
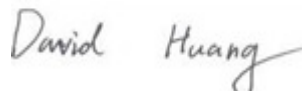



RF TEST REPORT



Report No.: 17070294-FCC-R4

Supersede Report No.: N/A

Applicant	MOVILTELCO TRADE, S.L.	
Product Name	Mobile phone	
Model No.	L402	
Serial No.	N/A	
Test Standard	FCC Part 24(E):2016; ANSI/TIA-603-D: 2010	
Test Date	May 04 to 21, 2017	
Issue Date	May 22, 2017	
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	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

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
17070294-FCC-R4	NONE	Original	May 22, 2017

2. Customer information

Applicant Name	MOVILTELCO TRADE, S.L.
Applicant Add	Street: ABTAO,25-1Floor A-office MADRID-SPAIN
Manufacturer	MOVILTELCO TRADE, S.L.
Manufacturer Add	Street: ABTAO,25-1Floor A-office MADRID-SPAIN

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:	L402
Serial Model:	N/A
Date EUT received:	May 03, 2017
Test Date(s):	May 04 to 21, 2017
Equipment Category :	PCE
Antenna Gain:	GSM850:0dBi PCS1900: 0dBi UMTS-FDD Band V: 0dBi UMTS-FDD Band II: 0dBi LTE Band II: 0dBi WIFI: 0dBi Bluetooth: 0dBi GPS: 0dBi
Antenna Type:	PIFA antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK GPS:BPSK

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 II TX: 1852.4 ~ 1907.6 MHz;
 RF Operating Frequency (ies): RX: 1932.4 ~ 1987.6 MHz
 LTE Band II TX: 1850.7~ 1909.3 MHz; RX : 1930.7 ~ 1989.3 MHz
 WIFI: 802.11b/g/n(20M): 2412-2462 MHz
 Bluetooth: 2402-2480 MHz
 GPS: 1575.42 MHz

Maximum Conducted
 AV Power to Antenna: LTE band II: 23.76 dBm

ERP/EIRP: LTE band II: 23.76 dBm / EIRP

Port: USB Port, Earphone Port

Adapter:
 Model: L402
 Input: AC100-240V~50/60Hz,0.15A
 Output: DC 5.0V,500mA
 Input Power: Battery :
 Model: L402
 Spec: 3.7V,5.18WH(min/typ)
 Voltage of charge limited:4.2V

Trade Name : Mtt/movistar

GPRS/EGPRS Multi-slot class 8/10/12

FCC ID: 2ACQKTELCO012

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; § 24.232(c);	RF Output Power	Compliance
§ 24.232 (d);	Peak-Average Ratio	Compliance
§ 2.1049; § 24.238;	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 24.238(a);	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 24.238(a);	Field Strength of Spurious Radiation	Compliance
§ 24.238(a);	Out of band emission, Band Edge	Compliance
§ 2.1055; § 24.235;	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

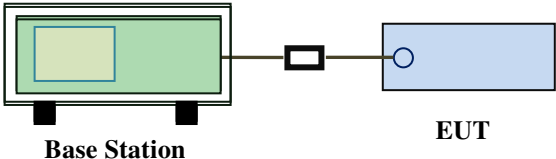
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17070294-FCC-H.

6.2 RF Output Power

Temperature	24°C
Relative Humidity	55%
Atmospheric Pressure	1010mbar
Test date :	May 17, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§24.232 (c)	a)	EIRP:33dBm	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Base Station EUT</p>		
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> <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 frequency was investigated. - Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non- 		

	<p>radiating cable. The absolute levels of the spurious emissions were measured by the substitution.</p> <ul style="list-style-type: none"> - Spurious emissions in dB = 10 log (TX power in Watts/0.001) – the absolute level - Spurious attenuation limit in dB = 43 + 10 Log10 (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

LTE Band II:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	18700	1860.0	QPSK	1	0	0	23.18	23±1
				1	49	0	23.09	23±1
				1	99	0	23.16	23±1
				50	0	1	23.17	23±1
				50	24	1	23.06	23±1
				50	49	1	23.13	23±1
			100	0	1	23.08	23±1	
			16QAM	1	0	1	23.14	22.5±1
				1	49	1	23.05	22.5±1
				1	99	1	23.11	22.5±1
				50	0	2	21.96	22.5±1
				50	24	2	21.92	22.5±1
	50	49		2	21.93	22.5±1		
	100	0	2	21.77	22.5±1			
	18900	1880.0	QPSK	1	0	0	23.17	23±1
				1	49	0	23.03	23±1
				1	99	0	23.15	23±1
				50	0	1	22.76	23±1
				50	24	1	22.76	23±1
				50	49	1	22.72	23±1
			100	0	1	22.84	23±1	
			16QAM	1	0	1	23.07	22.3±1
				1	49	1	23.00	22.3±1
				1	99	1	23.08	22.3±1
50				0	2	21.45	22.3±1	
50				24	2	21.43	22.3±1	
50	49	2		21.48	22.3±1			
100	0	2	21.52	22.3±1				
19100	1900.0	QPSK	1	0	0	23.26	23±1	
			1	49	0	23.20	23±1	
			1	99	0	23.21	23±1	
			50	0	1	22.91	23±1	
			50	24	1	22.95	23±1	
			50	49	1	22.93	23±1	
		100	0	1	23.04	23±1		
		16QAM	1	0	1	23.14	22.3±1	
			1	49	1	23.13	22.3±1	
			1	99	1	23.15	22.3±1	
			50	0	2	21.59	22.3±1	
			50	24	2	21.64	22.3±1	
50	49		2	21.53	22.3±1			
100	0	2	21.67	22.3±1				

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	18675	1857.5	QPSK	1	0	0	23.04	23 ± 1
				1	37	0	23.06	23 ± 1
				1	74	0	23.05	23 ± 1
				36	0	1	23.07	23 ± 1
				36	16	1	23.01	23 ± 1
				36	35	1	22.96	23 ± 1
				75	0	1	23.09	23 ± 1
			16QAM	1	0	1	23.05	22.3 ± 1
				1	37	1	23.02	22.3 ± 1
				1	74	1	23.13	22.3 ± 1
				36	0	2	22.05	22.3 ± 1
				36	16	2	22.13	22.3 ± 1
				36	35	2	22.05	22.3 ± 1
				75	0	2	21.70	22.3 ± 1
	18900	1880.0	QPSK	1	0	0	23.17	23 ± 1
				1	37	0	23.15	23 ± 1
				1	74	0	23.12	23 ± 1
				36	0	1	22.86	23 ± 1
				36	16	1	22.82	23 ± 1
				36	35	1	22.83	23 ± 1
				75	0	1	22.84	23 ± 1
			16QAM	1	0	1	23.56	23 ± 1
				1	37	1	23.51	23 ± 1
				1	74	1	23.49	23 ± 1
				36	0	2	22.16	23 ± 1
				36	16	2	22.17	23 ± 1
				36	35	2	22.17	23 ± 1
				75	0	2	22.28	23 ± 1
19125	1902.5	QPSK	1	0	0	23.68	23 ± 1	
			1	37	0	23.66	23 ± 1	
			1	74	0	23.62	23 ± 1	
			36	0	1	22.89	23 ± 1	
			36	16	1	22.81	23 ± 1	
			36	35	1	22.85	23 ± 1	
			75	0	1	22.90	23 ± 1	
		16QAM	1	0	1	22.11	22 ± 1	
			1	37	1	22.19	22 ± 1	
			1	74	1	22.13	22 ± 1	
			36	0	2	21.93	22 ± 1	
			36	16	2	21.90	22 ± 1	
			36	35	2	21.95	22 ± 1	
			75	0	2	21.55	22 ± 1	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	18650	1855	QPSK	1	0	0	23.13	23 ± 1
				1	24	0	23.10	23 ± 1
				1	49	0	23.11	23 ± 1
				25	0	1	23.14	23 ± 1
				25	12	1	23.09	23 ± 1
				25	24	1	23.13	23 ± 1
				50	0	1	23.06	23 ± 1
			16QAM	1	0	1	22.84	22.5 ± 1
				1	24	1	22.88	22.5 ± 1
				1	49	1	22.82	22.5 ± 1
				25	0	2	22.23	22.5 ± 1
				25	12	2	22.19	22.5 ± 1
				25	24	2	22.10	22.5 ± 1
				50	0	2	22.17	22.5 ± 1
	18900	1880.0	QPSK	1	0	0	23.34	23 ± 1
				1	24	0	23.26	23 ± 1
				1	49	0	23.24	23 ± 1
				25	0	1	22.86	23 ± 1
				25	12	1	22.83	23 ± 1
				25	24	1	22.84	23 ± 1
				50	0	1	22.78	23 ± 1
			16QAM	1	0	1	23.60	23 ± 1
				1	24	1	23.56	23 ± 1
				1	49	1	23.51	23 ± 1
				25	0	2	22.53	23 ± 1
				25	12	2	22.52	23 ± 1
				25	24	2	22.58	23 ± 1
				50	0	2	22.36	23 ± 1
	19150	1905	QPSK	1	0	0	23.64	23 ± 1
				1	24	0	23.57	23 ± 1
1				49	0	23.51	23 ± 1	
25				0	1	22.93	23 ± 1	
25				12	1	22.91	23 ± 1	
25				24	1	22.92	23 ± 1	
50				0	1	22.92	23 ± 1	
16QAM			1	0	1	22.40	21.8 ± 1	
			1	24	1	22.35	21.8 ± 1	
			1	49	1	22.42	21.8 ± 1	
			25	0	2	21.03	21.8 ± 1	
			25	12	2	21.08	21.8 ± 1	
			25	24	2	21.10	21.8 ± 1	
			50	0	2	21.55	21.8 ± 1	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	18625	1852.5	QPSK	1	0	0	23.24	23 ± 1
				1	12	0	23.21	23 ± 1
				1	24	0	23.16	23 ± 1
				12	0	1	23.20	23 ± 1
				12	6	1	23.05	23 ± 1
				12	11	1	23.11	23 ± 1
				25	0	1	23.26	23 ± 1
			16QAM	1	0	1	22.80	22 ± 1
				1	12	1	22.76	22 ± 1
				1	24	1	22.81	22 ± 1
				12	0	2	21.53	22 ± 1
				12	6	2	21.51	22 ± 1
				12	11	2	21.58	22 ± 1
				25	0	2	21.68	22 ± 1
	18900	1880.0	QPSK	1	0	0	23.10	23 ± 1
				1	12	0	23.08	23 ± 1
				1	24	0	23.02	23 ± 1
				12	0	1	22.96	23 ± 1
				12	6	1	22.85	23 ± 1
				12	11	1	22.82	23 ± 1
				25	0	1	22.91	23 ± 1
			16QAM	1	0	1	22.17	21.5 ± 1
				1	12	1	22.15	21.5 ± 1
				1	24	1	22.13	21.5 ± 1
				12	0	2	21.03	21.5 ± 1
				12	6	2	21.06	21.5 ± 1
				12	11	2	21.08	21.5 ± 1
				25	0	2	20.75	21.5 ± 1
19175	1907.5	QPSK	1	0	0	23.76	23.3 ± 1	
			1	12	0	23.72	23.3 ± 1	
			1	24	0	23.74	23.3 ± 1	
			12	0	1	23.12	23.3 ± 1	
			12	6	1	23.06	23.3 ± 1	
			12	11	1	23.15	23.3 ± 1	
			25	0	1	23.06	23.3 ± 1	
		16QAM	1	0	1	23.14	22.5 ± 1	
			1	12	1	23.12	22.5 ± 1	
			1	24	1	23.10	22.5 ± 1	
			12	0	2	21.68	22.5 ± 1	
			12	6	2	21.63	22.5 ± 1	
			12	11	2	21.61	22.5 ± 1	
			25	0	2	21.75	22.5 ± 1	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	23.50	23.3 ± 1
				1	7	0	23.52	23.3 ± 1
				1	14	0	23.50	23.3 ± 1
				8	0	1	23.18	23.3 ± 1
				8	4	1	23.16	23.3 ± 1
				8	7	1	23.13	23.3 ± 1
				15	0	1	23.23	23.3 ± 1
			16QAM	1	0	1	22.71	22 ± 1
				1	7	1	22.74	22 ± 1
				1	14	1	22.70	22 ± 1
				8	0	2	21.46	22 ± 1
				8	4	2	21.39	22 ± 1
				8	7	2	21.36	22 ± 1
				15	0	2	21.73	22 ± 1
	18900	1880.0	QPSK	1	0	0	23.25	23 ± 1
				1	7	0	23.28	23 ± 1
				1	14	0	23.21	23 ± 1
				8	0	1	22.86	23 ± 1
				8	4	1	22.81	23 ± 1
				8	7	1	22.85	23 ± 1
				15	0	1	22.88	23 ± 1
			16QAM	1	0	1	23.54	22.6 ± 1
				1	7	1	23.52	22.6 ± 1
				1	14	1	23.49	22.6 ± 1
				8	0	2	21.89	22.6 ± 1
				8	4	2	21.87	22.6 ± 1
				8	7	2	21.85	22.6 ± 1
				15	0	2	21.94	22.6 ± 1
19175	1907.5	QPSK	1	0	0	23.29	23 ± 1	
			1	7	0	23.21	23 ± 1	
			1	14	0	23.18	23 ± 1	
			8	0	1	23.06	23 ± 1	
			8	4	1	23.07	23 ± 1	
			8	7	1	23.01	23 ± 1	
			15	0	1	23.19	23 ± 1	
		16QAM	1	0	1	22.95	22 ± 1	
			1	7	1	22.83	22 ± 1	
			1	14	1	22.86	22 ± 1	
			8	0	2	21.46	22 ± 1	
			8	4	2	21.43	22 ± 1	
			8	7	2	21.44	22 ± 1	
			15	0	2	21.23	22 ± 1	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	18607	1850.7	QPSK	1	0	0	23.14	23±1
				1	2	0	23.11	23±1
				1	5	0	23.13	23±1
				3	0	0	23.29	23±1
				3	1	0	23.22	23±1
				3	2	0	23.25	23±1
			6	0	1	23.06	23±1	
			16QAM	1	0	1	23.27	22.5±1
				1	2	1	23.28	22.5±1
				1	5	1	23.15	22.5±1
				3	0	1	21.95	22.5±1
				3	1	1	21.93	22.5±1
	3	2		1	21.89	22.5±1		
	18900	1880.0	QPSK	1	0	0	22.81	23±1
				1	2	0	22.85	23±1
				1	5	0	22.87	23±1
				3	0	0	23.23	23±1
				3	1	0	23.21	23±1
				3	2	0	23.17	23±1
			6	0	1	22.89	23±1	
			16QAM	1	0	1	22.47	21.8±1
				1	2	1	22.35	21.8±1
				1	5	1	22.44	21.8±1
				3	0	1	21.05	21.8±1
				3	1	1	21.02	21.8±1
	3	2		1	21.13	21.8±1		
	19193	1909.3	QPSK	1	0	0	22.96	23±1
1				2	0	22.91	23±1	
1				5	0	22.83	23±1	
3				0	0	23.42	23±1	
3				1	0	23.41	23±1	
3				2	0	23.15	23±1	
6			0	1	23.01	23±1		
16QAM			1	0	1	22.51	21.8±1	
			1	2	1	22.49	21.8±1	
			1	5	1	22.40	21.8±1	
			3	0	1	21.05	21.8±1	
			3	1	1	21.11	21.8±1	
	3	2	1	21.04	21.8±1			
6	0	2	21.59	21.8±1				

ERP & EIRP

EIRP for LTE Band II (Part 24E)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.7	1.4	QPSK	1/0	16.26	V	7.88	0.85	23.29	33.01
1880	1.4	QPSK	1/0	16.20	V	7.88	0.85	23.23	33.01
1909.3	1.4	QPSK	1/0	16.39	V	7.88	0.85	23.42	33.01
1850.7	1.4	QPSK	1/0	15.08	H	7.88	0.85	22.11	33.01
1880	1.4	QPSK	1/0	15.12	H	7.88	0.85	22.15	33.01
1909.3	1.4	QPSK	1/0	15.24	H	7.88	0.85	22.27	33.01
1850.7	1.4	16-QAM	1/0	16.25	V	7.88	0.85	23.28	33.01
1880	1.4	16-QAM	1/0	15.44	V	7.88	0.85	22.47	33.01
1909.3	1.4	16-QAM	1/0	15.48	V	7.88	0.85	22.51	33.01
1850.7	1.4	16-QAM	1/0	14.1	H	7.88	0.85	21.13	33.01
1880	1.4	16-QAM	1/0	14.22	H	7.88	0.85	21.25	33.01
1909.3	1.4	16-QAM	1/0	14.35	H	7.88	0.85	21.38	33.01
1851.5	3	QPSK	1/0	16.49	V	7.88	0.85	23.52	33.01
1880	3	QPSK	1/0	16.25	V	7.88	0.85	23.28	33.01
1908.5	3	QPSK	1/0	16.26	V	7.88	0.85	23.29	33.01
1851.5	3	QPSK	1/0	15.38	H	7.88	0.85	22.41	33.01
1880	3	QPSK	1/0	15.14	H	7.88	0.85	22.17	33.01
1908.5	3	QPSK	1/0	15.22	H	7.88	0.85	22.25	33.01
1851.5	3	16-QAM	1/0	15.71	V	7.88	0.85	22.74	33.01
1880	3	16-QAM	1/0	16.51	V	7.88	0.85	23.54	33.01
1908.5	3	16-QAM	1/0	15.92	V	7.88	0.85	22.95	33.01
1851.5	3	16-QAM	1/0	14.6	H	7.88	0.85	21.63	33.01
1880	3	16-QAM	1/0	14.34	H	7.88	0.85	21.37	33.01
1908.5	3	16-QAM	1/0	14.81	H	7.88	0.85	21.84	33.01
1852.5	5	QPSK	1/24	16.23	V	7.88	0.85	23.26	33.01
1880	5	QPSK	1/0	15.09	V	7.88	0.85	22.12	33.01
1907.5	5	QPSK	1/24	16.07	V	7.88	0.85	23.10	33.01
1852.5	5	QPSK	1/24	15.02	H	7.88	0.85	22.05	33.01
1880	5	QPSK	1/0	16.73	H	7.88	0.85	23.76	33.01
1907.5	5	QPSK	1/24	15.5	H	7.88	0.85	22.53	33.01
1852.5	5	16-QAM	1/24	15.78	V	7.88	0.85	22.81	33.01
1880	5	16-QAM	1/0	14.63	V	7.88	0.85	21.66	33.01

1907.5	5	16-QAM	1/24	15.14	V	7.88	0.85	22.17	33.01
1852.5	5	16-QAM	1/24	14.05	H	7.88	0.85	21.08	33.01
1880	5	16-QAM	1/0	16.11	H	7.88	0.85	23.14	33.01
1907.5	5	16-QAM	1/24	14.93	H	7.88	0.85	21.96	33.01
1855	10	QPSK	1/0	16.11	V	7.88	0.85	23.14	33.01
1880	10	QPSK	1/0	16.31	V	7.88	0.85	23.34	33.01
1905	10	QPSK	1/49	16.61	V	7.88	0.85	23.64	33.01
1855	10	QPSK	1/0	15.05	H	7.88	0.85	22.08	33.01
1880	10	QPSK	1/0	15.12	H	7.88	0.85	22.15	33.01
1905	10	QPSK	1/49	15.46	H	7.88	0.85	22.49	33.01
1855	10	16-QAM	1/0	15.85	V	7.88	0.85	22.88	33.01
1880	10	16-QAM	1/0	16.57	V	7.88	0.85	23.60	33.01
1905	10	16-QAM	1/49	15.32	V	7.88	0.85	22.35	33.01
1855	10	16-QAM	1/0	14.64	H	7.88	0.85	21.67	33.01
1880	10	16-QAM	1/0	15.4	H	7.88	0.85	22.43	33.01
1905	10	16-QAM	1/49	14.18	H	7.88	0.85	21.21	33.01
1857.5	15	QPSK	1/0	16.06	V	7.88	0.85	23.09	33.01
1880	15	QPSK	1/0	14.89	V	7.88	0.85	23.17	33.01
1902.5	15	QPSK	1/0	16.65	V	7.88	0.85	23.68	33.01
1857.5	15	QPSK	1/0	#REF!	H	7.88	0.85	21.92	33.01
1880	15	QPSK	1/0	15.02	H	7.88	0.85	22.05	33.01
1902.5	15	QPSK	1/0	15.43	H	7.88	0.85	22.46	33.01
1857.5	15	16-QAM	1/0	16.1	V	7.88	0.85	23.13	33.01
1880	15	16-QAM	1/0	16.53	V	7.88	0.85	23.56	33.01
1902.5	15	16-QAM	1/0	15.16	V	7.88	0.85	22.19	33.01
1857.5	15	16-QAM	1/0	14.98	H	7.88	0.85	22.01	33.01
1880	15	16-QAM	1/0	15.41	H	7.88	0.85	22.44	33.01
1902.5	15	16-QAM	1/0	14.1	H	7.88	0.85	21.13	33.01
1860	20	QPSK	1/0	16.15	V	7.88	0.85	23.18	33.01
1880	20	QPSK	1/0	16.14	V	7.88	0.85	23.17	33.01
1900	20	QPSK	1/0	16.23	V	7.88	0.85	23.26	33.01
1860	20	QPSK	1/0	15.04	H	7.88	0.85	22.07	33.01
1880	20	QPSK	1/0	15.09	H	7.88	0.85	22.12	33.01
1900	20	QPSK	1/0	15.13	H	7.88	0.85	22.16	33.01
1860	20	16-QAM	1/0	16.11	V	7.88	0.85	23.14	33.01
1880	20	16-QAM	1/0	16.05	V	7.88	0.85	23.08	33.01
1900	20	16-QAM	1/0	16.12	V	7.88	0.85	23.15	33.01
1860	20	16-QAM	1/0	14.92	H	7.88	0.85	21.95	33.01



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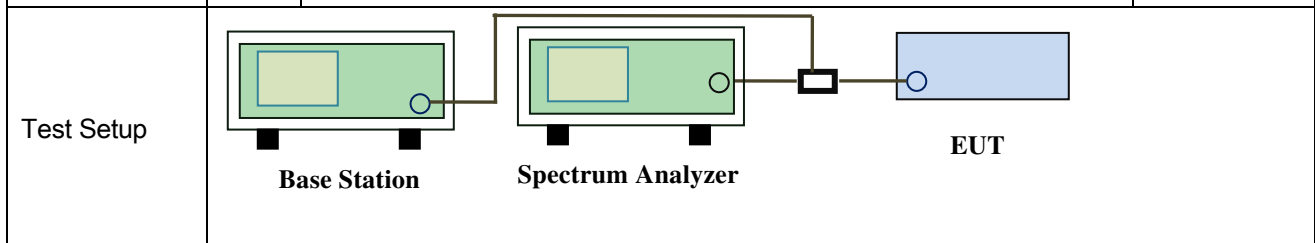
1880	20	16-QAM	1/0	14.94	H	7.88	0.85	21.97	33.01
1900	20	16-QAM	1/0	15.01	H	7.88	0.85	22.04	33.01

6.3 Peak-Average Ratio

Temperature	24°C
Relative Humidity	55%
Atmospheric Pressure	1010mbar
Test date :	May 17, 2017
Tested By :	Loren Luo

Requirement(s):

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



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</p>
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	<p>cycle \geq 98%) and at all times the EUT is transmitting at its maximum output power level, then a conventional wide-band RF power meter can be used. 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 \pm 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

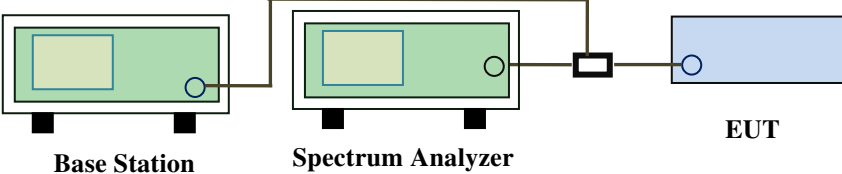
LTE Band II (part 24E)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1880	RB 1/0	QPSK	23.53	22.81	0.72
			16QAM	23.19	22.47	0.72
3	1880	RB 1/0	QPSK	23.83	23.25	0.58
			16QAM	24.23	23.54	0.69
5	1880	RB 1/0	QPSK	23.65	23.1	0.55
			16QAM	23.07	22.17	0.9
10	1880	RB 1/0	QPSK	23.88	23.34	0.54
			16QAM	24.16	23.6	0.56
15	1880	RB 1/0	QPSK	23.9	23.17	0.73
			16QAM	24.31	23.56	0.75
20	1880	RB 1/0	QPSK	23.82	23.18	0.64
			16QAM	23.79	23.14	0.65

6.4 Occupied Bandwidth

Temperature	24°C
Relative Humidity	55%
Atmospheric Pressure	1010mbar
Test date :	May 17, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §24.238	a)	99% Occupied Bandwidth(kHz)	<input checked="" type="checkbox"/>
	b)	26 dB Bandwidth(kHz)	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Base Station Spectrum Analyzer EUT</p>		
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

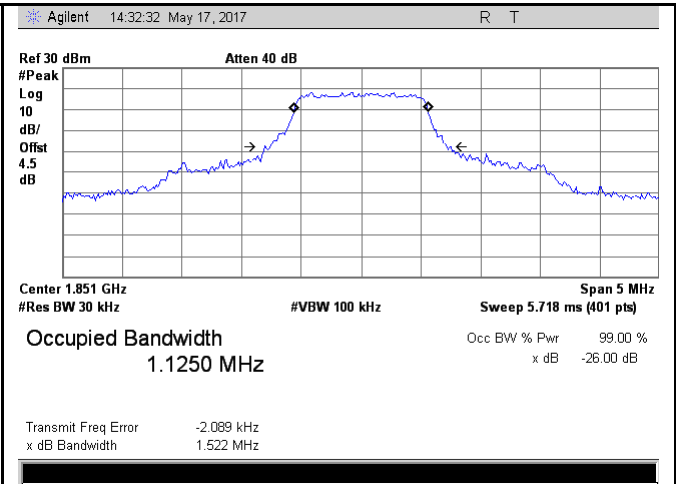
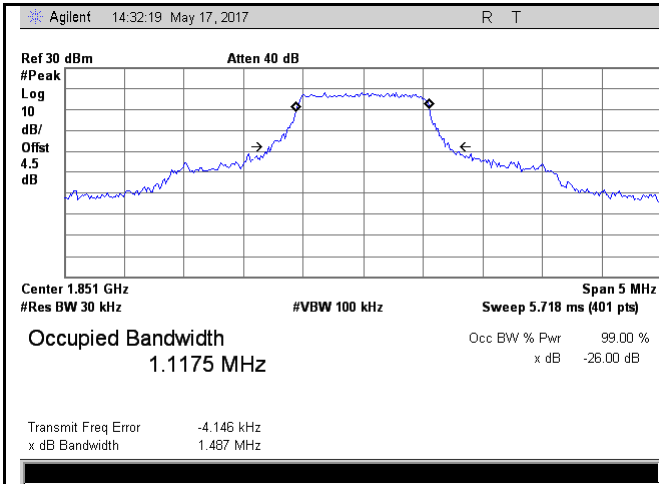
LTE Band II (Part 24E)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1851	16QAM	1.1250	1.522
			QPSK	1.1175	1.487
1.4	18900	1880	16QAM	1.1124	1.471
			QPSK	1.1050	1.487
1.4	19193	1909	16QAM	1.1284	1.512
			QPSK	1.1222	1.509
3	18615	1851	16QAM	2.7674	3.533
			QPSK	2.7663	3.523
3	18900	1880	16QAM	2.7527	3.296
			QPSK	2.7530	3.215
3	19185	1909	16QAM	2.7662	3.491
			QPSK	2.7729	3.407
5	18625	1853	16QAM	4.5422	5.213
			QPSK	4.5302	5.213
5	18900	1880	16QAM	4.5278	5.286
			QPSK	4.5338	5.237
5	19175	1907	16QAM	4.5425	5.305
			QPSK	4.5301	5.379
10	18650	1855	16QAM	9.1229	10.593
			QPSK	9.1374	10.697
10	18900	1880	16QAM	9.0880	10.398
			QPSK	9.1004	10.407
10	19150	1905	16QAM	9.0873	10.370
			QPSK	9.1035	10.349
15	18675	1857	16QAM	13.5681	15.322
			QPSK	13.5622	15.289
15	18900	1880	16QAM	13.4395	15.035
			QPSK	13.4654	15.087
15	19125	1903	16QAM	13.4693	15.281
			QPSK	13.4523	15.334

20	18700	1860	16QAM	17.9682	19.812
			QPSK	17.9769	19.898
20	18900	1880	16QAM	17.9356	19.847
			QPSK	17.9696	19.919
20	19100	1900	16QAM	17.9654	19.787
			QPSK	17.8960	19.850

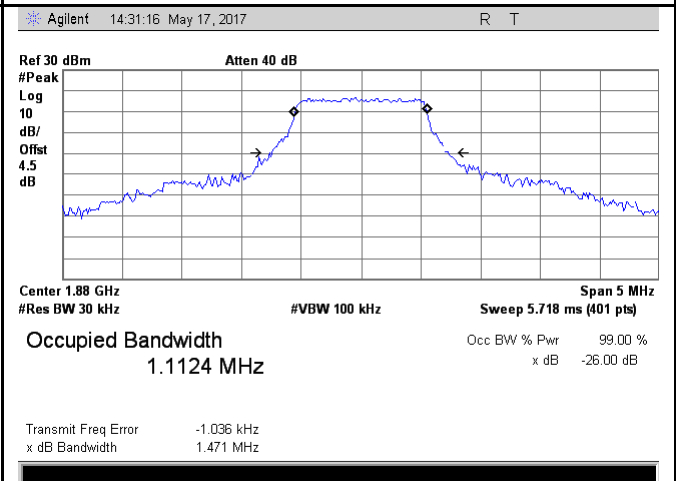
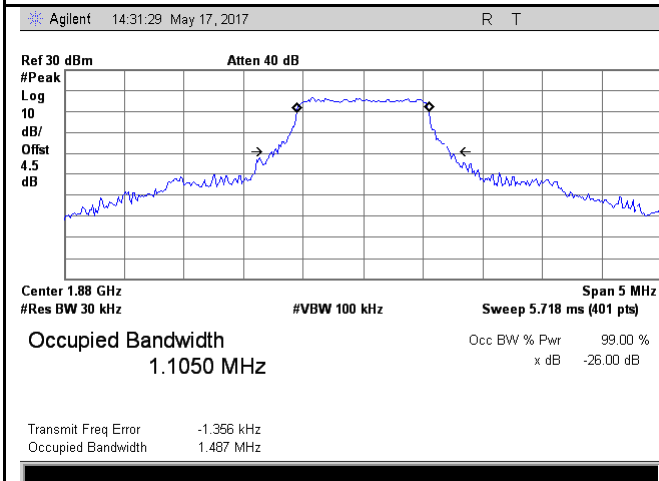
Test Plots

LTE Band II (Part 24E)



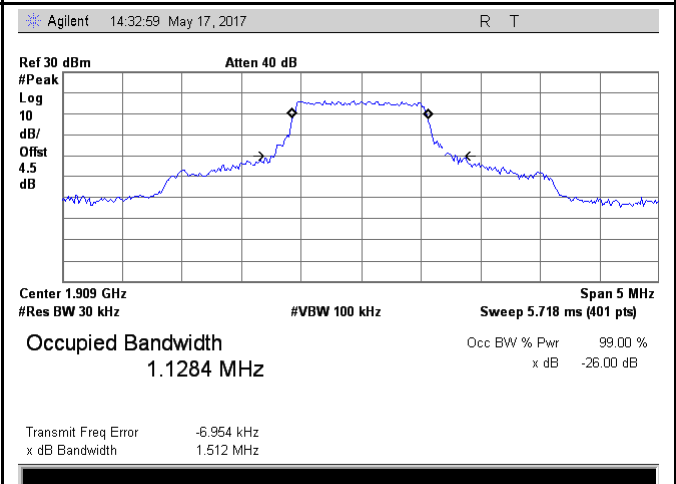
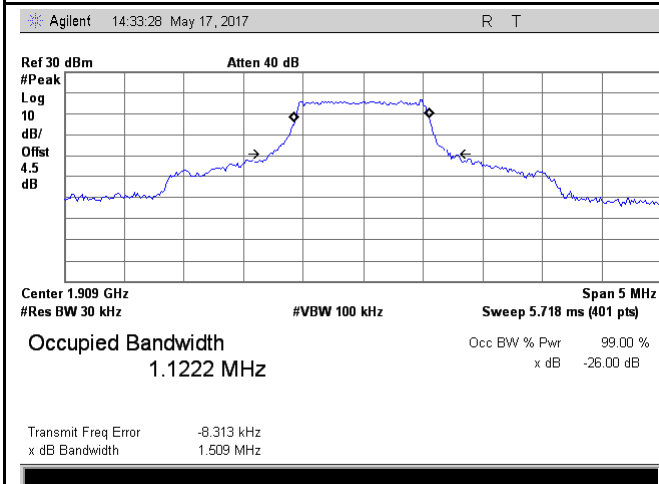
LTE band II - Low CH QPSK-1.4

LTE band II - Low CH 16QAM-1.4



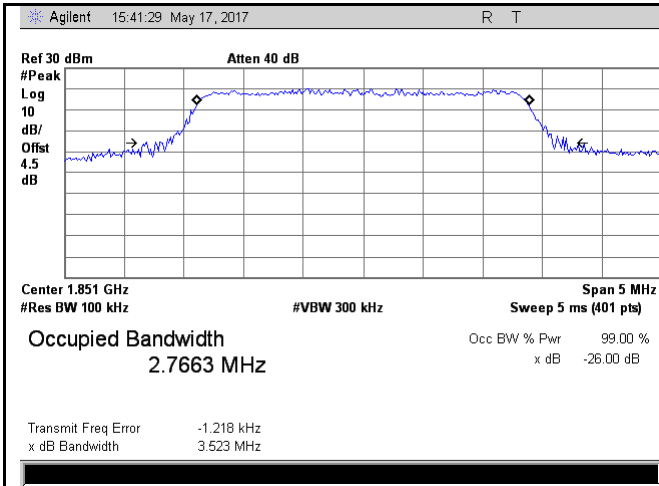
LTE band II - Middle CH QPSK-1.4

LTE band II - Middle CH 16QAM-1.4

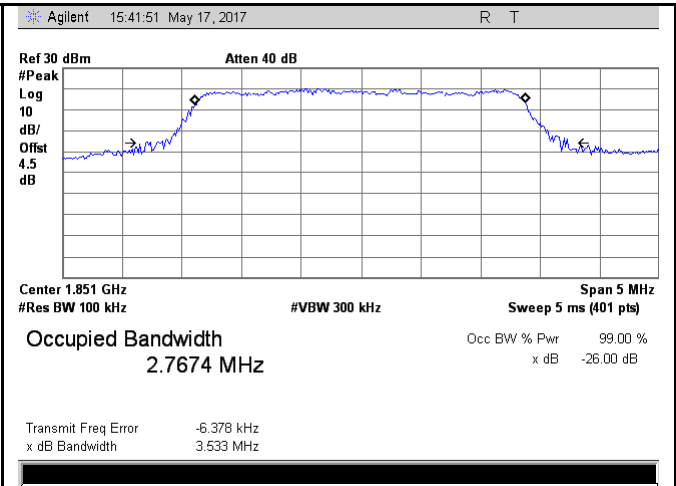


LTE band II - High CH QPSK-1.4

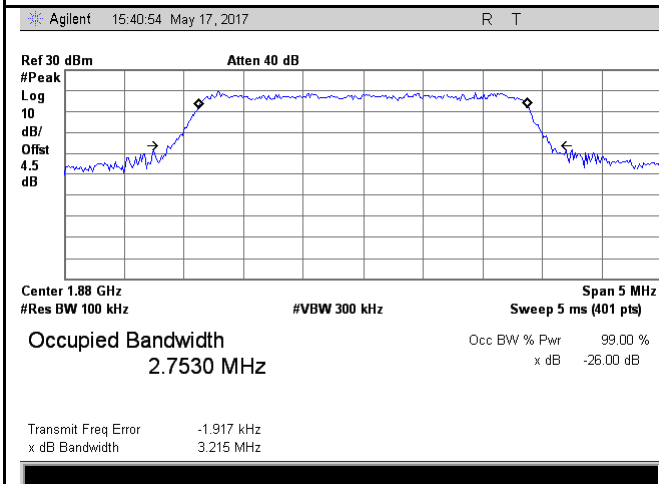
LTE band II - High CH 16QAM-1.4



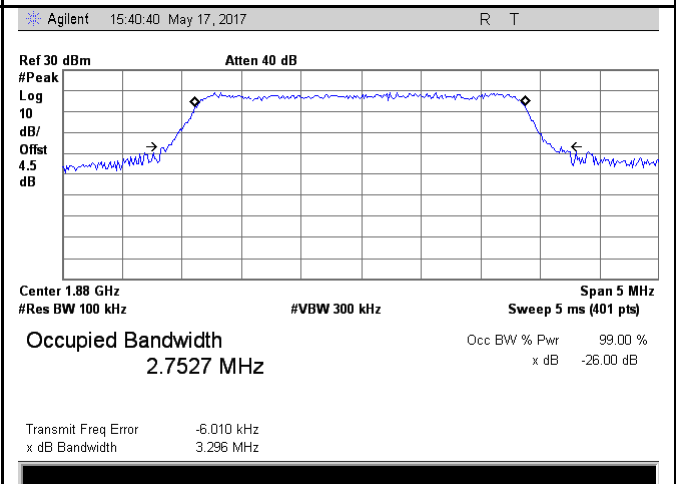
LTE band II - Low CH QPSK-3



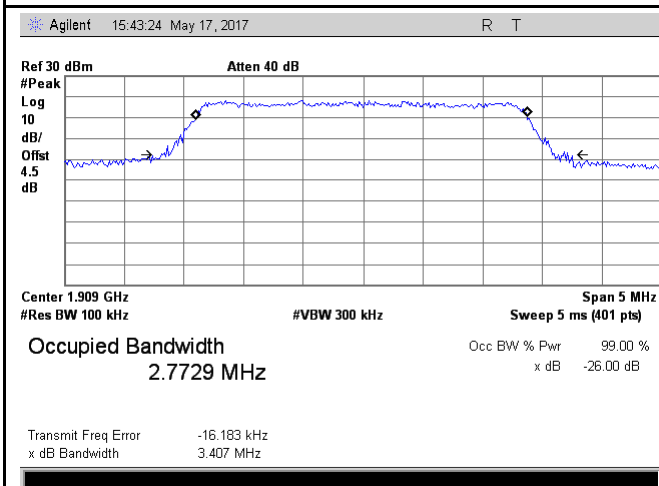
LTE band II - Low CH 16QAM-3



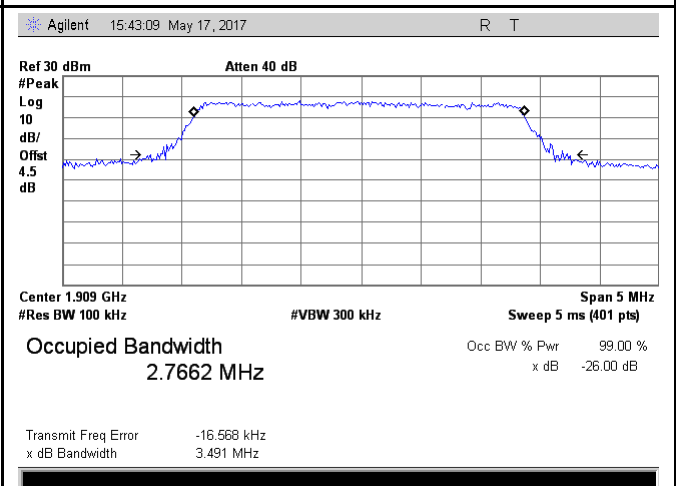
LTE band II - Middle CH QPSK-3



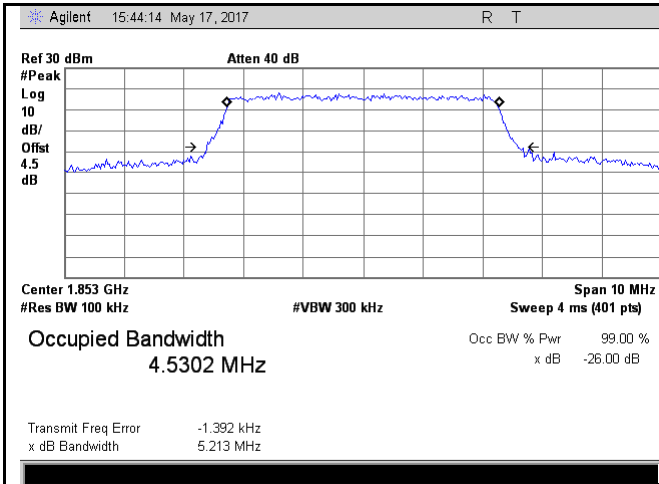
LTE band II - Middle CH 16QAM-3



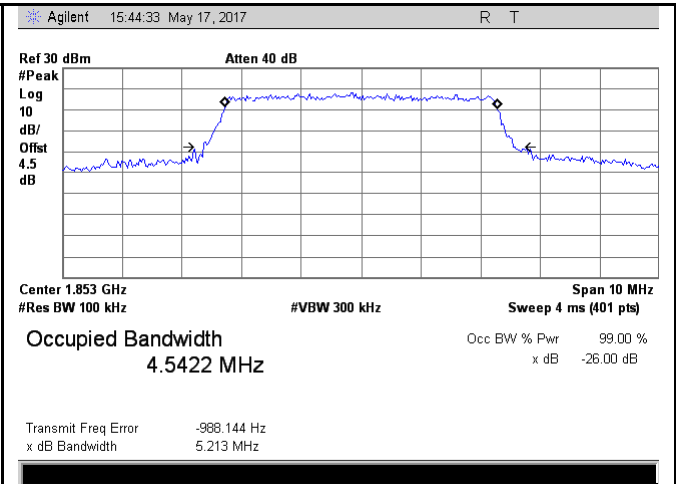
LTE band II - High CH QPSK-3



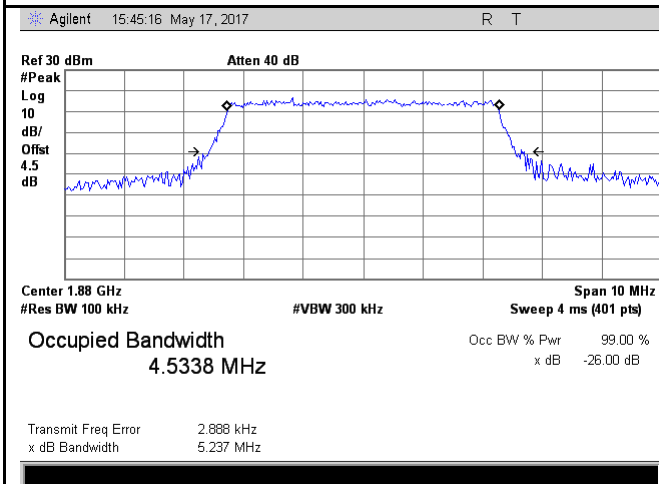
LTE band II - High CH 16QAM-3



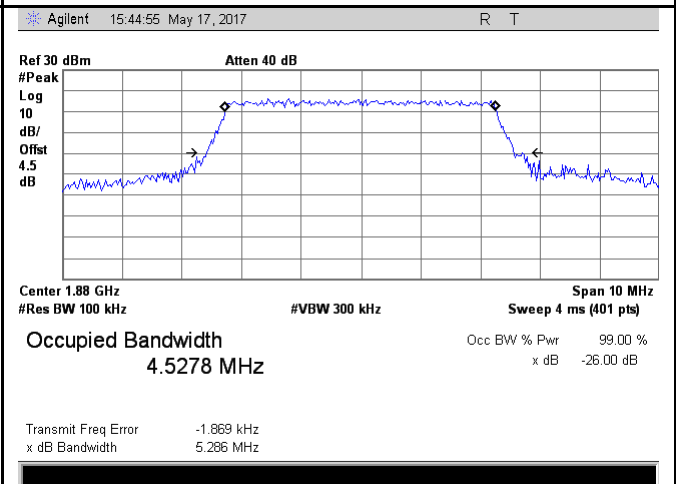
LTE band II - Low CH QPSK-5



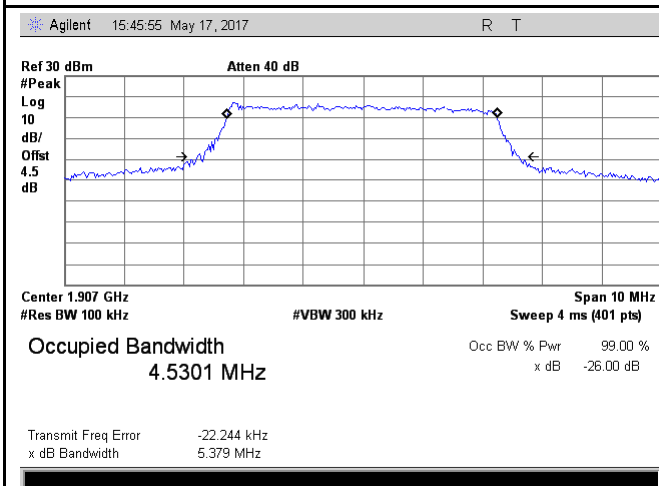
LTE band II - Low CH 16QAM-5



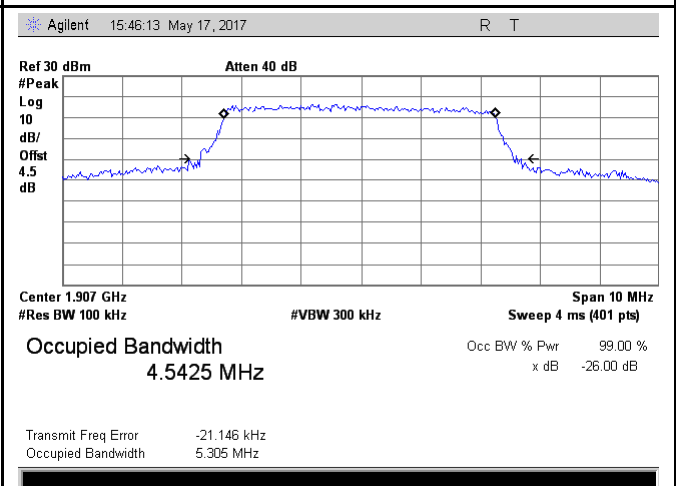
LTE band II - Middle CH QPSK-5



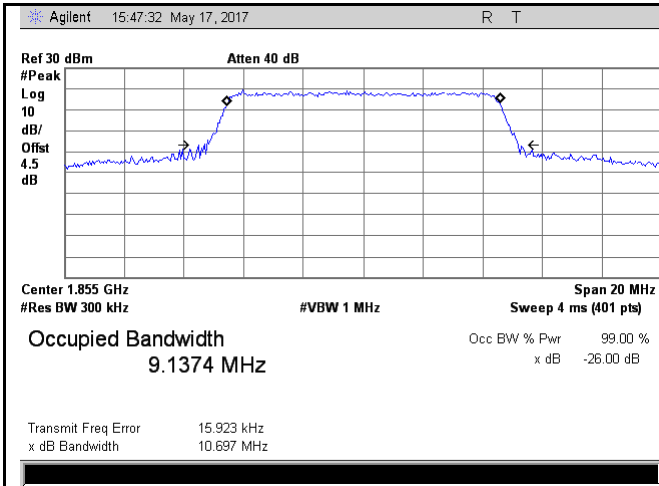
LTE band II - Middle CH 16QAM-5



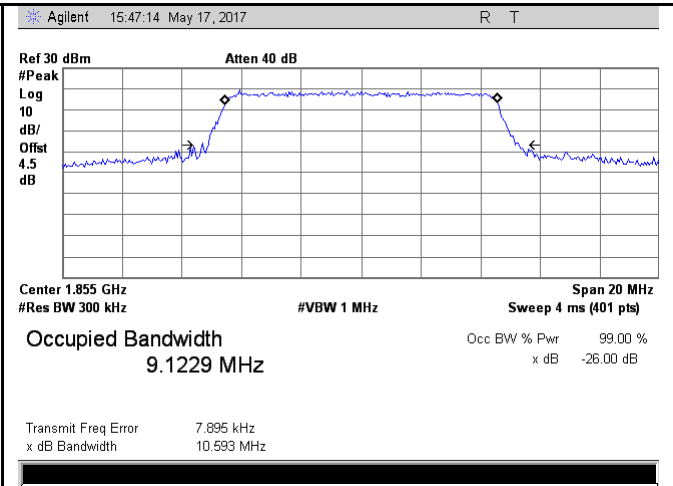
LTE band II - High CH QPSK-5



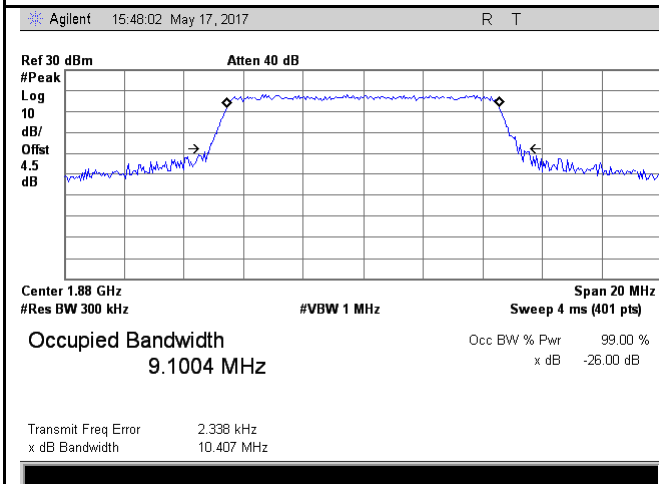
LTE band II - High CH 16QAM-5



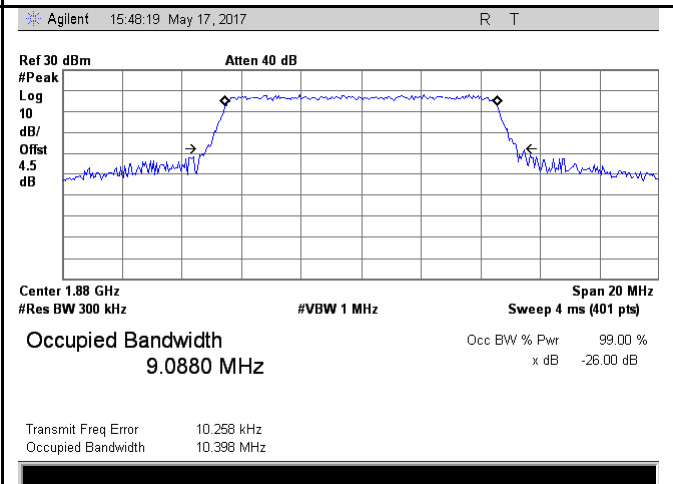
LTE band II - Low CH QPSK-10



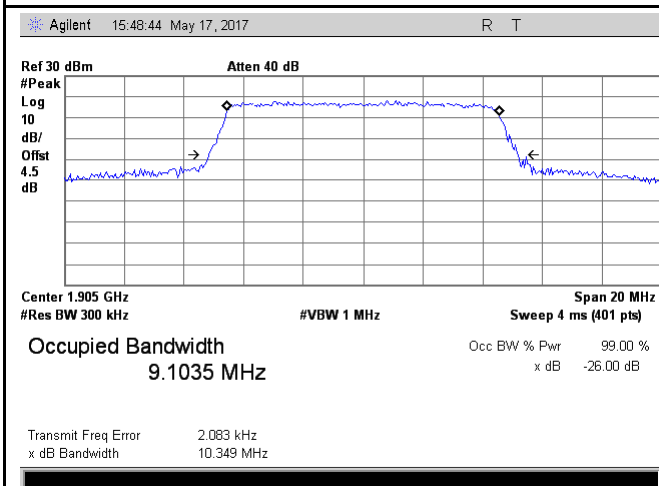
LTE band II - Low CH 16QAM-10



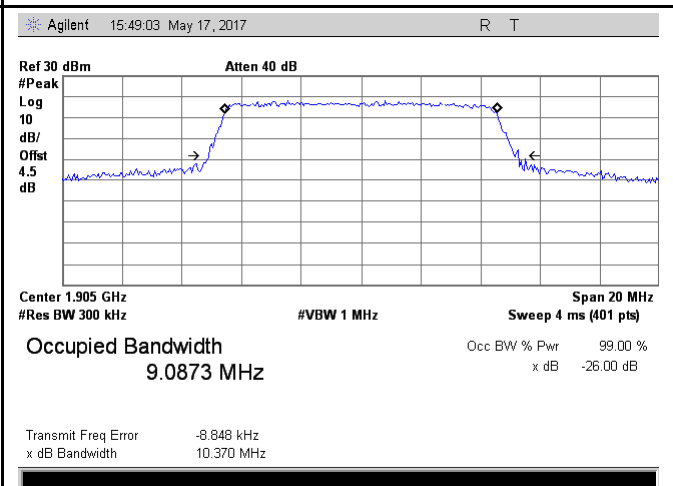
LTE band II - Middle CH QPSK-10



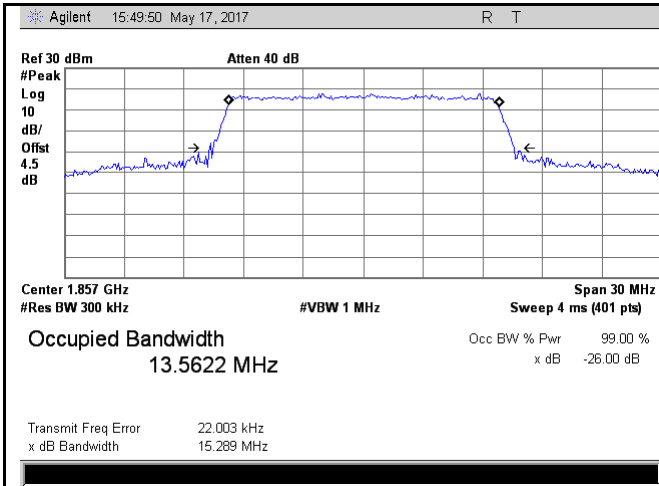
LTE band II - Middle CH 16QAM-10



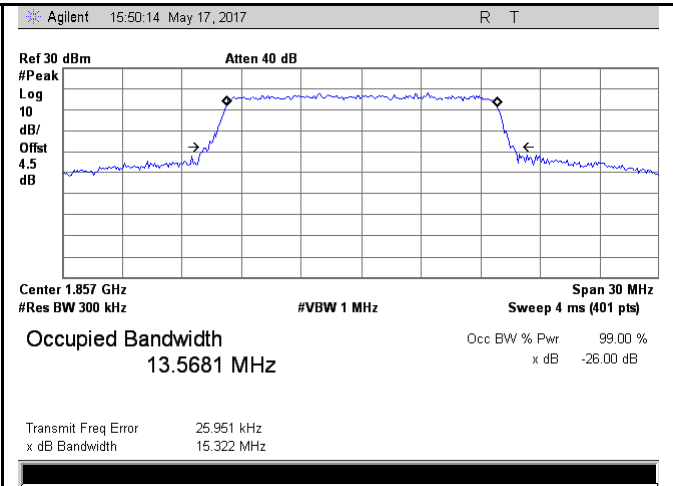
LTE band II - High CH QPSK-10



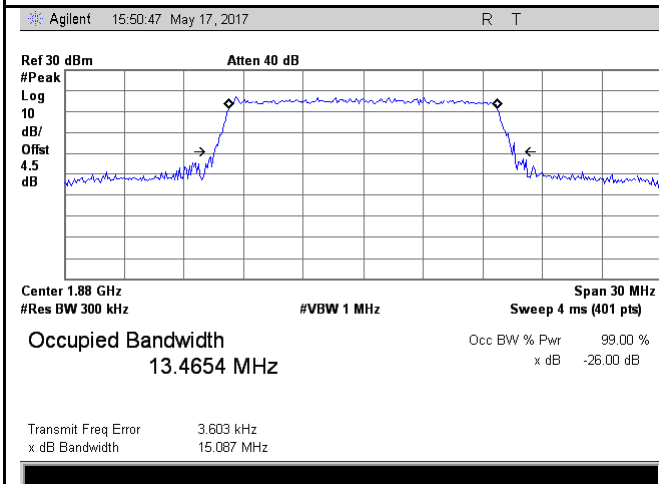
LTE band II - High CH 16QAM-10



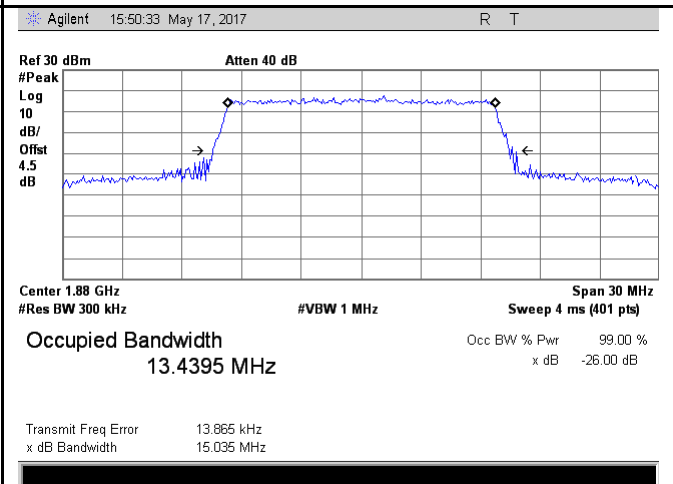
LTE band II - Low CH QPSK-15



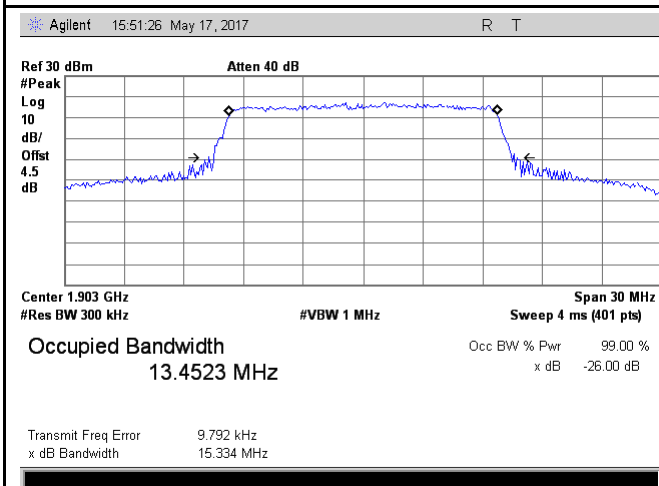
LTE band II - Low CH 16QAM-15



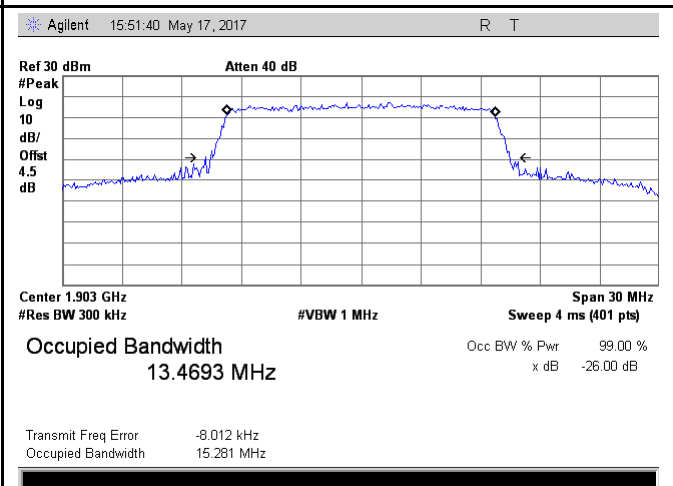
LTE band II - Middle CH QPSK-15



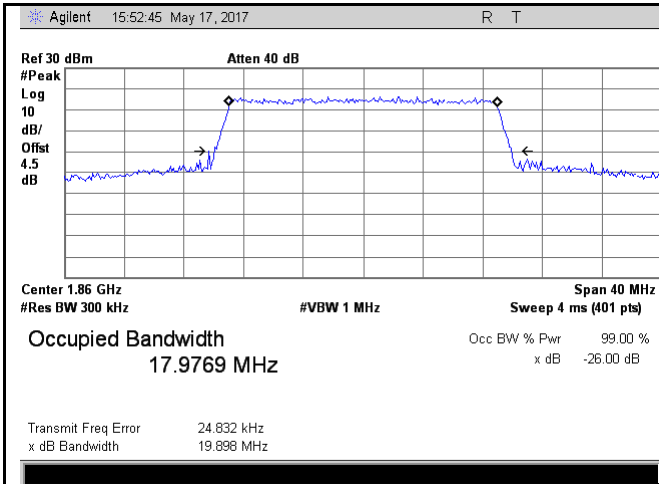
LTE band II - Middle CH 16QAM-15



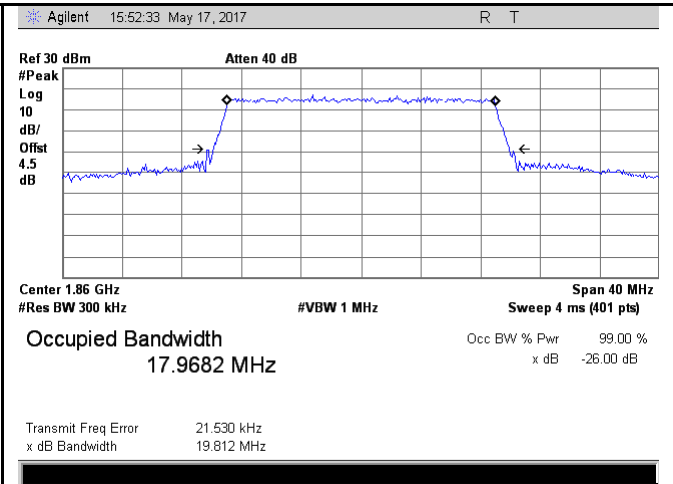
LTE band II - High CH QPSK-15



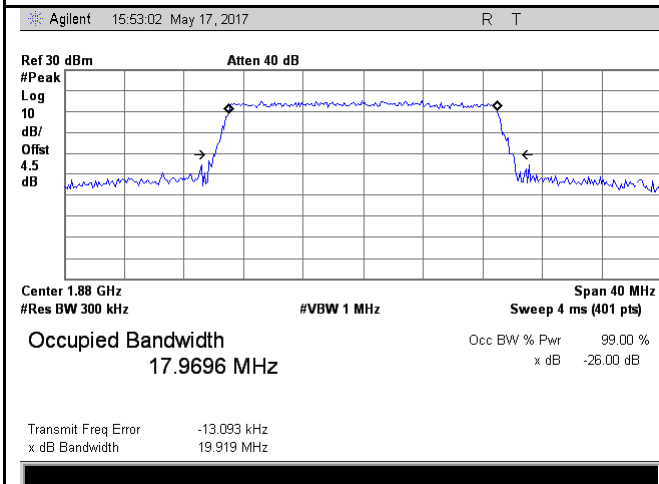
LTE band II - High CH 16QAM-15



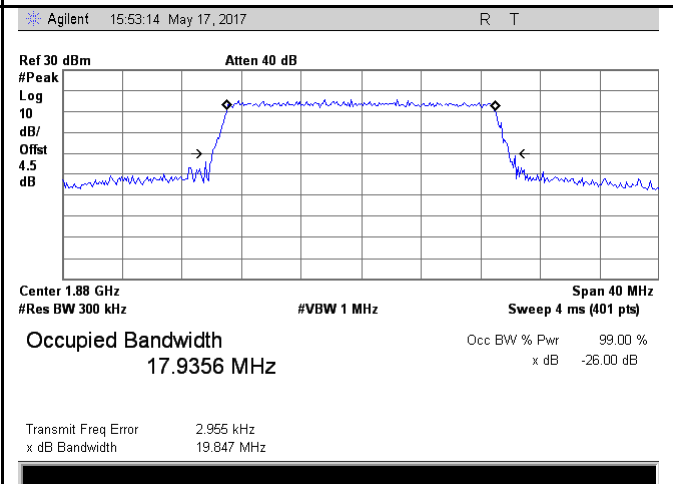
LTE band II - Low CH QPSK-20



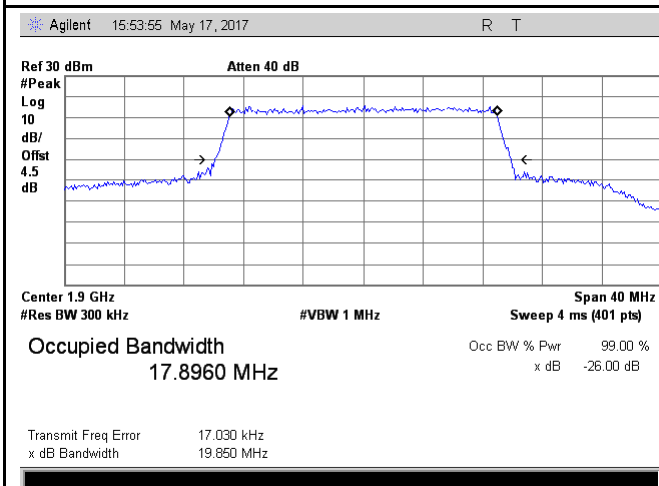
LTE band II - Low CH 16QAM-20



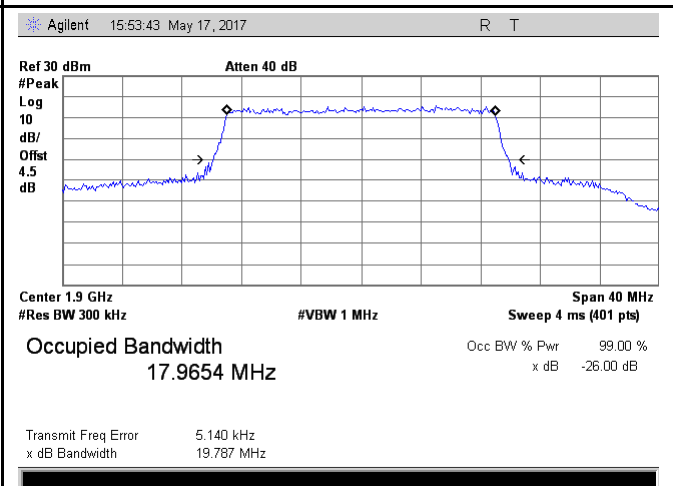
LTE band II - Middle CH QPSK-20



LTE band II - Middle CH 16QAM-20



LTE band II - High CH QPSK-20

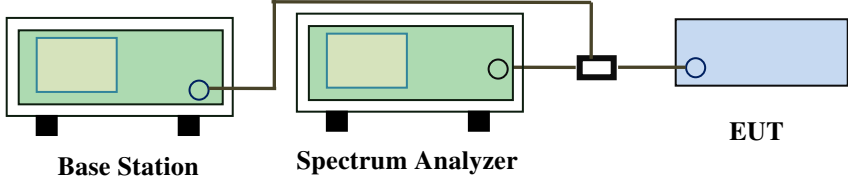


LTE band II - High CH 16QAM-20

6.5 Spurious Emissions at Antenna Terminals

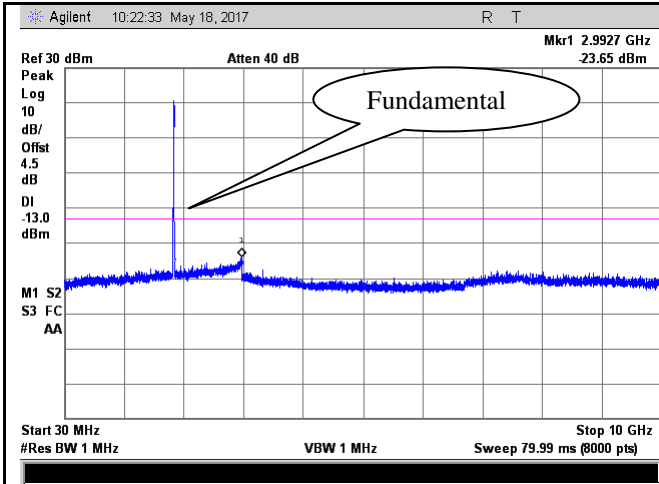
Temperature	22°C
Relative Humidity	55%
Atmospheric Pressure	1015mbar
Test date :	May 18, 2017
Tested By :	Loren Luo

Requirement(s):

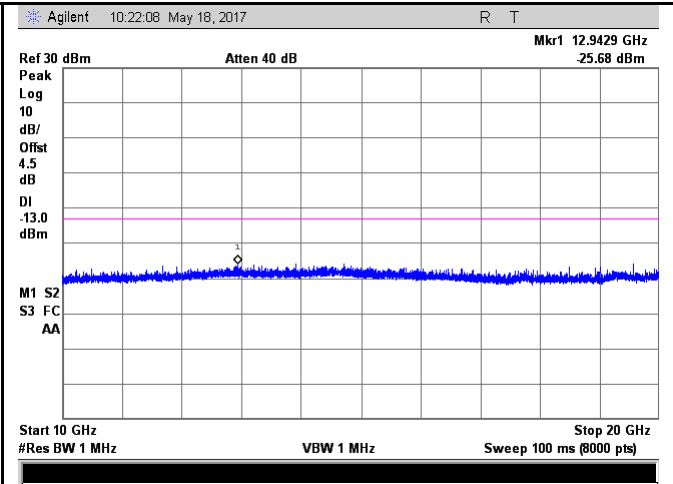
Spec	Item	Requirement	Applicable
§2.1051, §24.238(a)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log(P)$ dB	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Base Station Spectrum Analyzer EUT</p>		
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

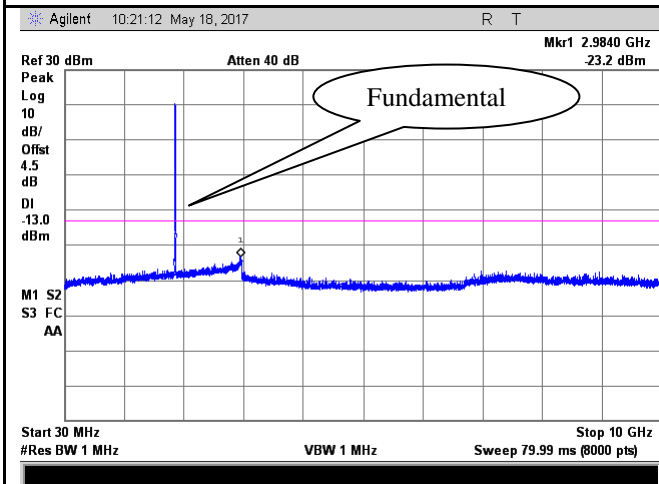
Test Plots 30MHz-5GHz
LTE band II (Part 24E)



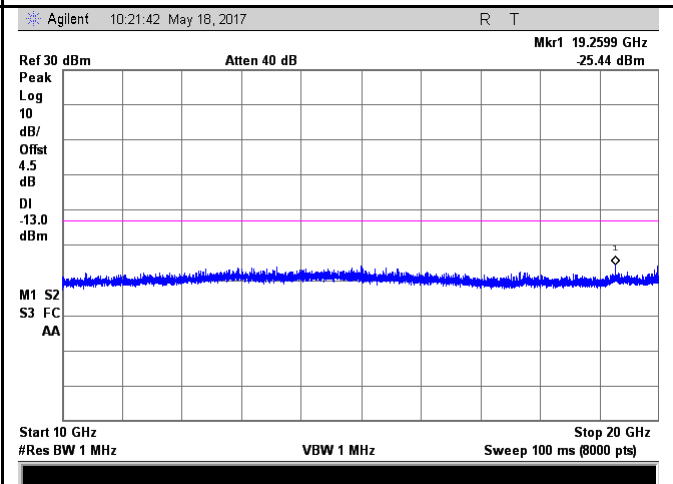
LTE band II - Low Channel-1



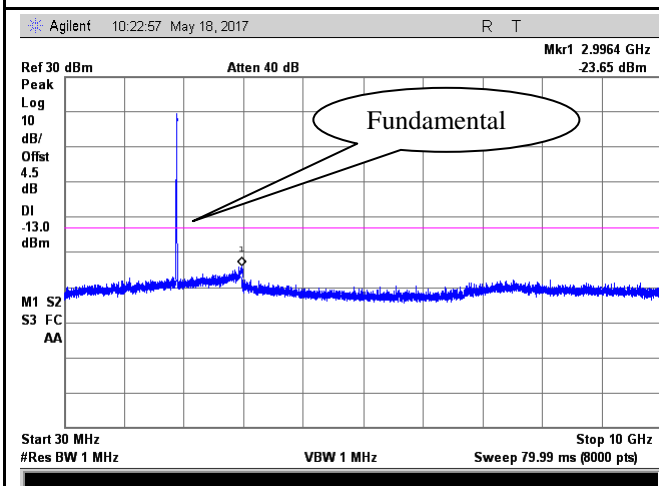
LTE band II - Low Channel-2



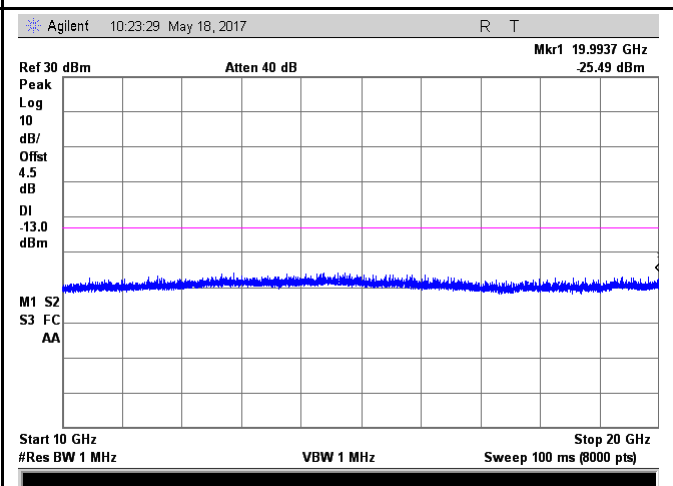
LTE band II Middle Channel-1



LTE band II Middle Channel-2



LTE band II - High Channel-1



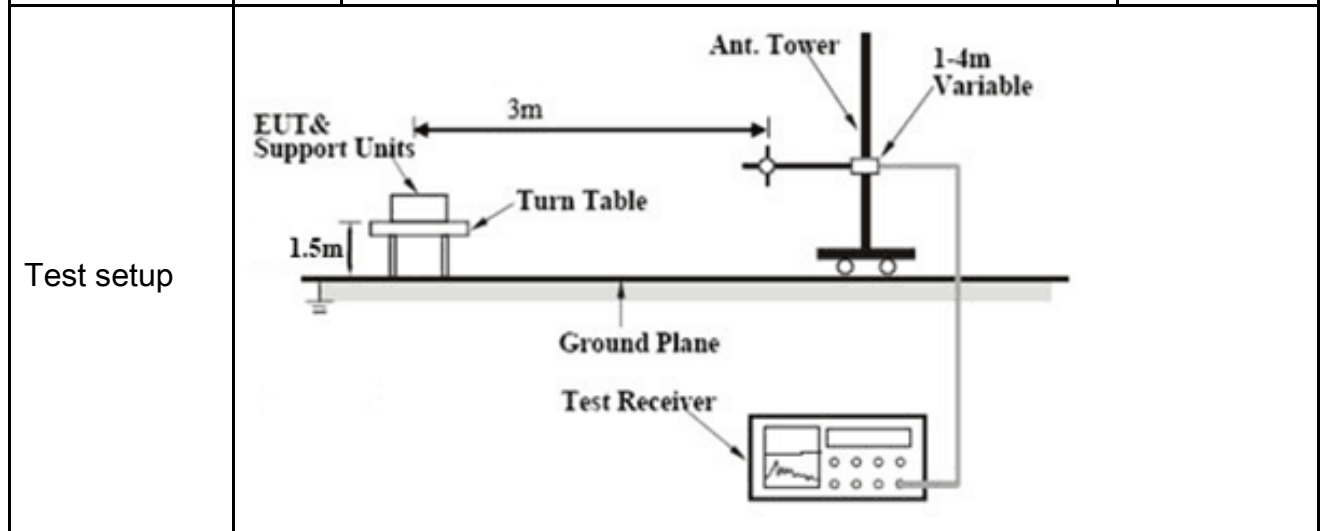
LTE band II - High Channel-2

6.6 Spurious Radiated Emissions

Temperature	25°C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	May 16, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1053, §24.238	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 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> $\text{EUT Field Strength} = \text{Raw Amplitude (dB}\mu\text{V/m)} - \text{Amplifier Gain (dB)} + \text{Antenna Factor (dB)} + \text{Cable Loss (dB)} + \text{Filter Attenuation (dB, if used)}$
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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

LTE band II (Part 24E) 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)
3720	-46.57	V	10.25	2.73	-39.05	-13	-26.05
3720	-46.93	H	10.25	2.73	-39.41	-13	-26.41
50.8	-45.34	V	-4.2	0.11	-49.65	-13	-36.65
202.1	-48.66	H	4.6	0.18	-44.24	-13	-31.24

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	-46.42	V	10.25	2.73	-38.9	-13	-25.9
3760	-47.11	H	10.25	2.73	-39.59	-13	-26.59
51.3	-45.08	V	-4.2	0.11	-49.39	-13	-36.39
202.6	-48.33	H	4.6	0.18	-43.91	-13	-30.91

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3800	-46.15	V	10.36	2.73	-38.52	-13	-25.52
3800	-46.92	H	10.36	2.73	-39.29	-13	-26.29
51.5	-45.13	V	-4.2	0.11	-49.44	-13	-36.44
202.9	-47.79	H	4.6	0.18	-43.37	-13	-30.37

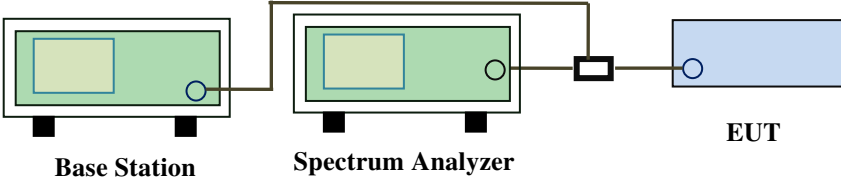
Note:

- 1, The testing has been conformed to $10 \times 1907.5 \text{ MHz} = 19,075 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit
- 3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

6.7 Band Edge

Temperature	25°C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	May 16, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§24.238(a)	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	 <p>The diagram shows a Base Station (green box) connected to a Spectrum Analyzer (green box) and an EUT (blue box) via a power divider (black box). The Base Station and Spectrum Analyzer are connected to each other, and the Spectrum Analyzer is connected to the power divider, which then splits the signal to the EUT.</p>		
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

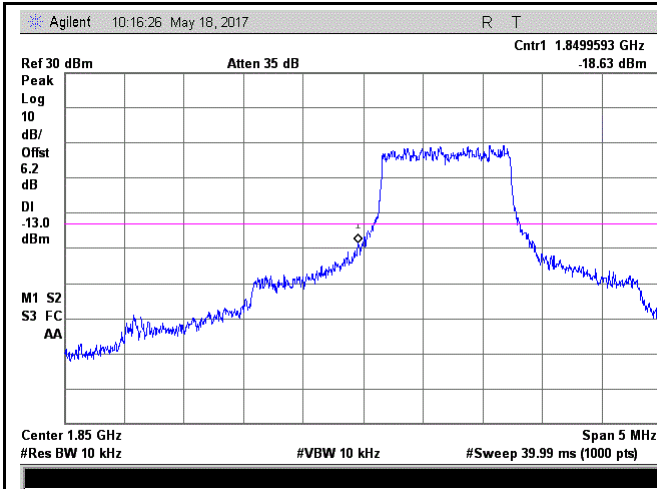
Test Plot Yes (See below) N/A

LTE band II (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	18607	1850	QPSK	-18.63	-13
			16QAM	-18.02	-13
1.4	18900	1910	QPSK	-17.73	-13
			16QAM	-18.34	-13
3	18615	1850	QPSK	-16.97	-13
			16QAM	-16.83	-13
3	19185	1910	QPSK	-17.82	-13
			16QAM	-20.30	-13
5	18625	1849	QPSK	-14.94	-13
			16QAM	-15.75	-13
5	19175	1910	QPSK	-20.68	-13
			16QAM	-20.48	-13
10	18650	1850	QPSK	-14.53	-13
			16QAM	-16.39	-13
10	19150	1910	QPSK	-17.38	-13
			16QAM	-16.84	-13
15	18675	1849	QPSK	-17.55	-13
			16QAM	-17.33	-13
15	19125	1910	QPSK	-21.98	-13
			16QAM	-19.28	-13
20	18700	1848	QPSK	-14.54	-13
			16QAM	-14.69	-13
20	19100	1910	QPSK	-17.05	-13
			16QAM	-17.19	-13

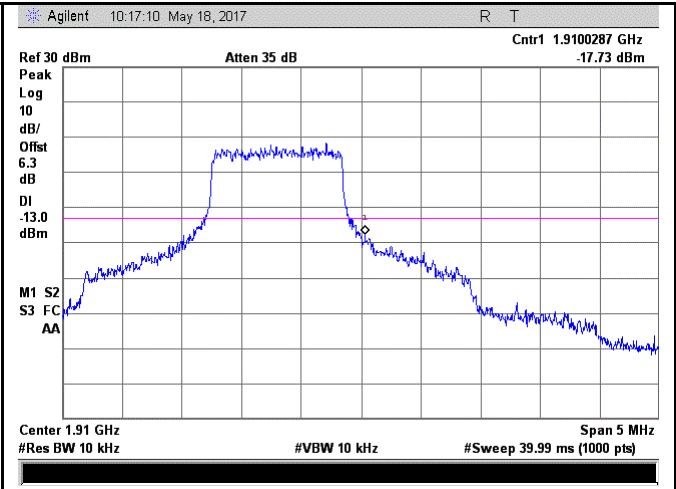
Test Plots

LTE band II (Part 24E)



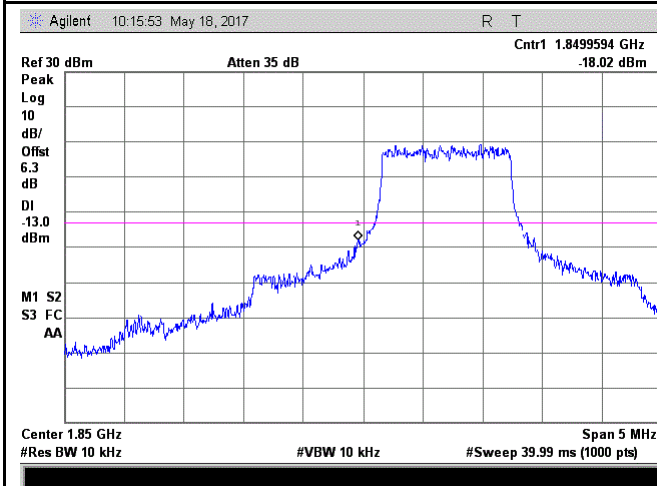
LTE band II - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
 $(14.87/10)=4.5+1.7=6.2\text{dB}$



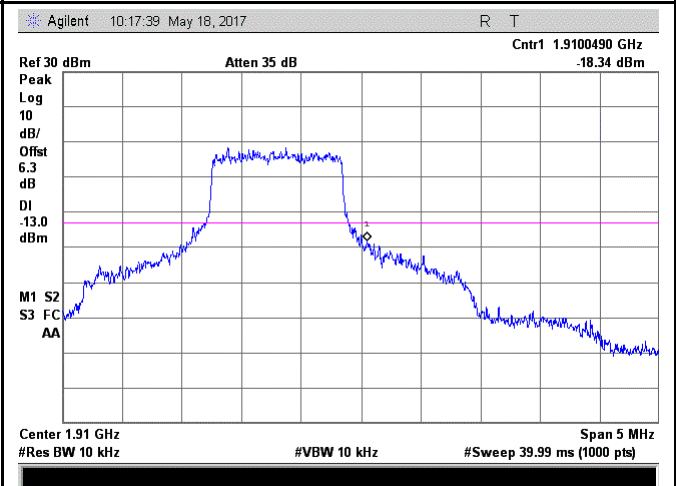
LTE band II - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
 $(15.09/10)=4.5+1.8=6.3\text{dB}$



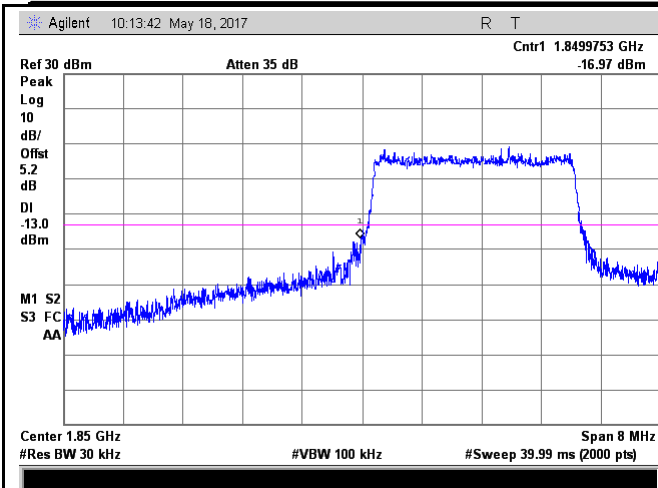
LTE band II - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
 $(15.22/10)=4.5+1.8=6.3\text{ dB}$



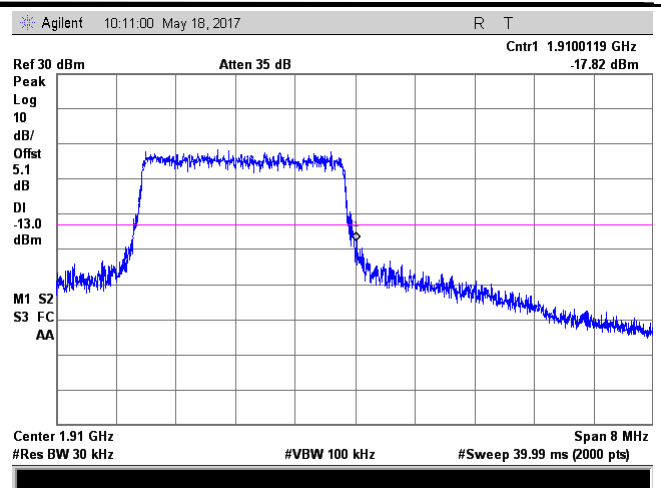
LTE band II - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
 $(15.12/10)=4.5+1.8=6.3\text{ dB}$



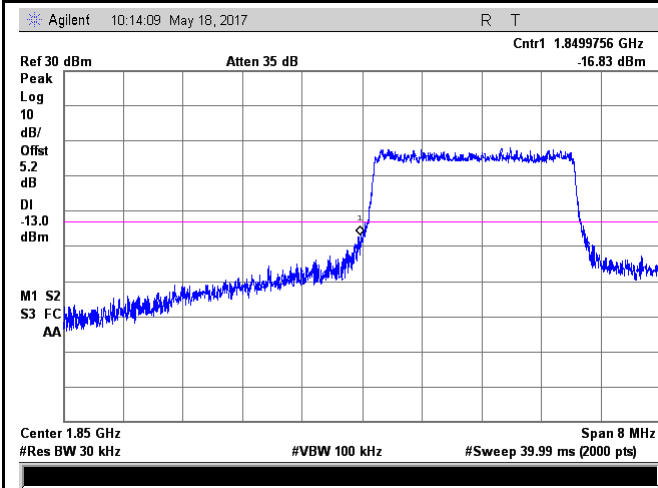
LTE band II - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(35.23/30)=4.5+0.7=5.2 dB



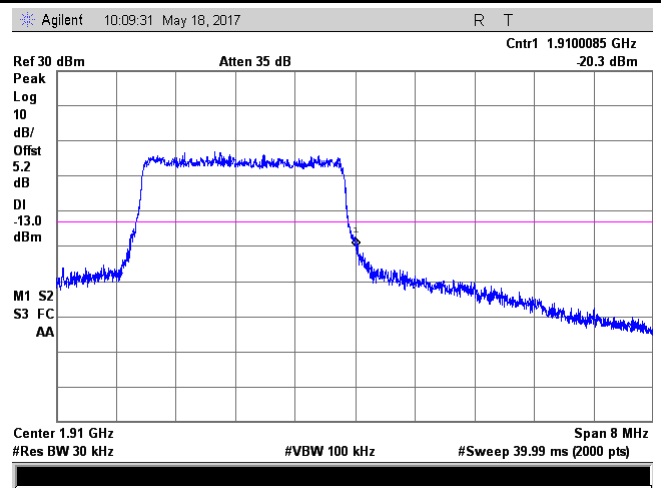
LTE band II - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(34.07/30)=4.5+0.6=5.1 dB



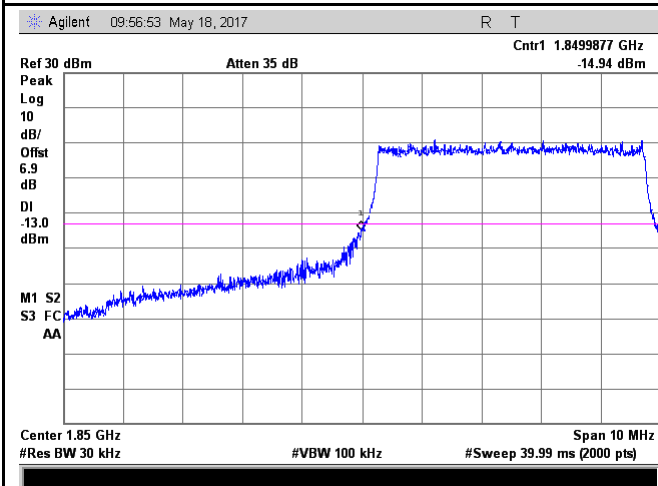
LTE band II - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(35.33/30)=4.5+0.7=5.2 dB

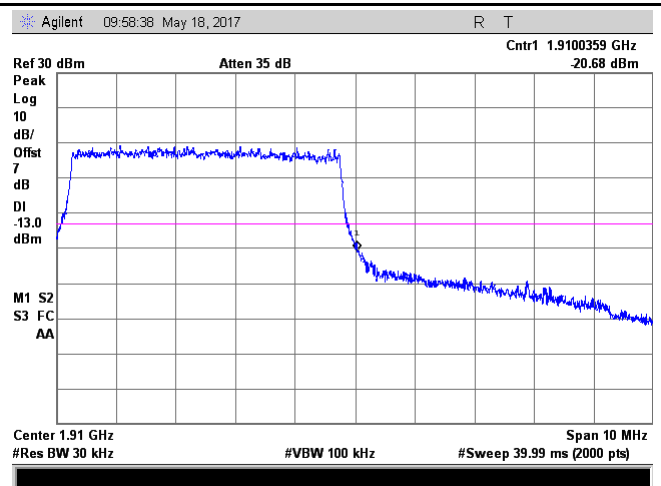


LTE band II - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(34.91/30)=4.5+0.7=5.2 dB

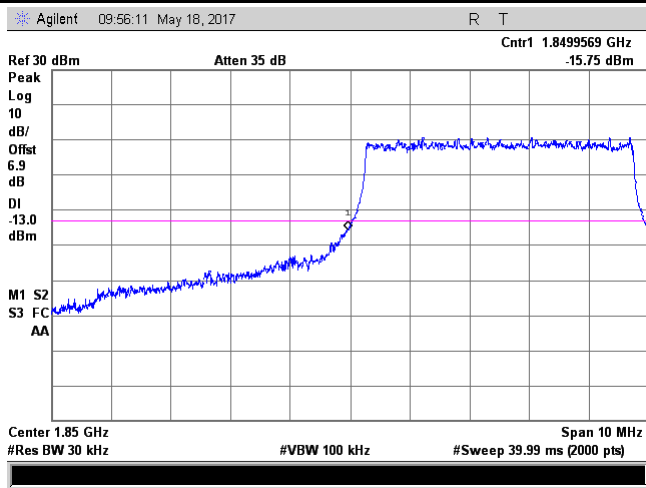


LTE band II - Low Channel QPSK-5



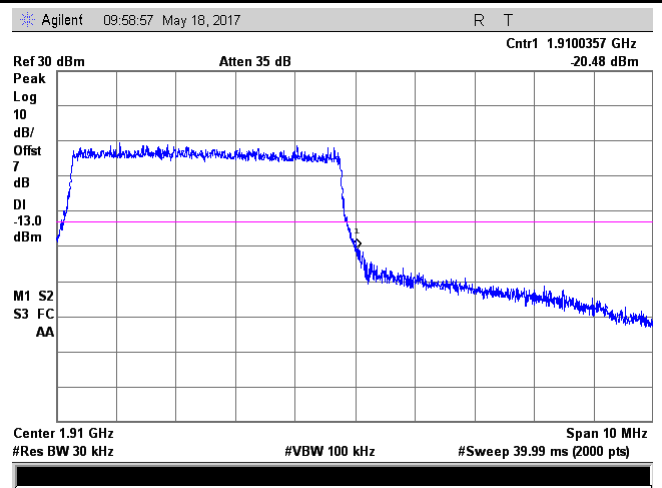
LTE band II - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
 $(52.13/30)=4.5+2.4=6.9$ dB



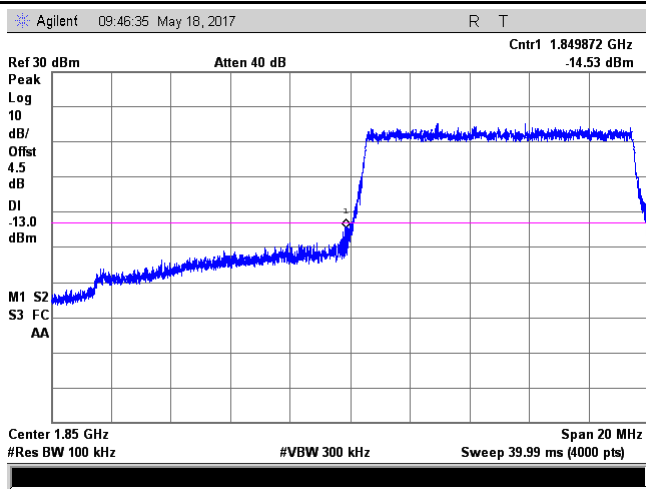
LTE band II - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
 $(53.79/30)=4.5+2.5=7.0$ dB



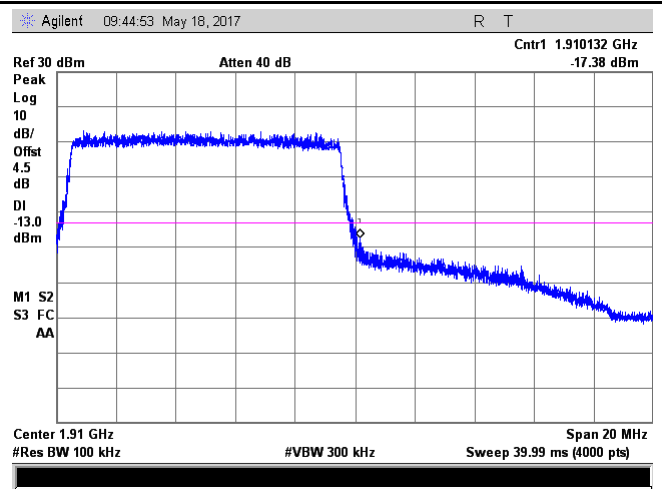
LTE band II - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
 $(52.13/30)=4.5+2.6=6.9$ dB

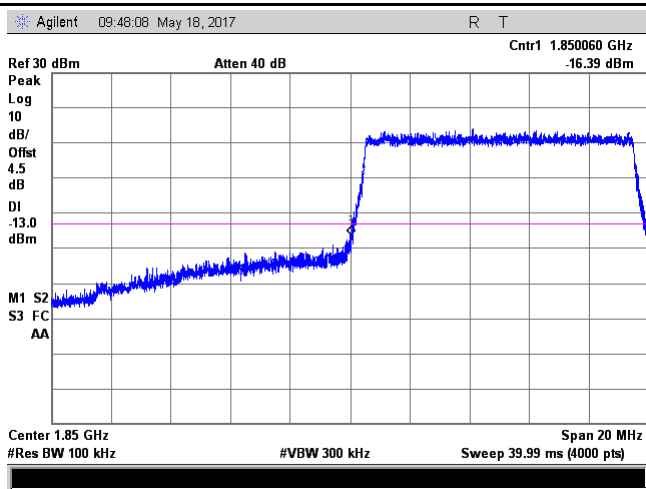


LTE band II - Low Channel QPSK-10

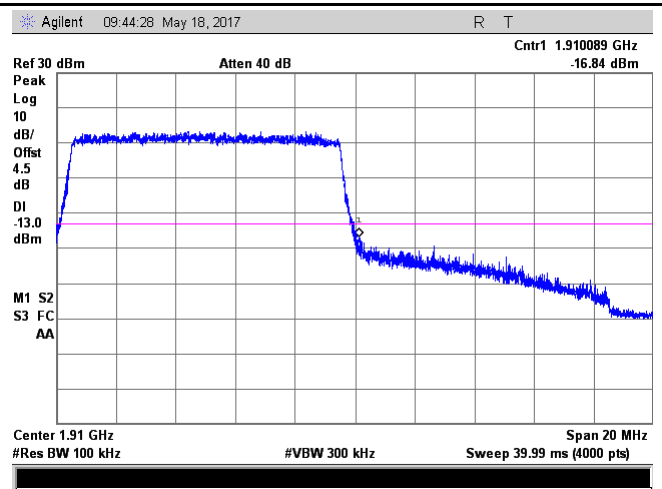
Note: Offset=Cable loss (4.5) + 10log
 $(53.05/30)=4.5+2.5=7$ dB



LTE band II - High Channel QPSK-10

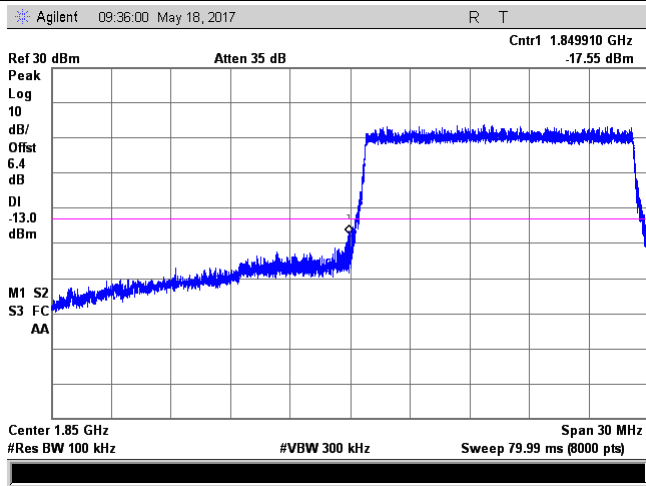


LTE band II - Low Channel 16QAM-10



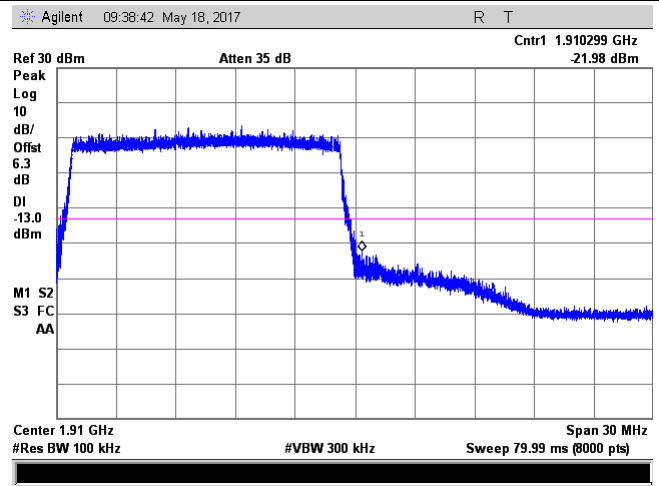
LTE band II - High Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log
 $(105.9/100)=4.5+0.0=4.5$ dB



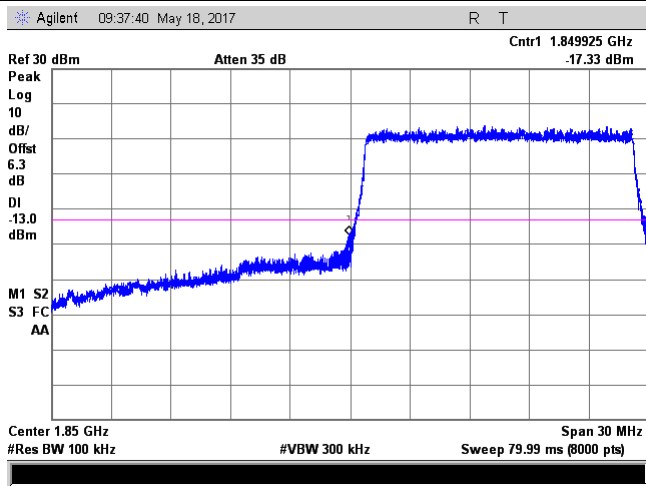
LTE band II - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
 $(103.7/100)=4.5+0.0=4.5$ dB



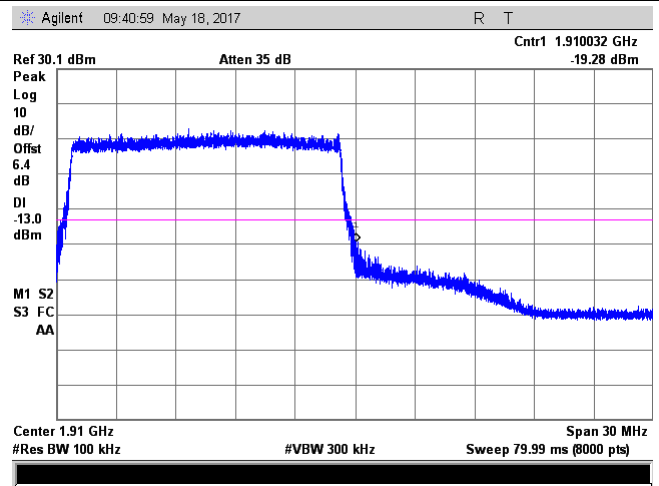
LTE band II - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
 $(152.9/100)=4.5+1.8=6.4$ dB



LTE band II - Low Channel 16QAM-15

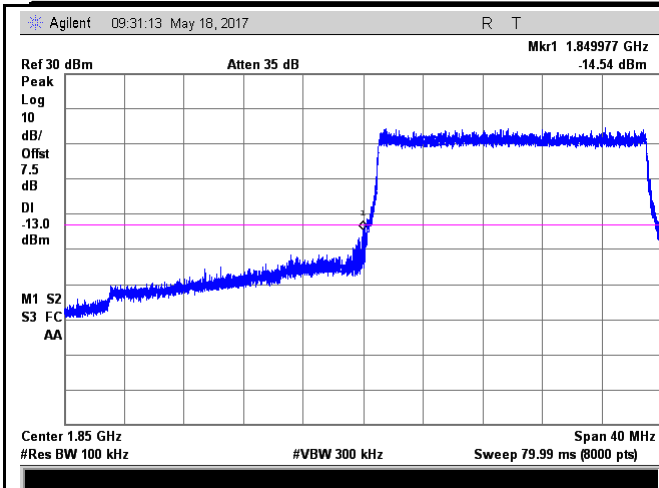
Note: Offset=Cable loss (4.5) + 10log
 $(153.3/100)=4.5+1.8=6.3$ dB



LTE band II - High Channel 16QAM-15

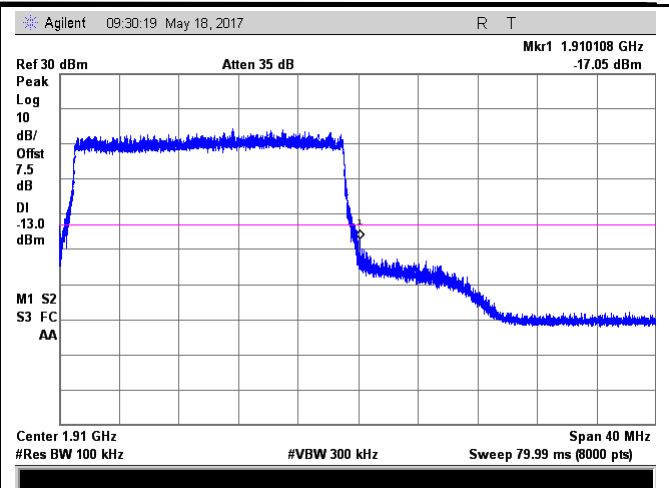
Note: Offset=Cable loss (4.5) + 10log
 $(153.2/100)=4.5+1.9=6.3$ dB

Note: Offset=Cable loss (4.5) + 10log
 $(152.8/100)=4.6+1.9=6.4$ dB



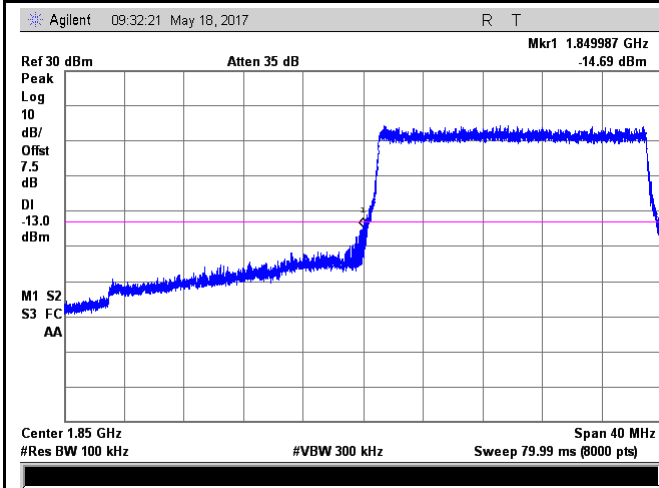
LTE band II - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(199/100)=4.5+3.0=7.5 dB



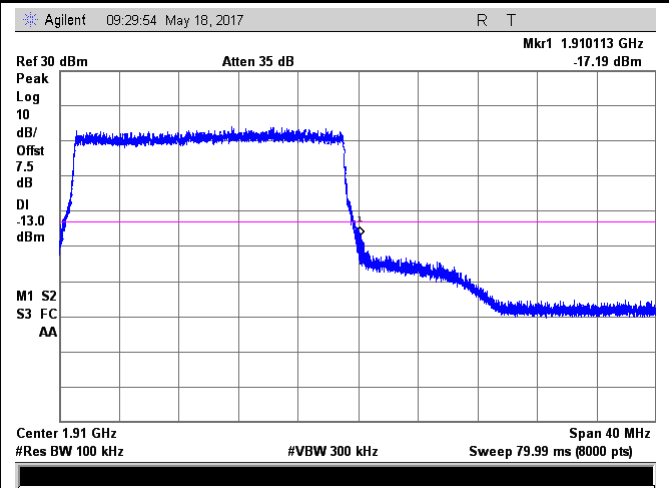
LTE band II - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(199/100)=4.5+3.0=7.5 dB



LTE band II - Low Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(199/100)=4.5+3.0=7.5 dB



LTE band II - High Channel 16QAM-20

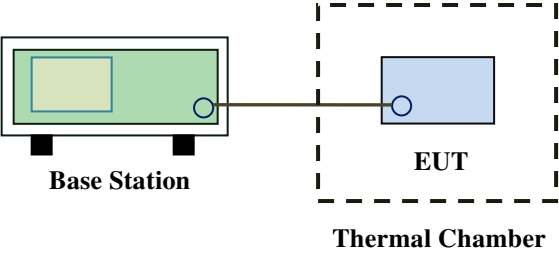
Note: Offset=Cable loss (4.5) + 10log
(198/100)=4.5+3.0=7.5 dB

6.8 Frequency Stability

Temperature	25°C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	May 16, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable																																
§2.1055, §24.235	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>□□to 450</td> <td>5.0</td> <td>5.0</td> <td>50.0</td> </tr> <tr> <td>450 to 512</td> <td>2.5</td> <td>5.0</td> <td>5□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 929.</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> <p>According to §27.54, The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.</p>	Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)	25 to 50	20.0	20.0	50.0	□□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	<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																														
		□□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																																

Test setup	 <p>The diagram illustrates the test setup. On the left, a green rectangular box labeled 'Base Station' is shown. A horizontal line connects it to a blue rectangular box labeled 'EUT' (Equipment Under Test) located inside a dashed-line rectangular box labeled 'Thermal Chamber'.</p>
Procedure	<p>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.</p> <p>Limit: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.</p>
Remark	<p>Frequency Stability versus Temperature: The Frequency tolerance of the carrier signal shall be maintained within 2.5ppm of the operating frequency over a temperature variation of -10°C to $+55^{\circ}\text{C}$ at normal supply voltage.</p>
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

Test Plot Yes (See below) N/A

LTE band II (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	-6	0.0032	2.5
0		-9	0.0048	2.5
10		-9	0.0048	2.5
20		-14	0.0074	2.5
30		-6	0.0032	2.5
40		-5	0.0027	2.5
50		-12	0.0064	2.5
55		-13	0.0069	2.5
25		4.2	-9	0.0048
	3.2	-11	0.0059	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	09/15/2016	09/14/2017	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
Temperature/Humidity Chamber	UHL-270	001	10/08/2016	10/07/2017	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
RF Power Sensor	Dare RPR3006C/P/W	AY554013	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/16/2016	09/15/2017	<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	03/23/2017	03/22/2018	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~2GHz)	JB1	A112017	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71259	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Power Amplifier	SMC150D	R1553-0313	03/08/2017	03/07/2018	<input checked="" type="checkbox"/>
Power Amplifier	S41-25D	R1553-0314	05/27/2016	05/26/2017	<input checked="" type="checkbox"/>

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Tunable Notch Filter	3NF-800/1000-S	AA4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Tunable Notch Filter	3NF-1000/2000-S	AM 4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>

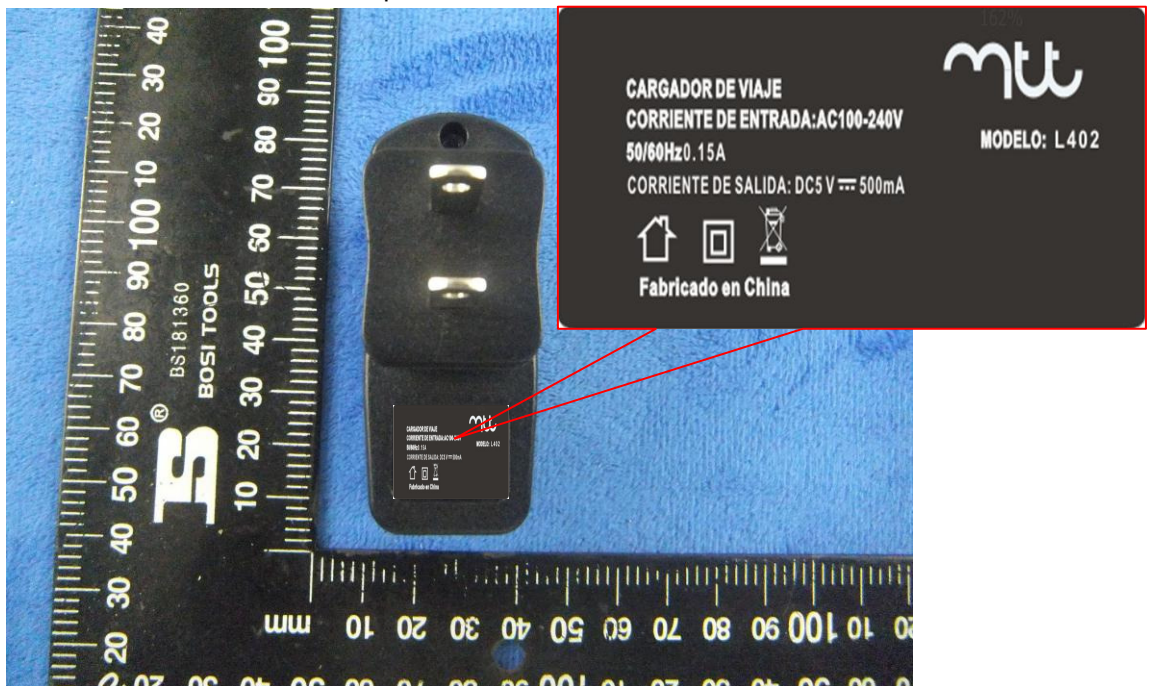
Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter - Lable View



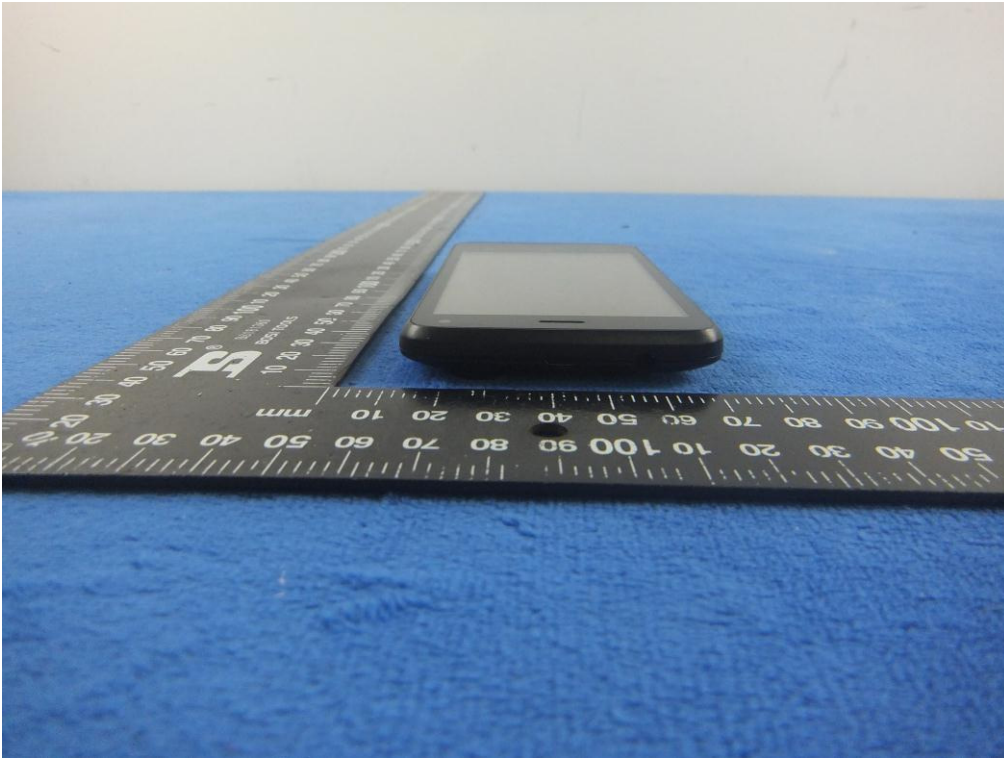
EUT - Front View



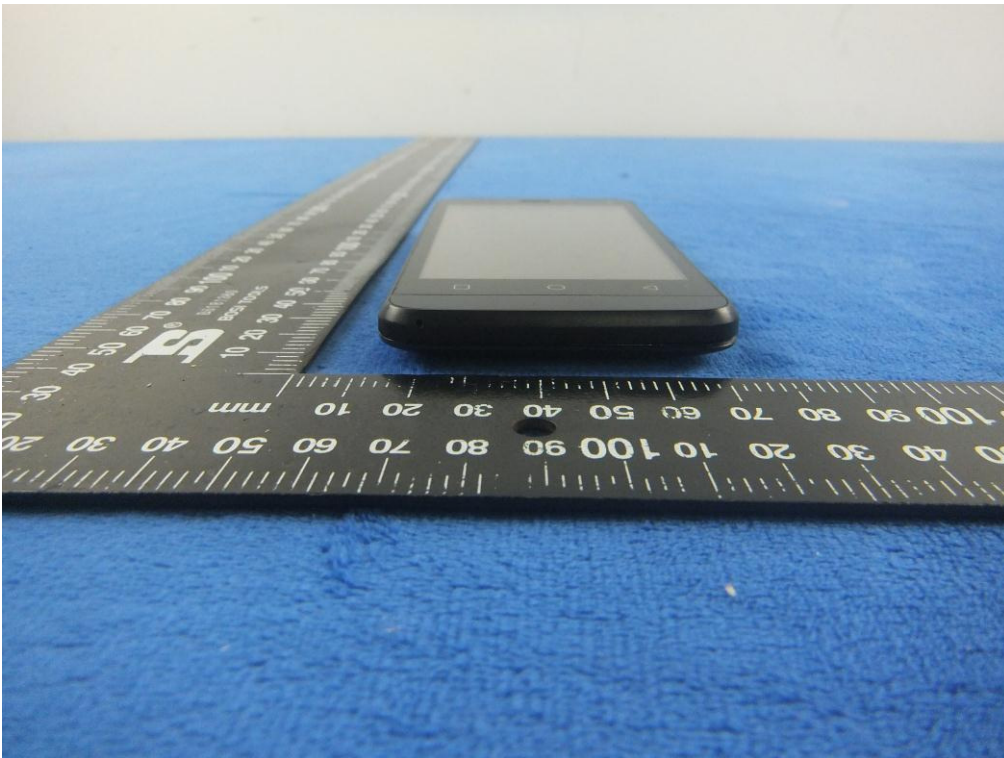
EUT - Rear View



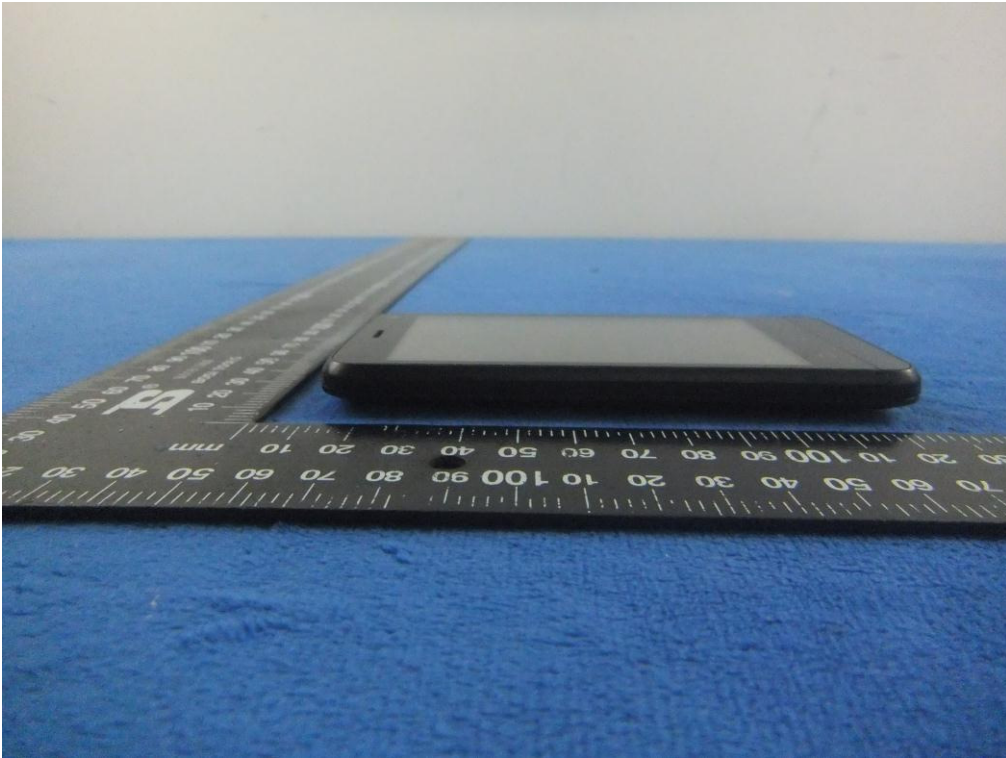
EUT - Top View



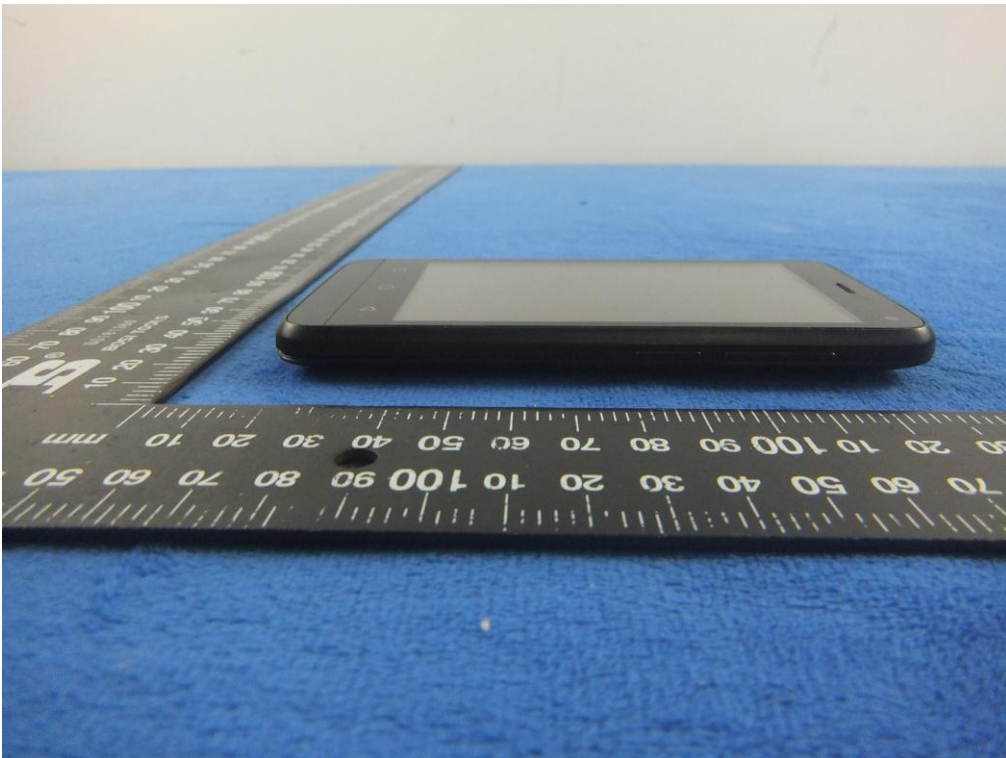
EUT - Bottom View



EUT - Left View



EUT - Right View



Annex B.ii. Photograph: EUT Internal Photo

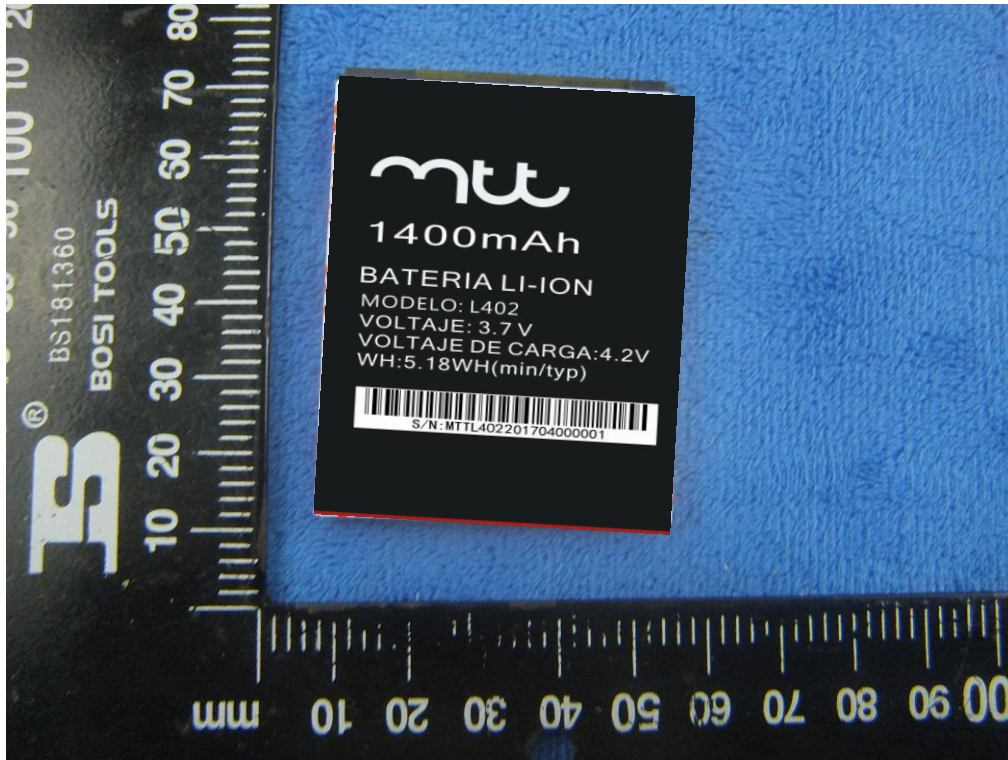
Cover Off - Top View 1



Cover Off - Top View 2



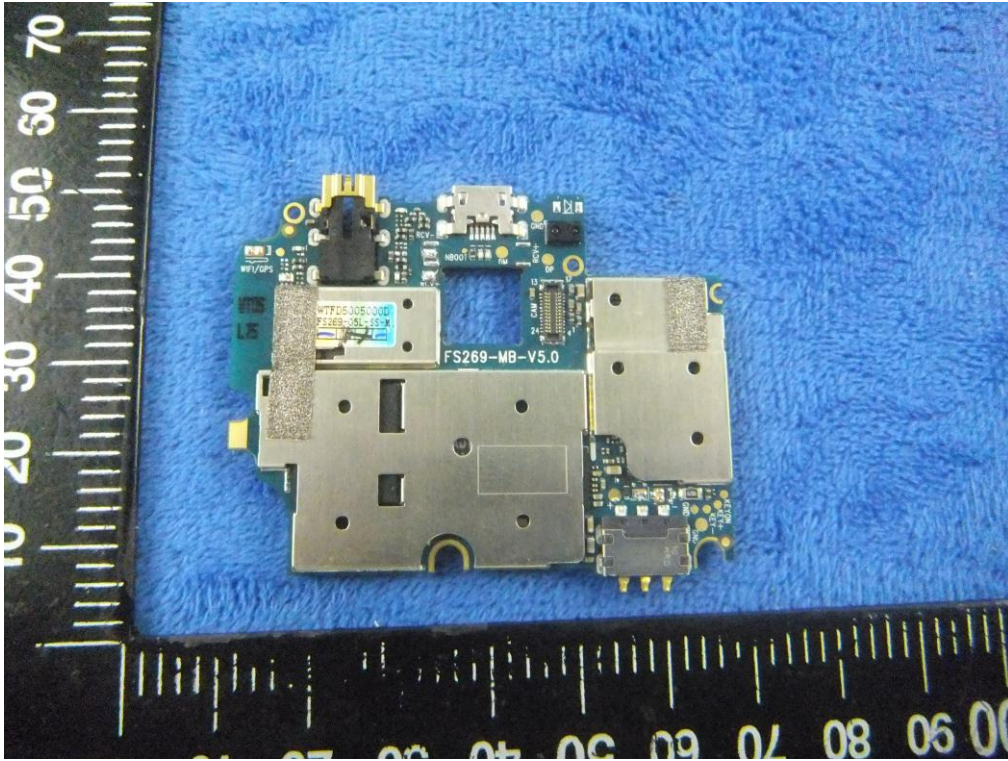
Battery - Front View



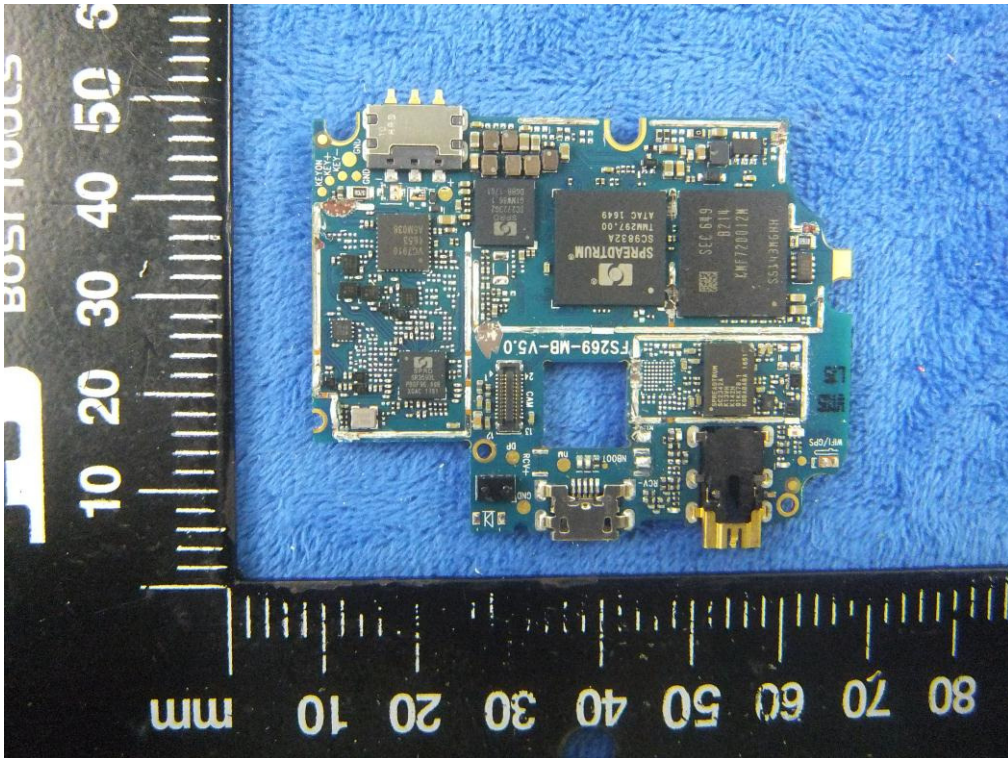
Battery - Rear View



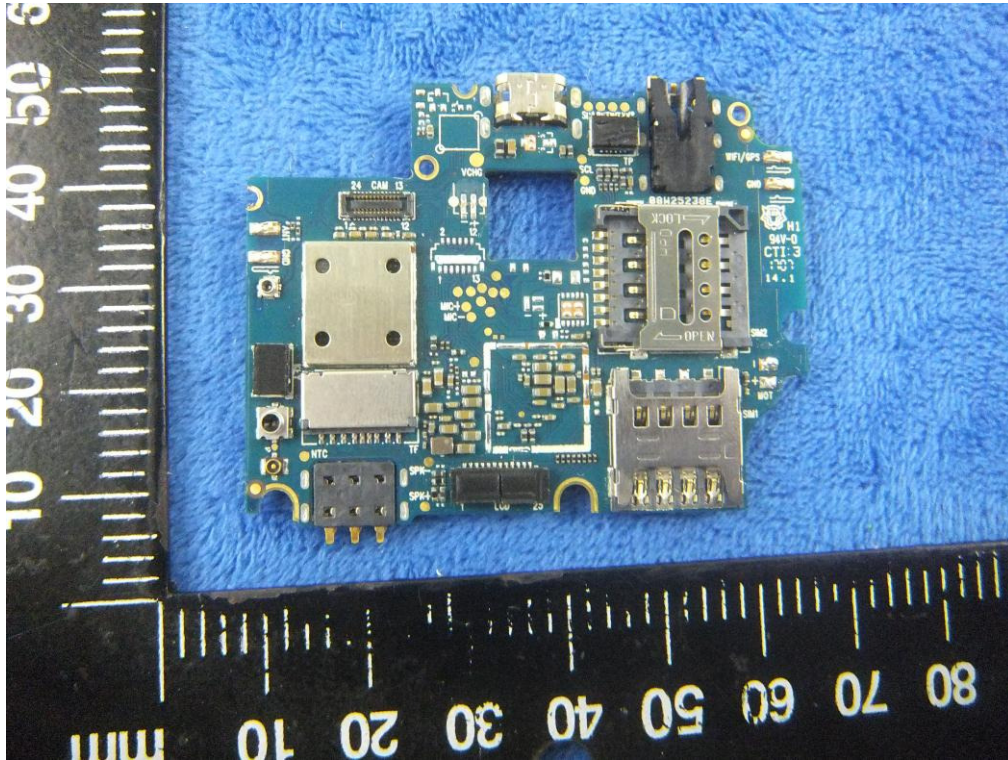
Mainboard with Shielding - Front View



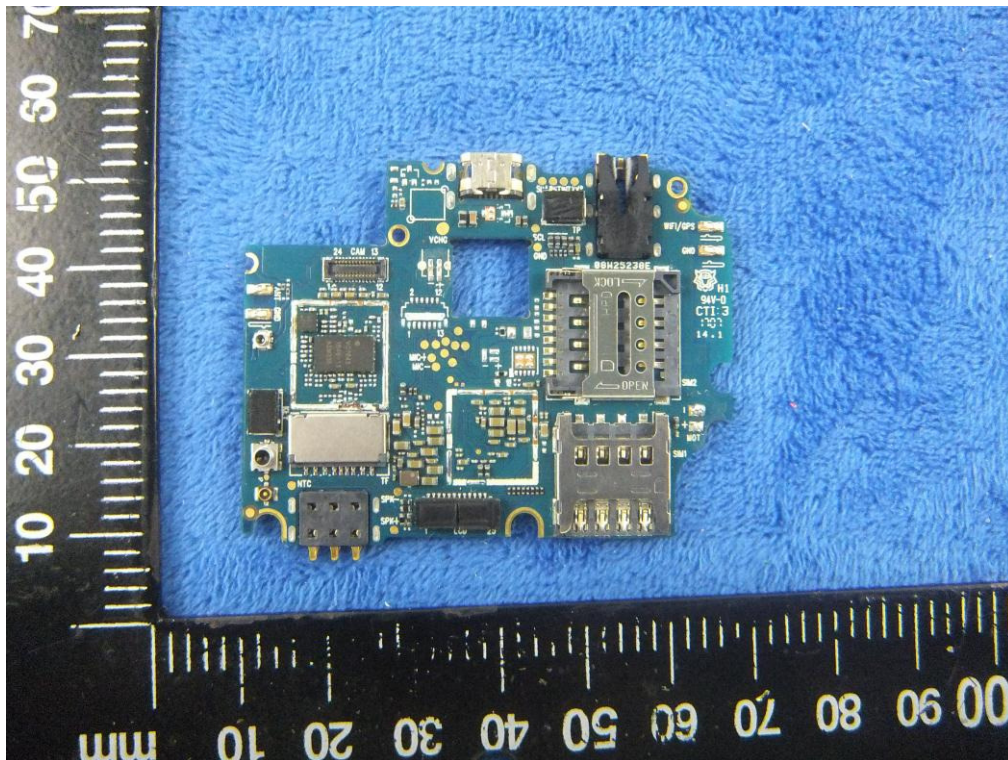
Mainboard without Shielding - Front View



Mainboard with Shielding – Rear View



Mainboard without Shielding – Rear View



LCD – Front View



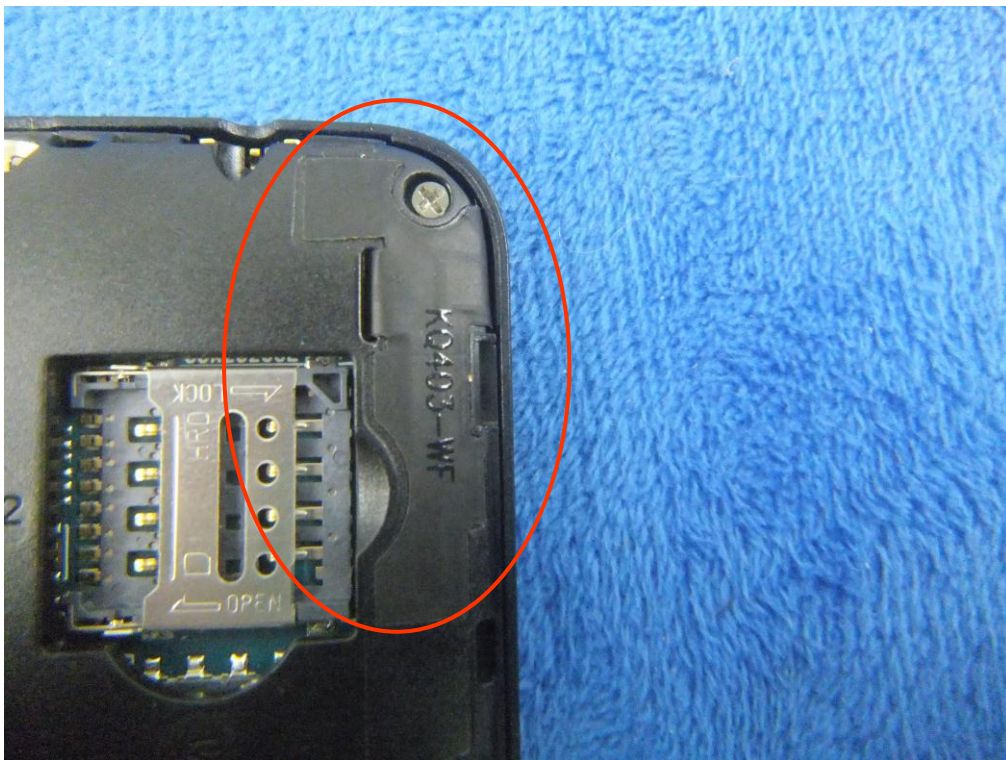
LCD – Rear View



GSM/PCS/UMTS-FDD Antenna View



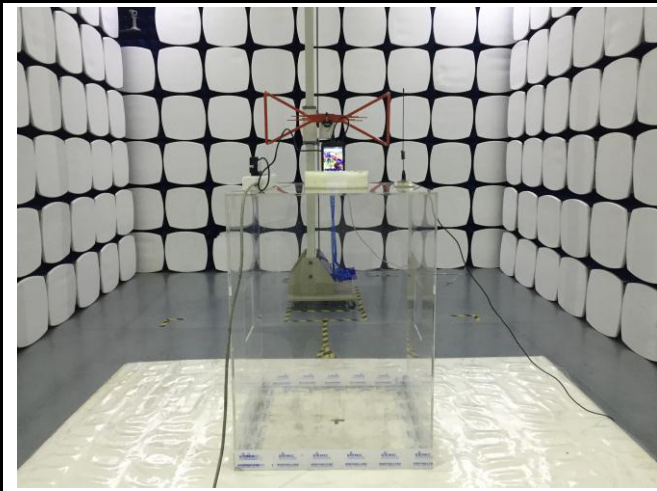
WIFI/BT/BLE - Antenna View



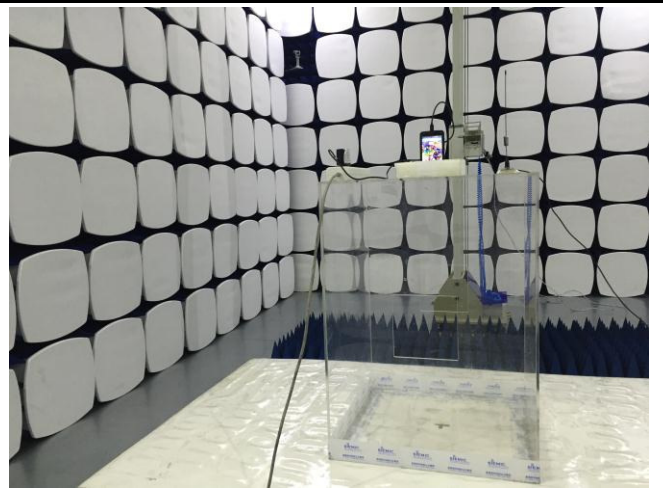
LTE - Antenna View



Annex B.iii. Photograph: Test Setup Photo



Radiated Spurious Emissions Test Setup Below 1GHz

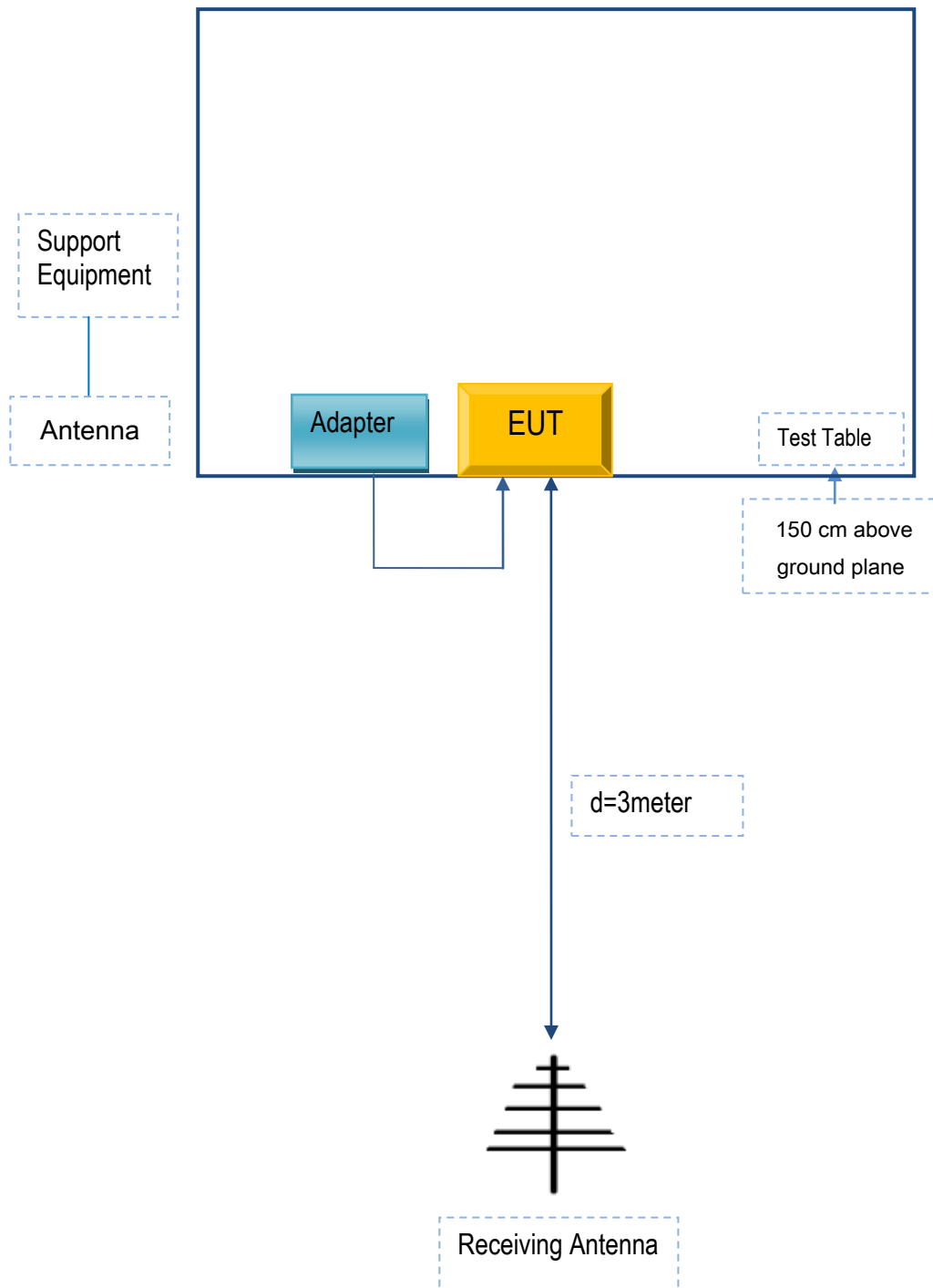


Radiated Spurious Emissions Test Setup Above
1GHz

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
MOVILTELCO TRADE, S.L.	Adapter	L402	S0170303

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	S0170303

Annex C.ii. EUT OPERATING CONKITIONS

N/A

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

N/A

Annex E. DECLARATION OF SIMILARITY

N/A