Test Site:
FCC Test Site No.: 96997
IC OATS No.: IC3475A-1

ECL-EMC Test Report No.: 10-151

Equipment under test: **TFBM7/7**
FCC ID: **XS5-ION-BTFBM77**
IC ID: **IC:2237E-IONBTFBM77**
Type of test: **47 CFR FCC Part 27 Subpart C:2009**
Miscellaneous Wireless Communication Services
IC RSS-131:2003
Zone Enhancers for the Land Mobile Service

Measurement Procedures: 47 CFR Parts 2:2009 (*Frequency Allocations and Radio Treaty Matters; General Rules and Regulations*),
Part 27:2009 (Miscellaneous Wireless Communication Services),
ANSI/TIA-603-C:2004, *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards*
IC-GEN:2007 General Requirements and Information for the Certification of Radio communication Equipment

Test result: **PASSED**

Date of issue:	28.06.2010			Signature:
Issue-No.:	01	Author:	**M. Lehmann** Test engineer	
Date of delivery:	22.06.2010	Checked:	**M. Grytz** Operational manager	
Test dates:	22.06. – 23.06.2010			
Pages:	37			

Manufacturer: ANDREW Wireless Systems GmbH
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Test Location: TEMPTON Service Plus GmbH

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Fax: +49 (0)911 59835 90

General:
The purpose of this report is to show compliance to the FCC regulations for devices operating under Part 27 of the Code of Federal Regulations title 47.
This report informs about the results of the EMC tests, it only refers to the equipment under test. No part of this report may be reproduced in any form, without written permission.

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1 Test Results Summary

Name of Test	FCC Para. No.	FCC Method	FCC Spec.	Result
RF Power Output	27.50(b)(c)	2.1046	1000 Watts ERP	Complies
Occupied Bandwidth	2.1049	2.1049	Input/Output	Complies
Spurious Emissions at Antenna Terminals	27.53(c)(g)	2.1051	-13dBm	Complies
Field Strength of Spurious Emissions	27.53(m)	2.1053 TIA/EA-603	-13dBm E.I.R.P	Complies
Frequency Stability	27.54	2.1055	Must stay in band	NA

Name of Test	IC Para. No.	IC Method	Result
RF Power Output	RSS-131 6.2	RSS-GEN 4.8	Complies
Occupied Bandwidth	RSS-Gen 6.3	RSS-GEN 4.6.1	Complies
Spurious Emissions at Antenna Terminals	RSS-131 6.4	RSS-GEN 4.9	Complies
Field Strength of Spurious Emissions	RSS-131 6.4	RSS-GEN 4.9 SRSP-513	Complies
Frequency Stability	RSS-131 6.5	RSS-GEN 4.7	NA

Frequency stability is not applicable because the device uses a common oscillator to up convert and down convert the RF signal. The EUT does not contain modulation circuitry, or frequency generation, therefore the test was not performed.

2 Equipment under test (E.U.T.)

2.1 Description

Kind of equipment	TFBM 7/7 Optical DAS repeater	
Andrew Ident. Number	TFBM7/7-14	
Serial no.(SN)	11	
Revision	00	
Software version and ID	n.a.	
Type of modulation and Designator	LTE (G7D)	☒
	CDMA (F9W)	☒
	WCDMA (F9W)	☒
Frequency Translation	F1-F1	☒
	F1-F2	☐
	N/A	☐
Band Selection	Software	☐
	Duplexer	☐
	Fullband	☒

2.1.1 Downlink

Pass band	728 MHz – 757 MHz
Max. composite output power based on one carrier(rated) per path	26.11 dBm = 408 mW
Calculated maximum rated composite output power / Remote Unit	29,11 dBm = 816 mW
Gain max.	-1.5dB

2.1.2 Uplink

Pass band	n.a.
Max. composite output power based on one carrier(rated)	n.a.
Gain max.	n.a.

Note: The EUT does not transmit over the air in the uplink direction.

2.1.3 Description of EUT

Andrew TFBM7/7 is a single band MIMO medium power booster designed to distribute 700MHz commercial band signals using the built-in auxiliary channel of a remote unit. The MIMO functionlity is accomplished by two identical 700MHz path (Ch1 and Ch2) with the intended use of simultaneous transmission. The automatic level control (ALC) compensates for level variation of the auxiliary channel

2.1.4 System diagrams

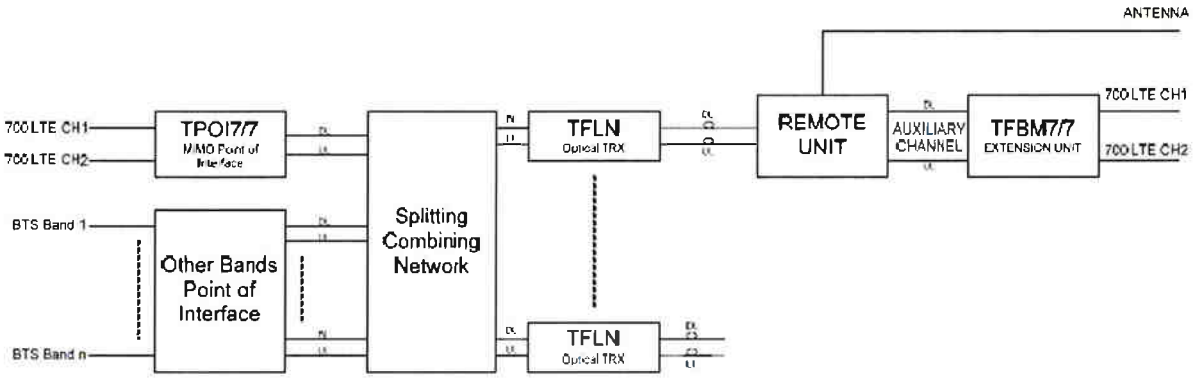


figure 2.1.4-#1 **System diagrams**: E.U.T. is TFBM7/7

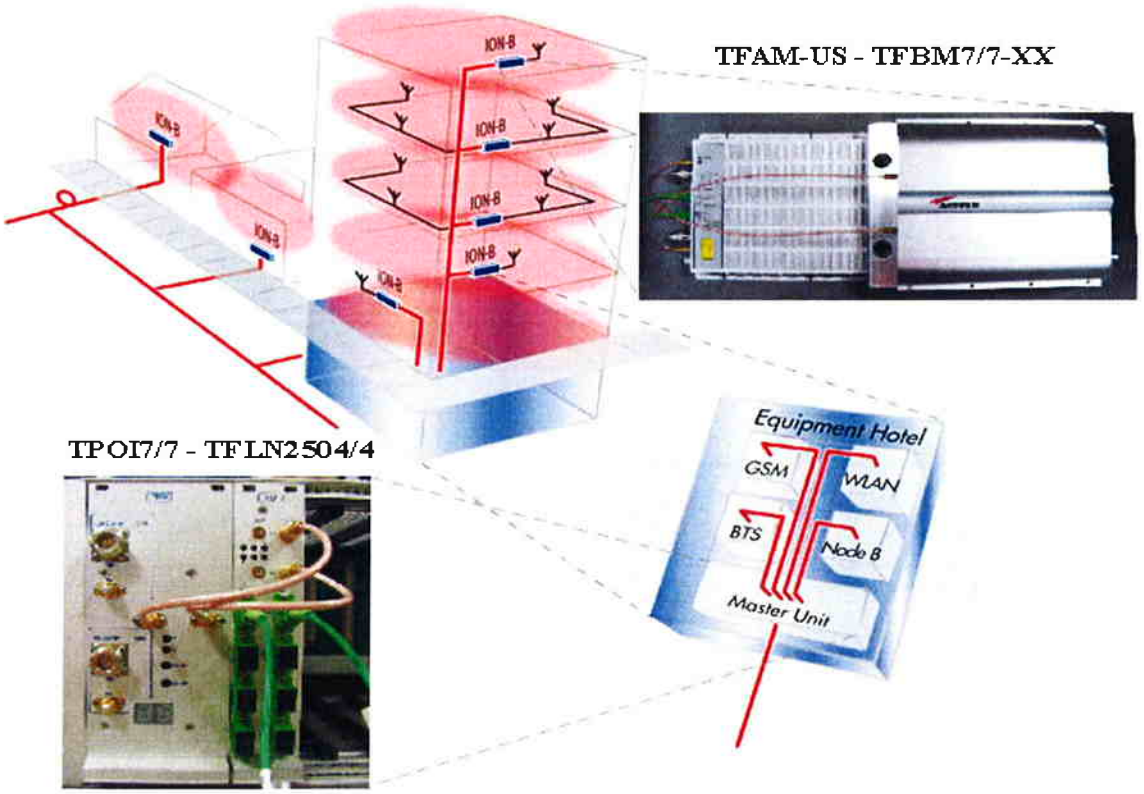


figure 2.1.4-#2 System diagrams: Application example

2.1.5 Block diagram of measurement reference points

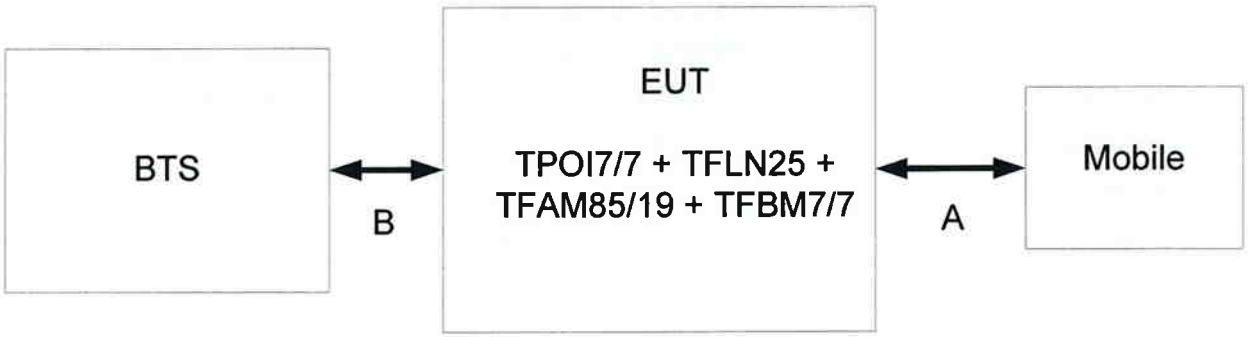


figure 2.1.5-#1 Block diagram of measurement reference points

Reference point A, Mobile: Optical DAS DL output, UL input
Reference point B, BTS: Optical DAS UL output, DL input

3 Test site

3.1 Test environment

All tests were performed under the following environmental conditions:

Condition	Minimum value	Maximum value
Barometric pressure	86 kPa	106 kPa
Temperature	15°C	30°C
Relative Humidity	20 %	75 %
Power supply range	±5% of rated voltages	

3.2 Test equipment

TEKMAR Inv. No.	Test equipment	Type	Manufacturer	Serial No.	Calibration
193	Signal Generator	E4438C	Agilent	MY45093065	10/10
166	Signal Generator	E4438C	Agilent	MY42080532	10/10
178	Spectrum Analyzer	E4445A	Agilent	MY45300725	10/10
197	Power Meter	N1911A	Agilent	MY45101154	10/10
197	Power Sensor	N1921A	Agilent	SG45240332	10/10
-	Hybrid 3dB	H-3-CPUS-N	Andrew	0107042328343	CIU
-	Circulator	2722 162 03811	Philips	---	CIU
-	Circulator	2722 162 03811	Philips	---	CIU
-	RF-Cable	ST18/SMAm/SMAm/36	Huber & Suhner	---	CIU
-	RF-Cable	ST18/SMAm/SMAm/36	Huber & Suhner	---	CIU
-	RF-Cable	ST18/SMAm/Nm/36	Huber & Suhner	---	CIU
-	RF-Cable	ST18/SMAm/SMAm/72	Huber & Suhner	---	CIU
-	Attenuator	33-20-34-LIM	Aeroflex	BW3372	CIU
-	Attenuator	33-20-34-LIM	Aeroflex	BW3370	CIU
-	50ohm Termination	245573A	Andrew	---	CIU

CIU = Calibrate in use

3.3 Input and output losses

All recorded power levels should be referenced to the input and output connectors of the repeater, unless explicitly stated otherwise.
The test equipment used in this test has to be calibrated, so that the functionality is also checked.
All cables, attenuators, splitter, isolator, circulator and combiner etc. must be measured before testing and used for compensation during testing.

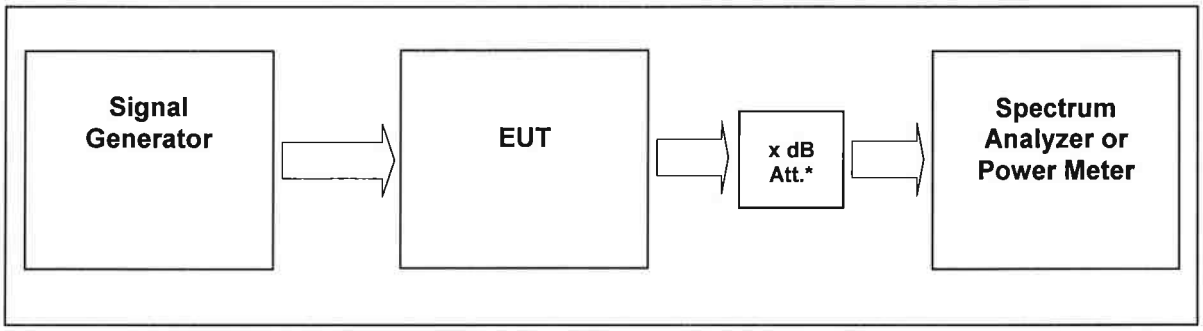
3.4 Measurement uncertainty

The extended measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor k=2. The true value is located in the corresponding interval with a probability of 95 %.

4 Test site (TEMPTON)

FCC Test site: **96997**
IC OATS: **IC3475A-1**
See relevant dates under section 8 of this test report.

5 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN



External Attenuator DL x dB = 20 dB

figure 3.4-#1 Test setup: RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN

Measurement uncertainty	± 0,38 dB
Test equipment used	166,178,197

5.1 Limit

5.1.1 FCC CFR47

Minimum standard:
Para. No.27.50(b)(1)

(b) The following power and antenna height limits apply to transmitters operating in the 746–763 MHz, 775–793 MHz and 805–806 MHz bands:

(1) Fixed and base stations transmitting a signal in the 757–758 and 775–776 MHz bands must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

Para. No.27.50(c)(1 and 3)

(c) The following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band:

(1) Fixed and base stations transmitting a signal with an emission bandwidth of 1 MHz or less must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;

(3) Fixed and base stations transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section;

5.2 Test method

5.2.1 FCC CFR47

§ 2.1046 Measurements required: RF power output.
(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations

5.3 Test results

Detector RMS.

Test signal LTE:
Signal waveform according to Test Model 1.1, E-TM1.1, clause 6.1.1.1-1, table 6.1.1.1-1 of standard specification 3GPP TS 36.141 V9.3.0 (2010-03).

Test signal CDMA2000:
Signal waveform according to table 6.2-1 of standard specification 3GPP2 C.p0051-0 v1.0 16.February 2006 pilot, sync, paging, 37 traffics, which is equal to the table 6.5.2.1 of 3GPP2 C.S0010-C v2.0 24.February 2006.

Test signal WCDMA:
Signal waveform according to Test Model 1 clause 6.1.1.1 of standard specification 3GPP TS25.141 v8.8.0 (2009-09). Signal modulated with a combination of PCCPCH, SCCPCH and Dedicated Physical Channels specified as test model 1 64 DPCH.

5.3.1 Downlink

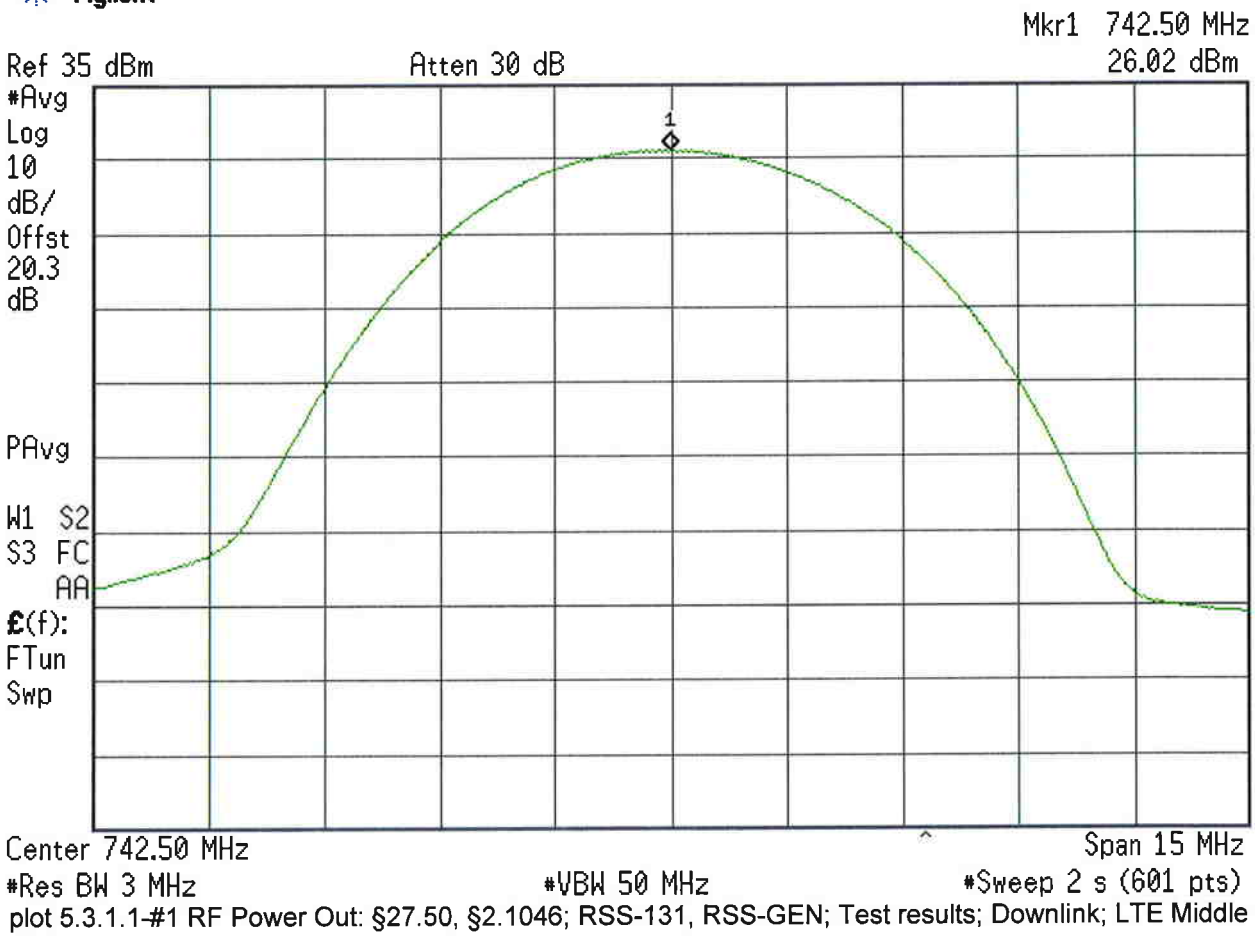
Modu-lation	Measured at		RBW VBW Span	RF Power (dBm)	RF Power (W)	Plot -
LTE	Middle	742,50 MHz	3MHz 50MHz 15MHz	26.02	0.400	5.3.1.1 #1
CDMA	Middle	742,50 MHz	3MHz 50MHz 15MHz	26.03	0.401	5.3.1.2 #1
WCDMA	Middle	742,50 MHz	8MHz 8MHz 50MHz	26.11	0.408	5.3.1.3 #1
Maximum output power = 26.11 dBm -> 0.408 W						
Limit Maximum output power = 1000 W / MHz -> 60 dBm / MHz; 61 dBm / 1,25 MHz; 61,5 dBm / 1,4 MHz ;67 dBm/ 5MHz						

table 5.3.1-#1 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN Test results Downlink

Modulation	Pin / dBm (Ref. point B)
LTE	27.5
CDMA	27.5
WCDMA	27.5

table 5.3.1-#2 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN Test results Downlink Input power

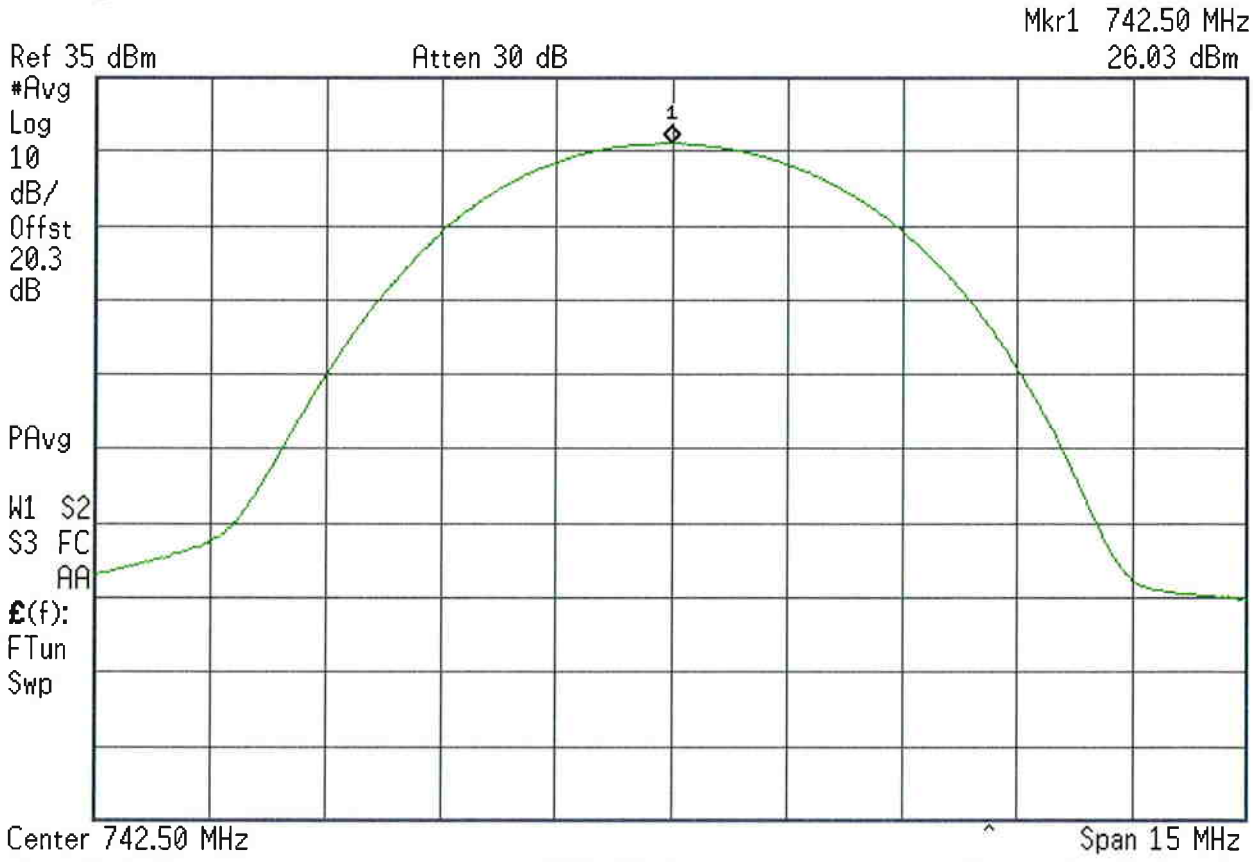
5.3.1.1 LTE



plot 5.3.1.1-#1 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN; Test results; Downlink; LTE Middle

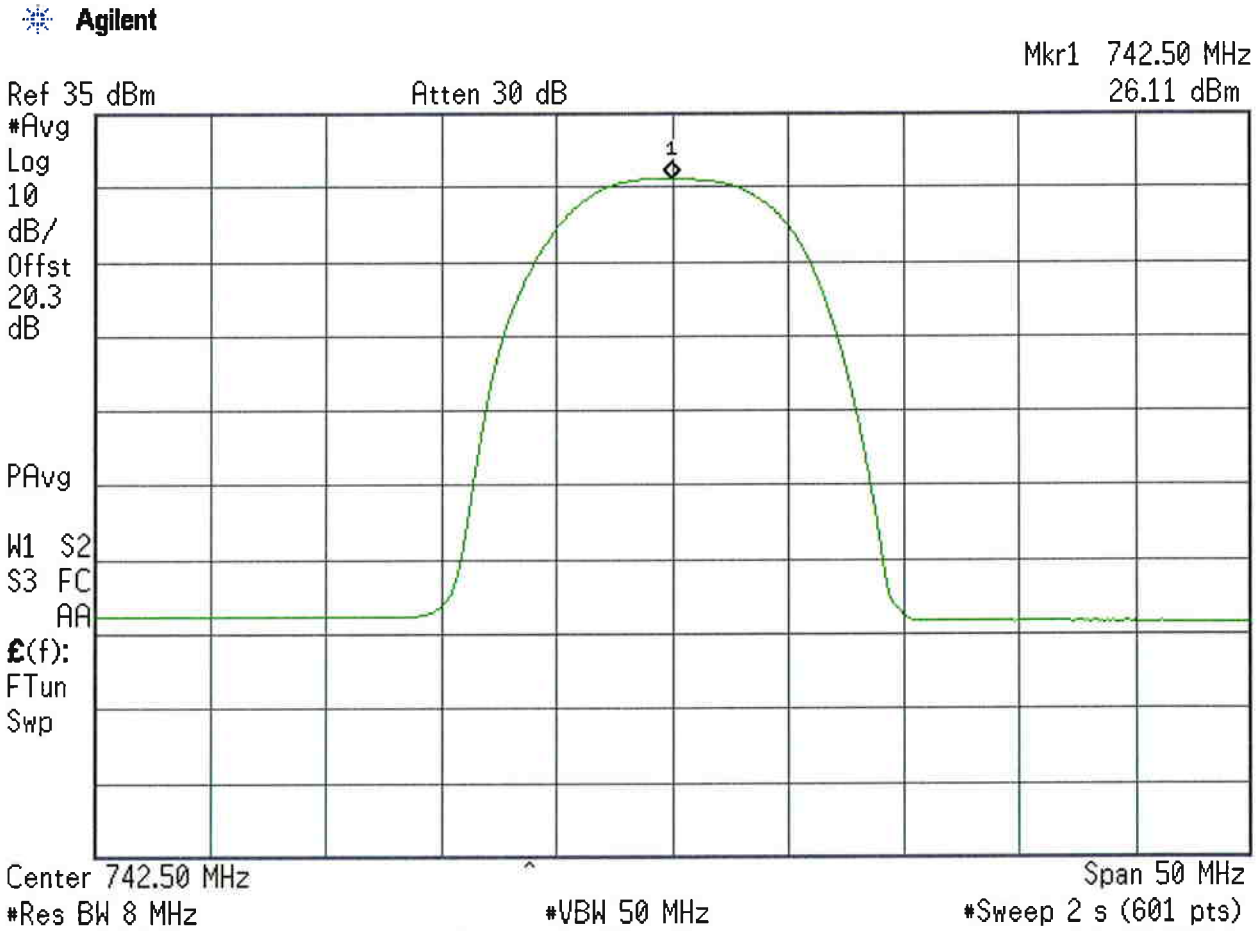
5.3.1.2 CDMA

Agilent



plot 5.3.1.2-#1 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN; Test results; Downlink; CDMA Middle

5.3.1.3 W-CDMA

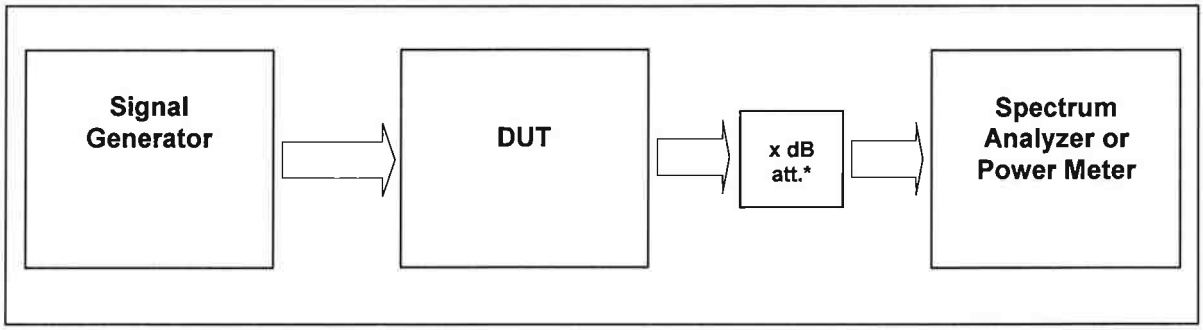


plot 5.3.1.3-#1 RF Power Out: §27.50, §2.1046; RSS-131, RSS-GEN; Test results; Downlink; W-CDMA Middle

5.4 Summary test result

Test result	complies, according the plots above
Tested by:	L. Donati
Date:	21.06.2010

6 Occupied Bandwidth: §2.1049; RSS-GEN



External Attenuator DL x dB = 20 dB

figure 5.4-#1 Test setup: Occupied Bandwidth: §2.1049; RSS-GEN

Measurement uncertainty	± 0,38 dB
Test equipment used	166,178,197

6.1 Limit

The spectral shape of the output should look similar to input for all modulations.

6.2 Test method

6.2.1 FCC CFR47

Para. No.2.1049

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

6.3 Test results

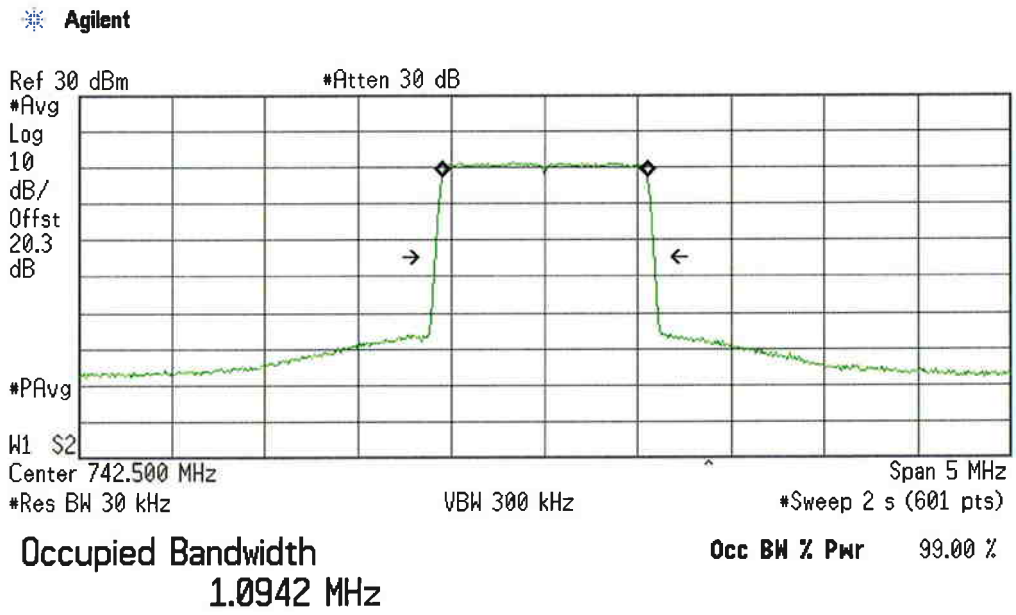
6.3.1 Downlink

Detector RMS.

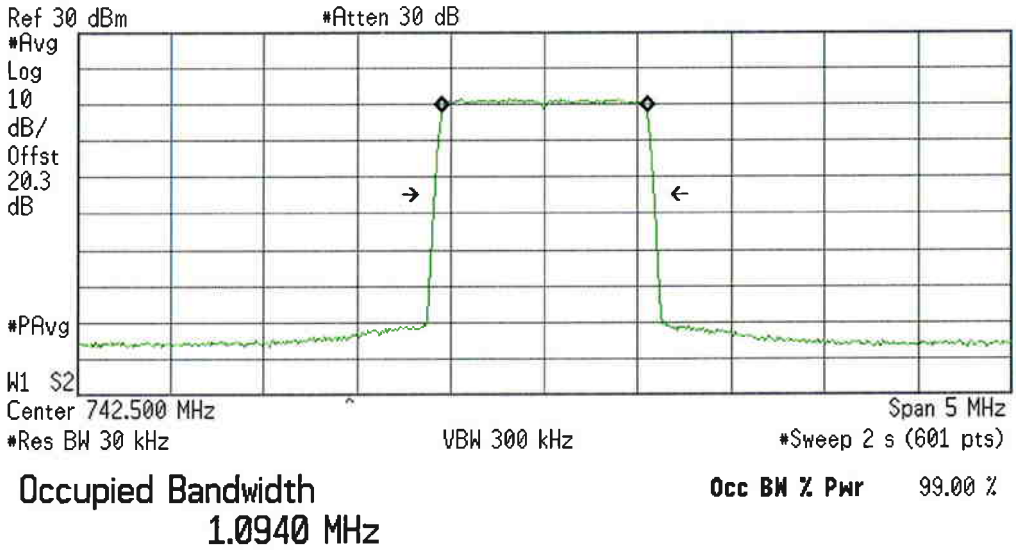
Modulation	Measured at		RBW VBW Span	Occupied Bandwidth / MHz	Plot #
LTE	Middle	742,50 MHz	30kHz 300kHz 5MHz	1.09	6.3.1.1 #1, #2
CDMA	Middle	742,50 MHz	30kHz 300kHz 5MHz	1.26	6.3.1.2 #1, #2
WCDMA	Middle	742,50 MHz	100kHz 1MHz 10MHz	4.14	6.3.1.3 #1, #2

table 6.3-#1 Occupied Bandwidth: §2.1049; RSS-GEN Test results Downlink

6.3.1.1 LTE

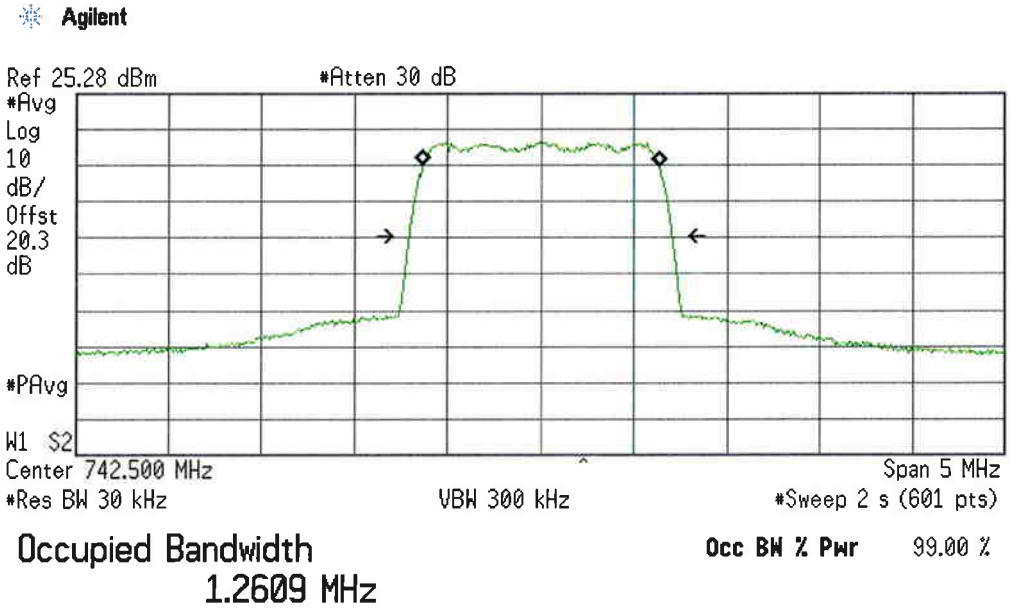


plot 6.3.1.1-#1 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; LTE Output

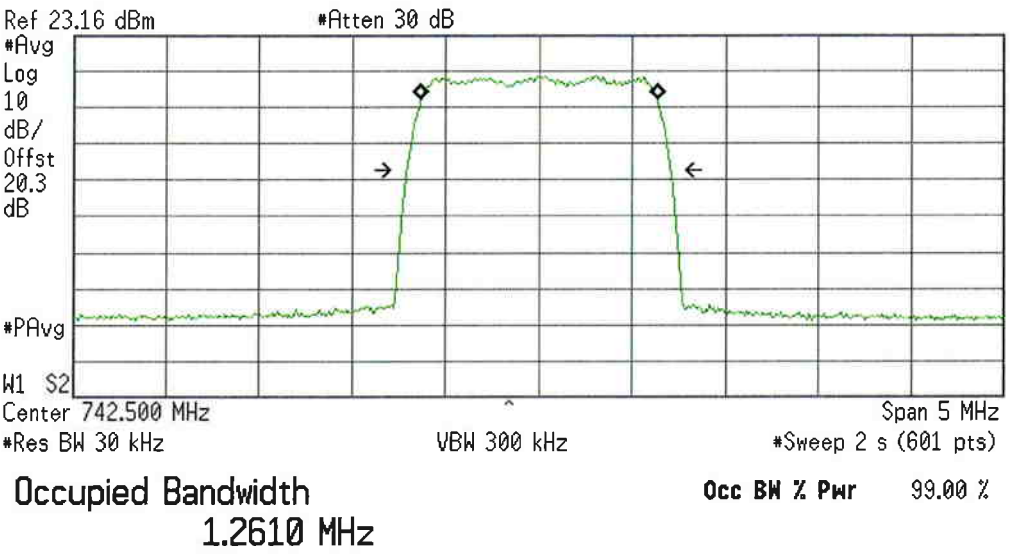


plot 6.3.1.1-#2 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; LTE Input

6.3.1.2 CDMA

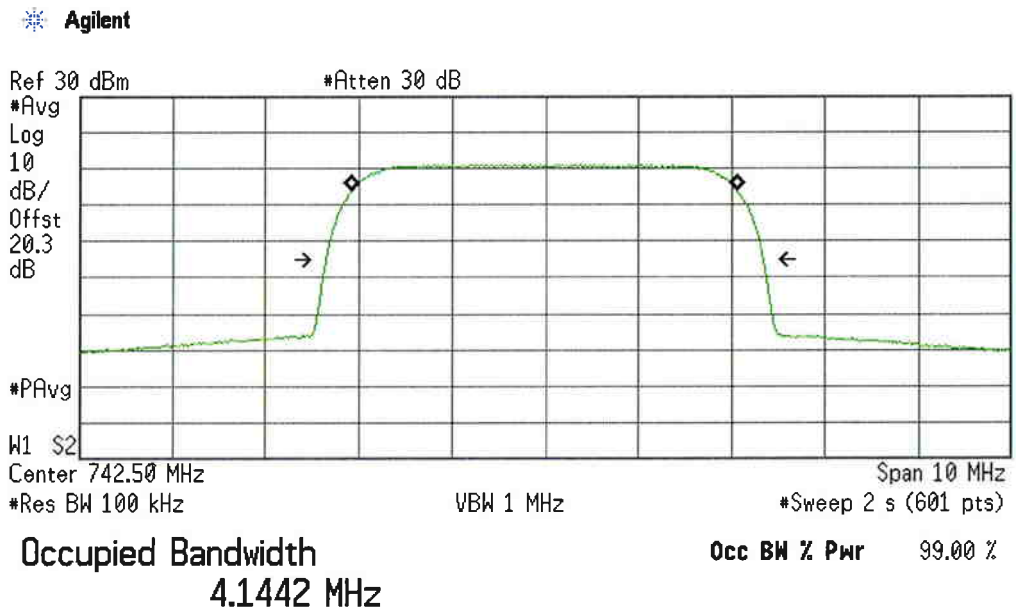


plot 6.3.1.2-#1 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; CDMA Output

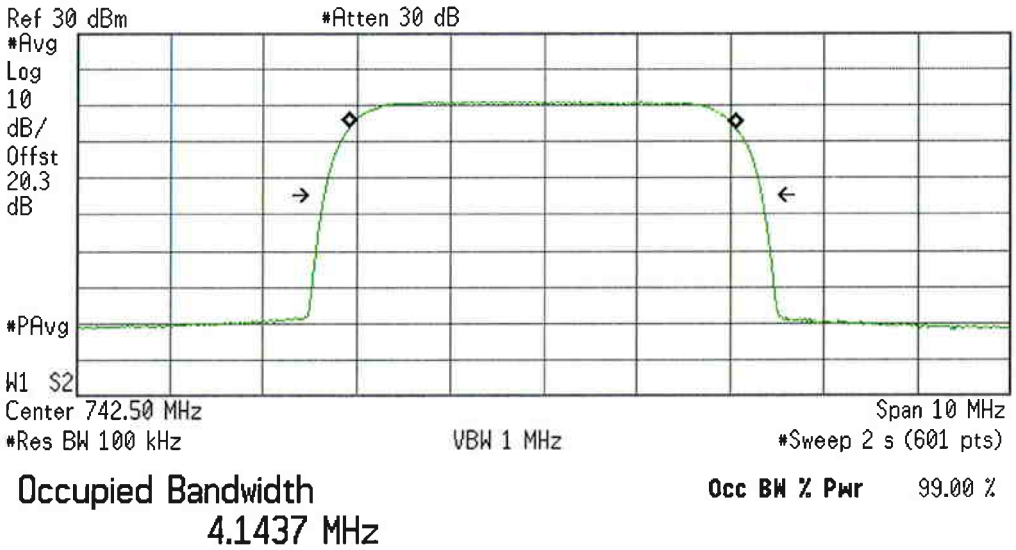


plot 6.3.1.2-#2 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; CDMA Input

6.3.1.3 W-CDMA



plot 6.3.1.3-#1 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; W-CDMA Output

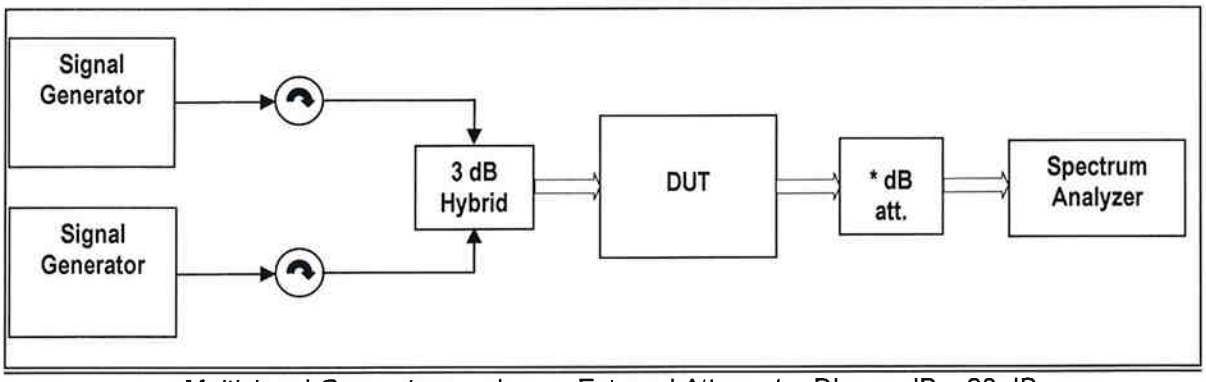


plot 6.3.1.3-#2 Occupied Bandwidth: §2.1049; RSS-GEN; Test results; Downlink; W-CDMA Input

6.4 Summary test result

Test result	complies, according the plots above
Tested by:	L. Donati
Date:	21.06.2010

7 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN



Multisignal-Generator used, External Attenuator DL x dB = 20 dB

figure 6.4-#1 Test setup: Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN

Measurement uncertainty	± 0,54 dB ± 1,2 dB ± 1,5 dB	9 kHz to 3 GHz 3 GHz to 7 GHz 7 GHz to 26 GHz
Test equipment used	193,166,178,197	

7.1 Limit

7.1.1 FCC CFR47

Minimum standard:
Para. No.27.53 (c) and (g)

(c) For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

(g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed

7.2 Test method

7.2.1 FCC CFR47

Para. No 2.1051 Measurements required: Spurious emissions at antenna terminals.
The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.
[39 FR 5919, Feb. 15, 1974. Redesignated andamended at 63 FR 36599, July 7, 1998]

7.3 Test results

7.3.1 Downlink

<1MHz from Band Edge

Detector: RMS.

Modulation	Measured at Band Edge	Carriers	RBW VBW Span	Plot -
LTE	Lower Edge Upper Edge	728.7 MHz 730.1 MHz 754.9 MHz 756.3 MHz	30kHz 300kHz 6MHz	7.3.1.1 #1, #2
CDMA	Lower Edge Upper Edge	728.75 MHz 731.25 MHz 753.75 MHz 756.25 MHz	30kHz 300kHz 6MHz	7.3.1.2 #1, #2
WCDMA	Lower Edge Upper Edge	730.5 MHz 735.5 MHz 749.5 MHz 754.5 MHz	100kHz 1MHz 15MHz	7.3.1.4 #1, #2

table 7.3-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN Test results Downlink <1MHz from Band Edge

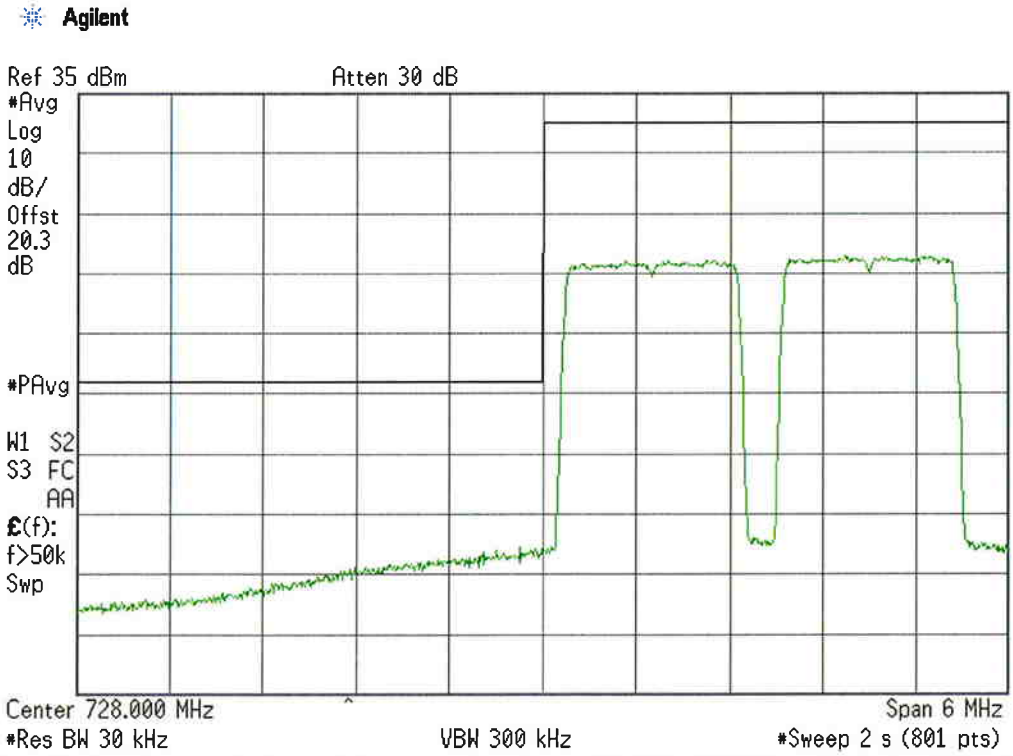
>1MHz from Band Edge

Detector: RMS.

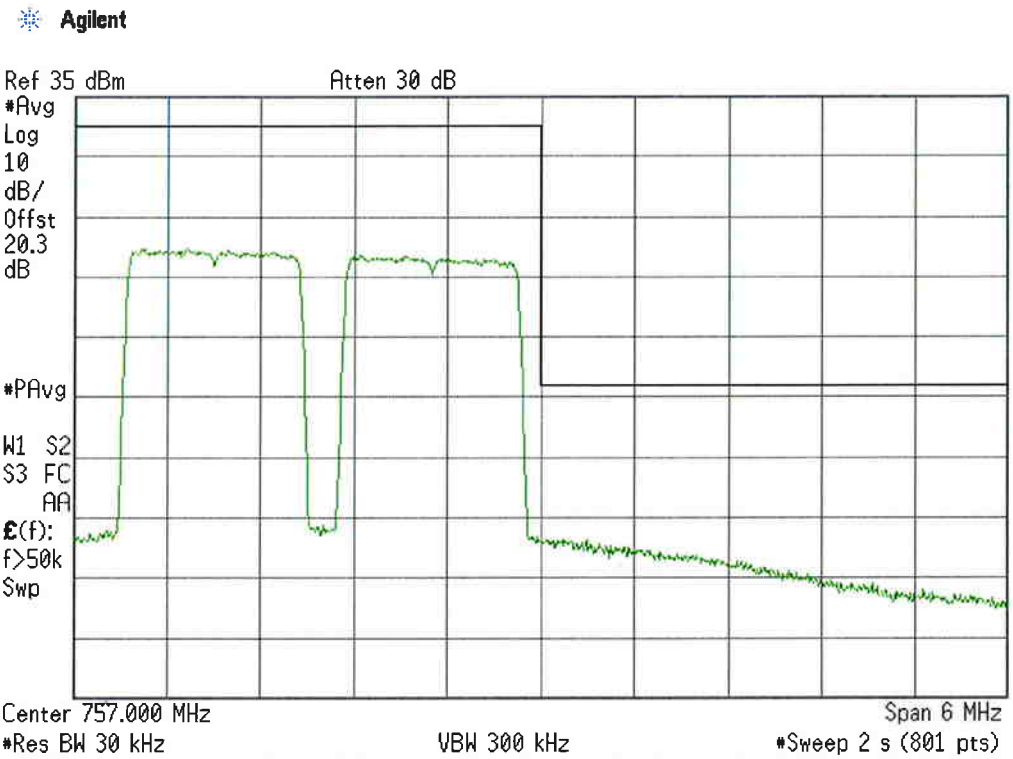
Modulation	Carriers	RBW VBW Span	Plot -
LTE	742.5 MHz	1MHz 3MHz 30MHz – 8GHz	7.3.1.6 #1, #2
CDMA	742.5 MHz	1MHz 3MHz 30MHz – 8GHz	7.3.1.6 #1, #2
WCDMA	742.5 MHz	1MHz 3MHz 30MHz – 8GHz	7.3.1.6 #1, #2

table 7.3-#2 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN Test results Downlink >1MHz from Band Edge

7.3.1.1 LTE < 1MHz to band edge

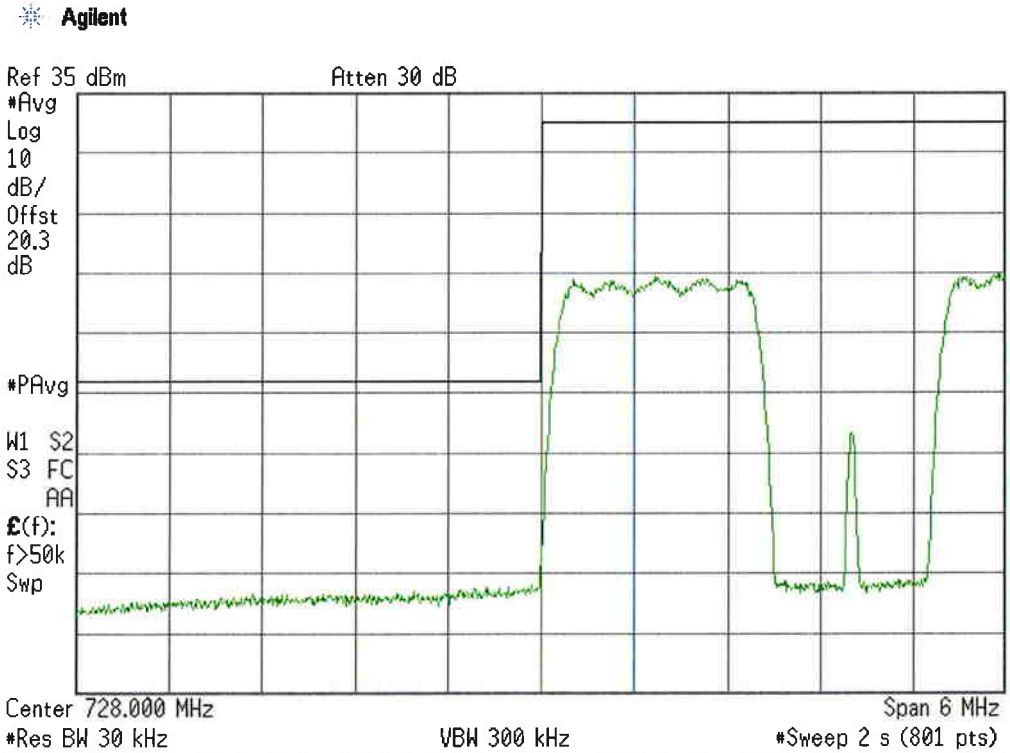


plot 7.3.1.1-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; LTE < 1MHz to band edge Lower Band Edge

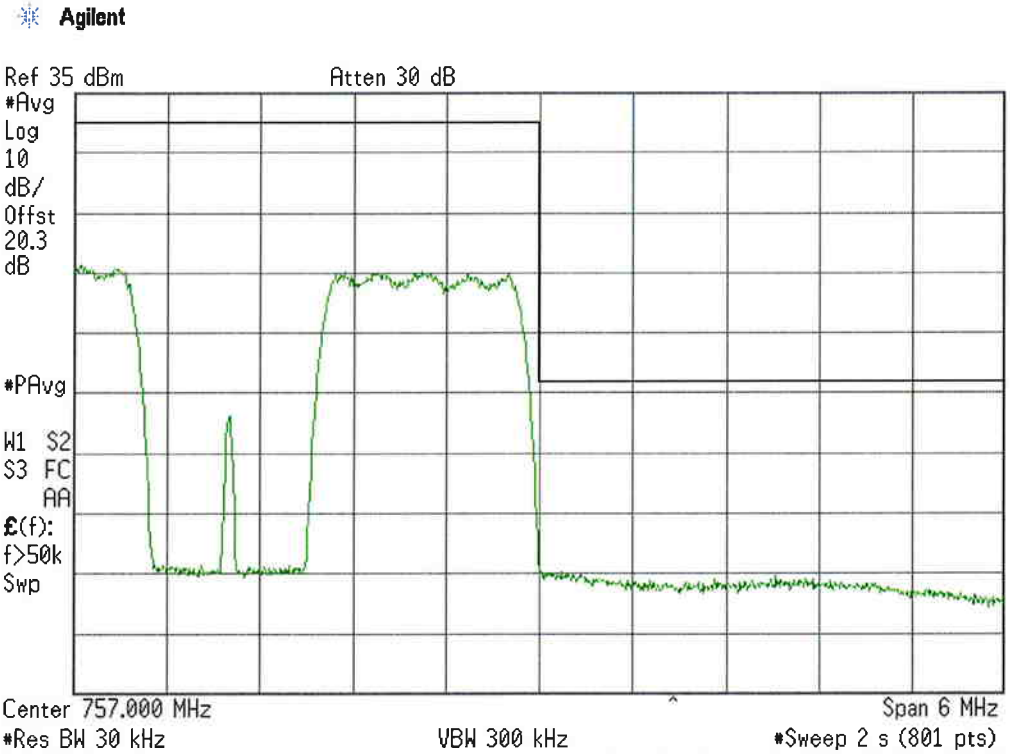


plot 7.3.1.1-#2 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; LTE < 1MHz to band edge Upper Band Edge

7.3.1.2 CDMA < 1MHz to band edge

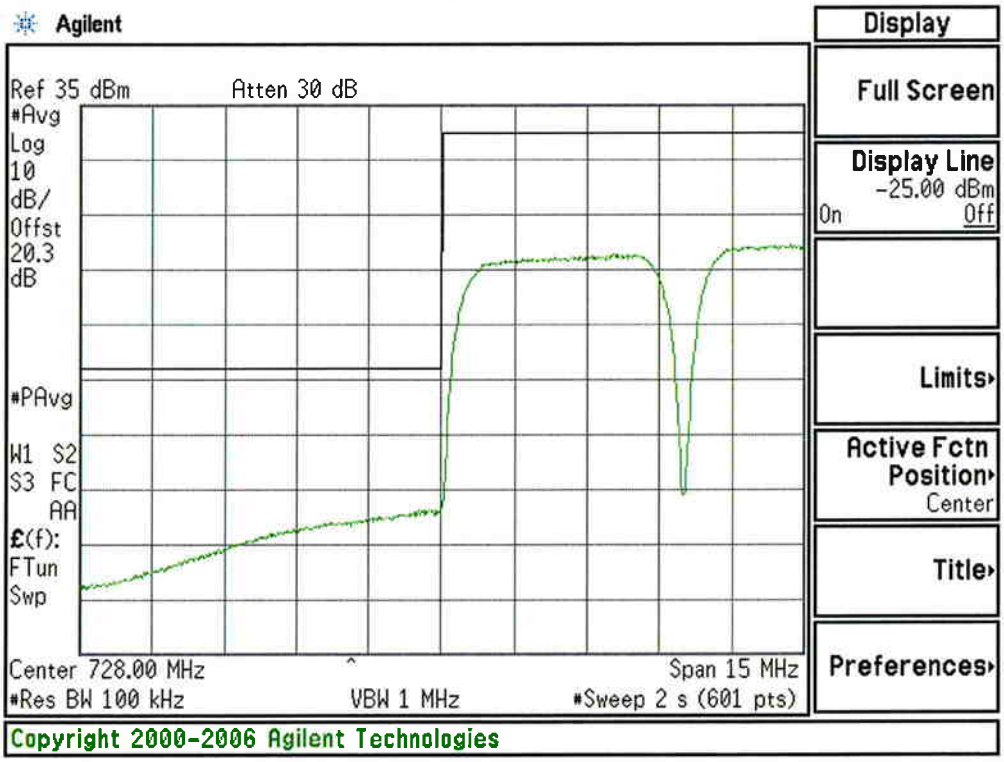


plot 7.3.1.2-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; CDMA < 1MHz to band edge Lower Band Edge

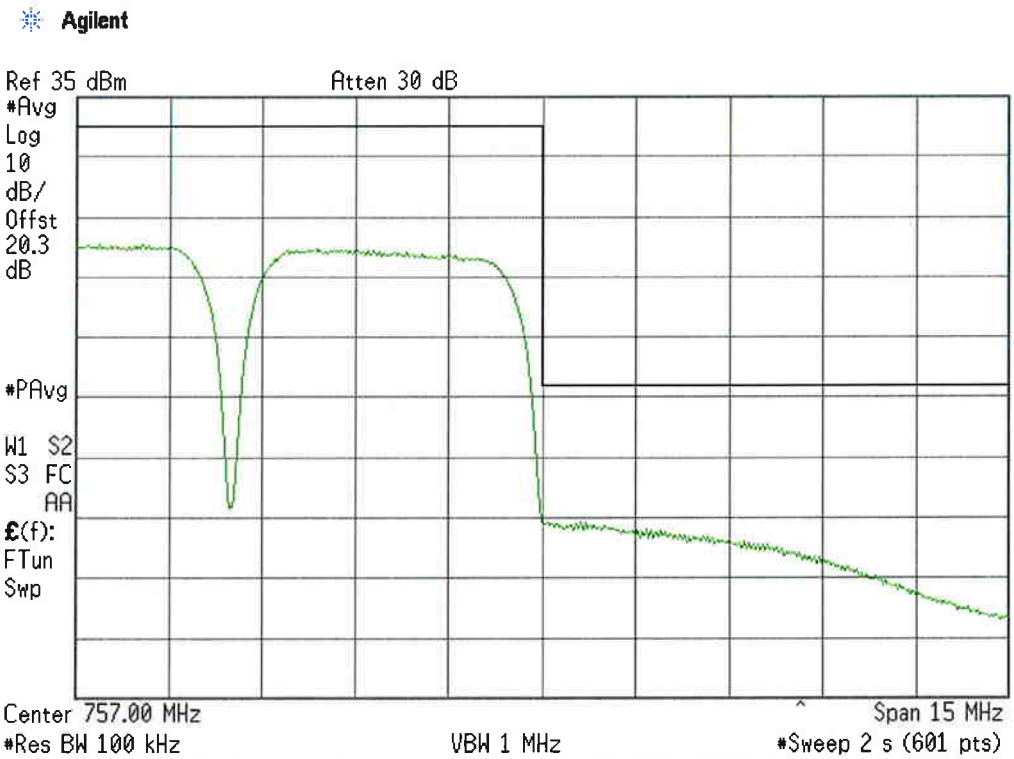


plot 7.3.1.2-#2 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; CDMA < 1MHz to band edge Upper Band Edge

7.3.1.3 W-CDMA < 1MHz to band edge

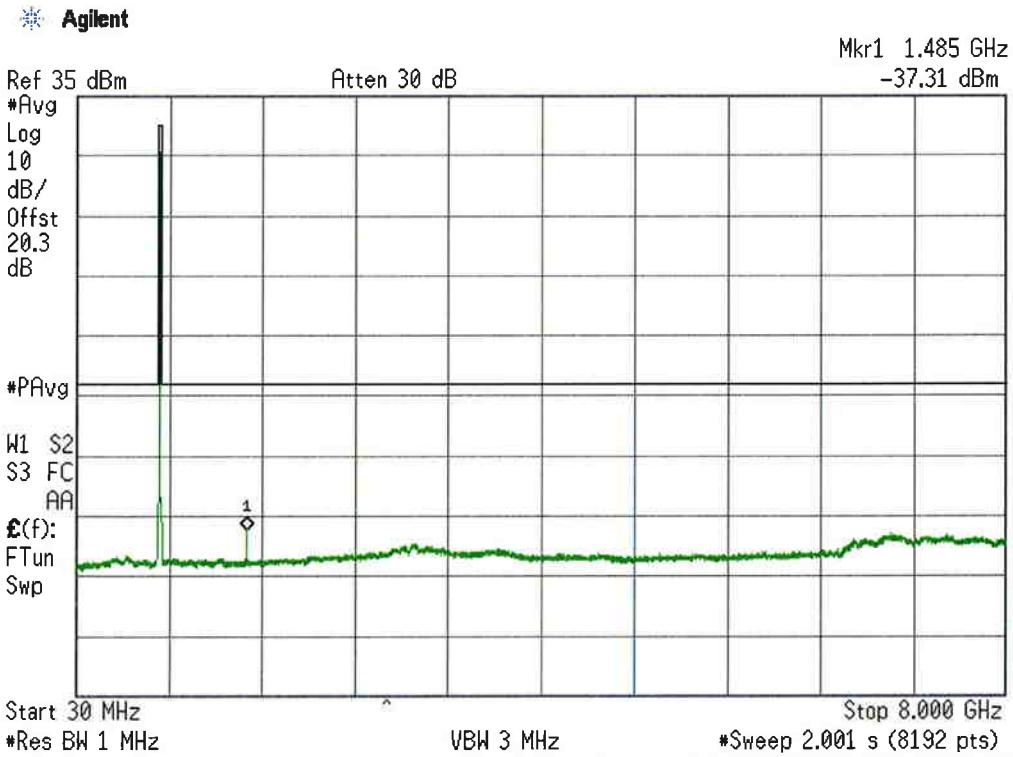


plot 7.3.1.3-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; W-CDMA < 1MHz to band edge Lower Band Edge



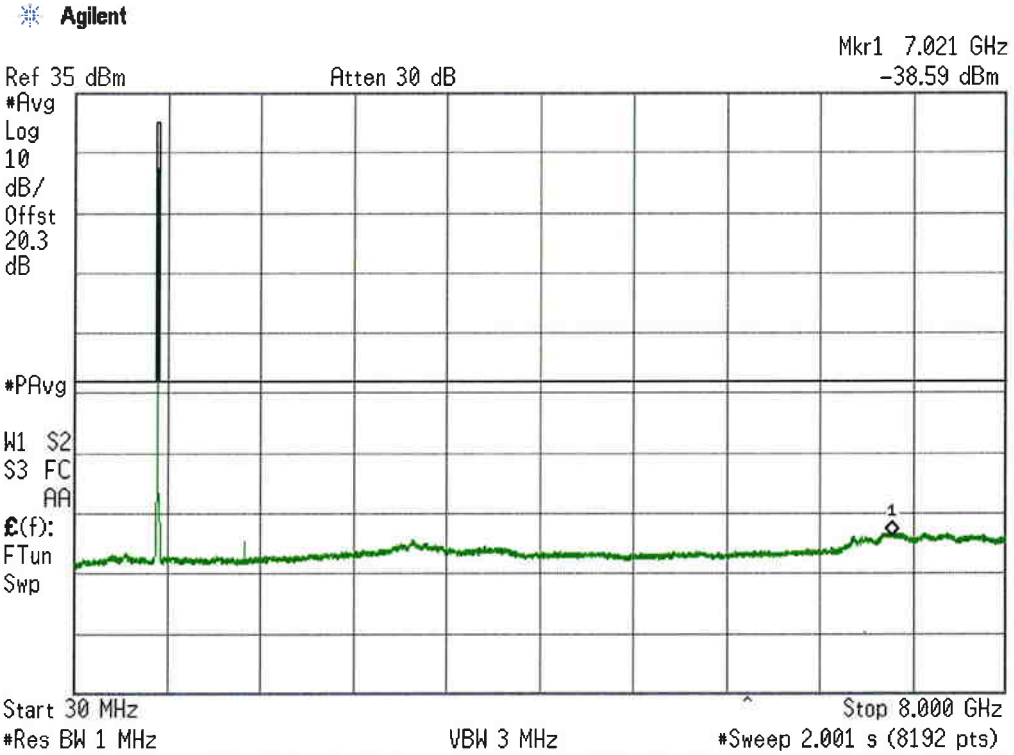
plot 7.3.1.3-#2 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; W-CDMA < 1MHz to band edge Upper Band Edge

7.3.1.4 LTE > 1MHz to band edge



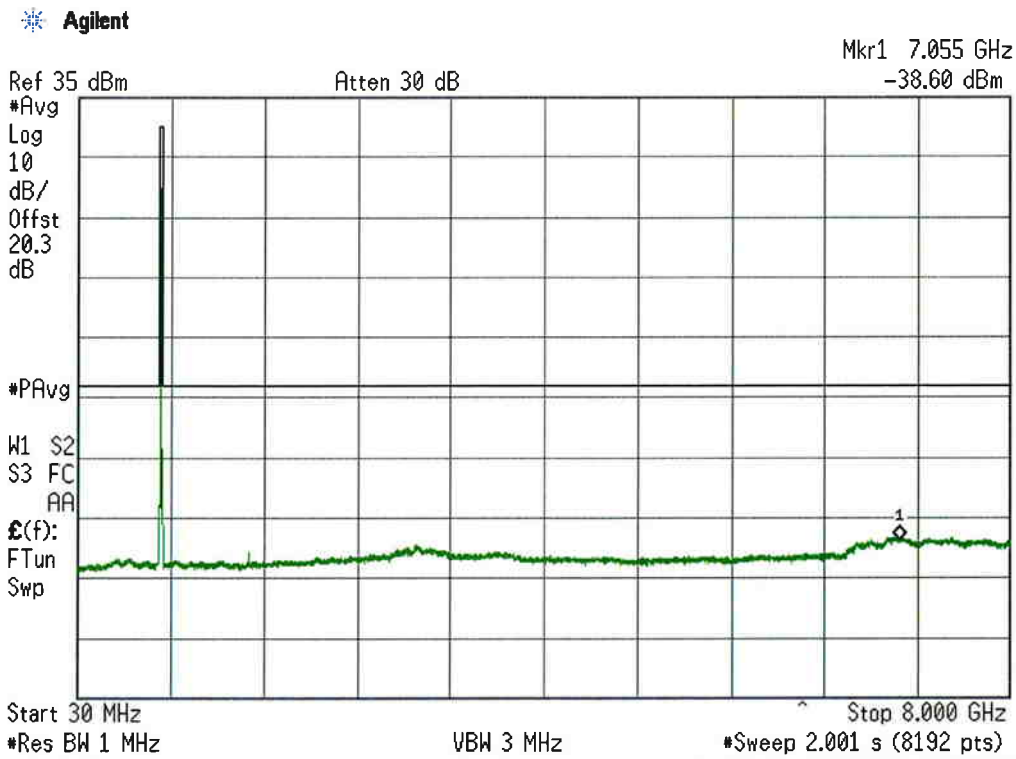
plot 7.3.1.4-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; LTE > 1MHz to band edge

7.3.1.5 CDMA > 1MHz to band edge



plot 7.3.1.5-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; CDMA > 1MHz to band edge

7.3.1.6 W-CDMA > 1MHz to band edge

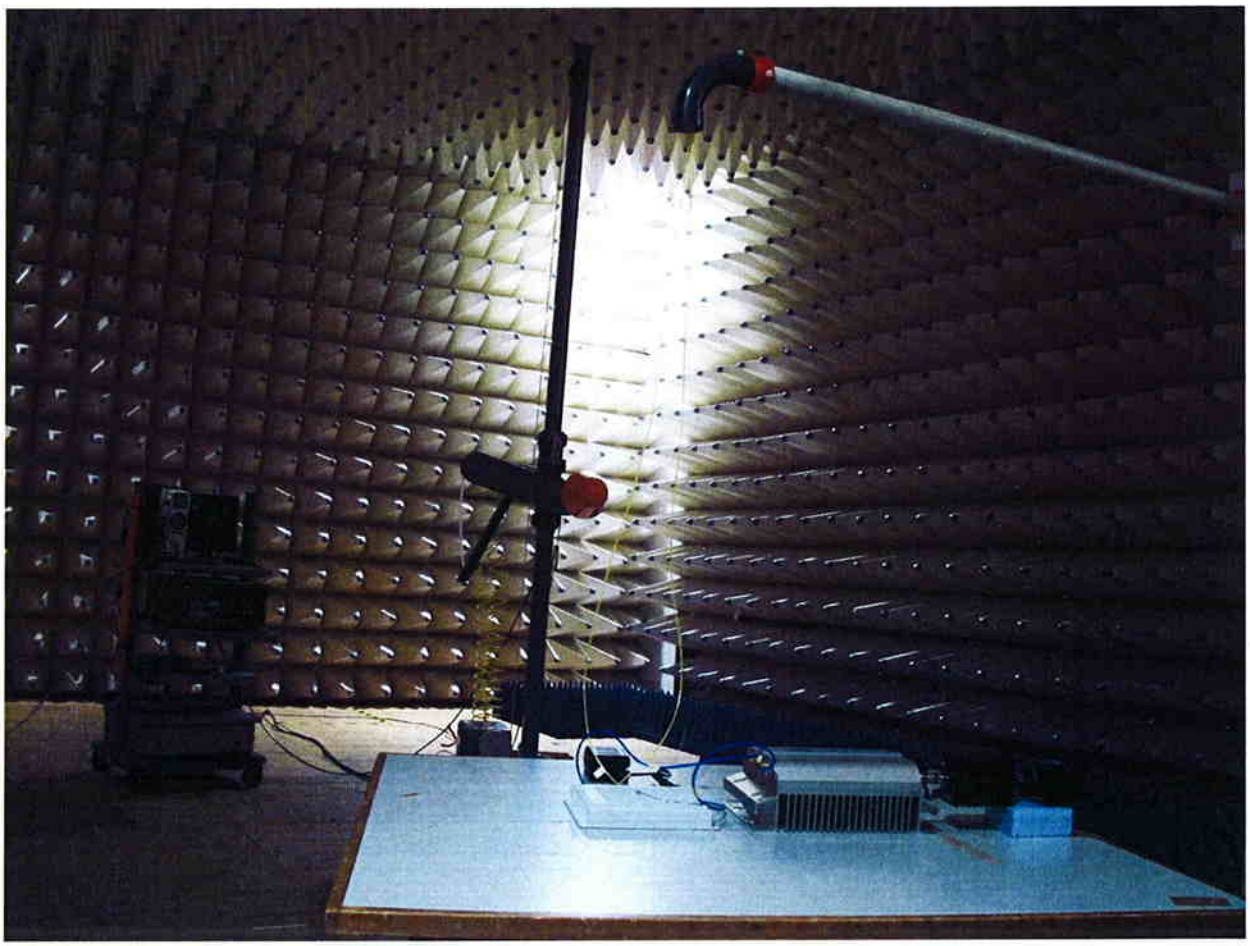


plot 7.3.1.6-#1 Spurious Emissions at Antenna Terminals: §27.53, §2.1051; RSS-131, RSS-GEN; Test results; Downlink; W-CDMA > 1MHz to band edge

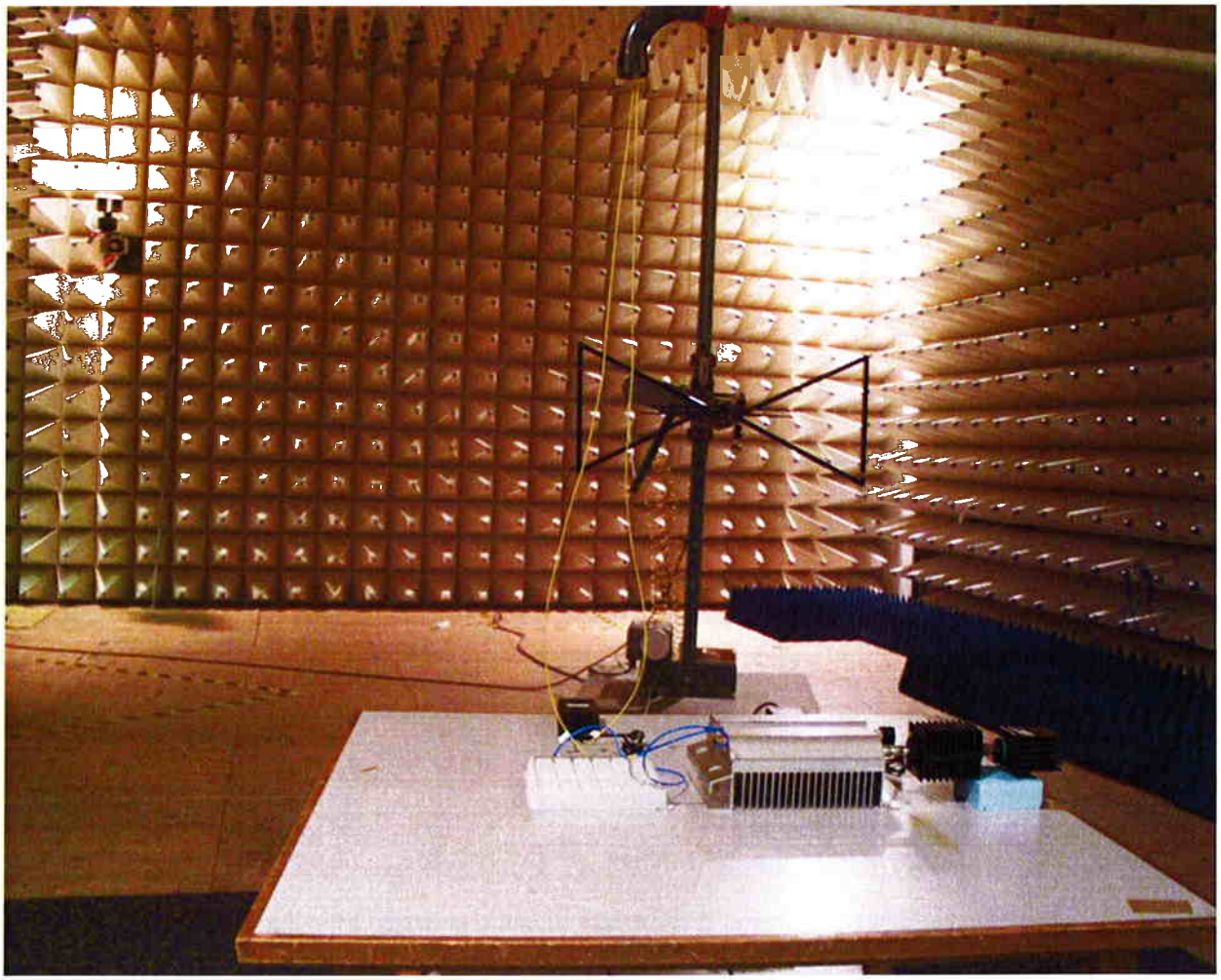
7.4 Summary test result

Test result	complies, according the plots above
Tested by:	L. Donati
Date:	21.06.2010

8 Field Strength of Spurious Emissions: §27.53, §2.1053, RSS-131, RSS-GEN



picture 8.1: Test setup: Field Strength Emission >1 GHz @3m in the FAC



picture 8.2: Test setup: Field Strength Emission <1 GHz @3m in the FAC

This clause specifies requirements for the measurement of radiated emission.

Frequency range	Distance: EUT <-> antenna / location	Limit	Test method
30 MHz - 1 GHz	3 metres / FAC	FCC 47 CFR Part 27	TIA/EIA-603-C:2004
		IC RSS-131	
1 GHz – 9 GHz		FCC 47 CFR Part 27	
		IC RSS-131	

Test equipment used:

Designation	Type	Manufacturer	Invent.-no.	Cal.-date	due Cal.-date	used
EMI test receiver	ESI40	Rohde & Schwarz	E1687	20.10.2009	20.10.2010	X
EMI test receiver	ESI40	Rohde & Schwarz	E1607	04.03.2009	04.03.2010	
Antenna	CBL 6111	Chase	K1149	14.09.2009	14.09.2010	X
Antenna	CBL 6111	Chase	K1026	14.09.2009	14.09.2010	
RF Cable		Frankonia	K1121 SET	28.12.2009	28.12.2010	X
Pre amplifier	AM1431	Miteq	K1721	27.04.2009	27.04.2011	X
Antenna	HL 025	R&S	K809	06.05.2009	06.05.2011	X
Antenna	MWH-1826 / B	ARA Inc.	K1042	06.04.2009	06.04.2010	
Antenna	MWH-2640 / B	ARA Inc.	K1043	06.04.2009	06.04.2010	
Preamplifier	AFS4-00102000	Miteq	K817	11.11.2009	11.11.2010	X
Preamplifier	AFS4-00102000	Miteq	K838	06.10.2009	06.10.2010	
Preamplifier	JS43-1800-4000	Miteq	K1104	26.08.2009	26.08.2010	
RF Cable	Sucoflex 100	Suhner	K1742	09.04.2009	09.04.2011	X

The Tile-Software Version 4 has been used to maximize radiated emission from the EUT in the frequency area up to 1 GHz. Above 1 GHz the REMI version 2.135 has been used for max search.

Test set-up:

Test location: FAC
The Fully Anechoic Chamber (FAC) fulfils the requirements of ANSI C63.4 and CISPR 16-1-4 with regards to NSA and SVSWR.
Test Voltage: 230V / 50 Hz
Type of EUT: Wall mounted

Measurement uncertainty:

Measurement uncertainty expanded (95% or K=2)	± 4,7 dB for ANSI C63.4 measurement ± 0,5 dB for TIA-603 measurement

8.1 Method of Measurement

Measurement procedure. **TIA-603-C**

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic dipole (see Figure 7.2).

From KDB (AMPLIFIER, BOOSTER, AND REPEATER REMINDER SHEET):
Radiated spurs (enclosure) – Use of CW signal (low, mid. and high freq.) is acceptable rather than all modulations.

The maximum RFI field strength was determined during the measurement by rotating the turntable (±180 degrees) and varying the height of the receive antenna (h = 1 ... 4 m) as like defined in ANSI C63.4. A measurement receiver has been used with a RBW 120 kHz up to 1 GHz and 1 MHz above 1 GHz. Steps with during pre measurement was half the RBW.

Both, the Fully Anechoic Chamber (FAC) and the Semi Anechoic Chamber (SAC) fulfil the requirements of ANSI C63.4 and CISPR 16-1-4 with regards to NSA and SVSWR.

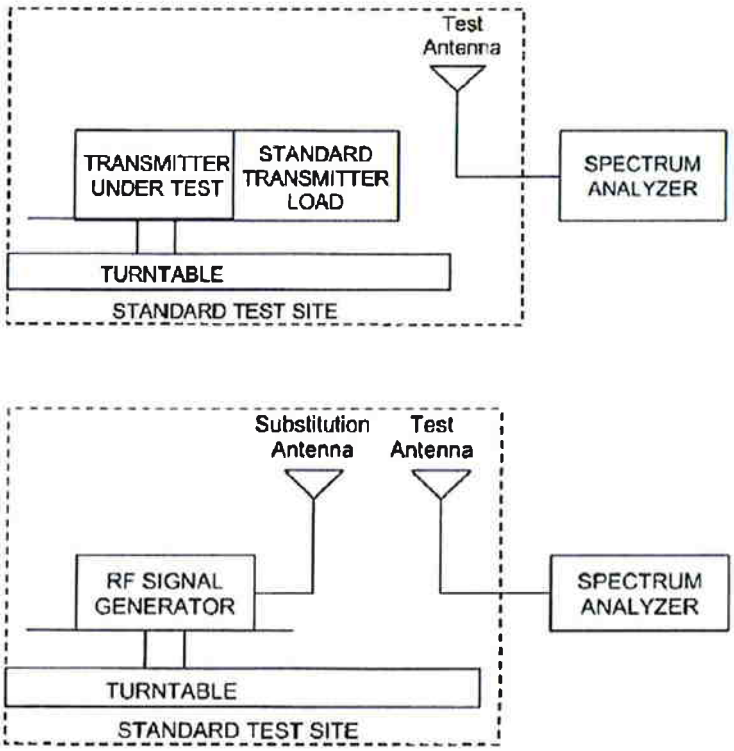


Figure #7.2 Substitution methods TIA/EIA-603-C

8.2 Limit

§27.53 Emission limitations / RSS-GEN sec. 4.9; RSS-131 sec. 4.4

The Emission limit is -13dBm.

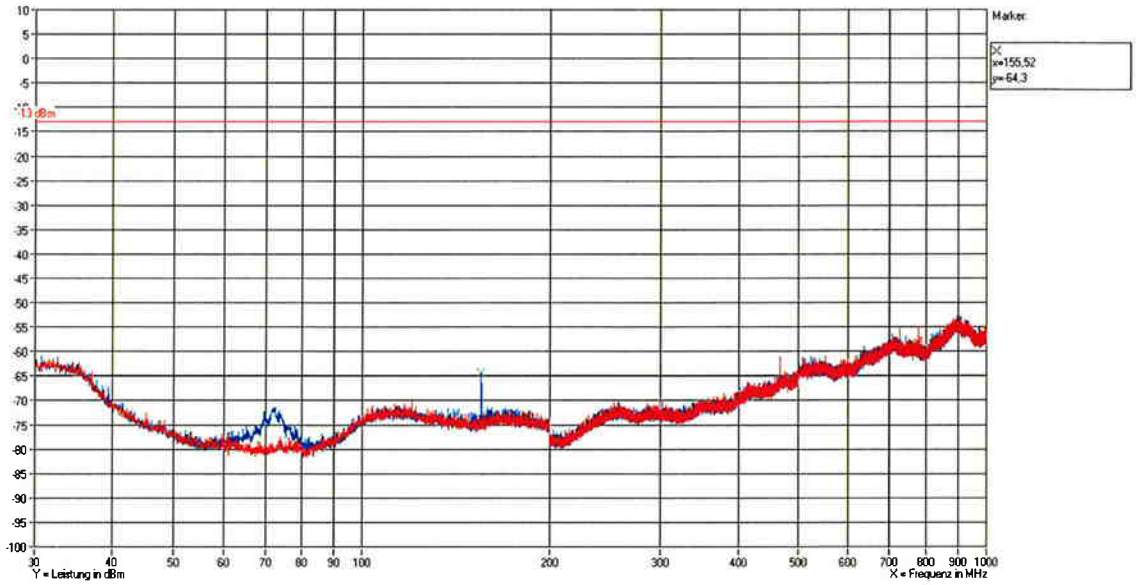
8.3 Climatic values in the lab

Temperature:	21°
Relative Humidity:	45%
Air-pressure:	1004 hPa

8.4 Test results

8.4.1 30 MHz to 1 GHz Downlink (Bottom – Middle – Top)

B/M/T: 728 MHz / 742.5 MHz / 757 MHz (Operation with maximum power in parallel)



Measurement with Peak detector, BW 120KHz, Step width 60 kHz, dwell time 50ms

No peak detected 20dB above noise

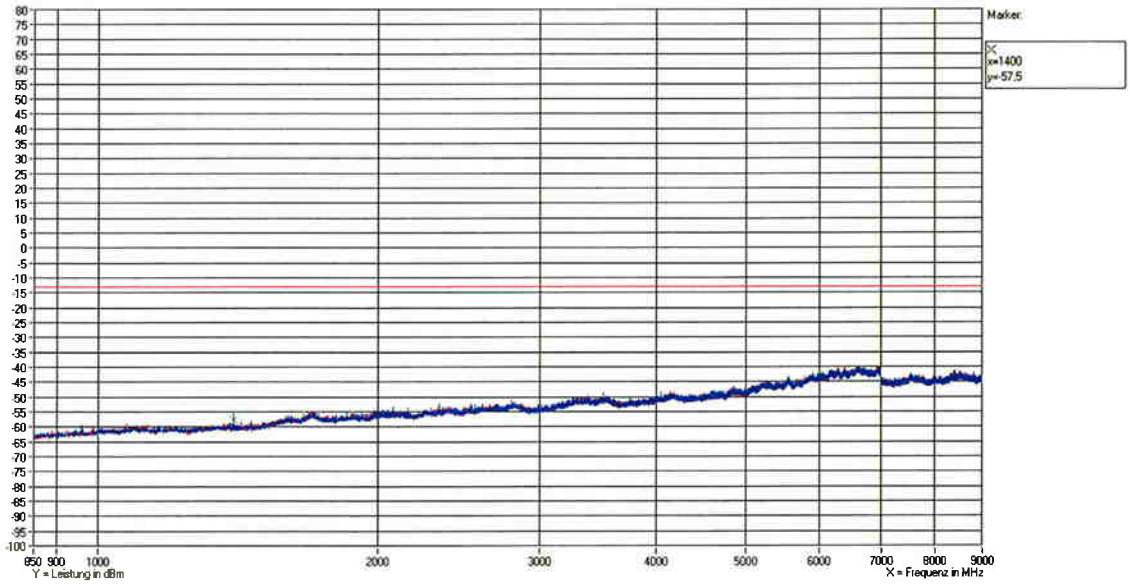
Antenna height: 1.55m; all positions of the turn table measured with max. hold function

Polarization: Horizontal / Vertical

Minimum Margin = 43 dB

8.4.2 1 GHz to 9 GHz Downlink (Bottom – Middle – Top)

B/M/T: 728 MHz / 742.5 MHz / 757 MHz (Operation with maximum power in parallel)



Measurement with Peak detector, BW 120KHz, Step width 60 kHz, dwell time 50ms

Antenna height: 1.55m; all positions of the turn table measured with max. hold function

Polarization: Horizontal / Vertical

No peak detected 20dB above noise

Minimum Margin = 26 dB

8.5 Summary test result

Test result	The spurious emission requirements have been met in all frequency bands.
Tested by:	M. Lehmann
Date:	23.06.2010

9 History

Revision	Modification	Date	Name
01.00	Initial Test report	28.06.2010	M. Lehmann

****** End of test report *****