

FCC SAR Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2513-1, XT2513-2, XT2513-3, XT2513V
FCC ID : IHDT56AT9
STANDARD : FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.



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Revision History

[illegible]

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2513-1, XT2513-2, XT2513-3, XT2513V**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.82	1.18	1.18	1.59
		GSM1900	0.11	1.27	1.27	
	WCDMA	WCDMA II	0.15	1.23	1.28	
		WCDMA IV	0.31	1.27	1.27	
		WCDMA V	0.55	1.28	1.28	
	LTE	LTE Band 7	0.51	1.25	1.28	
		LTE Band 12/17	0.79	0.88	0.88	
		LTE Band 13	0.80	1.25	1.25	
		LTE Band 14	0.75	1.19	1.19	
		LTE Band 25/2	0.88	1.17	1.22	
		LTE Band 26/5	0.88	1.14	1.14	
		LTE Band 30	0.48	1.16	1.16	
		LTE Band 66/4	0.79	1.21	1.16	
		LTE Band 71	0.54	0.59	0.67	
		LTE Band 41/38	0.48	1.25	1.25	
		LTE Band 48	0.84	0.61	0.89	
	5G NR	FR1 n7	0.24	1.19	1.19	
		FR1 n12	0.85	0.61	0.83	
		FR1 n14	0.84	0.94	0.94	
		FR1 n25/2	0.83	1.23	1.10	
		FR1 n26/5	0.83	1.28	1.28	
		FR1 n30	0.13	1.27	1.27	
		FR1 n66	0.80	1.24	1.23	
		FR1 n70	0.69	1.12	0.97	
		FR1 n71	0.42	0.50	0.50	
		FR1 n41	0.86	1.22	1.22	
		FR1 n48	0.81	0.53	0.74	
		FR1 n77/78	0.85	1.14	1.14	
DTS	WLAN	2.4GHz WLAN	1.37	0.80	1.39	1.59
NII		5GHz WLAN	1.19	0.67	1.18	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.43	0.35	0.35	1.59

Highest 10g SAR Summary					
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)	
Licensed		GSM850	2.75	3.97	
		GSM1900	3.14		
	WCDMA	WCDMA II	3.16		
		WCDMA IV	3.20		
		WCDMA V	2.92		
	LTE	LTE Band 7	3.17		
		LTE Band 13	1.42		
		LTE Band 25/2	3.14		
		LTE Band 26/5	1.47		
		LTE Band 30	3.18		
		LTE Band 66/4	3.13		
		LTE Band 41/38	3.17		
		LTE Band 48	2.29		
	5G NR	FR1 n7	2.96		
		FR1 n25/2	3.09		
		FR1 n26/5	1.41		
		FR1 n30	3.12		
		FR1 n66	3.09		
		FR1 n70	2.93		
		FR1 n41	2.87		
		FR1 n48	2.13		
	FR1 n77/78	3.19			
DTS	WLAN	WLAN2.4GHz	3.19	3.88	
NII		WLAN5GHz	3.07	3.97	
Date of Testing:			2024/8/27 ~ 2024/9/30		

Remark:

1. This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE B4 / B5 / B17 / B38 falls completely within the supports frequency span for LTE B25 / B66 / B26 / B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25 / B66 / B26 / B12 / B41.
2. This device supports 5GNR n5 / n2 / n78 and n26 / n25 / n77. Since the supported frequency span for 5GNR n5 / n2 / n78 falls completely within the supports frequency span for n26 / n25 / n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n26 / n25 / n77.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR03-SZ	CN1256	421272

Applicant	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

Manufacturer	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01



4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2513-1, XT2513-2, XT2513-3, XT2513V
FCC ID	IHDT56AT9
IMEI Code	Sample 1: IMEI1: 352291420056490 IMEI2: 352291420056508 Sample 2: IMEI1: 352291420078270 IMEI2: 352291420078288
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48: 3550 MHz ~ 3700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n70: 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA/HSUPA

	DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DVT2
SW Version	VVK35.48
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: 1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation. 2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications. 3. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only). 4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12. 5. This device supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). 6. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the MediaTek TA-SAR will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E. 7. For WLAN when transmit simultaneous with WWAN/BT, power reduction will be activated to head exposure condition. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and extremity exposure conditions. 8. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively. 9. LTE Band41 supports HPUE with higher power. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR. 10. This device supports HPUE for 5GNR n41/77/78 with class 2 level, HPUE power has been measured separately. For 5GNR n41/77/78 performed full SAR testing with class 2 and HPUE SAR can represent power class 3 level SAR. 11. For 5G NR bands, using FTM to perform SAR with default 100% transmission. 12. There are two samples, the different between them refer to the XT2513-1, XT2513-2, XT2513-3, XT2513V_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, sample 1 was chosen to perform full SAR testing and sample 2 to verify the worst case of sample 1. 13. This device has NFC function and the NFC SAR report will be separately submitted. 14. The four model names are only for different market purpose, and all the others are the same. 15. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.	

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n2	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 50
	n12	FDD	15	5, 10, 15
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n30	FDD	15	5, 10
	n66	FDD	15	10, 15, 20, 25, 30, 35, 40, 45
	n71	FDD	15	10, 15, 20, 25, 30, 35
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
SA	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n2	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 50
	n12	FDD	15	5, 10, 15
	n14	FDD	15	5, 10
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n26	FDD	15	5, 10, 15, 20
	n30	FDD	15	5, 10
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
	n70	FDD	15	5, 10, 15
	n71	FDD	15	5, 10, 15, 20, 25, 30, 35
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100



4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05									
FCC ID		IHDT56AT9							
Equipment Name		Mobile Cellular Phone							
Operating Frequency Range of each LTE transmission band		LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz							
Channel Bandwidth		LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 14: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz							
uplink modulations used		QPSK / 16QAM / 64QAM / 256QAM							
LTE Voice / Data requirements		Voice and Data							
LTE Release Version		R15							
CA Support		Supported, Uplink and Downlink							
LTE MPR permanently built-in by design		Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3							
		Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})					MPR (dB)	
			1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz		20 MHz
		QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
		16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
		16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
		64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
		64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
		256 QAM	≥ 1					≤ 5	
LTE A-MPR		In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)							
Spectrum plots for RB configuration		A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.							
Power reduction applied to satisfy SAR compliance		Yes, when operating in Proximity sensors/receiver/hotspot detect mechanism, head/body-worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 14.							
LTE Carrier Aggregation Combinations		Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.							
LTE Carrier Aggregation Additional Information		1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink.							

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 13												
	Bandwidth 5 MHz		Bandwidth 10 MHz									
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5			23230	782						
M	23230	782										
H	23255	784.5										
LTE Band 14												
	Bandwidth 5 MHz		Bandwidth 10 MHz									
	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #	Channel #
L	23305	790.5			23330	793						
M	23330	793										
H	23355	795.5										
LTE Band 17												
	Bandwidth 5 MHz		Bandwidth 10 MHz									
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23755	706.5			23780	709						
M	23790	710			23790	710						
H	23825	713.5			23800	711						
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

	LTE Band 66											
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

LTE Band 71								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133147	665.5	133172	668	133197	670.5	133222	673
M	133247	675.5	133272	678	133297	680.5	133322	683
H	133447	695.5	133422	693	133397	690.5	133372	688

LTE Band 48								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560
LM	55810	3607	55815	3607.5	55820	3608	55830	3609
MH	56170	3643	56165	3642.5	56160	3642	56150	3641
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690

<For LTE Overlap Bands Description>
1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 2	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 25	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		

2) LTE Bands tune up

Band	Ant	Full	ECI 2	ECI 3	ECI 4	ECI 7	ECI 10	ECI 12
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit
LTE Band 2	Ant0	24	24	18.5	24	17	21	
LTE Band 25	Ant0	24	16.5	18.5	24	17	21	
LTE Band 2	Ant.4	24	24	17	24	14		20
LTE Band 25	Ant.4	24	16.5	17	24	14		20
LTE Band 4	Ant0	24	24	19	24	18	22	
LTE Band 66	Ant0	24	24	19	24	18	22	
LTE Band 4	Ant.4	24	15.5	17	24	14		19
LTE Band 66	Ant.4	24	15.5	17	24	14		19
LTE Band 5	Ant0	24	24	22	24	22	24	
LTE Band 26	Ant0	24	24	22	24	22	24	
LTE Band 5	Ant.4	24	22.2	23.2	24	21.2		24
LTE Band 26	Ant.4	24	22.2	23.2	24	21.2		24
LTE Band 12	Ant0	24	24	24	24	24	24	
LTE Band 17	Ant0	24	24	24	24	24	24	
LTE Band 12	Ant.4	24	23.2	23.7	24	22.2		24
LTE Band 17	Ant.4	24	23.2	23.7	24	22.2		24

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48: 3550 MHz ~ 3700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n70: 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B4/5/7/12/13/14/30/48/66/71
LTE Anchor Bands for n5	LTE B2/4/730/66/48
LTE Anchor Bands for n7	LTE B2/4/5/12/66
LTE Anchor Bands for n12	LTE B2/66
LTE Anchor Bands for n25	LTE B7/12/26/66
LTE Anchor Bands for n30	LTE B2/5/12/14/66
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/7/48/66
LTE Anchor Bands for n41	LTE B2/4/5/12/25/26/66/71
LTE Anchor Bands for n48	LTE B5/71
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/26/30/66/71
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/66/71

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band																
NR Band 2																
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L 370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870	
M 376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	
H 381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895	378500	1892.5	378000	1890	

NR Band 5								
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L 165300	826.5	165800	829	166300	831.5	166800	834	
M 167300	836.5	167300	836.5	167300	836.5	167300	836.5	
H 169300	846.5	168800	844	168300	841.5	167800	839	

NR Band 7																		
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	503500	2517.5	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510500	2552.5	510000	2550	509000	2545

NR Band 12						
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L 140300	701.5	140800	704	141300	706.5	
M 141500	707.5	141500	707.5	141500	707.5	
H 142700	713.5	142200	711	141700	708.5	



NR Band 14					
Bandwidth 5MHz			Bandwidth 10MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	158100	790.5	158600	793	
M	158600	793			
H	159100	795.5			

NR Band 25															
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000

NR Band 26							
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #
L	163300	816.5	163800	819	164300	821.5	164800
M	166300	831.5	166300	831.5	166300	831.5	166300
H	169300	846.5	168800	844	168300	841.5	167800

NR Band 30					
Bandwidth 5MHz			Bandwidth 10MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	461500	2307.5	462000	2310	
M	462000	2310			
H	462500	2312.5			

NR Band 66																	
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730	346500
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760	351500

NR Band 70							
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #
L	339500	1697.5	340000	1700	340500	1702.5	341000
M	340500	1702.5	340500	1702.5	340500	1702.5	340500
H	341500	1707.5	341000	1705	340500	1702.5	340000

NR Band 71															
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #
L	133100	665.5	133600	668	134100	670.5	134600	673	135100	675.5	135600	678	136100	680.5	136600
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5	136100	680.5	136100	680.5	136100	680.5	136100
H	139100	695.5	138600	693	138100	690.5	137600	688	137100	685.5	136600	683	136100	680.5	135600

NR Band 41																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz	
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500202	2501.01	500700	2503.5	501204	2506.02	501702	2508.51	502200	2511	502704	2513.52	503202	2516.01	503700	2518.5	504204	2521.02	505200	2526	506202	2528.51	507204
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598
H	537000	2685	536496	2682.48	535998	2679.99	535500	2677.5	534996	2674.98	534498	2672.49	534000	2670	533496	2667.48	532998	2664.99	531996	2659.98	531000	2655	529998

NR Band48																	
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz	
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	637000	3555	637168	3557.52	637334	3560.01	637668	3565.02	638000	3570	638334	3575.01	638668	3580.02	639000	3585	639334
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666
H	646332	3694.98	646166	3692.49	646000	3690	645666	3684.99	645332	3679.98	645000	3675	644666	3669.99	644332	3664.98	644000



NR Band 77																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840.00	656000	3840.00	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930

NR Band 78																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750.00	650000	3750.00	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652500	3787.5	652334	3785.01	652000	3780	651668	3775.02	651334	3770.01	651000	3765	650668	3760.02	650334	3755.01		

For <3450 MHz ~ 3550 MHz >

NR Band 77																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L 630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M 633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H 636334	3545.01	636168	3542.52	636000	3540	635834	3537.51	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

NR Band 78																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635834	3537.51	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

<For NR Overlap Bands Description>
1) NR Bands BW

Band	Duplex	SCS(KHz)	Bandwidths(BW)
FR1 n2	FDD	15	5, 10, 15, 20,25,30,35,40
FR1 n25	FDD	15	5, 10, 15, 20,25,30,35,40
FR1 n5	TDD	30	5,10,15,20
FR1 n26	TDD	30	5,10,15,20
FR1 n77	TDD	30	10,15,20,25,30,40,50,60,70,80,90,100
FR1 n78	TDD	30	10,15,20,25,30,40,50,60,70,80,90,100

2) NR Bands Tune up:

Band	Ant	Full Tune-up Limit	ECI 2 Tune-up Limit	ECI 3 Tune-up Limit	ECI 4 Tune-up Limit	ECI 7 Tune-up Limit	ECI 10 Tune-up Limit	ECI 11 Tune-up Limit	ECI 12 Tune-up Limit	ECI 13 Tune-up Limit
FR1 n2	Ant 0	24	24	18.5	24	17.5	22			
FR1 n25	Ant 0	24	24	18.5	24	17.5	22			
FR1 n2	Ant 4	24	15	19	24	16			21.5	
FR1 n25	Ant 4	24	15	19	24	16			21.5	
FR1 n5	Ant 0	24	24	22.5	24	22.5	24			
FR1 n26	Ant 0	24	24	22.5	24	22.5	24			
FR1 n5	Ant 4	24	21.5	23	24	21.5			24	
FR1 n26	Ant 4	24	21.5	23	24	21.5			24	
FR1 n77 PC3	Ant 5	24	16	15.5	24	14				20.5
FR1 n78 PC3	Ant 5	24	16	15.5	24	14				20.5
FR1 n77 PC2	Ant 5	27	16	15.5	27	14				20.5
FR1 n78 PC2	Ant 5	27	16	15.5	27	14				20.5
FR1 n77 PC3	Ant 1	24	24	24	24	24		24		
FR1 n78 PC3	Ant 1	24	24	24	24	24		24		
FR1 n77 PC2	Ant 1	26.5	26.5	24.5	26.5	24.5		26.5		
FR1 n78 PC2	Ant 1	26.5	26.5	24.5	26.5	24.5		26.5		
FR1 n77 PC3	Ant 2	24	24	17.5	21	16				
FR1 n78 PC3	Ant 2	24	24	17.5	21	16				
FR1 n77 PC2	Ant 2	27	27	17.5	21	16				
FR1 n78 PC2	Ant 2	27	27	17.5	21	16				
FR1 n77 PC3	Ant 8	24	24	18.5	21.5	16				
FR1 n78 PC3	Ant 8	24	24	18.5	21.5	16				
FR1 n77 PC2	Ant 8	27	27	18.5	21.5	16				
FR1 n78 PC2	Ant 8	27	27	18.5	21.5	16				

5. TA-SAR feature for RF Exposure compliance

WWAN bands are all enabled with MediaTek TA-SAR feature. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

Note that WLAN operations are not enabled with TA-SAR feature.

The FCC RF exposure limit is defined based on time-averaged RF exposure. The product implements MediaTek TA-SAR feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with FCC RF exposure limit over a defined time window, for SAR (transmit frequency $\leq 6\text{GHz}$). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

The P_{limit} values correspond to SAR_{design_target}. The power will be fixed at the static reduce power level at different exposure conditions for RF exposure compliance. For the GSM (TDD) P_{limit} power levels in the table correspond to the burst average power levels which don't account for TX duty cycle.

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for TA-SAR algorithm. SAR char will be entered via the MediaTek's NV suggestion to enable the TA-SAR Feature.

<Terminologies in this report>

P _{limit}	The time-averaged RF power which corresponds to SAR _{design_target} .
P _{max}	Maximum target power level
SAR _{design_target} :	The design target for SAR compliance. It should be less than regulatory SAR limit to account for all device design related uncertainty.
SAR char	P _{limit} for all the technologies/bands for all applicable ECI

<SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for TA-SAR to control and manage RF exposure for $f < 6\text{ GHz}$.

<SAR design target and uncertainty>

Item	Uncertainty dB (k=2)
Total uncertainty	1.5

To account for total uncertainty, SAR_{design_target} should be determined as:

$$SAR_{design_target} < SAR_{regulatory_limit} \times 10^{\frac{-total_uncertainty}{10}}$$



The TA-SAR algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit, for each characterized technology and band.

TA-SAR allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit.

<Plimit for supported technologies and bands >

Band	Antenna	ECI 2	ECI 3	ECI 4	ECI 7	ECI 10	ECI 11	ECI 12	ECI 13	Pmax*
GSM850	Ant 0	27.4	23.0	25.5	23.0	26.1				25.5
GSM1900	Ant 0	33.3	19.0	22.5	17.5	21.5				22.5
WCDMA II	Ant 0	32.3	17.5	23.0	16.0	20.5				23.0
WCDMA IV	Ant 0	29.2	18.5	23.0	17.5	21.5				23.0
WCDMA V	Ant 0	26.7	21.0	23.0	21.0	23.4				23.0
LTE Band 2	Ant 0	26.9	17.5	23.0	16.0	20.0				23.0
LTE Band 2	Ant 4	15.5	16.0	23.0	13.0			19.0		23.0
LTE Band 4	Ant 0	29.8	18.0	23.0	17.0	21.0				23.0
LTE Band 4	Ant 4	14.5	16.0	23.0	13.0			18.0		23.0
LTE Band 5	Ant 0	27.2	21.0	23.0	21.0	26.3				23.0
LTE Band 5	Ant 4	21.2	22.2	23.0	20.2			23.0		23.0
LTE Band 7	Ant 1	27.0	18.5	23.0	18.5		21.0			23.0
LTE Band 7	Ant 4	28.1	28.0	23.0	23.9			23.0		23.0
LTE Band 12	Ant 0	29.5	24.6	23.0	24.6	23.0				23.0
LTE Band 12	Ant 4	22.2	22.7	23.0	21.2			23.0		23.0
LTE Band 13	Ant 0	27.9	23.0	23.0	23.0	26.5				23.0
LTE Band 13	Ant 4	21.2	22.7	23.0	21.2			23.0		23.0
LTE Band 14	Ant 0	28.2	23.0	23.0	23.0	23.0				23.0
LTE Band 14	Ant 4	20.7	22.2	23.0	20.7			23.0		23.0
LTE Band 17	Ant 0	29.5	24.6	23.0	24.6	23.0				23.0
LTE Band 17	Ant 4	22.2	22.7	23.0	21.2			23.0		23.0
LTE Band 25	Ant 0	26.9	17.5	23.0	16.0	20.0				23.0
LTE Band 25	Ant 4	15.5	16.0	23.0	13.0			19.0		23.0
LTE Band 26	Ant 0	27.2	21.0	23.0	21.0	26.3				23.0
LTE Band 26	Ant 4	21.2	22.2	23.0	20.2			23.0		23.0
LTE Band 30	Ant 1	31.3	18.0	23.0	18.0		20.0			23.0
LTE Band 30	Ant 4	25.7	24.9	23.0	21.5			23.0		23.0
LTE Band 38	Ant 1	26.2	18.4	21.0	18.4		20.9			21.0
LTE Band 41 PC3	Ant 1	26.2	18.4	21.0	18.4		20.9			21.0
LTE Band 41 PC2	Ant 1			22.4						22.4
LTE Band 48	Ant 5	14.5	14.0	21.0	13.0				19.5	21.0
LTE Band 66	Ant 0	29.8	18.0	23.0	17.0	21.0				23.0
LTE Band 66	Ant 4	14.5	16.0	23.0	13.0			18.0		23.0
LTE Band 71	Ant 0	29.9	26.4	23.0	26.4	23.0				23.0
LTE Band 71	Ant 4	25.1	24.2	23.0	23.0			23.0		23.0
n2	Ant 0	33.7	17.5	23.0	16.5	21.0				23.0
n2	Ant 4	14.0	18.0	23.0	15.0			20.5		23.0
n5	Ant 0	28.7	21.5	23.0	21.5	26.5				23.0
n5	Ant 4	20.5	22.0	23.0	20.5			23.0		23.0
n7	Ant 1	30.2	20.0	23.0	20.0		21.5			23.0
n12	Ant 0	31.0	26.2	23.0	26.2	23.0				23.0
n12	Ant 4	22.0	22.0	23.0	20.5			23.0		23.0
n14	Ant 0	30.2	24.3	23.0	24.3	23.0				23.0
n14	Ant 4	21.0	22.0	23.0	20.5			23.0		23.0
n25	Ant 0	33.7	17.5	23.0	16.5	21.0				23.0
n25	Ant 4	14.0	18.0	23.0	15.0			20.5		23.0
n26	Ant 0	28.7	21.5	23.0	21.5	26.5				23.0
n26	Ant 4	20.5	22.0	23.0	20.5			23.0		23.0
n30	Ant 1	33.0	19.0	23.0	19.0		21.0			23.0

n41 PC3	Ant 1	30.7	18.5	23.0	18.5		21.0			23.0
n41 PC2	Ant 1			26.0						26.0
n41 PC3	Ant 4	16.0	15.5	23.0	12.5			21.0		23.0
n41 PC2	Ant 4			26.0						26.0
n41 PC3	Ant 2	28.4	16.0	21.0	14.5					23.0
n41 PC2	Ant 2									26.0
n41 PC3	Ant 7	17.5	14.5	20.0	13.0					23.0
n41 PC2	Ant 7									26.0
n48	Ant 5	14.5	14.5	23.0	13.0				19.0	23.0
n66	Ant 0	29.7	18.0	23.0	17.5	21.5				23.0
n66	Ant 4	15.5	19.0	23.0	15.5			21.5		23.0
n70	Ant 0	31.1	18.0	23.0	17.5	21.5				23.0
n70	Ant 4	15.5	19.0	23.0	15.5			21.5		23.0
n71	Ant 0	31.3	27.5	23.0	27.5	23.0				23.0
n71	Ant 4	26.2	25.5	23.0	23.9			23.0		23.0
n77 PC3	Ant 5	15.0	14.5	23.0	13.0				19.5	23.0
n77 PC2	Ant 5			26.0						26.0
n77 PC3	Ant 1	36.7	23.5	23.0	23.5		25.5			23.0
n77 PC2	Ant 1			25.5						25.5
n77 PC3	Ant 2	32.1	16.5	20.0	15.0					23.0
n77 PC2	Ant 2									26.0
n77 PC3	Ant 8	27.3	17.5	20.5	15.0					23.0
n77 PC2	Ant 8									26.0
n78 PC3	Ant 5	15.0	14.0	23.0	12.5				19.5	23.0
n78 PC2	Ant 5			26.0						26.0
n78 PC3	Ant 1	36.7	23.5	23.0	23.5		25.5			23.0
n78 PC2	Ant 1			25.5						25.5
n78 PC3	Ant 2	32.1	16.5	20.0	15.0					23.0
n78 PC2	Ant 2									26.0
n78 PC3	Ant 8	27.3	17.5	20.5	15.0					23.0
n78 PC2	Ant 8									26.0

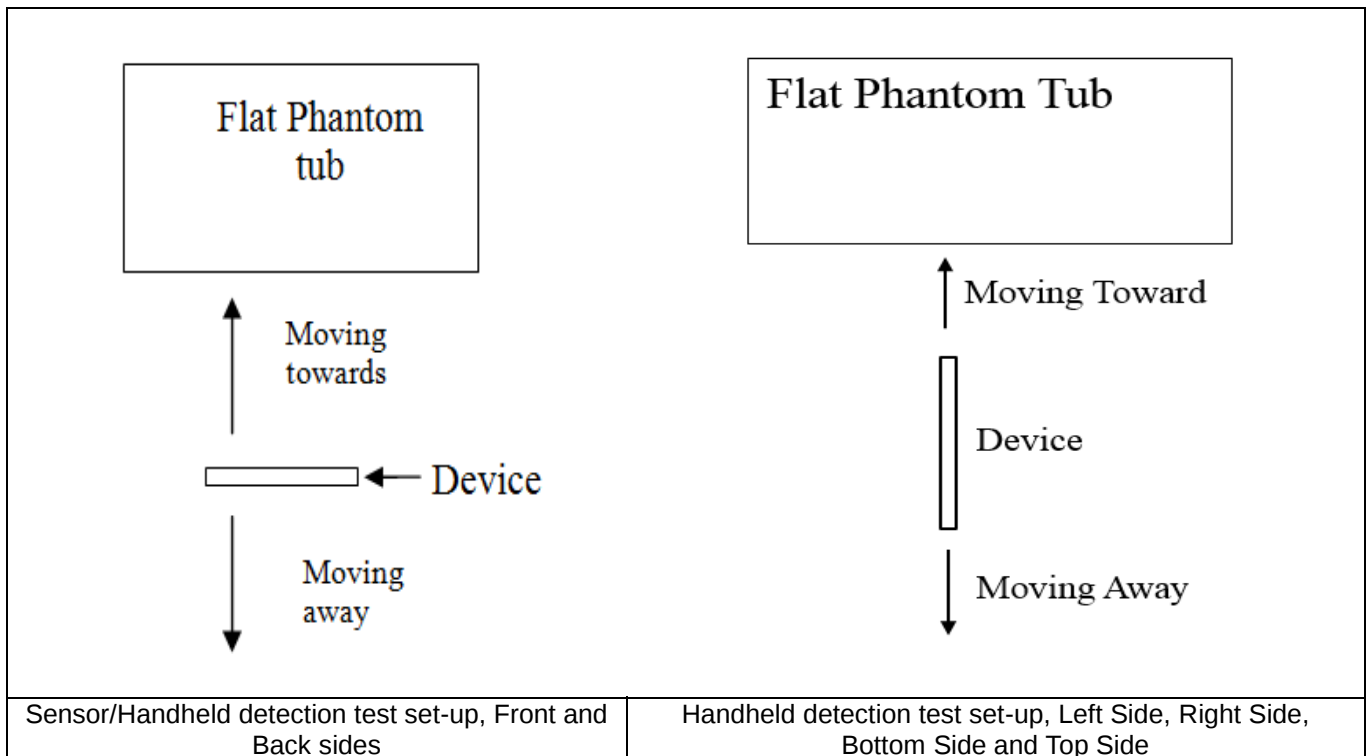
Note:

- 1) *Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1.0 dB device uncertainty.
- 2) All Plimit power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).
- 3) The max allowed output power is the Plimit + 1.0 dB device uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.

6. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5850MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s). When front or back body worn condition is detected reduced power will be active.
5. The device employs proximity sensors also can detect the presence of the user's a finger or hand when handheld state at the front/back/top/bottom/left/right sides of the device. When front/back/top/bottom/left/right sides of handheld condition is detected reduced power will be active.
6. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed:



<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	20	26	29	35

<Handheld for ANT 0>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	12	18	19	24	7	12	18	24

<Handheld for ANT1>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	3	8	8	14	6	12	8	14

<Handheld for ANT4>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	11	9	15	3	9	11	17

<Handheld for ANT 6>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	11	11	16	6	11	11	16

<Handheld for ANT 5>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	11	11	18	14	20

7. RF Exposure Limits

7.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

7.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

8. Specific Absorption Rate (SAR)

8.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

8.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\text{SAR} = \frac{d}{dt} \left(\frac{dW}{dm} \right) = \frac{d}{dt} \left(\frac{dW}{\rho dv} \right)$$

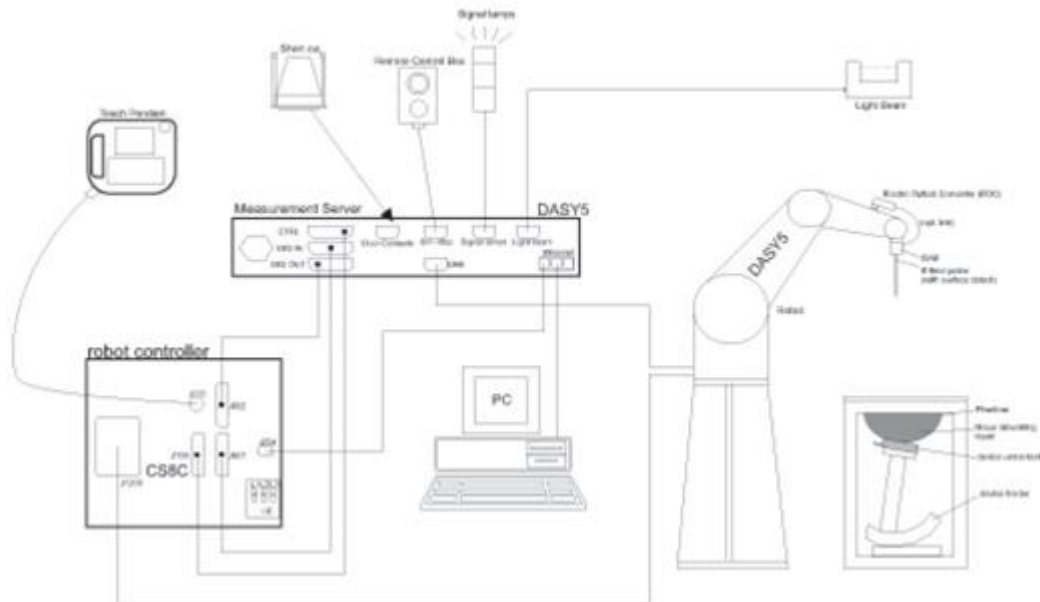
SAR is expressed in units of Watts per kilogram (W/kg)

$$\text{SAR} = \frac{\sigma |E|^2}{\rho}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

9. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

9.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – 10 GHz Linearity: ± 0.2 dB (30 MHz – 10 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

9.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Photo of DAE

9.3 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm	

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

9.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

10. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

- (a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- (b) Read the WWAN RF power level from the base station simulator.
- (c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
- (d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

10.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

10.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

10.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm	$3 - 4$ GHz: ≤ 12 mm $4 - 6$ GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

10.4 Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

10.5 Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

10.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

11. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 15, 2021	Dec. 13, 2024
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 15, 2024
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Oct. 19, 2021	Oct. 17, 2024
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 18, 2024
SPEAG	2300MHz System Validation Kit	D2300V2	1056	Oct. 20, 2021	Oct. 18, 2024
SPEAG	2450MHz System Validation Kit	D2450V2	924	Nov. 03, 2023	Nov. 02, 2024
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 18, 2024
SPEAG	3500MHz System Validation Kit	D3500V2	1037	Nov. 20, 2023	Nov. 19, 2024
SPEAG	3700MHz System Validation Kit	D3700V2	1008	Nov. 20, 2023	Nov. 19, 2024
SPEAG	3900MHz System Validation Kit	D3900V2	1048	Mar. 09, 2023	Mar. 07, 2026
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 11, 2024
SPEAG	Data Acquisition Electronics	DAE4	1210	Jan. 15, 2024	Jan. 14, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7641	Jun. 03, 2024	Jun. 02, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7577	Dec. 13, 2023	Dec. 12, 2024
SPEAG	ELI Phantom	QD OVA 001 BB	1225	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201341952	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Radio communication analyzer	MT8820C	6201563813	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Radio communication analyzer	MT8821C	6272416837	Apr. 08, 2024	Apr. 07, 2025
Anritsu	Radio communication analyzer	MT8821C	6272416846	Apr. 08, 2024	Apr. 07, 2025
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 16, 2023	Oct. 15, 2024
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Feb. 19, 2024	Feb. 18, 2025
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2023	Dec. 27, 2024
R&S	Signal Generator	SMB100A	175779	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Sensor	MA2411B	1306099	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Meter	ML2495A	1349001	Oct. 16, 2023	Oct. 15, 2024
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2023	Dec. 27, 2024
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2023	Dec. 27, 2024
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2023	Dec. 27, 2024
R&S	Spectrum Analyzer	FSP7	100818	Jul. 04, 2024	Jul. 03, 2025
TES	Hygrometer	1310	200505600	Jul. 08, 2024	Jul. 07, 2025
Anymetre	Thermo-Hygrometer	JR593	2015030903	Jan. 02, 2024	Jan. 01, 2025
Anymetre	Thermo-Hygrometer	JR593	2015102801	Jan. 02, 2024	Jan. 01, 2025
SPEAG	Device Holder	N/A	N/A	N/A	N/A
AR	Amplifier	5S1G4	0333096	Note 1	
Mini-Circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
Mini-Circuits	Amplifier	ZVA-183W-S+	726202215	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
Jinkexinhua	Attenuator	10db-8G	N/A	Note 1	

Note:

- Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check
- Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
- The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

12. System Verification

12.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

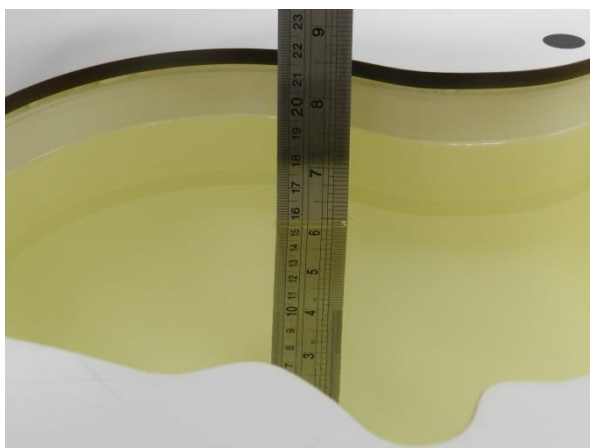


Fig 11.1 Photo of Liquid Height for Head SAR



Fig 11.2 Photo of Liquid Height for Body SAR

12.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ϵ_r)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%



<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
750	Head	22.2	0.912	42.087	0.89	41.90	2.47	0.45	±5	2024/8/30
835	Head	22.1	0.941	43.311	0.90	41.50	4.56	4.36	±5	2024/8/28
1750	Head	22.3	1.349	39.741	1.37	40.10	-1.53	-0.90	±5	2024/9/2
1900	Head	22.4	1.437	40.992	1.40	40.00	2.64	2.48	±5	2024/8/27
2300	Head	22.2	1.704	39.528	1.67	39.50	2.04	0.07	±5	2024/8/29
2450	Head	22.3	1.810	39.280	1.80	39.20	0.56	0.20	±5	2024/8/31
2600	Head	22.2	1.908	38.327	1.96	39.00	-2.65	-1.73	±5	2024/9/1
3500	Head	22.6	2.850	37.175	2.91	37.90	-2.06	-1.91	±5	2024/9/5
3700	Head	22.5	3.005	36.916	3.12	37.70	-3.69	-2.08	±5	2024/9/3
3900	Head	22.5	3.168	36.694	3.33	37.51	-4.86	-2.18	±5	2024/9/4
5250	Head	22.7	4.551	36.905	4.71	35.95	-3.38	2.66	±5	2024/9/6
5600	Head	22.1	4.900	36.179	5.07	35.50	-3.35	1.91	±5	2024/9/7
5750	Head	22.4	5.059	36.094	5.22	35.35	-3.08	2.10	±5	2024/9/9
750	Head	22.1	0.911	42.879	0.89	41.90	2.36	2.34	±5	2024/9/13
835	Head	22.5	0.936	40.095	0.90	41.50	4.00	-3.39	±5	2024/9/15
1750	Head	22.3	1.363	41.115	1.37	40.10	-0.51	2.53	±5	2024/9/28
1900	Head	22.4	1.418	38.387	1.40	40.00	1.29	-4.03	±5	2024/9/19
2300	Head	22.3	1.698	38.157	1.67	39.50	1.68	-3.40	±5	2024/9/11
2450	Head	22.2	1.789	38.686	1.80	39.20	-0.61	-1.31	±5	2024/9/12
2600	Head	22.2	1.907	38.730	1.96	39.00	-2.70	-0.69	±5	2024/9/16
3500	Head	22.6	2.847	36.338	2.91	37.90	-2.16	-4.12	±5	2024/9/17
3700	Head	22.1	2.998	36.030	3.12	37.70	-3.91	-4.43	±5	2024/9/21
3900	Head	22.3	3.242	35.797	3.33	37.51	-2.64	-4.57	±5	2024/9/26
5250	Head	22.3	4.629	35.873	4.71	35.95	-1.72	-0.21	±5	2024/9/23
5600	Head	22.1	4.977	35.377	5.07	35.50	-1.83	-0.35	±5	2024/9/25
5750	Head	22.4	5.129	35.121	5.22	35.35	-1.74	-0.65	±5	2024/9/30

12.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

<1g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2024/8/30	750	Head	250	1099	7577	1210	2.060	8.540	8.24	-3.51
2024/8/28	835	Head	250	4d162	7577	1210	2.490	9.640	9.96	3.32
2024/9/2	1750	Head	250	1137	7577	1210	8.740	36.500	34.96	-4.22
2024/8/27	1900	Head	250	5d182	7577	1210	9.800	39.600	39.2	-1.01
2024/8/29	2300	Head	250	1056	7641	1210	12.100	48.800	48.4	-0.82
2024/8/31	2450	Head	250	924	7577	1210	13.700	52.300	54.8	4.78
2024/9/1	2600	Head	250	1070	7577	1210	13.500	56.200	54	-3.91
2024/9/5	3500	Head	100	1037	7577	1210	6.560	65.400	65.6	0.31
2024/9/3	3700	Head	100	1008	7577	1210	6.480	67.200	64.8	-3.57
2024/9/4	3900	Head	100	1048	7577	1210	6.570	69.100	65.7	-4.92
2024/9/6	5250	Head	100	1341	7577	1210	8.260	80.700	82.6	2.35
2024/9/7	5600	Head	100	1341	7577	1210	8.810	84.500	88.1	4.26
2024/9/9	5750	Head	100	1341	7577	1210	7.990	80.600	79.9	-0.87
2024/9/13	750	Head	250	1099	7577	1210	2.170	8.540	8.68	1.64
2024/9/15	835	Head	250	4d162	7577	1210	2.480	9.640	9.92	2.90
2024/9/28	1750	Head	250	1137	7577	1210	9.050	36.500	36.2	-0.82
2024/9/19	1900	Head	250	5d182	7577	1210	10.300	39.600	41.2	4.04
2024/9/11	2300	Head	250	1056	7641	1210	12.600	48.800	50.4	3.28
2024/9/12	2450	Head	250	924	7577	1210	12.700	52.300	50.8	-2.87
2024/9/16	2600	Head	250	1070	7577	1210	14.700	56.200	58.8	4.63
2024/9/17	3500	Head	100	1037	7577	1210	6.470	65.400	64.7	-1.07
2024/9/21	3700	Head	100	1008	7577	1210	6.450	67.200	64.5	-4.02
2024/9/26	3900	Head	100	1048	7577	1210	6.690	69.100	66.9	-3.18
2024/9/23	5250	Head	100	1341	7577	1210	8.150	80.700	81.5	0.99
2024/9/25	5600	Head	100	1341	7577	1210	8.120	84.500	81.2	-3.91
2024/9/30	5750	Head	100	1341	7577	1210	8.490	80.600	84.9	5.33

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2024/8/30	750	Head	250	1099	7577	1210	1.380	5.650	5.52	-2.30
2024/8/28	835	Head	250	4d162	7577	1210	1.590	6.260	6.36	1.60
2024/9/2	1750	Head	250	1137	7577	1210	4.700	19.200	18.8	-2.08
2024/8/27	1900	Head	250	5d182	7577	1210	5.250	20.200	21	3.96
2024/8/29	2300	Head	250	1056	7641	1210	5.920	22.800	23.68	3.86
2024/8/31	2450	Head	250	924	7577	1210	6.130	24.500	24.52	0.08
2024/9/1	2600	Head	250	1070	7577	1210	5.840	24.600	23.36	-5.04
2024/9/5	3500	Head	100	1037	7577	1210	2.510	24.700	25.1	1.62
2024/9/3	3700	Head	100	1008	7577	1210	2.360	24.400	23.6	-3.28
2024/9/4	3900	Head	100	1048	7577	1210	2.400	24.100	24	-0.41
2024/9/6	5250	Head	100	1341	7577	1210	2.320	23.100	23.2	0.43
2024/9/7	5600	Head	100	1341	7577	1210	2.410	24.000	24.1	0.42
2024/9/9	5750	Head	100	1341	7577	1210	2.270	22.700	22.7	0.00
2024/9/13	750	Head	250	1099	7577	1210	1.480	5.650	5.92	4.78
2024/9/15	835	Head	250	4d162	7577	1210	1.570	6.260	6.28	0.32
2024/9/28	1750	Head	250	1137	7577	1210	5.020	19.200	20.08	4.58
2024/9/19	1900	Head	250	5d182	7577	1210	5.300	20.200	21.2	4.95
2024/9/11	2300	Head	250	1056	7641	1210	5.810	22.800	23.24	1.93
2024/9/12	2450	Head	250	924	7577	1210	5.820	24.500	23.28	-4.98
2024/9/16	2600	Head	250	1070	7577	1210	6.380	24.600	25.52	3.74
2024/9/17	3500	Head	100	1037	7577	1210	2.390	24.700	23.9	-3.24
2024/9/21	3700	Head	100	1008	7577	1210	2.460	24.400	24.6	0.82
2024/9/26	3900	Head	100	1048	7577	1210	2.360	24.100	23.6	-2.07
2024/9/23	5250	Head	100	1341	7577	1210	2.250	23.100	22.5	-2.60
2024/9/25	5600	Head	100	1341	7577	1210	2.460	24.000	24.6	2.50
2024/9/30	5750	Head	100	1341	7577	1210	2.410	22.700	24.1	6.17

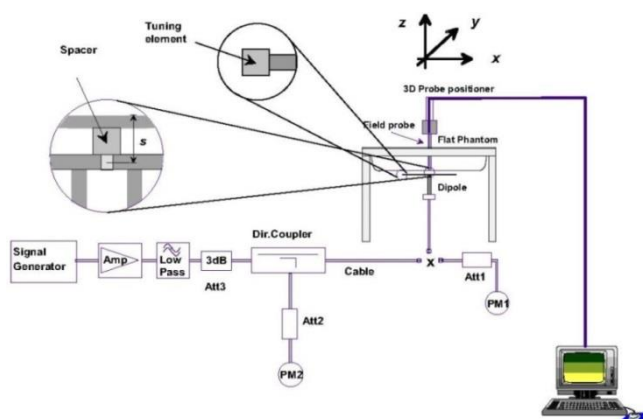


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo

13. RF Exposure Positions

13.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

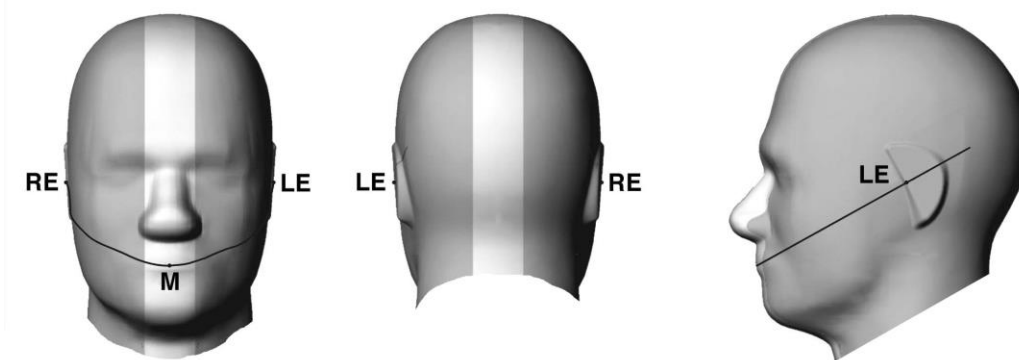


Fig 12.1.1 Front, back, and side views of SAM twin phantom

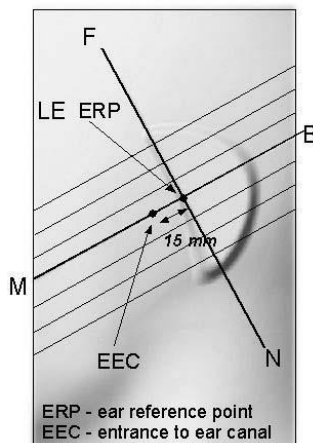


Fig 12.1.2 Close-up side view of phantom showing the ear region.

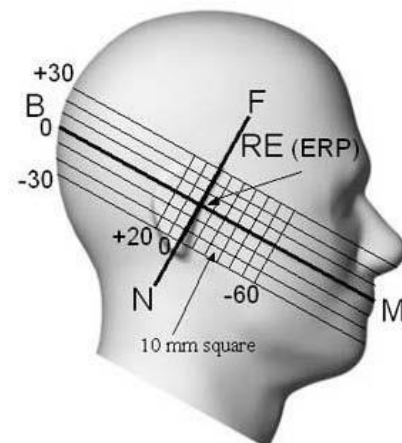


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

13.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width w_t of the handset at the level of the acoustic output (point A in Figure 12.2.1 and Figure 12.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 12.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the handset. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 12.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 12.2.3. The actual rotation angles should be documented in the test report.

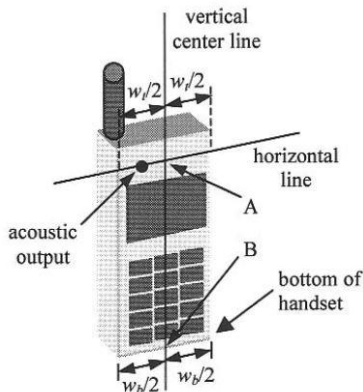


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case"

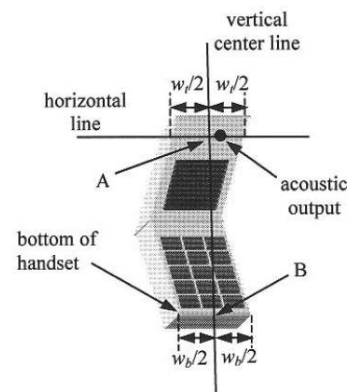


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

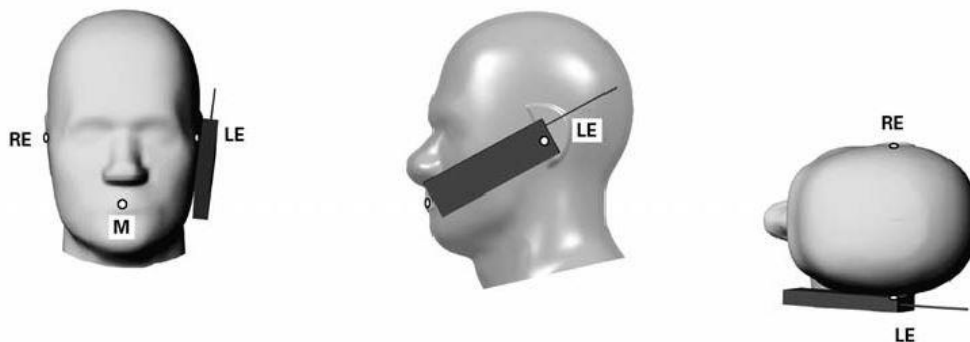


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

13.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

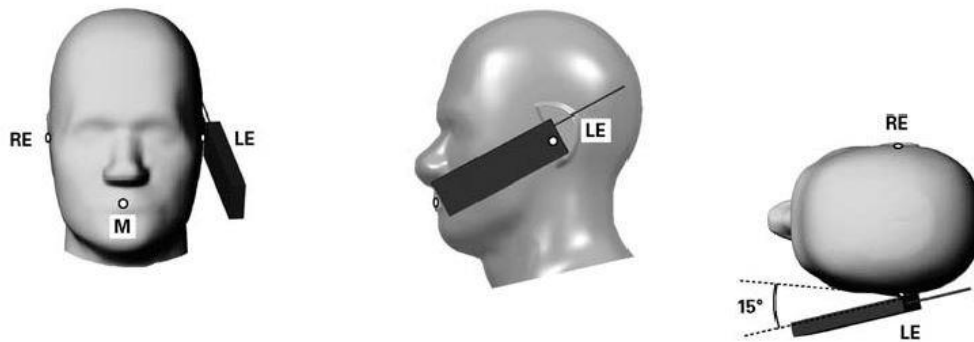


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

13.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

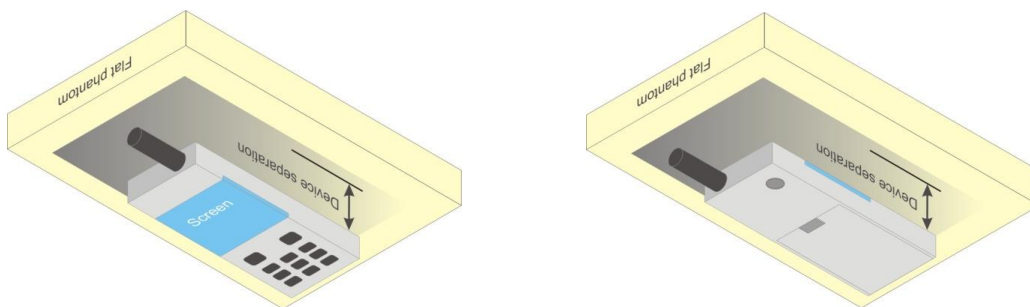


Fig 12.4 Body Worn Position

13.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.⁶ The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

13.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ($L \times W \geq 9$ cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

14. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set Gain Factors (β_c and β_d) and parameters were set according to each
 - ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - iii. Set RMC 12.2Kbps + HSDPA mode.
 - iv. Set Cell Power = -86 dBm
 - v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
 - vi. Select HSDPA Uplink Parameters
 - vii. Set Delta ACK, Delta NACK and Delta CQI = 8
 - viii. Set Ack-Nack Repetition Factor to 3
 - ix. Set CQI Feedback Cycle (k) to 4 ms
 - x. Set CQI Repetition Factor to 2
 - xi. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

Setup Configuration

HSUPA Setup Configuration:

- The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- The RF path losses were compensated into the measurements.
- A call was established between EUT and Base Station with following setting * :
 - Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
 - Set Cell Power = -86 dBm
 - Set Channel Type = 12.2k + HSPA
 - Set UE Target Power
 - Power Ctrl Mode= Alternating bits
 - Set and observe the E-TFCI
 - Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
- The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set RMC 12.2Kbps + HSDPA mode.
 - ii. Set Cell Power = -25 dBm
 - iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
 - iv. Select HSDPA Uplink Parameters
 - v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - a). Subtest 1: $\beta_c/\beta_d=2/15$
 - b). Subtest 2: $\beta_c/\beta_d=12/15$
 - c). Subtest 3: $\beta_c/\beta_d=15/8$
 - d). Subtest 4: $\beta_c/\beta_d=15/4$
 - vi. Set Delta ACK, Delta NACK and Delta CQI = 8
 - vii. Set Ack-Nack Repetition Factor to 3
 - viii. Set CQI Feedback Cycle (k) to 4 ms
 - ix. Set CQI Repetition Factor to 2
 - x. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

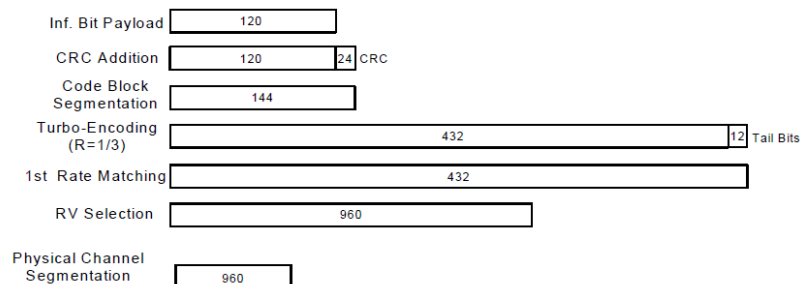


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

- i. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- ii. The RF path losses were compensated into the measurements.
- iii. A call was established between EUT and Base Station with following setting * :
 4. Call Configs = 5.2E:HSPA+:UL with 16QAM
 5. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
 6. Set Channel Params
 7. Set Cell Power = -86 dBm
 8. Set Channel Type = HSPA
 9. Set UE Target Power =21 dBm
 10. Power Ctrl Mode= All Up Bits
 11. Set Manual Uplink DPCH Bc/Bd = Manual
 12. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
 13. Set HSPA Conn DL Channel Levels
 14. Set HS-SCCH Configs
 15. Set RB Test Mode Setup
 16. Set Common HSUPA Parameters
 17. Set Serving Grant
 18. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
- iv. The transmitted maximum output power was recorded.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{fs} = 30/15 * \beta_c$.
 Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
 Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.
 Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
 Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

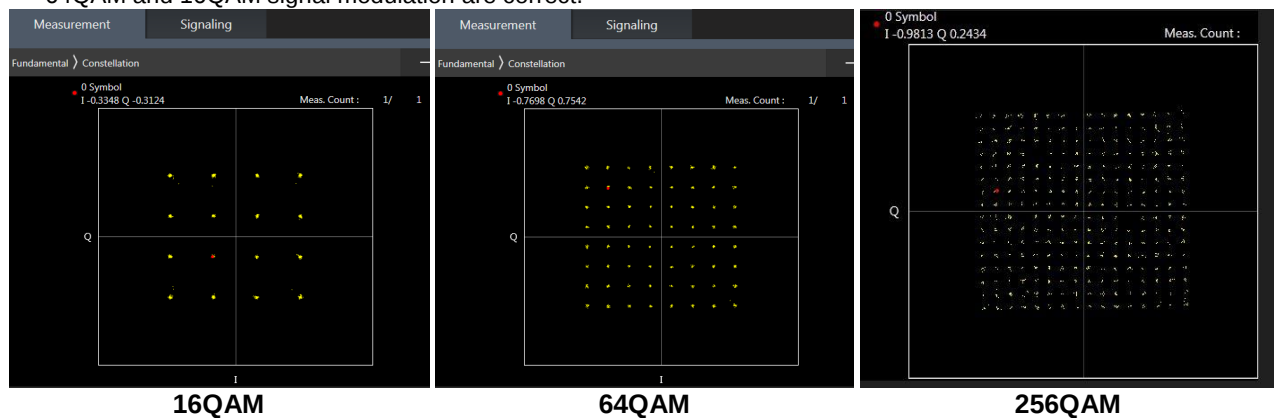
Setup Configuration
<WCDMA Conducted Power>
General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B2 / B4 / B5 / B17 / B38 SAR test was covered by B25 / B66 / B26 / B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 256QAM, 64QAM and 16QAM signal modulation are correct.



<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “special subframe S” contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

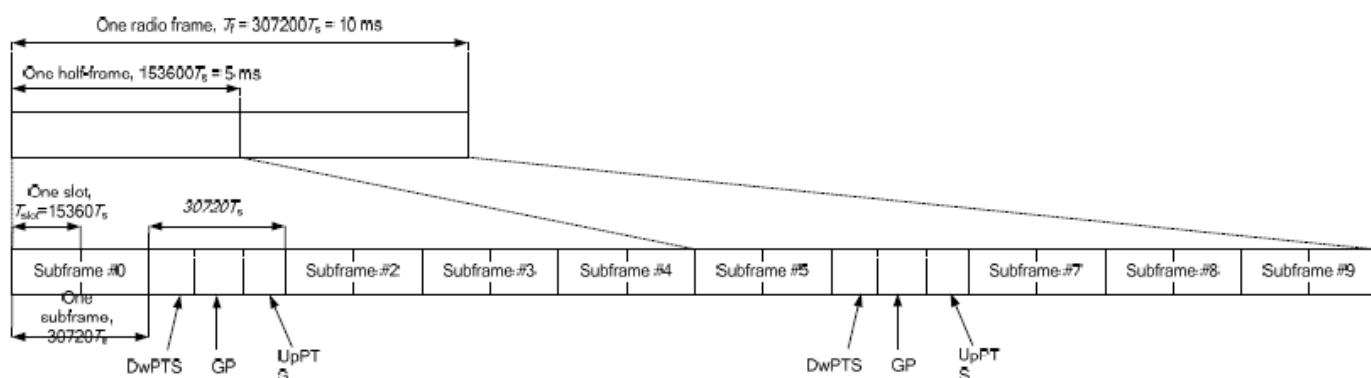


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T _s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~4	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T _s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

For LTE TDD Power class 2

- Uplink-downlink configuration: 1. In a half-frame consisted of 5 subframes, uplink operation is in 2 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(2+0.167)/5 = 43.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(2+0.143)/5 = 42.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $43.3\%/42.9\% = 1.009$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

For LTE TDD Power class 3

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

The device can adjust uplink/downlink configuration automatically according to the transmitting power class level, as follows:

LTE TDD Band	Power Class level	support uplink/downlink configuration
LTE Band 41	> 23	1,2,3,4,5
	=23	0,1,2,3,4,5,6
	< 23	0,1,2,3,4,5,6

<LTE Carrier Aggregation>

The detailed LTE Carrier Aggregation conducted power table can refer to Appendix F.

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, and for this device that all the configurations were choose to power measurement.
3. All permutations exist. No restrictions on Pcell & Scell combinations. Only LTE Band 29A is limited to Scell.
4. The gray color table is covered by other combinations and no need to verify power

2CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by
			Measurement Superset
1	CA_12A-30A	30A	
2	CA_12A-48A		
3	CA_12A-66A	66A	
4	CA_12B		
5	CA_13A-48A	48A	
6	CA_13A-66A	66A,	
7	CA_14A-30A	30A	
8	CA_14A-66A	66A	
9	CA_25A-25A	25A	
10	CA_25A-26A	25A	
11	CA_25A-41A	41A, 25A	
12	CA_25A-66A	66A, 25A	
13	CA_26A-41A	41A,	
14	CA_2A-12A		
15	CA_2A-13A	2A	
16	CA_2A-14A	2A	
17	CA_2A-17A	2A	
18	CA_2A-2A	2A	
19	CA_2A-30A	30A, 2A	
20	CA_2A-48A	CA_2A-48A, 48A, 2A	
21	CA_2A-4A	CA_2A-4A, 4A, 2A	
22	CA_2A-5A	2A	
23	CA_2A-66A	CA_2A-66A, 66A, 2A	
24	CA_2A-71A	2A	
25	CA_2A-7A	7A, 2A	
26	CA_2C	2A	
27	CA_30A-66A	66A, 30A	
29	CA_41A-41A	41A	
30	CA_41A-48A	48A, 41A	
31	CA_41C	CA_41C, 41A	
32	CA_48A-66A	CA_48A-66A, 66A, 48A	
33	CA_48B	CA_48B, 48A	
34	CA_48C	CA_48C, 48A	
35	CA_4A-12A	4A	
36	CA_4A-13A	4A	
37	CA_4A-17A	4A	
38	CA_4A-30A	4A, 30A	
39	CA_4A-48A	4A, 48A	
40	CA_4A-4A	4A	
41	CA_4A-5A	4A	

42	CA_4A-71A	4A	
43	CA_4A-7A	4A	
44	CA_5A-30A	30A	
45	CA_5A-41A	41A	
46	CA_5A-48A	48A	
47	CA_5A-66A	66A	
48	CA_5A-7A	7A	
49	CA_5B		
50	CA_66A-66A	66A	
51	CA_66A-71A	66A	
52	CA_66B	CA_66B, 66A	
53	CA_66C	CA_66C, 66A	
54	CA_7A-12A	7A	
55	CA_7A-13A	7A	
56	CA_7A-25A	7A	
57	CA_7A-30A	7A	
58	CA_7A-66A	7A	
59	CA_7A-7A	7A	
60	CA_7B	7A	
61	CA_7C	7A	
62	CA_48A-48A	48A	
63	CA_7A-71A	7A	
64	CA_29A-30A	30A	
65	CA_29A-66A	66A	
66	CA_2A-29A	2A	
67	CA_4A-29A	4A	
68	CA_7A-29A	7A	

LTE Carrier Aggregation Conducted Power (Downlink)

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.
- vi. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vii. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lceil \frac{BW_{\text{Channel}(1)} + BW_{\text{Channel}(2)} - 0.1|BW_{\text{Channel}(1)} - BW_{\text{Channel}(2)}|}{0.6} \right\rceil 0.3 \text{ [MHz]}$$

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Band 2/4/7/25/30/41/48/66 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive. When carrier aggregation is applicable, power measurements were performed with the downlink carrier aggregation and 4x4 DL MIMO active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

4X4 MIMO	Band
	LTE Band 2/4/7/25/30/41/48/66

LTE Carrier Aggregation Conducted Power (Uplink)

LTE Uplink CA	2CC Uplink Carrier Aggregation
Intra-band	
CA_5B	ANT0/4
CA_66B	ANT0/4
CA_66C	ANT0/4
CA_41C	ANT1
CA_48B	ANT5
CA_48C	ANT5

<Intra-band>
General Note:

- i. The device supports intra-band uplink carrier aggregation for LTE B5/66/41/48 with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According Nov. 2017 TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. Additional SAR measurement for LTE UL CA with other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.
- v. LTE CA_66B/48B test was covered by CA_66C/48C; therefore, SAR was only assessed for CA_66C/48C.

<Inter-band uplink carrier aggregation consideration>

LTE Inter CA	Main Antenna Tx	ASDiv Tx
CA_12A-66A	ANT4+ANT0	ANT0+ANT4
CA_13A-66A	ANT4+ANT0	ANT0+ANT4
CA_14A-66A	ANT4+ANT0	ANT0+ANT4
CA_2A-12A	ANT0+ANT4	ANT4+ANT0
CA_2A-13A	ANT0+ANT4	ANT4+ANT0
CA_2A-14A	ANT0+ANT4	ANT4+ANT0
CA_2A-48A	ANT0+ANT5	ANT4+ANT5
CA_2A-4A	ANT0+ANT4	ANT4+ANT0
CA_2A-5A	ANT0+ANT4	ANT4+ANT0
CA_2A-66A	ANT0+ANT4	ANT4+ANT0
CA_2A-71A	ANT0+ANT4	ANT4+ANT0
CA_4A-12A	ANT0+ANT4	/
CA_4A-13A	ANT0+ANT4	/
CA_4A-5A	ANT0+ANT4	/
CA_5A-66A	ANT4+ANT0	ANT0+ANT4
CA_48A-66A	ANT5+ANT0	ANT5+ANT4

General Note:

1. The single carrier of inter band CA uplink power level is the same as Non-CA standalone LTE power level.
2. The product implements MediaTek TA-SAR feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with RF exposure limit over a defined time window, for SAR (transmit frequency $\leq 6\text{GHz}$). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.
3. For LTE inter-band CA mode, MediaTek TA-SAR algorithm in WWAN adds directly the time-averaged RF exposure between two LTE bands. TA-SAR algorithm controls the total RF exposure base on LTE inter CA bands to not exceed FCC limit. In Part 1 Report, simultaneous transmission compliance was evaluated with other Radios (WLAN or BT) using standalone LTE SAR mode.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n2/n5/n7/n12/n25/n30/n66/n71/n41/n48/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n12/n14/n25/n26/n30/n66/n70/n71/n41/n48/n77/n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
 - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
 - c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
 - d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
 - f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
 - g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. For 5G NR bands, using FTM to perform SAR with default 100% transmission.
5. For 5G NR, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
6. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
7. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
8. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
9. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
10. This device supports HPUE for 5G NR n41/77/78 with class 2 level, HPUE power has been measured separately. For 5G NR n41/77/78 performed full SAR testing with class 2.

<3GPP 38.101 MPR for EN-DC>
Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	0 ²
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
CP-OFDM	256 QAM	≤ 4.5		
	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5	≤ 2.5	
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

<EN-DC combination>

ENDC	Main Antenna Tx		ASDv Tx	
	LTE TX	NR TX	LTE TX	NR TX
DC_12A_n25A	ANT4	ANT0	ANT0	ANT4
DC_12A_n2A	ANT4	ANT0	ANT0	ANT4
DC_12A_n30A	ANT4	ANT1	ANT0	ANT1
DC_12A_n41A	ANT4	ANT1	ANT0	ANT1
DC_12A_n66A	ANT4	ANT0	ANT0	ANT4
DC_12A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_12A_n78A	ANT0	ANT5		
DC_12A_n7A	ANT4	ANT1		
DC_13A_n2A	ANT4	ANT0	ANT0	ANT4
DC_13A_n66A	ANT4	ANT0	ANT0	ANT4
DC_13A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_13A_n78A	ANT0	ANT5		
DC_14A_n2A	ANT4	ANT0	ANT0	ANT4
DC_14A_n30A	ANT4	ANT1	ANT0	ANT1
DC_14A_n66A	ANT4	ANT0	ANT0	ANT4
DC_14A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_25A_n41A	ANT4	ANT1	ANT0	ANT1
DC_25A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_25A_n78A	ANT0	ANT5		
DC_26A_n25A	ANT4	ANT0	ANT0	ANT4
DC_26A_n41A	ANT4	ANT1	ANT0	ANT1
DC_26A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_2A_n12A	ANT0	ANT4	ANT4	ANT0
DC_2A_n30A	ANT4	ANT1	ANT0	ANT1
DC_2A_n41A	ANT4	ANT1	ANT0	ANT1
DC_2A_n5A	ANT0	ANT4	ANT4	ANT0
DC_2A_n66A	ANT0	ANT4	ANT4	ANT0



DC_2A_n71A	ANT0	ANT4	ANT4	ANT0
DC_2A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_2A_n78A	ANT0	ANT5		
DC_2A_n7A	ANT4	ANT1		
DC_30A_n2A	ANT1	ANT4	ANT1	ANT0
DC_30A_n5A	ANT1	ANT4	ANT1	ANT0
DC_30A_n66A	ANT1	ANT4	ANT1	ANT0
DC_30A_n77A	ANT4	ANT5	ANT4	ANT1/2/8
DC_48A_n2A	ANT5	ANT0	ANT5	ANT4
DC_48A_n5A	ANT5	ANT0	ANT5	ANT4
DC_48A_n66A	ANT5	ANT0	ANT5	ANT4
DC_48A_n71A	ANT5	ANT0	ANT5	ANT4
DC_4A_n2A	ANT0	ANT4	ANT4	ANT0
DC_4A_n41A	ANT4	ANT1	ANT0	ANT1
DC_4A_n5A	ANT0	ANT4	ANT4	ANT0
DC_4A_n78A	ANT0	ANT5		
DC_4A_n7A	ANT4	ANT1		
DC_5A_n2A	ANT4	ANT0	ANT0	ANT4
DC_5A_n30A	ANT4	ANT1	ANT0	ANT1
DC_5A_n41A	ANT4	ANT1	ANT0	ANT1
DC_5A_n48A	ANT0	ANT5	ANT4	ANT5
DC_5A_n66A	ANT4	ANT0	ANT0	ANT4
DC_5A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_5A_n78A	ANT0	ANT5		
DC_5A_n7A	ANT4	ANT1		
DC_66A_n12A	ANT0	ANT4	ANT4	ANT0
DC_66A_n25A	ANT0	ANT4	ANT4	ANT0
DC_66A_n2A	ANT0	ANT4	ANT4	ANT0
DC_66A_n30A	ANT4	ANT1	ANT0	ANT1
DC_66A_n41A	ANT4	ANT1	ANT0	ANT1
DC_66A_n5A	ANT0	ANT4	ANT4	ANT0
DC_66A_n71A	ANT4	ANT0	ANT0	ANT4
DC_66A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_66A_n78A	ANT0	ANT5		
DC_66A_n7A	ANT4	ANT1		
DC_71A_n2A	ANT4	ANT0	ANT0	ANT4
DC_71A_n41A	ANT4	ANT1	ANT0	ANT1
DC_71A_n48A	ANT0	ANT5	ANT4	ANT5
DC_71A_n66A	ANT4	ANT0	ANT0	ANT4
DC_71A_n78A	ANT0	ANT5		
DC_71A_n77A	ANT0	ANT5	ANT4	ANT1/2/8
DC_7A_n25A	ANT1	ANT4		
DC_7A_n2A	ANT1	ANT4		
DC_7A_n5A	ANT1	ANT4		
DC_7A_n66A	ANT1	ANT4		
DC_7A_n71A	ANT1	ANT4		
DC_7A_n77A	ANT4	ANT5		
DC_7A_n78A	ANT4	ANT5		

<WLAN Conducted Power>

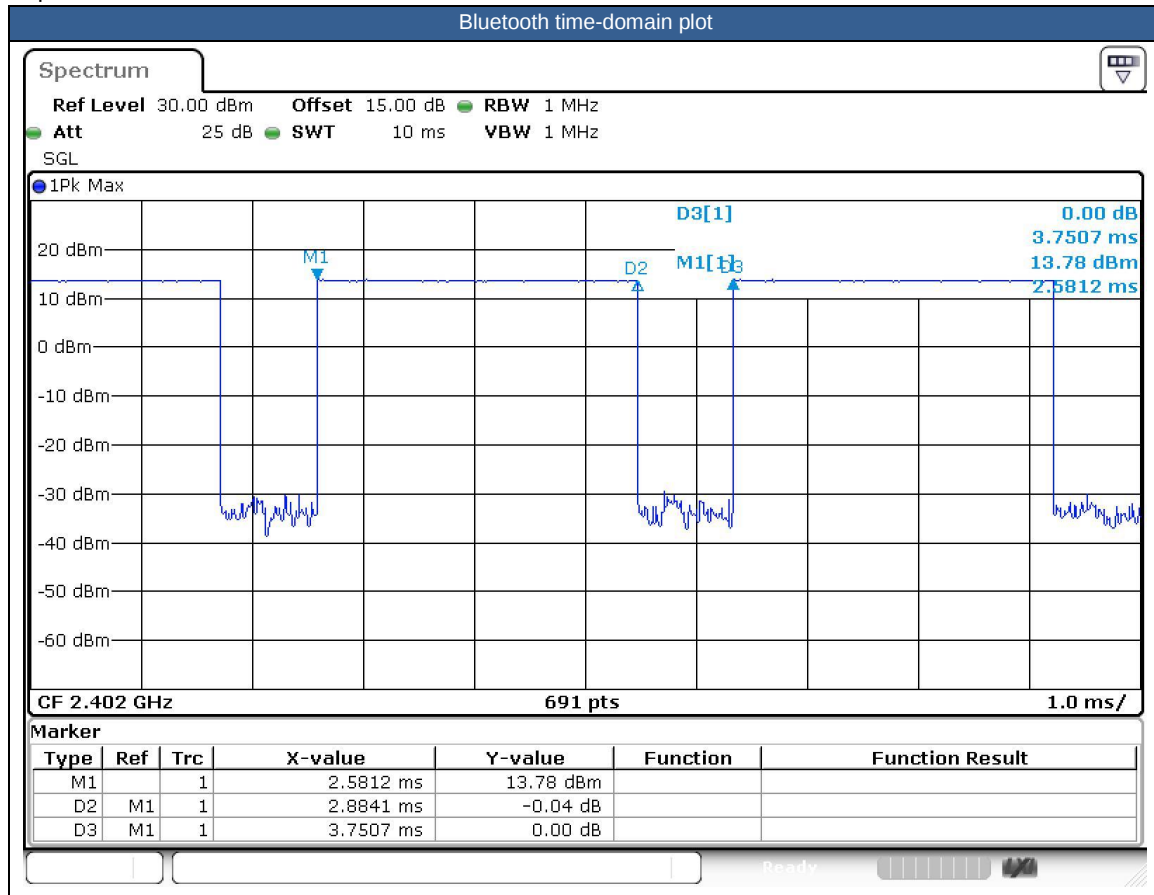
General Note:

1. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration. Additional output power measurements were not necessary.
2. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
3. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
4. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
5. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
 - a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
 - b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
 - c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.89% as following figure, for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to 83.3% for Bluetooth reported SAR calculation





15. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

16. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For SAR testing of Bluetooth signal with 83.3% theoretical duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle) *83.3%".
 - d. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - e. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - f. For TDD LTE SAR measurement of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8 W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the MediaTek TA-SAR will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E.
5. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
 - a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/5/7/13/25/26/30/66/38/41/48, 5G NR n2/n5/n7/n66/70/n48/n41/n77/n78, WLAN2.4/5.2/5.8GHz, therefore product specific 10g SAR is necessary.
 - b. WLAN 5.3/5.8GHz tested the product specific 10g SAR since it has no hotspot mode.
 - c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
6. Although the headset SAR is greater than 0.8 W/kg, the headset SAR verified the worst of the non-headset SAR and less than non-headset SAR, so there is no need to be tested other channels.
7. According to Nov. 2017 TCB workshop, when the reported 1gSAR for UL CA configuration is <1.2 W/kg, UL CA 1gSAR is not required for all required test channels (PCC based).
8. For some WWAN bands Ant 0 distance SAR test at front 5mm / Back 10mm and some WWAN bands Ant 1 distance SAR test at Back 10mm is only for extremity exposure conditions simultaneous transmission analysis with WLAN.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

WCDMA Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+ .

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $> \text{not } \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $> \text{not } \frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B2 / B4 / B5 / B17 / B38 SAR test was covered by B25 / B66 / B26 / B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
 - b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - c. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
 - d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not $\frac{1}{2}$ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
 - e. Smaller bandwidth output power for each RB allocation configuration for this device will not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
 - f. For 5G FR1 n5 /n7/ n12/ n25 /n26 /n66 /n41 / n48 /n77 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

WLAN/Bluetooth Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, U-NII-1 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

ECI status description:

The device has the following ECI state which used at different exposure condition.

This WWAN bands enabled with MediaTek TA-SAR feature which located at chapter 5. The default power is Pmax power, When Plimit power higher than Pmax power, the output power will be limited at Pmax, and so the SAR will use Pmax power to do the testing.

Exposure Condition	ECI	Ant	Trigger conditions
Head SAR	ECI2	All Ant	Earpiece On
Hotspot SAR	ECI7	All Ant	Hotspot On
Body worn/ Extremity SAR	ECI4	Ant 2/7/8	receiver off
Body worn/ Extremity SAR	ECI4	Ant 0/1/4/5	Sensor Off
Body worn SAR	ECI3	All Ant	Sensor On
Extremity SAR	ECI10	Ant 0	Sensor On
Extremity SAR	ECI11	Ant 1	Sensor On
Extremity SAR	ECI12	Ant 4	Sensor On
Extremity SAR	ECI13	Ant 5	Sensor On



16.1 Head SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																					
01	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	133297	680.5	1	23.11	24.00	1.227	-	-	-0.09	0.212	0.260
	LTE Band 71	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	133297	680.5	1	23.11	24.00	1.227	-	-	0.13	0.114	0.140
	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	133297	680.5	1	23.11	24.00	1.227	-	-	0.06	0.182	0.223
	LTE Band 71	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	133297	680.5	1	23.11	24.00	1.227	-	-	0.18	0.071	0.087
	LTE Band 71	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	133297	680.5	1	22.17	23.00	1.211	-	-	-0.11	0.168	0.203
	LTE Band 71	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	133297	680.5	1	22.17	23.00	1.211	-	-	-0.15	0.092	0.111
	LTE Band 71	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	133297	680.5	1	22.17	23.00	1.211	-	-	-0.15	0.116	0.140
	LTE Band 71	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	133297	680.5	1	22.17	23.00	1.211	-	-	0.14	0.058	0.070
	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	133297	680.5	1	23.16	24.00	1.213	-	-	0.03	0.442	0.536
	LTE Band 71	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	133297	680.5	1	23.16	24.00	1.213	-	-	0.15	0.318	0.386
	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	133297	680.5	1	23.16	24.00	1.213	-	-	0	0.438	0.531
	LTE Band 71	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	133297	680.5	1	23.16	24.00	1.213	-	-	0.12	0.317	0.385
	LTE Band 71	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI 2	133297	680.5	1	22.15	23.00	1.216	-	-	-0.06	0.348	0.423
	LTE Band 71	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI 2	133297	680.5	1	22.15	23.00	1.216	-	-	0.19	0.223	0.271
	LTE Band 71	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI 2	133297	680.5	1	22.15	23.00	1.216	-	-	0.14	0.229	0.279
	LTE Band 71	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI 2	133297	680.5	1	22.15	23.00	1.216	-	-	0.05	0.225	0.274
	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	23095	707.5	1	23.07	24.00	1.239	-	-	0.09	0.230	0.285
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	23095	707.5	1	23.07	24.00	1.239	-	-	-0.12	0.132	0.164
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	23095	707.5	1	23.07	24.00	1.239	-	-	0.19	0.112	0.139
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	23095	707.5	1	23.07	24.00	1.239	-	-	-0.03	0.099	0.123
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	0.18	0.186	0.236
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.01	0.103	0.131
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.08	0.098	0.124
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.12	0.078	0.099
02	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	23095	707.5	1	22.19	23.20	1.262	-	-	0.05	0.629	0.794
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	23095	707.5	1	22.19	23.20	1.262	-	-	-0.1	0.548	0.691
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	23095	707.5	1	22.19	23.20	1.262	-	-	0.18	0.479	0.604
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	23095	707.5	1	22.19	23.20	1.262	-	-	-0.13	0.436	0.550
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.05	0.619	0.785
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.19	0.525	0.666
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	-0.15	0.461	0.584
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	23095	707.5	1	21.97	23.00	1.268	-	-	0.03	0.418	0.530
03	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	23230	782	1	23.04	24.00	1.247	-	-	-0.03	0.328	0.409
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	23230	782	1	23.04	24.00	1.247	-	-	-0.01	0.191	0.238
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	23230	782	1	23.04	24.00	1.247	-	-	-0.04	0.224	0.279
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	23230	782	1	23.04	24.00	1.247	-	-	0.13	0.132	0.165
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI 2	23230	782	1	21.96	23.00	1.271	-	-	-0.03	0.256	0.325
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI 2	23230	782	1	21.96	23.00	1.271	-	-	-0.08	0.152	0.193
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI 2	23230	782	1	21.96	23.00	1.271	-	-	0.16	0.174	0.221
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI 2	23230	782	1	21.96	23.00	1.271	-	-	-0.18	0.101	0.128
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	23230	782	1	21.14	22.20	1.276	-	-	-0.02	0.623	0.795
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	23230	782	1	21.14	22.20	1.276	-	-	0.05	0.492	0.628
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	23230	782	1	21.14	22.20	1.276	-	-	0.01	0.473	0.604
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	23230	782	1	21.14	22.20	1.276	-	-	-0.05	0.428	0.546
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI 2	23230	782	1	21.06	22.20	1.300	-	-	0.13	0.606	0.788
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI 2	23230	782	1	21.06	22.20	1.300	-	-	-0.11	0.471	0.612
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI 2	23230	782	1	21.06	22.20	1.300	-	-	0.03	0.460	0.598
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	23230	782	1	21.06	22.20	1.300	-	-	0.16	0.414	0.538
	LTE Band 14	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	23330	793	1	22.99	24.00	1.262	-	-	-0.09	0.306	0.386
	LTE Band 14	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	23330	793	1	22.99	24.00	1.262	-	-	0.08	0.188	0.237



FCC SAR Test Report

Report No. : FA482618

	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	23330	793	1	22.99	24.00	1.262	-	-	0.01	0.183	0.231
	LTE Band 14	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	23330	793	1	22.99	24.00	1.262	-	-	0.02	0.105	0.132
	LTE Band 14	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI 2	23330	793	1	21.96	23.00	1.271	-	-	-0.07	0.242	0.307
	LTE Band 14	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI 2	23330	793	1	21.96	23.00	1.271	-	-	0	0.147	0.187
	LTE Band 14	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI 2	23330	793	1	21.96	23.00	1.271	-	-	-0.07	0.143	0.182
	LTE Band 14	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI 2	23330	793	1	21.96	23.00	1.271	-	-	-0.02	0.085	0.108
04	LTE Band 14	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	23330	793	1	20.58	21.70	1.294	-	-	0.07	0.576	0.745
	LTE Band 14	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	23330	793	1	20.58	21.70	1.294	-	-	0.07	0.442	0.572
	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	23330	793	1	20.58	21.70	1.294	-	-	0.01	0.447	0.579
	LTE Band 14	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	23330	793	1	20.58	21.70	1.294	-	-	-0.16	0.391	0.506
	LTE Band 14	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI 2	23330	793	1	20.53	21.70	1.309	-	-	-0.14	0.562	0.736
	LTE Band 14	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI 2	23330	793	1	20.53	21.70	1.309	-	-	-0.14	0.430	0.563
	LTE Band 14	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI 2	23330	793	1	20.53	21.70	1.309	-	-	0.06	0.438	0.573
	LTE Band 14	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	23330	793	1	20.53	21.70	1.309	-	-	0.14	0.381	0.499
	FR1 n71	35M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.96	24.00	1.271	-	-	-0.11	0.140	0.178
	FR1 n71	35M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.96	24.00	1.271	-	-	-0.15	0.068	0.086
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.96	24.00	1.271	-	-	-0.01	0.099	0.126
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.96	24.00	1.271	-	-	-0.11	0.050	0.064
	FR1 n71	35M	QPSK	90	45	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.87	24.00	1.297	-	-	0.1	0.145	0.188
	FR1 n71	35M	QPSK	90	45	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.87	24.00	1.297	-	-	-0.06	0.070	0.091
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.87	24.00	1.297	-	-	0.18	0.092	0.119
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.87	24.00	1.297	-	-	0.16	0.051	0.066
05	FR1 n71	35M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	136100	680.5	1	22.99	24.00	1.262	-	-	-0.06	0.334	0.421
	FR1 n71	35M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	136100	680.5	1	22.99	24.00	1.262	-	-	0.07	0.245	0.309
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	136100	680.5	1	22.99	24.00	1.262	-	-	0.19	0.241	0.304
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	136100	680.5	1	22.99	24.00	1.262	-	-	-0.01	0.221	0.279
	FR1 n71	35M	QPSK	90	45	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	136100	680.5	1	22.88	24.00	1.294	-	-	0.08	0.319	0.413
	FR1 n71	35M	QPSK	90	45	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	136100	680.5	1	22.88	24.00	1.294	-	-	0.02	0.234	0.303
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	136100	680.5	1	22.88	24.00	1.294	-	-	0.07	0.230	0.298
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	136100	680.5	1	22.88	24.00	1.294	-	-	0.19	0.211	0.273
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	141500	707.5	1	23.03	24.00	1.250	-	-	-0.15	0.161	0.201
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	141500	707.5	1	23.03	24.00	1.250	-	-	0.01	0.076	0.095
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	141500	707.5	1	23.03	24.00	1.250	-	-	0.1	0.100	0.125
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	141500	707.5	1	23.03	24.00	1.250	-	-	-0.12	0.063	0.079
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	141500	707.5	1	22.87	24.00	1.297	-	-	0	0.157	0.204
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	141500	707.5	1	22.87	24.00	1.297	-	-	-0.01	0.070	0.091
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	141500	707.5	1	22.87	24.00	1.297	-	-	0.07	0.110	0.143
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	141500	707.5	1	22.87	24.00	1.297	-	-	-0.05	0.062	0.080
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	1	22.01	23.00	1.256	-	-	0.18	0.674	0.847
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	141500	707.5	1	22.01	23.00	1.256	-	-	0.05	0.521	0.654
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	141500	707.5	1	22.01	23.00	1.256	-	-	-0.02	0.550	0.691
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	141500	707.5	1	22.01	23.00	1.256	-	-	0.05	0.491	0.617
06	FR1 n12	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	1	21.94	23.00	1.276	-	-	0.03	0.665	0.849
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	141500	707.5	1	21.94	23.00	1.276	-	-	0.08	0.558	0.712
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	141500	707.5	1	21.94	23.00	1.276	-	-	-0.17	0.520	0.664
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	141500	707.5	1	21.94	23.00	1.276	-	-	-0.07	0.503	0.642
	FR1 n12	15M	QPSK	75	0	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	1	21.93	23.00	1.279	-	-	-0.02	0.640	0.819
	FR1 n14	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	158600	793	1	23.13	24.00	1.222	-	-	-0.03	0.201	0.246
	FR1 n14	10M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	158600	793	1	23.13	24.00	1.222	-	-	-0.13	0.104	0.127
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	158600	793	1	23.13	24.00	1.222	-	-	-0.11	0.153	0.187
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	158600	793	1	23.13	24.00	1.222	-	-	0.07	0.093	0.114
	FR1 n14	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	158600	793	1	23.06	24.00	1.242	-	-	0.02	0.194	0.241
	FR1 n14	10M	QPSK	25	14	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	158600	793	1	23.06	24.00	1.242	-	-	-0.15	0.103	0.128
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	158600	793	1	23.06	24.00	1.242	-	-	0.04	0.154	0.191
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	158600	793	1	23.06	24.00	1.242	-	-	-0.07	0.090	0.112
07	FR1 n14	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	158600	793	1	20.96	22.00	1.271	-	-	-0.07	0.659	0.837



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	FR1 n14	10M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	158600	793	1	20.96	22.00	1.271	-	-	-0.07	0.405	0.515
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	158600	793	1	20.96	22.00	1.271	-	-	0.02	0.480	0.610
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	158600	793	1	20.96	22.00	1.271	-	-	-0.13	0.419	0.532
	FR1 n14	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	158600	793	1	20.93	22.00	1.279	-	-	0.17	0.635	0.812
	FR1 n14	10M	QPSK	25	14	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	158600	793	1	20.93	22.00	1.279	-	-	0.11	0.480	0.614
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	158600	793	1	20.93	22.00	1.279	-	-	-0.12	0.475	0.608
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	158600	793	1	20.93	22.00	1.279	-	-	0.1	0.413	0.528
	FR1 n14	10M	QPSK	50	0	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	158600	793	1	20.81	22.00	1.315	-	-	0.13	0.621	0.817
835MHz																					
08	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	189	836.4	1	28.74	29.50	1.191	-	-	0.16	0.691	0.823
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 0	ECI 2	189	836.4	1	28.74	29.50	1.191	-	-	0.03	0.314	0.374
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 0	ECI 2	189	836.4	1	28.74	29.50	1.191	-	-	-0.03	0.631	0.752
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 0	ECI 2	189	836.4	1	28.74	29.50	1.191	-	-	-0.13	0.366	0.436
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	128	824.2	1	28.71	29.50	1.199	-	-	-0.04	0.644	0.772
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	251	848.8	1	28.73	29.50	1.194	-	-	-0.14	0.630	0.752
09	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	4182	836.4	1	23.36	24.00	1.159	-	-	0.06	0.474	0.549
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI 2	4182	836.4	1	23.36	24.00	1.159	-	-	0.16	0.186	0.216
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	4182	836.4	1	23.36	24.00	1.159	-	-	-0.05	0.352	0.408
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI 2	4182	836.4	1	23.36	24.00	1.159	-	-	0.07	0.199	0.231
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	4132	826.4	1	23.35	24.00	1.161	-	-	-0.12	0.439	0.510
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	4233	846.6	1	23.28	24.00	1.180	-	-	0.14	0.404	0.477
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	23.31	24.00	1.172	-	-	0.14	0.413	0.484
	LTE Band 5B	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	20575+ 20476	841.5+ 831.6	1	22.96	24.00	1.271	-	-	0.18	0.367	0.466
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	26865	831.5	1	23.31	24.00	1.172	-	-	0.1	0.190	0.223
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	23.31	24.00	1.172	-	-	0.06	0.150	0.176
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	26865	831.5	1	23.31	24.00	1.172	-	-	0.06	0.083	0.097
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	26765	821.5	1	23.27	24.00	1.183	-	-	-0.16	0.353	0.418
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	26965	841.5	1	23.26	24.00	1.186	-	-	-0.01	0.319	0.378
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	22.27	23.00	1.183	-	-	-0.06	0.325	0.384
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 0	ECI 2	26865	831.5	1	22.27	23.00	1.183	-	-	-0.09	0.155	0.183
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	22.27	23.00	1.183	-	-	-0.08	0.121	0.143
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 0	ECI 2	26865	831.5	1	22.27	23.00	1.183	-	-	-0.01	0.064	0.076
10	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	26865	831.5	1	21.45	22.20	1.189	-	-	0.08	0.743	0.883
	LTE Band 5B	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	20575+ 20476	841.5+ 831.6	1	21.15	22.20	1.274	-	-	0.12	0.541	0.689
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	26865	831.5	2	21.45	22.20	1.189	-	-	0.08	0.436	0.518
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	26865	831.5	1	21.45	22.20	1.189	-	-	-0.17	0.461	0.548
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	26865	831.5	1	21.45	22.20	1.189	-	-	0	0.516	0.613
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	26865	831.5	1	21.45	22.20	1.189	-	-	0.04	0.476	0.566
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	26765	821.5	1	21.42	22.20	1.197	-	-	0.06	0.665	0.796
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	26965	841.5	1	21.37	22.20	1.211	-	-	0.18	0.699	0.846
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	ECI 2	26865	831.5	1	21.43	22.20	1.194	-	-	0.03	0.710	0.848
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 4	ECI 2	26865	831.5	1	21.43	22.20	1.194	-	-	-0.16	0.440	0.525
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 4	ECI 2	26865	831.5	1	21.43	22.20	1.194	-	-	-0.11	0.493	0.589
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 4	ECI 2	26865	831.5	1	21.43	22.20	1.194	-	-	0.11	0.455	0.543
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	ECI 2	26765	821.5	1	21.39	22.20	1.205	-	-	0.1	0.635	0.765
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	ECI 2	26965	841.5	1	21.38	22.20	1.208	-	-	-0.07	0.668	0.807
	LTE Band 26	15M	QPSK	75	0	-	Right Cheek	0mm	Ant 4	ECI 2	26865	831.5	1	21.36	22.20	1.213	-	-	0.13	0.630	0.764
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	23.22	24.00	1.197	-	-	-0.19	0.264	0.316
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	166300	831.5	1	23.22	24.00	1.197	-	-	-0.15	0.129	0.154
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	23.22	24.00	1.197	-	-	0.05	0.189	0.226
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	166300	831.5	1	23.22	24.00	1.197	-	-	0.16	0.102	0.122
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	23.05	24.00	1.245	-	-	0.06	0.278	0.346
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	166300	831.5	1	23.05	24.00	1.245	-	-	0.09	0.112	0.139
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	23.05	24.00	1.245	-	-	-0.17	0.187	0.233
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	166300	831.5	1	23.05	24.00	1.245	-	-	0.03	0.105	0.131



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	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	1	20.66	21.50	1.213	-	-	-0.01	0.653	0.792
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	166300	831.5	1	20.66	21.50	1.213	-	-	0.19	0.474	0.575
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	166300	831.5	1	20.66	21.50	1.213	-	-	-0.02	0.495	0.601
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	166300	831.5	1	20.66	21.50	1.213	-	-	-0.12	0.435	0.528
11	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	1	20.64	21.50	1.219	-	-	-0.13	0.677	0.825
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	166300	831.5	1	20.64	21.50	1.219	-	-	-0.14	0.446	0.544
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	166300	831.5	1	20.64	21.50	1.219	-	-	-0.05	0.487	0.594
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	166300	831.5	1	20.64	21.50	1.219	-	-	-0.16	0.429	0.523
	FR1 n26	20M	QPSK	100	0	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	1	20.56	21.50	1.242	-	-	-0.16	0.652	0.810
1750MHz																					
12	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	1413	1732.6	1	23.44	24.00	1.138	-	-	-0.04	0.269	0.306
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI 2	1413	1732.6	1	23.44	24.00	1.138	-	-	0.16	0.155	0.176
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	1413	1732.6	1	23.44	24.00	1.138	-	-	0.16	0.205	0.233
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI 2	1413	1732.6	1	23.44	24.00	1.138	-	-	0.11	0.171	0.195
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	1312	1712.4	1	23.42	24.00	1.143	-	-	-0.14	0.181	0.207
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	1513	1752.6	1	23.31	24.00	1.172	-	-	-0.07	0.173	0.203
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	132322	1745	1	23.25	24.00	1.189	-	-	0.02	0.222	0.264
	LTE Band 66C	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	132322+132520	1745+1764.8	1	22.93	24.00	1.279	-	-	-0.13	0.167	0.214
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	132322	1745	1	23.25	24.00	1.189	-	-	-0.13	0.129	0.153
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	132322	1745	1	23.25	24.00	1.189	-	-	-0.06	0.217	0.258
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	132322	1745	1	23.25	24.00	1.189	-	-	-0.12	0.190	0.226
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	132072	1720	1	23.20	24.00	1.202	-	-	-0.04	0.124	0.149
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	132572	1770	1	23.19	24.00	1.205	-	-	0.09	0.211	0.254
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	132322	1745	1	22.13	23.00	1.222	-	-	-0.06	0.164	0.200
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	132322	1745	1	22.13	23.00	1.222	-	-	-0.03	0.101	0.123
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	132322	1745	1	22.13	23.00	1.222	-	-	-0.04	0.173	0.211
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	132322	1745	1	22.13	23.00	1.222	-	-	0.08	0.158	0.193
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	132322	1745	1	14.63	15.50	1.222	-	-	0.09	0.576	0.704
13	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322	1745	1	14.63	15.50	1.222	-	-	-0.01	0.647	0.791
	LTE Band 66C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322+132520	1745+1764.8	1	14.49	15.50	1.262	-	-	-0.16	0.607	0.766
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	132322	1745	1	14.63	15.50	1.222	-	-	0.08	0.323	0.395
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	132322	1745	1	14.63	15.50	1.222	-	-	-0.08	0.399	0.487
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132072	1720	1	14.56	15.50	1.242	-	-	-0.14	0.422	0.524
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132572	1770	1	14.58	15.50	1.236	-	-	-0.03	0.525	0.649
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI 2	132322	1745	1	14.60	15.50	1.230	-	-	-0.1	0.565	0.695
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322	1745	1	14.60	15.50	1.230	-	-	-0.12	0.642	0.790
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI 2	132322	1745	1	14.60	15.50	1.230	-	-	-0.1	0.317	0.390
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI 2	132322	1745	1	14.60	15.50	1.230	-	-	-0.08	0.388	0.477
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	340500	1702.5	1	23.20	24.00	1.202	-	-	0.19	0.164	0.197
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	340500	1702.5	1	23.20	24.00	1.202	-	-	-0.19	0.087	0.105
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	340500	1702.5	1	23.20	24.00	1.202	-	-	0.14	0.128	0.154
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	340500	1702.5	1	23.20	24.00	1.202	-	-	0.16	0.100	0.120
	FR1 n70	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	340500	1702.5	1	23.11	24.00	1.227	-	-	-0.18	0.160	0.196
	FR1 n70	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	340500	1702.5	1	23.11	24.00	1.227	-	-	0.12	0.091	0.112
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	340500	1702.5	1	23.11	24.00	1.227	-	-	-0.09	0.129	0.158
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	340500	1702.5	1	23.11	24.00	1.227	-	-	-0.14	0.104	0.128
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	340500	1702.5	1	15.74	16.50	1.191	-	-	-0.07	0.541	0.644
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	340500	1702.5	1	15.74	16.50	1.191	-	-	0.08	0.554	0.660
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	340500	1702.5	1	15.74	16.50	1.191	-	-	0.18	0.323	0.385
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	340500	1702.5	1	15.74	16.50	1.191	-	-	-0.16	0.371	0.442
	FR1 n70	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	340500	1702.5	1	15.69	16.50	1.205	-	-	-0.02	0.547	0.659
14	FR1 n70	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	340500	1702.5	1	15.69	16.50	1.205	-	-	-0.11	0.573	0.690
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	340500	1702.5	1	15.69	16.50	1.205	-	-	0.02	0.327	0.394
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	340500	1702.5	1	15.69	16.50	1.205	-	-	0.11	0.380	0.458
	FR1 n70	15M	QPSK	75	0	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	340500	1702.5	1	15.68	16.50	1.208	-	-	0.17	0.562	0.679



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	FR1 n66	45M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	349000	1745	1	23.17	24.00	1.211	-	-	0.05	0.158	0.191
	FR1 n66	45M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	349000	1745	1	23.17	24.00	1.211	-	-	-0.15	0.092	0.111
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	349000	1745	1	23.17	24.00	1.211	-	-	-0.06	0.103	0.125
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	349000	1745	1	23.17	24.00	1.211	-	-	-0.03	0.084	0.102
	FR1 n66	45M	QPSK	120	60	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	349000	1745	1	23.05	24.00	1.245	-	-	-0.08	0.147	0.183
	FR1 n66	45M	QPSK	120	60	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	349000	1745	1	23.05	24.00	1.245	-	-	-0.14	0.092	0.114
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	349000	1745	1	23.05	24.00	1.245	-	-	-0.15	0.100	0.124
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	349000	1745	1	23.05	24.00	1.245	-	-	0.16	0.084	0.105
	FR1 n66	45M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	349000	1745	1	15.73	16.50	1.194	-	-	-0.07	0.498	0.595
	FR1 n66	45M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	349000	1745	1	15.73	16.50	1.194	-	-	0.01	0.527	0.629
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	349000	1745	1	15.73	16.50	1.194	-	-	0.18	0.295	0.352
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	349000	1745	1	15.73	16.50	1.194	-	-	-0.01	0.354	0.423
	FR1 n66	45M	QPSK	120	60	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	349000	1745	1	15.68	16.50	1.208	-	-	0.17	0.545	0.658
15	FR1 n66	45M	QPSK	120	60	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	349000	1745	1	15.68	16.50	1.208	-	-	0.14	0.666	0.804
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	349000	1745	1	15.68	16.50	1.208	-	-	-0.18	0.316	0.382
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	349000	1745	1	15.68	16.50	1.208	-	-	0.04	0.389	0.470
	FR1 n66	45M	QPSK	240	0	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	349000	1745	1	15.64	16.50	1.219	-	-	0.03	0.587	0.716
1900MHz																					
16	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	661	1880	1	26.14	26.50	1.086	-	-	-0.14	0.098	0.106
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 0	ECI 2	661	1880	1	26.14	26.50	1.086	-	-	-0.03	0.055	0.060
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 0	ECI 2	661	1880	1	26.14	26.50	1.086	-	-	-0.07	0.092	0.100
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 0	ECI 2	661	1880	1	26.14	26.50	1.086	-	-	-0.14	0.091	0.099
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	512	1850.2	1	26.08	26.50	1.102	-	-	-0.01	0.085	0.094
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI 2	810	1909.8	1	26.04	26.50	1.112	-	-	0.12	0.084	0.093
17	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	9400	1880	1	23.74	24.00	1.062	-	-	-0.12	0.140	0.149
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI 2	9400	1880	1	23.74	24.00	1.062	-	-	-0.13	0.060	0.064
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	9400	1880	1	23.74	24.00	1.062	-	-	0.11	0.136	0.144
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI 2	9400	1880	1	23.74	24.00	1.062	-	-	0.11	0.111	0.118
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	9262	1852.4	1	23.67	24.00	1.079	-	-	-0.02	0.125	0.135
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	9538	1907.6	1	23.66	24.00	1.081	-	-	-0.15	0.115	0.124
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	26340	1880	1	23.20	24.00	1.202	-	-	0.09	0.430	0.517
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	26340	1880	1	23.20	24.00	1.202	-	-	-0.04	0.020	0.024
	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26340	1880	1	23.20	24.00	1.202	-	-	-0.15	0.135	0.162
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	26340	1880	1	23.20	24.00	1.202	-	-	-0.06	0.121	0.145
	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26140	1860	1	23.14	24.00	1.219	-	-	0.18	0.140	0.171
	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26590	1905	1	23.18	24.00	1.208	-	-	0.13	0.121	0.146
	LTE Band 25	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	26340	1880	1	22.26	23.00	1.186	-	-	0.06	0.350	0.415
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	26340	1880	1	22.26	23.00	1.186	-	-	-0.17	0.015	0.018
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	26340	1880	1	22.26	23.00	1.186	-	-	0.13	0.105	0.125
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	26340	1880	1	22.26	23.00	1.186	-	-	0.17	0.098	0.116
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	26340	1880	1	15.85	16.50	1.161	-	-	0.15	0.592	0.688
18	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	26340	1880	1	15.85	16.50	1.161	-	-	-0.04	0.760	0.883
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	26340	1880	2	15.85	16.50	1.161	-	-	-0.04	0.439	0.510
	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	26340	1880	1	15.85	16.50	1.161	-	-	0.15	0.321	0.373
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	26340	1880	1	15.85	16.50	1.161	-	-	-0.03	0.401	0.466
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	26140	1860	1	15.79	16.50	1.178	-	-	-0.1	0.575	0.677
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	26590	1905	1	15.78	16.50	1.180	-	-	0.11	0.697	0.823
	LTE Band 25	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI 2	26340	1880	1	15.81	16.50	1.172	-	-	-0.05	0.601	0.704
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI 2	26340	1880	1	15.81	16.50	1.172	-	-	-0.09	0.656	0.769
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI 2	26340	1880	1	15.81	16.50	1.172	-	-	-0.18	0.331	0.388
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI 2	26340	1880	1	15.81	16.50	1.172	-	-	0.16	0.405	0.475
	LTE Band 25	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECI 2	26340	1880	1	15.79	16.50	1.178	-	-	0.17	0.662	0.780
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	376500	1882.5	1	23.06	24.00	1.242	-	-	-0.16	0.088	0.109
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	376500	1882.5	1	23.06	24.00	1.242	-	-	-0.08	0.050	0.062
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	376500	1882.5	1	23.06	24.00	1.242	-	-	-0.03	0.065	0.081
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	376500	1882.5	1	23.06	24.00	1.242	-	-	0.18	0.058	0.072



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	FR1 n25	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 0	ECI 2	376500	1882.5	1	22.98	24.00	1.265	-	-	0.06	0.085	0.108
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 0	ECI 2	376500	1882.5	1	22.98	24.00	1.265	-	-	0.16	0.047	0.059
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 0	ECI 2	376500	1882.5	1	22.98	24.00	1.265	-	-	0	0.063	0.080
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 0	ECI 2	376500	1882.5	1	22.98	24.00	1.265	-	-	0.12	0.054	0.068
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	376500	1882.5	1	14.18	15.00	1.208	-	-	-0.06	0.413	0.499
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	376500	1882.5	1	14.18	15.00	1.208	-	-	0.13	0.441	0.533
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	376500	1882.5	1	14.18	15.00	1.208	-	-	-0.03	0.240	0.290
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	376500	1882.5	1	14.18	15.00	1.208	-	-	-0.16	0.274	0.331
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 4	ECI 2	376500	1882.5	1	14.15	15.00	1.216	-	-	0	0.439	0.534
19	FR1 n25	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	376500	1882.5	1	14.15	15.00	1.216	-	-	-0.12	0.681	0.828
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 4	ECI 2	376500	1882.5	1	14.15	15.00	1.216	-	-	0.06	0.252	0.306
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 4	ECI 2	376500	1882.5	1	14.15	15.00	1.216	-	-	0.1	0.288	0.350
	FR1 n25	40M	QPSK	216	0	DFT-15	Right Tilted	0mm	Ant 4	ECI 2	376500	1882.5	1	14.09	15.00	1.233	-	-	0.1	0.481	0.593
2300MHz																					
	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	27710	2310	1	23.34	24.00	1.164	-	-	0.09	0.161	0.187
	LTE Band 30	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	27710	2310	1	23.34	24.00	1.164	-	-	0.18	0.117	0.136
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	27710	2310	1	23.34	24.00	1.164	-	-	0.06	0.143	0.166
	LTE Band 30	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI 2	27710	2310	1	23.34	24.00	1.164	-	-	-0.03	0.080	0.093
	LTE Band 30	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	ECI 2	27710	2310	1	22.27	24.00	1.489	-	-	-0.06	0.108	0.161
	LTE Band 30	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	ECI 2	27710	2310	1	22.27	24.00	1.489	-	-	-0.05	0.060	0.089
	LTE Band 30	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	ECI 2	27710	2310	1	22.27	24.00	1.489	-	-	0.15	0.164	0.244
	LTE Band 30	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	ECI 2	27710	2310	1	22.27	24.00	1.489	-	-	-0.11	0.069	0.103
	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	27710	2310	1	22.81	24.00	1.315	-	-	-0.07	0.275	0.362
20	LTE Band 30	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	27710	2310	1	22.81	24.00	1.315	-	-	-0.17	0.362	0.476
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	27710	2310	1	22.81	24.00	1.315	-	-	0.04	0.135	0.178
	LTE Band 30	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	27710	2310	1	22.81	24.00	1.315	-	-	0.06	0.174	0.229
	LTE Band 30	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI 2	27710	2310	1	21.95	23.00	1.274	-	-	0.13	0.245	0.312
	LTE Band 30	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI 2	27710	2310	1	21.95	23.00	1.274	-	-	0.15	0.277	0.353
	LTE Band 30	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI 2	27710	2310	1	21.95	23.00	1.274	-	-	-0.16	0.102	0.130
	LTE Band 30	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	27710	2310	1	21.95	23.00	1.274	-	-	-0.05	0.129	0.164
21	FR1 n30	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	ECI 2	462000	2310	1	23.33	24.00	1.167	-	-	-0.01	0.109	0.127
	FR1 n30	10M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	ECI 2	462000	2310	1	23.33	24.00	1.167	-	-	0.06	0.048	0.056
	FR1 n30	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	ECI 2	462000	2310	1	23.33	24.00	1.167	-	-	0.07	0.051	0.059
	FR1 n30	10M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	ECI 2	462000	2310	1	23.33	24.00	1.167	-	-	-0.15	0.011	0.013
	FR1 n30	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 1	ECI 2	462000	2310	1	23.32	24.00	1.169	-	-	-0.09	0.072	0.084
	FR1 n30	10M	QPSK	25	14	DFT-15	Right Tilted	0mm	Ant 1	ECI 2	462000	2310	1	23.32	24.00	1.169	-	-	-0.1	0.050	0.058
	FR1 n30	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 1	ECI 2	462000	2310	1	23.32	24.00	1.169	-	-	0.14	0.079	0.092
	FR1 n30	10M	QPSK	25	14	DFT-15	Left Tilted	0mm	Ant 1	ECI 2	462000	2310	1	23.32	24.00	1.169	-	-	-0.11	0.009	0.011
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	21100	2535	1	23.49	24.00	1.125	-	-	0.13	0.197	0.222
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	21100	2535	1	23.49	24.00	1.125	-	-	-0.05	0.109	0.123
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	21100	2535	1	23.49	24.00	1.125	-	-	0	0.442	0.497
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI 2	21100	2535	1	23.49	24.00	1.125	-	-	-0.05	0.129	0.145
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	20850	2510	1	23.32	24.00	1.169	-	-	0.07	0.408	0.477
22	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	21350	2560	1	23.41	24.00	1.146	-	-	0.08	0.442	0.506
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI 2	21100	2535	1	22.41	23.00	1.146	-	-	0	0.161	0.184
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	21100	2535	1	22.41	23.00	1.146	-	-	-0.02	0.090	0.103
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI 2	21100	2535	1	22.41	23.00	1.146	-	-	-0.05	0.360	0.412
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI 2	21100	2535	1	22.41	23.00	1.146	-	-	0.07	0.106	0.121
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	21100	2535	1	23.20	24.00	1.202	-	-	0.04	0.221	0.266
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	21100	2535	1	23.20	24.00	1.202	-	-	-0.01	0.214	0.257
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	21100	2535	1	23.20	24.00	1.202	-	-	-0.12	0.074	0.089
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	21100	2535	1	23.20	24.00	1.202	-	-	-0.09	0.094	0.113
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	20850	2510	1	23.12	24.00	1.225	-	-	-0.01	0.221	0.271
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	21350	2560	1	23.09	24.00	1.233	-	-	0.1	0.222	0.274
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI 2	21100	2535	1	22.21	23.00	1.199	-	-	-0.15	0.181	0.217



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	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI 2	21100	2535	1	22.21	23.00	1.199	-	-	-0.04	0.200	0.240
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI 2	21100	2535	1	22.21	23.00	1.199	-	-	-0.05	0.060	0.072
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI 2	21100	2535	1	22.21	23.00	1.199	-	-	0.15	0.082	0.098
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	40620	2593	1	23.47	24.00	1.130	62.9	1.006	-0.01	0.207	0.235
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	40620	2593	1	23.47	24.00	1.130	62.9	1.006	0.09	0.129	0.147
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	40620	2593	1	23.47	24.00	1.130	62.9	1.006	-0.19	0.324	0.368
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI 2	40620	2593	1	23.47	24.00	1.130	62.9	1.006	-0.17	0.099	0.113
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	39750	2506	1	23.37	24.00	1.156	62.9	1.006	-0.16	0.238	0.277
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	40185	2549.5	1	23.40	24.00	1.148	62.9	1.006	-0.14	0.282	0.326
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	41055	2636.5	1	23.38	24.00	1.153	62.9	1.006	-0.07	0.335	0.389
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	41490	2680	1	23.44	24.00	1.138	62.9	1.006	-0.14	0.342	0.391
	LTE Band 41C	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	41490+41292	2680+2660.2	1	23.03	24.00	1.250	62.9	1.006	0.03	0.310	0.390
23	LTE Band 41 HPUE	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	41490	2680	1	26.40	27.00	1.148	42.9	1.009	0.19	0.416	0.482
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI 2	40620	2593	1	22.47	23.00	1.130	62.9	1.006	-0.05	0.170	0.193
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	40620	2593	1	22.47	23.00	1.130	62.9	1.006	0.19	0.106	0.120
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI 2	40620	2593	1	22.47	23.00	1.130	62.9	1.006	0.16	0.264	0.300
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI 2	40620	2593	1	22.47	23.00	1.130	62.9	1.006	-0.06	0.079	0.090
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	ECI 2	507000	2535	1	23.34	24.00	1.164	-	-	-0.16	0.143	0.166
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	ECI 2	507000	2535	1	23.34	24.00	1.164	-	-	-0.04	0.129	0.150
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	ECI 2	507000	2535	1	23.34	24.00	1.164	-	-	-0.05	0.195	0.227
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	ECI 2	507000	2535	1	23.34	24.00	1.164	-	-	-0.11	0.094	0.109
	FR1 n7	50M	QPSK	135	68	DFT-15	Right Cheek	0mm	Ant 1	ECI 2	507000	2535	1	23.32	24.00	1.169	-	-	0.11	0.159	0.186
	FR1 n7	50M	QPSK	135	68	DFT-15	Right Tilted	0mm	Ant 1	ECI 2	507000	2535	1	23.32	24.00	1.169	-	-	0.04	0.156	0.182
24	FR1 n7	50M	QPSK	135	68	DFT-15	Left Cheek	0mm	Ant 1	ECI 2	507000	2535	1	23.32	24.00	1.169	-	-	0.11	0.207	0.242
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Tilted	0mm	Ant 1	ECI 2	507000	2535	1	23.32	24.00	1.169	-	-	0.1	0.091	0.106
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	518598	2592.99	1	26.26	27.00	1.186	-	-	0.12	0.183	0.217
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	26.26	27.00	1.186	-	-	-0.09	0.175	0.208
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	518598	2592.99	1	26.26	27.00	1.186	-	-	-0.03	0.281	0.333
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	26.26	27.00	1.186	-	-	0.07	0.100	0.119
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	518598	2592.99	1	26.20	27.00	1.202	-	-	-0.02	0.226	0.272
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	26.20	27.00	1.202	-	-	0.19	0.225	0.271
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	518598	2592.99	1	26.20	27.00	1.202	-	-	0.11	0.363	0.436
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	26.20	27.00	1.202	-	-	0.03	0.122	0.147
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	ECI 2	518598	2592.99	1	16.25	17.00	1.189	-	-	0.11	0.617	0.733
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 4	ECI 2	518598	2592.99	1	16.25	17.00	1.189	-	-	0.18	0.690	0.820
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 4	ECI 2	518598	2592.99	1	16.25	17.00	1.189	-	-	-0.17	0.237	0.282
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	ECI 2	518598	2592.99	1	16.25	17.00	1.189	-	-	-0.17	0.306	0.364
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 4	ECI 2	518598	2592.99	1	16.22	17.00	1.197	-	-	-0.18	0.490	0.586
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 4	ECI 2	518598	2592.99	1	16.22	17.00	1.197	-	-	0.08	0.555	0.664
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 4	ECI 2	518598	2592.99	1	16.22	17.00	1.197	-	-	-0.13	0.178	0.213
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 4	ECI 2	518598	2592.99	1	16.22	17.00	1.197	-	-	0.18	0.223	0.267
	FR1 n41	100M	QPSK	270	0	DFT-30	Right Tilted	0mm	Ant 4	ECI 2	518598	2592.99	1	16.15	17.00	1.216	-	-	-0.06	0.552	0.671
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	26.28	27.00	1.180	-	-	-0.11	0.390	0.460
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	26.28	27.00	1.180	-	-	-0.17	0.156	0.184
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	26.28	27.00	1.180	-	-	0.08	0.146	0.172
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	26.28	27.00	1.180	-	-	0.06	0.113	0.133
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	26.18	27.00	1.208	-	-	0.16	0.422	0.510
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	26.18	27.00	1.208	-	-	-0.14	0.146	0.176
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	26.18	27.00	1.208	-	-	0	0.139	0.168
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	26.18	27.00	1.208	-	-	0.09	0.102	0.123
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 7	ECI 2	518598	2592.99	1	17.65	18.50	1.216	-	-	-0.02	0.108	0.131
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 7	ECI 2	518598	2592.99	1	17.65	18.50	1.216	-	-	-0.13	0.070	0.085
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 7	ECI 2	518598	2592.99	1	17.65	18.50	1.216	-	-	0.07	0.398	0.484
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 7	ECI 2	518598	2592.99	1	17.65	18.50	1.216	-	-	-0.19	0.195	0.237
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 7	ECI 2	518598	2592.99	1	17.62	18.50	1.225	-	-	0.08	0.164	0.201
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 7	ECI 2	518598	2592.99	1	17.62	18.50	1.225	-	-	0.19	0.093	0.114



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25	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 7	ECI 2	518598	2592.99	1	17.62	18.50	1.225	-	-	0.13	0.705	0.863
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 7	ECI 2	518598	2592.99	1	17.62	18.50	1.225	-	-	0.06	0.276	0.338
	FR1 n41	100M	QPSK	270	0	DFT-30	Left Cheek	0mm	Ant 7	ECI 2	518598	2592.99	1	17.55	18.50	1.245	-	-	0.14	0.681	0.848
3000MHz ~ 4000MHz																					
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	ECI 2	55830	3609	1	16.44	17.50	1.276	62.9	1.006	0.09	0.347	0.446
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	ECI 2	55830	3609	1	16.44	17.50	1.276	62.9	1.006	-0.06	0.391	0.502
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	55830	3609	1	16.44	17.50	1.276	62.9	1.006	-0.07	0.479	0.615
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	ECI 2	55830	3609	1	16.44	17.50	1.276	62.9	1.006	0.18	0.484	0.622
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	55340	3560	1	16.35	17.50	1.303	62.9	1.006	0.06	0.438	0.574
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	56150	3641	1	16.41	17.50	1.285	62.9	1.006	0.18	0.490	0.634
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	56640	3690	1	16.31	17.50	1.315	62.9	1.006	-0.12	0.465	0.615
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	ECI 2	55340	3560	1	16.35	17.50	1.303	62.9	1.006	-0.03	0.438	0.574
26	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	ECI 2	56150	3641	1	16.41	17.50	1.285	62.9	1.006	0.15	0.647	0.837
	LTE Band 48C	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	ECI 2	56150+ 56348	3641+ 3660.8	1	16.05	17.50	1.396	62.9	1.006	0	0.465	0.653
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	ECI 2	56640	3690	1	16.31	17.50	1.315	62.9	1.006	-0.19	0.494	0.654
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	ECI 2	55830	3609	1	16.38	17.50	1.294	62.9	1.006	-0.01	0.348	0.453
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	ECI 2	55830	3609	1	16.38	17.50	1.294	62.9	1.006	0.1	0.379	0.493
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	ECI 2	55830	3609	1	16.38	17.50	1.294	62.9	1.006	0.04	0.437	0.569
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	ECI 2	55830	3609	1	16.38	17.50	1.294	62.9	1.006	-0.11	0.454	0.591
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	ECI 2	55340	3560	1	16.30	17.50	1.318	62.9	1.006	0.09	0.430	0.570
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	ECI 2	56150	3641	1	16.36	17.50	1.300	62.9	1.006	0.1	0.477	0.624
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	ECI 2	56640	3690	1	16.30	17.50	1.318	62.9	1.006	0.19	0.469	0.622
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	ECI 2	55340	3560	1	16.30	17.50	1.318	62.9	1.006	-0.07	0.430	0.570
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	ECI 2	56150	3641	1	16.36	17.50	1.300	62.9	1.006	0.17	0.493	0.645
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	ECI 2	56640	3690	1	16.30	17.50	1.318	62.9	1.006	-0.18	0.486	0.645
	LTE Band 48	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 5	ECI 2	55830	3609	1	16.35	17.50	1.303	62.9	1.006	0.19	0.483	0.633
	LTE Band 48	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 5	ECI 2	55830	3609	1	16.35	17.50	1.303	62.9	1.006	0.03	0.476	0.624
	FR1 n48	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	641666	3624.99	1	14.39	15.50	1.291	-	-	0.07	0.336	0.434
	FR1 n48	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	641666	3624.99	1	14.39	15.50	1.291	-	-	0	0.368	0.475
	FR1 n48	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	641666	3624.99	1	14.39	15.50	1.291	-	-	-0.03	0.483	0.624
	FR1 n48	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	641666	3624.99	1	14.39	15.50	1.291	-	-	-0.1	0.476	0.615
	FR1 n48	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	641666	3624.99	1	14.37	15.50	1.297	-	-	0.08	0.368	0.477
	FR1 n48	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	641666	3624.99	1	14.37	15.50	1.297	-	-	0.06	0.410	0.532
	FR1 n48	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	641666	3624.99	1	14.37	15.50	1.297	-	-	0.03	0.507	0.658
27	FR1 n48	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	641666	3624.99	1	14.37	15.50	1.297	-	-	-0.18	0.623	0.808
	FR1 n48	100M	QPSK	270	0	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	641666	3624.99	1	14.37	15.50	1.297	-	-	-0.12	0.611	0.793
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	633332	3499.98	1	14.64	16.00	1.368	-	-	0.14	0.367	0.502
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	633332	3499.98	1	14.64	16.00	1.368	-	-	0.08	0.359	0.491
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	633332	3499.98	1	14.64	16.00	1.368	-	-	0.02	0.474	0.648
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	633332	3499.98	1	14.64	16.00	1.368	-	-	0.14	0.443	0.606
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	633332	3499.98	1	14.58	16.00	1.387	-	-	-0.07	0.406	0.563
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	633332	3499.98	1	14.58	16.00	1.387	-	-	-0.12	0.392	0.544
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	633332	3499.98	1	14.58	16.00	1.387	-	-	0.06	0.527	0.731
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	633332	3499.98	1	14.58	16.00	1.387	-	-	-0.05	0.503	0.698
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	633332	3499.98	1	14.56	16.00	1.393	-	-	-0.02	0.532	0.741
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	633332	3499.98	1	14.56	16.00	1.393	-	-	-0.16	0.497	0.692
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	656000	3840	1	14.63	16.00	1.371	-	-	0.16	0.351	0.481
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	656000	3840	1	14.63	16.00	1.371	-	-	0.05	0.383	0.525
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	656000	3840	1	14.63	16.00	1.371	-	-	-0.19	0.412	0.565
28	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	1	14.63	16.00	1.371	-	-	0.11	0.619	0.849
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	2	14.63	16.00	1.371	-	-	-0.12	0.263	0.361
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	ECI 2	656000	3840	1	14.55	16.00	1.396	-	-	-0.18	0.336	0.469
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	ECI 2	656000	3840	1	14.55	16.00	1.396	-	-	0.15	0.366	0.511
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	ECI 2	656000	3840	1	14.55	16.00	1.396	-	-	-0.03	0.404	0.564
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	1	14.55	16.00	1.396	-	-	0.12	0.431	0.602
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-30	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	1	14.47	16.00	1.422	-	-	-0.01	0.427	0.607



FCC SAR Test Report

Report No. : FA482618

	FR1 n77 HPUE	100M	QPSK	1	271	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	633332	3499.98	1	25.72	26.50	1.197	-	-	0.04	0.037	0.044
	FR1 n77 HPUE	100M	QPSK	1	271	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	633332	3499.98	1	25.72	26.50	1.197	-	-	-0.17	0.048	0.057
	FR1 n77 HPUE	100M	QPSK	1	271	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	633332	3499.98	1	25.72	26.50	1.197	-	-	0.1	0.038	0.045
	FR1 n77 HPUE	100M	QPSK	1	271	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	633332	3499.98	1	25.72	26.50	1.197	-	-	0.05	0.053	0.063
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	633332	3499.98	1	25.38	26.50	1.294	-	-	-0.03	0.000	0.000
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	633332	3499.98	1	25.38	26.50	1.294	-	-	0.16	0.035	0.045
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	633332	3499.98	1	25.38	26.50	1.294	-	-	0.06	0.000	0.000
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	633332	3499.98	1	25.38	26.50	1.294	-	-	-0.01	0.042	0.054
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	656000	3840	1	25.48	26.50	1.265	-	-	0.11	0.043	0.054
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	656000	3840	1	25.48	26.50	1.265	-	-	0.04	0.075	0.095
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	656000	3840	1	25.48	26.50	1.265	-	-	-0.13	0.057	0.072
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	656000	3840	1	25.48	26.50	1.265	-	-	-0.12	0.046	0.058
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 1	ECI 2	656000	3840	1	25.43	26.50	1.279	-	-	-0.11	0.046	0.059
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 1	ECI 2	656000	3840	1	25.43	26.50	1.279	-	-	0.07	0.076	0.097
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 1	ECI 2	656000	3840	1	25.43	26.50	1.279	-	-	0.04	0.057	0.073
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 1	ECI 2	656000	3840	1	25.43	26.50	1.279	-	-	0.09	0.052	0.067
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	633332	3499.98	1	26.09	27.00	1.233	-	-	-0.1	0.132	0.163
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	633332	3499.98	1	26.09	27.00	1.233	-	-	-0.09	0.075	0.092
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	633332	3499.98	1	26.09	27.00	1.233	-	-	-0.19	0.048	0.059
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	633332	3499.98	1	26.09	27.00	1.233	-	-	-	n/a	n/a
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	633332	3499.98	1	25.95	27.00	1.274	-	-	-0.13	0.168	0.214
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	633332	3499.98	1	25.95	27.00	1.274	-	-	-0.12	0.127	0.162
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	633332	3499.98	1	25.95	27.00	1.274	-	-	-0.01	0.085	0.108
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	633332	3499.98	1	25.95	27.00	1.274	-	-	-0.17	0.083	0.106
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	656000	3840	1	26.14	27.00	1.219	-	-	-0.03	0.060	0.073
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	656000	3840	1	26.14	27.00	1.219	-	-	0.15	0.050	0.061
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	656000	3840	1	26.14	27.00	1.219	-	-	-0.08	0.057	0.069
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	656000	3840	1	26.14	27.00	1.219	-	-	-0.02	0.055	0.067
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	ECI 2	656000	3840	1	26.04	27.00	1.247	-	-	0.11	0.064	0.080
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 2	ECI 2	656000	3840	1	26.04	27.00	1.247	-	-	0.12	0.055	0.069
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2	ECI 2	656000	3840	1	26.04	27.00	1.247	-	-	-0.04	0.042	0.052
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 2	ECI 2	656000	3840	1	26.04	27.00	1.247	-	-	0.01	0.042	0.052
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 8	ECI 2	633332	3499.98	1	26.16	27.00	1.213	-	-	-0.16	0.286	0.347
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 8	ECI 2	633332	3499.98	1	26.16	27.00	1.213	-	-	-0.07	0.281	0.341
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 8	ECI 2	633332	3499.98	1	26.16	27.00	1.213	-	-	0.08	0.381	0.462
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 8	ECI 2	633332	3499.98	1	26.16	27.00	1.213	-	-	0.09	0.538	0.653
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 8	ECI 2	633332	3499.98	1	26.06	27.00	1.242	-	-	-0.18	0.288	0.358
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 8	ECI 2	633332	3499.98	1	26.06	27.00	1.242	-	-	-0.07	0.270	0.335
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 8	ECI 2	633332	3499.98	1	26.06	27.00	1.242	-	-	0.15	0.391	0.485
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 8	ECI 2	633332	3499.98	1	26.06	27.00	1.242	-	-	0.15	0.478	0.594
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.22	27.00	1.197	-	-	0.07	0.196	0.235
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.22	27.00	1.197	-	-	0.17	0.190	0.227
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.22	27.00	1.197	-	-	-0.09	0.249	0.298
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.22	27.00	1.197	-	-	-0.09	0.306	0.366
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.13	27.00	1.222	-	-	0.14	0.205	0.250
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.13	27.00	1.222	-	-	-0.18	0.201	0.246
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.13	27.00	1.222	-	-	-0.07	0.247	0.302
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.13	27.00	1.222	-	-	-0.12	0.301	0.368



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
2450MHz																	
29	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 6	Full Power	78	2480	1	12.30	14.00	1.479	76.89	1.083	-0.05	0.090	0.144
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 6	Full Power	78	2480	1	12.30	14.00	1.479	76.89	1.083	0	0.099	0.158
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 6	Full Power	78	2480	1	12.30	14.00	1.479	76.89	1.083	0.04	0.271	0.434
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 6	Full Power	78	2480	1	12.30	14.00	1.479	76.89	1.083	0.04	0.194	0.311
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 6	Full Power	0	2402	1	12.00	14.00	1.585	76.89	1.083	0.15	0.244	0.419
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 6	Full Power	39	2441	1	12.10	13.50	1.380	76.89	1.083	0.01	0.229	0.342
30	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Standalone	6	2437	1	16.10	17.50	1.380	100.00	1.000	0.18	0.333	0.460
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Standalone	6	2437	1	16.10	17.50	1.380	100.00	1.000	0.07	0.296	0.409
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	6	2437	1	16.10	17.50	1.380	100.00	1.000	0.13	0.806	1.113
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	6	2437	1	16.10	17.50	1.380	100.00	1.000	-0.18	0.621	0.857
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	1	2412	1	15.90	17.50	1.445	100.00	1.000	-0.1	0.721	1.042
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	11	2462	1	16.00	17.50	1.413	100.00	1.000	-0.01	0.968	1.367
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	11	2462	2	16.00	17.50	1.413	100.00	1.000	-0.01	0.588	0.831
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	1	2412	1	15.90	17.50	1.445	100.00	1.000	-0.1	0.560	0.809
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	11	2462	1	16.00	17.50	1.413	100.00	1.000	-0.01	0.751	1.061
	WLAN2.4GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	Standalone	6	2437	1	16.10	17.50	1.380	100.00	1.000	-0.16	0.831	1.147
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Simultaneous	6	2437	1	13.40	14.50	1.288	100.00	1.000	0.03	0.163	0.210
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Simultaneous	6	2437	1	13.40	14.50	1.288	100.00	1.000	0.11	0.136	0.175
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Simultaneous	6	2437	1	13.40	14.50	1.288	100.00	1.000	0.14	0.367	0.473
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Simultaneous	6	2437	1	13.40	14.50	1.288	100.00	1.000	-0.17	0.283	0.365
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Simultaneous	1	2412	1	13.10	14.50	1.380	100.00	1.000	0.14	0.338	0.467
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Simultaneous	11	2462	1	13.30	14.50	1.318	100.00	1.000	-0.11	0.485	0.639
5000MHz																	
31	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Standalone	58	5290	1	12.89	14.00	1.291	100.00	1.000	0.02	0.389	0.502
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Standalone	58	5290	1	12.89	14.00	1.291	100.00	1.000	0	0.439	0.567
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	58	5290	1	12.89	14.00	1.291	100.00	1.000	0.14	0.564	0.728
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	58	5290	1	12.89	14.00	1.291	100.00	1.000	0.11	0.922	1.191
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	58	5290	2	12.89	14.00	1.291	100.00	1.000	0.12	0.533	0.688
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	58	5290	1	7.79	9.00	1.321	100.00	1.000	-0.04	0.134	0.177
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	58	5290	1	7.79	9.00	1.321	100.00	1.000	-0.1	0.142	0.188
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	58	5290	1	7.79	9.00	1.321	100.00	1.000	0.14	0.191	0.252
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	58	5290	1	7.79	9.00	1.321	100.00	1.000	-0.01	0.328	0.433
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Standalone	122	5610	1	11.10	12.50	1.380	100.00	1.000	-0.06	0.320	0.442
32	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Standalone	122	5610	1	11.10	12.50	1.380	100.00	1.000	0.08	0.386	0.533
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	122	5610	1	11.10	12.50	1.380	100.00	1.000	-0.14	0.473	0.653
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	122	5610	1	11.10	12.50	1.380	100.00	1.000	0.12	0.826	1.140
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	106	5530	1	10.45	11.50	1.274	100.00	1.000	-0.19	0.471	0.600
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	138	5690	1	10.86	12.00	1.300	100.00	1.000	0.19	0.423	0.550
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	122	5610	1	6.08	7.50	1.387	100.00	1.000	0.16	0.115	0.159
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	122	5610	1	6.08	7.50	1.387	100.00	1.000	-0.04	0.126	0.175
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	122	5610	1	6.08	7.50	1.387	100.00	1.000	0.13	0.146	0.202
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	122	5610	1	6.08	7.50	1.387	100.00	1.000	0.09	0.299	0.415
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	106	5530	1	5.42	6.50	1.282	100.00	1.000	0.15	0.132	0.169
33	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	138	5690	1	5.80	7.00	1.318	100.00	1.000	0.17	0.145	0.191
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Standalone	155	5775	1	11.57	13.00	1.390	100.00	1.000	0.14	0.468	0.650
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Standalone	155	5775	1	11.57	13.00	1.390	100.00	1.000	-0.12	0.482	0.670
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	155	5775	1	11.57	13.00	1.390	100.00	1.000	0.08	0.524	0.728
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Standalone	155	5775	1	11.57	13.00	1.390	100.00	1.000	-0.17	0.826	1.148
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	155	5775	1	6.18	7.50	1.355	100.00	1.000	-0.06	0.180	0.244
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	155	5775	1	6.18	7.50	1.355	100.00	1.000	-0.07	0.149	0.202
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	155	5775	1	6.18	7.50	1.355	100.00	1.000	0.02	0.141	0.191
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	155	5775	1	6.18	7.50	1.355	100.00	1.000	0.19	0.305	0.413



16.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																					
34	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	133297	680.5	1	23.11	24.00	1.227	-	-	-0.01	0.321	0.394
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	133297	680.5	1	23.11	24.00	1.227	-	-	0.19	0.479	0.588
	LTE Band 71	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	133297	680.5	1	23.11	24.00	1.227	-	-	-0.15	0.410	0.503
	LTE Band 71	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	133297	680.5	1	23.11	24.00	1.227	-	-	0.16	0.261	0.320
	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	133297	680.5	1	23.11	24.00	1.227	-	-	-0.13	0.171	0.210
	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	133297	680.5	1	22.17	23.00	1.211	-	-	-0.12	0.295	0.357
	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	133297	680.5	1	22.17	23.00	1.211	-	-	-0.17	0.425	0.515
	LTE Band 71	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	133297	680.5	1	22.17	23.00	1.211	-	-	-0.04	0.347	0.420
	LTE Band 71	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	133297	680.5	1	22.17	23.00	1.211	-	-	-0.18	0.178	0.215
	LTE Band 71	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI 7	133297	680.5	1	22.17	23.00	1.211	-	-	0.15	0.131	0.159
	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	133297	680.5	1	23.16	24.00	1.213	-	-	-0.12	0.158	0.192
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	133297	680.5	1	23.16	24.00	1.213	-	-	0.08	0.463	0.562
	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	133297	680.5	1	23.16	24.00	1.213	-	-	0.09	0.200	0.243
	LTE Band 71	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	133297	680.5	1	23.16	24.00	1.213	-	-	0.14	0.267	0.324
	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI 7	133297	680.5	1	22.15	23.00	1.216	-	-	-0.12	0.135	0.164
35	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI 7	133297	680.5	1	22.15	23.00	1.216	-	-	0.04	0.396	0.482
	LTE Band 71	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI 7	133297	680.5	1	22.15	23.00	1.216	-	-	0.18	0.156	0.190
	LTE Band 71	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI 7	133297	680.5	1	22.15	23.00	1.216	-	-	-0.09	0.209	0.254
	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	23095	707.5	1	23.07	24.00	1.239	-	-	-0.15	0.451	0.559
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	23095	707.5	1	23.07	24.00	1.239	-	-	0.09	0.713	0.883
	LTE Band 12	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	23095	707.5	1	23.07	24.00	1.239	-	-	0.18	0.690	0.855
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	23095	707.5	1	23.07	24.00	1.239	-	-	0.09	0.357	0.442
	LTE Band 12	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	23095	707.5	1	23.07	24.00	1.239	-	-	-0.18	0.198	0.245
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 0	ECI 7	23095	707.5	1	21.97	23.00	1.268	-	-	0.13	0.372	0.472
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 0	ECI 7	23095	707.5	1	21.97	23.00	1.268	-	-	0.16	0.660	0.837
	LTE Band 12	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	ECI 7	23095	707.5	1	21.97	23.00	1.268	-	-	-0.02	0.486	0.616
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	ECI 7	23095	707.5	1	21.97	23.00	1.268	-	-	0	0.287	0.364
	LTE Band 12	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	ECI 7	23095	707.5	1	21.97	23.00	1.268	-	-	0.05	0.159	0.202
	LTE Band 12	10M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	23095	707.5	1	21.95	23.00	1.274	-	-	0.02	0.541	0.689
	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	23095	707.5	1	21.31	22.20	1.227	-	-	-0.14	0.121	0.149
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	23095	707.5	1	21.31	22.20	1.227	-	-	-0.05	0.494	0.606
36	LTE Band 12	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	23095	707.5	1	21.31	22.20	1.227	-	-	-0.09	0.081	0.099
	LTE Band 12	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	23095	707.5	1	21.31	22.20	1.227	-	-	-0.12	0.376	0.462
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI 7	23095	707.5	1	21.28	22.20	1.236	-	-	0	0.137	0.169
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI 7	23095	707.5	1	21.28	22.20	1.236	-	-	-0.15	0.422	0.522
	LTE Band 12	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI 7	23095	707.5	1	21.28	22.20	1.236	-	-	-0.03	0.086	0.106
	LTE Band 12	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI 7	23095	707.5	1	21.28	22.20	1.236	-	-	0.18	0.382	0.472
	LTE Band 13	10M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	23230	782	1	23.04	24.00	1.247	-	-	-0.16	0.570	0.711
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	23230	782	1	23.04	24.00	1.247	-	-	0.01	0.998	1.245
	LTE Band 13	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	23230	782	1	23.04	24.00	1.247	-	-	-0.1	0.735	0.917
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	23230	782	1	23.04	24.00	1.247	-	-	0.14	0.665	0.830
	LTE Band 13	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	23230	782	1	23.04	24.00	1.247	-	-	-0.07	0.253	0.316
	LTE Band 13	10M	QPSK	25	0	-	Front	5mm	Ant 0	ECI 7	23230	782	1	21.96	23.00	1.271	-	-	-0.01	0.418	0.531
	LTE Band 13	10M	QPSK	25	0	-	Back	5mm	Ant 0	ECI 7	23230	782	1	21.96	23.00	1.271	-	-	0.05	0.693	0.881
	LTE Band 13	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	ECI 7	23230	782	1	21.96	23.00	1.271	-	-	0.05	0.702	0.892
	LTE Band 13	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	ECI 7	23230	782	1	21.96	23.00	1.271	-	-	-0.15	0.582	0.739
	LTE Band 13	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	ECI 7	23230	782	1	21.96	23.00	1.271	-	-	-0.15	0.201	0.255
37	LTE Band 13	10M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	23230	782	1	21.95	23.00	1.274	-	-	-0.03	0.933	1.188
	LTE Band 13	10M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	23230	782	1	21.95	23.00	1.274	-	-	-0.18	0.671	0.855



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	LTE Band 13	10M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	23230	782	1	21.95	23.00	1.274	-	-	0.18	0.602	0.767
	LTE Band 13	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	23230	782	1	21.09	22.20	1.291	-	-	-0.01	0.196	0.253
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	23230	782	1	21.09	22.20	1.291	-	-	-0.19	0.471	0.608
	LTE Band 13	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	23230	782	1	21.09	22.20	1.291	-	-	-0.03	0.122	0.158
	LTE Band 13	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	23230	782	1	21.09	22.20	1.291	-	-	-0.17	0.411	0.531
	LTE Band 13	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI 7	23230	782	1	21.07	22.20	1.297	-	-	-0.17	0.197	0.256
	LTE Band 13	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI 7	23230	782	1	21.07	22.20	1.297	-	-	-0.11	0.458	0.594
	LTE Band 13	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI 7	23230	782	1	21.07	22.20	1.297	-	-	-0.19	0.127	0.165
	LTE Band 13	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI 7	23230	782	1	21.07	22.20	1.297	-	-	0.15	0.405	0.525
	LTE Band 14	10M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	23330	793	1	22.99	24.00	1.262	-	-	0.17	0.517	0.652
37	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	23330	793	1	22.99	24.00	1.262	-	-	0.15	0.942	1.189
	LTE Band 14	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	23330	793	1	22.99	24.00	1.262	-	-	0.06	0.855	1.079
	LTE Band 14	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	23330	793	1	22.99	24.00	1.262	-	-	0.1	0.818	1.032
	LTE Band 14	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	23330	793	1	22.99	24.00	1.262	-	-	-0.01	0.114	0.144
	LTE Band 14	10M	QPSK	25	0	-	Front	5mm	Ant 0	ECI 7	23330	793	1	21.96	23.00	1.271	-	-	-0.13	0.411	0.522
	LTE Band 14	10M	QPSK	25	0	-	Back	5mm	Ant 0	ECI 7	23330	793	1	21.96	23.00	1.271	-	-	-0.08	0.749	0.952
	LTE Band 14	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	ECI 7	23330	793	1	21.96	23.00	1.271	-	-	0.14	0.674	0.856
	LTE Band 14	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	ECI 7	23330	793	1	21.96	23.00	1.271	-	-	-0.16	0.631	0.802
	LTE Band 14	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	ECI 7	23330	793	1	21.96	23.00	1.271	-	-	0.02	0.093	0.118
	LTE Band 14	10M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	23330	793	1	21.93	23.00	1.279	-	-	0.07	0.808	1.034
	LTE Band 14	10M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	23330	793	1	21.93	23.00	1.279	-	-	0.04	0.513	0.656
	LTE Band 14	10M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	23330	793	1	21.93	23.00	1.279	-	-	-0.18	0.704	0.901
	LTE Band 14	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	23330	793	1	20.72	21.70	1.253	-	-	-0.18	0.231	0.289
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	23330	793	1	20.72	21.70	1.253	-	-	-0.03	0.482	0.604
	LTE Band 14	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	23330	793	1	20.72	21.70	1.253	-	-	0.04	0.108	0.135
	LTE Band 14	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	23330	793	1	20.72	21.70	1.253	-	-	0.05	0.307	0.385
	LTE Band 14	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI 7	23330	793	1	20.64	21.70	1.276	-	-	-0.17	0.228	0.291
	LTE Band 14	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI 7	23330	793	1	20.64	21.70	1.276	-	-	0.19	0.470	0.600
	LTE Band 14	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI 7	23330	793	1	20.64	21.70	1.276	-	-	-0.08	0.106	0.135
	LTE Band 14	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI 7	23330	793	1	20.64	21.70	1.276	-	-	-0.04	0.297	0.379
	FR1 n71	35M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	136100	680.5	1	22.96	24.00	1.271	-	-	-0.09	0.179	0.227
	FR1 n71	35M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	136100	680.5	1	22.96	24.00	1.271	-	-	-0.12	0.357	0.454
	FR1 n71	35M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.96	24.00	1.271	-	-	0.1	0.319	0.405
	FR1 n71	35M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.96	24.00	1.271	-	-	0.15	0.137	0.174
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.96	24.00	1.271	-	-	-0.09	0.166	0.211
	FR1 n71	35M	QPSK	90	45	DFT-15	Front	5mm	Ant 0	ECI 7	136100	680.5	1	22.87	24.00	1.297	-	-	-0.08	0.200	0.259
	FR1 n71	35M	QPSK	90	45	DFT-15	Back	5mm	Ant 0	ECI 7	136100	680.5	1	22.87	24.00	1.297	-	-	-0.08	0.306	0.397
	FR1 n71	35M	QPSK	90	45	DFT-15	Right Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.87	24.00	1.297	-	-	0.05	0.348	0.451
	FR1 n71	35M	QPSK	90	45	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.87	24.00	1.297	-	-	0.06	0.157	0.204
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.87	24.00	1.297	-	-	-0.16	0.164	0.213
	FR1 n71	35M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	136100	680.5	1	22.99	24.00	1.262	-	-	0.03	0.193	0.244
38	FR1 n71	35M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	136100	680.5	1	22.99	24.00	1.262	-	-	-0.06	0.396	0.500
	FR1 n71	35M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	136100	680.5	1	22.99	24.00	1.262	-	-	-0.07	0.150	0.189
	FR1 n71	35M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	136100	680.5	1	22.99	24.00	1.262	-	-	0.14	0.218	0.275
	FR1 n71	35M	QPSK	90	45	DFT-15	Front	5mm	Ant 4	ECI 7	136100	680.5	1	22.88	24.00	1.294	-	-	-0.11	0.122	0.158
	FR1 n71	35M	QPSK	90	45	DFT-15	Back	5mm	Ant 4	ECI 7	136100	680.5	1	22.88	24.00	1.294	-	-	0.04	0.241	0.312
	FR1 n71	35M	QPSK	90	45	DFT-15	Left Side	5mm	Ant 4	ECI 7	136100	680.5	1	22.88	24.00	1.294	-	-	-0.07	0.127	0.164
	FR1 n71	35M	QPSK	90	45	DFT-15	Top Side	5mm	Ant 4	ECI 7	136100	680.5	1	22.88	24.00	1.294	-	-	0.02	0.148	0.192
	FR1 n12	15M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	141500	707.5	1	23.03	24.00	1.250	-	-	0.12	0.237	0.296
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	141500	707.5	1	23.03	24.00	1.250	-	-	-0.13	0.372	0.465
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	141500	707.5	1	23.03	24.00	1.250	-	-	-0.06	0.355	0.444
	FR1 n12	15M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	141500	707.5	1	23.03	24.00	1.250	-	-	-0.11	0.226	0.283
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	141500	707.5	1	23.03	24.00	1.250	-	-	-0.04	0.170	0.213
	FR1 n12	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 0	ECI 7	141500	707.5	1	22.87	24.00	1.297	-	-	0.14	0.215	0.279
39	FR1 n12	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 0	ECI 7	141500	707.5	1	22.87	24.00	1.297	-	-	-0.14	0.473	0.614
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Side	5mm	Ant 0	ECI 7	141500	707.5	1	22.87	24.00	1.297	-	-	-0.08	0.344	0.446



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	FR1 n12	15M	QPSK	36	22	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	141500	707.5	1	22.87	24.00	1.297	-	-	-0.04	0.242	0.314
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 0	ECI 7	141500	707.5	1	22.87	24.00	1.297	-	-	-0.06	0.174	0.226
	FR1 n12	15M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	141500	707.5	1	20.54	21.50	1.247	-	-	0.08	0.181	0.226
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	141500	707.5	1	20.54	21.50	1.247	-	-	-0.19	0.464	0.579
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	141500	707.5	1	20.54	21.50	1.247	-	-	-0.18	0.116	0.145
	FR1 n12	15M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	141500	707.5	1	20.54	21.50	1.247	-	-	0.08	0.322	0.402
	FR1 n12	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 4	ECI 7	141500	707.5	1	20.44	21.50	1.276	-	-	0.18	0.208	0.265
	FR1 n12	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 4	ECI 7	141500	707.5	1	20.44	21.50	1.276	-	-	-0.06	0.457	0.583
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 4	ECI 7	141500	707.5	1	20.44	21.50	1.276	-	-	-0.16	0.111	0.142
	FR1 n12	15M	QPSK	36	22	DFT-15	Top Side	5mm	Ant 4	ECI 7	141500	707.5	1	20.44	21.50	1.276	-	-	-0.16	0.327	0.417
	FR1 n14	10M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	158600	793	1	23.13	24.00	1.222	-	-	0.12	0.272	0.332
	FR1 n14	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	158600	793	1	23.13	24.00	1.222	-	-	0.14	0.558	0.682
	FR1 n14	10M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	158600	793	1	23.13	24.00	1.222	-	-	-0.18	0.379	0.463
	FR1 n14	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	158600	793	1	23.13	24.00	1.222	-	-	0.17	0.506	0.618
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	158600	793	1	23.13	24.00	1.222	-	-	0.19	0.155	0.189
	FR1 n14	10M	QPSK	25	14	DFT-15	Front	5mm	Ant 0	ECI 7	158600	793	1	23.06	24.00	1.242	-	-	0.11	0.271	0.336
40	FR1 n14	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 0	ECI 7	158600	793	1	23.06	24.00	1.242	-	-	-0.14	0.756	0.939
	FR1 n14	10M	QPSK	25	14	DFT-15	Right Side	5mm	Ant 0	ECI 7	158600	793	1	23.06	24.00	1.242	-	-	-0.04	0.360	0.447
	FR1 n14	10M	QPSK	25	14	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	158600	793	1	23.06	24.00	1.242	-	-	-0.07	0.535	0.664
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 0	ECI 7	158600	793	1	23.06	24.00	1.242	-	-	0.16	0.159	0.197
	FR1 n14	10M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	158600	793	1	20.47	21.50	1.268	-	-	0.01	0.233	0.295
	FR1 n14	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	158600	793	1	20.47	21.50	1.268	-	-	-0.17	0.445	0.564
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	158600	793	1	20.47	21.50	1.268	-	-	0.1	0.120	0.152
	FR1 n14	10M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	158600	793	1	20.47	21.50	1.268	-	-	-0.18	0.286	0.363
	FR1 n14	10M	QPSK	25	14	DFT-15	Front	5mm	Ant 4	ECI 7	158600	793	1	20.44	21.50	1.276	-	-	0.04	0.229	0.292
	FR1 n14	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 4	ECI 7	158600	793	1	20.44	21.50	1.276	-	-	0.04	0.420	0.536
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 4	ECI 7	158600	793	1	20.44	21.50	1.276	-	-	0.16	0.115	0.147
	FR1 n14	10M	QPSK	25	14	DFT-15	Top Side	5mm	Ant 4	ECI 7	158600	793	1	20.44	21.50	1.276	-	-	-0.09	0.280	0.357
835MHz																					
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 0	ECI 7	189	836.4	1	25.92	27.00	1.282	-	-	0	0.386	0.495
41	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	189	836.4	1	25.92	27.00	1.282	-	-	-0.12	0.917	1.176
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Side	5mm	Ant 0	ECI 7	189	836.4	1	25.92	27.00	1.282	-	-	-0.1	0.298	0.382
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	189	836.4	1	25.92	27.00	1.282	-	-	0.09	0.582	0.746
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Side	5mm	Ant 0	ECI 7	189	836.4	1	25.92	27.00	1.282	-	-	-0.14	0.376	0.482
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	128	824.2	1	25.87	27.00	1.297	-	-	-0.19	0.800	1.038
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	251	848.8	1	25.91	27.00	1.285	-	-	-0.08	0.813	1.045
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI 7	4182	836.4	1	20.97	22.00	1.268	-	-	-0.05	0.406	0.515
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	4182	836.4	1	20.97	22.00	1.268	-	-	0.07	0.885	1.122
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI 7	4182	836.4	1	20.97	22.00	1.268	-	-	0.02	0.350	0.444
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	4182	836.4	1	20.97	22.00	1.268	-	-	0.11	0.865	1.097
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI 7	4182	836.4	1	20.97	22.00	1.268	-	-	-0.01	0.246	0.312
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	4132	826.4	1	20.94	22.00	1.276	-	-	0.04	0.924	1.179
42	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	4233	846.6	1	20.93	22.00	1.279	-	-	0.03	1.000	1.279
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	4132	826.4	1	20.94	22.00	1.276	-	-	0.04	0.893	1.140
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	4233	846.6	1	20.93	22.00	1.279	-	-	0.03	0.955	1.222
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	26865	831.5	1	21.32	22.00	1.169	-	-	0.15	0.372	0.435
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	26865	831.5	1	21.32	22.00	1.169	-	-	-0.08	0.856	1.001
	LTE Band 26	15M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.32	22.00	1.169	-	-	0.04	0.358	0.419
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.32	22.00	1.169	-	-	0.11	0.553	0.647
	LTE Band 26	15M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.32	22.00	1.169	-	-	0.09	0.080	0.094
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	26765	821.5	1	21.22	22.00	1.197	-	-	-0.08	0.880	1.053
43	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	26965	841.5	1	21.28	22.00	1.180	-	-	-0.15	0.968	1.143
	LTE Band 5B	10M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	20600+ 20501	844+ 834.1	1	20.92	22.00	1.282	-	-	-0.08	0.781	1.002
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	ECI 7	26865	831.5	1	21.27	22.00	1.183	-	-	0.01	0.355	0.420
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	ECI 7	26865	831.5	1	21.27	22.00	1.183	-	-	0.04	0.817	0.967
	LTE Band 26	15M	QPSK	36	0	-	Right Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.27	22.00	1.183	-	-	-0.11	0.342	0.405



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	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.27	22.00	1.183	-	-	-0.03	0.528	0.625
	LTE Band 26	15M	QPSK	36	0	-	Left Side	5mm	Ant 0	ECI 7	26865	831.5	1	21.27	22.00	1.183	-	-	0.02	0.100	0.118
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	ECI 7	26765	821.5	1	21.19	22.00	1.205	-	-	-0.08	0.840	1.012
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	ECI 7	26965	841.5	1	21.21	22.00	1.199	-	-	-0.15	0.924	1.108
	LTE Band 26	15M	QPSK	75	0	-	Back	5mm	Ant 0	ECI 7	26865	831.5	1	21.23	22.00	1.194	-	-	0.07	0.820	0.979
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	26865	831.5	1	20.19	21.20	1.262	-	-	-0.08	0.142	0.179
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	26865	831.5	1	20.19	21.20	1.262	-	-	0.09	0.473	0.597
	LTE Band 5B	10M	QPSK	1	0		Back	5mm	Ant 4	ECI 7	20575+ 20476	886.5+ 831.6	1	20.02	21.20	1.312	-	-	-0.09	0.446	0.585
	LTE Band 26	15M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	26865	831.5	1	20.19	21.20	1.262	-	-	-0.05	0.060	0.076
	LTE Band 26	15M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	26865	831.5	1	20.19	21.20	1.262	-	-	-0.01	0.300	0.379
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	26765	821.5	1	20.15	21.20	1.274	-	-	-0.19	0.381	0.485
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	26965	841.5	1	20.16	21.20	1.271	-	-	0.04	0.453	0.576
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 4	ECI 7	26865	831.5	1	20.10	21.20	1.288	-	-	0.15	0.149	0.192
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 4	ECI 7	26865	831.5	1	20.10	21.20	1.288	-	-	-0.16	0.380	0.490
	LTE Band 26	15M	QPSK	36	0	-	Left Side	5mm	Ant 4	ECI 7	26865	831.5	1	20.10	21.20	1.288	-	-	-0.02	0.064	0.082
	LTE Band 26	15M	QPSK	36	0	-	Top Side	5mm	Ant 4	ECI 7	26865	831.5	1	20.10	21.20	1.288	-	-	0.06	0.296	0.381
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	166300	831.5	1	21.76	22.50	1.186	-	-	-0.03	0.459	0.544
44	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	166300	831.5	1	21.76	22.50	1.186	-	-	0.03	1.080	1.281
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	166300	831.5	2	21.76	22.50	1.186	-	-	0.03	0.715	0.848
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	166300	831.5	1	21.76	22.50	1.186	-	-	0.07	0.395	0.468
	FR1 n26	20M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	1	21.76	22.50	1.186	-	-	0	0.774	0.918
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	166300	831.5		21.76	22.50	1.186	-	-	0.12	0.119	0.141
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	5mm	Ant 0	ECI 7	166300	831.5	1	21.71	22.50	1.199	-	-	-0.07	0.438	0.525
	FR1 n26	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 0	ECI 7	166300	831.5	1	21.71	22.50	1.199	-	-	-0.06	1.030	1.235
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Side	5mm	Ant 0	ECI 7	166300	831.5	1	21.71	22.50	1.199	-	-	-0.14	0.377	0.452
	FR1 n26	20M	QPSK	50	28	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	1	21.71	22.50	1.199	-	-	-0.13	0.739	0.886
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Side	5mm	Ant 0	ECI 7	166300	831.5		21.71	22.50	1.199	-	-	0.13	0.112	0.134
	FR1 n26	20M	QPSK	100	0	DFT-15	Back	5mm	Ant 0	ECI 7	166300	831.5	1	21.70	22.50	1.202	-	-	-0.11	1.010	1.214
	FR1 n26	20M	QPSK	100	0	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	1	21.70	22.50	1.202	-	-	-0.08	0.722	0.868
	FR1 n26	20M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	166300	831.5	1	20.63	21.50	1.222	-	-	-0.01	0.261	0.319
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	166300	831.5	1	20.63	21.50	1.222	-	-	0.16	0.475	0.580
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	166300	831.5	1	20.63	21.50	1.222	-	-	-0.13	0.101	0.123
	FR1 n26	20M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	166300	831.5	1	20.63	21.50	1.222	-	-	0.07	0.368	0.450
	FR1 n26	20M	QPSK	50	28	DFT-15	Front	5mm	Ant 4	ECI 7	166300	831.5	1	20.56	21.50	1.242	-	-	-0.14	0.259	0.322
	FR1 n26	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 4	ECI 7	166300	831.5	1	20.56	21.50	1.242	-	-	0.05	0.493	0.612
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Side	5mm	Ant 4	ECI 7	166300	831.5	1	20.56	21.50	1.242	-	-	-0.02	0.114	0.142
	FR1 n26	20M	QPSK	50	28	DFT-15	Top Side	5mm	Ant 4	ECI 7	166300	831.5	1	20.56	21.50	1.242	-	-	0.03	0.354	0.440
1750MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI 7	1413	1732.6	1	17.35	18.50	1.303	-	-	-0.04	0.605	0.788
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1413	1732.6	1	17.35	18.50	1.303	-	-	-0.01	0.786	1.024
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI 7	1413	1732.6	1	17.35	18.50	1.303	-	-	0.02	0.100	0.130
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1413	1732.6	1	17.35	18.50	1.303	-	-	0.19	0.971	1.265
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI 7	1413	1732.6	1	17.35	18.50	1.303	-	-	-0.06	0.537	0.700
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1312	1712.4	1	17.24	18.50	1.337	-	-	-0.02	0.703	0.940
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1513	1752.6	1	17.29	18.50	1.321	-	-	0.12	0.857	1.132
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1312	1712.4	1	17.24	18.50	1.337	-	-	0.09	0.870	1.163
45	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1513	1752.6	1	17.29	18.50	1.321	-	-	-0.18	0.964	1.274
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1513	1752.6	2	17.29	18.50	1.321	-	-	-0.09	0.883	1.167
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	132322	1745	1	17.13	18.00	1.222	-	-	0.11	0.644	0.787
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	1	17.13	18.00	1.222	-	-	0	0.757	0.925
	LTE Band 66	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	132322	1745	1	17.13	18.00	1.222	-	-	0.05	0.090	0.110
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	132322	1745	1	17.13	18.00	1.222	-	-	0.18	0.642	0.784
46	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	132322	1745	1	17.13	18.00	1.222	-	-	0.05	0.992	1.212
	LTE Band 66C	20M	QPSK	1	0		Bottom Side	5mm	Ant 0	ECI 7	132322+ 132520	1745+ 1764.8	1	17.07	18.00	1.239	-	-	0.05	0.965	1.195
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132072	1720	1	17.07	18.00	1.239	-	-	-0.08	0.672	0.832



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	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132572	1770	1	17.05	18.00	1.245	-	-	-0.01	0.726	0.904
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	132072	1720	1	17.07	18.00	1.239	-	-	-0.08	0.877	1.086
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	132572	1770	1	17.05	18.00	1.245	-	-	-0.01	0.972	1.210
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	132322	1745	1	17.08	18.00	1.236	-	-	0.17	0.626	0.774
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	1	17.08	18.00	1.236	-	-	-0.11	0.767	0.948
	LTE Band 66	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	132322	1745	1	17.08	18.00	1.236	-	-	-0.04	0.042	0.052
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	132322	1745	1	17.08	18.00	1.236	-	-	0.04	0.938	1.159
	LTE Band 66	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI 7	132322	1745	1	17.08	18.00	1.236			0.13	0.523	0.646
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	132072	1720	1	17.03	18.00	1.250	-	-	-0.08	0.642	0.803
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	132572	1770	1	17.04	18.00	1.247	-	-	-0.01	0.693	0.864
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	132072	1720	1	17.03	18.00	1.250	-	-	-0.08	0.838	1.048
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	132572	1770	1	17.04	18.00	1.247	-	-	-0.01	0.928	1.158
	LTE Band 66	20M	QPSK	100	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	1	17.06	18.00	1.242	-	-	-0.16	0.784	0.973
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	ECI 7	132322	1745	1	17.06	18.00	1.242	-	-	-0.12	0.893	1.109
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	132322	1745	1	13.15	14.00	1.216	-	-	0.15	0.178	0.216
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	132322	1745	1	13.15	14.00	1.216	-	-	0.07	0.275	0.334
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	132322	1745	1	13.15	14.00	1.216	-	-	0.05	0.067	0.081
	LTE Band 66	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	132322	1745	1	13.15	14.00	1.216	-	-	0.15	0.470	0.572
	LTE Band 66C	20M	QPSK	1	0		Top Side	5mm	Ant 4	ECI 7	132322+ 132520	1745+ 1764.8	1	12.98	14.00	1.265	-	-	0.15	0.316	0.400
	LTE Band 66	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	132072	1720	1	13.12	14.00	1.225	-	-	0.1	0.425	0.520
	LTE Band 66	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	132572	1770	1	13.12	14.00	1.225	-	-	-0.1	0.406	0.497
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI 7	132322	1745	1	13.11	14.00	1.227	-	-	-0.13	0.257	0.315
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI 7	132322	1745	1	13.11	14.00	1.227	-	-	-0.04	0.283	0.347
	LTE Band 66	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI 7	132322	1745	1	13.11	14.00	1.227	-	-	0.13	0.056	0.069
	LTE Band 66	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI 7	132322	1745	1	13.11	14.00	1.227	-	-	0.1	0.440	0.540
	FR1 n70	15M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	340500	1702.5	1	17.59	18.50	1.233	-	-	-0.02	0.549	0.677
	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	340500	1702.5	1	17.59	18.50	1.233	-	-	0.15	0.622	0.767
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.59	18.50	1.233	-	-	0.06	0.092	0.113
	FR1 n70	15M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.59	18.50	1.233	-	-	0.03	0.809	0.998
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.59	18.50	1.233	-	-	-0.12	0.074	0.091
	FR1 n70	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 0	ECI 7	340500	1702.5	1	17.58	18.50	1.236	-	-	-0.13	0.547	0.676
	FR1 n70	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 0	ECI 7	340500	1702.5	1	17.58	18.50	1.236	-	-	0.04	0.649	0.802
	FR1 n70	15M	QPSK	36	22	DFT-15	Right Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.58	18.50	1.236	-	-	0.15	0.091	0.112
	FR1 n70	15M	QPSK	36	22	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.58	18.50	1.236	-	-	-0.16	0.840	1.038
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.58	18.50	1.236	-	-	0.02	0.081	0.100
	FR1 n70	15M	QPSK	75	0	DFT-15	Front	5mm	Ant 0	ECI 7	340500	1702.5	1	17.51	18.50	1.256	-	-	-0.15	0.561	0.705
	FR1 n70	15M	QPSK	75	0	DFT-15	Back	5mm	Ant 0	ECI 7	340500	1702.5	1	17.51	18.50	1.256	-	-	-0.12	0.652	0.819
47	FR1 n70	15M	QPSK	75	0	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	340500	1702.5	1	17.51	18.50	1.256	-	-	-0.07	0.891	1.119
	FR1 n70	15M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	340500	1702.5	1	15.72	16.50	1.197	-	-	0.19	0.341	0.408
	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	340500	1702.5	1	15.72	16.50	1.197	-	-	-0.18	0.433	0.518
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	340500	1702.5	1	15.72	16.50	1.197	-	-	-0.07	0.078	0.093
	FR1 n70	15M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	340500	1702.5	1	15.72	16.50	1.197	-	-	-0.14	0.470	0.562
	FR1 n70	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 4	ECI 7	340500	1702.5	1	15.66	16.50	1.213	-	-	0.11	0.374	0.454
	FR1 n70	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 4	ECI 7	340500	1702.5	1	15.66	16.50	1.213	-	-	0.03	0.428	0.519
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 4	ECI 7	340500	1702.5	1	15.66	16.50	1.213	-	-	-0.16	0.083	0.101
	FR1 n70	15M	QPSK	36	22	DFT-15	Top Side	5mm	Ant 4	ECI 7	340500	1702.5	1	15.66	16.50	1.213	-	-	0.17	0.500	0.607
	FR1 n66	45M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	349000	1745	1	17.68	18.50	1.208	-	-	0.1	0.598	0.722
	FR1 n66	45M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	349000	1745	1	17.68	18.50	1.208	-	-	0.07	0.704	0.850
	FR1 n66	45M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	349000	1745	1	17.68	18.50	1.208	-	-	0.1	0.096	0.116
	FR1 n66	45M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	349000	1745	1	17.68	18.50	1.208	-	-	0.02	0.901	1.088
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	349000	1745	1	17.68	18.50	1.208	-	-	-0.17	0.090	0.109
	FR1 n66	45M	QPSK	120	60	DFT-15	Front	5mm	Ant 0	ECI 7	349000	1745	1	17.56	18.50	1.242	-	-	0.01	0.696	0.864
	FR1 n66	45M	QPSK	120	60	DFT-15	Back	5mm	Ant 0	ECI 7	349000	1745	1	17.56	18.50	1.242	-	-	0.17	0.841	1.044
	FR1 n66	45M	QPSK	120	60	DFT-15	Right Side	5mm	Ant 0	ECI 7	349000	1745	1	17.56	18.50	1.242	-	-	0.19	0.099	0.123
48	FR1 n66	45M	QPSK	120	60	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	349000	1745	1	17.56	18.50	1.242	-	-	-0.13	0.995	1.235
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Side	5mm	Ant 0	ECI 7	349000	1745	1	17.56	18.50	1.242			-0.02	0.095	0.118



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	FR1 n66	45M	QPSK	240	0	DFT-15	Front	5mm	Ant 0	ECI 7	349000	1745	1	17.49	18.50	1.262	-	-	-0.07	0.670	0.845
	FR1 n66	45M	QPSK	240	0	DFT-15	Back	5mm	Ant 0	ECI 7	349000	1745	1	17.49	18.50	1.262	-	-	-0.06	0.827	1.044
	FR1 n66	45M	QPSK	240	0	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	349000	1745	1	17.49	18.50	1.262	-	-	-0.16	0.960	1.211
	FR1 n66	45M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	349000	1745	1	15.74	16.50	1.191	-	-	0.07	0.244	0.291
	FR1 n66	45M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	349000	1745	1	15.74	16.50	1.191	-	-	0.06	0.383	0.456
	FR1 n66	45M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	349000	1745	1	15.74	16.50	1.191	-	-	0.04	0.073	0.087
	FR1 n66	45M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	349000	1745	1	15.74	16.50	1.191	-	-	0.08	0.422	0.503
	FR1 n66	45M	QPSK	120	60	DFT-15	Front	5mm	Ant 4	ECI 7	349000	1745	1	15.66	16.50	1.213	-	-	0.19	0.235	0.285
	FR1 n66	45M	QPSK	120	60	DFT-15	Back	5mm	Ant 4	ECI 7	349000	1745	1	15.66	16.50	1.213	-	-	-0.03	0.398	0.483
	FR1 n66	45M	QPSK	120	60	DFT-15	Left Side	5mm	Ant 4	ECI 7	349000	1745	1	15.66	16.50	1.213	-	-	0.18	0.079	0.096
	FR1 n66	45M	QPSK	120	60	DFT-15	Top Side	5mm	Ant 4	ECI 7	349000	1745	1	15.66	16.50	1.213	-	-	0.1	0.408	0.495
1900MHz																					
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 0	ECI 7	661	1880	1	20.68	21.50	1.208	-	-	0.19	0.479	0.579
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	661	1880	1	20.68	21.50	1.208	-	-	0.01	0.726	0.877
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Side	5mm	Ant 0	ECI 7	661	1880	1	20.68	21.50	1.208	-	-	0.09	0.067	0.081
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	661	1880	1	20.68	21.50	1.208	-	-	0.07	0.914	1.104
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Side	5mm	Ant 0	ECI 7	661	1880	1	20.68	21.50	1.208	-	-	0.01	0.071	0.086
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	512	1850.2	1	20.58	21.50	1.236	-	-	-0.08	0.727	0.899
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECI 7	810	1909.8	1	20.54	21.50	1.247	-	-	0.01	0.810	1.010
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	512	1850.2	1	20.58	21.50	1.236	-	-	-0.13	0.915	1.131
49	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	810	1909.8	1	20.54	21.50	1.247	-	-	-0.02	1.020	1.272
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI 7	9400	1880	1	16.10	17.00	1.230	-	-	-0.08	0.474	0.583
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9400	1880	1	16.10	17.00	1.230	-	-	-0.14	0.710	0.873
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI 7	9400	1880	1	16.10	17.00	1.230	-	-	-0.1	0.058	0.071
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9400	1880	1	16.10	17.00	1.230	-	-	-0.01	0.952	1.171
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI 7	9400	1880	1	16.10	17.00	1.230	-	-	-0.04	0.514	0.632
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9262	1852.4	1	15.98	17.00	1.265	-	-	0.02	0.702	0.888
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9538	1907.6	1	16.01	17.00	1.256	-	-	0.17	0.745	0.936
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9262	1852.4	1	15.98	17.00	1.265	-	-	0.14	0.926	1.171
50	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9538	1907.6	1	16.01	17.00	1.256	-	-	0.15	0.982	1.233
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	26340	1880	1	16.05	17.00	1.245	-	-	0.1	0.433	0.539
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	26340	1880	1	16.05	17.00	1.245	-	-	-0.03	0.629	0.783
	LTE Band 25	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	26340	1880	1	16.05	17.00	1.245	-	-	-0.06	0.060	0.075
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	26340	1880	1	16.05	17.00	1.245	-	-	-0.04	0.911	1.134
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	26340	1880	1	16.05	17.00	1.245	-	-	-0.19	0.502	0.625
51	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	26140	1860	1	16.01	17.00	1.256	-	-	-0.02	0.931	1.169
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	26590	1905	1	15.98	17.00	1.265	-	-	0.06	0.905	1.145
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	26340	1880	1	15.99	17.00	1.262	-	-	0.11	0.414	0.522
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	26340	1880	1	15.99	17.00	1.262	-	-	0.19	0.601	0.758
	LTE Band 25	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	26340	1880	1	15.99	17.00	1.262	-	-	0.14	0.057	0.072
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	26340	1880	1	15.99	17.00	1.262	-	-	-0.07	0.870	1.098
	LTE Band 25	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI 7	26340	1880	1	15.99	17.00	1.262	-	-	0.13	0.390	0.492
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	26140	1860	1	15.94	17.00	1.276	-	-	0	0.889	1.135
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	26590	1905	1	15.96	17.00	1.271	-	-	-0.09	0.864	1.098
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	26340	1880	1	15.97	17.00	1.268	-	-	-0.07	0.850	1.078
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	26340	1880	1	13.18	14.00	1.208	-	-	0.06	0.225	0.272
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	26340	1880	1	13.18	14.00	1.208	-	-	-0.17	0.332	0.401
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	26340	1880	1	13.18	14.00	1.208	-	-	-0.06	0.046	0.056
	LTE Band 25	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	26340	1880	1	13.18	14.00	1.208	-	-	-0.04	0.502	0.606
	LTE Band 25	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	26140	1860	1	13.14	14.00	1.219	-	-	-0.03	0.483	0.589
	LTE Band 25	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	26590	1905	1	13.12	14.00	1.225	-	-	-0.11	0.493	0.604
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI 7	26340	1880	1	13.11	14.00	1.227	-	-	-0.02	0.228	0.280
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI 7	26340	1880	1	13.11	14.00	1.227	-	-	-0.13	0.337	0.414
	LTE Band 25	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI 7	26340	1880	1	13.11	14.00	1.227	-	-	-0.08	0.048	0.059
	LTE Band 25	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI 7	26340	1880	1	13.11	14.00	1.227	-	-	0.08	0.410	0.503
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 0	ECI 7	376500	1882.5	1	16.60	17.50	1.230	-	-	0.02	0.461	0.567



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	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	ECI 7	376500	1882.5	1	16.60	17.50	1.230	-	-	-0.06	0.706	0.869
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.60	17.50	1.230	-	-	0.07	0.069	0.085
52	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.60	17.50	1.230	-	-	0.06	1.000	1.230
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.60	17.50	1.230	-	-	0.03	0.070	0.086
	FR1 n25	40M	QPSK	108	54	DFT-15	Front	5mm	Ant 0	ECI 7	376500	1882.5	1	16.53	17.50	1.250	-	-	0.04	0.466	0.583
	FR1 n25	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 0	ECI 7	376500	1882.5	1	16.53	17.50	1.250	-	-	0	0.712	0.890
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.53	17.50	1.250	-	-	0.12	0.059	0.074
	FR1 n25	40M	QPSK	108	54	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.53	17.50	1.250	-	-	-0.05	0.976	1.220
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.53	17.50	1.250	-	-	0.15	0.067	0.084
	FR1 n25	40M	QPSK	216	0	DFT-15	Back	5mm	Ant 0	ECI 7	376500	1882.5	1	16.55	17.50	1.245	-	-	0.05	0.723	0.900
	FR1 n25	40M	QPSK	216	0	DFT-15	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	1	16.55	17.50	1.245	-	-	-0.05	0.966	1.202
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 4	ECI 7	376500	1882.5	1	20.76	21.50	1.186	-	-	-0.19	0.190	0.225
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 4	ECI 7	376500	1882.5	1	20.76	21.50	1.186	-	-	-0.09	0.332	0.394
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 4	ECI 7	376500	1882.5	1	20.76	21.50	1.186	-	-	0.04	0.074	0.088
	FR1 n25	40M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 4	ECI 7	376500	1882.5	1	20.76	21.50	1.186	-	-	-0.01	0.469	0.556
	FR1 n25	40M	QPSK	108	54	DFT-15	Front	5mm	Ant 4	ECI 7	376500	1882.5	1	20.70	21.50	1.202	-	-	-0.04	0.236	0.284
	FR1 n25	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 4	ECI 7	376500	1882.5	1	20.70	21.50	1.202	-	-	-0.01	0.369	0.444
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Side	5mm	Ant 4	ECI 7	376500	1882.5	1	20.70	21.50	1.202	-	-	-0.03	0.078	0.094
	FR1 n25	40M	QPSK	108	54	DFT-15	Top Side	5mm	Ant 4	ECI 7	376500	1882.5	1	20.70	21.50	1.202	-	-	-0.14	0.450	0.541
2300MHz																					
	LTE Band 30	10M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	27710	2310	1	18.19	19.00	1.205	-	-	0.17	0.416	0.501
53	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	1	18.19	19.00	1.205	-	-	-0.02	0.966	1.164
	LTE Band 30	10M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	27710	2310	1	18.19	19.00	1.205	-	-	-0.01	0.281	0.339
	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	27710	2310	1	18.19	19.00	1.205	-	-	-0.09	0.796	0.959
	LTE Band 30	10M	QPSK	25	0	-	Front	5mm	Ant 1	ECI 7	27710	2310	1	18.13	19.00	1.222	-	-	-0.05	0.418	0.511
	LTE Band 30	10M	QPSK	25	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	1	18.13	19.00	1.222	-	-	0.02	0.842	1.029
	LTE Band 30	10M	QPSK	25	0	-	Left Side	5mm	Ant 1	ECI 7	27710	2310	1	18.13	19.00	1.222	-	-	-0.05	0.290	0.354
	LTE Band 30	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 1	ECI 7	27710	2310	1	18.13	19.00	1.222	-	-	-0.02	0.794	0.970
	LTE Band 30	10M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	1	18.01	19.00	1.256	-	-	0.06	0.841	1.056
	LTE Band 30	10M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	27710	2310	1	18.01	19.00	1.256	-	-	0.12	0.791	0.994
	LTE Band 30	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI7	27710	2310	1	21.50	22.50	1.259	-	-	-0.04	0.147	0.185
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI7	27710	2310	1	21.50	22.50	1.259	-	-	-0.12	0.307	0.386
	LTE Band 30	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI7	27710	2310	1	21.50	22.50	1.259	-	-	-0.01	0.040	0.050
	LTE Band 30	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	27710	2310	1	21.50	22.50	1.259	-	-	0.01	0.486	0.612
	LTE Band 30	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI7	27710	2310	1	21.41	22.50	1.285	-	-	-0.12	0.112	0.144
	LTE Band 30	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI7	27710	2310	1	21.41	22.50	1.285	-	-	0.17	0.286	0.368
	LTE Band 30	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI7	27710	2310	1	21.41	22.50	1.285	-	-	0.07	0.000	0.000
	LTE Band 30	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI7	27710	2310	1	21.41	22.50	1.285	-	-	-0.01	0.467	0.600
	FR1 n30	10M	QPSK	1	1	DFT-15	Front	5mm	Ant 1	ECI7	462000	2310	1	19.39	20.00	1.151	-	-	-0.01	0.494	0.568
54	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	ECI7	462000	2310	1	19.39	20.00	1.151	-	-	0.09	1.100	1.266
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	ECI7	462000	2310	1	19.39	20.00	1.151	-	-	0.07	1.010	1.162
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	ECI7	462000	2310	2	19.39	20.00	1.151	-	-	0.06	0.812	0.934
	FR1 n30	10M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 1	ECI7	462000	2310	1	19.39	20.00	1.151	-	-	0.03	0.321	0.369
	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	ECI7	462000	2310	1	19.39	20.00	1.151	-	-	-0.07	0.861	0.991
	FR1 n30	10M	QPSK	25	14	DFT-15	Front	5mm	Ant 1	ECI7	462000	2310	1	19.37	20.00	1.156	-	-	-0.15	0.488	0.564
	FR1 n30	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 1	ECI7	462000	2310	1	19.37	20.00	1.156	-	-	0.05	1.080	1.249
	FR1 n30	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 1	ECI7	462000	2310	1	19.37	20.00	1.156	-	-	-0.06	0.323	0.373
	FR1 n30	10M	QPSK	25	14	DFT-15	Bottom Side	5mm	Ant 1	ECI7	462000	2310	1	19.37	20.00	1.156	-	-	-0.12	0.787	0.910
	FR1 n30	10M	QPSK	50	0	DFT-15	Back	5mm	Ant 1	ECI7	462000	2310	1	19.35	20.00	1.161	-	-	-0.09	1.050	1.220
	FR1 n30	10M	QPSK	50	0	DFT-15	Bottom Side	5mm	Ant 1	ECI7	462000	2310	1	19.35	20.00	1.161	-	-	0.12	0.841	0.977
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	21100	2535	1	18.58	19.50	1.236	-	-	-0.19	0.490	0.606
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	18.58	19.50	1.236	-	-	-0.02	0.918	1.135
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	21100	2535	1	18.58	19.50	1.236	-	-	0.1	0.330	0.408
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI7	21100	2535	1	18.58	19.50	1.236	-	-	-0.06	0.630	0.779
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	20850	2510	1	18.42	19.50	1.282	-	-	-0.19	0.845	1.084



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55	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	21350	2560	1	18.44	19.50	1.276	-	-	-0.14	0.981	1.252
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI7	21100	2535	1	18.47	19.50	1.268	-	-	-0.1	0.468	0.593
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	18.47	19.50	1.268	-	-	0	0.877	1.112
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI7	21100	2535	1	18.47	19.50	1.268	-	-	0.06	0.313	0.397
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI7	21100	2535	1	18.47	19.50	1.268	-	-	-0.12	0.602	0.763
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	20850	2510	1	18.30	19.50	1.318	-	-	-0.19	0.807	1.064
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	21350	2560	1	18.43	19.50	1.279	-	-	-0.14	0.937	1.199
	LTE Band 7	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	18.42	19.50	1.282	-	-	0.1	0.854	1.095
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI7	21100	2535	1	23.20	24.00	1.202	-	-	-0.08	0.102	0.123
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI7	21100	2535	1	23.20	24.00	1.202	-	-	-0.07	0.233	0.280
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI7	21100	2535	1	23.20	24.00	1.202	-	-	0.08	0.074	0.089
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	21100	2535	1	23.20	24.00	1.202	-	-	-0.05	0.346	0.416
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	20850	2510	1	23.12	24.00	1.225	-	-	-0.18	0.405	0.496
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	21350	2560	1	23.09	24.00	1.233	-	-	-0.15	0.337	0.416
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI7	21100	2535	1	22.21	23.00	1.199	-	-	0.15	0.082	0.098
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI7	21100	2535	1	22.21	23.00	1.199	-	-	0.05	0.208	0.249
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI7	21100	2535	1	22.21	23.00	1.199	-	-	-0.1	0.063	0.076
	LTE Band 7	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI7	21100	2535	1	22.21	23.00	1.199	-	-	-0.11	0.275	0.330
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	40620	2593	1	20.37	21.40	1.268	62.9	1.006	-0.17	0.454	0.579
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.37	21.40	1.268	62.9	1.006	-0.1	0.952	1.214
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	40620	2593	1	20.37	21.40	1.268	62.9	1.006	0.1	0.405	0.516
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI7	40620	2593	1	20.37	21.40	1.268	62.9	1.006	0.07	0.296	0.377
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	39750	2506	1	20.16	21.40	1.330	62.9	1.006	0.15	0.856	1.146
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	40185	2549.5	1	20.18	21.40	1.324	62.9	1.006	-0.07	0.919	1.224
56	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41055	2636.5	1	20.17	21.40	1.327	62.9	1.006	-0.09	0.934	1.247
	LTE Band 41C	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41055+41253	2636.5+2656.3	1	20.06	21.40	1.361	62.9	1.006	0.17	0.865	1.185
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41490	2680	1	20.34	21.40	1.276	62.9	1.006	0.08	0.960	1.233
	LTE Band 41 HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41055	2636.5	1	21.48	23.00	1.419	42.9	1.009	-0.15	0.824	1.180
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI7	40620	2593	1	20.28	21.40	1.294	62.9	1.006	0.14	0.441	0.574
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.28	21.40	1.294	62.9	1.006	-0.04	0.909	1.183
	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI7	40620	2593	1	20.28	21.40	1.294	62.9	1.006	-0.08	0.387	0.504
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI7	40620	2593	1	20.28	21.40	1.294	62.9	1.006	0.06	0.283	0.368
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	39750	2506	1	20.11	21.40	1.346	62.9	1.006	0.09	0.817	1.106
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	40185	2549.5	1	20.03	21.40	1.371	62.9	1.006	0.04	0.878	1.211
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	41055	2636.5	1	20.02	21.40	1.374	62.9	1.006	0.08	0.892	1.233
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	41490	2680	1	20.26	21.40	1.300	62.9	1.006	0.02	0.917	1.199
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.25	21.40	1.303	62.9	1.006	0.12	0.902	1.183
	FR1 n7	50M	QPSK	1	1	DFT-15	Front	5mm	Ant 1	ECI3/7	507000	2535	1	20.37	21.00	1.156	-	-	-0.04	0.450	0.520
57	FR1 n7	50M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	ECI3/7	507000	2535	1	20.37	21.00	1.156	-	-	0.11	1.030	1.191
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 1	ECI3/7	507000	2535	1	20.37	21.00	1.156	-	-	-0.07	0.372	0.430
	FR1 n7	50M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	ECI3/7	507000	2535	1	20.37	21.00	1.156	-	-	0.09	0.647	0.748
	FR1 n7	50M	QPSK	135	68	DFT-15	Front	5mm	Ant 1	ECI3/7	507000	2535	1	20.33	21.00	1.167	-	-	-0.18	0.513	0.599
	FR1 n7	50M	QPSK	135	68	DFT-15	Back	5mm	Ant 1	ECI3/7	507000	2535	1	20.33	21.00	1.167	-	-	0.05	0.934	1.090
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Side	5mm	Ant 1	ECI3/7	507000	2535	1	20.33	21.00	1.167	-	-	0	0.382	0.446
	FR1 n7	50M	QPSK	135	68	DFT-15	Bottom Side	5mm	Ant 1	ECI3/7	507000	2535	1	20.33	21.00	1.167	-	-	-0.05	0.638	0.744
	FR1 n7	50M	QPSK	270	0	DFT-15	Back	5mm	Ant 1	ECI3/7	507000	2535	1	20.26	21.00	1.186	-	-	0.04	0.960	1.138
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 1	ECI7	518598	2592.99	1	18.69	19.50	1.205	-	-	0.01	0.488	0.588
58	FR1 n41	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 1	ECI7	518598	2592.99	1	18.69	19.50	1.205	-	-	-0.18	1.010	1.217
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 1	ECI7	518598	2592.99	1	18.69	19.50	1.205	-	-	-0.19	0.406	0.489
	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	ECI7	518598	2592.99	1	18.69	19.50	1.205	-	-	-0.15	0.778	0.938
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 1	ECI7	518598	2592.99	1	18.66	19.50	1.213	-	-	0.1	0.461	0.559
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 1	ECI7	518598	2592.99	1	18.66	19.50	1.213	-	-	-0.19	0.949	1.152
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	5mm	Ant 1	ECI7	518598	2592.99	1	18.66	19.50	1.213	-	-	-0.09	0.471	0.572
	FR1 n41	100M	QPSK	135	69	DFT-30	Bottom Side	5mm	Ant 1	ECI7	518598	2592.99	1	18.66	19.50	1.213	-	-	-0.14	0.755	0.916
	FR1 n41	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 1	ECI7	518598	2592.99	1	18.64	19.50	1.219	-	-	0.09	0.940	1.146
	FR1 n41	100M	QPSK	270	0	DFT-30	Bottom Side	5mm	Ant 1	ECI7	518598	2592.99	1	18.64	19.50	1.219	-	-	0.19	0.738	0.900



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	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	ECI7	518598	2592.99	1	12.82	13.50	1.169	-	-	0.01	0.181	0.212
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 4	ECI7	518598	2592.99	1	12.82	13.50	1.169	-	-	-0.07	0.350	0.409
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	ECI7	518598	2592.99	1	12.82	13.50	1.169	-	-	0.19	0.141	0.165
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 4	ECI7	518598	2592.99	1	12.82	13.50	1.169	-	-	0.17	0.499	0.584
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 4	ECI7	518598	2592.99	1	12.80	13.50	1.175	-	-	-0.04	0.164	0.193
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 4	ECI7	518598	2592.99	1	12.80	13.50	1.175	-	-	0.15	0.335	0.394
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	5mm	Ant 4	ECI7	518598	2592.99	1	12.80	13.50	1.175	-	-	0.07	0.155	0.182
	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 4	ECI7	518598	2592.99	1	12.80	13.50	1.175	-	-	-0.18	0.468	0.550
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 2	ECI 7	518598	2592.99	1	14.85	15.50	1.161	-	-	0.12	0.012	0.014
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 2	ECI 7	518598	2592.99	1	14.85	15.50	1.161	-	-	-0.19	0.490	0.569
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2	ECI 7	518598	2592.99	1	14.85	15.50	1.161	-	-	0.14	0.064	0.074
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 2	ECI 7	518598	2592.99	1	14.85	15.50	1.161	-	-	0.13	0.008	0.009
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 2	ECI 7	518598	2592.99	1	14.82	15.50	1.169	-	-	0.16	0.011	0.013
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 2	ECI 7	518598	2592.99	1	14.82	15.50	1.169	-	-	0.19	0.434	0.508
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Side	5mm	Ant 2	ECI 7	518598	2592.99	1	14.82	15.50	1.169	-	-	-0.14	0.082	0.096
	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 2	ECI 7	518598	2592.99	1	14.82	15.50	1.169	-	-	0.02	0.007	0.008
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 7	ECI 7	518598	2592.99	1	13.23	14.00	1.194	-	-	0.18	0.140	0.167
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	ECI 7	518598	2592.99	1	13.23	14.00	1.194	-	-	0.14	0.482	0.576
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 7	ECI 7	518598	2592.99	1	13.23	14.00	1.194	-	-	0.18	0.184	0.220
	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 7	ECI 7	518598	2592.99	1	13.23	14.00	1.194	-	-	0.14	0.000	0.000
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 7	ECI 7	518598	2592.99	1	13.21	14.00	1.199	-	-	0.14	0.141	0.169
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 7	ECI 7	518598	2592.99	1	13.21	14.00	1.199	-	-	0.02	0.465	0.558
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Side	5mm	Ant 7	ECI 7	518598	2592.99	1	13.21	14.00	1.199	-	-	0.09	0.258	0.309
	FR1 n41	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 7	ECI 7	518598	2592.99	1	13.21	14.00	1.199	-	-	-0.05	0.033	0.040
3000MHz ~ 4000MHz																					
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 5	ECI 7	55830	3609	1	15.08	16.00	1.236	62.9	1.006	-0.04	0.186	0.231
	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI 7	55830	3609	1	15.08	16.00	1.236	62.9	1.006	0.05	0.404	0.502
	LTE Band 48	20M	QPSK	1	0	-	Right Side	5mm	Ant 5	ECI 7	55830	3609	1	15.08	16.00	1.236	62.9	1.006	-0.1	0.117	0.145
	LTE Band 48	20M	QPSK	1	0	-	Top Side	5mm	Ant 5	ECI 7	55830	3609	1	15.08	16.00	1.236	62.9	1.006	-0.09	0.291	0.362
	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI 7	55340	3560	1	14.99	16.00	1.262	62.9	1.006	-0.08	0.390	0.495
59	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI 7	56150	3641	1	14.92	16.00	1.282	62.9	1.006	0.11	0.474	0.611
	LTE Band 48C	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI 7	56150+56348	3641+3660.8	1	14.68	16.00	1.355	62.9	1.006	0.11	0.441	0.601
	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI 7	56640	3690	1	15.05	16.00	1.245	62.9	1.006	-0.08	0.440	0.551
	LTE Band 48	20M	QPSK	50	0	-	Front	5mm	Ant 5	ECI 7	55830	3609	1	15.03	16.00	1.250	62.9	1.006	0.05	0.185	0.233
	LTE Band 48	20M	QPSK	50	0	-	Back	5mm	Ant 5	ECI 7	55830	3609	1	15.03	16.00	1.250	62.9	1.006	-0.17	0.401	0.504
	LTE Band 48	20M	QPSK	50	0	-	Right Side	5mm	Ant 5	ECI 7	55830	3609	1	15.03	16.00	1.250	62.9	1.006	0.13	0.104	0.131
	LTE Band 48	20M	QPSK	50	0	-	Top Side	5mm	Ant 5	ECI 7	55830	3609	1	15.03	16.00	1.250	62.9	1.006	0.08	0.301	0.379
	LTE Band 48	20M	QPSK	100	0	-	Front	5mm	Ant 5	ECI 7	55830	3609	1	15.00	16.00	1.259	62.9	1.006	0.11	0.183	0.232
	LTE Band 48	20M	QPSK	100	0	-	Back	5mm	Ant 5	ECI 7	55830	3609	1	15.00	16.00	1.259	62.9	1.006	0.04	0.384	0.486
	LTE Band 48	20M	QPSK	100	0	-	Right Side	5mm	Ant 5	ECI 7	55830	3609	1	15.00	16.00	1.259	62.9	1.006	-0.12	0.102	0.129
	LTE Band 48	20M	QPSK	100	0	-	Top Side	5mm	Ant 5	ECI 7	55830	3609	1	15.00	16.00	1.259	62.9	1.006	-0.06	0.293	0.371
	FR1 n48	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 5	ECI 7	641666	3624.99	1	12.86	14.00	1.300	-	-	-0.16	0.176	0.229
60	FR1 n48	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 5	ECI 7	641666	3624.99	1	12.86	14.00	1.300	-	-	-0.1	0.407	0.529
	FR1 n48	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 5	ECI 7	641666	3624.99	1	12.86	14.00	1.300	-	-	-0.07	0.092	0.120
	FR1 n48	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 5	ECI 7	641666	3624.99	1	12.86	14.00	1.300	-	-	0.02	0.221	0.287
	FR1 n48	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 5	ECI 7	641666	3624.99	1	12.79	14.00	1.321	-	-	-0.1	0.194	0.256
	FR1 n48	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 5	ECI 7	641666	3624.99	1	12.79	14.00	1.321	-	-	0.18	0.390	0.515
	FR1 n48	100M	QPSK	135	69	DFT-30	Right Side	5mm	Ant 5	ECI 7	641666	3624.99	1	12.79	14.00	1.321	-	-	0.19	0.096	0.127
	FR1 n48	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 5	ECI 7	641666	3624.99	1	12.79	14.00	1.321	-	-	-0.09	0.238	0.314
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 5	ECI 7	633332	3499.98	1	12.76	14.00	1.330	-	-	-0.08	0.112	0.149
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 5	ECI 7	633332	3499.98	1	12.76	14.00	1.330	-	-	-0.06	0.403	0.536
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 5	ECI 7	633332	3499.98	1	12.76	14.00	1.330	-	-	-0.02	0.068	0.090
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 5	ECI 7	633332	3499.98	1	12.76	14.00	1.330	-	-	-0.04	0.212	0.282
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 5	ECI 7	633332	3499.98	1	12.67	14.00	1.358	-	-	0.04	0.136	0.185
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 5	ECI 7	633332	3499.98	1	12.67	14.00	1.358	-	-	0.05	0.409	0.556
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-30	Right Side	5mm	Ant 5	ECI 7	633332	3499.98	1	12.67	14.00	1.358	-	-	-0.13	0.079	0.107