FCC SAR Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2503-4, XT2505-1
FCC ID	: IHDT56AU8
STANDARD	: FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Kunshan), 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. (Kunshan), the test report shall not be reproduced except in full.

Approved by: Si Zhang

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA4D1311-01	Rev. 01	Initial issue of report.	Feb. 08, 2025
FA4D1311-01	Rev. 02	Added 5GNR n38/41 Ant2/9 relevant data This report is an update version, replacing the report issued on Feb. 08, 2025.	Feb. 28, 2025

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2503-4, XT2505-1,** 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	0.88	**1.30**	**1.30**	1.59
		GSM1900	0.87	1.27	1.28	
	WCDMA	WCDMA II	0.88	1.29	1.27	
		WCDMA V	0.89	1.26	1.26	
	LTE	LTE Band 2	0.88	1.28	1.29	
		LTE Band 7	0.89	1.29	1.28	
		LTE Band 26/5	0.88	0.62	0.89	
		LTE Band 41/38	0.90	**1.30**	**1.30**	
		LTE Band 42	0.89	**1.30**	1.21	
		LTE Band 71	0.49	0.79	0.63	
	5G NR	FR1 n7	0.88	1.28	1.28	
		FR1 n26/n5	0.81	0.82	0.88	
		FR1 n41/ n38	0.89	1.28	1.29	
		FR1 n71	0.48	0.52	0.44	
		FR1 n77/n78	0.89	1.28	1.28	
DTS	WLAN	2.4GHz WLAN	**1.34**	0.62	0.62	1.59
NII		5GHz WLAN	1.12	0.61	1.03	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.45	0.30	0.30	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	GSM	GSM850	2.33	3.89
		GSM1900	2.91	
	WCDMA	WCDMA II	**3.20**	
		WCDMA V	2.01	
	LTE	LTE Band 2	3.17	
		LTE Band 7	3.17	
		LTE Band 26/5	1.40	
		LTE Band 41/38	3.15	
		LTE Band 42	2.46	
	5G NR	FR1 n7	3.18	
		FR1 n26/n5	1.08	
		FR1 n41/ n38	3.18	
		FR1 n77/n78	3.15	
NII	WLAN	WLAN5GHz	1.74	3.89
DXX	NFC	13.56MHz	<0.10	3.89
Date of Testing:			2025/1/7 ~ 2025/2/15	

Remark:

1. This device supports LTE B5 / B38 and B26 / B41. Since the supported frequency span for LTE LTE B5 / B38 falls completely within the support's frequency span for LTE B26 / 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 B26 / B41.
2. This device supports 5GNR n5 /n38 / n78 and n26 / n41 / n77. Since the supported frequency span for 5GNR n5 /n38 / n78 falls completely within the support's frequency span for n26 / n41 / 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 / n41 / 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. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR06-KS	CN1257	314309

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. Data Reuse Approach

3.1 Introduction Section

This application re-uses data collected on a similar device, FCC ID: IHDT56AU7 (reference model) and FCC ID: IHDT56AU8 (variant model). Due to the same design are identical between parent model and variant model, SAR data reuse is requested and spot check data in this report is used to justify the SAR data reuse.

Per KDB 484596 D01 v02r03, the deviation of variant model 1g SAR and 10g SAR spot check result was no larger than 3 dB, the WWAN/WLAN/BT max SAR summary was always choosing the higher SAR between parent model and variant model.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: IHDT56AU8

3.2 Model Difference Information

The **main** difference between FCC ID: IHDT56AU7 and FCC ID: IHDT56AU8 is as below:

- Remove WCDMA Band IV, LTE B4/12/13/17/66 and 5G NR n2/n66.
- Add LTE B18/B19/20/32/43/71 and 5G NR n20/n71/n75
- Add n5 NSA mode and n38/41 SA mode.
- LTE B41, 5G NR n77/N78 upgraded to PC2 via software.

Other differences and all the details of similarity and difference can be found in the confidential documents (XT2503-4, XT2505-1_Operational Description of Product Equality Declaration).

3.3 Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	FCC ID (Reference)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Test on the variant
Part 2.1093	PCE	GSM	GSM850/1900	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
		WCDMA	B2/5	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
		LTE	B2/5/7/26/42	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
		LTE	B38/41/71				IHDT56AU8	Full Test
		5GNR FR1	n71/n77/n78				IHDT56AU8	Full Test
		5GNR FR1	n38/n41(Ant2/9)				IHDT56AU8	Full Test
		5GNR FR1	n5/n7/n26 and n38/n41(Ant0/1)	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
	DTS	BLE/ WiFi	2400~2483.5	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
	NII	Wi-Fi	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
	DSS	Bluetooth	2400~2483.5	IHDT56AU7	Original Grant	FA4D1311	IHDT56AU8	Spot check
	DXX	NFC	13.56	IHDT56AU7	Original Grant	FA4D1311A	IHDT56AU8	Spot check

4. 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
- IEC/IEEE 62209-1528:2020
- 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
- FCC KDB 484596 D01 Referencing Test Data v02r03

5. Equipment Under Test (EUT) Information

5.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2503-4, XT2505-1
FCC ID	IHDT56AU8
IMEI Code	Sample 1 IMEI 1: 357706750005358 IMEI 2: 357706750005366 Sample 2 IMEI 1: 358065190003054 IMEI 2: 358065190003062
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 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: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 WLAN 5GHz 802.11ax HE20/HE40/HE80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DVT2
SW Version	V2VC35.13

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/BT when transmit simultaneously with each other, or when transmit simultaneous with WWAN, power reduction will be activated to head exposure condition. For WLAN when transmit simultaneous with WWAN/BT 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. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately. 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 we 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 mode for 5G NR n77/n78 with higher power, so 5GNR n77/n78 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 difference between them could be referred to the XT2503-4, XT2505-1_Operational Description of Product Equality Declaration which is exhibited separately. According to the difference, sample 1 was chosen to perform full testing and sample 2 verified the worst case of sample 1.
13. 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	n5	FDD	15	5, 10, 15, 20
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 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
SA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 50
	n26	FDD	15	5, 10, 15, 20
	n71	FDD	15	5, 10, 15, 20
	n38	FDD	15	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 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

5.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>IHDT56AU8</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 42: 3450 MHz ~ 3550 MHz
LTE Band 71: 663 MHz ~ 698 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM / 256QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15</td></tr>
<tr><td>CA Support</td><td>Supported, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>
</td></tr>
<tr><td>LTE A-MPR</td><td>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)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>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.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>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 15.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 15.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>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 3 carriers in the downlink and 2 carriers in the uplink.</td></tr>
</table>

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 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)				
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)				
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 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)
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 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 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 42								
	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	42115	3452.5	42140	3455	42165	3457.5	42190	3460
M	42590	3500	42590	3500	42590	3500	42590	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540

<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 5	Yes	Yes	Yes	Yes		
LTE Band 26	Yes	Yes	Yes	Yes	Yes	
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2) LTE Bands tune up:

Band	Antenna	Head	Body-worn	Hotspot	Extremity	Sensor Off	Default
		ECI 2	ECI 3	ECI 7	ECI 6	ECI4	Tune-up Limit
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	
LTE Band 5	Ant 0	24	24	24	24	24	24
LTE Band 26	Ant 0	24	24	24	24	24	24
LTE Band 5	Ant 1	23.5	22.7	21.1	24	24	24
LTE Band 26	Ant 1	23.5	22.7	21.1	24	24	24
LTE Band 38	Ant 2	24	22.7	21.2	24	24	24
LTE Band 41	Ant 2	24	22.7	21.2	24	24	24
LTE Band 41 HPUE	Ant 2	27	24.3	22.8	26.6	27	27
LTE Band 38	Ant 1	21.5	20.4	19	23	23	23
LTE Band 41	Ant 1	21.5	20.4	19	23	23	23
LTE Band 41 HPUE	Ant 1	23.1	22	20.6	26	26	26
LTE Band 38 Other PA	Ant 1	21.7	21.5	20.1	24	24	24
LTE Band 38	Ant 9	21.4	19	14.5	19.3	19.3	24
LTE Band 41	Ant 9	21.4	19	14.5	19.3	19.3	24
LTE Band 41 HPUE	Ant 9	23	20.6	16.1	20.9	20.9	27
LTE Band 38	Ant 0	21	21	21	21	21	21
LTE Band 41	Ant 0	21	21	21	21	21	21
LTE Band 41 HPUE	Ant 0	24	24	24	24	24	24
LTE Band 38 Other PA	Ant 0	23	22.1	22.1	23	23	23

5.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz 5G NR n71 : 663 MHz ~ 698 MHz
Channel Bandwidth	The detail please refers to section 5.1 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 n5	LTE B7
LTE Anchor Bands for n41	LTE B5
LTE Anchor Bands for n77	LTE B7/41
LTE Anchor Bands for n78	LTE B5/7/38/41

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band

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 26

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	163300	816.5	163800	819	164300	821.5	164800	824
M	166300	831.5	166300	831.5	166300	831.5	166300	831.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 38

	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580	516504	2582.52	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	521496	2607.48	520998	2604.99	519996	2599.98

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		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)	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	500202	2501.01	507204	2536.02	508200	2541	509202	2546.01
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	2592.99	518598	2592.99	518598	2592.99
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	2649.99	528996	2644.98	528000	2640

NR Band 71 SCS15KHz								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133100	665.5	133600	668	134100	670.5	134600	673
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5
H	139100	695.5	138600	693	138100	690.5	137600	688

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	664834	3972.51	664668	3970.02	664500	3967.50	664334	3965.01	664000	3960	663668	3955.02	663334	3950.01	663000	3945	662668	3940.02	662334	3935.01	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 NR Overlap Bands Description>

1) NR Bands BW

Band	Duplex	SCS(KHz)	Bandwidths(BW)
n5	FDD	15	5, 10, 15, 20
n26	FDD	15	5, 10, 15, 20
n38	TDD	30	10, 15, 20, 25, 30, 40
n41	TDD	30	10, 15, 20, 25, 30, 35, 40, 45, 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

2) NR Bands Tune up:

and	Antenna	Head	Body-worn	Hotspot	Extremity	Sensor Off	Default
		ECI 2	ECI 3	ECI 7	ECI 6	ECI4	Tune-up Limit
		Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	Tune-up Limit	
FR1 n5	Ant 0	24	24	24	24	24	24
FR1 n26	Ant 0	24	24	24	24	24	24
FR1 n5	Ant 1	24	22.4	20.9	24	24	24
FR1 n26	Ant 1	24	22.4	20.9	24	24	24
FR1 n38	Ant 2	24	20.9	19.3	22.3	24	24
FR1 n41	Ant 2	24	20.9	19.3	22.3	24	24
FR1 n38	Ant 1	19.4	18.5	17	21.9	24	24
FR1 n41	Ant 1	19.4	18.5	17	21.9	24	24
FR1 n38 Other PA	Ant 1	19.2	16.5	15	20.8	24	24
FR1 n38	Ant 9	23.2	20.9	16.5	18.8	18.8	24
FR1 n41	Ant 9	23.2	20.9	16.5	18.8	18.8	24
FR1 n38	Ant 0	24	22.5	22.4	23.7	24	24
FR1 n41	Ant 0	24	22.5	22.4	23.7	24	24
FR1 n38 Other PA	Ant 0	24	21.8	21.6	23.1	24	24
FR1 n77	Ant 7	19.6	19.1	17	20.1	24	24
FR1 n77	Ant 4	16.8	17.3	12.7	21.3	24	24
FR1 n77	Ant 8	24	24.7	22.4	24.8	24.8	24
FR1 n77	Ant 5	20.8	19.9	17.9	22.1	24	24
FR1 n77 PC2	Ant 7	19.6	19.1	17	20.1	27	27
FR1 n77 PC2	Ant 4	16.8	17.3	12.7	21.3	27	27
FR1 n77 PC2	Ant 8	27	24.7	22.4	24.8	24.8	27
FR1 n77 PC2	Ant 5	20.8	19.9	17.9	22.1	27	27
FR1 n78	Ant 7	19.6	19.1	17	20.1	24	24
FR1 n78	Ant 4	16.8	17.3	12.7	21.3	24	24
FR1 n78	Ant 8	24	24.7	22.4	24.8	24.8	24
FR1 n78	Ant 5	20.8	19.9	17.9	22.1	24	24
FR1 n78 PC2	Ant 7	19.6	19.1	17	20.1	27	27
FR1 n78 PC2	Ant 4	16.8	17.3	12.7	21.3	27	27
FR1 n78 PC2	Ant 8	27	24.7	22.4	24.8	24.8	27
FR1 n78 PC2	Ant 5	20.8	19.9	17.9	22.1	27	27

6. TA-SAR feature for RF Exposure compliance

WWAN bands are all enabled with MediaTek TA-SAR Gen2 feature to improve antenna performance by applying separate SAR budgets to each predefined antenna group. 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/BT operations are not enabled with TA-SAR Gen2 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 ≤ 6GHz). 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 Plimit 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) Plimit 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 Gen2 algorithm. SAR char will be entered via the MediaTek's NV suggestion to enable the TA-SAR Gen2 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 Gen2 algorithm to control and manage RF exposure for f < 6 GHz.

SPLSR_Group (Antenna Group):

Antenna Group 0 (AG0)	ANT0 & ANT2& ANT8
Antenna Group 1 (AG1)	ANT1 & ANT4 & ANT5 & ANT7& ANT9

<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 Gen2 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	Head ECI2	Bodyworn ECI3	Hotspot ECI7	Extremity ECI6	Sensor off ECI4	Pmax*
GSM850	Ant 0	32.6	24.7	24.7	27.3	25.7	25.7
GSM850	Ant 1	22.6	22.6	21.6	25.2	25.0	25.0
GSM1900	Ant 2	31.7	20.4	20.1	22.6	22.2	22.2
GSM1900	Ant 1	17.5	16.6	15.3	21.4	20.5	20.5
WCDMA II	Ant 2	30.7	20.5	17.5	21.8	23.0	23.0
WCDMA II	Ant 1	18.0	17.2	15.6	20.4	21.0	21.0
WCDMA V	Ant 0	30.4	23.1	23.1	25.0	23.0	23.0
WCDMA V	Ant 1	22.4	21.9	20.7	26.2	23.0	23.0
LTE Band 2	Ant 2	30.9	20.1	18.7	22.6	23.0	23.0
LTE Band 2	Ant 1	17.6	16.6	15.1	20.9	20.5	20.5
LTE Band 7	Ant 2	30.5	18.7	18.0	20.6	23.0	23.0
LTE Band 7	Ant 1	18.9	16.1	15.0	20.5	22.0	22.0
LTE Band 7 Other PA	Ant 1	19.0	17.2	16.2	20.4	23.0	23.0
LTE Band 7	Ant 9	20.6	19.2	14.6	17.0	17.0	23.0
LTE Band 7	Ant 0	31.6	21.6	21.3	22.9	21.5	21.5
LTE Band 7 Other PA	Ant 0	33.6	23.3	23.0	24.7	23.0	23.0
LTE Band 26(5)	Ant 0	31.3	27.0	27.0	23.0	23.0	23.0
LTE Band 26(5)	Ant 1	22.5	21.7	20.1	25.5	23.0	23.0
LTE Band 41(38)	Ant 2	32.1	19.7	18.2	22.0	22.4	21.0
LTE Band 41 HPUE	Ant 2	32.1	19.7	18.2	22.0	22.4	22.4
LTE Band 41(38)	Ant 1	18.5	17.4	16.0	21.4	21.4	20.0
LTE Band 41 HPUE	Ant 1	18.5	17.4	16.0	21.4	21.4	21.4
LTE Band 38 Other PA	Ant 1	18.7	18.5	17.1	21.3	21.0	21.0
LTE Band 41(38)	Ant 9	18.4	16.0	11.5	16.3	16.3	21.0
LTE Band 41 HPUE	Ant 9	18.4	16.0	11.5	16.3	16.3	22.4
LTE Band 41(38)	Ant 0	32.2	19.4	19.4	20.9	19.4	18.0
LTE Band 41 HPUE	Ant 0	32.2	19.4	19.4	20.9	19.4	19.4
LTE Band 38 Other PA	Ant 0	33.7	19.1	19.1	22.3	20.0	20.0
LTE Band 42	Ant 7	16.6	17.4	14.2	18.3	21.0	21.0
LTE Band 42	Ant 4	13.6	13.4	9.5	18.5	16.0	16.0
LTE Band 42	Ant 8	27.1	21.3	19.7	22.7	21.0	21.0
LTE Band 42	Ant 5	16.3	18.0	14.5	16.0	16.0	16.0
LTE Band 71	Ant 0	33.9	26.1	25.1	23.0	23.0	23.0
LTE Band 71	Ant 1	24.5	24.3	22.8	22.0	22.0	22.0
FR1 n7	Ant 2	32.0	19.9	18.8	21.0	23.0	23.0
FR1 n7	Ant 1	19.3	17.0	15.2	20.1	21.0	21.0
FR1 n7 Other PA	Ant 1	17.8	17.6	16.3	20.4	23.0	23.0

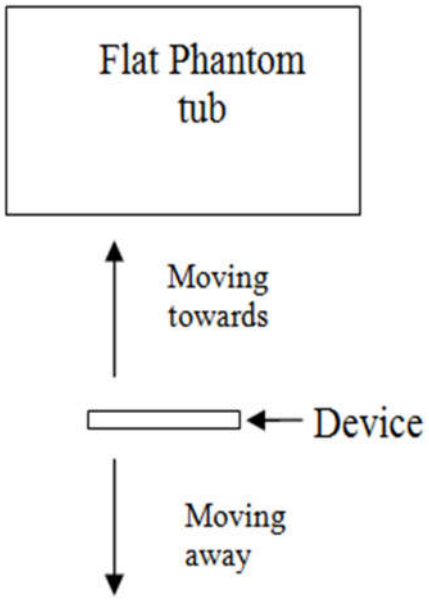
FR1 n26(5)	Ant 0	31.7	24.9	24.9	23.0	23.0	23.0
FR1 n26(5)	Ant 1	23.4	21.4	19.9	26.6	23.0	23.0
FR1 n71	Ant 0	35.4	27.7	26.9	23.0	23.0	23.0
FR1 n71	Ant 1	24.2	24.5	23.0	21.5	21.5	21.5
FR1 n41(38)	Ant 2	32.5	19.9	18.3	21.3	23.0	23.0
FR1 n41(38)	Ant 1	18.4	17.5	16.0	20.9	23.0	23.0
FR1 n38 Other PA	Ant 1	18.2	15.5	14.0	19.8	23.0	23.0
FR1 n41(38)	Ant 9	22.2	19.9	15.5	17.8	17.8	23.0
FR1 n41(38)	Ant 0	32.0	21.5	21.4	22.7	23.0	23.0
FR1 n38 Other PA	Ant 0	32.3	20.8	20.6	22.1	23.0	23.0
FR1 n77(78)	Ant 7	18.6	18.1	16.0	19.1	26.0	23.0
FR1 n77(78)	Ant 4	15.8	16.3	11.7	20.3	26.0	23.0
FR1 n77(78)	Ant 8	29.7	23.7	21.4	23.8	23.8	23.0
FR1 n77(78)	Ant 5	19.8	18.9	16.9	21.1	26.0	23.0
FR1 n77(78) PC2	Ant 7	18.6	18.1	16.0	19.1	26.0	26.0
FR1 n77(78) PC2	Ant 4	15.8	16.3	11.7	20.3	26.0	26.0
FR1 n77(78) PC2	Ant 8	29.7	23.7	21.4	23.8	23.8	26.0
FR1 n77(78) PC2	Ant 5	19.8	18.9	16.9	21.1	26.0	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.

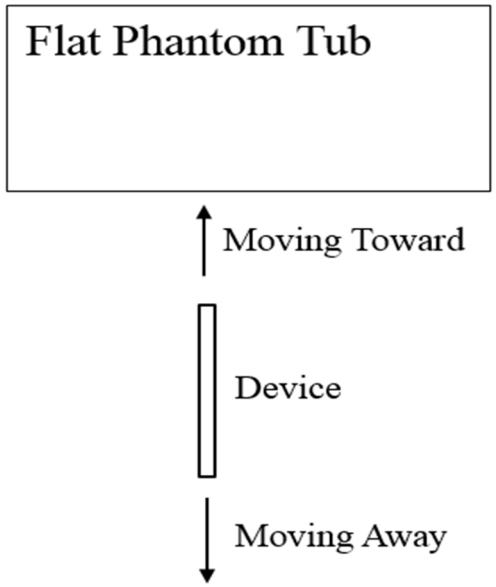
7. Proximity Sensor Triggering Test

<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 (5825MHz) and lowest (850MHz) 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:



Sensor/Handheld detection test set-up, Front and Back sides



Handheld detection test set-up, Left Side, Right Side, Bottom Side and Top Side

<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	20	15	21	16

<Handheld for ANT 0>

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	14	9	18	13	16	11	17	11

<Handheld for ANT1&7>

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	14	9	21	16	17	12	19	14

<Handheld for ANT 2>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	12	7	12	7	18	13

<Handheld for ANT 3&4&5>

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	15	9	16	11	18	13	17	12

8. RF Exposure Limits

8.1 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.

8.2 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.

9. Specific Absorption Rate (SAR)

9.1 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.

9.2 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:

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

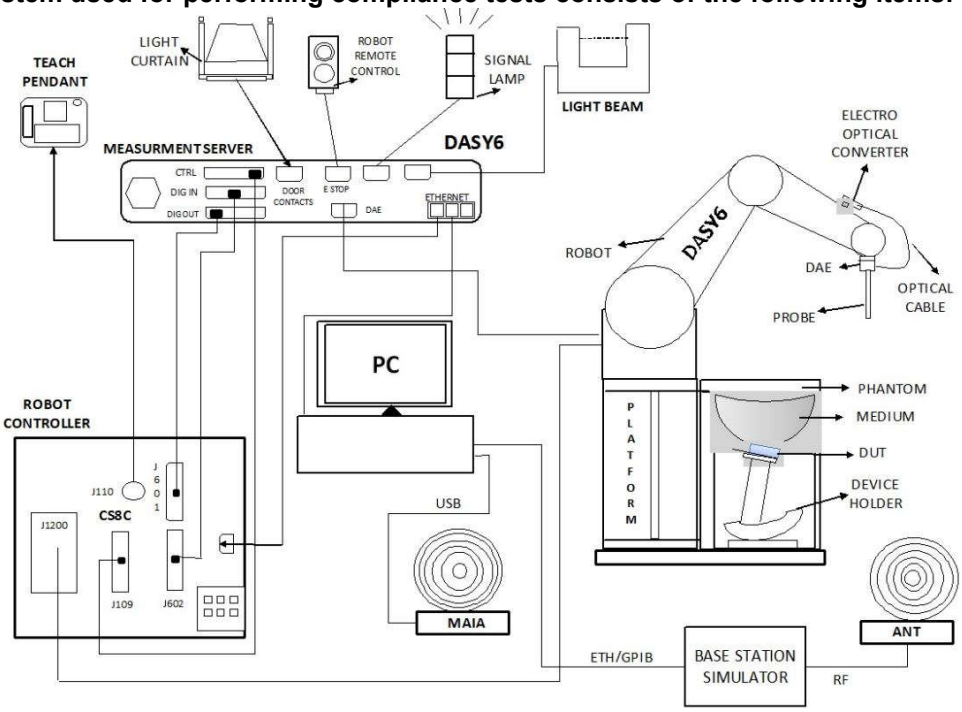
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

10. 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 Win7 or Win10 and the DASY5 or DASY6 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.

10.1 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 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/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

10.2 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

10.3 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

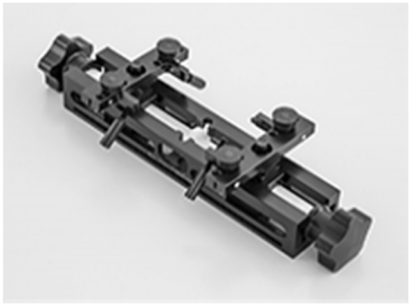
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

10.4 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

11. 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

11.1 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 form 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

11.2 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.

11.3 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 dB0 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	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{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 ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

11.4 Zoom Scan

Zoom scans are used 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 shoes 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: Δx_{Zoom}, Δy_{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: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
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 *reported* SAR from the *area scan based 1-g SAR estimation* 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.

11.5 Volume Scan Procedures

The volume scan is used for 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.

11.6 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.

12. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2022/2/24	2025/2/22
SPEAG	835MHz System Validation Kit	D835V2	4d298	2024/1/26	2025/1/25
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	2022/3/30	2025/3/28
SPEAG	2450MHz System Validation Kit	D2450V2	1095	2024/2/8	2025/2/7
SPEAG	2600MHz System Validation Kit	D2600V2	1112	2023/12/18	2026/12/17
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2023/11/20	2026/11/19
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2023/11/20	2026/11/19
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2023/3/9	2026/3/8
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2022/9/23	2025/9/21
SPEAG	13MHz System Validation Kit	CLA13	1023	2024/1/22	2025/1/21
SPEAG	Data Acquisition Electronics	DAE4	1358	2024/5/23	2025/5/22
SPEAG	Data Acquisition Electronics	DAE4	1649	2024/7/3	2025/7/2
SPEAG	Dosimetric E-Field Probe	EX3DV4	7774	2024/6/27	2025/6/26
SPEAG	Dosimetric E-Field Probe	EX3DV4	7706	2024/1/24	2025/1/23
SPEAG	SAM Twin Phantom	SAM Twin	TP-2022	NCR	NCR
SPEAG	ELI Phantom	ELI V8.0	TP-2135	NCR	NCR
Testo	Thermo-Hygrometer	HTC-1	55011	2025/1/2	2026/1/1
CHIGO	Thermo-Hygrometer	HTC-1	55009	2025/1/2	2026/1/1
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6262306175	2024/7/4	2025/7/3
Rohde & Schwarz	Vector Signal Generator	SMBV100A	258305	2025/1/2	2026/1/1
Agilent	ENA Series Network Analyzer	E5071C	MY46112129	2024/7/4	2025/7/3
SPEAG	Dielectric Probe Kit	DAK-3.5	1144	2024/8/20	2025/8/19
SPEAG	Dielectric Probe Kit	DAK-12	1156	2024/7/15	2025/7/14
Anritsu	Vector Signal Generator	MG3710A	6201682672	2025/1/3	2026/1/2
Rohde & Schwarz	Power Meter	NRVD	102081	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2024/7/4	2025/7/3
R&S	BLUETOOTH TESTER	CBT	101246	2024/7/4	2025/7/3
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2024/10/11	2025/10/10
TES	DIGITAC THERMOMETER	TYPE-K	220305411	2025/1/2	2026/1/1
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	

Note:

1. 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.
2. 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.
3. 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.

13. System Verification

13.1 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.

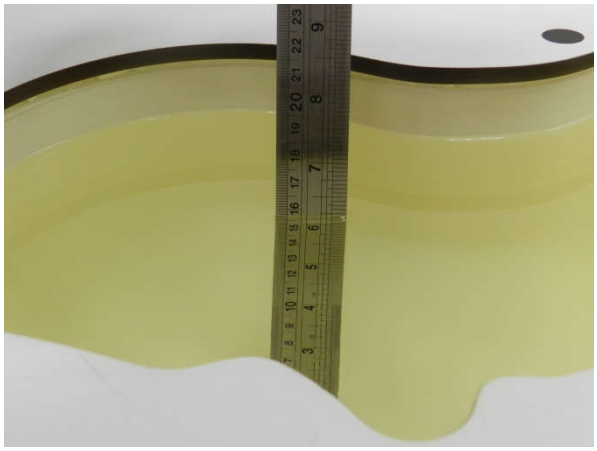


Fig 11.1 Photo of Liquid Height for Head SAR

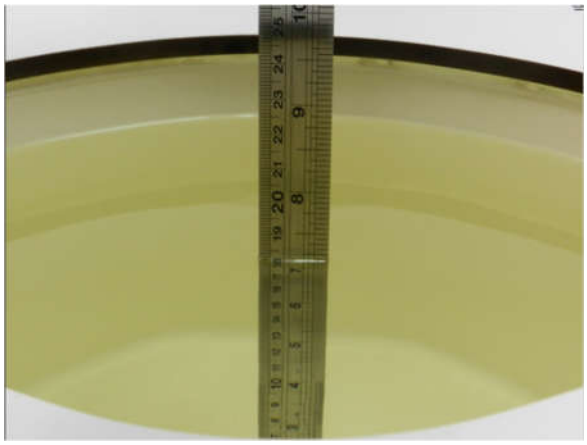


Fig 11.2 Photo of Liquid Height for Body SAR

13.2 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 (εr)
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. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.6	0.889	42.300	0.89	41.90	-0.11	0.95	±5	2025/1/7
2600	Head	22.8	1.890	39.200	1.96	39.00	-3.57	0.51	±5	2025/1/9
3900	Head	22.8	3.210	38.000	3.32	37.50	-3.31	1.33	±5	2025/1/11
750	Head	22.9	0.925	42.400	0.89	41.90	3.93	1.19	±5	2025/1/13
2600	Head	22.7	1.930	39.000	1.96	39.00	-1.53	0.00	±5	2025/1/15
3900	Head	22.8	3.180	38.400	3.32	37.50	-4.22	2.40	±5	2025/1/17
835	Head	22.7	0.918	41.500	0.90	41.50	2.00	0.00	±5	2025/1/19
1900	Head	22.8	1.450	39.900	1.40	40.00	3.57	-0.25	±5	2025/1/20
3500	Head	22.6	2.870	38.500	2.91	37.90	-1.37	1.58	±5	2025/1/21
2450	Head	22.8	1.750	39.500	1.80	39.20	-2.78	0.77	±5	2025/1/22
5250	Head	22.8	4.560	35.000	4.71	35.90	-3.18	-2.51	±5	2025/1/23
5600	Head	22.7	4.950	34.400	5.07	35.50	-2.37	-3.10	±5	2025/1/24
5750	Head	22.6	5.080	34.300	5.22	35.40	-2.68	-3.11	±5	2025/1/25
3700	Head	22.8	2.990	38.400	3.12	37.70	-4.17	1.86	±5	2025/1/14
13	Head	22.8	0.757	53.7	0.75	55.00	0.93	-2.36	±5	2025/1/10
2600	Head	22.6	1.910	39.200	1.96	39.00	-2.55	0.51	±5	2025/2/15

13.3 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 (%)
2025/1/7	750	Head	50	1087	7774	1358	0.418	8.58	8.36	-2.56
2025/1/9	2600	Head	50	1112	7774	1358	2.610	55.10	52.2	-5.26
2025/1/11	3900	Head	50	1048	7774	1358	3.460	69.10	69.2	0.14
2025/1/13	750	Head	50	1087	7774	1358	0.436	8.58	8.72	1.63
2025/1/15	2600	Head	50	1112	7774	1358	2.700	55.10	54	-2.00
2025/1/17	3900	Head	50	1048	7774	1358	3.350	69.10	67	-3.04
2025/1/19	835	Head	50	4d298	7774	1358	0.463	9.89	9.26	-6.37
2025/1/20	1900	Head	50	5d118	7774	1358	1.920	39.30	38.4	-2.29
2025/1/21	3500	Head	50	1037	7774	1358	3.320	65.40	66.4	1.53
2025/1/22	2450	Head	50	1095	7774	1358	2.720	52.60	54.4	3.42
2025/1/23	5250	Head	50	1113	7774	1358	3.860	81.50	77.2	-5.28
2025/1/24	5600	Head	50	1113	7774	1358	3.960	82.60	79.2	-4.12
2025/1/25	5750	Head	50	1113	7774	1358	3.840	80.80	76.8	-4.95
2025/1/14	3700	Head	50	1008	7774	1358	3.540	67.20	70.8	5.36
2025/1/10	13	Head	250	1023	7706	1649	0.143	0.621	0.572	-7.74
2025/2/15	2600	Head	50	1112	7774	1358	2.700	55.10	54	-2.00

<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 (%)
2025/1/7	750	Head	50	1087	7774	1358	0.285	5.65	5.7	0.88
2025/1/9	2600	Head	50	1112	7774	1358	1.220	24.80	24.4	-1.61
2025/1/11	3900	Head	50	1048	7774	1358	1.270	24.10	25.4	5.39
2025/1/13	750	Head	50	1087	7774	1358	0.298	5.65	5.96	5.49
2025/1/15	2600	Head	50	1112	7774	1358	1.260	24.80	25.2	1.61
2025/1/17	3900	Head	50	1048	7774	1358	1.230	24.10	24.6	2.07
2025/1/19	835	Head	50	4d298	7774	1358	0.317	6.45	6.34	-1.71
2025/1/20	1900	Head	50	5d118	7774	1358	0.977	20.40	19.54	-4.22
2025/1/21	3500	Head	50	1037	7774	1358	1.330	24.70	26.6	7.69
2025/1/22	2450	Head	50	1095	7774	1358	1.270	24.70	25.4	2.83
2025/1/23	5250	Head	50	1113	7774	1358	1.160	23.30	23.2	-0.43
2025/1/24	5600	Head	50	1113	7774	1358	1.130	23.70	22.6	-4.64
2025/1/25	5750	Head	50	1113	7774	1358	1.090	23.00	21.8	-5.22
2025/1/14	3700	Head	50	1008	7774	1358	1.310	24.40	26.2	7.38
2025/1/10	13	Head	250	1023	7706	1649	0.081	0.335	0.324	-4.71
2025/2/15	2600	Head	50	1112	7774	1358	1.260	24.80	25.2	1.61

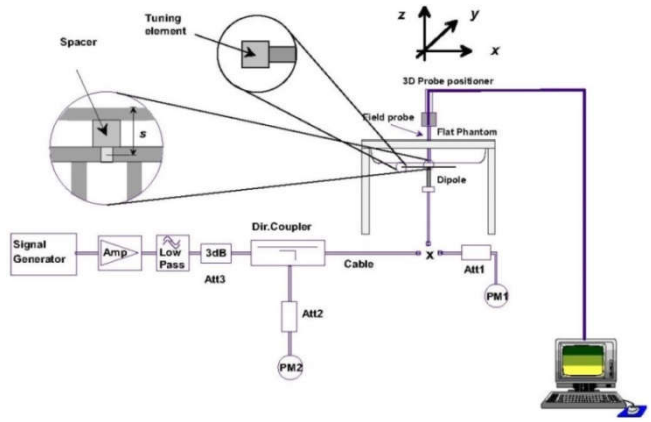


Fig 11.3.1 System Performance Check Setup

Fig 11.3.2 Setup Photo

Fig 8.3.2 Setup Photo

14. RF Exposure Positions

14.1 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.

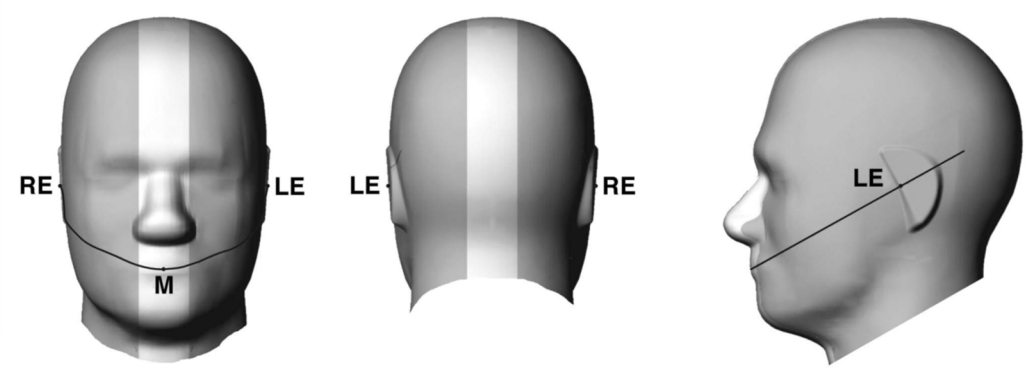


Fig 12.1.1 Front, back, and side views of SAM twin phantom

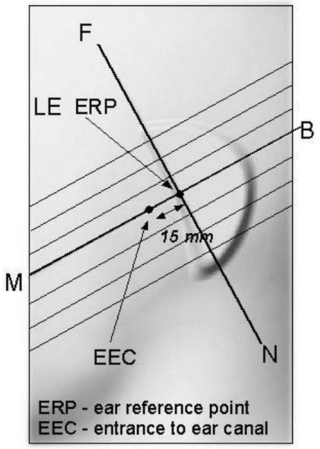


Fig 12.1.2 Close-up side view of phantom showing the ear region.

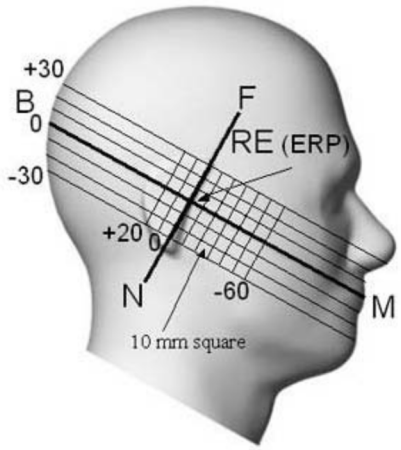


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

14.2 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 wt 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 wb 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 horizontal line. 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.

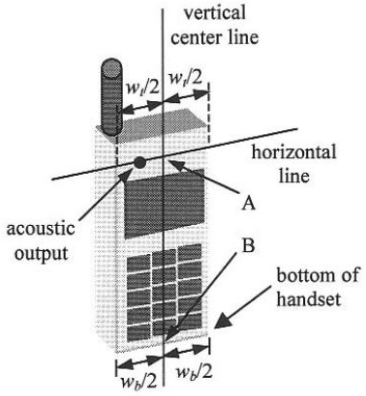


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

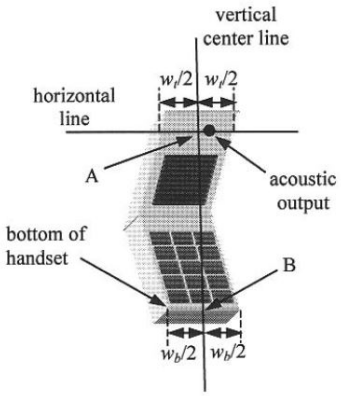


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

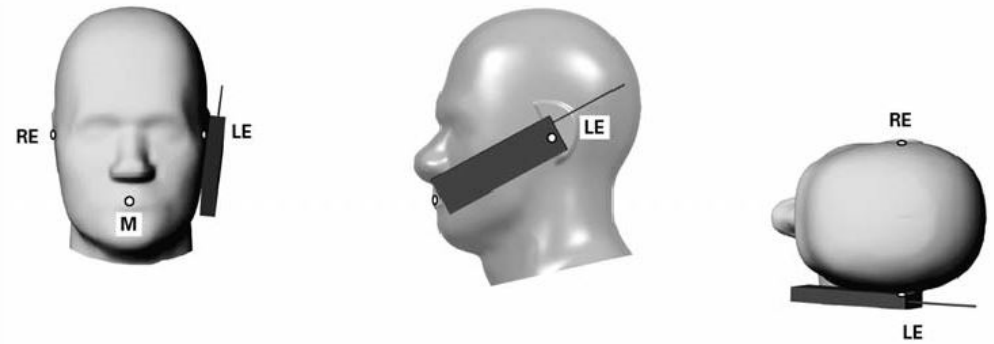


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

14.3 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

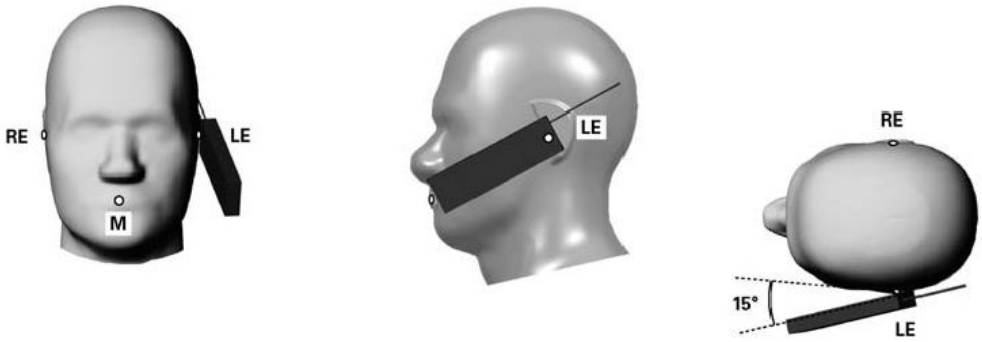


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

14.4 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 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-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

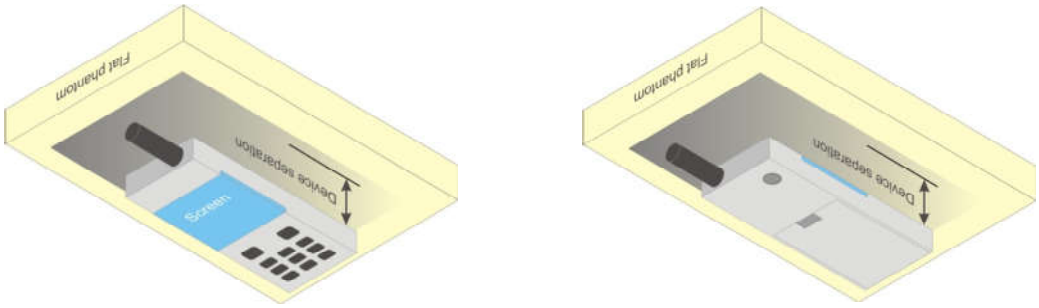


Fig 12.4 Body Worn Position

14.5 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.

14.6 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 x W ≥ 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 form 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.

15. Conducted RF Output Power (Unit: dBm)

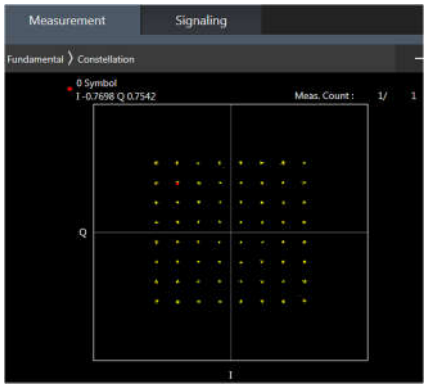
The detailed conducted power table can refer to Appendix E.

<LTE Conducted Power>

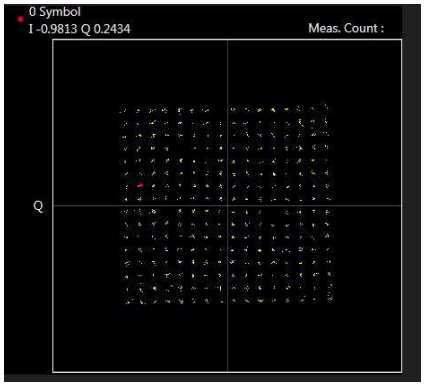
General Note:

1. Anritsu MT8821C 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 ½ 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 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; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B5 / 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 B5 / B38 SAR test was covered by B26 / 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 ≤ 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.

16QAM



64QAM



256QAM

<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.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "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
c. 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.

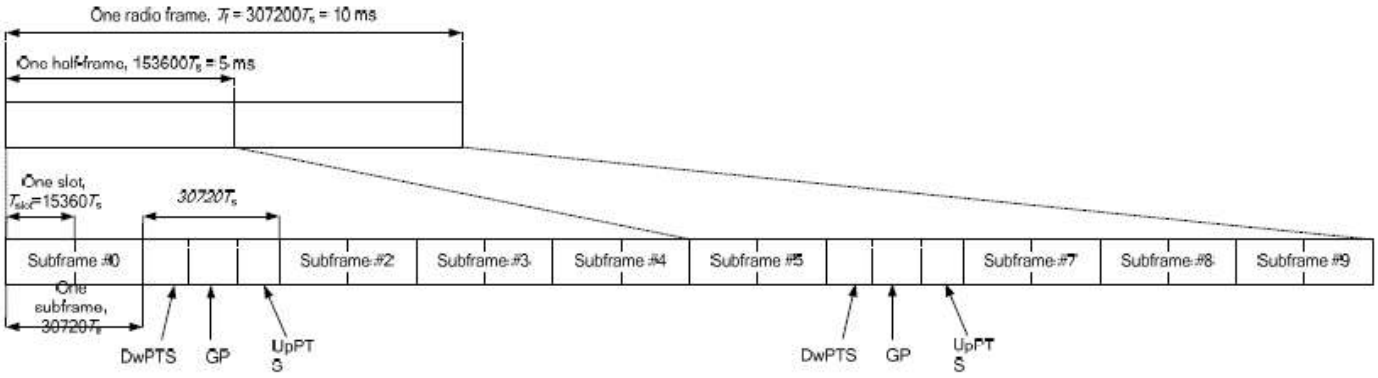


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
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

i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subfames, uplink operation is in 2 uplink subframes and 1 special subframe.
ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
iii. 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%
iv. 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%
v. 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

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.
ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
iii. 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%
iv. 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%
v. 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 followings:

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. Per Oct. 2024 TCB workshop, Manufacturer declares that TX power measurement for multiple DL CA configurations is deemed not required as the DL CA has no impact on the TX power according to preliminary scan. TX power measured in LTE standalone operation represents the worst case.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation		
Number	Combination	4X4 MIMO	Number	Combination	4X4 MIMO
1	CA_38C	38C, 38A	1	CA_41A-41A-41A	
2	CA_41A-41A	41A-41A, 41A	2	CA_41A-41C	41C, 41A
3	CA_41A-42A	41A-42A, 42A, 41A	3	CA_41A-42C	42C, 42A, 41A
4	CA_41C	41C, 41A	4	CA_41C-42A	41C, 42A, 41A
5	CA_42C	42C, 42A	5	CA_41D	
6	CA_5A-7A	7A	6	CA_42D	
7	CA_7A-26A	7A	7	CA_7C-26A	7C, 7A
8	CA_7A-7A	7A-7A, 7A	8		
9	CA_7B	7B, 7A	9		
10	CA_7C	7C, 7A	10		

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 three 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.

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

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Band 7/38/41/42 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 7/38/41/42

LTE Carrier Aggregation Conducted Power (Uplink)

LTE Uplink CA	2CC Uplink Carrier Aggregation	
Intra-band	Antenna Tx	ASDiv-1 Tx
CA_7C	Ant 2	Ant 1/9/0
CA_38C	Ant 2	Ant 1/9/0
CA_41C	Ant 2	Ant 1/9/0
CA_42C	Ant7	Ant 4/8/5

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41/42 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. 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.

iii. Additional SAR measurement for LTE UL CA whit 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.

<Inter-band uplink carrier aggregation consideration>

LTE Uplink CA	2CC Uplink Carrier Aggregation	
Inter-band	Main Antenna Tx	ASDiv-1 Tx
CA_5A-7A	Ant1+Ant2	Ant1+Ant0 Ant0+Ant1/9

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 ≤ 6GHz). 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 n5/n41/n77/n78 is NSA mode.
2. 5G NR n5/n7/n26/n71/n38/n41/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 5GNR, 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. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR 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. For 5GNR inter-band CA mode, MediaTek Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure between two 5GNR bands. MediaTek algorithm controls the total RF exposure base on 5GNR inter CA bands to not exceed FCC limit.
11. This device supports HPUE mode for 5G NR n77/n78 with higher power, so 5GNR n77/n78 HPUE SAR can represent power class 3 level SAR.

<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	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	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		ASDiv Tx	
	LTE TX	NR TX	LTE TX	NR TX
DC_38A_n78A	Ant 1	Ant 7	Ant 2/9/0 Ant1	Ant7 Ant4/8/5
DC_41A_n77A	Ant 1	Ant 7	Ant 2/9/0 Ant1	Ant7 Ant4/8/5
DC_41A_n78A	Ant 1	Ant 7	Ant 2/9/0 Ant1	Ant7 Ant4/8/5
DC_5A_n78A	Ant 0	Ant 7	Ant 1 Ant0	Ant7 Ant4/8/5
DC_7A_n5A	Ant2	Ant1	Ant1/9 Ant0	Ant0 Ant1
DC_7A_n78A	Ant 1	Ant 7	Ant 2/9/0 Ant1	Ant7 Ant4/8/5
DC_7A_n77A	Ant 1	Ant 7	Ant 2/9/0 Ant1	Ant7 Ant4/8/5
DC_5A_n41A	Ant1	Ant2	Ant0 Ant1	Ant1/9 Ant0

Inter-Band CA Configuration:

NR Uplink CA	2CC Uplink Carrier Aggregation	
Inter-band	Main Antenna Tx	ASDiv-1 Tx
CA_n41A-n71A	Ant2+Ant1	Ant1/9/+Ant0 Ant0+Ant1
CA_n41A-n77A	Ant1+Ant7	Ant2/9/0+Ant7 Ant1+Ant4/8/5
CA_n41A-n78A	Ant1+Ant7	Ant2/9/0+Ant7 Ant1+Ant4/8/5

16. Antenna Location

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

17. Spot Check SAR and Full Test SAR Results

General Note:

1. According to section 3.3, spot check conducted power test against the variant project based on the worst-case SAR condition from the original project was performed in this filing to demonstrate the test data from original project remains representative for the variant project. Detail Conducted power measurement referred to appendix E.
2. SAR spot check verification on the worst cases from the original model was performed to demonstrate the test data from original model remains representative for the variant model.
3. Per KDB 484596 D01 v02r03, the variant filings must demonstrate that the referenced test data remain valid for the variant device by including spot-check measurements that meet the following criteria:
   a. Spot-check measurements shall be made in correspondence to the worst-case scenario reported in the reference device filing, i.e., for those conditions that are the closest to non-compliance
   b. Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, may show a deviation ddB from the reference data no larger than 3 dB:
      $$d_{dB} = | VdB – RdB | \leq 3\ dB \quad (1)$$
      where between VdB, the variant spot-check level in dB, and RdB is the corresponding measurement level in dB for the reference model.
4. The Spot check results showed that Deviation of the SAR results did not exceed 3 dB, therefore referring to the guidance in the KDB inquiry, SAR data reuse is justified.
5. 1st as parent model, 2nd as variant model.

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.
   g. For TDD LTE SAR measurement of power class 2, 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 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 ≥ 0.8W/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/V, LTE Band 2/5/7/26/38/41/42, 5GNR n7/n5/n26/n38 /n41/n77/n78, therefore product specific 10g SAR is necessary.
   b. WLAN 5.3/5.5GHz 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. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot SAR.
9. For Phablet devices, when hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
10. LTE B7/38 at Ant 0/1 and 5GNR n38 at Ant 0/1, and 5GNR n7 at Ant 1 support different PAs for same antennas. And some LTE/NR bands support Other PA only under ENDC& UL CA. Some LTE/NR bands support different PAs for some antennas, whether it is the maximum power of Main PA is higher than and very close to the other PA, for RF exposure, after verification all PAs in a same position, so the worst-case PA was chosen to perform full SAR testing to ensure the RF exposure is compliance and another PA verified the worst case. Since this application re-uses data collected on a similar device, FCC ID: IHDT56AU7 (reference model), so LTE B38 at Ant 0/1 and 5GNR n38 at Ant 0/1 are all evaluated for SAR testing in this report.

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 > not ½ 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 > 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; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B5 / 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 B5 / B38 SAR test was covered by B26 / 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 ≤ 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 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.
   e. 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
   f. For 5G FR1 n5/n7/n26/n41 /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.

ECI status description:

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

This WWAN bands enabled with MediaTek TA-SAR Gen2 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	Trigger conditions
Head SAR	ECI2	Earpiece On
Hotspot SAR	ECI7	Hotspot On
Body worn SAR	ECI3	Sensor On
Extremity SAR	ECI6	Sensor On
Body worn/ Extremity SAR	ECI4	Sensor Off

17.1 Head SAR

Plot No.	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)	Deviation
750MHz																							
	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	133322	683	1	22.56	24.00	1.393	-	-	-0.05	0.046	0.064	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	133322	683	1	21.49	23.00	1.416	-	-	0.18	0.000	0.000	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	133322	683	1	22.56	24.00	1.393	-	-	0.14	0.000	0.000	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	133322	683	1	21.49	23.00	1.416	-	-	-0.17	0.000	0.000	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	133322	683	1	22.56	24.00	1.393	-	-	0.17	0.075	0.104	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	133322	683	1	21.49	23.00	1.416	-	-	-0.05	0.055	0.078	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	133322	683	1	22.56	24.00	1.393	-	-	0.01	0.000	0.000	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	133322	683	1	21.49	23.00	1.416	-	-	0.1	0.000	0.000	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	133322	683	1	21.72	23.00	1.343	-	-	-0.17	0.337	0.453	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI 2	133322	683	1	20.68	22.00	1.355	-	-	0.04	0.285	0.386	
01	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	133322	683	1	21.72	23.00	1.343	-	-	-0.01	0.366	**0.491**	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	133322	683	1	20.68	22.00	1.355	-	-	-0.08	0.307	0.416	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	133322	683	1	21.72	23.00	1.343	-	-	0.05	0.163	0.219	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI 2	133322	683	1	20.68	22.00	1.355	-	-	0.06	0.136	0.184	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI 2	133322	683	1	21.72	23.00	1.343	-	-	-0.09	0.181	0.243	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI 2	133322	683	1	20.68	22.00	1.355	-	-	-0.08	0.154	0.209	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.84	24.00	1.306	-	-	0.08	0.000	0.000	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.73	24.00	1.340	-	-	0.01	0.039	0.052	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.84	24.00	1.306	-	-	0.03	0.000	0.000	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.73	24.00	1.340	-	-	-0.08	0.000	0.000	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.84	24.00	1.306	-	-	0.03	0.057	0.074	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	1	22.73	24.00	1.340	-	-	-0.08	0.054	0.072	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.84	24.00	1.306	-	-	0.1	0.000	0.000	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	1	22.73	24.00	1.340	-	-	-0.18	0.000	0.000	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI 2	136100	680.5	1	21.25	22.50	1.334	-	-	0.1	0.288	0.384	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI 2	136100	680.5	1	21.22	22.50	1.343	-	-	0.12	0.307	0.412	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI 2	136100	680.5	1	21.25	22.50	1.334	-	-	0.08	0.259	0.345	
02	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI 2	136100	680.5	1	21.22	22.50	1.343	-	-	-0.11	0.355	**0.477**	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECI 2	136100	680.5	1	21.25	22.50	1.334	-	-	-0.17	0.106	0.141	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECI 2	136100	680.5	1	21.22	22.50	1.343	-	-	-0.03	0.144	0.193	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	ECI 2	136100	680.5	1	21.25	22.50	1.334	-	-	0.14	0.123	0.164	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	ECI 2	136100	680.5	1	21.22	22.50	1.343	-	-	0.11	0.152	0.204	
835MHz																							
	1st	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 0	ECI 2	189	836.4	1	29.14	31.00	1.535	-	-	-0.12	0.174	0.267	0.499
	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 0	ECI 2	189	836.4	1	29.11	31.00	1.545	-	-	-0.07	0.154	0.238	
	1st	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 1	ECI 2	128	824.2	1	25.26	26.60	1.361	-	-	0.06	0.649	0.884	0.605
03	2nd	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 1	ECI 2	128	824.2	1	25.35	26.60	1.334	-	-	0.08	0.577	**0.769**	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	4182	836.4	1	22.81	24.00	1.315	-	-	0.15	0.177	0.233	0.556
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	4182	836.4	1	22.84	24.00	1.306	-	-	0.1	0.157	0.205	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	ECI 2	4132	826.4	1	22.08	23.40	1.355	-	-	0.03	0.654	0.886	0.352
04	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	ECI 2	4132	826.4	1	22.11	23.40	1.346	-	-	0.04	0.607	**0.817**	
	1st	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	22.52	24.00	1.406	-	-	0.05	0.134	0.188	0.213
	2nd	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	26865	831.5	1	22.47	24.00	1.422	-	-	-0.18	0.126	0.179	
	1st	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	26865	831.5	1	22.51	23.50	1.256	-	-	0.03	0.697	0.875	0.293
05	2nd	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	26865	831.5	1	22.53	23.50	1.250	-	-	-0.07	0.654	**0.818**	
	1st	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	22.73	24.00	1.340	-	-	0.1	0.128	0.171	0.399
	2nd	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	1	22.72	24.00	1.343	-	-	0.07	0.116	0.156	
	1st	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI 2	166300	831.5	1	22.69	24.00	1.352	-	-	-0.04	0.598	0.809	0.027
06	2nd	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI 2	166300	831.5	1	22.68	24.00	1.355	-	-	0.06	0.593	**0.804**	
1900MHz																							

	1st	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 2	ECI 2	661	1880	1	26.34	27.50	1.306	-	-	-0.05	0.112	0.146	0.308
	2nd	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 2	ECI 2	661	1880	1	26.38	27.50	1.294	-	-	-0.08	0.105	0.136	
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 1	ECI 2	512	1850.2	1	20.42	21.50	1.282	-	-	0.07	0.681	0.873	0.251
07	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 1	ECI 2	512	1850.2	1	20.41	21.50	1.285	-	-	-0.05	0.641	**0.824**	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 2	ECI 2	9400	1880	1	22.68	24.00	1.355	-	-	-0.09	0.161	0.218	0.183
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 2	ECI 2	9400	1880	1	22.67	24.00	1.358	-	-	-0.08	0.154	0.209	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	ECI 2	9262	1852.4	1	17.84	19.00	1.306	-	-	-0.07	0.675	0.882	0.253
08	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	ECI 2	9262	1852.4	1	17.76	19.00	1.330	-	-	-0.01	0.625	**0.832**	
	1st	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	18900	1880	1	22.49	24.00	1.416	-	-	0.17	0.147	0.208	0.370
	2nd	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	18900	1880	1	22.45	24.00	1.429	-	-	0.03	0.134	0.191	
	1st	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	18700	1860	1	17.53	18.60	1.279	-	-	-0.15	0.685	0.876	0.208
09	2nd	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	18700	1860	1	17.45	18.60	1.303	-	-	0.07	0.641	**0.835**	
2600MHz																							
	1st	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	21100	2535	1	22.67	24.00	1.358	-	-	-0.19	0.166	0.225	0.137
	2nd	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	21100	2535	1	22.61	24.00	1.377	-	-	0.01	0.158	0.218	
	1st	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	21100	2535	1	18.67	19.90	1.327	-	-	-0.08	0.664	0.881	0.085
10	2nd	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	21100	2535	1	18.69	19.90	1.321	-	-	0.07	0.654	**0.864**	
	1st	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	21350	2560	1	20.59	21.60	1.262	-	-	0.03	0.702	0.886	0.221
	2nd	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	21350	2560	1	20.61	21.60	1.256	-	-	0.09	0.670	0.842	
	1st	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	21100	2535	1	21.27	22.50	1.327	-	-	0.16	0.095	0.126	0.397
	2nd	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	21100	2535	1	19.79	21.00	1.321	-	-	0.08	0.087	0.115	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	40620	2593	1	22.61	24.00	1.377	62.9	1.006	0.12	0.063	0.087	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 2	ECI 2	40620+ 40818	2593+ 2612.8	1	22.53	24.00	1.403	62.9	1.006	0.16	0.058	0.082	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	ECI 2	40620	2593	1	21.56	23.00	1.393	62.9	1.006	0.08	0.050	0.070	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	ECI 2	40620	2593	1	22.61	24.00	1.377	62.9	1.006	-0.17	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	ECI 2	40620	2593	1	21.56	23.00	1.393	62.9	1.006	-0.03	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	ECI 2	40620	2593	1	22.61	24.00	1.377	62.9	1.006	0.14	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	ECI 2	40620	2593	1	21.56	23.00	1.393	62.9	1.006	0.11	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	ECI 2	40620	2593	1	22.61	24.00	1.377	62.9	1.006	-0.05	0.041	0.057	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	ECI 2	40620	2593	1	21.56	23.00	1.393	62.9	1.006	0.18	0.000	0.000	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	ECI 2	40620	2593	1	25.56	27.00	1.393	42.9	1.009	0.14	0.085	0.119	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 2	ECI 2	40620+ 40818	2593+ 2612.8	1	25.52	27.00	1.406	42.9	1.009	0.18	0.076	0.108	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	40620	2593	1	20.22	21.50	1.343	62.9	1.006	0.08	0.462	0.624	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	39750	2506	1	20.15	21.50	1.365	62.9	1.006	0.03	0.514	0.706	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	40185	2549.5	1	20.19	21.50	1.352	62.9	1.006	-0.08	0.511	0.695	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	41055	2636.5	1	20.15	21.50	1.365	62.9	1.006	-0.08	0.427	0.586	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI 2	41490	2680	1	20.18	21.50	1.355	62.9	1.006	0.1	0.422	0.575	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI 2	40620	2593	1	20.20	21.50	1.349	62.9	1.006	-0.18	0.366	0.497	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Right Cheek	5mm	Ant 1	ECI 2	40620	2593	1	20.19	21.50	1.352	62.9	1.006	0.14	0.363	0.494	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	40620	2593	1	20.22	21.50	1.343	62.9	1.006	0.11	0.565	0.763	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	39750	2506	1	20.15	21.50	1.365	62.9	1.006	0.18	0.609	0.836	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	40185	2549.5	1	20.19	21.50	1.352	62.9	1.006	0.14	0.649	0.883	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Right Tilted	0mm	Ant 1	ECI 2	40185+ 40383	2549.5+ 2569.3	1	20.15	21.50	1.365	62.9	1.006	0.03	0.632	0.868	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	41055	2636.5	1	20.15	21.50	1.365	62.9	1.006	-0.17	0.517	0.710	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	41490	2680	1	20.18	21.50	1.355	62.9	1.006	0.17	0.514	0.701	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	40620	2593	1	20.20	21.50	1.349	62.9	1.006	-0.05	0.441	0.598	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	39750	2506	1	20.13	21.50	1.371	62.9	1.006	0.1	0.486	0.670	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	40185	2549.5	1	20.16	21.50	1.361	62.9	1.006	-0.17	0.494	0.677	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	41055	2636.5	1	20.19	21.50	1.352	62.9	1.006	0.04	0.412	0.560	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI 2	41490	2680	1	20.13	21.50	1.371	62.9	1.006	-0.01	0.412	0.568	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Right Tilted	5mm	Ant 1	ECI 2	40620	2593	1	20.19	21.50	1.352	62.9	1.006	-0.08	0.439	0.597	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI 2	40620	2593	1	20.22	21.50	1.343	62.9	1.006	0.05	0.364	0.492	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI 2	40620	2593	1	20.20	21.50	1.349	62.9	1.006	0.03	0.286	0.388	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI 2	40620	2593	1	20.22	21.50	1.343	62.9	1.006	0.16	0.425	0.574	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI 2	40620	2593	1	20.20	21.50	1.349	62.9	1.006	-0.15	0.332	0.451	

	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	40185	2549.5	1	21.87	23.10	1.327	42.9	1.009	0.04	0.655	0.877	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Right Tilted	0mm	Ant 1	ECI 2	40185+40383	2549.5+2569.3	1	21.86	23.10	1.330	42.9	1.009	0.12	0.631	0.847	
	2nd	LTE Band 38_Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI 2	38000	2595	1	20.34	21.70	1.368	62.9	1.006	0.07	0.641	0.882	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	40620	2593	1	20.11	21.40	1.346	62.9	1.006	0.11	0.473	0.640	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	39750	2506	1	20.09	21.40	1.352	62.9	1.006	-0.17	0.358	0.487	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	40185	2549.5	1	20.06	21.40	1.361	62.9	1.006	-0.08	0.388	0.531	
11	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	41055	2636.5	1	20.07	21.40	1.358	62.9	1.006	-0.04	0.657	**0.898**	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	41055	2636.5	2	20.07	21.40	1.358	62.9	1.006	0.09	0.643	0.879	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 9	ECI 2	41055+41253	2636.5+2656.3	1	20.01	21.40	1.377	62.9	1.006	-0.08	0.639	0.885	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	41490	2680	1	20.08	21.40	1.355	62.9	1.006	-0.08	0.652	0.889	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 9	ECI 2	40620	2593	1	20.10	21.40	1.349	62.9	1.006	0.17	0.497	0.674	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 9	ECI 2	39750	2506	1	20.04	21.40	1.368	62.9	1.006	-0.04	0.471	0.648	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 9	ECI 2	40185	2549.5	1	20.08	21.40	1.355	62.9	1.006	-0.08	0.455	0.620	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 9	ECI 2	41055	2636.5	1	20.06	21.40	1.361	62.9	1.006	-0.13	0.531	0.727	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 9	ECI 2	41490	2680	1	20.02	21.40	1.374	62.9	1.006	-0.13	0.504	0.697	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 9	ECI 2	40620	2593	1	20.09	21.40	1.352	62.9	1.006	0.06	0.401	0.545	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 9	ECI 2	40620	2593	1	20.11	21.40	1.346	62.9	1.006	-0.03	0.097	0.131	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 9	ECI 2	40620	2593	1	20.10	21.40	1.349	62.9	1.006	-0.03	0.081	0.110	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	ECI 2	40620	2593	1	20.11	21.40	1.346	62.9	1.006	0.08	0.400	0.542	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 9	ECI 2	40620	2593	1	20.10	21.40	1.349	62.9	1.006	-0.16	0.336	0.456	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 9	ECI 2	40620	2593	1	20.11	21.40	1.346	62.9	1.006	0.16	0.055	0.074	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 9	ECI 2	40620	2593	1	20.10	21.40	1.349	62.9	1.006	0.05	0.049	0.066	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 9	ECI 2	41055	2636.5	1	21.66	23.00	1.361	42.9	1.009	-0.09	0.631	0.867	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 9	ECI 2	41055+41253	2636.5+2656.3	1	21.55	23.00	1.396	42.9	1.009	-0.09	0.611	0.861	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.08	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.01	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.03	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	40620	2593	1	18.95	20.00	1.274	62.9	1.006	-0.08	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	40620	2593	1	19.98	21.00	1.265	62.9	1.006	-0.08	0.032	0.041	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 0	ECI 2	40620+40818	2593+2612.8	1	19.92	21.00	1.282	62.9	1.006	0.06	0.029	0.037	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.1	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	40620	2593	1	19.98	21.00	1.265	62.9	1.006	-0.18	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.1	0.000	0.000	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.12	0.045	0.059	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 0	ECI 2	40620+40818	2593+2612.8	1	22.88	24.00	1.294	42.9	1.009	0.05	0.041	0.054	
	2nd	LTE Band 38 _Other PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	38000	2595	1	21.78	23.00	1.324	62.9	1.006	0.08	0.041	0.055	
	1st	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	ECI 2	507000	2535	1	22.48	24.00	1.419	-	-	0.12	0.113	0.160	0.458
	2nd	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	ECI 2	507000	2535	1	22.58	24.00	1.387	-	-	-0.17	0.104	0.144	
	1st	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI 2	507000	2535	1	19.25	20.30	1.274	-	-	0.07	0.693	0.883	0.040
12	2nd	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI 2	507000	2535	1	19.25	20.30	1.274	-	-	0.04	0.687	**0.875**	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	22.66	24.00	1.361	-	-	-0.05	0.082	0.112	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	22.63	24.00	1.371	-	-	-0.03	0.087	0.119	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	22.66	24.00	1.361	-	-	0.18	0.055	0.075	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	22.63	24.00	1.371	-	-	0.14	0.054	0.074	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	22.66	24.00	1.361	-	-	-0.17	0.080	0.109	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	ECI 2	518598	2592.99	1	22.63	24.00	1.371	-	-	0.17	0.084	0.115	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	22.66	24.00	1.361	-	-	-0.05	0.047	0.064	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	ECI 2	518598	2592.99	1	22.63	24.00	1.371	-	-	0.01	0.062	0.085	
	1st	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	18.26	19.40	1.300	-	-	-0.04	0.687	0.893	0.088
13	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	ECI 2	518598	2592.99	1	18.28	19.40	1.294	-	-	-0.01	0.676	**0.875**	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 9	ECI 2	518598	2592.99	1	21.86	23.20	1.361	-	-	0.08	0.533	0.726	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 9	ECI 2	518598	2592.99	1	21.84	23.20	1.368	-	-	-0.09	0.597	0.817	
	2nd	FR1 n41	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 9	ECI 2	518598	2592.99	1	21.79	23.00	1.321	-	-	0.01	0.512	0.677	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 9	ECI 2	518598	2592.99	1	21.86	23.20	1.361	-	-	0.03	0.078	0.106	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 9	ECI 2	518598	2592.99	1	21.84	23.20	1.368	-	-	-0.08	0.125	0.171	

	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	ECI 2	518598	2592.99	1	21.86	23.20	1.361	-	-	-0.08	0.548	0.746	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	ECI 2	518598	2592.99	1	21.84	23.20	1.368	-	-	0.1	0.499	0.682	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 9	ECI 2	518598	2592.99	1	21.86	23.20	1.361	-	-	-0.18	0.051	0.069	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 9	ECI 2	518598	2592.99	1	21.84	23.20	1.368	-	-	0.1	0.076	0.104	
	1st	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 0	ECI 2	518598	2592.99	1	22.82	24.00	1.312	-	-	-0.09	0.123	0.161	0.455
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 0	ECI 2	518598	2592.99	1	22.89	24.00	1.291	-	-	0.14	0.112	0.145	
3500MHz																							
	1st	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 7	ECI 2	42990	3540	1	18.62	19.60	1.253	62.9	1.006	0.07	0.706	0.890	
	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 7	ECI 2	42990	3540	1	18.61	19.60	1.256	62.9	1.006	-0.09	0.657	0.830	0.303
	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 7	ECI 2	42990	3540	2	18.61	19.60	1.256	62.9	1.006	0.01	0.649	0.820	
	1st	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	42990	3540	1	18.52	19.50	1.253	62.9	1.006	0.03	0.684	0.862	
14	2nd	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	42990	3540	1	15.57	16.60	1.268	62.9	1.006	-0.04	0.675	**0.861**	0.005
	2nd	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	42990	3540	2	15.57	16.60	1.268	62.9	1.006	0.02	0.668	0.852	
	1st	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 8	ECI 2	42590	3500	1	22.38	24.00	1.452	62.9	1.006	-0.09	0.217	0.317	0.681
	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 8	ECI 2	42590	3500	1	22.42	24.00	1.439	62.9	1.006	0.11	0.187	0.271	
	1st	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	42990	3540	1	22.49	24.00	1.416	62.9	1.006	-0.05	0.561	0.799	
	2nd	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	42990	3540	1	17.36	19.00	1.459	62.9	1.006	0.03	0.462	0.678	0.713
	2nd	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	ECI 2	42990	3540	2	17.36	19.00	1.459	62.9	1.006	0.09	0.455	0.668	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI 2	656000	3840	1	18.30	19.60	1.349	-	-	0.05	0.644	0.869	
15	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI 2	656000	3840	1	18.28	19.60	1.355	-	-	-0.07	0.659	**0.893**	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI 2	656000	3840	2	18.28	19.60	1.355	-	-	0.01	0.642	0.870	
	2nd	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI 2	656000	3840	1	18.26	19.60	1.361	-	-	-0.03	0.650	0.885	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	ECI 2	656000	3840	1	18.30	19.60	1.349	-	-	-0.15	0.258	0.348	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	ECI 2	656000	3840	1	18.28	19.60	1.355	-	-	0.02	0.290	0.393	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI 2	656000	3840	1	18.30	19.60	1.349	-	-	0.16	0.150	0.202	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI 2	656000	3840	1	18.28	19.60	1.355	-	-	0.13	0.160	0.217	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	ECI 2	656000	3840	1	18.30	19.60	1.349	-	-	-0.18	0.102	0.138	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	ECI 2	656000	3840	1	18.28	19.60	1.355	-	-	0.02	0.113	0.153	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	ECI 2	656000	3840	1	15.86	16.80	1.242	-	-	-0.03	0.446	0.554	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	ECI 2	656000	3840	1	15.85	16.80	1.245	-	-	0.16	0.463	0.576	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	ECI 2	656000	3840	1	15.86	16.80	1.242	-	-	-0.02	0.607	0.754	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 4	ECI 2	656000	3840	1	15.85	16.80	1.245	-	-	0.01	0.639	0.795	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	ECI 2	656000	3840	1	15.86	16.80	1.242	-	-	-0.06	0.528	0.656	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 4	ECI 2	656000	3840	1	15.85	16.80	1.245	-	-	-0.04	0.579	0.721	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	ECI 2	656000	3840	1	15.86	16.80	1.242	-	-	-0.17	0.676	0.839	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	ECI 2	656000	3840	1	15.85	16.80	1.245	-	-	-0.05	0.704	0.876	
	2nd	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 4	ECI 2	656000	3840	1	15.82	16.80	1.253	-	-	-0.1	0.676	0.847	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.21	27.00	1.199	-	-	0.18	0.384	0.461	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.19	27.00	1.205	-	-	-0.07	0.459	0.553	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.21	27.00	1.199	-	-	-0.17	0.141	0.169	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.19	27.00	1.205	-	-	-0.04	0.159	0.192	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.21	27.00	1.199	-	-	-0.05	0.229	0.275	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	ECI 2	656000	3840	1	26.19	27.00	1.205	-	-	0	0.252	0.304	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.21	27.00	1.199	-	-	-0.13	0.273	0.327	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	ECI 2	656000	3840	1	26.19	27.00	1.205	-	-	-0.01	0.275	0.331	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	ECI 2	656000	3840	1	19.85	20.80	1.245	-	-	-0.09	0.128	0.159	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	ECI 2	656000	3840	1	19.83	20.80	1.250	-	-	0.05	0.170	0.213	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	ECI 2	656000	3840	1	19.85	20.80	1.245	-	-	0.02	0.120	0.149	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	ECI 2	656000	3840	1	19.83	20.80	1.250	-	-	-0.13	0.153	0.191	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	ECI 2	656000	3840	1	19.85	20.80	1.245	-	-	0.17	0.656	0.816	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	ECI 2	656000	3840	1	19.83	20.80	1.250	-	-	0.16	0.702	0.878	
	2nd	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	ECI 2	656000	3840	1	19.82	20.80	1.253	-	-	0.06	0.653	0.818	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	1	19.85	20.80	1.245	-	-	0	0.314	0.391	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI 2	656000	3840	1	19.83	20.80	1.250	-	-	-0.04	0.380	0.475	

Plot No.	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)	Deviation
2450MHz																			
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	1	2412	1	19.10	20.50	1.380	99.14	1.009	0.04	0.959	1.336	
16	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	1	2412	1	19.12	20.50	1.374	99.14	1.009	0.06	0.943	**1.307**	0.095
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 3	Standalone	1	2412	2	19.12	20.50	1.374	99.14	1.009	0.02	0.928	1.287	
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	19.10	20.50	1.380	99.14	1.009	-0.08	0.690	0.961	0.124
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 3	Standalone	1	2412	1	19.12	20.50	1.374	99.14	1.009	0.03	0.674	0.934	
	1st	Bluetooth	1Mbps	Left Cheek	0mm	Ant 3	Full power	39	2441	1	16.40	17.00	1.148	76.45	1.090	0.08	0.363	0.454	0.048
17	2nd	Bluetooth	1Mbps	Left Cheek	0mm	Ant 3	Full power	39	2441	1	16.43	17.00	1.140	76.45	1.090	-0.08	0.361	**0.449**	
5000MHz																			
	1st	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 4	Standalone	54	5270	1	15.54	17.00	1.400	93.7	1.067	0.03	0.718	1.072	
18	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 4	Standalone	54	5270	1	15.56	17.00	1.393	93.7	1.067	0.03	0.703	**1.045**	0.111
	2nd	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 4	Standalone	54	5270	2	15.56	17.00	1.393	93.7	1.067	0.01	0.695	1.033	
	1st	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	106	5530	1	15.51	17.00	1.409	88.19	1.134	-0.07	0.699	1.117	
19	2nd	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	106	5530	1	15.55	17.00	1.396	88.19	1.134	0.01	0.687	**1.088**	0.114
	2nd	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	106	5530	2	15.55	17.00	1.396	88.19	1.134	0.05	0.674	1.067	
	1st	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	155	5775	1	16.47	18.00	1.422	88.19	1.134	-0.12	0.677	1.092	
20	2nd	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	155	5775	1	16.49	18.00	1.416	88.19	1.134	0.08	0.668	**1.072**	0.080
	2nd	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Standalone	155	5775	2	16.49	18.00	1.416	88.19	1.134	0.01	0.655	1.052	

17.2 Hotspot SAR

Plot No.	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)	Deviation
750MHz																							
	2nd	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	133322	683	1	22.56	24.00	1.393	-	-	0.01	0.253	0.352	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	133322	683	1	21.49	23.00	1.416	-	-	0.03	0.199	0.282	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	133322	683	1	22.56	24.00	1.393	-	-	-0.08	0.519	0.723	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	133322	683	1	21.49	23.00	1.416	-	-	-0.08	0.405	0.573	
21	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	133322	683	1	22.56	24.00	1.393	-	-	-0.02	0.566	**0.789**	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	133322	683	2	22.56	24.00	1.393	-	-	0.06	0.552	0.769	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI 7	133322	683	1	21.49	23.00	1.416	-	-	0.1	0.414	0.586	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	133322	683	1	22.56	24.00	1.393	-	-	-0.18	0.082	0.114	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	133322	683	1	21.49	23.00	1.416	-	-	0.1	0.065	0.092	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	133322	683	1	22.56	24.00	1.393	-	-	0.12	0.363	0.506	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	133322	683	1	21.49	23.00	1.416	-	-	0.08	0.286	0.405	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	133322	683	1	21.72	23.00	1.343	-	-	0.1	0.093	0.125	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	133322	683	1	20.68	22.00	1.355	-	-	0.04	0.076	0.103	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	133322	683	1	21.72	23.00	1.343	-	-	0.12	0.385	0.517	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	133322	683	2	21.72	23.00	1.343	-	-	0.09	0.369	0.495	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	133322	683	1	20.68	22.00	1.355	-	-	0.13	0.287	0.389	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	133322	683	1	21.72	23.00	1.343	-	-	0.11	0.165	0.222	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI 7	133322	683	1	20.68	22.00	1.355	-	-	-0.05	0.156	0.211	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Right Side	5mm	Ant 1	ECI 7	133322	683	1	21.72	23.00	1.343	-	-	0.18	0.053	0.071	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Right Side	5mm	Ant 1	ECI 7	133322	683	1	20.68	22.00	1.355	-	-	0.14	0.048	0.065	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	ECI 7	133322	683	1	21.72	23.00	1.343	-	-	-0.17	0.198	0.266	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	ECI 7	133322	683	1	20.68	22.00	1.355	-	-	0.17	0.266	0.360	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	136100	680.5	1	22.84	24.00	1.306	-	-	-0.05	0.180	0.235	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	136100	680.5	1	22.73	24.00	1.340	-	-	0.01	0.183	0.245	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	136100	680.5	1	22.84	24.00	1.306	-	-	0.1	0.367	0.479	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	136100	680.5	1	22.73	24.00	1.340	-	-	-0.17	0.352	0.472	
22	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.84	24.00	1.306	-	-	0.12	0.400	**0.522**	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.73	24.00	1.340	-	-	0.04	0.384	0.514	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.84	24.00	1.306	-	-	-0.01	0.057	0.074	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.73	24.00	1.340	-	-	-0.08	0.063	0.084	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.84	24.00	1.306	-	-	0.05	0.294	0.384	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	136100	680.5	1	22.73	24.00	1.340	-	-	0.06	0.294	0.394	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI 7	136100	680.5	1	21.25	22.50	1.334	-	-	-0.15	0.071	0.095	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI 7	136100	680.5	1	21.22	22.50	1.343	-	-	-0.06	0.092	0.124	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	136100	680.5	1	21.25	22.50	1.334	-	-	-0.14	0.261	0.348	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	136100	680.5	1	21.22	22.50	1.343	-	-	-0.14	0.329	0.442	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.25	22.50	1.334	-	-	0.12	0.128	0.171	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.22	22.50	1.343	-	-	0.03	0.175	0.235	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.25	22.50	1.334	-	-	0.18	0.039	0.052	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.22	22.50	1.343	-	-	0.16	0.054	0.073	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.25	22.50	1.334	-	-	-0.1	0.197	0.263	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Top Side	5mm	Ant 1	ECI 7	136100	680.5	1	21.22	22.50	1.343	-	-	0.07	0.227	0.305	
835MHz																							
	1st	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	251	848.8	1	29.12	30.00	1.225	-	-	0.01	1.060	1.298	
23	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	251	848.8	1	29.07	30.00	1.239	-	-	-0.02	1.030	**1.276**	0.074
	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	251	848.8	2	29.07	30.00	1.239	-	-	0.06	0.992	1.229	
	1st	GSM850	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	189	836.4	1	29.14	30.00	1.219	-	-	0.03	0.491	0.599	0.110
	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	189	836.4	1	29.11	30.00	1.227	-	-	0.05	0.476	0.584	
	1st	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	ECI 7	189	836.4	1	24.35	25.60	1.334	-	-	-0.15	0.464	0.619	0.404
	2nd	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	ECI 7	189	836.4	1	24.38	25.60	1.324	-	-	-0.05	0.426	0.564	

	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	4182	836.4	1	22.81	24.00	1.315	-	-	-0.1	0.959	1.261	0.215
24	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	4182	836.4	1	22.84	24.00	1.306	-	-	0.03	0.919	**1.200**	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI 7	4182	836.4	1	22.81	24.00	1.315	-	-	-0.13	0.715	0.940	0.065
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI 7	4182	836.4	1	22.84	24.00	1.306	-	-	0.05	0.709	0.926	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	ECI 7	4182	836.4	1	20.08	21.70	1.452	-	-	-0.07	0.425	0.617	0.085
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	ECI 7	4182	836.4	1	20.05	21.70	1.462	-	-	-0.07	0.414	0.605	
	1st	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	26865	831.5	1	22.52	24.00	1.406	-	-	-0.03	0.365	0.513	0.244
	2nd	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	26865	831.5	1	22.47	24.00	1.422	-	-	0.07	0.341	0.485	
	1st	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	26865	831.5	1	19.97	21.10	1.297	-	-	-0.09	0.481	0.624	0.141
25	2nd	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	26865	831.5	1	20.02	21.10	1.282	-	-	0.07	0.471	**0.604**	
	1st	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	166300	831.5	1	22.73	24.00	1.340	-	-	-0.16	0.611	0.819	0.080
26	2nd	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	166300	831.5	1	22.72	24.00	1.343	-	-	-0.08	0.599	**0.804**	
	1st	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	166300	831.5	1	19.71	20.90	1.315	-	-	-0.11	0.471	0.619	0.201
	2nd	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	166300	831.5	1	19.69	20.90	1.321	-	-	0.02	0.447	0.591	
1900MHz																							
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 2	ECI 7	661	1880	1	22.88	24.10	1.324	-	-	0.01	0.959	1.270	0.107
27	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 2	ECI 7	661	1880	1	22.85	24.10	1.334	-	-	0.07	0.929	**1.239**	
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 2	ECI 7	512	1850.2	1	22.86	24.10	1.330	-	-	-0.15	0.639	0.850	0.161
	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 2	ECI 7	512	1850.2	1	22.83	24.10	1.340	-	-	0.02	0.611	0.819	
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	ECI 7	661	1880	1	17.98	19.30	1.355	-	-	0.02	0.459	0.622	0.215
	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	ECI 7	661	1880	1	17.99	19.30	1.352	-	-	0.07	0.438	0.592	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 2	ECI 7	9262	1852.4	1	17.18	18.50	1.355	-	-	0.02	0.953	1.291	0.394
28	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 2	ECI 7	9262	1852.4	1	17.21	18.50	1.346	-	-	-0.03	0.876	**1.179**	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	ECI 7	9400	1880	1	15.34	16.60	1.337	-	-	-0.04	0.466	0.623	0.303
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	ECI 7	9400	1880	1	15.38	16.60	1.324	-	-	-0.11	0.439	0.581	
	1st	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	18700	1860	1	18.49	19.70	1.321	-	-	-0.04	0.972	1.284	0.092
29	2nd	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	18700	1860	1	18.51	19.70	1.315	-	-	0.12	0.956	**1.257**	
	1st	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	18700	1860	1	18.49	19.70	1.321	-	-	0.03	0.759	1.003	0.168
	2nd	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	18700	1860	1	18.51	19.70	1.315	-	-	0.01	0.734	0.965	
	1st	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	18900	1880	1	15.13	16.10	1.250	-	-	0.03	0.495	0.619	0.164
	2nd	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	18900	1880	1	15.16	16.10	1.242	-	-	-0.07	0.480	0.596	
2600MHz																							
	1st	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	21100	2535	1	18.16	19.00	1.213	-	-	-0.01	1.050	1.274	0.544
	2nd	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	21100	2535	1	18.15	19.00	1.216	-	-	0.07	0.924	1.124	
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	21100	2535	1	14.70	16.00	1.349	-	-	0.13	0.464	0.626	0.302
	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	21100	2535	1	14.65	16.00	1.365	-	-	0.13	0.428	0.584	
	1st	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	21100	2535	1	14.75	15.60	1.216	-	-	0.19	0.514	0.625	0.587
	2nd	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	21100	2535	1	14.73	15.60	1.222	-	-	-0.09	0.447	0.546	
	1st	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	21100	2535	1	21.27	22.30	1.268	-	-	0.07	1.020	1.293	0.017
30	2nd	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	21100	2535	1	19.79	21.00	1.321	-	-	0.02	0.975	**1.288**	
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	21100	2535	1	21.27	22.30	1.268	-	-	-0.14	0.933	1.183	0.041
	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	21100	2535	1	19.79	21.00	1.321	-	-	0.09	0.887	1.172	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	ECI 7	40620	2593	1	20.61	21.20	1.146	62.9	1.006	0.18	0.482	0.555	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	ECI 7	40620	2593	1	20.60	21.20	1.148	62.9	1.006	-0.1	0.367	0.424	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	40620	2593	1	20.61	21.20	1.146	62.9	1.006	0.01	0.611	0.704	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	39750	2506	1	20.58	21.20	1.153	62.9	1.006	-0.15	0.726	0.842	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	40185	2549.5	1	20.54	21.20	1.164	62.9	1.006	0.19	0.656	0.768	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	41055	2636.5	1	20.56	21.20	1.159	62.9	1.006	0.07	0.632	0.737	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	ECI 7	41490	2680	1	20.51	21.20	1.172	62.9	1.006	-0.18	0.663	0.782	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	ECI 7	40620	2593	1	20.60	21.20	1.148	62.9	1.006	0.03	0.478	0.552	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 2	ECI 7	40620	2593	1	20.57	21.20	1.156	62.9	1.006	-0.15	0.505	0.587	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	ECI 7	40620	2593	1	20.61	21.20	1.146	62.9	1.006	-0.15	0.075	0.086	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 2	ECI 7	40620	2593	1	20.60	21.20	1.148	62.9	1.006	0.11	0.054	0.062	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Side	5mm	Ant 2	ECI 7	40620	2593	1	20.61	21.20	1.146	62.9	1.006	-0.08	0.148	0.171	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Side	5mm	Ant 2	ECI 7	40620	2593	1	20.60	21.20	1.148	62.9	1.006	-0.17	0.118	0.136	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	40620	2593	1	20.61	21.20	1.146	62.9	1.006	-0.08	0.783	0.902	

	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	39750	2506	1	20.58	21.20	1.153	62.9	1.006	-0.01	0.926	1.075	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Bottom Side	5mm	Ant 2	ECI 7	39750+ 39948	2506+ 2525.8	1	20.46	21.20	1.186	62.9	1.006	-0.16	0.895	1.068	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	40185	2549.5	1	20.54	21.20	1.164	62.9	1.006	-0.04	0.894	1.047	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	41055	2636.5	1	20.56	21.20	1.159	62.9	1.006	-0.08	0.778	0.907	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	41490	2680	1	20.51	21.20	1.172	62.9	1.006	0.17	0.824	0.972	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 2	ECI 7	40620	2593	1	20.60	21.20	1.148	62.9	1.006	0.18	0.632	0.730	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 2	ECI 7	39750	2506	1	20.51	21.20	1.172	62.9	1.006	-0.04	0.729	0.860	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 2	ECI 7	40185	2549.5	1	20.54	21.20	1.164	62.9	1.006	-0.08	0.701	0.821	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 2	ECI 7	41055	2636.5	1	20.59	21.20	1.151	62.9	1.006	-0.13	0.613	0.710	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 2	ECI 7	41490	2680	1	20.53	21.20	1.167	62.9	1.006	-0.13	0.651	0.764	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 2	ECI 7	40620	2593	1	20.57	21.20	1.156	62.9	1.006	0.06	0.660	0.768	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 2	ECI 7	39750	2506	1	22.19	22.80	1.151	42.9	1.009	0.04	0.881	1.023	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Bottom Side	5mm	Ant 2	ECI 7	39750+ 39948	2506+ 2525.8	1	22.13	22.80	1.167	42.9	1.009	-0.02	0.843	0.992	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	40620	2593	1	17.73	19.00	1.340	62.9	1.006	-0.05	0.158	0.213	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	40620	2593	1	17.71	19.00	1.346	62.9	1.006	-0.08	0.124	0.168	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	1	17.73	19.00	1.340	62.9	1.006	0.16	0.449	0.605	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	39750	2506	1	17.68	19.00	1.355	62.9	1.006	0.05	0.429	0.585	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40185	2549.5	1	17.71	19.00	1.346	62.9	1.006	0.07	0.465	0.630	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI 7	40185+ 40383	2549.5+ 2569.3	1	17.64	19.00	1.368	62.9	1.006	0.11	0.449	0.618	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	41055	2636.5	1	17.67	19.00	1.358	62.9	1.006	-0.03	0.371	0.507	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	41490	2680	1	17.66	19.00	1.361	62.9	1.006	-0.15	0.364	0.499	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	1	17.71	19.00	1.346	62.9	1.006	0.02	0.339	0.459	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	1	17.70	19.00	1.349	62.9	1.006	0.16	0.352	0.478	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	40620	2593	1	17.73	19.00	1.340	62.9	1.006	-0.03	0.066	0.089	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI 7	40620	2593	1	17.71	19.00	1.346	62.9	1.006	0.07	0.052	0.070	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Side	5mm	Ant 1	ECI 7	40620	2593	1	17.73	19.00	1.340	62.9	1.006	0	0.019	0.026	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Side	5mm	Ant 1	ECI 7	40620	2593	1	17.71	19.00	1.346	62.9	1.006	0.01	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	ECI 7	40620	2593	1	17.73	19.00	1.340	62.9	1.006	-0.01	0.341	0.460	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	ECI 7	40620	2593	1	17.71	19.00	1.346	62.9	1.006	0.18	0.368	0.498	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40185	2549.5	1	19.29	20.60	1.352	42.9	1.009	0.07	0.441	0.602	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI 7	40185+ 40383	2549.5+ 2569.3	1	19.27	20.60	1.358	42.9	1.009	-0.05	0.432	0.592	
	2nd	LTE Band 38 _Other PA	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	38000	2595	1	18.81	20.10	1.346	62.9	1.006	0.07	0.459	0.621	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 9	ECI 7	40620	2593	1	13.19	14.50	1.352	62.9	1.006	0.05	0.085	0.116	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 9	ECI 7	40620	2593	1	13.17	14.50	1.358	62.9	1.006	0.02	0.070	0.096	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	ECI 7	40620	2593	1	13.19	14.50	1.352	62.9	1.006	-0.13	0.127	0.173	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	ECI 7	40620	2593	1	13.17	14.50	1.358	62.9	1.006	0.11	0.123	0.168	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	40620	2593	1	13.19	14.50	1.352	62.9	1.006	-0.16	0.447	0.608	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	39750	2506	1	13.07	14.50	1.390	62.9	1.006	-0.06	0.419	0.586	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	40185	2549.5	1	13.14	14.50	1.368	62.9	1.006	-0.14	0.434	0.597	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	41055	2636.5	1	13.06	14.50	1.393	62.9	1.006	-0.19	0.409	0.573	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	41490	2680	1	13.14	14.50	1.368	62.9	1.006	-0.03	0.454	0.625	
	2nd	LTE Band 41C	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	41490+ 41292	2680+ 2660.2	1	13.01	14.50	1.409	62.9	1.006	0.05	0.439	0.622	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 9	ECI 7	40620	2593	1	13.17	14.50	1.358	62.9	1.006	0.01	0.415	0.567	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Left Side	5mm	Ant 9	ECI 7	40620	2593	1	13.16	14.50	1.361	62.9	1.006	0.07	0.391	0.536	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Side	5mm	Ant 9	ECI 7	40620	2593	1	13.19	14.50	1.352	62.9	1.006	-0.02	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Side	5mm	Ant 9	ECI 7	40620	2593	1	13.17	14.50	1.358	62.9	1.006	-0.05	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 9	ECI 7	40620	2593	1	13.19	14.50	1.352	62.9	1.006	-0.13	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 9	ECI 7	40620	2593	1	13.17	14.50	1.358	62.9	1.006	0.08	0.000	0.000	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	41490	2680	1	14.79	16.10	1.352	42.9	1.009	0.07	0.438	0.598	
	2nd	LTE Band 41C PC2	20M	QPSK	1	0	-	Left Side	5mm	Ant 9	ECI 7	41490+ 41292	2680+ 2660.2	1	14.78	16.10	1.355	42.9	1.009	0.05	0.426	0.583	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.08	0.650	0.827	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	39750	2506	1	19.87	21.00	1.297	62.9	1.006	0.08	0.680	0.887	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	40185	2549.5	1	19.86	21.00	1.300	62.9	1.006	0.01	0.643	0.841	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	41055	2636.5	1	19.92	21.00	1.282	62.9	1.006	0.03	0.646	0.833	

	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	41490	2680	1	19.89	21.00	1.291	62.9	1.006	-0.08	0.655	0.851	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.01	0.584	0.748	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	39750	2506	1	18.87	20.00	1.297	62.9	1.006	-0.08	0.588	0.767	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	40185	2549.5	1	18.94	20.00	1.276	62.9	1.006	0.1	0.571	0.733	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	41055	2636.5	1	18.86	20.00	1.300	62.9	1.006	-0.18	0.551	0.721	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	41490	2680	1	18.90	20.00	1.288	62.9	1.006	0.1	0.548	0.710	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 0	ECI 7	40620	2593	1	18.93	20.00	1.279	62.9	1.006	0.12	0.607	0.781	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.03	0.807	1.027	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 0	ECI 7	40620+ 40818	2593+ 2612.8	1	19.92	21.00	1.282	62.9	1.006	-0.03	0.791	1.020	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	39750	2506	1	19.87	21.00	1.297	62.9	1.006	0.08	0.749	0.977	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	40185	2549.5	1	19.86	21.00	1.300	62.9	1.006	-0.17	0.760	0.994	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	41055	2636.5	1	19.92	21.00	1.282	62.9	1.006	-0.03	0.784	1.011	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	41490	2680	1	19.89	21.00	1.291	62.9	1.006	0.14	0.758	0.985	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	40620	2593	1	18.95	20.00	1.274	62.9	1.006	-0.08	0.632	0.810	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	39750	2506	1	18.87	20.00	1.297	62.9	1.006	0.11	0.632	0.825	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	40185	2549.5	1	18.94	20.00	1.276	62.9	1.006	-0.05	0.606	0.778	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	41055	2636.5	1	18.86	20.00	1.300	62.9	1.006	0.18	0.614	0.803	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	41490	2680	1	18.90	20.00	1.288	62.9	1.006	0.14	0.622	0.806	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 0	ECI 7	40620	2593	1	18.93	20.00	1.279	62.9	1.006	-0.17	0.565	0.727	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI 7	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.14	0.225	0.286	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI 7	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.1	0.166	0.213	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	40620	2593	1	19.98	21.00	1.265	62.9	1.006	-0.09	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.07	0.000	0.000	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.08	0.522	0.664	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	39750	2506	1	19.87	21.00	1.297	62.9	1.006	0.08	0.554	0.723	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	40185	2549.5	1	19.86	21.00	1.300	62.9	1.006	0.01	0.537	0.702	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	41055	2636.5	1	19.92	21.00	1.282	62.9	1.006	0.03	0.518	0.668	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI 7	41490	2680	1	19.89	21.00	1.291	62.9	1.006	-0.08	0.561	0.729	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI 7	40620	2593	1	18.95	20.00	1.274	62.9	1.006	-0.09	0.387	0.496	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	ECI 7	40620	2593	1	18.93	20.00	1.279	62.9	1.006	-0.17	0.528	0.680	
31	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.08	0.995	**1.296**	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 0	ECI 7	40620+ 40818	2593+ 2612.8	1	22.88	24.00	1.294	42.9	1.009	-0.13	0.913	1.192	
	2nd	LTE Band 38 _Other PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	38000	2595	1	20.31	22.10	1.510	62.9	1.006	-0.01	0.842	1.279	
	1st	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 2	ECI 7	507000	2535	1	18.54	19.80	1.337	-	-	0.07	0.956	1.278	0.152
32	2nd	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 2	ECI 7	507000	2535	1	18.55	19.80	1.334	-	-	-0.18	0.925	**1.234**	
	1st	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 2	ECI 7	507000	2535	1	18.54	19.80	1.337	-	-	0.02	0.596	0.797	0.155
	2nd	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 2	ECI 7	507000	2535	1	18.55	19.80	1.334	-	-	0.06	0.577	0.769	
	1st	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	507000	2535	1	15.33	16.20	1.222	-	-	-0.02	0.508	0.621	0.527
	2nd	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	507000	2535	1	15.35	16.20	1.216	-	-	-0.08	0.452	0.550	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 2	ECI 7	518598	2592.99	1	18.16	19.30	1.300	-	-	0.12	0.398	0.517	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 2	ECI 7	518598	2592.99	1	18.09	19.30	1.321	-	-	0.08	0.442	0.584	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 2	ECI 7	518598	2592.99	1	18.16	19.30	1.300	-	-	-0.17	0.514	0.668	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	ECI 7	518598	2592.99	1	18.09	19.30	1.321	-	-	0.09	0.581	0.768	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.16	19.30	1.300	-	-	-0.03	0.054	0.070	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.09	19.30	1.321	-	-	0.14	0.063	0.083	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.16	19.30	1.300	-	-	0.11	0.125	0.163	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.09	19.30	1.321	-	-	-0.05	0.137	0.181	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.16	19.30	1.300	-	-	0.18	0.876	1.139	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.09	19.30	1.321	-	-	-0.13	0.961	1.270	
	2nd	FR1 n41	100M	QPSK	270	0	DFT-SCS-30KHz	Bottom Side	5mm	Ant 2	ECI 7	518598	2592.99	1	18.04	19.30	1.337	-	-	0.14	0.748	1.000	
	1st	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI 7	518598	2592.99	1	15.80	17.00	1.318	-	-	-0.04	0.473	0.624	0.077
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI 7	518598	2592.99	1	15.83	17.00	1.309	-	-	-0.17	0.468	0.613	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	ECI 7	518598	2592.99	1	15.25	16.50	1.334	-	-	-0.08	0.094	0.125	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	ECI 7	518598	2592.99	1	15.24	16.50	1.337	-	-	0.05	0.151	0.202	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	ECI 7	518598	2592.99	1	15.25	16.50	1.334	-	-	0.06	0.152	0.203	

	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	ECI 7	518598	2592.99	1	15.24	16.50	1.337	-	-	-0.09	0.264	0.353	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.25	16.50	1.334	-	-	-0.08	0.333	0.444	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.24	16.50	1.337	-	-	0.07	0.469	0.627	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.25	16.50	1.334	-	-	0.13	0.000	0.000	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.24	16.50	1.337	-	-	0.12	0.000	0.000	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.25	16.50	1.334	-	-	0.03	0.006	0.008	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 9	ECI 7	518598	2592.99	1	15.24	16.50	1.337	-	-	0.18	0.008	0.011	
	1st	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 0	ECI 7	518598	2592.99	1	21.31	22.40	1.285	-	-	-0.14	0.999	1.284	0.034
33	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 0	ECI 7	518598	2592.99	1	21.29	22.40	1.291	-	-	0.08	0.987	**1.274**	
	1st	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 0	ECI 7	518598	2592.99	1	21.31	22.40	1.285	-	-	0	0.963	1.238	0.046
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 0	ECI 7	518598	2592.99	1	21.29	22.40	1.291	-	-	0.05	0.949	1.225	
3500MHz																							
	1st	LTE Band 42	20M	QPSK	1	0	-	Left Side	5mm	Ant 7	ECI 7	42590	3500	1	15.95	17.20	1.334	62.9	1.006	0.05	0.463	0.621	0.085
	2nd	LTE Band 42	20M	QPSK	1	0	-	Left Side	5mm	Ant 7	ECI 7	42590	3500	1	15.98	17.20	1.324	62.9	1.006	-0.03	0.457	0.609	
	1st	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	42590	3500	1	11.01	12.50	1.409	62.9	1.006	0.01	0.436	0.618	0.253
	2nd	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	42590	3500	1	11.05	12.50	1.396	62.9	1.006	-0.02	0.415	0.583	
	1st	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 8	ECI 7	42590	3500	1	21.93	22.70	1.194	62.9	1.006	0.06	1.080	1.297	
34	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 8	ECI 7	42590	3500	1	21.95	22.70	1.189	62.9	1.006	-0.08	0.923	**1.104**	0.700
	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 8	ECI 7	42590	3500	2	21.95	22.70	1.189	62.9	1.006	0.09	0.914	1.093	
	1st	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 5	ECI 7	42590	3500	1	16.47	17.50	1.268	62.9	1.006	0.04	0.492	0.627	0.098
	2nd	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 5	ECI 7	42590	3500	1	16.51	17.50	1.256	62.9	1.006	-0.09	0.485	0.613	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 7	ECI 7	656000	3840	1	15.86	17.00	1.300	-	-	-0.16	0.177	0.230	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 7	ECI 7	656000	3840	1	15.85	17.00	1.303	-	-	-0.18	0.201	0.262	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 7	ECI 7	656000	3840	1	15.86	17.00	1.300	-	-	0.11	0.362	0.471	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 7	ECI 7	656000	3840	1	15.85	17.00	1.303	-	-	0.03	0.476	0.620	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 7	ECI 7	656000	3840	1	15.86	17.00	1.300	-	-	-0.1	0.406	0.528	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 7	ECI 7	656000	3840	1	15.85	17.00	1.303	-	-	-0.01	0.466	0.607	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 7	ECI 7	656000	3840	1	15.86	17.00	1.300	-	-	-0.06	0.007	0.009	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 7	ECI 7	656000	3840	1	15.85	17.00	1.303	-	-	-0.17	0.014	0.018	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 7	ECI 7	656000	3840	1	15.86	17.00	1.300	-	-	-0.01	0.047	0.061	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 7	ECI 7	656000	3840	1	15.85	17.00	1.303	-	-	-0.11	0.053	0.069	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 4	ECI 7	656000	3840	1	11.75	12.70	1.245	-	-	-0.03	0.123	0.153	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 4	ECI 7	656000	3840	1	11.74	12.70	1.247	-	-	0.17	0.127	0.158	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 4	ECI 7	656000	3840	1	11.75	12.70	1.245	-	-	0.16	0.272	0.339	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 4	ECI 7	656000	3840	1	11.74	12.70	1.247	-	-	0.05	0.286	0.357	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 4	ECI 7	656000	3840	1	11.75	12.70	1.245	-	-	-0.13	0.033	0.041	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 4	ECI 7	656000	3840	1	11.74	12.70	1.247	-	-	-0.01	0.040	0.050	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 4	ECI 7	656000	3840	1	11.75	12.70	1.245	-	-	-0.11	0.022	0.027	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 4	ECI 7	656000	3840	1	11.74	12.70	1.247	-	-	0.19	0.022	0.027	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 4	ECI 7	656000	3840	1	11.75	12.70	1.245	-	-	-0.14	0.414	0.515	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 4	ECI 7	656000	3840	1	11.74	12.70	1.247	-	-	-0.1	0.503	0.627	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 8	ECI 7	656000	3840	1	20.79	22.40	1.449	-	-	0.19	0.189	0.274	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 8	ECI 7	656000	3840	1	20.78	22.40	1.452	-	-	-0.06	0.187	0.272	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 8	ECI 7	656000	3840	1	20.79	22.40	1.449	-	-	0	0.296	0.429	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 8	ECI 7	656000	3840	1	20.78	22.40	1.452	-	-	-0.03	0.308	0.447	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 8	ECI 7	656000	3840	1	20.79	22.40	1.449	-	-	0.07	0.029	0.042	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 8	ECI 7	656000	3840	1	20.78	22.40	1.452	-	-	-0.12	0.029	0.042	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 8	ECI 7	656000	3840	1	20.79	22.40	1.449	-	-	-0.03	0.817	1.184	
35	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 8	ECI 7	656000	3840	1	20.78	22.40	1.452	-	-	0.03	0.881	**1.279**	
	2nd	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Right Side	5mm	Ant 8	ECI 7	656000	3840	1	20.73	22.40	1.469	-	-	0.02	0.858	1.260	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	5mm	Ant 8	ECI 7	656000	3840	1	20.79	22.40	1.449	-	-	0.12	0.070	0.101	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 8	ECI 7	656000	3840	1	20.78	22.40	1.452	-	-	0.02	0.074	0.107	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 5	ECI 7	656000	3840	1	16.95	17.90	1.245	-	-	0.05	0.128	0.159	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 5	ECI 7	656000	3840	1	16.93	17.90	1.250	-	-	0	0.165	0.206	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 5	ECI 7	656000	3840	1	16.95	17.90	1.245	-	-	0.07	0.390	0.485	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 5	ECI 7	656000	3840	1	16.93	17.90	1.250	-	-	0.15	0.470	0.588	

	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 5	ECI 7	656000	3840	1	16.95	17.90	1.245	-	-	-0.08	0.025	0.031	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 5	ECI 7	656000	3840	1	16.93	17.90	1.250	-	-	-0.08	0.027	0.034	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 5	ECI 7	656000	3840	1	16.95	17.90	1.245	-	-	-0.13	0.453	0.564	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 5	ECI 7	656000	3840	1	16.93	17.90	1.250	-	-	-0.04	0.497	0.621	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 5	ECI 7	656000	3840	1	16.95	17.90	1.245	-	-	-0.11	0.077	0.096	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 5	ECI 7	656000	3840	1	16.93	17.90	1.250	-	-	0.03	0.102	0.128	

Plot No.	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)	Deviation
2450MHz																			
	1st	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	Hotspot	1	2412	1	19.10	20.50	1.380	99.14	1.009	-0.19	0.448	0.624	0.251
36	2nd	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 3	Hotspot	1	2412	1	19.12	20.50	1.374	99.14	1.009	-0.08	0.425	**0.589**	
	1st	Bluetooth	1Mbps	Back	5mm	Ant 3	Full power	39	2441	1	16.40	17.00	1.148	76.45	1.090	0.06	0.243	0.304	0.131
37	2nd	Bluetooth	1Mbps	Back	5mm	Ant 3	Full power	39	2441	1	16.43	17.00	1.140	76.45	1.090	-0.08	0.237	**0.295**	
5000MHz																			
	1st	WLAN5.2GHz	802.11n-HT40 MCS0	Back	5mm	Ant 4	Hotspot	46	5230	1	17.03	18.50	1.403	93.7	1.067	-0.04	0.386	0.578	0.239
38	2nd	WLAN5.2GHz	802.11n-HT40 MCS0	Back	5mm	Ant 4	Hotspot	46	5230	1	16.98	18.50	1.419	93.7	1.067	0.06	0.361	**0.547**	
	1st	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4	Hotspot	155	5775	1	16.95	18.50	1.429	88.19	1.134	0.14	0.379	0.614	0.486
39	2nd	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4	Hotspot	155	5775	1	16.99	18.50	1.416	88.19	1.134	-0.17	0.342	**0.549**	

17.3 Body Worn Accessory SAR

Plot No.	No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Headset	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)	Deviation
750MHz																								
	2nd	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	133322	683	1	22.56	24.00	1.393	-	-	-0.15	0.220	0.306	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	133322	683	1	21.49	23.00	1.416	-	-	0.11	0.174	0.246	
40	2nd	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	133322	683	1	22.56	24.00	1.393	-	-	-0.07	0.452	**0.630**	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	133322	683	1	21.49	23.00	1.416	-	-	-0.02	0.353	0.500	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	ECI 3	133322	683	1	21.72	23.00	1.343	-	-	0.1	0.093	0.125	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	ECI 3	133322	683	1	20.68	22.00	1.355	-	-	0.04	0.076	0.103	
	2nd	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	133322	683	1	21.72	23.00	1.343	-	-	0.12	0.385	0.517	
	2nd	LTE Band 71	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	133322	683	1	20.68	22.00	1.355	-	-	0.13	0.287	0.389	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	-	ECI 3	136100	680.5	1	22.84	24.00	1.306	-	-	-0.18	0.164	0.214	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 0	-	ECI 3	136100	680.5	1	22.73	24.00	1.340	-	-	-0.11	0.167	0.224	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	-	ECI 3	136100	680.5	1	22.84	24.00	1.306	-	-	0.07	0.335	0.438	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	-	ECI 3	136100	680.5	1	22.73	24.00	1.340	-	-	-0.16	0.321	0.430	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 1	-	ECI 3	136100	680.5	1	21.25	22.50	1.334	-	-	-0.15	0.071	0.095	
	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 1	-	ECI 3	136100	680.5	1	21.22	22.50	1.343	-	-	-0.06	0.092	0.124	
	2nd	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	136100	680.5	1	21.25	22.50	1.334	-	-	-0.14	0.261	0.348	
41	2nd	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	136100	680.5	1	21.22	22.50	1.343	-	-	-0.14	0.329	**0.442**	
835MHz																								
	1st	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	-	ECI 3	251	848.8	1	29.12	30.00	1.225	-	-	0.01	1.060	1.298	0.074
42	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	-	ECI 3	251	848.8	1	29.07	30.00	1.239	-	-	-0.02	1.030	**1.276**	
	1st	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 0	-	ECI 3	189	836.4	1	29.14	30.00	1.219	-	-	0.17	0.421	0.513	0.051
	2nd	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 0	-	ECI 3	189	836.4	1	29.11	30.00	1.227	-	-	0.06	0.413	0.507	
	1st	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	-	ECI 3	128	824.2	1	25.26	26.60	1.361	-	-	-0.04	0.648	0.882	0.248
	2nd	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	-	ECI 3	128	824.2	1	25.28	26.60	1.355	-	-	-0.11	0.615	0.833	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI 3	4182	836.4	1	22.81	24.00	1.315	-	-	-0.1	0.959	1.261	0.215
43	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI 3	4182	836.4	1	22.84	24.00	1.306	-	-	0.03	0.919	**1.200**	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	ECI 3	4182	836.4	1	22.81	24.00	1.315	-	-	0.06	0.481	0.633	0.262
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	ECI 3	4182	836.4	1	22.84	24.00	1.306	-	-	0.03	0.456	0.596	
	1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	ECI 3	4132	826.4	1	21.53	22.90	1.371	-	-	-0.12	0.638	0.875	0.085
	2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	ECI 3	4132	826.4	1	21.55	22.90	1.365	-	-	-0.05	0.629	0.858	
	1st	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	26865	831.5	1	22.52	24.00	1.406	-	-	-0.03	0.365	0.513	0.244
	2nd	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	26865	831.5	1	22.47	24.00	1.422	-	-	0.07	0.341	0.485	
	1st	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	26865	831.5	1	21.57	22.70	1.297	-	-	-0.05	0.689	0.894	
44	2nd	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	26865	831.5	1	21.55	22.70	1.303	-	-	-0.04	0.666	**0.868**	0.214
	2nd	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	26865	831.5	2	21.55	22.70	1.303	-	-	0.09	0.653	0.851	
	1st	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	-	ECI 3	166300	831.5	1	22.73	24.00	1.340	-	-	-0.16	0.611	0.819	0.080
45	2nd	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	-	ECI 3	166300	831.5	1	22.72	24.00	1.343	-	-	-0.08	0.599	**0.804**	
	1st	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	166300	831.5	1	21.22	22.40	1.312	-	-	0.09	0.673	0.883	0.555
	2nd	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	166300	831.5	1	21.25	22.40	1.303	-	-	-0.15	0.596	0.777	
1900MHz																								
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 2	-	ECI 3	512	1850.2	1	23.28	24.40	1.294	-	-	0.09	0.991	1.283	0.229
46	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 2	-	ECI 3	512	1850.2	1	23.32	24.40	1.282	-	-	0.07	0.949	**1.217**	
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 2	-	ECI 3	512	1850.2	1	23.28	24.40	1.294	-	-	0.05	0.807	1.044	0.235
	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 2	-	ECI 3	512	1850.2	1	23.32	24.40	1.282	-	-	0.03	0.771	0.989	
	1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	-	ECI 3	512	1850.2	1	19.34	20.60	1.337	-	-	0.02	0.667	0.892	0.313
	2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 1	-	ECI 3	512	1850.2	1	19.37	20.60	1.327	-	-	0.03	0.625	0.830	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 2	-	ECI 3	9262	1852.4	1	20.17	21.50	1.358	-	-	-0.02	0.937	1.273	0.021
47	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 2	-	ECI 3	9262	1852.4	1	20.18	21.50	1.355	-	-	0.04	0.935	**1.267**	
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 2	-	ECI 3	9262	1852.4	2	20.18	21.50	1.355	-	-	0.09	0.918	1.244	
	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	-	ECI 3	9262	1852.4	1	20.17	21.50	1.358	-	-	0.11	0.787	1.069	0.094
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	-	ECI 3	9262	1852.4	1	20.18	21.50	1.355	-	-	0.03	0.772	1.046	

	1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	ECI 3	9262	1852.4	1	16.87	18.20	1.358	-	-	-0.09	0.648	0.880	0.030
	2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	ECI 3	9262	1852.4	1	16.88	18.20	1.355	-	-	0.07	0.645	0.874	
	1st	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	18700	1860	1	19.98	21.10	1.294	-	-	-0.19	0.996	1.289	0.657
48	2nd	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	18700	1860	1	20.01	21.10	1.285	-	-	0.13	0.862	**1.108**	
	1st	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	18700	1860	1	16.54	17.60	1.276	-	-	-0.08	0.692	0.883	
	2nd	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	18700	1860	1	16.52	17.60	1.282	-	-	-0.07	0.683	0.876	0.035
	2nd	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	18700	1860	2	16.52	17.60	1.282	-	-	0.09	0.677	0.868	
2600MHz																								
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	20850	2510	1	18.68	19.70	1.265	-	-	-0.08	1.010	1.277	0.451
	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	20850	2510	1	18.66	19.70	1.271	-	-	-0.03	0.906	1.151	
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	21350	2560	1	16.18	17.10	1.236	-	-	-0.06	0.713	0.881	0.490
	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	21350	2560	1	16.21	17.10	1.227	-	-	-0.14	0.641	0.787	
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	21350	2560	1	19.13	20.20	1.279	-	-	-0.12	0.687	0.879	0.125
	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	21350	2560	1	19.17	20.20	1.268	-	-	0.09	0.674	0.854	
	1st	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	21100	2535	1	21.27	22.50	1.327	-	-	-0.14	0.953	1.265	0.273
49	2nd	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	21100	2535	1	19.79	21.00	1.321	-	-	0.04	0.899	**1.188**	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	ECI 3	40620	2593	1	21.15	22.70	1.429	62.9	1.006	0.17	0.581	0.835	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	ECI 3	39750	2506	1	21.05	22.70	1.462	62.9	1.006	0.08	0.534	0.785	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	ECI 3	40185	2549.5	1	21.13	22.70	1.435	62.9	1.006	0.01	0.542	0.783	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	ECI 3	41055	2636.5	1	21.08	22.70	1.452	62.9	1.006	0.03	0.518	0.757	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	ECI 3	41490	2680	1	21.09	22.70	1.449	62.9	1.006	-0.08	0.521	0.759	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	ECI 3	40620	2593	1	21.13	22.70	1.435	62.9	1.006	-0.05	0.443	0.640	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	ECI 3	39750	2506	1	20.99	22.70	1.483	62.9	1.006	-0.08	0.421	0.628	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	ECI 3	40185	2549.5	1	21.06	22.70	1.459	62.9	1.006	0.1	0.475	0.697	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	ECI 3	41055	2636.5	1	21.02	22.70	1.472	62.9	1.006	-0.18	0.510	0.755	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	ECI 3	41490	2680	1	21.03	22.70	1.469	62.9	1.006	0.1	0.483	0.714	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 2	-	ECI 3	40620	2593	1	21.08	22.70	1.452	62.9	1.006	0.05	0.538	0.786	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	40620	2593	1	21.15	22.70	1.429	62.9	1.006	0.01	0.737	1.059	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	39750	2506	1	21.05	22.70	1.462	62.9	1.006	-0.01	0.875	1.287	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	39750	2506	2	21.05	22.70	1.462	62.9	1.006	0.03	0.862	1.268	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 2	-	ECI 3	39750+ 39948	2506+ 2525.8	1	21.05	22.70	1.462	62.9	1.006	0.01	0.806	1.186	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	Headset	ECI 3	39750	2506	1	21.05	22.70	1.462	62.9	1.006	-0.12	0.864	1.271	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	40185	2549.5	1	21.13	22.70	1.435	62.9	1.006	-0.17	0.791	1.142	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	41055	2636.5	1	21.08	22.70	1.452	62.9	1.006	0.04	0.762	1.113	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	41490	2680	1	21.09	22.70	1.449	62.9	1.006	-0.01	0.800	1.166	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	ECI 3	40620	2593	1	21.13	22.70	1.435	62.9	1.006	-0.08	0.676	0.976	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	ECI 3	39750	2506	1	20.99	22.70	1.483	62.9	1.006	0.12	0.625	0.932	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	ECI 3	40185	2549.5	1	21.06	22.70	1.459	62.9	1.006	0.08	0.618	0.907	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	ECI 3	41055	2636.5	1	21.02	22.70	1.472	62.9	1.006	-0.17	0.598	0.886	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	ECI 3	41490	2680	1	21.03	22.70	1.469	62.9	1.006	-0.03	0.576	0.851	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 2	-	ECI 3	40620	2593	1	21.08	22.70	1.452	62.9	1.006	0.05	0.609	0.890	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	ECI 3	39750	2506	1	22.69	24.30	1.449	42.9	1.009	-0.17	0.868	1.269	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 2	-	ECI 3	39750+ 39948	2506+ 2525.8	1	22.65	24.30	1.462	42.9	1.009	-0.15	0.801	1.182	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	14mm	Ant 2	-	ECI 4	40620	2593	1	22.61	24.00	1.377	62.9	1.006	0.08	0.194	0.269	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Front	14mm	Ant 2	-	ECI 4	40620	2593	1	25.56	27.00	1.393	42.9	1.009	0.01	0.224	0.315	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 2	-	ECI 4	40620	2593	1	22.61	24.00	1.377	62.9	1.006	0.03	0.218	0.302	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	15mm	Ant 2	-	ECI 4	40620	2593	1	25.56	27.00	1.393	42.9	1.009	-0.08	0.276	0.388	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	ECI 3	40620	2593	1	19.25	20.40	1.303	62.9	1.006	0.06	0.230	0.302	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	ECI 3	40620	2593	1	19.24	20.40	1.306	62.9	1.006	-0.09	0.182	0.239	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	40620	2593	1	19.25	20.40	1.303	62.9	1.006	-0.08	0.641	0.840	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	39750	2506	1	19.21	20.40	1.315	62.9	1.006	0.12	0.626	0.828	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	40185	2549.5	1	19.23	20.40	1.309	62.9	1.006	-0.03	0.679	0.894	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	40185	2549.5	2	19.23	20.40	1.309	62.9	1.006	0.05	0.665	0.876	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	ECI 3	40185+ 40383	2549.5+ 2569.3	1	19.18	20.40	1.324	62.9	1.006	0.19	0.664	0.885	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	41055	2636.5	1	19.18	20.40	1.324	62.9	1.006	0.03	0.541	0.721	

	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	41490	2680	1	19.15	20.40	1.334	62.9	1.006	0.18	0.532	0.714	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	40620	2593	1	19.24	20.40	1.306	62.9	1.006	0.16	0.495	0.650	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	39750	2506	1	19.16	20.40	1.330	62.9	1.006	0.07	0.503	0.673	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	40185	2549.5	1	19.15	20.40	1.334	62.9	1.006	0.18	0.409	0.549	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	41055	2636.5	1	19.15	20.40	1.334	62.9	1.006	-0.1	0.432	0.580	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	ECI 3	41490	2680	1	19.19	20.40	1.321	62.9	1.006	0.01	0.427	0.568	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	ECI 3	40620	2593	1	19.23	20.40	1.309	62.9	1.006	-0.15	0.515	0.678	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	40185	2549.5	1	20.79	22.00	1.321	42.9	1.009	0.19	0.622	0.829	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 1	-	ECI 3	40185+40383	2549.5+2569.3	1	20.75	22.00	1.334	42.9	1.009	0.07	0.613	0.825	
	2nd	LTE Band 38 _Other PA	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	ECI 3	38000	2595	1	20.34	21.50	1.306	62.9	1.006	-0.07	0.672	0.883	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	ECI 4	40620	2593	1	21.72	23.00	1.343	62.9	1.006	0.14	0.108	0.146	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Front	14mm	Ant 1	-	ECI 4	40620	2593	1	24.59	26.00	1.384	42.9	1.009	0.11	0.124	0.173	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 1	-	ECI 4	40620	2593	1	21.72	23.00	1.343	62.9	1.006	-0.05	0.185	0.250	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	15mm	Ant 1	-	ECI 4	40620	2593	1	24.59	26.00	1.384	42.9	1.009	0.18	0.244	0.341	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 9	-	ECI 3	40620	2593	1	17.63	19.00	1.371	62.9	1.006	0.07	0.240	0.331	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 9	-	ECI 3	40620	2593	1	17.62	19.00	1.374	62.9	1.006	-0.18	0.198	0.274	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	40620	2593	1	17.63	19.00	1.371	62.9	1.006	0.03	0.557	0.768	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	39750	2506	1	17.55	19.00	1.396	62.9	1.006	-0.15	0.470	0.660	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	40185	2549.5	1	17.55	19.00	1.396	62.9	1.006	0.11	0.556	0.781	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	41055	2636.5	1	17.50	19.00	1.413	62.9	1.006	-0.08	0.554	0.787	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	41490	2680	1	17.57	19.00	1.390	62.9	1.006	0.11	0.638	0.892	
	2nd	LTE Band 41C	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	41490+41292	2680+2660.2	1	17.54	19.00	1.400	62.9	1.006	0.03	0.625	0.880	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	-	ECI 3	40620	2593	1	17.62	19.00	1.374	62.9	1.006	-0.17	0.446	0.616	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	-	ECI 3	39750	2506	1	17.48	19.00	1.419	62.9	1.006	-0.04	0.434	0.620	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	-	ECI 3	40185	2549.5	1	17.56	19.00	1.393	62.9	1.006	-0.08	0.401	0.562	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	-	ECI 3	41055	2636.5	1	17.50	19.00	1.413	62.9	1.006	0.17	0.438	0.622	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 9	-	ECI 3	41490	2680	1	17.52	19.00	1.406	62.9	1.006	0.18	0.498	0.704	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 9	-	ECI 3	40620	2593	1	17.61	19.00	1.377	62.9	1.006	-0.04	0.329	0.456	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	41490	2680	1	19.14	20.60	1.400	42.9	1.009	-0.08	0.621	0.877	
	2nd	LTE Band 41C PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	ECI 3	41490+41292	2680+2660.2	1	19.15	20.60	1.396	42.9	1.009	-0.18	0.614	0.865	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	14mm	Ant 9	-	ECI 4	40620	2593	1	18.11	19.30	1.315	62.9	1.006	0.12	0.175	0.232	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Front	14mm	Ant 9	-	ECI 4	40620	2593	1	19.73	20.90	1.309	42.9	1.009	0.08	0.204	0.269	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 9	-	ECI 4	40620	2593	1	18.11	19.30	1.315	62.9	1.006	-0.17	0.235	0.311	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	15mm	Ant 9	-	ECI 4	40620	2593	1	19.73	20.90	1.309	42.9	1.009	-0.03	0.242	0.320	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.08	0.650	0.827	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	39750	2506	1	19.87	21.00	1.297	62.9	1.006	0.08	0.680	0.887	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	40185	2549.5	1	19.86	21.00	1.300	62.9	1.006	0.01	0.643	0.841	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	41055	2636.5	1	19.92	21.00	1.282	62.9	1.006	0.03	0.646	0.833	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI 3	41490	2680	1	19.89	21.00	1.291	62.9	1.006	-0.08	0.655	0.851	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	40620	2593	1	18.95	20.00	1.274	62.9	1.006	0.01	0.584	0.748	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	39750	2506	1	18.87	20.00	1.297	62.9	1.006	-0.08	0.588	0.767	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	40185	2549.5	1	18.94	20.00	1.276	62.9	1.006	0.1	0.571	0.733	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	41055	2636.5	1	18.86	20.00	1.300	62.9	1.006	-0.18	0.551	0.721	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI 3	41490	2680	1	18.90	20.00	1.288	62.9	1.006	0.1	0.548	0.710	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 0	-	ECI 3	40620	2593	1	18.93	20.00	1.279	62.9	1.006	0.12	0.607	0.781	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	40620	2593	1	19.98	21.00	1.265	62.9	1.006	0.03	0.807	1.027	
	2nd	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	ECI 3	40620+40818	2593+2612.8	1	19.92	21.00	1.282	62.9	1.006	-0.15	0.786	1.014	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	39750	2506	1	19.87	21.00	1.297	62.9	1.006	0.08	0.749	0.977	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	40185	2549.5	1	19.86	21.00	1.300	62.9	1.006	-0.17	0.760	0.994	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	41055	2636.5	1	19.92	21.00	1.282	62.9	1.006	-0.03	0.784	1.011	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	41490	2680	1	19.89	21.00	1.291	62.9	1.006	0.14	0.758	0.985	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	40620	2593	1	18.95	20.00	1.274	62.9	1.006	-0.08	0.632	0.810	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	39750	2506	1	18.87	20.00	1.297	62.9	1.006	0.11	0.632	0.825	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	40185	2549.5	1	18.94	20.00	1.276	62.9	1.006	-0.05	0.606	0.778	

	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	41055	2636.5	1	18.86	20.00	1.300	62.9	1.006	0.18	0.614	0.803	
	2nd	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI 3	41490	2680	1	18.90	20.00	1.288	62.9	1.006	0.14	0.622	0.806	
	2nd	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	ECI 3	40620	2593	1	18.93	20.00	1.279	62.9	1.006	-0.17	0.565	0.727	
50	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.08	0.995	**1.296**	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	40620	2593	2	22.89	24.00	1.291	42.9	1.009	0.03	0.986	1.285	
	2nd	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 0	-	ECI 3	40620+ 40818	2593+ 2612.8	1	22.88	24.00	1.294	42.9	1.009	-0.15	0.913	1.192	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	ECI 3	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.07	0.975	1.270	
	2nd	LTE Band 38 _Other PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI 3	38000	2595	1	20.31	22.10	1.510	62.9	1.006	-0.01	0.842	1.279	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	ECI 4	40620	2593	1	19.98	21.00	1.265	62.9	1.006	-0.08	0.067	0.085	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Front	14mm	Ant 0	-	ECI 4	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.1	0.081	0.106	
	2nd	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 0	-	ECI 4	40620	2593	1	19.98	21.00	1.265	62.9	1.006	-0.18	0.076	0.097	
	2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	15mm	Ant 0	-	ECI 4	40620	2593	1	22.89	24.00	1.291	42.9	1.009	0.1	0.104	0.135	
	1st	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 2	-	ECI 3	507000	2535	1	20.04	20.90	1.219	-	-	-0.06	1.050	1.280	0.778
51	2nd	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 2	-	ECI 3	507000	2535	1	20.05	20.90	1.216	-	-	-0.03	0.880	**1.070**	
	1st	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	507000	2535	1	16.80	18.00	1.318	-	-	-0.04	0.673	0.887	0.029
	2nd	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	-	ECI 3	507000	2535	1	16.75	18.00	1.334	-	-	-0.02	0.661	0.881	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 2		ECI 3	518598	2592.99	1	19.65	20.90	1.334	-	-	0.08	0.572	0.763	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 2		ECI 3	518598	2592.99	1	19.62	20.90	1.343	-	-	0.01	0.636	0.854	
	2nd	FR1 n41	100M	QPSK	270	0	DFT-SCS-30KHz	Front	5mm	Ant 2		ECI 3	518598	2592.99	1	19.57	20.90	1.358	-	-	0.03	0.558	0.758	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 2		ECI 3	518598	2592.99	1	19.65	20.90	1.334	-	-	-0.08	0.740	0.987	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2		ECI 3	518598	2592.99	1	19.62	20.90	1.343	-	-	-0.06	0.835	1.121	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	Headset	ECI 3	518598	2592.99	1	19.62	20.90	1.343	-	-	-0.08	0.816	1.096	
	2nd	FR1 n41	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 2		ECI 3	518598	2592.99	1	19.57	20.90	1.358	-	-	0.1	0.672	0.913	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	14mm	Ant 2		ECI 4	518598	2592.99	1	22.63	24.00	1.371	-	-	-0.18	0.305	0.418	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 2		ECI 4	518598	2592.99	1	22.63	24.00	1.371	-	-	0.1	0.356	0.488	
	1st	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI 3	518598	2592.99	1	17.30	18.50	1.318	-	-	-0.14	0.665	0.877	0.040
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI 3	518598	2592.99	1	17.27	18.50	1.327	-	-	0.05	0.655	0.869	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	ECI 3	518598	2592.99	1	17.75	18.80	1.274	-	-	0.12	0.346	0.441	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	ECI 3	518598	2592.99	1	17.73	18.80	1.279	-	-	0.08	0.391	0.500	
	2nd	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	-	ECI 3	518598	2592.99	1	17.75	18.80	1.274	-	-	-0.17	0.608	0.774	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	-	ECI 3	518598	2592.99	1	17.73	18.80	1.279	-	-	-0.17	0.660	0.844	
	2nd	FR1 n41	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 9	-	ECI 3	518598	2592.99	1	17.71	18.80	1.285	-	-	-0.03	0.575	0.739	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	14mm	Ant 9	-	ECI 4	518598	2592.99	1	17.75	18.80	1.274	-	-	0.14	0.115	0.146	
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 9	-	ECI 4	518598	2592.99	1	17.73	18.80	1.279	-	-	0.11	0.231	0.296	
	1st	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 0	-	ECI 3	518598	2592.99	1	21.31	22.50	1.315	-	-	0.02	0.977	1.285	0.024
52	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 0	-	ECI 3	518598	2592.99	1	21.29	22.50	1.321	-	-	-0.02	0.967	**1.278**	
	1st	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 0	-	ECI 3	518598	2592.99	1	21.31	22.50	1.315	-	-	-0.12	0.746	0.981	0.044
	2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 0	-	ECI 3	518598	2592.99	1	21.29	22.50	1.321	-	-	0.06	0.735	0.971	
3500MHz																								
	1st	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 7	-	ECI 3	42190	3460	1	19.44	20.40	1.247	62.9	1.006	0.04	0.713	0.895	0.433
	2nd	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 7	-	ECI 3	42190	3460	1	19.43	20.40	1.250	62.9	1.006	-0.07	0.644	0.810	
	1st	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI 3	42990	3540	1	14.98	16.40	1.387	62.9	1.006	-0.07	0.642	0.896	0.487
	2nd	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI 3	42990	3540	1	15.01	16.40	1.377	62.9	1.006	0.06	0.578	0.801	
	1st	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 8	-	ECI 3	42590	3500	1	22.38	24.00	1.452	62.9	1.006	-0.13	0.825	1.205	0.557
53	2nd	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 8	-	ECI 3	42590	3500	1	22.42	24.00	1.439	62.9	1.006	-0.01	0.732	**1.060**	
	1st	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 5	-	ECI 3	42590	3500	1	17.37	19.00	1.455	62.9	1.006	0.01	0.380	0.556	0.392
	2nd	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 5	-	ECI 3	42590	3500	1	17.37	19.00	1.455	62.9	1.006	0.16	0.347	0.508	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 7	-	ECI 3	656000	3840	1	18.19	19.10	1.233	-	-	0.08	0.301	0.371	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 7	-	ECI 3	656000	3840	1	18.18	19.10	1.236	-	-	0.01	0.341	0.421	
	2nd	FR1 n77	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI 3	656000	3840	1	18.19	19.10	1.233	-	-	-0.08	0.616	0.760	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI 3	656000	3840	1	18.18	19.10	1.236	-	-	0.04	0.715	0.884	
	2nd	FR1 n77	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI 3	656000	3840	1	18.15	19.10	1.245	-	-	-0.08	0.677	0.843	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Front	14mm	Ant 7	-	ECI 4	656000	3840	1	22.80	24.00	1.318	-	-	0.14	0.264	0.348	
	2nd	FR1 n77	100M	QPSK	135	69	DFT-SCS-30KHz	Back	15mm	Ant 7	-	ECI 4	656000	3840	1	22.80	24.00	1.318	-	-	-0.17	0.324	0.427	