



Nemko Italy S.p.A., Via del Carroccio 4, 20853, Biassono, Italy.

Report number: **253922-5TRFWL**

Equipment Under Test: TRE7S8SC8A9S19AWAS


Applicant: TEKO Telecom Srl  
Via Meucci, 24/a  
I-40024 Castel S. Pietro Terme (BO)

FCC ID: XM2-EP6B

Test specification:

Title 47 – Telecommunication  
Chapter I – Federal Communications Commission  
Subchapter A – General  
Part 24 – Personal Communication Services  
Subpart E – Broadband PCS

Reviewed by:  \_\_\_\_\_ 2014/03/27 \_\_\_\_\_  
Signature Date  
P. Barbieri, Wireless/EMC Specialist

Reviewed by:  \_\_\_\_\_ 2014/03/27 \_\_\_\_\_  
Signature Date  
G. Curioni, Wireless/EMC Specialist

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Section 1: Report summary

Report number **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Section 1: Report summary

This report contains an assessment of apparatus against specifications based upon tests carried out on samples submitted at Nemko Italy SpA.

**Test specification:**  
FCC Part 24 Subpart E, Broadband PCS

Compliance status:	Complies
Exclusions:	None
Non-compliances:	None
Report release history:	Original release
Test location:	Nemko Italy S.p.A. Via del Carroccio 4, 20046, Biassono, Italy
Registration number:	481407 (10 m Semi anechoic chamber)

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Italy's ISO/IEC 17025 accreditation.

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Section 2: Equipment under test

Report number: **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Section 2: Equipment under test

### 2.1 Identification of equipment under test (EUT)

The following information identifies the EUT under test:

Type of equipment:	Remote Unit
Product marketing name:	Teko Telecom Srl
Model number:	TRE7S8SC8A9S19AWAS
Serial number:	132059001
Nemko sample number:	-----
FCC ID:	XM2-EP6B
Date of receipt:	2014-03-03

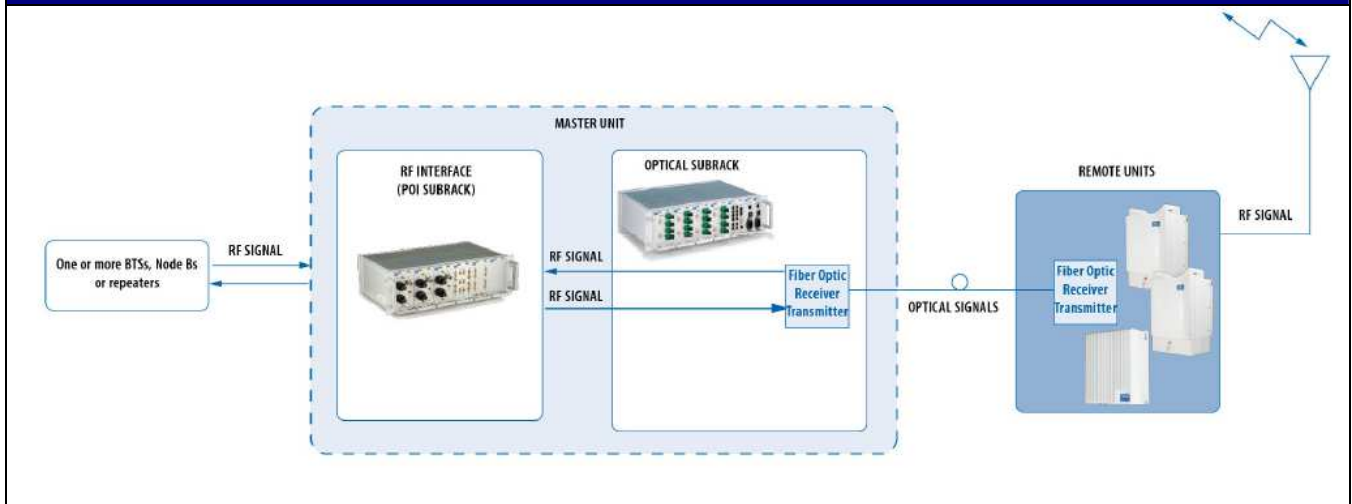
### 2.2 Accessories and support equipment

The following information identifies accessories used to exercise the EUT during testing:

Only setup See 3.4 test equipment and photo

Section 2: Equipment under test, continued

2.3 EUT description



2.4 Technical specifications of the EUT

Operating band:	Down Link 1930-1995 MHz; Up Link 1850-1915 MHz
Operating frequencies:	Wideband
Modulation type:	GSM, EDGE, CDMA, WCDMA, LTE (QAM and QPSK)
Occupied bandwidth:	GSM and EDGE: 200 kHz; CDMA: 1,25 MHz, WCDMA: 5 MHz LTE: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
Channel spacing:	Standard
Emission designator:	GSM and EDGE: GXW; CDMA, WCDMA: F9W, LTE: D7W
RF Output	Down Link: 31dBm (1,25W) Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
Gain	Down Link: 36dB Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
Antenna data:	No antenna provided
Antenna type:	No antenna provided External Antenna (Equipment that has an external 50 Ω RF connector)
Power source	100-240 Vac

## Section 2: Equipment under test, continued

### 2.5 EUT setup diagram



### 2.6 Operation of the EUT during testing

In down-link direction, normal working at max gain with max RF power output

### 2.7 Modifications incorporated in the EUT

None/Comments (Performed by: Client or Nemko)

There were no modifications performed to the EUT during this assessment.



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Section 4: Result summary

Report number: **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Section 3: Test conditions

### 3.1 Deviations from laboratory tests procedures

No deviations were made from laboratory test procedures.

### 3.2 Test conditions, power source and ambient temperatures

Normal temperature, humidity and air pressure test conditions	Temperature: 15–30 °C Relative humidity: 30–60 % Air pressure: 860–1060 hPa  When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.
Power supply range:	The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages $\pm 5\%$ , for which the equipment was designed.

### 3.3 Measurement uncertainty

Nemko S.p.A. measurement uncertainty has been calculated using the standard CISPR 16-4-2 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modeling – Uncertainty in EMC measurements". All calculations have been performed to provide a confidence level of 95 % and can be found in Nemko S.p.A. document WML1002.



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Section 4: Result summary  
Report number: **253922-5TRFWL**  
Specification: FCC 24 Subpart E

### 3.4 Test equipment

Client's property:

Identification number	Description	Manufacturer model	s/n	Cal. Due
1a	Vector Signal Generator	Agilent N5182A MXG	MY48180714	May 2015
1b	Vector Signal Generator	Agilent E4438C ESG	MY45094485	Ago 2016
2a	Spectrum Analyzer	Agilent E4440A	US40420470	May 2015
2b	Spectrum Analyzer	Agilent E9020A MXA	MY48011812	Ago 2015
3	Network Analyzer	Agilent E5071B	MY42301133	Ago 2016
4	Climatic chamber	Angelantoni Hygros 600	7237	Nov 2014

Property of Nemko Italy:

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle months	Next cal.
Trilog Broad Band Antenna 25-2000 MHz	Schwarzbeck	VULB 9168	VULB 9168-242	36	02/2015
Trilog Broad Band Antenna 25-8000 MHz	Schwarzbeck	VULB 9162	VULB 9162-25	36	05/2015
Antenna 1-18 GHz	Schwarzbeck	STLP 9148	STPL 9148-123	36	02/2015
Double ridge waveguide horn	RFspin	DRH40	061106A40		08/2016
Preamplifier 18-40 GHz	Miteq	JS44	1648665		09/2014
Broadband preamplifier 1-18 GHz	Schwarzbeck	BBV 9718	9718-137	36	09/2014
EMI receiver 20 Hz ÷ 8 GHz	R&S	ESU8	100202	12	02/2015
EMI receiver 20 Hz ÷ 3 GHz	R&S	ESCI	100888	12	08/2014
Hydraulic revolving platform	Nemko	RTPL 01	4.233		NCR
Turning-table	R&S	HCT	835 803/03		NCR
Antenna mast	R&S	HCM	836 529/05		NCR
Controller	R&S	HCC	836 620/7		NCR
Spectrum Analyzer 9kHz ÷ 40GHz	R&S	FSEK	848255/005		08/2014
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530		08/2014
Shielded room	Siemens	10m control room	1947		NCR
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	70		NCR
Shielded Room	Siemens	3m semi-anechoic chamber	3		NCR
Motor controller	Emco	1051-25	9012-1559		NCR
Motor controller	Emco	1061-1.521	9012-1508		NCR
Antenna Tower	Emco	2071-2	9601-1940		NCR
Controller pole/table	Emco	2090	9511-1099		NCR
V-Network	Rohde & Schwarz	ESH2-Z5	872 460/041	12	09/2014

Note: N/A = Not applicable, NCR = No cal required, COU = Cal on use





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Section 4: Result summary

Report number: **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Section 4: Result summary

### 4.1 Test results

The apparatus was assessed against the following specifications:

FCC Part 2 Subpart J, Equipment Authorization Procedures  
FCC Part 24 Subpart E, Broadband PCS

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N	No : not applicable / not relevant.
Y	Yes : Mandatory i.e. the apparatus shall conform to these tests.
N/T	Not Tested, mandatory but not assessed. (See report summary)

Part	Test method	Test description	Required	Result
§24.232	2.1046	EIRP limits	Y	Pass
§24.238(b)	2.1049	Occupied bandwidth	Y	Pass
§24.238(a)	2.1051	Spurious emissions at the antenna terminal	Y	Pass
§24.238(a)	2.1053	Field strength of spurious radiation	Y	Pass
§24.235	2.1055	Frequency stability	N	N/A a)
§2-11-04/EAB/RF	--	Filter Frequency Response	Y	Pass

Notes:

- a) NOT APPLICABLE: Modulation/frequency conversion circuitry not in use. No frequency change in EUT (input and output have same frequency)



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Appendix A: Test results

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Specification: FCC 24 Subpart E

## Appendix A: Test results

### Clause 24.232 RF Power output

Base stations are limited to 1640 watts peak E.I.R.P. with an antenna height up to 300 meters HAAT. In no case may the peak output power of a base station transmitter exceed 100 watts.

Test date: [2014-03-06](#)

Test results: [Pass](#)

### Special notes

Conducted measurement were performed:

- The power was measured using spectrum analyzer with RMS detector / average power meter.

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB

Only conducted measurement at antenna connector was possible, no antenna provided by manufacturer



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Appendix A: Test results

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Specification: FCC 24 Subpart E

**Test data**

**Conducted measurement**

**Test data**

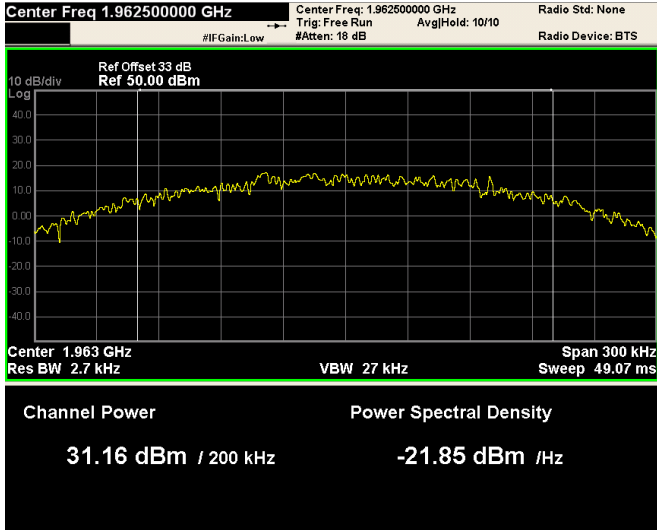
Direction	Modulation	Frequency (MHz)	RF output channel Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	GSM (200 kHz)	1962.5	31.16	1.31	0,07
Down-link	EDGE (200 kHz)	1962.5	31.14	1.30	3,25
Down-link	CDMA (1,25MHz)	1962.5	31.12	1.29	9,07
Down-link	WCDMA (5MHz)	1962.5	31.12	1.29	10,62
Down-link	LTE (QAM, 1,4MHz)	1962.5	31.14	1.30	10,09
Down-link	LTE (QPSK, 1,4MHz)	1962.5	31.14	1.30	9,47
Down-link	LTE (QAM, 3MHz)	1962.5	31.19	1.32	10,29
Down-link	LTE (QPSK, 3MHz)	1962.5	31.10	1.29	10,48
Down-link	LTE (QAM, 5MHz)	1962.5	31.20	1.32	10,66
Down-link	LTE (QPSK, 5MHz)	1962.5	31.11	1.29	10,26
Down-link	LTE (QAM, 10MHz)	1962.5	31.18	1.31	10,93
Down-link	LTE (QPSK, 10MHz)	1962.5	31.15	1.30	10,60
Down-link	LTE (QAM, 15MHz)	1962.5	31.19	1.32	10,40
Down-link	LTE (QPSK, 15MHz)	1962.5	31.12	1.29	11,08
Down-link	LTE (QAM, 20MHz)	1962.5	31.15	1.30	10,23
Down-link	LTE (QPSK, 20MHz)	1962.5	31.19	1.32	10,54



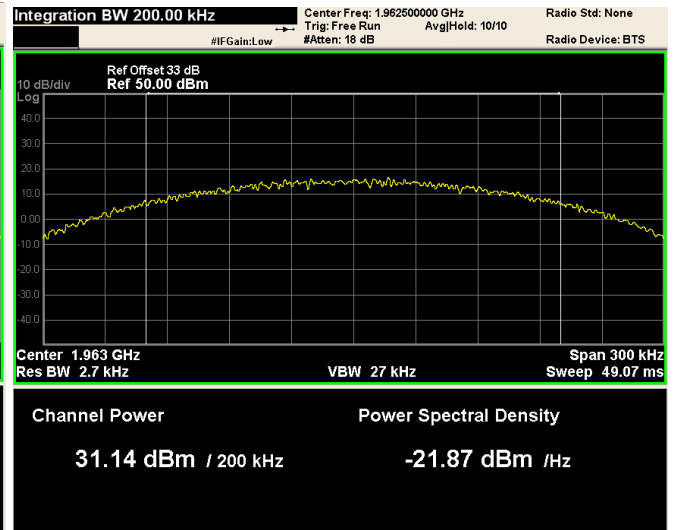
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Test data

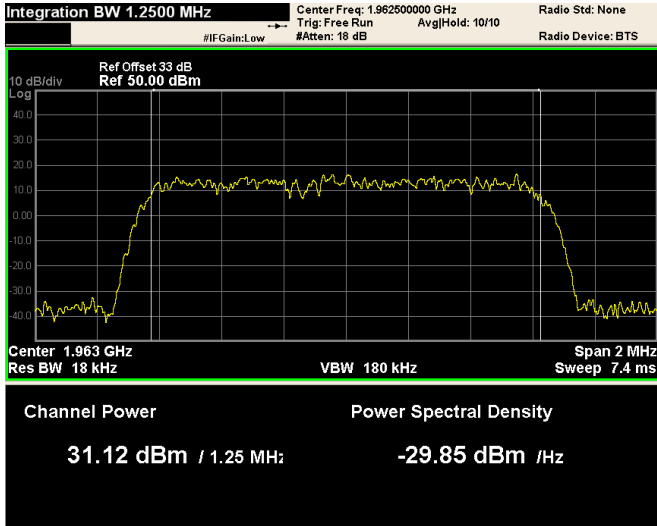
Mod. GSM



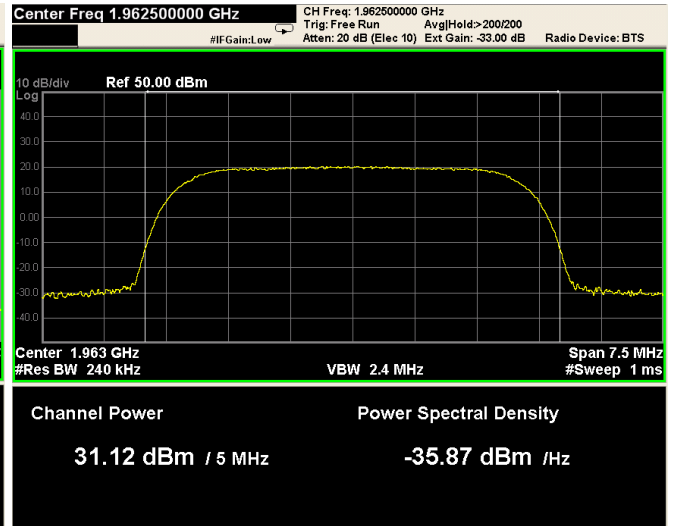
Mod. EDGE



Mod. CDMA



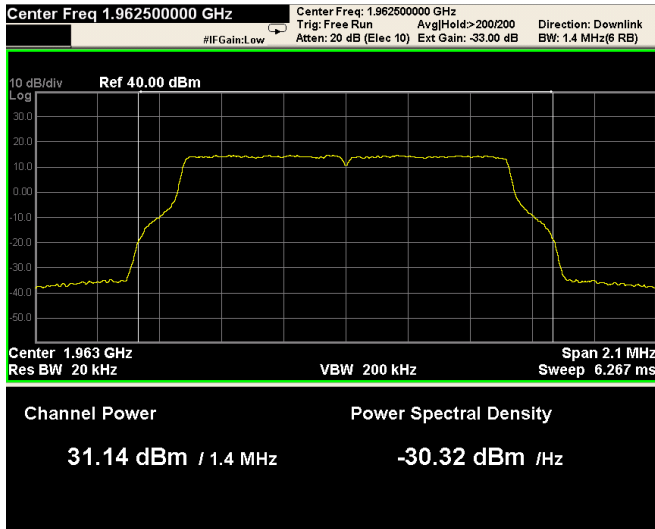
Mod. WCDMA



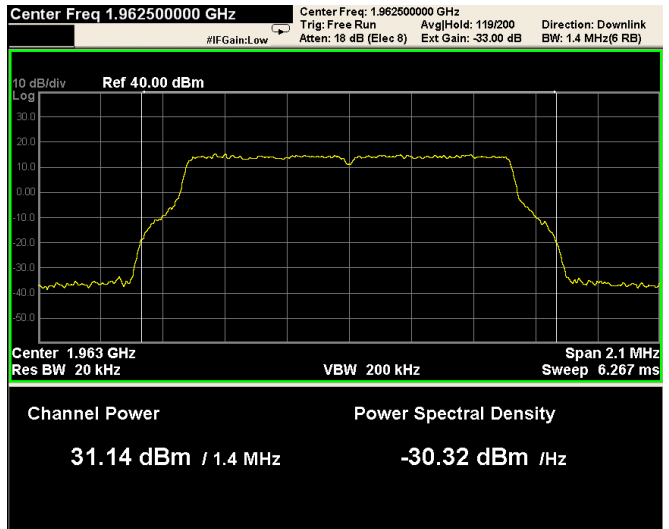


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**Mod. LTE 1,4MHz (Down-link)**

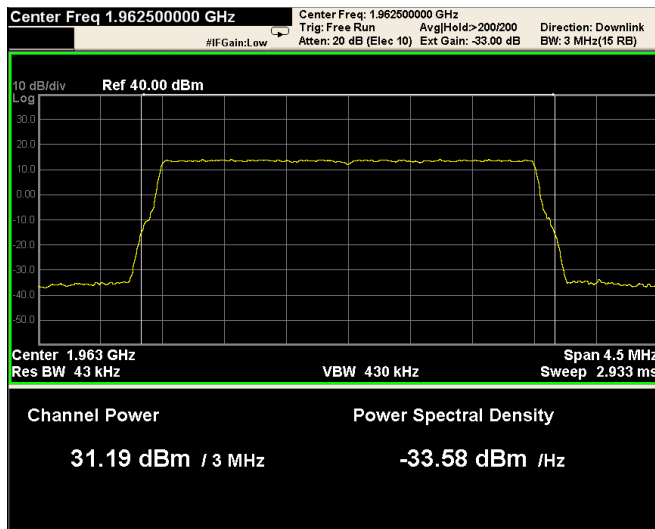


**QAM**

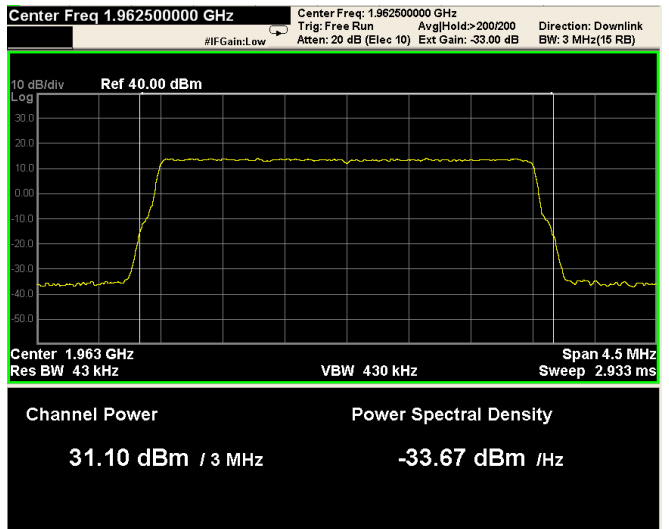


**QPSK**

**Mod. LTE 3MHz (Down-link)**



**QAM**

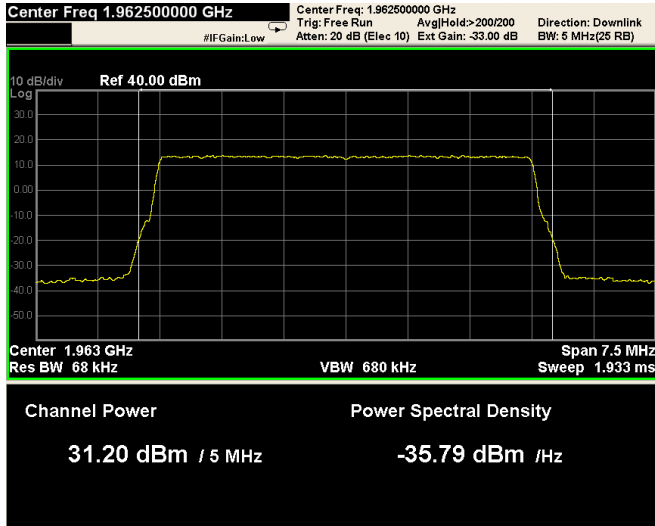


**QPSK**

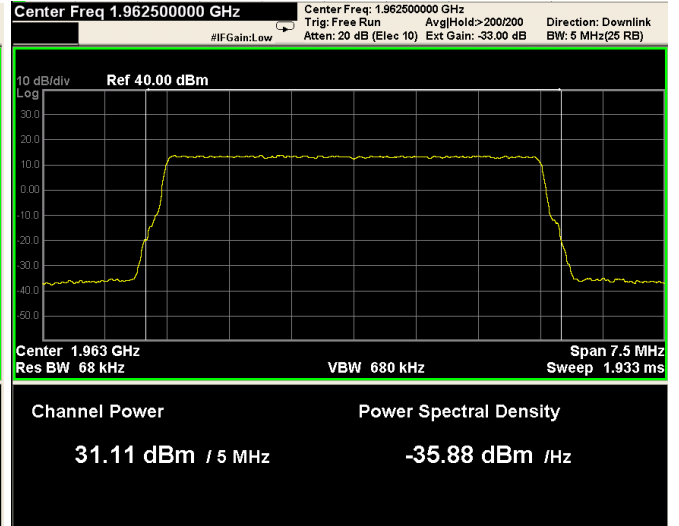


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### Mod. LTE 5MHz (Down-link)

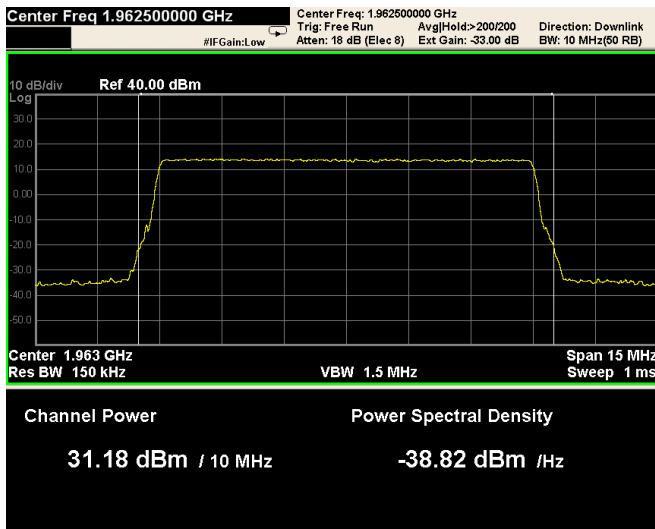


QAM

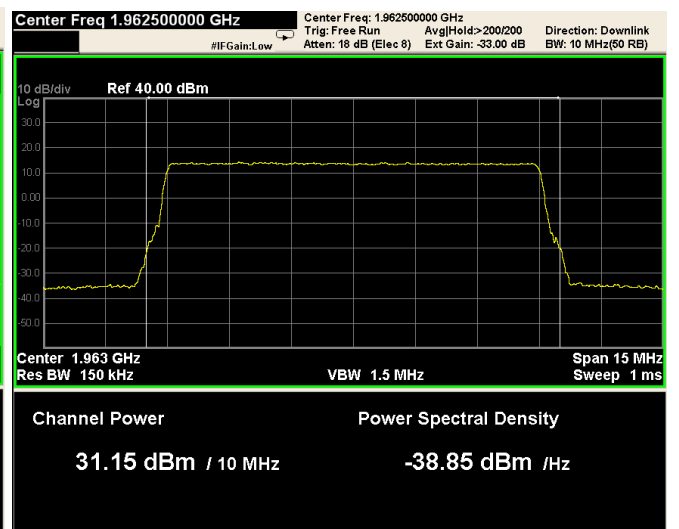


QPSK

### Mod. LTE 10MHz (Down-link)



QAM

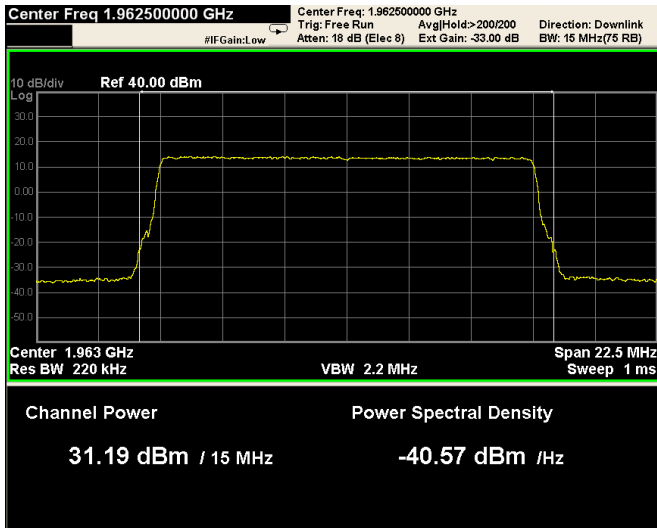


QPSK

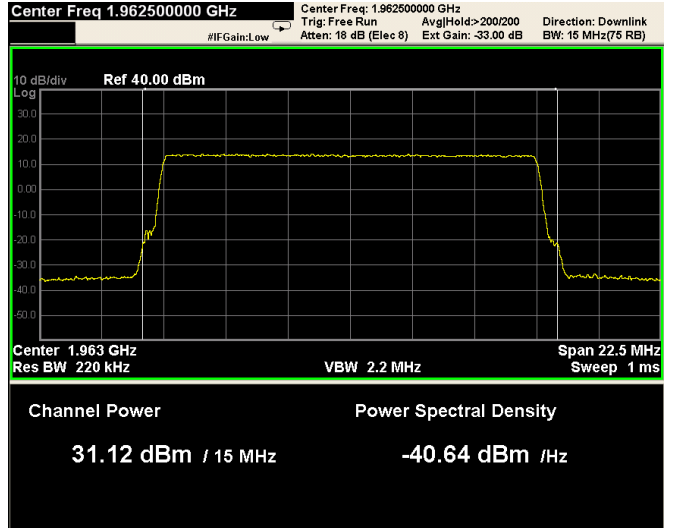


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**Mod. LTE 15MHz (Down-link)**

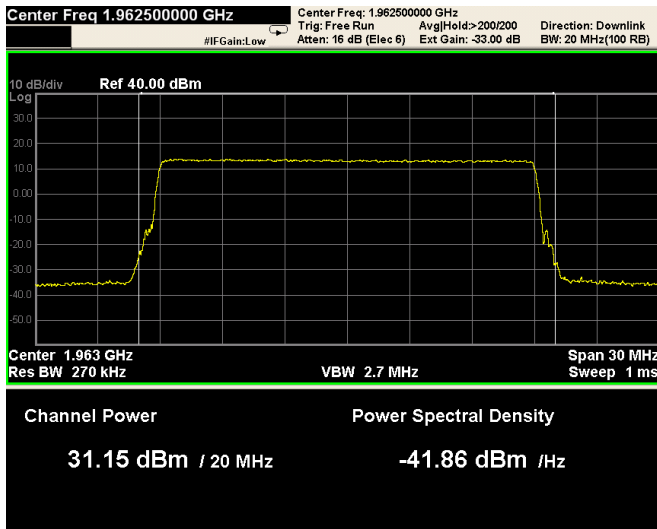


**QAM**

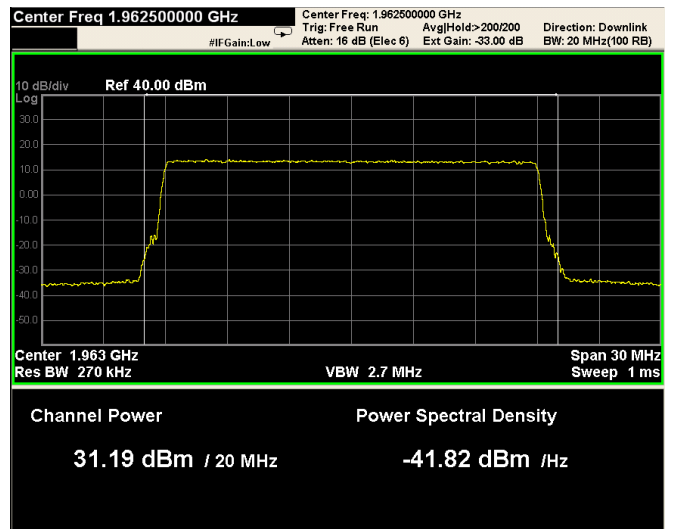


**QPSK**

**Mod. LTE 20MHz (Down-link)**



**QAM**



**QPSK**



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Appendix A: Test results

Report Number: **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Clause 24.238(b) Occupied bandwidth

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test date: [2014-03-06](#)

Test results: [Pass](#)

### Special notes

Resolution bandwidth was set wider or equal than occupied bandwidth.

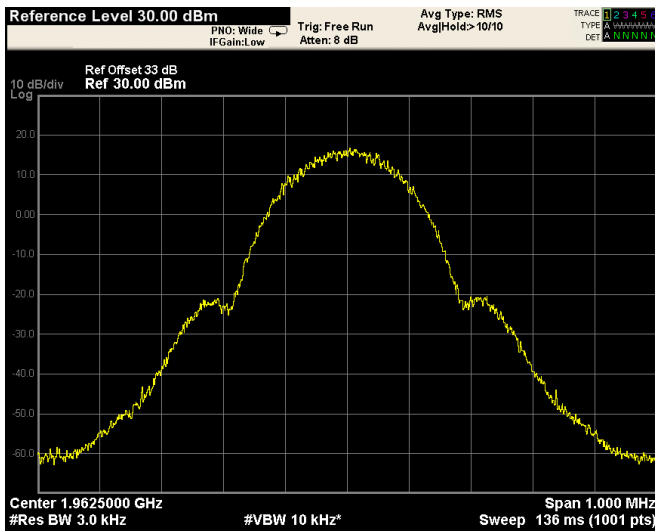




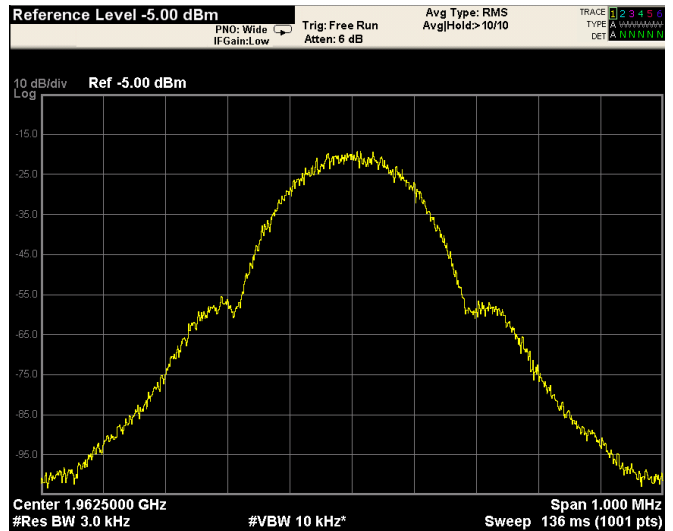
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Clause 24.238(b) Occupied bandwidth, continued

Mod. GSM (Down-link)

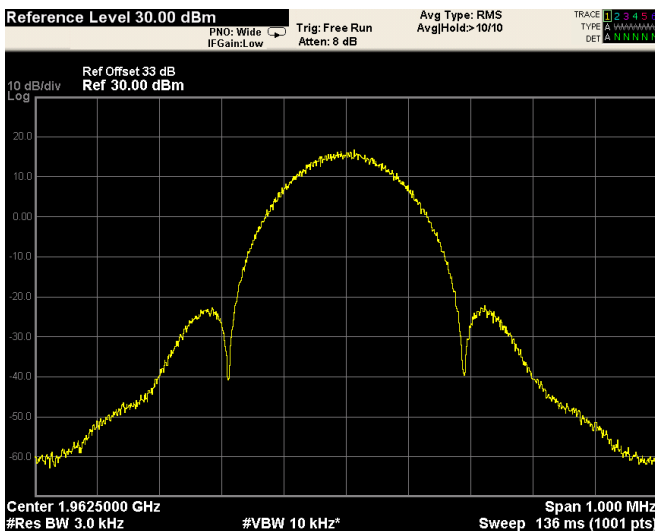


Output

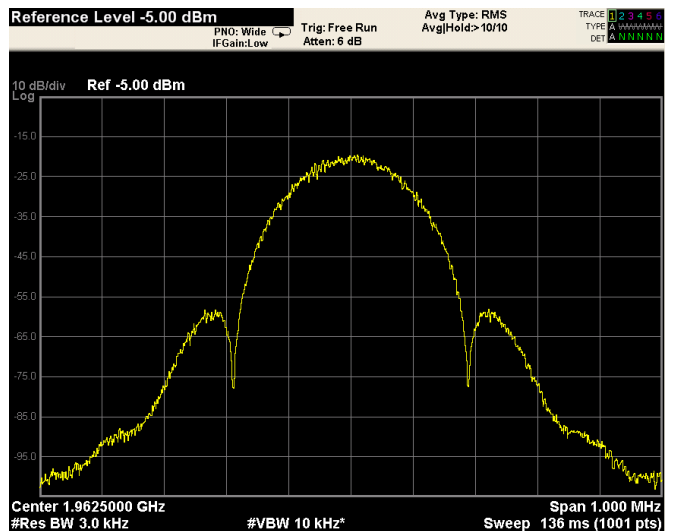


Input

Mod. EDGE (Down-link)



Output

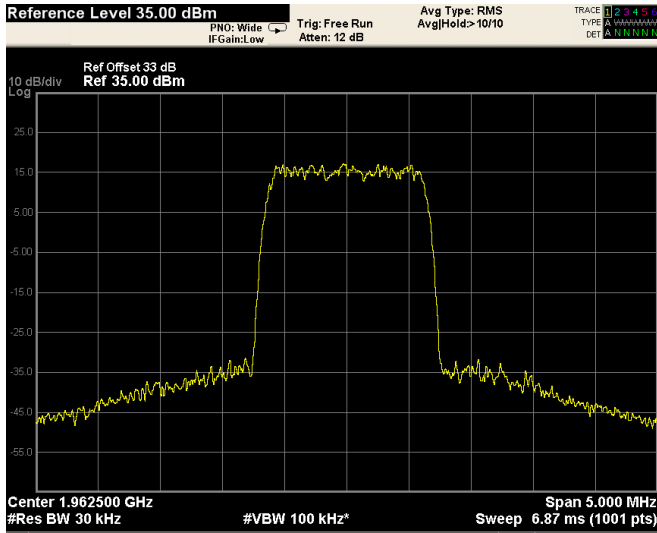


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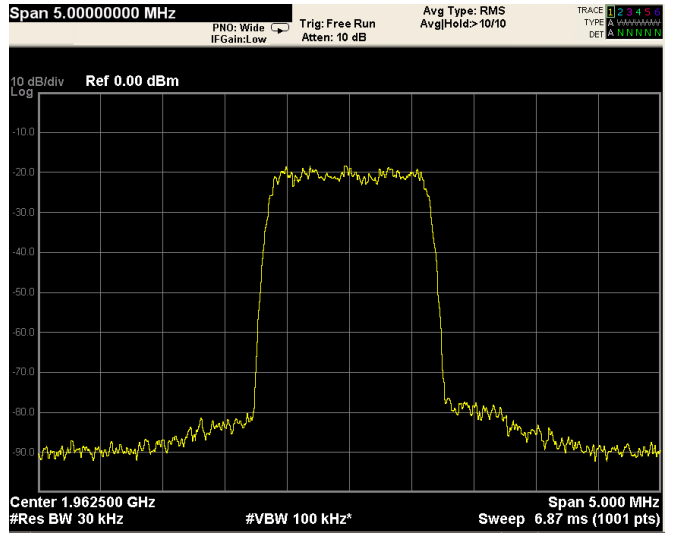


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### Mod. CDMA (Down-link)

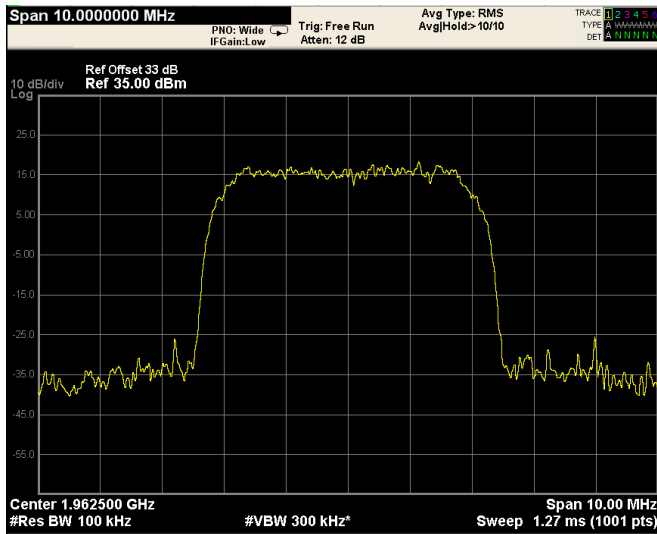


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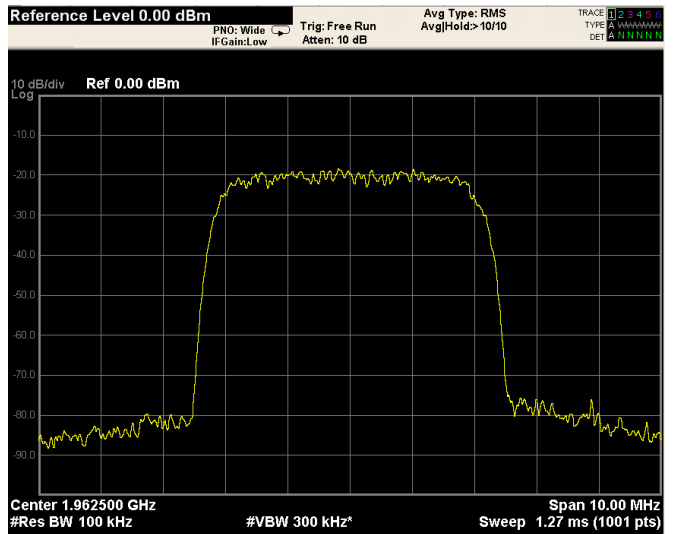


Input

### Mod. WCDMA (Down-link)



Output

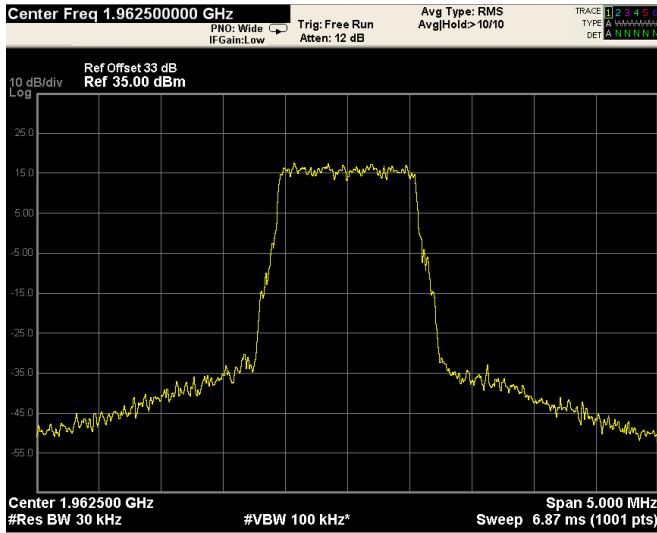


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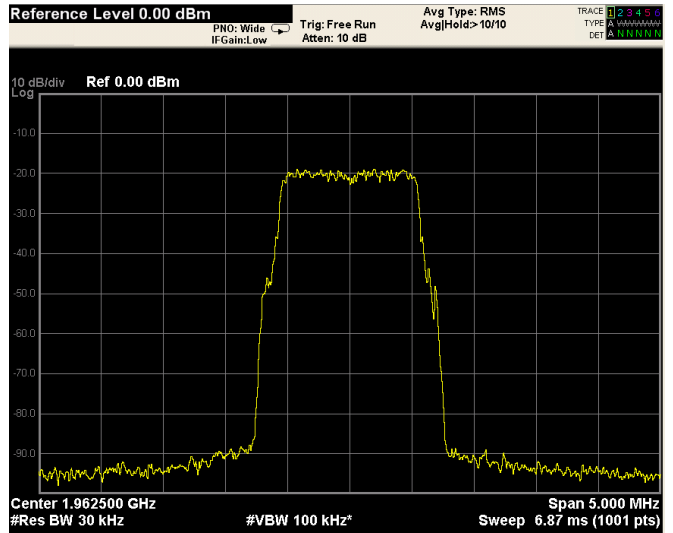


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### Mod. LTE 1.4MHz (QAM) (Down-link)

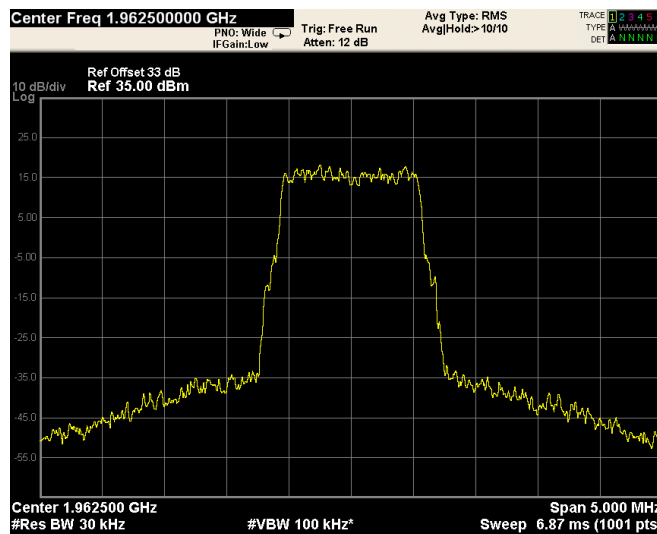


Output

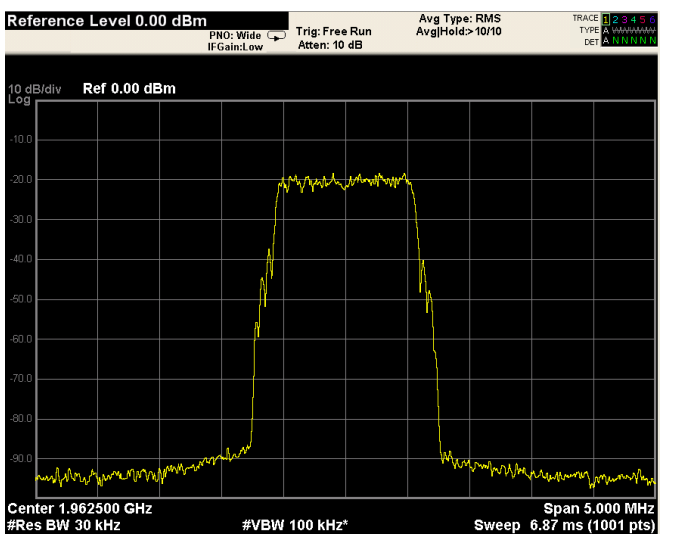


Input

### Mod. LTE 1.4MHz (QPSK) (Down-link)



Output

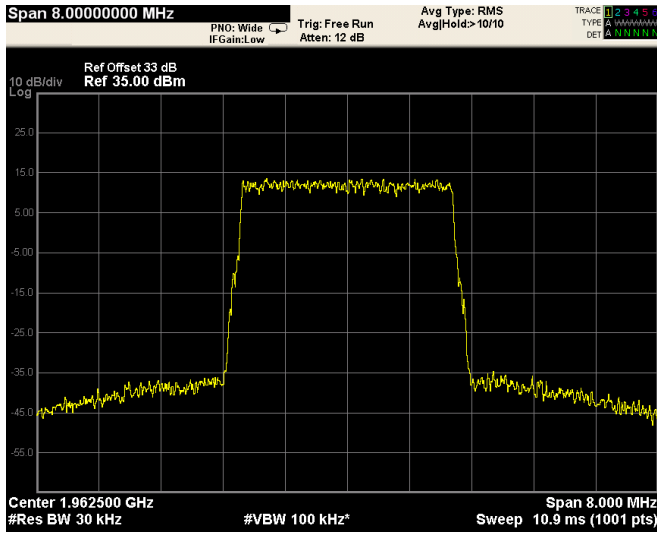


Input

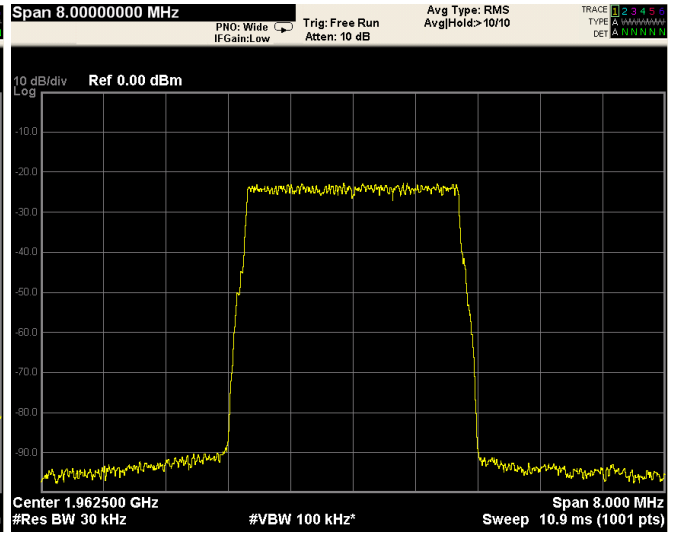


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### Mod. LTE 3MHz (QAM) (Down-link)

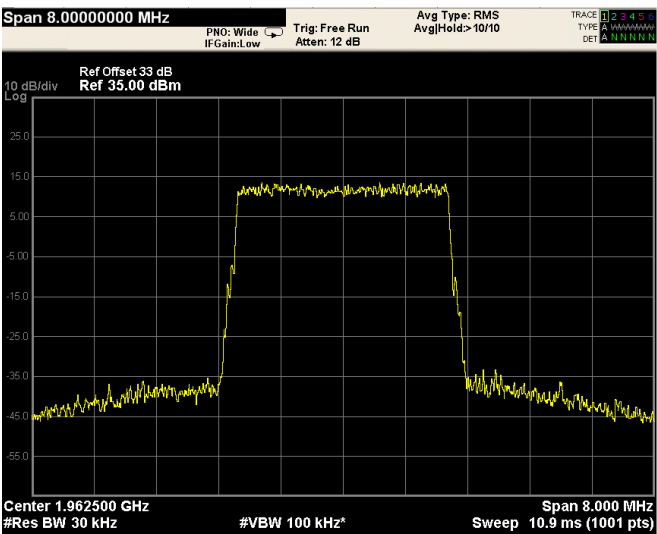


Output

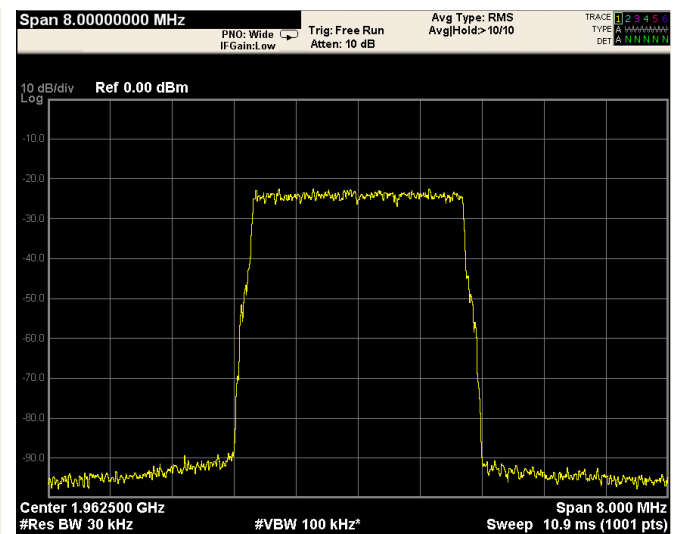


Input

### Mod. LTE 3MHz (QPSK) (Down-link)



Output

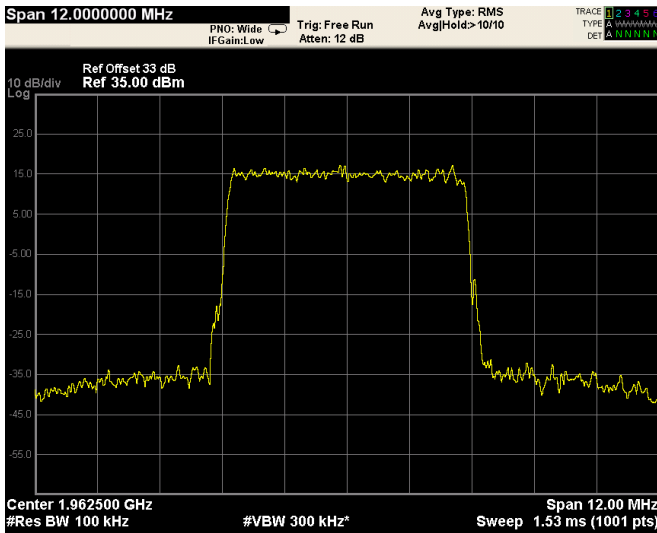


Input

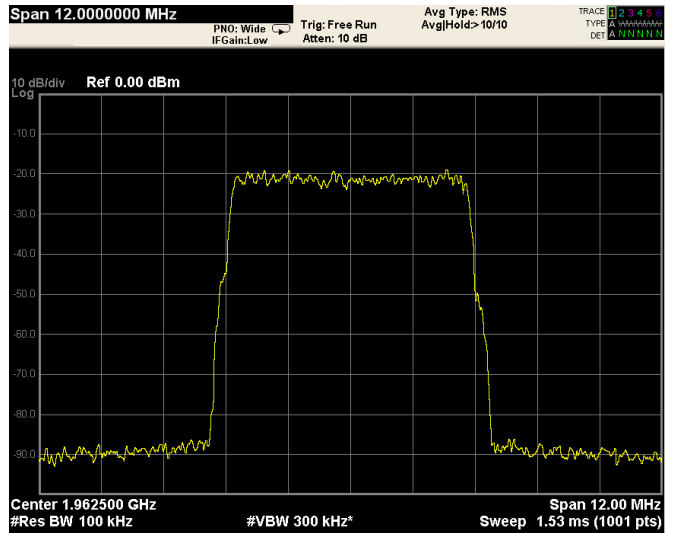


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### Mod. LTE 5MHz (QAM) (Down-link)

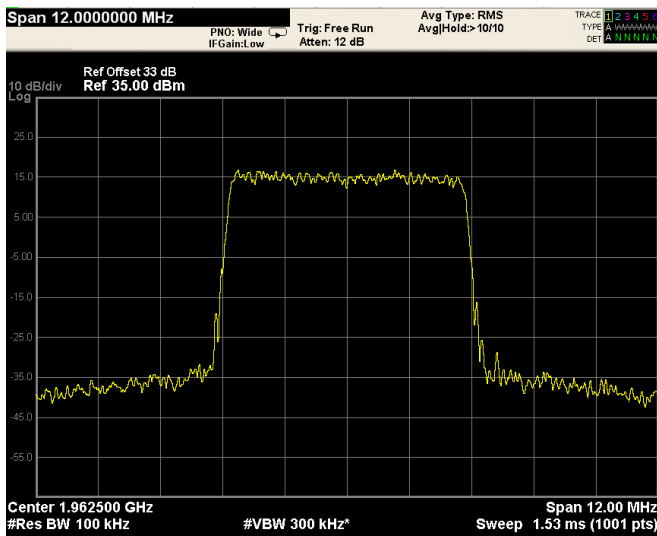


Output

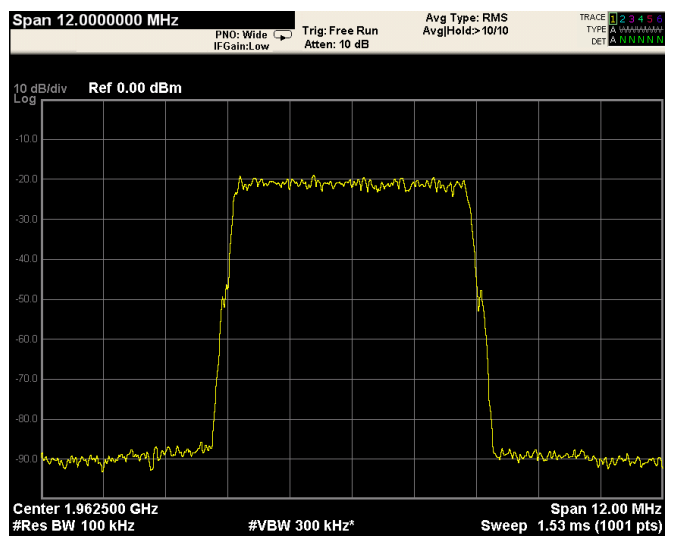


Input

### Mod. LTE 5MHz (QPSK) (Down-link)



Output



Input



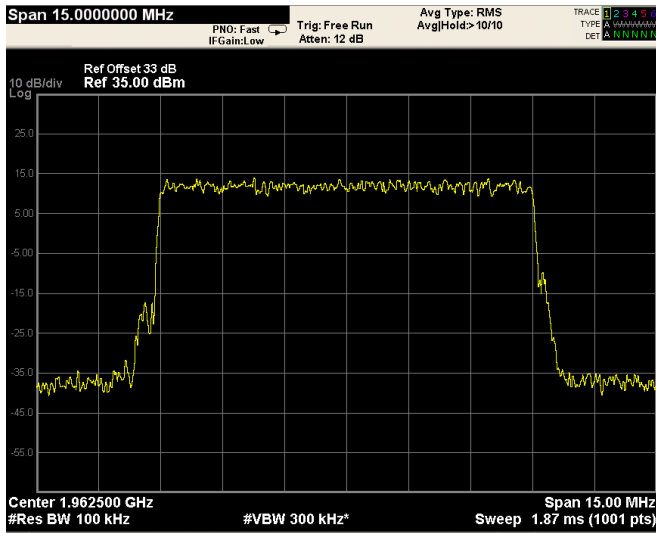
Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Appendix A: Test results

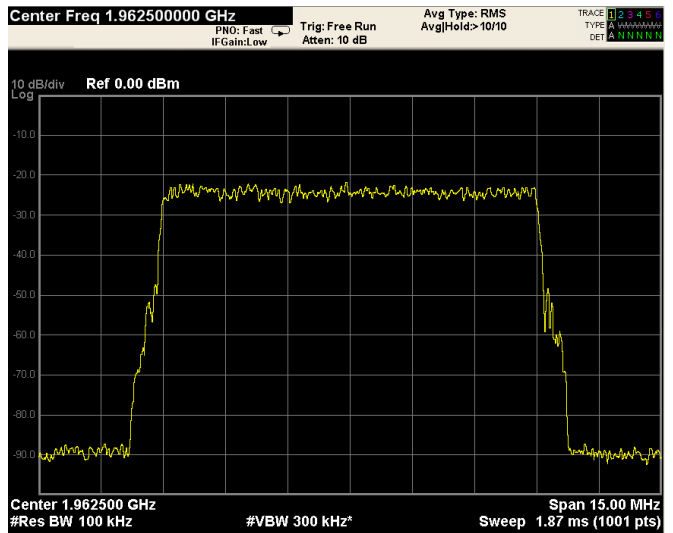
Report Number: 253922-5TRFWL

Specification: FCC 24 Subpart E

Mod. LTE 10MHz (QAM) (Down-link)

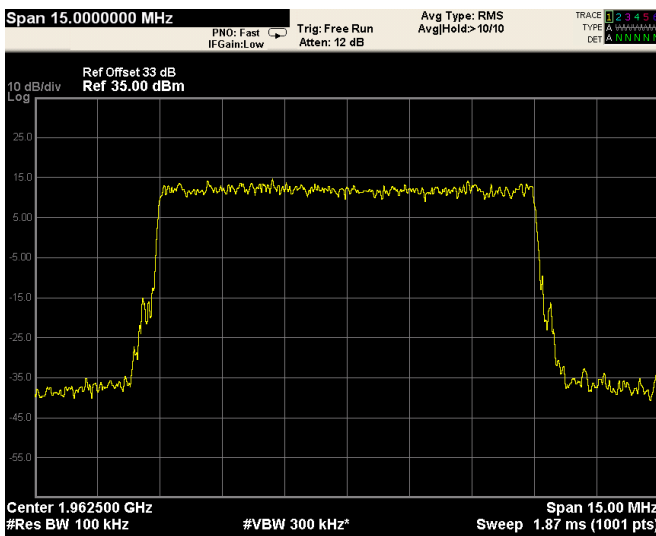


Output

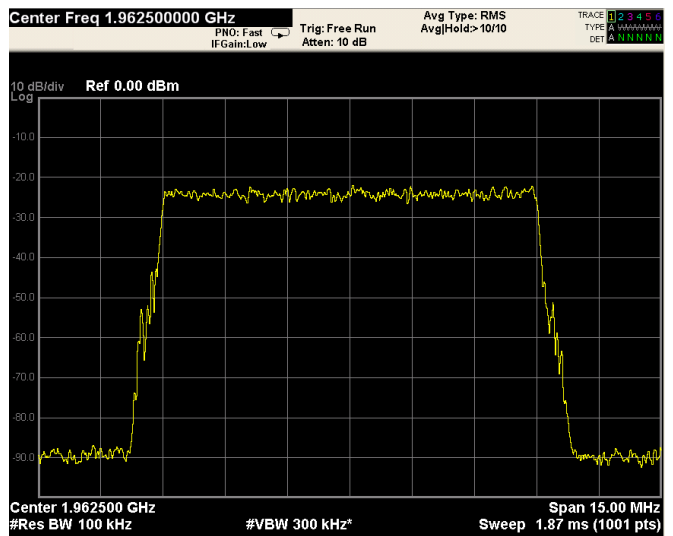


Input

Mod. LTE 10MHz (QPSK) (Down-link)



Output

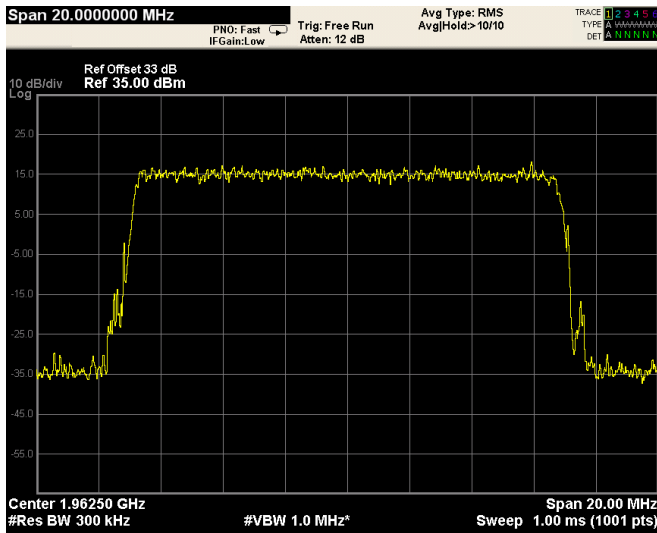


Input

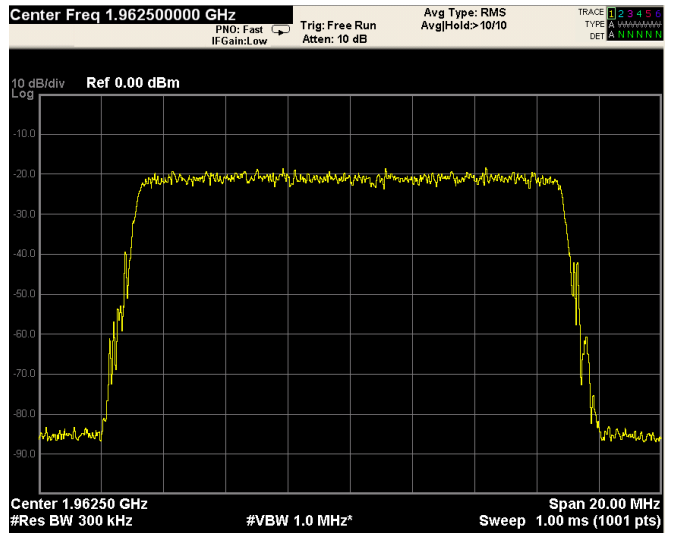


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 15MHz (QAM) (Down-link)

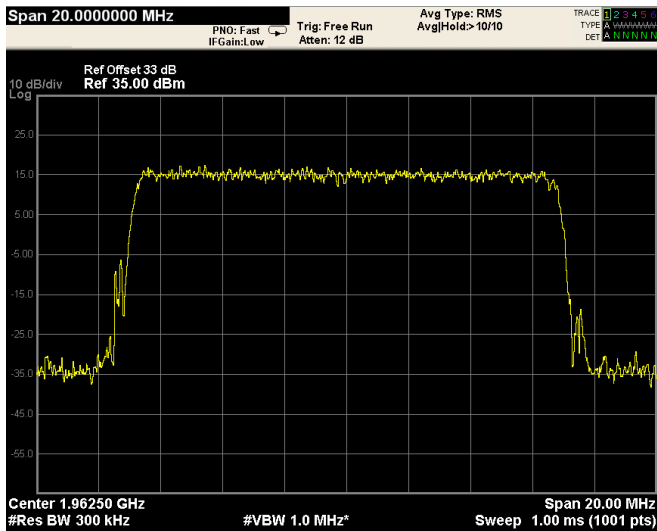


Output

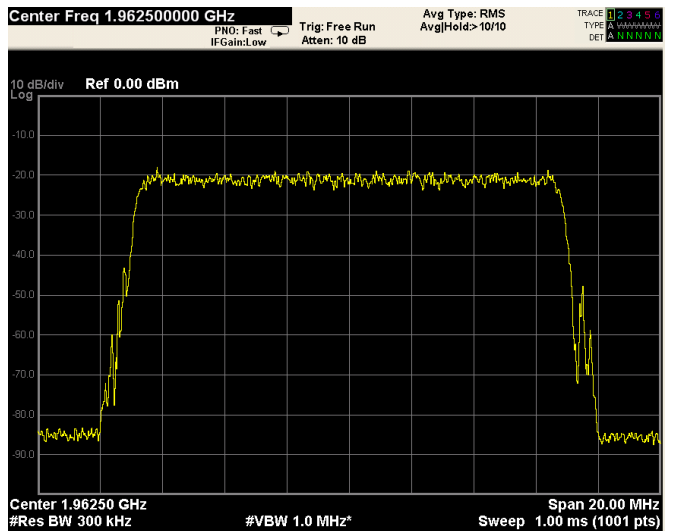


Input

### Mod. LTE 15MHz (QPSK) (Down-link)



Output

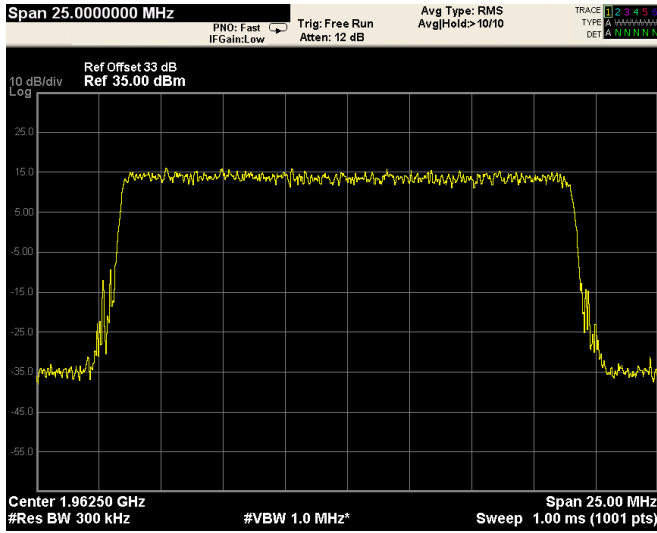


Input

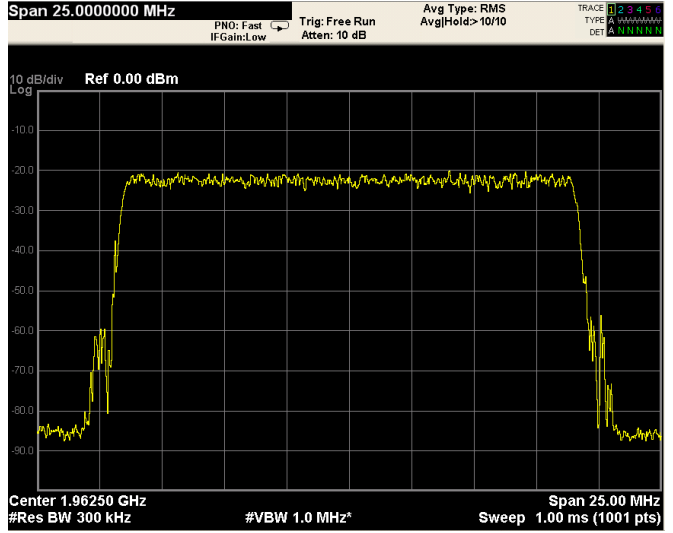


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 20MHz (QAM) (Down-link)

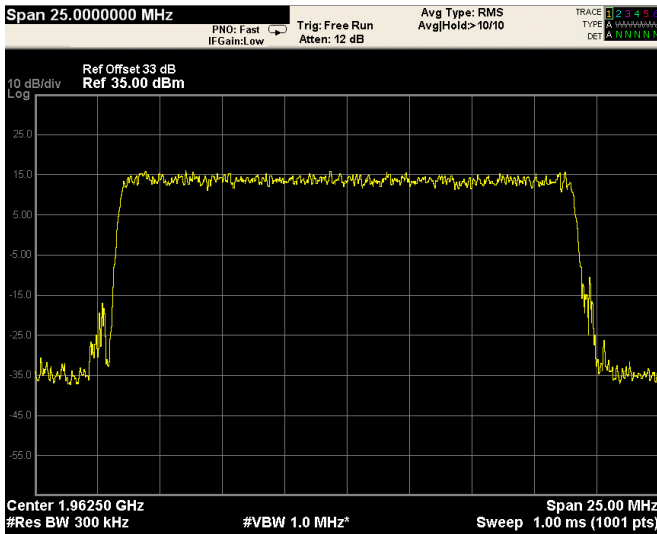


Output

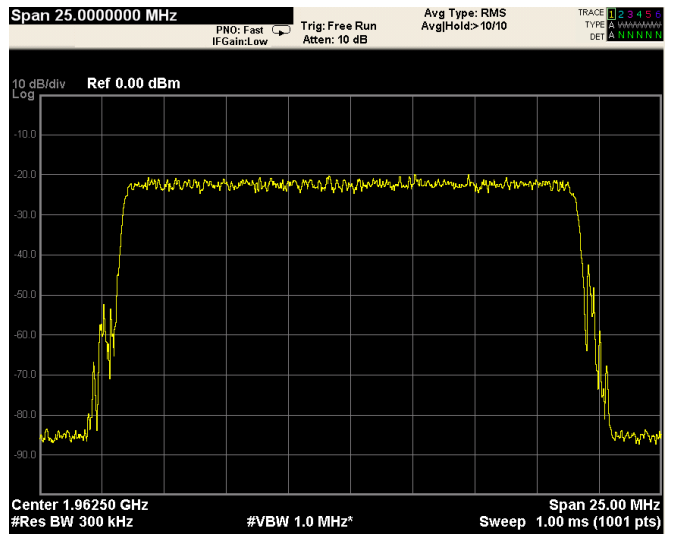


Input

### Mod. LTE 20MHz (QPSK) (Down-link)



Output



Input





Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Appendix A: Test results

Report Number: **253922-5TRFWL**

Specification: FCC 24 Subpart E

## Clause 24.238(a) Spurious emissions at antenna terminal

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \text{ Log}(P)$  dB.

Frequency, MHz	Attenuation below carrier, dBc	ERP of spurious, dBm
30–10 <sup>th</sup> harmonic	$43 + 10 \text{ Log}(P)$	-13

(b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth ( *i.e.* 1 MHz or 1 percent of emission bandwidth, as specified).

Test date: [2014-03-06](#)

Test results: [Pass](#)

### Special notes

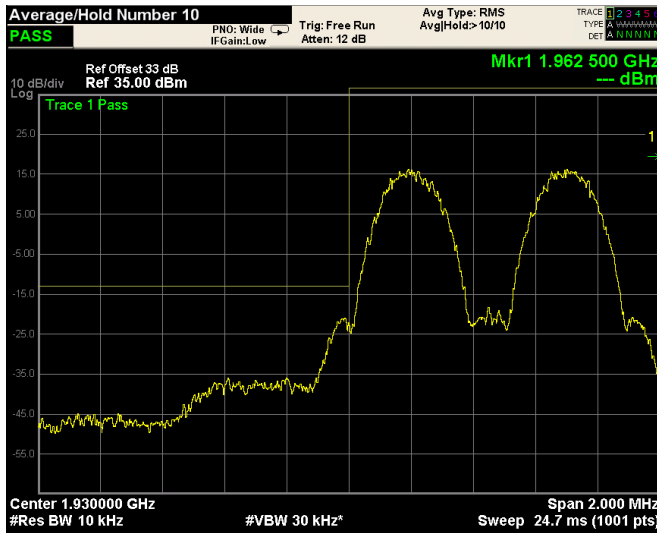
- The spectrum was searched from 30 MHz up to 10<sup>th</sup> harmonic
- Only the worst data presented in the test report.



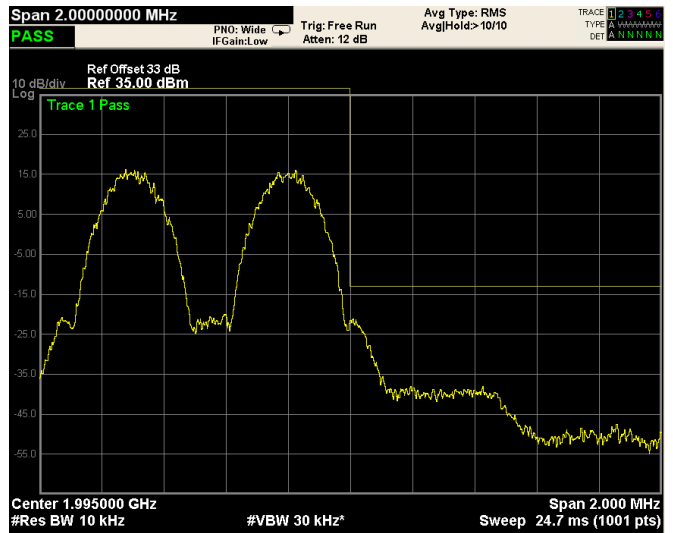
Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Band edges Inter modulation:

Mod. GSM (Down-link)

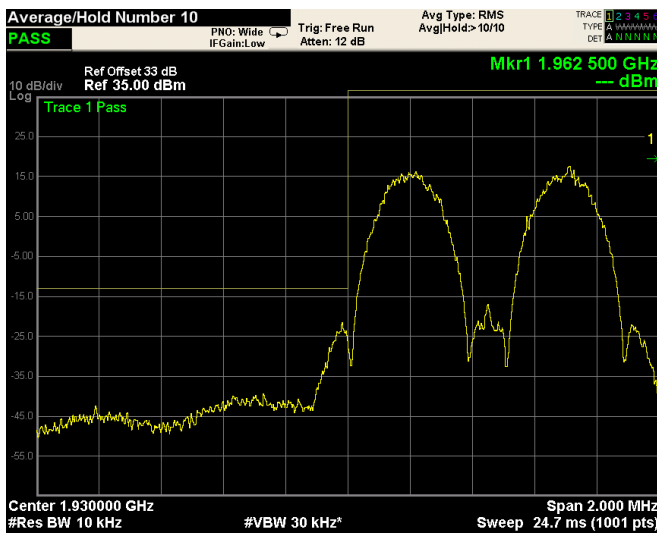


Low Band Edge

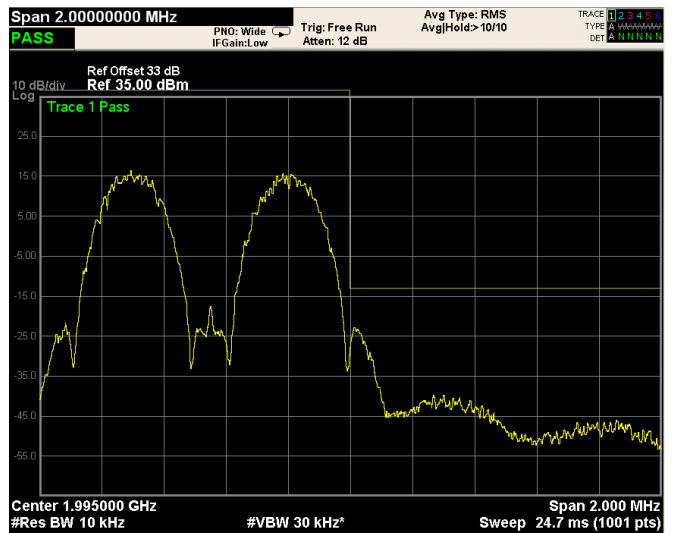


High Band Edge

Mod. EDGE (Down-link)



Low Band Edge



High Band Edge



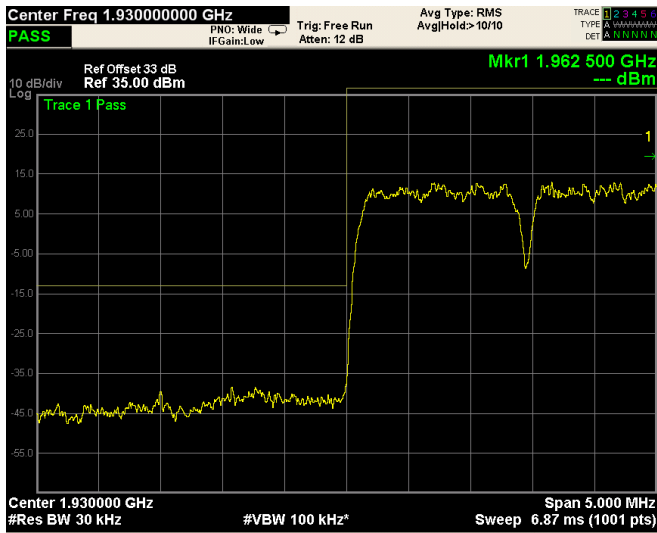
Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Appendix A: Test results

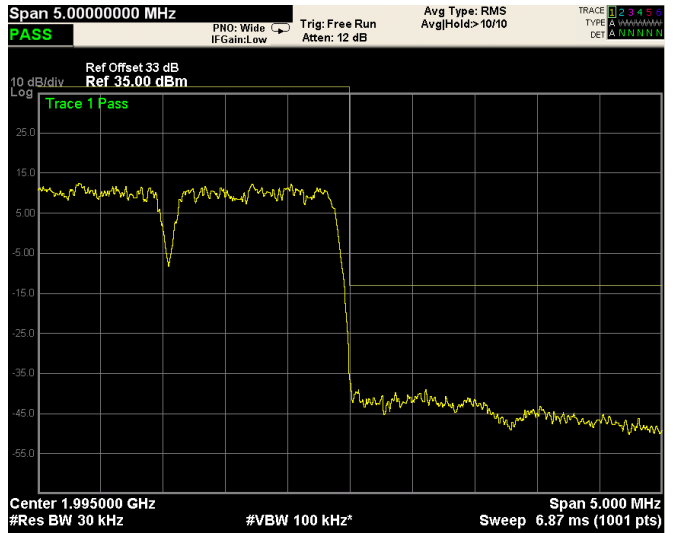
Report Number: 253922-5TRFWL

Specification: FCC 24 Subpart E

Mod. CDMA (Down-link)

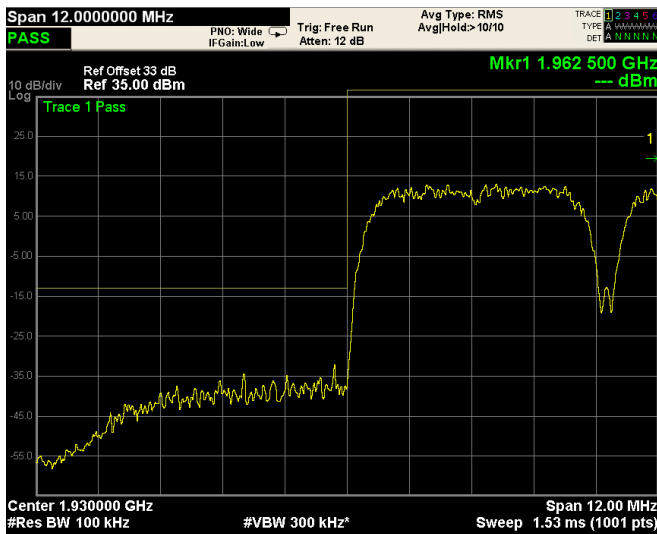


Low Band Edge

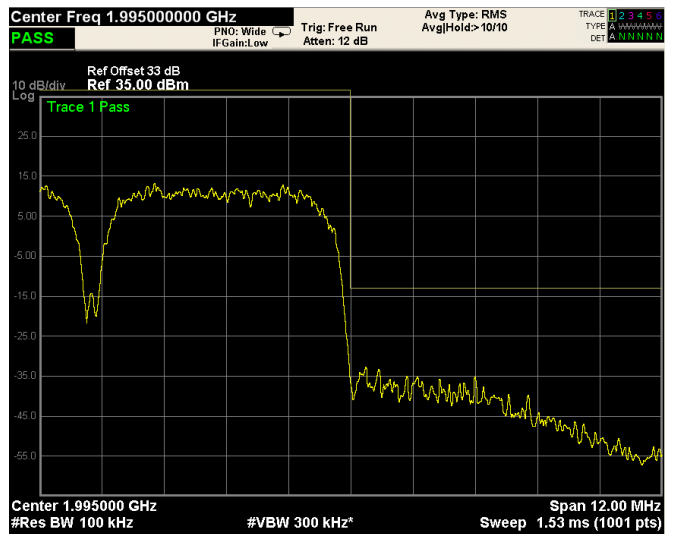


High Band Edge

Mod. WCDMA (Down-link)



Low Band Edge

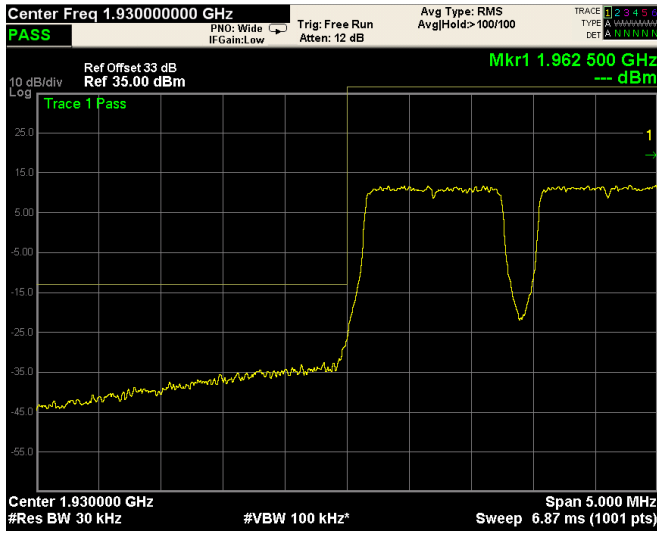


High Band Edge

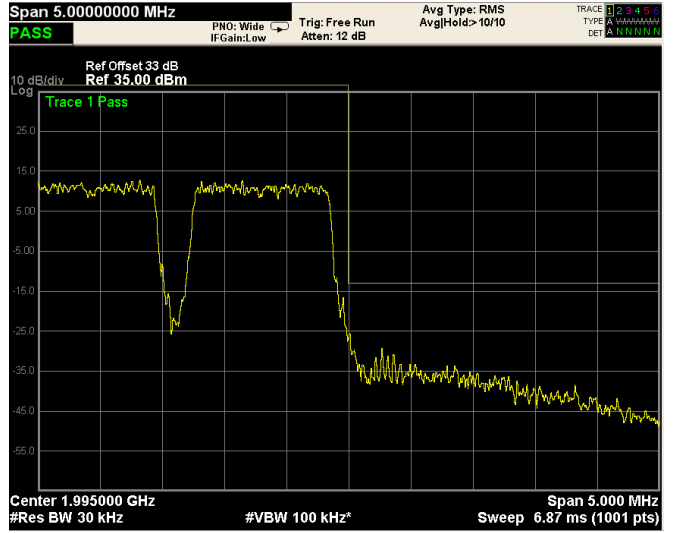


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 1.4MHz (QAM) (Down-link)

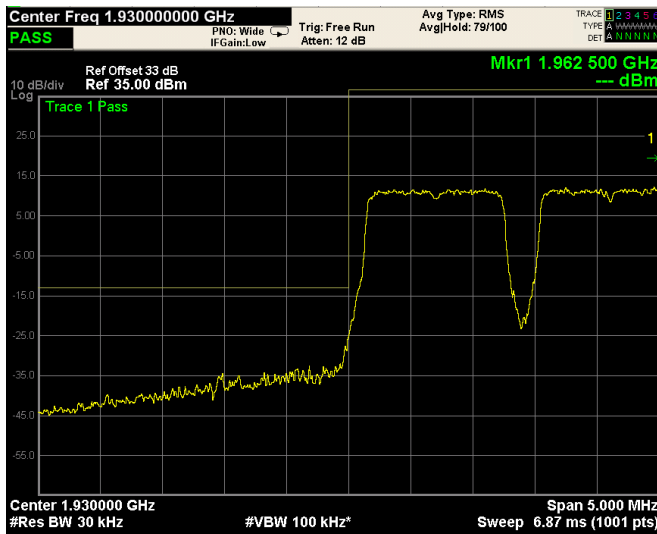


Low Band Edge

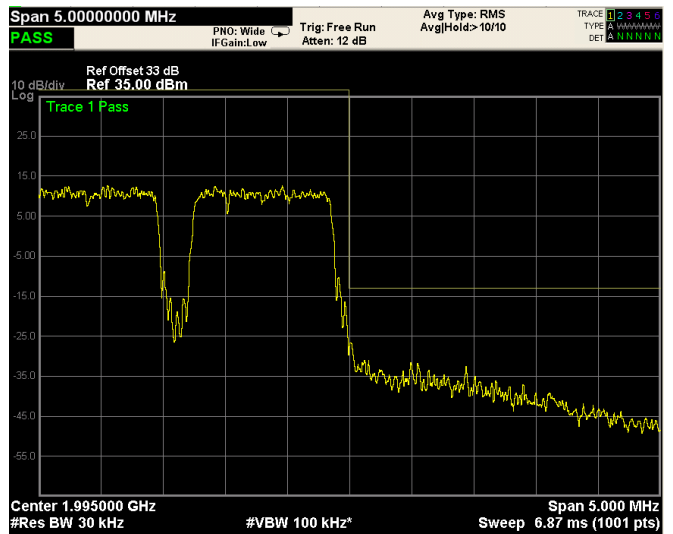


High Band Edge

### Mod. LTE 1.4MHz (QPSK) (Down-link)



Low Band Edge

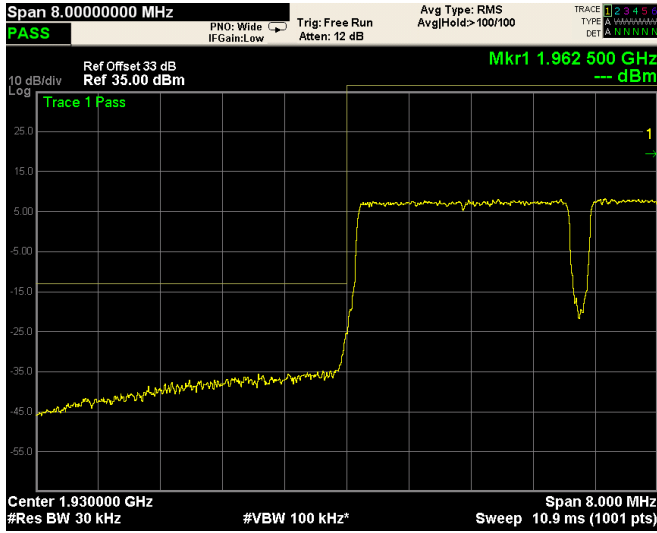


High Band Edge

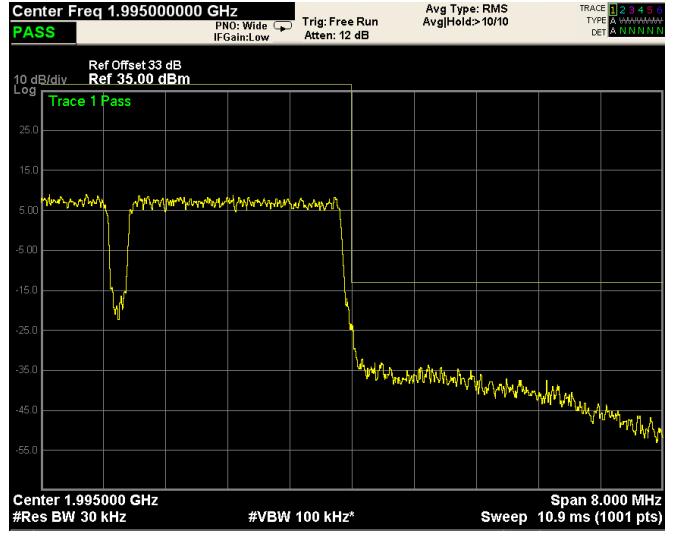


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 3MHz (QAM) (Down-link)

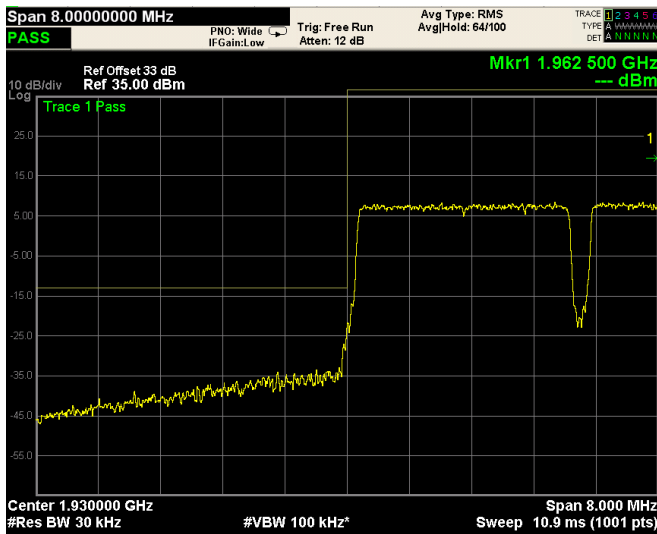


Low Band Edge

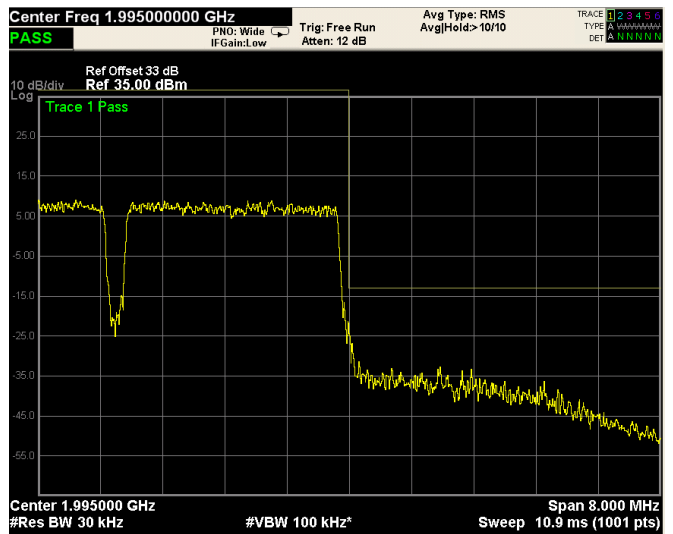


High Band Edge

### Mod. LTE 3MHz (QPSK) (Down-link)



Low Band Edge

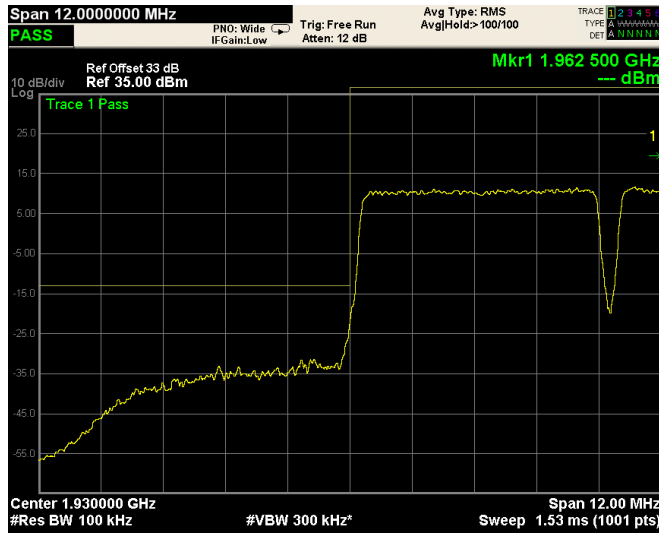


High Band Edge

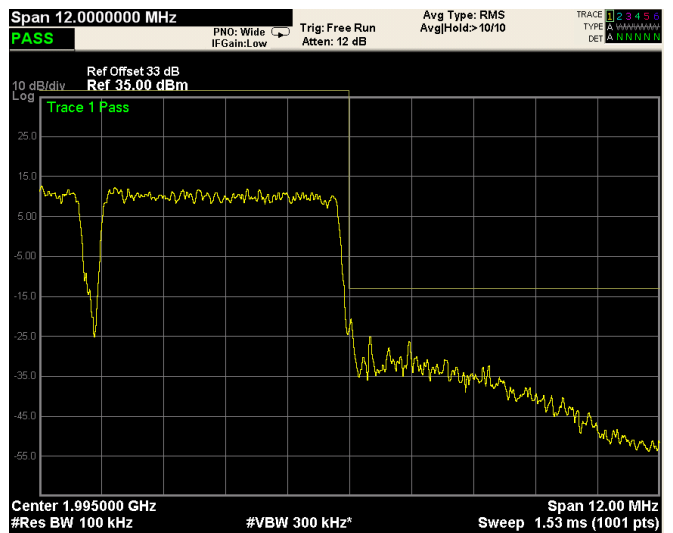


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 5MHz (QAM) (Down-link)

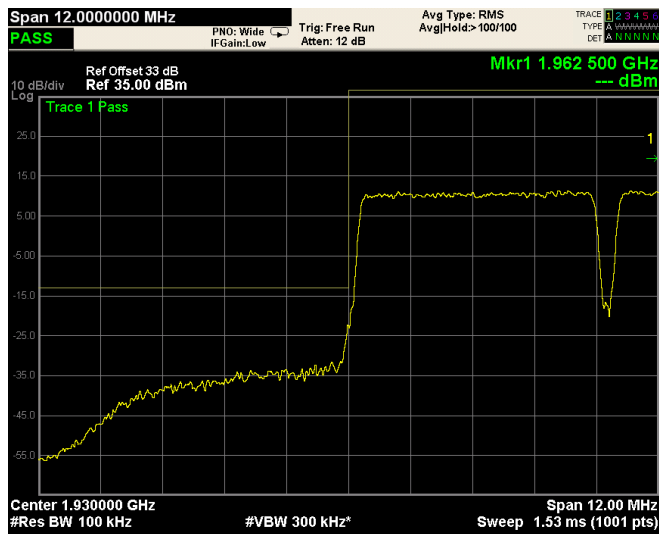


Low Band Edge

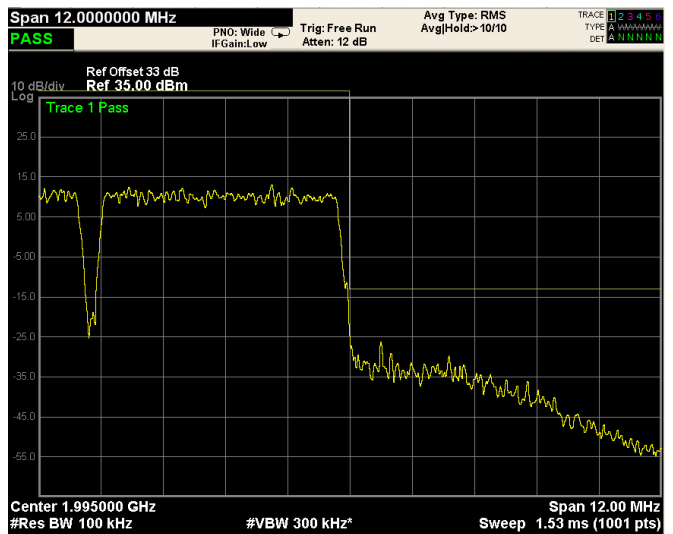


High Band Edge

### Mod. LTE 5MHz (QPSK) (Down-link)



Low Band Edge

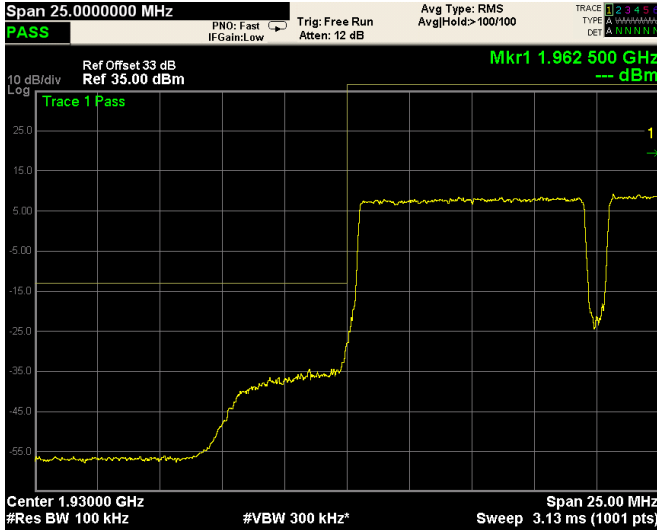


High Band Edge

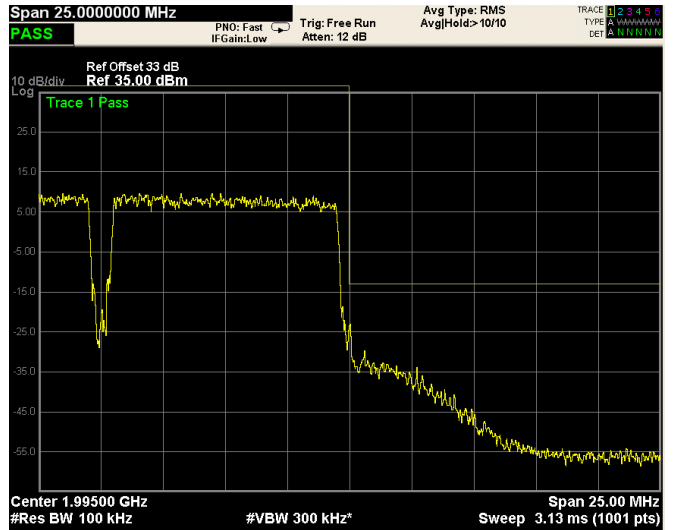


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 10MHz (QAM) (Down-link)

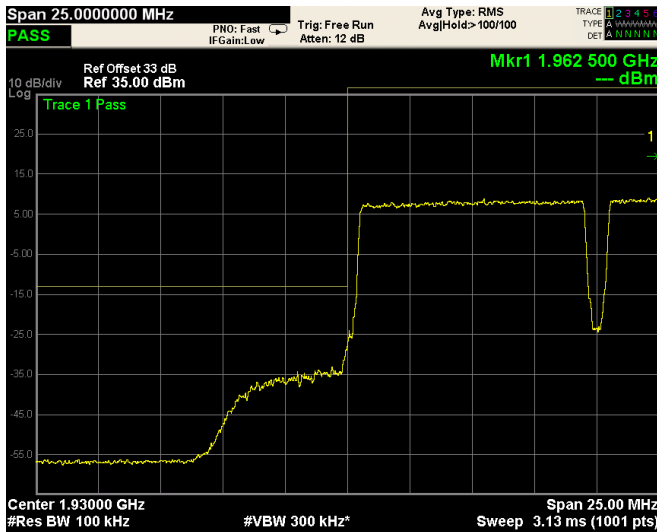


Low Band Edge

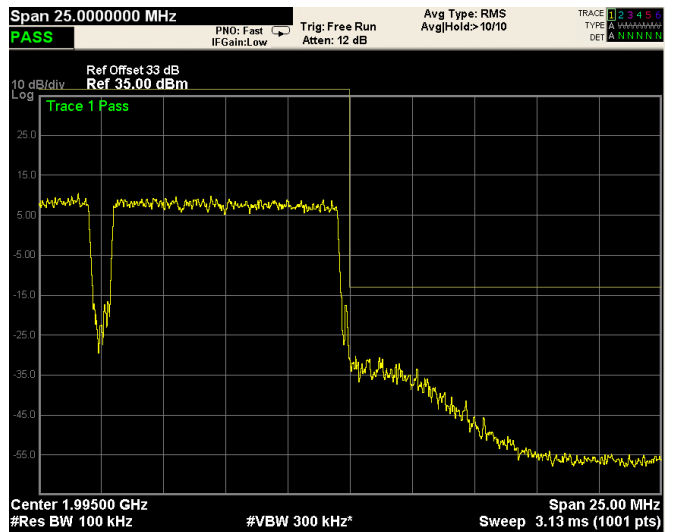


High Band Edge

### Mod. LTE 10MHz (QPSK) (Down-link)



Low Band Edge

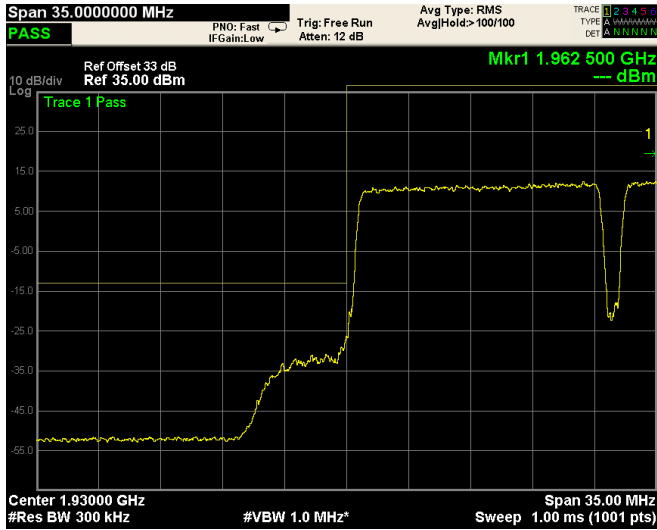


High Band Edge

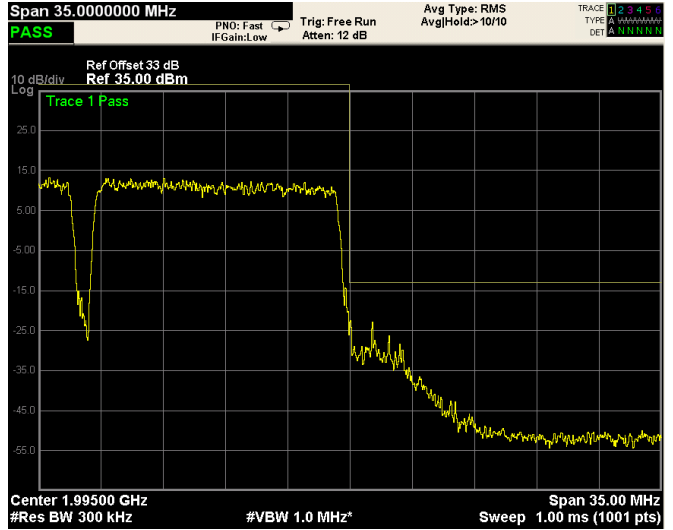


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 15MHz (QAM) (Down-link)

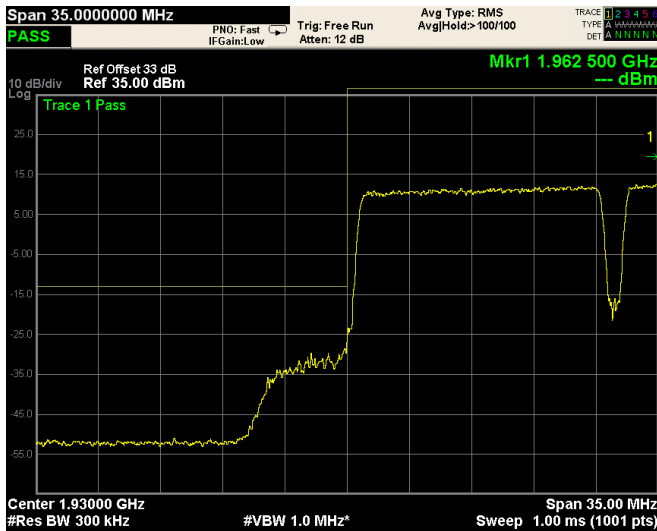


Low Band Edge

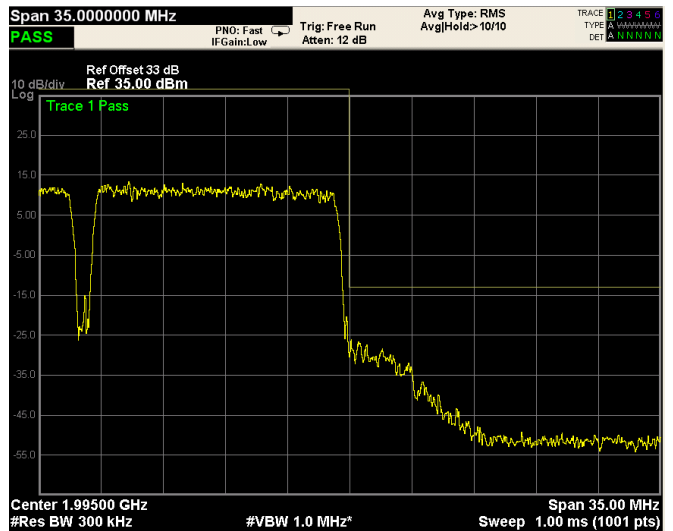


High Band Edge

### Mod. LTE 15MHz (QPSK) (Down-link)



Low Band Edge



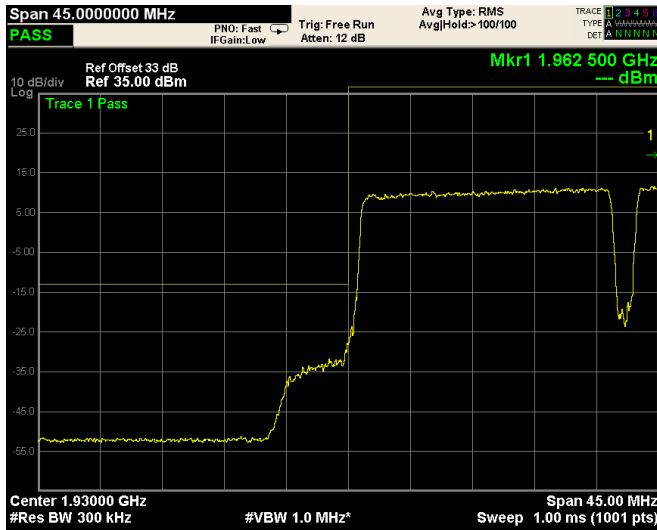
High Band Edge



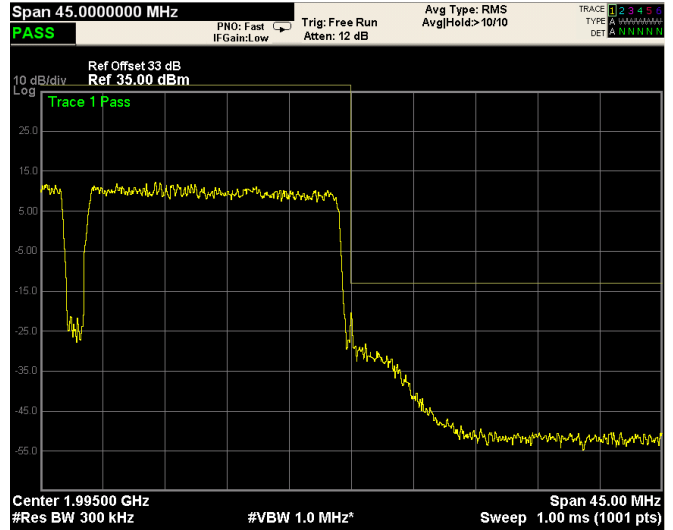


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 20MHz (QAM) (Down-link)

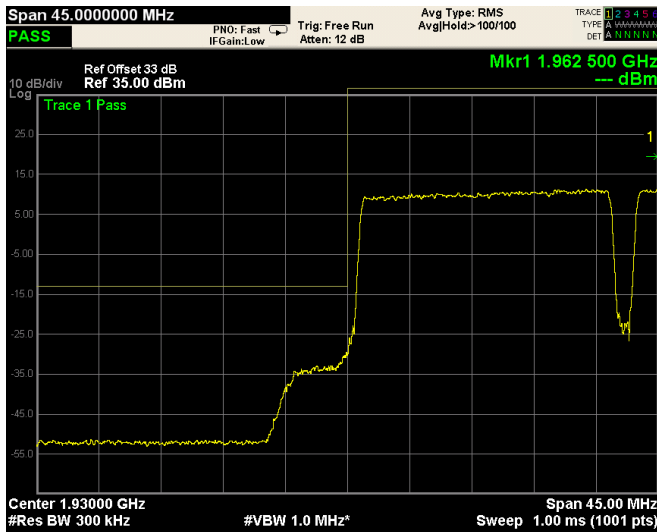


Low Band Edge

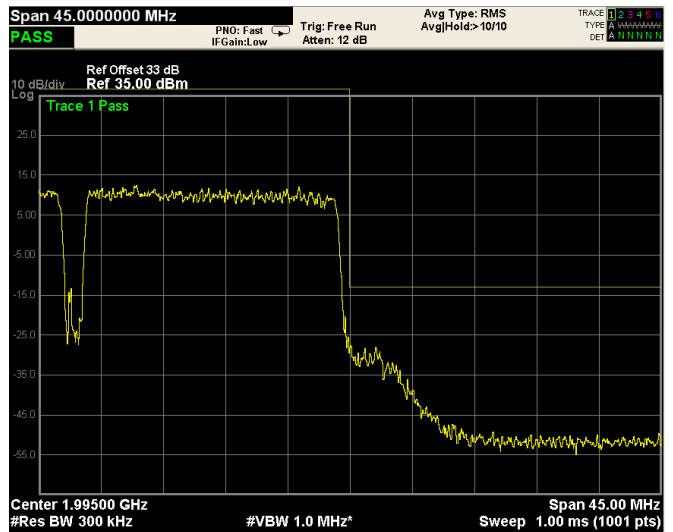


High Band Edge

### Mod. LTE 20MHz (QPSK) (Down-link)



Low Band Edge



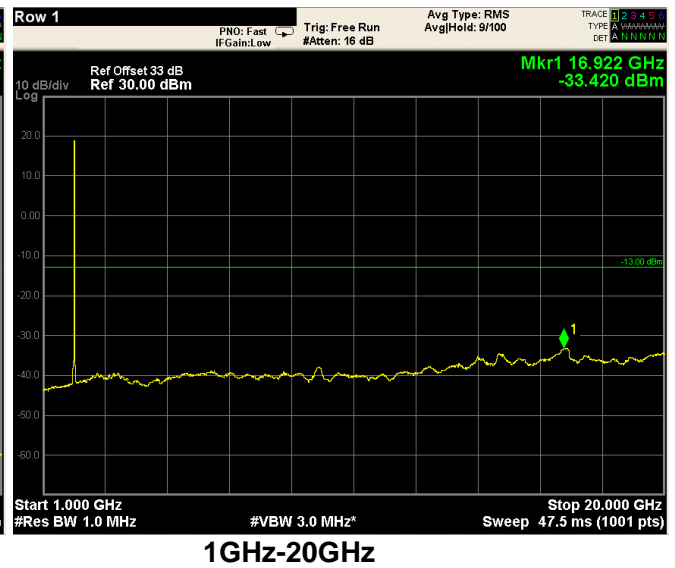
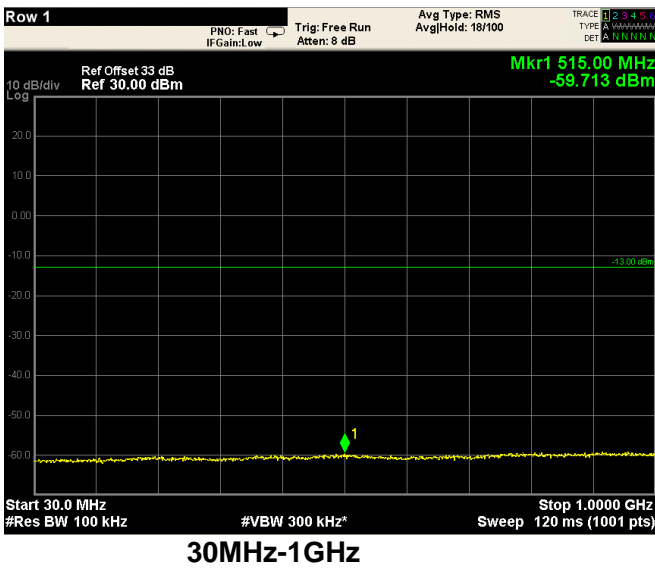
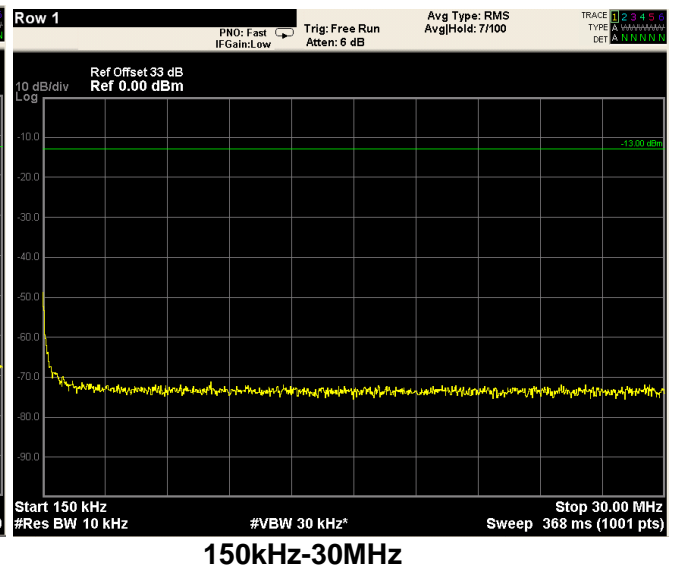
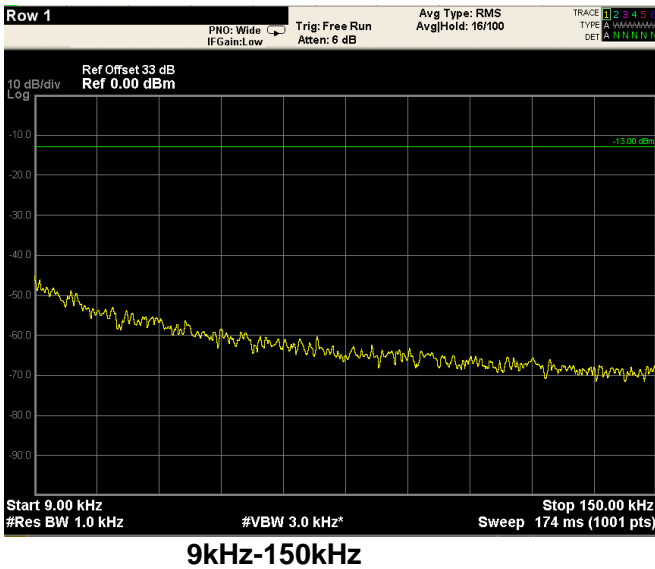
High Band Edge



Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Spurious emissions at antenna terminal:

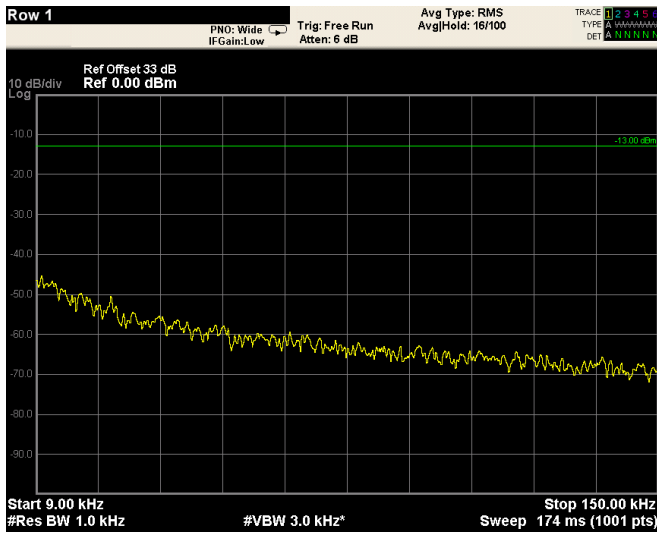
Mod. GSM (Down-link)



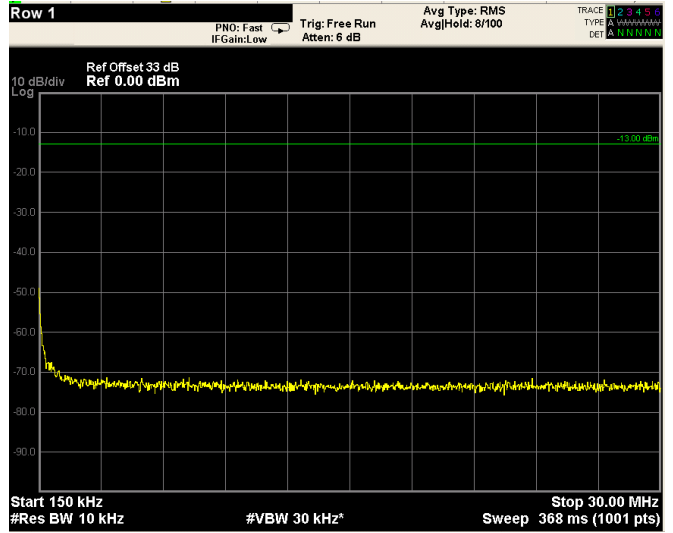


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

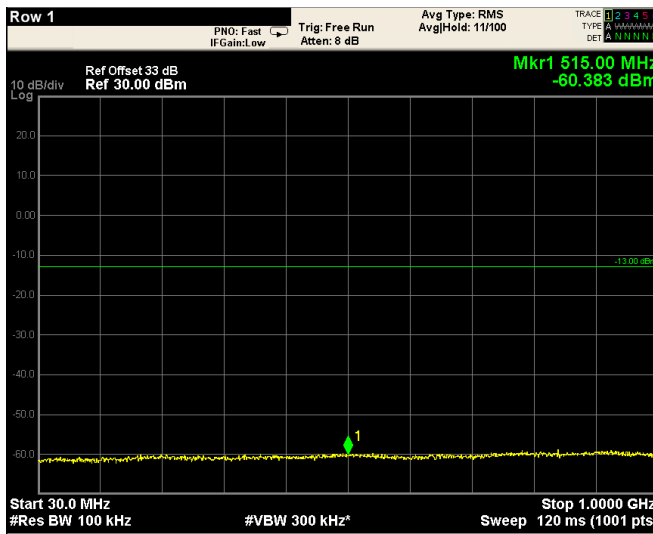
### Mod. EDGE (Down-link)



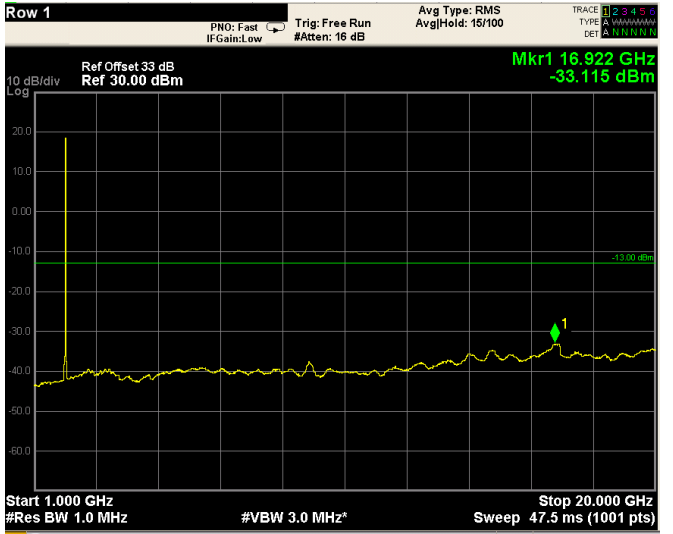
9kHz-150kHz



150kHz-30MHz



30MHz-1GHz

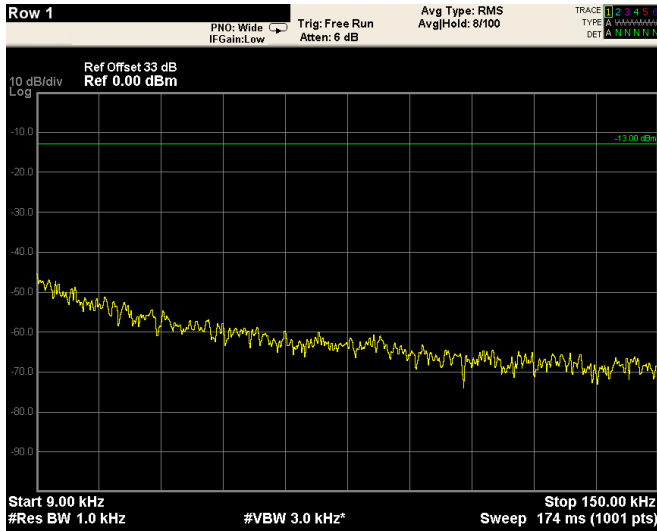


1GHz-20GHz

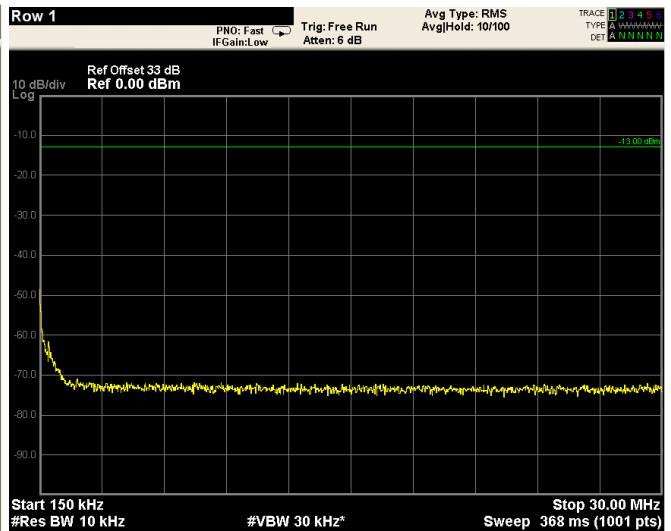


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

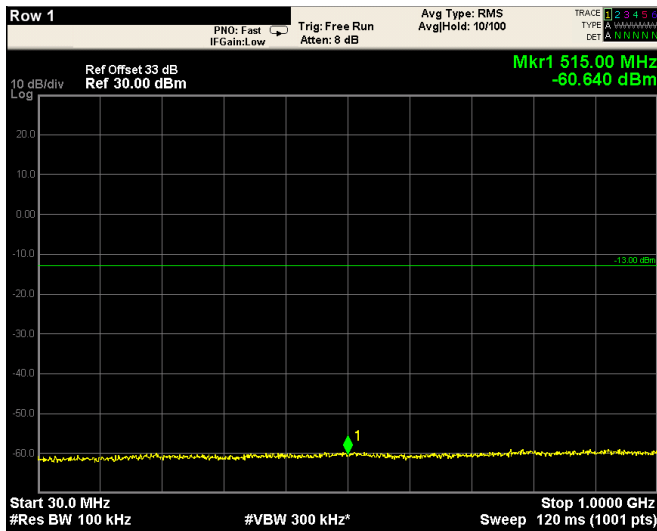
### Mod. CDMA (Down-link)



9kHz-150kHz



150kHz-30MHz



30MHz-1GHz

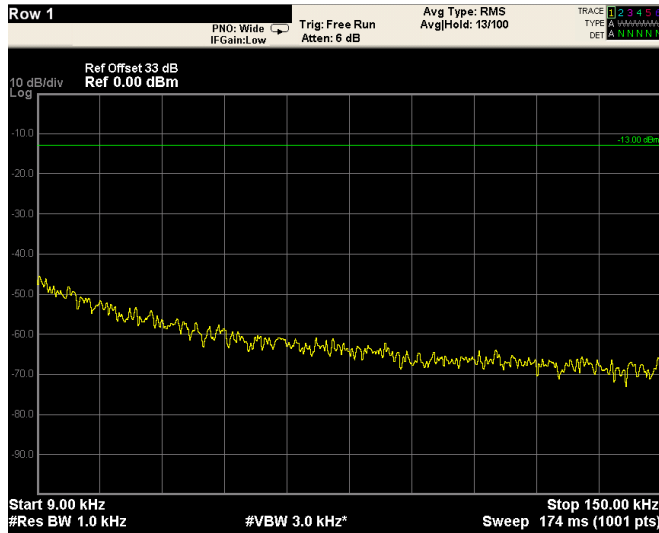


1GHz-20GHz

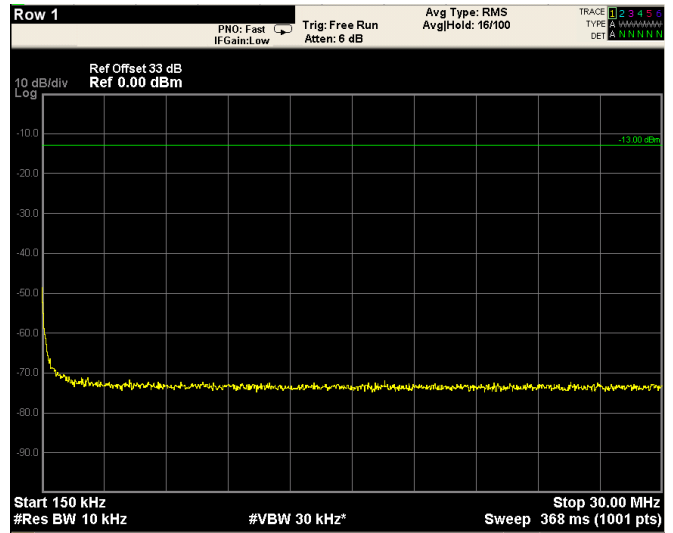


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

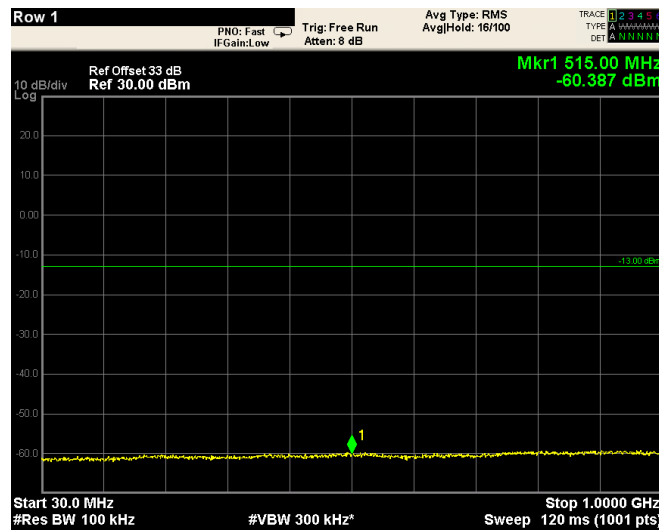
### Mod. WCDMA (Down-link)



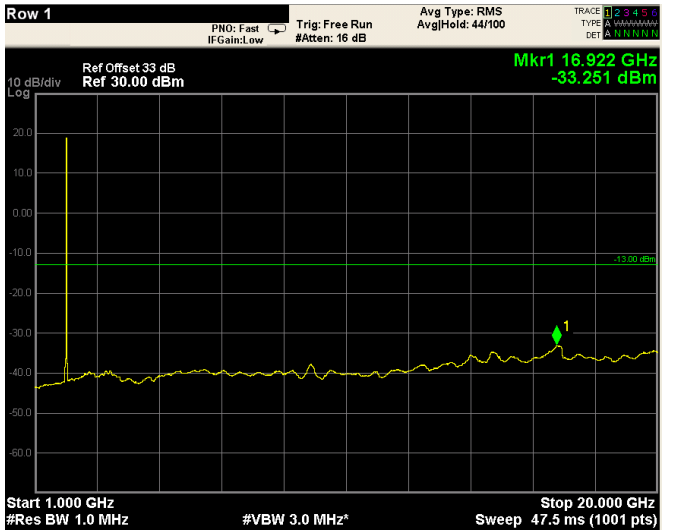
9kHz-150kHz



150kHz-30MHz



30MHz-1GHz

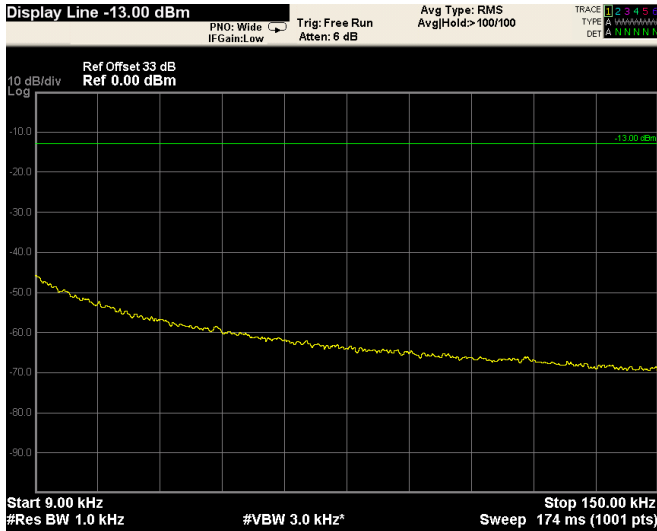


1GHz-20GHz

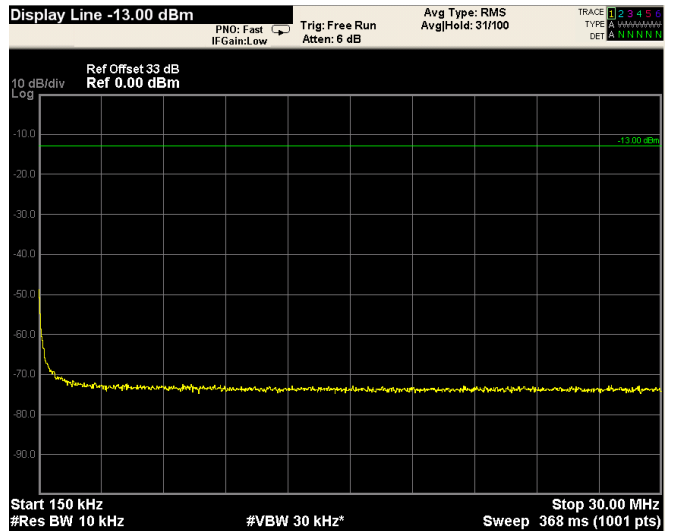


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

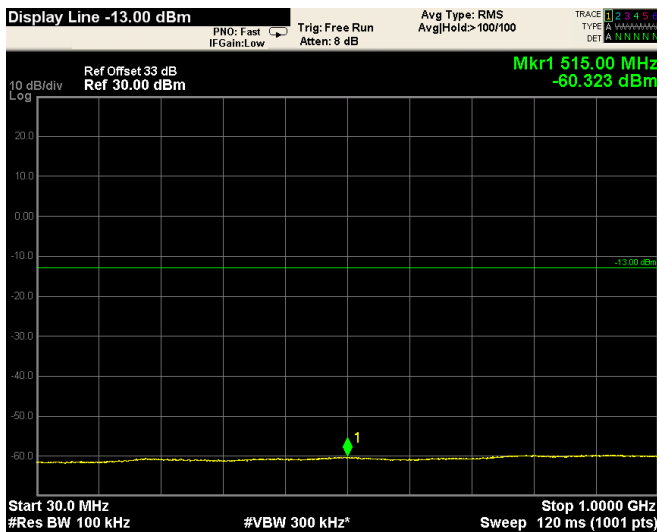
### Mod. LTE 1.4MHz (QAM) (Down-link)



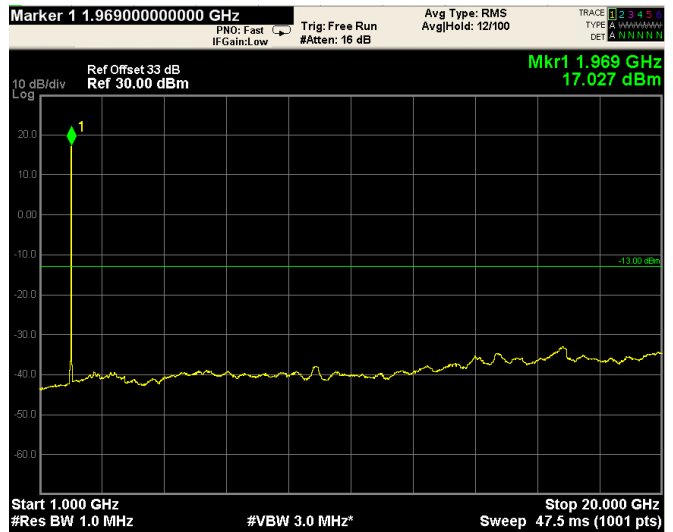
9kHz-150kHz



150kHz-30MHz



30MHz-1GHz

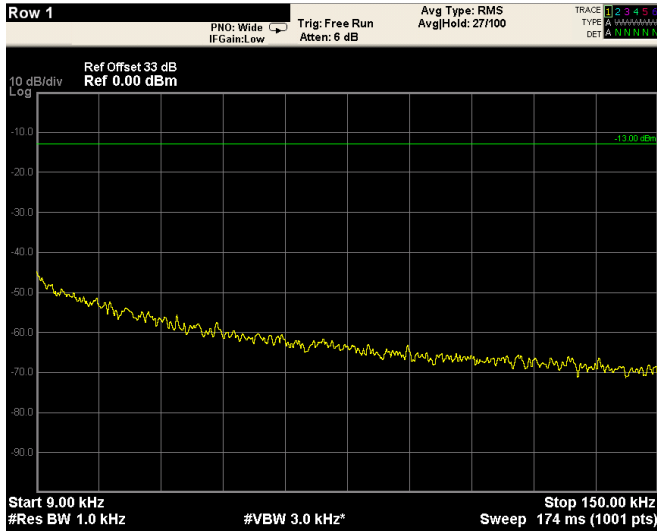


1GHz-20GHz

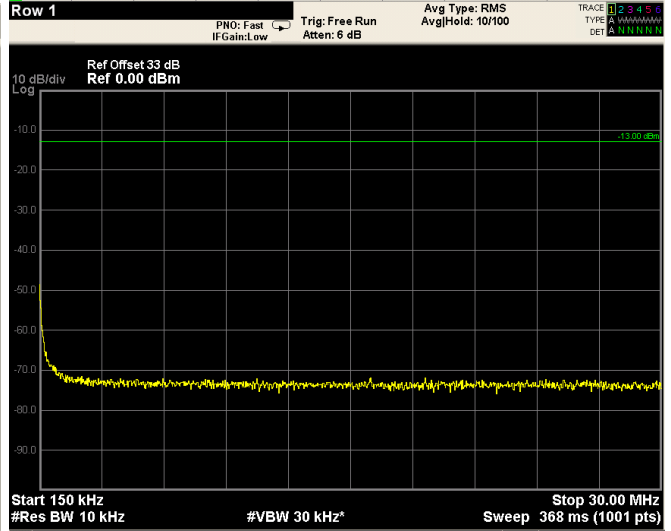


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

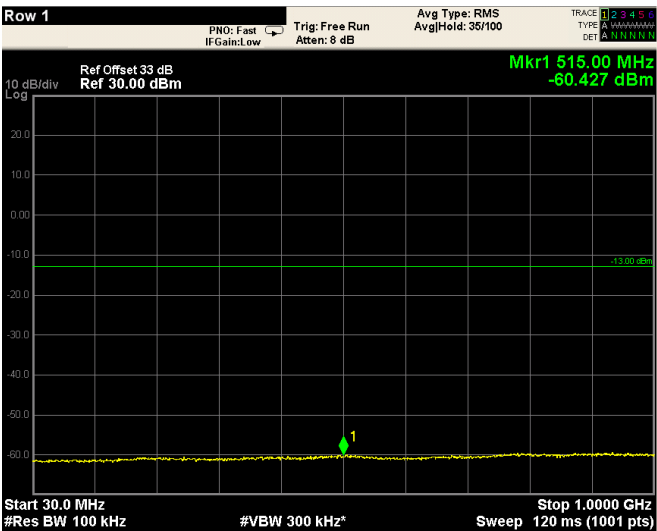
### Mod. LTE 1.4MHz (QPSK) (Down-link)



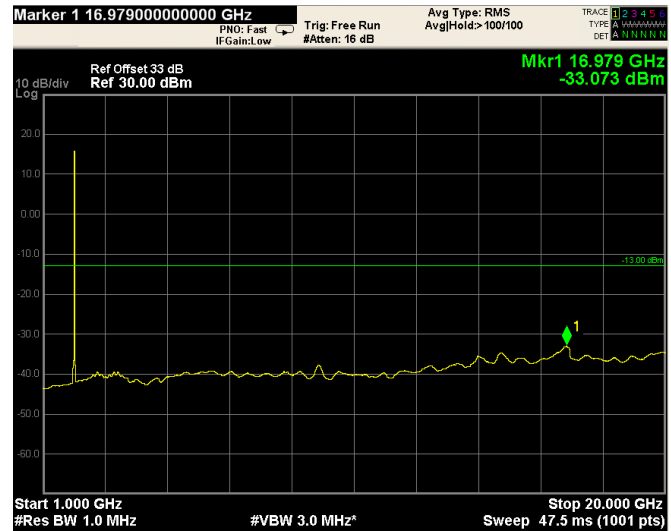
9kHz-150kHz



150kHz-30MHz



30MHz-1GHz

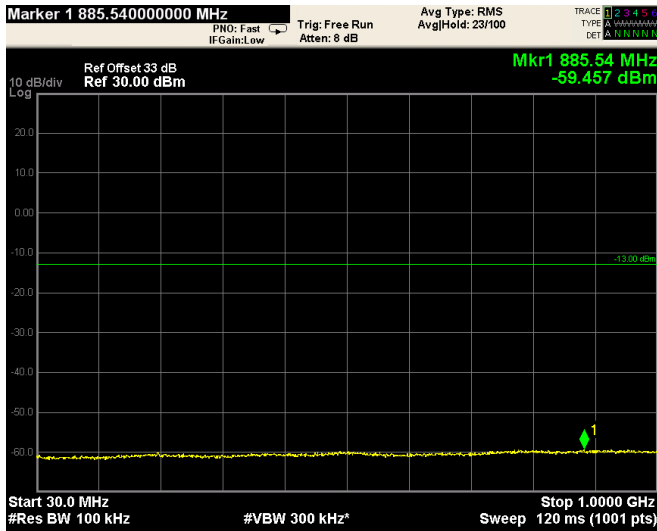


1GHz-20GHz

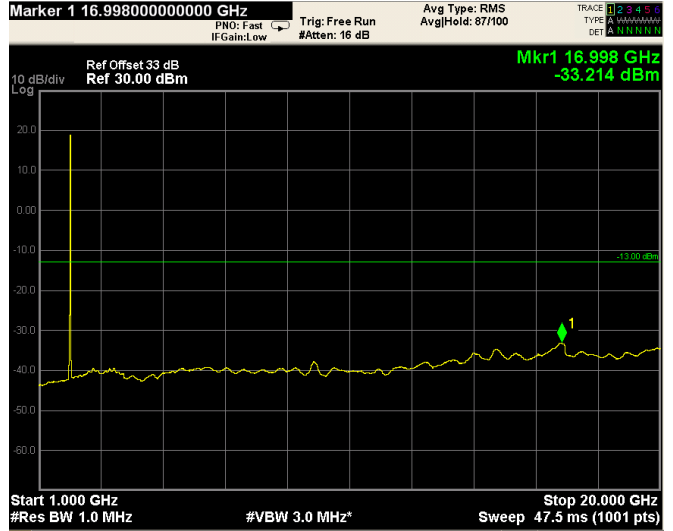


Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

### Mod. LTE 3MHz, only 30M-20G plot (Down-link)

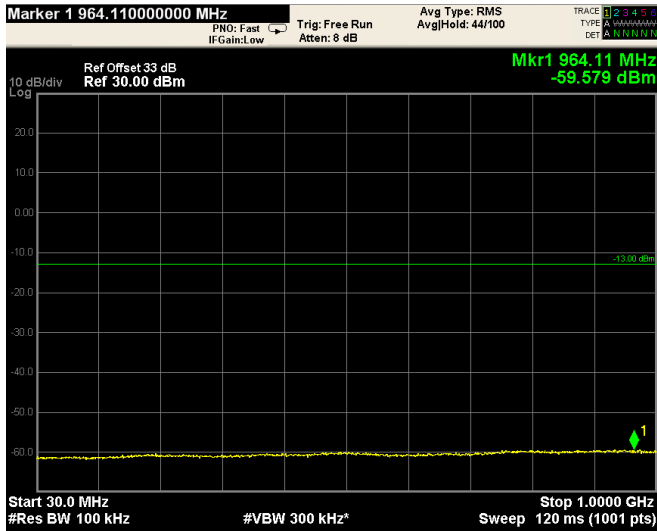


30MHz-1GHz



1GHz-20GHz

### Mod. LTE 5MHz, only 30M-20G plot (Down-link)



30MHz-1GHz



1GHz-20GHz





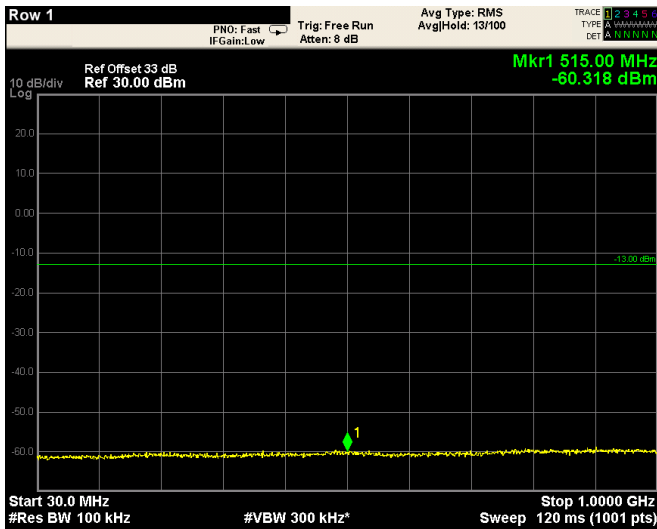
Nemko Italy S.p.A.  
Via del Carroccio 4, 20046, Biassono, Italy.

Appendix A: Test results

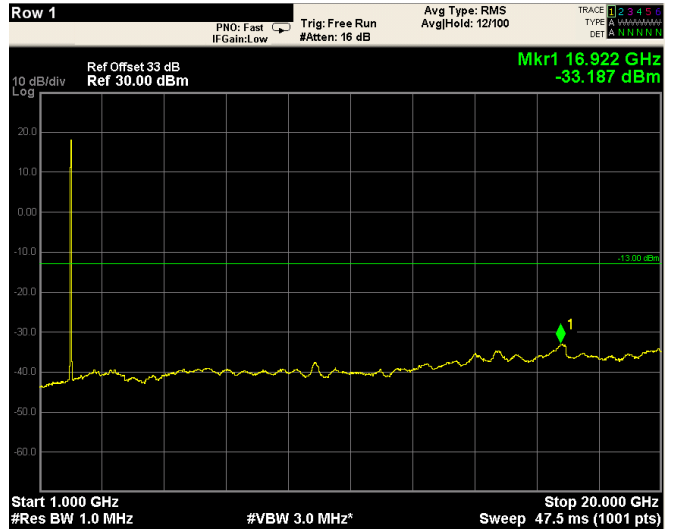
Report Number: 253922-5TRFWL

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Mod. LTE 10MHz, only 30M-20G plot (Down-link)

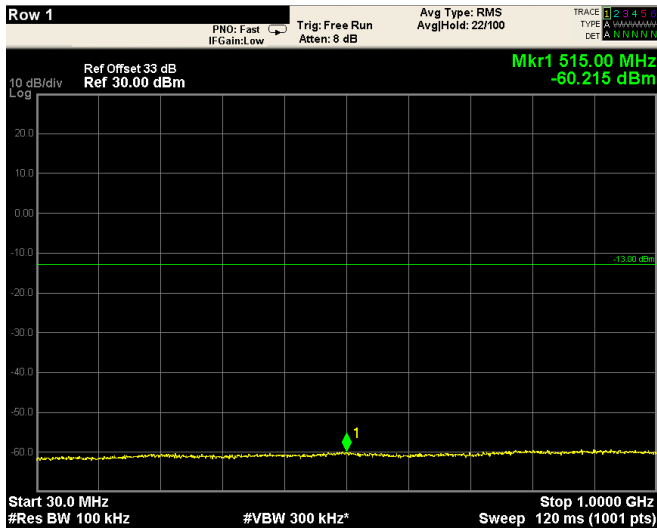


30MHz-1GHz



1GHz-20GHz

Mod. LTE 15MHz, only 30M-20G plot (Down-link)



30MHz-1GHz



1GHz-20GHz



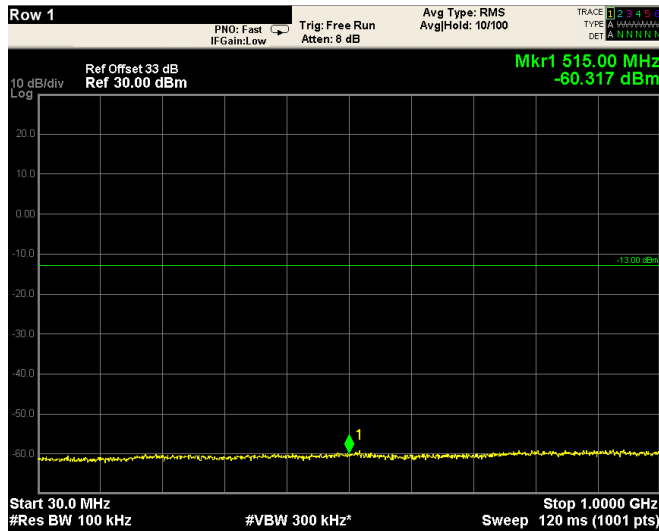
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Appendix A: Test results

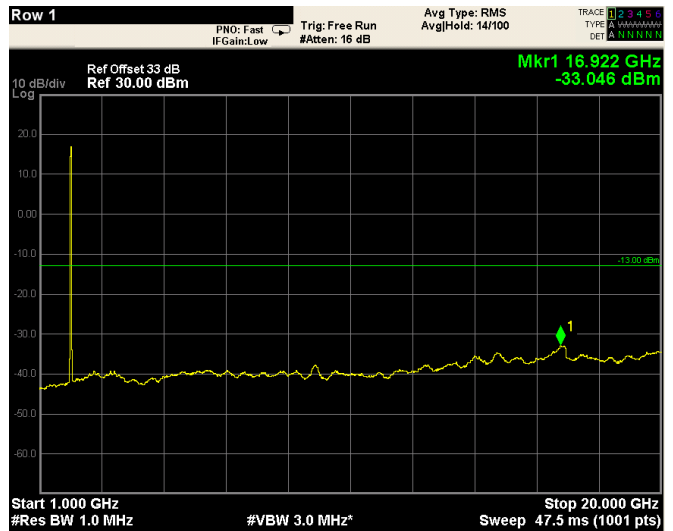
Report Number: 253922-5TRFWL

Specification: FCC 24 Subpart E

### Mod. LTE 20MHz, only 30M-20G plot (Down-link)



30MHz-1GHz



1GHz-20GHz

## Clause 24.238(a) Field strength of spurious radiation

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 Log (P) dB.

Frequency, MHz	Attenuation below carrier, dBc	ERP of spurious, dBm	Equivalent field strength limit* at 3 m, dBμV/m
30–10 <sup>th</sup> harmonic	43 + 10 Log(P)	-13	84.4

\* - Equivalent field strength limit was calculated from maximum allowed ERP of spurious as follows:

$$E = \sqrt{\frac{30 \times P \times 1.64}{r}}$$
, where P is ERP in W, 1.64 is numeric gain of ideal dipole and r is antenna to EUT distance in m.

(b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth ( i.e. 1 MHz or 1 percent of emission bandwidth, as specified).

Test date: 2014-03-06

Test results: Pass

### Special notes

- The spectrum was searched from 30 MHz up to 10th harmonic
- The EUT was measured on three orthogonal axis.
- All measurements were performed at a distance of 3 m.
- The EUT's antenna port was terminated with 50 Ω termination

### Test Data

The D.U.T. was positioned according to the radiated emissions set-up

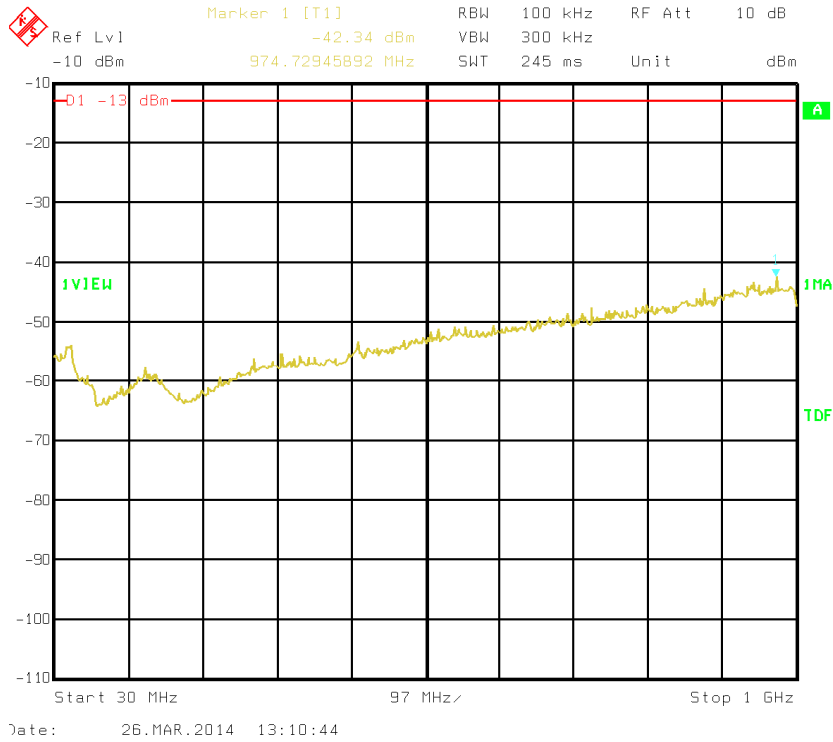
The D.U.T. antenna connector was terminated by a 50 Ω shielded dummy load.

The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

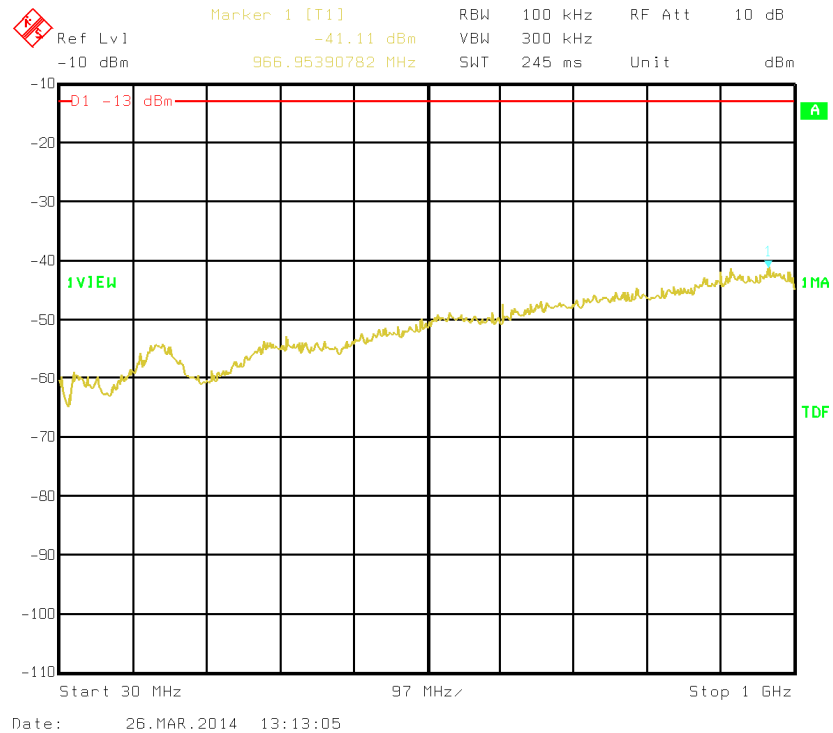
There were no emissions detected above the noise floor which was at least 20 dB below the specification limit.



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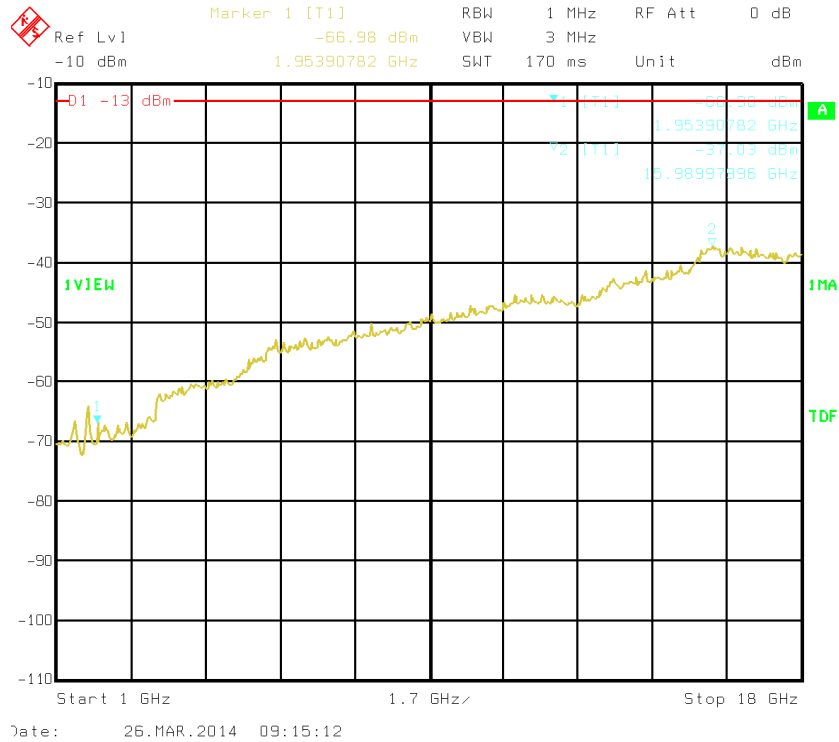
30MHz-1GHz – H Pol



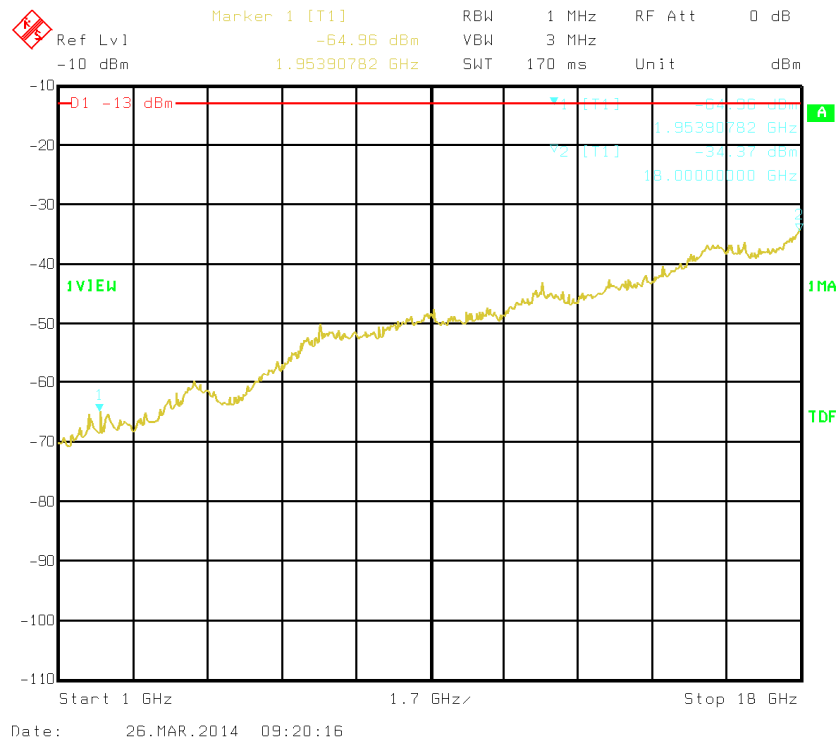
30MHz-1GHz – V Pol



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1GHz-18GHz – H Pol



1GHz-18GHz – V Pol

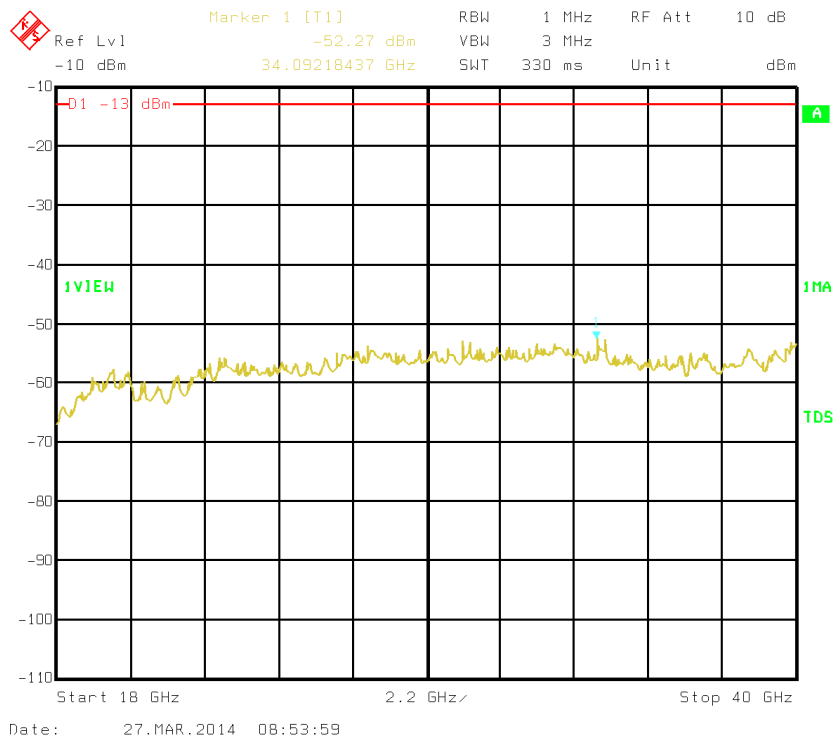


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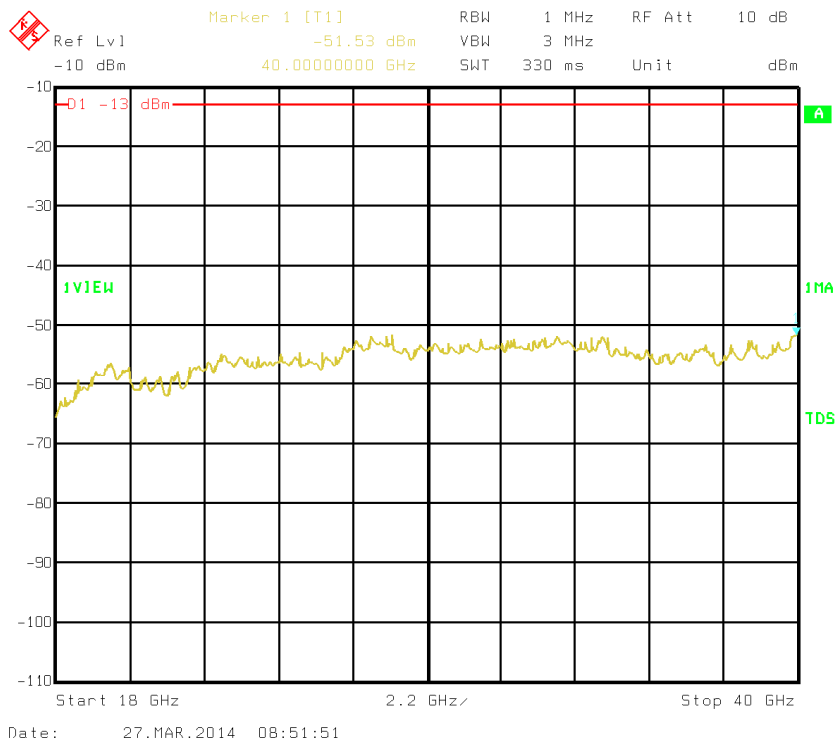
Appendix A: Test results

Report Number: 253922-5TRFWL

Specification: FCC 24 Subpart E



18GHz-40GHz – H Pol



18GHz-40GHz – V Pol



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Appendix A: Test results

Report Number: **253922-5TRFWL**

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### Clause 24.235 Frequency stability

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Assigned frequency, MHz	Limits
1882.5	26 dBc points including frequency drift shall remain within the authorized frequency block
1962.5	

Test date:

Test results:

NOT APPLICABLE: Modulation/frequency conversion circuitry not in use. No frequency change in EUT (input and output have same frequency)

Special notes



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Appendix A: Test results

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Clause 24.235 Frequency stability, continued

Test data

**Down-link**

Conditions	$\Delta$ Frequency (Hz)	Maximum drift (Hz)
+50 °C, Nominal power		
+40 °C, Nominal power		
+30 °C, Nominal power		
+20 °C, +10% power		
+20 °C, Nominal power		
+20 °C, -10% power		
+10 °C, Nominal power		
0 °C, Nominal power		
-10 °C, Nominal power		
-20 °C, Nominal power		





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Appendix A: Test results

Report Number: **253922-5TRFWL**

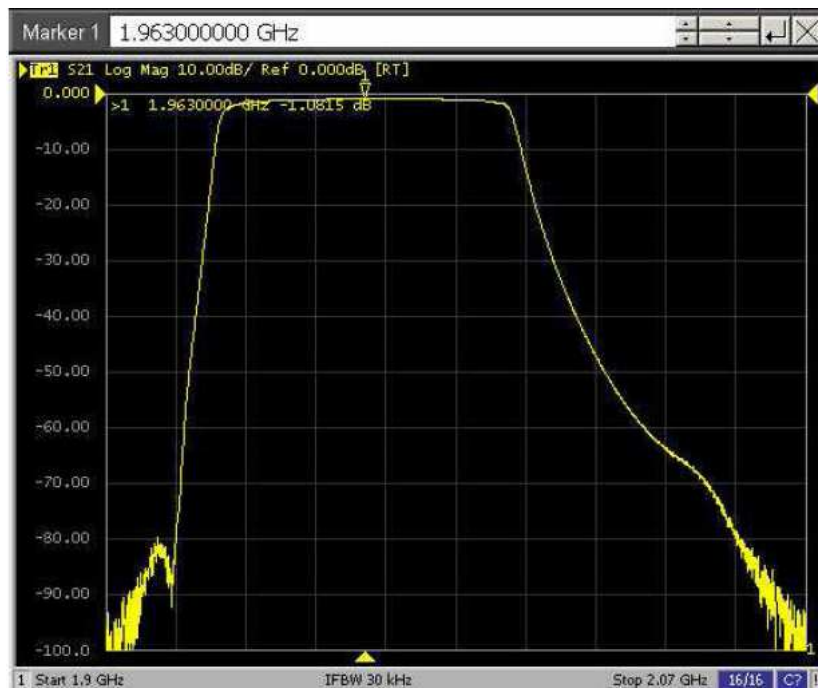
Specification: FCC 24 Subpart E

Clause Para NO. 2-11-04/EAB/RF

Filter Frequency Response

Test date: 2014-03-06

Test results: **Pass**



Down-link

Photo Set up









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Appendix A: Test results

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Photo EUT





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Appendix A: Test results

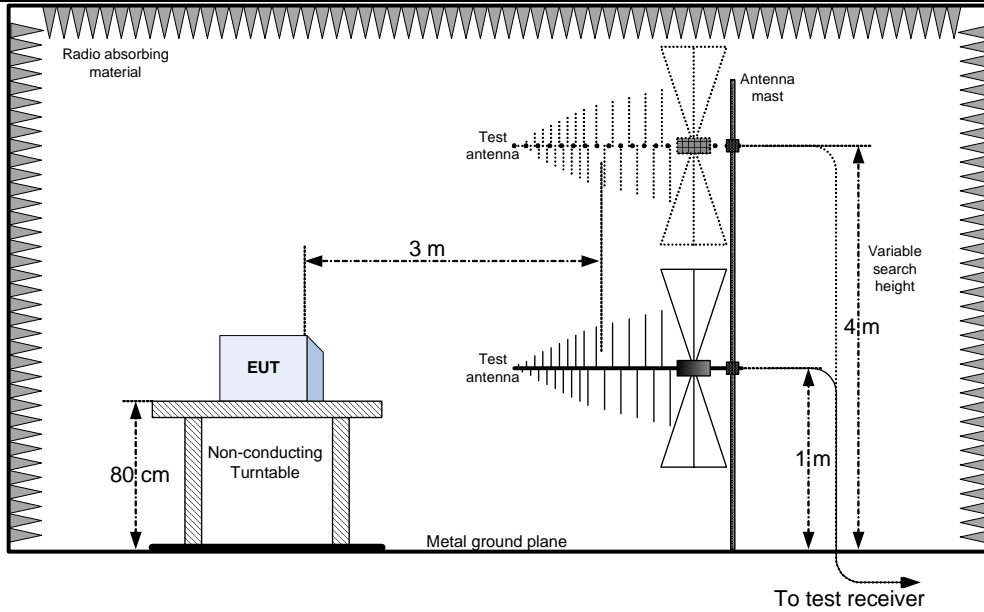
Report Number: **253922-5TRFWL**

Specification: FCC 24 Subpart E



## Appendix B: Block diagrams of test set-ups

### Radiated emissions set-up



### Substitution method set-up

