Shenzhen Huatongwei International Inspection Co., Ltd.
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CNASL1225

TEST REPORT

ETSI EN 301 908-1 V5.2.1: 2011-05/ETSI EN 301 908-2 V4.2.1: 2010-03

Report Reference No.....:	**TRE1303013501 R/C: 59940**
Compiled by (position+printed name+signature)..:	File administrators Tim Zhang
Supervised by (position+printed name+signature)..:	Test Engineer Eric Zhang
Approved by (position+printed name+signature)..:	Manager Wenliang Li
Date of issue.....:	May 22, 2013
Testing Laboratory Name .....:	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Applicant's name.....:	**RICON TECHNOLOGIES FZE**
Address.....:	Ras Al Khaimah,UAE P.O. Box 16111
Test specification:	
Standard .....:	**ETSI EN 301 908-1 V5.2.1: 2011-05**
	ETSI EN 301 908-2 V4.2.1: 2010-03
TRF Originator.....:	Shenzhen Huatongwei International Inspection CO., Ltd
Master TRF.....:	Dated 2006-06

Test item description ..... :	Cellular Router
Trade Mark .....:	RICON
Manufacturer .....:	**RICON TECHNOLOGIES FZE**
Model/Type reference.....:	S9922
List Model .....:	/
Modulation .....:	GMSK
Operation Frequency Band .....:	FDD Band I &FDD Band VIII
Power Class .....:	Power Class 3
Ratings.....:	DC12.0V adapter from AC 230V/50Hz
Result.....:	**Positive**

T E S T R E P O R T

Test Report No. :	TRE1303013501	May 22, 2013 Date of issue

Equipment under Test	:	Cellular Router
Model /Type	:	S9922
Listed Models	:	/
Applicant	:	**RICON TECHNOLOGIES FZE**
Address	:	Ras Al Khaimah,UAE P.O. Box 16111
Manufacturer	:	**RICON TECHNOLOGIES FZE**
Address	:	Ras Al Khaimah,UAE P.O. Box 16111

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

ETSI EN 301 908-1 V5.2.1(2011-05) –IMT cellular networks;Harmonized EN covering the essential requirementsof article 3.2 of the R&TTE Directive;Part 1: Introduction and common requirements .
ETSI EN 301 908-2 V4.2.1(2010-03)–Electromagnetic compatibilityand Radio spectrum Matters (ERM);Base Stations (BS), Repeaters and User Equipment (UE)for IMT-2000 Third-Generation cellular networks;Part 2: Harmonized EN for IMT-2000,CDMA Direct Spread (UTRA FDD and E-UTRA FDD) (UE)covering the essential requirementsof article 3.2 of the R&TTE Directive.
ETSI TS 134 121-1 V10.4.0 (2012-10)–Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Radio transmission and reception (FDD); Part 1: Conformance specification
3GPP TS 34.121-1 version 10.4.0 Release 10- Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Radio transmission and reception (FDD)

2 . SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Mar 26, 2013
Testing commenced on	:	Mar 26, 2013
Testing concluded on	:	May 22, 2013

2.2. Product Description

The **RICON TECHNOLOGIES FZE**.'s Model: S9922 or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

Name of EUT	Cellular Router
Model Number	S9922
Power Class	Power Class 3
Rated Output Power	24dBm
Modilation Type	GMSK
Antenna Type	External
Operation Frequency Band	FDD Band I &FDD Band VIII
HSDPA Release Version	Release 5 & Release 6
HSUPA Release Version	Release 6
WCDMA Release Version	R99

2.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	115V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

DC 12.0 V Adapter from AC 230V/50Hz

Test frequency list

Frequency Band	Test Channel	Test Frequency
Band I	Low (9613)	1922.60 MHz
	Middle (9750)	1950.00 MHz
	High (9887)	1977.40 MHz
Band VIII	Low (2713)	822.60 MHz
	Middle (2788)	897.60 MHz
	High (2862)	912.40 MHz

2.4. EUT operation mode

The EUT and test equipment were configured for testing according to ETSI EN 301 908-1 V5.2.1 (2011-05) and ETSI EN 301 908-2 V4.2.1 (2010-03),where refer to ETSI TS 134 121-1 V10.4.0 (2012-10) for details.

2.5. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

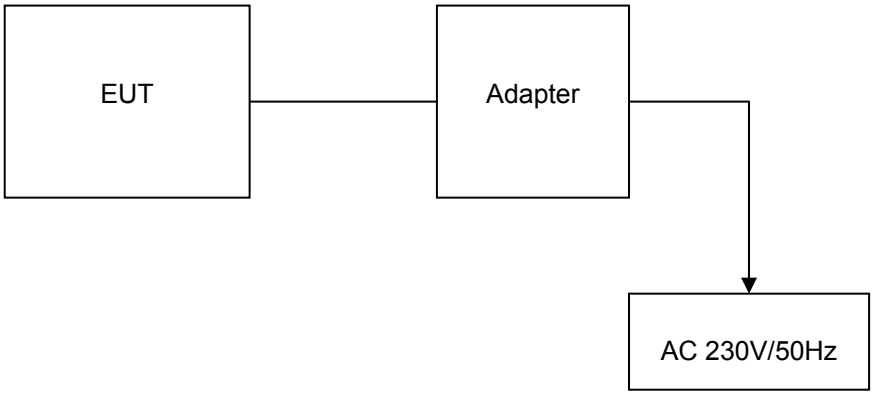


Table 2-1 Equipment Used in Tested System

Adapter:

Model: KW300-120E20
Input:100-240V～50/60Hz 0.8A
Output: +12V DC 2.0A
Power Cable: 120cm
◇ Shielded ◆ Unshielded

2.6. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
○	Multimeter	Manufacturer :	/
		Model No. :	/

2.7. NOTE

1. The EUT including GPRS,EGPRS, WCDMA and WLAN function,The functions of the EUT listed as below:

	Test Standards	Reference Report
Radio-WCDMA	ETSI EN 301 908-1 V5.2.1: 2011-05 ETSI EN 301 908-2 V4.2.1: 2010-03	TRE1303013501
Radio-GSM	ETSI EN 301 511 V9.0.2: 2003-03	TRE1303013502
Radio-WLAN	ETSI EN 300 328 V1.7.1: 2006-10	TRE1303013503
EMC-GSM	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-7 V1.3.1: 2005-11	TRE1303013504
EMC-WCDMA	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-24 V1.5.1: 2010-10	TRE1303013505
EMC-WLAN	ETSI EN 301 489-1 V1.9.2: 2011-09 ETSI EN 301 489-17 V2.2.1: 2012-09	TRE1303013506
EMC	EN 55022:2010 EN 55024:2010	TRE1303013507
EMF	EN62311:2008	TRE1303013508

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar. 29, 2012. Valid time is until Feb. 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept. 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date June. 01, 2012, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the authorization is valid through July 07, 2013

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2010. Valid time is until May 06, 2013.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2013.

3.3. Environmental conditions

Normal Temperature: 25 °C
High Temperature: 55 °C
Low Temperature: -20 °C
Normal Voltage : AC 230V/50Hz
High Voltage:AC 253V/50Hz
Low Voltage:AC 207V/50Hz
Relative Humidity: 55 %
Air Pressure: 989 hPa

3.4. Test Description

ESTI EN 301908-1	EN-R (note): Test Descriptions & Test Conditions	Verdict		Note
		FDD Band I	FDD Band VIII	
Section 4.2.2	Radiated emissions (UE)	PASS	PASS	---
Section 4.2.4	Control and monitoring functions (UE)	PASS	PASS	---

ESTI EN 301908-2	ETSI TS 134 121-1	EN-R (note): Test Descriptions & Test Conditions	Verdict		Note
			FDD Band I	FDD Band VIII	
Section 4.2.2	Clause 5.2	Maximum Output Power NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	---
Section 4.2.2	Clause 5.2A	Maximum Output Power with HS-DPCCH NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	Rel. 5 only
Section 4.2.2	Clause 5.2AA	Maximum Output Power with HS-DPCCH NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	Rel. 6 And later
Section 4.2.2	Clause 5.2B	Maximum Output Power with HS-DPCCH and E-DCH NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	---
Section 4.2.3	Clause 5.9	Spectrum emission mask NT/NV	 PASS	 PASS	---

Section 4.2.3	Clause 5.9A	Spectrum Emission Mask with HS-DPCCH NT/NV	PASS	PASS	---
Section 4.2.3	Clause 5.9B	Spectrum Emission Mask with E-DCH NT/NV	PASS	PASS	---
Section 4.2.4	Clause 5.11	Spurious Emissions NT/NV	PASS	PASS	---
Section 4.2.5	Clause 5.4.3	Minimum Output Power NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	---
Section 4.2.6	Clause 6.4	Adjacent Channel Selectivity NT/NV	N/A	N/A	Rel.99 And Rel. 4
Section 4.2.6	Clause 6.4A	Adjacent Channel Selectivity NT/NV	PASS	PASS	Rel.5 And later
Section 4.2.7	Clause 6.5	Blocking Characteristics NT/NV	PASS	PASS	---
Section 4.2.8	Clause 6.6	Spurious Response NT/NV	PASS	PASS	---
Section 4.2.9	Clause 6.7	Minimum Requirements NT/NV	PASS	PASS	---
Section 4.2.10	Clause 6.8	Spurious Emissions NT/NV	PASS	PASS	---
Section 4.2.11	Clause 5.4.4	Out-of-synchronisation handling of output power NT/NV	PASS	PASS	---
Section 4.2.12	Clause 5.10	Adjacent Channel Leakage Power Ratio NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	
Section 4.2.12	Clause 5.10A	Adjacent Channel Leakage Power Ratio (ACLR) with HSDPCCH NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	
Section 4.2.12	Clause 5.10B	Adjacent Channel Leakage Power Ratio (ACLR) with EDCH NT/NV LT/LV LT/HV HT/LV HT/HV	 PASS PASS PASS PASS PASS	 PASS PASS PASS PASS PASS	---

Remark: The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN

ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

ETSI EN 301 908-1	Test Description	Uncertainty
4.2.2	Radiated emissions (UE)	2.20 dB
4.2.4	Control and monitoring functions (UE)	5.50 dB
ETSI TS 134 121-1	Test Description	Uncertainty
5.2 5.2A 5.2AA 5.2B	Maximum Output Power Maximum Output Power with HS-DPCCH Maximum Output Power with HS-DPCCH and E-DCH	0.781 dB
5.4.3	Minimum Output Power	0.781 dB
5.4.4	Out of Synchronisation Handling of Output Power DPCCH_Ec/Ior Îor/Ioc Overall Error (DPCCH_Ec/Ior + Îor/Ioc) Îoc	 0.608 dB 0.671 dB 0.721 dB 0.671 dB
5.9 5.9A 5.9B	Spectrum Emission Mask Spectrum Emission Mask with HS-DPCCH Spectrum Emission Mask with E-DCH	0.849dB
5.10 5.10A 5.10B	Adjacent Channel Leakage Power Ratio Adjacent Channel Leakage Power Ratio (ACLR) with HS-DPCCH Adjacent Channel Leakage Power Ratio (ACLR) with E-DCH	0.632dB
5.11	Spurious Emissions	5.23dB
6.4 6.4A	Adjacent Channel Selectivity (Rel-99 and Rel-4) Adjacent Channel Selectivity (Rel-5 and later releases)	0.922dB
6.5	Blocking Characteristics	1.166dB
6.6	Spurious Response	1.166dB
6.7	Intermodulation Characteristics	0.721dB
6.8	Spurious Emissions	1.081dB

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3.6. Equipments Used during the Test

Details for TS8950

No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	GSM/WCDMA Signaling Unit	Rohde&Schwarz	CRTU-MS	11511.2500.02	2012/10/27
2	Power Sensor	Rohde&Schwarz	NRP-Z21	102638	2012/10/27
3	Power Sensor	Rohde&Schwarz	NRP-Z21	102639	2012/10/27
4	Spectrum Analyzer	Rohde&Schwarz	FSU26	201141	2012/10/27
5	Signal Generator	Rohde&Schwarz	SMF100A	101932	2012/10/27
6	Vector signal genertor	Rohde&Schwarz	SMU200A	104329	2012/10/27
7	Vector signal genertor	Rohde&Schwarz	SMU200A	104332	2012/10/27
8	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	122206	2012/10/27

Details for Radiated emissions test equipment

No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2012/10/27
2	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2012/10/27
3	HORN ANTENNA	ShwarzBeck	9120D	1011	2012/10/27
4	HORN ANTENNA	ShwarzBeck	9120D	1012	2012/10/27
5	TURNTABLE	MATURO	TT2.0	----	2012/10/27
6	ANTENNA MAST	MATURO	TAM-4.0-P	----	2012/10/27
7	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	2012/10/27
8	High pass filter	Compliance Direction systems	BSU-6	34202	2012/10/27
9	EMI TEST SOFTWARE	Rohde&Schwarz	ESK1	N/A	2012/10/27
10	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2012/10/27
11	RF TEST PANEL	Rohde&Schwarz	TS / RSP	335015/ 0017	2012/10/27
12	Broadband Preamplifier	ShwarzBeck	BBV743	9743-0079	2012/10/27
13	JS amplifer	Rohde&Schwarz	JS4-00101800-28-5A	F201504	2012/10/27
14	Amplifer	Compliance Direction systems	PAP1-4060	120	2012/10/27

The Cal. Interval was one year

4. TEST CONDITIONS AND RESULTS

4.1. ETSI EN 301 908-1 REQUIREMENTS

4.1.1. Radiated emissions (UE)

LIMIT

ETSI EN 301 908-1 (V.5.2.1) Sub-clause 4.2.2.2

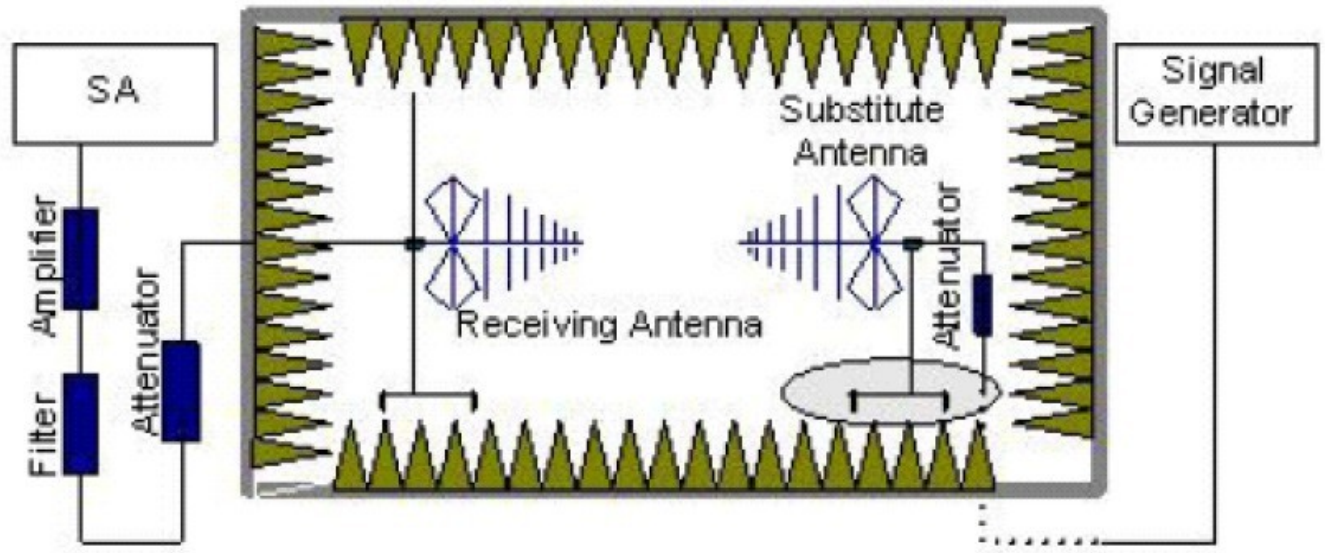
This test assesses the ability of radio communications equipment and ancillary equipment to limit unwanted emissions from the enclosure port.
This test is applicable to radio communications equipment and ancillary equipment.
This test shall be performed on the radio communications equipment and/or a representative configuration of the ancillary equipment.
The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out-of-band emissions and spurious emissions are based on ITU-R Recommendations SM.329-10 [3] and SM.1539-1 [4].
The requirements shown in table 4.2.2.2-1 are only applicable for frequencies in the spurious domain.

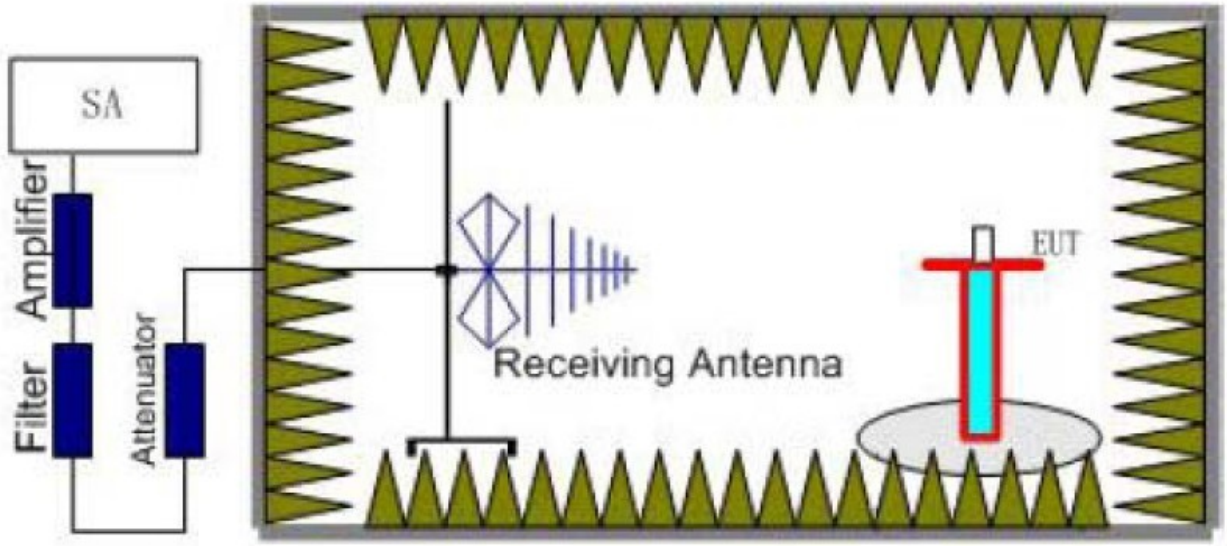
Table 4.2.2.2-1: Radiated spurious emissions requirements (UE)

Frequency	Minimum requirement (e.r.p.)/ reference bandwidth idle mode	Minimum requirement (e.r.p.)/ reference bandwidth traffic mode	Applicability
30 MHz ⩽ f < 1 000 MHz	-57 dBm/100 kHz	-36 dBm/100 kHz	All
1 GHz ⩽ f < 12.75 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All
f_c – 2.5 × 5 MHz < f < f_c + 2.5 × 5 MHz		Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3
f_c – 2.5 × BWChannel MHz < f < f_c + 2.5 × BWChannel MHz		Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX, UMB
f_c – 2.5 × 10 MHz < f < f_{c1} + 2.5 × 10 MHz		Not defined	UTRA TDD, 7,68 Mcps option
f_c - 4 MHz < f < f_c + 4 MHz		Not defined	UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1
f_c - 500 kHz < f < f_c + 500 kHz		Not defined	UWC 136, 200 kHz option
f_c - 250 kHz < f < f_c + 250 kHz		Not defined	UWC 136, 30 kHz option
NOTE: fc is the UE transmit centre frequency.			

TEST CONFIGURATION

Radiated Spurious Emissions 30MHz to 12.75GHz





TEST PROCEDURE

Step 1:
The measurement is carried out in the fully anechoic chamber. EUT was placed on a 1.50 meter high non-conductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 1.50 m and varies in certain range to find the maximum power value. Connect the EUT to the BTS simulator via the air interface. The measurement is carried out using a spectrum analyzer or receiver. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver. A filter is necessary in the band near to the carrier frequency. A filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.
Step 2:
A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
Calculation procedure:
The data of cable loss, antenna gain and air loss has been calibrated in full testing frequency range before the testing.
The power of the Radiated Spurious Emissions is calculated by adding the cable loss, antenna gain and air loss. The basic equation with a sample calculation is as followed:
$P=P_R+L_C+L_A-G$
Where
P: Power of the Radiated Spurious Emissions (dBm)
P_R: reading of the receiver (dBm)
L_C: Cable Lose and power amilifer gain and filter cable loss (dB)
L_A: Air loss (dB)
G: Antenna Gain (dBi)
Assumed the reading of the receiver is -60dBm. A cable lose of 10dB, an air lose of 30dB and an antenna gain of 11dBi are added.
$P=P_R+L_C+L_A-G=-60+10+30-11=-31dBm$

TEST RESULTS

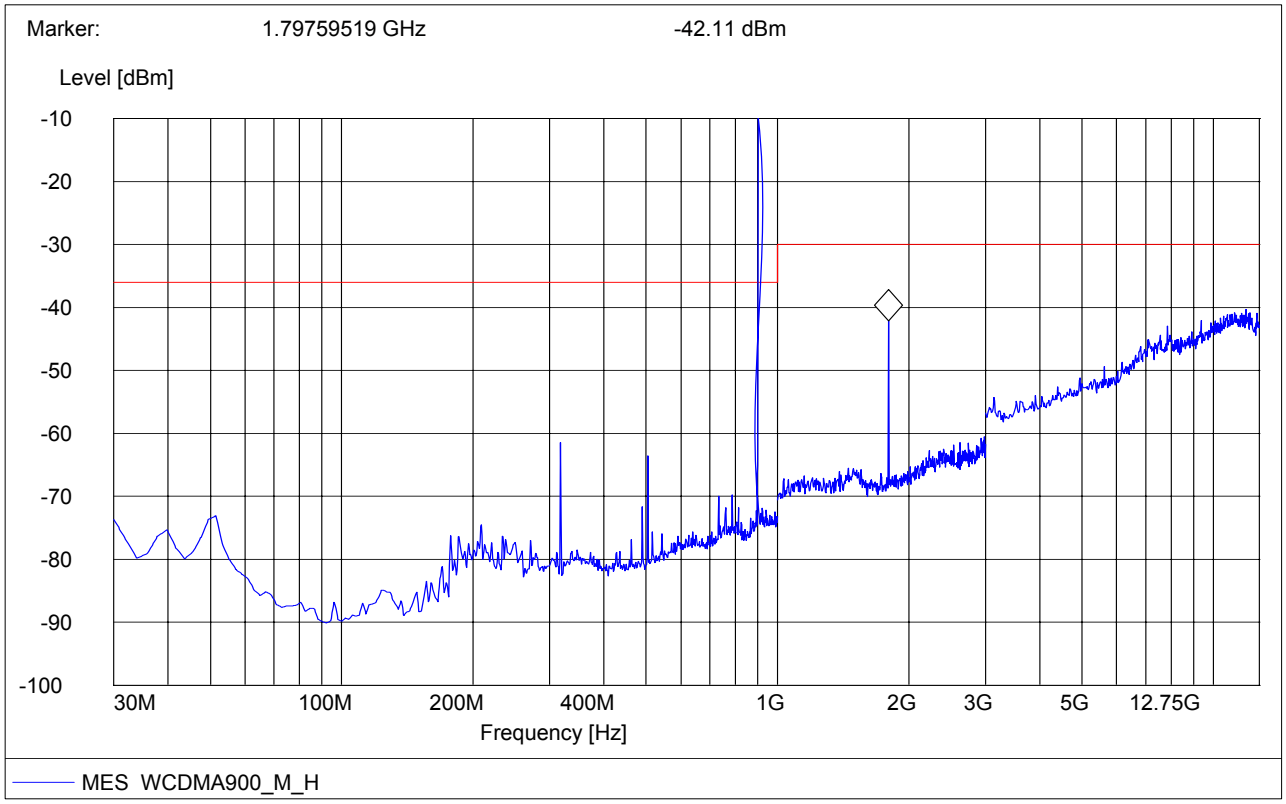
This test was carried out in all the test modes, here only the worst test result was shown.

The EUT has met the requirements of 3GPP2 C.S0011-A's requirement.

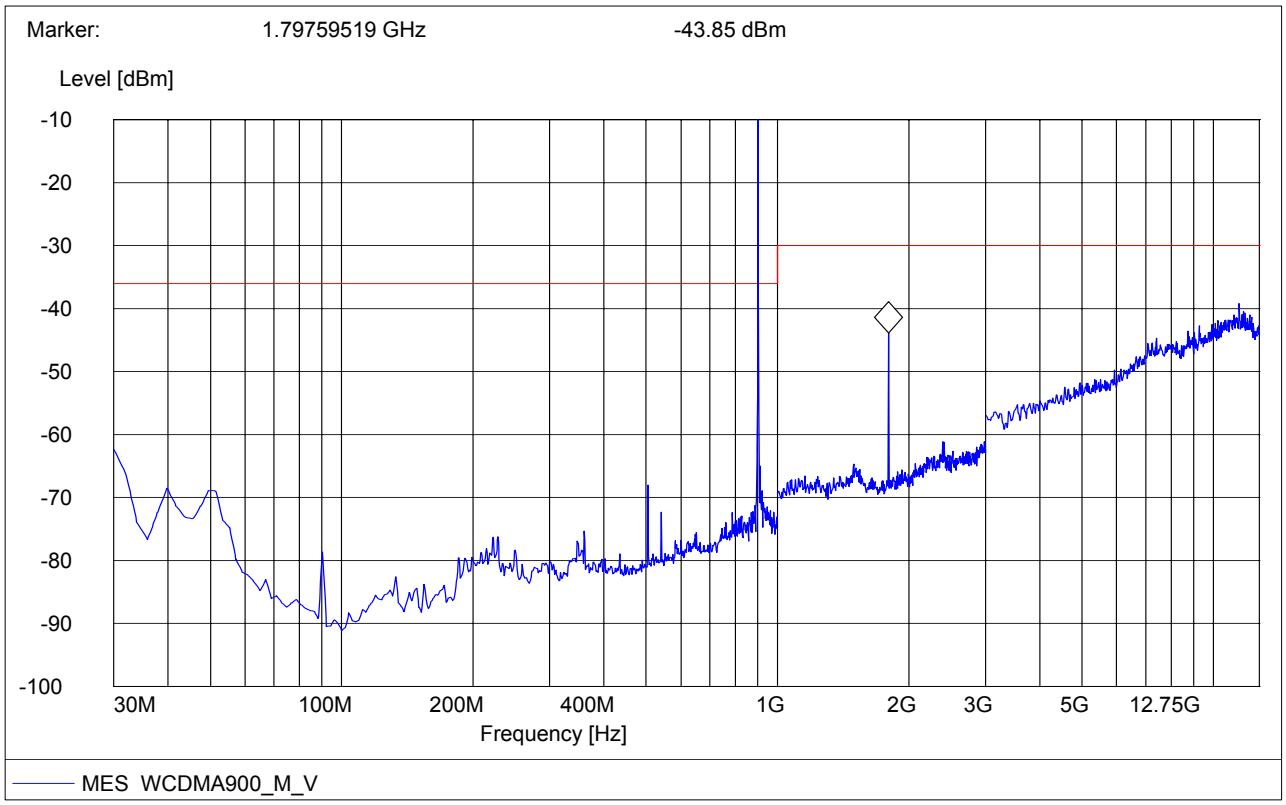
For WCDMA 900

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

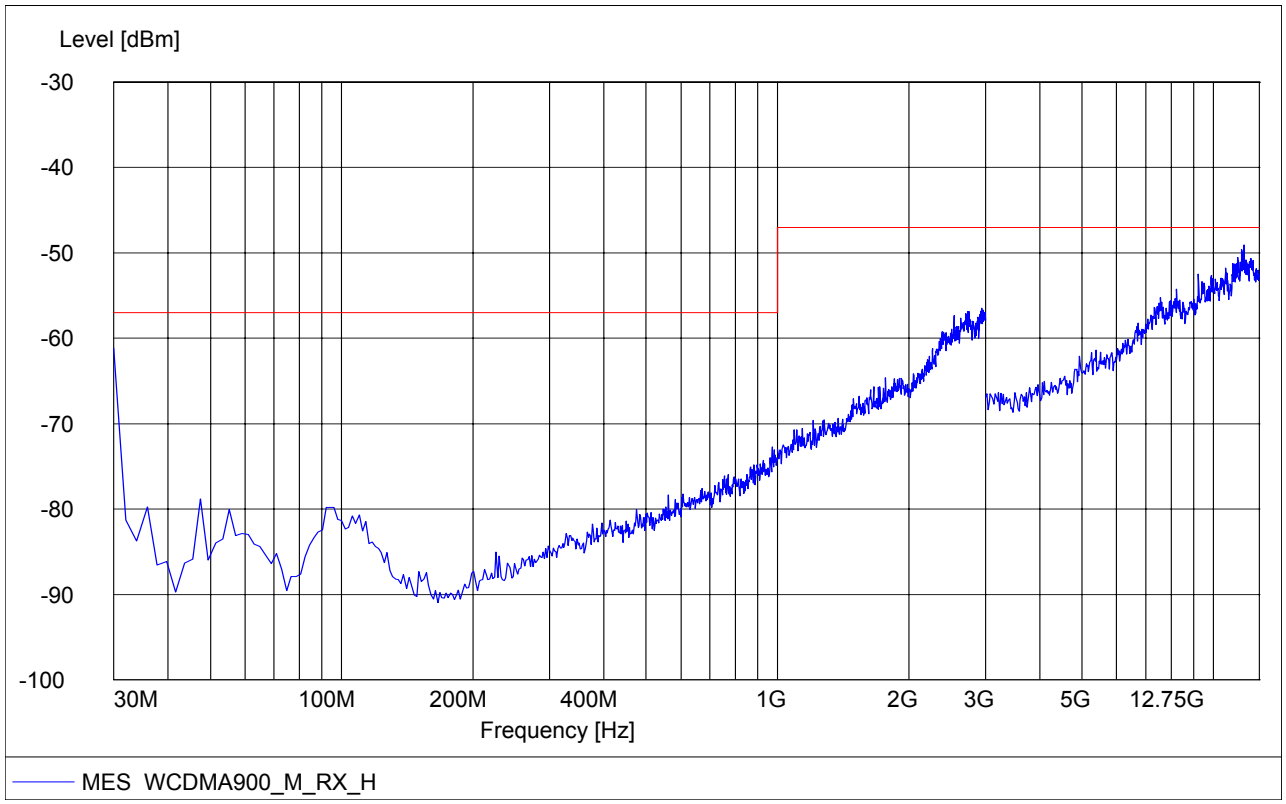


The Middle Channel @Vertical

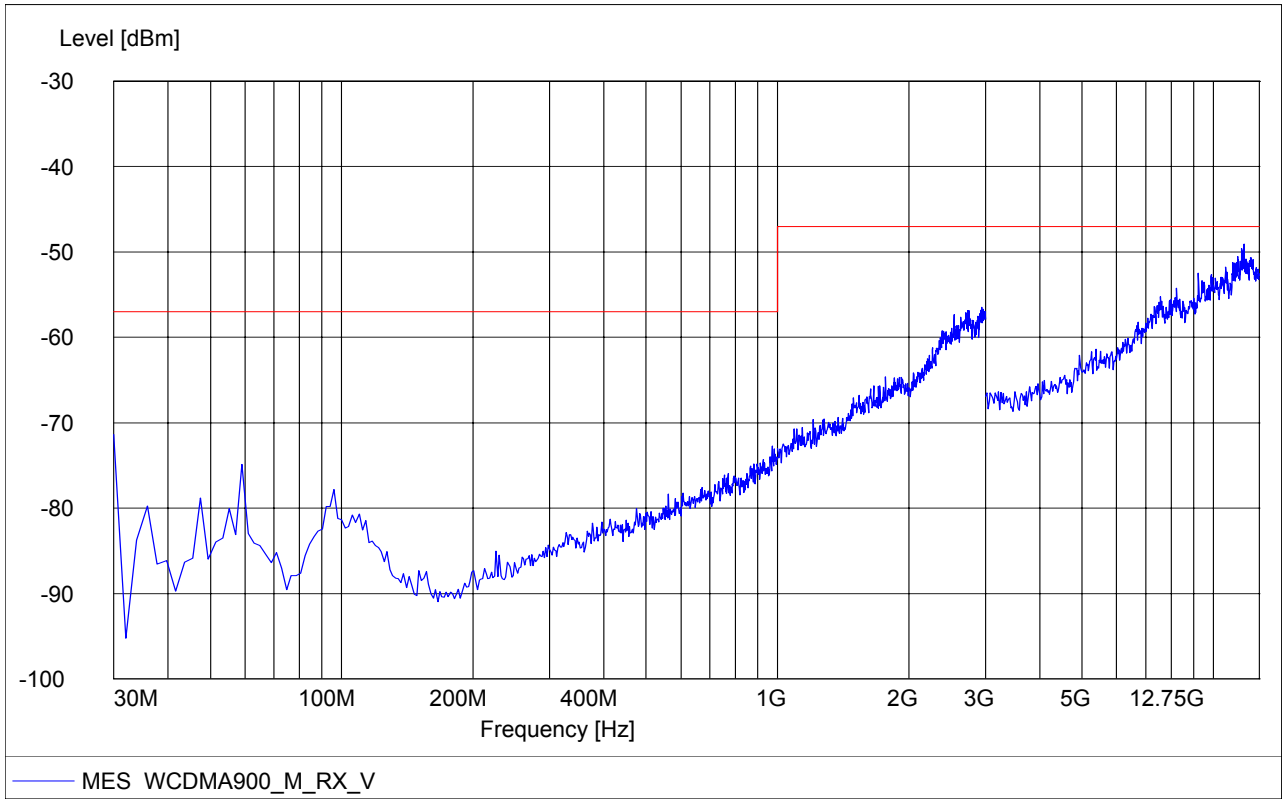


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



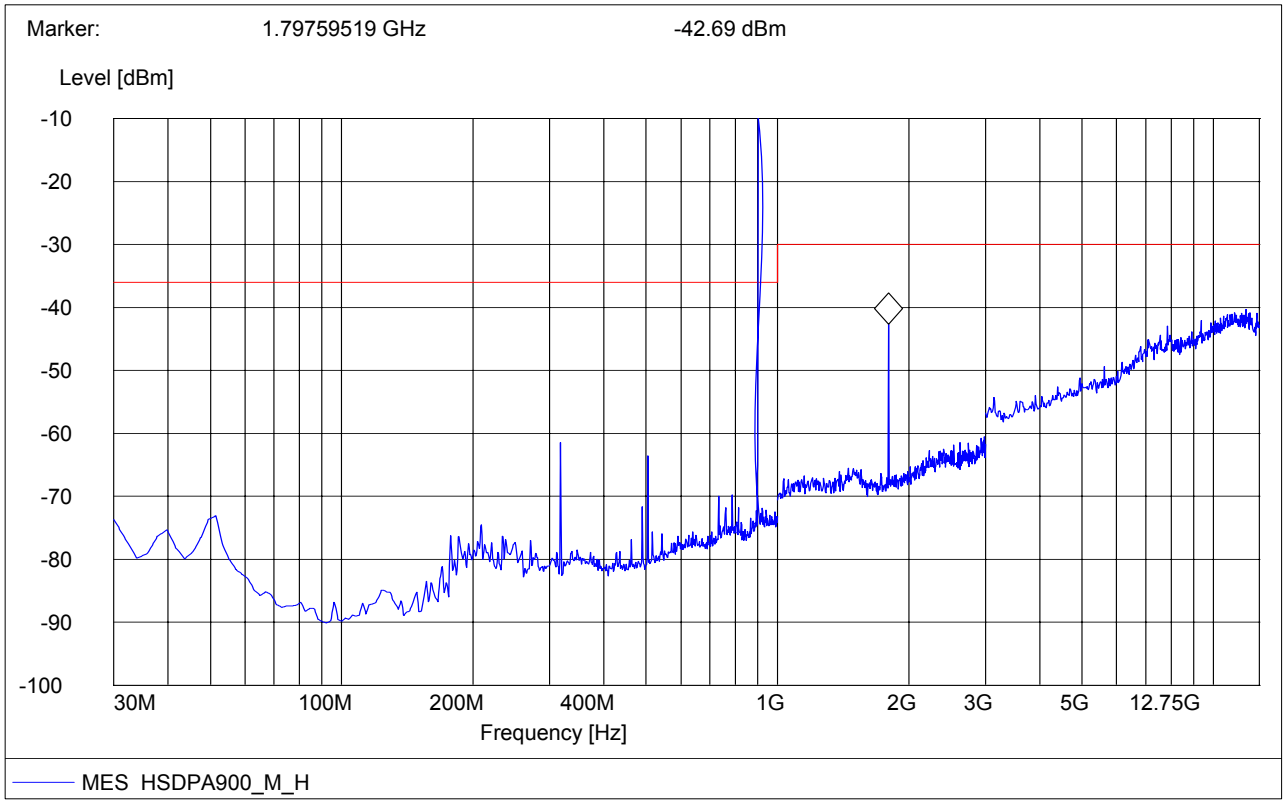
The Middle Channel @Vertical



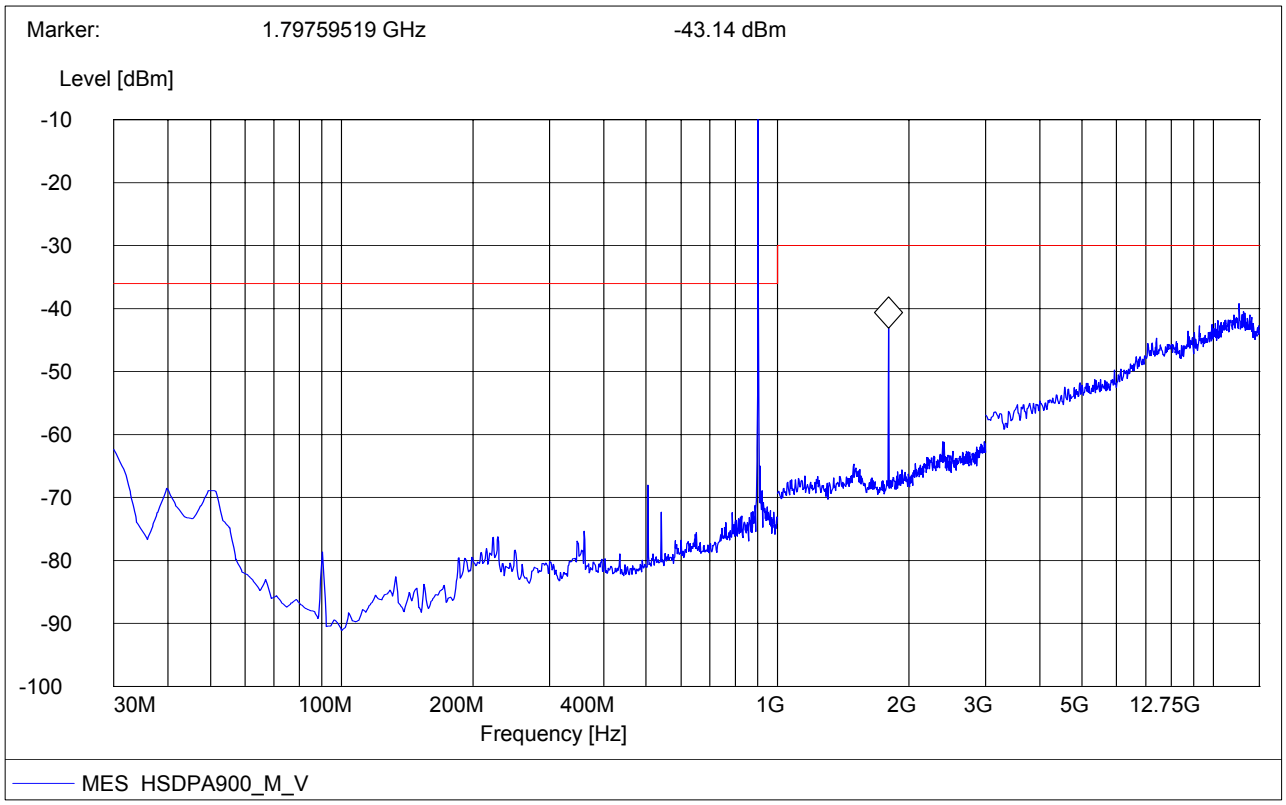
For HSDPA 900

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

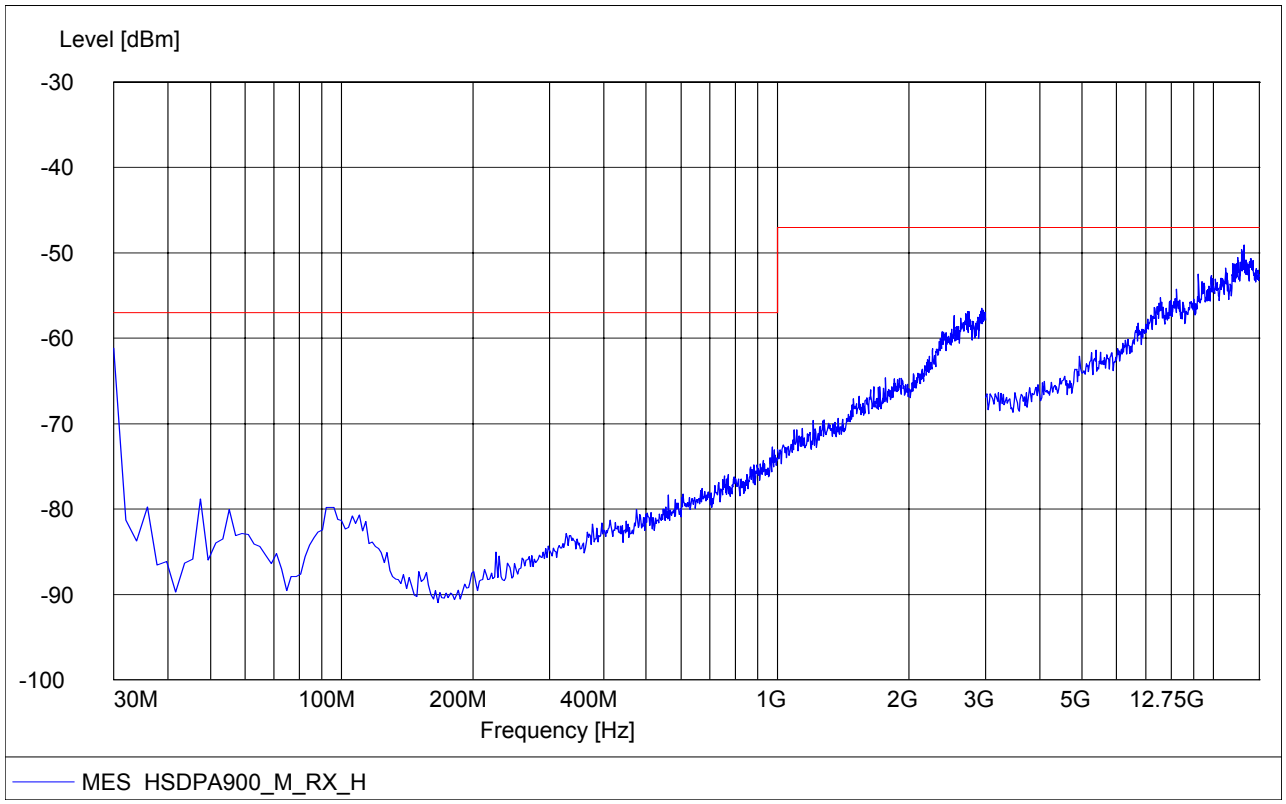


The Middle Channel @Vertical

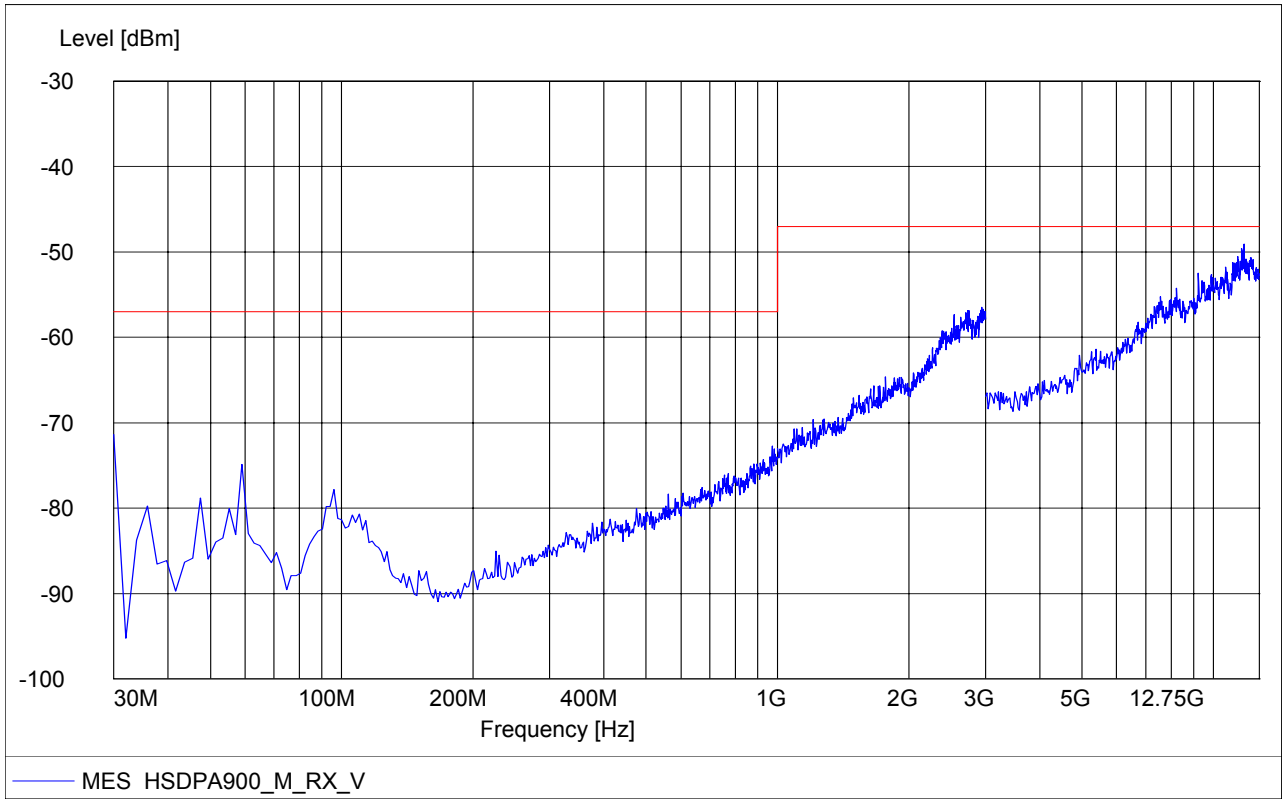


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



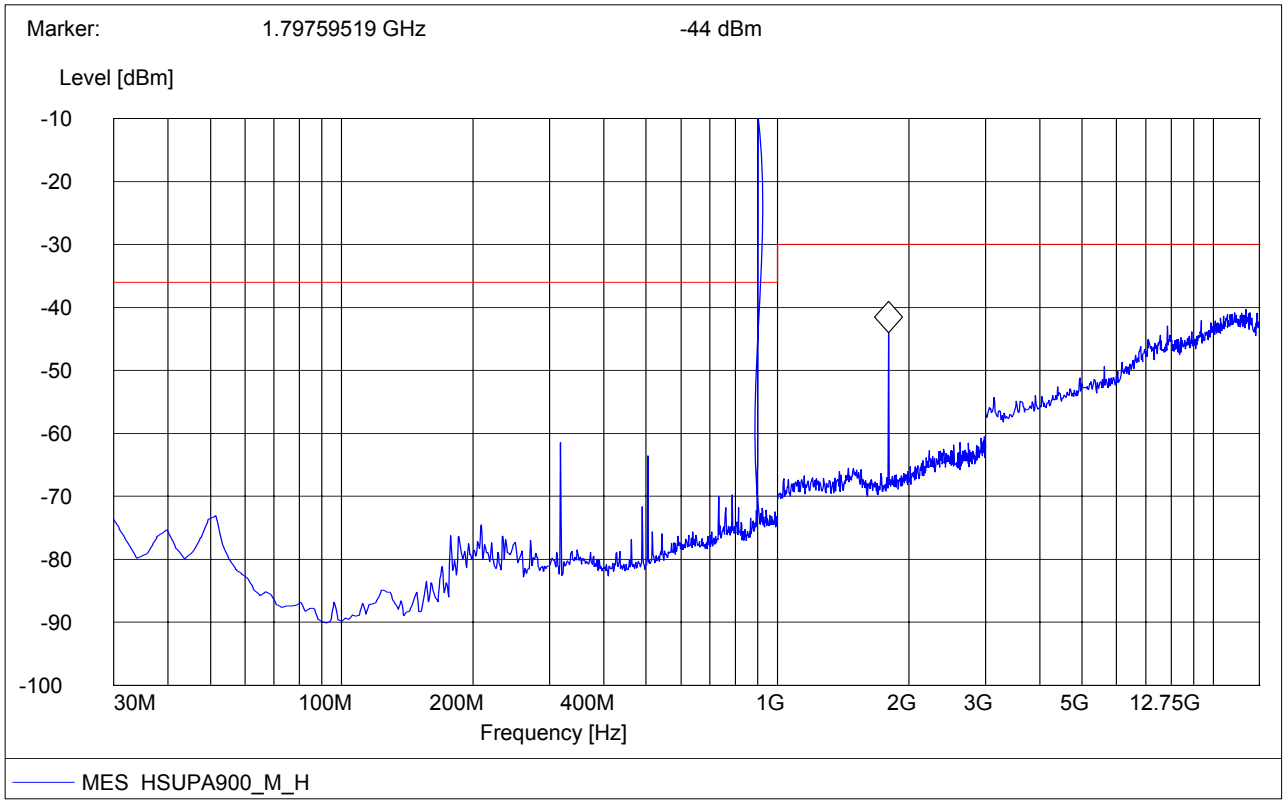
The Middle Channel @Vertical



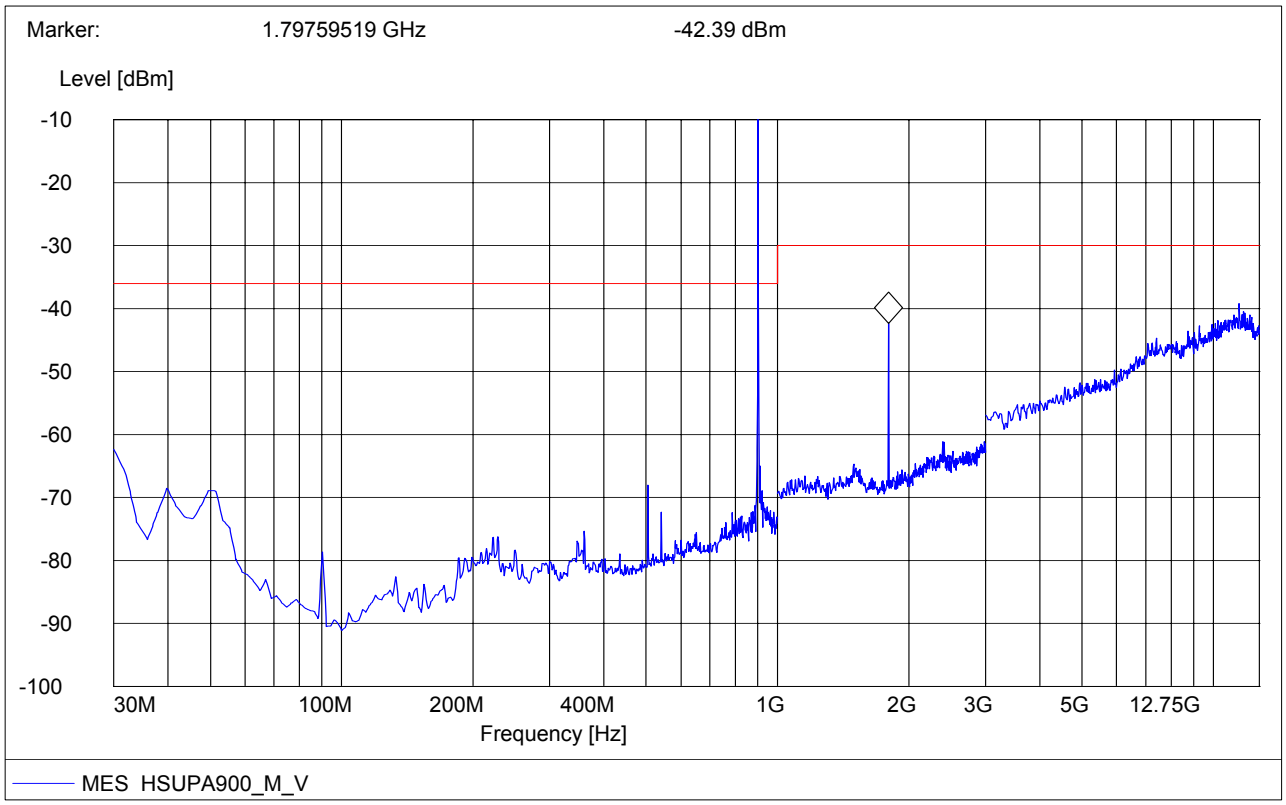
For HSUPA 900

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

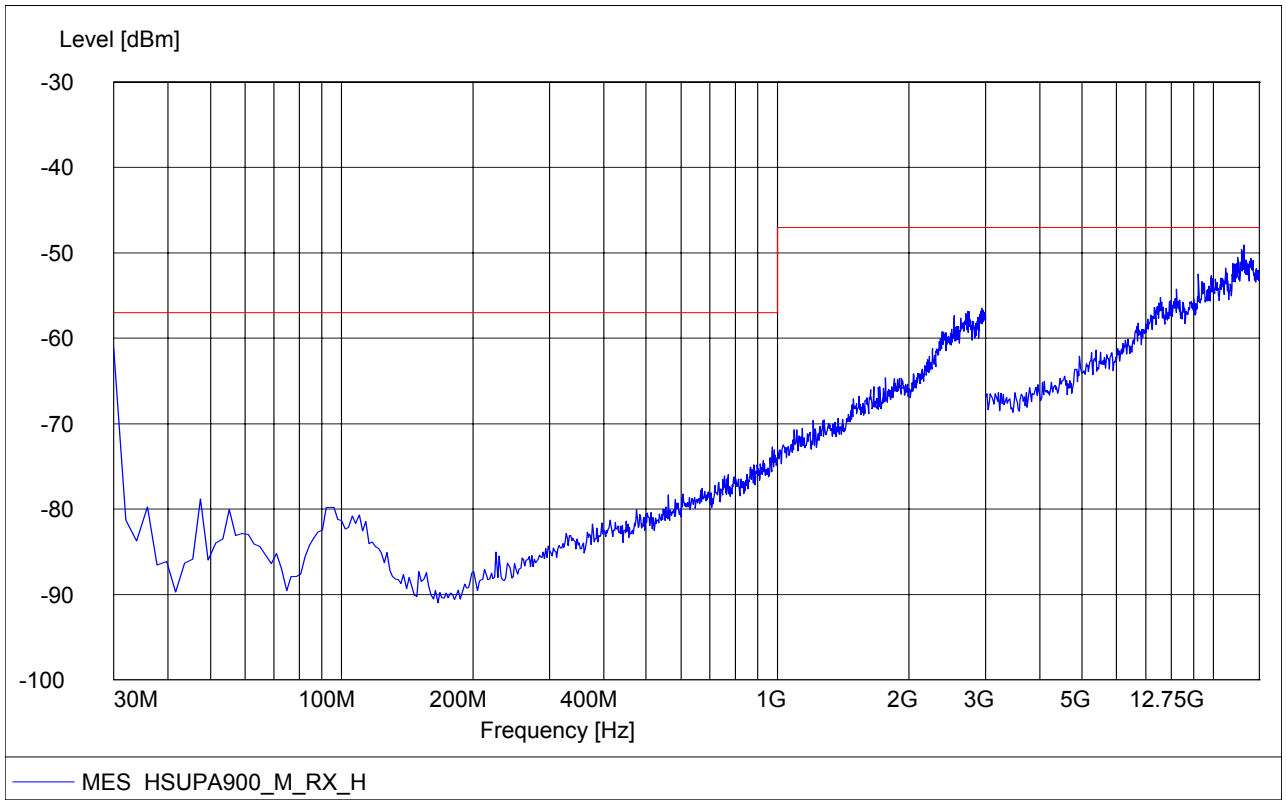


The Middle Channel @Vertical

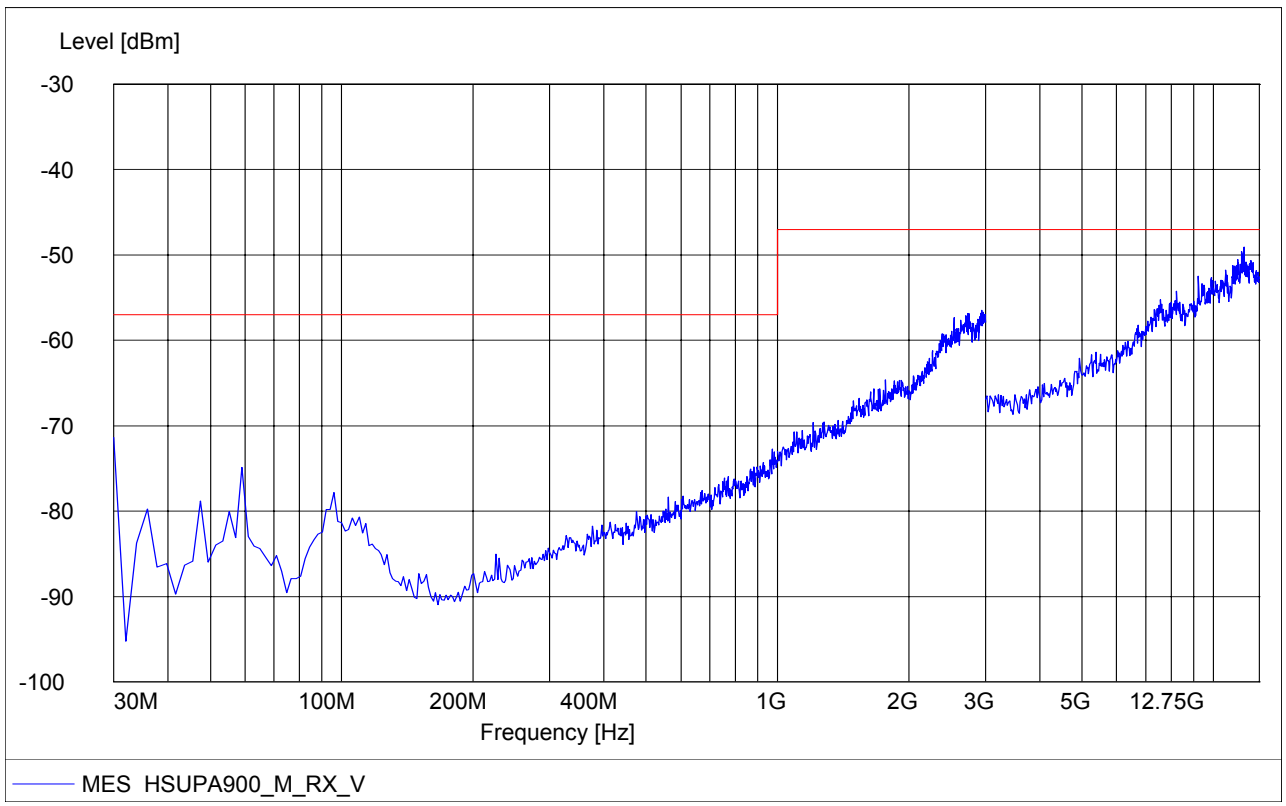


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



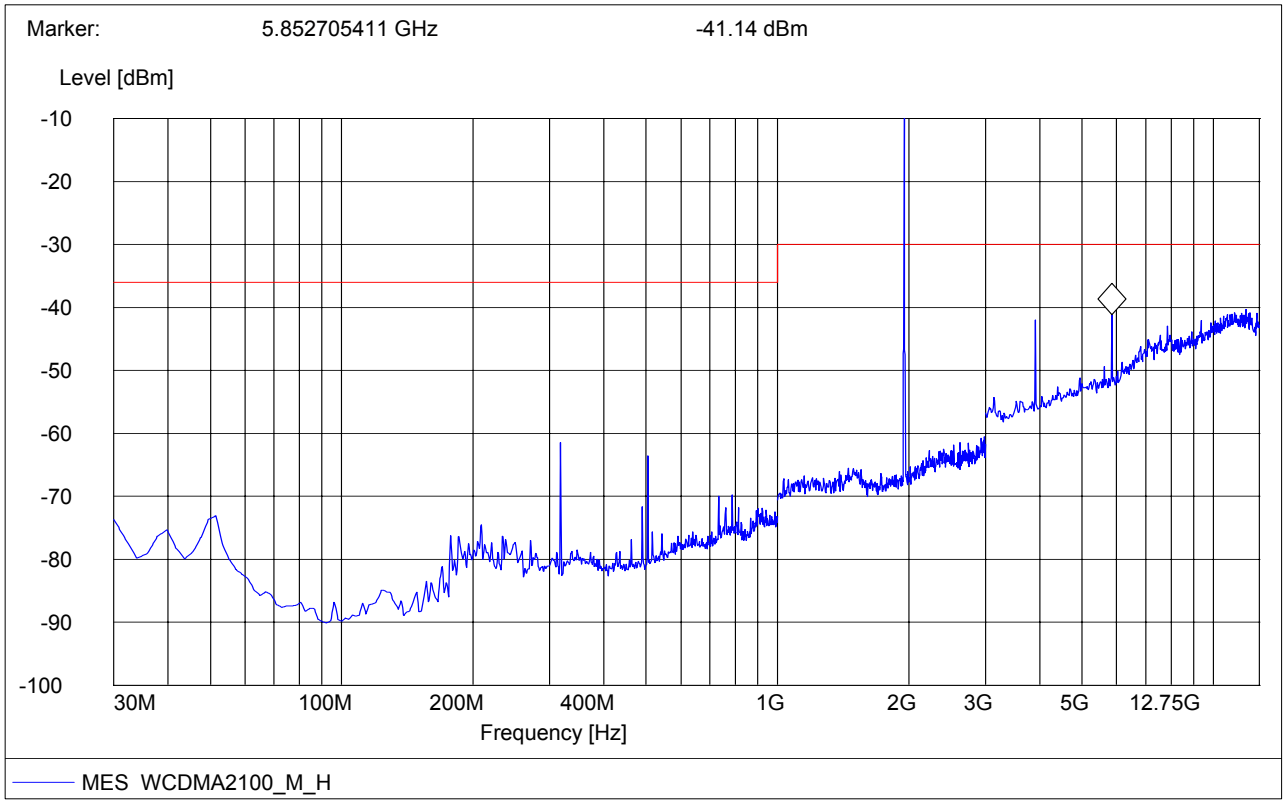
The Middle Channel @Vertical



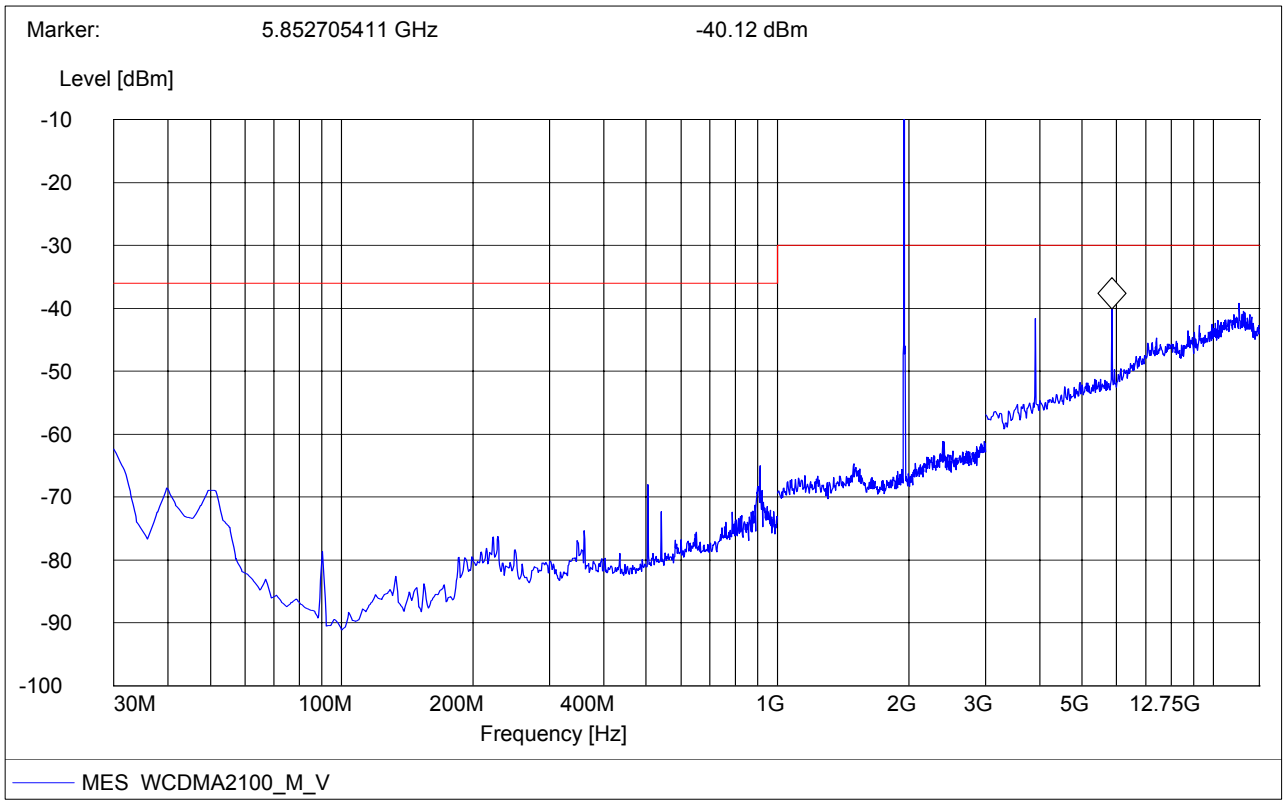
For WCDMA 2100

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

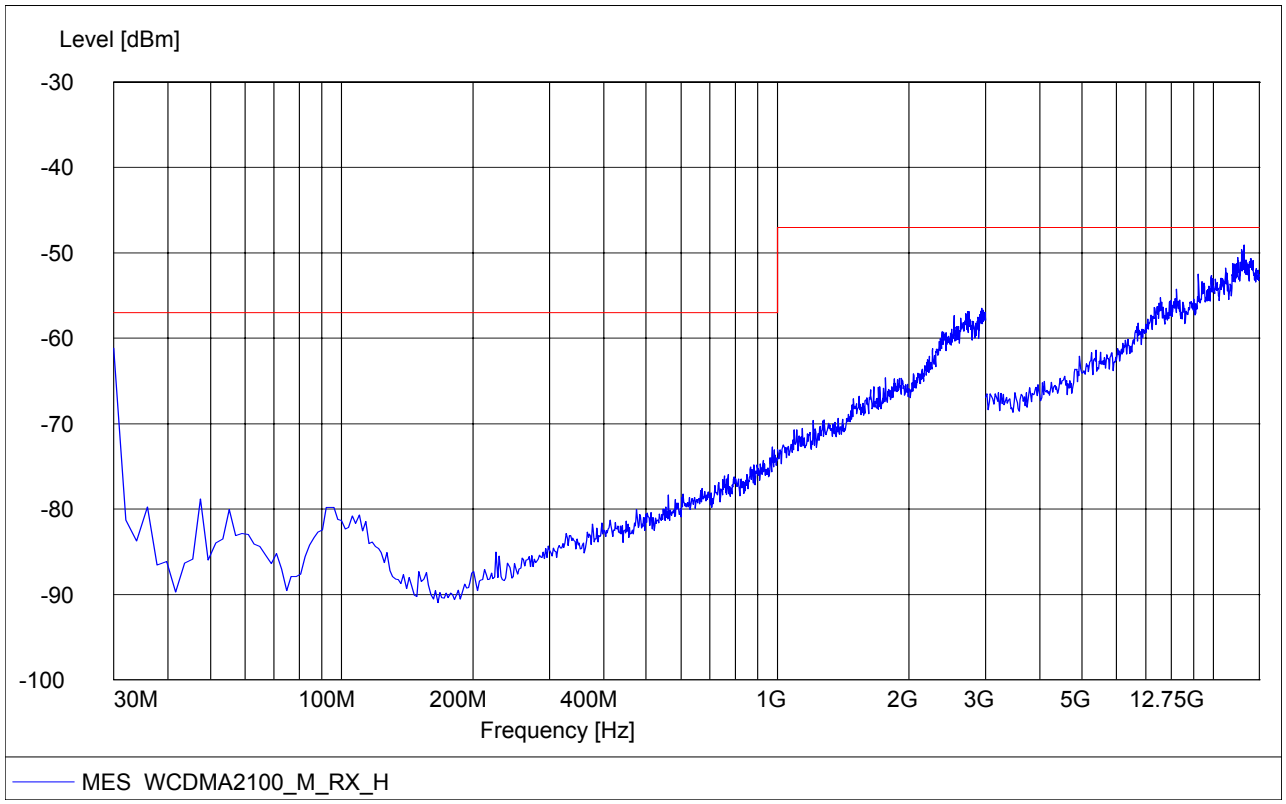


The Middle Channel @Vertical

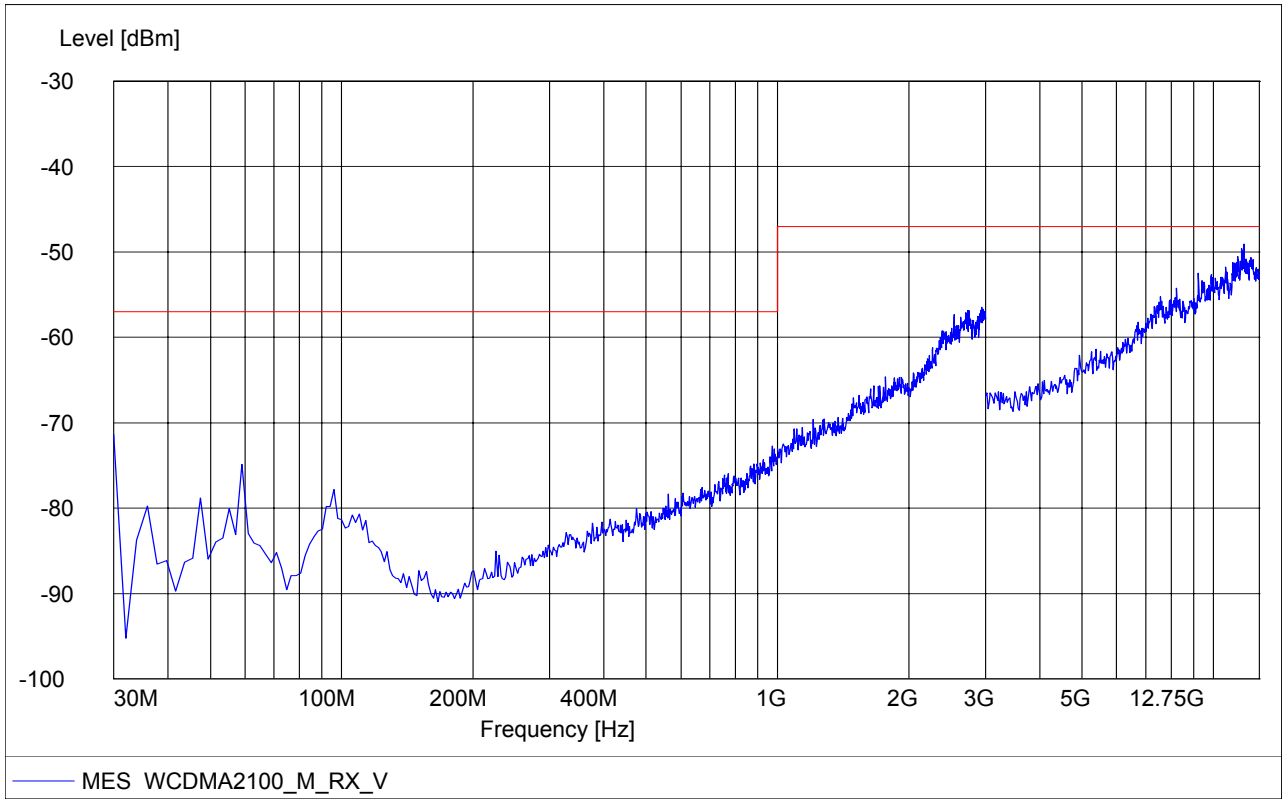


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



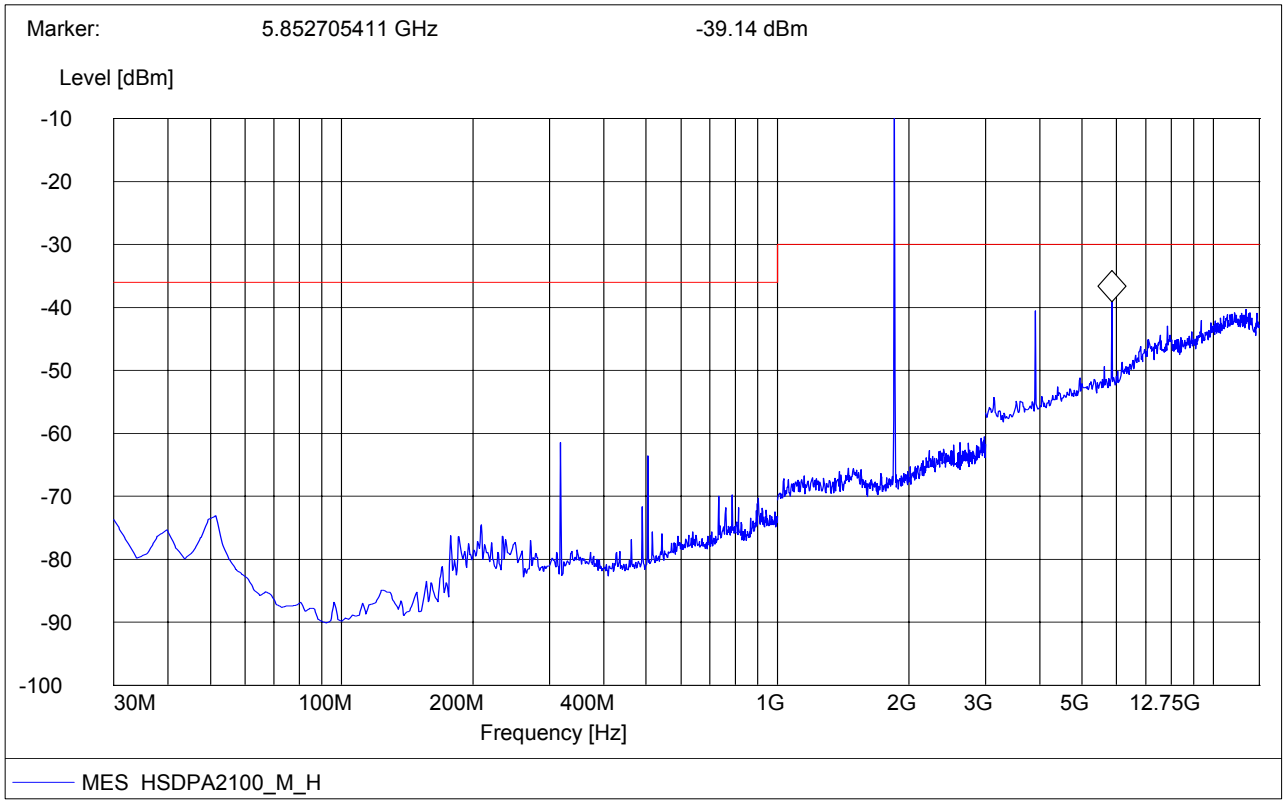
The Middle Channel @Vertical



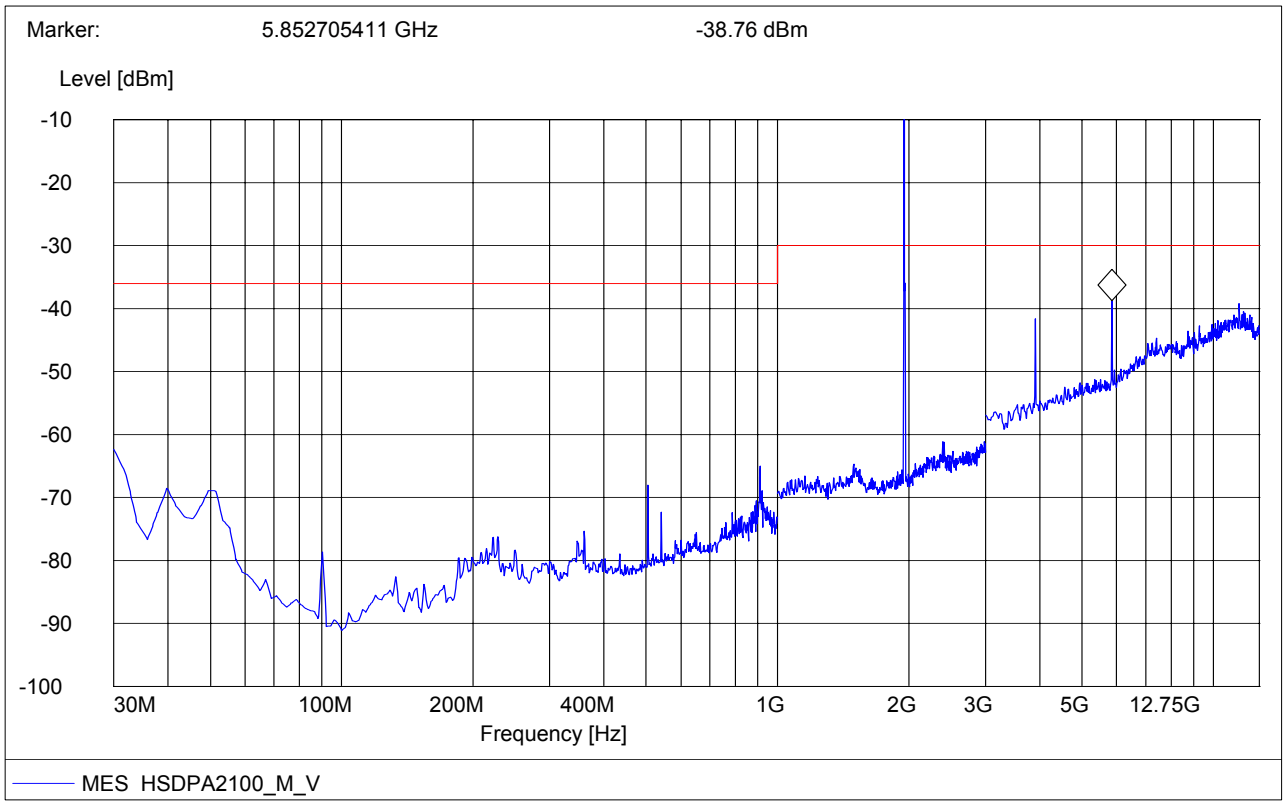
For HSDPA 2100

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

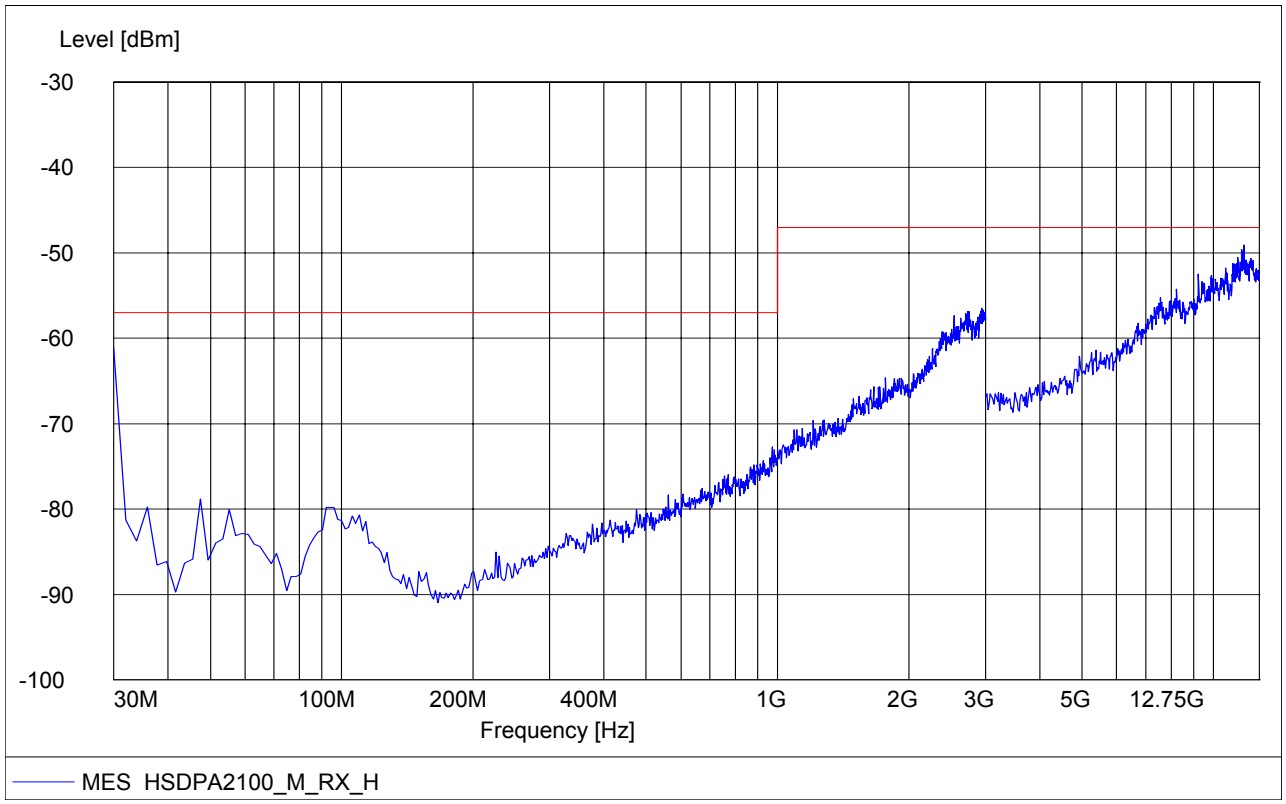


The Middle Channel @Vertical

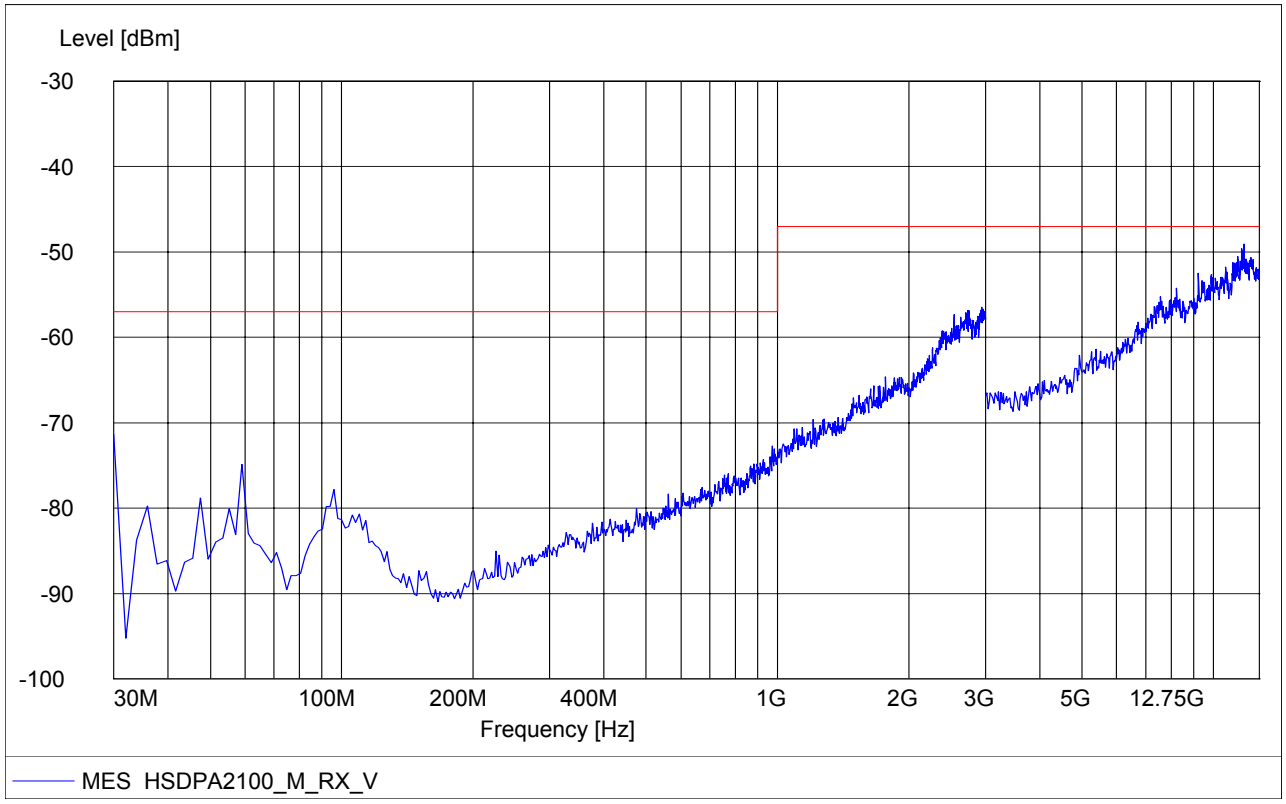


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



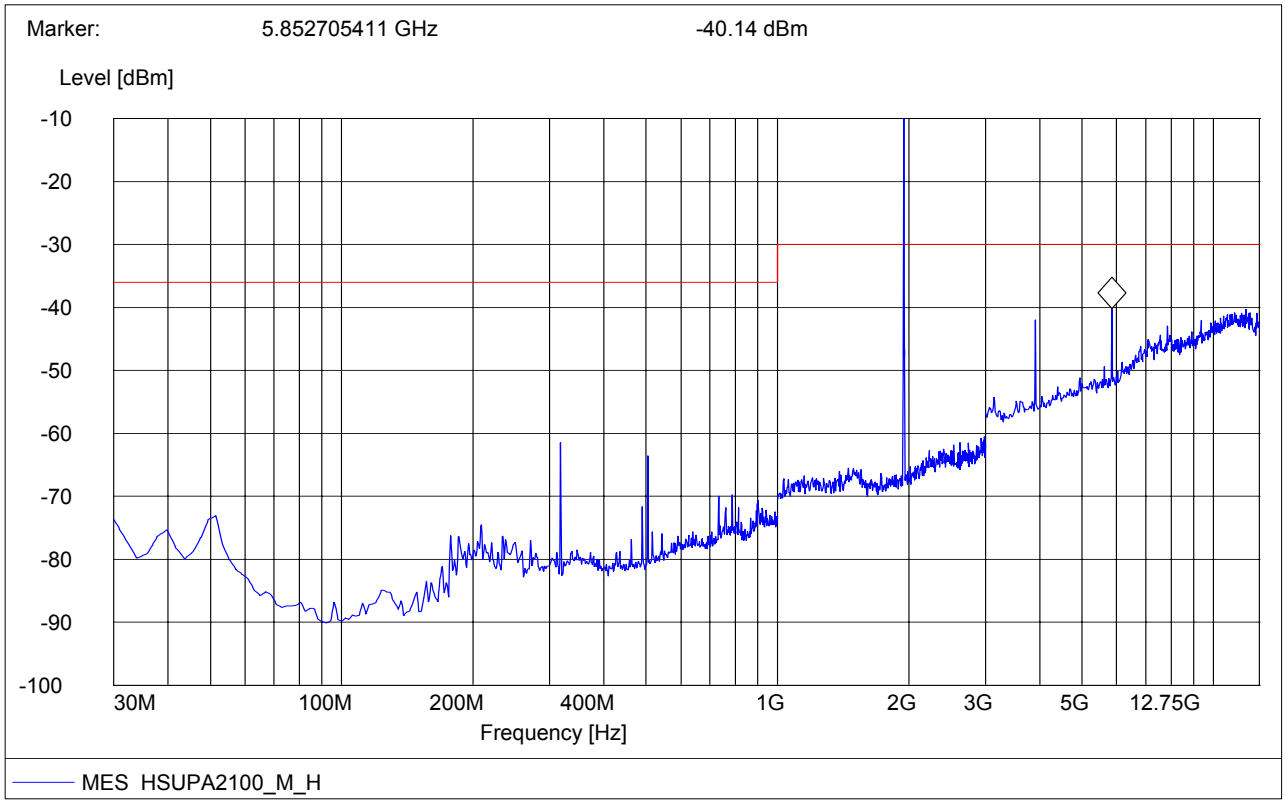
The Middle Channel @Vertical



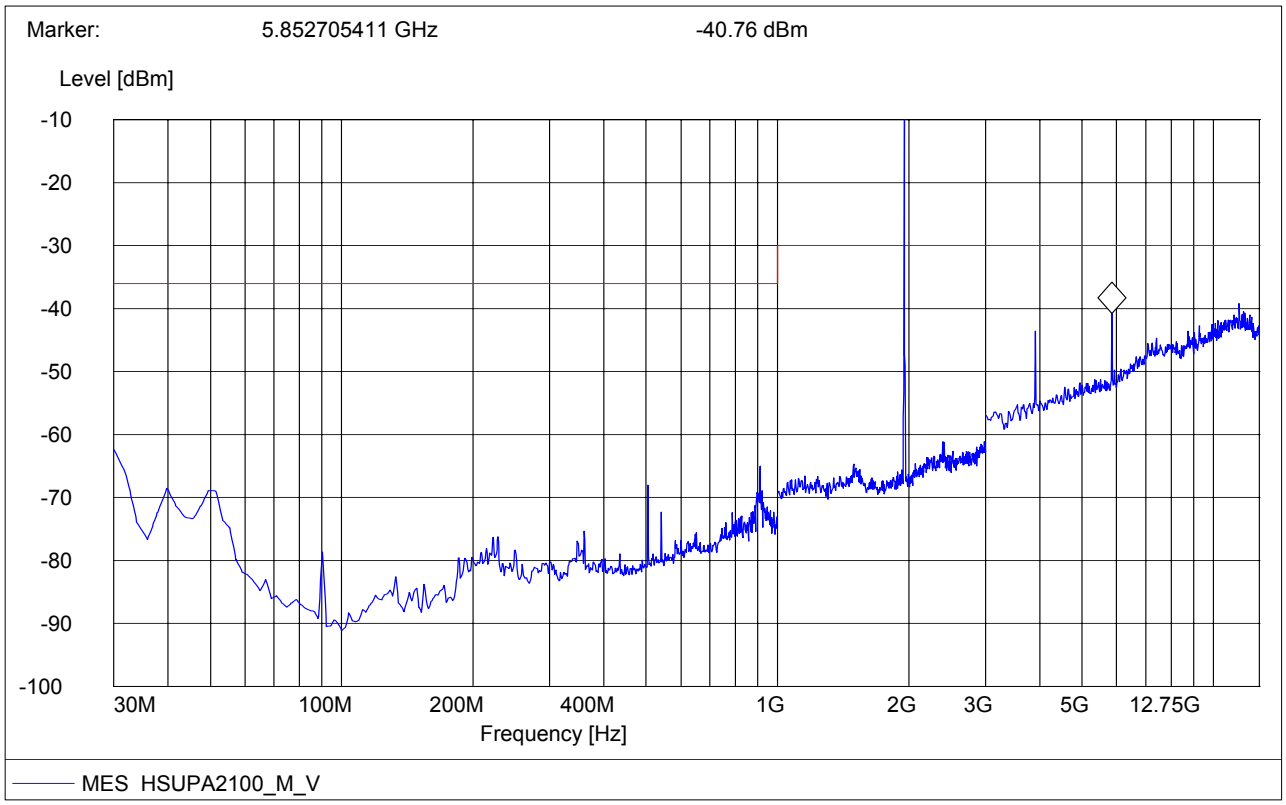
For HSUPA 2100

Traffic Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal

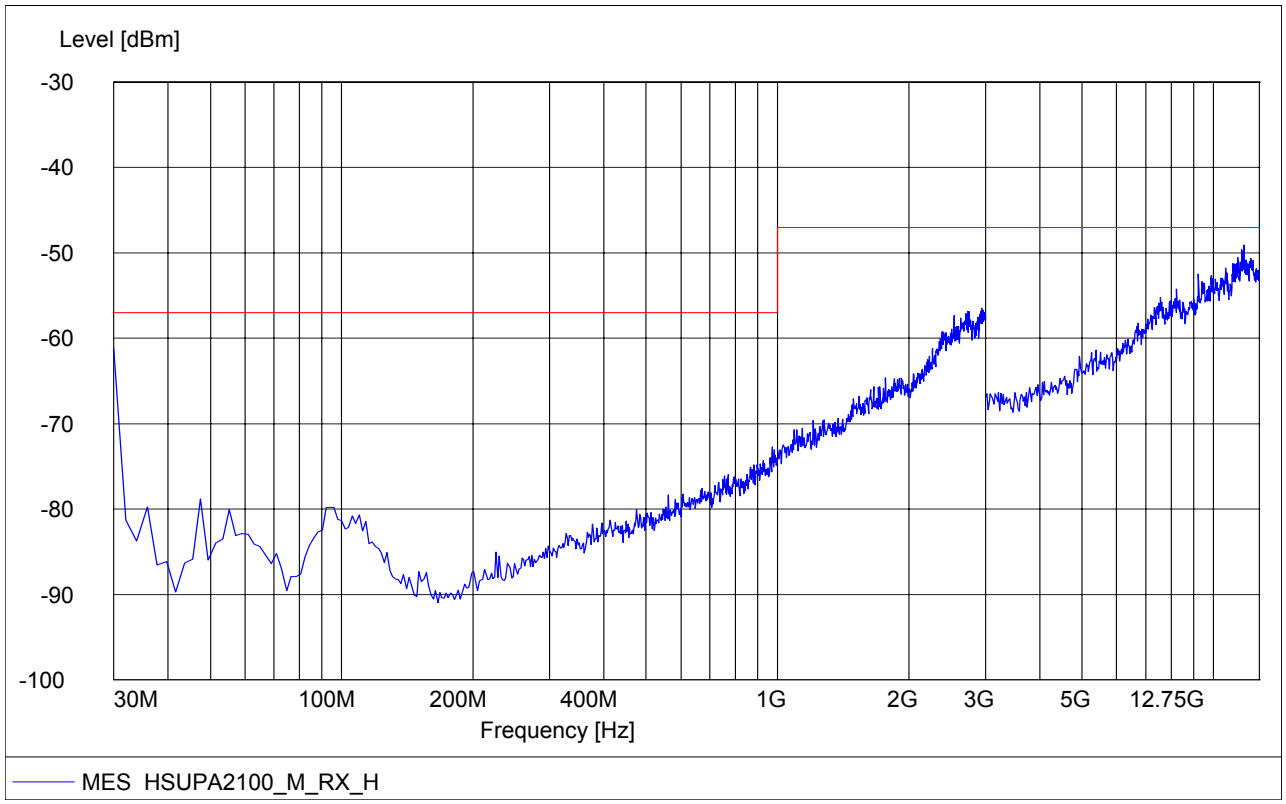


The Middle Channel @Vertical

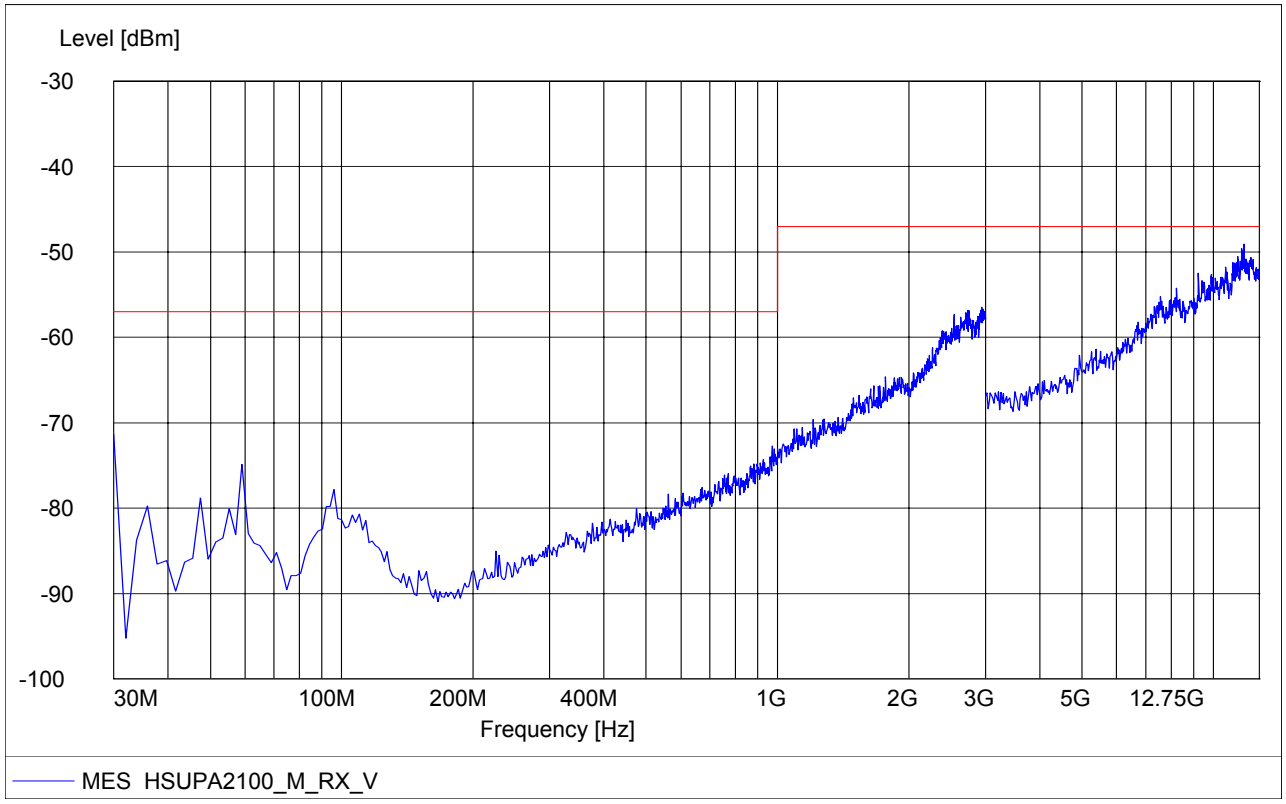


Idle Mode Mode (30MHz~12.75GHz)

The Middle Channel @Horizontal



The Middle Channel @Vertical



4.1.2. Control and monitoring functions (UE)

LIMIT

ETSI EN 301 908-1 (V.5.2.1) Sub-clause 4.2.4.2

This requirement, together with other control and monitoring technical requirements identified in the table of cross references in the applicable part, verifies that the control and monitoring functions of the UE prevent it from transmitting in the absence of a valid network.
This test is applicable to radio communications equipment and ancillary equipment in the operating band defined in the applicable part of this multipart harmonized standard.
This test shall be performed on the radio communications equipment and/or a representative configuration of the ancillary equipment.
The maximum measured power during the duration of the test shall not exceed -30 dBm.

TEST PROCEDURE

1 . At the start of the test, the UE shall be switched off. The UE antenna connector shall be connected to a power measuring equipment, with the following characteristics:
- the RF bandwidth shall exceed the total operating transmit frequency range of the UE for operation with an applicable part;
- the response time of the power measuring equipment shall be such that the measured power has reached within 1 dB of its steady state value within 100 µs of a CW signal being applied;
- it shall record the maximum power measured.

NOTE: The equipment may include a video low pass filter to minimize its response to transients or Gaussian noise peaks.
2. The UE shall be switched on for a period of approximately fifteen minutes, and then switched off.
3. The EUT shall remain switched off for a period of at least thirty seconds, and shall then be switched on for a period of approximately one minute.
4. The maximum power emitted from the UE throughout the duration of the test shall be recorded.

TEST RESULTS

FDD Band I								
Test environment		Test Frequency (MHz)		Measurement Results (dBm)				Limit (dBm)
Temperature(℃)	Voltage (V)	Start Freq	Stop Freq	1st	2nd	3rd	4th	
25	230	1920	1980	-38.26	-39.12	-36.28	-37.74	-30.00
Test Results				PASS				

FDD Band VIII								
Test environment		Test Frequency (MHz)		Measurement Results (dBm)				Limit (dBm)
Temperature(℃)	Voltage (V)	Start Freq	Stop Freq	1st	2nd	3rd	4th	
25	230	880	915	-39.52	-37.27	-38.14	-36.77	-30.00
Test Results				PASS				

4.2. ETSI EN 301 908-2 REQUIREMENTS

4.2.1. Transmitter maximum output power

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.2.2

The UE maximum output power shall be within the shown value in table 4.2.2.2-1 even for the multi-code DPDCH transmission mode.

Table 4.2.2.2-1: UE power classes

Operating Band	Power Class 3		Power Class 3bis		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
Band I	+24	+1.7/-3.7			+21	+2.7/-2.7
Band III	+24	+1.7/-3.7			+21	+2.7/-2.7
Band VII	+24	+1.7/-3.7	+23	+2.7/-2.7	+21	+2.7/-2.7
Band VIII	+24	+1.7/-3.7	+23	+2.7/-2.7	+21	+2.7/-2.7
Band XV	+24	+1.7/-3.7	+23	+2.7/-2.7	+21	+2.7/-2.7
Band XVI	+24	+1.7/-3.7	+23	+2.7/-2.7	+21	+2.7/-2.7

NOTE: These requirements do not take into account the maximum power reduction allowed to the UE in the presence of HS-DPCCH and E-DCH specified in TS 125 101 [5].

TEST PROCEDURE

1. Set and send continuously Up power control commands to the UE.
2. Measure the mean power of the UE in a bandwidth of at least (1 + α) times the chip rate of the radio access mode. The mean power shall be averaged over at least one timeslot.

TEST RESULTS

FDD Band I							
Test environment		**Test Results**					
Temperature(℃)	**Voltage (V)**	**Test Channel**	**Power (dBm)**	**Test Channel**	**Power (dBm)**	**Test Channel**	**Power (dBm)**
25	230	9613	24.00	9750	22.50	9887	23.00
-20	253	9613	24.05	9750	22.62	9887	23.16
	207	9613	24.05	9750	22.60	9887	23.22
+55	253	9613	23.95	9750	22.54	9887	22.91
	207	9613	23.98	9750	22.58	9887	23.02
Test Limit		20.30dBm～25.70dBm					
Test Results		**PASS**					

FDD Band VIII							
Test environment		**Test Results**					
Temperature(℃)	**Voltage (V)**	**Test Channel**	**Power (dBm)**	**Test Channel**	**Power (dBm)**	**Test Channel**	**Power (dBm)**
25	230	2713	22.40	2788	22.70	2862	22.40
-20	253	2713	22.48	2788	22.76	2862	22.47
	207	2713	22.48	2788	22.74	2862	22.45
+55	253	2713	22.35	2788	22.67	2862	22.36
	207	2713	22.38	2788	22.67	2862	22.38
Test Limit		20.30dBm～25.70dBm					
Test Results		**PASS**					

4.2.2. Transmitter spectrum emission mask

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.3.2

The spectrum emission mask of the UE applies to frequencies, which are between 2,5 MHz and 12,5 MHz away from the UE centre carrier frequency. The out of channel emission is specified relative to the RRC filtered mean power of the UE carrier.
The power of any UE emission shall not exceed the levels specified in table 4.2.3.2-1. The requirements are applicable for all for the values of βc, βd, βhs, βec and βed defined in TS 125 214 [8].

Table 4.2.3.2-1: Spectrum emission mask requirement

∆ f in MHz (note 1)	Minimum requirement (note 2)		Measurement bandwidth (note 5)
	Relative requirement	Absolute requirement (in measurement bandwidth)	
2.5 MHz to 3.5 MHz	$\left\{-33{,}5-15\cdot\left(\frac{\Delta f}{MHz}-2{,}5\right)\right\}dBc$	-69.6 dBm	30 kHz (see note 3)
3.5 MHz to 7.5 MHz	$\left\{-33{,}5-1\cdot\left(\frac{\Delta f}{MHz}-3{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
7.5 MHz to 8.5 MHz	$\left\{-37{,}5-10\cdot\left(\frac{\Delta f}{MHz}-7{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
8.5 MHz to 12.5 MHz	-47.5 dBc	-54.3 dBm	1 MHz (see note 4)

NOTE 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.
NOTE 2: The minimum requirement is calculated from the relative requirement or the absolute requirement, whichever is the higher power.
NOTE 3: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.
NOTE 4: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.
NOTE 5: As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

TEST PROCEDURE

1. Set and send continuously Up power control commands to the UE until the UE output power shall be at the maximum level.
2. Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 4.2.3.2-1. Measurements with an offset from the carrier centre frequency between 2.515 MHz and 3.485 MHz shall use a 30 kHz measurement filter. Measurements with an offset from the carrier centre frequency between 4 MHz and 12 MHz shall use 1 MHz measurement bandwidth and the result may be calculated by integrating multiple 50 kHz or narrower filter measurements. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous steps according to table 4.2.3.2-1. The measured power shall be recorded for each step.
3. Measure the RRC filtered mean power centred on the assigned channel frequency.
4. Calculate the ratio of the power 2 with respect to 3 in dBc.

TEST RESULTS

FDD Band I								
Test Channel					9613			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1922.600 MHz							22.80 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.500	1914.100	-27.49	1 MHz	-24.71
		-8.50	-7.50	-7.691	1914.909	-22.99	1 MHz	-16.61
		-7.50	-4.00	-4.006	1918.594	-11.51	1 MHz	-11.21
		-3.485	-2.515	-2.535	1920.065	-23.21	30 KHz	-11.24
		2.515	3.485	2.551	1925.151	-23.02	30 KHz	-11.47
		4.00	7.50	4.006	1926.606	-15.91	1 MHz	-12.35
		7.50	8.50	7.514	1930.114	-26.38	1 MHz	-14.85
		8.50	12.00	8.500	1931.100	-30.37	1 MHz	-24.71
Test Results					PASS			

FDD Band I								
Test Channel					9750			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1950.000 MHz							21.70 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.550	1941.450	-31.93	1 MHz	-25.83
		-8.50	-7.50	-7.583	1942.417	-26.64	1 MHz	-16.66
		-7.50	-4.00	-4.028	1945.972	-18.68	1 MHz	-12.36
		-3.485	-2.515	-3.412	1946.588	-22.44	30 KHz	-25.51
		2.515	3.485	3.460	1953.460	-25.40	30 KHz	-26.23
		4.00	7.50	4.179	1954.179	-17.30	1 MHz	-12.51
		7.50	8.50	7.707	1957.707	-29.29	1 MHz	-17.89
		8.50	12.00	8.573	1958.573	-33.63	1 MHz	-25.83
Test Results					PASS			

FDD Band I								
Test Channel					9887			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1977.400 MHz							22.40 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.651	1968.749	-35.71	1 MHz	-25.14
		-8.50	-7.50	-7.553	1969.847	-31.09	1 MHz	-15.67
		-7.50	-4.00	-4.006	1973.394	-14.43	1 MHz	-11.64
		-3.485	-2.515	-2.527	1974.873	-29.24	30 KHz	-11.55
		2.515	3.485	2.527	1979.927	-29.63	30 KHz	-11.55
		4.00	7.50	4.006	1981.406	-13.22	1 MHz	-11.64
		7.50	8.50	7.556	1984.956	-29.45	1 MHz	-15.70
		8.50	12.00	8.556	1985.956	-33.30	1 MHz	-25.14
Test Results					PASS			

FDD Band VIII								
Test Channel					2713			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 882.600 MHz							22.20 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.550	874.050	-41.64	1 MHz	-25.29
		-8.50	-7.50	-7.697	874.903	-35.13	1 MHz	-17.26
		-7.50	-4.00	-4.017	878.583	-15.04	1 MHz	-11.81
		-3.485	-2.515	-3.477	879.123	-33.53	30 KHz	-25.95
		2.515	3.485	3.389	885.989	-36.86	30 KHz	-24.62
		4.00	7.50	4.000	886.600	-15.74	1 MHz	-11.79
		7.50	8.50	7.559	890.159	-35.36	1 MHz	-15.88
		8.50	12.00	8.590	891.190	-40.72	1 MHz	-25.29
Test Results					PASS			

FDD Band VIII								
Test Channel					2788			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 897.600 MHz							22.50 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.668	888.932	-38.90	1 MHz	-24.98
		-8.50	-7.50	-7.742	889.858	-33.90	1 MHz	-17.40
		-7.50	-4.00	-4.000	893.600	-16.86	1 MHz	-11.48
		-3.485	-2.515	-2.545	895.055	-39.02	30 KHz	-11.65
		2.515	3.485	3.412	901.012	-35.10	30 KHz	-24.66
		4.00	7.50	4.000	901.600	-13.79	1 MHz	-11.48
		7.50	8.50	7.580	905.180	-31.85	1 MHz	-15.78
		8.50	12.00	8.550	906.150	-36.88	1 MHz	-24.98
Test Results					PASS			

FDD Band VIII								
Test Channel					2862			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 912.400 MHz							22.20 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.562	903.838	-25.53	1 MHz	-25.28
		-8.50	-7.50	-8.454	903.946	-25.14	1 MHz	-24.81
		-7.50	-4.00	-4.011	908.389	-11.82	1 MHz	-11.79
		-3.485	-2.515	-3.477	908.923	-25.60	30 KHz	-25.94
		2.515	3.485	2.600	915.000	-23.54	30 KHz	-12.79
		4.00	7.50	4.000	916.400	-13.01	1 MHz	-11.78
		7.50	8.50	7.588	919.988	-36.49	1 MHz	-16.16
		8.50	12.00	8.511	920.911	-45.33	1 MHz	-25.28
Test Results					PASS			

4.2.3. Transmitter spurious emissions

LIMIT

ETSI EN 301 908-1 (V.4.2.1) Sub-clause 4.2.4.2

Spurious emissions are emissions, which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out-of-band emissions.

The power of spurious emissions shall not exceed the limits defined in tables 4.2.4.2-1 and 4.2.4.2-2. The limits shown in tables 4.2.4.2-1 and 4.2.4.2-2 are only applicable for frequencies, which are greater than 12,5 MHz away from the UE centre carrier frequency.

Table 4.2.4.2-1: General spurious emissions requirements

Frequency bandwidth	Measurement bandwidth	Minimum requirement
9 kHz ⩽ f < 150 kHz	1 kHz	-36 dBm
150 kHz ⩽ f < 30 MHz	10 kHz	-36 dBm
30 MHz ⩽ f < 1 000 MHz	100 kHz	-36 dBm
1 GHz ⩽ f < 12.75 GHz	1 MHz	-30 dBm

Table 4.2.4.2-2: Additional spurious emissions requirements

Operating band	Frequency bandwidth	Measurement bandwidth	Minimum requirement
I	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm
III	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	3.84 MHz	-60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm
VII	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 590 MHz ⩽ f ⩽ 2 620 MHz	3.84 MHz	-60 dBm
	2 620 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-50 dBm
VIII	925 MHz ⩽ f ⩽ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz < f ⩽ 960 MHz	100 kHz 3.84 MHz	-79 dBm (note 1) -60 dBm
	1 805 MHz < f ⩽ 1 830 MHz	100 kHz 3.84 MHz	-71 dBm (notes 1 and 2) -60 dBm (note 2)
	1 830 MHz < f ⩽ 1 880 MHz	100 kHz 3.84 MHz	-71 dBm (note 1) -60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 640 MHz	3.84 MHz	-60 dBm
	2 640 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm (note 2)
XV	921 MHz ⩽ f ⩽ 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz ⩽ f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 620 MHz	3.84 MHz	-50 dBm
	2 620 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm

XVI	921 MHz ≤ f ≤ 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ≤f ≤ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz ≤ f ≤ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ≤ f ≤ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 110 MHz ≤ f ≤ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ≤ f ≤ 2 620 MHz	3.84 MHz	-50 dBm
	2 620 MHz ≤ f ≤ 2 690 MHz	3.84 MHz	-60 dBm
NOTE 1: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in table 4.2.4.2-1 are permitted for each UARFCN used in the measurement. NOTE 2: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, measurements with a level up to the applicable requirements defined in table 4.2.4.2-1 are permitted for each UARFCN used in the measurement due to 2nd or 3rd harmonic spurious emissions.			

TEST PROCEDURE

1. Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
2. Sweep the spectrum analyser (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

TEST RESULTS

FDD Band I							
Test Channel				9613			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.035	-70.99	1 KHz	-36.00
		0.150	30.00	3.840	-61.65	10 KHz	-36.00
		30.00	921.00	458.00	-74.21	100 KHz	-36.00
		921.00	925.00	923.44	-76.04	100 KHz	-60.00
		925.00	935.00	930.27	-76.79	100 KHz	-67.00
		935.00	960.00	955.68	-84.15	100 KHz	-79.00
		960.00	1000.00	968.36	-68.01	100 KHz	-36.00
		1000.00	1805.00	1464.87	-67.01	1 MHz	-30.00
		1805.00	1880.00	1872.68	-78.83	100 KHz	-71.00
		1880.00	2100.00	1909.88	-43.54	1 MHz	-30.00
		2110.00	2170.00	2155.84	-69.00	3.84 MHz	-60.00
		2170.00	2585.00	2500.47	-59.61	1 MHz	-30.00
		2585.00	2690.00	2633.59	-69.91	3.84 MHz	-60.00
		2690.00	5000.00	3846.30	-51.14	1 MHz	-30.00
		5000.00	12750.00	12469.18	-68.65	1 MHz	-30.00
Test Results				PASS			

FDD Band I							
Test Channel				9750			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.035	-71.59	1 KHz	-36.00
		0.150	30.00	3.840	-64.66	10 KHz	-36.00
		30.00	921.00	804.00	-76.68	100 KHz	-36.00
		921.00	925.00	925.03	-76.03	100 KHz	-60.00
		925.00	935.00	933.11	-78.89	100 KHz	-67.00
		935.00	960.00	957.56	-84.52	100 KHz	-79.00
		960.00	1000.00	997.25	-72.92	100 KHz	-36.00
		1000.00	1805.00	1472.72	-66.98	1 MHz	-30.00
		1805.00	1880.00	1868.82	-76.89	100 KHz	-71.00
		1880.00	2100.00	1937.47	-42.05	1 MHz	-30.00
		2110.00	2170.00	2168.58	-68.18	3.84 MHz	-60.00
		2170.00	2585.00	2499.11	-59.91	1 MHz	-30.00
		2585.00	2690.00	2604.36	-68.03	3.84 MHz	-60.00
		2690.00	5000.00	3898.03	-51.00	1 MHz	-30.00
		5000.00	12750.00	12468.97	-68.65	1 MHz	-30.00
Test Results				PASS			

FDD Band I							
Test Channel				9887			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.035	-71.66	1 KHz	-36.00
		0.150	30.00	3.840	-62.37	10 KHz	-36.00
		30.00	921.00	870.700	-75.47	100 KHz	-36.00
		921.00	925.00	924.784	-77.12	100 KHz	-60.00
		925.00	935.00	925.897	-76.62	100 KHz	-67.00
		935.00	960.00	955.900	-85.28	100 KHz	-79.00
		960.00	1000.00	1000.00	-65.28	100 KHz	-36.00
		1000.00	1805.00	1470.37	-66.97	1 MHz	-30.00
		1805.00	1880.00	1856.28	-78.11	100 KHz	-71.00
		1880.00	2100.00	1989.90	-45.29	1 MHz	-30.00
		2110.00	2170.00	2168.63	-68.11	3.84 MHz	-60.00
		2170.00	2585.00	2581.51	-59.92	1 MHz	-30.00
		2585.00	2690.00	2682.55	-68.00	3.84 MHz	-60.00
		2690.00	5000.00	3951.91	-57.32	1 MHz	-30.00
		5000.00	12750.00	12469.66	-68.68	1 MHz	-30.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2713			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.019	-69.68	1 KHz	-36.00
		0.150	30.00	0.190	-76.01	10 KHz	-36.00
		30.00	925.00	895.600	-57.26	100 KHz	-36.00
		925.00	935.00	922.36	-76.58	100 KHz	-67.00
		935.00	960.00	957.57	-86.35	100 KHz	-79.00
		960.00	1000.00	998.39	-62.13	100 KHz	-36.00
		1000.00	1805.00	1763.58	-51.13	1 MHz	-30.00
		1805.00	1830.00	1825.46	-79.36	100 KHz	-71.00
		1830.00	1880.00	1873.61	-78.14	100 KHz	-71.00
		1880.00	2100.00	2057.99	-59.27	1 MHz	-30.00
		2110.00	2170.00	2143.33	-68.75	3.84 MHz	-60.00
		2170.00	2585.00	2480.42	-57.55	1 MHz	-30.00
		2585.00	2640.00	2635.42	-67.29	3.84 MHz	-60.00
		2640.00	2690.00	2685.31	-68.82	3.84 MHz	-60.00
		2690.00	5000.00	4731.67	-56.42	1 MHz	-30.00
		5000.00	12750.00	12464.17	-53.55	1 MHz	-30.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2788			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.019	-70.66	1 KHz	-36.00
		0.150	30.00	0.190	-76.21	10 KHz	-36.00
		30.00	925.00	910.700	-58.25	100 KHz	-36.00
		925.00	935.00	934.254	-76.14	100 KHz	-67.00
		935.00	960.00	957.336	-86.67	100 KHz	-79.00
		960.00	1000.00	984.840	-63.96	100 KHz	-36.00
		1000.00	1805.00	1796.65	-51.10	1 MHz	-30.00
		1805.00	1830.00	1825.00	-79.00	100 KHz	-71.00
		1830.00	1880.00	1869.55	-78.42	100 KHz	-71.00
		1880.00	2100.00	2005.86	-63.25	1 MHz	-30.00
		2110.00	2170.00	2165.50	-58.17	3.84 MHz	-60.00
		2170.00	2585.00	2347.68	-58.81	1 MHz	-30.00
		2585.00	2640.00	2637.19	-65.75	3.84 MHz	-60.00
		2640.00	2690.00	2677.85	-68.96	3.84 MHz	-60.00
		2690.00	5000.00	4735.53	-56.44	1 MHz	-30.00
		5000.00	12750.00	12496.28	-53.58	1 MHz	-30.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2862			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	0.009	0.150	0.019	-70.02	1 KHz	-36.00
		0.150	30.00	0.190	-76.08	10 KHz	-36.00
		30.00	925.00	899.900	-48.75	100 KHz	-36.00
		925.00	935.00	930.778	-75.33	100 KHz	-67.00
		935.00	960.00	950.981	-86.22	100 KHz	-79.00
		960.00	1000.00	994.749	-63.93	100 KHz	-36.00
		1000.00	1805.00	1728.11	-64.63	1 MHz	-30.00
		1805.00	1830.00	1822.99	-71.20	100 KHz	-71.00
		1830.00	1880.00	1869.55	-78.42	100 KHz	-71.00
		1880.00	2100.00	2005.86	-63.25	1 MHz	-30.00
		2110.00	2170.00	2165.50	-58.24	3.84 MHz	-60.00
		2170.00	2585.00	2439.49	-57.98	1 MHz	-30.00
		2585.00	2640.00	2615.66	-65.04	3.84 MHz	-60.00
		2640.00	2690.00	2685.22	-65.55	3.84 MHz	-60.00
		2690.00	5000.00	4730.77	-56.44	1 MHz	-30.00
		5000.00	12750.00	12469.74	-53.58	1 MHz	-30.00
Test Results				PASS			

4.2.4. Transmitter minimum output power

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.5.2

The minimum controlled output power of the UE is when the power is set to a minimum value. The minimum transmit power is defined as a mean power in one time slot.
The minimum output power shall be less than -49 dBm.

TEST PROCEDURE

1. Set and send continuously Down power control commands to the UE.
2. Measure the mean power of the UE.

TEST RESULTS

FDD Band I							
Test environment		Test Results					
Temperature(℃)	Voltage (V)	Test Channel	Power (dBm)	Test Channel	Power (dBm)	Test Channel	Power (dBm)
25	230	9613	-59.60	9750	-59.50	9887	-59.50
-20	253	9613	-59.56	9750	-59.44	9887	-59.48
	207	9613	-59.54	9750	-59.44	9887	-59.43
+55	253	9613	-59.63	9750	-59.50	9887	-59.52
	207	9613	-59.63	9750	-59.48	9887	-59.52
Test Limit		-49.00 dBm					
Test Results		PASS					

FDD Band VIII							
Test environment		Test Results					
Temperature(℃)	Voltage (V)	Test Channel	Power (dBm)	Test Channel	Power (dBm)	Test Channel	Power (dBm)
25	230	2713	-60.40	2788	-60.70	2862	-60.50
-20	253	2713	-60.36	2788	-60.70	2862	-60.52
	207	2713	-60.36	2788	-60.70	2862	-60.52
+55	253	2713	-60.38	2788	-60.72	2862	-60.52
	207	2713	-60.40	2788	-60.72	2862	-60.50
Test Limit		-49.00 dBm					
Test Results		PASS					

4.2.5. Receiver Adjacent Channel Selectivity (ACS)

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.6.2

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a WCDMA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).
For the UE of power class 3 and 4, the BER shall not exceed 0,001 for the parameters specified in table 4.2.6.2-1. This test condition is equivalent to the ACS value 33 dB.

Table 4.2.6.2-1: Test parameters for adjacent channel selectivity

Parameter	Unit	Case 1	Case 2
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 14 dB	<REFSENS> + 41 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 14 dB	<REF$\hat{I}_{or}$> + 41 dB
I_{oac} mean power (modulated)	dBm	-52	-25
F_{uw} (offset)	MHz	+5 or -5	+5 or -5
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	20 (for Power class 3) 18 (for Power class 4)
NOTE 1: <REFSENS> and <REF$\hat{I}$or> as specified in TS 134 121-1 [2]. NOTE 2: The I_{oac} (modulated) signal consists of the common channels and the 16 dedicated data channels as specified in TS 125 101 [5].			

TEST PROCEDURE

1. Set the parameters of the interference signal generator as shown in table 4.2.6.2-1 case 1.
2. Set the power level of UE according to the table 4.2.6.2-1 case 1 with ±1 dB tolerance.
3. Measure the BER of DCH received from the UE at the SS.
4. Set the parameters of the interference signal generator as shown in table 4.2.6.2-1 case 2.
5. Set the power level of UE according to the table 4.2.6.2-1 case 2 with ±1 dB tolerance.
6. Measure the BER of DCH received from the UE at the SS.

TEST RESULTS

FDD Band I					
Test Channel			9750		
Test environment		Measurement Results			Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw} (offset) (MHz)	Test Sample	BER MEAS	
25	230	+5	10000	0.000%	0.100%
		-5	10000	0.000%	0.100%
Test Results			PASS		

FDD Band VIII					
Test Channel			2788		
Test environment		Measurement Results			Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw} (offset) (MHz)	Test Sample	BER MEAS	
25	230	+5	10000	0.000%	0.100%
		-5	10000	0.000%	0.100%
Test Results			PASS		

4.2.6. Receiver blocking characteristics

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.7.2

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.
The BER shall not exceed 0,001 for the parameters specified in tables 4.2.7.2-1 and 4.2.7.2-2. For table 4.2.7.2-2 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

Table 4.2.7.2-1: Test parameters for in-band blocking characteristics

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	
NOTE 1: <REFSENS> and <REF$\hat{I}_{or}$> as specified in TS 134 121-1 [2]. NOTE 2: The Iblocking (modulated) signal consists of the common channels and the 16 dedicated data channels as specified in TS 125 101 [5].			

Table 4.2.7.2-2: Test parameters for out-of-band blocking characteristics

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 3 dB	<REFSENS> + 3 dB	<REFSENS> + 3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2 050 < f < 2 095 2 185 < f < 2 230	2 025 < f ⩽ 2 050 2 230 ⩽ f < 2 255	1 < f ⩽ 2 025 2 255 ⩽ f < 12 750
F_{uw} (Band III operation)	MHz	1 745 < f < 1 790 1 895 < f < 1 940	1 720 < f ⩽ 1 745 1 940 ⩽ f < 1 965	1 < f ⩽ 1 720 1 965 ⩽ f < 12 750
F_{uw} (Band VII operation)	MHz	2 570 < f < 2 605 2 705 < f < 2 750	Na 2 750 ⩽ f < 2 775	1 < f ⩽ 2 570 2 775 ⩽ f < 12 750
F_{uw} (Band VIII operation)	MHz	865 < f < 910 975 < f < 1 020	840 < f < 865 1 020 ⩽ f < 1 045	1 < f ⩽ 840 1 045 ⩽ f < 12 750
F_{uw} (Band XV operation)	MHz	2 570 < f < 2 585 2 705 < f < 2 750	Na 2 750 ⩽ f < 2 775	1 < f ⩽ 2 570 2 775 ⩽ f < 12 750
F_{uw} (Band XVI operation)	MHz	Na 2 705 < f < 2 750	2 500 < f ⩽ 2 570 2 750 ⩽ f < 2 775	1 < f ⩽ 2 500 2 775 ⩽ f < 12 750
Band I operation	For 2 095 MHz ⩽ f ⩽ 2 185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied.			
Band III operation	For 1 790 MHz ⩽ f ⩽ 1 895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied.			
Band VII operation	For 2 605 MHz ⩽ f ⩽ 2 705 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied.			
Band VIII operation	For 910 MHz ⩽ f ⩽ 975 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied.			
Band XV operation	For 2 585 ⩽ f ⩽ 2 705 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied.			
Band XVI operation	For 2 570 ⩽ f ⩽ 2 705 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 4.2.6 and table 4.2.7.2-1 shall be applied			
NOTE: <REFSENS> and <REF$\hat{I}_{or}$> as specified in TS 134 121-1 [2].				

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Table 4.2.7.2-3: Test parameters for narrow band blocking

Parameter	Unit	Band III, VIII
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 10 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB
$I_{blocking}$ (GMSK)	dBm	-56
F_{uw} (offset)	MHz	2.8
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)

NOTE 1: <REFSENS> and <REFÎor> as specified in TS 134 121-1 [2].
NOTE 2: $I_{blocking}$ (GMSK) is an interfering signal as defined in TS 145 004 [9]. It is a continuous GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or any pseudo random data stream.

TEST PROCEDURE

1. Set the parameters of the CW generator or the interference signal generator as shown in tables 4.2.7.2-1, 4.2.7.2-2 and 4.2.7.2-3. For table 4.2.7.2-2 the frequency step size is 1 MHz.
2. Set the power level of the UE according to tables 4.2.7.2-1, 4.2.7.2-2 and 4.2.7.2-3 with a ±1 dB tolerance.
3. Measure the BER of DCH received from the UE at the SS.
4. For table 4.2.7.2-2, record the frequencies for which the BER exceeds the test requirements.

TEST RESULTS

FDD Band I				
Test Channel			9750	
Test environment		Measurement Results		Limit
Temperature (℃)	Voltage (V)	Test Sample	BER MEAS	(BER)
25	230	6300	0.000%	0.100%
Test Results		PASS		

FDD Band VIII				
Test Channel			2788	
Test environment		Measurement Results		Limit
Temperature (℃)	Voltage (V)	Test Sample	BER MEAS	(BER)
25	230	6300	0.000%	0.100%
Test Results		PASS		

4.2.7. Receiver spurious response

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.8.2

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.
The BER shall not exceed 0,001 for the parameters specified in table 4.2.8.2-1.

Table 4.2.8.2-1: Test parameters for spurious response

Parameter	Level	Unit
DPCH_Ec	<REFSENS> + 3 dB	dBm/3.84 MHz
$\hat{I}_{or}$	<REF$\hat{I}_{or}$> + 3 dB	dBm/3.84 MHz
$I_{blocking}$(CW)	-44	dBm
F_{uw}	Spurious response frequencies	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)	dBm
NOTE: <REFSENS> and <REF$\hat{I}$or> as specified in TS 134 121-1 [2].		

TEST PROCEDURE

1. Set the parameter of the CW generator as shown in table 4.2.8.2-1. The spurious response frequencies are determined in step 4 of clause 5.3.6.1.2.
2. Set the power level of the UE according to table 4.2.8.2-1 with a ±1 dB tolerance.
3. Measure the BER of DCH received from the UE at the SS.

TEST RESULTS

FDD Band I				
Test Channel		9750		
Test environment		Measurement Results		Limit (BER)
Temperature (℃)	Voltage (V)	Test Sample	BER MEAS	
25	230	10000	0.000%	0.100%
Test Results		PASS		

FDD Band VIII				
Test Channel		2788		
Test environment		Measurement Results		Limit (BER)
Temperature (℃)	Voltage (V)	Test Sample	BER MEAS	
25	230	10000	0.000%	0.100%
Test Results		PASS		

4.2.8. Receiver intermodulation characteristics

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.9.2

Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receiver a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.
The BER shall not exceed 0.001 for the parameters specified in table 4.2.9.2-1

Table 4.2.9.2-1: Receive intermodulation characteristics

Parameter	Level		Unit
DPCH_Ec	<REFSENS> + 3 dB		dBm/3.84 MHz
$\hat{I}_{or}$	<REF$\hat{I}_{or}$> + 3 dB		dBm/3.84 MHz
I_{ouw1} (CW)	-46		dBm
I_{ouw2} mean power (modulated)	-46		dBm
F_{uw1} (offset)	10	-10	MHz
F_{uw2} (offset)	20	-20	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)		dBm
NOTE 1: I_{ouw2} (modulated) consists of the common channels and the 16 dedicated data channels as specified in TS 125 101 [5]. NOTE 2: <REFSENS> and <REF$\hat{I}_{or}$> as specified in TS 134 121-1 [2].			

Table 4.2.9.2-2: Test parameters for narrow band intermodulation characteristics

Parameter	Unit	Band III, VIII	
DPCH_Ec	dBm/3.84 MH	<REFSENS> + 10 dB	
$\hat{I}_{or}$	dBm/3.84 MH	<REF$\hat{I}_{or}$> + 10 dB	
I_{ouw1} (CW)	dBm	-43	
I_{ouw2} (GMSK)	dBm	-43	
F_{uw1} (offset)	MHz	3.6	-3.6
F_{uw2} (offset)	MHz	6.0	-6.0
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	
NOTE 1: <REFSENS> and <REF$\hat{I}_{or}$> as specified in TS 134 121-1 [2]. NOTE 2: I_{ouw2} (GMSK) is an interfering signal as defined in TS 145 004 [9]. It is a continuous GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or any pseudo random data stream.			

TEST PROCEDURE

1. Set the parameters of the CW generator and interference generator as shown in tables 4.2.9.2-1 and 4.2.9.2-2.
2. Set the power level of the UE according to tables 4.2.9.2-1 and 4.2.9.2-2 with a ±1 dB tolerance.
3. Measure the BER of DCH received from the UE at the SS.

TEST RESULTS

FDD Band I						
Test Channel				9750		
Test environment		Measurement Results				Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw1} (offset) (MHz)	F_{uw2}(offset) (MHz)	Test Sample	BER MEAS	
25	230	+10	+20	10000	0.000%	0.100%
		-10	-20	10000	0.000%	0.100%
Test Results				PASS		

FDD Band VIII						
Test Channel				2788		
Test environment		Measurement Results				Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw1} (offset) (MHz)	F_{uw2}(offset) (MHz)	Test Sample	BER MEAS	
25	230	+10	+20	10000	0.000%	0.100%
		-10	-20	10000	0.000%	0.100%
Test Results				PASS		

FDD Band I						
Test Channel				9750		
Test environment		Measurement Results				Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw1} (offset) (MHz)	F_{uw2}(offset) (MHz)	Test Sample	BER MEAS	
25	230	+3.6	+6.0	10000	0.000%	0.100%
		-3.6	-6.0	10000	0.000%	0.100%
Test Results				PASS		

FDD Band VIII						
Test Channel				2788		
Test environment		Measurement Results				Limit (BER)
Temperature (℃)	Voltage (V)	F_{uw1} (offset) (MHz)	F_{uw2}(offset) (MHz)	Test Sample	BER MEAS	
25	230	+3.6	+6.0	10000	0.000%	0.100%
		-3.6	-6.0	10000	0.000%	0.100%
Test Results				PASS		

4.2.9. Receiver spurious emissions

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.10.2

The spurious emissions power is the power of emissions, generated or amplified in a receiver, which appear at the UE antenna connector. The requirements in UE transmit bands are valid in URA_PCH, Cell_PCH and idle state.
The power of any narrow band CW spurious emission shall not exceed the maximum level specified in tables 4.2.10.2-1 and 4.2.10.2-2.

Table 4.2.10.2-1: General receiver spurious emission requirements

Frequency band	Measurement bandwidth	Maximum level
30 MHz ⩽ f < 1 GHz	100 kHz	-57 dBm
1 GHz ⩽ f ⩽ 12.75 GHz	1 MHz	-47 dBm

Table 4.2.10.2-2: Additional receiver spurious emission requirements

Operating band	Frequency bandwidth	Measurement bandwidth	Minimum requirement
I	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	1 920 MHz ⩽ f ⩽ 1 980 MHz	3.84 MHz	-60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm
III	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 710 MHz ⩽ f ⩽ 1 785 MHz	3.84 MHz	-60 dBm
	1 805 MHz ⩽ f ⩽ 1 880 MHz	3.84 MHz	-60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm
VII	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz	-67 dBm (note 1)
	935 MHz < f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 500 MHz ⩽ f ⩽ 2 570 MHz	3.84 MHz	-60 dBm
	2 620 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-50 dBm
VIII	880 MHz ⩽ f ⩽ 915 MHz	3.84 MHz	-60 dBm
	921 MHz ⩽ f < 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz < f ⩽ 960 MHz	100 kHz 3.84 MHz	-79 dBm (note 1) -60 dBm
	1 805 MHz < f ⩽ 1 880 MHz	3.84 MHz	-60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 640 MHz	3.84 MHz	-60 dBm
	2 640 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-60 dBm (note 2)
XV	921 MHz ⩽ f ⩽ 925 MHz	100 kHz	-60 dBm (note 1)
	925 MHz ⩽ f ⩽ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz ⩽ f ⩽ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ⩽ f ⩽ 1 880 MHz	100 kHz	-71 dBm (note 1)
	1 900 MHz ⩽ f ⩽ 1 920 MHz	3.84 MHz	-60 dBm
	2 110 MHz ⩽ f ⩽ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ⩽ f ⩽ 2 690 MHz	3.84 MHz	-50 dBm
XVI	921 MHz ⩽ f ⩽ 925 MHz	100 kHz	-60 dBm (note 1)

	925 MHz ≤f≤ 935 MHz	100 kHz 3.84 MHz	-67 dBm (note 1) -60 dBm
	935 MHz ≤ f ≤ 960 MHz	100 kHz	-79 dBm (note 1)
	1 805 MHz ≤ f ≤ 1 880 MHz	100 kHz	-71 dBm (note 1)
	2 010 MHz ≤ f ≤ 2 025 MHz	3.84 MHz	-60 dBm
	2 110 MHz ≤ f ≤ 2 170 MHz	3.84 MHz	-60 dBm
	2 585 MHz ≤ f ≤ 2 690 MHz	3.84 MHz	-50 dBm
NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in table 4.2.10.2-1 are permitted for each UARFCN used in the measurement.			

TEST PROCEDURE

Sweep the spectrum analyser (or other suitable test equipment) over a frequency range from 30 MHz to 12.75 GHz and measure the average power of the spurious emissions.

TEST RESULTS

FDD Band I							
Test Channel				9613			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	921.00	120.000	-84.57	100 KHz	-57.00
		921.00	925.00	821.300	-90.71	100 KHz	-60.00
		925.00	935.00	934.200	-90.99	100 KHz	-67.00
		935.00	960.00	942.800	-90.34	100 KHz	-79.00
		960.00	1000.00	971.477	-90.17	100 KHz	-57.00
		1000.00	1805.00	1462.94	-80.28	1 MHz	-47.00
		1805.00	1880.00	1870.76	-83.25	100 KHz	-71.00
		1880.00	1 920.00	1919.61	-78.83	1 MHz	-47.00
		1920.00	1980.00	1953.65	-73.25	3.84 MHz	-60.00
		1980.00	2110.00	2095.42	-78.81	1 MHz	-47.00
		2110.00	2170.00	2160.58	-72.82	3.84 MHz	-60.00
		2170.00	2585.00	2530.67	-75.64	1 MHz	-47.00
		2585.00	2690.00	2649.01	-73.25	3.84 MHz	-60.00
		2690.00	5000.00	4587.02	-76.02	1 MHz	-47.00
		5000.00	12750.00	12517.16	-71.35	1 MHz	-47.00
Test Results				PASS			

FDD Band I							
Test Channel				9750			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	921.00	120.000	-84.49	100 KHz	-57.00
		921.00	925.00	923.100	-91.11	100 KHz	-60.00
		925.00	935.00	829.900	-90.94	100 KHz	-67.00
		935.00	960.00	942.800	-90.31	100 KHz	-79.00
		960.00	1000.00	972.031	-90.14	100 KHz	-57.00
		1000.00	1805.00	1475.90	-80.27	1 MHz	-47.00
		1805.00	1880.00	1806.25	-79.46	100 KHz	-71.00
		1880.00	2100.00	2099.37	-78.76	1 MHz	-47.00
		1920.00	1980.00	1925.58	-73.36	3.84 MHz	-60.00
		1980.00	2110.00	2099.38	-78.76	1 MHz	-47.00
		2110.00	2170.00	2161.44	-73.04	3.84 MHz	-60.00
		2170.00	2585.00	2520.47	-75.54	1 MHz	-47.00
		2585.00	2690.00	2647.43	-73.36	3.84 MHz	-60.00
		2690.00	5000.00	4587.02	-76.00	1 MHz	-47.00
		5000.00	12750.00	12510.19	-71.28	1 MHz	-47.00
Test Results				PASS			

FDD Band I							
Test Channel				9887			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	921.00	120.000	-84.97	100 KHz	-57.00
		921.00	925.00	923.300	-90.77	100 KHz	-60.00
		925.00	935.00	926.900	-91.05	100 KHz	-67.00
		935.00	960.00	941.700	-90.31	100 KHz	-79.00
		960.00	1000.00	997.785	-90.21	100 KHz	-57.00
		1000.00	1805.00	1464.46	-80.32	1 MHz	-47.00
		1805.00	1880.00	1814.66	-79.48	100 KHz	-71.00
		1880.00	2100.00	2100.00	-78.81	1 MHz	-47.00
		1920.00	1980.00	1941.03	-72.84	3.84 MHz	-60.00
		1980.00	2110.00	2100.00	-78.81	1 MHz	-47.00
		2110.00	2170.00	2126.15	-73.08	3.84 MHz	-60.00
		2170.00	2585.00	2544.30	-75.70	1 MHz	-47.00
		2585.00	2690.00	2678.85	-72.21	3.84 MHz	-60.00
		2690.00	5000.00	4582.31	-76.01	1 MHz	-47.00
		5000.00	12750.00	12515.77	-71.33	1 MHz	-47.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2713			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	880.00	120.000	-84.57	100 KHz	-57.00
		880.00	915.00	894.000	-75.76	3.84 MHz	-60.00
		915.00	925.00	922.600	-90.83	100 KHz	-57.00
		925.00	935.00	934.000	-90.76	100 KHz	-67.00
		935.00	960.00	943.300	-90.33	100 KHz	-79.00
		960.00	1000.00	984.146	-90.17	100 KHz	-57.00
		1000.00	1805.00	1465.99	-80.36	1 MHz	-47.00
		1805.00	1880.00	1853.82	-94.48	100 KHz	-71.00
		1880.00	2100.00	1914.42	-78.93	1 MHz	-47.00
		2110.00	2170.00	2161.73	-73.06	3.84 MHz	-60.00
		2170.00	2585.00	2520.465	-75.58	1 MHz	-47.00
		2585.00	2690.00	2633.301	-69.70	3.84 MHz	-60.00
		2690.00	5000.00	4225.02	-73.88	1 MHz	-47.00
		5000.00	12750.00	12514.38	-71.32	1 MHz	-47.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2788			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	880.00	120.000	-84.12	100 KHz	-57.00
		880.00	915.00	872.900	-75.78	3.84 MHz	-60.00
		915.00	925.00	918.576	-90.34	100 KHz	-57.00
		925.00	935.00	925.900	-90.48	100 KHz	-67.00
		935.00	960.00	942.800	-90.21	100 KHz	-79.00
		960.00	1000.00	995.015	-90.28	100 KHz	-57.00
		1000.00	1805.00	1468.27	-80.38	1 MHz	-47.00
		1805.00	1880.00	1820.09	-94.48	100 KHz	-71.00
		1880.00	2100.00	1909.59	-79.01	1 MHz	-47.00
		2110.00	2170.00	2163.56	-72.66	3.84 MHz	-60.00
		2170.00	2585.00	2520.47	-75.62	1 MHz	-47.00
		2585.00	2690.00	2649.01	-69.88	3.84 MHz	-60.00
		2690.00	5000.00	4279.98	-74.21	1 MHz	-47.00
		5000.00	12750.00	12512.52	-71.25	1 MHz	-47.00
Test Results				PASS			

FDD Band VIII							
Test Channel				2862			
Test environment		Test Frequency		Measurement Results			Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq (MHz)	Stop Freq (MHz)	FREQ (MHz)	MEAS (dBm)	Meas BW	
25	230	30.00	880.00	120.000	-84.69	100 KHz	-57.00
		880.00	915.00	886.300	-75.17	3.84 MHz	-60.00
		915.00	925.00	923.400	-91.18	100 KHz	-57.00
		925.00	935.00	929.900	-90.94	100 KHz	-67.00
		935.00	960.00	945.600	-90.17	100 KHz	-79.00
		960.00	1000.00	984.146	-90.11	100 KHz	-57.00
		1000.00	1805.00	1475.90	-80.36	1 MHz	-47.00
		1805.00	1880.00	1809.61	-89.48	100 KHz	-71.00
		1880.00	2100.00	1912.55	-78.94	1 MHz	-47.00
		2110.00	2170.00	2167.79	-72.96	3.84 MHz	-60.00
		2170.00	2585.00	2520.47	-75.57	1 MHz	-47.00
		2585.00	2690.00	2657.64	-69.68	3.84 MHz	-60.00
		2690.00	5000.00	4334.95	-74.68	1 MHz	-47.00
		5000.00	12750.00	12512.98	-71.30	1 MHz	-47.00
Test Results				PASS			

4.2.10. Out-of-synchronization handling of output power

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.10.2

The UE shall monitor the DPCCH quality in order to detect a loss of the signal on Layer 1. The threshold Qout specifies at what DPCCH quality levels the UE shall shut its power off. The threshold is not defined explicitly, but is defined by the conditions under which the UE shall shut its transmitter off, as stated in this clause.
The DPCCH quality shall be monitored in the UE and compared to the threshold Q_{out} for the purpose of monitoring synchronization. The threshold Q_{out} should correspond to a level of DPCCH quality where no reliable detection of the TPC commands transmitted on the downlink DPCCH can be made. This can be at a TPC command error ratio level of e.g. 20 %.
When the UE estimates the DPCCH quality over the last 160 ms period to be worse than a threshold Q_{out}, the UE shall shut its transmitter off within 40 ms.
The quality level at the thresholds Q_{out} correspond to different signal levels depending on the downlink conditions DCH parameters. For the conditions in table 4.2.11.2-1, a signal with the quality at the level Q_{out} can be generated by a DPCCH_E_c/I_{or} ratio of -25 dB. The DL reference measurement channel 12.2 kbit/s is specified in TS 134 121-1 [2] and with static propagation conditions. The downlink physical channels, other than those specified in table 4.2.11.2-1, are as specified in TS 134 121-1 [2].

Table 4.2.11.2-1: DCH parameters for test of out-of-synchronization handling

Parameter	Value	Unit
$\hat{I}_{or}/I_{oc}$	-1	dB
I_{oc}	-60	dBm/3.84 MHz
$\frac{DPDCH\_E_C}{I_{or}}$	See figure 4.2.11.2-1: Before point A -16,6 After point A not defined	dB
$\frac{DPCCH\_E_C}{I_{or}}$	See figure 4.2.11.2-1	dB
Information Data Rate	12.2	kbit/s

Figure 4.2.11.2-1 shows an example scenario where the DPCCH_Ec/I_{or} ratio varies from a level where the DPCH is demodulated under normal conditions, down to a level below Q_{out} where the UE shall shut its power off.

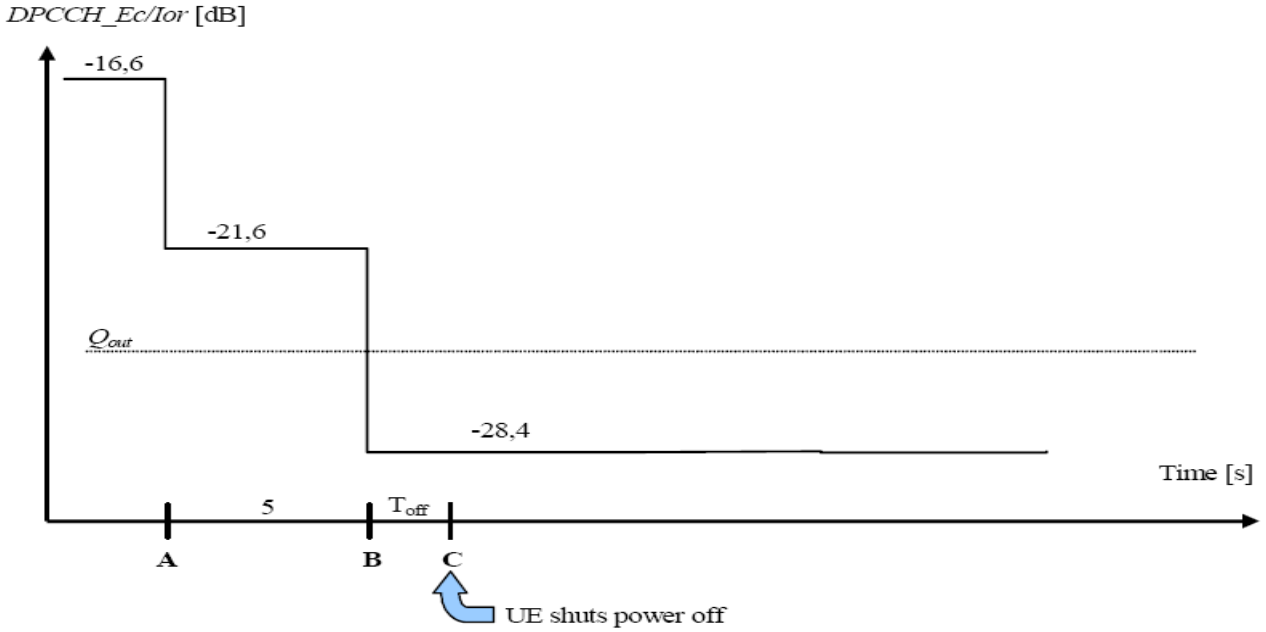


Figure 4.2.11.2-1: Conditions for out-of-synchronization handling in the UE

The requirements for the UE are that it shall shut its transmitter off before point C.
The UE transmitter is considered to be OFF if the measured RRC filtered mean power is less than -55 dBm.

TEST PROCEDURE

1. The SS sends continuously up power control commands to the UE until the UE transmitter power reach maximum level.

2. The SS controls the DPCCH_E_c/I_{or} ratio level to -21.6 dB.
3. The SS controls the DPCCH_E_c/I_{or} ratio level to -28.4 dB. The SS waits 200 ms and then verifies that the UE transmitter has been switched off.
4. The SS monitors the UE transmitted power for 5 s and verifies that the UE transmitter is not switched on during this time.

TEST RESULTS

FDD Band I										
Test Channel			9613							
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-12.5	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-62.3	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-57.9	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-11.6	≥-49.0	
Test Results			PASS							

FDD Band I										
Test Channel			9750							
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-11.2	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-61.6	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-57.7	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-11.0	≥-49.0	
Test Results			PASS							

FDD Band I										
Test Channel			9887							
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-11.8	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-61.5	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-57.3	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-11.4	≥-49.0	
Test Results			PASS							

FDD Band VIII										
Test Channel			2713							
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-10.3	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-60.1	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-56.8	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-10.2	≥-49.0	
Test Results			PASS							

FDD Band VIII										
Test Channel							2788			
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-9.9	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-60.0	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-57.3	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-9.7	≥-49.0	
Test Results			PASS							

FDD Band VIII										
Test Channel							2862			
Test environment		DL DPCH_E_c/I_{or}	Test Conditions				Measument Results		Limit	
			A		B				A	B
Temperature (℃)	Voltage (V)		Start Time	Stop Time	Start Time	Stop Time	Time (s)	Values (dBm)	(dBm)	(dBm)
25	3.70	-21.6 dB	0.0 s	5.0 s			0.0 s	-10.5	≥-55.0	
		-28.4 dB	0.2 s	0.2 s	0.2 s	5.2 s	0.2 s	-59.8	≤-55.0	≤-49.0
		-24.4 dB	0.0 s	5.0 s			0.0 s	-56.6	≤-55.0	
		-17.6 dB	0.2 s	0.2 s			0.2 s	-10.0	≥-49.0	
Test Results			PASS							

4.2.11. Adjacent Channel Leakage power Ratio (ACLR)

LIMIT

ETSI EN 301 908-2 (V.4.2.1) Sub-clause 4.2.11.2

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the RRC filtered mean power centred on the assigned channel frequency to the RRC filtered mean power centred on an adjacent channel frequency.
If the adjacent channel power is greater than -50dBm then the ACLR shall be higher than the value specified in table 4.2.12.2-1.The requirements are applicable for all for the values of β_c, β_d, β_{hs}, β_{ec} and β_{ed} defined in TS 125 214 [8].

Table 4.2.12.2-1: UE ACLR

Power Class	Adjacent channel frequency relative to assigned channel frequency	ACLR limit
3	+5 MHz or -5 MHz	32.2 dB
3	+10 MHz or -10 MHz	42.2 dB
4	+5 MHz or -5 MHz	32.2 dB
4	+10 MHz or -10 MHz	42.2 dB
NOTE 1: The requirement shall still be met in the presence of switching transients. NOTE 2: The ACLR requirements reflect what can be achieved with present state of the art technology. NOTE 3: Requirement on the UE shall be reconsidered when the state of the art technology progresses.		

TEST PROCEDURE

1. The SS sends continuously Up power control commands to the UE until the UE transmitter power reach maximum level.
2. Measure the RRC filtered mean power.
3. Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.
4. Calculate the ratio of the power between the values measured in 2 and 3 above.

TEST RESULTS

FDD Band I							
Test Channel		9613					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-37.96	-39.77	-32.20	-52.03	-48.38	-42.20
-20	253	-37.64	-39.50	-32.20	-51.76	-48.12	-42.20
	207	-37.64	-39.56	-32.20	-51.71	-48.17	-42.20
+55	253	-37.78	-39.70	-32.20	-51.82	-48.19	-42.20
	207	-37.75	-37.68	-32.20	-51.74	-48.20	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9750					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-36.55	-36.68	-32.20	-52.71	-49.93	-42.20
-20	253	-36.11	-36.28	-32.20	-52.48	-49.69	-42.20
	207	-36.15	-36.29	-32.20	-52.49	-49.67	-42.20
+55	253	-36.19	-36.50	-32.20	-52.64	-49.78	-42.20
	207	-36.22	-36.50	-32.20	-52.67	-49.80	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9887					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-38.01	-37.13	-32.20	-52.46	-54.14	-42.20
-20	253	-37.54	-36.75	-32.20	-52.21	-53.97	-42.20
	207	-37.58	-36.80	-32.20	-52.26	-53.92	-42.20
+55	253	-37.79	-36.96	-32.20	-52.34	-53.99	-42.20
	207	-37.85	-36.97	-32.20	-52.40	-54.08	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2713					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-43.88	-40.26	-32.20	-58.64	-63.08	-42.20
-20	253	-43.40	-40.10	-32.20	-58.36	-62.70	-42.20
	207	-43.41	-40.12	-32.20	-58.33	-62.79	-42.20
+55	253	-43.49	-40.35	-32.20	-58.51	-62.96	-42.20
	207	-43.48	-40.31	-32.20	-58.55	-62.93	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2788					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-41.99	-46.64	-32.20	-57.21	-59.87	-42.20
-20	253	-41.46	-46.21	-32.20	-56.89	-59.63	-42.20
	207	-41.45	-46.20	-32.20	-56.96	-59.61	-42.20
+55	253	-41.63	-46.54	-32.20	-57.05	-59.68	-42.20
	207	-41.67	-46.52	-32.20	-57.07	-59.72	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2862					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-36.79	-35.28	-32.20	-48.12	-45.26	-42.20
-20	253	-36.43	-34.93	-32.20	-47.82	-44.93	-42.20
	207	-36.41	-35.07	-32.20	-47.90	-44.99	-42.20
+55	253	-36.49	-35.26	-32.20	-47.98	-45.16	-42.20
	207	-36.55	-35.25	-32.20	-48.07	-45.18	-42.20
Test Results		PASS					

4.2.12. Maximum Output Power with HS-DPCCH (Release 5 only)

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.2A.5

The maximum output power with HS-DPCCH and its tolerance are defined according to the Power Class of the UE.
The maximum output power with HS-DPCCH is a measure of the maximum power the UE can transmit when HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. The measurement period shall be at least one timeslot.
The maximum output power with HS-DPCCH, derived in step 4), shall not exceed the range prescribed by the maximum output power and tolerance in table 5.2A.2. The maximum output power where HS-DPCCH is not transmitted shall not exceed the range prescribed in table 5.2.2. The UL reference measurement channel for TX test will be set as defined in C.10.1 with the power ratio between HS-DPCH, DPCCH and DPDCH being set to the values defined in table C.10.1.4.

Table 5.2A.2: Maximum Output Powers with HS-DPCCH for test

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
$1/15 \leqslant \beta_c/\beta_d \leqslant 12/15$	+24	+1.7/-3.7	+21	+2.7/-2.7
$13/15 \leqslant \beta_c/\beta_d \leqslant 15/8$	+23	+2.7/-3.7	+20	+3.7/-2.7
$15/7 \leqslant \beta_c/\beta_d \leqslant 15/0$	+22	+3.7/-3.7	+19	+4.7/-2.7
NOTE: For the purpose of the test Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs}= 30/15 *β_c.				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

TEST PROCEDURE

1. Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table C.10.1.4 and the DPCH frame offset according the HS-DPCCH slot offset required for measurements.
2. Set and send continuously Up power control commands to the UE.
3. Start transmitting HSDPA Data.
4. Measure the mean power of the UE. The mean power shall be averaged over at least one timeslot.
5. Repeat the measurement for the different combinations of beta values as given in table C.10.1.4.

Specific Message Contents
All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

TEST RESULTS

FDD Band I					
Test Channel			9613		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	23.90	25.70	20.30
		12/15	23.70	25.70	20.30
		15/8	22.40	25.70	19.80
		15/4	23.70	25.70	19.80
-20	253	2/15	23.95	25.70	20.30
		12/15	23.76	25.70	20.30
		15/8	22.46	25.70	19.80
		15/4	23.73	25.70	19.80
	207	2/15	23.92	25.70	20.30
		12/15	23.79	25.70	20.30
		15/8	22.46	25.70	19.80
		15/4	23.75	25.70	19.80
+55	253	2/15	23.95	25.70	20.30
		12/15	23.74	25.70	20.30
		15/8	22.49	25.70	19.80
		15/4	23.72	25.70	19.80
	207	2/15	23.95	25.70	20.30
		12/15	23.71	25.70	20.30
		15/8	22.42	25.70	19.80
		15/4	23.72	25.70	19.80
Test Results			PASS		

FDD Band I					
Test Channel			9750		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.60	25.70	20.30
		12/15	22.30	25.70	20.30
		15/8	22.40	25.70	19.80
		15/4	22.40	25.70	19.80
-20	253	2/15	22.65	25.70	20.30
		12/15	22.34	25.70	20.30
		15/8	22.48	25.70	19.80
		15/4	22.44	25.70	19.80
	207	2/15	22.69	25.70	20.30
		12/15	22.36	25.70	20.30
		15/8	22.45	25.70	19.80
		15/4	22.49	25.70	19.80
+55	253	2/15	22.63	25.70	20.30
		12/15	22.39	25.70	20.30
		15/8	22.42	25.70	19.80
		15/4	22.49	25.70	19.80
	207	2/15	22.67	25.70	20.30
		12/15	22.34	25.70	20.30
		15/8	22.45	25.70	19.80
		15/4	22.47	25.70	19.80
Test Results			PASS		

FDD Band I					
Test Channel			9887		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.90	25.70	20.30
		12/15	22.90	25.70	20.30
		15/8	22.90	25.70	19.80
		15/4	22.90	25.70	19.80
-20	253	2/15	22.97	25.70	20.30
		12/15	22.94	25.70	20.30
		15/8	22.97	25.70	19.80
		15/4	22.91	25.70	19.80
	207	2/15	22.96	25.70	20.30
		12/15	22.96	25.70	20.30
		15/8	22.95	25.70	19.80
		15/4	22.93	25.70	19.80
+55	253	2/15	22.96	25.70	20.30
		12/15	22.98	25.70	20.30
		15/8	22.97	25.70	19.80
		15/4	22.95	25.70	19.80
	207	2/15	22.93	25.70	20.30
		12/15	22.97	25.70	20.30
		15/8	22.94	25.70	19.80
		15/4	22.94	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2713		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	23.78	25.70	20.30
		12/15	23.64	25.70	20.30
		15/8	22.48	25.70	19.80
		15/4	22.30	25.70	19.80
-20	253	2/15	23.86	25.70	20.30
		12/15	23.71	25.70	20.30
		15/8	22.60	25.70	19.80
		15/4	22.42	25.70	19.80
	207	2/15	23.82	25.70	20.30
		12/15	23.71	25.70	20.30
		15/8	22.57	25.70	19.80
		15/4	22.42	25.70	19.80
+55	253	2/15	23.89	25.70	20.30
		12/15	23.68	25.70	20.30
		15/8	22.57	25.70	19.80
		15/4	22.35	25.70	19.80
	207	2/15	23.85	25.70	20.30
		12/15	23.69	25.70	20.30
		15/8	22.58	25.70	19.80
		15/4	22.40	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2788		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.50	25.70	20.30
		12/15	23.59	25.70	20.30
		15/8	23.70	25.70	19.80
		15/4	23.60	25.70	19.80
-20	253	2/15	22.59	25.70	20.30
		12/15	23.66	25.70	20.30
		15/8	23.75	25.70	19.80
		15/4	23.70	25.70	19.80
	207	2/15	22.54	25.70	20.30
		12/15	22.66	25.70	20.30
		15/8	23.71	25.70	19.80
		15/4	23.67	25.70	19.80
+55	253	2/15	22.59	25.70	20.30
		12/15	22.63	25.70	20.30
		15/8	23.73	25.70	19.80
		15/4	23.67	25.70	19.80
	207	2/15	22.56	25.70	20.30
		12/15	22.66	25.70	20.30
		15/8	23.73	25.70	19.80
		15/4	23.68	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2862		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.78	25.70	20.30
		12/15	22.90	25.70	20.30
		15/8	22.85	25.70	19.80
		15/4	22.85	25.70	19.80
-20	253	2/15	22.86	25.70	20.30
		12/15	22.90	25.70	20.30
		15/8	22.93	25.70	19.80
		15/4	22.89	25.70	19.80
	207	2/15	22.80	25.70	20.30
		12/15	22.86	25.70	20.30
		15/8	22.94	25.70	19.80
		15/4	22.94	25.70	19.80
+55	253	2/15	22.78	25.70	20.30
		12/15	22.94	25.70	20.30
		15/8	22.93	25.70	19.80
		15/4	22.96	25.70	19.80
	207	2/15	22.85	25.70	20.30
		12/15	22.88	25.70	20.30
		15/8	22.96	25.70	19.80
		15/4	22.89	25.70	19.80
Test Results			PASS		

4.2.13. Spectrum Emission Mask with HS-DPCCH

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.9A.5

The spectrum emission mask of the UE applies to frequencies, which are between 2.5 MHz and 12.5 MHz away from the UE centre carrier frequency. The out of channel emission is specified relative to the RRC filtered mean power of the UE carrier.
The requirements and this test apply for Release 5 and later releases to all types of UTRA for the FDD UE that support HSDPA.
The result of clause 5.9A.4.2 step 6) shall fulfil the requirements of table 5.9A.3. For operation in band II, IV, V, X, XII, XIII, XIV, XXV and XXVI both minimum requirement in table 5.9A.3 and the applicable additional requirement in Tables 5.9A.3A, 5.9A.3B, or 5.9A.3C need to be satisfied.

Table 5.9A.3: Spectrum Emission Mask Requirement

Δf in MHz (note 1)	Minimum requirement (note 2)		Measurement bandwidth (note 5)
	Relative requirement	Absolute requirement (in measurement bandwidth)	
2.5 MHz to 3.5 MHz	$\left\{-33{,}5-15\cdot\left(\frac{\Delta f}{MHz}-2{,}5\right)\right\}dBc$	-69.6 dBm	30 kHz (see note 3)
3.5 MHz to 7.5 MHz	$\left\{-33{,}5-1\cdot\left(\frac{\Delta f}{MHz}-3{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
7.5 MHz to 8.5 MHz	$\left\{-37{,}5-10\cdot\left(\frac{\Delta f}{MHz}-7{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
8.5 MHz to 12.5 MHz	-47.5 dBc	-54.3 dBm	1 MHz (see note 4)

NOTE 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.
NOTE 2: The minimum requirement is calculated from the relative requirement or the absolute requirement, whichever is the higher power.
NOTE 3: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.
NOTE 4: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.

TEST PROCEDURE

1. Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table C.10.1.4 and the DPCH frame offset according the HS-DPCCH slot offset required for measurements.
2. Set and send continuously Up power control commands to the UE.
3. Start transmitting HSDPA Data.
4. When UE has reached the maximum power, measure the power of the transmitted signal with a measurement filter of bandwidths according to table 5.9A.3 and 5.9A.3A, 5.9A.3B, 5.9A.3C if applicable. For measurements using 1 MHz or 100KHz measurement bandwidths the result may be calculated by integrating multiple 50 kHz or narrower filter(≥3kHz) measurements. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous steps according to table 5.9A.3 and 5.9A.3A, 5.9A.3B, 5.9A.3C if applicable. The measured power shall be recorded for each step. The measurement duration with the filter on one frequency shall last at least the filter settling time and the measurement period shall be inside the HS-DPCCH on-period.
5. Measure the RRC filtered mean power centred on the assigned channel frequency.
6. Calculate the ratio of the power 4 with respect to 5 in dBc.
7. Repeat steps 1-6 for all the different combinations of beta values as given in table C.10.1.4.

All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

TEST RESULTS

Note:The spectrum emission maks with HS-DPCCH were test all β_c/β_d conditions.worst case were reported

FDD Band I								
Test Channel					9613			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1922.600 MHz							22.90 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.522	1914.078	-27.19	1 MHz	-24.64
		-8.50	-7.50	-7.840	1914.760	-22.61	1 MHz	-18.04
		-7.50	-4.00	-4.017	1918.583	-18.73	1 MHz	-11.16
		-3.485	-2.515	-2.515	1920.085	-23.69	30 KHz	-10.86
		2.515	3.485	2.527	1925.127	-23.31	30 KHz	-11.05
		4.00	7.50	4.039	1926.639	-18.50	1 MHz	-11.18
		7.50	8.50	7.684	1930.284	-26.35	1 MHz	-16.48
		8.50	12.00	8.506	1931.106	-30.39	1 MHz	-24.64
Test Results					PASS			

FDD Band I								
Test Channel					9750			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1950.000 MHz							21.40 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.747	1941.253	-29.32	1 MHz	-26.12
		-8.50	-7.50	-7.558	1942.442	-26.78	1 MHz	-16.70
		-7.50	-4.00	-5.341	1944.659	-18.12	1 MHz	-13.96
		-3.485	-2.515	-3.485	1946.515	-27.07	30 KHz	-26.90
		2.515	3.485	2.765	1952.765	-22.22	30 KHz	-16.10
		4.00	7.50	4.000	1954.000	-18.74	1 MHz	-12.62
		7.50	8.50	7.617	1957.617	-28.45	1 MHz	-17.29
		8.50	12.00	8.618	1958.618	-31.34	1 MHz	-26.12
Test Results					PASS			

FDD Band I								
Test Channel					9887			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1977.400 MHz							22.50 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.663	1968.737	-36.99	1 MHz	-25.05
		-8.50	-7.50	-7.747	1969.653	-30.20	1 MHz	-17.52
		-7.50	-4.00	-4.000	1973.400	-18.86	1 MHz	-11.55
		-3.485	-2.515	-2.538	1974.862	-28.97	30 KHz	-11.62
		2.515	3.485	2.538	1979.938	-29.85	30 KHz	-11.62
		4.00	7.50	4.006	1981.406	-18.89	1 MHz	-11.55
		7.50	8.50	7.679	1985.079	-28.36	1 MHz	-16.84
		8.50	12.00	8.534	1985.934	-33.17	1 MHz	-25.05
Test Results					PASS			

FDD Band VIII								
Test Channel					2713			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 882.600 MHz							22.40 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.623	873.977	-29.33	1 MHz	-25.10
		-8.50	-7.50	-7.561	875.039	-26.01	1 MHz	-15.71
		-7.50	-4.00	-4.785	877.815	-18.57	1 MHz	-12.39
		-3.485	-2.515	-3.485	879.115	-32.98	30 KHz	-25.88
		2.515	3.485	3.446	886.046	-32.45	30 KHz	-25.29
		4.00	7.50	4.000	886.600	-18.88	1 MHz	-11.60
		7.50	8.50	7.756	890.356	-29.85	1 MHz	-17.66
		8.50	12.00	8.562	891.162	-33.17	1 MHz	-25.10
Test Results					PASS			

FDD Band VIII								
Test Channel					2788			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 897.600 MHz							21.60 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.629	888.971	-31.86	1 MHz	-25.86
		-8.50	-7.50	-7.553	890.047	-27.79	1 MHz	-16.38
		-7.50	-4.00	-4.595	893.005	-18.14	1 MHz	-12.95
		-3.485	-2.515	-3.474	894.126	-32.90	30 KHz	-26.47
		2.515	3.485	3.473	901.073	-32.56	30 KHz	-26.44
		4.00	7.50	4.000	901.600	-18.45	1 MHz	-12.36
		7.50	8.50	7.511	905.111	-28.36	1 MHz	-15.97
		8.50	12.00	8.500	906.100	-33.57	1 MHz	-25.86
Test Results					PASS			

FDD Band VIII								
Test Channel					2862			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 912.400 MHz							22.30 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.562	903.838	-34.85	1 MHz	-25.18
		-8.50	-7.50	-7.579	904.821	-30.27	1 MHz	-15.96
		-7.50	-4.00	-4.000	908.400	-18.06	1 MHz	-11.68
		-3.485	-2.515	-2.538	909.862	-20.81	30 KHz	-11.75
		2.515	3.485	2.695	915.095	-19.87	30 KHz	-14.11
		4.00	7.50	4.230	916.630	-18.11	1 MHz	-11.91
		7.50	8.50	7.787	920.187	-28.01	1 MHz	-18.05
		8.50	12.00	8.775	921.175	-32.44	1 MHz	-25.18
Test Results					PASS			

4.2.14. Adjacent Channel Leakage Power Ratio (ACLR) with HS-DPCCH

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.10A.5

ACLR is the ratio of the RRC filtered mean power centred on the assigned channel frequency to the RRC filtered mean power centred on an adjacent channel frequency.
The requirements and this test apply for Release 5 and later releases to all types of UTRA for the FDD UE that support HSDPA.

The measured ACLR, derived in step 6), shall be higher than the limit in table 5.10A.3.

Power Class	Adjacent channel frequency relative to assigned channel frequency	ACLR limit
3	+5 MHz or -5 MHz	32.2 dB
3	+10 MHz or -10 MHz	42.2 dB
4	+5 MHz or -5 MHz	32.2 dB
4	+10 MHz or -10 MHz	42.2 dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

TEST PROCEDURE

1. Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table C.10.1.4 and the DPCH frame offset according the HS-DPCCH slot offset required for measurements.
2. Set and send continuously Up power control commands to the UE.
3. Start transmitting HSDPA Data.
4. When UE has reached the maximum power, measure the RRC filtered mean power on the wanted channel. The measurement period shall be inside the HS-DPCCH on-period for the wanted and the adjacent channels.
5. Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.
6. Calculate the ratio of the power between the values measured in step 4 and step 5.
7. Repeat steps 1-6 for all the different combinations of beta values as given in table C.10.1.4.

All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

TEST RESULTS

Note:The ACLP with HS-DPCCH were test all β_c/β_d conditions.worst case were reported

FDD Band I							
Test Channel		9613					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-37.12	-40.02	-32.20	-48.63	-49.12	-42.20
-20	253	-36.85	-39.44	-32.20	-48.11	-48.69	-42.20
	207	-36.89	-39.46	-32.20	-48.16	-48.75	-42.20
+55	253	-36.92	-39.59	-32.20	-48.32	-48.80	-42.20
	207	-37.05	-39.59	-32.20	-48.37	-48.97	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9750					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-37.05	-36.11	-32.20	-50.47	-48.66	-42.20
-20	253	-36.77	-35.85	-32.20	-50.11	-48.29	-42.20
	207	-36.84	-35.85	-32.20	-50.15	-48.35	-42.20
+55	253	-36.89	-35.89	-32.20	-50.25	-48.53	-42.20
	207	-36.95	-35.90	-32.20	-50.34	-48.55	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9887					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-38.01	-37.13	-32.20	-52.46	-54.14	-42.20
-20	253	-37.85	-37.00	-32.20	-52.24	-53.82	-42.20
	207	-37.85	-37.06	-32.20	-52.26	-53.89	-42.20
+55	253	-37.94	-37.12	-32.20	-52.26	-53.97	-42.20
	207	-37.99	-37.10	-32.20	-52.29	-54.10	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2713					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-43.88	-40.26	-32.20	-58.64	-63.08	-42.20
-20	253	-43.63	-40.10	-32.20	-58.26	-62.59	-42.20
	207	-43.68	-40.16	-32.20	-58.29	-62.62	-42.20
+55	253	-43.76	-40.23	-32.20	-58.47	-62.77	-42.20
	207	-43.76	-40.20	-32.20	-58.55	-62.80	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2788					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-41.99	-46.64	-32.20	-57.21	-59.87	-42.20
-20	253	-41.67	-46.24	-32.20	-56.92	-59.52	-42.20
	207	-41.75	-46.33	-32.20	-56.94	-59.55	-42.20
+55	253	-41.79	-46.57	-32.20	-56.99	-59.69	-42.20
	207	-41.83	-46.59	-32.20	-57.03	-59.74	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2862					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-36.79	-35.28	-32.20	-48.12	-45.26	-42.20
-20	253	-36.41	-35.00	-32.20	-47.93	-44.97	-42.20
	207	-36.49	-35.02	-32.20	-47.96	-44.96	-42.20
+55	253	-36.62	-35.29	-32.20	-48.05	-45.11	-42.20
	207	-36.71	-35.24	-32.20	-48.05	-45.18	-42.20
Test Results		PASS					

4.2.15. Maximum Output Power with HS-DPCCH (Release 6 and later)

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.2AA.5

The maximum output power with HS-DPCCH and its tolerance are defined according to the UE Maximum Power Reduction (MPR) for the nominal maximum output power.
The maximum output power with HS-DPCCH is a measure of the maximum power the UE can transmit when HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. The measurement period shall be at least one timeslot.
The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE that support HSDPA without E-DCH.
The maximum output power with HS-DPCCH, derived in step 4), shall not exceed the range prescribed by the maximum output power and tolerance in table 5.2AA.2 or 5.2AA.3 depending on tested band. The maximum output power where HS-DPCCH is not transmitted shall not exceed the range prescribed in table 5.2.2.
The UL reference measurement channel for TX test will be set as defined in C.10.1 with the power ratio between HS-DPCH, DPCCH and DPDCH being set to the values defined in table C.10.1.4.

Table 5.2AA.2: Maximum Output Powers with HS-DPCCH for test

Sub-test in table C.10.1.4	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-3.7	+21	+2.7/-2.7
2	+24	+1.7/-3.7	+21	+2.7/-2.7
3	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7
4	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

TEST PROCEDURE

1. Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table C.10.1.4 and the DPCH frame offset according the HS-DPCCH slot offset required for measurements.
2. Set and send continuously Up power control commands to the UE.
3. Start transmitting HSDPA Data.
4. Measure the mean power of the UE. The mean power shall be averaged over at least one timeslot..
5. Repeat the measurement for the different combinations of beta values as given in table C.10.1.4.
6. Calculate the ratio of the power between the values measured in step 4 and step 5.

Specific Message Contents
All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

TEST RESULTS

FDD Band I					
Test Channel			9613		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	24.00	25.70	20.30
		12/15	23.60	25.70	20.30
		15/8	23.90	25.70	19.80
		15/4	23.70	25.70	19.80
-20	253	2/15	23.35	25.70	20.30
		12/15	23.67	25.70	20.30
		15/8	23.92	25.70	19.80
		15/4	23.47	25.70	19.80
	207	2/15	23.37	25.70	20.30
		12/15	23.68	25.70	20.30
		15/8	23.95	25.70	19.80
		15/4	23.48	25.70	19.80
+55	253	2/15	23.52	25.70	20.30
		12/15	22.60	25.70	20.30
		15/8	23.85	25.70	19.80
		15/4	23.44	25.70	19.80
	207	2/15	23.52	25.70	20.30
		12/15	22.68	25.70	20.30
		15/8	23.81	25.70	19.80
		15/4	23.43	25.70	19.80
Test Results			PASS		

FDD Band I					
Test Channel			9750		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.70	25.70	20.30
		12/15	22.50	25.70	20.30
		15/8	22.50	25.70	19.80
		15/4	22.40	25.70	19.80
-20	253	2/15	22.53	25.70	20.30
		12/15	22.58	25.70	20.30
		15/8	22.40	25.70	19.80
		15/4	22.35	25.70	19.80
	207	2/15	22.54	25.70	20.30
		12/15	22.47	25.70	20.30
		15/8	22.42	25.70	19.80
		15/4	22.34	25.70	19.80
+55	253	2/15	22.45	25.70	20.30
		12/15	22.47	25.70	20.30
		15/8	22.36	25.70	19.80
		15/4	22.14	25.70	19.80
	207	2/15	22.47	25.70	20.30
		12/15	22.44	25.70	20.30
		15/8	22.40	25.70	19.80
		15/4	22.17	25.70	19.80
Test Results			PASS		

FDD Band I					
Test Channel			9887		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	23.10	25.70	20.30
		12/15	23.00	25.70	20.30
		15/8	22.90	25.70	19.80
		15/4	22.90	25.70	19.80
-20	253	2/15	22.85	25.70	20.30
		12/15	23.02	25.70	20.30
		15/8	22.75	25.70	19.80
		15/4	22.90	25.70	19.80
	207	2/15	22.85	25.70	20.30
		12/15	22.96	25.70	20.30
		15/8	22.81	25.70	19.80
		15/4	23.01	25.70	19.80
+55	253	2/15	22.89	25.70	20.30
		12/15	22.96	25.70	20.30
		15/8	22.81	25.70	19.80
		15/4	22.96	25.70	19.80
	207	2/15	22.89	25.70	20.30
		12/15	22.96	25.70	20.30
		15/8	22.89	25.70	19.80
		15/4	22.90	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2713		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	23.00	25.70	20.30
		12/15	23.11	25.70	20.30
		15/8	22.74	25.70	19.80
		15/4	22.64	25.70	19.80
-20	253	2/15	23.15	25.70	20.30
		12/15	23.42	25.70	20.30
		15/8	22.60	25.70	19.80
		15/4	22.89	25.70	19.80
	207	2/15	23.09	25.70	20.30
		12/15	23.41	25.70	20.30
		15/8	22.60	25.70	19.80
		15/4	22.96	25.70	19.80
+55	253	2/15	23.00	25.70	20.30
		12/15	22.94	25.70	20.30
		15/8	22.80	25.70	19.80
		15/4	22.77	25.70	19.80
	207	2/15	22.96	25.70	20.30
		12/15	23.05	25.70	20.30
		15/8	22.90	25.70	19.80
		15/4	22.76	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2788		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.86	25.70	20.30
		12/15	23.17	25.70	20.30
		15/8	23.56	25.70	19.80
		15/4	23.60	25.70	19.80
-20	253	2/15	22.14	25.70	20.30
		12/15	23.01	25.70	20.30
		15/8	23.26	25.70	19.80
		15/4	23.79	25.70	19.80
	207	2/15	22.15	25.70	20.30
		12/15	22.98	25.70	20.30
		15/8	23.20	25.70	19.80
		15/4	23.75	25.70	19.80
+55	253	2/15	22.42	25.70	20.30
		12/15	22.66	25.70	20.30
		15/8	23.15	25.70	19.80
		15/4	23.67	25.70	19.80
	207	2/15	22.45	25.70	20.30
		12/15	22.61	25.70	20.30
		15/8	23.10	25.70	19.80
		15/4	23.66	25.70	19.80
Test Results			PASS		

FDD Band VIII					
Test Channel			2862		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	2/15	22.70	25.70	20.30
		12/15	22.56	25.70	20.30
		15/8	22.93	25.70	19.80
		15/4	22.68	25.70	19.80
-20	253	2/15	22.92	25.70	20.30
		12/15	22.87	25.70	20.30
		15/8	22.86	25.70	19.80
		15/4	22.88	25.70	19.80
	207	2/15	22.84	25.70	20.30
		12/15	22.46	25.70	20.30
		15/8	22.82	25.70	19.80
		15/4	22.60	25.70	19.80
+55	253	2/15	22.92	25.70	20.30
		12/15	22.71	25.70	20.30
		15/8	22.90	25.70	19.80
		15/4	22.79	25.70	19.80
	207	2/15	22.93	25.70	20.30
		12/15	22.81	25.70	20.30
		15/8	22.96	25.70	19.80
		15/4	22.80	25.70	19.80
Test Results			PASS		

4.2.16. Maximum Output Power with HS-DPCCH and E-DCH

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.2B.5

The maximum output power with HS-DPCCH and E-DCH and its tolerance are defined according to the UE Maximum Power Reduction (MPR) for the nominal maximum output power.
The maximum output power with HS-DPCCH and E-DCH is a measure of the maximum power the UE can transmit when HS-DPCCH and E-DCH is fully or partially transmitted during a DPCCH timeslot. The measurement period shall be at least one timeslot.
The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE that support HSDPA and E-DCH.
he maximum output power with HS-DPCCH and E-DCH, derived in step 9), shall not exceed the range prescribed by the maximum output power and tolerance in table 5.2B.5 or 5.2B.6 depending on tested band.
Note:
The UL reference measurement channel for TX test will be set as defined in C.11.1 with the power ratio between HS-DPCH, DPCCH, DPDCH, E-DPCCH and E-DPDCH being set to the values defined in table C.11.1.3.

Table 5.2B.5: Maximum Output Powers with HS-DPCCH and E-DCH for test

Sub-test in table C.11.1.3	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-6.7	+21	+2.7/-5.7
2	+22	+3.7/-5.2	+19	+4.7/-4.2
3	+23	+2.7/-5.2	+20	+3.7/-4.2
4	+22	+3.7/-5.2	+19	+4.7/-4.2
5	+24	+1.7/-3.7	+21	+2.7/-2.7

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.
NOTE 2: The test procedure for sub-test 1 to 4 will result in a power slightly below the maximum, and therefore the lower limits in Table 5.2B.5 are made lower by 1.5 dB.
NOTE 3: The test procedure allows UE to decrease its maximum transmit power for E-TFC selection in sub-test 1, and therefore the lower limits of sub-test 1 in Table 5.2B.5 are made lower by 1.5 dB.
NOTE 4: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

TEST PROCEDURE

Procedure for sub-test 1 to 4

1. Set the Absolute Grant according to Table C.11.1.3.
2. The SS starts transmitting HSDPA and the UE loops the received data back on E-DCH.
3. Set the UE power to be at least 7.5dB lower than the maximum output power. Wait 150 ms.
4. Send power control bits to give one TPC_cmd = +1 command to the UE.
5. The SS checks the received E-TFCI for 150 ms. If UE does not send any decreased E-TFCI (DTX on E-DPDCH is also considered decreased E-TFCI) within the 150ms then go back to step 4 otherwise proceed to step 6.
6. Send power control bits to give one TPC_cmd = -1 command to the UE and wait 150ms.
7. The SS checks the received E-TFCI for 150 ms. If UE sends any decreased E-TFCI (DTX on E-DPDCH is also considered decreased E-TFCI) within the 150ms, then send new power control bits to give another TPC_cmd = -1 command to the UE and wait 150ms.
8. Confirm that the E-TFCI transmitted by the UE is equal to the target E-TFCI in Table C.11.1.3. If the E-TFCI transmitted by the UE is not equal to the target E-TFCI, then fail the UE.
9. Measure the mean power of the UE. The mean power shall be averaged over at least one timeslot.
10. Repeat the measurement for the different combinations of beta values for sub-test 1 to 4 as given in table C.11.1.3.

Procedure for sub-test 5

1. Set the Absolute Grant according to sub-test 5 in Table C.11.1.3.
2. The SS starts transmitting HSDPA and the UE loops the received data back on E-DCH.
3. Set the UE power to be at least 7.5dB lower than the maximum output power. Wait 150ms.
4. Set and send continuously Up power control commands to the UE. Wait 150ms.
5. Measure the mean power of the UE. The mean power shall be averaged over at least one timeslot.

TEST RESULTS

FDD Band I					
Test Channel			9613		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	21.50	25.70	17.30
		6/15	19.50	25.70	16.80
		15/9	21.40	25.70	17.80
		2/15	19.30	25.70	16.80
		15/15	21.80	25.70	17.30
-20	253	11/15	21.75	25.70	17.30
		6/15	19.96	25.70	16.80
		15/9	21.85	25.70	17.80
		2/15	19.12	25.70	16.80
		15/15	21.56	25.70	17.30
	207	11/15	21.75	25.70	17.30
		6/15	20.07	25.70	16.80
		15/9	21.82	25.70	17.80
		2/15	19.12	25.70	16.80
		15/15	21.56	25.70	17.30
+55	253	11/15	21.39	25.70	17.30
		6/15	19.78	25.70	16.80
		15/9	21.68	25.70	17.80
		2/15	19.56	25.70	16.80
		15/15	21.33	25.70	17.30
	207	11/15	21.34	25.70	17.30
		6/15	19.70	25.70	16.80
		15/9	21.70	25.70	17.80
		2/15	19.61	25.70	16.80
		15/15	21.40	25.70	17.30
Test Results			PASS		

FDD Band I					
Test Channel			9750		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	20.20	25.70	17.30
		6/15	20.60	25.70	16.80
		15/9	21.10	25.70	17.80
		2/15	20.60	25.70	16.80
		15/15	20.70	25.70	17.30
-20	253	11/15	20.69	25.70	17.30
		6/15	21.00	25.70	16.80
		15/9	20.73	25.70	17.80
		2/15	20.99	25.70	16.80
		15/15	21.15	25.70	17.30
	207	11/15	20.72	25.70	17.30
		6/15	21.00	25.70	16.80
		15/9	20.78	25.70	17.80
		2/15	21.03	25.70	16.80
		15/15	21.10	25.70	17.30
+55	253	11/15	20.47	25.70	17.30
		6/15	20.73	25.70	16.80
		15/9	20.96	25.70	17.80
		2/15	20.71	25.70	16.80
		15/15	20.88	25.70	17.30
	207	11/15	20.50	25.70	17.30
		6/15	20.78	25.70	16.80
		15/9	20.96	25.70	17.80
		2/15	20.68	25.70	16.80
		15/15	20.84	25.70	17.30
Test Results			PASS		

FDD Band I					
Test Channel			9887		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	21.10	25.70	17.30
		6/15	21.80	25.70	16.80
		15/9	22.50	25.70	17.80
		2/15	22.00	25.70	16.80
		15/15	21.00	25.70	17.30
-20	253	11/15	20.66	25.70	17.30
		6/15	22.33	25.70	16.80
		15/9	22.06	25.70	17.80
		2/15	22.69	25.70	16.80
		15/15	21.58	25.70	17.30
	207	11/15	20.70	25.70	17.30
		6/15	22.18	25.70	16.80
		15/9	22.00	25.70	17.80
		2/15	22.74	25.70	16.80
		15/15	21.63	25.70	17.30
+55	253	11/15	20.51	25.70	17.30
		6/15	21.97	25.70	16.80
		15/9	22.25	25.70	17.80
		2/15	22.74	25.70	16.80
		15/15	21.75	25.70	17.30
	207	11/15	20.47	25.70	17.30
		6/15	21.97	25.70	16.80
		15/9	22.22	25.70	17.80
		2/15	22.76	25.70	16.80
		15/15	21.71	25.70	17.30
Test Results			PASS		

FDD Band VIII					
Test Channel			2713		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	21.75	25.70	17.30
		6/15	20.47	25.70	16.80
		15/9	21.36	25.70	17.80
		2/15	21.00	25.70	16.80
		15/15	22.14	25.70	17.30
-20	253	11/15	22.34	25.70	17.30
		6/15	21.16	25.70	16.80
		15/9	21.03	25.70	17.80
		2/15	21.78	25.70	16.80
		15/15	22.66	25.70	17.30
	207	11/15	22.34	25.70	17.30
		6/15	21.10	25.70	16.80
		15/9	21.03	25.70	17.80
		2/15	21.80	25.70	16.80
		15/15	22.60	25.70	17.30
+55	253	11/15	22.06	25.70	17.30
		6/15	20.73	25.70	16.80
		15/9	21.00	25.70	17.80
		2/15	21.45	25.70	16.80
		15/15	22.25	25.70	17.30
	207	11/15	22.10	25.70	17.30
		6/15	20.75	25.70	16.80
		15/9	21.00	25.70	17.80
		2/15	21.41	25.70	16.80
		15/15	22.25	25.70	17.30
Test Results			PASS		

FDD Band VIII					
Test Channel			2788		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	22.19	25.70	17.30
		6/15	20.65	25.70	16.80
		15/9	21.44	25.70	17.80
		2/15	21.63	25.70	16.80
		15/15	22.06	25.70	17.30
-20	253	11/15	22.61	25.70	17.30
		6/15	21.11	25.70	16.80
		15/9	21.93	25.70	17.80
		2/15	22.00	25.70	16.80
		15/15	22.61	25.70	17.30
	207	11/15	22.65	25.70	17.30
		6/15	21.17	25.70	16.80
		15/9	22.00	25.70	17.80
		2/15	21.95	25.70	16.80
		15/15	22.58	25.70	17.30
+55	253	11/15	22.47	25.70	17.30
		6/15	20.78	25.70	16.80
		15/9	21.82	25.70	17.80
		2/15	21.88	25.70	16.80
		15/15	22.44	25.70	17.30
	207	11/15	22.45	25.70	17.30
		6/15	20.78	25.70	16.80
		15/9	21.86	25.70	17.80
		2/15	21.88	25.70	16.80
		15/15	22.49	25.70	17.30
Test Results			PASS		

FDD Band VIII					
Test Channel			2862		
Test environment		β_c/β_d	Meas (dBm)	Limit (dBm)	
Temperature (℃)	Voltage (V)			High	Low
25	230	11/15	21.55	25.70	17.30
		6/15	20.96	25.70	16.80
		15/9	20.81	25.70	17.80
		2/15	20.44	25.70	16.80
		15/15	22.17	25.70	17.30
-20	253	11/15	22.12	25.70	17.30
		6/15	21.69	25.70	16.80
		15/9	21.44	25.70	17.80
		2/15	20.98	25.70	16.80
		15/15	22.17	25.70	17.30
	207	11/15	22.15	25.70	17.30
		6/15	21.75	25.70	16.80
		15/9	21.44	25.70	17.80
		2/15	21.00	25.70	16.80
		15/15	22.21	25.70	17.30
+55	253	11/15	21.78	25.70	17.30
		6/15	21.33	25.70	16.80
		15/9	21.12	25.70	17.80
		2/15	20.85	25.70	16.80
		15/15	22.00	25.70	17.30
	207	11/15	21.80	25.70	17.30
		6/15	21.33	25.70	16.80
		15/9	21.10	25.70	17.80
		2/15	20.85	25.70	16.80
		15/15	22.00	25.70	17.30
Test Results			PASS		

4.2.17. Spectrum Emission Mask with HS-DPCCH and E-DCH

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.9B.5

The spectrum emission mask of the UE applies to frequencies, which are between 2,5 MHz and 12,5 MHz away from the UE centre carrier frequency. The out of channel emission is specified relative to the RRC filtered mean power of the UE carrier.
The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE that support HSDPA and E-DCH.
The result of clause 5.9B.4.2 step 4) shall fulfil the requirements of table 5.9B.3.
For operation in band II, IV, V, X, XII, XIII, XIV, XXV and XXVI both minimum requirement in table 5.9B.3 and the applicable additional requirement in Tables 5.9B.3A, 5.9B.3B or 5.9B.3C need to be satisfied.

Table 5.9B.3: Spectrum Emission Mask Requirement

∆ f in MHz (note 1)	Minimum requirement (note 2)		Measurement bandwidth (note 5)
	Relative requirement	Absolute requirement (in measurement bandwidth)	
2.5 MHz to 3.5 MHz	$\left\{-33{,}5-15\cdot\left(\frac{\Delta f}{MHz}-2{,}5\right)\right\}dBc$	-69.6 dBm	30 kHz (see note 3)
3.5 MHz to 7.5 MHz	$\left\{-33{,}5-1\cdot\left(\frac{\Delta f}{MHz}-3{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
7.5 MHz to 8.5 MHz	$\left\{-37{,}5-10\cdot\left(\frac{\Delta f}{MHz}-7{,}5\right)\right\}dBc$	-54.3 dBm	1 MHz (see note 4)
8.5 MHz to 12.5 MHz	-47.5 dBc	-54.3 dBm	1 MHz (see note 4)

NOTE 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.
NOTE 2: The minimum requirement is calculated from the relative requirement or the absolute requirement, whichever is the higher power.
NOTE 3: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.
NOTE 4: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.

TEST PROCEDURE

1. Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table C.10.1.4 and the DPCH frame offset according the HS-DPCCH slot offset required for measurements.
2. Set and send continuously Up power control commands to the UE.
3. Start transmitting HSDPA Data.
4. When UE has reached the maximum power, measure the power of the transmitted signal with a measurement filter of bandwidths according to table 5.9A.3 and 5.9A.3A, 5.9A.3B, 5.9A.3C if applicable. For measurements using 1 MHz or 100KHz measurement bandwidths the result may be calculated by integrating multiple 50 kHz or narrower filter(⩾3kHz) measurements. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous steps according to table 5.9A.3 and 5.9A.3A, 5.9A.3B, 5.9A.3C if applicable. The measured power shall be recorded for each step. The measurement duration with the filter on one frequency shall last at least the filter settling time and the measurement period shall be inside the HS-DPCCH on-period.
5. Measure the RRC filtered mean power centred on the assigned channel frequency.
6. Calculate the ratio of the power 4 with respect to 5 in dBc.
7. Repeat steps 1-6 for all the different combinations of beta values as given in table C.10.1.4.

All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

TEST RESULTS

Note:The spectrum emission maks with HS-DPCCH and E-DCH were test all β_c/β_d conditions.worst case were reported

FDD Band I								
Test Channel					9613			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1922.600 MHz							22.60 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.534	1914.066	-32.69	1 MHz	-24.87
		-8.50	-7.50	-7.554	1915.046	-27.41	1 MHz	-15.42
		-7.50	-4.00	-4.000	1918.600	-15.24	1 MHz	-11.37
		-3.485	-2.515	-3.420	1919.180	-24.86	30 KHz	-24.67
		2.515	3.485	3.115	1925.715	-20.25	30 KHz	-20.10
		4.00	7.50	4.000	1926.600	-17.16	1 MHz	-11.37
		7.50	8.50	7.649	1930.249	-33.60	1 MHz	-16.36
		8.50	12.00	11.215	1933.815	-34.79	1 MHz	-24.87
Test Results					PASS			

FDD Band I								
Test Channel					9750			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1950.000 MHz							21.30 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.730	1941.270	-27.21	1 MHz	-26.15
		-8.50	-7.50	-7.721	1942.279	-23.90	1 MHz	-18.37
		-7.50	-4.00	-5.385	1944.615	-16.19	1 MHz	-14.04
		-3.485	-2.515	-3.485	1946.515	-27.16	30 KHz	-26.93
		2.515	3.485	2.591	1952.591	-19.69	30 KHz	-13.52
		4.00	7.50	4.000	1954.000	-16.79	1 MHz	-12.65
		7.50	8.50	7.684	1957.684	-24.90	1 MHz	-18.00
		8.50	12.00	8.528	1958.528	-27.98	1 MHz	-26.15
Test Results					PASS			

FDD Band I								
Test Channel					9887			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 1977.400 MHz							22.30 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.528	1968.872	-33.52	1 MHz	-25.18
		-8.50	-7.50	-7.561	1969.839	-29.11	1 MHz	-15.79
		-7.50	-4.00	-4.404	1972.996	-18.20	1 MHz	-12.08
		-3.485	-2.515	-2.873	1974.527	-22.78	30 KHz	-16.77
		2.515	3.485	2.694	1980.094	-22.20	30 KHz	-14.09
		4.00	7.50	4.000	1981.400	-18.79	1 MHz	-11.68
		7.50	8.50	7.571	1984.971	-27.93	1 MHz	-15.89
		8.50	12.00	8.522	1985.922	-32.41	1 MHz	-25.18
Test Results					PASS			

FDD Band VIII								
Test Channel					2713			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 882.600 MHz							21.50 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.635	873.965	-33.59	1 MHz	-25.98
		-8.50	-7.50	-7.511	875.089	-27.37	1 MHz	-16.10
		-7.50	-4.00	-4.006	878.594	-20.11	1 MHz	-12.49
		-3.485	-2.515	-2.879	879.721	-23.85	30 KHz	-17.66
		2.515	3.485	2.804	885.404	-23.71	30 KHz	-16.54
		4.00	7.50	4.017	886.617	-17.54	1 MHz	-12.50
		7.50	8.50	7.500	890.100	-20.20	1 MHz	-15.98
		8.50	12.00	8.708	891.308	-40.63	1 MHz	-25.98
Test Results					PASS			

FDD Band VIII								
Test Channel					2788			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 897.600 MHz							21.20 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.534	889.066	-26.99	1 MHz	-26.28
		-8.50	-7.50	-7.603	889.997	-23.85	1 MHz	-17.31
		-7.50	-4.00	-5.408	892.192	-20.37	1 MHz	-14.19
		-3.485	-2.515	-3.485	894.115	-36.27	30 KHz	-27.06
		2.515	3.485	2.579	900.179	-19.60	30 KHz	-13.46
		4.00	7.50	4.000	901.600	-20.95	1 MHz	-12.78
		7.50	8.50	7.596	905.196	-24.48	1 MHz	-17.24
		8.50	12.00	8.500	906.100	-38.52	1 MHz	-26.28
Test Results					PASS			

FDD Band VIII								
Test Channel					2862			
3.84-MHz-RRC-Filtered UE output power at carrier frequency 912.400 MHz							22.40 dBm	
Test environment		Test Frequency Δ f (MHz)		Measurement Results				Limit (dBm)
Temperature (℃)	Voltage (V)	Start Freq	Stop Freq	FREQ_REL (MHz)	FREQ_ABS (MHz)	MEAS (dBm)	Meas BW	
25	230	-12.00	-8.50	-8.562	903.838	-33.10	1 MHz	-25.08
		-8.50	-7.50	-7.604	904.796	-29.47	1 MHz	-16.12
		-7.50	-4.00	-4.662	907.738	-20.40	1 MHz	-12.24
		-3.485	-2.515	-2.614	909.786	-20.38	30 KHz	-12.79
		2.515	3.485	3.474	915.874	-30.46	30 KHz	-25.69
		4.00	7.50	4.000	916.400	-19.70	1 MHz	-11.58
		7.50	8.50	7.506	919.906	-27.51	1 MHz	-15.14
		8.50	12.00	8.595	920.995	-38.75	1 MHz	-25.08
Test Results					PASS			

4.2.18. Adjacent Channel Leakage Power Ratio (ACLR) with E-DCH

LIMIT

ETSI TS13412101 V10.4.0(2012-10) Sub-clause 5.10B.5

ACLR is the ratio of the RRC filtered mean power centred on the assigned channel frequency to the RRC filtered mean power centred on an adjacent channel frequency.
The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE that support HSDPA and E-DCH.
The measured ACLR, derived in step 4), shall be higher than the limit in table 5.10B.2.

Table 5.10B.2: UE ACLR

Power Class	UE channel	ACLR limit
3	+5 MHz or −5 MHz	32.2 dB
3	+10 MHz or −10 MHz	42.2 dB
4	+5 MHz or −5 MHz	32.2 dB
4	+10 MHz or −10 MHz	42.2 dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause

TEST PROCEDURE

1. For sub-test 1 to 4, set UE to maximum output power according to 5.2B.4.2.1 steps 1 to 8. For sub-test 5, set UE to maximum output power according to 5.2B.4.2.2 step 1 to 4.
2. When UE has reached the maximum power, measure the RRC filtered mean power on the wanted channel. The measurement period shall be inside the HS-DPCCH on-period for the wanted and the adjacent channels.
3. Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.
4. Calculate the ratio of the power between the values measured in step 2 and step 3.
5. Repeat steps 1-4 for all the different combinations of beta values as given in table C.11.1.3.

TEST RESULTS

Note:The ACLP with E-DCH were test all β_c/β_d conditions.worst case were reported

FDD Band I							
Test Channel		9613					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-37.86	-41.22	-32.20	-49.50	-50.12	-42.20
-20	253	-37.11	-40.61	-32.20	-48.97	-49.71	-42.20
	207	-37.16	-40.66	-32.20	-49.01	-49.77	-42.20
+55	253	-37.85	-40.15	-32.20	-48.82	-49.59	-42.20
	207	-37.85	-40.10	-32.20	-48.89	-49.59	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9750					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-38.23	-37.68	-32.20	-50.17	-49.08	-42.20
-20	253	-37.82	-37.10	-32.20	-49.60	-48.78	-42.20
	207	-37.84	-37.16	-32.20	-49.65	-48.78	-42.20
+55	253	-37.63	-37.22	-32.20	-49.76	-48.44	-42.20
	207	-37.66	-37.25	-32.20	-49.79	-48.40	-42.20
Test Results		PASS					

FDD Band I							
Test Channel		9887					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-38.96	-37.77	-32.20	-51.66	-52.86	-42.20
-20	253	-38.44	-37.23	-32.20	-51.14	-52.33	-42.20
	207	-38.49	-37.25	-32.20	-51.10	-52.30	-42.20
+55	253	-38.60	-37.56	-32.20	-51.39	-52.62	-42.20
	207	-38.63	-37.60	-32.20	-51.42	-52.62	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2713					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-38.96	-40.00	-32.20	-59.12	-62.56	-42.20
-20	253	-38.55	-39.47	-32.20	-58.63	-62.10	-42.20
	207	-38.51	-39.46	-32.20	-58.62	-62.12	-42.20
+55	253	-38.76	-39.69	-32.20	-58.88	-62.35	-42.20
	207	-38.76	-39.70	-32.20	-58.91	-62.35	-42.20
Test Results		PASS					

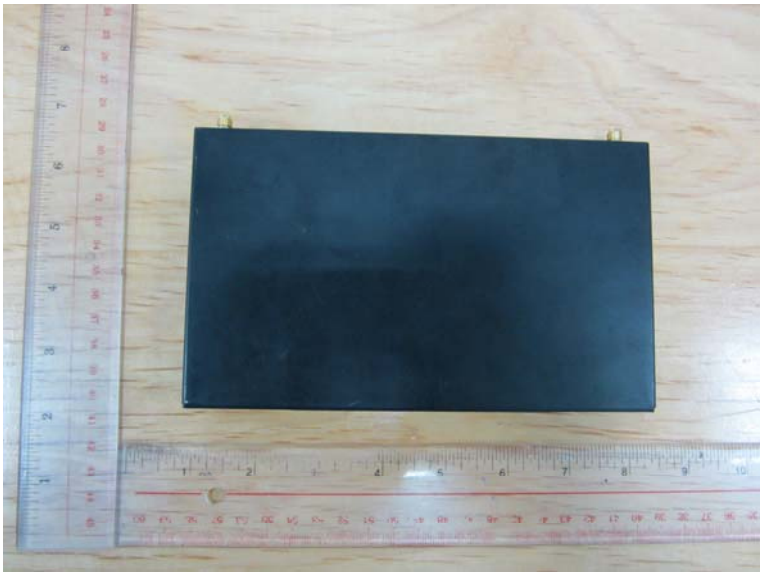
FDD Band VIII							
Test Channel		2788					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-42.99	-45.11	-32.20	-57.55	-59.00	-42.20
-20	253	-42.54	-44.57	-32.20	-57.00	-58.44	-42.20
	207	-42.58	-44.60	-32.20	-57.00	-58.48	-42.20
+55	253	-42.78	-44.88	-32.20	-57.34	-58.69	-42.20
	207	-42.74	-44.90	-32.20	-57.34	-58.71	-42.20
Test Results		PASS					

FDD Band VIII							
Test Channel		2862					
Test environment		ACLR (dBc)					
Temperature (℃)	Voltage (V)	Mea ACLR at Δf (MHz)			Mea ACLR at Δf (MHz)		
		+5	-5	Limit	+10	-10	Limit
25	230	-35.22	-35.06	-32.20	-48.96	-46.11	-42.20
-20	253	-34.66	-34.51	-32.20	-48.51	-45.58	-42.20
	207	-34.70	-34.55	-32.20	-48.55	-45.61	-42.20
+55	253	-34.85	-34.79	-32.20	-48.77	-45.79	-42.20
	207	-34.85	-34.82	-32.20	-48.77	-45.79	-42.20
Test Results		PASS					

5. Test Set up Photos of the EUT

6. External and Internal Photos of the EUT

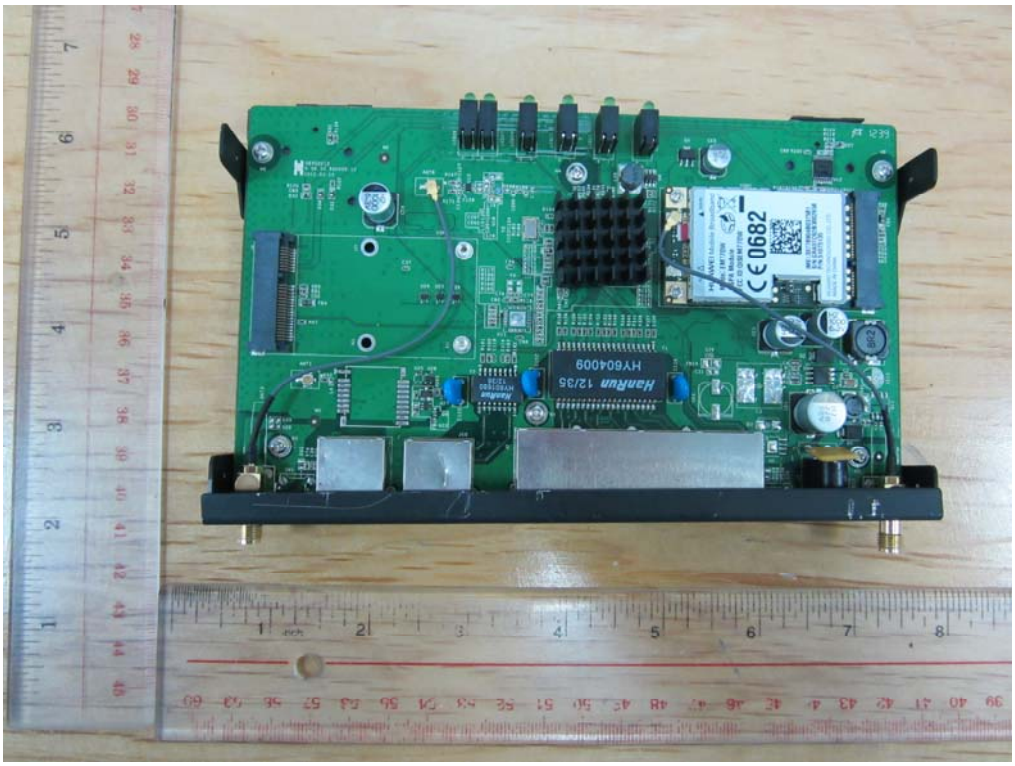
External photos of the EUT

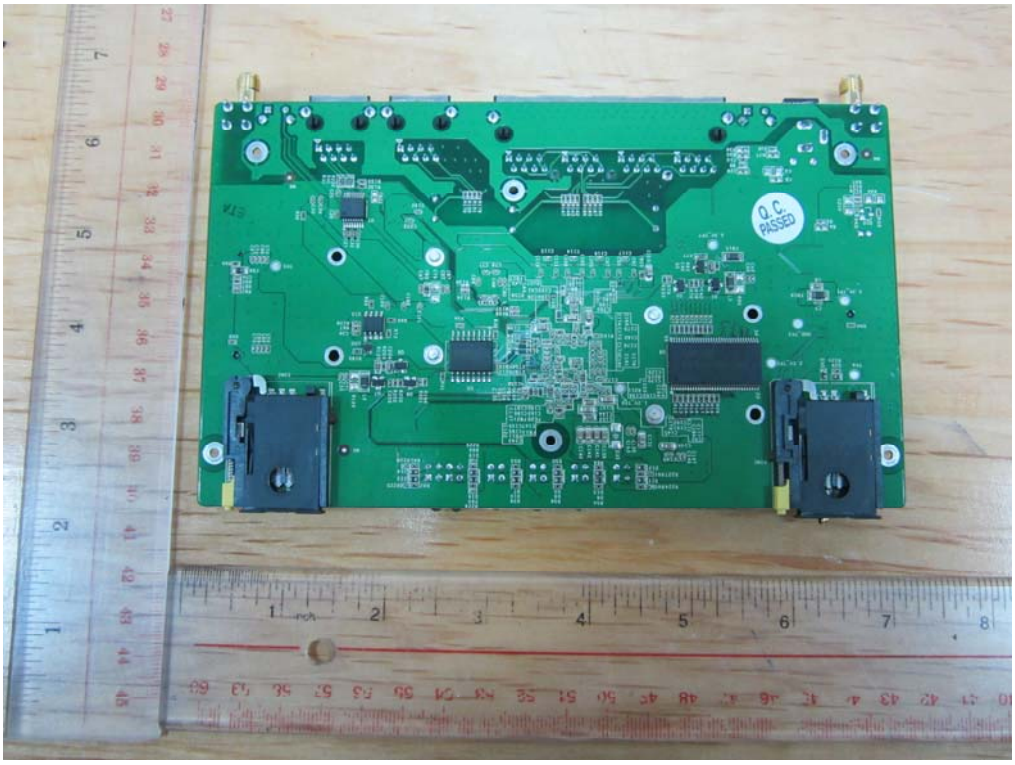


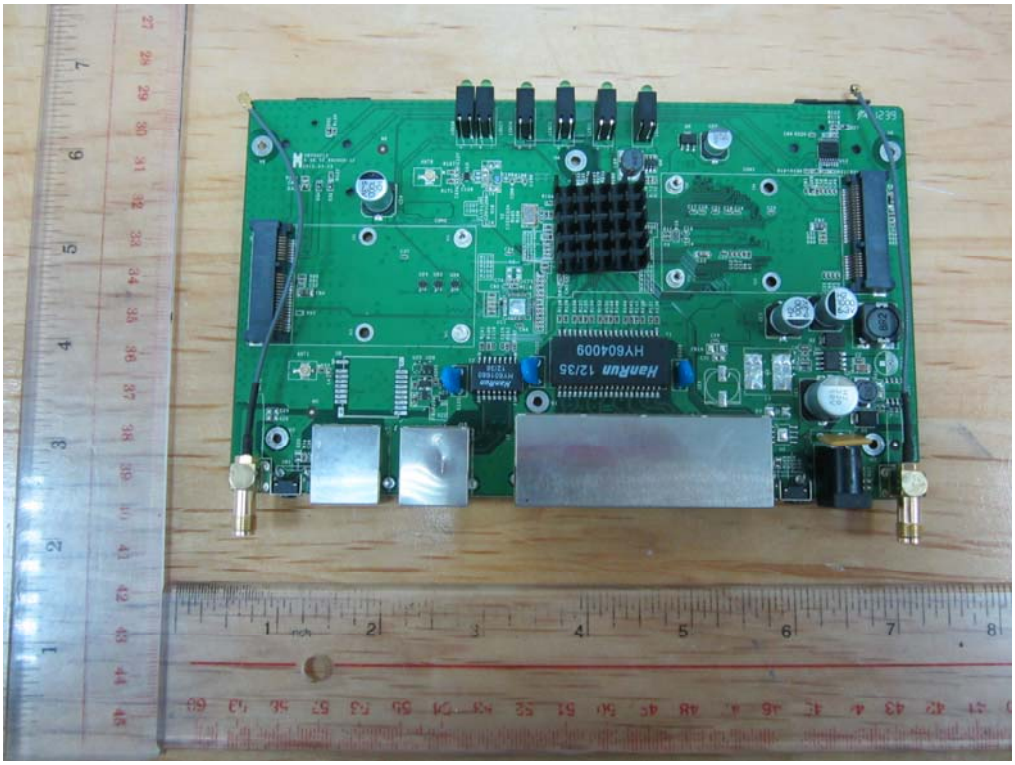

RICON


Q.C.
PASSED

Internal photos of the EUT







.....End of Report.....