


RF TEST REPORT



Report No.: 16071000-FCC-R1

Supersede Report No.: N/A

Applicant	MOBIWIRE MOBILES (NINGBO) CO.,LTD.	
Product Name	Mobile phone	
Model No.	A400	
Serial No.	N/A	
Test Standard	FCC Part 22(H):2015 ;FCC Part 24(E):2015; FCC Part 27:2015; ANSI/TIA-603-D: 2010	
Test Date	August 18 to September 10, 2016	
Issue Date	September 13, 2016	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
		
Loren Luo Test Engineer	David Huang Checked By	
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Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
16071000-FCC-R1	NONE	Original	September 13, 2016

2. Customer information

Applicant Name	MOBIWIRE MOBILES (NINGBO) CO.,LTD.
Applicant Add	No.999,Dacheng East Road,Fenghua City,Zhejiang
Manufacturer	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Manufacturer Add	No.999,Dacheng East Road,Fenghua City,Zhejiang

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	Mobile phone
Main Model:	A400
Serial Model:	N/A
Date EUT received:	August 17, 2016
Test Date(s):	August 18 to September 10, 2016
Equipment Category :	PCE
Antenna Gain:	GSM850: -1dBi PCS1900: -2dBi UMTS-FDD Band V: -1dBi UMTS-FDD Band IV: -1dBi UMTS-FDD Band II: -2dBi Bluetooth/BLE/WIFI: -2dBi GPS: -2dBi
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS: BPSK
Input Power:	Adapter: Model: A8+-500550 Input: AC 100-240V~50/60Hz;0.2A Output: DC 5.0V,550mA Battery: Model: ELITE Capacity: 1400mAh;5.18Wh Voltage: DC 3.7V Charging Limited Voltage:4.2V

Maximum Conducted
AV Power to Antenna:

GSM Voice: GSM850: 32.34 dBm
PCS1900: 29.6 dBm
GPRS: GSM850: 32.32 dBm
PCS1900: 29.41 dBm
MCS1: GSM850: 32.25 dBm
PCS1900: 29.13 dBm
RMC: UMTS-FDD Band V: 22.89 dBm
UMTS-FDD Band IV: 23.21 dBm
UMTS-FDD Band II: 22.67 dBm
HSUPA: UMTS-FDD Band V: 21.68 dBm
UMTS-FDD Band IV: 22.39 dBm
UMTS-FDD Band II: 21.84 dBm
HSDPA: UMTS-FDD Band V: 21.69 dBm
UMTS-FDD Band IV: 22.35 dBm
UMTS-FDD Band II: 21.89 dBm

ERP/EIRP:

GSM Voice: GSM850: 29.26 dBm / ERP
PCS1900: 27.71 dBm / EIRP
GPRS: GSM850: 29.22 dBm / ERP
PCS1900: 27.49 dBm / EIRP
EGPRS: GSM850: 29.15 dBm / ERP
PCS1900: 27.39 dBm / EIRP
RMC: UMTS-FDD Band V: 19.67 dBm / ERP
UMTS-FDD Band IV: 22.28 dBm / ERP
UMTS-FDD Band II: 20.64 dBm / EIRP
HSUPA: UMTS-FDD Band V: 18.85 dBm / ERP
UMTS-FDD Band IV: 21.59 dBm / ERP
UMTS-FDD Band II: 20.01 dBm / EIRP
HSDPA: UMTS-FDD Band V: 18.55 dBm / ERP
UMTS-FDD Band IV: 21.47 dBm / ERP
UMTS-FDD Band II: 19.98 dBm / EIRP

Port:

Earphone Port, USB Port

Number of Channels:	GSM 850: 124CH
	PCS1900: 299CH
	UMTS-FDD Band V : 102CH
	UMTS-FDD Band IV: 202CH
	UMTS-FDD Band II : 277CH
	WIFI :802.11b/g/n(20M): 11CH
	WIFI :802.11n(40M): 7CH
	Bluetooth: 79CH
	BLE: 40CH
	GPS:1CH
RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
	PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
	UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
	UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;
	RX : 2112.4 ~ 2152.6 MHz
	UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;
	RX: 1932.4 ~ 1987.6 MHz
	WIFI: 802.11b/g/n(20M): 2412-2462 MHz
	WIFI: 802.11n(40M): 2422-2452 MHz
	Bluetooth& BLE: 2402-2480 MHz
Trade Name :	GPS: 1575.42 MHz
	N/A
GPRS/EGPRS Multi-slot class	8/10/12
FCC ID:	2ADA4A400
Antenna Type:	PIFA antenna

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 1.1307; § 2.1093	RF Exposure (SAR)	Compliance
§2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10) ; § 27.50(d.4)	RF Output Power	Compliance
§ 24.232 (d) ; § 27.50(d)	Peak-Average Ratio	Compliance
§ 2.1049; § 22.905; § 22.917; § 24.238; § 27.53(a.5)	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917(a); § 24.238(a); § 27.53(h)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917(a); § 24.238(a); § 27.53(h)	Field Strength of Spurious Radiation	Compliance
§ 22.917(a); § 24.238(a); § 27.53(h)	Out of band emission, Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; § 27.5(h); § 27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

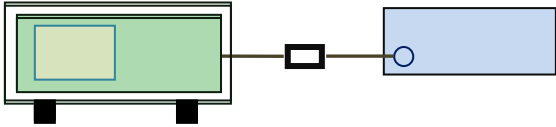
The EUT is a portable device, thus requires SAR evaluation;
Please refer to RF Exposure Evaluation Report: 16071000-FCC-H.

6.2 RF Output Power

Temperature	25°C
Relative Humidity	50%
Atmospheric Pressure	1008mbar
Test date :	September 08 to 10, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	<input checked="" type="checkbox"/>
§24.232 (c)	b)	EIRP:33dBm	<input checked="" type="checkbox"/>
§27.50 (c)	c)	EIRP: 30dBm	<input checked="" type="checkbox"/>

Test Setup	
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Test Procedure	<p>For Conducted Power:</p> <ul style="list-style-type: none"> - The transmitter output port was connected to base station. - Set EUT at maximum power through base station. - Select lowest, middle, and highest channels for each band and different test mode. <p>For ERP/EIRP:</p> <p>According with KDB 971168 v02r02</p> <ul style="list-style-type: none"> - 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
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	<p>frequency was investigated.</p> <ul style="list-style-type: none"> - 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 = $10 \log (\text{TX power in Watts}/0.001)$ – the absolute level - Spurious attenuation limit in dB = $43 + 10 \text{ Log}_{10} (\text{power out in Watts})$.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A
 Test Plot ☐ Yes (See below) ☒ N/A

Conducted Power

GSM Mode:

Burst Average Power (dBm);								
Band	GSM850				PCS1900			
Channel	128	190	251	Tune up Power tolerant	512	661	810	Tune up Power tolerant
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice (1 uplink),GMSK	31.76	32.08	32.34	32±1	29.55	29.46	29.6	29±1
GPRS Multi-Slot Class 8 (1 uplink),GMSK	31.75	32.07	32.32	32±1	29.38	29.3	29.41	29±1
GPRS Multi-Slot Class 10 (2 uplink) GMSK	30.92	31.27	31.66	31±1	27.62	28.53	28.63	28±1
GPRS Multi-Slot Class 12 (4 uplink) GMSK	27.95	28.26	28.12	28±1	25.52	25.54	25.64	25±1
EGPRS Multi-Slot Class 8 (1 uplink) GMSK MCS1	31.69	32.01	32.25	32±1	29.13	29.04	29.1	29±1
EGPRS Multi-Slot Class 10 (2 uplink) GMSK MCS1	30.85	31.21	31.61	31±1	28.29	28.21	28.34	28±1
EGPRS Multi-Slot Class 12 (4 uplink) GMSK MCS1	27.89	28.19	28.57	28±1	25.23	25.04	25.17	25±1

Remark :

GPRS, CS1 coding scheme.

EGPRS, MCS1 coding scheme.

Multi-Slot Class 8 , Support Max 4 downlink, 1 uplink , 5 working link

Multi-Slot Class 10 , Support Max 4 downlink, 2 uplink , 5 working link

Multi-Slot Class 12 , Support Max 4 downlink, 4 uplink , 5 working link

UMTS Mode:

UMTS-FDD Band V

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)	Tune up Power tolerant
RMC 12.2kbps	4132	826.4	22.76	23±1
	4175	835	22.89	23±1
	4233	846.6	22.86	23±1
HSDPA Subtest1	4132	826.4	21.59	21.5±1
	4175	835	21.57	21.5±1
	4233	846.6	21.59	21.5±1
HSDPA Subtest2	4132	826.4	21.56	21.5±1
	4175	835	21.59	21.5±1
	4233	846.6	21.54	21.5±1
HSDPA Subtest3	4132	826.4	21.47	21.5±1
	4175	835	21.32	21.5±1
	4233	846.6	21.63	21.5±1
HSDPA Subtest4	4132	826.4	21.6	21.5±1
	4175	835	21.63	21.5±1
	4233	846.6	21.69	21.5±1
HSUPA Subtest1	4132	826.4	21.61	21.5±1
	4175	835	21.04	21.5±1
	4233	846.6	21.59	21.5±1
HSUPA Subtest2	4132	826.4	21.52	21.5±1
	4175	835	21.68	21.5±1
	4233	846.6	21.47	21.5±1
HSUPA Subtest3	4132	826.4	21.63	21.5±1
	4175	835	21.59	21.5±1
	4233	846.6	21.49	21.5±1
HSUPA Subtest4	4132	826.4	21.62	21.5±1
	4175	835	21.66	21.5±1
	4233	846.6	21.64	21.5±1
HSUPA Subtest5	4132	826.4	21.55	21.5±1
	4175	835	21.53	21.5±1
	4233	846.6	21.61	21.5±1

UMTS-FDD Band II

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)	Tune up Power tolerant
RMC 12.2kbps	9262	1852.4	22.57	22±1
	9400	1880	22.67	22±1
	9538	1907.6	22.57	22±1
HSDPA Subtest1	9262	1852.4	21.85	21.5±1
	9400	1880	21.86	21.5±1
	9538	1907.6	21.79	21.5±1
HSDPA Subtest2	9262	1852.4	21.81	21.5±1
	9400	1880	21.89	21.5±1
	9538	1907.6	21.85	21.5±1
HSDPA Subtest3	9262	1852.4	21.86	21.5±1
	9400	1880	21.88	21.5±1
	9538	1907.6	21.82	21.5±1
HSDPA Subtest4	9262	1852.4	21.81	21.5±1
	9400	1880	21.8	21.5±1
	9538	1907.6	21.86	21.5±1
HSUPA Subtest1	9262	1852.4	21.79	21.5±1
	9400	1880	21.75	21.5±1
	9538	1907.6	21.73	21.5±1
HSUPA Subtest2	9262	1852.4	21.83	21.5±1
	9400	1880	21.82	21.5±1
	9538	1907.6	21.84	21.5±1
HSUPA Subtest3	9262	1852.4	21.73	21.5±1
	9400	1880	21.71	21.5±1
	9538	1907.6	21.71	21.5±1
HSUPA Subtest4	9262	1852.4	21.73	21.5±1
	9400	1880	21.72	21.5±1
	9538	1907.6	21.73	21.5±1
HSUPA Subtest5	9262	1852.4	21.75	21.5±1
	9400	1880	21.76	21.5±1
	9538	1907.6	21.78	21.5±1

UMTS-FDD Band IV

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)	Tune up Power tolerant
RMC 12.2kbps	1313	1712.6	23.21	23±1
	1413	1732.6	23.18	23±1
	1512	1752.4	23.20	23±1
HSDPA Subtest1	1313	1712.6	22.15	22.3±1
	1413	1732.6	22.16	22.3±1
	1512	1752.4	22.31	22.3±1
HSDPA Subtest2	1313	1712.6	22.26	22.3±1
	1413	1732.6	22.28	22.3±1
	1512	1752.4	22.16	22.3±1
HSDPA Subtest3	1313	1712.6	22.35	22.3±1
	1413	1732.6	22.18	22.3±1
	1512	1752.4	22.24	22.3±1
HSDPA Subtest4	1313	1712.6	22.26	22.3±1
	1413	1732.6	22.15	22.3±1
	1512	1752.4	22.15	22.3±1
HSUPA Subtest1	1313	1712.6	22.16	22.3±1
	1413	1732.6	22.35	22.3±1
	1512	1752.4	22.29	22.3±1
HSUPA Subtest2	1313	1712.6	22.34	22.3±1
	1413	1732.6	22.35	22.3±1
	1512	1752.4	22.16	22.3±1
HSUPA Subtest3	1313	1712.6	22.25	22.3±1
	1413	1732.6	22.18	22.3±1
	1512	1752.4	22.35	22.3±1
HSUPA Subtest4	1313	1712.6	22.36	22.3±1
	1413	1732.6	22.38	22.3±1
	1512	1752.4	22.25	22.3±1
HSUPA Subtest5	1313	1712.6	22.34	22.3±1
	1413	1732.6	22.36	22.3±1
	1512	1752.4	22.39	22.3±1

ERP & EIRP

GSM Voice

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	22.34	V	6.8	0.53	28.61	38.45
824.2	21.81	H	6.8	0.53	28.08	38.45
836.6	22.61	V	6.8	0.53	28.88	38.45
836.6	21.95	H	6.8	0.53	28.22	38.45
848.8	22.89	V	6.9	0.53	29.26	38.45
848.8	22.12	H	6.9	0.53	28.49	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	20.45	V	7.88	0.85	27.48	33
1850.2	19.08	H	7.88	0.85	26.11	33
1880	20.68	V	7.88	0.85	27.71	33
1880	19.75	H	7.88	0.85	26.78	33
1909.8	20.51	V	7.86	0.85	27.52	33
1909.8	19.54	H	7.86	0.85	26.55	33

GPRS:

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	22.31	V	6.8	0.53	28.58	38.45
824.2	21.89	H	6.8	0.53	28.16	38.45
836.6	22.59	V	6.8	0.53	28.86	38.45
836.6	21.98	H	6.8	0.53	28.25	38.45
848.8	22.85	V	6.9	0.53	29.22	38.45
848.8	22.34	H	6.9	0.53	28.71	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	20.32	V	7.88	0.85	27.35	33
1850.2	19.62	H	7.88	0.85	26.65	33
1880	20.16	V	7.88	0.85	27.19	33
1880	19.23	H	7.88	0.85	26.26	33
1909.8	20.48	V	7.86	0.85	27.49	33
1909.8	19.36	H	7.86	0.85	26.37	33

EGPRS (MCS1):

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	22.49	V	6.8	0.53	28.76	38.45
824.2	21.93	H	6.8	0.53	28.2	38.45
836.6	22.56	V	6.8	0.53	28.83	38.45
836.6	21.68	H	6.8	0.53	27.95	38.45
848.8	22.78	V	6.9	0.53	29.15	38.45
848.8	21.82	H	6.9	0.53	28.19	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	20.21	V	7.88	0.85	27.24	33
1850.2	19.74	H	7.88	0.85	26.77	33
1880	20.36	V	7.88	0.85	27.39	33
1880	19.56	H	7.88	0.85	26.59	33
1909.8	20.18	V	7.86	0.85	27.19	33
1909.8	19.47	H	7.86	0.85	26.48	33

RMC

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	13.26	V	6.8	0.53	19.53	38.45
826.4	12.63	H	6.8	0.53	18.9	38.45
835	13.37	V	6.8	0.53	19.64	38.45
835	12.65	H	6.8	0.53	18.92	38.45
846.6	13.3	V	6.9	0.53	19.67	38.45
846.6	12.58	H	6.9	0.53	18.95	38.45

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	13.56	V	7.88	0.85	20.59	33
1852.4	12.78	H	7.88	0.85	19.81	33
1880	13.61	V	7.88	0.85	20.64	33
1880	12.54	H	7.88	0.85	19.57	33
1907.6	13.49	V	7.86	0.85	20.5	33
1907.6	12.35	H	7.86	0.85	19.36	33

EIRP for UMTS-FDD Band IV (Part 27E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1712.4	15.21	V	7.76	0.82	22.15	30
1712.4	14.35	H	7.76	0.82	21.29	30
1740	15.06	V	7.76	0.82	22	30
1740	14.12	H	7.76	0.82	21.06	30
1752.6	15.36	V	7.74	0.82	22.28	30
1752.6	14.53	H	7.74	0.82	21.45	30

HSDPA

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	12.06	V	6.8	0.53	18.33	38.45
826.4	11.42	H	6.8	0.53	17.69	38.45
835	12.22	V	6.8	0.53	18.49	38.45
835	11.51	H	6.8	0.53	17.78	38.45
846.6	12.18	V	6.9	0.53	18.55	38.45
846.6	11.36	H	6.9	0.53	17.73	38.45

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	12.85	V	7.88	0.85	19.88	33
1852.4	12.14	H	7.88	0.85	19.17	33
1880	12.78	V	7.88	0.85	19.81	33
1880	11.85	H	7.88	0.85	18.88	33
1907.6	12.97	V	7.86	0.85	19.98	33
1907.6	12.26	H	7.86	0.85	19.27	33

EIRP for UMTS-FDD Band IV (Part 27E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1712.4	14.23	V	7.76	0.82	21.17	30
1712.4	13.25	H	7.76	0.82	20.19	30
1740	14.36	V	7.76	0.82	21.3	30
1740	13.41	H	7.76	0.82	20.35	30
1752.6	14.55	V	7.74	0.82	21.47	30
1752.6	13.46	H	7.74	0.82	20.38	30

HSUPA

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	12.16	V	6.8	0.53	18.43	38.45
826.4	11.59	H	6.8	0.53	17.86	38.45
835	12.31	V	6.8	0.53	18.58	38.45
835	11.87	H	6.8	0.53	18.14	38.45
846.6	12.48	V	6.9	0.53	18.85	38.45
846.6	11.69	H	6.9	0.53	18.06	38.45

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	12.74	V	7.88	0.85	19.77	33
1852.4	11.48	H	7.88	0.85	18.51	33
1880	12.98	V	7.88	0.85	20.01	33
1880	11.62	H	7.88	0.85	18.65	33
1907.6	12.83	V	7.86	0.85	19.84	33
1907.6	11.59	H	7.86	0.85	18.6	33

EIRP for UMTS-FDD Band IV (Part 27E)

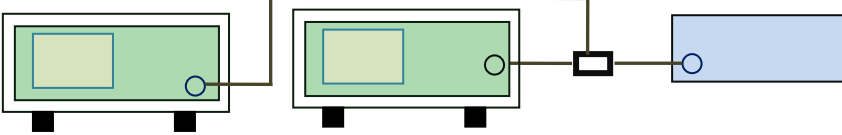
Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1712.4	14.4	V	7.76	0.82	21.34	30
1712.4	13.33	H	7.76	0.82	20.27	30
1740	14.65	V	7.76	0.82	21.59	30
1740	13.58	H	7.76	0.82	20.52	30
1752.6	14.27	V	7.74	0.82	21.19	30
1752.6	13.34	H	7.74	0.82	20.26	30

6.3 Peak-Average Ratio

Temperature	24°C
Relative Humidity	59%
Atmospheric Pressure	1007mbar
Test date :	September 07, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§24.232(d) § 27.50(d)	a)	The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.	<input checked="" type="checkbox"/>

Test Setup	
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Test Procedure	<p>According with KDB 971168 v02r02</p> <p>5.7.2 Alternate procedure for PAPR</p> <p>5.1.2 Peak power measurements with a peak power meter</p> <p>The total peak output power may be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.</p> <p>5.2.3 Average power measurement with average power meter</p> <p>As an alternative to the use of a spectrum/signal analyzer or EMI receiver to perform a measurement of the total in-band average output power, a wideband RF average power meter with a thermocouple detector or equivalent can be used under certain conditions</p> <p>If the EUT can be configured to transmit continuously (i.e., the burst duty cycle $\geq 98\%$) and at all times the EUT is transmitting at its maximum output</p>
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Test Report	16071000-FCC-R1
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	<p>power level, then a conventional wide-band RF power meter can be used.</p> <p>If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle < 98%), then there are two options for the use of an average power meter. First, a gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only over active transmission bursts at maximum output power levels. A conventional average power meter can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to $10\log(1/\text{duty cycle})$</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A
 Test Plot ☐ Yes (See below) ☒ N/A

GSM : GSM 1900 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1850.2	31.26	29.55	1.71
1880	31.62	29.46	2.16
1909.8	31.11	29.6	1.51

GPRS 1900 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1850.2	31.65	29.38	2.27
1880	30.82	29.3	1.52
1909.8	31.17	29.41	1.76

RMC : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	25.69	22.57	3.12
1880	25.84	22.67	3.17
1907.6	25.26	22.47	2.79

UMTS-FDD Band 4 PK-AV POWER (PART 27)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1712.6	26.1	23.21	2.89
1732.6	25.86	23.18	2.68
1752.4	25.66	23.02	2.64

HSUPA : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	24.53	21.79	2.74
1880	24.23	21.75	2.48
1907.6	24.46	21.73	2.73

UMTS-FDD Band 4 PK-AV POWER (PART 27)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1712.6	24.97	22.16	2.81
1732.6	24.83	22.35	2.48
1752.4	24.72	22.29	2.43

HSDPA : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	24.58	21.85	2.73
1880	24.55	21.86	2.69
1907.6	24.63	21.79	2.84

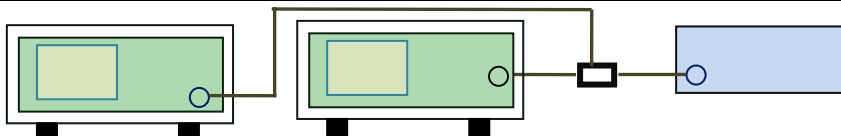
UMTS-FDD Band 4 PK-AV POWER (PART 27)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1712.6	24.57	22.15	2.42
1732.6	24.33	22.16	2.17
1752.4	24.26	22.31	1.95

6.4 Occupied Bandwidth

Temperature	24°C
Relative Humidity	59%
Atmospheric Pressure	1007mbar
Test date :	September 07, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §22.917, §22.905 §24.238 §27.53(a)	a)	99% Occupied Bandwidth(kHz)	<input checked="" type="checkbox"/>
	b)	26 dB Bandwidth(kHz)	<input checked="" type="checkbox"/>
Test Setup			
Test Procedure	<ul style="list-style-type: none"> - The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers. 		
Remark			
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

GSM Voice:

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	247.4831	322.018
190	836.6	245.8229	323.544
251	848.8	250.8122	325.854

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	250.7998	320.347
661	1880.0	244.0075	318.285
810	1909.8	246.1670	318.053

GPRS:

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	248.1025	322.965
190	836.6	244.7935	322.770
251	848.8	248.2833	321.897

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	247.3151	318.785
661	1880.0	243.3921	319.263
810	1909.8	245.6576	318.707

EGPRS (MCS 1):

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	249.6403	321.220
190	836.6	249.0064	324.296
251	848.8	245.5725	324.147

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	246.8232	321.837
661	1880.0	246.5687	318.073
810	1909.8	246.3998	322.383

RMC:

UMTS-FDD Band V (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.4	4.1501	4.728
4175	835.0	4.1617	4.707
4233	846.6	4.1366	4.701

UMTS-FDD Band IV (Part 27E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1313	1712.6	4.1750	4.755
1413	1732.6	4.2584	4.877
1512	1752.4	4.1924	4.782

UMTS-FDD Band II (Part 24E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1852.4	4.1511	4.728
9400	1880.0	4.1639	4.722
9538	1907.6	4.1601	4.722

HSUPA:

UMTS-FDD Band V (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.4	4.1591	4.735
4175	835.0	4.1564	4.708
4233	846.6	4.1418	4.702

UMTS-FDD Band IV (Part 27E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1313	1712.6	4.1725	4.736
1413	1732.6	4.1899	4.761
1512	1752.4	4.1786	4.769

UMTS-FDD Band II (Part 24E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1852.4	4.1683	4.740
9400	1880.0	4.1661	4.730
9538	1907.6	4.1579	4.742

HSDPA:

UMTS-FDD Band V (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.4	4.1545	4.721
4175	835.0	4.1584	4.721
4233	846.6	4.1443	4.724

UMTS-FDD Band IV (Part 27E)

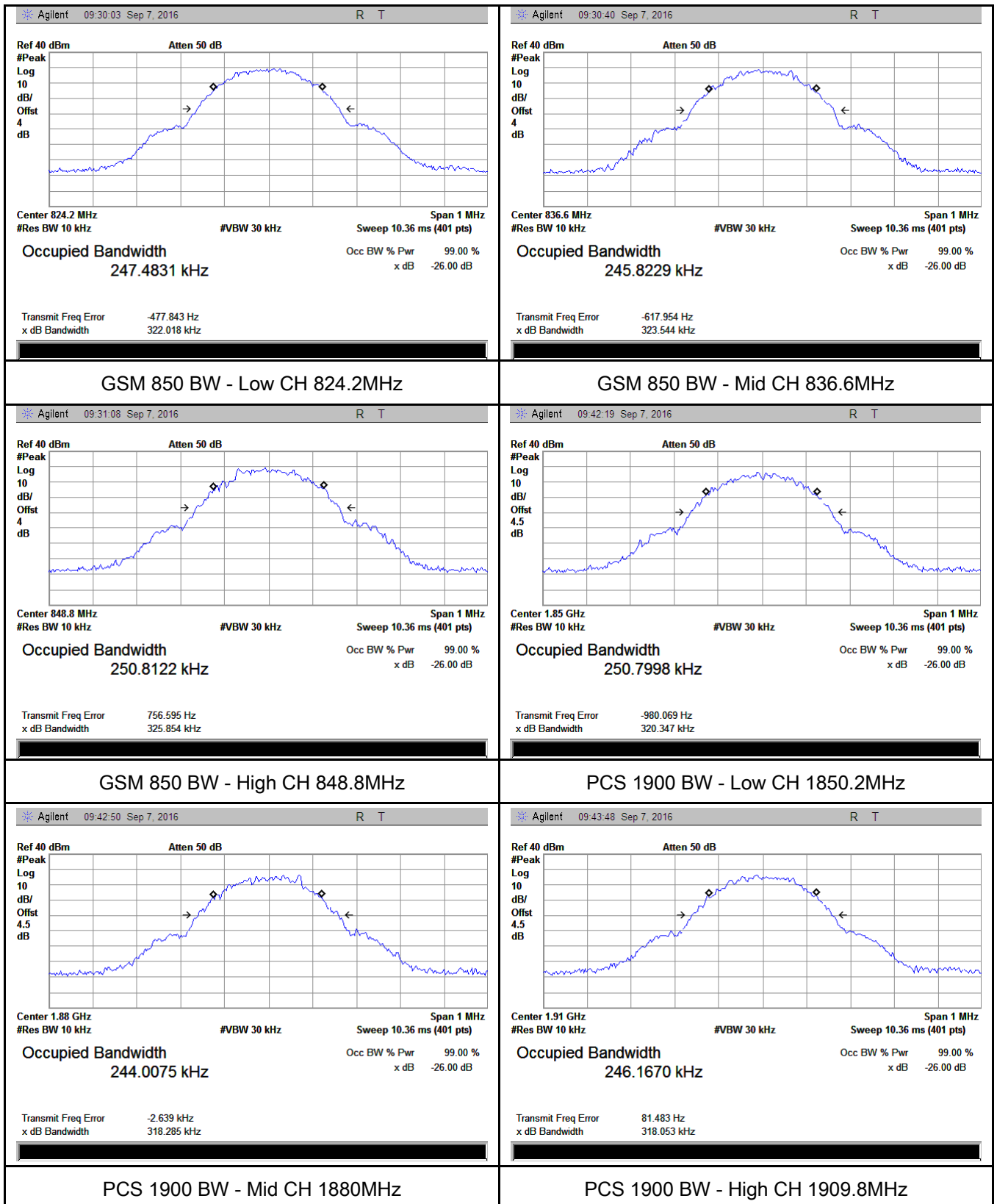
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1313	1712.6	4.1625	4.739
1413	1732.6	4.1819	4.770
1512	1752.4	4.2013	4.824

UMTS-FDD Band II (Part 24E)

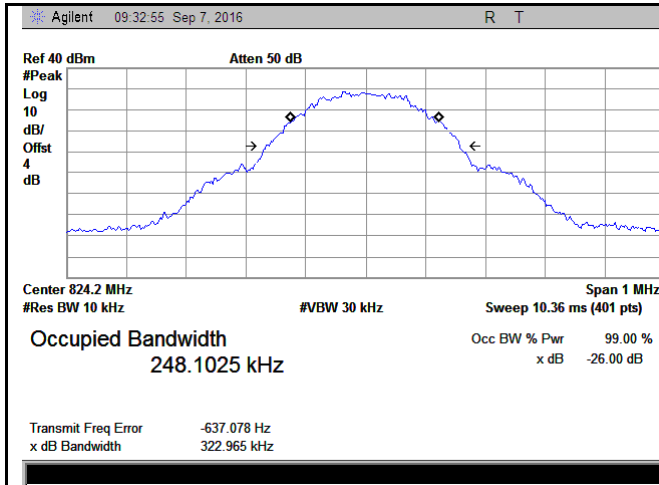
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1852.4	4.1548	4.719
9400	1880.0	4.1702	4.720
9538	1907.6	4.1634	4.710

Test Plots

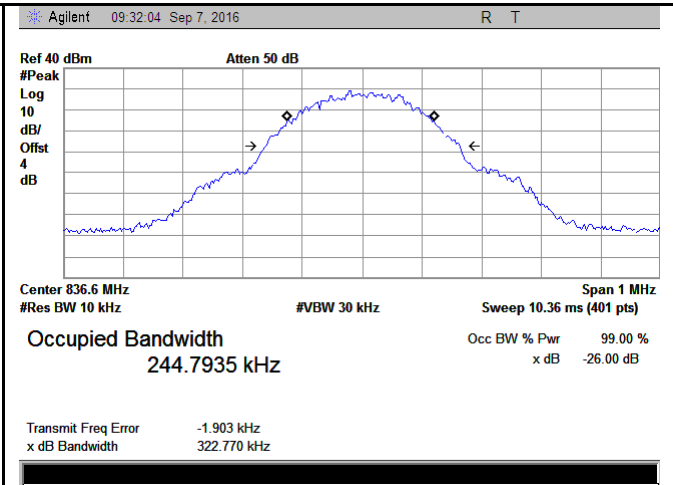
GSM Voice:



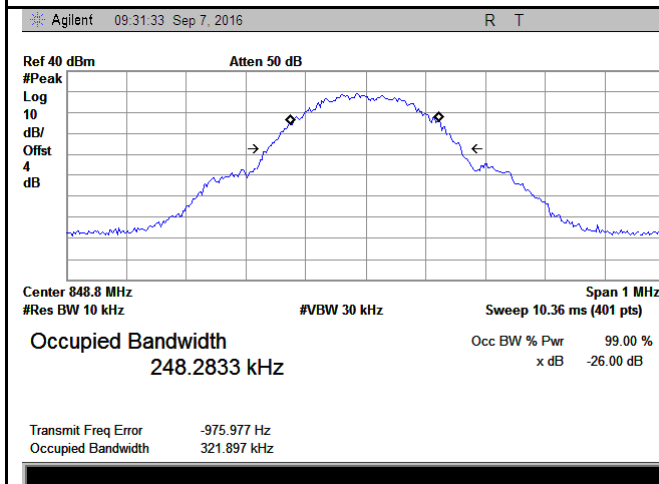
GPRS:



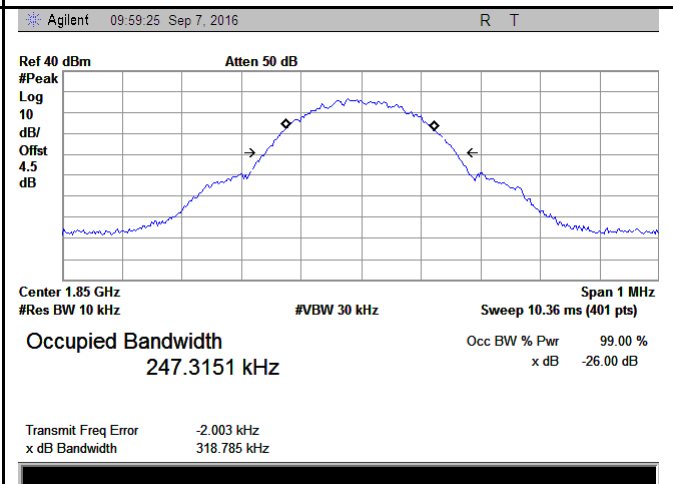
GSM 850 BW - Low CH 824.2MHz



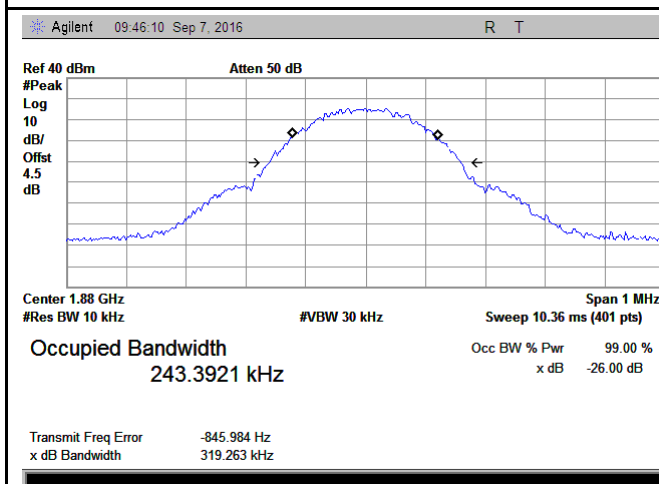
GSM 850 BW - Mid CH 836.6MHz



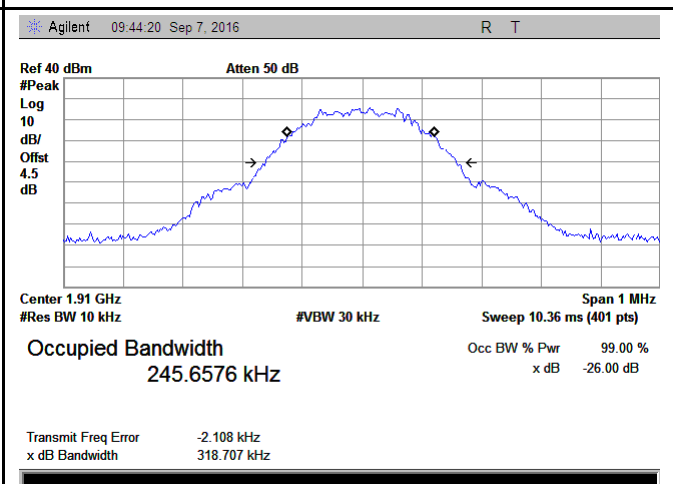
GSM 850 BW - High CH 848.8MHz



PCS 1900 BW - Low CH 1850.2MHz

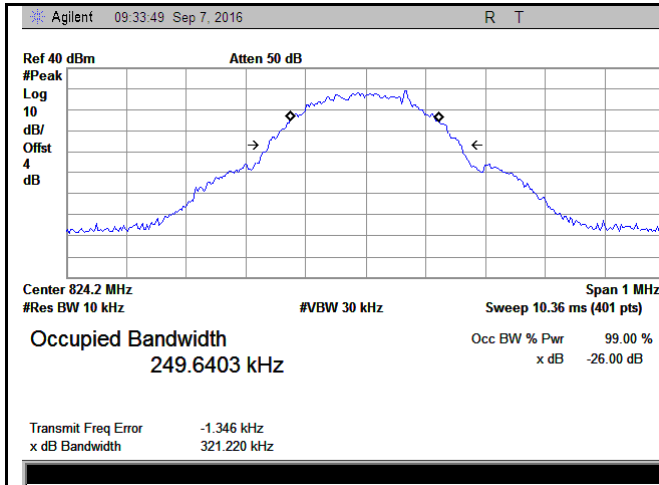


PCS 1900 BW - Mid CH 1880MHz

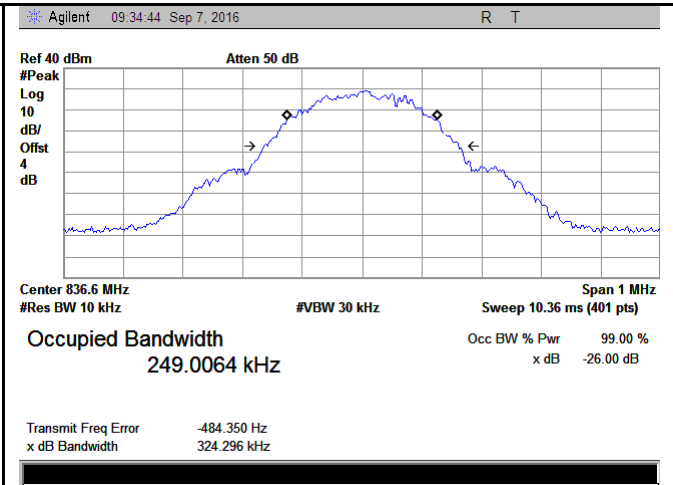


PCS 1900 BW - High CH 1909.8MHz

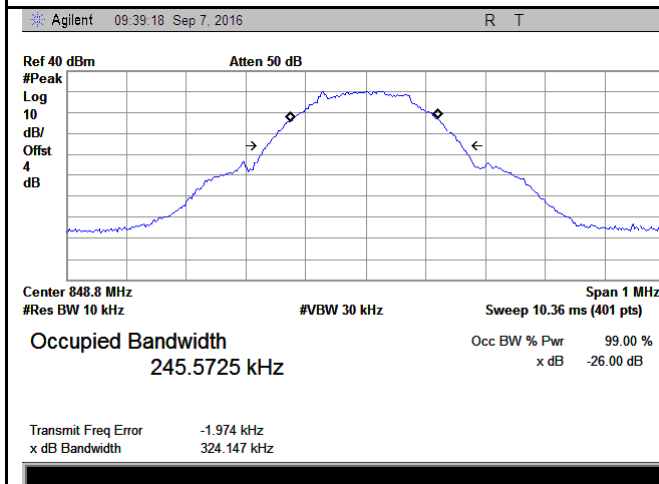
EGPRS:



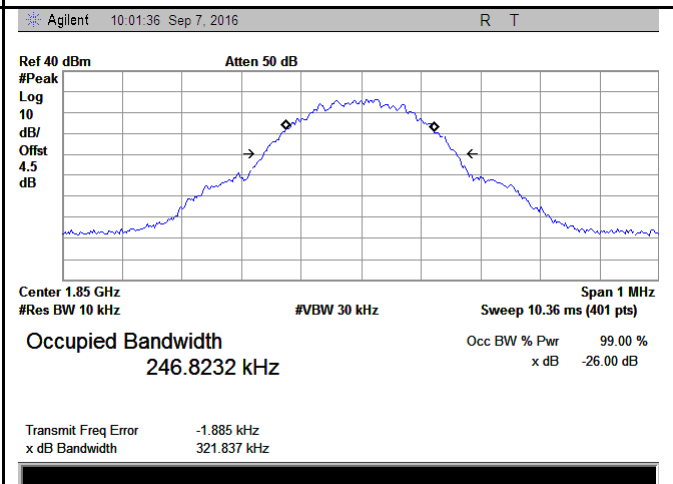
GSM 850 BW - Low CH 824.2MHz



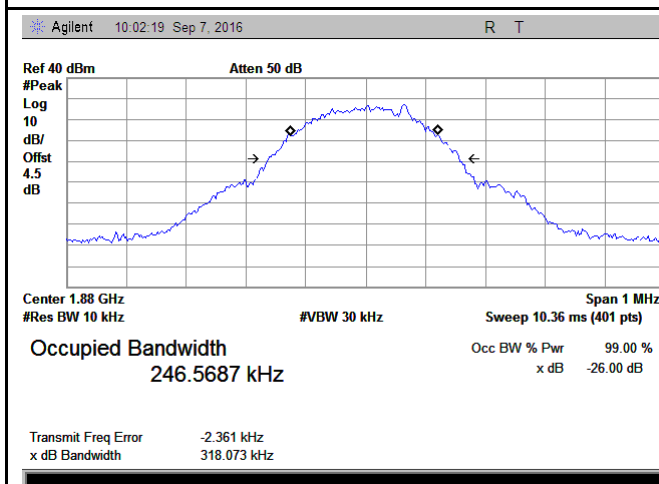
GSM 850 BW - Mid CH 836.6MHz



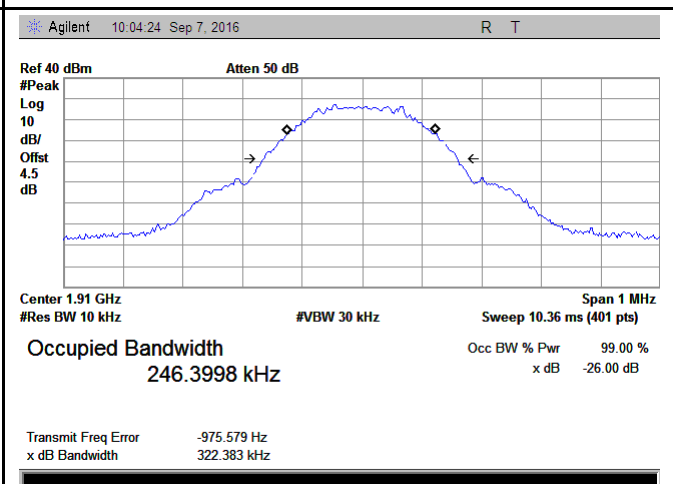
GSM 850 BW - High CH 848.8MHz



PCS 1900 BW - Low CH 1850.2MHz

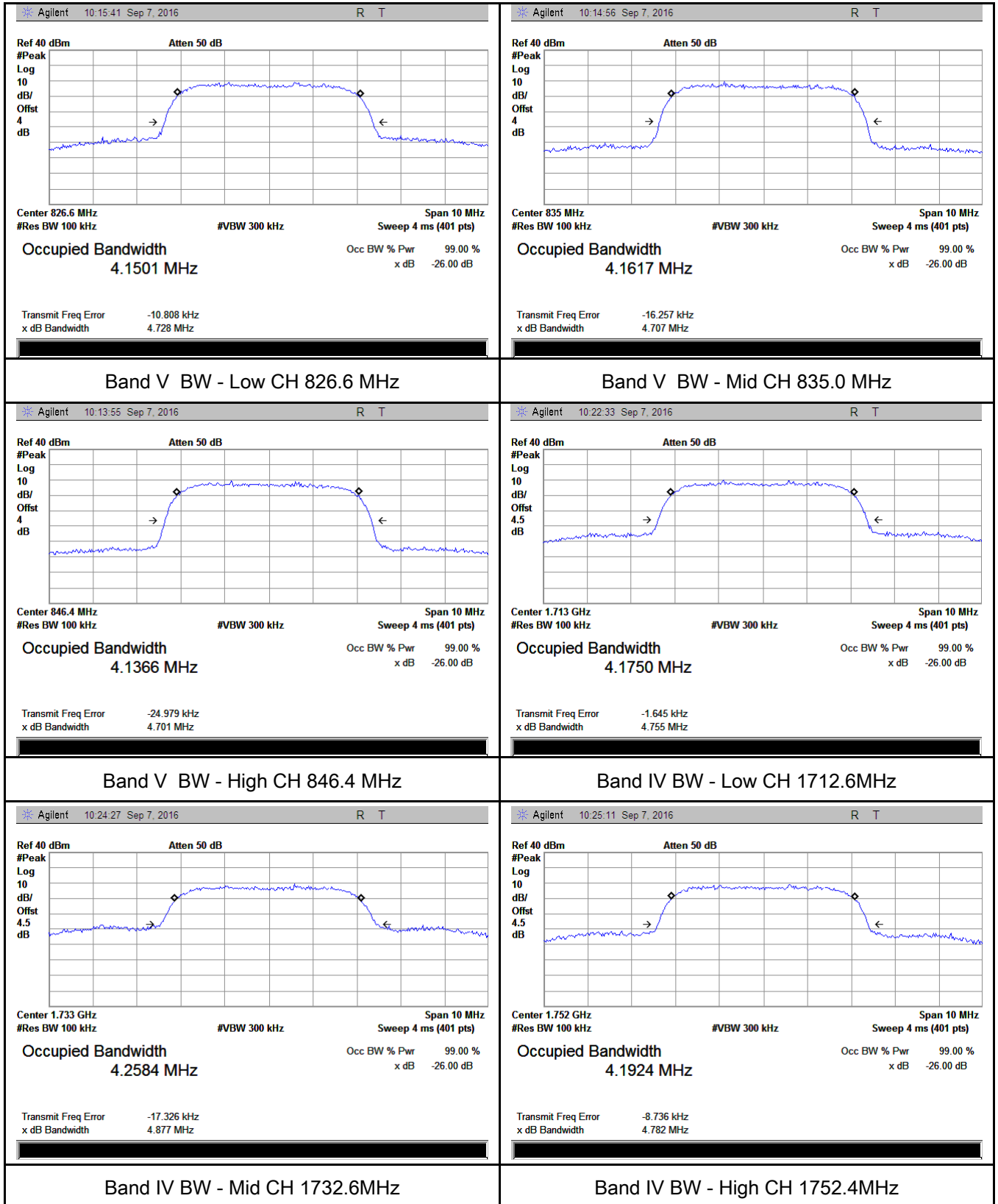


PCS 1900 BW - Mid CH 1880MHz



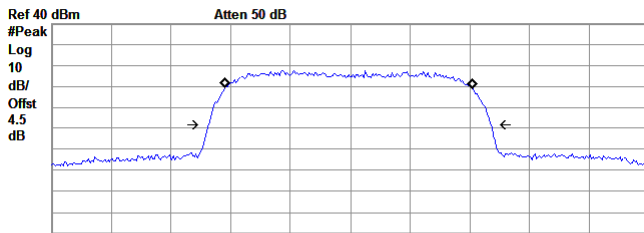
PCS 1900 BW - High CH 1909.8MHz

RMC:



Agilent 10:56:04 Sep 7, 2016

R T

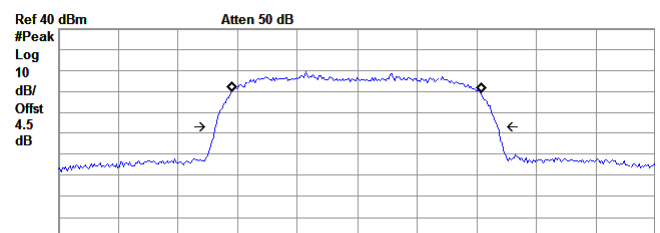


Center 1.853 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1511 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -17.172 kHz
x dB Bandwidth 4.728 MHz

Agilent 10:55:28 Sep 7, 2016

R T



Center 1.88 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1639 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

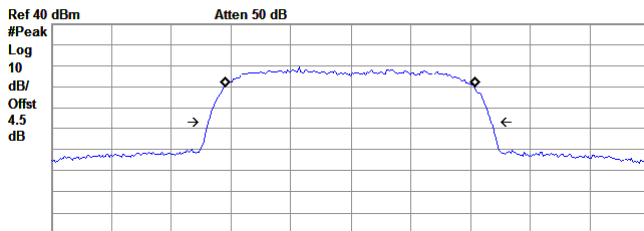
Transmit Freq Error -18.222 kHz
x dB Bandwidth 4.722 MHz

Band II BW - Low CH 1852.4MHz

Band II BW - Mid CH 1880MHz

Agilent 10:54:50 Sep 7, 2016

R T

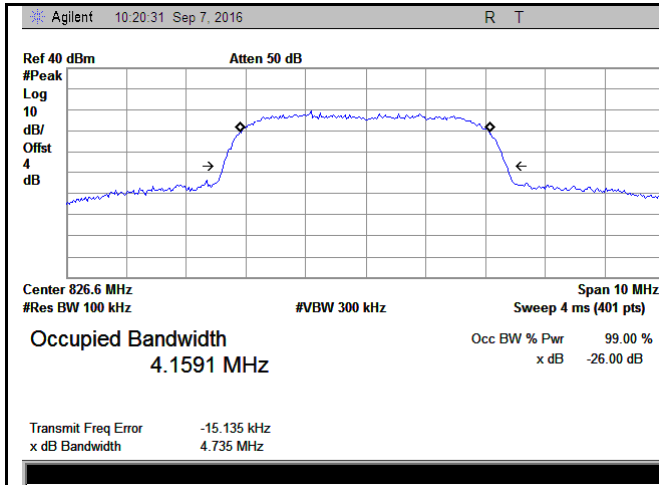


Center 1.907 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1601 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

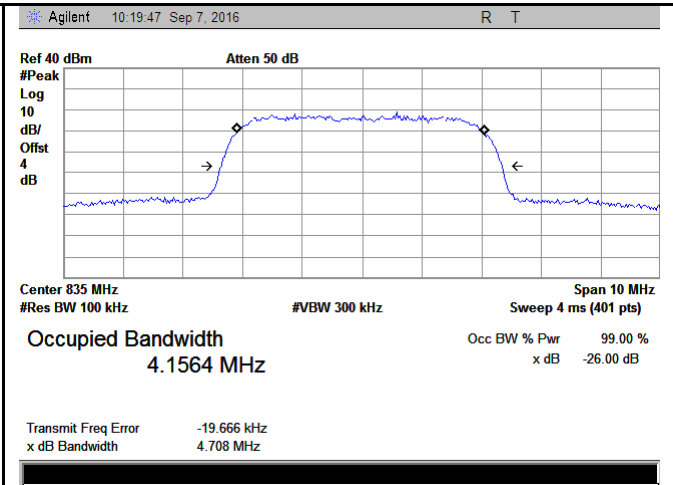
Transmit Freq Error -17.117 kHz
x dB Bandwidth 4.722 MHz

Band II BW - High CH 1907.6MHz

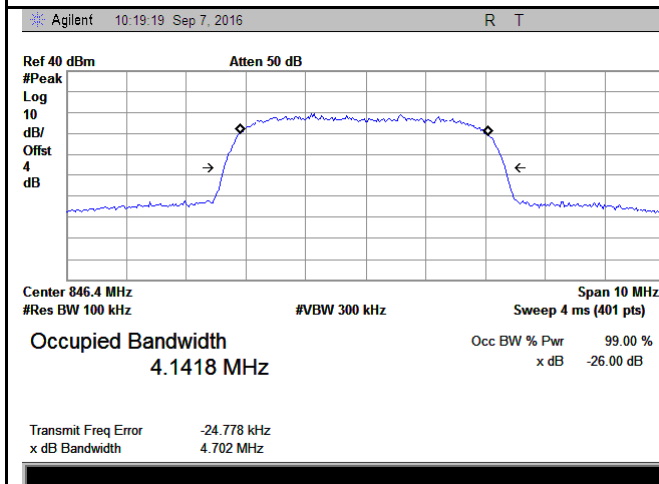
HSUPA:



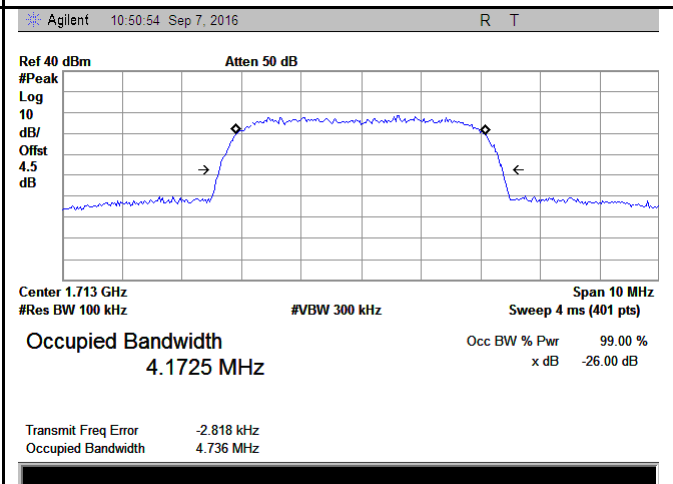
Band V BW - Low CH 826.6 MHz



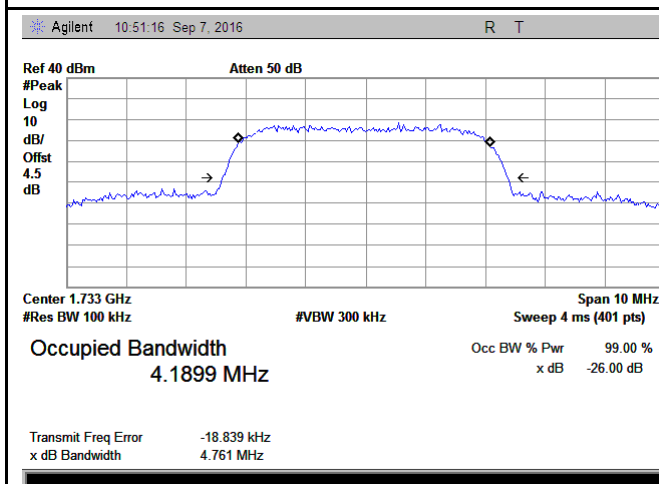
Band V BW - Mid CH 835.0 MHz



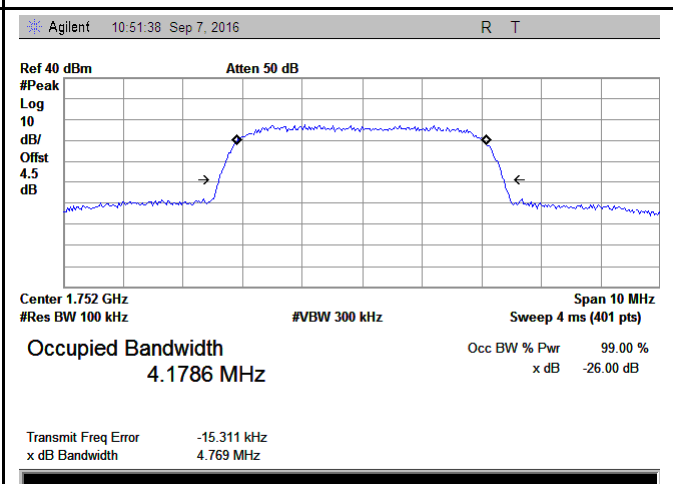
Band V BW - High CH 846.4 MHz



Band IV BW - Low CH 1712.6MHz



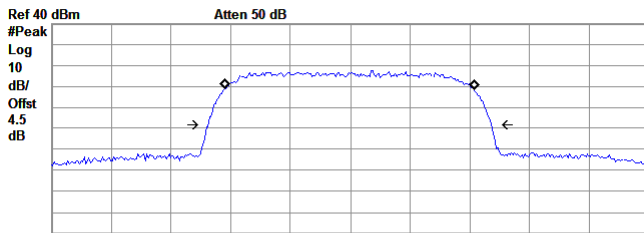
Band IV BW - Mid CH 1732.6MHz



Band IV BW - High CH 1752.4MHz

Agilent 10:58:13 Sep 7, 2016

R T

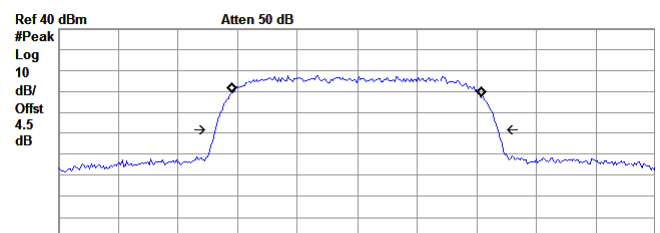


Center 1.853 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1683 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -12.574 kHz
x dB Bandwidth 4.740 MHz

Agilent 10:57:39 Sep 7, 2016

R T



Center 1.88 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1661 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

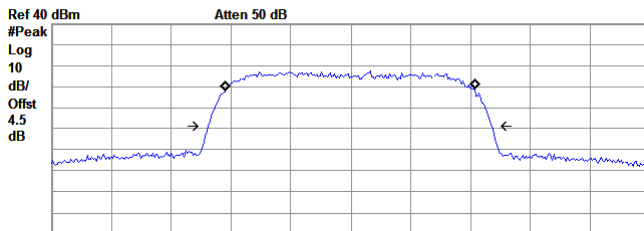
Transmit Freq Error -16.697 kHz
x dB Bandwidth 4.730 MHz

Band II BW - Low CH 1852.4MHz

Band II BW - Mid CH 1880MHz

Agilent 10:57:19 Sep 7, 2016

R T

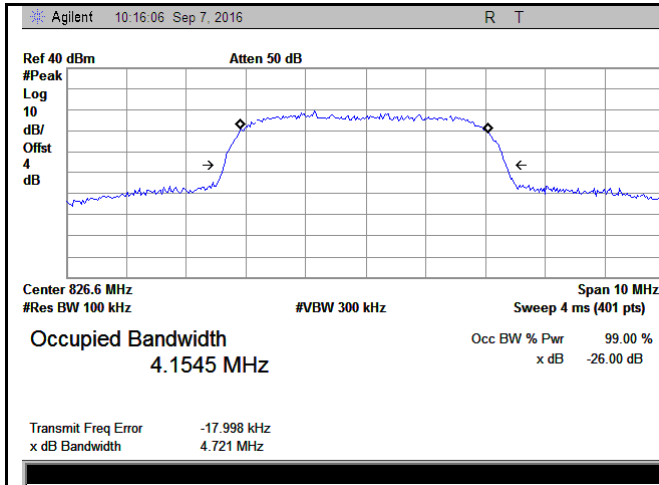


Center 1.907 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 4 ms (401 pts)
Occupied Bandwidth
4.1579 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB

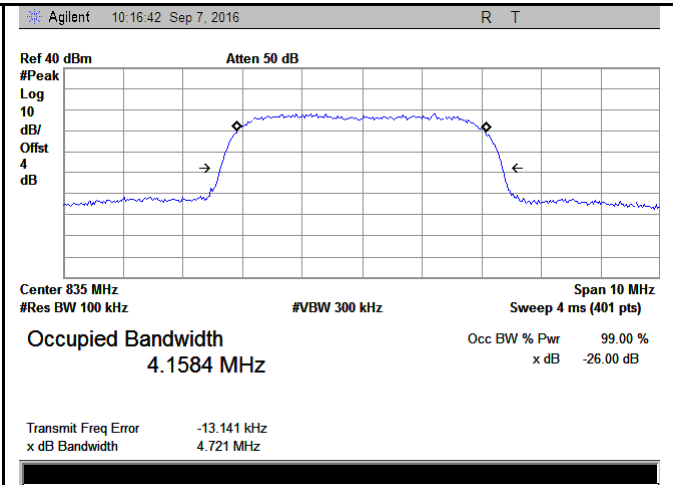
Transmit Freq Error -12.962 kHz
Occupied Bandwidth 4.742 MHz

Band II BW - High CH 1907.6MHz

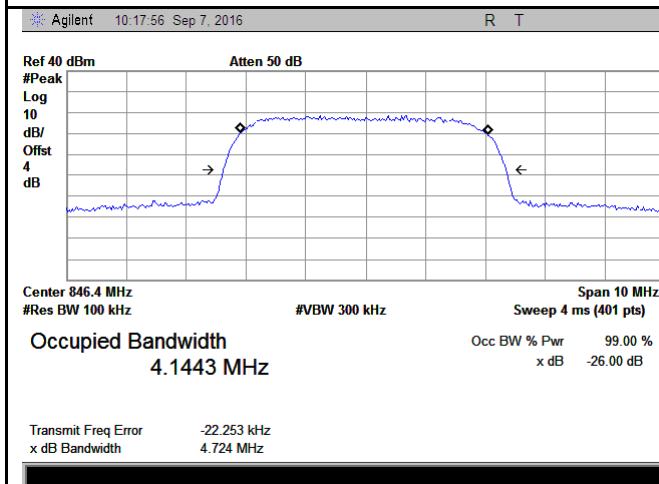
HSDPA:



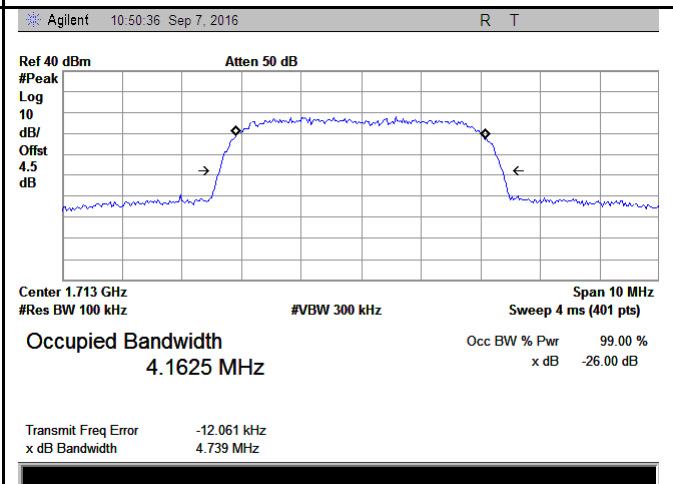
Band V BW - Low CH 826.6 MHz



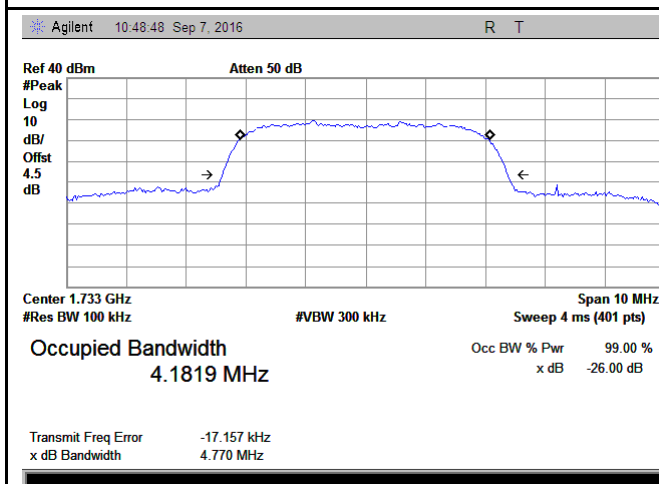
Band V BW - Mid CH 835.0 MHz



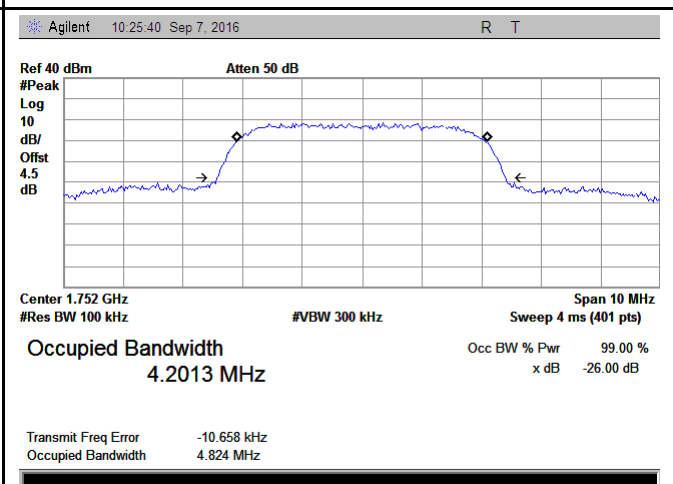
Band V BW - High CH 846.4 MHz



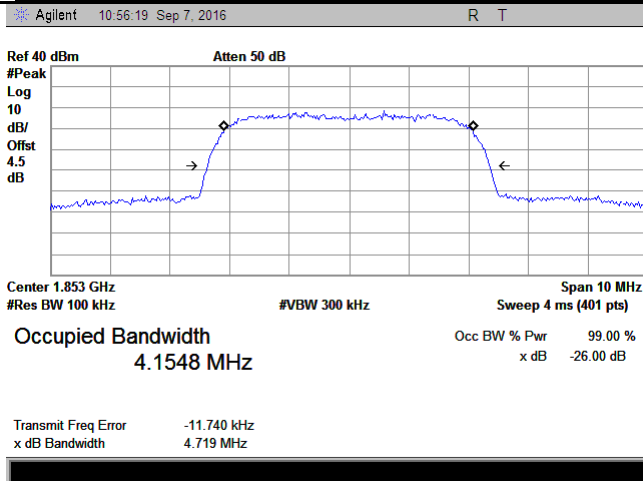
Band IV BW - Low CH 1712.6 MHz



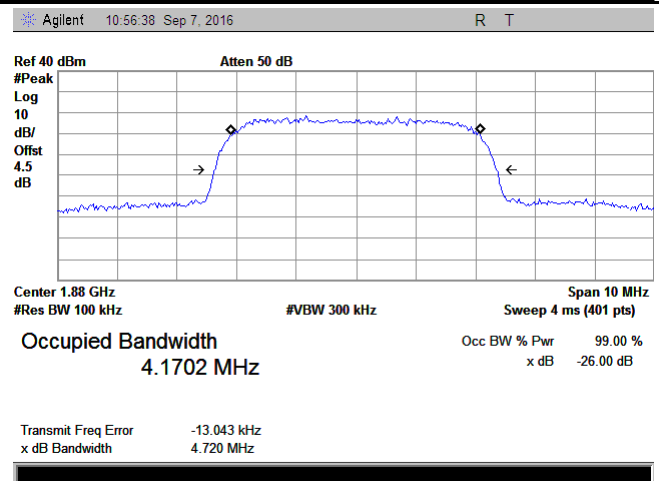
Band IV BW - Mid CH 1732.6 MHz



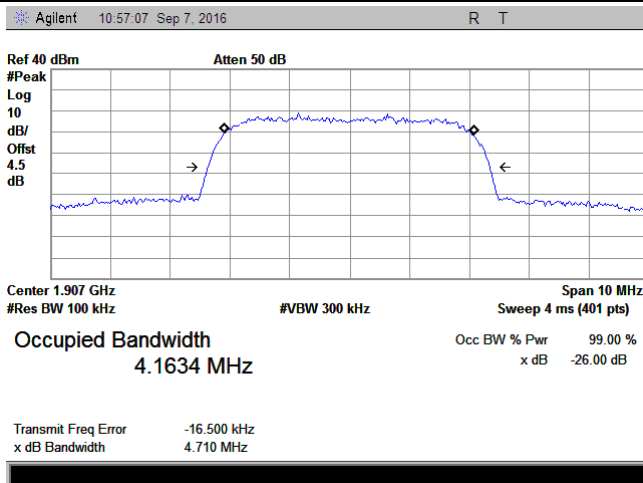
Band IV BW - High CH 1752.4 MHz



Band II BW - Low CH 1852.4MHz



Band II BW - Mid CH 1880MHz

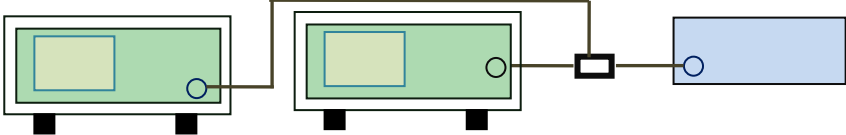


Band II BW - High CH 1907.6MHz

6.5 Spurious Emissions at Antenna Terminals

Temperature	24°C
Relative Humidity	59%
Atmospheric Pressure	1007mbar
Test date :	September 07, 2016
Tested By :	Loren Luo

Requirement(s):

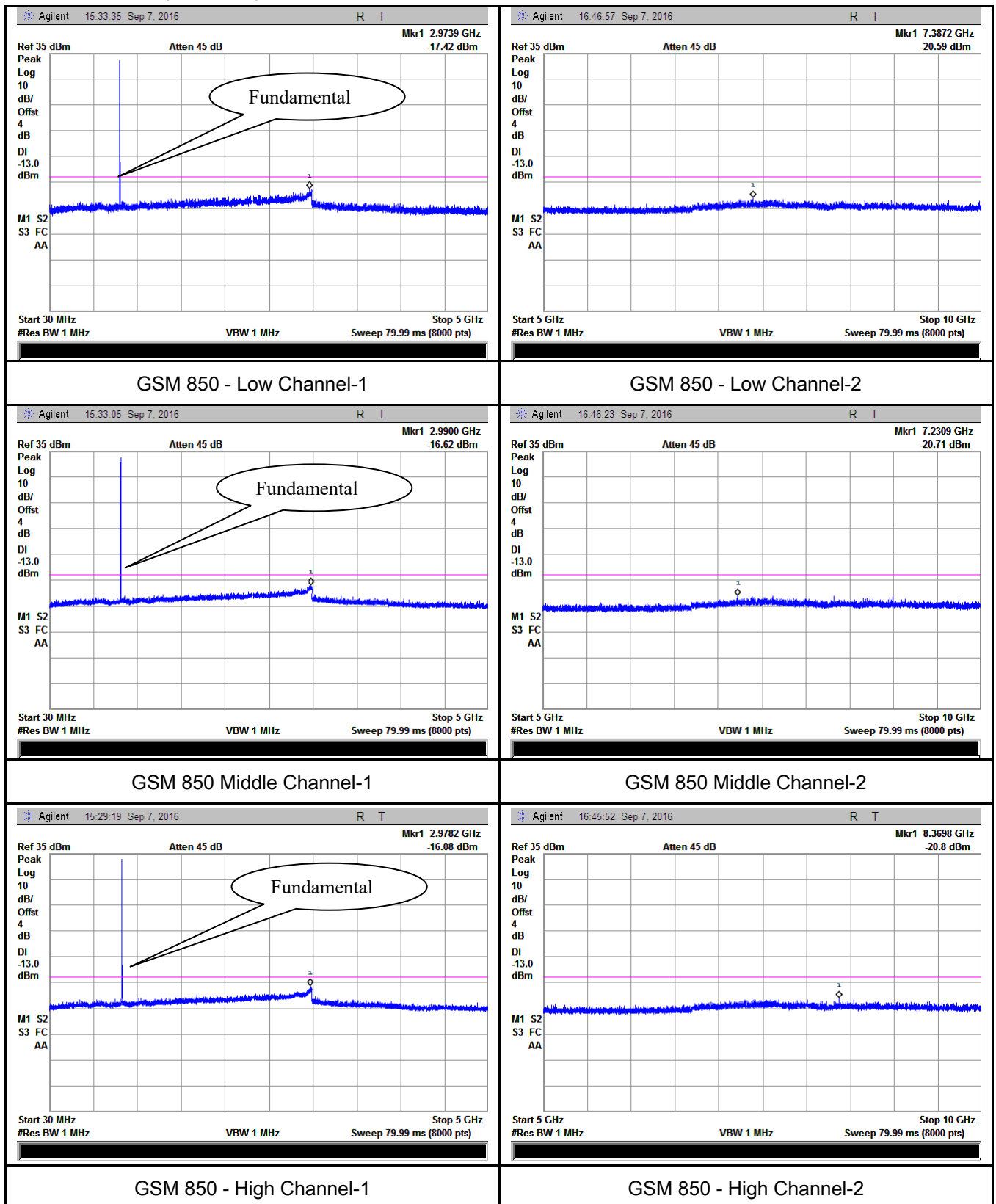
Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB	<input checked="" type="checkbox"/>
Test Setup			
Test Procedure	<ul style="list-style-type: none"> - The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. - Setting RBW as roughly BW/100. 		
Remark			
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes ☐ N/A
 Test Plot ☒ Yes (See below) ☐ N/A

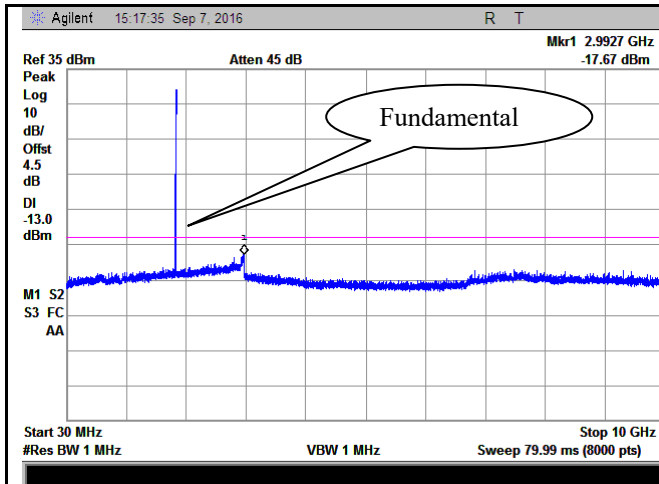
Test Plots

GSM Voice:

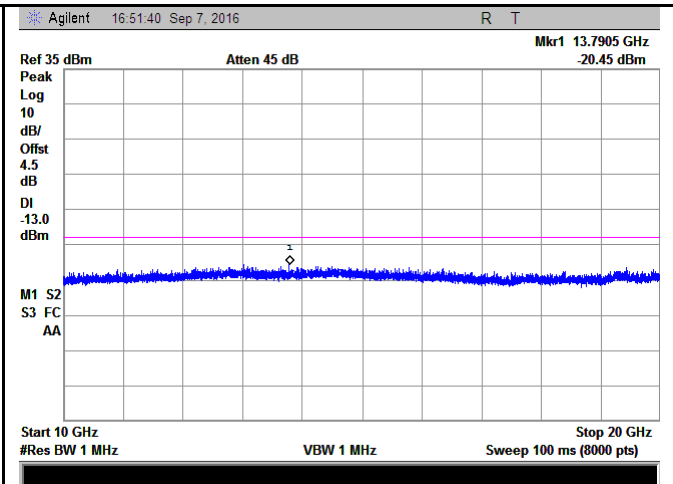
Cellular Band (Part 22H) result



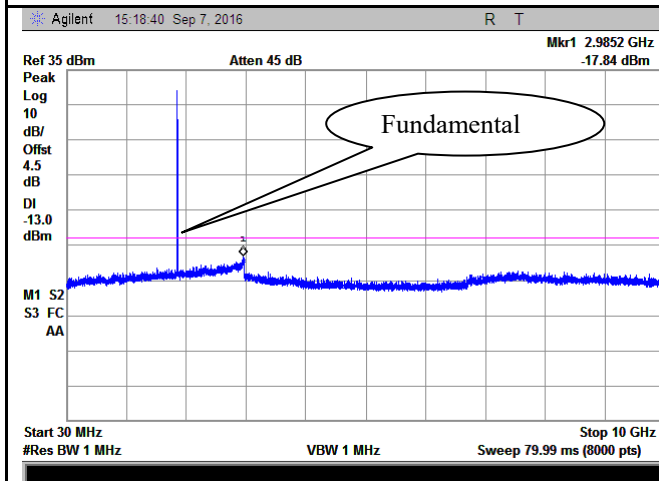
PCS Band (Part24E) result



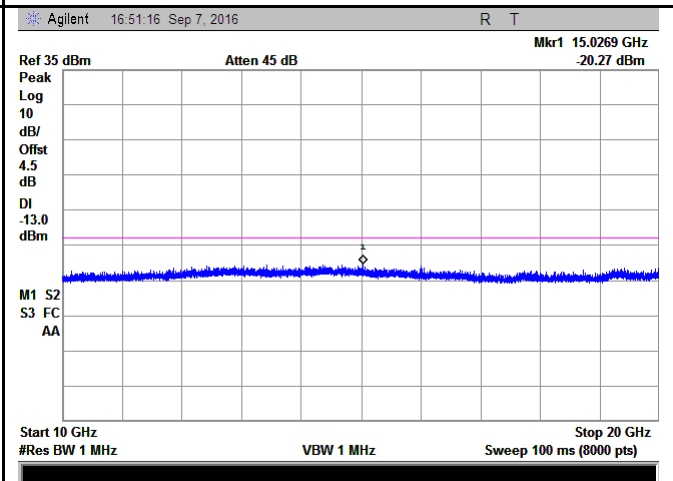
PCS1900 - Low Channel-1



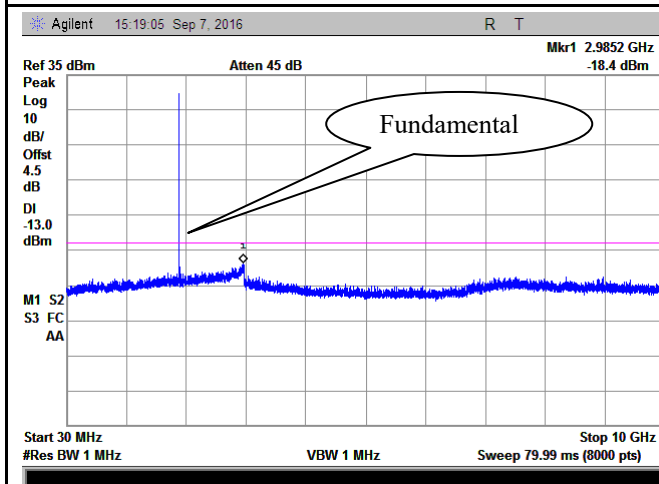
PCS 1900 - Low Channel-2



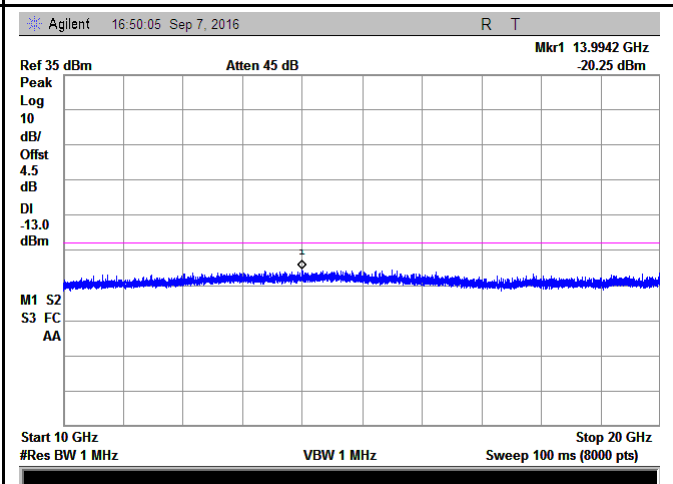
PCS1900 - Middle Channel-1



PCS 1900 - Middle Channel-2



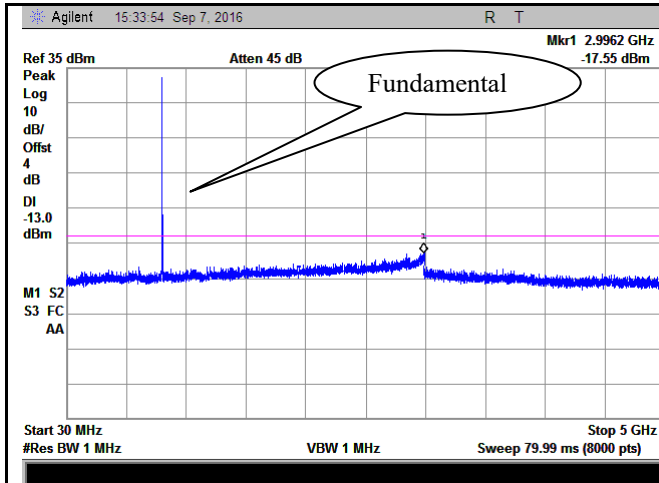
PCS1900 - High Channel-1



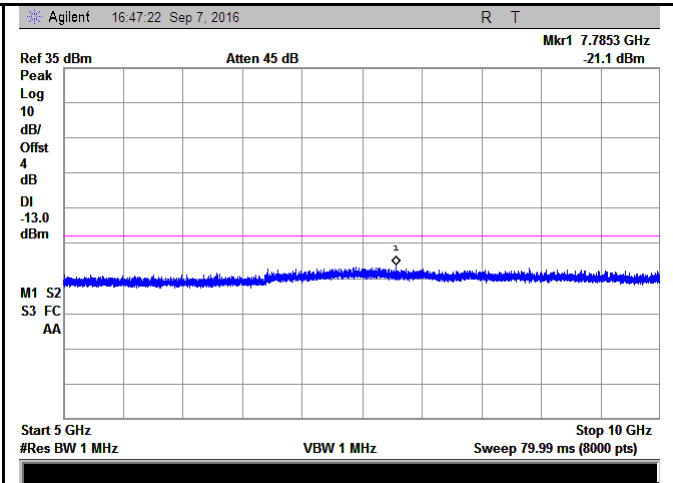
PCS 1900 - High Channel-2

GPRS:

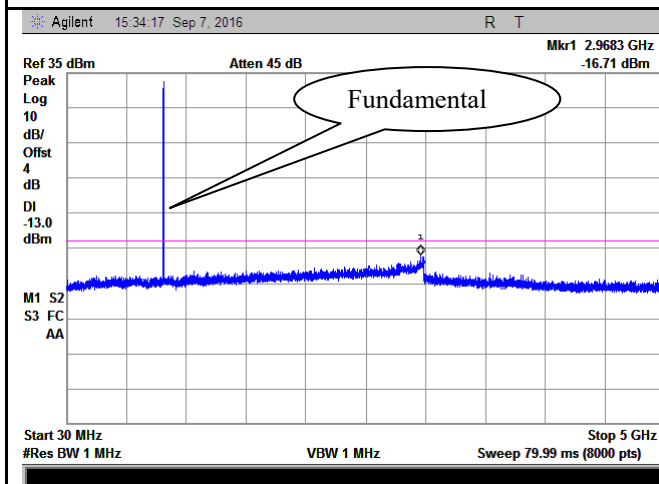
Cellular Band (Part 22H) result



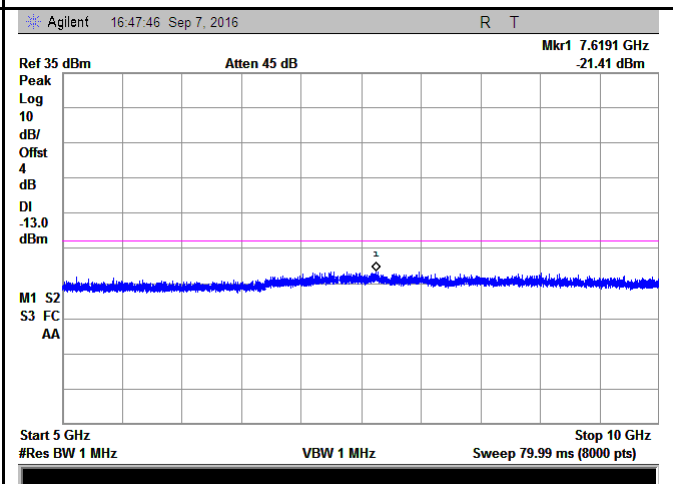
GSM 850 - Low Channel-1



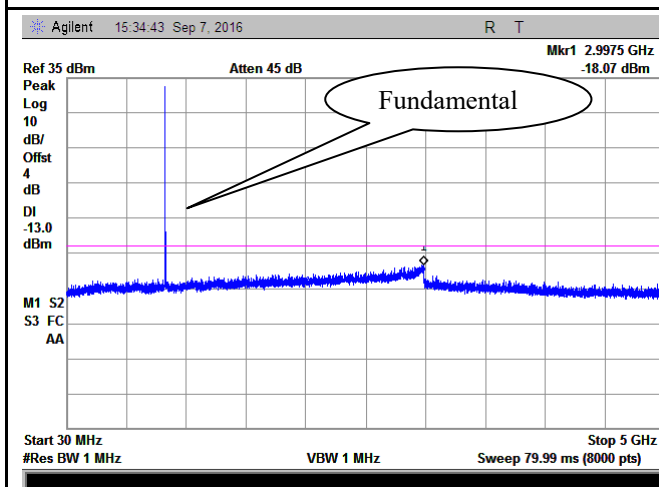
GSM 850 - Low Channel-2



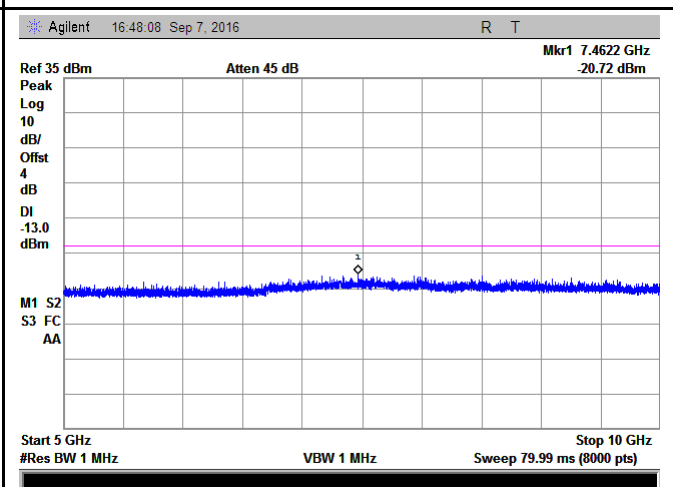
GSM 850 Middle Channel-1



GSM 850 Middle Channel-2

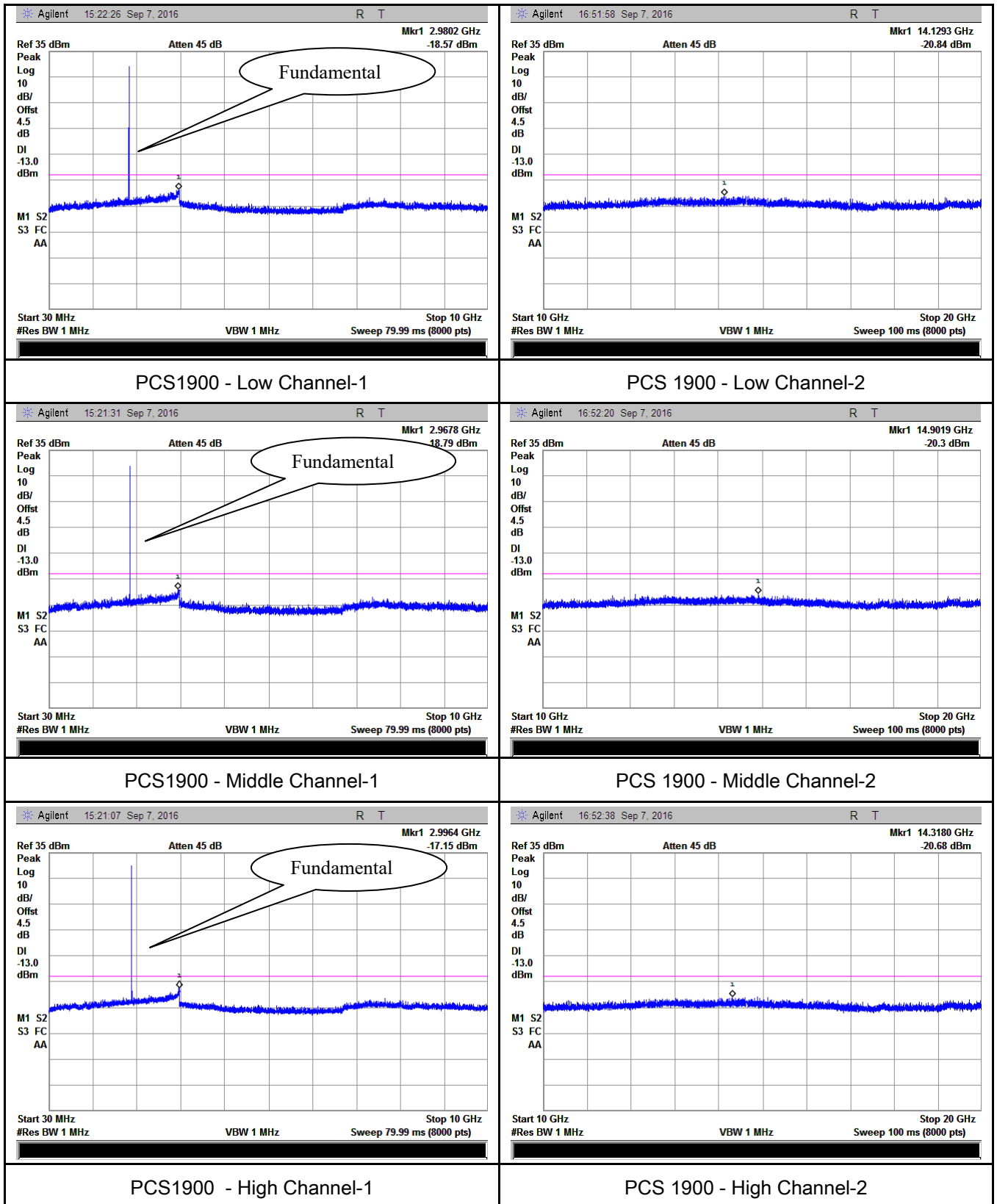


GSM 850 - High Channel-1



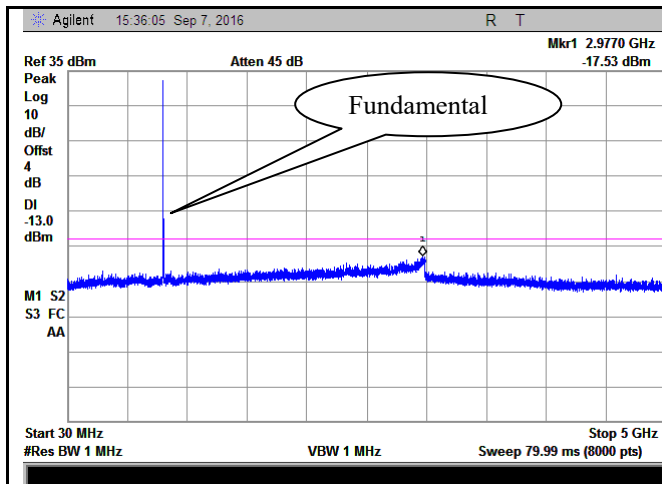
GSM 850 - High Channel-2

PCS Band (Part24E) result

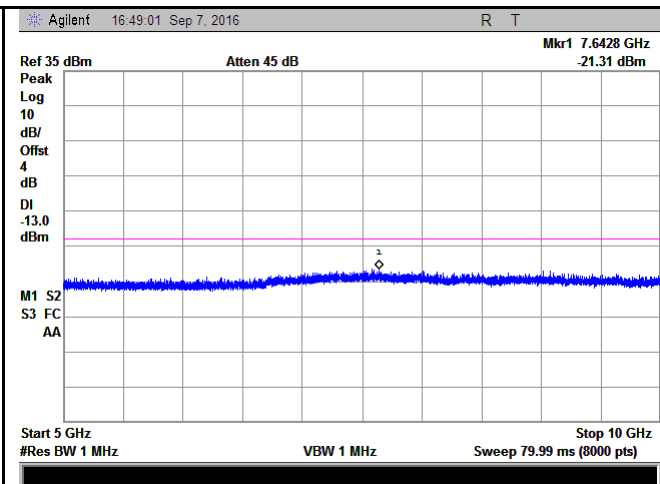


EGPRS (MCS 1):

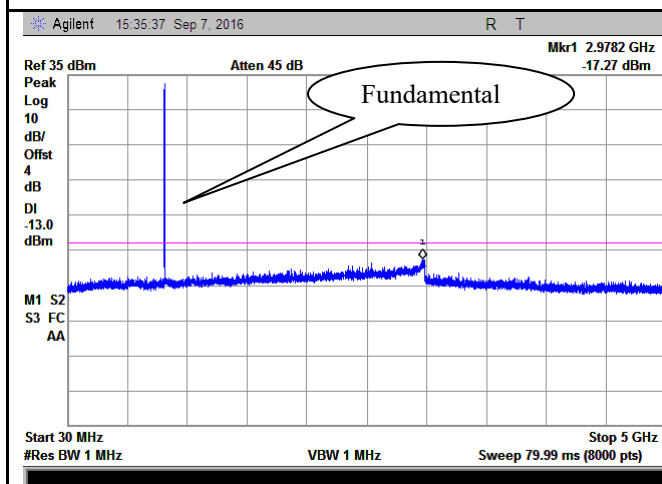
Cellular Band (Part 22H) result



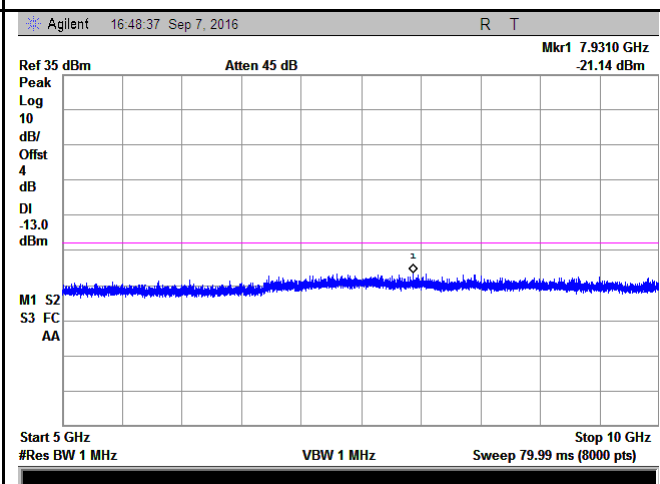
GSM 850 - Low Channel-1



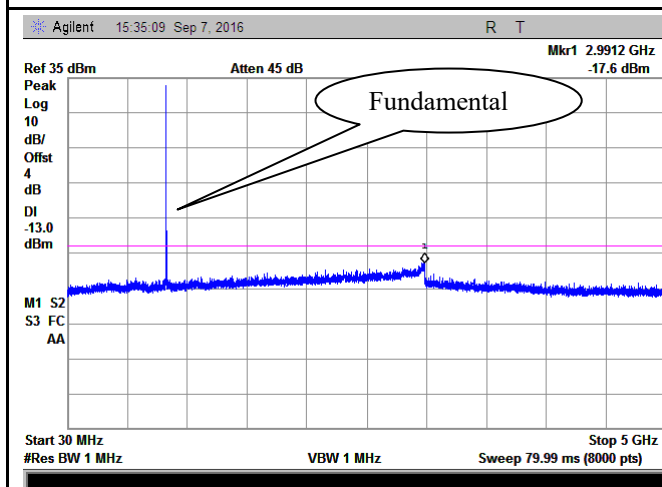
GSM 850 - Low Channel-2



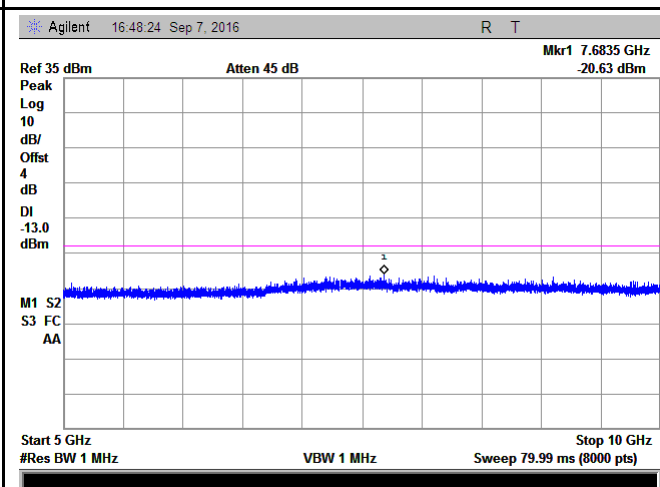
GSM 850 Middle Channel-1



GSM 850 Middle Channel-2

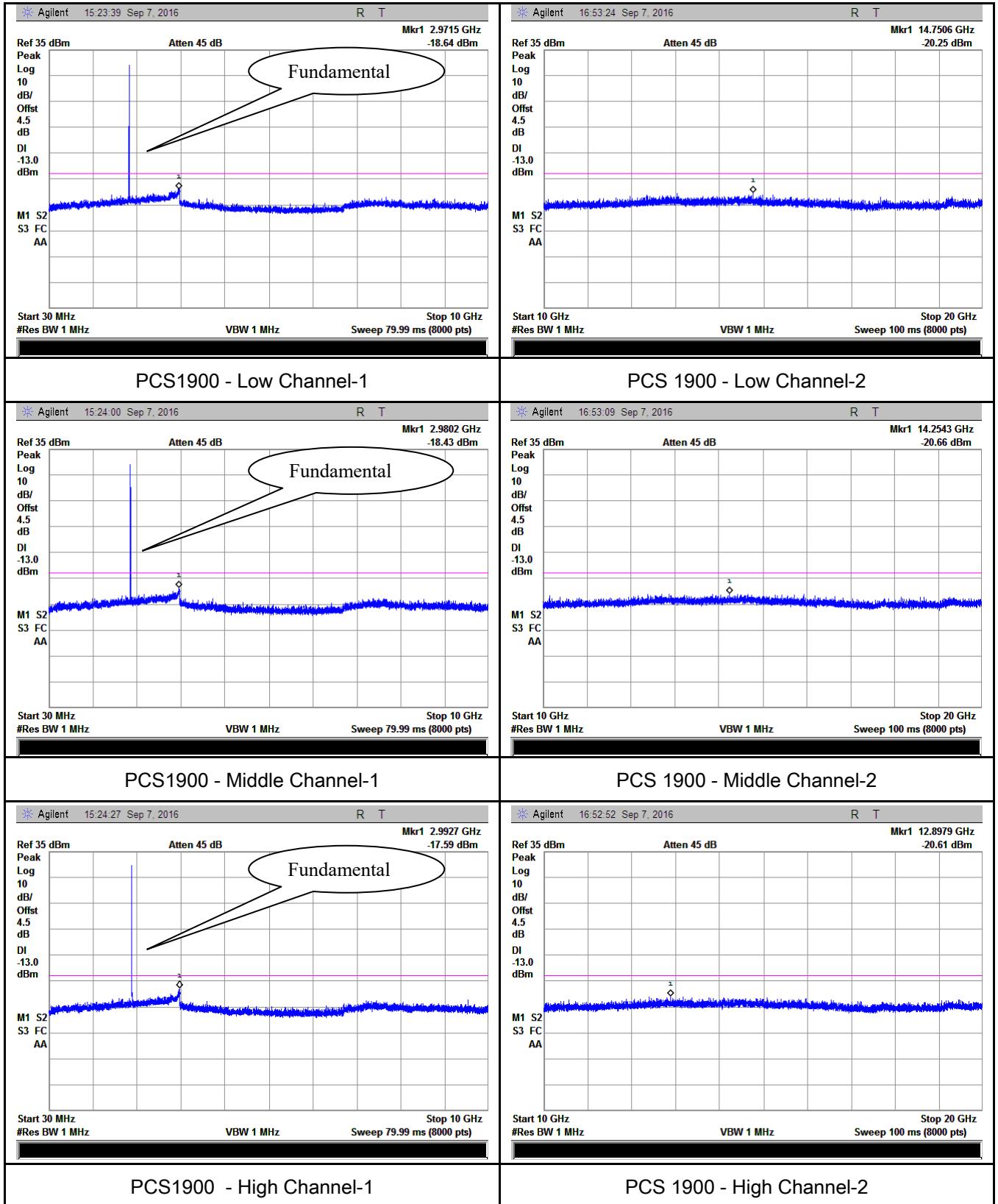


GSM 850 - High Channel-1



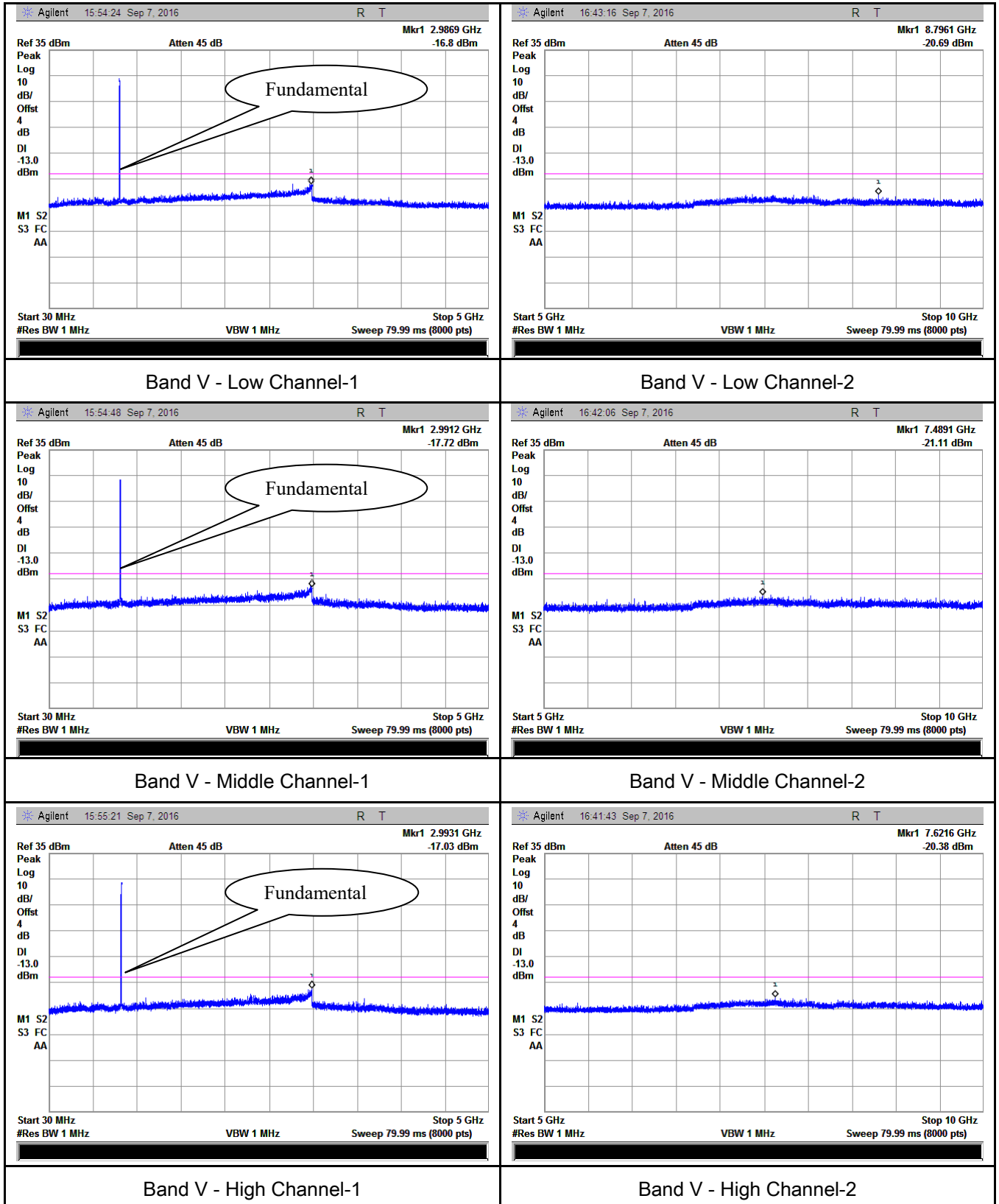
GSM 850 - High Channel-2

PCS Band (Part24E) result

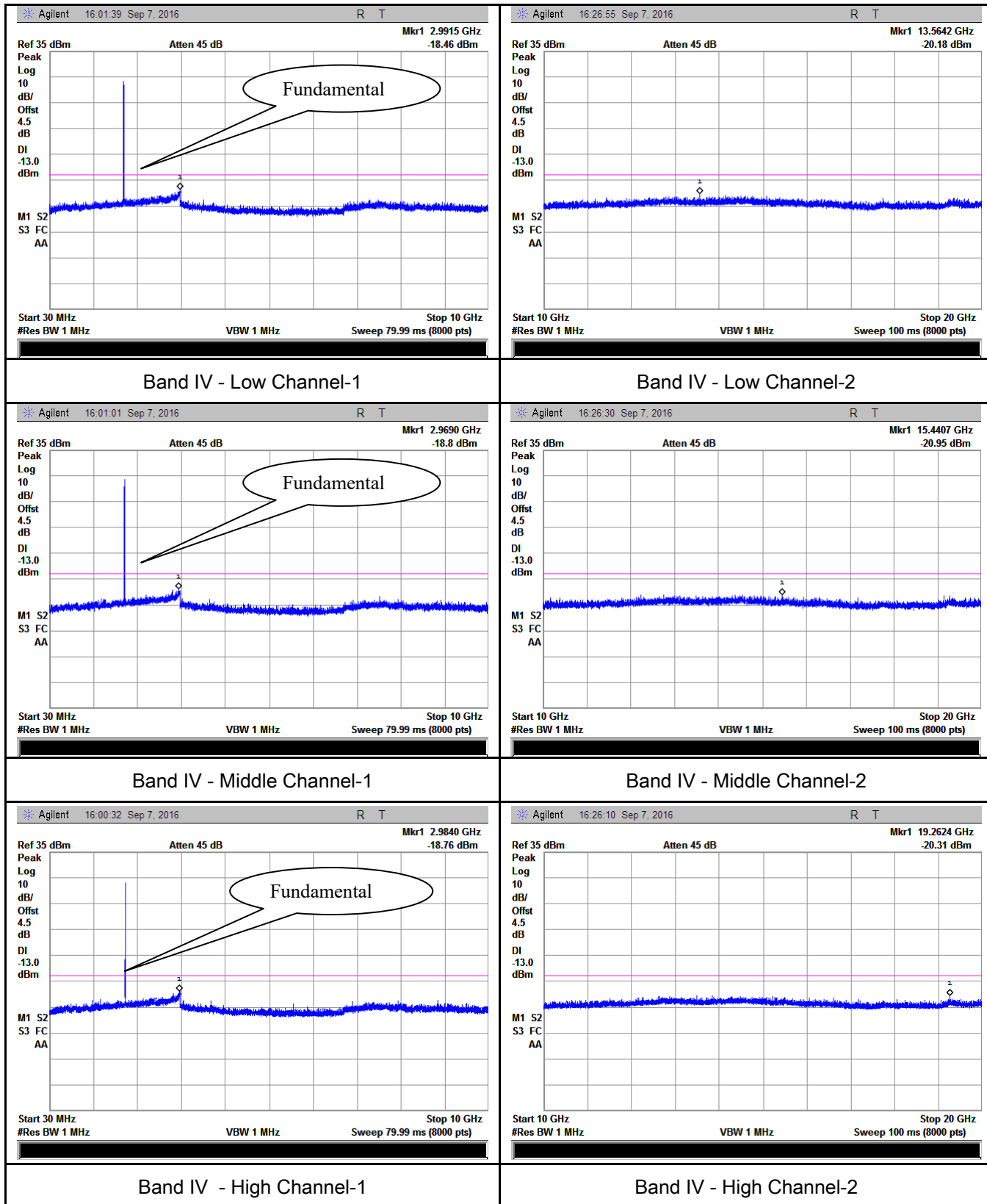


RMC

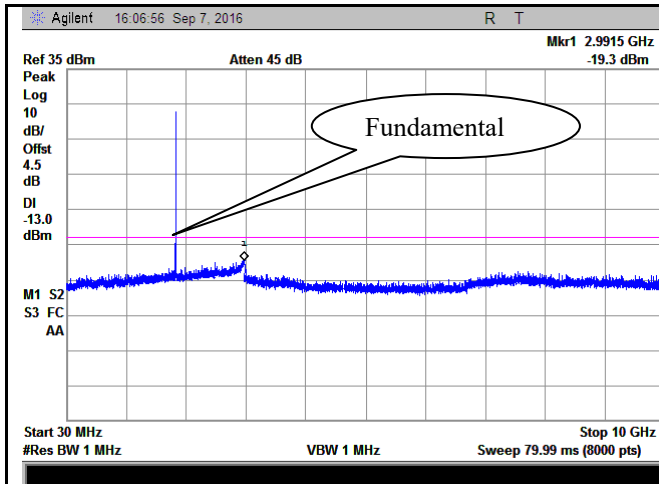
UMTS-FDD Band V (Part 22H)



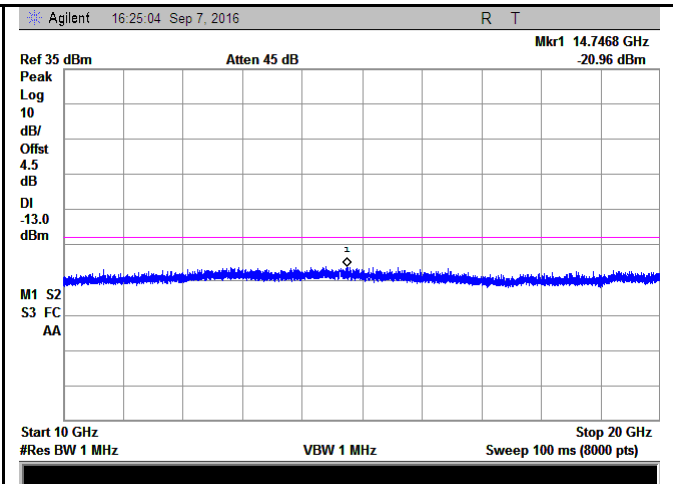
UMTS-FDD Band IV (Part 27)



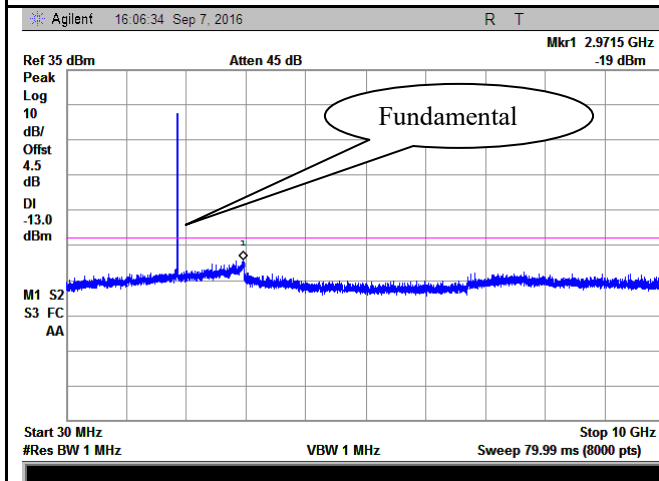
UMTS-FDD Band II (Part 24E)



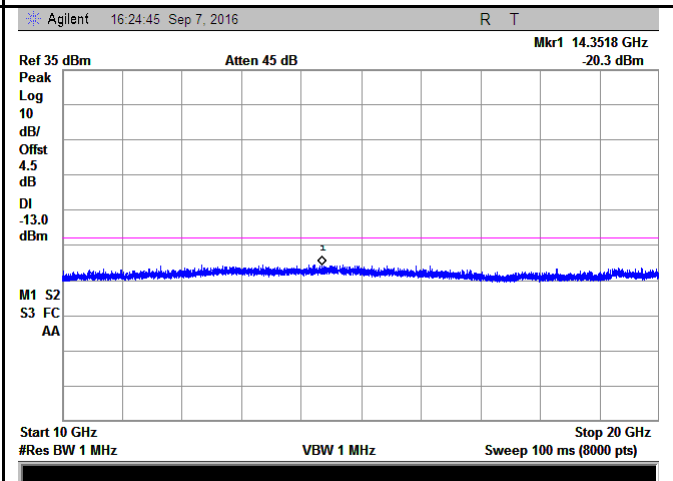
Band II - Low Channel-1



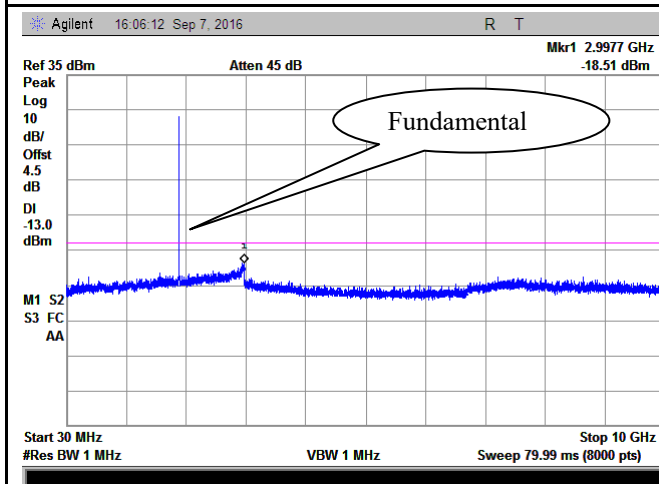
Band II - Low Channel-2



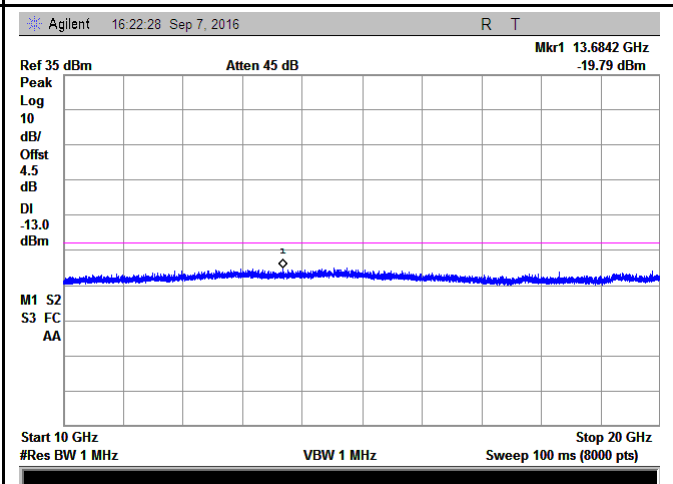
Band II - Middle Channel-1



Band II - Middle Channel-2



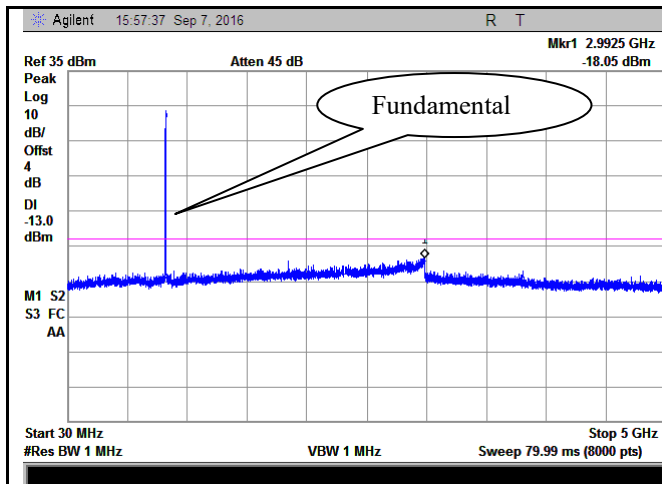
Band II - High Channel-1



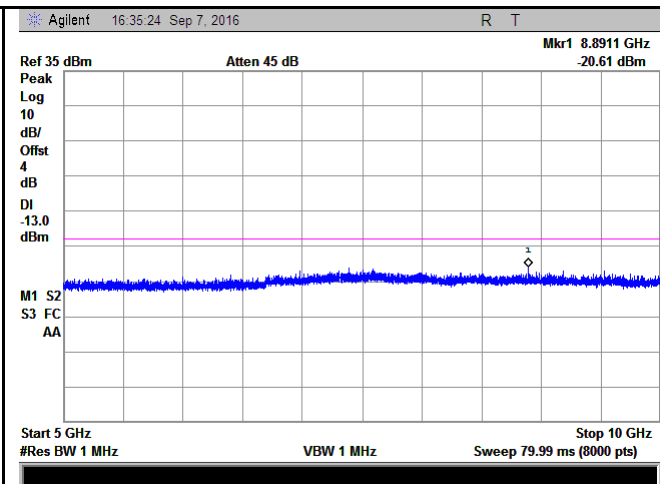
Band II - High Channel-2

HSUPA:

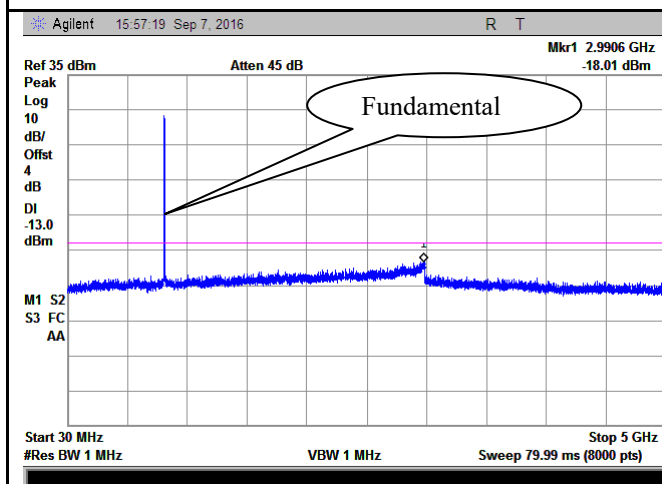
UMTS-FDD Band V (Part 22H)



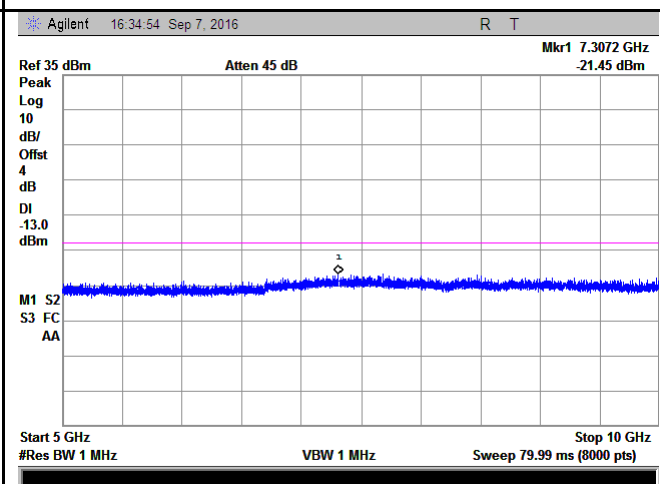
Band V - Low Channel-1



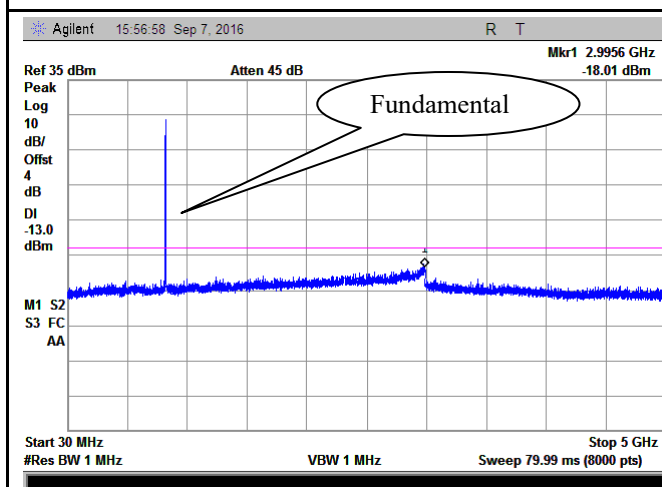
Band V - Low Channel-2



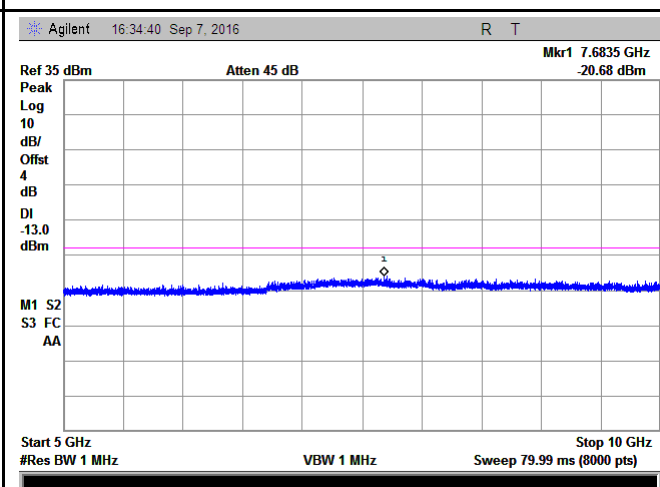
Band V - Middle Channel-1



Band V - Middle Channel-2

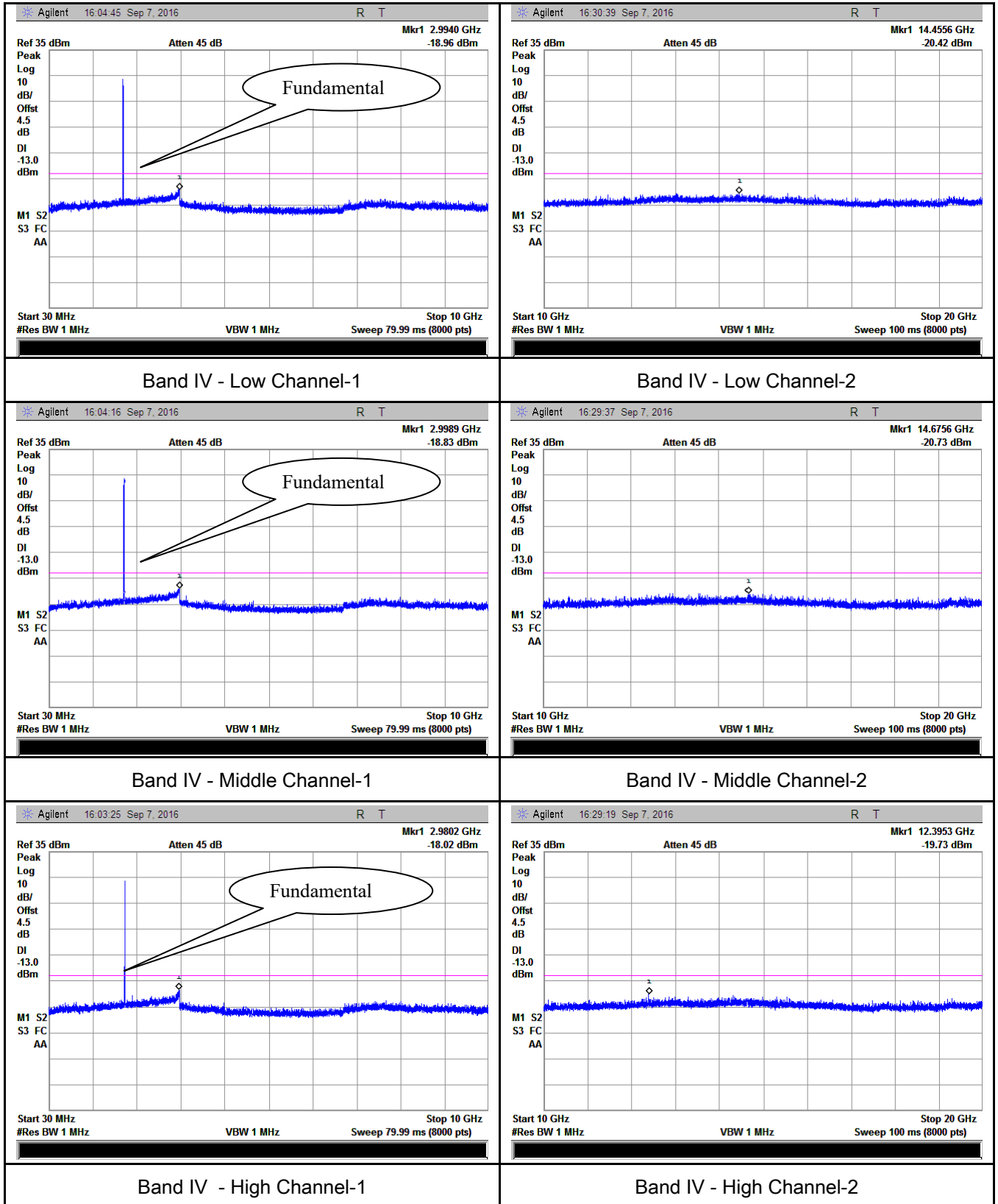


Band V - High Channel-1

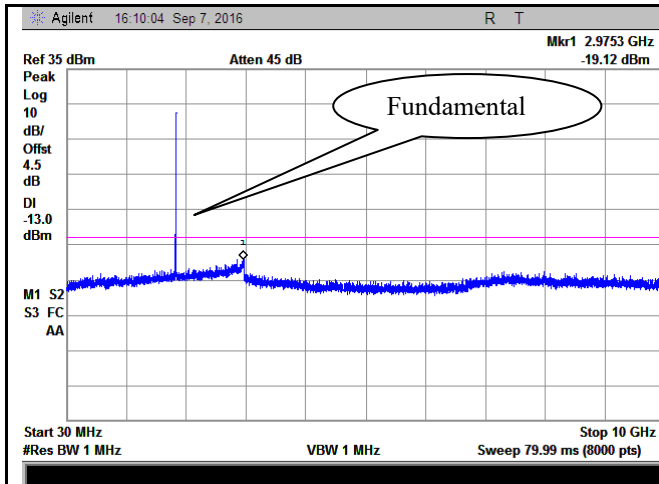


Band V - High Channel-2

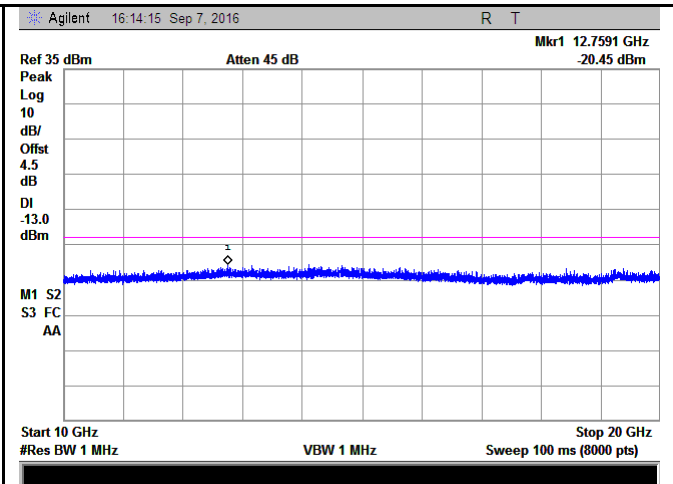
UMTS-FDD Band IV (Part 27)



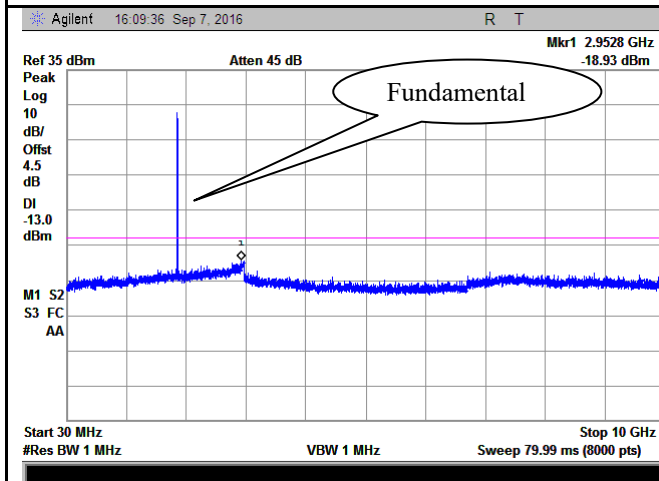
UMTS-FDD Band II (Part 24E)



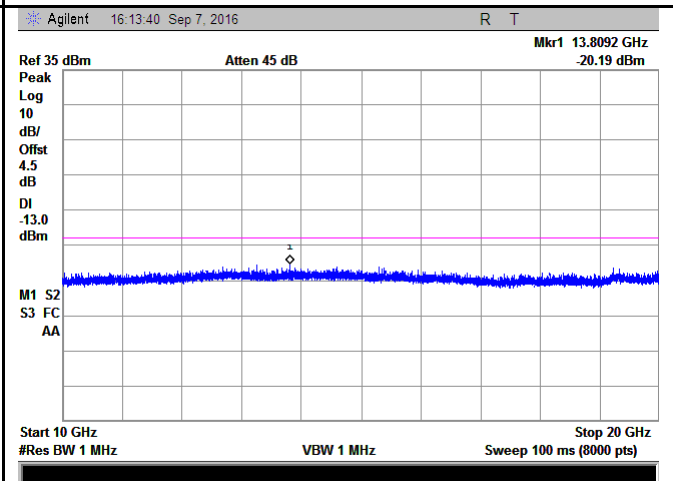
Band II - Low Channel-1



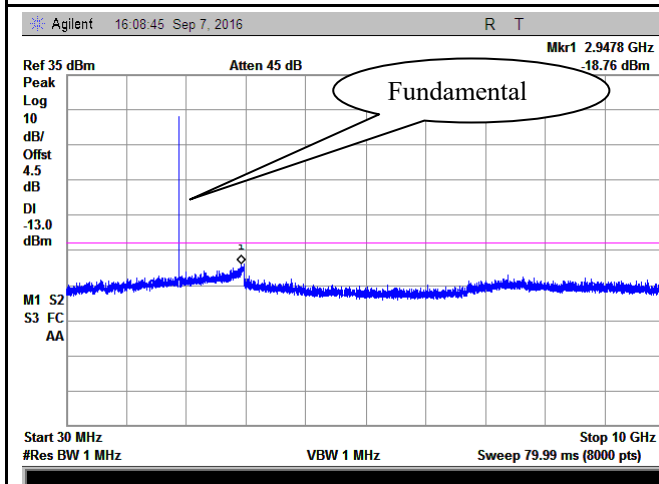
Band II - Low Channel-2



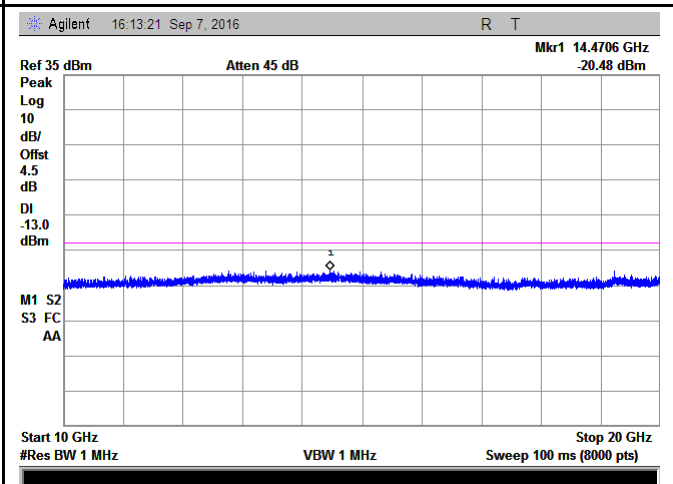
Band II - Middle Channel-1



Band II - Middle Channel-2



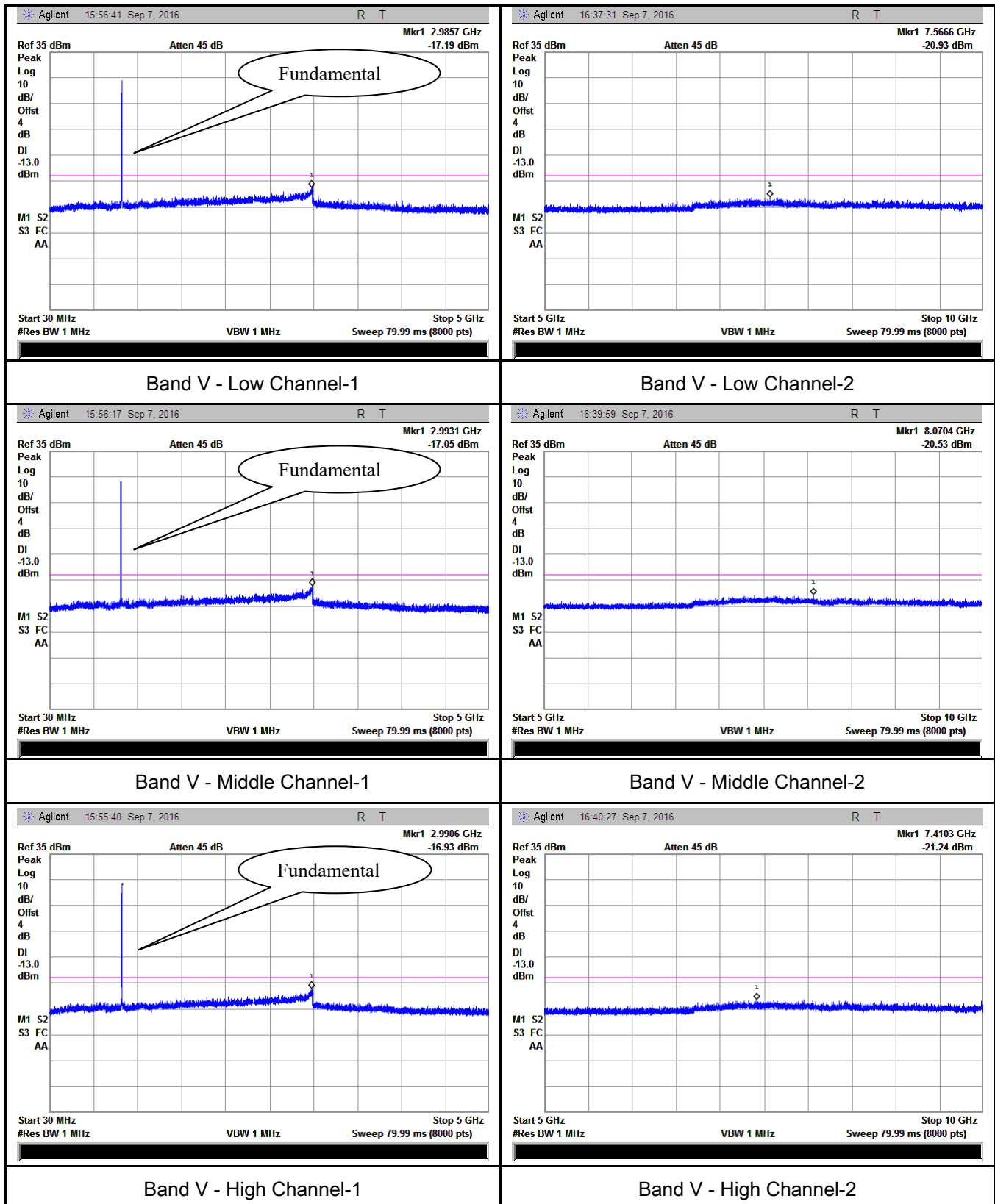
Band II - High Channel-1



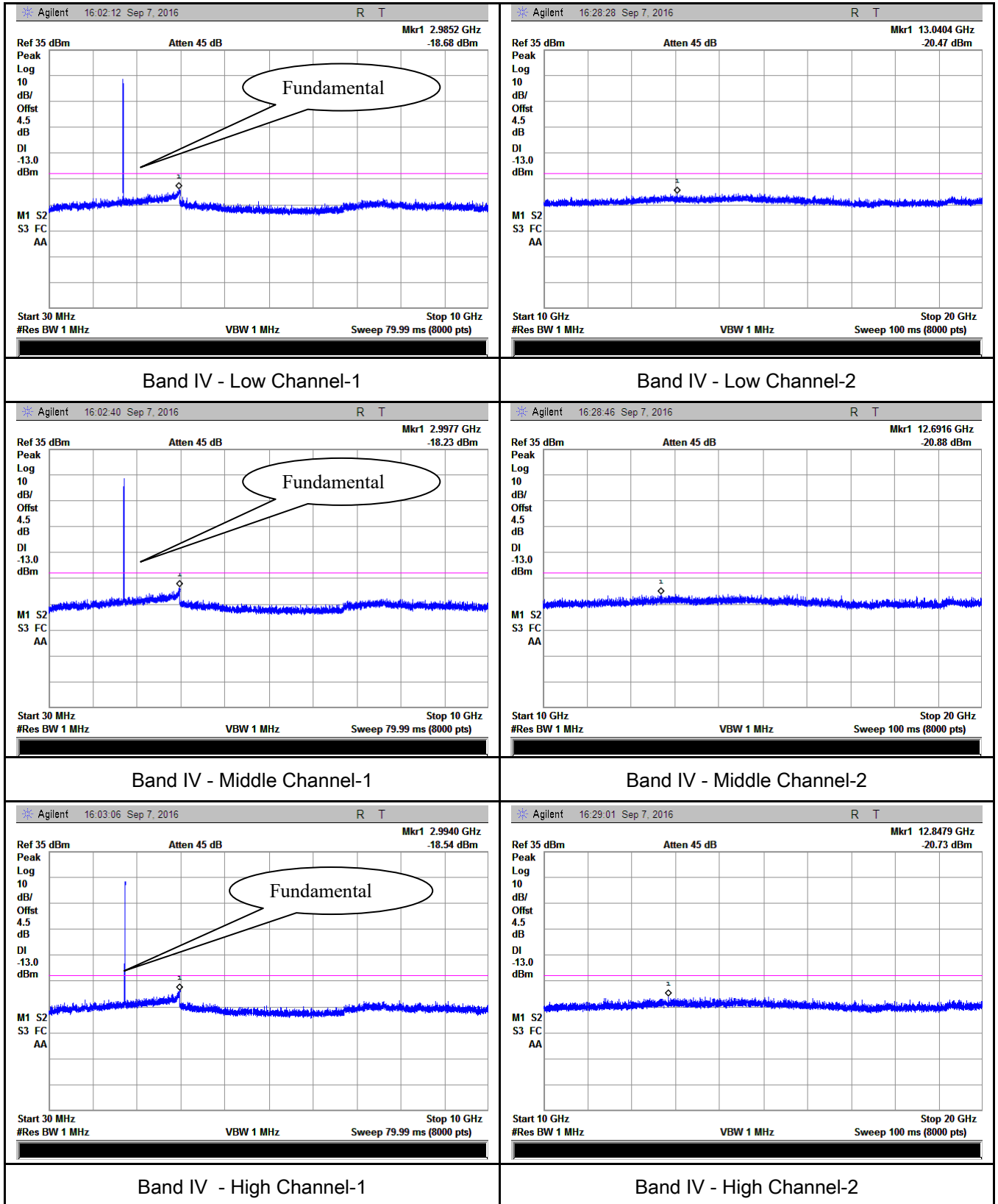
Band II - High Channel-2

HSDPA:

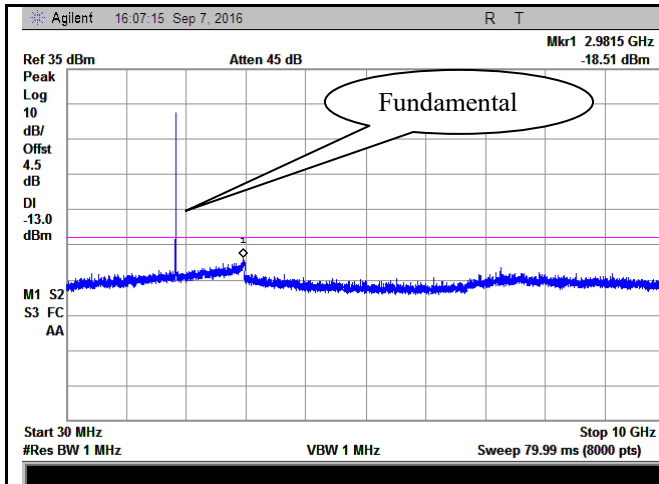
UMTS-FDD Band V (Part 22H)



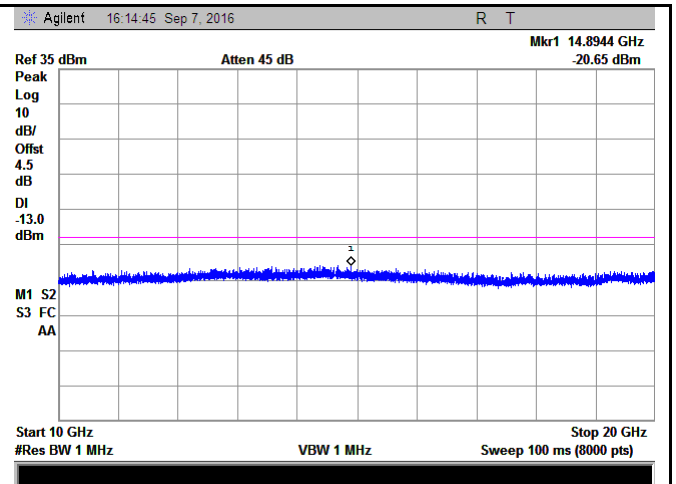
UMTS-FDD Band IV (Part 27)



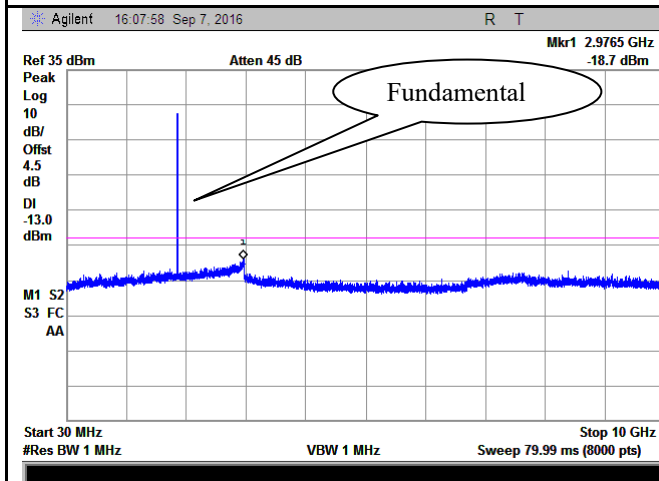
UMTS-FDD Band II (Part 24E)



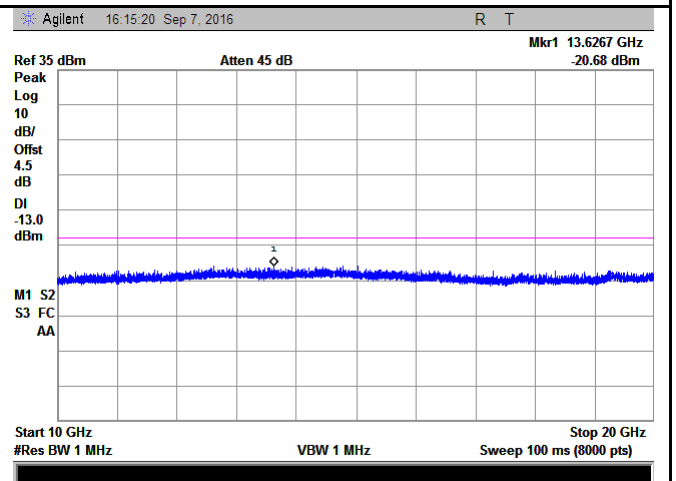
Band II - Low Channel-1



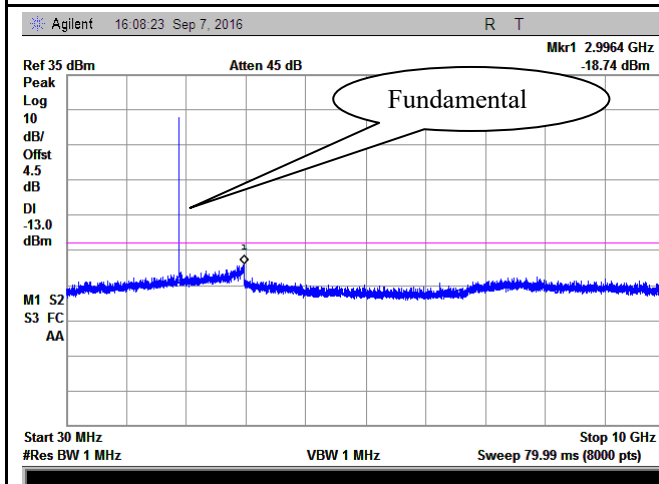
Band II - Low Channel-2



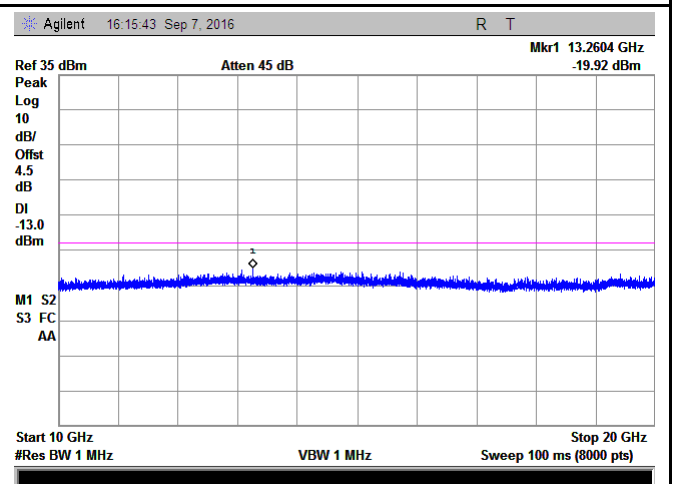
Band II - Middle Channel-1



Band II - Middle Channel-2



Band II - High Channel-1



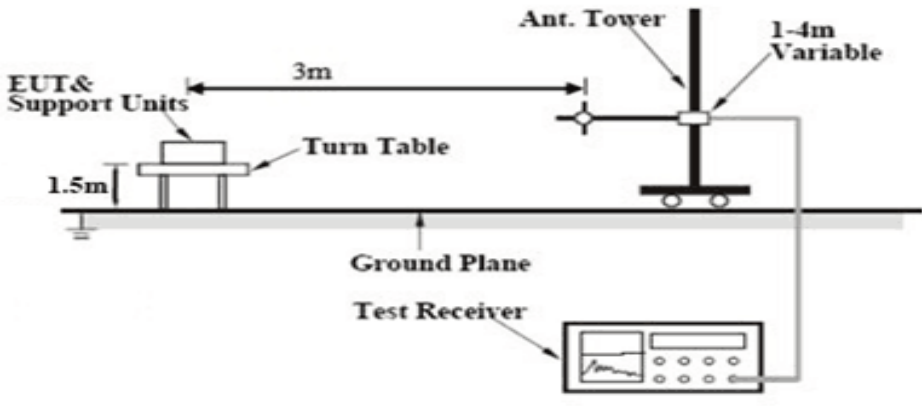
Band II - High Channel-2

6.6 Spurious Radiated Emissions

Temperature	23°C
Relative Humidity	55%
Atmospheric Pressure	1031mbar
Test date :	August 31, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1053, §22.917 & §24.238 § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.	<input checked="" type="checkbox"/>

Test setup	 <p>The diagram illustrates the test setup. A turntable is placed on a ground plane, with EUT & Support Units on top. The turntable is 1.5m high. A measurement antenna is positioned 3m away from the turntable. The antenna is mounted on a tower with a 1-4m variable height. A test receiver is connected to the antenna.</p>
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Test Procedure	<ol style="list-style-type: none"> 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. 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. <p>Sample Calculation:</p> <p>EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)</p>
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Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Cellular Band (Part 22H) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1648.4	-43.52	V	7.95	0.78	-36.35	-13	-23.35
1648.4	-43.89	H	7.95	0.78	-36.72	-13	-23.72
329.5	-52.54	V	6.4	0.26	-46.4	-13	-33.4
602.4	-52.61	H	6.8	0.37	-46.18	-13	-33.18

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1673.2	-43.35	V	7.95	0.78	-36.18	-13	-23.18
1673.2	-44.08	H	7.95	0.78	-36.91	-13	-23.91
328.1	-52.61	V	6.4	0.26	-46.47	-13	-33.47
604.2	-52.84	H	6.8	0.37	-46.41	-13	-33.41

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1697.6	-43.21	V	7.95	0.78	-36.04	-13	-23.04
1697.6	-43.85	H	7.95	0.78	-36.68	-13	-23.68
327.8	-52.71	V	6.4	0.26	-46.57	-13	-33.57
603.5	-52.68	H	6.8	0.37	-46.25	-13	-33.25

Note:

1, The testing has been conformed to $10 \times 848.8 \text{ MHz} = 8,488 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

3, GSM voice, GPRS and EGPRS mode were investigated. The results above show only the worse cases

4, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

PCS Band (Part24E) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3700.4	-48.59	V	10.25	2.73	-41.07	-13	-28.07
3700.4	-49.01	H	10.25	2.73	-41.49	-13	-28.49
326.9	-53.47	V	6.4	0.26	-47.33	-13	-34.33
605.1	-53.65	H	6.8	0.37	-47.22	-13	-34.22

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-48.69	V	10.25	2.73	-41.17	-13	-28.17
3760	-49.24	H	10.25	2.73	-41.72	-13	-28.72
326.4	-53.28	V	6.4	0.26	-47.14	-13	-34.14
602.3	-53.57	H	6.8	0.37	-47.14	-13	-34.14

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3819.6	-48.67	V	10.36	2.73	-41.04	-13	-28.04
3819.6	-49.26	H	10.36	2.73	-41.63	-13	-28.63
326.5	-53.17	V	6.4	0.26	-47.03	-13	-34.03
603.4	-52.25	H	6.8	0.37	-45.82	-13	-32.82

Note:

1, The testing has been conformed to $10 \times 1909.8 \text{ MHz} = 19,098 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

3, GSM voice, GPRS and EGPRS mode were investigated. The results above show only the worse cases

4, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

UMTS-FDD Band V (Part 22H)

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1652.8	-46.27	V	7.95	0.78	-39.1	-13	-26.1
1652.8	-45.63	H	7.95	0.78	-38.46	-13	-25.46
328.9	-52.48	V	6.4	0.26	-46.34	-13	-33.34
604.5	-52.84	H	6.8	0.37	-46.41	-13	-33.41

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1670	-46.19	V	7.95	0.78	-39.02	-13	-26.02
1670	-45.87	H	7.95	0.78	-38.7	-13	-25.7
328.1	-52.67	V	6.4	0.26	-46.53	-13	-33.53
605.2	-53.12	H	6.8	0.37	-46.69	-13	-33.69

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1693.2	-46.41	V	7.95	0.78	-39.24	-13	-26.24
1693.2	-45.69	H	7.95	0.78	-38.52	-13	-25.52
329.6	-52.47	V	6.4	0.26	-46.33	-13	-33.33
604.5	-52.65	H	6.8	0.37	-46.22	-13	-33.22

Note:

1, The testing has been conformed to $10 \times 846.6 \text{ MHz} = 8,466 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

3, RMC, HSUPA and HSDPA mode were investigated. The results above show only the worse cases

4, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

UMTS-FDD Band II (Part 24E)

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3704.8	-49.41	V	10.25	2.73	-41.89	-13	-28.89
3704.8	-50.13	H	10.25	2.73	-42.61	-13	-29.61
330.2	-53.44	V	6.4	0.26	-47.3	-13	-34.3
601.8	-53.21	H	6.8	0.37	-46.78	-13	-33.78

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-49.05	V	10.25	2.73	-41.53	-13	-28.53
3760	-49.82	H	10.25	2.73	-42.3	-13	-29.3
329.8	-53.41	V	6.4	0.26	-47.27	-13	-34.27
602.7	-53.26	H	6.8	0.37	-46.83	-13	-33.83

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3815.2	-49.06	V	10.36	2.73	-41.43	-13	-28.43
3815.2	-49.69	H	10.36	2.73	-42.06	-13	-29.06
329.6	-53.26	V	6.4	0.26	-47.12	-13	-34.12
604.6	-53.47	H	6.8	0.37	-47.04	-13	-34.04

Note:

1, The testing has been conformed to $10 \times 1907.6 \text{ MHz} = 19,076 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

3, RMC, HSUPA and HSDPA mode were investigated. The results above show only the worse cases

4, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case

UMTS-FDD Band IV (Part 27E)

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3424.8	-45.83	V	10.07	2.52	-38.28	-13	-25.28
3424.8	-46.69	H	10.07	2.52	-39.14	-13	-26.14
323.4	-57.13	V	6.4	0.26	-50.99	-13	-37.99
738.6	-52.61	H	7.1	0.42	-45.93	-13	-32.93

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3480	-46.23	V	10.09	2.52	-38.66	-13	-25.66
3480	-45.92	H	10.09	2.52	-38.35	-13	-25.35
322.5	-56.82	V	6.4	0.26	-50.68	-13	-37.68
736.1	-53.16	H	7.1	0.42	-46.48	-13	-33.48

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3505.2	-45.89	V	10.09	2.52	-38.32	-13	-25.32
3505.2	-45.64	H	10.09	2.52	-38.07	-13	-25.07
325.6	-57.04	V	6.4	0.26	-50.9	-13	-37.9
739.8	-52.38	H	7.1	0.42	-45.7	-13	-32.7

Note:

1, The testing has been conformed to $10 \times 1712.4 \text{ MHz} = 17,124 \text{ MHz}$

2, All other emissions more than 30 dB below the limit

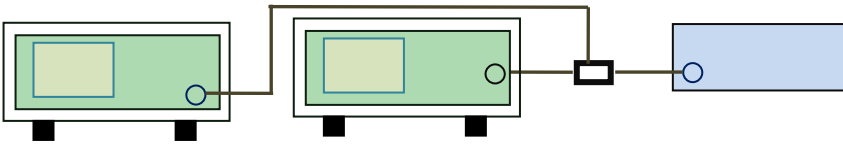
3, RMC, HSUPA and HSDPA mode were investigated. The results above show only the worse cases

4, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case

6.7 Band Edge

Temperature	24°C
Relative Humidity	59%
Atmospheric Pressure	1007mbar
Test date :	September 07, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§22.917(a) §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.	<input checked="" type="checkbox"/>
Test setup			
Procedure	<ul style="list-style-type: none"> - The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100. 		
Remark			
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

GSM Voice:

Cellular Band (Part 22H) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.9950	-16.72	-13
849.0225	-15.35	-13

PCS Band (Part24E) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.9775	-20.54	-13
1910.0025	-17.36	-13

GPRS:

Cellular Band (Part 22H) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.9950	-16.55	-13
849.0200	-15.79	-13

PCS Band (Part24E) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.9900	-20.9	-13
1910.0050	-17.4	-13

EGPRS (MCS1):

Cellular Band (Part 22H) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.9950	-16.22	-13
849.0175	-17.31	-13

PCS Band (Part24E) result

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.9950	-18.33	-13
1910.0025	-16.55	-13

RMC:

UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.925	-24.83	-13
849.100	-27.49	-13

UMTS-FDD Band IV (Part 27)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1709.925	-24.1	-13
1755.025	-21.58	-13

UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.925	-20.17	-13
1910.050	-15.24	-13

HSUPA:

UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.950	-25.93	-13
849.775	-27.19	-13

UMTS-FDD Band IV (Part 27)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1709.900	-23.49	-13
1755.075	-21.84	-13

UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.975	-18.61	-13
1910.050	-17.64	-13

HSDPA:

UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
823.925	-26.04	-13
849.075	-28.24	-13

UMTS-FDD Band IV (Part 27)

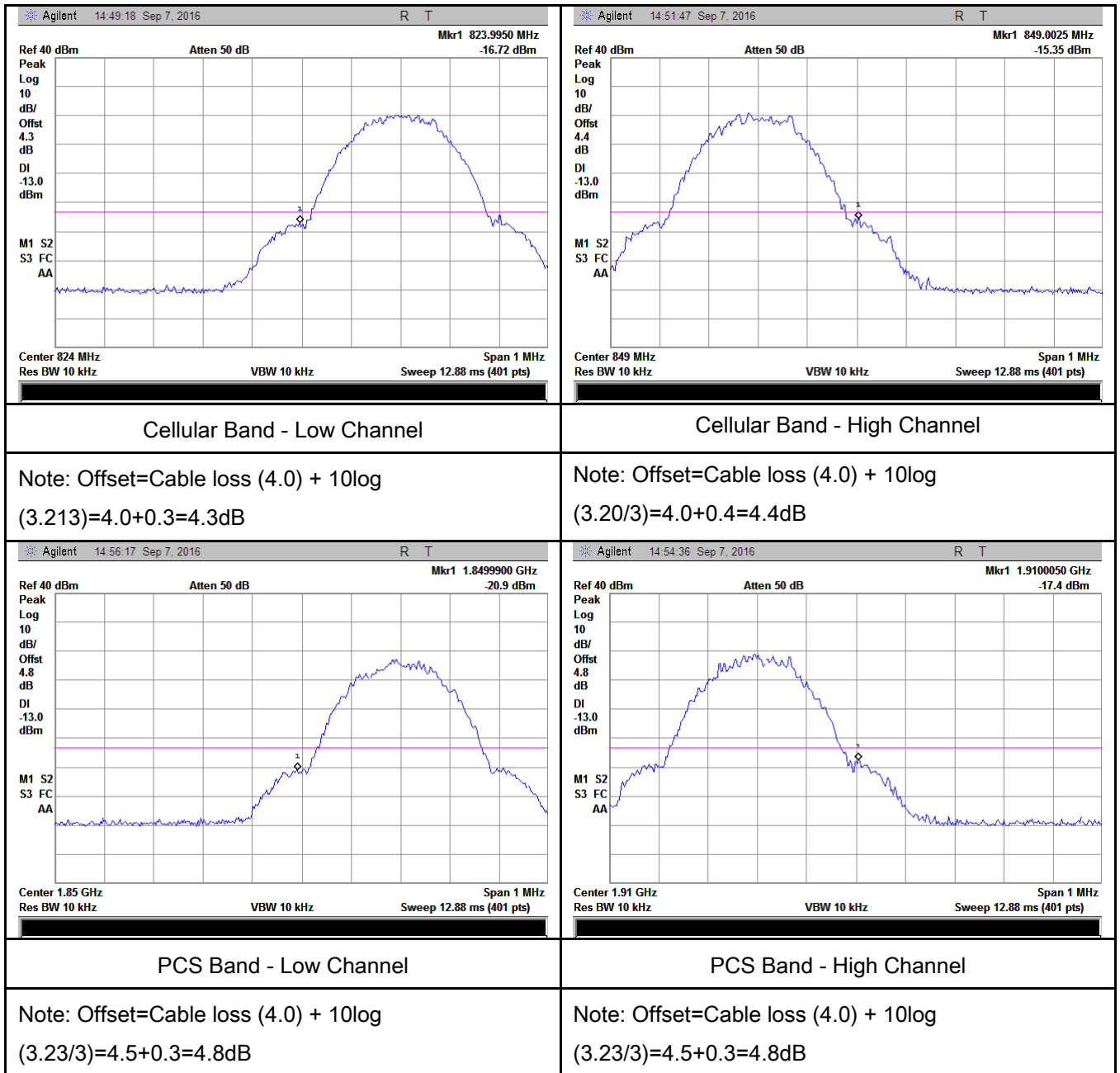
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1709.975	-23.34	-13
1755.050	-21.39	-13

UMTS-FDD Band II (Part 24E)

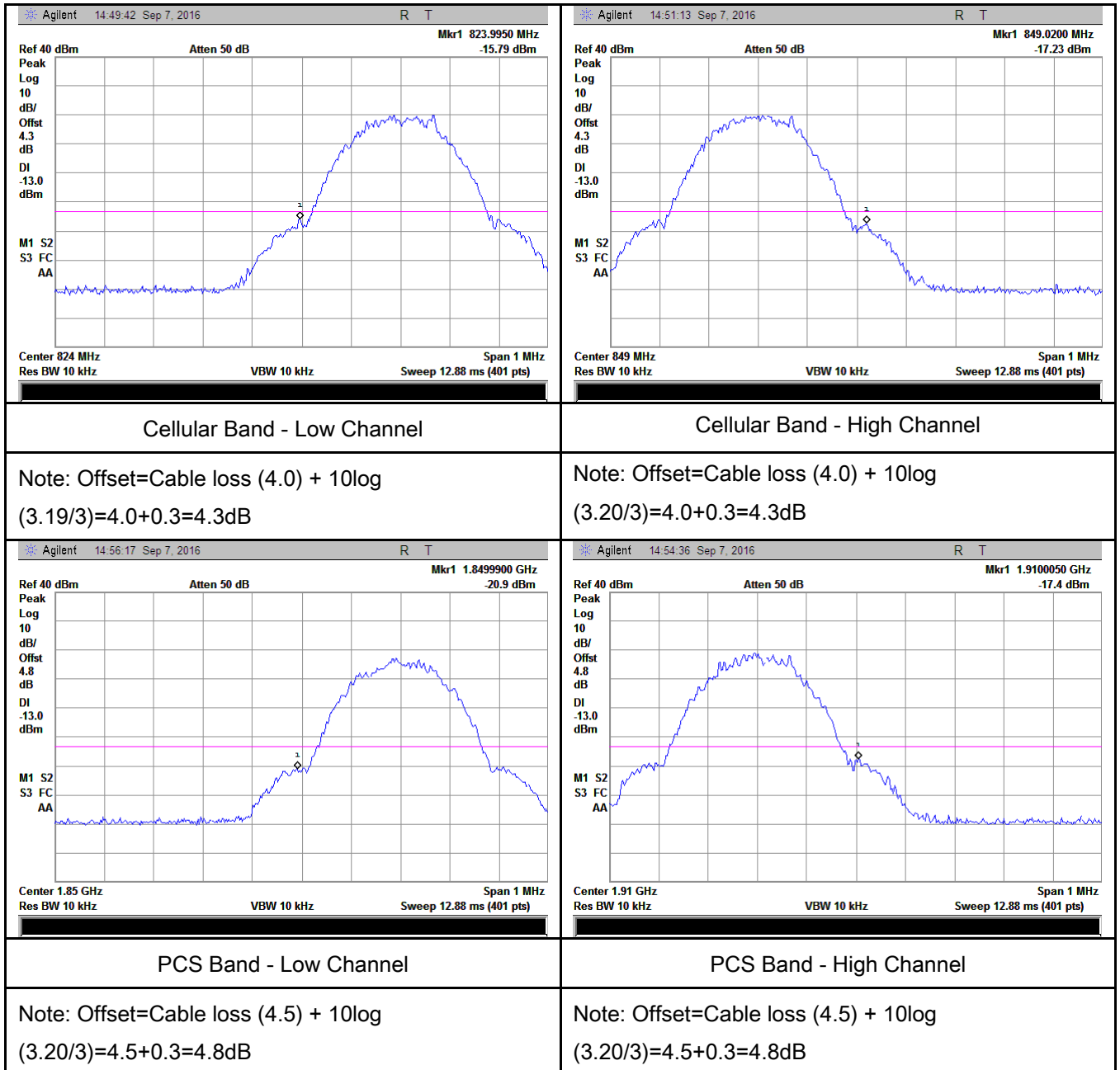
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1849.900	-19.33	-13
1910.050	-15.39	-13

Test Plots

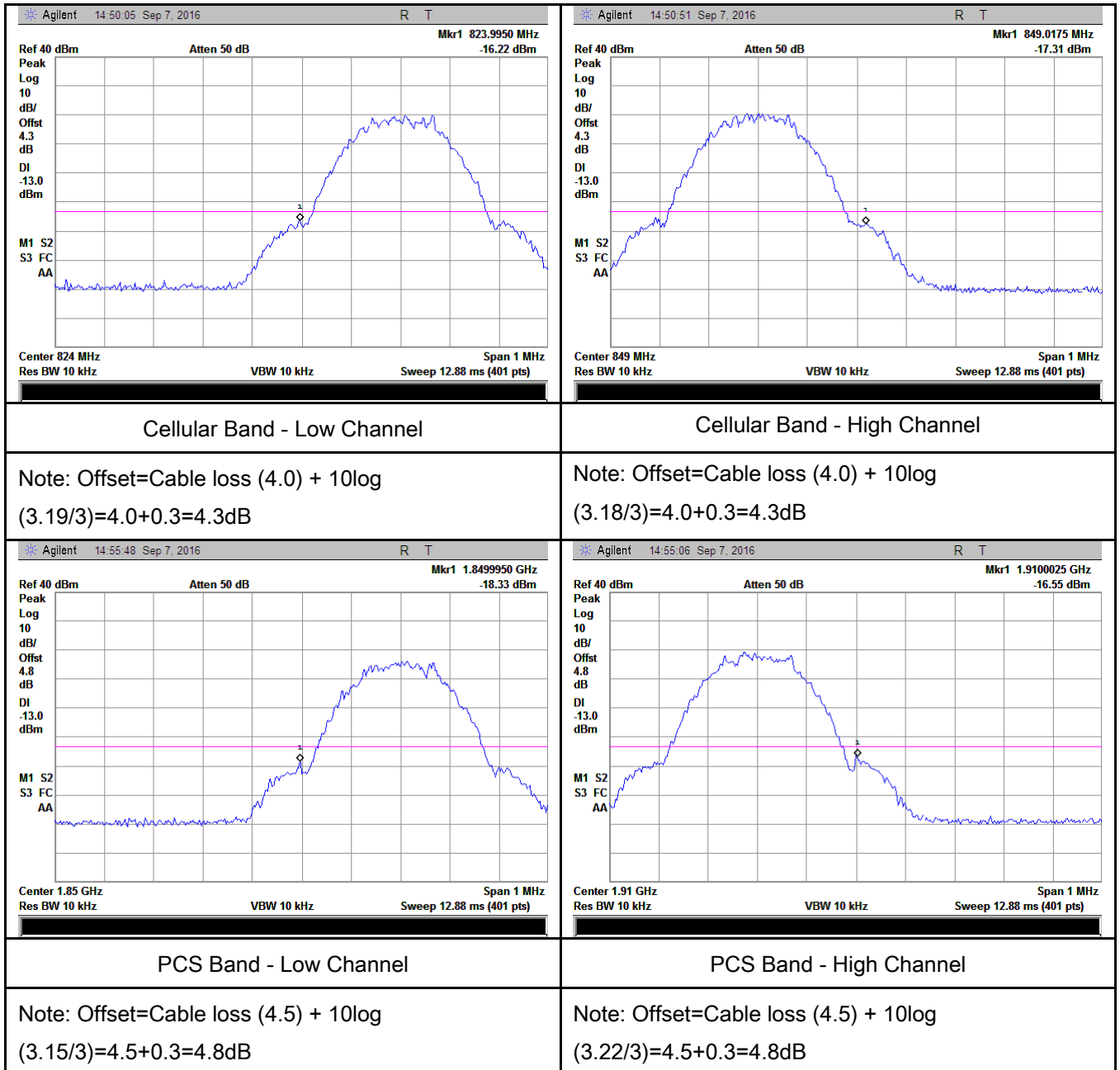
GSM Voice:



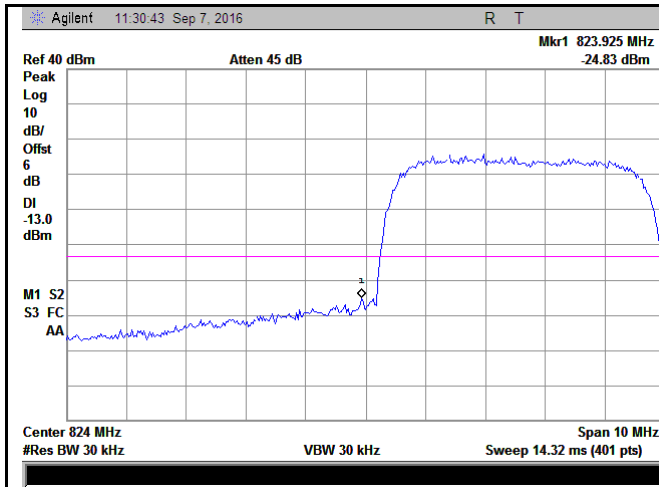
GPRS:



EGPRS (MCS1):

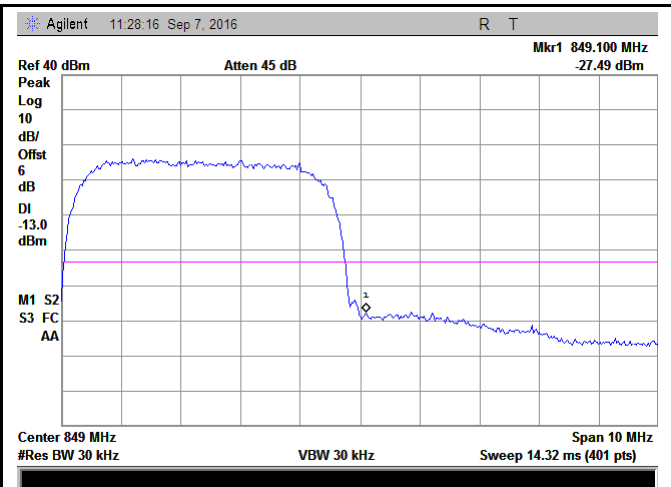


RMC:



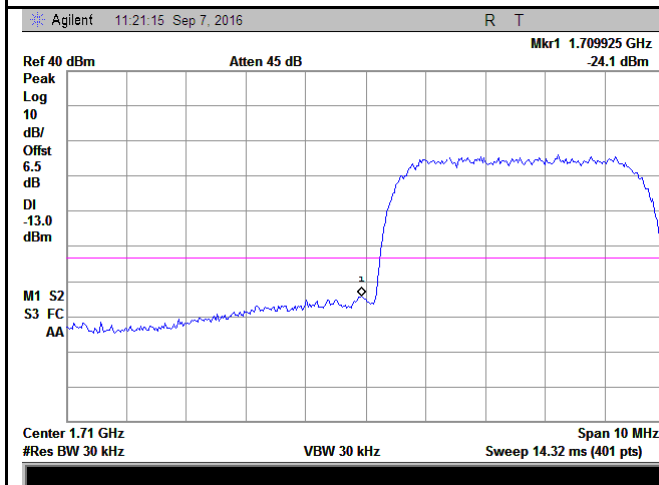
UMTS-FDD Band V - Low Channel

Note: Offset=Cable loss (4.0) + 10log
(47.02/30)=4.0+2.0=6.0dB



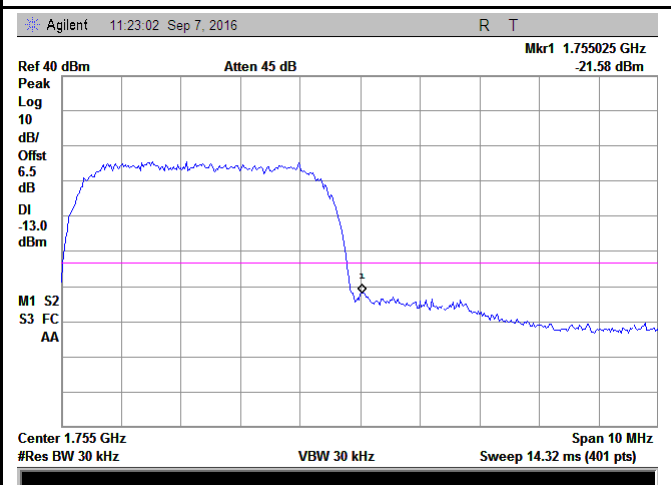
UMTS-FDD Band V - High Channel

Note: Offset=Cable loss (4.0) + 10log
(47.07/30)=4.0+2.0=6.0dB



UMTS-FDD Band IV - Low Channel

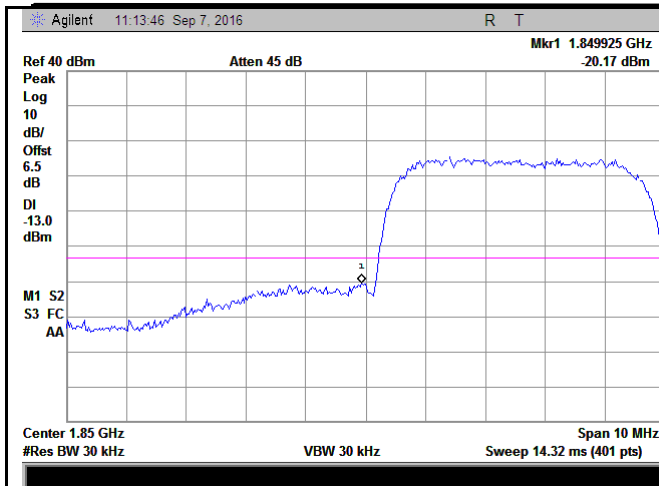
Note: Offset=Cable loss (4.5) + 10log
(47.21/30)=4.5+2.0=6.5dB



UMTS-FDD Band IV - High Channel

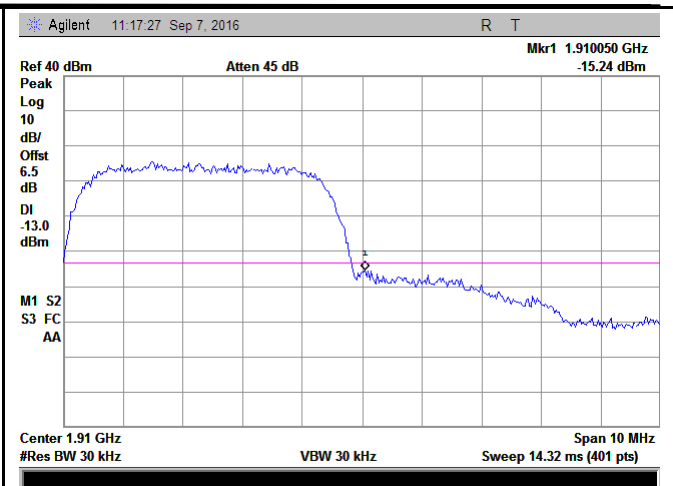
Note: Offset=Cable loss (4.5) + 10log
(46.99/30)=4.5+2.0=6.5dB

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UMTS-FDD Band II - Low Channel

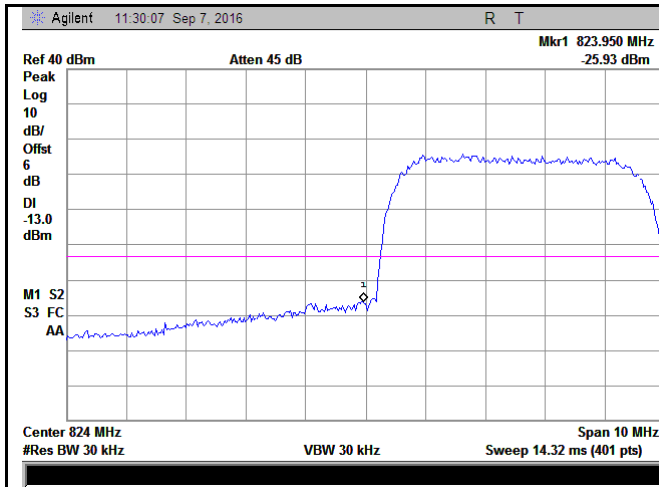
Note: Offset=Cable loss (4.5) + 10log
(47.00/30)4.5+2.0=6.5dB



UMTS-FDD Band II - High Channel

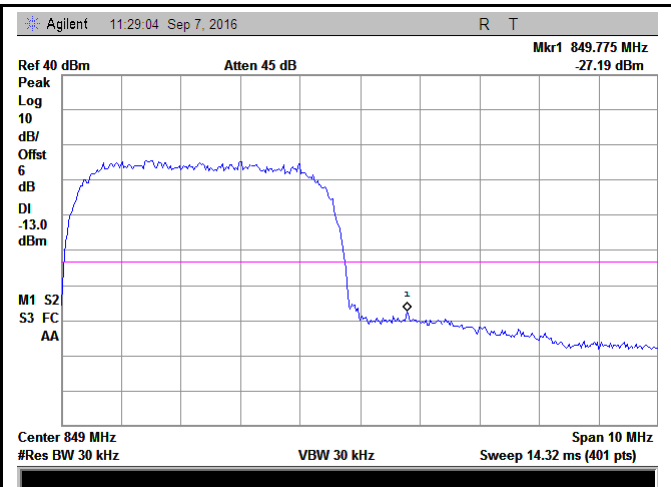
Note: Offset=Cable loss (4.5) + 10log
(48.05/30)=4.5+2.0=6.5dB

HSUPA:



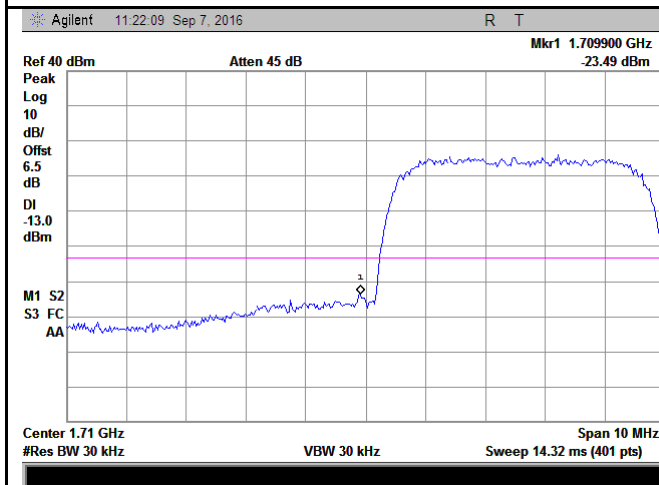
UMTS-FDD Band V - Low Channel

Note: Offset=Cable loss (4.0) + 10log
(46.99/30)=4.0+2.0=6.0dB



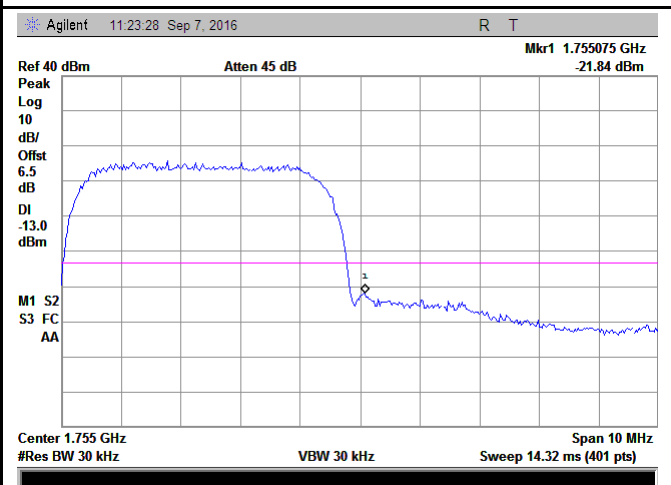
UMTS-FDD Band V - High Channel

Note: Offset=Cable loss (4.0) + 10log
(47.00/30)=4.0+2.0=6.0dB



UMTS-FDD Band IV - Low Channel

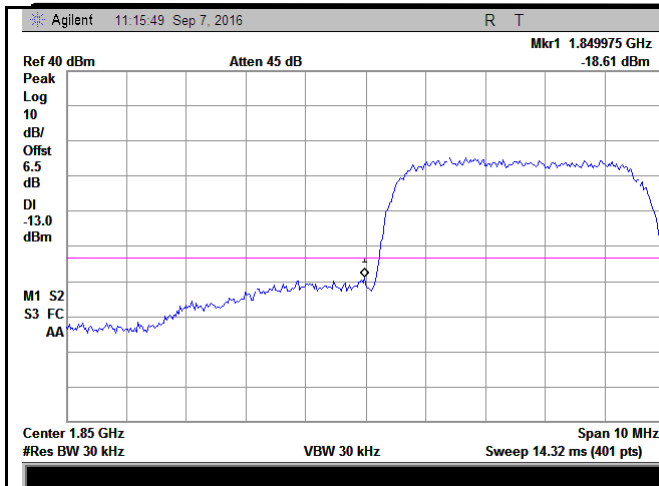
Note: Offset=Cable loss (4.5) + 10log
(47.23/30)=4.5+2.0=6.5dB



UMTS-FDD Band IV - High Channel

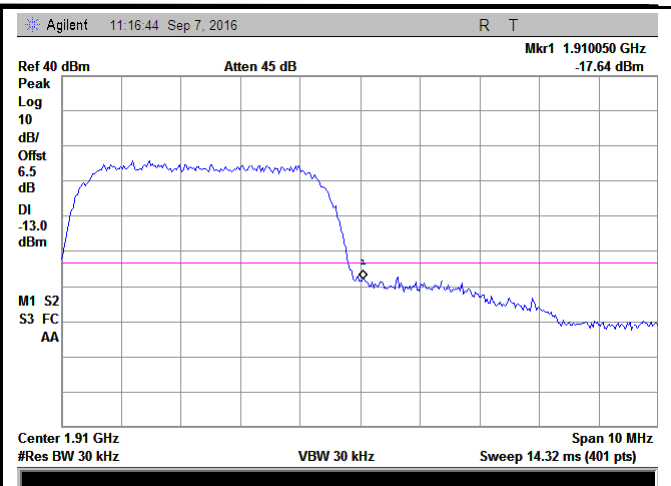
Note: Offset=Cable loss (4.5) + 10log
(47.05/30)=4.5+2.0=6.5dB

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UMTS-FDD Band II - Low Channel

Note: Offset=Cable loss (4.5) + 10log
(47.35/30)=4.5+2.0=6.5dB



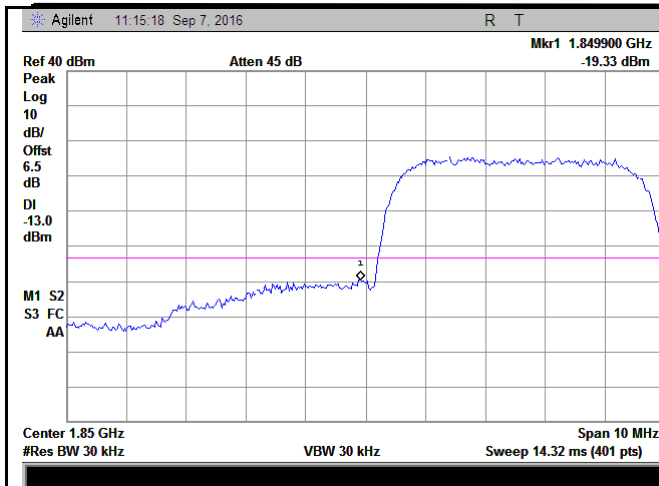
UMTS-FDD Band II - High Channel

Note: Offset=Cable loss (4.5) + 10log
(48.40/30)=4.5+2.0=6.5dB

HSDPA:

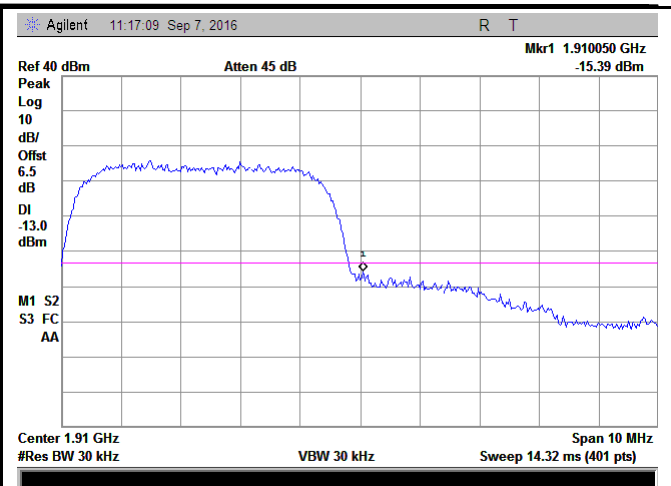
<p>Agilent 11:30:25 Sep 7, 2016 R T</p> <p>Ref 40 dBm Atten 45 dB Mkr1 823.925 MHz -26.04 dBm</p> <p>Center 824 MHz Span 10 MHz #Res BW 30 kHz VBW 30 kHz Sweep 14.32 ms (401 pts)</p>	<p>Agilent 11:28:40 Sep 7, 2016 R T</p> <p>Ref 40 dBm Atten 45 dB Mkr1 849.075 MHz -28.24 dBm</p> <p>Center 849 MHz Span 10 MHz #Res BW 30 kHz VBW 30 kHz Sweep 14.32 ms (401 pts)</p>
UMTS-FDD Band V - Low Channel	UMTS-FDD Band V - High Channel
<p>Note: Offset=Cable loss (4.0) + 10log (47.08/30)=4.0+2.0=6.0dB</p>	<p>Note: Offset=Cable loss (4.0) + 10log (46.95/30)=4.0+2.0=6.0dB</p>
<p>Agilent 11:21:44 Sep 7, 2016 R T</p> <p>Ref 40 dBm Atten 45 dB Mkr1 1.709975 GHz -23.34 dBm</p> <p>Center 1.71 GHz Span 10 MHz #Res BW 30 kHz VBW 30 kHz Sweep 14.32 ms (401 pts)</p>	<p>Agilent 11:24:06 Sep 7, 2016 R T</p> <p>Ref 40 dBm Atten 45 dB Mkr1 1.755050 GHz -21.39 dBm</p> <p>Center 1.755 GHz Span 10 MHz #Res BW 30 kHz VBW 30 kHz Sweep 14.32 ms (401 pts)</p>
UMTS-FDD Band IV - Low Channel	UMTS-FDD Band IV - High Channel
<p>Note: Offset=Cable loss (4.5) + 10log (47.13/30)=4.5+2.0=6.5dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (47.10/30)=4.5+2.1=6.6dB</p>

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UMTS-FDD Band II - Low Channel

Note: Offset=Cable loss (4.5) + 10log
(47.47/30)=4.5+2.0=6.5dB



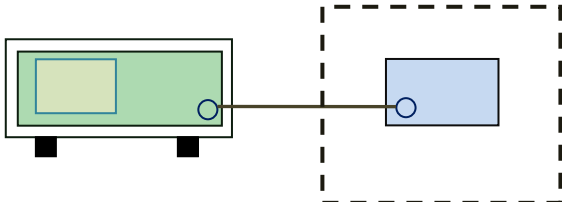
UMTS-FDD Band II - High Channel

Note: Offset=Cable loss (4.5) + 10log
(47.63/30)=4.5+2.0=6.5dB

6.8 Frequency Stability

Temperature	23°C
Relative Humidity	52%
Atmospheric Pressure	1010mbar
Test date :	September 10, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable																																
§2.1055, §22.355 & §24.235 § 27.5(h); § 27.54	a)	<p>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:</p> <p>Frequency Tolerance for Transmitters in the Public Mobile Services</p> <table border="1"> <thead> <tr> <th>Frequency Range (MHz)</th><th>Base, fixed (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th></tr> </thead> <tbody> <tr> <td>25 to 50</td><td>20.0</td><td>20.0</td><td>50.0</td></tr> <tr> <td>50 to 450</td><td>5.0</td><td>5.0</td><td>50.0</td></tr> <tr> <td>45 to 512</td><td>2.5</td><td>5.0</td><td>.0</td></tr> <tr> <td>821 to 896</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr> <td>928 to 29.</td><td>5.0</td><td>N/A</td><td>N/A</td></tr> <tr> <td>929 to 960.</td><td>1.5</td><td>N/A</td><td>N/A</td></tr> <tr> <td>2110 to 2220</td><td>10.0</td><td>N/A</td><td>N/A</td></tr> </tbody> </table> <p>According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.</p>	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	45 to 512	2.5	5.0	.0	821 to 896	1.5	2.5	2.5	928 to 29.	5.0	N/A	N/A	929 to 960.	1.5	N/A	N/A	2110 to 2220	10.0	N/A	N/A	<input checked="" type="checkbox"/>
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																																
45 to 512	2.5	5.0	.0																																
821 to 896	1.5	2.5	2.5																																
928 to 29.	5.0	N/A	N/A																																
929 to 960.	1.5	N/A	N/A																																
2110 to 2220	10.0	N/A	N/A																																
Test setup																																			

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Procedure	A communication link was established between EUT and base station. The frequency error was monitored and measured by base station under variation of ambient temperature and variation of primary supply voltage. Limit: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

GSM Voice:

Cellular Band (Part 22H) result

Middle Channel, $f_0 = 836.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	21	0.0251	2.5
0		19	0.0227	2.5
10		17	0.0203	2.5
20		15	0.0179	2.5
30		14	0.0167	2.5
40		20	0.0239	2.5
50		17	0.0203	2.5
55		20	0.0239	2.5
25	4.2	21	0.0251	2.5
	3.5	18	0.0215	2.5

PCS Band (Part 24E) result

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	11	0.0059	2.5
0		12	0.0064	2.5
10		11	0.0059	2.5
20		10	0.0053	2.5
30		14	0.0074	2.5
40		15	0.0080	2.5
50		15	0.0080	2.5
55		17	0.0090	2.5
25	4.2	14	0.0074	2.5
	3.5	21	0.0112	2.5

GPRS:

Cellular Band (Part 22H) result

Middle Channel, $f_0 = 836.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	21	0.0251	2.5
0		16	0.0191	2.5
10		14	0.0167	2.5
20		13	0.0155	2.5
30		11	0.0131	2.5
40		15	0.0179	2.5
50		16	0.0191	2.5
55		20	0.0239	2.5
25	4.2	18	0.0215	2.5
	3.5	16	0.0191	2.5

PCS Band (Part 24E) result

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	20	0.0106	2.5
0		17	0.0090	2.5
10		16	0.0085	2.5
20		15	0.0080	2.5
30		10	0.0053	2.5
40		17	0.0090	2.5
50		15	0.0080	2.5
55		14	0.0074	2.5
25	4.2	21	0.0112	2.5
	3.5	20	0.0106	2.5

EGPRS (MCS1):

Cellular Band (Part 22H) result

Middle Channel, $f_0 = 836.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	20	0.0239	2.5
0		16	0.0191	2.5
10		17	0.0203	2.5
20		12	0.0143	2.5
30		16	0.0191	2.5
40		18	0.0215	2.5
50		20	0.0239	2.5
55		21	0.0251	2.5
25	4.2	20	0.0239	2.5
	3.5	16	0.0191	2.5

PCS Band (Part 24E) result

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	20	0.0106	2.5
0		19	0.0101	2.5
10		18	0.0096	2.5
20		12	0.0064	2.5
30		15	0.0080	2.5
40		16	0.0085	2.5
50		13	0.0069	2.5
55		20	0.0106	2.5
25	4.2	21	0.0112	2.5
	3.5	15	0.0080	2.5

RMC:

UMTS-FDD Band V (Part 22H)

Middle Channel, $f_0 = 835$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	16	0.0192	2.5
0		14	0.0168	2.5
10		11	0.0132	2.5
20		15	0.0180	2.5
30		14	0.0168	2.5
40		11	0.0132	2.5
50		14	0.0168	2.5
55		15	0.0180	2.5
25	4.2	10	0.0120	2.5
	3.5	20	0.0240	2.5

UMTS-FDD Band II (Part 24E)

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	19	0.0101	2.5
0		10	0.0053	2.5
10		11	0.0059	2.5
20		11	0.0059	2.5
30		12	0.0064	2.5
40		14	0.0074	2.5
50		13	0.0069	2.5
55		13	0.0069	2.5
25	4.2	15	0.0080	2.5
	3.5	17	0.0090	2.5

UMTS-FDD Band IV (Part 27E)

Middle Channel, $f_0 = 1732.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	16	0.0192	2.5
0		15	0.0180	2.5
10		14	0.0168	2.5
20		16	0.0192	2.5
30		15	0.0180	2.5
40		12	0.0144	2.5
50		15	0.0180	2.5
55		16	0.0192	2.5
25	4.2	10	0.0120	2.5
	3.5	16	0.0192	2.5

HSUPA:

UMTS-FDD Band V (Part 22H)

Middle Channel, $f_0 = 835$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	18	0.0216	2.5
0		16	0.0192	2.5
10		12	0.0144	2.5
20		14	0.0168	2.5
30		13	0.0156	2.5
40		10	0.0120	2.5
50		20	0.0240	2.5
55		17	0.0204	2.5
25	4.2	20	0.0240	2.5
	3.5	21	0.0251	2.5

UMTS-FDD Band II (Part 24E)

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	19	0.0101	2.5
0		15	0.0080	2.5
10		13	0.0069	2.5
20		11	0.0059	2.5
30		13	0.0069	2.5
40		16	0.0085	2.5
50		15	0.0080	2.5
55		20	0.0106	2.5
25	4.2	16	0.0085	2.5
	3.5	20	0.0106	2.5

UMTS-FDD Band IV (Part 27E)

Middle Channel, $f_0 = 1732.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	14	0.0168	2.5
0		15	0.0180	2.5
10		11	0.0132	2.5
20		13	0.0156	2.5
30		11	0.0132	2.5
40		10	0.0120	2.5
50		12	0.0144	2.5
55		14	0.0168	2.5
25	4.2	20	0.0240	2.5
	3.5	21	0.0251	2.5

HSDPA:

UMTS-FDD Band V (Part 22H)

Middle Channel, $f_0 = 835$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	21	0.0251	2.5
0		16	0.0192	2.5
10		13	0.0156	2.5
20		12	0.0144	2.5
30		14	0.0168	2.5
40		15	0.0180	2.5
50		15	0.0180	2.5
55		20	0.0240	2.5
25	4.2	19	0.0228	2.5
	3.5	16	0.0192	2.5

UMTS-FDD Band II (Part 24E)

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	20	0.0106	2.5
0		19	0.0101	2.5
10		13	0.0069	2.5
20		11	0.0059	2.5
30		9	0.0048	2.5
40		14	0.0074	2.5
50		15	0.0080	2.5
55		18	0.0096	2.5
25	4.2	15	0.0080	2.5
	3.5	15	0.0080	2.5

UMTS-FDD Band IV (Part 27E)

Middle Channel, $f_0 = 1732.6$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	20	0.0240	2.5
0		15	0.0180	2.5
10		15	0.0180	2.5
20		14	0.0168	2.5
30		13	0.0156	2.5
40		15	0.0180	2.5
50		14	0.0168	2.5
55		21	0.0251	2.5
25	4.2	19	0.0228	2.5
	3.5	17	0.0204	2.5

Annex A. TEST INSTRUMENT

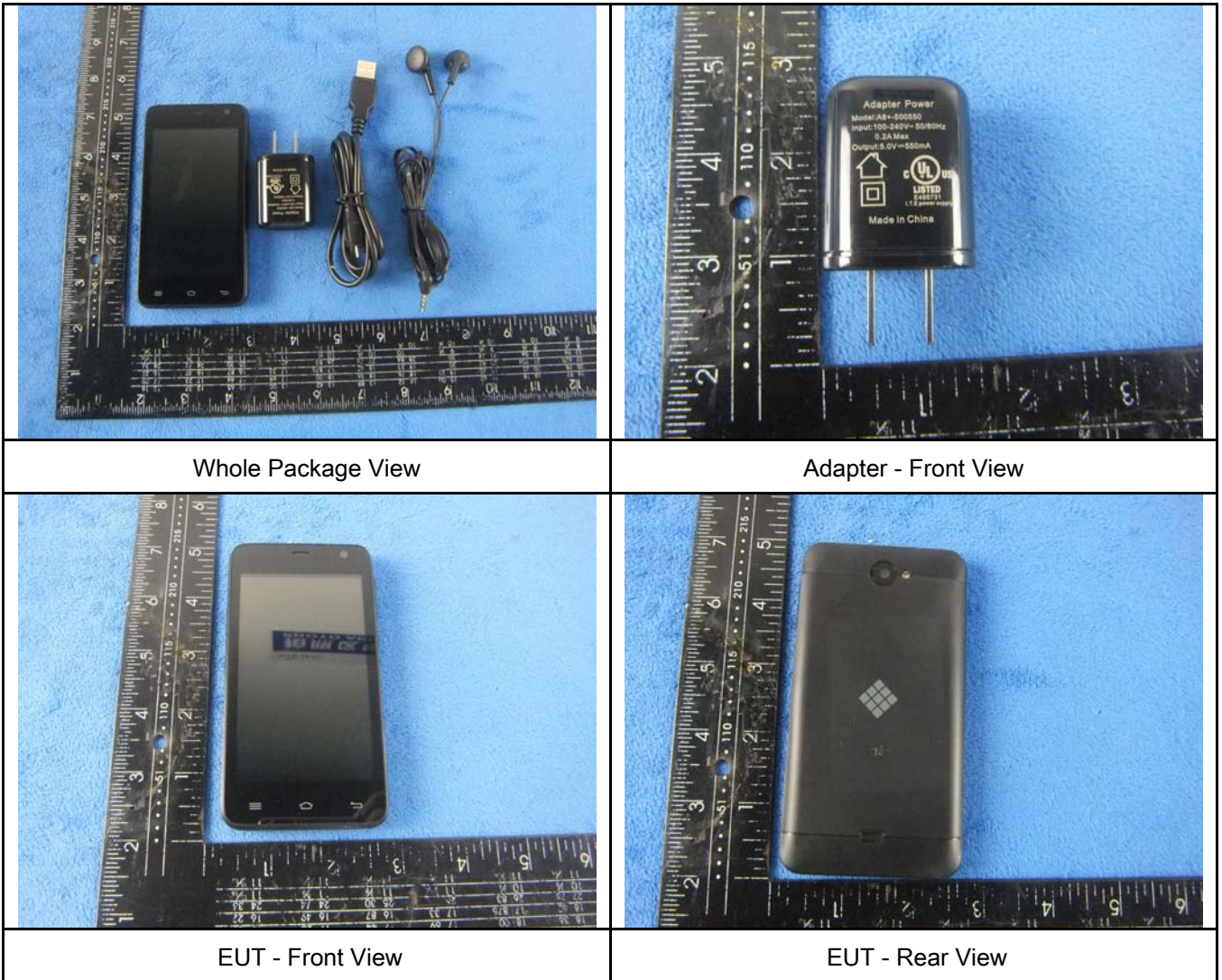
Instrument	Model	Serial #	Cal Date	Cal Due	In use
RF Conducted Test					
Agilent ESA-E SERIES SPECTRUM ANALYZER	E4407B	MY45108319	09/16/2015	09/15/2016	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/31/2016	09/30/2017	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/25/2015	09/24/2016	<input checked="" type="checkbox"/>
Temperature/Humidity Chamber	UHL-270	001	10/09/2015	10/08/2016	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
RF Power Sensor	Dare RPR3006C/P/W	AY554013	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/24/2016	03/23/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~2GHz)	JB1	A112017	09/21/2015	09/20/2016	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71259	09/24/2015	09/23/2016	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/24/2015	09/23/2016	<input checked="" type="checkbox"/>
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Power Amplifier	SMC150D	R1553-0313	03/09/2016	03/08/2017	<input checked="" type="checkbox"/>
Power Amplifier	S41-25D	R1553-0314	05/27/2016	05/26/2017	<input checked="" type="checkbox"/>
Tunable Notch Filter	3NF-800/1000-S	AA4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>

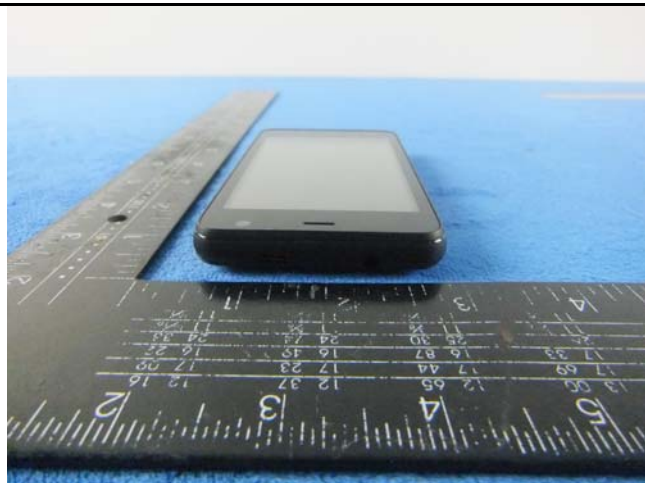
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Tunable Notch Filter	3NF- 1000/2000-S	AM 4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
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Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

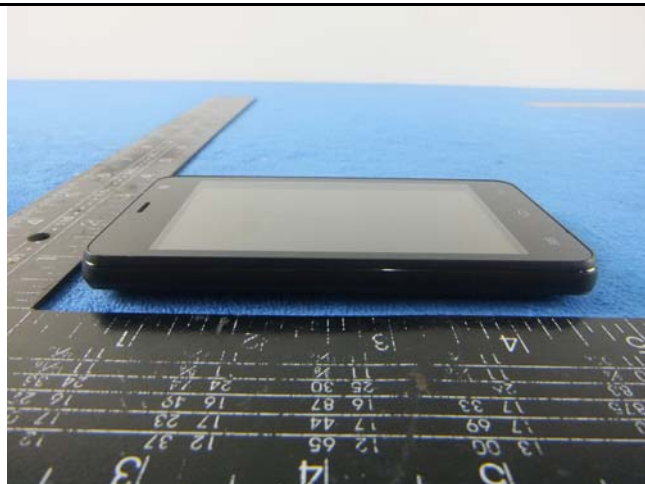




EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View

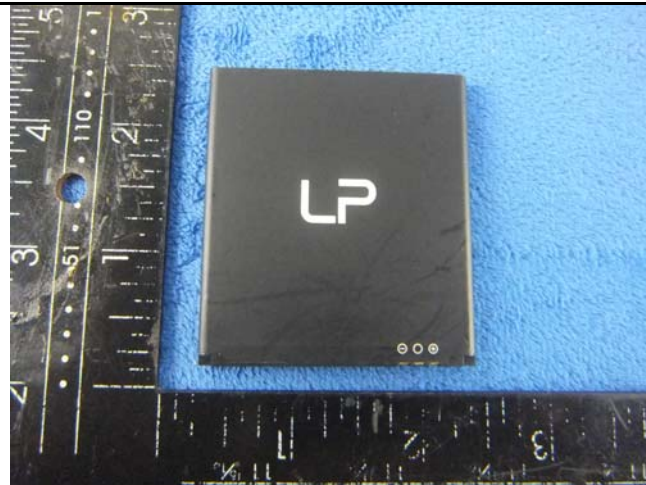
Annex B.ii. Photograph: EUT Internal Photo



Cover Off - Top View 1



Cover Off - Top View 2



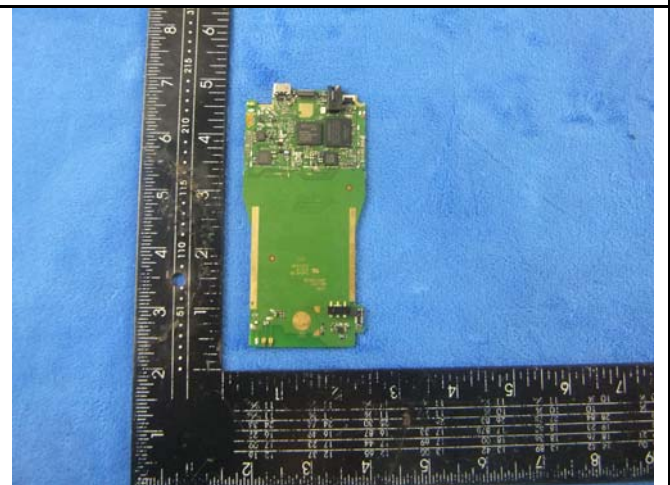
Battery - Front View



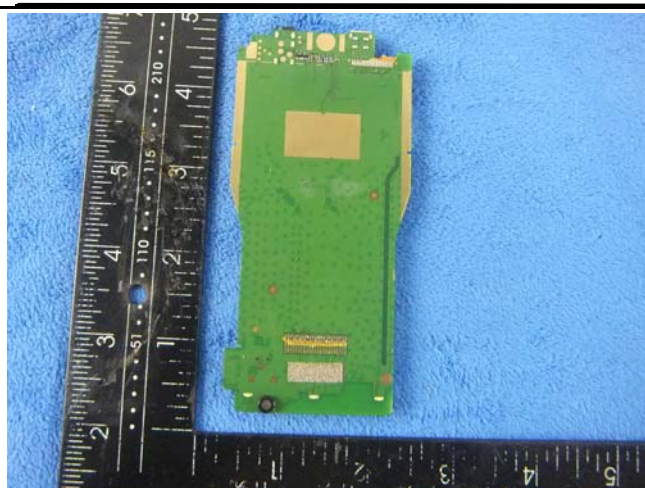
Battery - Rear View



Mainboard with Shielding - Front View



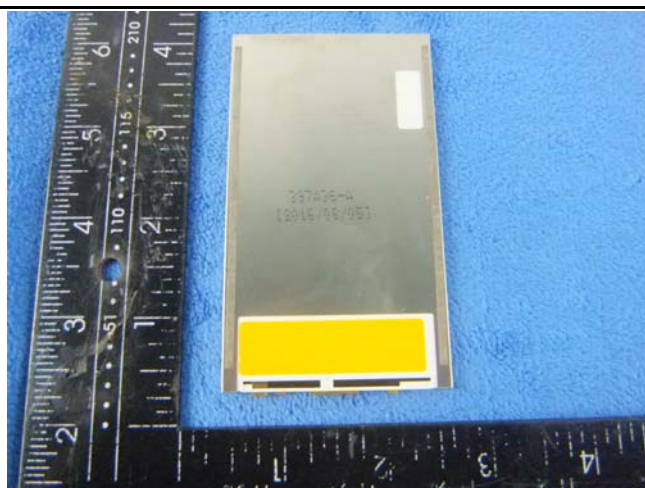
Mainboard without Shielding - Front View



Mainboard - Rear View



LCD - Front View



LCD - Rear View

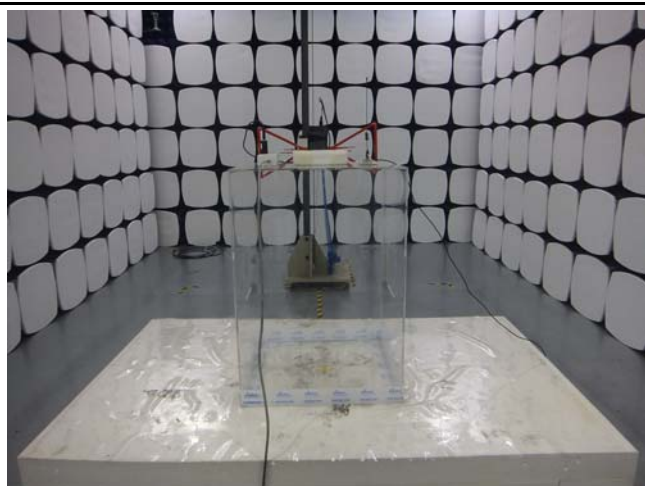


GSM/PCS/UMTS-FDD Antenna View

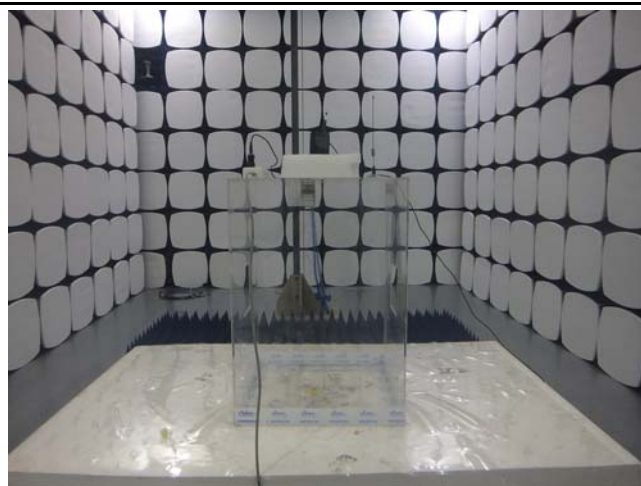


WIFI/BT/BLE/GPS - Antenna View

Annex B.iii. Photograph: Test Setup Photo



Radiated Spurious Emissions Test Setup Below 1GHz

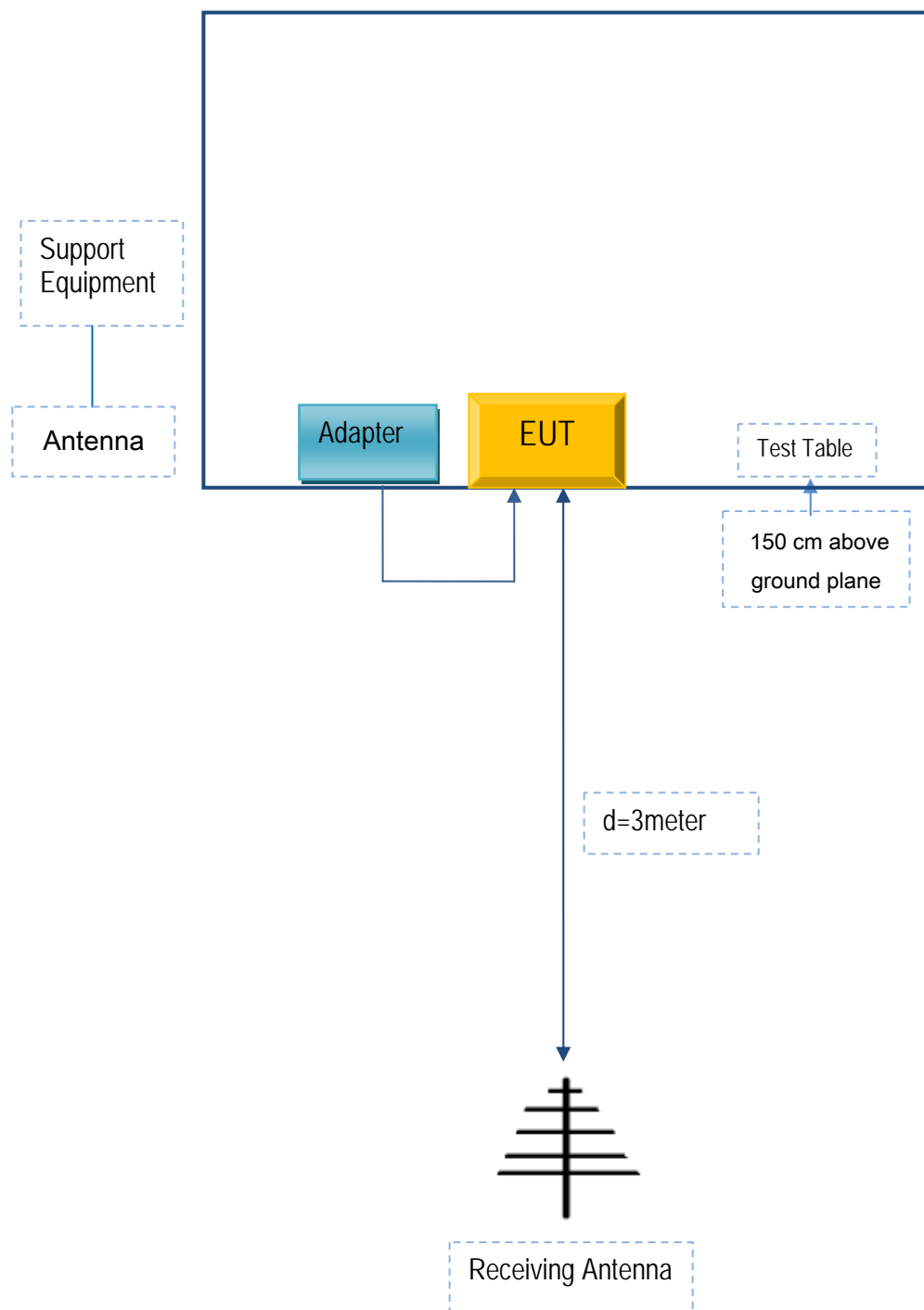


Radiated Spurious Emissions Test Setup Above
1GHz

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Radiated Emissions



Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
MOBIWIRE MOBILES (NINGBO) CO.,LTD.	Adapter	A8+-500550	CL0004

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	CL0004

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Annex C.ii. EUT OPERATING CONKITIONS

N/A

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Annex D. User Manual / Block Diagram / Schematics / Partlist

See attachment

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Annex E. DECLARATION OF SIMILARITY

N/A