LABCODE: 500069-0

FCC PART 22H, PART 24E

MEASUREMENT AND TEST REPORT

For

Shanghai Huace Navigation Technology LTD.

Building C, 599 Gaojing Road, Qingpu District, Shanghai. China

FCC ID: SY4-B01004

Report Type:	**Product Type:**
Original Report	Handheld GNSS Data Collector

Test Engineer:	Dean Liu
Report Number:	R1SH140603004-00B
Report Date:	2014-10-13
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shanghai Huace Navigation Technology LTD.*'s product, model number: *LT500H (FCC ID: SY4-B01004)* (the "EUT") in this report was a *Handheld GNSS Data Collector* , which was measured approximately: 23.7 cm (L) x 9.6cm (W) x 7.2 cm (H), rated input voltage: DC15 V from lithium battery or DC15V charging from adapter.

Adapter information: HuaceNav
Model:GM26-150150-1A
Output:AC100-240V,50/60Hz,1.0A
Input:DC15V,1.5A

Note: The series product, model LT500XYZ are electrically identical, the difference between them is just the model name and colour, we selected LT500H for fully testing, the details was explained in the attached declaration letter

** All measurement and test data in this report was gathered from production sample serial number: 140603004. (Assigned by BACL.Dongguan). The EUT was received on 2014-06-05.*

Objective

This report is prepared on behalf of *Shanghai Huace Navigation Technology LTD.* in accordance with Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communications Commission's rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

Related Submittal(s)/Grant(s)

1.FCC Part 15B JBP submissions with FCC ID: *SY4-B01004*
2.FCC Part15C DSS submissions with FCC ID: SY4-B01004 *for BDR, EDR mode.*
3.FCC Part15C DTS submissions with FCC ID: SY4-B01004

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-D-2010, ANSI C63.4-2003.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).

The current scope of accreditations can be found at http://ts.nist.gov/standards/scopes/5000690.htm

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to TIA/EIA-603-D-2010.

The test items were performed with the EUT operating at testing mode.

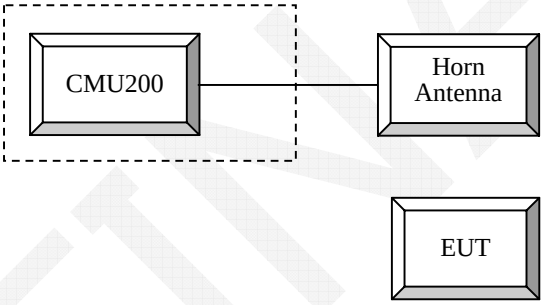
Equipment Modifications

No modification was made to the EUT.

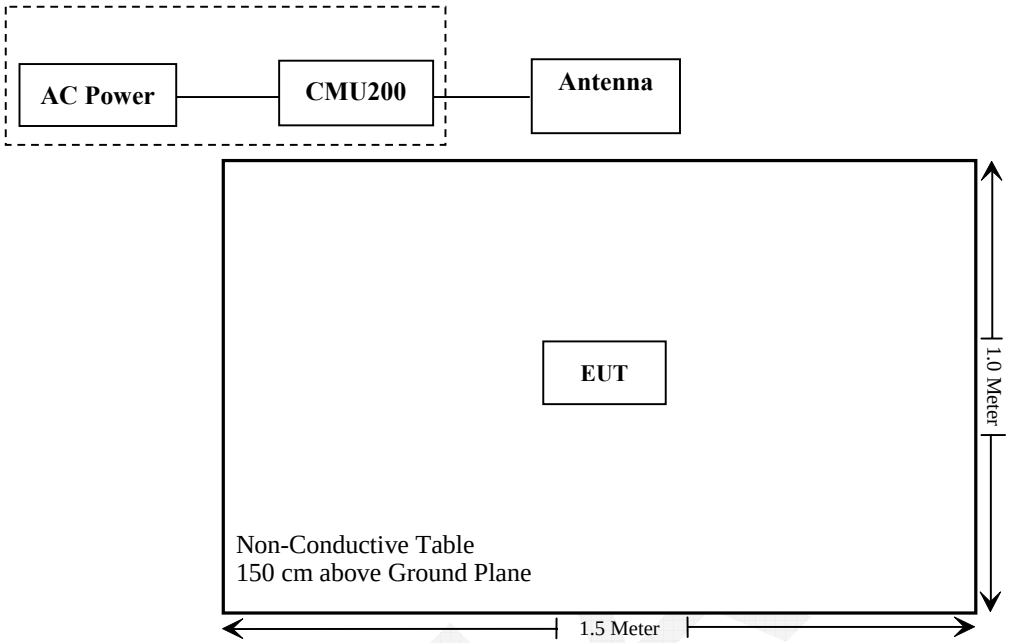
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R & S	Universal Radio Communication Tester	CMU200	109038

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1093	RF Exposure	Compliance
§2.1046; § 22.913 (a); § 24.232 (c)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

FCC §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: R1SH140603004-20.

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC § 2.1046, § 22.913 (a) & § 24.232 (c) - RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

Test Procedure

GSM

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection Press Signal Off to turn off the signal and change settings
Network Support > GSM + only
MS Signal
> 33 dBm for GSM 850
> 30 dBm for GSM 1900
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stabe)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
Channel Type > Off
P0 > 4 dB
TCH > choose desired test channel
Hopping > Off
AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection Press Signal on to turn on the signal and change settings

GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection Press Signal Off to turn off the signal and change settings
Network Support > GSM + GPRS or GSM + EGSM
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
> Slot configuration > Uplink/Gamma
> 33 dBm for GPRS 850
> 30 dBm for GPRS 1900
> 27 dBm for EGPRS 850
> 26 dBm for EGPRS 1900
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stabe)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off
P0 > 4 dB
Slot Config > Unchanged (if already set under MS signal)
TCH > choose desired test channel
Hopping > Off
Main Timeslot > 3
Network Coding Scheme > CS4 (GPRS) and MCS9 (EGPRS)
Bit Stream > 2E9-1 PSR Bit Stream
AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection Press Signal on to turn on the signal and change settings

UMTS Rel 99

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

UMTS Rel 6 HSDPA

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	Not Applicable			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βec	-	-	-	-
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	βed	Not Applicable			
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs = βhs/βc	30/15			

UMTS Rel 6 HSPA (HSDPA & HSUPA)

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15 47/15	56/75	47/15
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

Radiated method:

ANSI/TIA 603-D section 2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-1	2011-09-06	2014-09-05
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-05
HP	Amplifier	8447E	2434A02181	2013-09-06	2014-09-05
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2014-02-19	2015-02-18
Giga	Signal Generator	1026	320408	2014-05-09	2015-05-08
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2012-09-06	2015-09-05

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	28 °C
Relative Humidity:	60 %
ATM Pressure:	99.6 kPa

The testing was performed by Dean Liu on 2014-06-11

Conducted Power

Cellular Band (Part 22H) & PCS Band (Part 24E)

Band	Channel No.	Peak Output Power (dBm)								
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Cellular	128	32.70	32.71	29.72	/	/	26.51	23.56	/	/
	190	32.61	32.62	29.34	/	/	26.51	23.59	/	/
	251	32.49	32.50	29.29	/	/	26.46	23.22	/	/
PCS	512	28.09	28.15	25.50	/	/	24.56	21.18	/	/
	661	28.07	28.12	25.52	/	/	24.43	21.06	/	/
	810	28.34	28.44	25.78	/	/	24.71	21.39	/	/

WCDMA Band II:

Mode	3GPP Sub Test	Ave. Conducted Output Power (dBm)					
		Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99	1	22.47	3.23	22.04	3.34	21.84	3.27
HSDPA	1	21.98	3.53	21.75	3.71	21.45	3.95
	2	21.99	3.54	21.76	3.72	21.46	3.96
	3	21.99	3.54	21.74	3.71	21.45.	3.95
	4	21.98	3.55	21.75	3.72	21.46	3.95
HSUPA	1	21.98	3.52	21.75	3.71	21.45	3.94
	2	21.98	3.53	21.74	3.72	21.44	3.94
	3	21.99	3.52	21.76	3.72	21.45	3.95
	4	22.00	3.54	21.75	3.71	21.46	3.95
	5	21.99	3.53	21.75	3.72	21.46	3.96

Note: Peak-to-average ratio(PAR) < 13 dB

WCDMA Band V:

Mode	3GPP Sub Test	Ave. Conducted Output Power (dBm)					
		Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99	1	23.31	3.35	23.01	3.51	23.42	3.35
HSDPA	1	23.04	3.49	22.62	3.75	23.23	3.74
	2	23.05	3.50	22.63	3.74	23.25	3.75
	3	23.04	3.48	22.63	3.75	23.24	3.74
	4	23.03	3.49	22.61	3.74	23.25	3.75
HSUPA	1	23.03	3.48	22.62	3.75	23.24	3.74
	2	23.03	3.49	22.62	3.74	23.21	3.75
	3	23.04	3.50	22.63	3.75	23.22	3.73
	4	23.02	3.49	22.62	3.75	23.23	3.74
	5	23.03	3.49	22.63	3.74	23.22	3.74

ERP & EIRP

GSM:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Cellular band								
824.200	V	103.70	31.8	0.0	1.0	30.8	38.5	7.7
836.600	V	102.98	31.2	0.0	1.0	30.2	38.5	8.3
848.800	V	103.60	31.9	0.0	1.0	30.9	38.5	7.6
PCS band								
1850.200	H	88.41	16.6	11.4	1.4	26.6	33.0	6.4
1880.000	H	88.77	17.2	11.7	1.4	27.5	33.0	5.5
1909.800	H	88.63	17.3	11.8	1.4	27.7	33.0	5.3

EGPRS:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Cellular band								
824.200	H	99.99	25.0	0.0	1.0	24.0	38.5	14.5
836.600	H	100.65	25.7	0.0	1.0	24.7	38.5	13.8
848.800	H	100.70	25.9	0.0	1.0	24.9	38.5	13.6
PCS band								
1850.000	H	85.53	13.7	11.4	1.4	23.7	33.0	9.3
1880.000	H	83.86	12.3	11.7	1.4	22.6	33.0	10.4
1909.800	H	84.06	12.7	11.8	1.4	23.1	33.0	9.9

WCDMA Band V:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
826.400	H	97.50	22.5	0.0	1.0	21.5	38.5	17.0
836.600	H	98.21	23.3	0.0	1.0	22.3	38.5	16.2
846.600	H	98.29	23.4	0.0	1.0	22.4	38.5	16.1

WCDMA Band II:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1852.400	H	82.25	10.4	11.5	1.4	20.5	33.0	12.5
1880.000	H	83.01	11.4	11.7	1.4	21.7	33.0	11.3
1907.600	H	82.74	11.4	11.8	1.4	21.8	33.0	11.2

FCC §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH

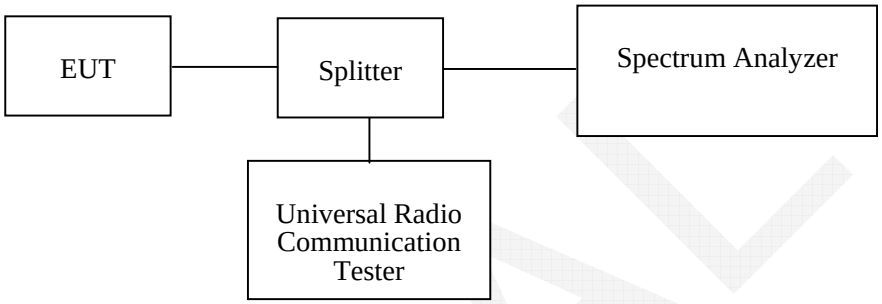
Applicable Standard

FCC §2.1049, §22.917, §22.905 and §24.238.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The 26 dB & 99% bandwidth was recorded.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

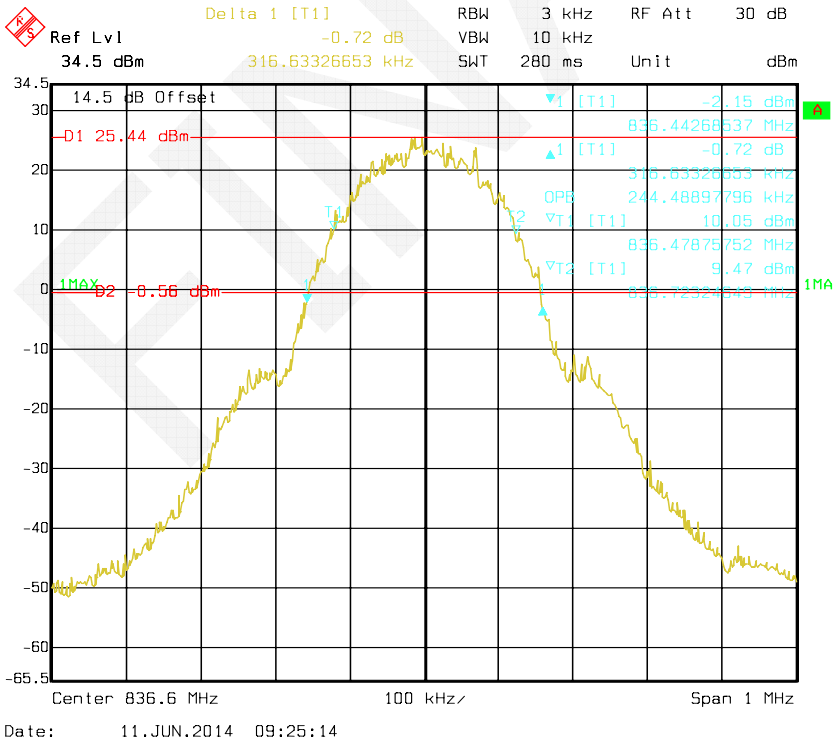
Temperature:	27.3 °C~28.8°C
Relative Humidity:	57 %~67 %
ATM Pressure:	99.6 kPa~99.8 kPa

The testing was performed by Dean Liu from 2014-06-11 to2014-06-18.

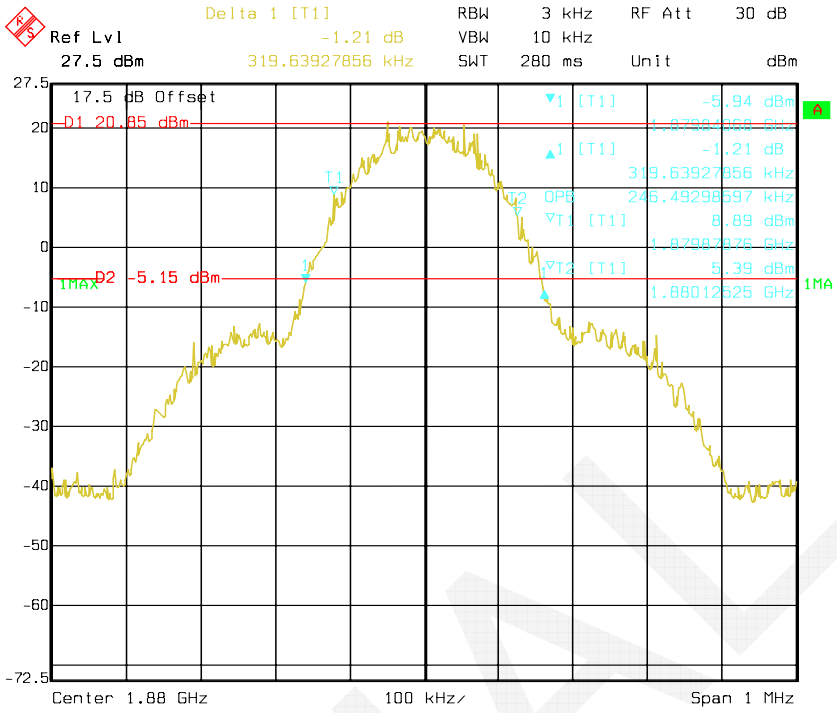
Band	Channel No.	Mode	99% Occupied Bandwidth	26 dB Occupied Bandwidth
			kHz	kHz
Cellular	190	GSM	244.49	316.63
		EGPRS	244.49	312.63
PCS	661	GSM	246.49	319.64
		EGPRS	246.49	310.62
WCDMA Band Ⅴ	4183	Rel 99	4148.3	4689.38
	4183	HSDPA	4168.34	4721.44
	4183	HSUPA	4168.34	4699.4
WCDMA Band Ⅱ	9400	Rel 99	4148.3	4699.4
	9400	HSDPA	4148.3	4719.44
	9400	HSUPA	4148.3	4697.39

Please refer to the following plots.

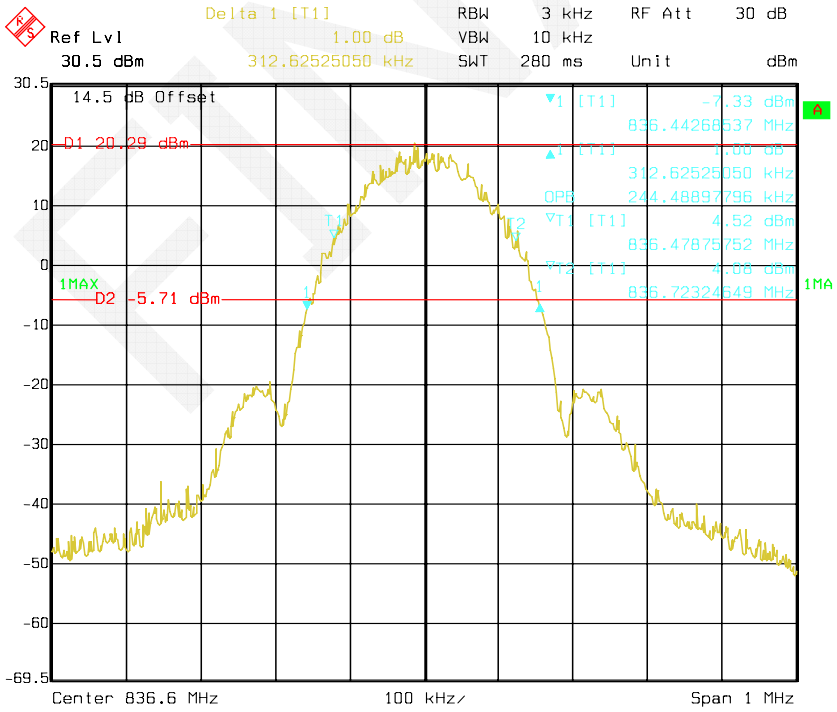
GMSK Cellular Band



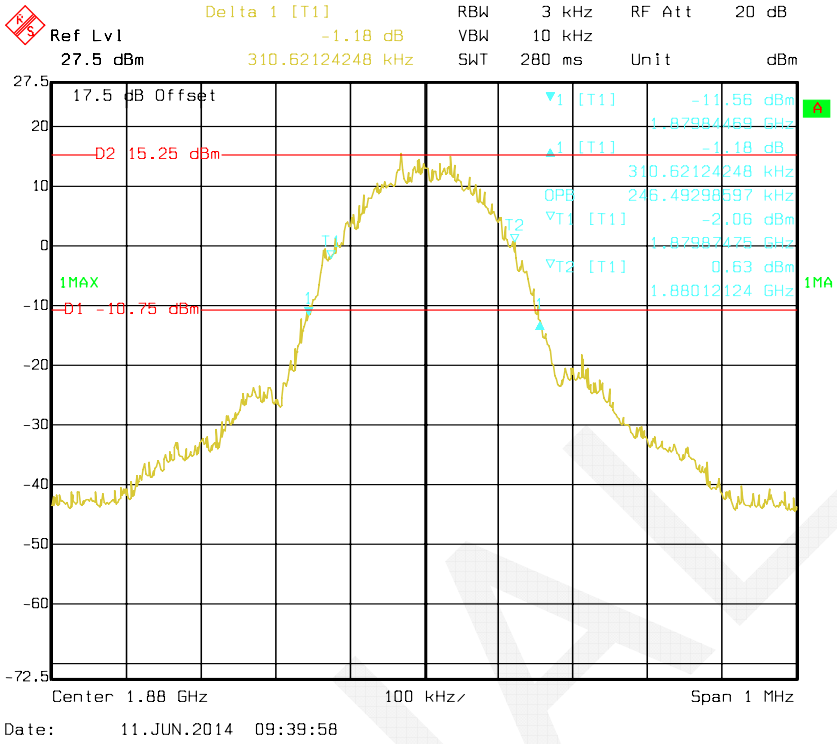
GMSK PCS Band



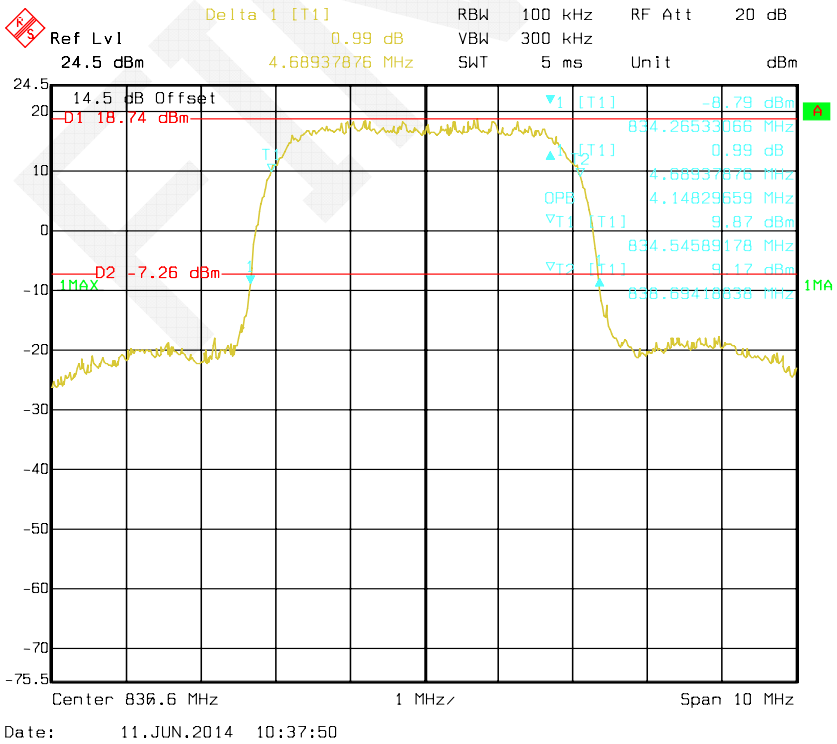
8PSK Cellular Band



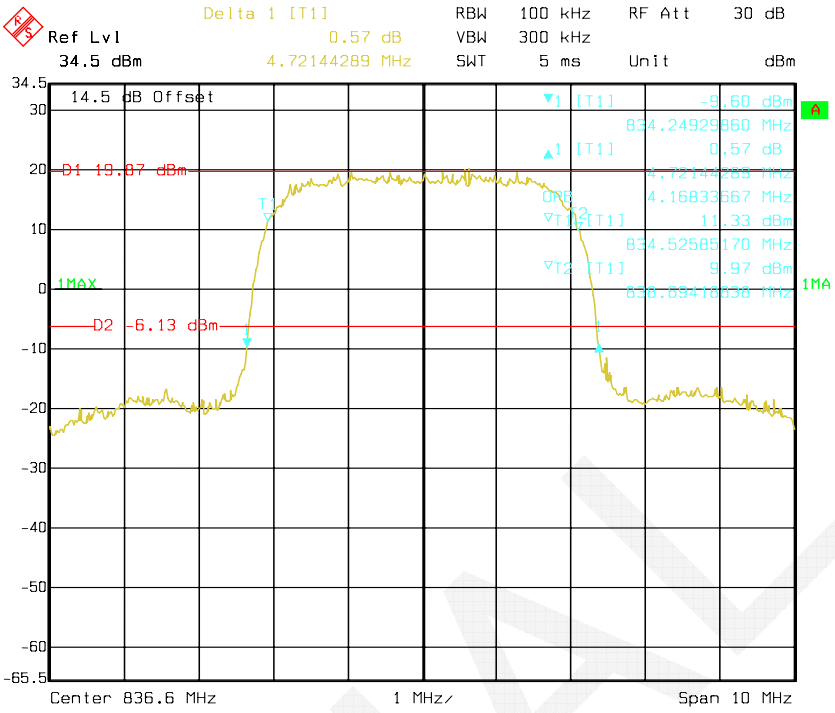
8PSK PCS 1900



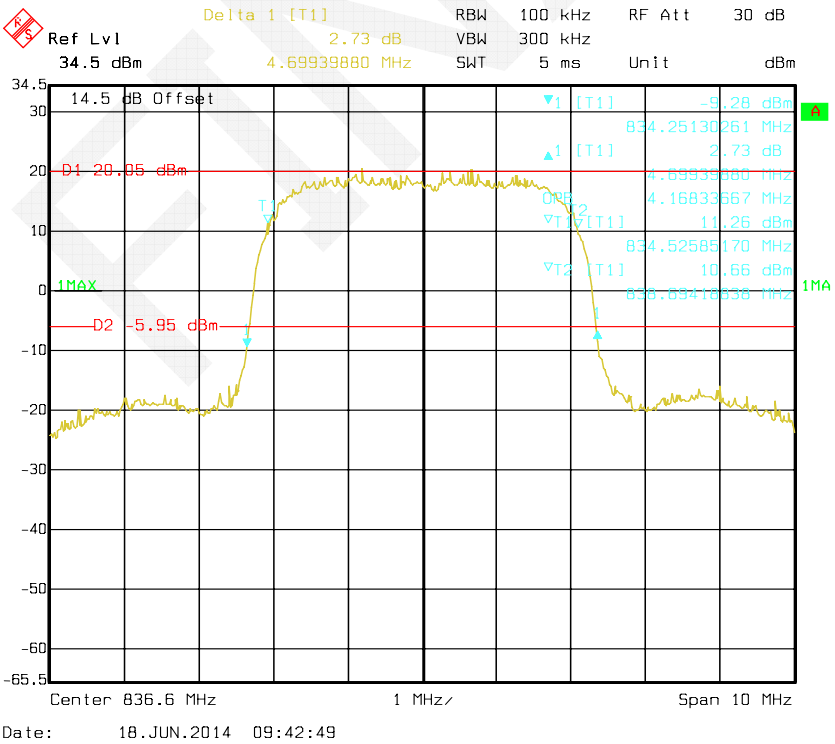
WCDMA Band V–REL99



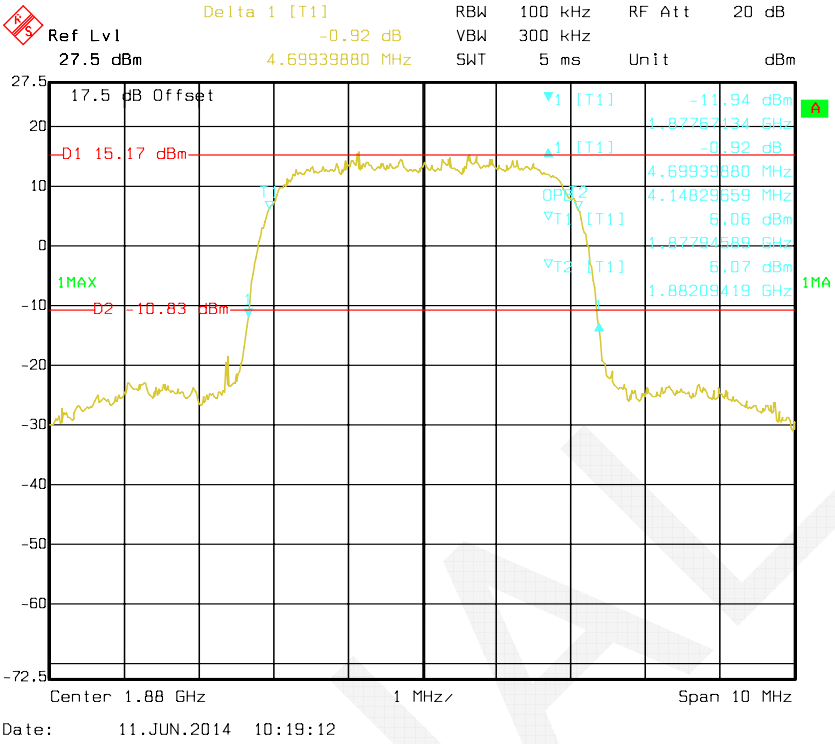
WCDMA Band V –HSDPA



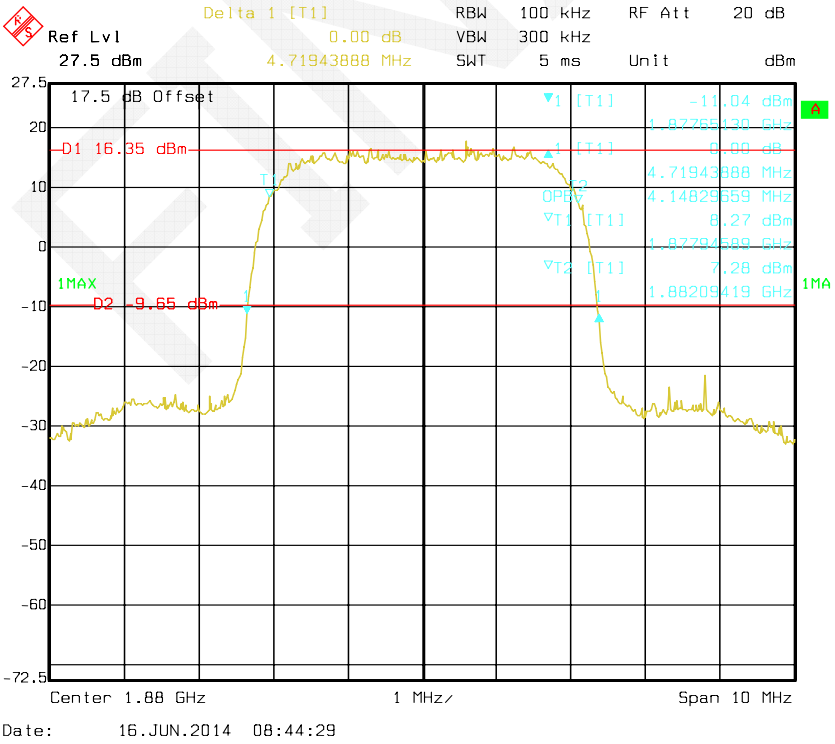
WCDMA Band V–HSUPA



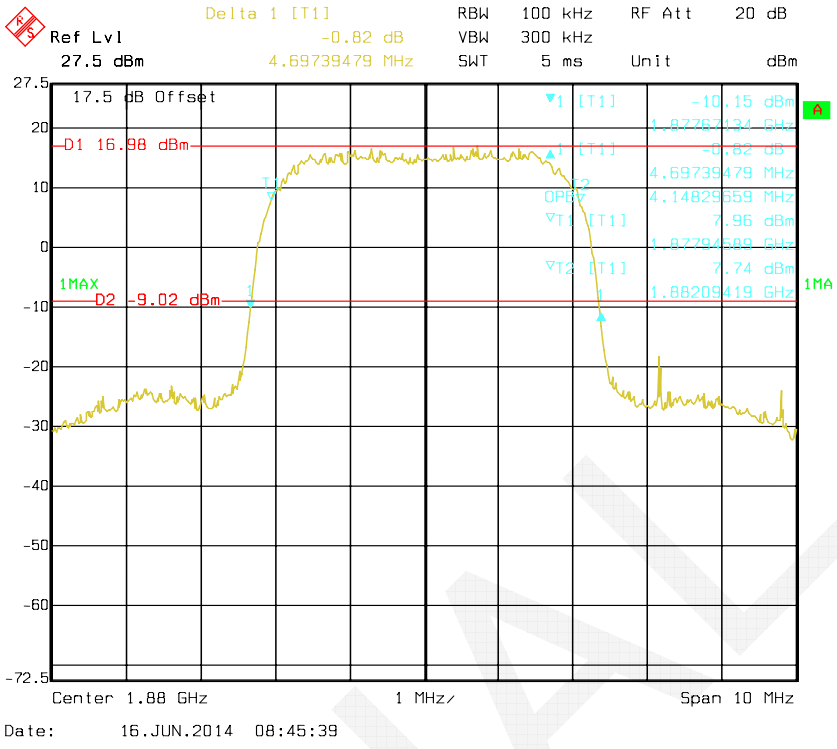
WCDMA Band II –REL99



WCDMA Band II –HSDPA



WCDMA Band II –HSUPA



FCC §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

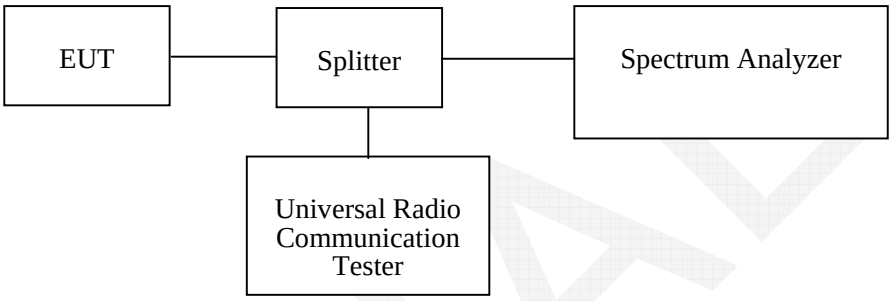
Applicable Standard

FCC §2.1051, §22.917(a) and §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

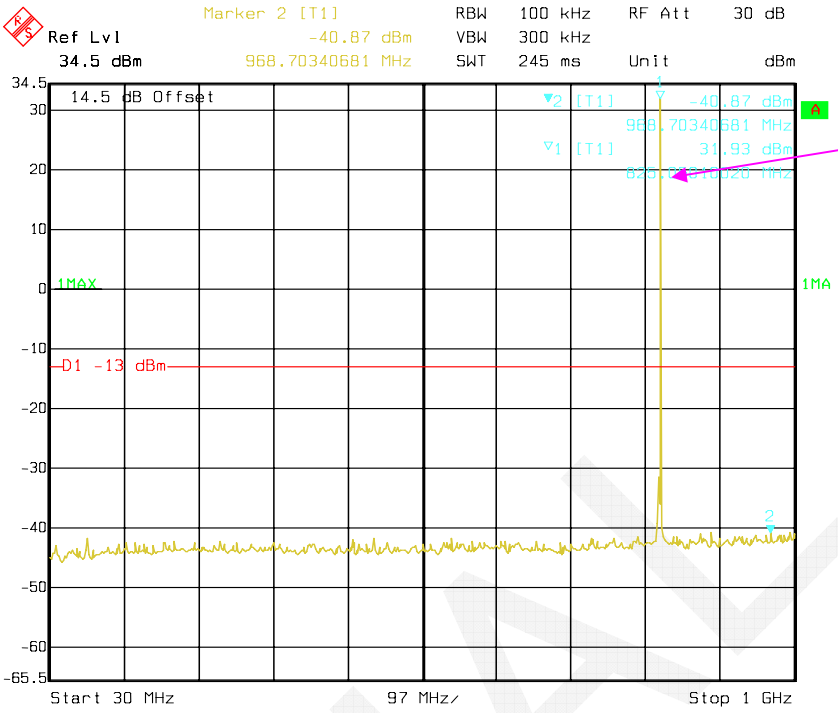
Environmental Conditions

Temperature:	25.3~26.4 °C
Relative Humidity:	60~63 %
ATM Pressure:	99.6~99.7 kPa

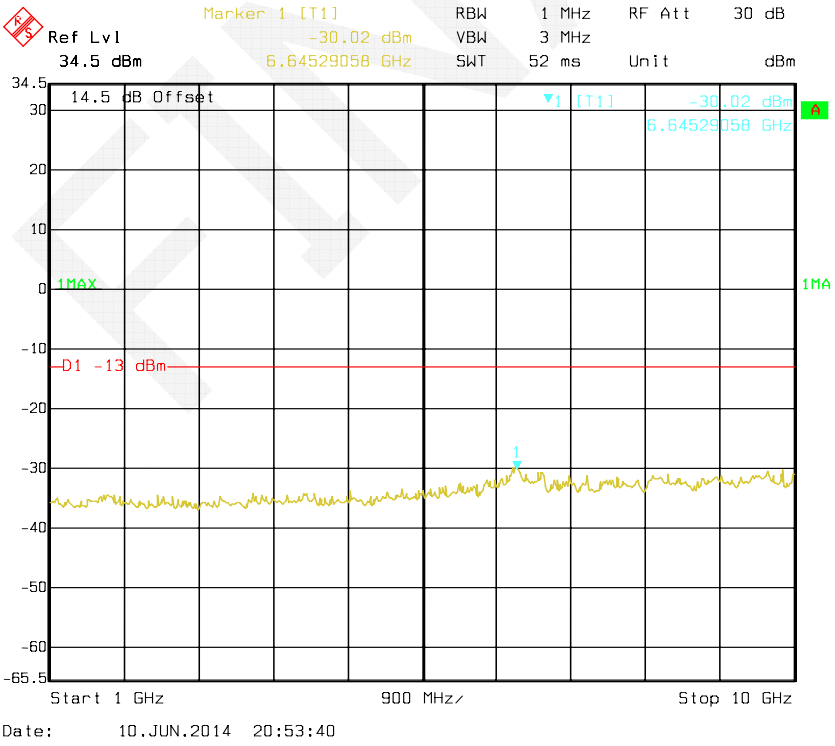
The testing was performed by Dean Liu from 2014-06-10 to 2014-06-16.

Please refer to the following plots.

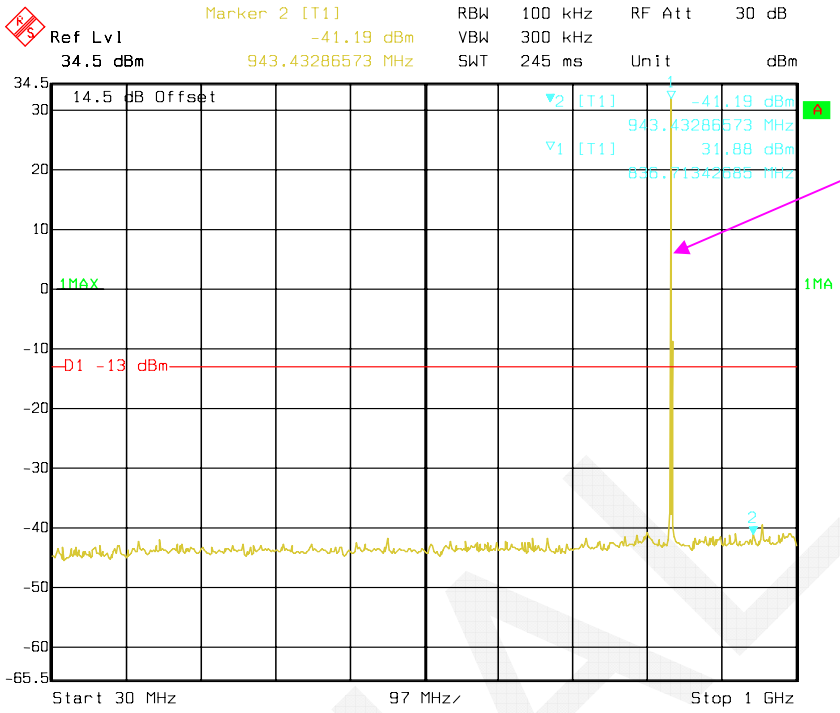
GSM850 Low Channel



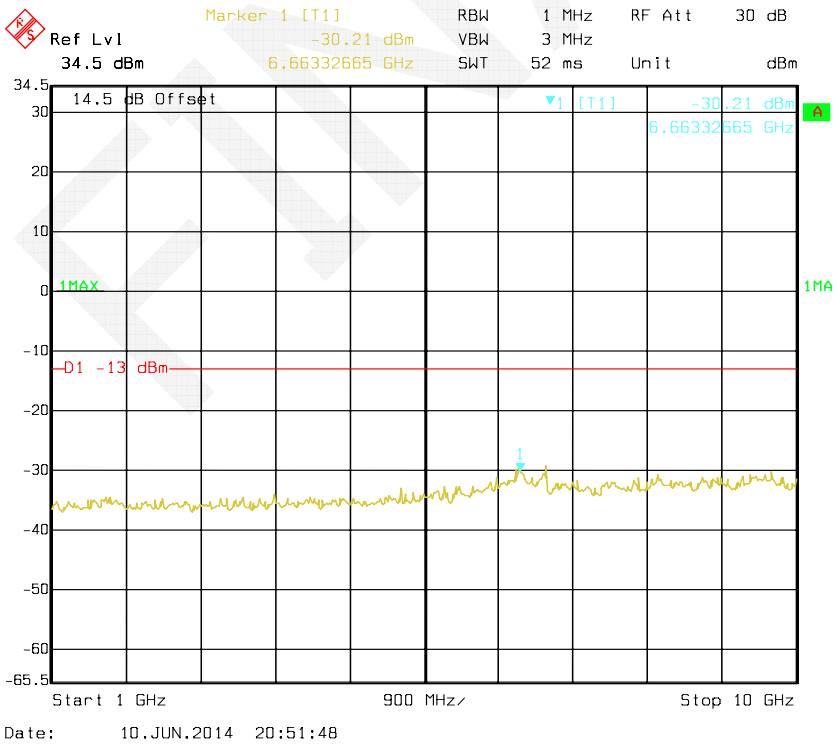
Fundamental



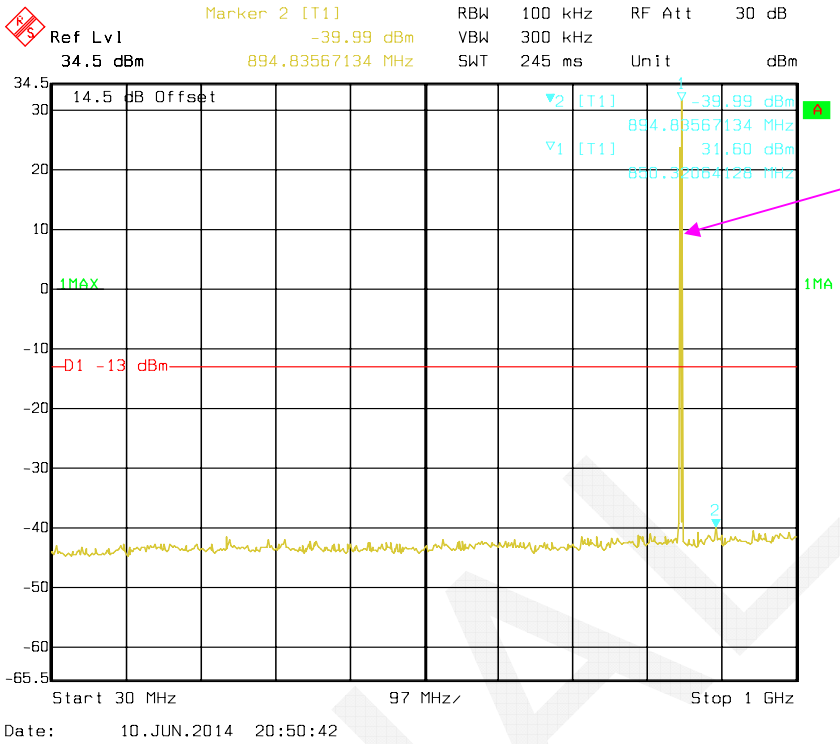
GSM850 Middle Channel



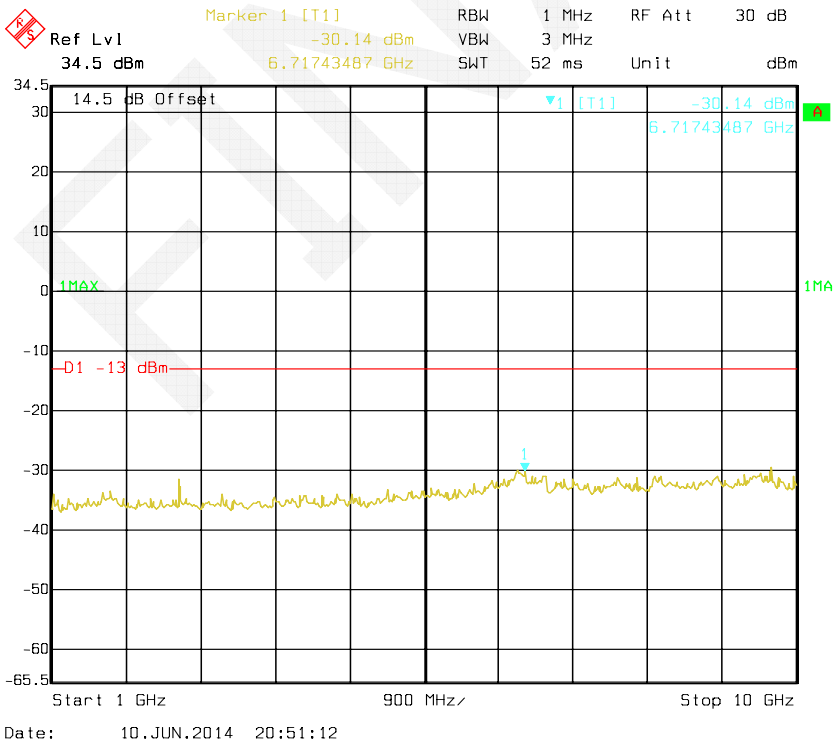
Fundamental



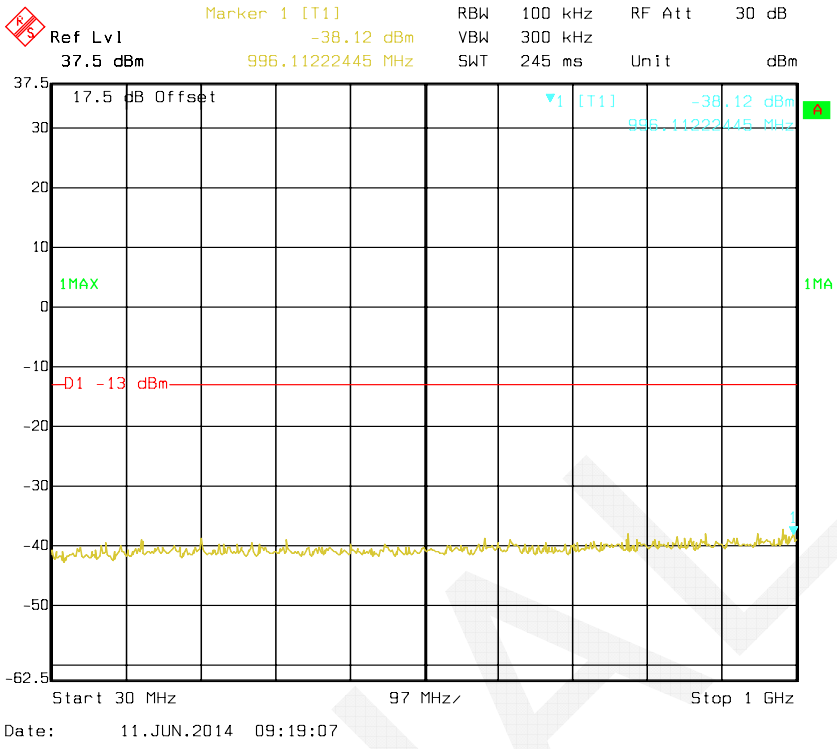
GSM850 High Channel

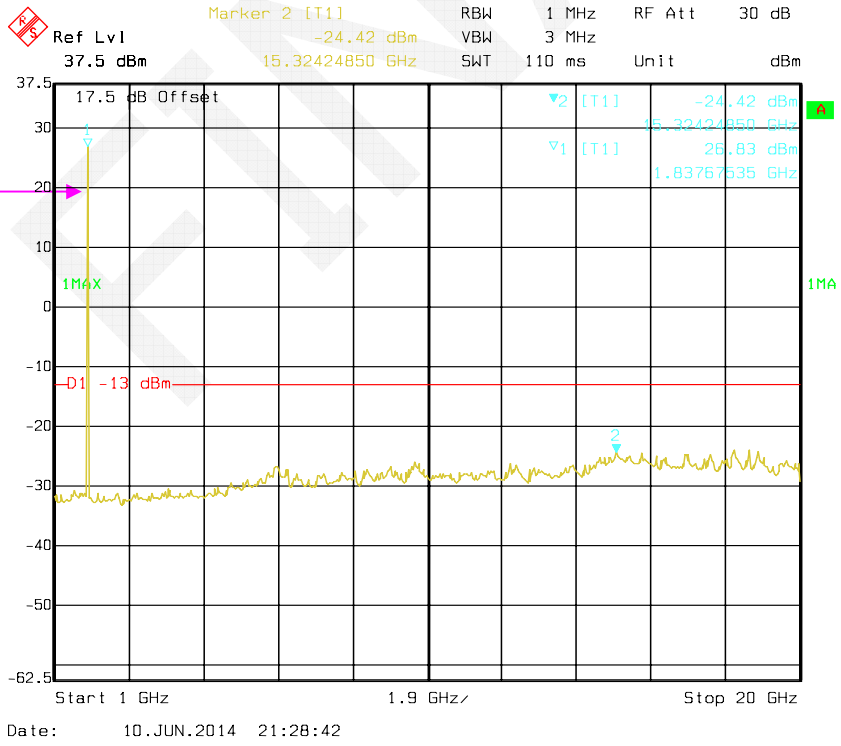


Fundamental



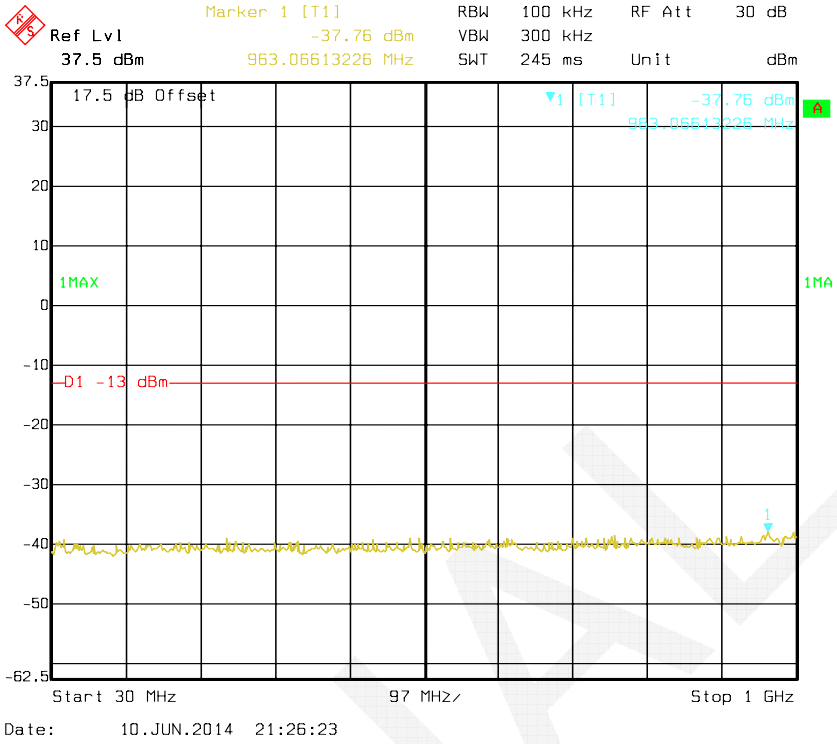
PCS 1900 Low Channel

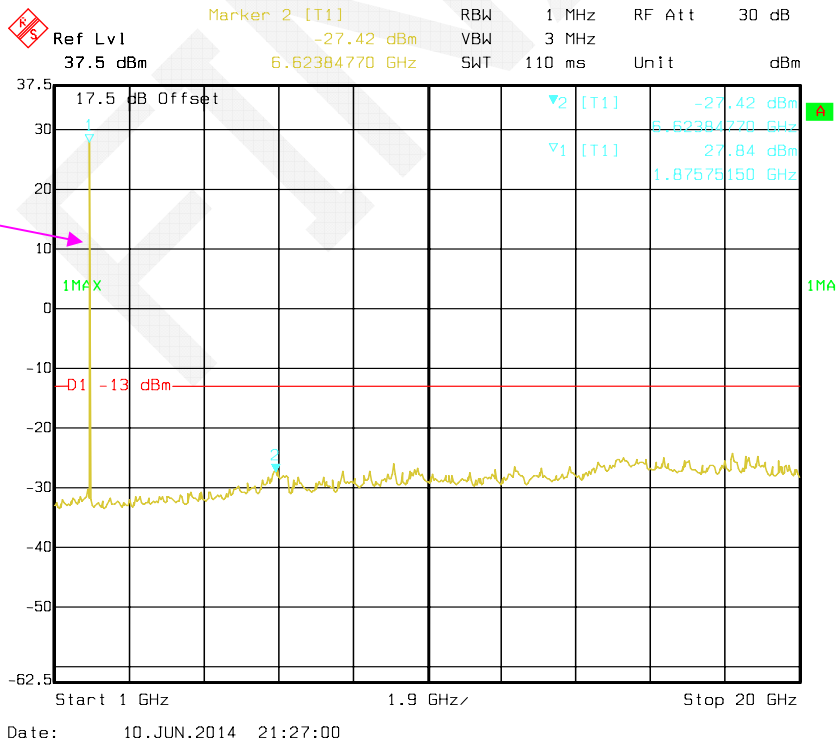




Fundamental

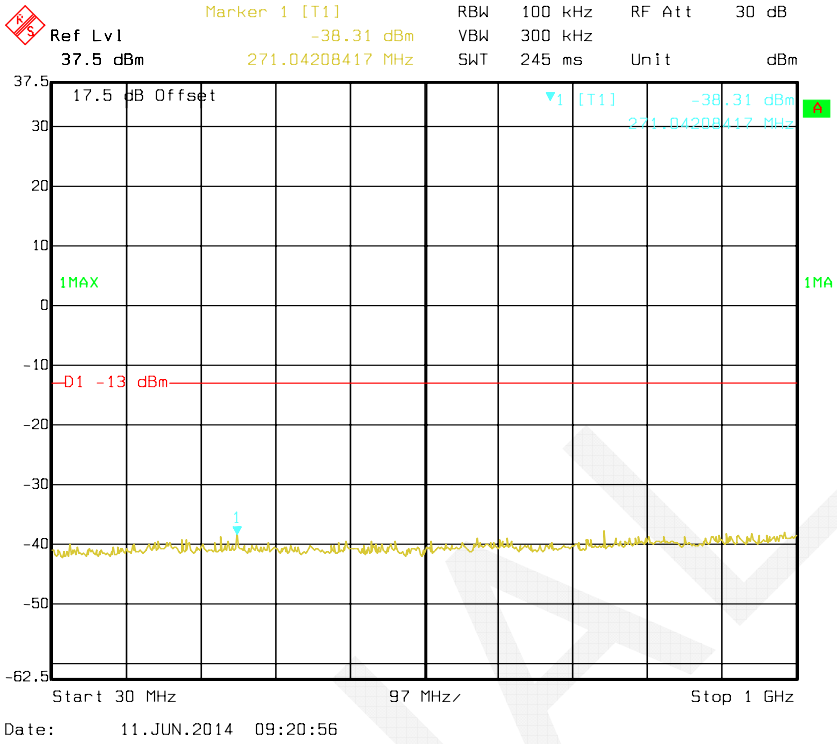
PCS 1900 Middle Channel

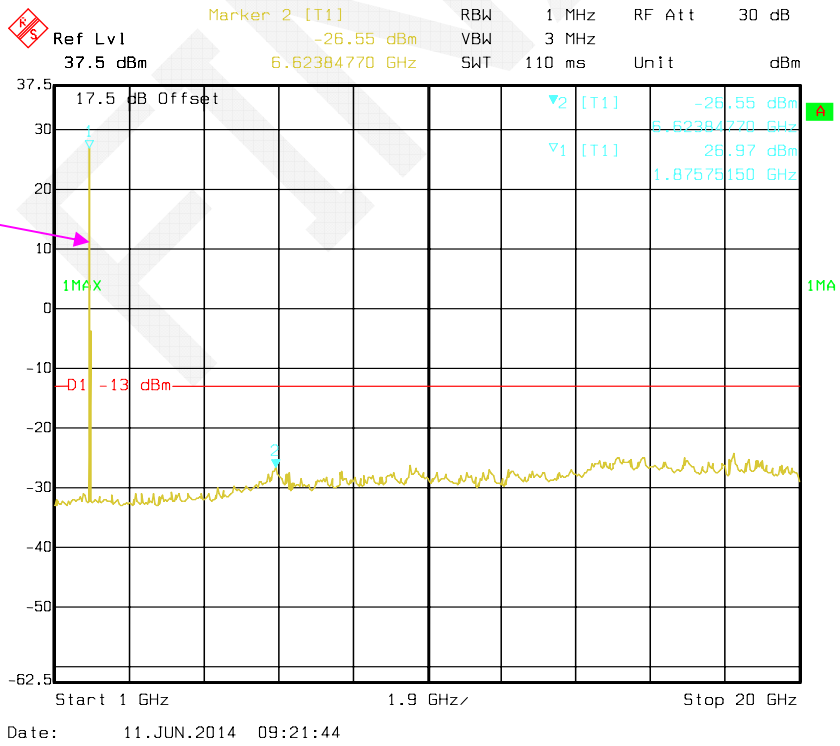




Fundamental

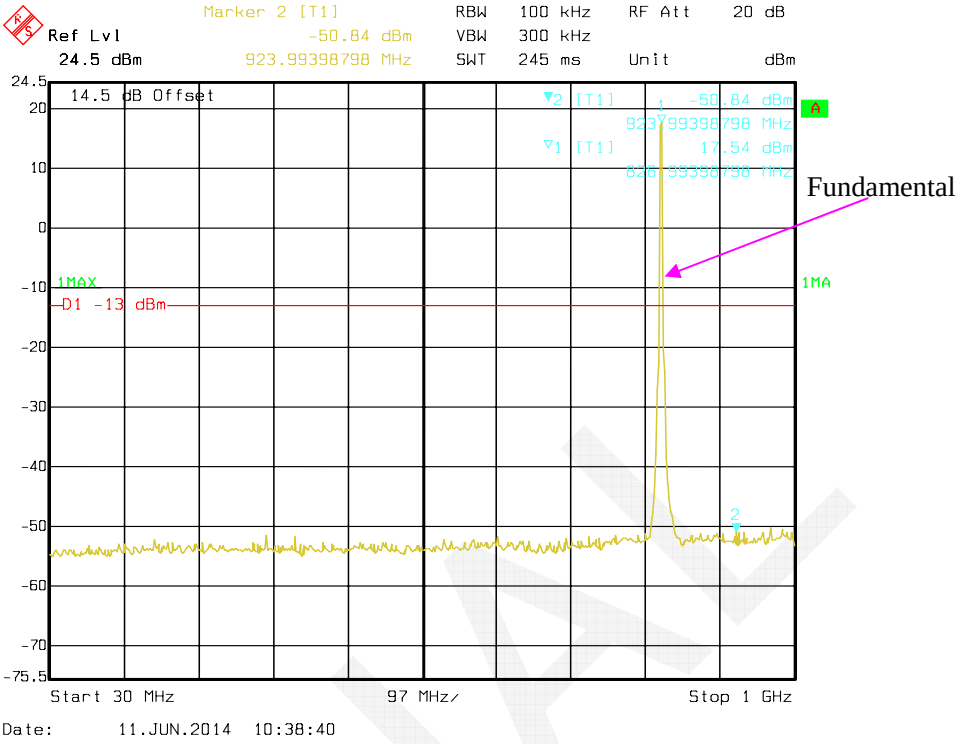
PCS 1900 High Channel

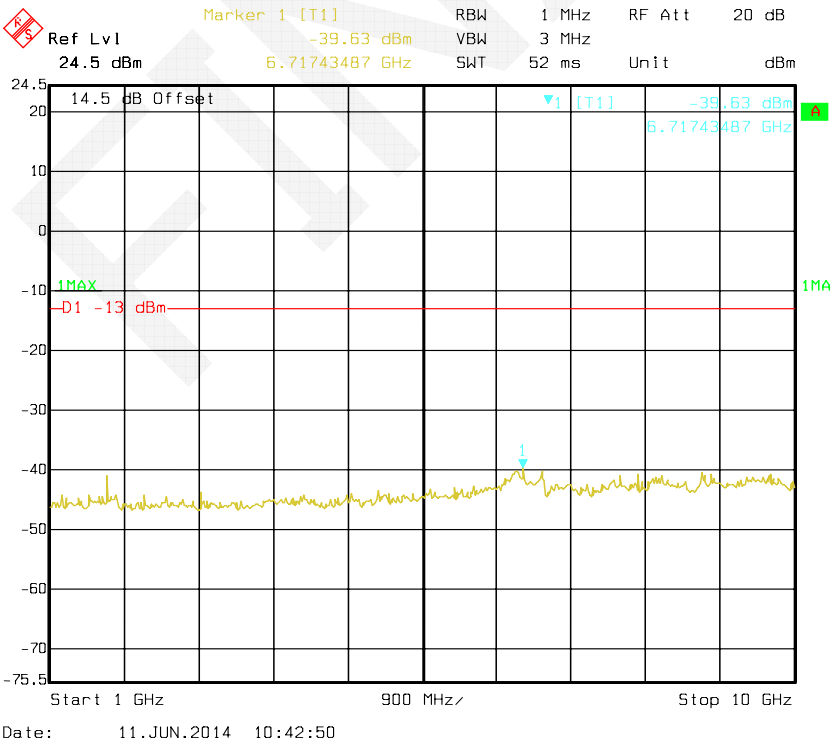




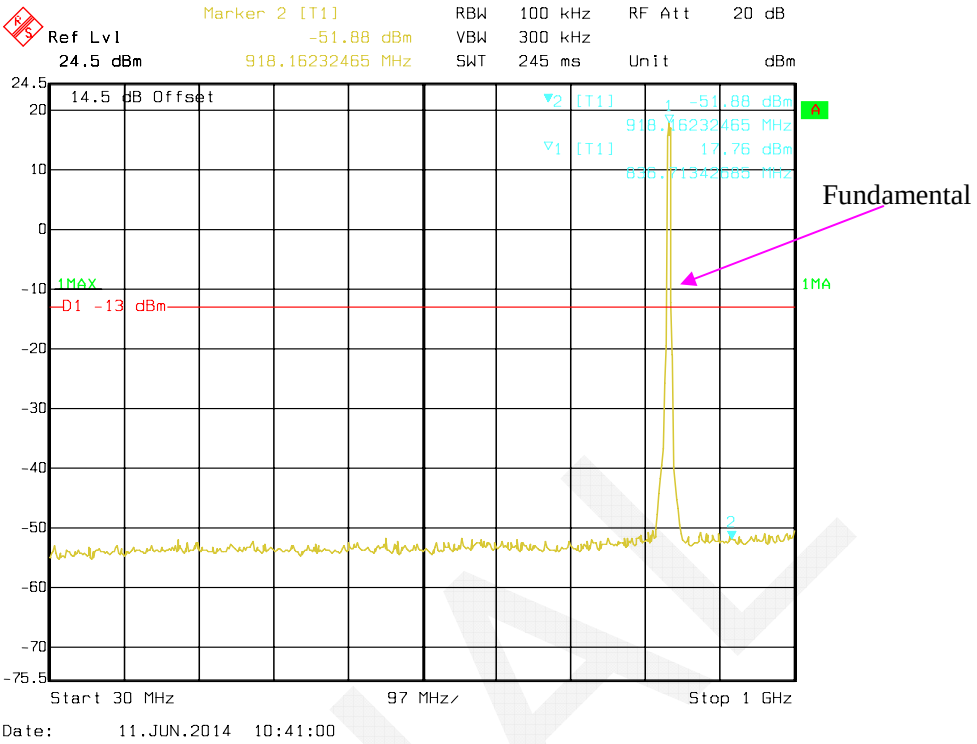
Fundamental

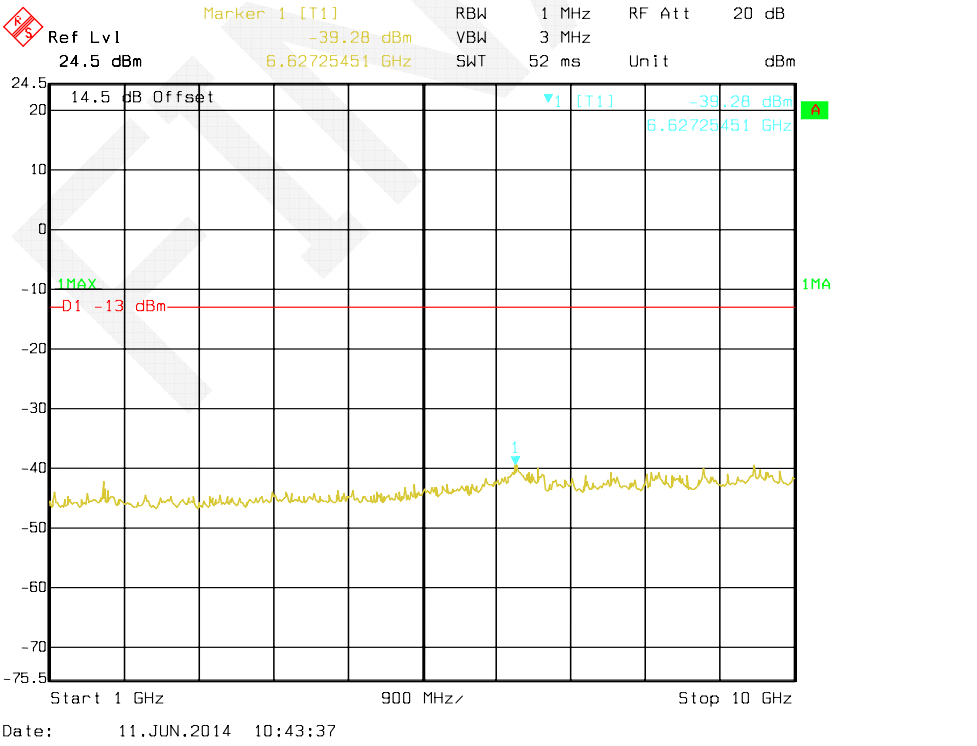
WCDMA Band V –REL99 Low Channel



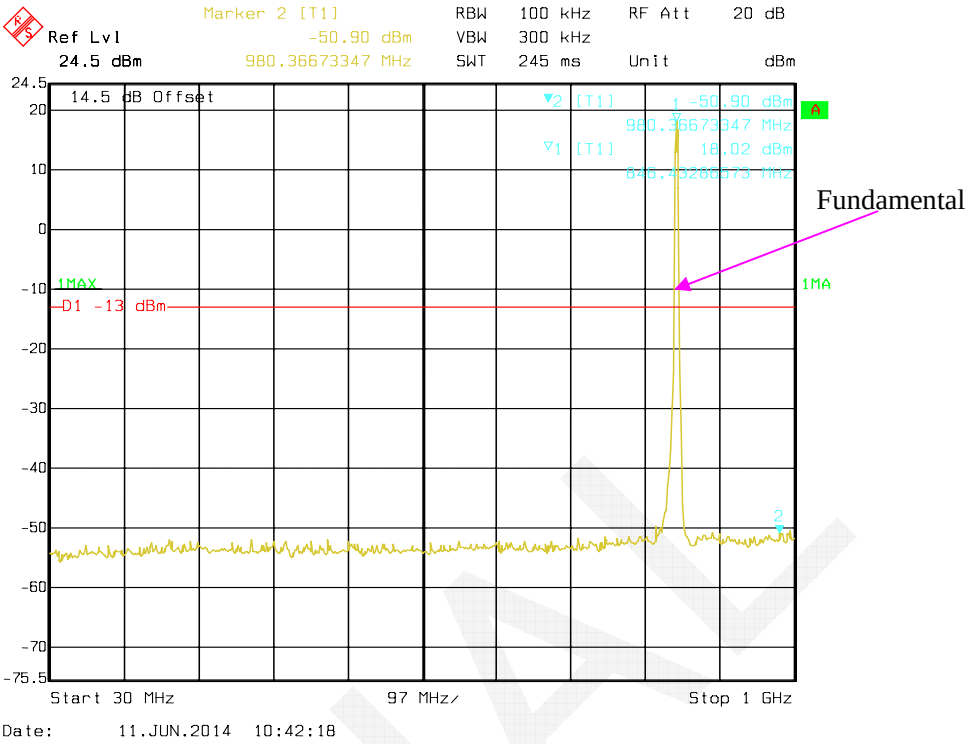


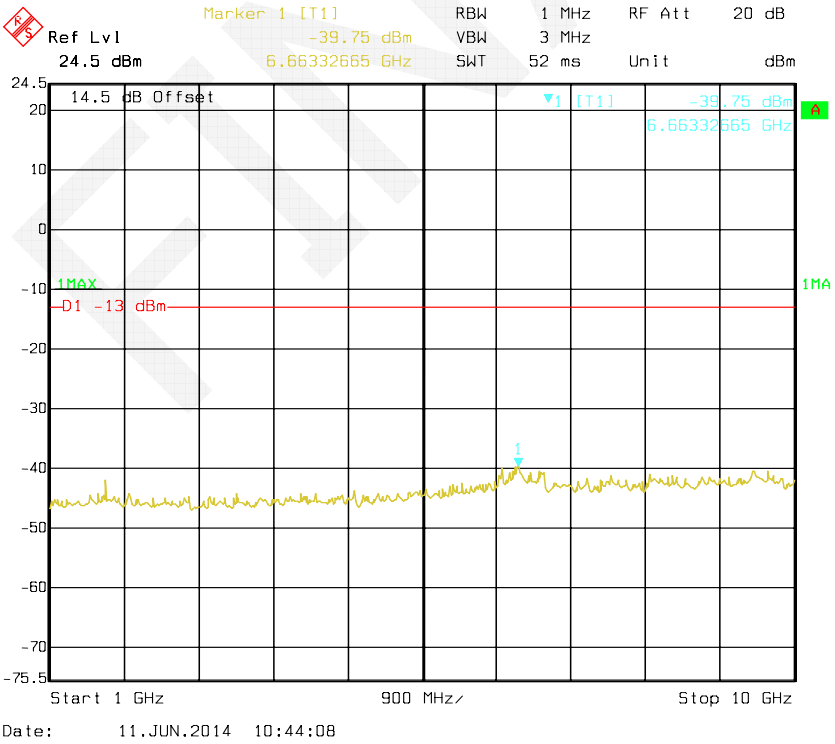
WCDMA Band V –REL99 Middle Channel



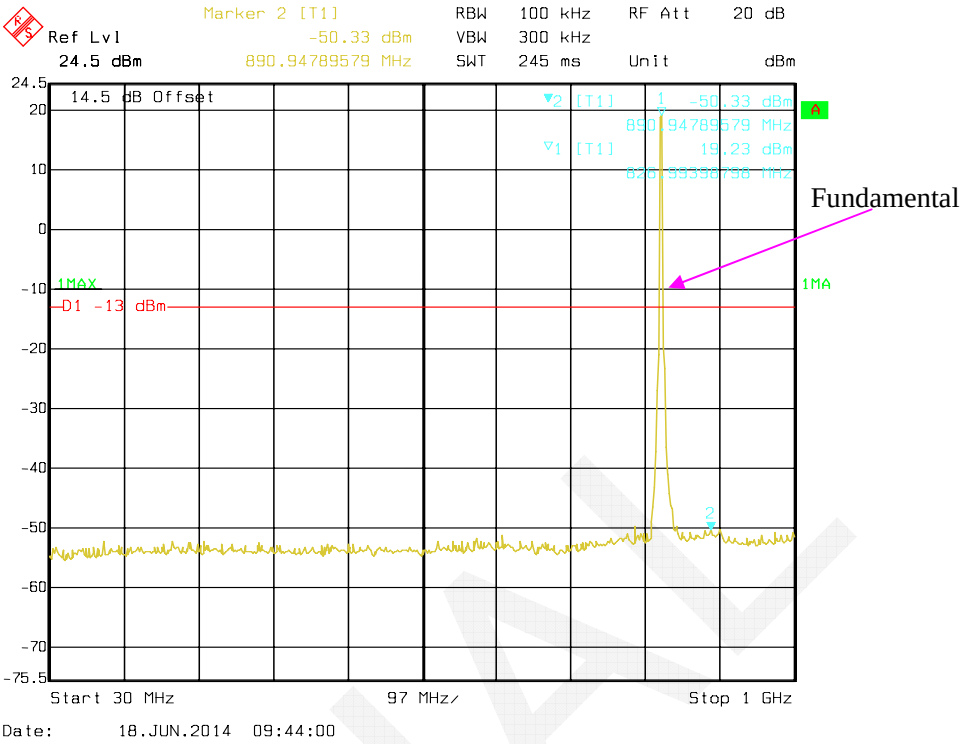


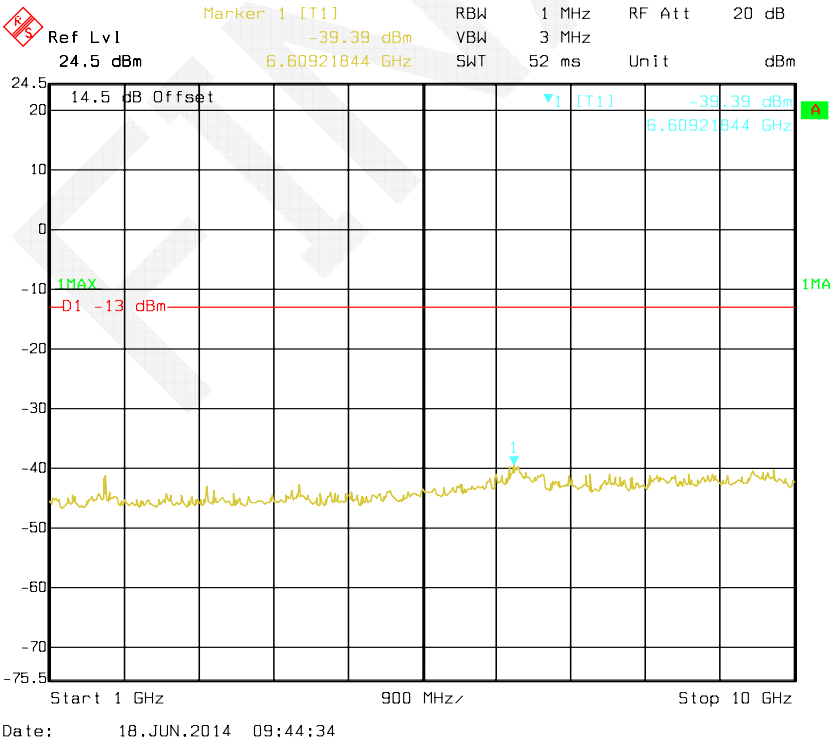
WCDMA Band V –REL99 High Channel



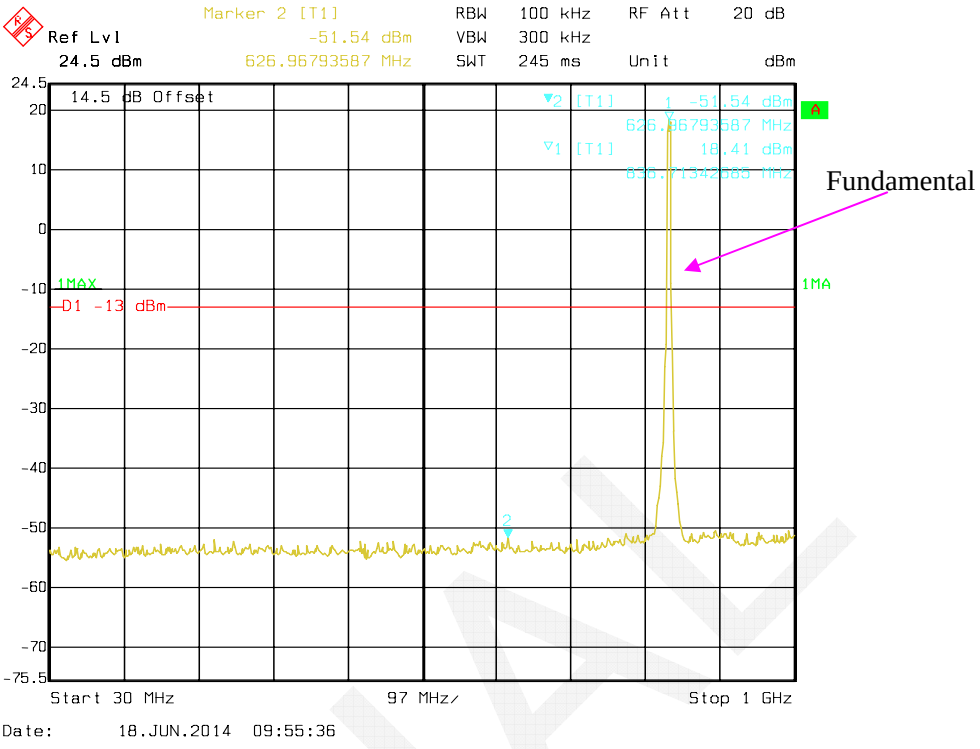


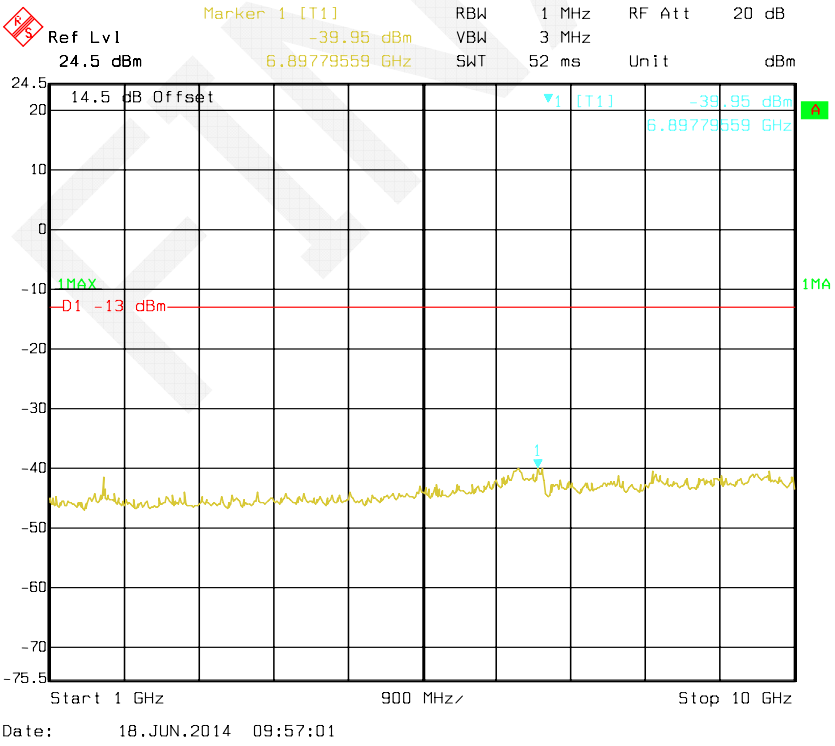
WCDMA Band V –HSDPA Low Channel



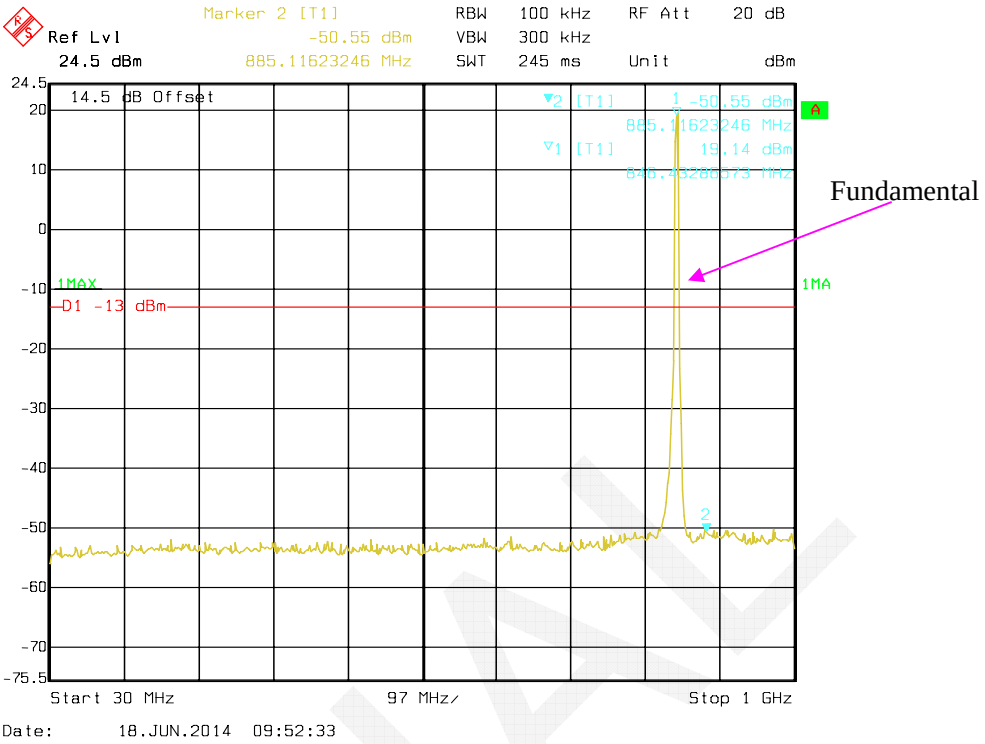


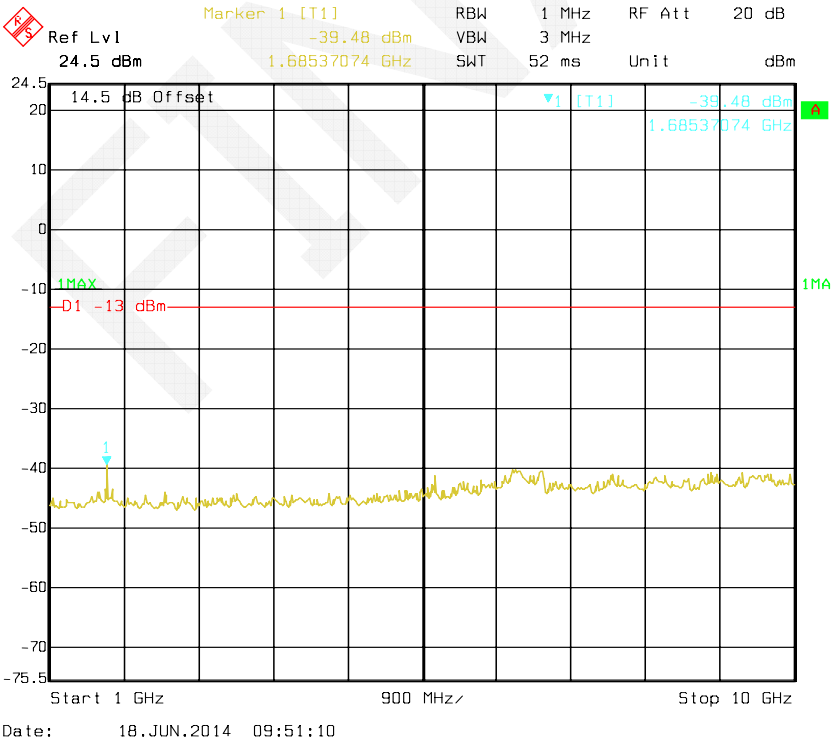
WCDMA Band V –HSDPA Middle Channel



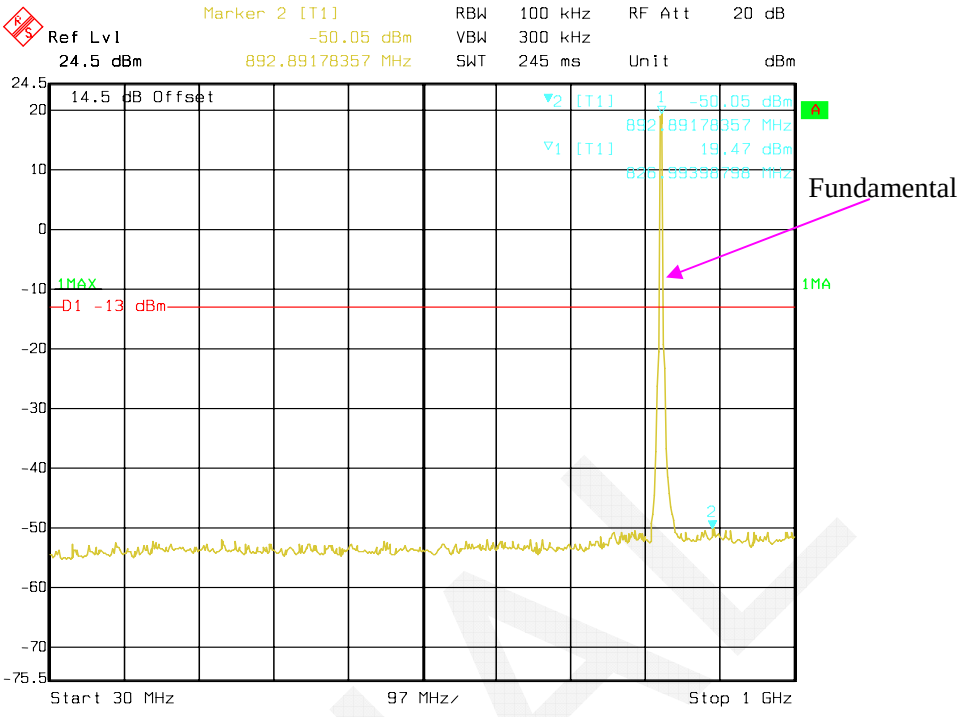


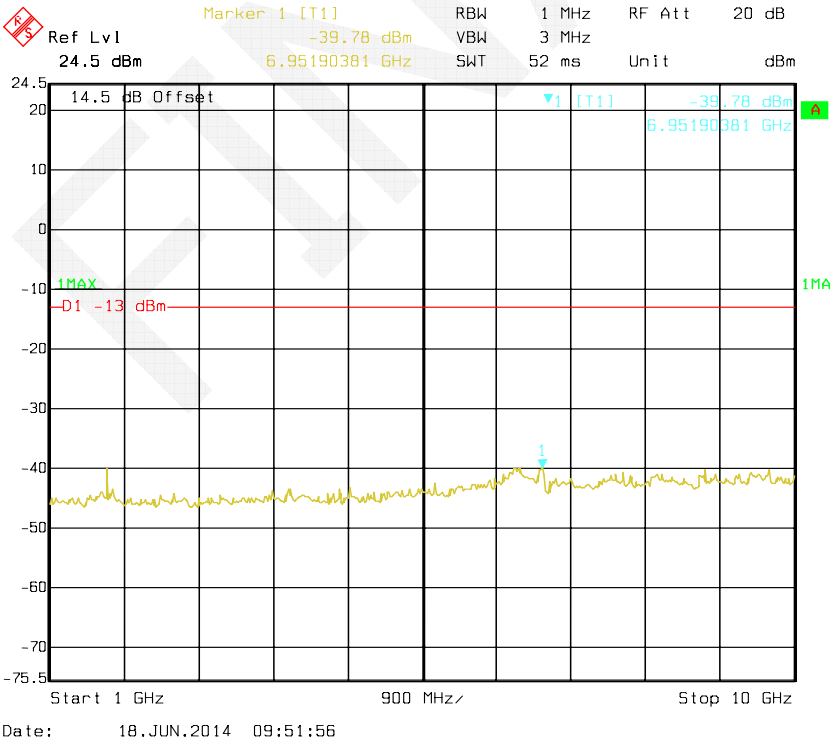
WCDMA Band V –HSDPA High Channel



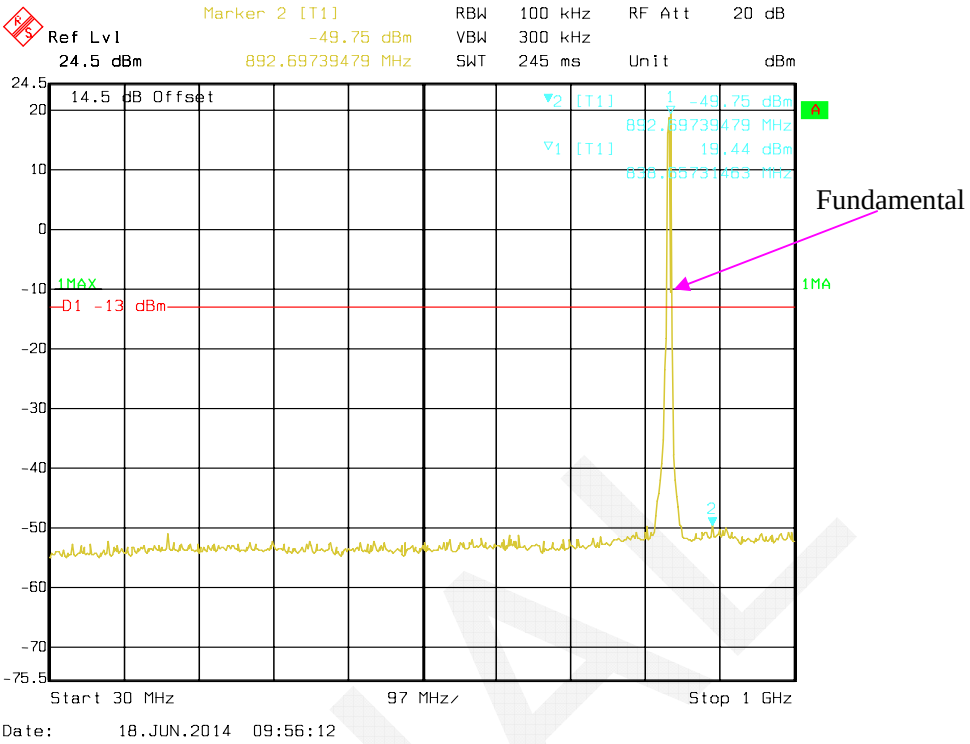


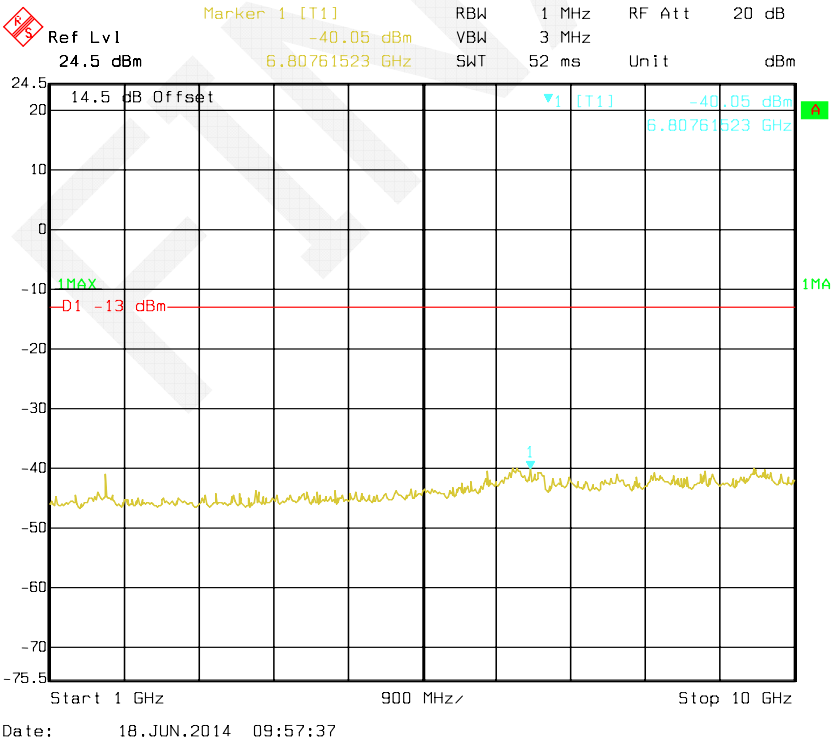
WCDMA Band V–HSUPA Low Channel



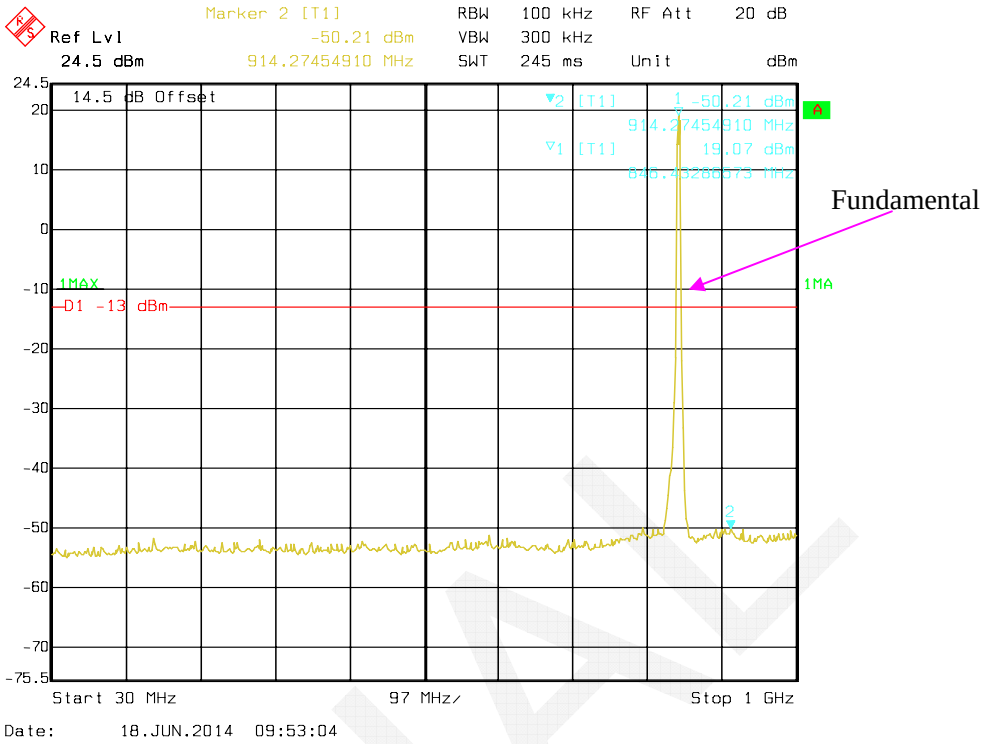


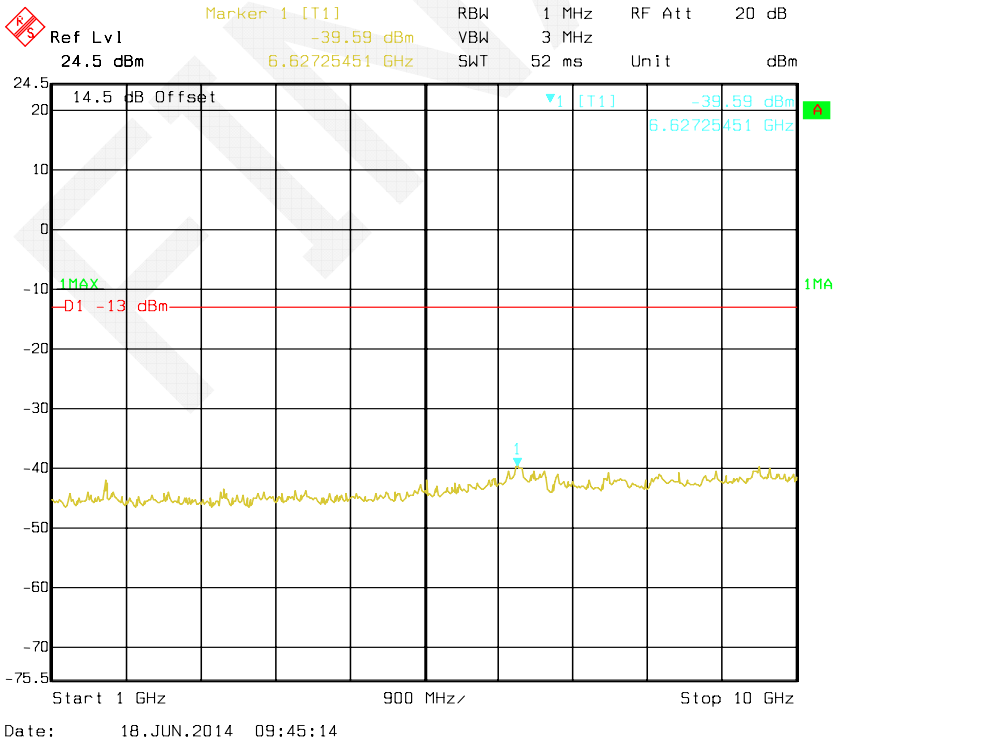
WCDMA Band V–HSUPA Middle Channel



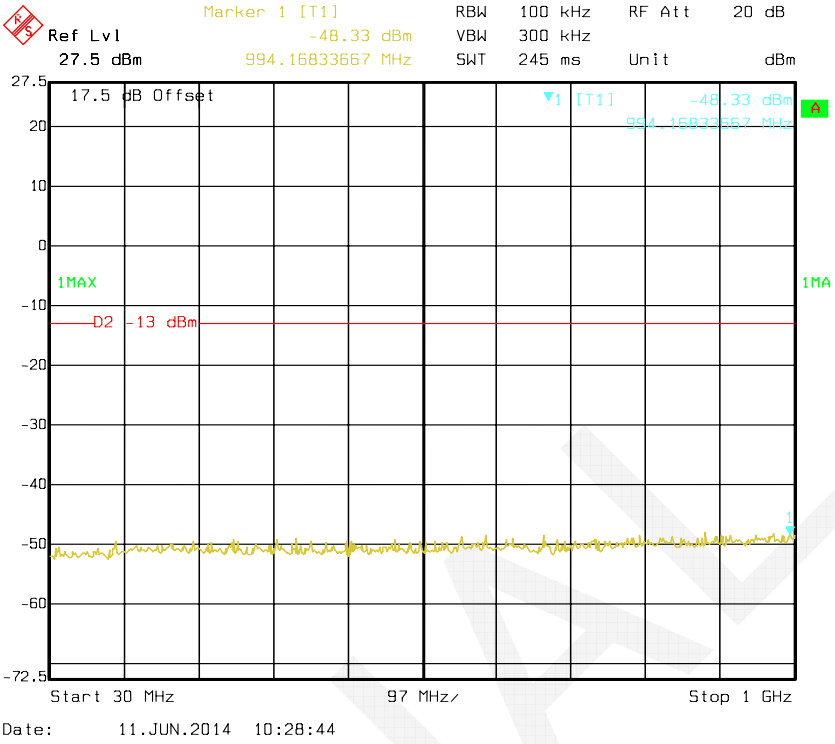


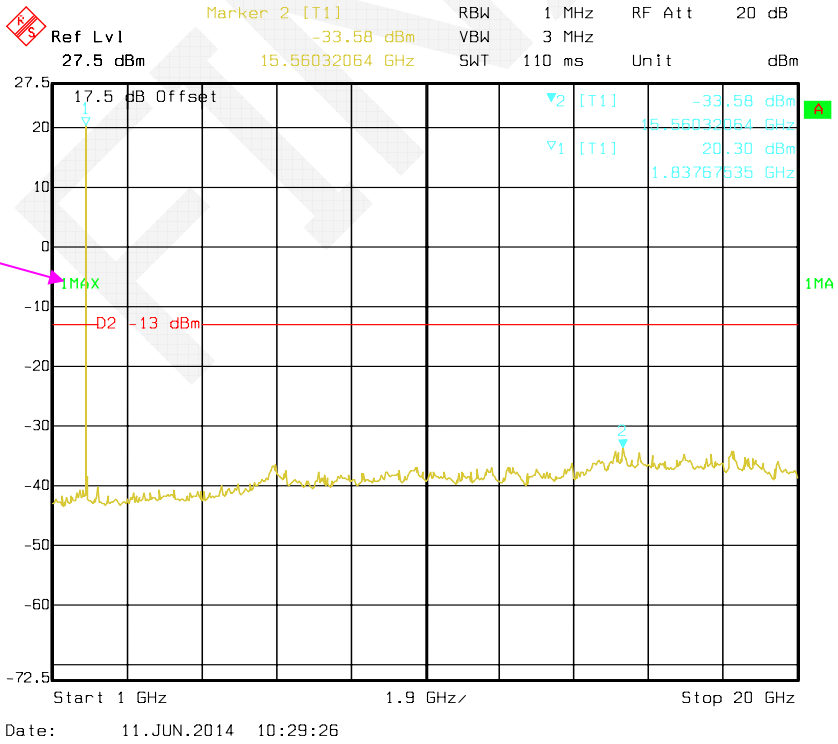
WCDMA Band V –HSUPA High Channel





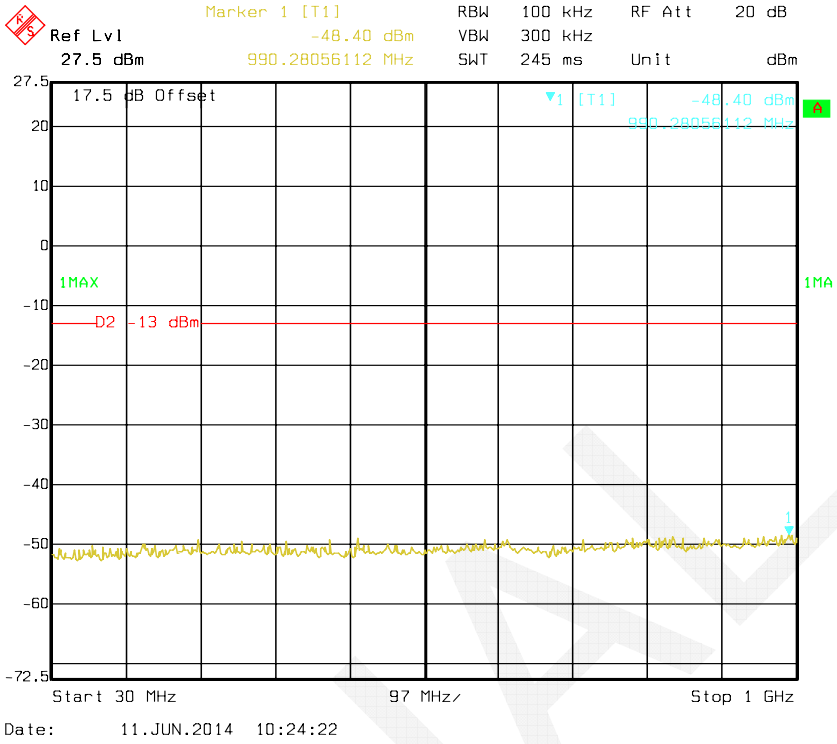
WCDMA Band II –REL99 Low Channel

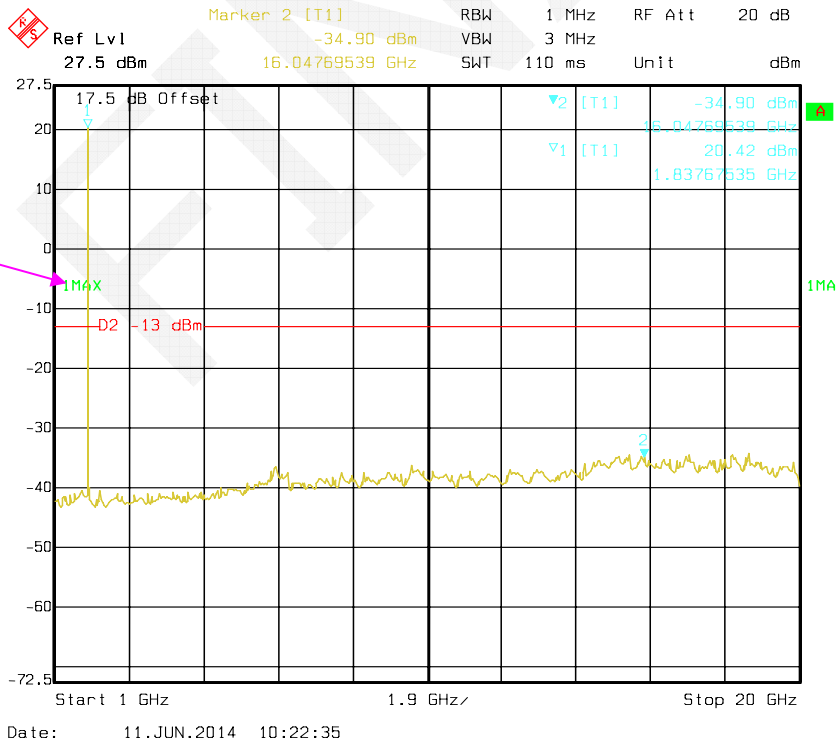




Fundamental

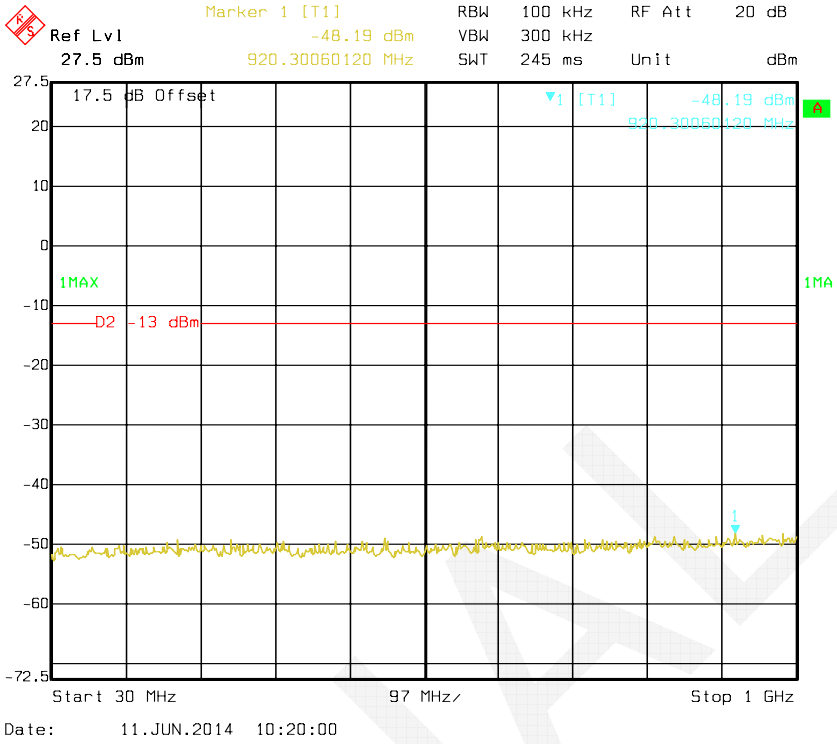
WCDMA Band II –REL99 Middle Channel

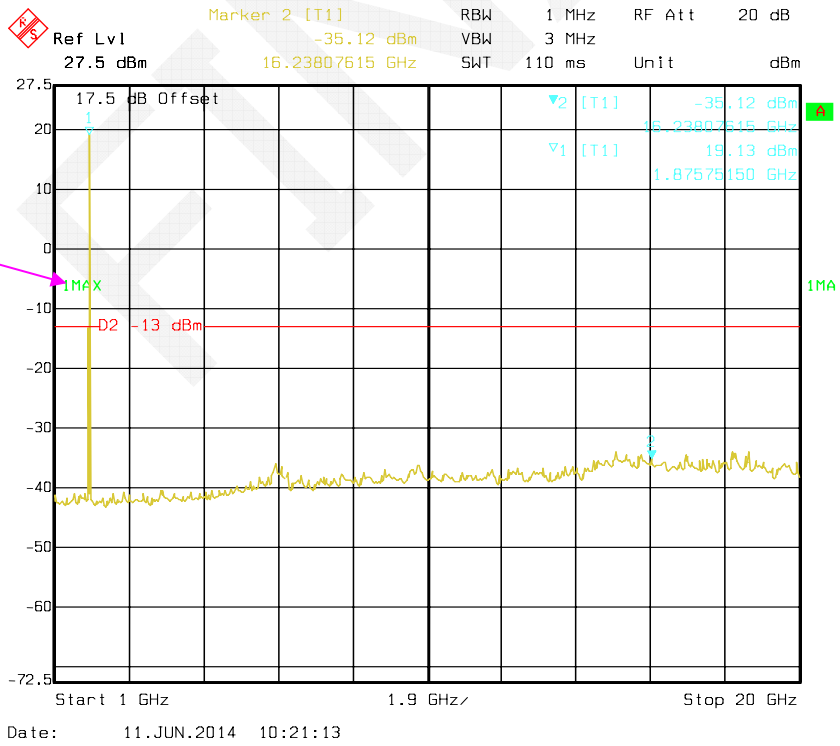




Fundamental

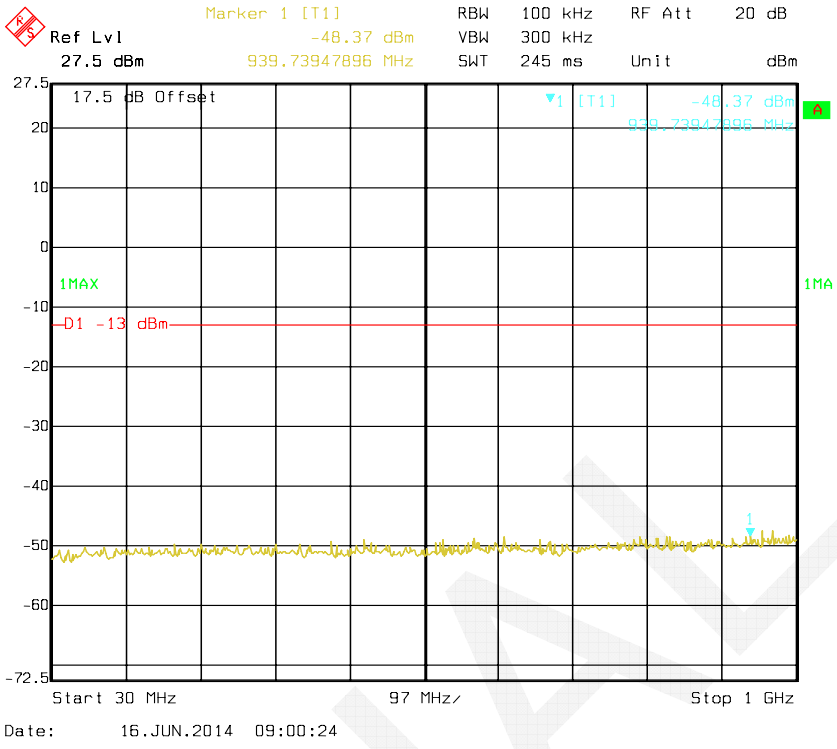
WCDMA Band II –REL99 High Channel

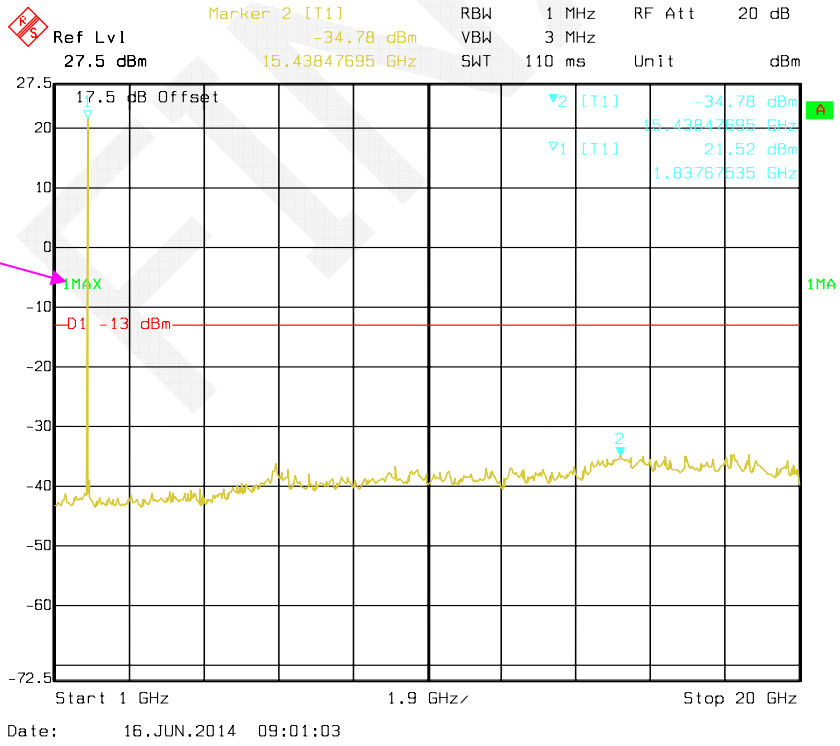




Fundamental

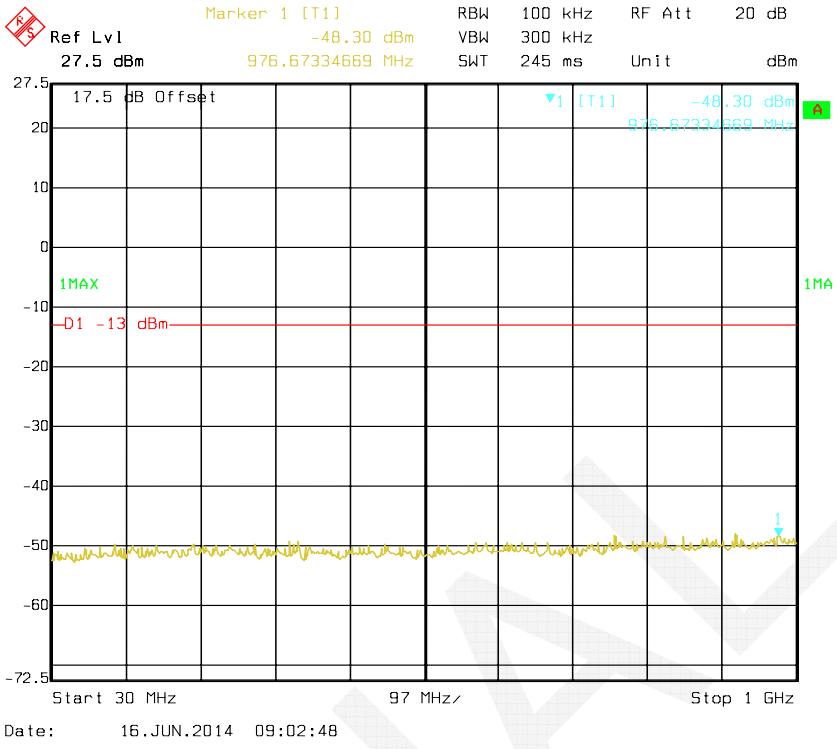
WCDMA Band II –HSDPA Low Channel

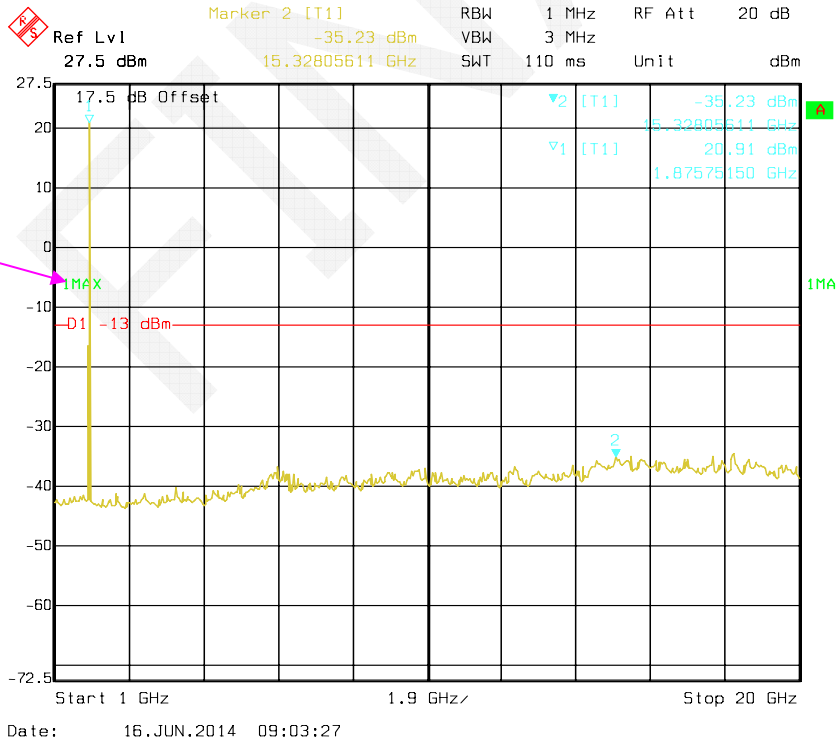




Fundamental

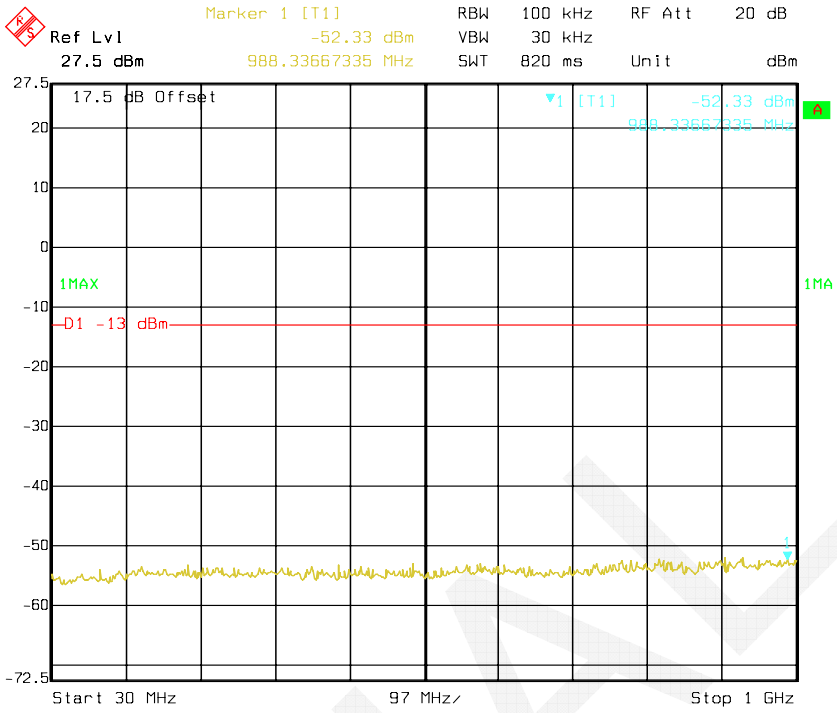
WCDMA Band II –HSDPA Middle Channel

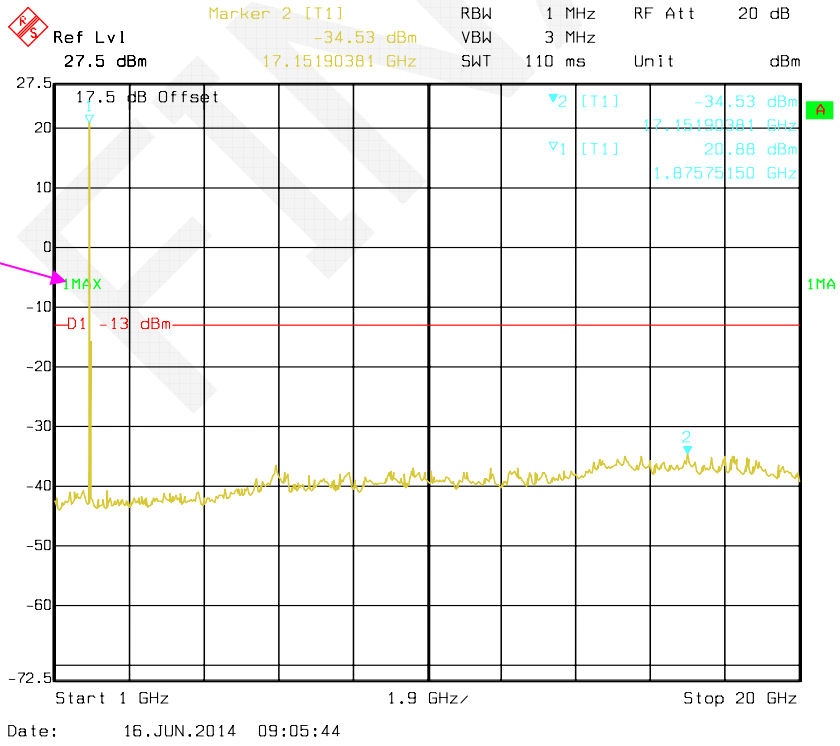




Fundamental

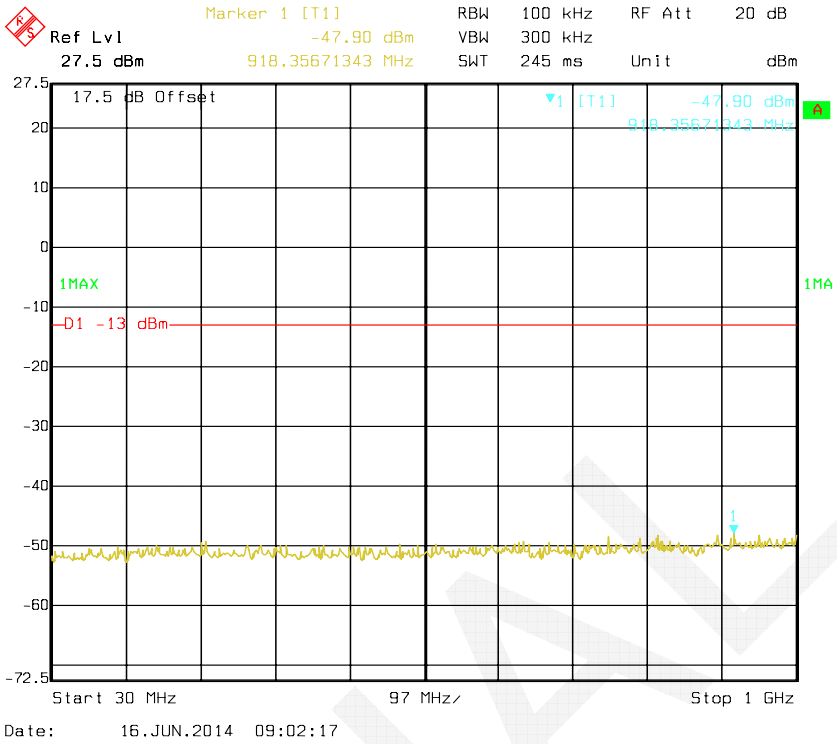
WCDMA Band II –HSDPA High Channel

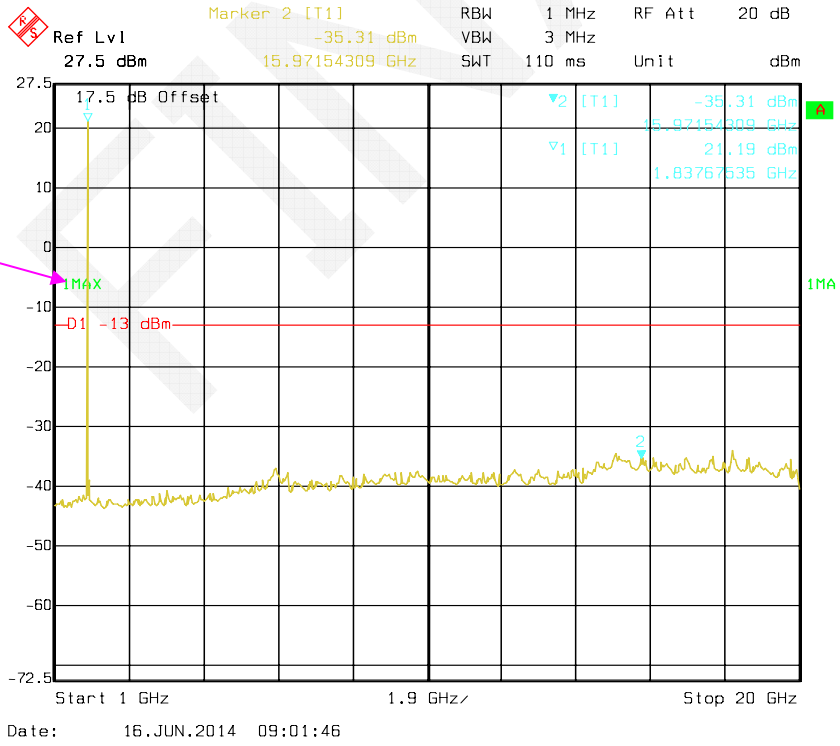




Fundamental

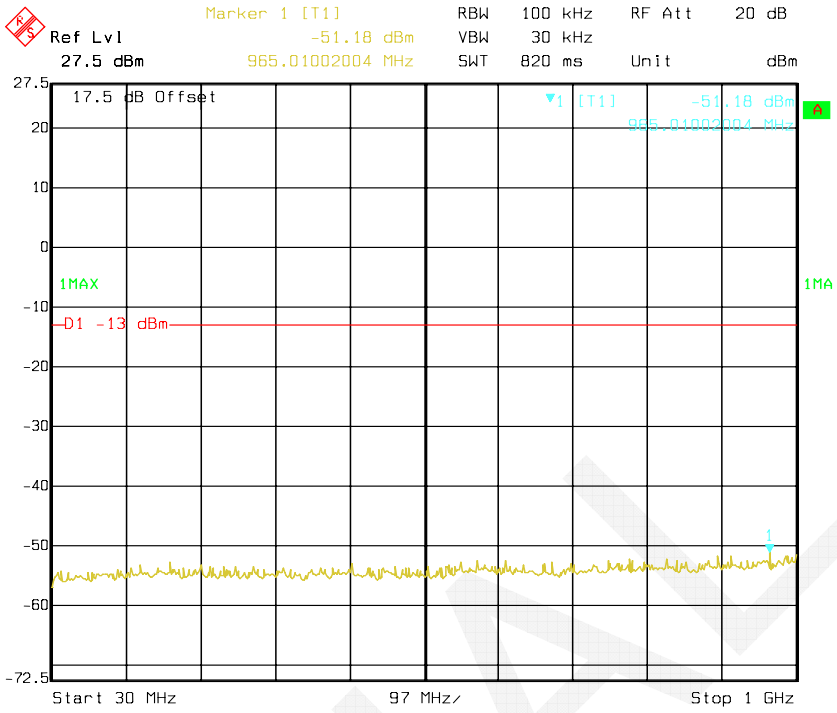
WCDMA Band II –HSUPA Low Channel

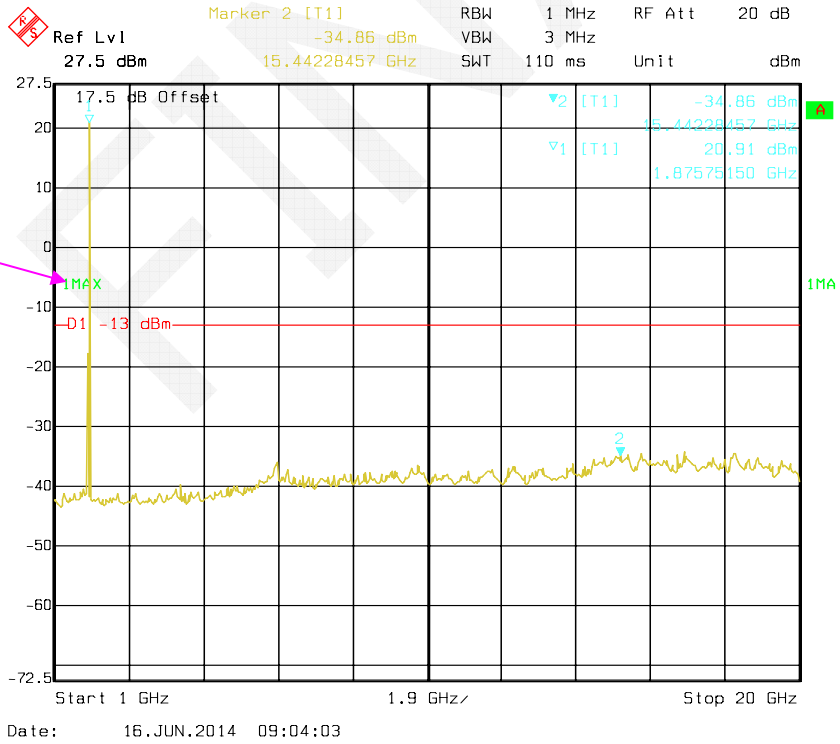




Fundamental

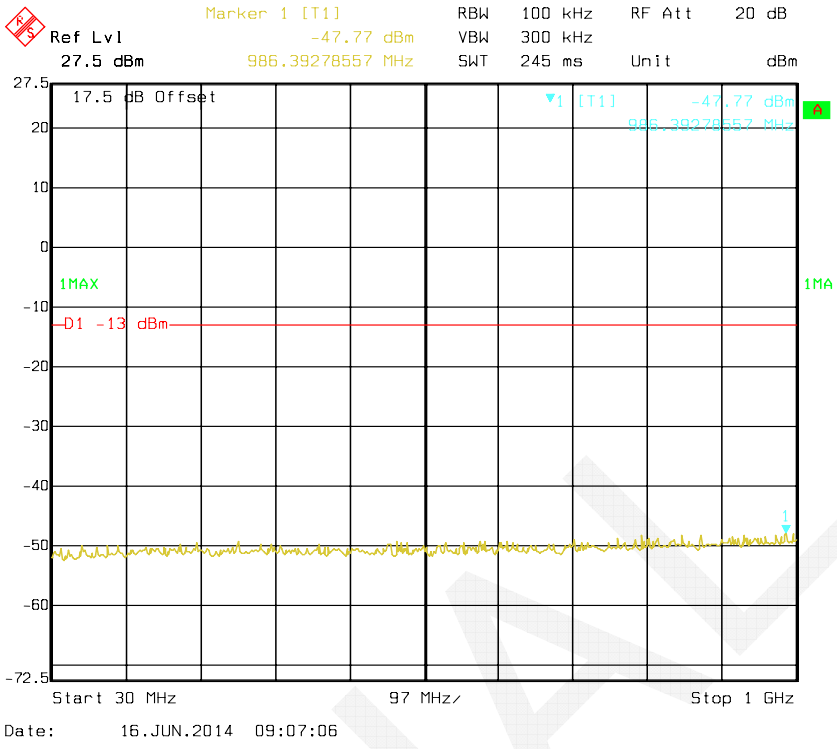
WCDMA Band II–HSUPA Middle Channel

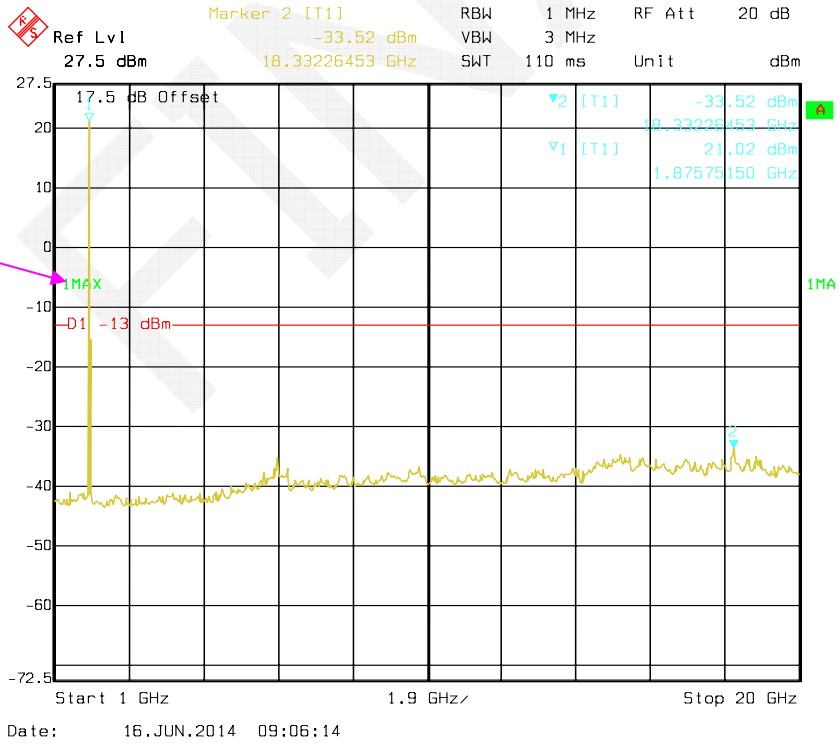




Fundamental

WCDMA Band II –HSUPA High Channel





Fundamental

FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917 and § 24.238.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-1	2011-09-06	2014-09-05
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-05
HP	Amplifier	8447E	2434A02181	2013-09-06	2014-09-05
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2014-02-19	2015-02-18
Giga	Signal Generator	1026	320408	2014-05-09	2015-05-09
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2012-09-06	2015-09-05

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	24.1 °C
Relative Humidity:	60%
ATM Pressure:	99.7 kPa

The testing was performed by Dean Liu on 2014-06-06

EUT Operation Mode: Transmitting

Cellular Band

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBµV	dBm	dBd/dBi	dB	dBm	dBm	dB
Low Channel								
1649.200	H	69.46	-31.7	10.5	1.5	-22.7	-13.0	9.7
1649.200	V	68.90	-32.7	10.5	1.5	-23.7	-13.0	10.7
2473.800	H	53.85	-44.2	12.9	2.6	-33.9	-13.0	20.9
2473.800	V	53.06	-43.7	12.9	2.6	-33.4	-13.0	20.4
3298.400	H	43.15	-54.1	13.6	1.7	-42.2	-13.0	29.2
3298.400	V	39.63	-57.3	13.6	1.7	-45.4	-13.0	32.4
353.100	H	29.07	-72	0.0	0.6	-72.6	-13.0	59.6
353.100	V	30.19	-68.3	0.0	0.6	-68.9	-13.0	55.9
Middle Channel								
1673.200	H	71.29	-29.8	10.6	1.5	-20.7	-13.0	7.7
1673.200	V	69.75	-31.6	10.6	1.5	-22.5	-13.0	9.5
2509.800	H	56.16	-41.9	13.1	2.8	-31.6	-13.0	18.6
2509.800	V	54.59	-42.5	13.1	2.8	-32.2	-13.0	19.2
3346.400	H	40.64	-56.8	13.8	1.7	-44.7	-13.0	31.7
3346.400	V	39.74	-57.4	13.8	1.7	-45.3	-13.0	32.3
353.100	H	30.52	-70.5	0.0	0.6	-71.1	-13.0	58.1
353.100	V	29.88	-68.6	0.0	0.6	-69.2	-13.0	56.2
High Channel								
1697.600	H	72.85	-28.2	10.8	1.5	-18.9	-13.0	5.9
1697.600	V	75.87	-25.3	10.8	1.5	-16.0	-13.0	3.0
2546.400	H	55.27	-41.3	13.1	2.8	-31.0	-13.0	18.0
2546.400	V	59.63	-37.5	13.1	2.8	-27.2	-13.0	14.2
3395.200	H	44.58	-53	14.1	1.8	-40.7	-13.0	27.7
3395.200	V	42.96	-54.4	14.1	1.8	-42.1	-13.0	29.1
353.100	H	29.64	-71.4	0.0	0.6	-72.0	-13.0	59.0
353.100	V	30.55	-67.9	0.0	0.6	-68.5	-13.0	55.5

PCS Band

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBµV	dBm	dBd/dBi	dB	dBm	dBm	dB
Low Channel								
3700.400	H	39.39	-55.4	14.0	2.5	-43.9	-13.0	30.9
3700.400	V	35.48	-58.9	14.0	2.5	-47.4	-13.0	34.4
5550.600	H	38.77	-52.1	14.0	2.2	-40.3	-13.0	27.3
5550.600	V	41.82	-49.6	14.0	2.2	-37.8	-13.0	24.8
7400.800	H	36.26	-51.8	13.3	3.0	-41.5	-13.0	28.5
7400.800	V	35.03	-52.7	13.3	3.0	-42.4	-13.0	29.4
375.000	H	30.58	-67.8	0.0	0.6	-68.4	-13.0	55.4
375.000	V	29.04	-66.7	0.0	0.6	-67.3	-13.0	54.3
Middle Channel								
3760.000	H	40.15	-54.1	13.8	2.9	-43.2	-13.0	30.2
3760.000	V	36.62	-56.4	13.8	2.9	-45.5	-13.0	32.5
5640.000	H	39.74	-52.0	14.0	2.1	-40.1	-13.0	27.1
5640.000	V	41.85	-49.8	14.0	2.1	-37.9	-13.0	24.9
7520.000	H	37.12	-50.5	13.2	2.9	-40.2	-13.0	27.2
7520.000	V	36.20	-51.3	13.2	2.9	-41.0	-13.0	28.0
375.000	H	28.76	-69.6	0.0	0.6	-70.2	-13.0	57.2
375.000	V	29.11	-66.7	0.0	0.6	-67.3	-13.0	54.3
High Channel								
3819.600	H	40.10	-53.7	13.6	3.3	-43.4	-13.0	30.4
3819.600	V	36.77	-55.4	13.6	3.3	-45.1	-13.0	32.1
5729.400	H	37.98	-53.9	13.9	2.4	-42.4	-13.0	29.4
5729.400	V	41.74	-50	13.9	2.4	-38.5	-13.0	25.5
7639.200	H	37.11	-50.3	13.3	3.2	-40.2	-13.0	27.2
7639.200	V	36.54	-51	13.3	3.2	-40.9	-13.0	27.9
375.000	H	30.46	-67.9	0.0	0.6	-68.5	-13.0	55.5
375.000	V	29.55	-66.2	0.0	0.6	-66.8	-13.0	53.8

WCDMA Band V

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBµV	dBm	dBd/dBi	dB	dBm	dBm	dB
Low Channel								
1652.800	H	50.37	-50.7	10.5	1.5	-41.7	-13.0	28.7
1652.800	V	50.04	-51.5	10.5	1.5	-42.5	-13.0	29.5
2479.200	H	35.64	-62.5	12.9	2.6	-52.2	-13.0	39.2
2479.200	V	33.95	-62.9	12.9	2.6	-52.6	-13.0	39.6
305.000	H	29.64	-77.2	0.0	0.5	-77.7	-13.0	64.7
305.000	V	30.11	-74.2	0.0	0.5	-74.7	-13.0	61.7
Middle Channel								
1673.200	H	53.19	-47.9	10.6	1.5	-38.8	-13.0	25.8
1673.200	V	52.48	-48.9	10.6	1.5	-39.8	-13.0	26.8
2509.800	H	37.93	-60.1	13.1	2.8	-49.8	-13.0	36.8
2509.800	V	35.19	-61.9	13.1	2.8	-51.6	-13.0	38.6
305.000	H	29.90	-76.9	0.0	0.5	-77.4	-13.0	64.4
305.000	V	30.44	-73.9	0.0	0.5	-74.4	-13.0	61.4
High Channel								
1693.200	H	56.41	-44.6	10.7	1.5	-35.4	-13.0	22.4
1693.200	V	55.28	-45.9	10.7	1.5	-36.7	-13.0	23.7
2539.800	H	40.46	-56.4	13.1	2.8	-46.1	-13.0	33.1
2539.800	V	38.29	-58.8	13.1	2.8	-48.5	-13.0	35.5
305.000	H	28.57	-78.3	0.0	0.5	-78.8	-13.0	65.8
305.000	V	29.12	-75.2	0.0	0.5	-75.7	-13.0	62.7

WCDMA Band II

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBµV	dBm	dBd/dBi	dB	dBm	dBm	dB
Low Channel								
3704.800	H	40.24	-54.5	13.9	2.5	-43.1	-13.0	30.1
3704.800	V	42.06	-52.2	13.9	2.5	-40.8	-13.0	27.8
5557.200	H	37.67	-53.3	14.0	2.2	-41.5	-13.0	28.5
5557.200	V	38.10	-53.3	14.0	2.2	-41.5	-13.0	28.5
403.500	H	29.63	-65.5	0.0	0.6	-66.1	-13.0	53.1
403.500	V	28.59	-63.9	0.0	0.6	-64.5	-13.0	51.5
Middle Channel								
3760.000	H	40.23	-54.1	13.8	2.9	-43.2	-13.0	30.2
3760.000	V	40.92	-52.1	13.8	2.9	-41.2	-13.0	28.2
5640.000	H	38.08	-53.6	14.0	2.1	-41.7	-13.0	28.7
5640.000	V	39.05	-52.6	14.0	2.1	-40.7	-13.0	27.7
403.500	H	28.22	-66.9	0.0	0.6	-67.5	-13.0	54.5
403.500	V	29.65	-62.8	0.0	0.6	-63.4	-13.0	50.4
High Channel								
3815.200	H	41.29	-52.6	13.6	3.3	-42.3	-13.0	29.3
3815.200	V	41.96	-50.2	13.6	3.3	-39.9	-13.0	26.9
5722.800	H	36.95	-55	13.9	2.4	-43.5	-13.0	30.5
5722.800	V	37.97	-53.8	13.9	2.4	-42.3	-13.0	29.3
403.500	H	29.72	-65.4	0.0	0.6	-66.0	-13.0	53.0
403.500	V	29.63	-62.9	0.0	0.6	-63.5	-13.0	50.5

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = SG Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

FCC §22.917(a) & §24.238(a) - BAND EDGES

Applicable Standard

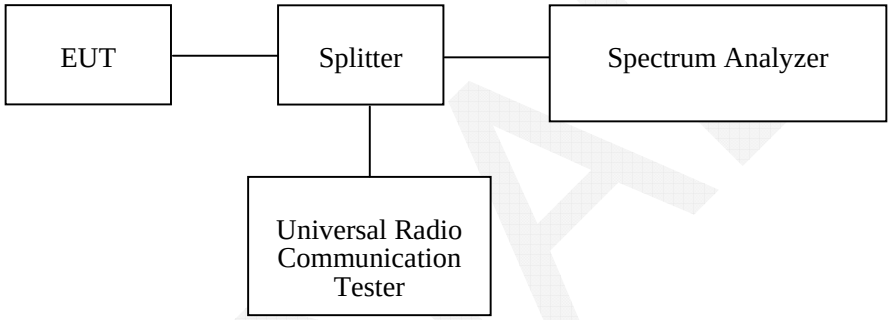
According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

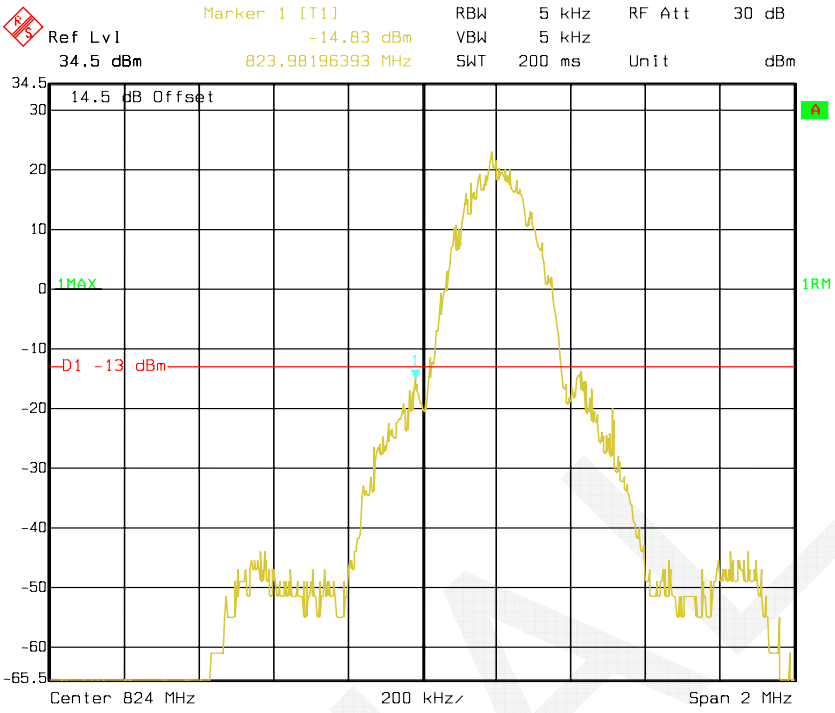
Temperature:	27.3~28.8 °C
Relative Humidity:	57~67 %
ATM Pressure:	99.6~99.8 kPa

The testing was performed by Dean Liu from 2014-06-10 to 2014-06-18.

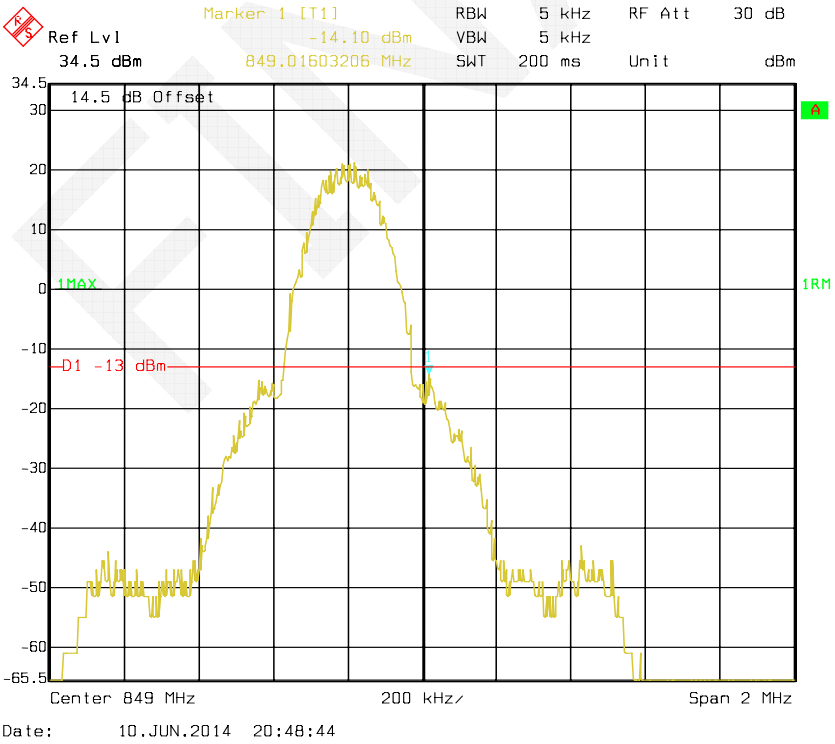
Please refer to the following tables and plots.

Band	Mode	Channel No.	Reading	Limit
			dBm	dBm
Cellular	GSM	128	-14.83	-13
		251	-14.10	-13
	EGPRS	128	-22.34	-13
		251	-20.91	-13
PCS	GSM	512	-16.68	-13
		810	-14.17	-13
	EGPRS	512	-25.72	-13
		810	-22.72	-13
WCDMA Band V	Rel 99	4132	-19.72	-13
		4233	-19.75	-13
	HSDPA	4132	-18.79	-13
		4233	-16.98	-13
	HSUPA	4132	-17.90	-13
		4233	-17.66	-13
WCDMA Band II	Rel 99	9262	-25.27	-13
		9538	-23.61	-13
	HSDPA	9262	-20.24	-13
		9538	-19.70	-13
	HSUPA	9262	-19.64	-13
		9538	-19.93	-13

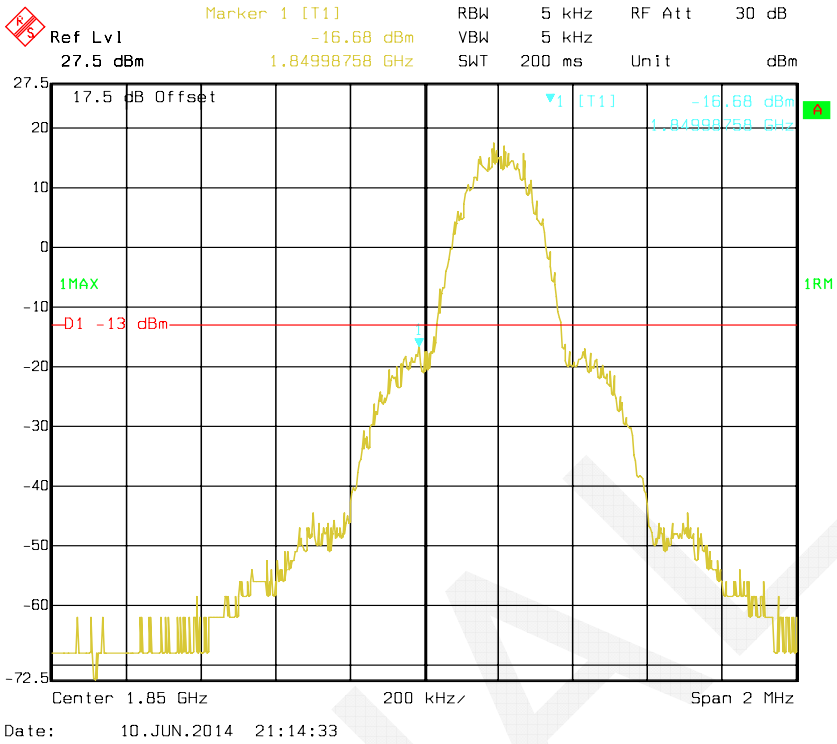
GSM 850, Left Band Edge



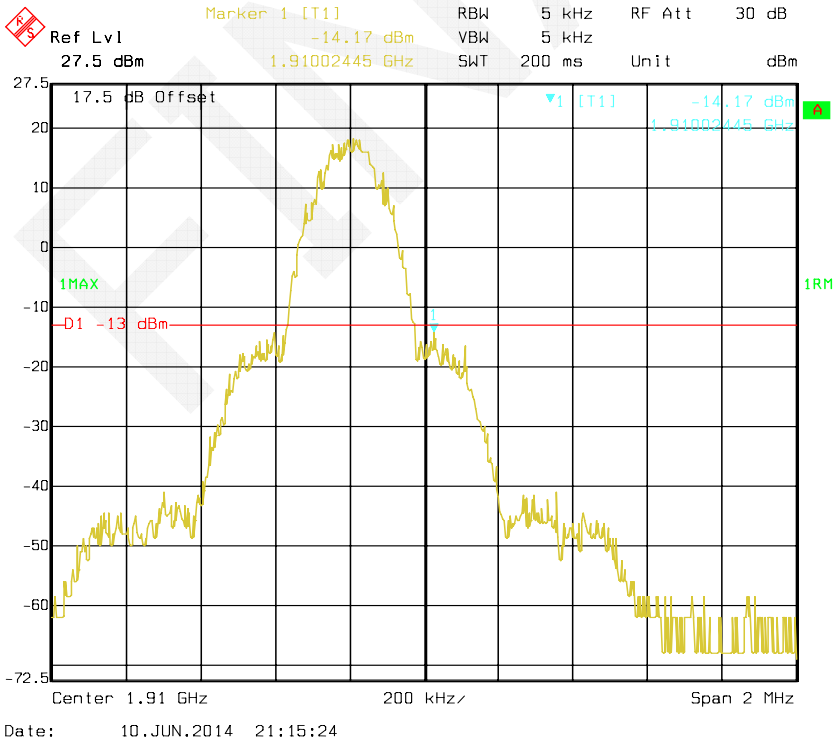
GSM 850, Right Band Edge



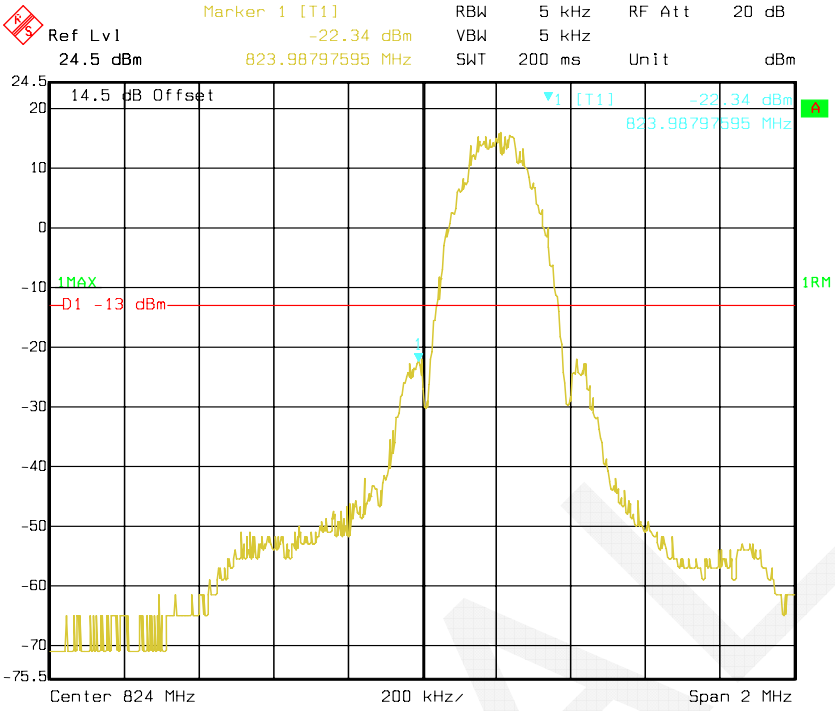
GSM 1900, Left Band Edge



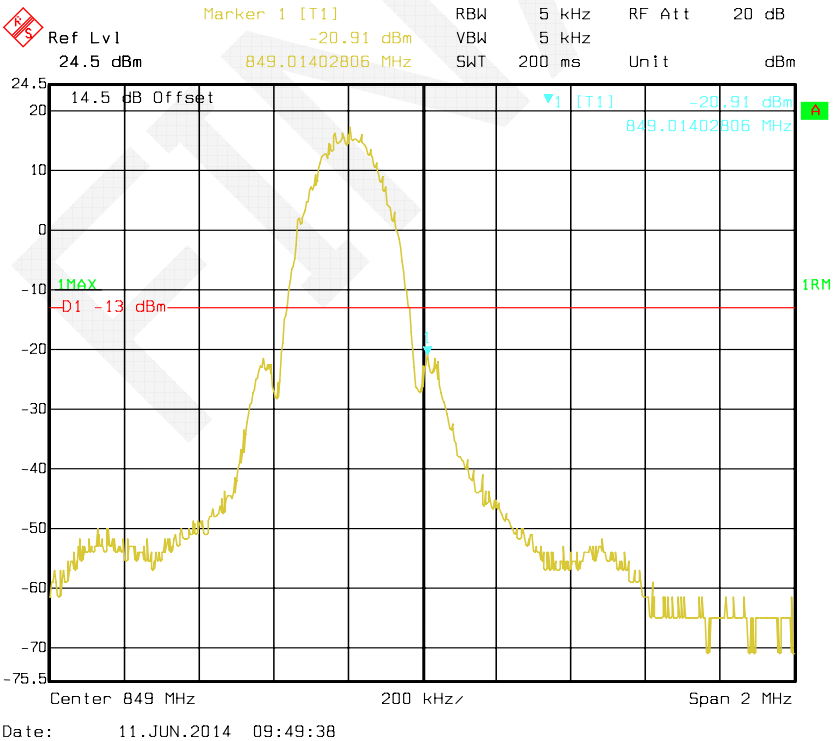
GSM 1900, Right Band Edge



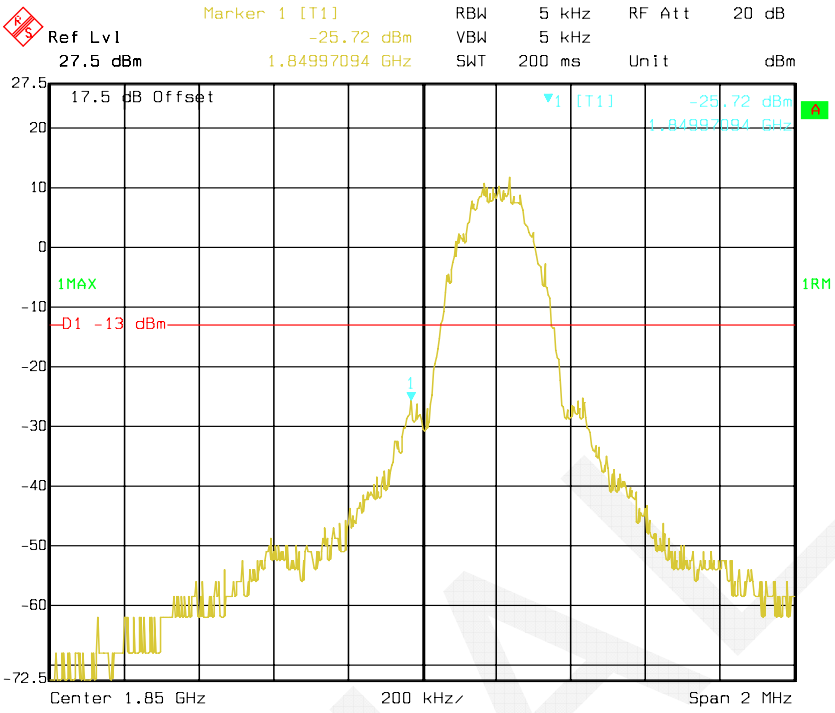
EGPRS 850, Left Band Edge



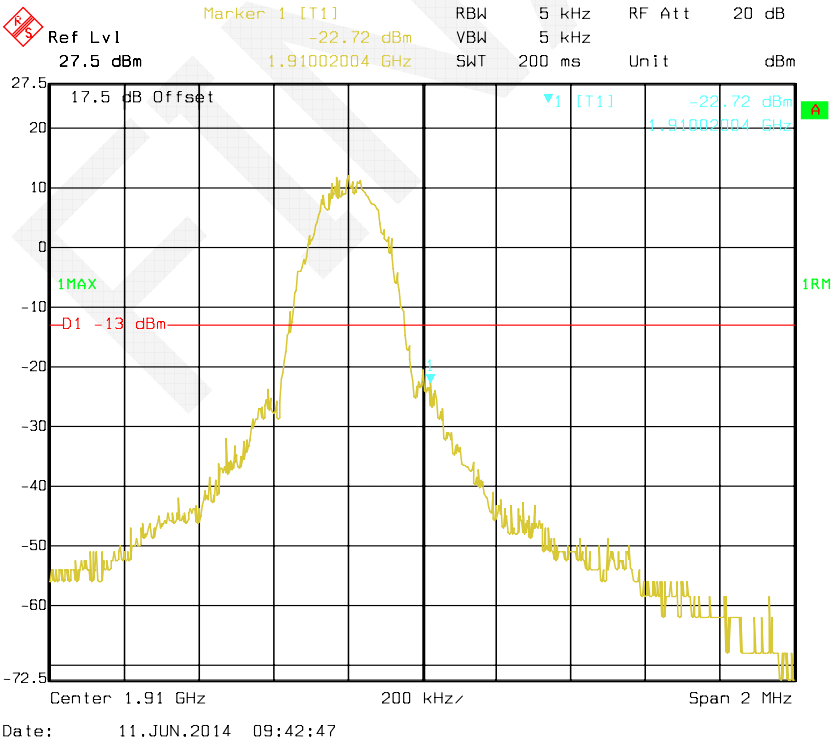
EGPRS 850, Right Band Edge



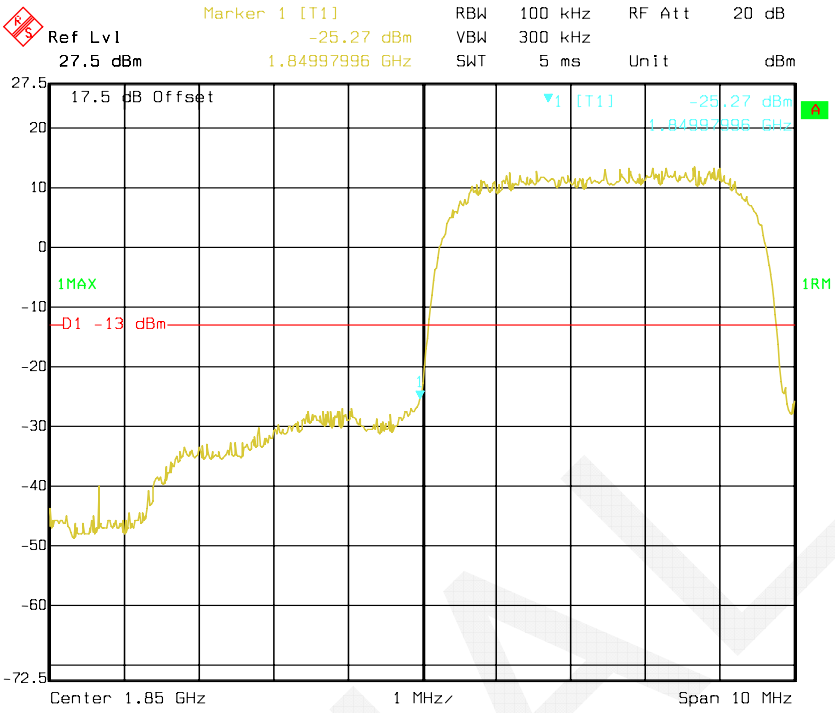
EGPRS 1900, Left Band Edge



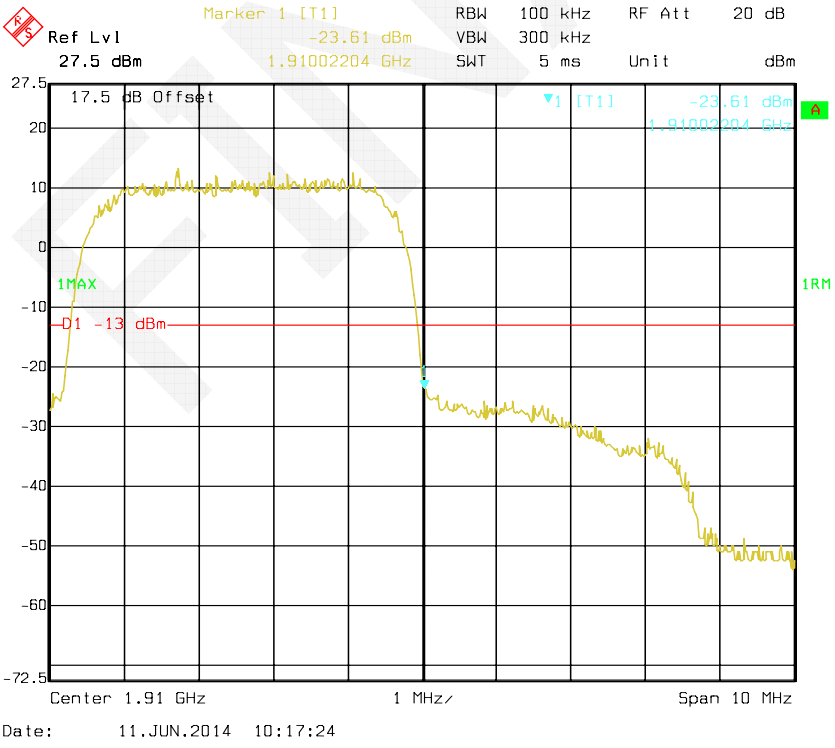
EGPRS 1900, Right Band Edge



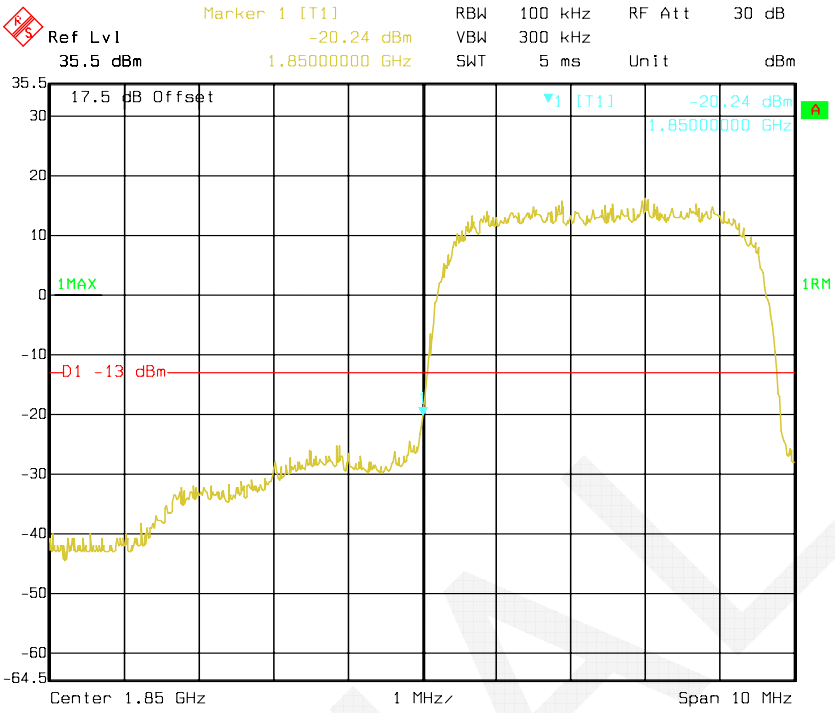
WCDMA Band II-REL99, Left Band Edge



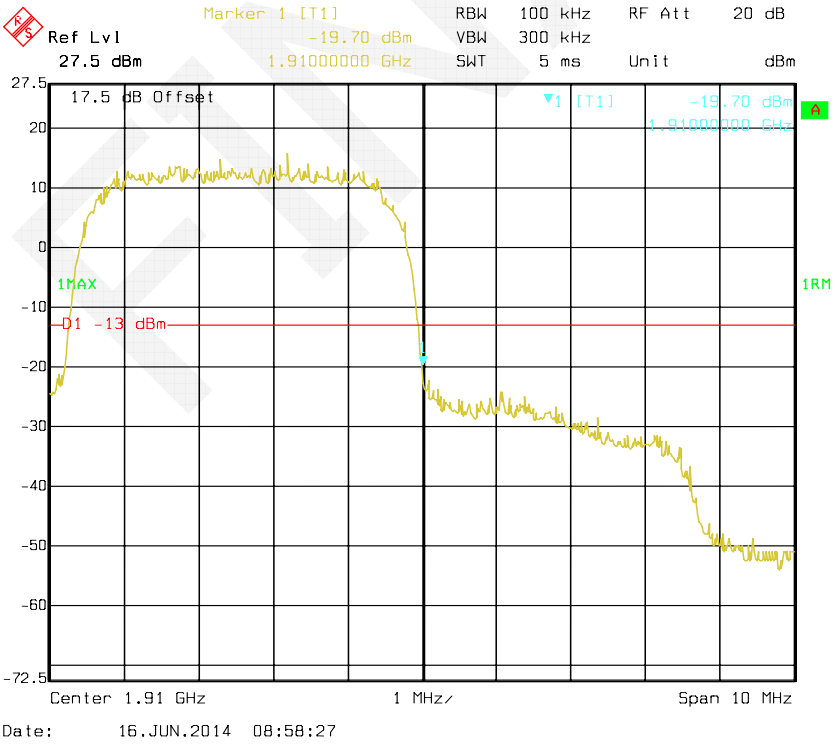
WCDMA Band II-REL99, Right Band Edge



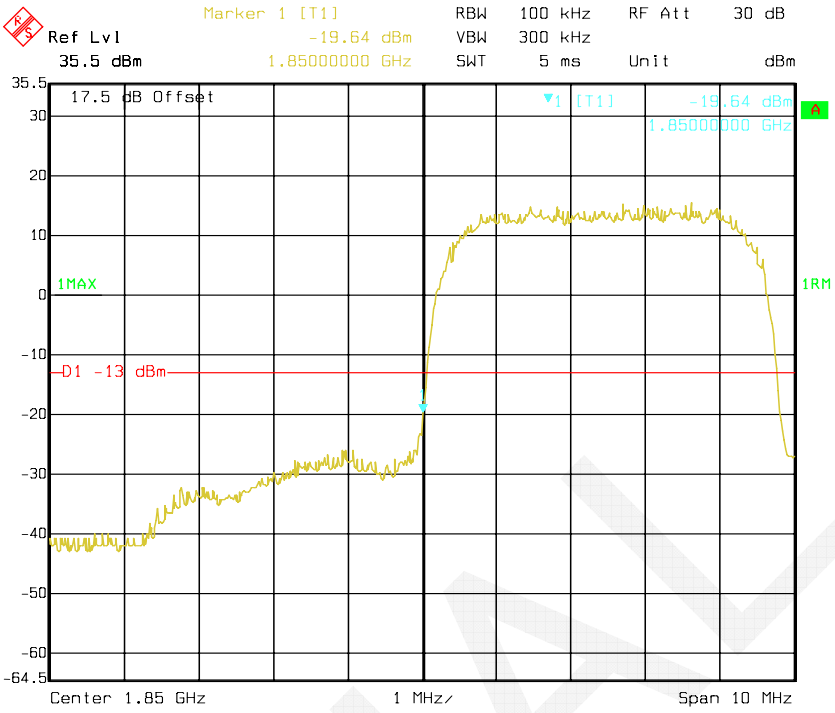
WCDMA Band II-HSDPA, Left Band Edge



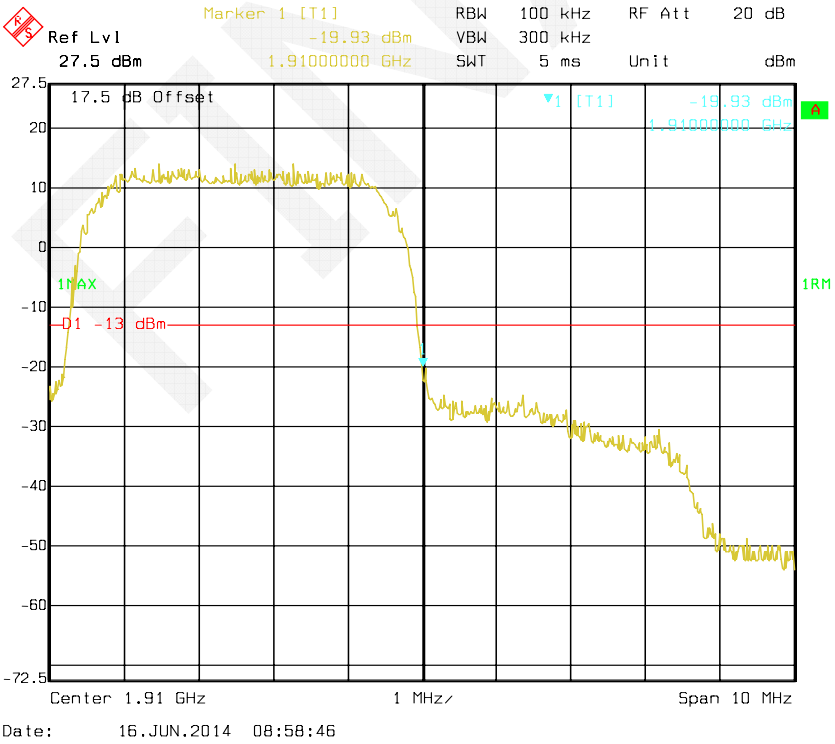
WCDMA Band II-HSDPA, Right Band Edge



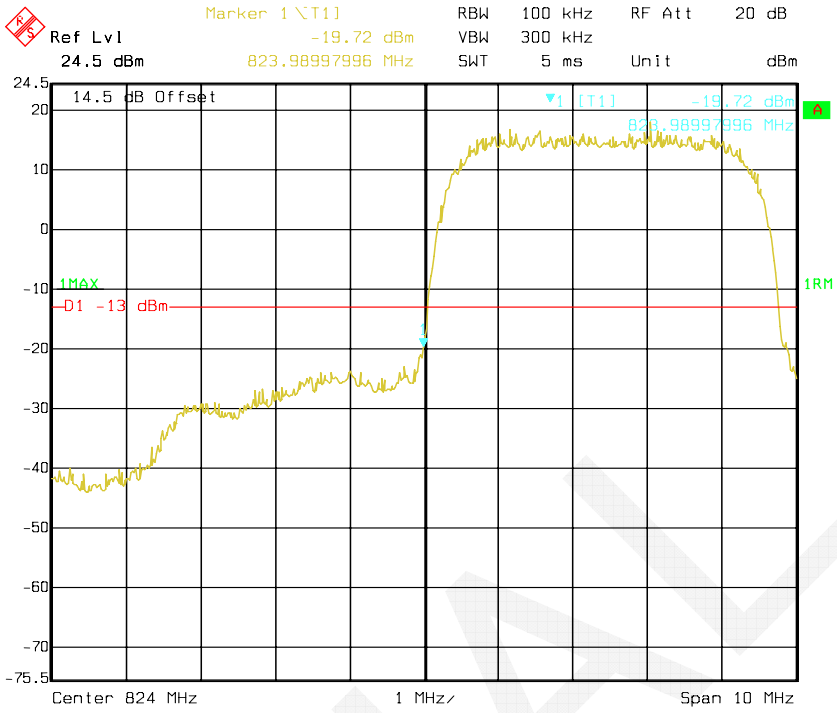
WCDMA Band II-HSUPA, Left Band Edge



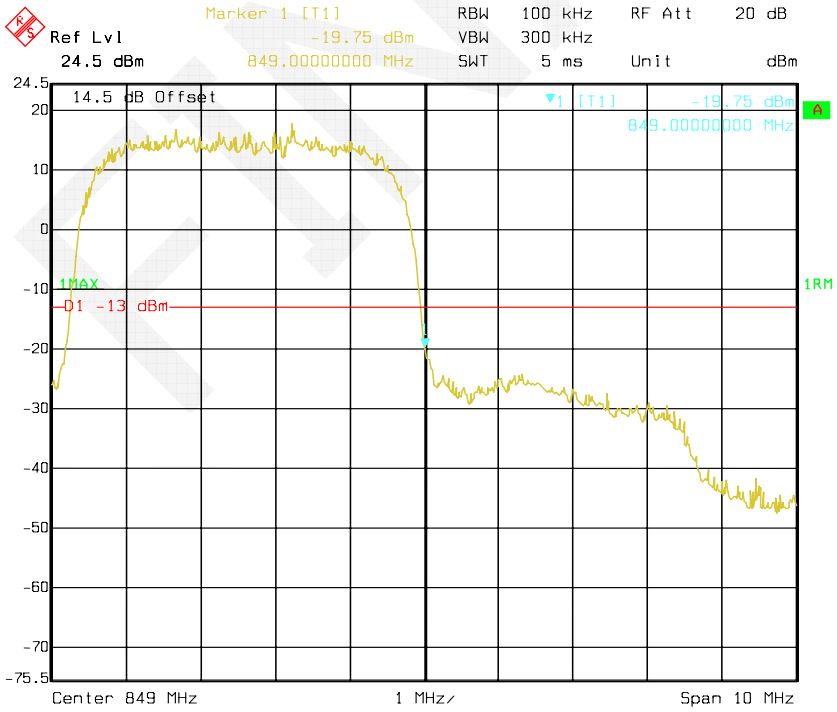
WCDMA Band II-HSUPA, Right Band Edge



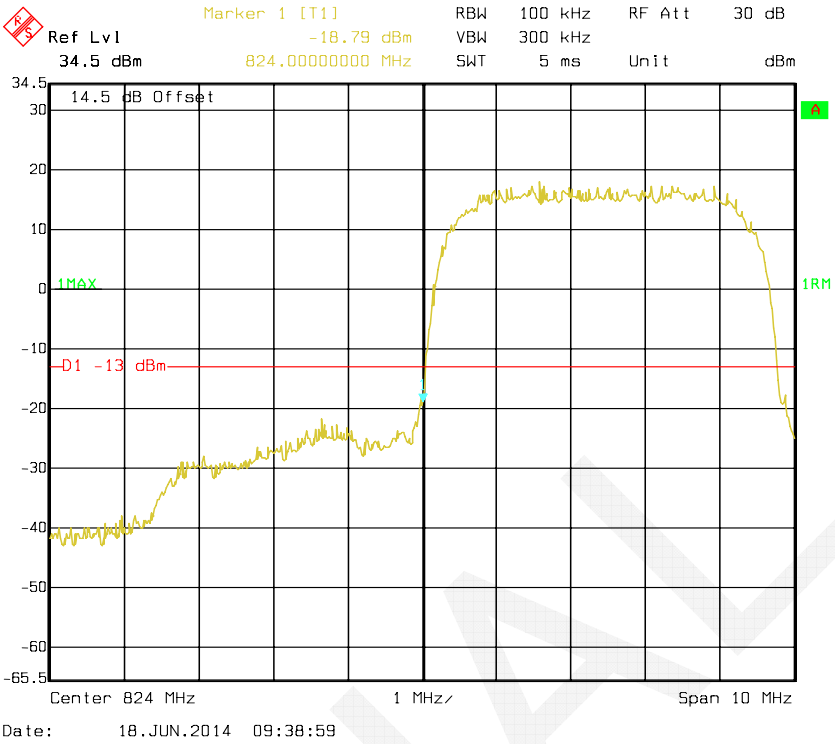
WCDMA Band V-REL99, Left Band Edge



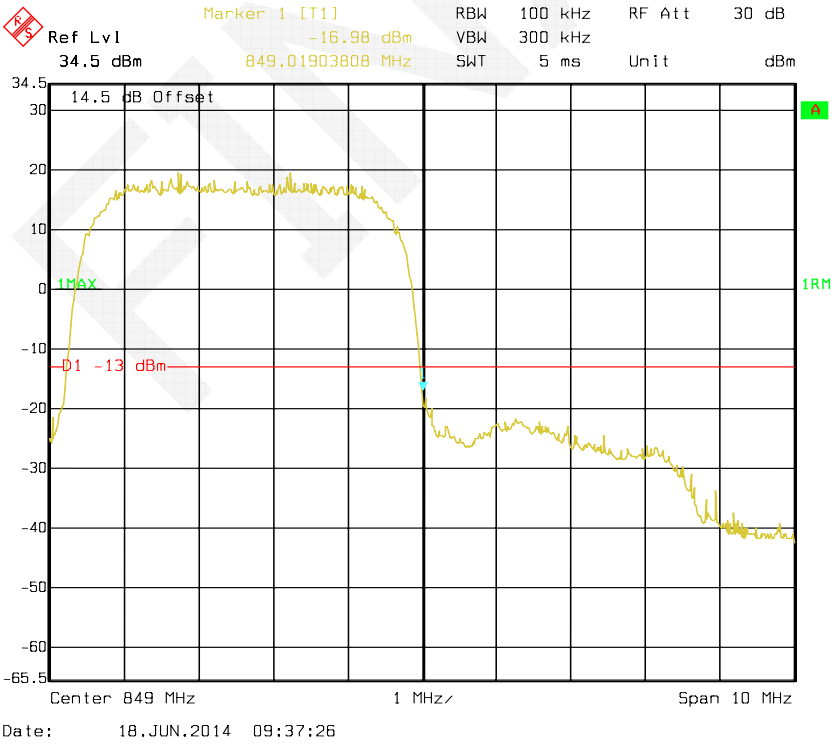
WCDMA Band V-REL99, Right Band Edge



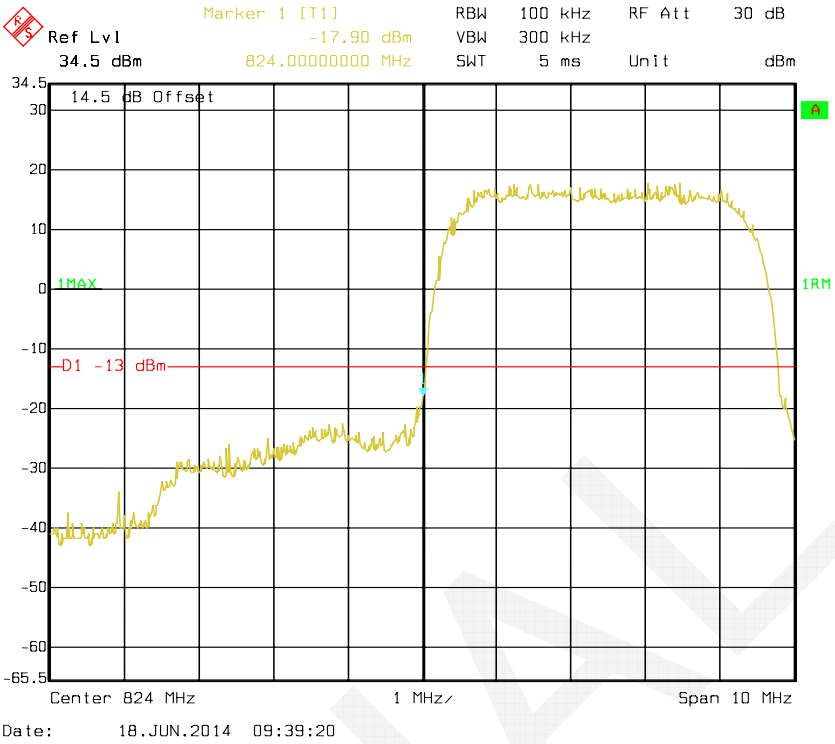
WCDMA Band V-HSDPA, Left Band Edge



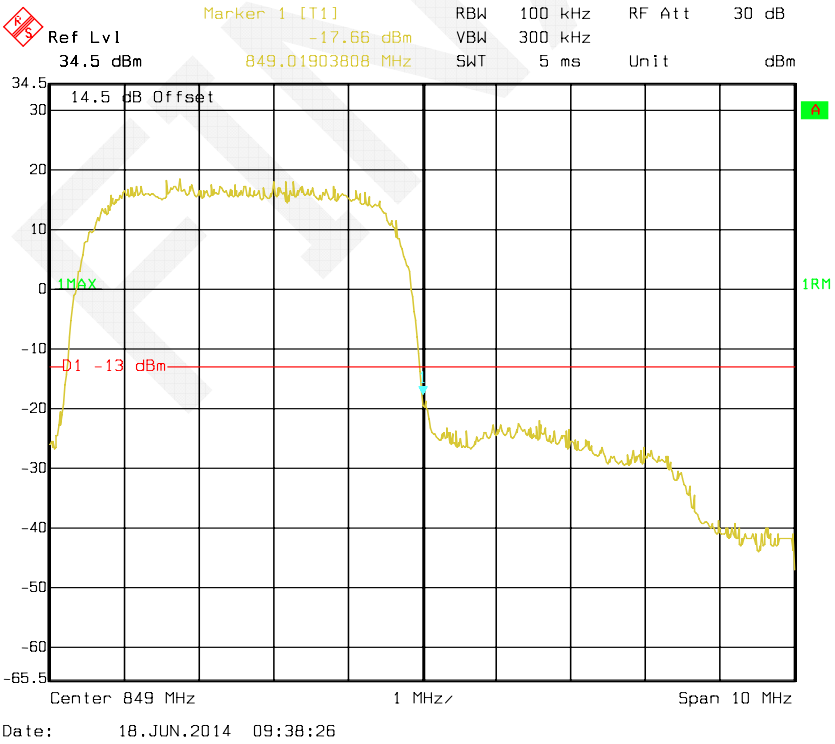
WCDMA Band V-HSDPA, Right Band Edge



WCDMA Band V-HSUPA, Left Band Edge



WCDMA Band V-HSUPA, Right Band Edge



FCC §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

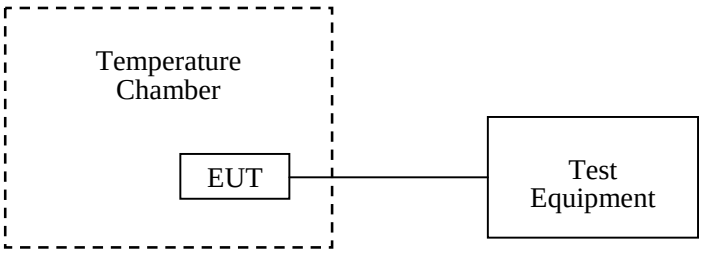
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set from 85% to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-3	2013-08-01	2014-07-31
R&S	Universal Radio Communication Tester	CMU200	109 038	2014-05-09	2015-05-08

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	28 °C
Relative Humidity:	60 %
ATM Pressure:	99.6 kPa

The testing was performed by Dean Liu on 2014-06-11

Cellular Band (Part 22H)

GMSK, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.7	-10	-0.012	2.5
-20	3.7	-9	-0.011	2.5
-10	3.7	-7	-0.008	2.5
0	3.7	-6	-0.007	2.5
10	3.7	-6	-0.007	2.5
20	3.7	-5	-0.006	2.5
30	3.7	-3	-0.004	2.5
40	3.7	-6	-0.007	2.5
50	3.7	-6	-0.007	2.5
25	3.5	-5	-0.006	2.5
25	4.2	-8	-0.010	2.5

EDGE, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.7	-9	-0.011	2.5
-20	3.7	-8	-0.010	2.5
-10	3.7	-5	-0.006	2.5
0	3.7	-7	-0.008	2.5
10	3.7	-5	-0.006	2.5
20	3.7	-8	-0.010	2.5
30	3.7	-7	-0.008	2.5
40	3.7	-5	-0.006	2.5
50	3.7	-8	-0.010	2.5
25	3.5	-7	-0.008	2.5
25	4.2	-4	-0.005	2.5

WCDMA Band V, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.7	-8	-0.010	2.5
-20	3.7	-6	-0.007	2.5
-10	3.7	-5	-0.006	2.5
0	3.7	-7	-0.008	2.5
10	3.7	-8	-0.010	2.5
20	3.7	-6	-0.007	2.5
30	3.7	-4	-0.005	2.5
40	3.7	-6	-0.007	2.5
50	3.7	-7	-0.008	2.5
25	3.5	-5	-0.006	2.5
25	4.2	-9	-0.011	2.5

PCS Band (Part 24E)

GMSK, Middle Channel, f_c = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.7	-12	-0.006	Pass
-20	3.7	-10	-0.005	Pass
-10	3.7	-8	-0.004	Pass
0	3.7	-8	-0.004	Pass
10	3.7	-6	-0.003	Pass
20	3.7	-9	-0.005	Pass
30	3.7	-7	-0.004	Pass
40	3.7	-11	-0.006	Pass
50	3.7	-8	-0.004	Pass
25	3.5	-10	-0.005	Pass
25	4.2	-11	-0.006	Pass

EDGE, Middle Channel, fo = 1880.0 MHz				
Temperature	Voltage	Frequency Error	Frequency Error	Result
℃	V_{DC}	Hz	ppm	
-30	3.7	-9	-0.005	Pass
-20	3.7	-8	-0.004	Pass
-10	3.7	-9	-0.005	Pass
0	3.7	-8	-0.004	Pass
10	3.7	-7	-0.004	Pass
20	3.7	-7	-0.004	Pass
30	3.7	-5	-0.003	Pass
40	3.7	-6	-0.003	Pass
50	3.7	-7	-0.004	Pass
25	3.5	-8	-0.004	Pass
25	4.2	-7	-0.004	Pass

WCDMA Band II, Middle Channel, f_c = 1880.0 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.7	13	0.007	Pass
-20	3.7	12	0.006	Pass
-10	3.7	13	0.007	Pass
0	3.7	12	0.006	Pass
10	3.7	11	0.006	Pass
20	3.7	15	0.008	Pass
30	3.7	9	0.005	Pass
40	3.7	13	0.007	Pass
50	3.7	11	0.006	Pass
25	3.5	12	0.006	Pass
25	4.2	13	0.007	Pass

EXHIBIT A - EUT PHOTOGRAPHS

EUT—All View

EUT—Adapter View

EUT—Adapter Label View

EUT - Top View

EUT - Bottom View

EUT – Side View

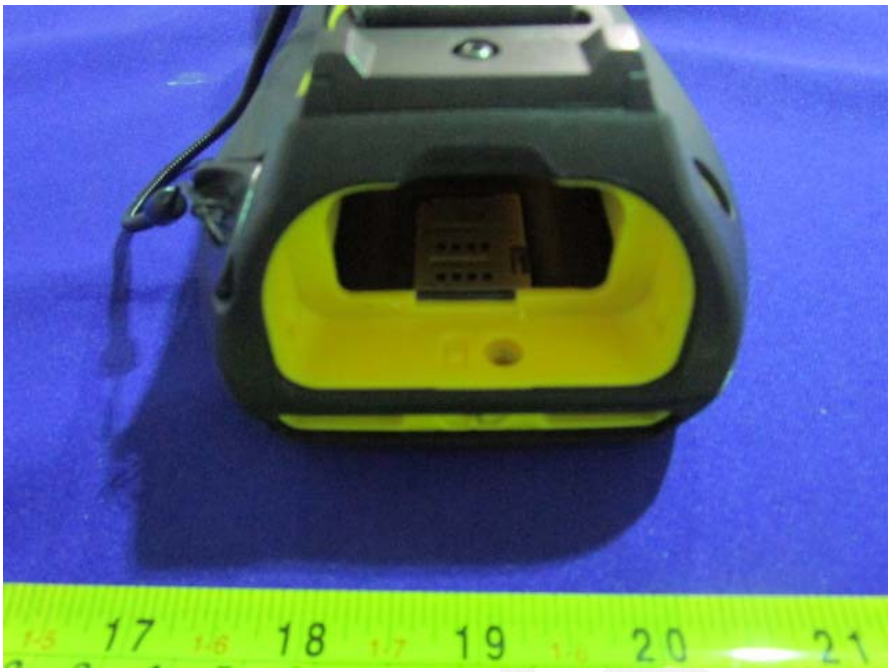
EUT – Side View

EUT – Side View

EUT – Side View

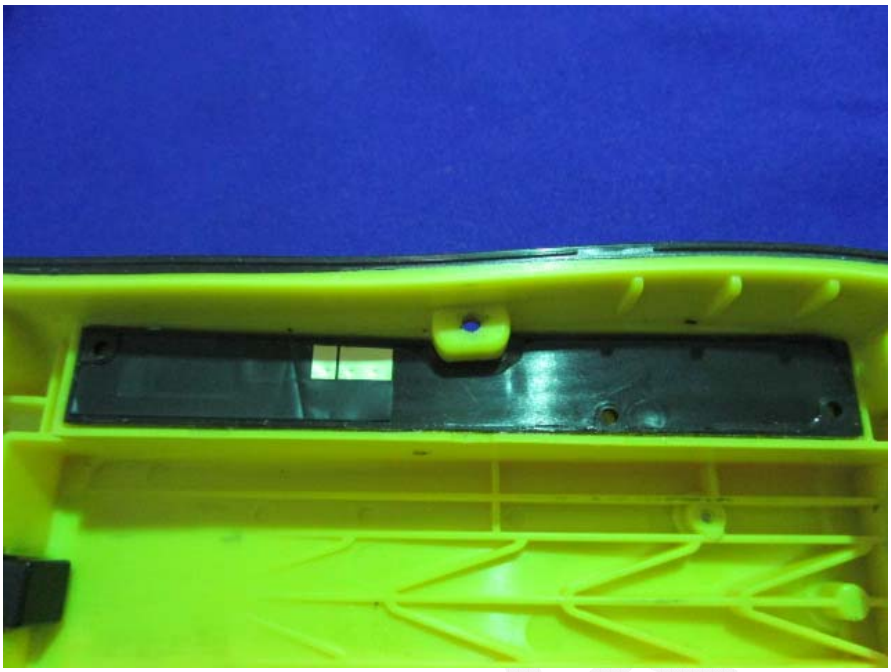
EUT – Battery off View

EUT – Battery Slot View

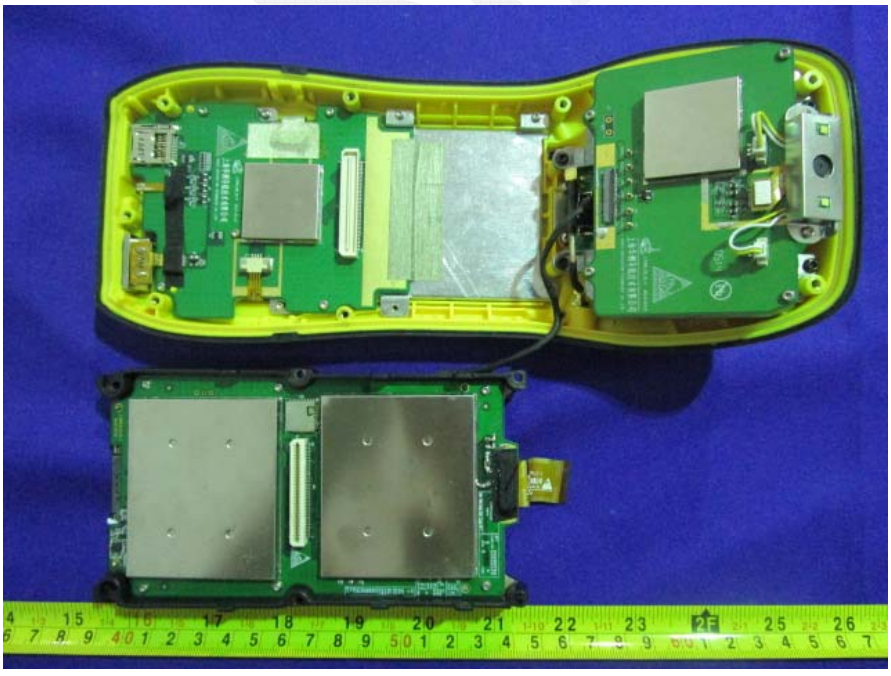


EUT – Uncover View

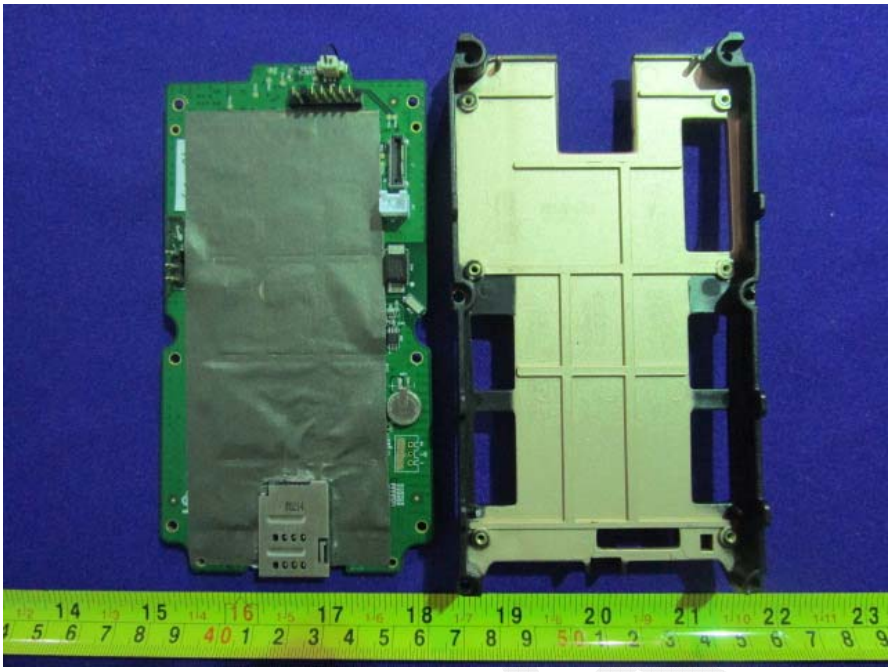
EUT – GSM and WCDMA Antenna View



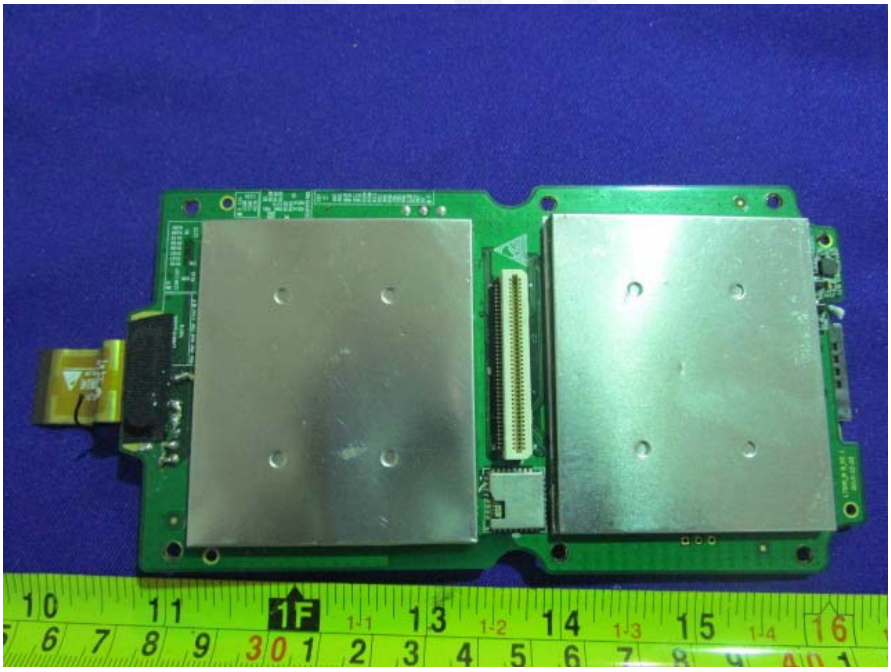
EUT – Uncover View



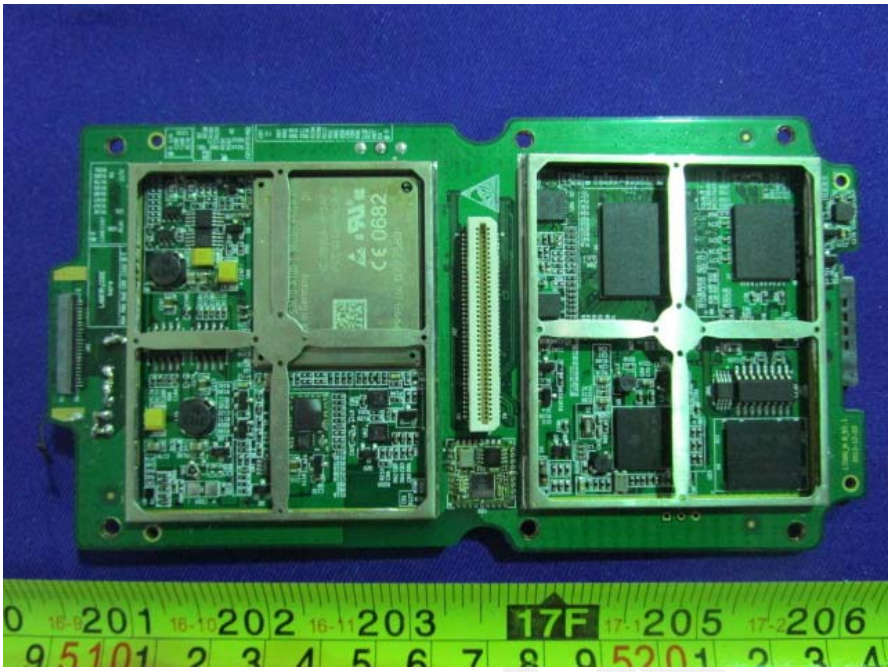
EUT – Main Board Uncover View



EUT – Main Board Top View

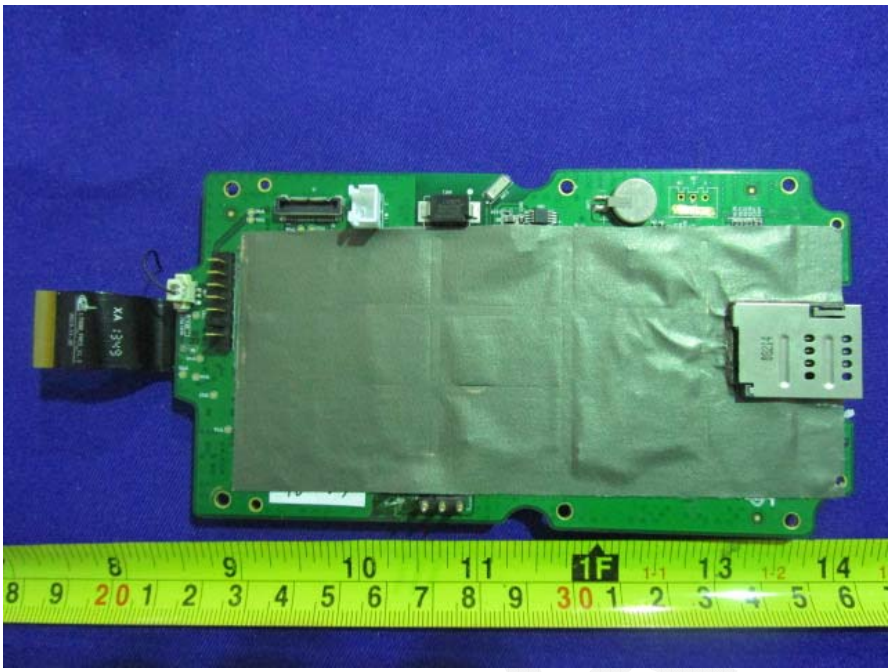


EUT – Main Board Top without ShieldingView

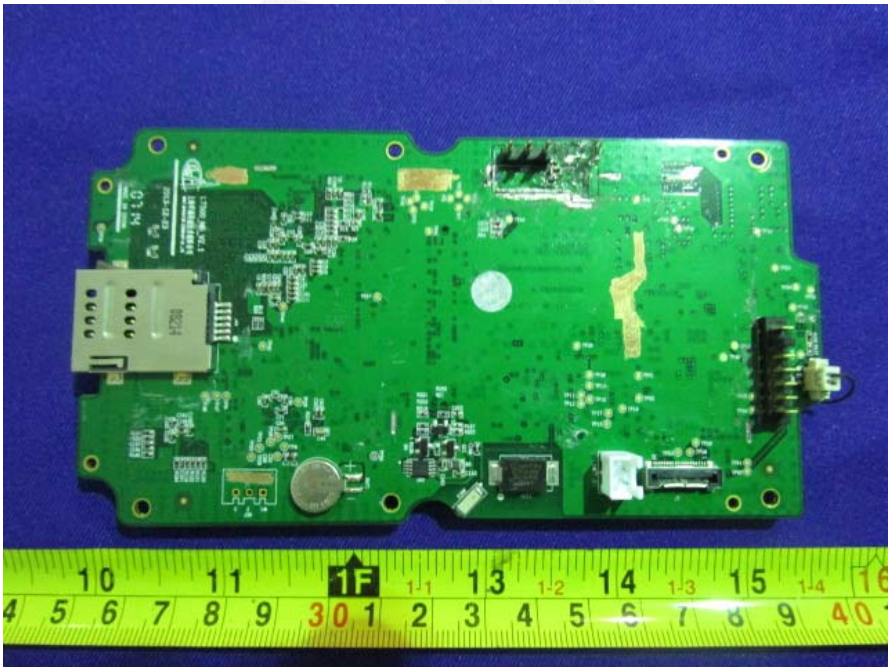


EUT – RF Chip View

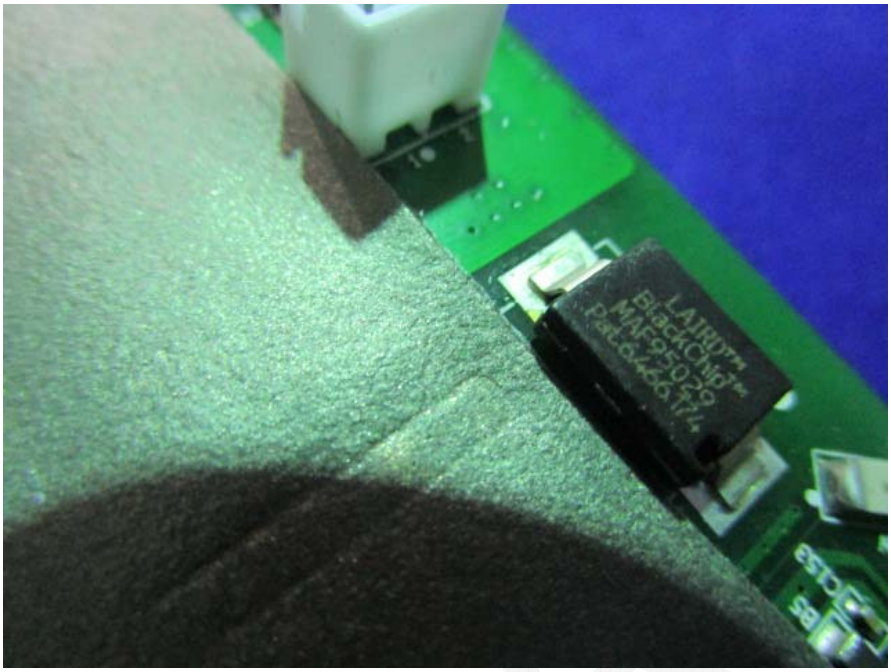
EUT – Main Board Bottom View



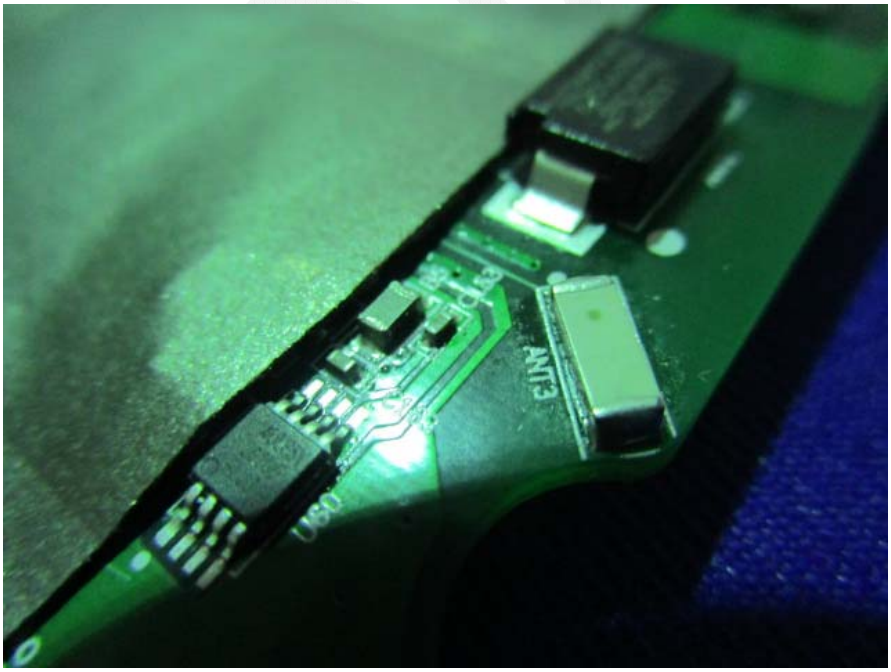
EUT – Main Board Bottom without Shielding View



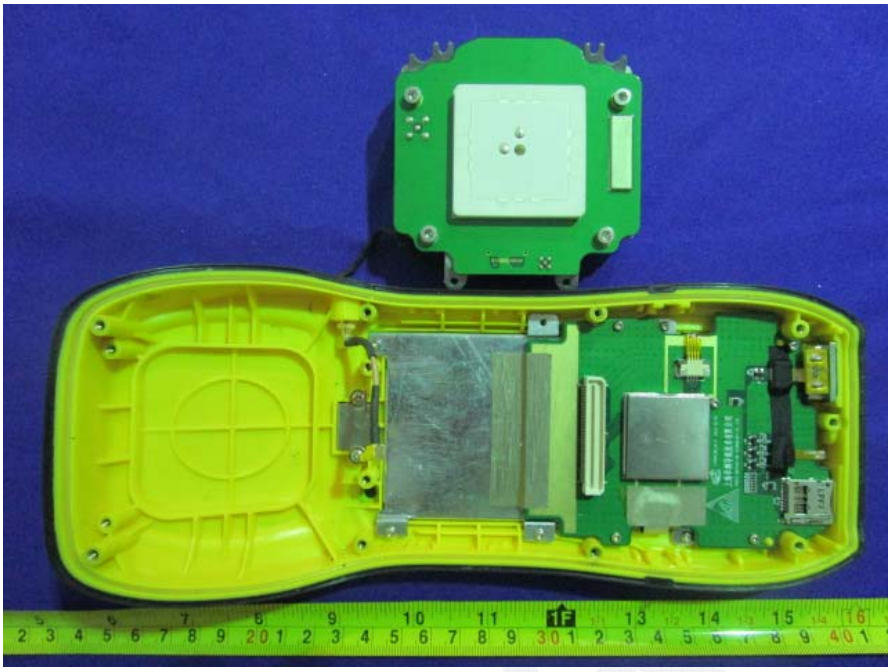
EUT – Wi-Fi Antenna View



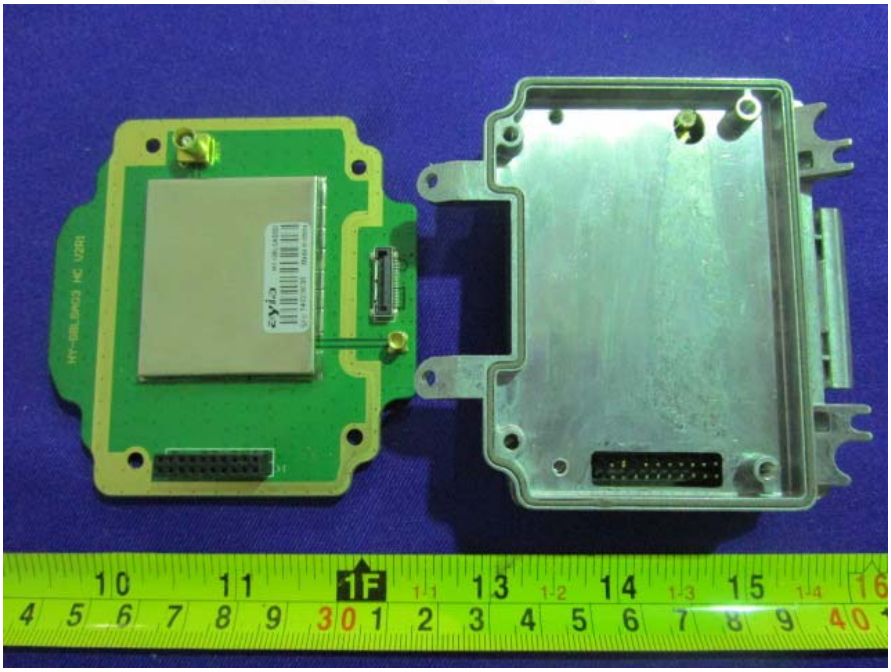
EUT – BT Antenna View



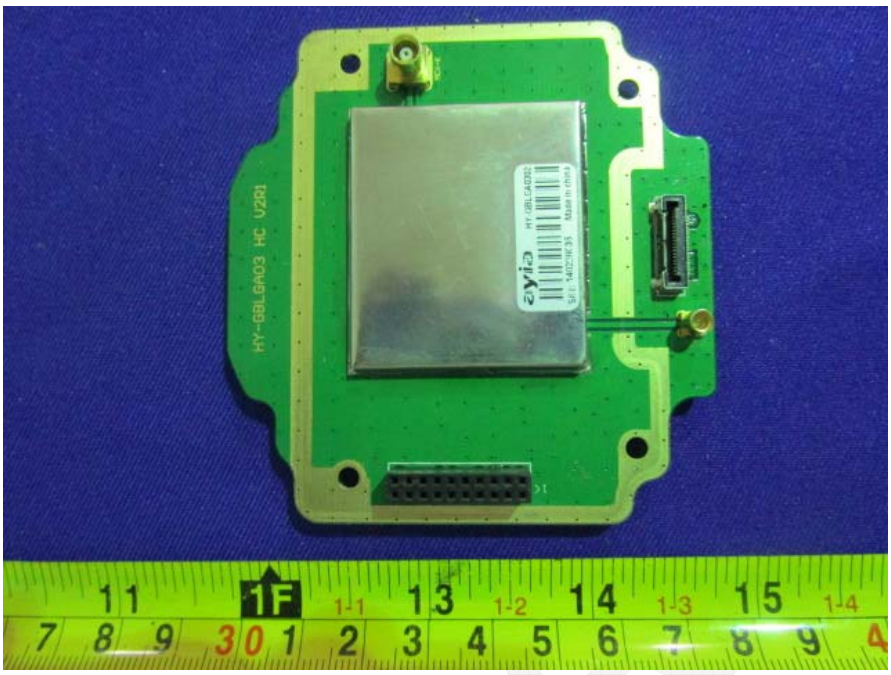
EUT – GPS Board Off View



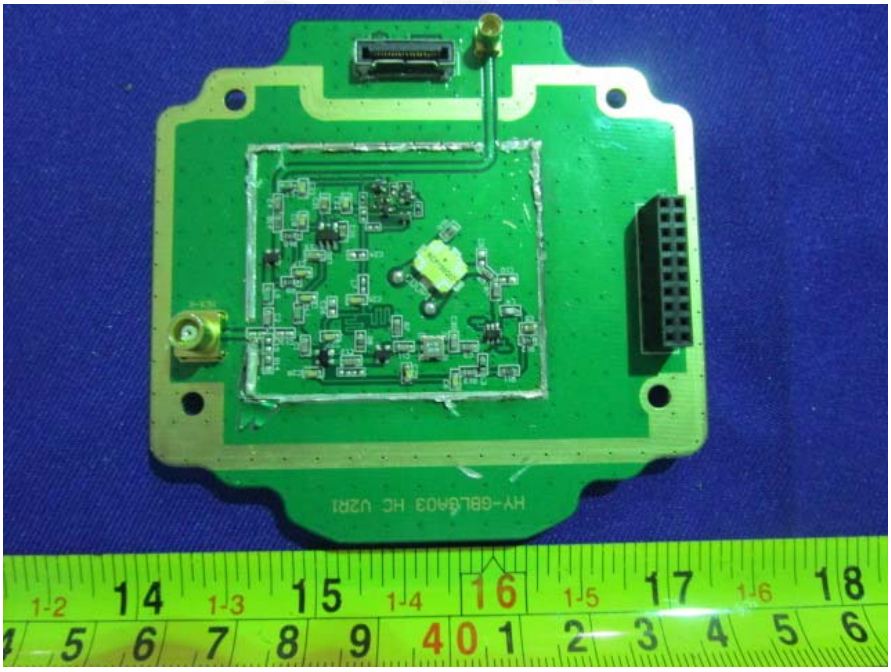
EUT – GPS Board Cover Off View



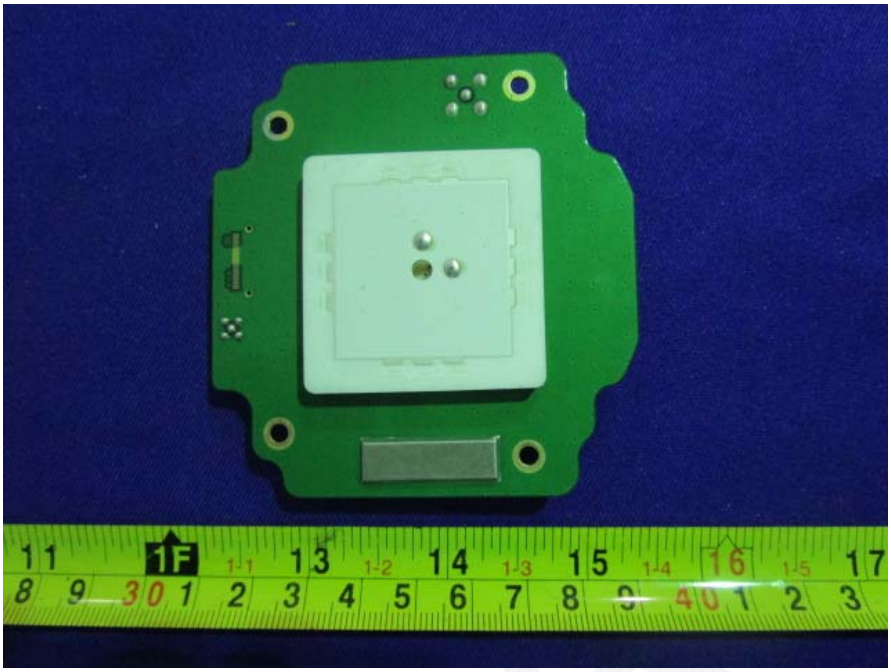
EUT – GPS Board Top View



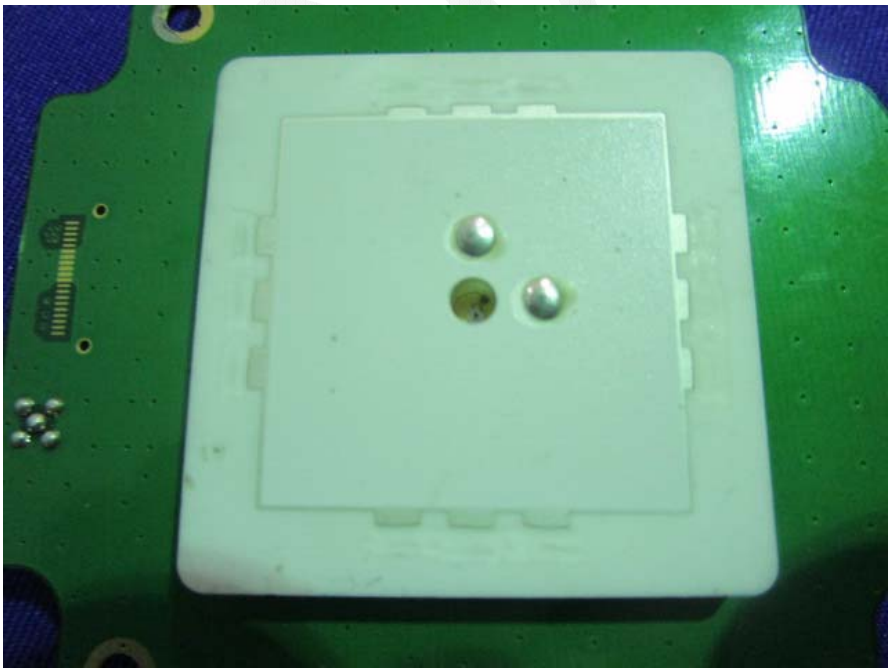
EUT – GPS Board Top without Shielding View



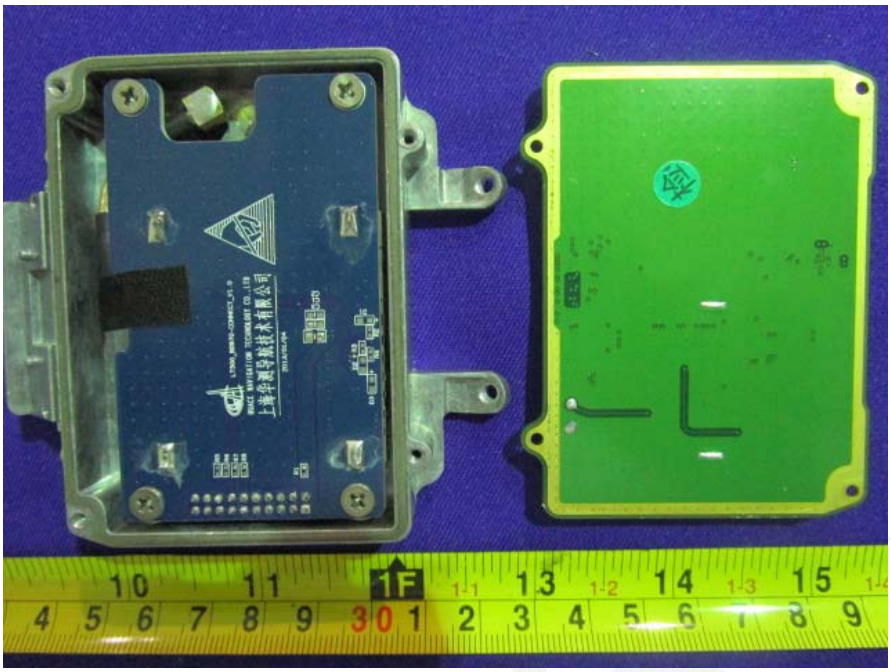
EUT – GPS Board Bottom View



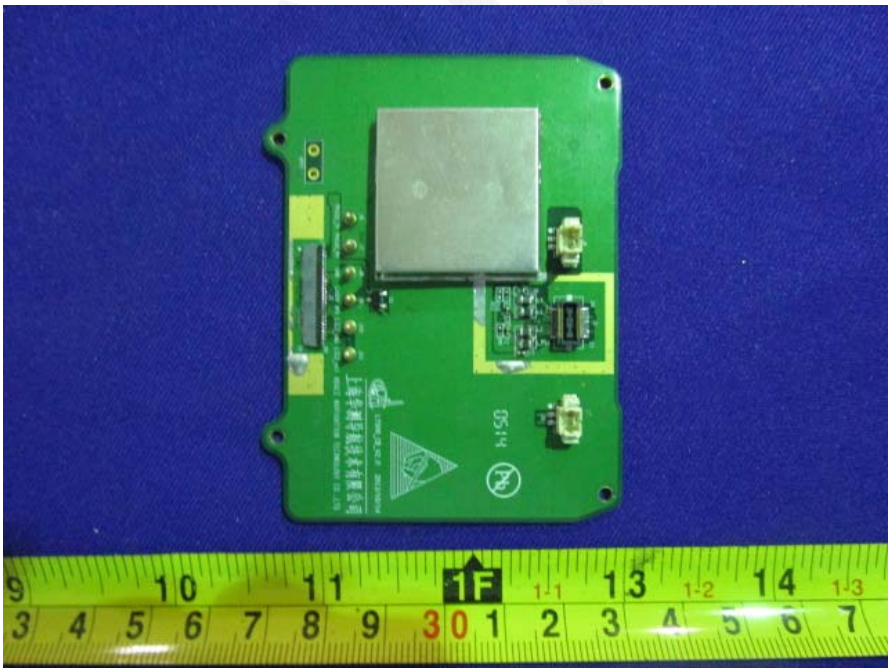
EUT – GPS Antenna View



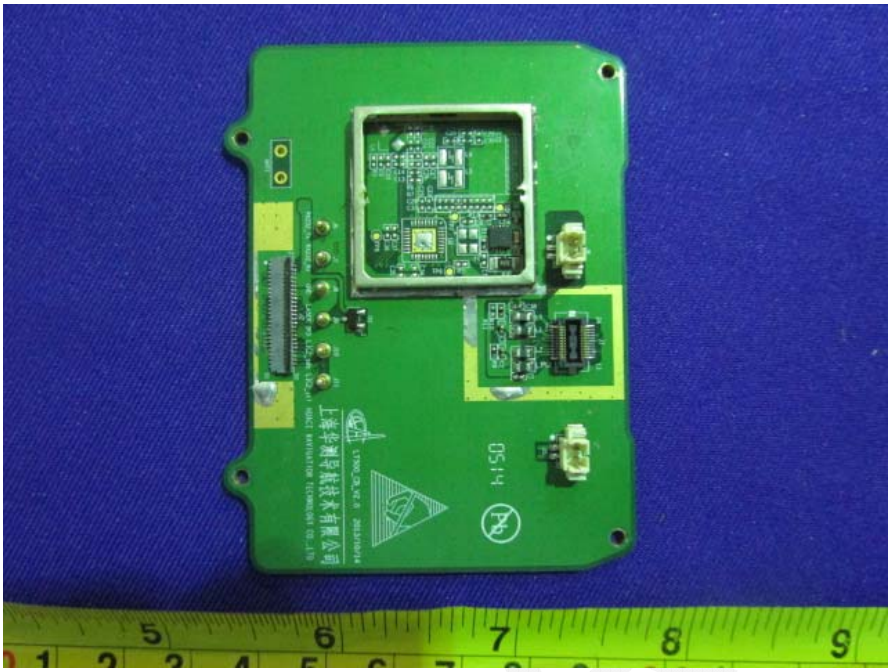
EUT – Sub Board 1 Uncover View



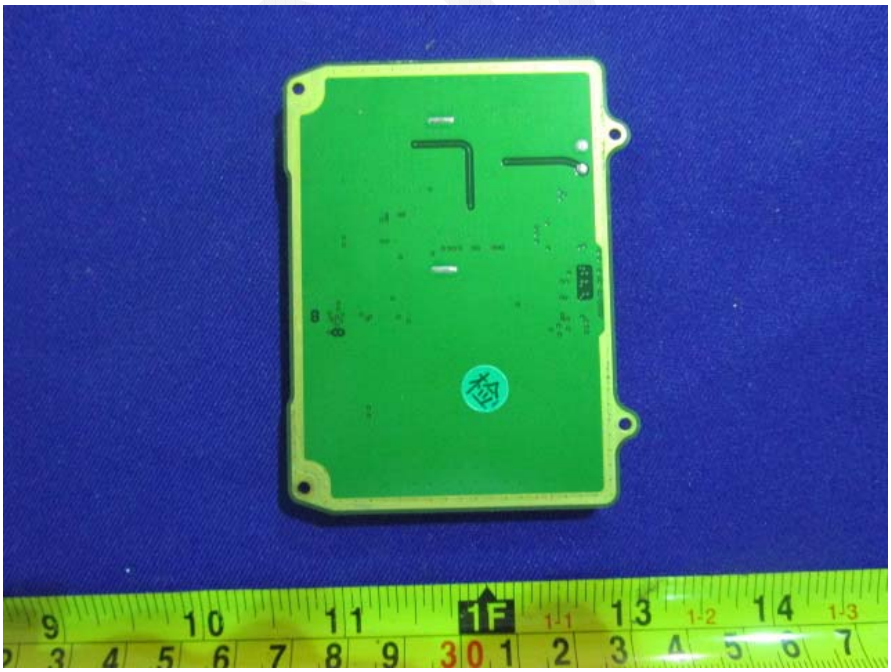
EUT – Sub Board 1 Top View



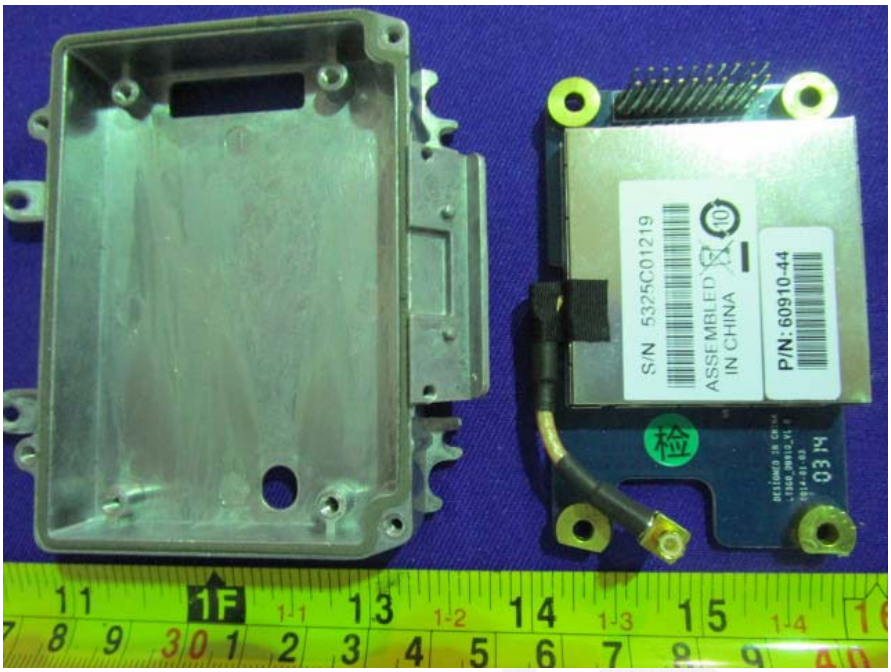
EUT – Sub Board 1 Top without Shielding View



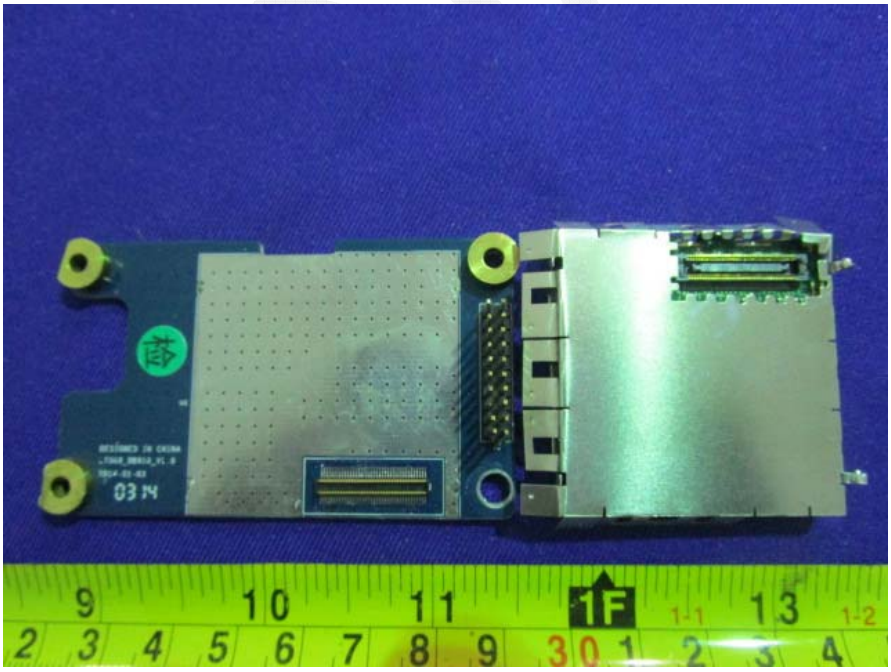
EUT – Sub Board 1 Bottom View



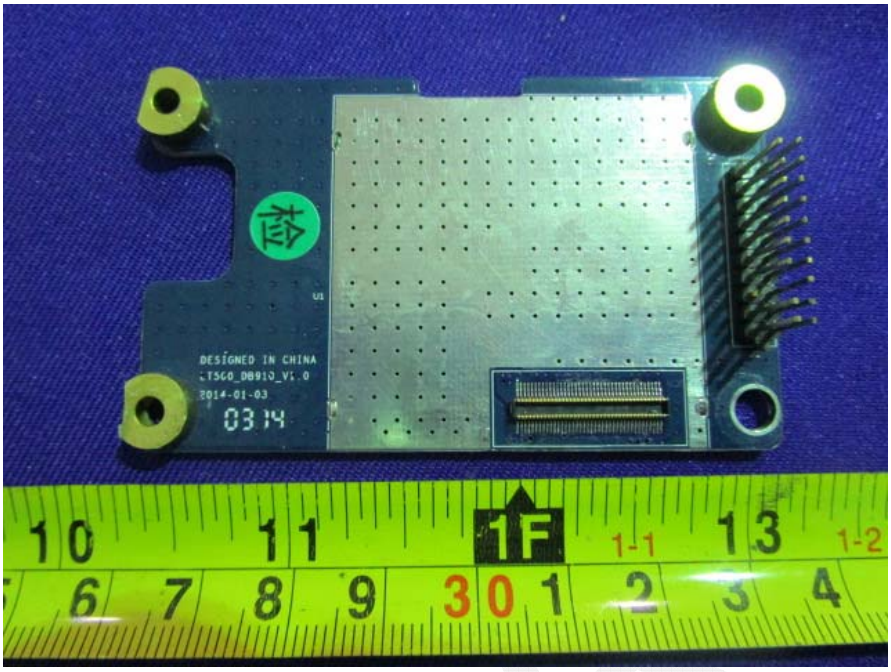
EUT – Sub Board 2 Uncover View



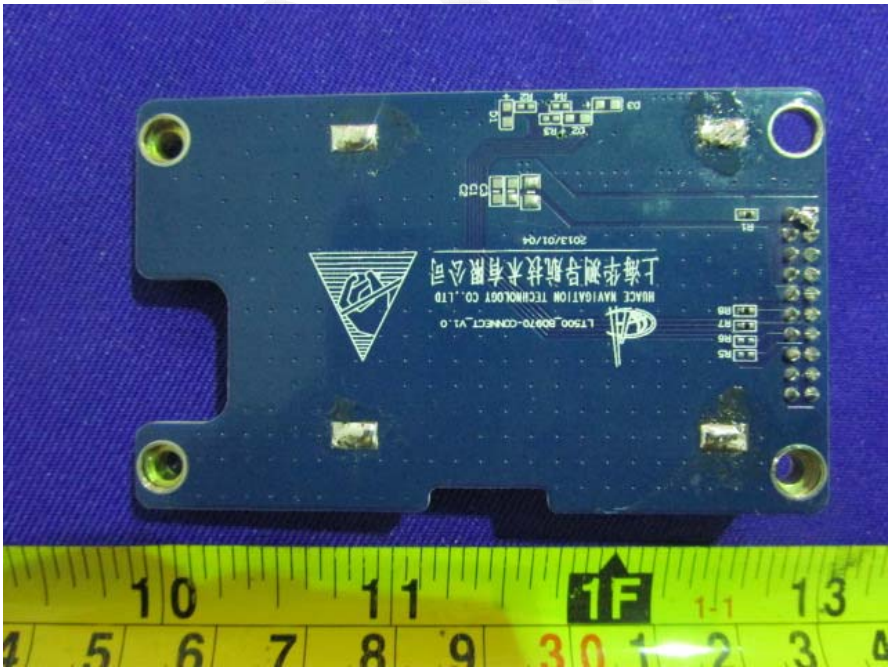
EUT – Sub Board 2 Uncover View



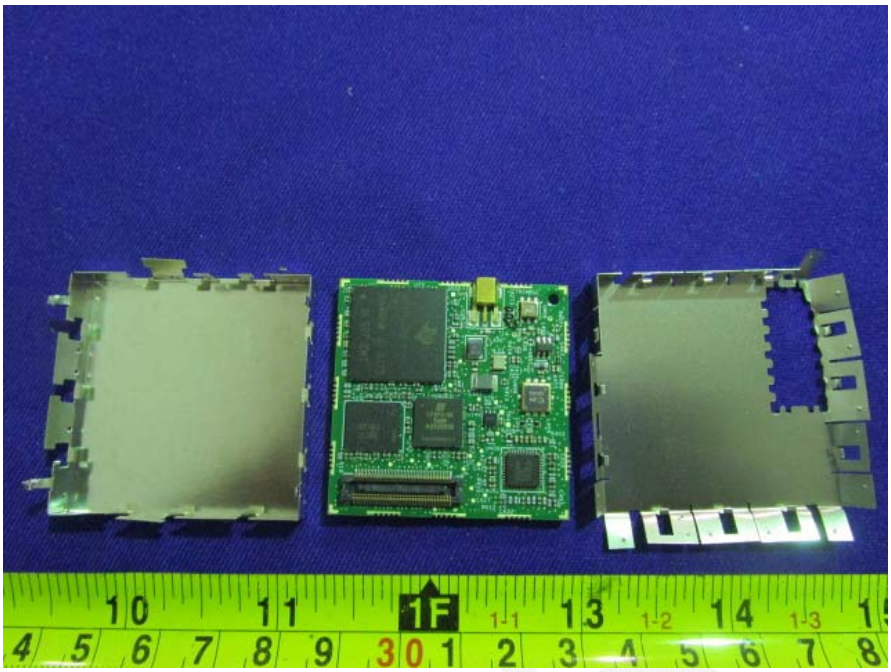
EUT – Sub Board 2 Top View



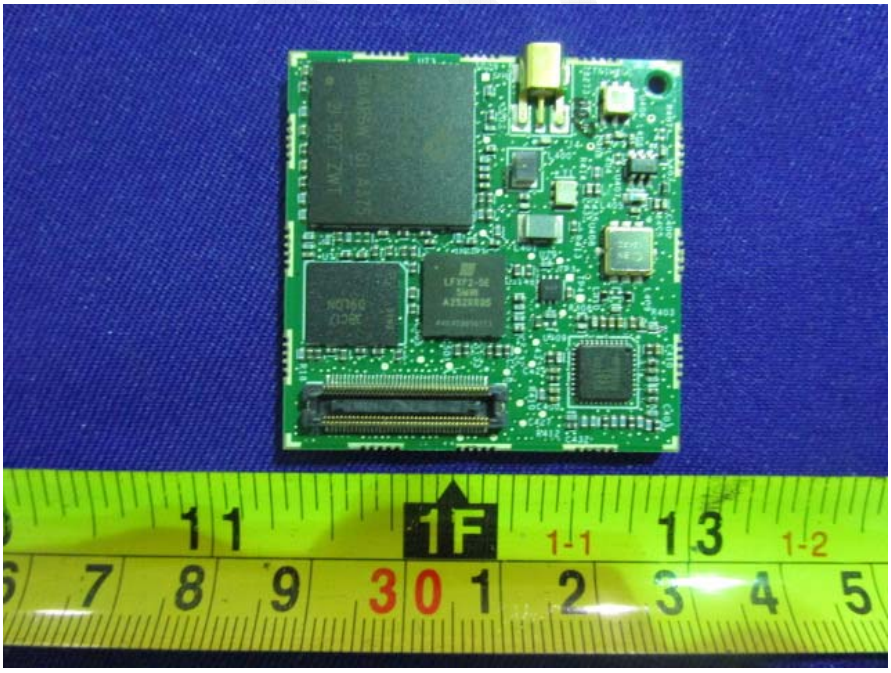
EUT – Sub Board 2 Bottom View



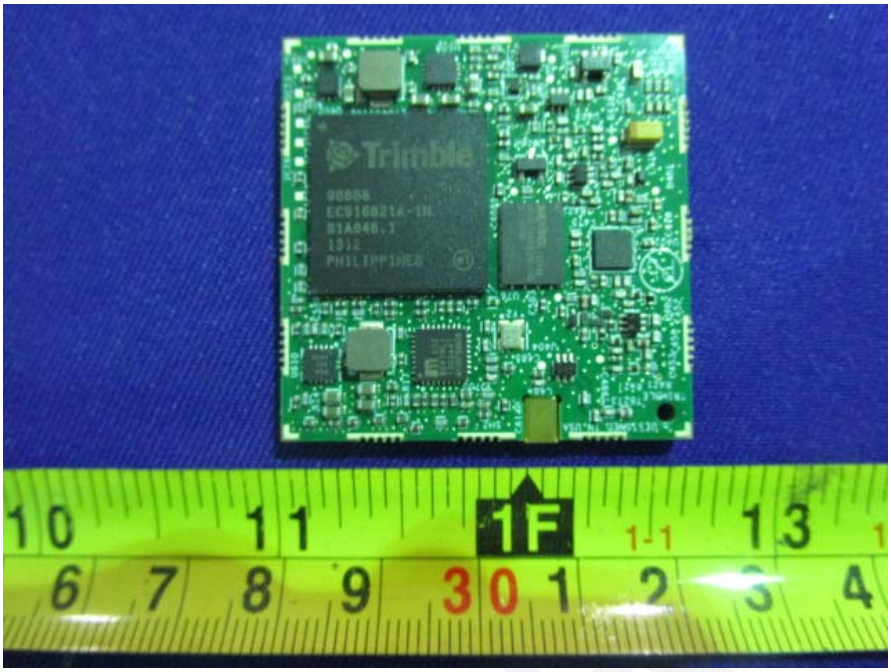
EUT – Sub Board 3 Uncover View



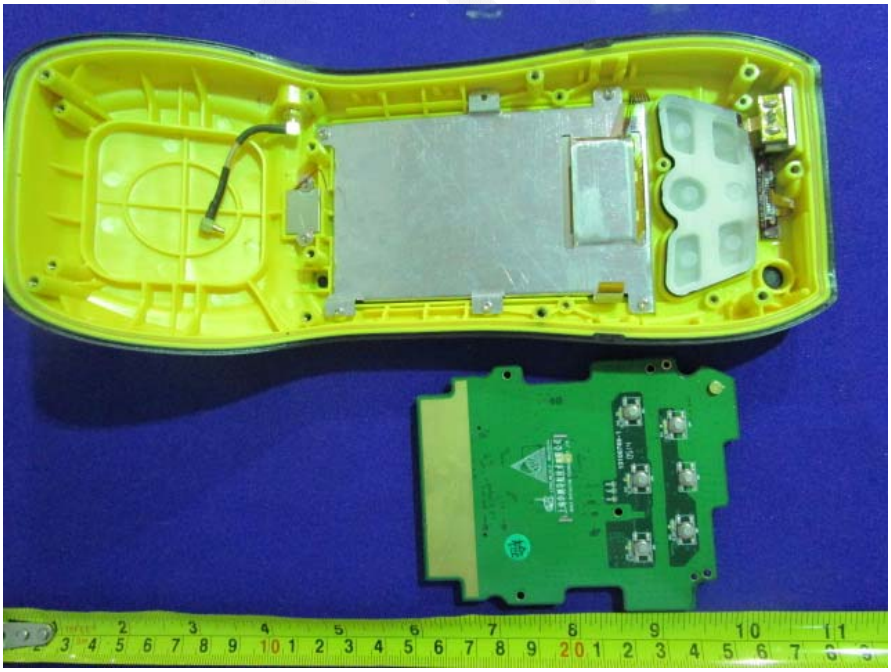
EUT – Sub Board 3 Top View



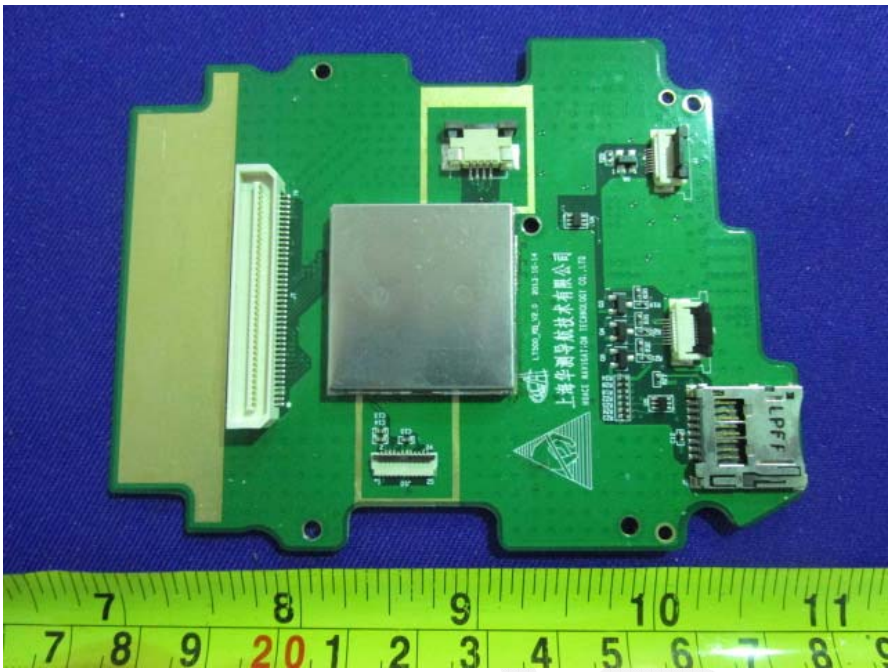
EUT – Sub Board 3 Bottom View



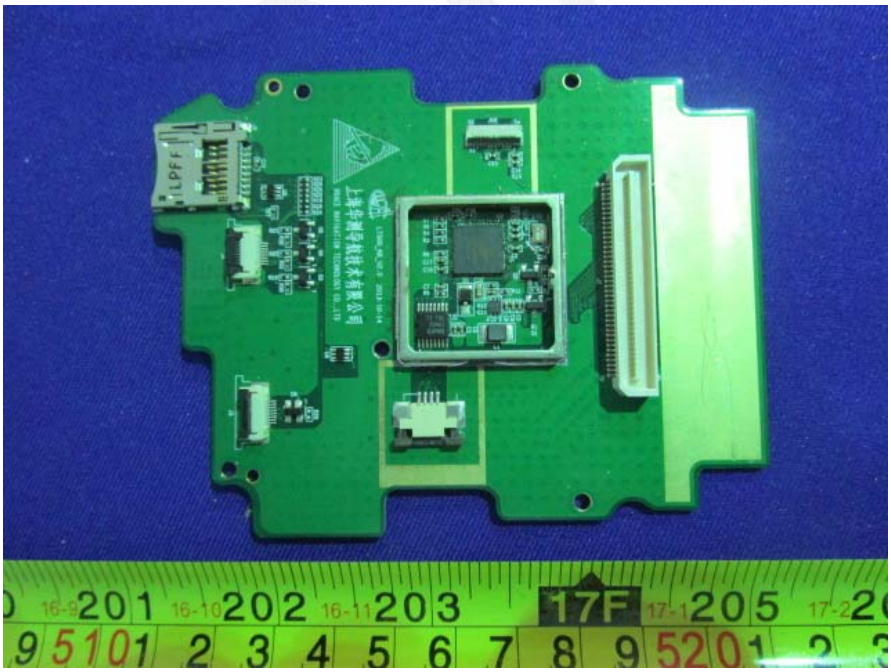
EUT – Sub Board 4 Off View



EUT – Sub Board 4 Top View



EUT – Sub Board 4 Top without ShieldingView



EUT – Sub Board 4 Bottom View

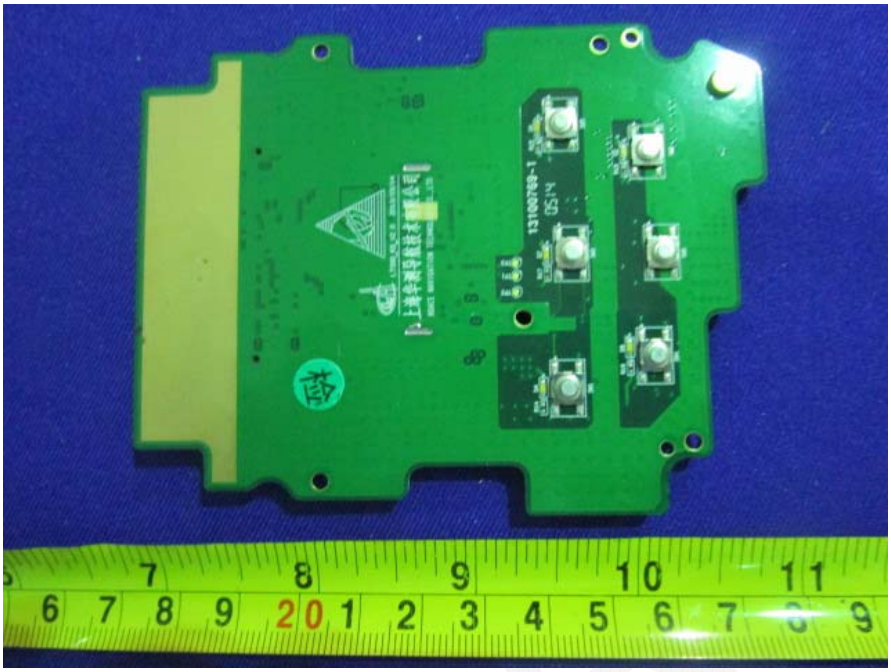
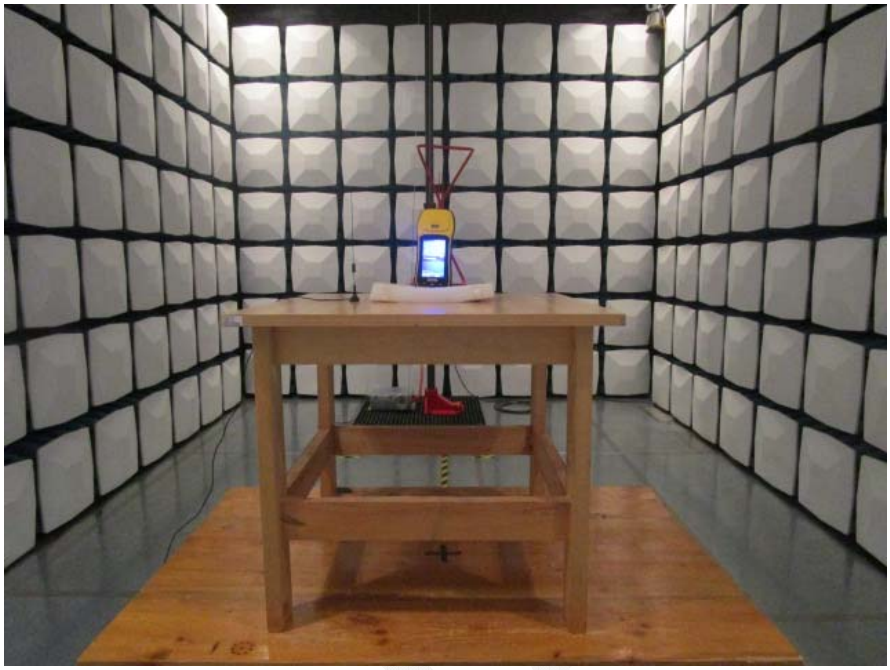


EXHIBIT B - TEST SETUP PHOTOGRAPHS

Radiated Emission -Front View (Below 1GHz)



Radiated Emission -Front View (Above 1GHz)

DECLARATION LETTER

CHC

Product Model Declaration

Dear Officer,
We Here represent Shanghai Huace Mavigation Technology LTD declare:

The Applicant declares that the model LT500XYZ , X is variable, it indicated A-Z or 0-9, Y is variable, it indicated A-Z, 0-9 or blank. Z is variable, it indicated A-Z, 0-9 or blank. due to sales purpose in different countries or regions.

The internal PCB design are no difference, but only distinct in colours and model names.

The test model name is LT500H.

The Declaration For Your Consideration.

Signature/Stamp:
Date:

Zheng Dan

******* END OF REPORT *******