FCC Test Report

Product Name	：	Advanced Industrial 4G/LTE Router, WWAN Failover Manager
Trade Name	：	BEC, Billion
Model No.	：	MX-200, MX-200e, M100
FCC ID.	：	QI3BIL-MX200-R

Applicant	：	Billion Electric Co., Ltd.
Address	：	8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Date of Receipt	：	Jan. 05, 2016
Issued Date	：	Feb. 24, 2017
Report No.	：	1710161R-HPUSP45V00
Report Version	：	V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : Feb. 24, 2017
Report No. :1710161R-HPUSP45V00

Product Name	:	Advanced Industrial 4G/LTE Router, WWAN Failover Manager
Applicant	:	Billion Electric Co., Ltd.
Address	:	8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Manufacturer	:	Billion Electric Co., Ltd.
Model No.	:	MX-200, MX-200e, M100
FCC ID.	:	QI3BIL-MX200-R
EUT Voltage	:	DC 9-56V
Testing Voltage	:	DC 12V(Power by Adapter AC120V/60Hz)
Trade Name	:	BEC, Billion
Applicable Standard	:	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part 27 Subpart M ANSI/TIA-603-D-2010
Test Lab	:	Hsin Chu Laboratory
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd..

Documented By :

(Demi Chang / Senior Engineering Adm. Specialist)

Tested By :

(JuBo Shen / Senior Engineer)

Approved By :

(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1710161R-HPUSP45V00	V1.0	Initial issue of report.	Feb. 24, 2017

Laboratory Information

We, **DEKRA Testing and Certification Co., Ltd.**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 834100**
Canada	**:**	**IC, Submission No: 181665** **IC Registration Number: 22397-1 / 22397-2 / 22397-3**

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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1. General Information

1.1. EUT Description

Product Name	Advanced Industrial 4G/LTE Router, WWAN Failover Manager
Model No.	MX-200, MX-200e, M100
Trade Name	BEC, Billion
Tx Frequency Range	WCDMA Band 4: 1712.4-1752.6 MHz
Rx Frequency Range	WCDMA Band 4: 2112.4-2152.6 MHz
Type of Modulation	WCDMA: QPSK (Uplink); HSDPA/HSUPA: QPSK
HW Version	1.011
SW Version	1.04.1.103p

Antenna Information	
Antenna Type	Dipole Antenna
Antenna Gain	0.71 dBi (700-960MHz) 3.7 dBi (1710-2700MHz) 4.5 dBi (GPS)

Accessory Information	
Power Adapter	Billion, BA018-120120AXU I/P: 100-240V ~ 0.5A 50/60Hz O/P: 12V⎓1.2A Cable Out: Non-Shielded, 2m.
LTE Antenna	Cortec Technology Inc., AN0727-64DP5BSM (2pcs)
GPS Antenna	Cortec Technology Inc., AG1575-0250SM (1pcs)

Note:

1. This Advanced Industrial 4G/LTE Router, WWAN Failover Manager included WCDMA Band 2, WCDMA Band 4 and WCDMA Band 5 transmitting and receiving function.

2. The different of the each model is shown as below:

Product Name	Advanced Industrial 4G/LTE Router		WWAN Failover Manager
Model No.	**MX-200**	**M100**	**MX-200e**
Trade Name	BEC	Billion	BEC
Hardware design	PCBA/Layout/Scheme/ Key component/housing / interface …100% same		
LTE antennas (SMA)	Detachable LTE Antenna *2pcs	Detachable LTE Antenna *2pcs	Detachable LTE Antenna *2pcs
GPS antenna (SMA)	1	1	1
SIM slot (2FF)	1	1	1
RS-232 (DB-9)	1	1	1
Ethernet Giga port	2	2	2
Power input	9-56VDC	9-56VDC	9-56VDC
External color	Casing: Metal/Black	Casing: Metal/Black	Casing: Metal/Black
Software function	with VPN	with VPN	without VPN

1.2. Test Mode

DEKRA has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

Final Test Model	
TX	Mode 1: WCDMA Band 4_Link Mode Mode 2: WCDMA Band 4_Idle Mode Mode 3: WCDMA Band 4_HSUPA Mode Mode 4: WCDMA Band 4_HSDPA Mode

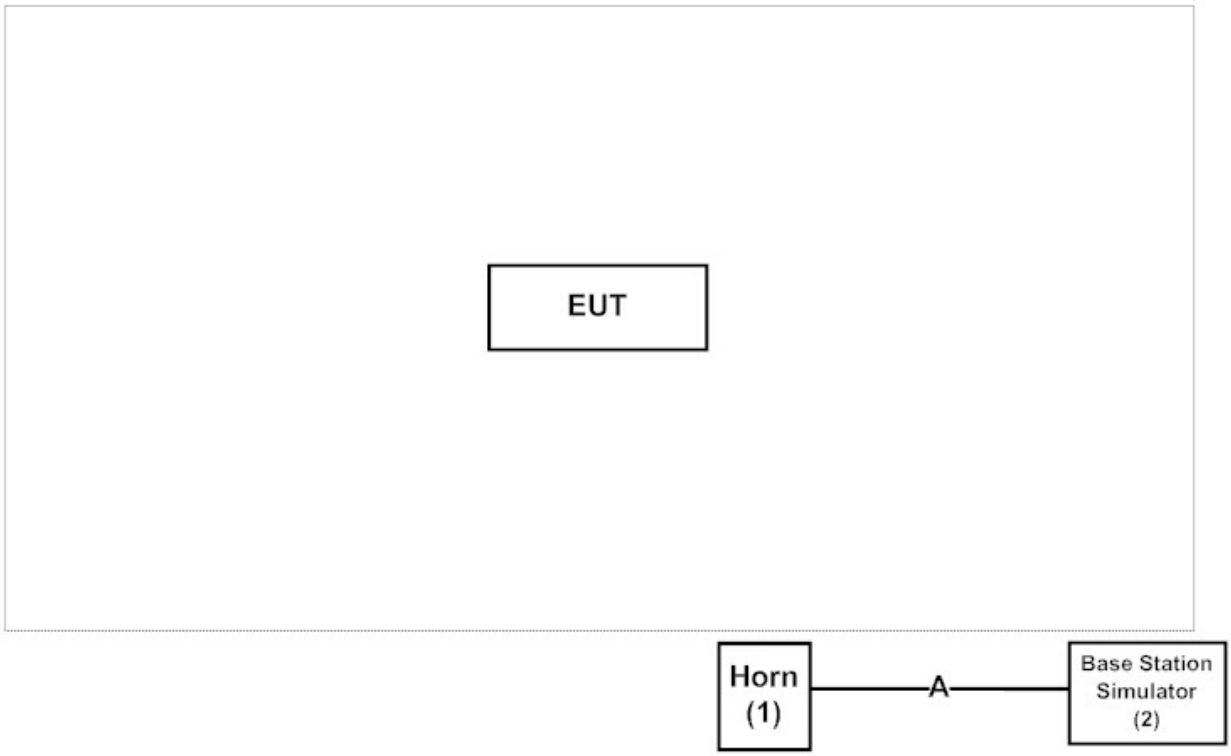
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Horn	ELECTRO METRICS	EM6961	103326	DoC	--
2	Base Station Simulator	JRC	NJZ-2000	ET00477	DoC	--

1.4. Configuration of tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	RF Cable	Shielded, 2m.

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Turn on the power of all equipment. Horn link with base station.
3	The EUT link with base station and it will continue receive the signal from WCDMA function.
4	Repeat the above procedure.

2. Technical Test

2.1. Summary of Test Result

Performed Item	FCC References	Result
Peak Output Power	FCC PART 2.1046 and PART 27.50(h)(2)	Pass
Occupied Bandwidth	FCC PART 2.1049 PART 27.53(h)	Pass
Spurious Emission At Antenna Terminals (+/- 1MHz)	FCC PART 2.1051 and PART 27.53(h)	Pass
Spurious Emission	FCC PART 2.1051 and PART 27.53(h)	Pass
Frequency Stability Under Temperature & Voltage Variations	FCC PART 2.1055(a)(l) and PART 27.54	Pass

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	23
Humidity (%RH)	25-75	52
Barometric pressure (mbar)	860-1060	950-1000

3. Peak Output Power

3.1. Test Equipment

The following test equipments are used during the test:

Peak Output Power - Conducted Measurement /SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional Coupler	Agilent	778D	20402	2017/10/06

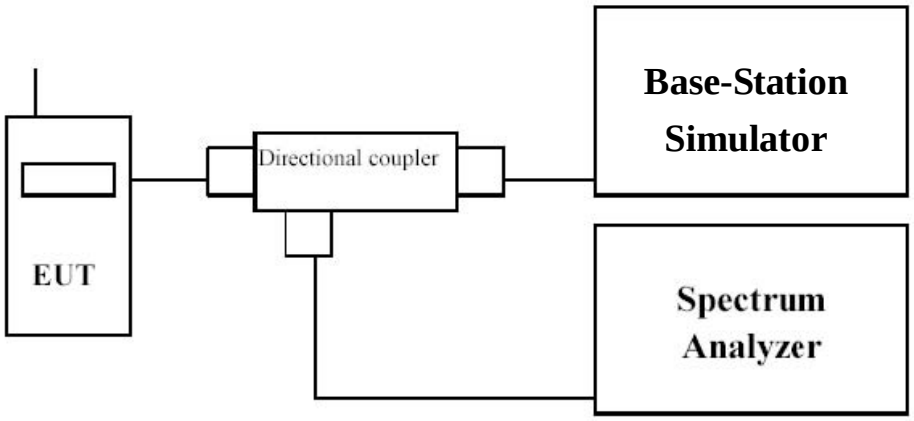
Peak Output Power - Radiated Measurement /CB4-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-001040000-58-5P	1573954	2017/10/04
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/05

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup

RF Conducted Measurement:



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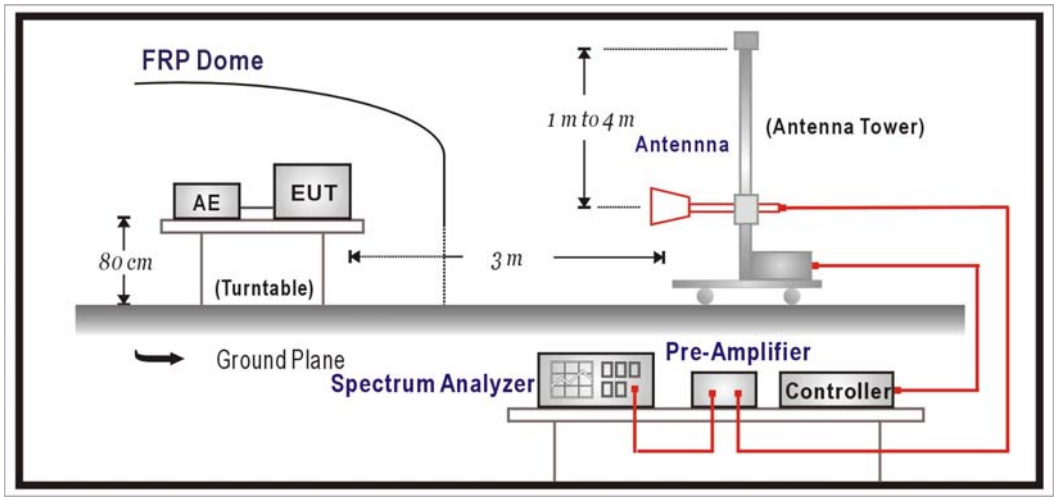
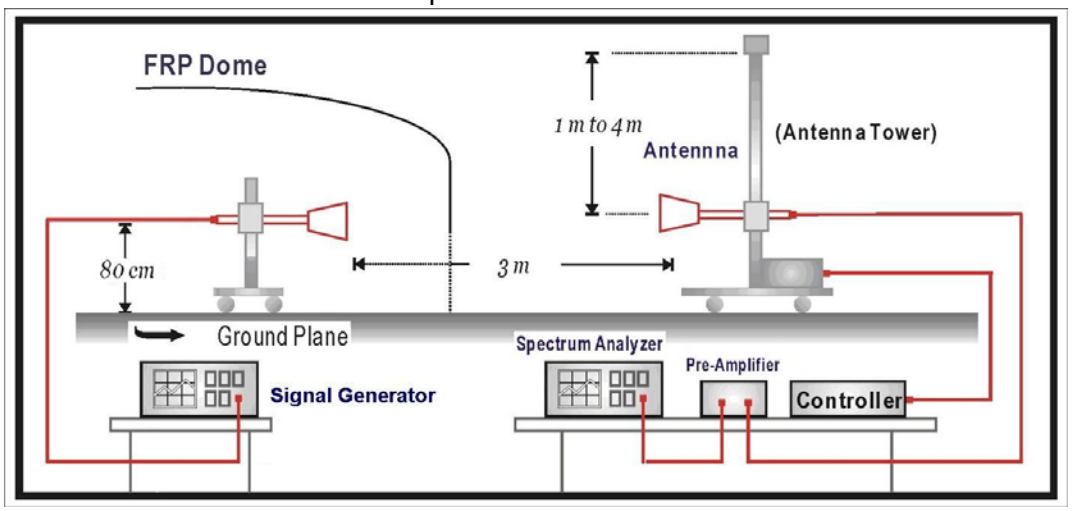


Substitution Measurement Setup:



3.3. Limits

(1) Main, Booster and Base Stations: Maximum E.I.R.P shall not exceed 33 dBW + 10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition.

(2) Mobile and Other User Stations: 2.0 Watts EIRP.

3.4. Test Procedure

The conducted peak output power is measured using R&S Spectrum Analyzer. The EUT was set up for the rated peak power. All measurements were done at 3 channels: low, middle and high operational frequency range.

For measuring E.I.R.P peak power, EUT was placed on the turn-table which was rotated around 360 degrees to search the maximum radiation power and receiver antenna was rotated vertical and horizontal polarization to find the maximum polarization radiated power.

The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission and level of signal generator adjusted to same level of emission. Both horizontal and vertical polarization of the antenna are set on measurement.

The radiated E.I.R.P power was calculated via the Correct factor, Reading Level, and Antenna gain as follows:
E.I.R.P = Reading Level + Correct Factor = S.G. – Cable Loss + Antenna Gain

3.5. Uncertainty

The measurement uncertainty is defined as ±1.27 dB

3.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Peak Output Power		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/03	Test Site	SR10-H

Frequency (MHz)	Peak Power		Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	Reading Level (dBm)	Measure Level (dBm)	
1712.4	25.51	29.21	22.56	26.26	30
1732.6	25.18	28.88	22.39	26.09	30
1752.6	25.58	29.28	22.37	26.07	30

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Peak Output Power		
Test Mode	Mode 3: WCDMA Band 4_HSUPA mode		
Date of Test	2017/02/15	Test Site	SR10-H

Frequency (MHz)	Peak Power		Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	Reading Level (dBm)	Measure Level (dBm)	
1712.4	25.23	27.60	20.72	23.09	30
1732.6	24.62	26.99	20.19	22.56	30
1752.6	24.88	27.25	20.57	22.94	30

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Peak Output Power		
Test Mode	Mode 4: WCDMA Band 4_HSDPA mode		
Date of Test	2017/02/15	Test Site	SR10-H

Frequency (MHz)	Peak Power		Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	Reading Level (dBm)	Measure Level (dBm)	
1712.4	24.93	27.3	21.16	23.53	30
1732.6	24.7	27.07	20.87	23.21	30
1752.6	24.94	27.31	21.06	23.43	30

4. Occupied Bandwidth

4.1. Test Equipment

The following test equipments are used during the test:

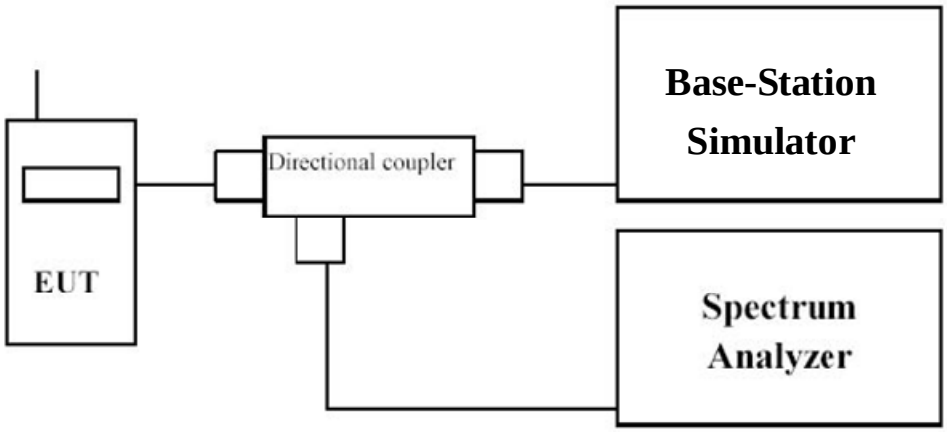
Occupied Bandwidth/ SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional Coupler	Agilent	778D	20402	2017/10/06

Note: All equipments are calibrated with traceable calibrations.

Each calibration is traceable to the national or international standards.

4.2. Test Setup



4.3. Limits

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.

4.4. Test Procedure

The occupied bandwidth is measured using R&S Spectrum Analyzer with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz and span of 10 MHz. The EUT was set up for the rated peak power under transmission mode and specific channel frequency. The standards required a measurement bandwidth is the fundamental emission below 26dB bandwidth.

4.5. Uncertainty

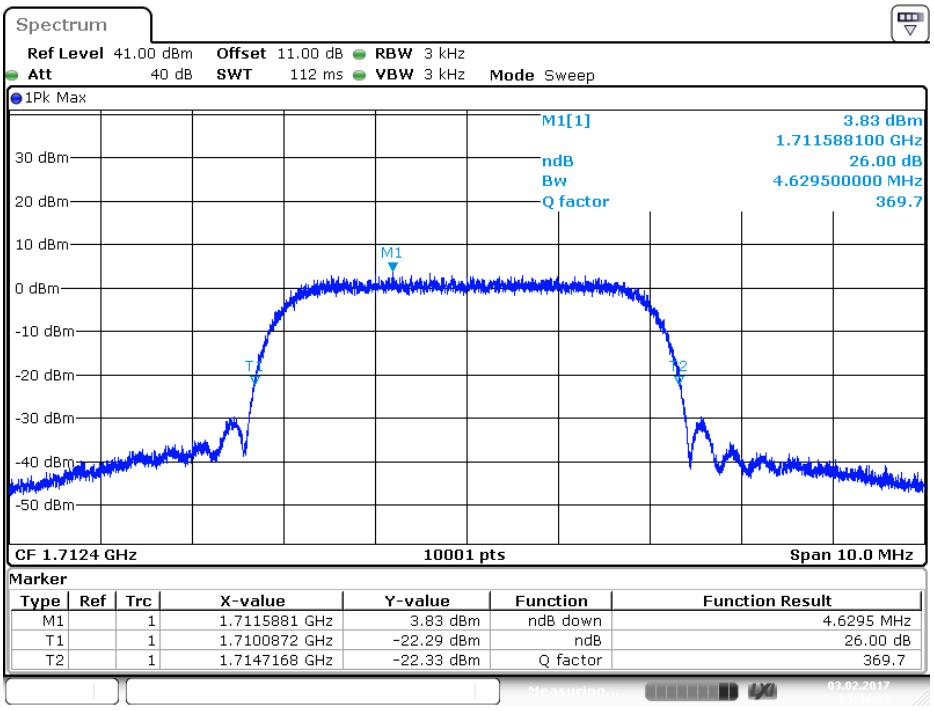
The measurement uncertainty is defined as ±50 KHz

4.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/03	Test Site	SR10-H

Frequency (MHz)	-26B BW Measure Level (MHz)	99% BW Measure Level (MHz)	Limit (MHz)
1712.4	4.63	4.142	N/A
1732.6	4.657	4.131	N/A
1752.6	4.632	4.128	N/A

1712.4 MHz (-26dB BW)



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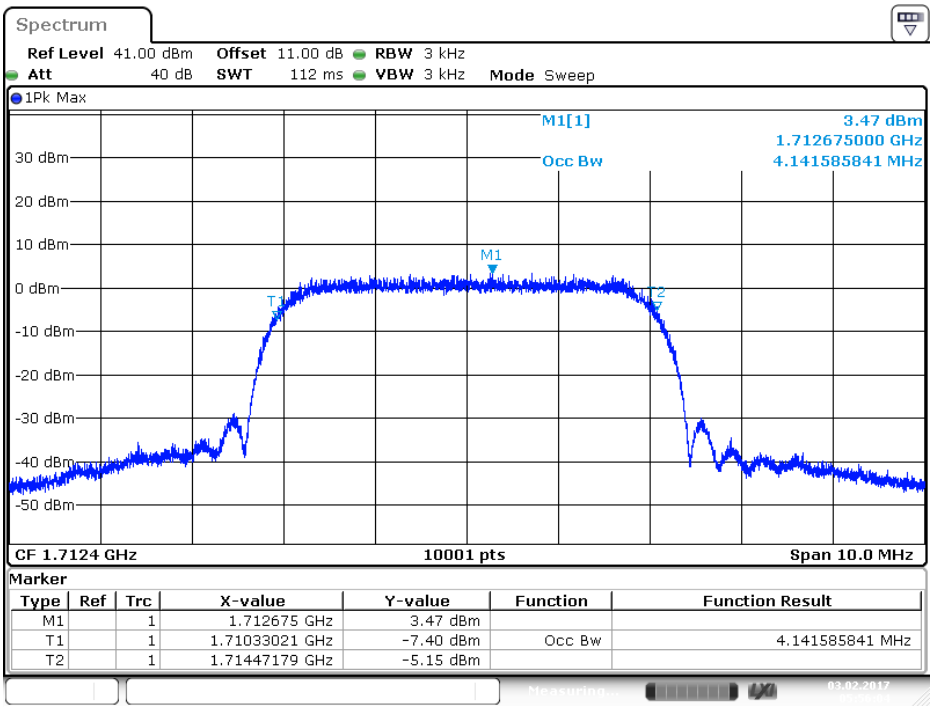
1712.4 MHz (99% BW)



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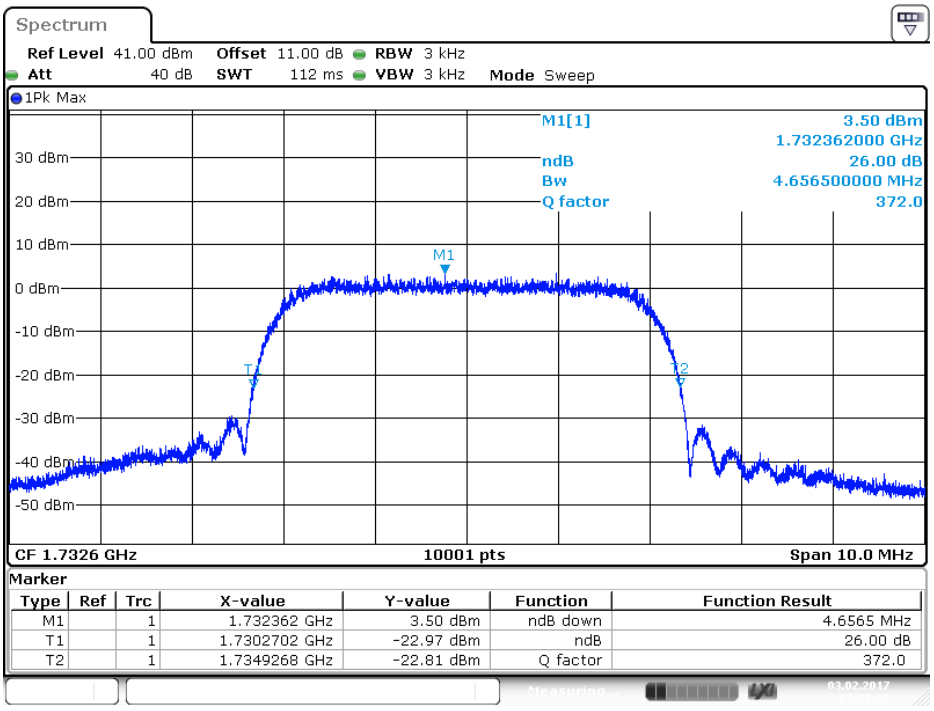
1732.6 MHz (-26dB BW)



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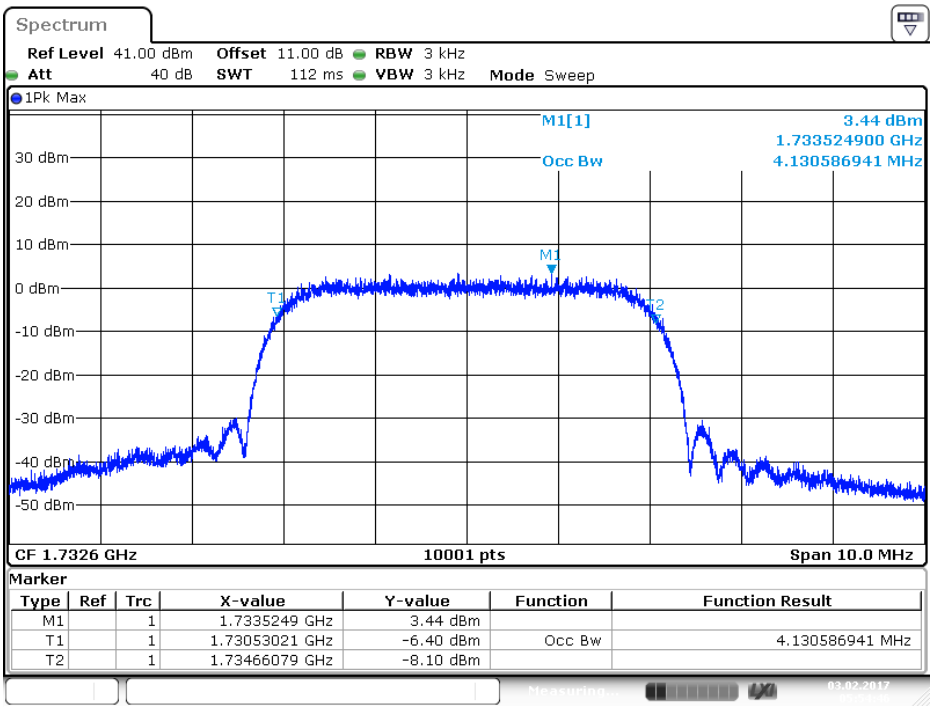
1732.6 MHz (99% BW)



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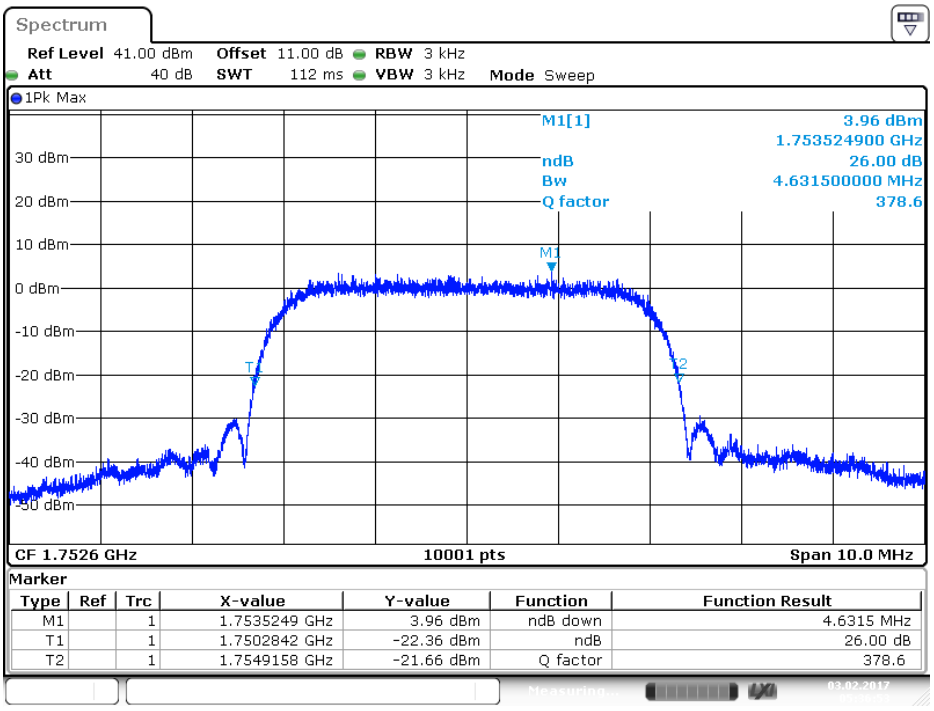
1752.6MHz (-26dB BW)



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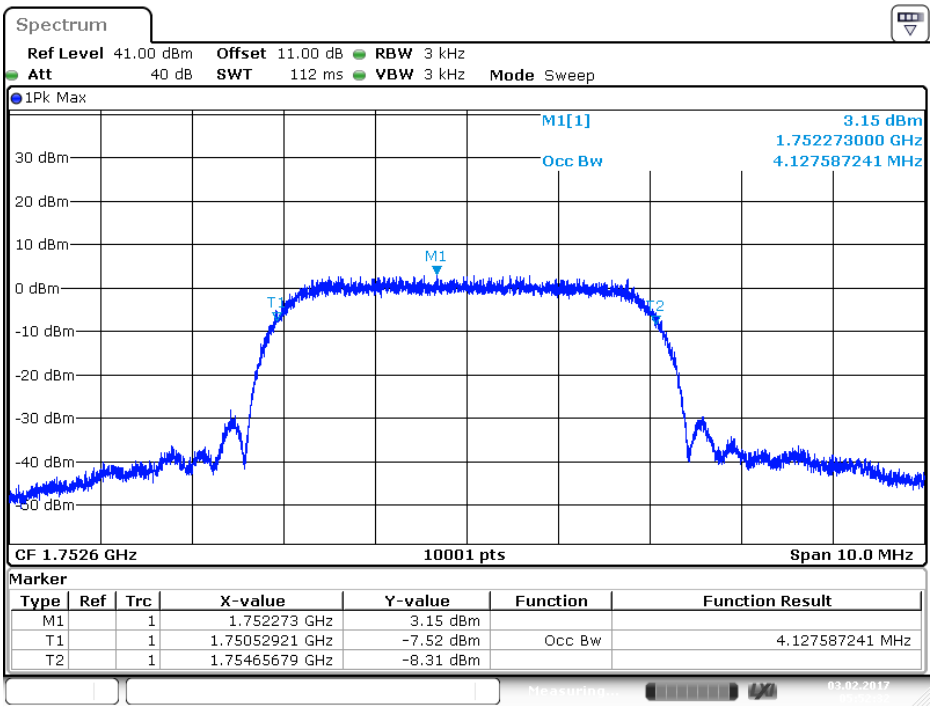

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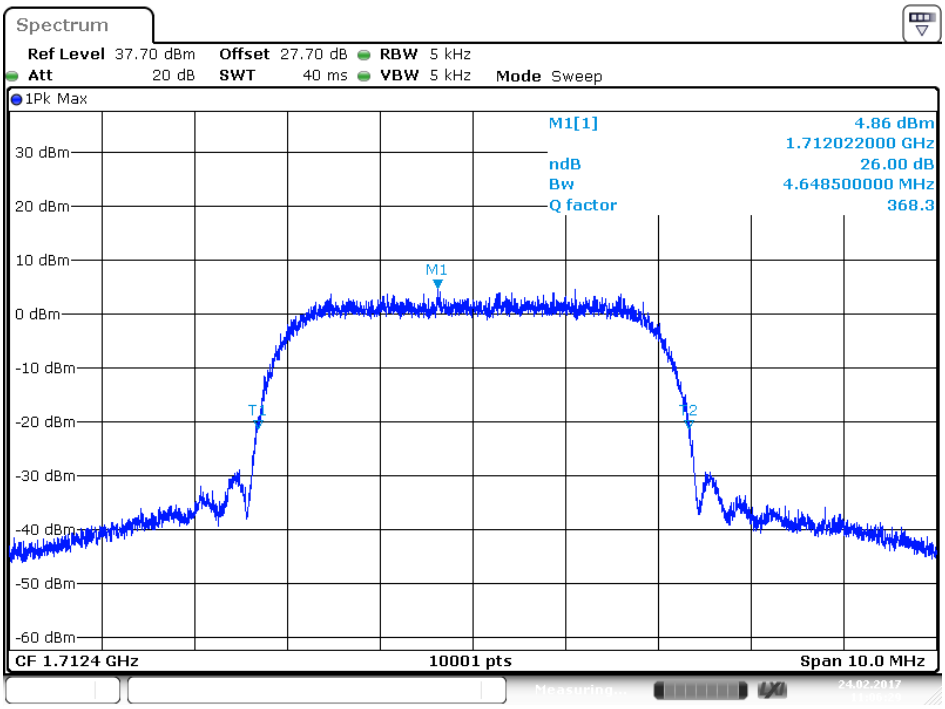
Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: WCDMA Band 4_HSUPA Mode		
Date of Test	2017/02/24	Test Site	SR10-H

Frequency (MHz)	-26B BW Measure Level (MHz)	99% BW Measure Level (MHz)	Limit (MHz)
1712.4	4.652	4.1316	N/A
1732.6	4.634	4.1346	N/A
1752.6	4.664	4.1336	N/A

1712.4 MHz (-26dB BW)



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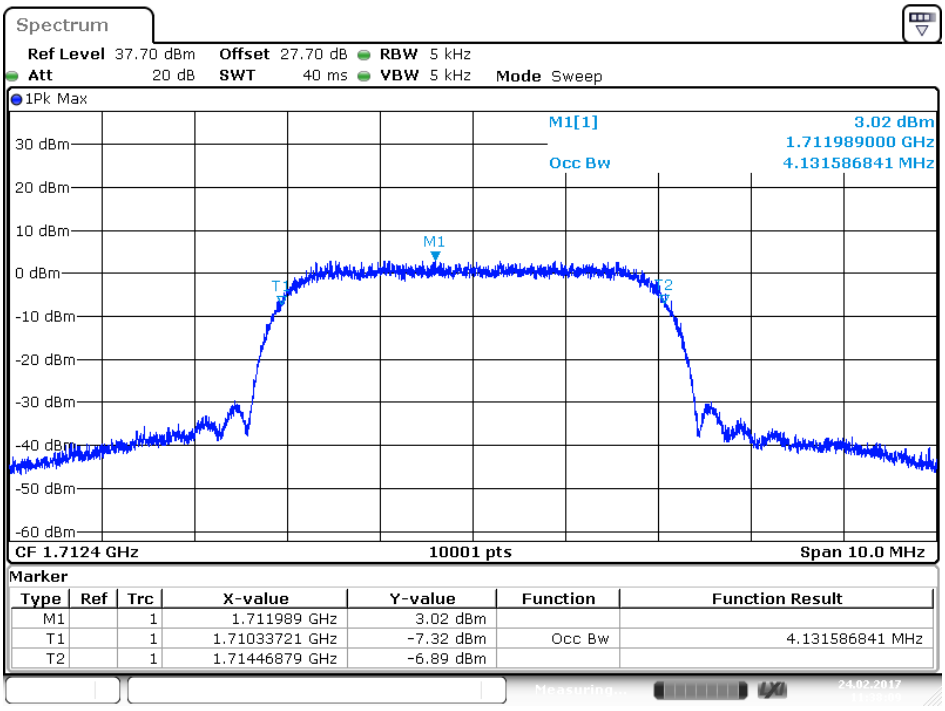

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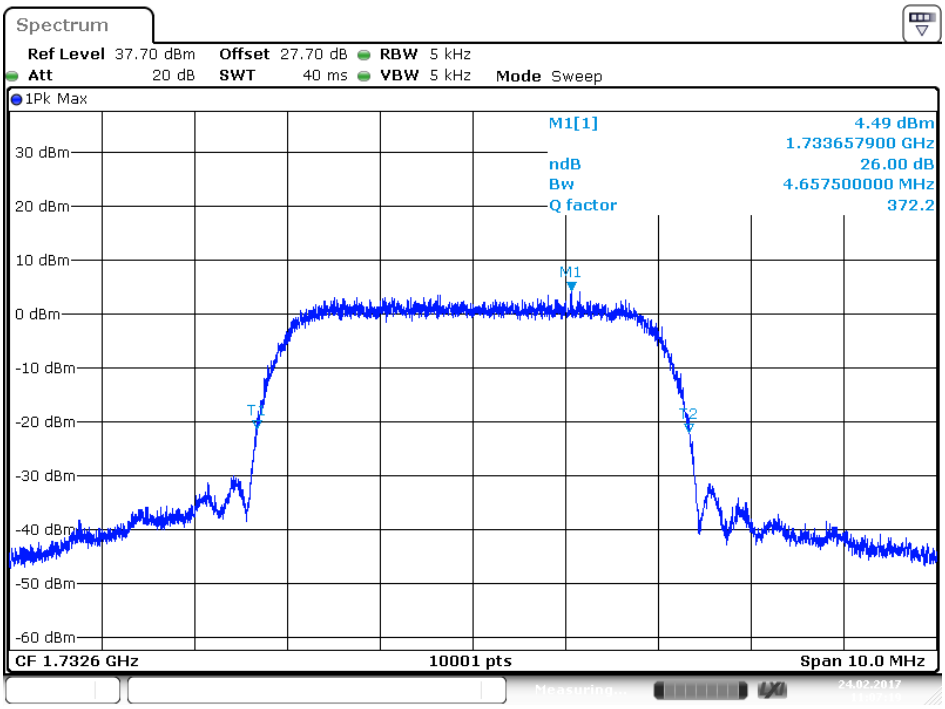
1732.6 MHz (-26dB BW)



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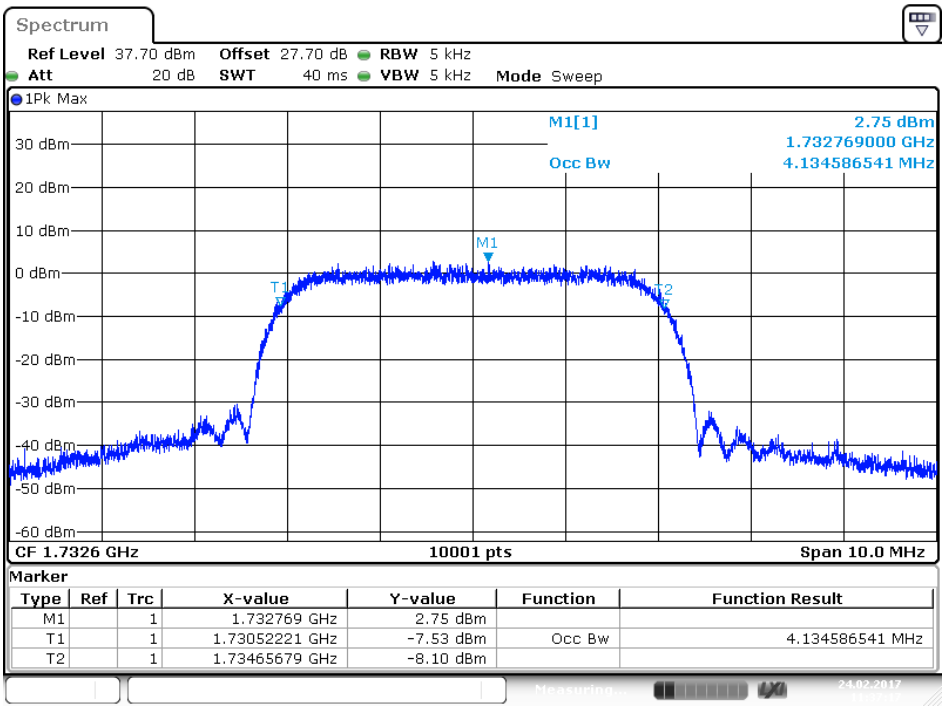
1732.6 MHz (99% BW)



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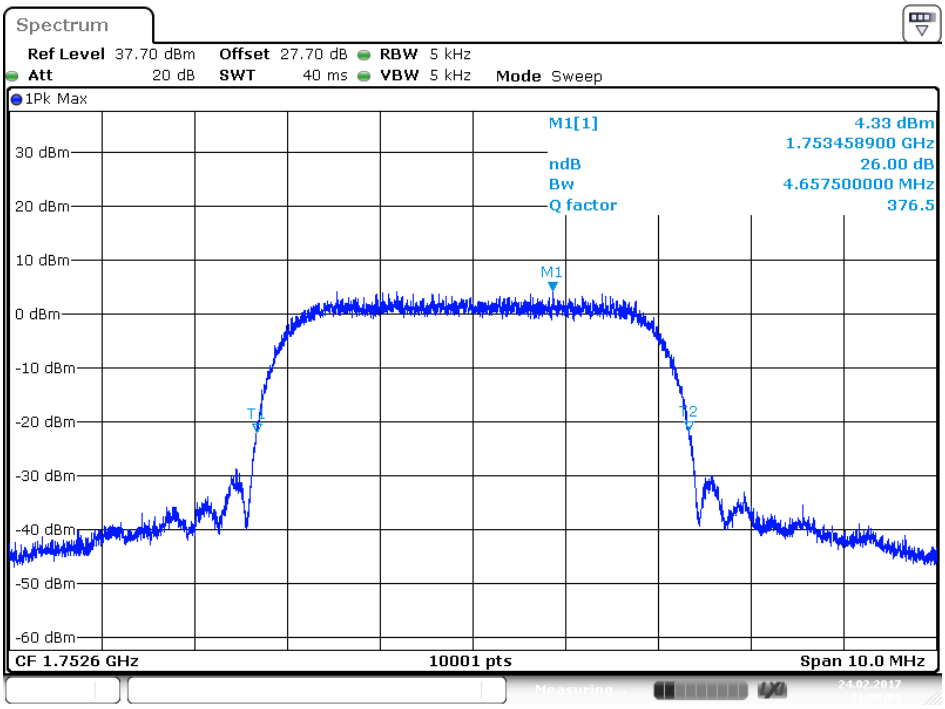
1752.6MHz (-26dB BW)



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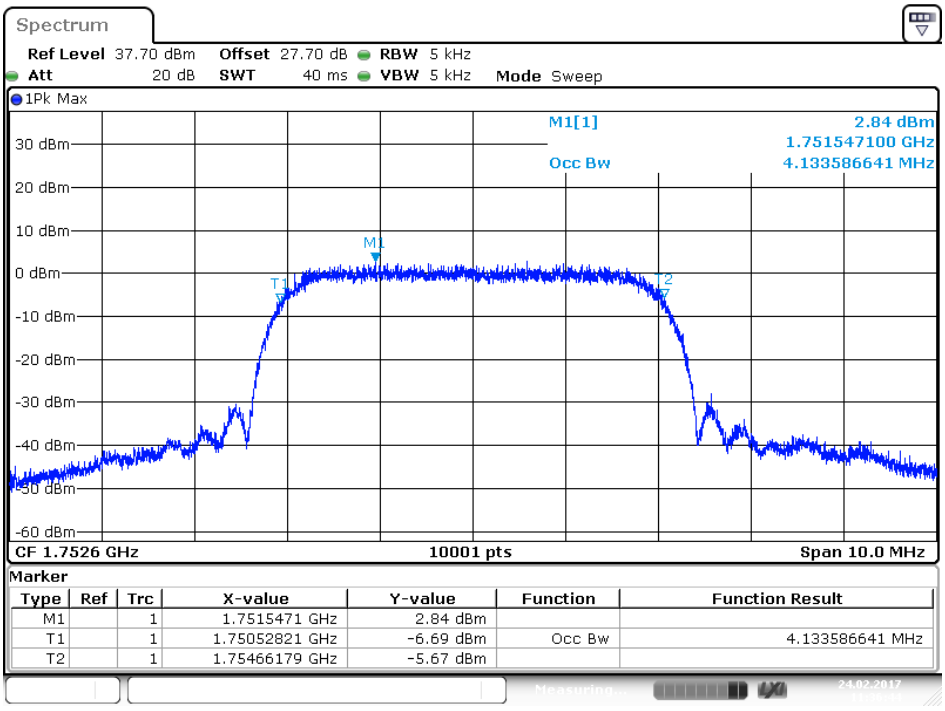
1752.6MHz (99% BW)



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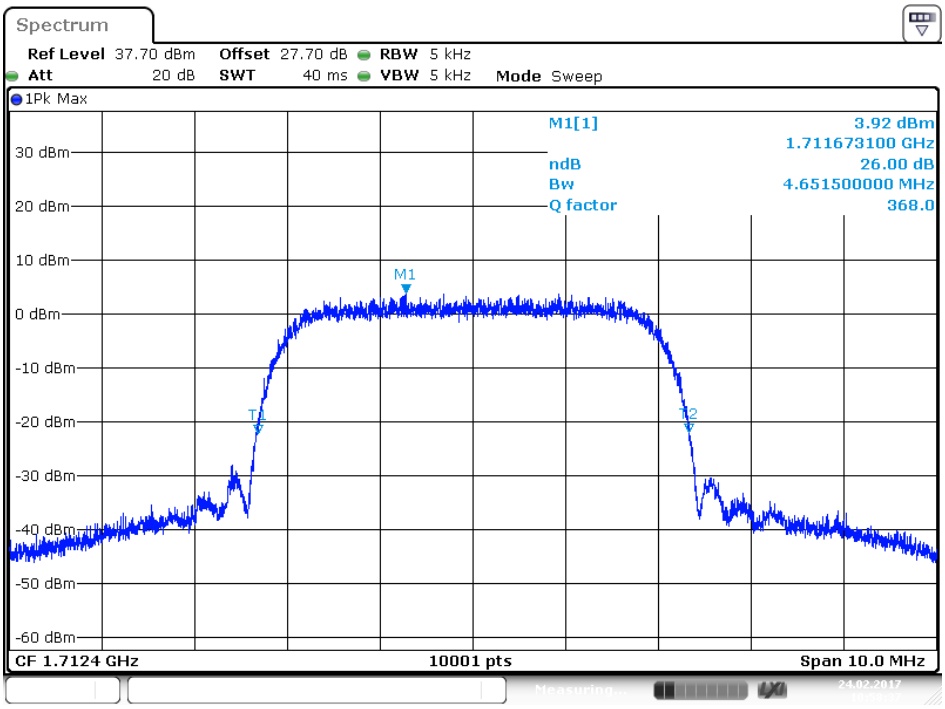
Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: WCDMA Band 4_HSDPA Mode		
Date of Test	2017/02/24	Test Site	SR10-H

Frequency (MHz)	-26B BW Measure Level (MHz)	99% BW Measure Level (MHz)	Limit (MHz)
1712.4	4.649	4.1406	N/A
1732.6	4.658	4.1340	N/A
1752.6	4.658	4.1356	N/A

1712.4 MHz (-26dB BW)



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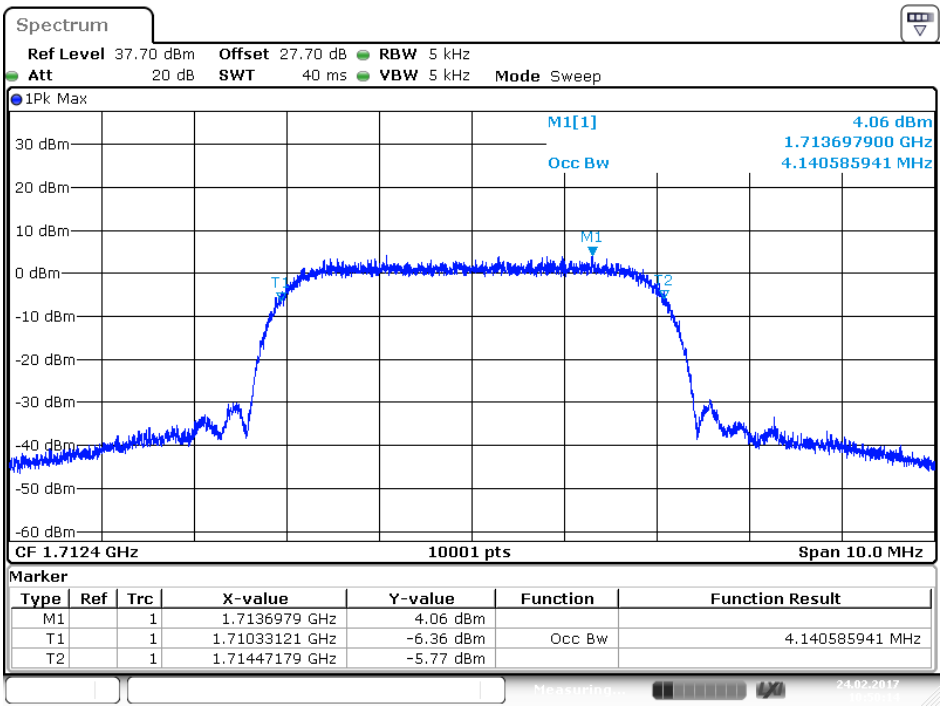
1712.4 MHz (99% BW)



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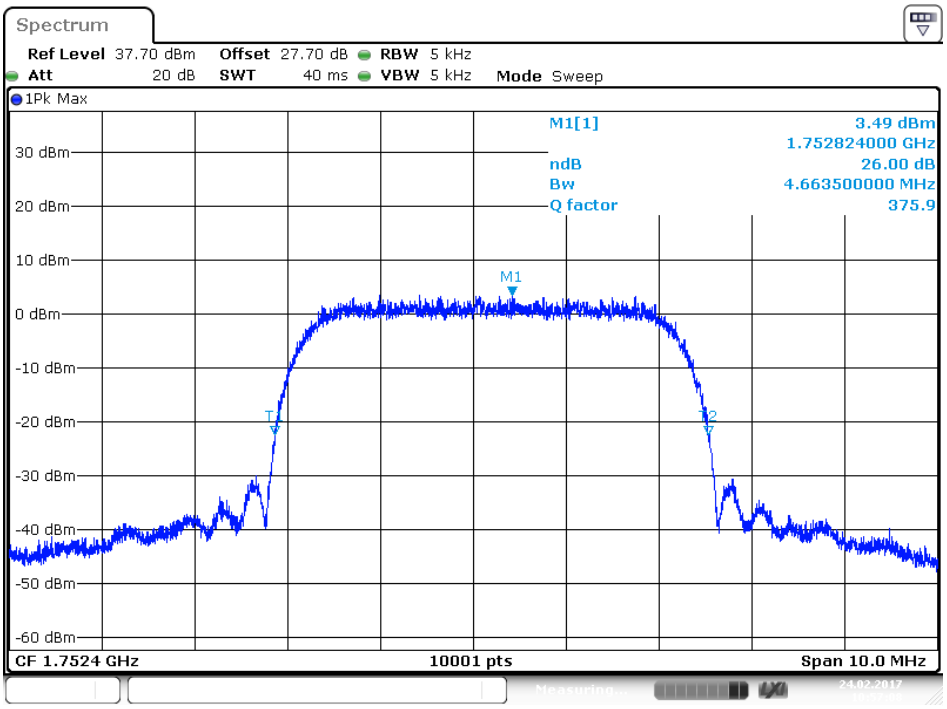
1732.6 MHz (-26dB BW)



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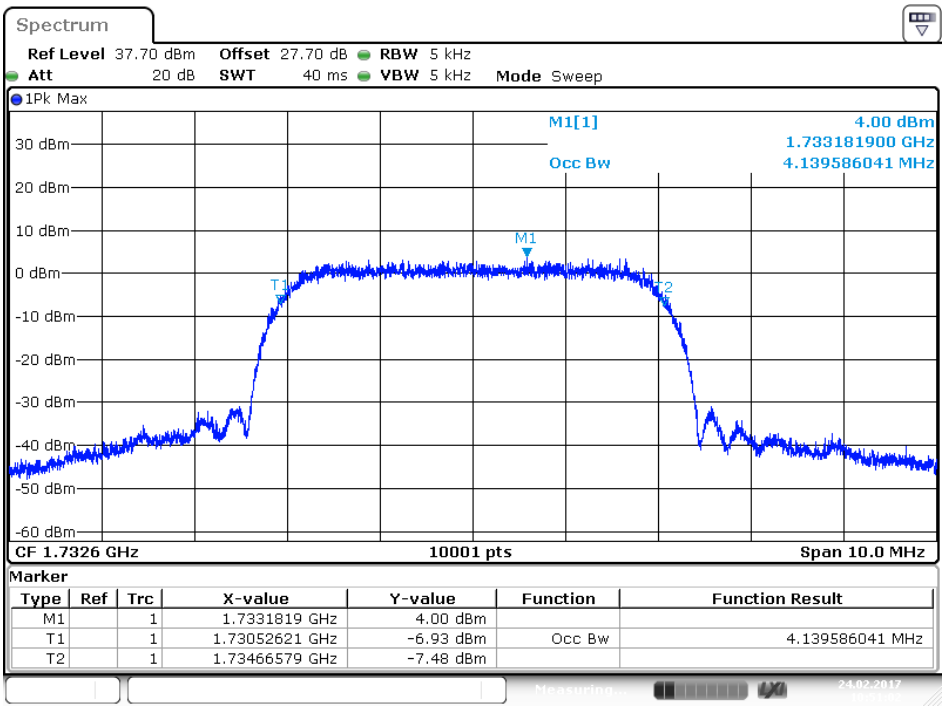

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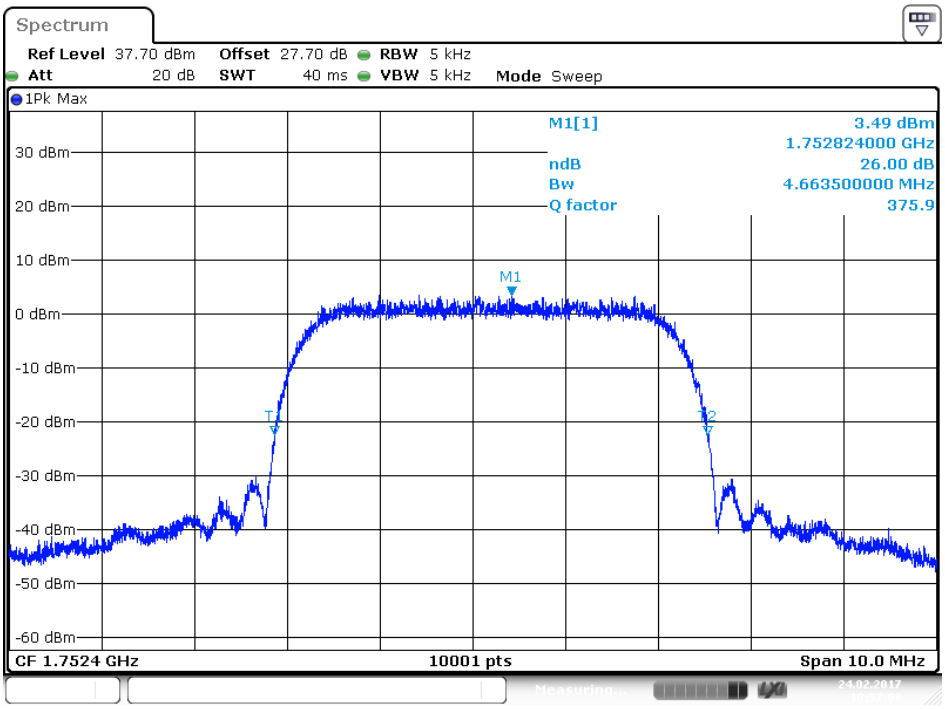

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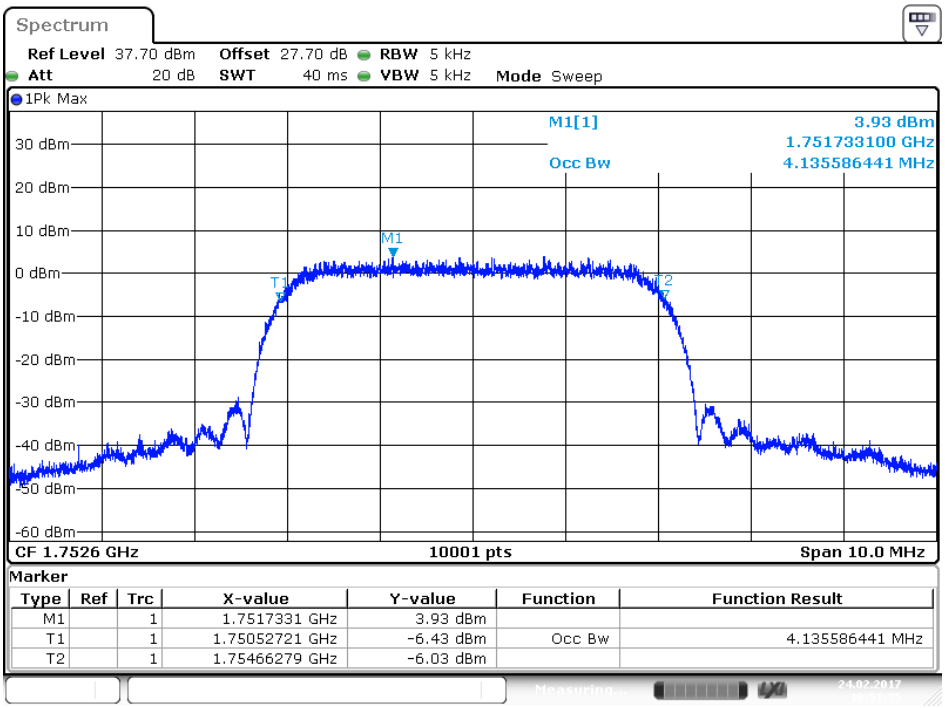

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5. Band Edge

5.1. Test Equipment

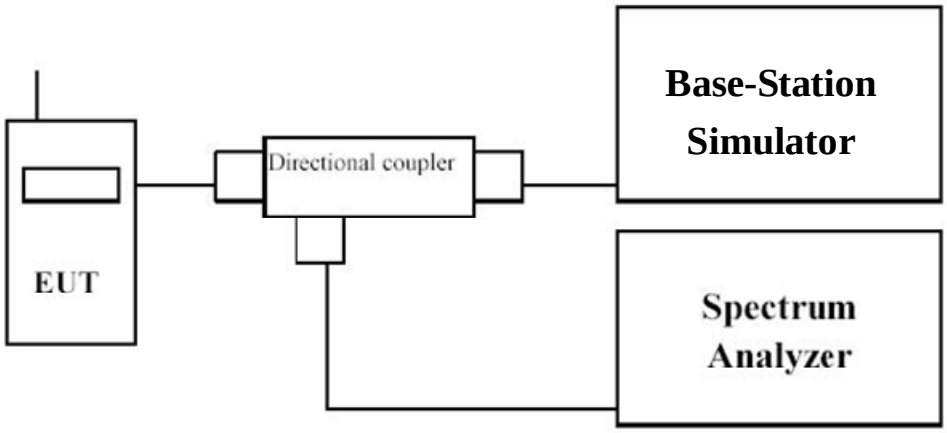
The following test equipment are used during the test:

Band edge / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional Coupler	Agilent	778D	20402	2017/10/06

Note: All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup



5.3. Limits

(1) Fixed and Temporary Fixed Digital Stations: not less than 43 + log (P) dB

(2) Mobile Digital Stations: not less than 43 + log (P) dB at the channel edge and 55 + log (P) dB at 5.5 MHz from the channel edges

Sample Calculation:

Assume the EUT Output Power is 2 W = 33 dBm

43 + log (P) dB

43 + log (2) = 46 dB

33 dBm – 46 dB = -13 dBm

55 + log (2) = 58 dB

33 dBm – 58 dB = -25 dBm

5.4. Test Procedure

Conducted Measurement：

The EUT was set up for the rated peak power. The band edge was measured with Spectrum Analyzer with a resolution bandwidth of 100 kHz and video bandwidth of 300 kHz. All measurements were done at 2 channels: low and high operational frequency range.

The center frequency of spectrum is the band edge frequency and span is 7.5 MHz for test mode 1 (5 MHz bandwidth) and 15 MHz for test mode 2 (10 MHz bandwidth). The resolution bandwidth of spectrum is 100 kHz and video bandwidth of spectrum is 300 kHz.

Record the max trace plot into the test report.

Radiated Measurement：

EUT was placed on the turn-table which was rotated around 360 degrees to search the maximum radiation power and receiver antenna was rotated vertical and horizontal polarization to find the maximum polarization radiated power.

The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission and level of signal generator adjusted to same level of emission. Both horizontal and vertical polarization of the antenna are set on measurement.

On any frequency, the limits shown are based on measuring equipment employing a peak detector function. The resolution bandwidth of spectrum analyzer is 100KHz. and video bandwidth is 300KHz.

The radiated band edge emission was calculated via the Correct factor, Reading Level, and Antenna gain as follows:

Emission Level = Reading Level + Correct Factor = S.G. – Cable Loss + Antenna Gain

5.5. Uncertainty

The measurement uncertainty

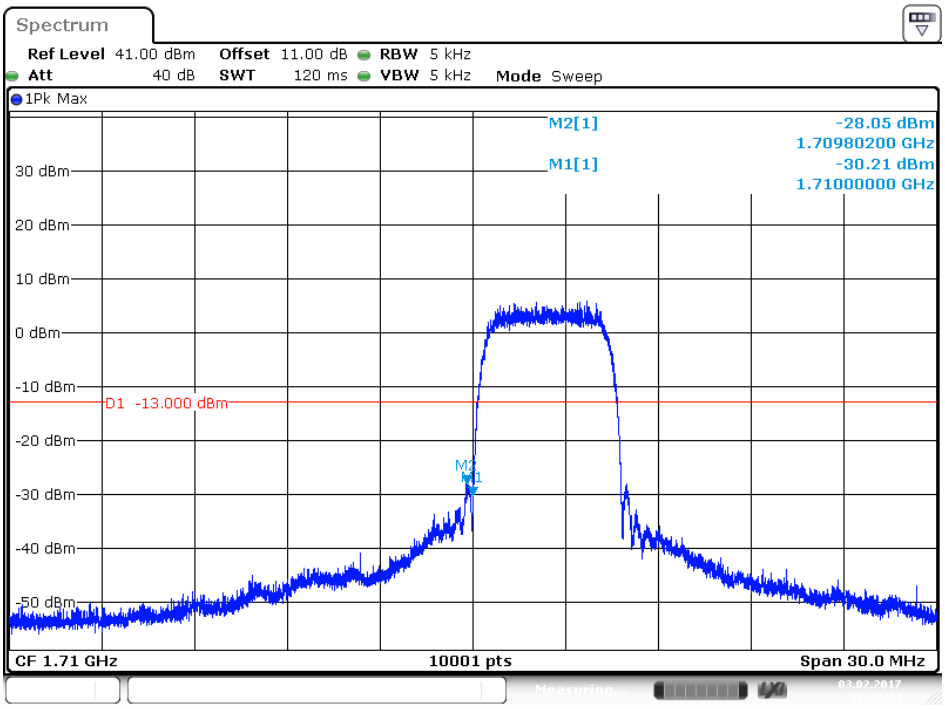
Conducted is defined as ±1.27dB

Radiated is defined as ±3.9dB

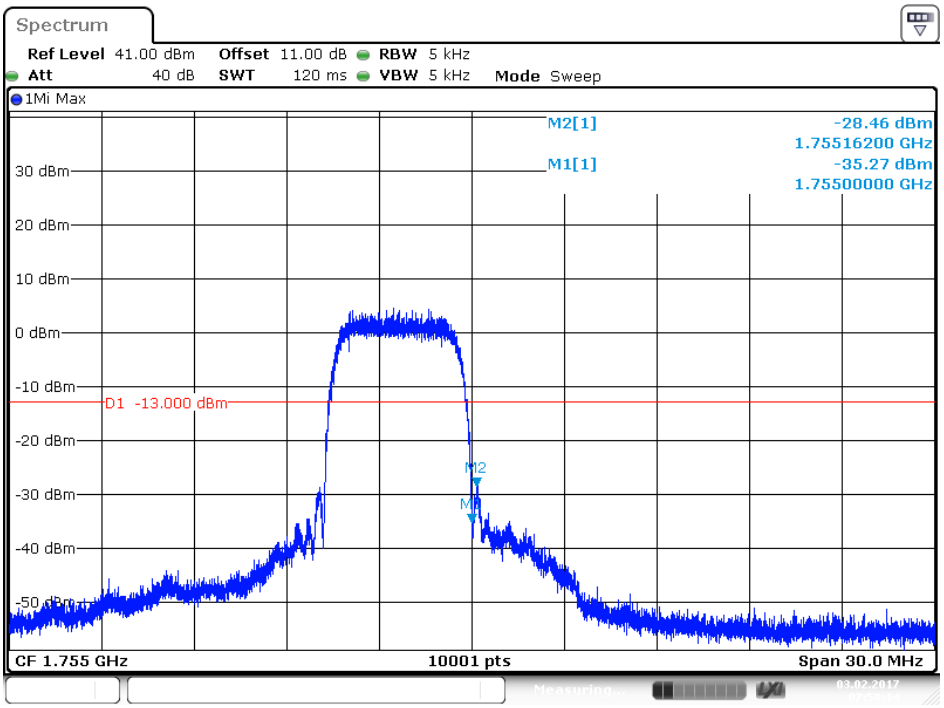
5.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Band Edge		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/03	Test Site	SR10-H

Low Channel (1712.4 MHz)



High Channel (1752.6 MHz)



Date: 3.FEB.2017 07:50:14

6. Conducted Spurious Emission

6.1. Test Equipment

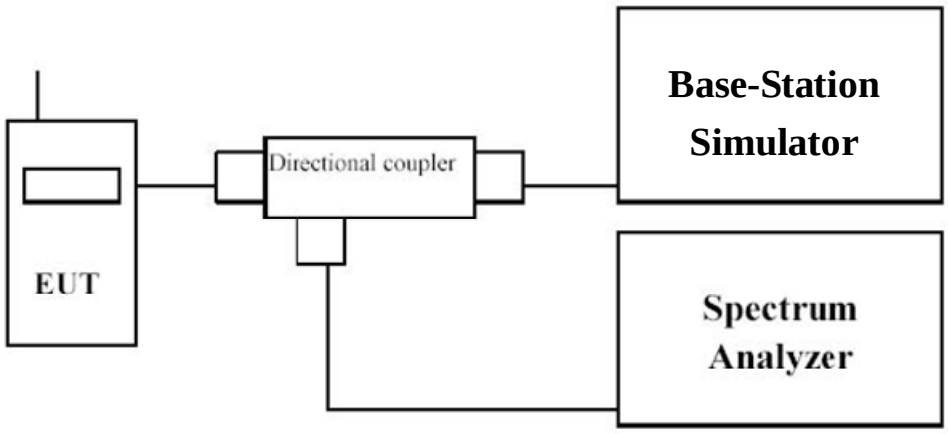
The following test equipments are used during the test:

Conducted Spurious Emission / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional Coupler	Agilent	778D	20402	2017/10/06

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup



6.3. Limits

(1) Fixed and Temporary Fixed Digital Stations: not less than 43 + log (P) dB
(2) Mobile Digital Stations: not less than 43 + log (P) dB at the channel edge and 55 + log (P) dB at 5.5 MHz from the channel edges

Sample Calculation:
Assume the EUT Output Power is 2 W = 33 dBm
43 + log (P) dB
43 + log (2) = 46 dB
33 dBm – 46 dB = -13 dBm

55 + log (2) = 58 dB
33 dBm – 58 dB = -25 dBm

6.4. Test Procedure

The EUT was set up for the rated peak power. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels: low, middle and high operational frequency range.

When the spectrum scanned from 30MHz to 27GHz, it connected to the 10dB attenuator to the carried frequency. The spectrum set RBW = 1MHz, VBW = 3MHz. and using peak detection mode.

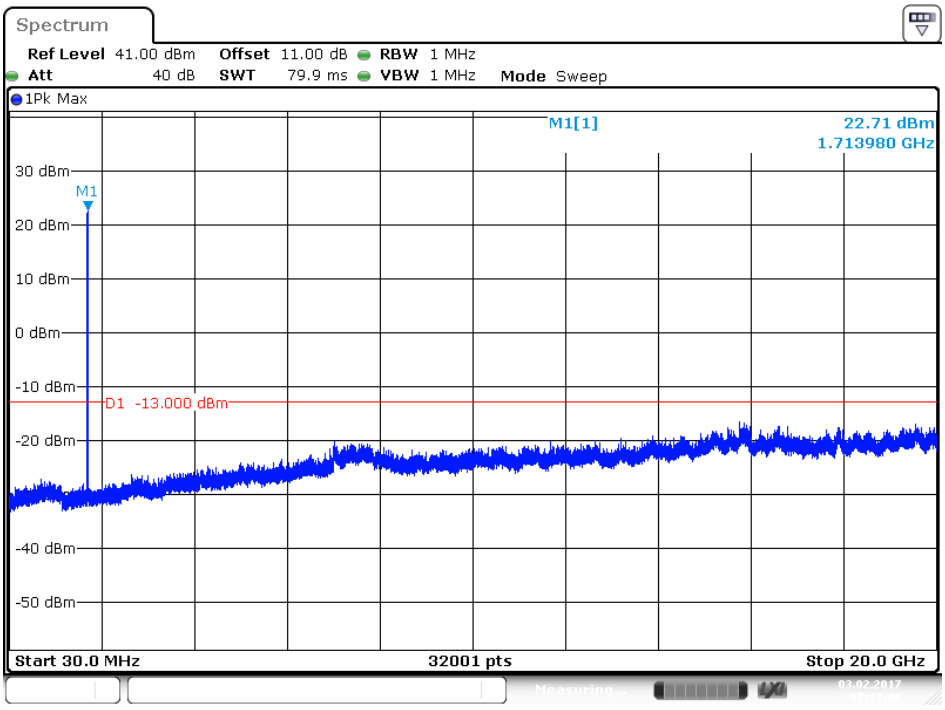
6.5. Uncertainty

The measurement uncertainty is defined as ±1.27 dB

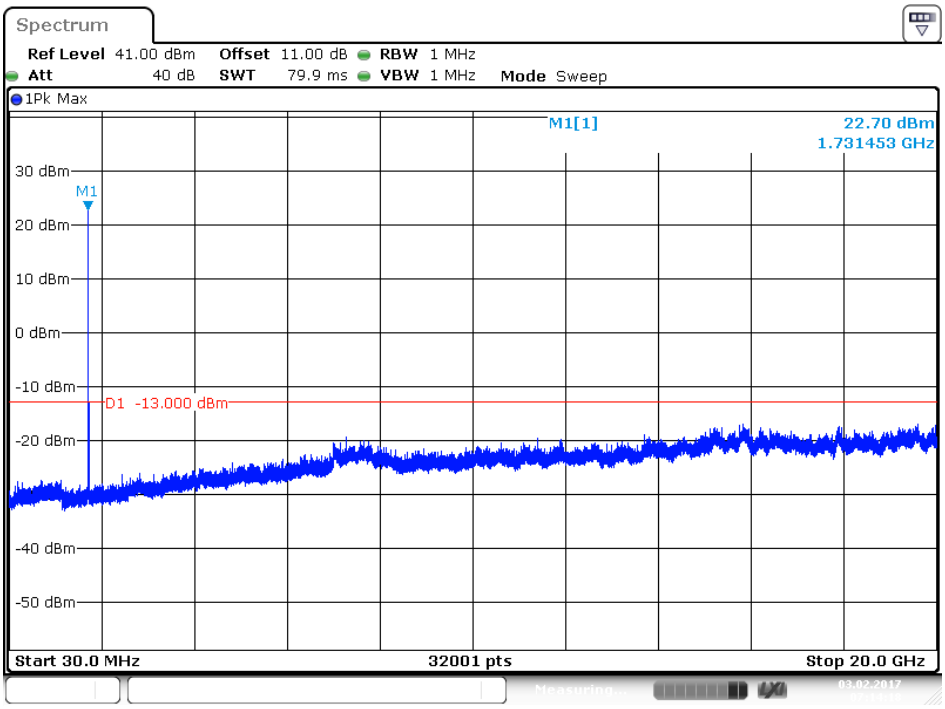
6.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/03	Test Site	SR10-H

1712.4 MHz

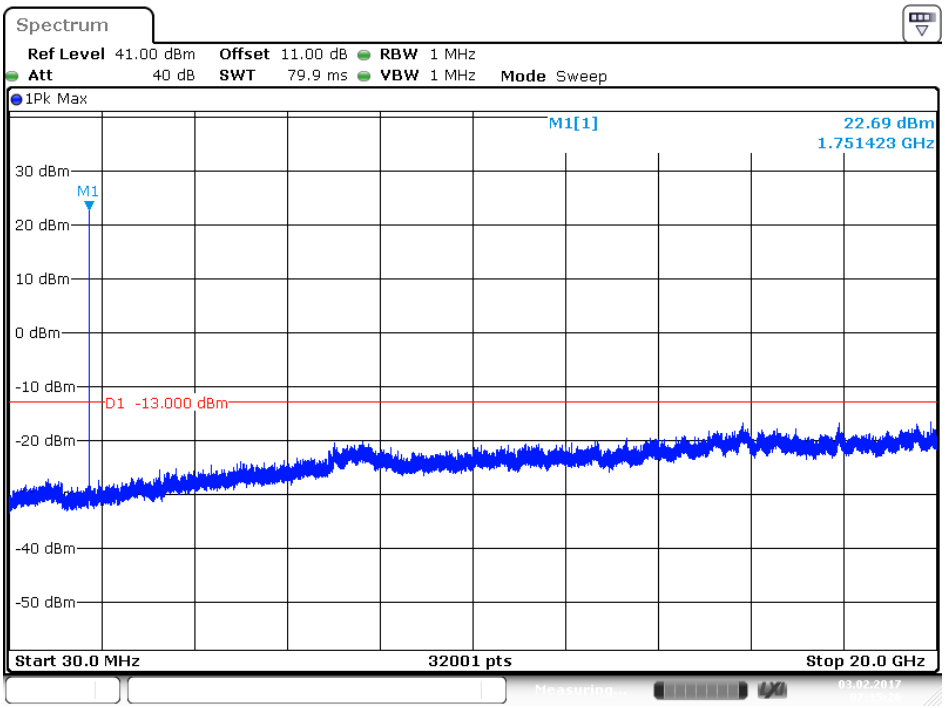


1732.6 MHz



Date: 3.FEB.2017 07:14:19

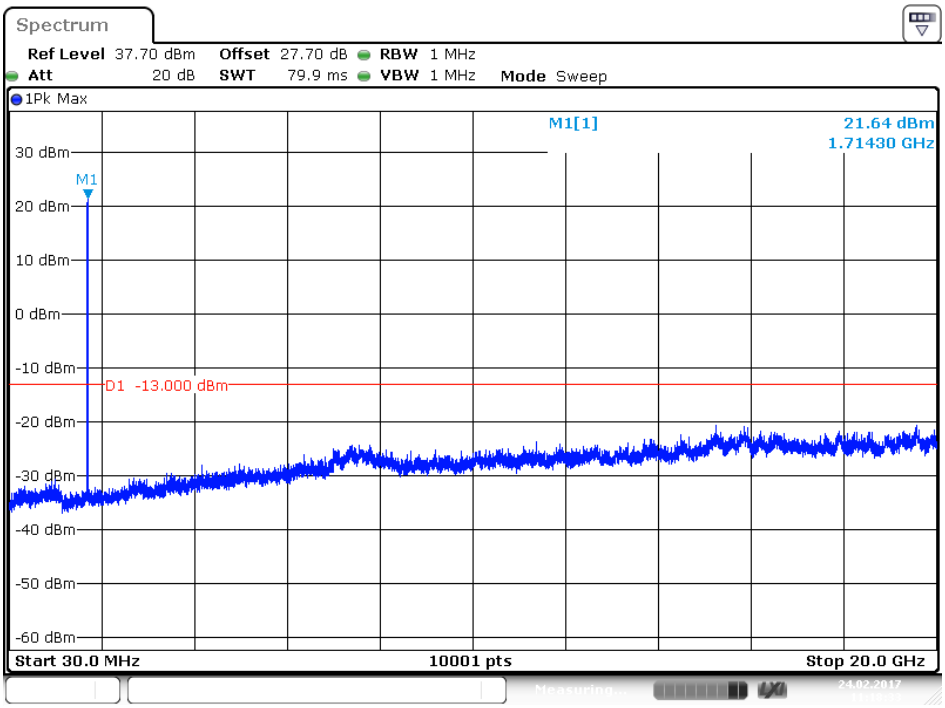
1752.6 MHz



Date: 3.FEB.2017 07:15:27

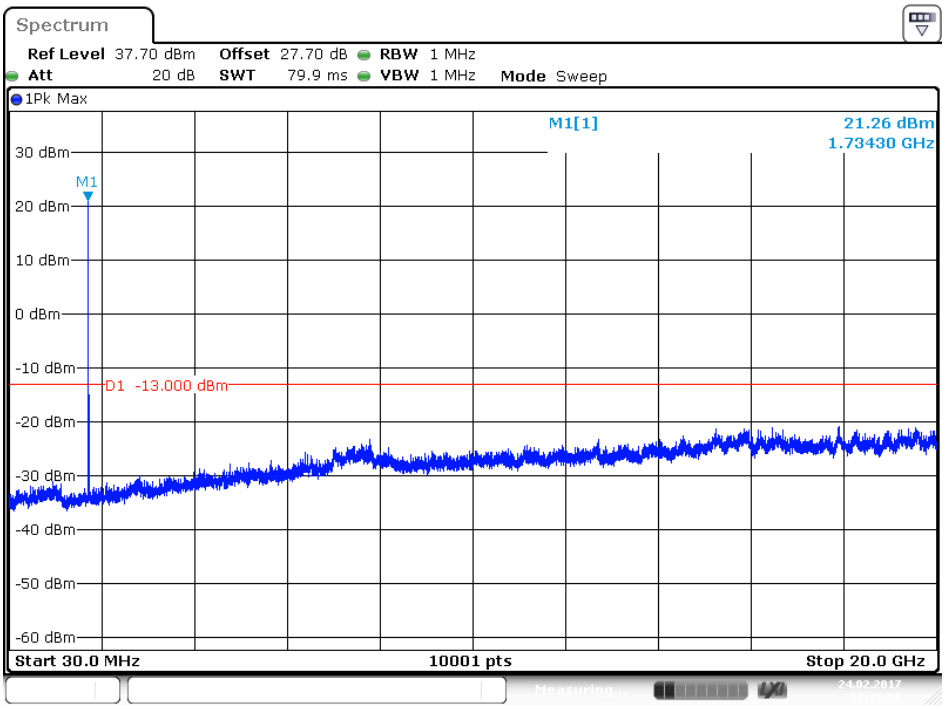
Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 3: WCDMA Band 4_HSUPA Mode		
Date of Test	2017/02/24	Test Site	SR10-H

1712.4 MHz



Date: 24.FEB.2017 11:18:34

1732.6 MHz



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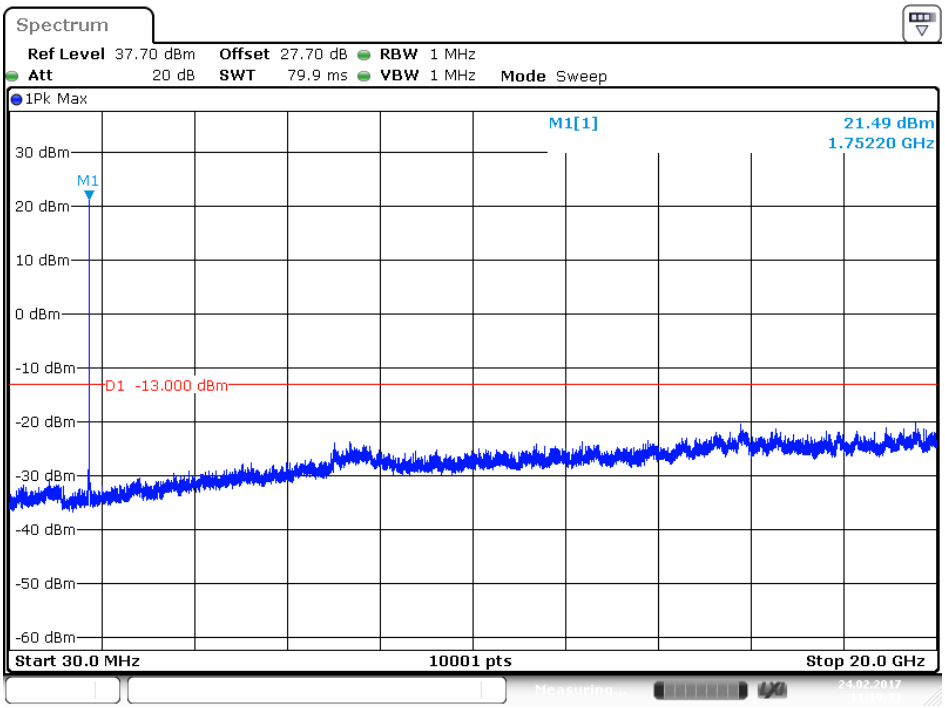
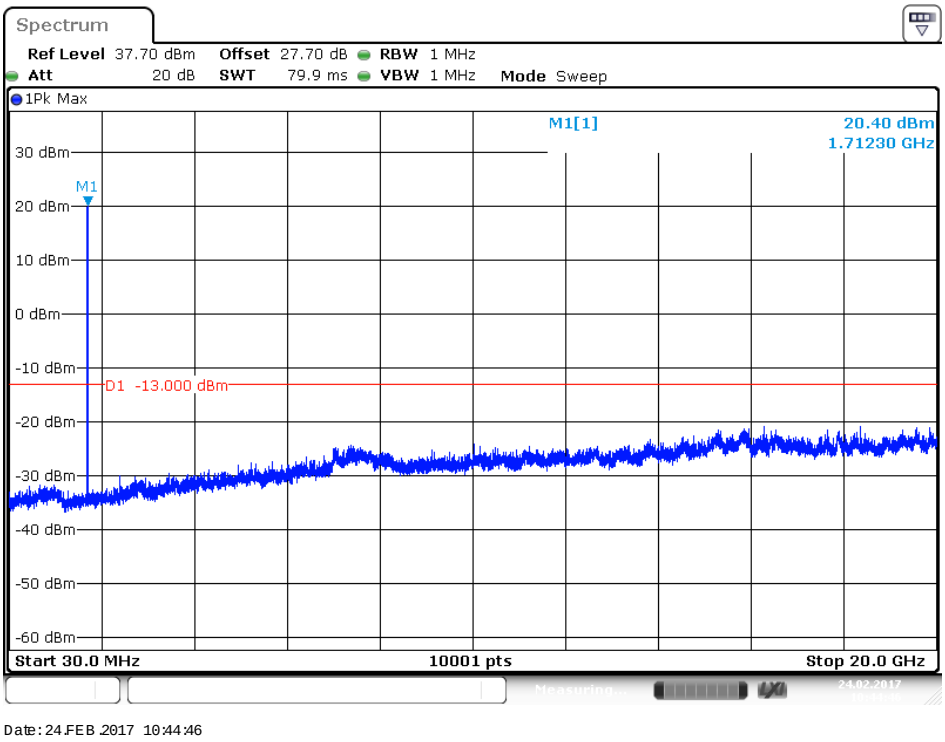
1752.6 MHz



Date: 24.FEB.2017 11:19:34

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 4: WCDMA Band 4_HSDPA Mode		
Date of Test	2017/02/24	Test Site	SR10-H

1712.4 MHz



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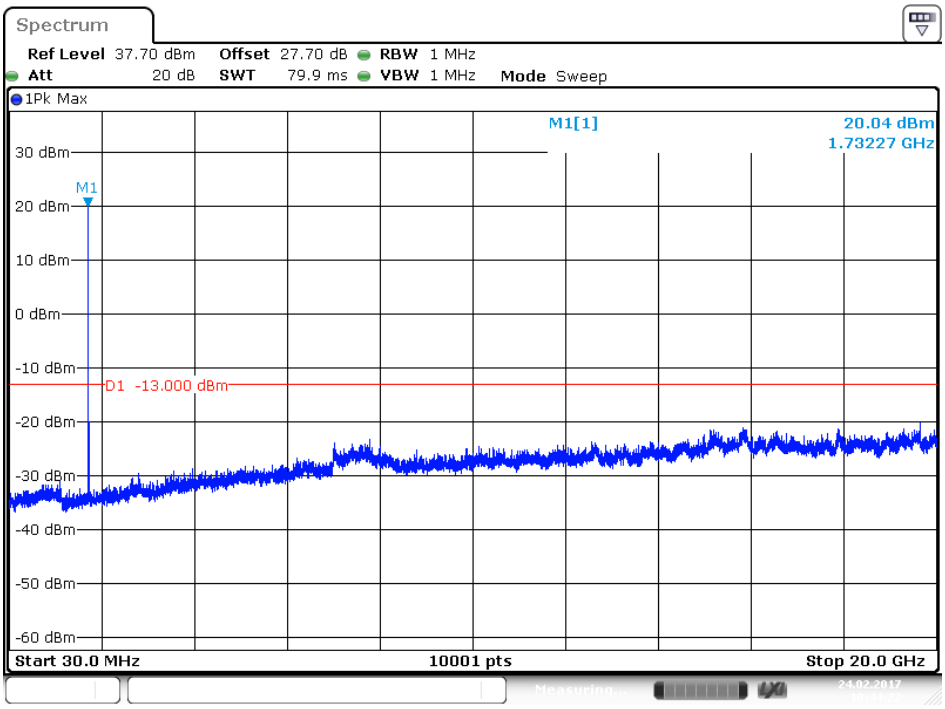
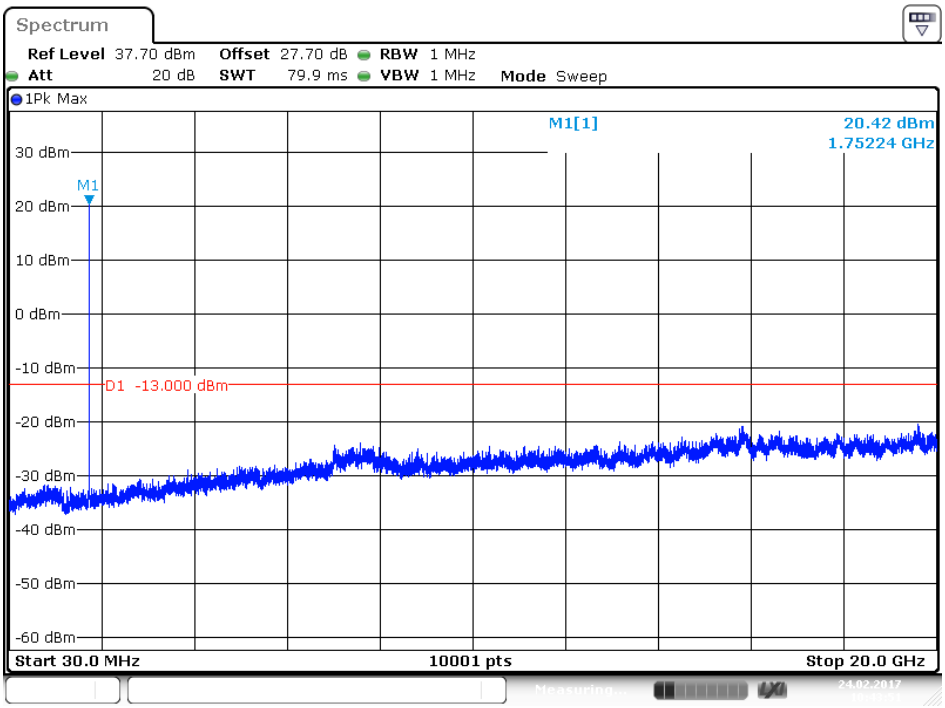
1732.6 MHz



Date: 24.FEB.2017 10:44:22

1752.6 MHz



Date: 24.FEB.2017 10:43:51

7. Radiated Spurious Emission

7.1. Test Equipment

The following test equipments are used during the test:

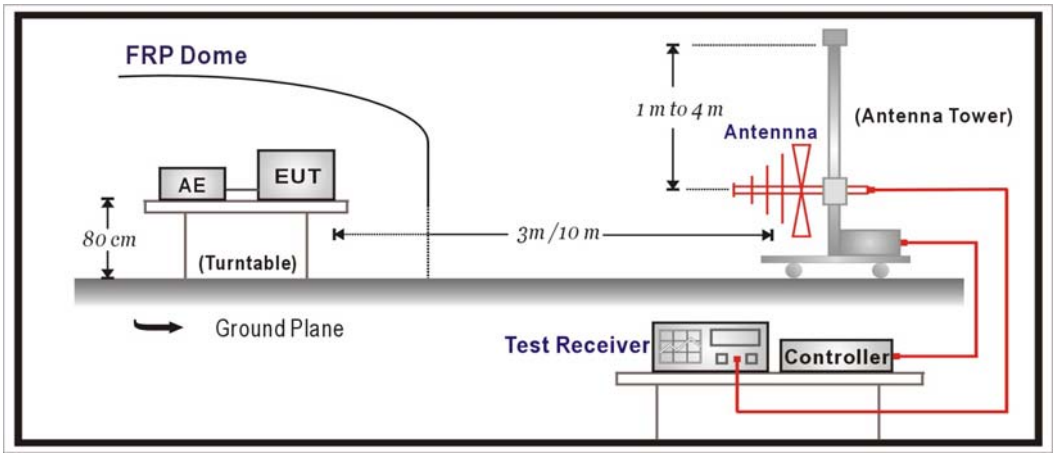
Radiated Emission / CB4-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-001040000-58-5P	1573954	2017/10/04
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

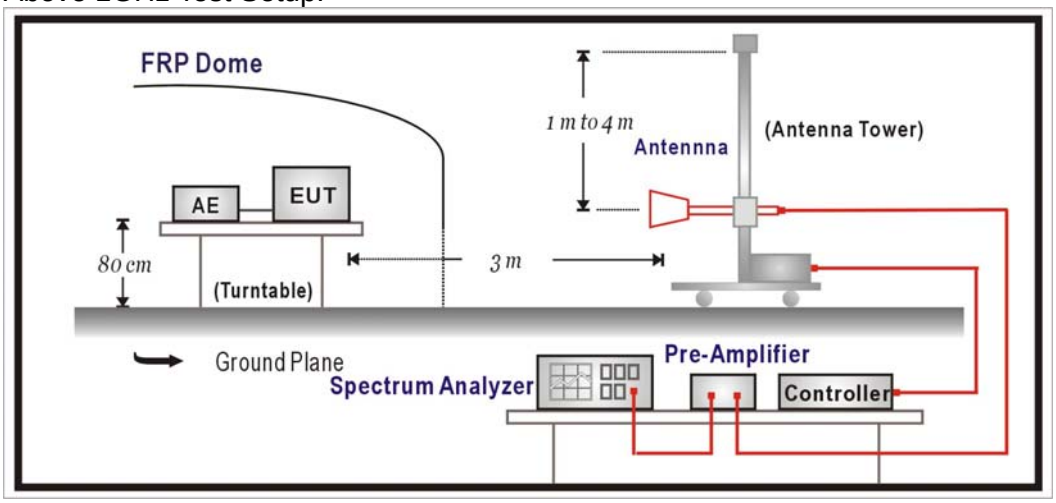
Note: All equipment that need to calibrate are with calibration period of 1 year.

7.2. Test Setup

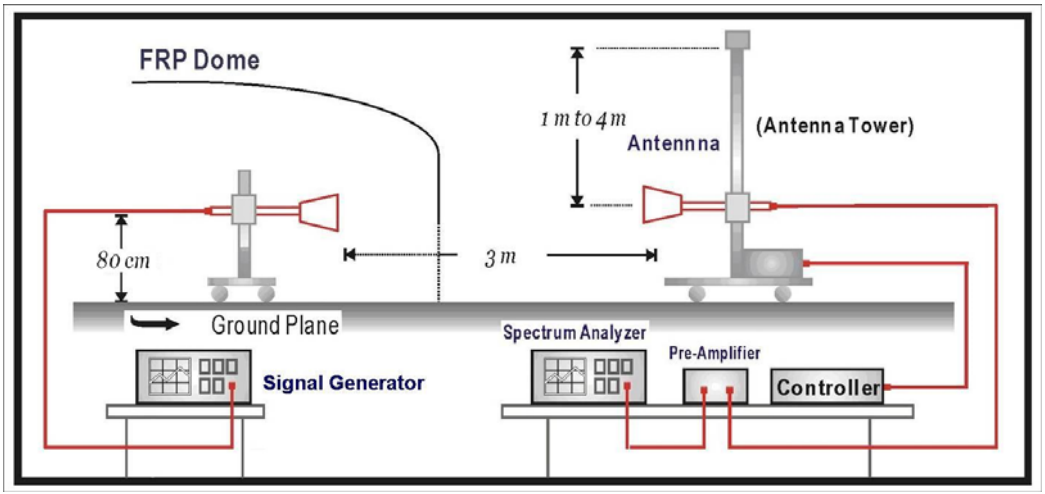
Under 1GHz Test Setup:



Above 1GHz Test Setup:



Substitution Measurement Setup:



7.3. Limits

(1) Fixed and Temporary Fixed Digital Stations: not less than 43 + log (P) dB.
(2) Mobile Digital Stations: not less than 43 + log (P) dB at the channel edge and 55 + log (P) dB at 5.5 MHz from the channel edges.

Sample Calculation:
Assume the EUT Output Power is 2 W = 33 dBm
43 + log (P) dB
43 + log (2) = 46 dB
33 dBm – 46 dB = -13 dBm

55 + log (2) = 58 dB
33 dBm – 58 dB = -25 dBm

7.4. Test Procedure

For measuring E.I.R.P peak power, EUT was placed on the turn-table which was rotated around 360 degrees to search the maximum radiation power and receiver antenna was rotated vertical and horizontal polarization to find the maximum polarization radiated power.

The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission and level of signal generator adjusted to same level of emission. Both horizontal and vertical polarization of the antenna are set on measurement.
On any frequency, the limits shown are based on measuring equipment employing a peak detector function. The resolution bandwidth of spectrum analyzer is 1MHz. and video bandwidth is 3MHz.
The radiated E.I.R.P power was calculated via the Correct factor, Reading Level, and Antenna gain as follows:
E.I.R.P = Reading Level + Correct Factor = S.G. – Cable Loss + Antenna Gain

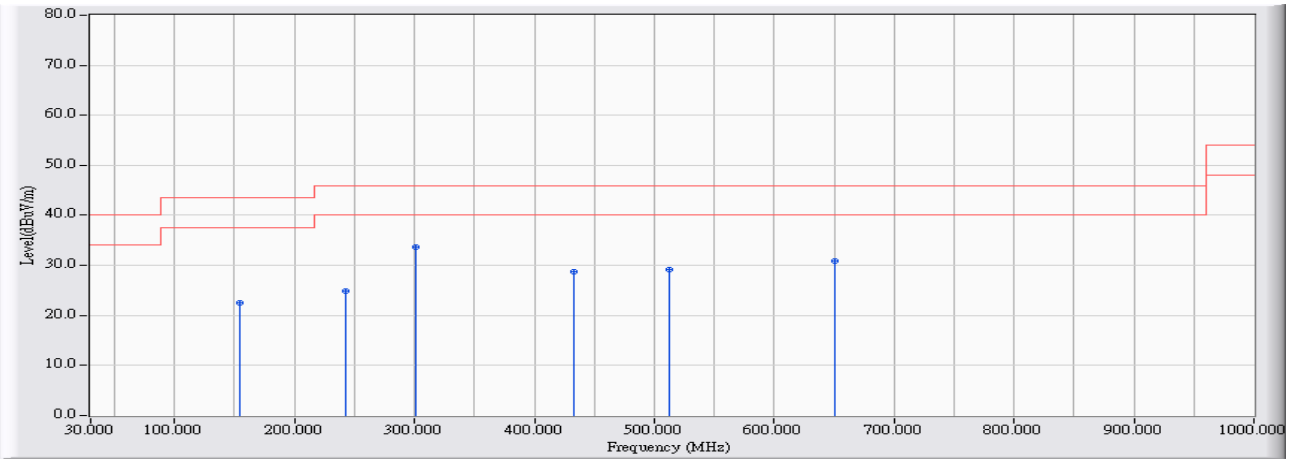
7.5. Uncertainty

The measurement uncertainty
30MHz～1GHz as ±3.19dB
1GHz～27GHz as ±3.9dB

7.6. Test Result

30 MHz - 1 GHz Spurious:

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1732.6MHz**

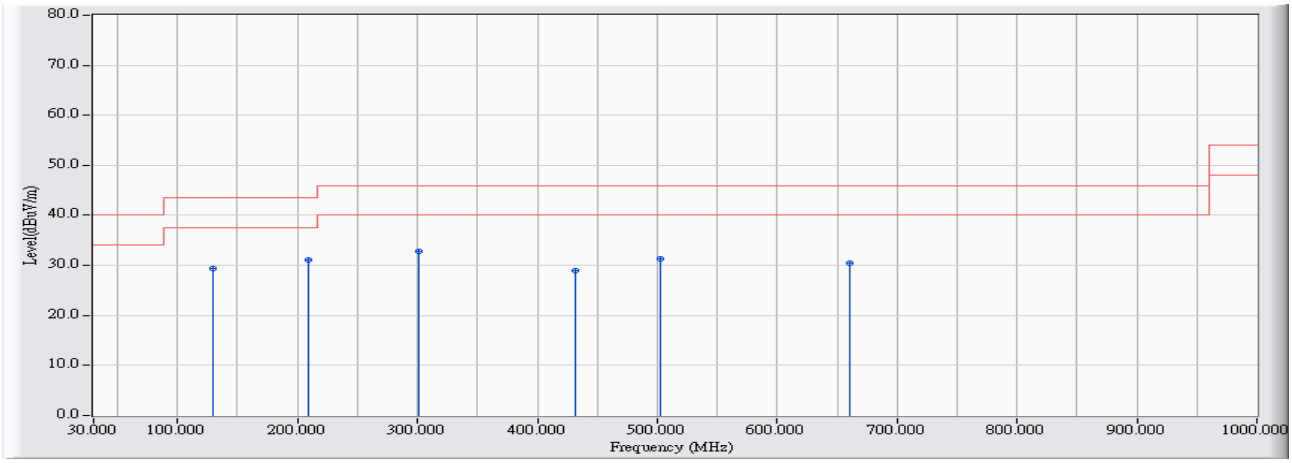


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		153.760	-22.464	45.088	22.623	-20.877	43.500	QUASIPEAK
2		242.603	-20.653	45.623	24.971	-21.029	46.000	QUASIPEAK
3	*	301.573	-19.382	52.996	33.614	-12.386	46.000	QUASIPEAK
4		432.704	-15.406	44.251	28.845	-17.155	46.000	QUASIPEAK
5		513.012	-13.579	42.739	29.160	-16.840	46.000	QUASIPEAK
6		650.835	-12.886	43.774	30.888	-15.112	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link 1732.6MHz**

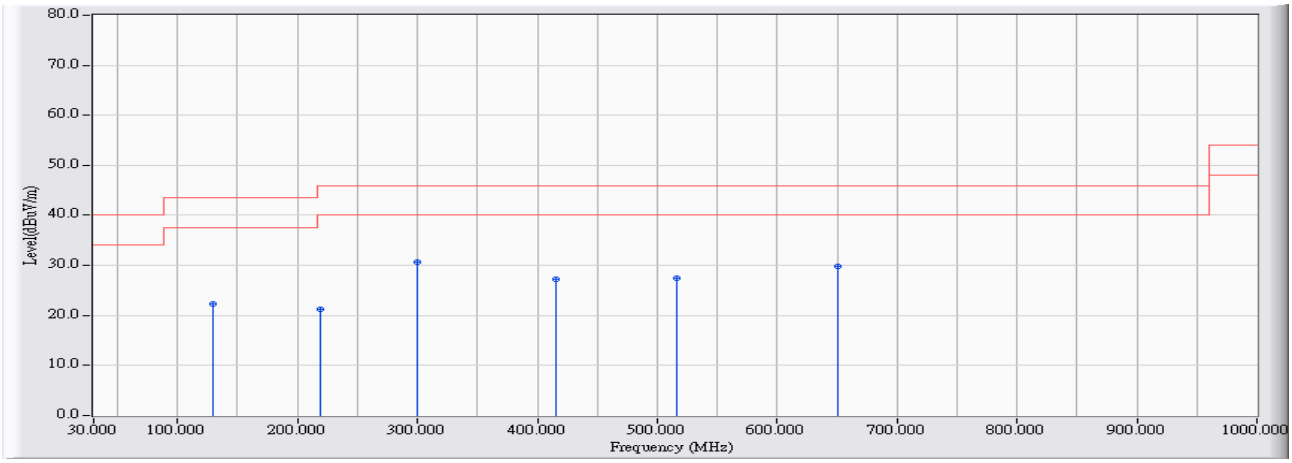


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		129.609	-21.254	50.654	29.400	-14.100	43.500	QUASIPEAK
2	*	209.238	-22.530	53.732	31.202	-12.298	43.500	QUASIPEAK
3		301.573	-19.382	52.095	32.713	-13.287	46.000	QUASIPEAK
4		431.540	-15.442	44.418	28.976	-17.024	46.000	QUASIPEAK
5		501.955	-13.957	45.194	31.237	-14.763	46.000	QUASIPEAK
6		660.534	-12.189	42.589	30.400	-15.600	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1732.6MHz**

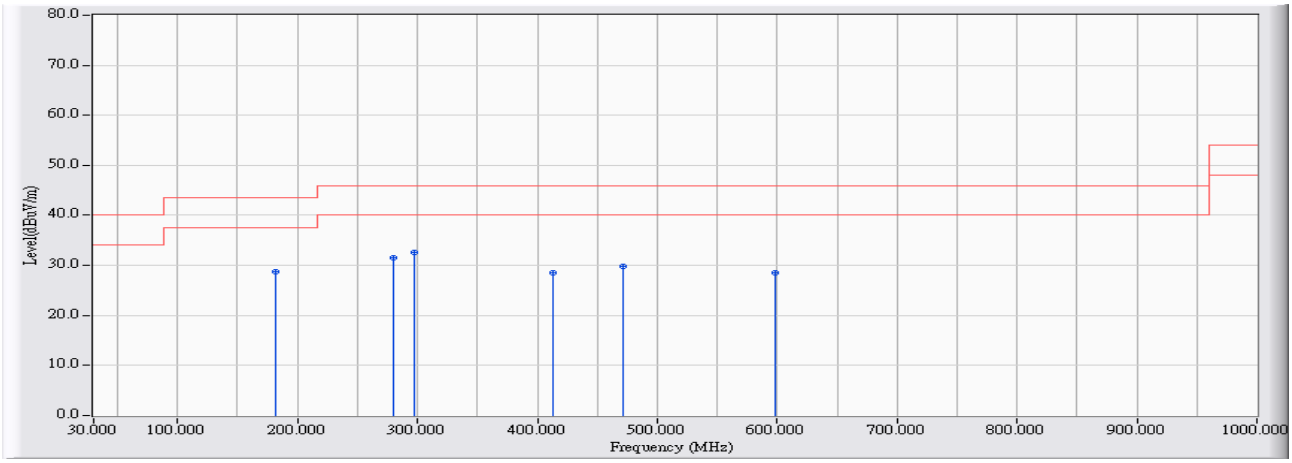


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		129.318	-21.252	43.502	22.251	-21.249	43.500	QUASIPEAK
2		219.325	-22.084	43.399	21.315	-24.685	46.000	QUASIPEAK
3	*	300.021	-19.403	50.105	30.702	-15.298	46.000	QUASIPEAK
4		415.536	-15.700	42.932	27.231	-18.769	46.000	QUASIPEAK
5		515.824	-13.570	41.010	27.440	-18.560	46.000	QUASIPEAK
6		649.962	-12.929	42.838	29.909	-16.091	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1732.6MHz**

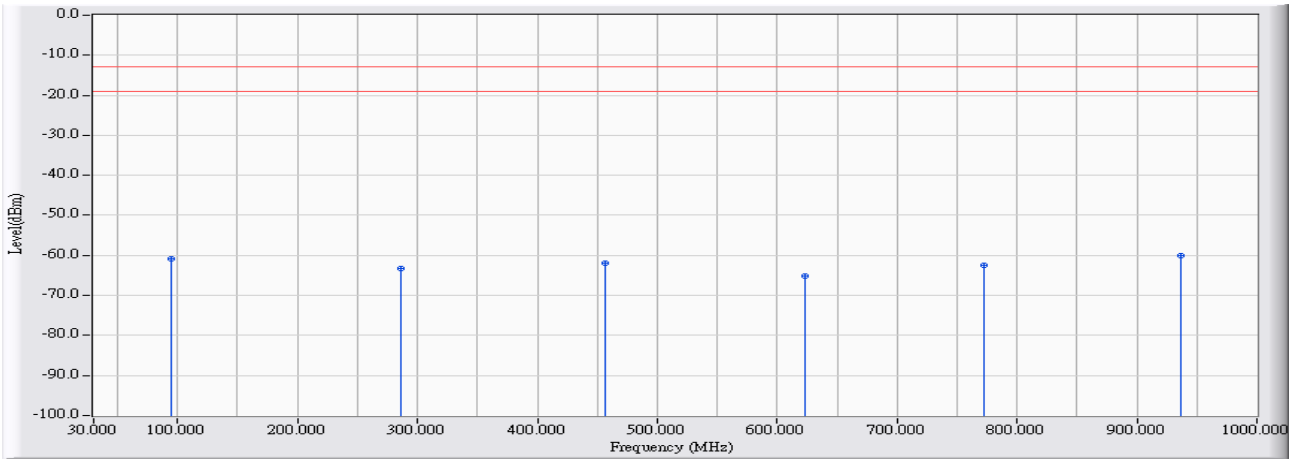


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		182.178	-23.999	52.769	28.770	-14.730	43.500	QUASIPEAK
2		280.041	-19.350	50.923	31.572	-14.428	46.000	QUASIPEAK
3	*	297.499	-19.382	51.973	32.592	-13.408	46.000	QUASIPEAK
4		413.306	-15.625	44.154	28.530	-17.470	46.000	QUASIPEAK
5		470.918	-14.564	44.333	29.769	-16.231	46.000	QUASIPEAK
6		598.848	-12.756	41.190	28.434	-17.566	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Link**

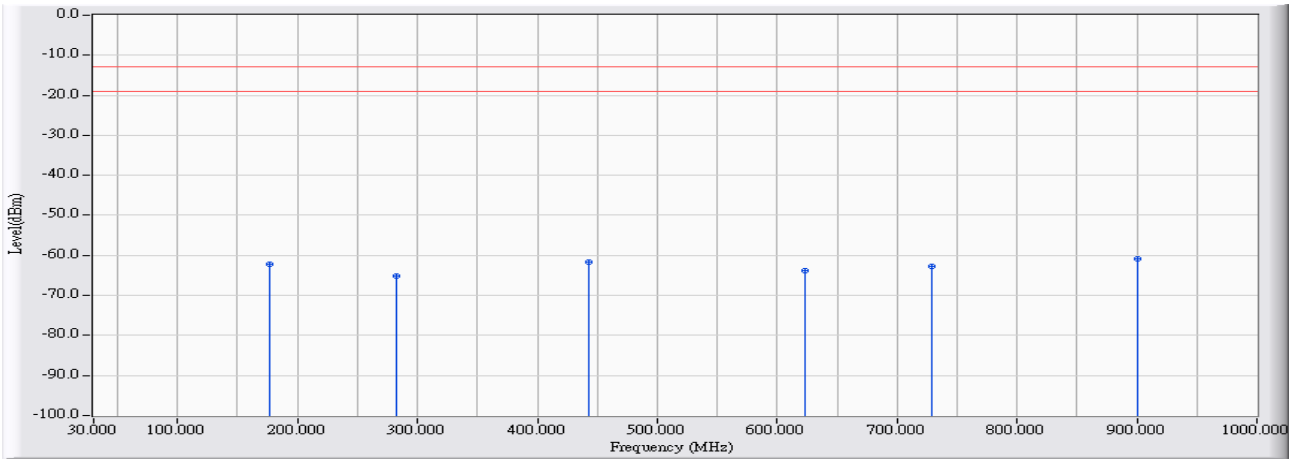


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		94.208	-28.119	-32.844	-60.964	-47.964	-13.000	PEAK
2		285.569	-21.083	-42.193	-63.275	-50.275	-13.000	PEAK
3		456.951	-14.938	-47.055	-61.993	-48.993	-13.000	PEAK
4		622.999	-11.897	-53.122	-65.019	-52.019	-13.000	PEAK
5		772.170	-10.033	-52.536	-62.568	-49.568	-13.000	PEAK
6	*	936.180	-7.789	-52.233	-60.022	-47.022	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Link**

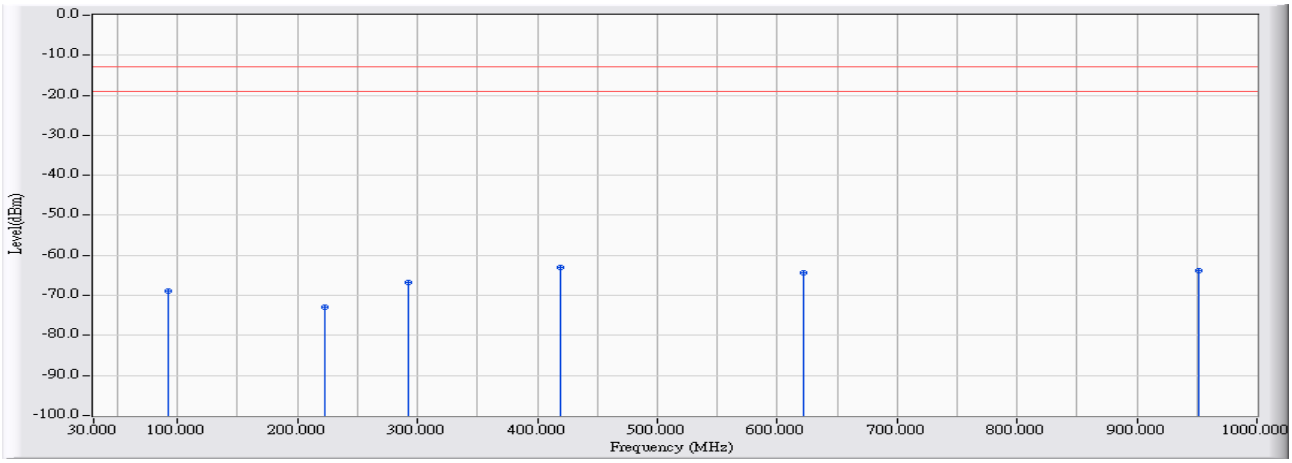


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		176.261	-22.817	-39.383	-62.200	-49.200	-13.000	PEAK
2		281.981	-20.672	-44.433	-65.105	-52.105	-13.000	PEAK
3		442.403	-15.449	-46.288	-61.737	-48.737	-13.000	PEAK
4		623.290	-11.322	-52.539	-63.862	-50.862	-13.000	PEAK
5		728.718	-10.291	-52.316	-62.607	-49.607	-13.000	PEAK
6	*	900.100	-8.774	-52.177	-60.951	-47.951	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Idle**

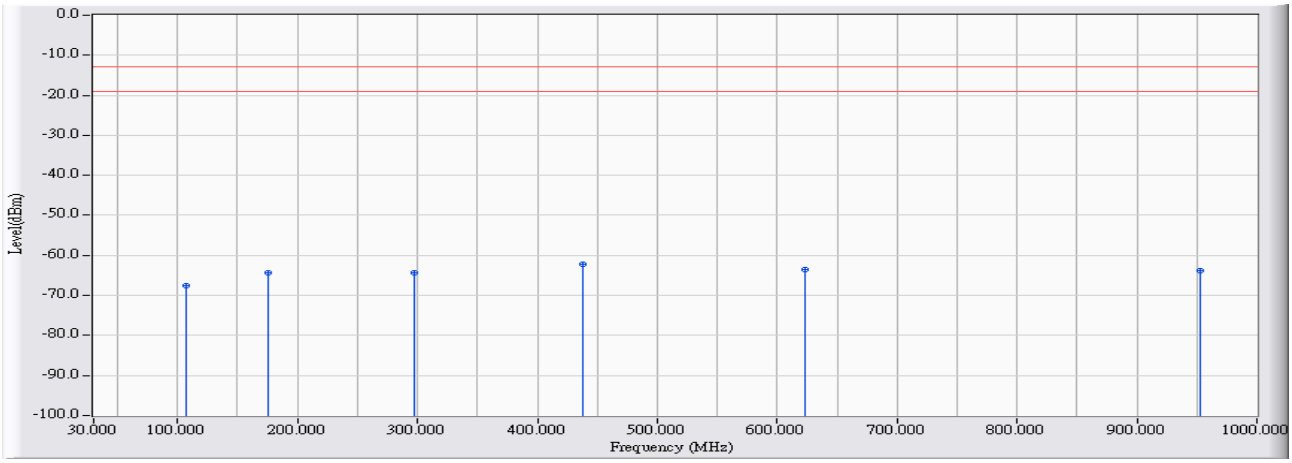


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		91.977	-28.191	-40.727	-68.918	-55.918	-13.000	PEAK
2		223.011	-25.614	-47.288	-72.902	-59.902	-13.000	PEAK
3		292.553	-20.755	-46.108	-66.862	-53.862	-13.000	PEAK
4	*	419.804	-16.270	-46.618	-62.888	-49.888	-13.000	PEAK
5		621.835	-11.854	-52.517	-64.371	-51.371	-13.000	PEAK
6		951.020	-7.443	-56.354	-63.798	-50.798	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Idle**

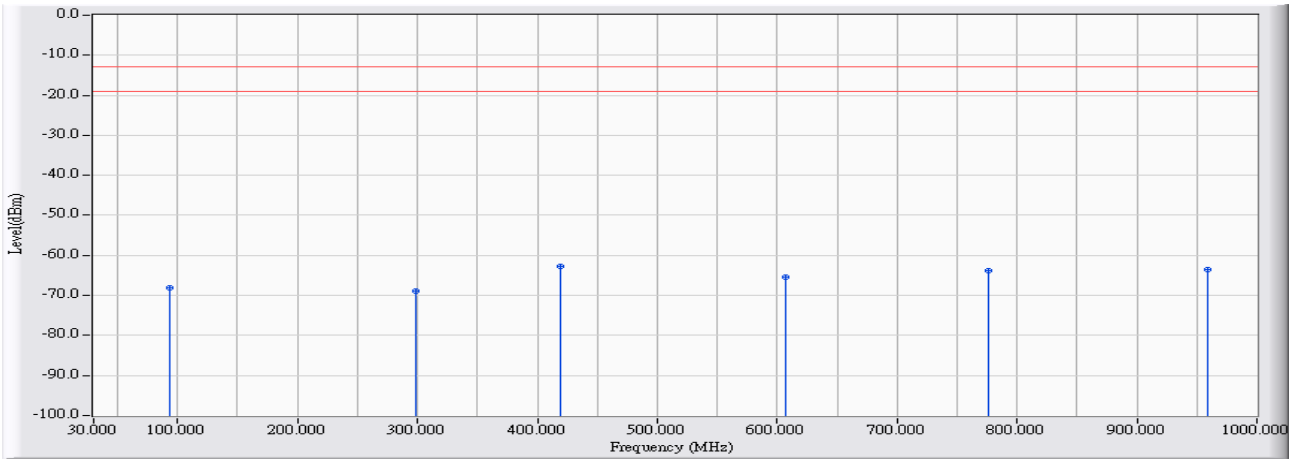


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		107.592	-20.366	-47.197	-67.562	-54.562	-13.000	PEAK
2		175.873	-22.781	-41.561	-64.342	-51.342	-13.000	PEAK
3		296.917	-20.322	-44.023	-64.346	-51.346	-13.000	PEAK
4	*	438.329	-15.660	-46.616	-62.275	-49.275	-13.000	PEAK
5		623.387	-11.326	-52.190	-63.516	-50.516	-13.000	PEAK
6		952.475	-7.518	-56.346	-63.863	-50.863	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1880_HSDPA_Link**

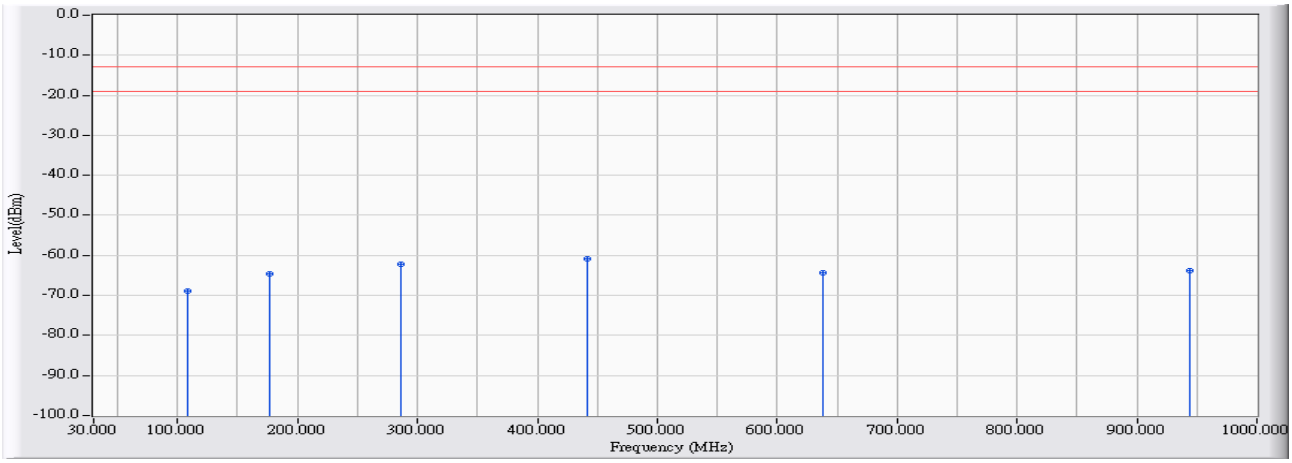


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		92.947	-28.160	-40.004	-68.164	-55.164	-13.000	PEAK
2		298.081	-20.550	-48.395	-68.945	-55.945	-13.000	PEAK
3	*	419.125	-16.247	-46.510	-62.757	-49.757	-13.000	PEAK
4		606.413	-12.341	-52.964	-65.305	-52.305	-13.000	PEAK
5		776.728	-9.599	-54.115	-63.715	-50.715	-13.000	PEAK
6		959.264	-7.921	-55.674	-63.595	-50.595	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1880_HSDPA_Link**

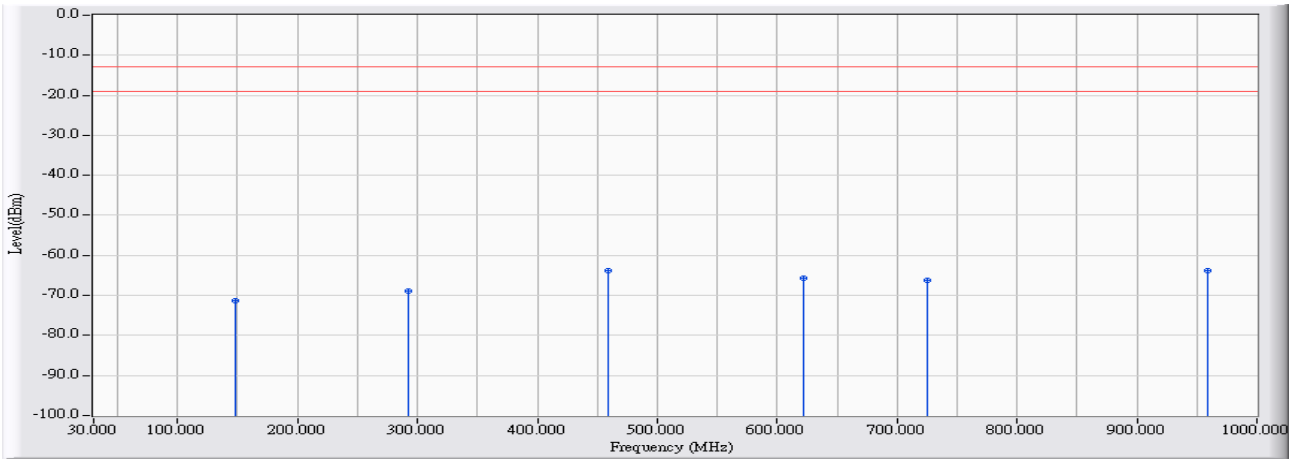


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		108.368	-20.446	-48.373	-68.818	-55.818	-13.000	PEAK
2		176.164	-22.809	-41.837	-64.645	-51.645	-13.000	PEAK
3		286.151	-20.545	-41.619	-62.164	-49.164	-13.000	PEAK
4	*	441.045	-15.532	-45.222	-60.754	-47.754	-13.000	PEAK
5		638.129	-12.094	-52.202	-64.295	-51.295	-13.000	PEAK
6		943.455	-7.435	-56.420	-63.855	-50.855	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Idle**

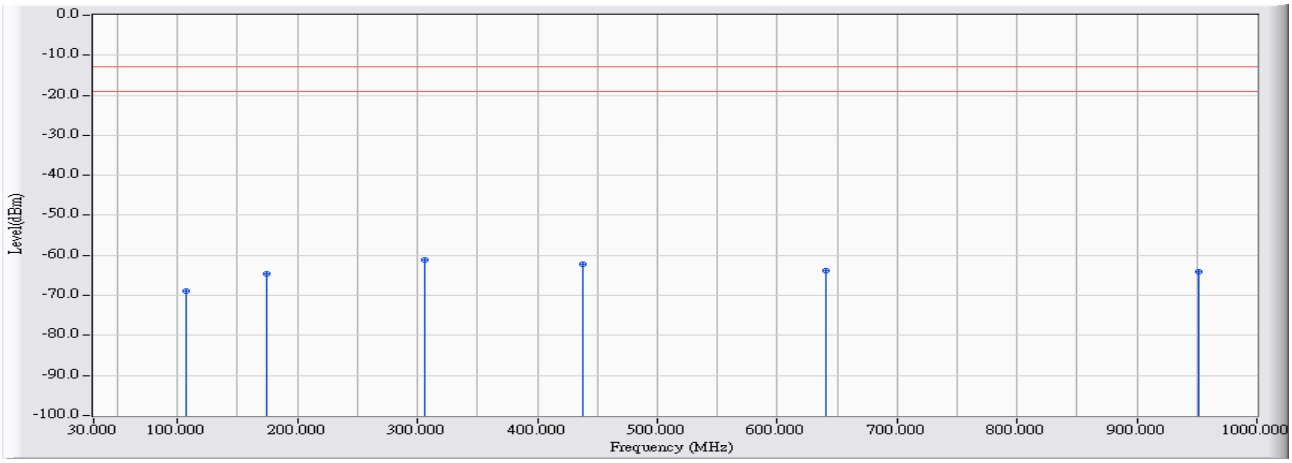


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		147.649	-28.094	-43.328	-71.422	-58.422	-13.000	PEAK
2		292.068	-20.772	-48.150	-68.922	-55.922	-13.000	PEAK
3	*	459.376	-14.893	-48.893	-63.786	-50.786	-13.000	PEAK
4		622.417	-11.876	-53.934	-65.810	-52.810	-13.000	PEAK
5		725.614	-10.835	-55.443	-66.278	-53.278	-13.000	PEAK
6		958.779	-7.894	-55.956	-63.849	-50.849	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part22/24_00M_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_S2_30M-1GHz_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Idle**



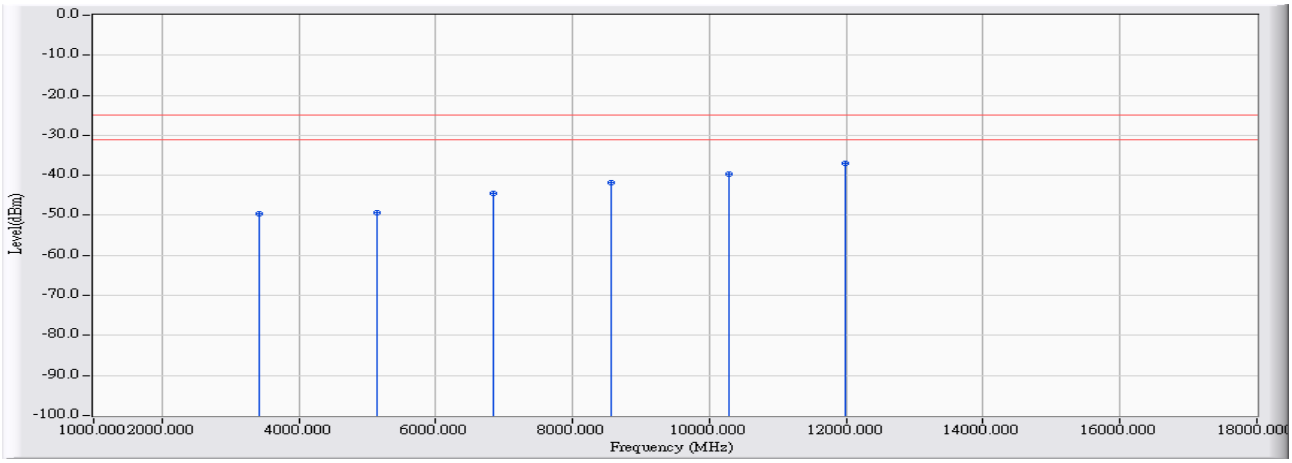
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		107.592	-20.366	-48.518	-68.883	-55.883	-13.000	PEAK
2		174.225	-22.694	-42.033	-64.726	-51.726	-13.000	PEAK
3	*	305.743	-20.171	-40.882	-61.052	-48.052	-13.000	PEAK
4		438.329	-15.660	-46.583	-62.242	-49.242	-13.000	PEAK
5		640.166	-12.214	-51.682	-63.896	-50.896	-13.000	PEAK
6		951.602	-7.469	-56.602	-64.070	-51.070	-13.000	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Harmonic & Spurious:

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1712.4MHz**

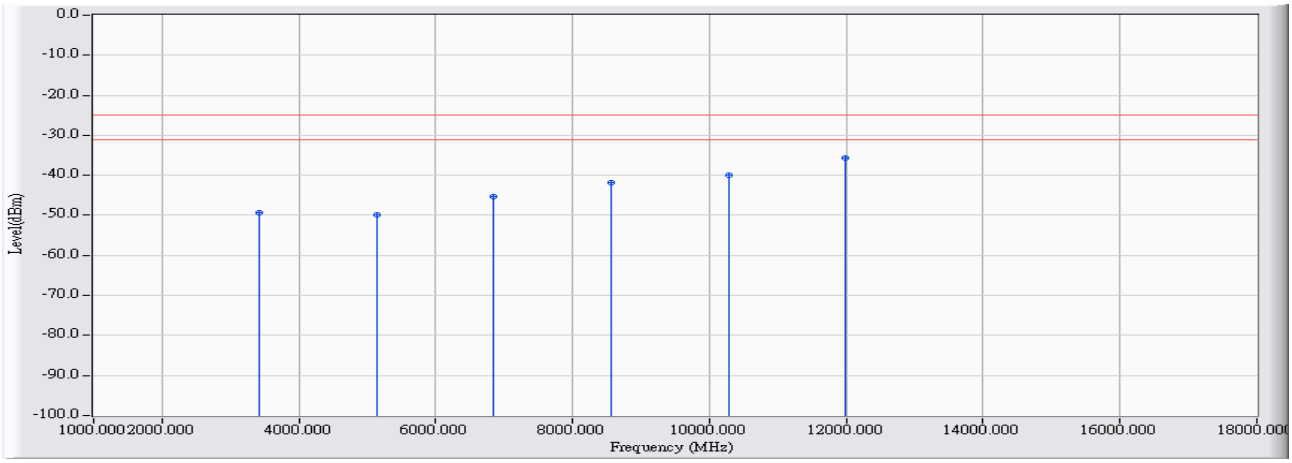


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.946	-67.490	-49.543	-24.543	-25.000	PEAK
2		5137.200	20.368	-69.630	-49.262	-24.262	-25.000	PEAK
3		6849.600	25.503	-69.880	-44.377	-19.377	-25.000	PEAK
4		8562.000	27.718	-69.530	-41.812	-16.812	-25.000	PEAK
5		10274.400	29.907	-69.520	-39.613	-14.613	-25.000	PEAK
6	*	11986.800	31.781	-68.790	-37.009	-12.009	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1712.4MHz**

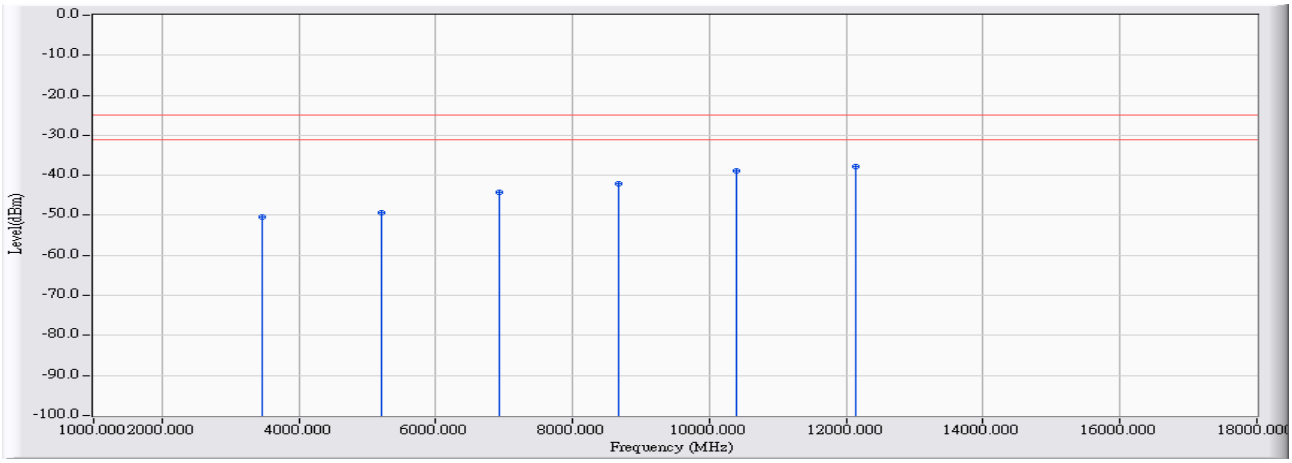


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.681	-68.040	-49.359	-24.359	-25.000	PEAK
2		5137.200	20.058	-69.890	-49.832	-24.832	-25.000	PEAK
3		6849.600	24.252	-69.660	-45.408	-20.408	-25.000	PEAK
4		8562.000	27.831	-69.780	-41.949	-16.949	-25.000	PEAK
5		10274.400	29.837	-69.850	-40.013	-15.013	-25.000	PEAK
6	*	11986.800	33.192	-68.810	-35.618	-10.618	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1732.6MHz**

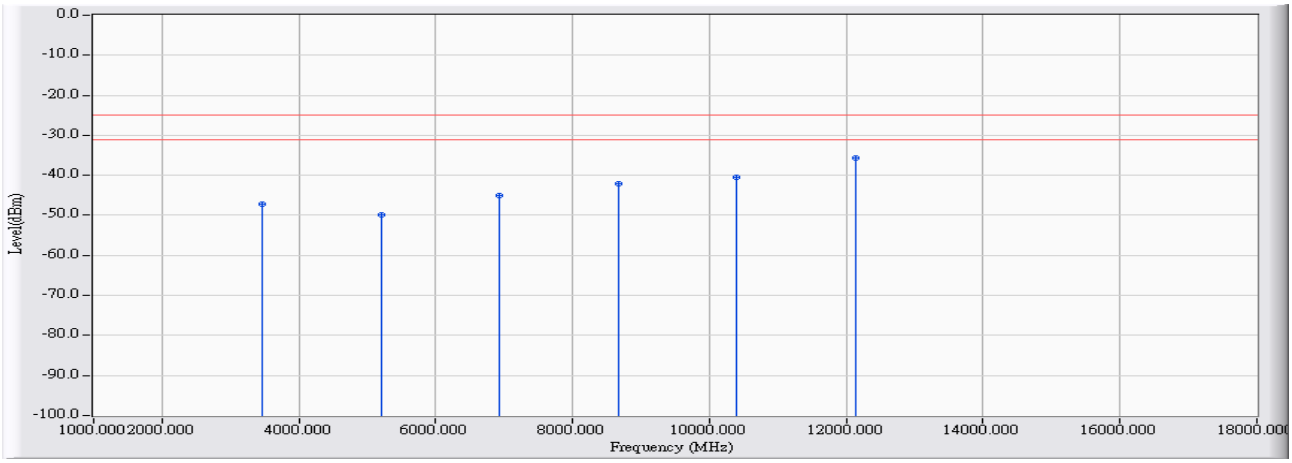


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.053	-68.480	-50.427	-25.427	-25.000	PEAK
2		5197.800	20.410	-69.700	-49.290	-24.290	-25.000	PEAK
3		6930.400	25.752	-69.970	-44.218	-19.218	-25.000	PEAK
4		8663.000	27.955	-70.060	-42.104	-17.104	-25.000	PEAK
5		10395.600	30.189	-69.080	-38.892	-13.892	-25.000	PEAK
6	*	12128.200	32.099	-69.860	-37.760	-12.760	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1732.6MHz**

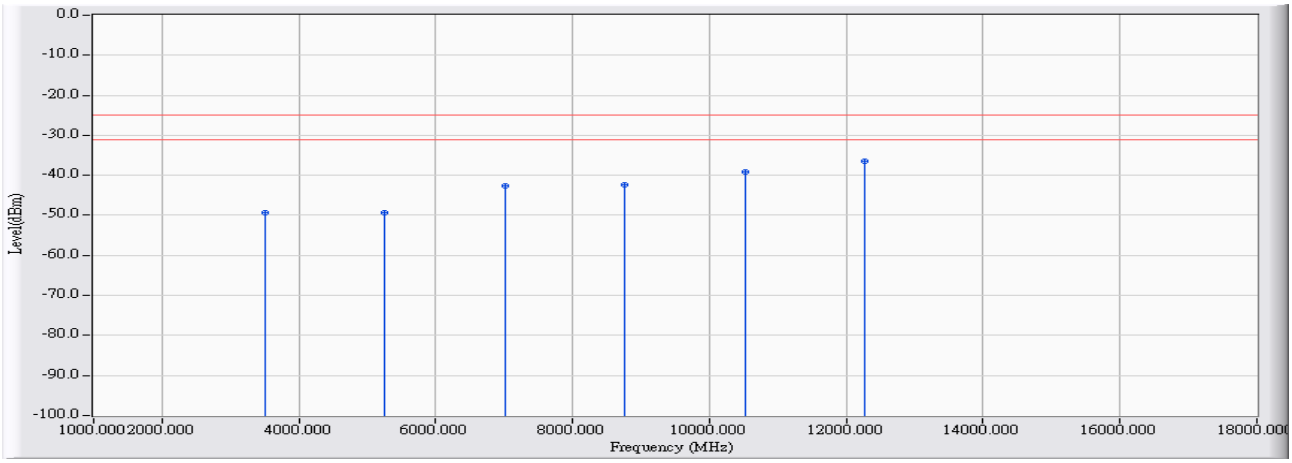


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.835	-65.950	-47.115	-22.115	-25.000	PEAK
2		5197.800	20.127	-69.910	-49.783	-24.783	-25.000	PEAK
3		6930.400	24.330	-69.380	-45.051	-20.051	-25.000	PEAK
4		8663.000	28.252	-70.350	-42.098	-17.098	-25.000	PEAK
5		10395.600	29.748	-70.140	-40.393	-15.393	-25.000	PEAK
6	*	12128.200	33.614	-69.310	-35.696	-10.696	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1752.6MHz**

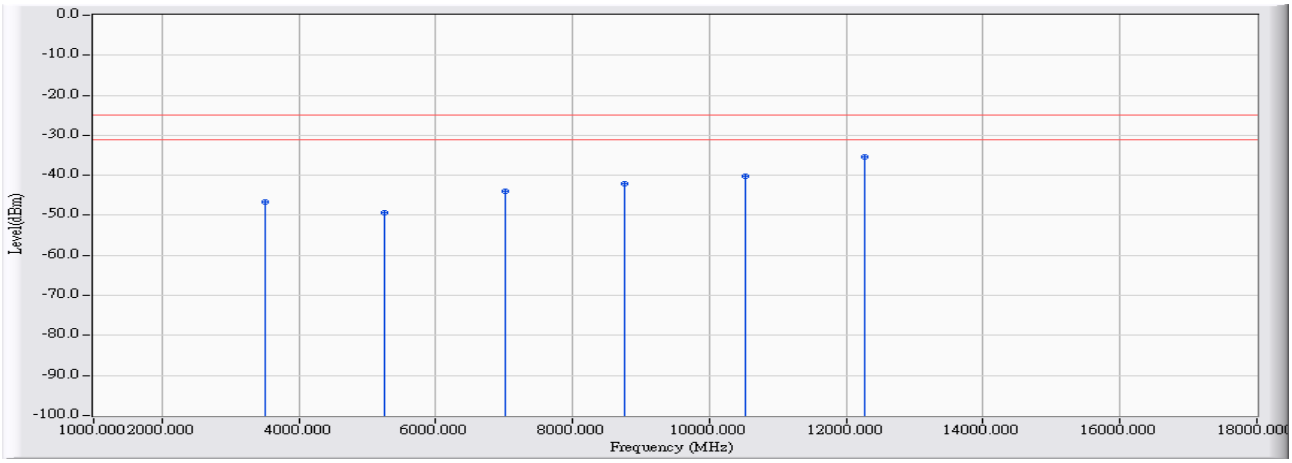


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.158	-67.530	-49.372	-24.372	-25.000	PEAK
2		5257.800	20.452	-69.870	-49.418	-24.418	-25.000	PEAK
3		7010.400	25.972	-68.600	-42.628	-17.628	-25.000	PEAK
4		8763.000	28.191	-70.520	-42.329	-17.329	-25.000	PEAK
5		10515.600	30.462	-69.630	-39.168	-14.168	-25.000	PEAK
6	*	12268.200	32.464	-69.000	-36.536	-11.536	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 1: WCDMA Band 4_Link Mode 1752.6MHz**

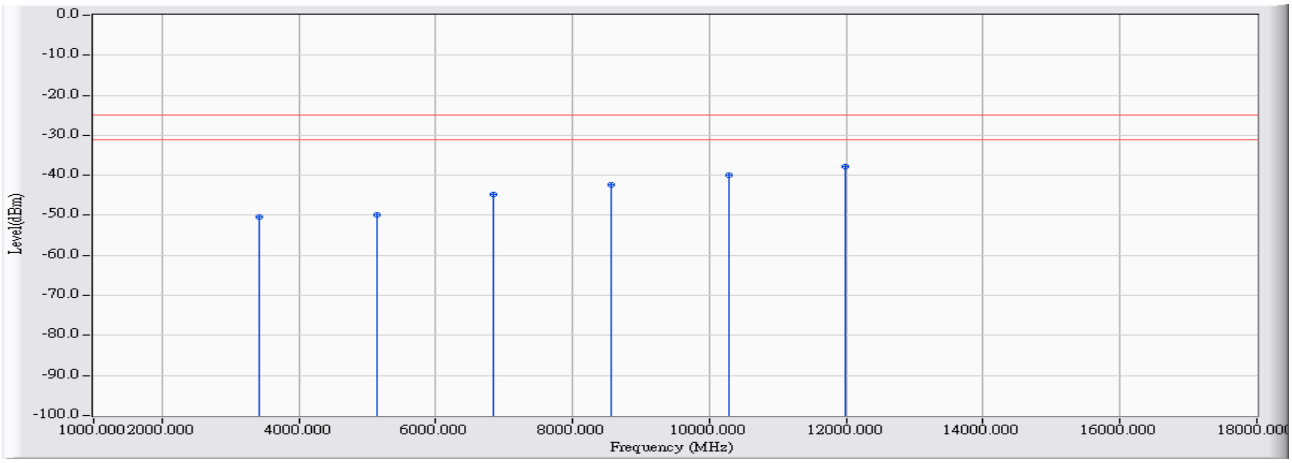


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.981	-65.600	-46.620	-21.620	-25.000	PEAK
2		5257.800	20.195	-69.440	-49.245	-24.245	-25.000	PEAK
3		7010.400	24.437	-68.300	-43.863	-18.863	-25.000	PEAK
4		8763.000	28.669	-70.710	-42.040	-17.040	-25.000	PEAK
5		10515.600	29.682	-69.890	-40.208	-15.208	-25.000	PEAK
6	*	12268.200	34.048	-69.490	-35.442	-10.442	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1712.4MHz**

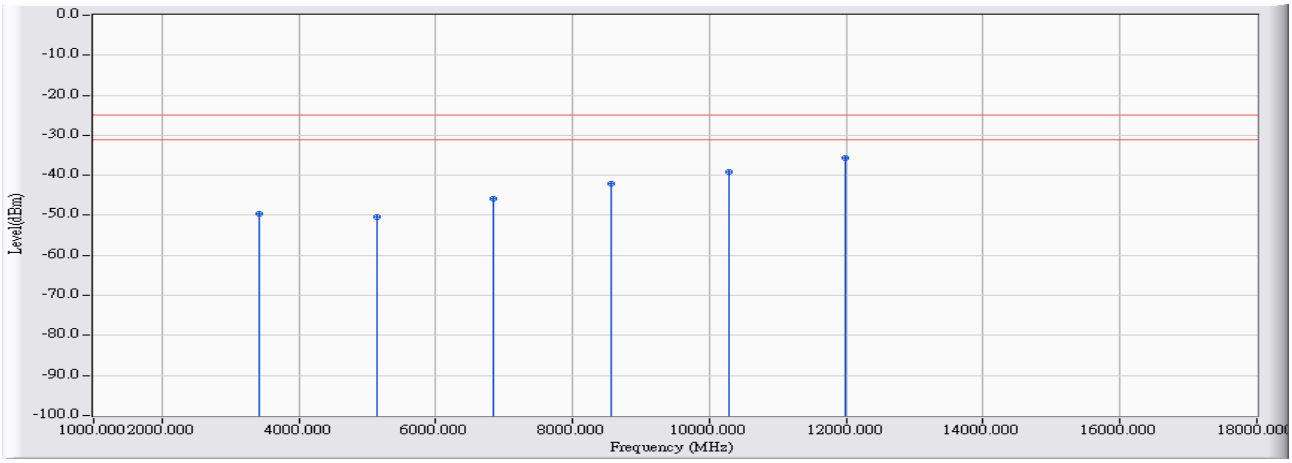


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.946	-68.250	-50.303	-25.303	-25.000	PEAK
2		5137.200	20.368	-70.350	-49.982	-24.982	-25.000	PEAK
3		6849.600	25.503	-70.340	-44.837	-19.837	-25.000	PEAK
4		8562.000	27.718	-70.170	-42.452	-17.452	-25.000	PEAK
5		10274.400	29.907	-69.720	-39.813	-14.813	-25.000	PEAK
6	*	11986.800	31.781	-69.630	-37.849	-12.849	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1712.4MHz**

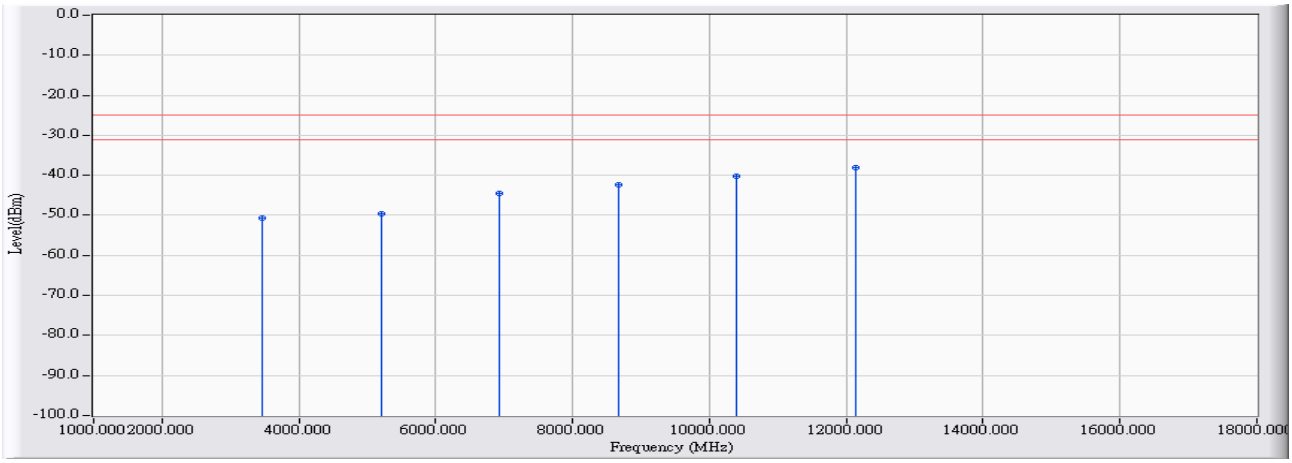


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.681	-68.350	-49.669	-24.669	-25.000	PEAK
2		5137.200	20.058	-70.530	-50.472	-25.472	-25.000	PEAK
3		6849.600	24.252	-70.170	-45.918	-20.918	-25.000	PEAK
4		8562.000	27.831	-70.030	-42.199	-17.199	-25.000	PEAK
5		10274.400	29.837	-68.950	-39.113	-14.113	-25.000	PEAK
6	*	11986.800	33.192	-68.950	-35.758	-10.758	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1732.6MHz**

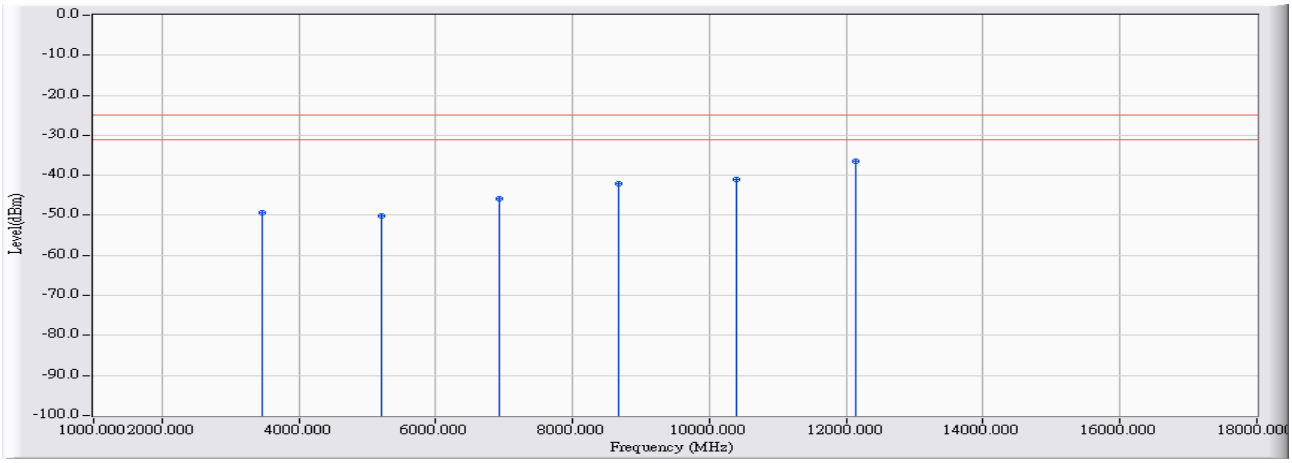


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.053	-68.800	-50.747	-25.747	-25.000	PEAK
2		5197.800	20.410	-69.890	-49.480	-24.480	-25.000	PEAK
3		6930.400	25.752	-70.380	-44.628	-19.628	-25.000	PEAK
4		8663.000	27.955	-70.310	-42.354	-17.354	-25.000	PEAK
5		10395.600	30.189	-70.490	-40.302	-15.302	-25.000	PEAK
6	*	12128.200	32.099	-70.170	-38.070	-13.070	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1732.6MHz**

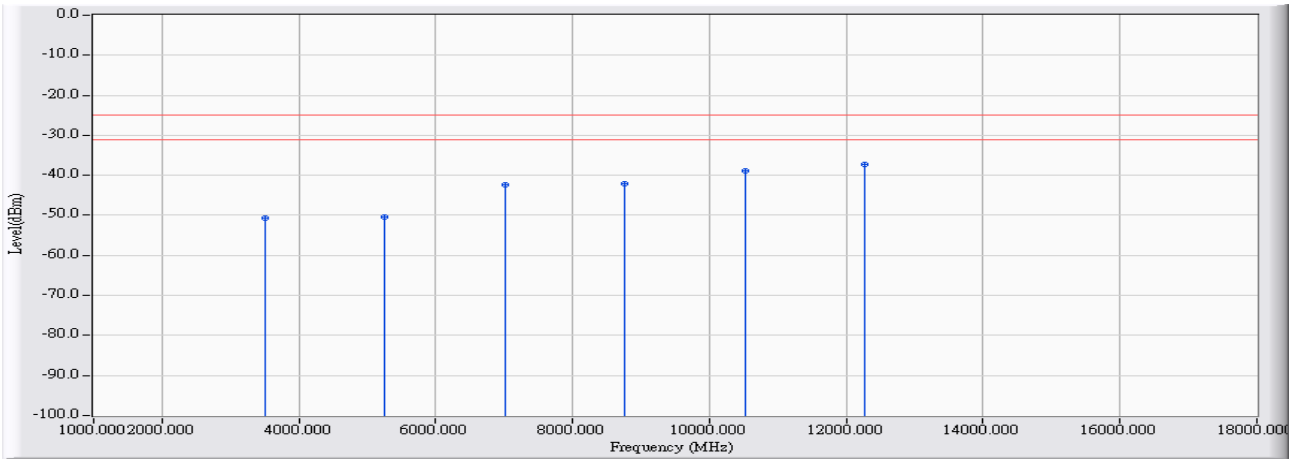


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.835	-68.240	-49.405	-24.405	-25.000	PEAK
2		5197.800	20.127	-70.140	-50.013	-25.013	-25.000	PEAK
3		6930.400	24.330	-70.150	-45.821	-20.821	-25.000	PEAK
4		8663.000	28.252	-70.380	-42.128	-17.128	-25.000	PEAK
5		10395.600	29.748	-70.650	-40.903	-15.903	-25.000	PEAK
6	*	12128.200	33.614	-69.960	-36.346	-11.346	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1752.6MHz**

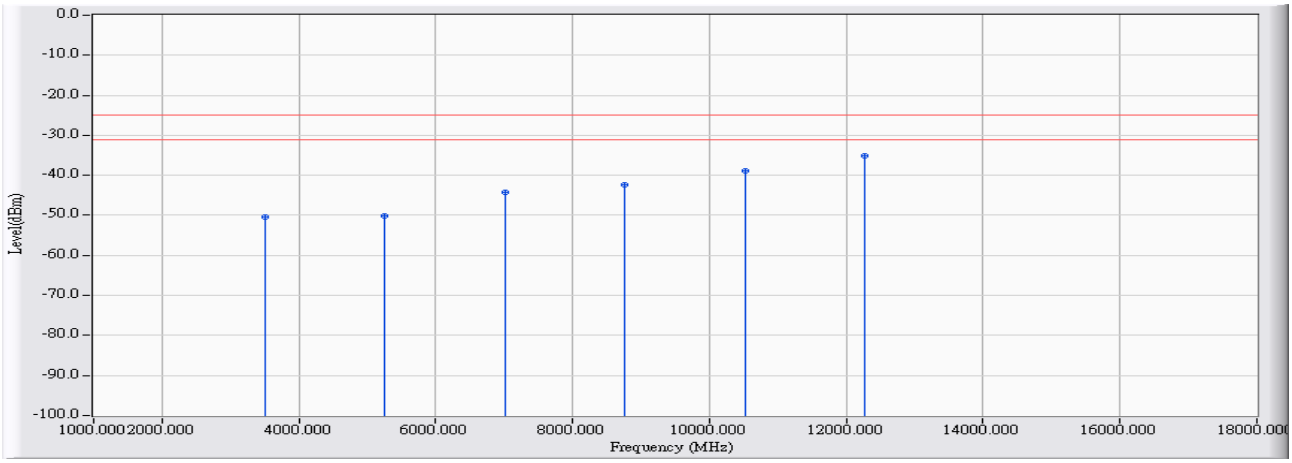


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.158	-68.770	-50.612	-25.612	-25.000	PEAK
2		5257.800	20.452	-70.730	-50.278	-25.278	-25.000	PEAK
3		7010.400	25.972	-68.300	-42.328	-17.328	-25.000	PEAK
4		8763.000	28.191	-70.210	-42.019	-17.019	-25.000	PEAK
5		10515.600	30.462	-69.340	-38.878	-13.878	-25.000	PEAK
6	*	12268.200	32.464	-69.790	-37.326	-12.326	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/04**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4-H_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 2: WCDMA Band 4_Idle Mode 1752.6MHz**

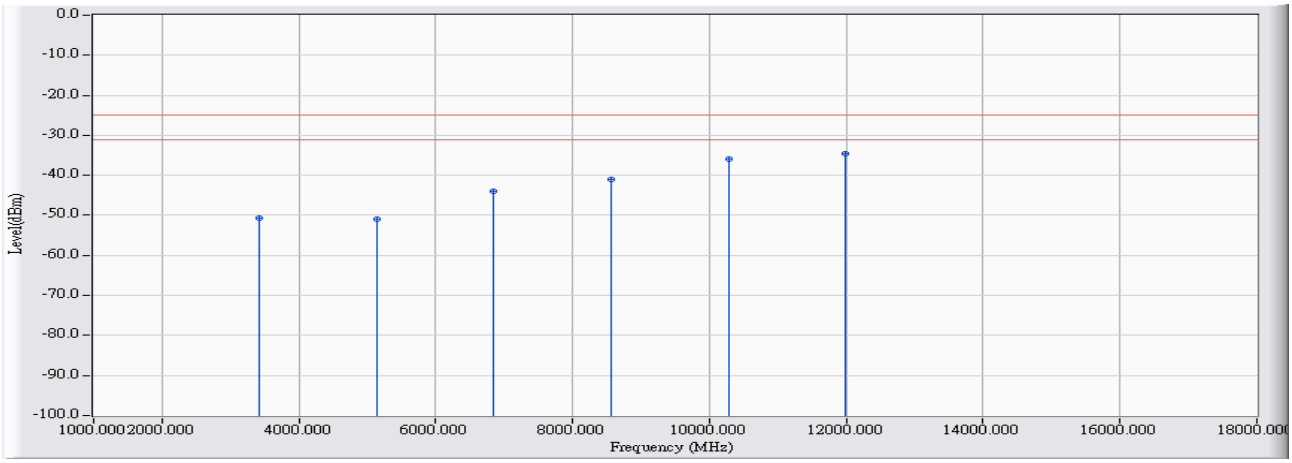


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.981	-69.280	-50.300	-25.300	-25.000	PEAK
2		5257.800	20.195	-70.430	-50.235	-25.235	-25.000	PEAK
3		7010.400	24.437	-68.690	-44.253	-19.253	-25.000	PEAK
4		8763.000	28.669	-71.140	-42.470	-17.470	-25.000	PEAK
5		10515.600	29.682	-68.680	-38.998	-13.998	-25.000	PEAK
6	*	12268.200	34.048	-69.270	-35.222	-10.222	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1712.4_HSUPA_Link**



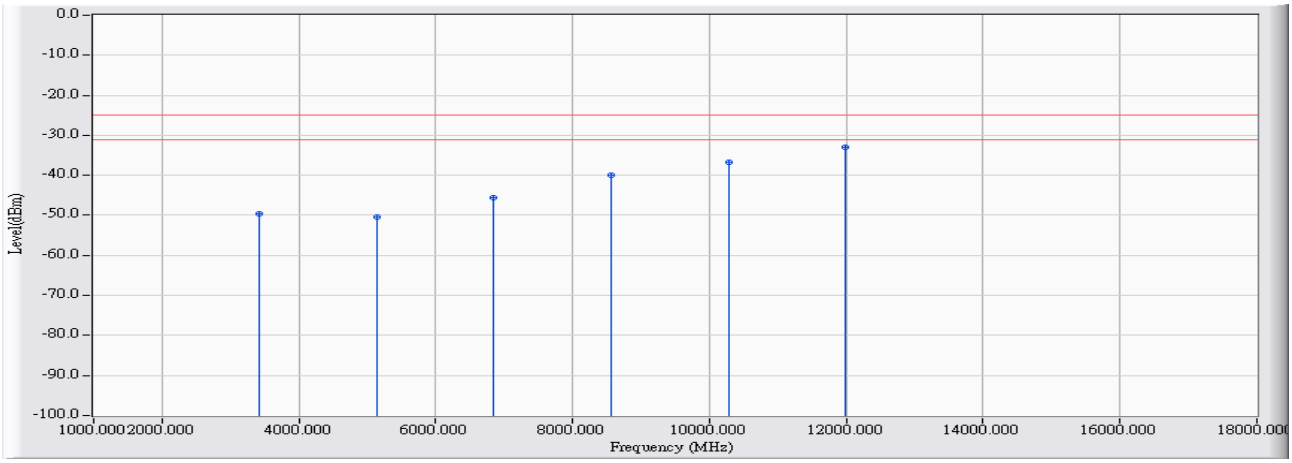
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.529	-68.250	-50.720	-25.720	-25.000	PEAK
2		5137.200	20.315	-71.180	-50.865	-25.865	-25.000	PEAK
3		6849.600	26.912	-71.010	-44.099	-19.099	-25.000	PEAK
4		8562.000	30.527	-71.440	-40.913	-15.913	-25.000	PEAK
5		10274.400	34.070	-69.980	-35.911	-10.911	-25.000	PEAK
6	*	11986.800	35.477	-70.060	-34.583	-9.583	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1712.4_HSUPA_Link**

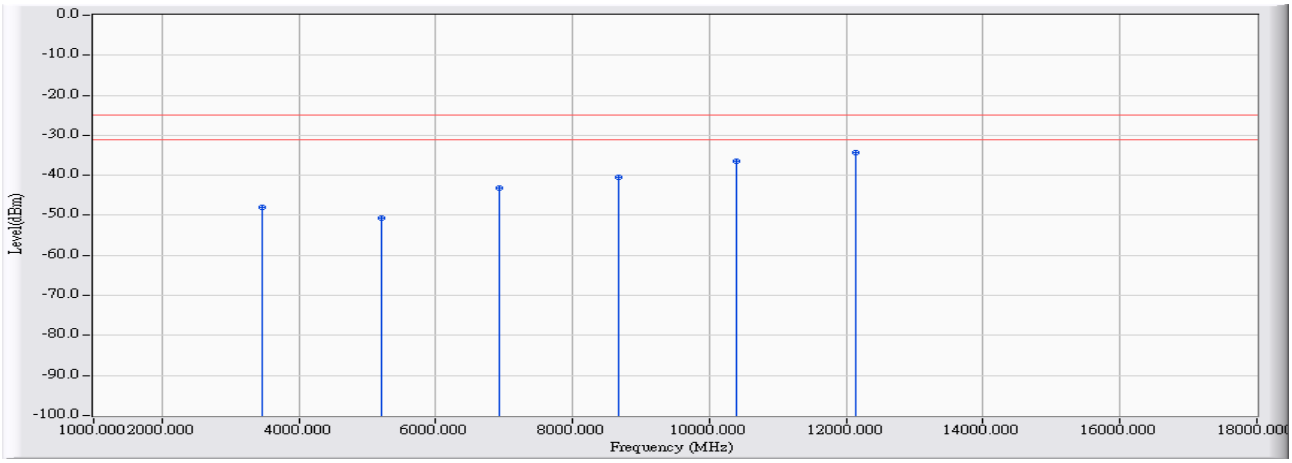


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.264	-67.870	-49.606	-24.606	-25.000	PEAK
2		5137.200	20.005	-70.460	-50.454	-25.454	-25.000	PEAK
3		6849.600	25.661	-71.180	-45.520	-20.520	-25.000	PEAK
4		8562.000	30.640	-70.560	-39.920	-14.920	-25.000	PEAK
5		10274.400	34.000	-70.670	-36.670	-11.670	-25.000	PEAK
6	*	11986.800	36.888	-69.890	-33.002	-8.002	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Link**

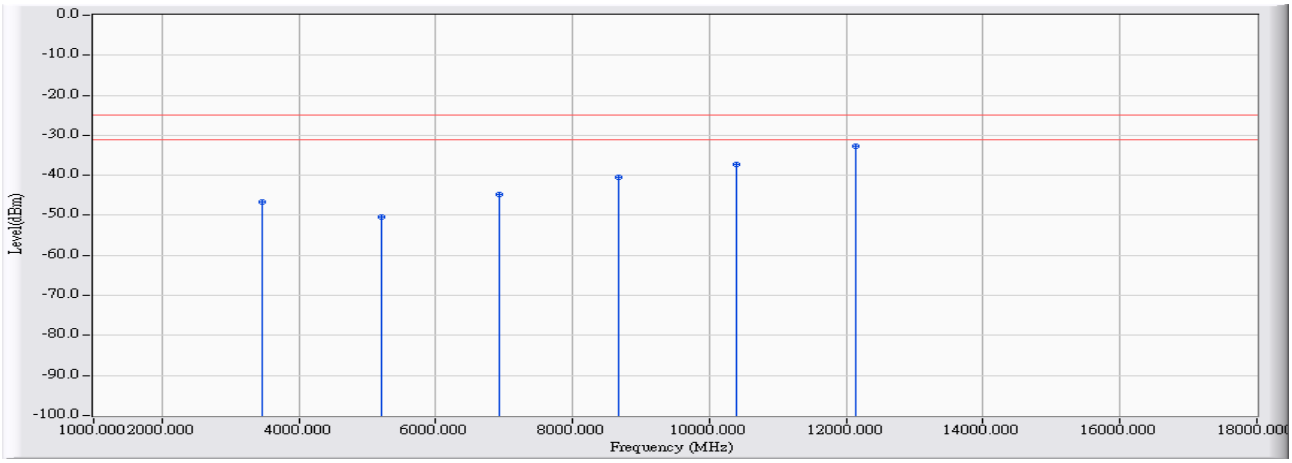


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	17.629	-65.610	-47.981	-22.981	-25.000	PEAK
2		5197.800	20.384	-71.180	-50.797	-25.797	-25.000	PEAK
3		6930.400	27.253	-70.480	-43.228	-18.228	-25.000	PEAK
4		8663.000	30.958	-71.450	-40.492	-15.492	-25.000	PEAK
5		10385.600	34.247	-70.660	-36.413	-11.413	-25.000	PEAK
6	*	12128.200	35.717	-69.900	-34.183	-9.183	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Link**

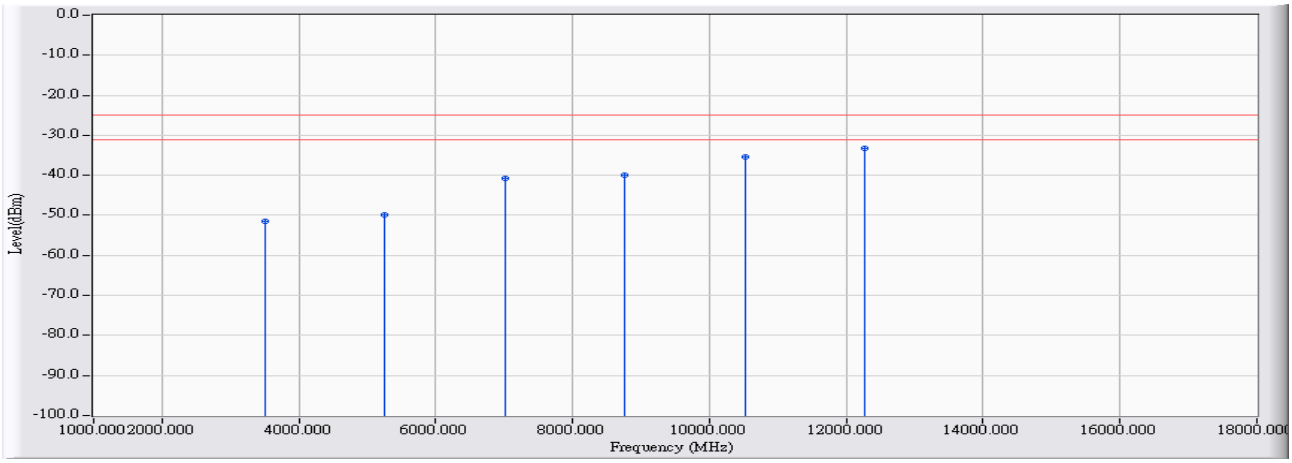


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.411	-65.140	-46.729	-21.729	-25.000	PEAK
2		5197.800	20.101	-70.570	-50.470	-25.470	-25.000	PEAK
3		6930.400	25.831	-70.470	-44.640	-19.640	-25.000	PEAK
4		8663.000	31.255	-71.660	-40.405	-15.405	-25.000	PEAK
5		10395.600	33.823	-71.210	-37.388	-12.388	-25.000	PEAK
6	*	12128.200	37.232	-69.930	-32.699	-7.699	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1752.6_HSUPA_Link**

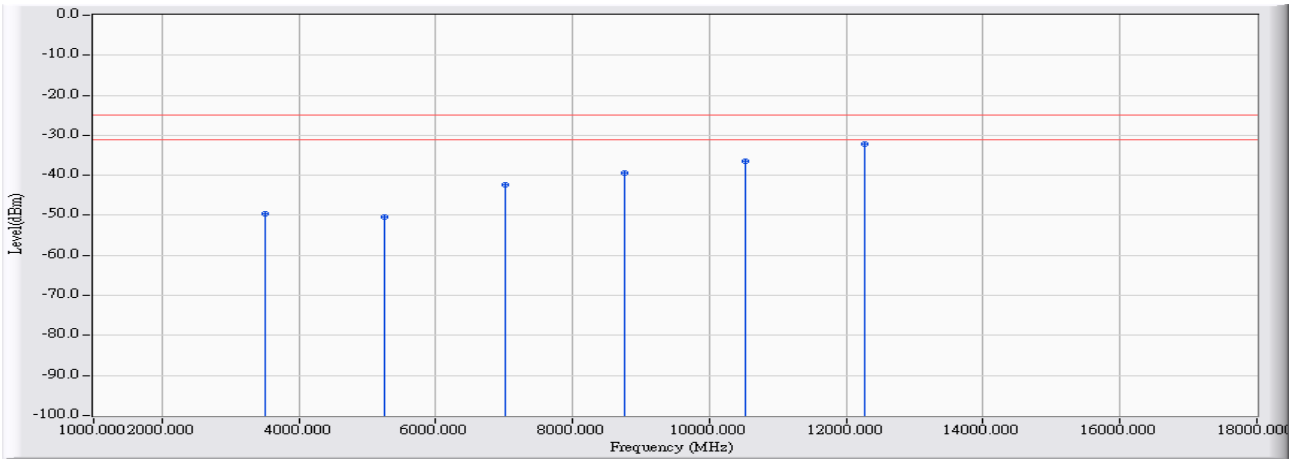


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	17.728	-69.290	-51.562	-26.562	-25.000	PEAK
2		5257.800	20.451	-70.440	-49.990	-24.990	-25.000	PEAK
3		7010.400	27.562	-68.310	-40.748	-15.748	-25.000	PEAK
4		8763.000	31.386	-71.370	-39.984	-14.984	-25.000	PEAK
5		10515.600	34.454	-69.720	-35.266	-10.266	-25.000	PEAK
6	*	12268.200	35.981	-69.240	-33.259	-8.259	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1752.6_HSUPA_Link**

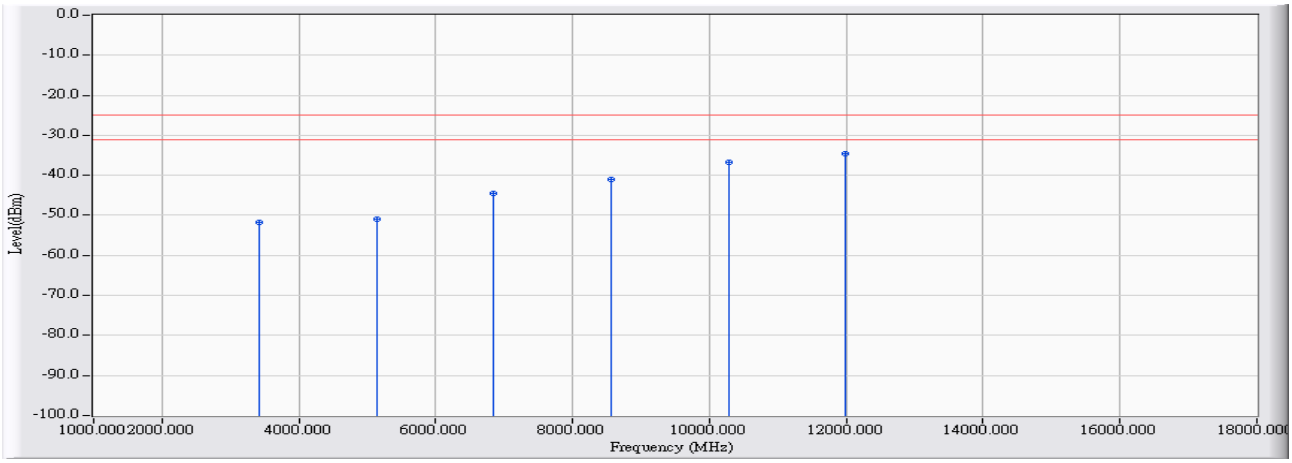


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.551	-68.040	-49.490	-24.490	-25.000	PEAK
2		5257.800	20.194	-70.590	-50.396	-25.396	-25.000	PEAK
3		7010.400	26.027	-68.500	-42.473	-17.473	-25.000	PEAK
4		8763.000	31.864	-71.360	-39.495	-14.495	-25.000	PEAK
5		10515.600	33.674	-70.110	-36.437	-11.437	-25.000	PEAK
6	*	12268.200	37.565	-69.680	-32.115	-7.115	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1712.4_HSUPA_Idle**

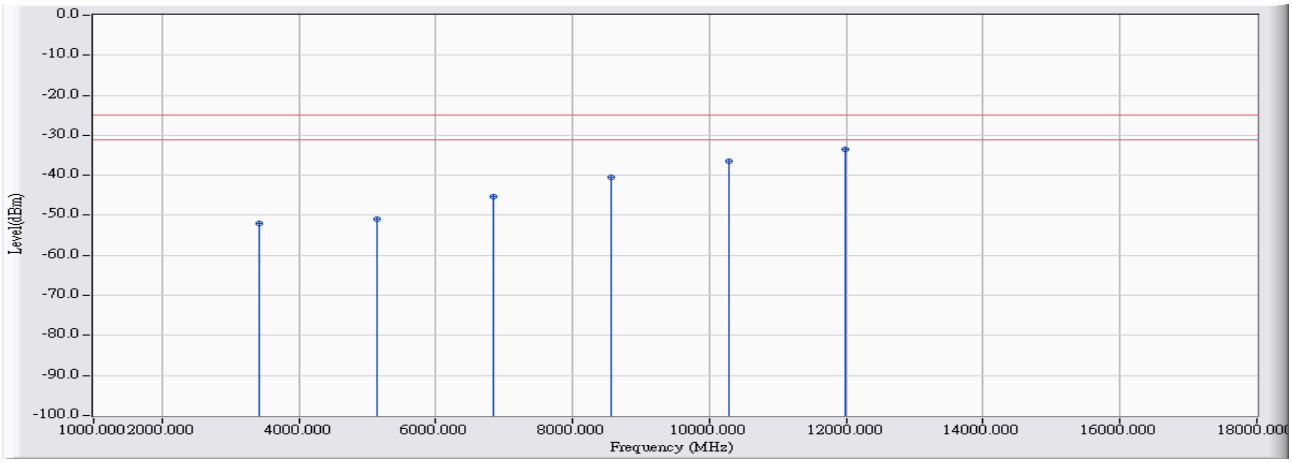


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.529	-69.180	-51.650	-26.650	-25.000	PEAK
2		5137.200	20.315	-71.330	-51.015	-26.015	-25.000	PEAK
3		6849.600	26.912	-71.530	-44.619	-19.619	-25.000	PEAK
4		8562.000	30.527	-71.420	-40.893	-15.893	-25.000	PEAK
5		10274.400	34.070	-70.700	-36.631	-11.631	-25.000	PEAK
6	*	11986.800	35.477	-70.160	-34.683	-9.683	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1712.4_HSUPA_Idle**

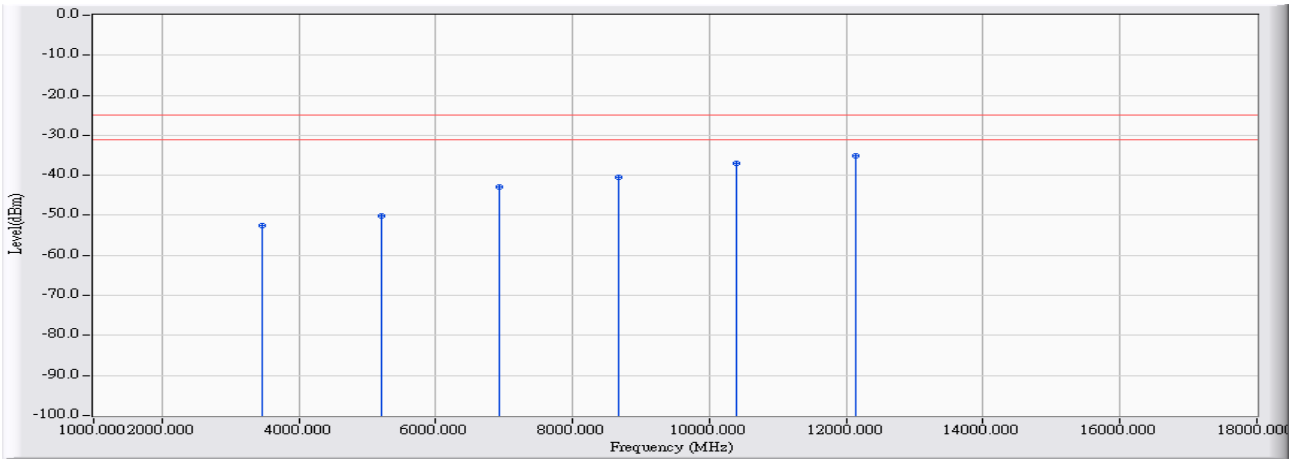


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.264	-70.240	-51.976	-26.976	-25.000	PEAK
2		5137.200	20.005	-70.810	-50.804	-25.804	-25.000	PEAK
3		6849.600	25.661	-70.920	-45.260	-20.260	-25.000	PEAK
4		8562.000	30.640	-71.150	-40.510	-15.510	-25.000	PEAK
5		10274.400	34.000	-70.530	-36.530	-11.530	-25.000	PEAK
6	*	11986.800	36.888	-70.430	-33.542	-8.542	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Idle**

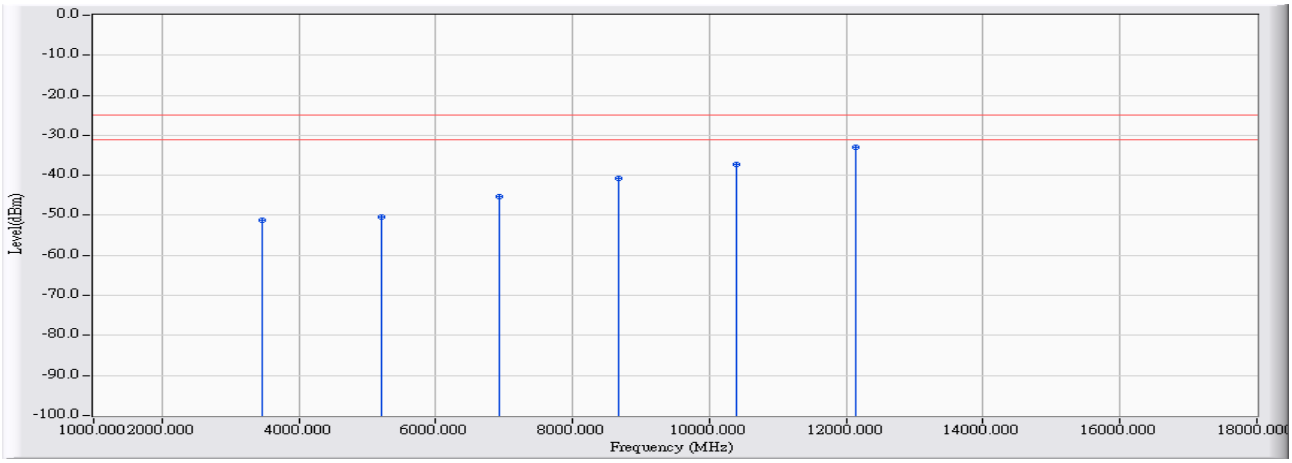


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	17.629	-70.240	-52.611	-27.611	-25.000	PEAK
2		5197.800	20.384	-70.610	-50.227	-25.227	-25.000	PEAK
3		6930.400	27.253	-70.250	-42.998	-17.998	-25.000	PEAK
4		8663.000	30.958	-71.490	-40.532	-15.532	-25.000	PEAK
5		10395.600	34.264	-71.280	-37.017	-12.017	-25.000	PEAK
6	*	12128.200	35.717	-70.910	-35.193	-10.193	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1732.6_HSUPA_Idle**

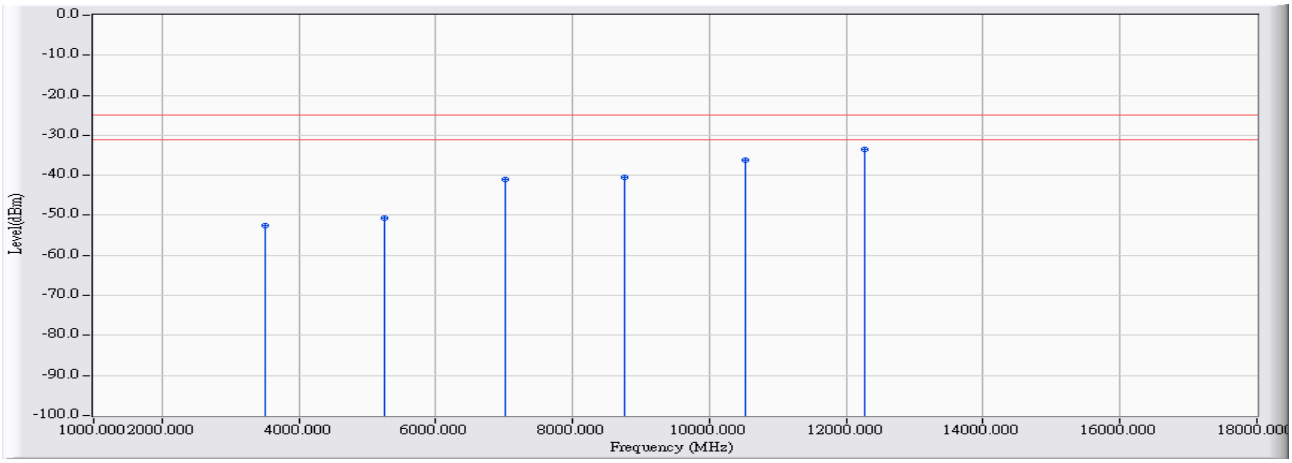


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.411	-69.620	-51.209	-26.209	-25.000	PEAK
2		5197.800	20.101	-70.570	-50.470	-25.470	-25.000	PEAK
3		6930.400	25.831	-71.170	-45.340	-20.340	-25.000	PEAK
4		8663.000	31.255	-71.930	-40.675	-15.675	-25.000	PEAK
5		10395.600	33.823	-71.030	-37.208	-12.208	-25.000	PEAK
6	*	12128.200	37.232	-70.300	-33.069	-8.069	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1752.6_HSUPA_Idle**

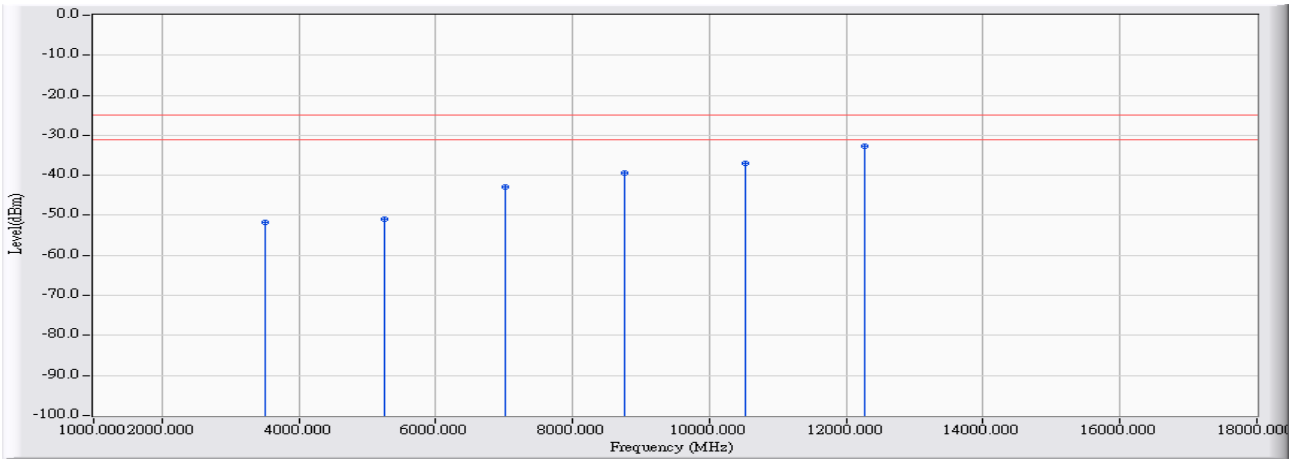


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	17.728	-70.230	-52.502	-27.502	-25.000	PEAK
2		5257.800	20.451	-71.000	-50.550	-25.550	-25.000	PEAK
3		7010.400	27.562	-68.680	-41.118	-16.118	-25.000	PEAK
4		8763.000	31.386	-71.910	-40.524	-15.524	-25.000	PEAK
5		10515.600	34.454	-70.520	-36.066	-11.066	-25.000	PEAK
6	*	12268.200	35.981	-69.520	-33.539	-8.539	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 3: WCDMA Band 4_HSUPA Mode _1752.6_HSUPA_Idle**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.551	-70.370	-51.820	-26.820	-25.000	PEAK
2		5257.800	20.194	-71.140	-50.946	-25.946	-25.000	PEAK
3		7010.400	26.027	-68.900	-42.873	-17.873	-25.000	PEAK
4		8763.000	31.864	-71.260	-39.395	-14.395	-25.000	PEAK
5		10515.600	33.674	-70.690	-37.017	-12.017	-25.000	PEAK
6	*	12268.200	37.565	-70.260	-32.695	-7.695	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
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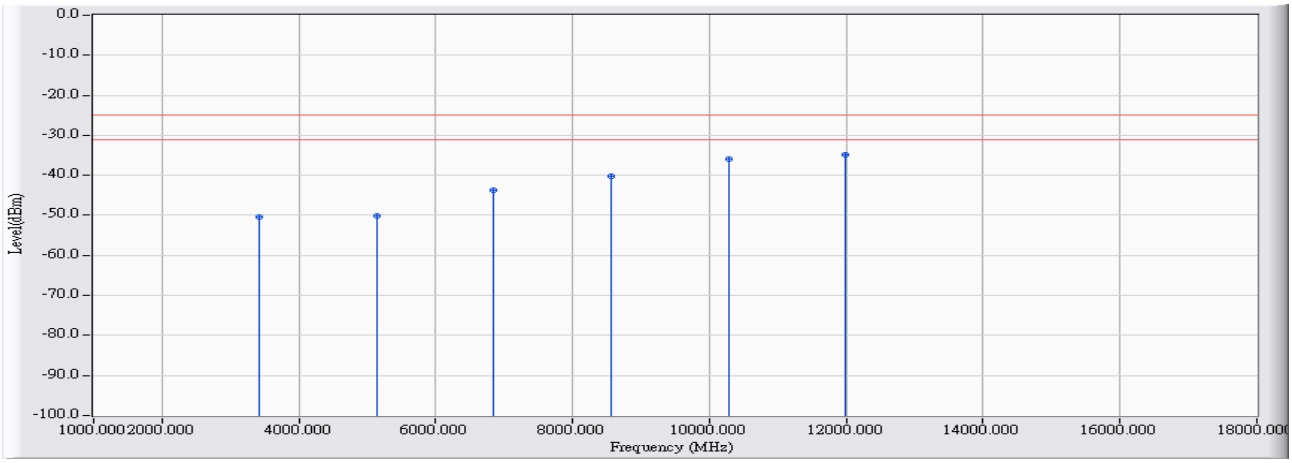
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1712.4_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.529	-67.880	-50.350	-25.350	-25.000	PEAK
2		5137.200	20.315	-70.540	-50.225	-25.225	-25.000	PEAK
3		6849.600	26.912	-70.610	-43.699	-18.699	-25.000	PEAK
4		8562.000	30.527	-70.790	-40.263	-15.263	-25.000	PEAK
5		10274.400	34.070	-70.070	-36.001	-11.001	-25.000	PEAK
6	*	11986.800	35.477	-70.240	-34.763	-9.763	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
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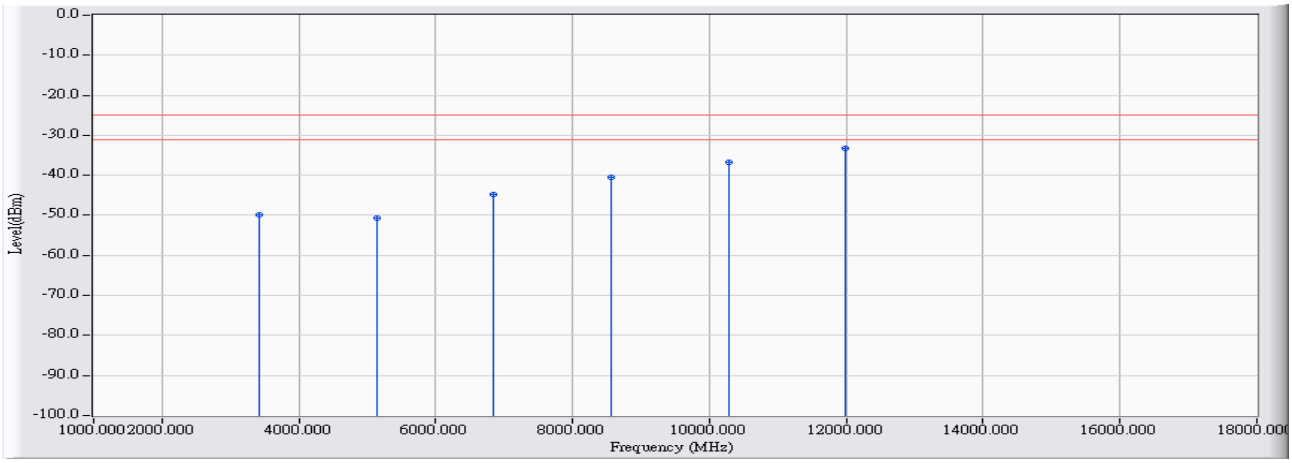
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1712.4_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.264	-68.100	-49.836	-24.836	-25.000	PEAK
2		5137.200	20.005	-70.640	-50.634	-25.634	-25.000	PEAK
3		6849.600	25.661	-70.540	-44.880	-19.880	-25.000	PEAK
4		8562.000	30.640	-71.140	-40.500	-15.500	-25.000	PEAK
5		10274.400	34.000	-70.670	-36.670	-11.670	-25.000	PEAK
6	*	11986.800	36.888	-70.070	-33.182	-8.182	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
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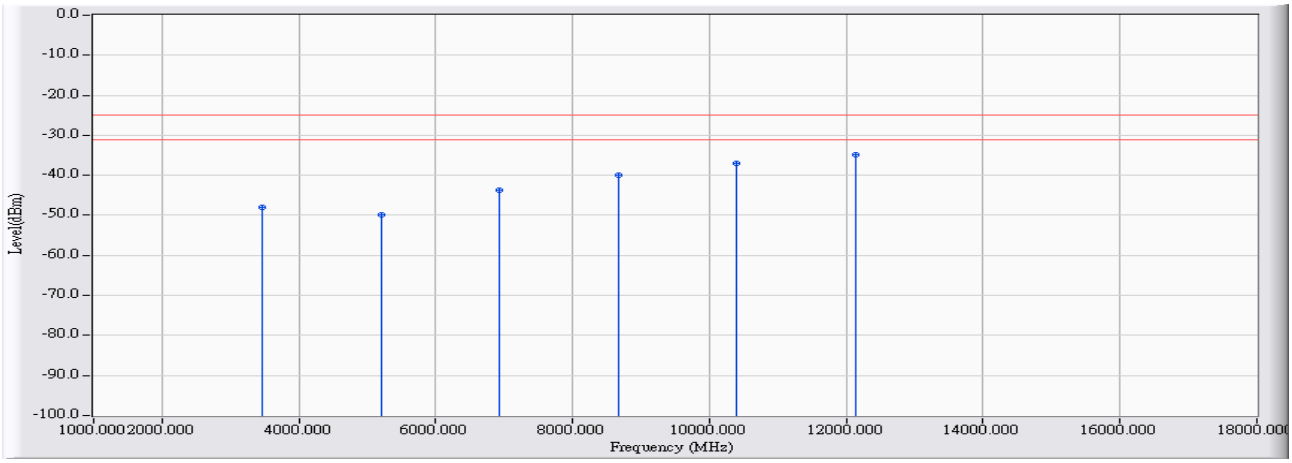
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	17.629	-65.680	-48.051	-23.051	-25.000	PEAK
2		5197.800	20.384	-70.310	-49.927	-24.927	-25.000	PEAK
3		6930.400	27.253	-70.900	-43.648	-18.648	-25.000	PEAK
4		8663.000	30.958	-70.880	-39.922	-14.922	-25.000	PEAK
5		10395.600	34.264	-71.330	-37.067	-12.067	-25.000	PEAK
6	*	12128.200	35.717	-70.670	-34.953	-9.953	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
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4. " * ", means this data is the worst emission level.
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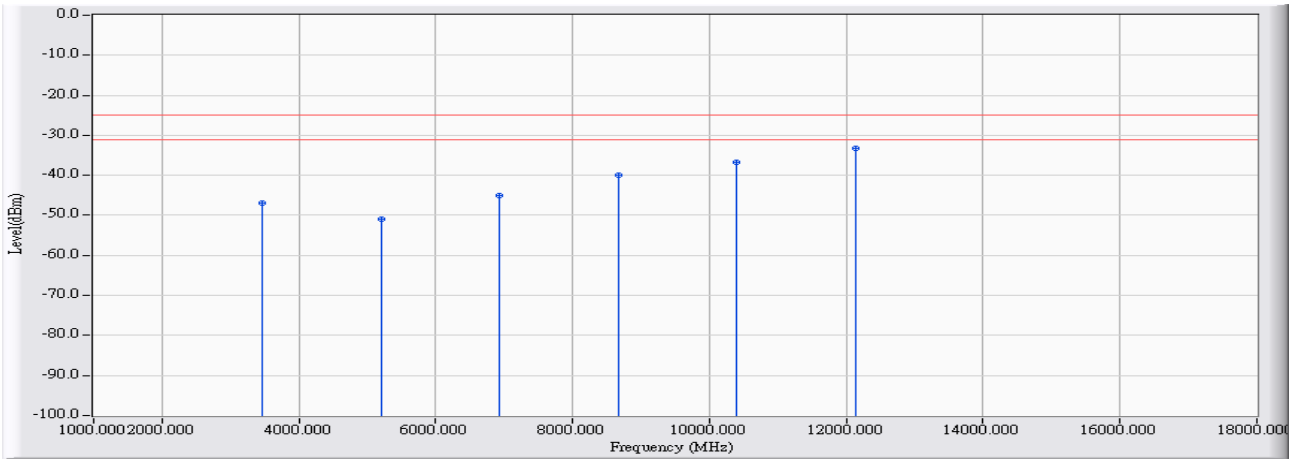
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.411	-65.320	-46.909	-21.909	-25.000	PEAK
2		5197.800	20.101	-70.920	-50.820	-25.820	-25.000	PEAK
3		6930.400	25.831	-70.900	-45.070	-20.070	-25.000	PEAK
4		8663.000	31.255	-71.230	-39.975	-14.975	-25.000	PEAK
5		10395.600	33.823	-70.520	-36.698	-11.698	-25.000	PEAK
6	*	12128.200	37.232	-70.460	-33.229	-8.229	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
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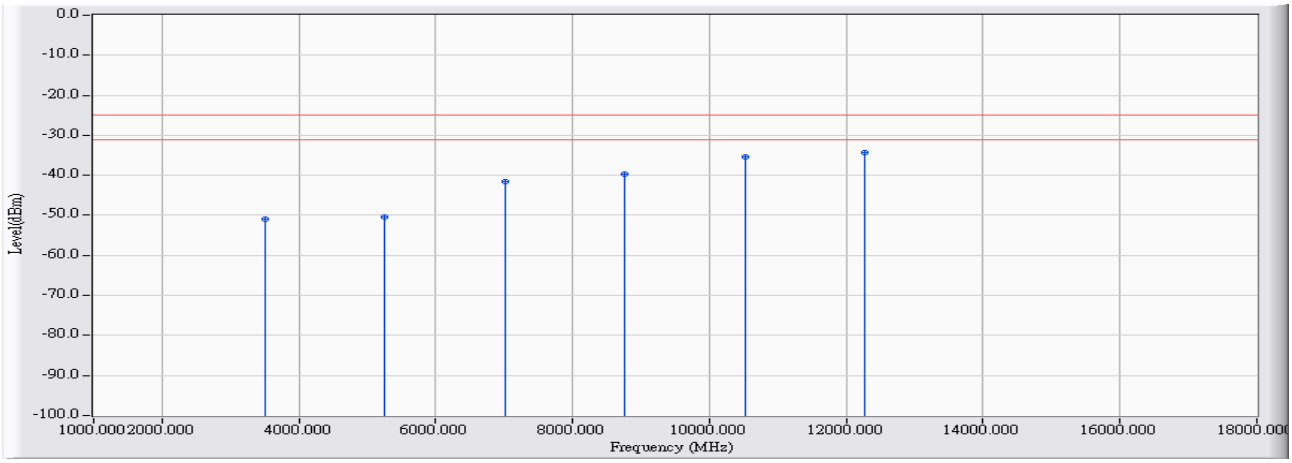
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1752.6_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	17.728	-68.550	-50.822	-25.822	-25.000	PEAK
2		5257.800	20.451	-70.800	-50.350	-25.350	-25.000	PEAK
3		7010.400	27.562	-69.170	-41.608	-16.608	-25.000	PEAK
4		8763.000	31.386	-70.950	-39.564	-14.564	-25.000	PEAK
5		10515.600	34.454	-69.900	-35.446	-10.446	-25.000	PEAK
6	*	12268.200	35.981	-70.380	-34.399	-9.399	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
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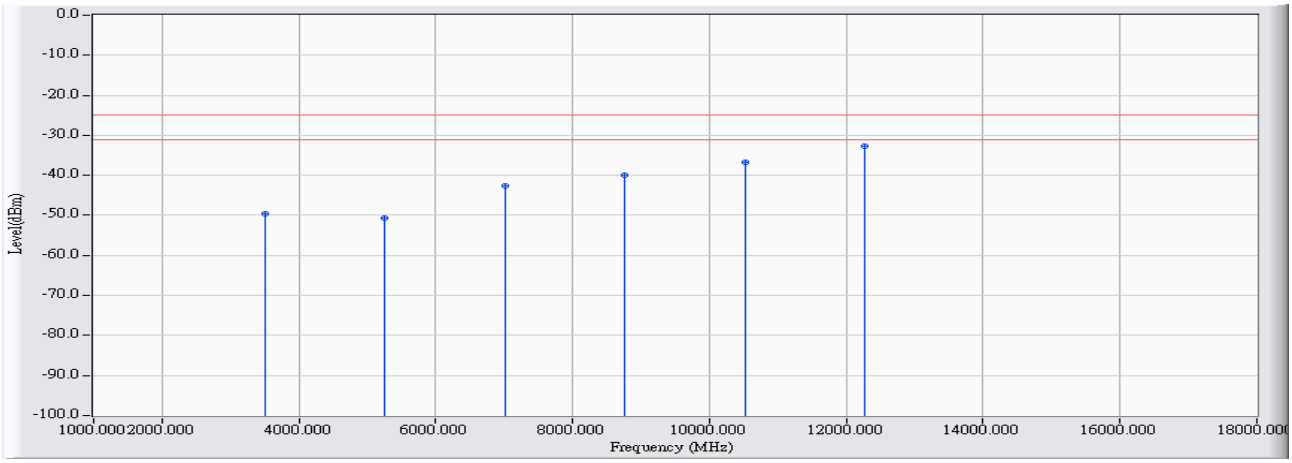
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1752.6_HSDPA_Link**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.551	-68.170	-49.620	-24.620	-25.000	PEAK
2		5257.800	20.194	-70.870	-50.676	-25.676	-25.000	PEAK
3		7010.400	26.027	-68.530	-42.503	-17.503	-25.000	PEAK
4		8763.000	31.864	-71.780	-39.915	-14.915	-25.000	PEAK
5		10515.600	33.674	-70.530	-36.857	-11.857	-25.000	PEAK
6	*	12268.200	37.565	-70.320	-32.755	-7.755	-25.000	PEAK

Note:

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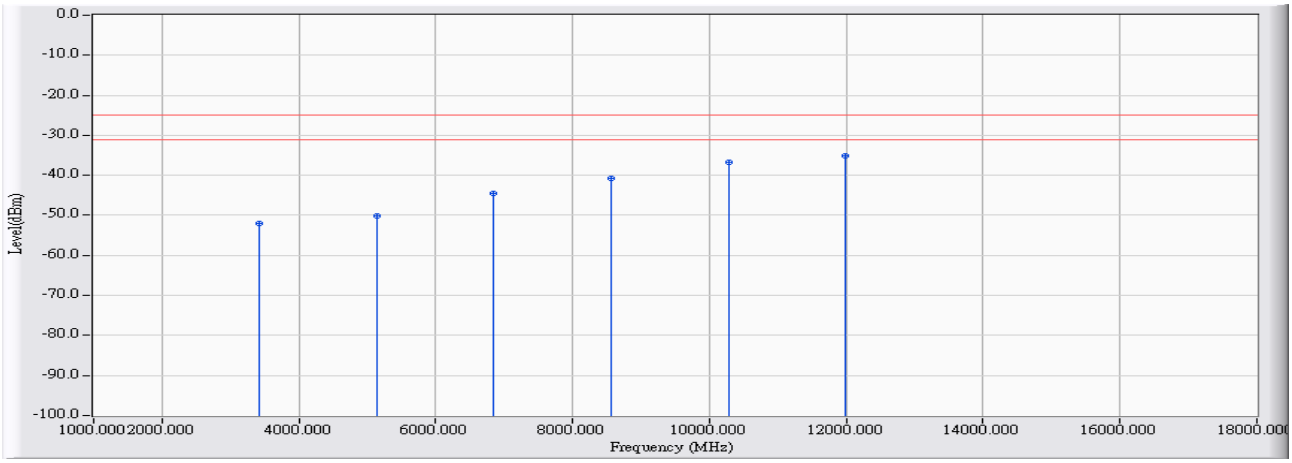
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1712.4_HSDPA_Idle**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	17.529	-69.540	-52.010	-27.010	-25.000	PEAK
2		5137.200	20.315	-70.560	-50.245	-25.245	-25.000	PEAK
3		6849.600	26.912	-71.480	-44.569	-19.569	-25.000	PEAK
4		8562.000	30.527	-71.190	-40.663	-15.663	-25.000	PEAK
5		10274.400	34.070	-70.710	-36.641	-11.641	-25.000	PEAK
6	*	11986.800	35.477	-70.710	-35.233	-10.233	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
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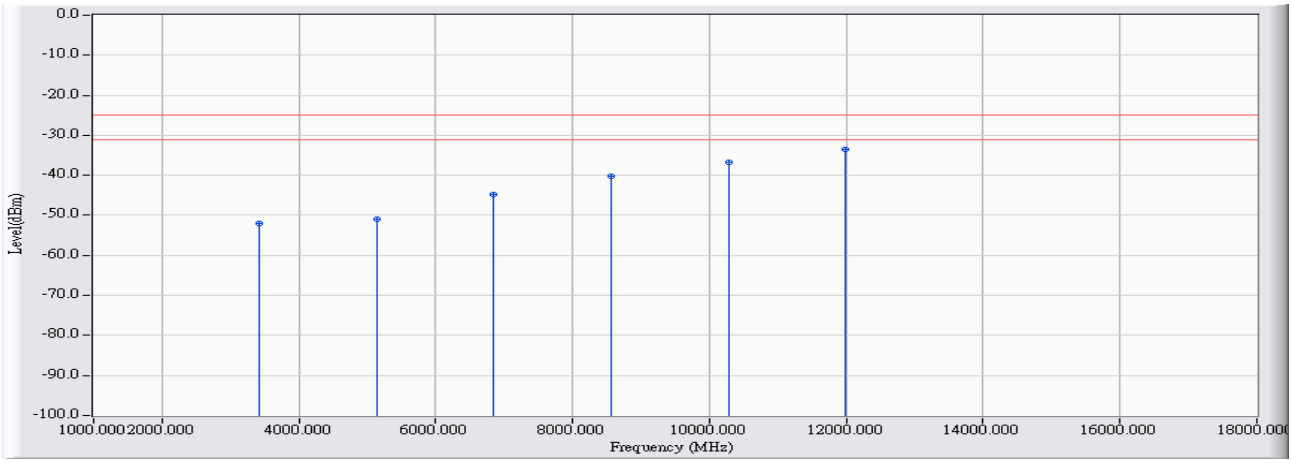
Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1712.4_HSDPA_Idle**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3424.800	18.264	-70.190	-51.926	-26.926	-25.000	PEAK
2		5137.200	20.005	-71.070	-51.064	-26.064	-25.000	PEAK
3		6849.600	25.661	-70.320	-44.660	-19.660	-25.000	PEAK
4		8562.000	30.640	-70.850	-40.210	-15.210	-25.000	PEAK
5		10274.400	34.000	-70.670	-36.670	-11.670	-25.000	PEAK
6	*	11986.800	36.888	-70.330	-33.442	-8.442	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
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3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
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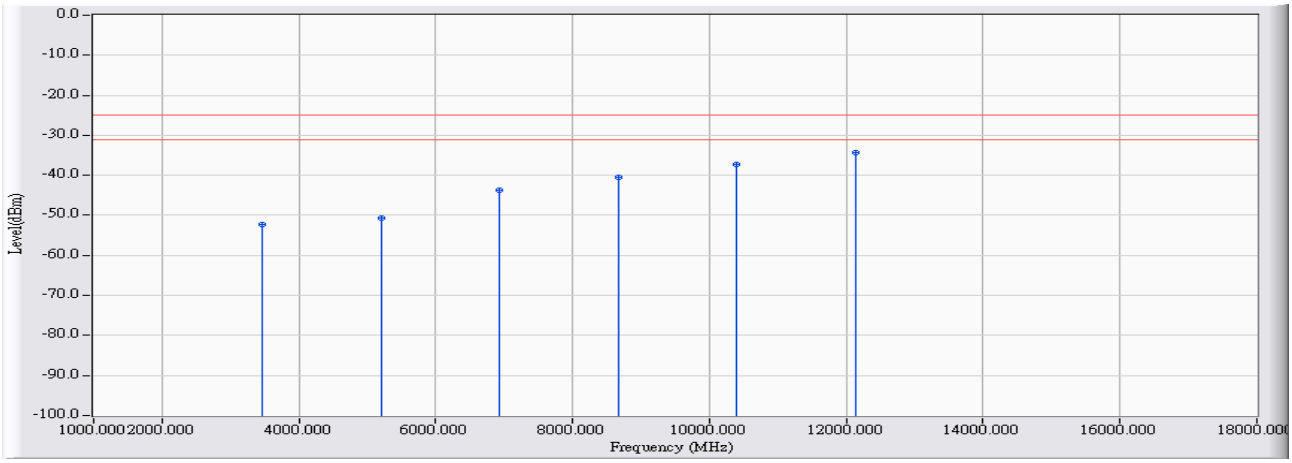
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Idle**

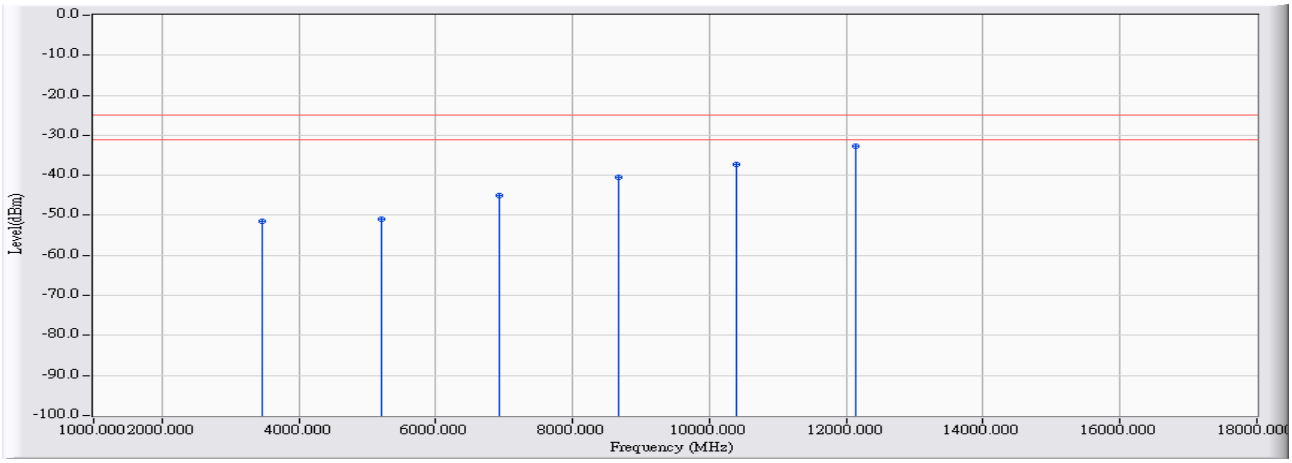


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	17.629	-69.950	-52.321	-27.321	-25.000	PEAK
2		5197.800	20.384	-70.940	-50.557	-25.557	-25.000	PEAK
3		6930.400	27.253	-71.050	-43.798	-18.798	-25.000	PEAK
4		8663.000	30.958	-71.550	-40.592	-15.592	-25.000	PEAK
5		10395.600	34.264	-71.540	-37.277	-12.277	-25.000	PEAK
6	*	12128.200	35.717	-70.100	-34.383	-9.383	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1732.6_HSDPA_Idle**

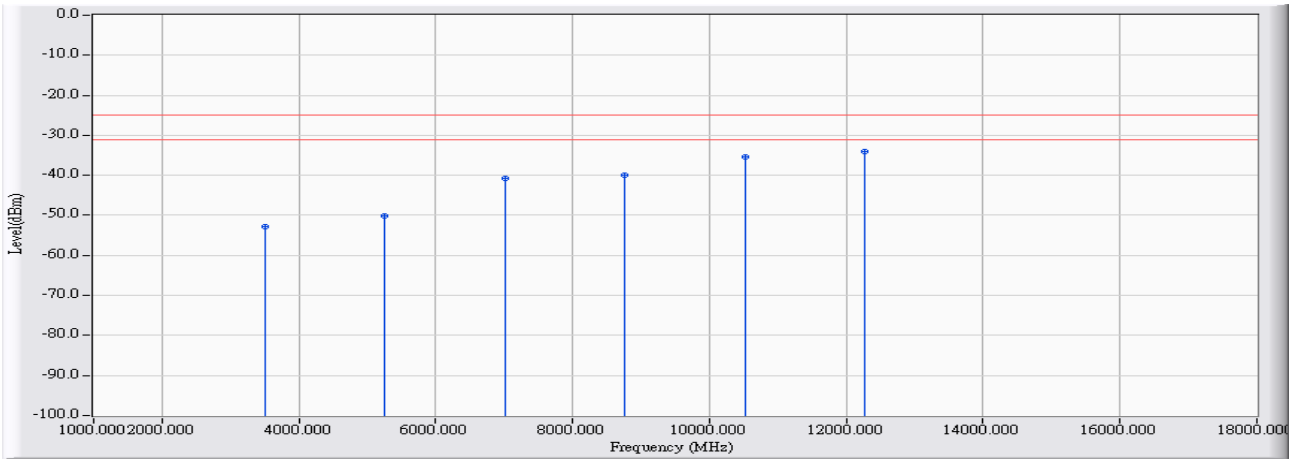


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3465.200	18.411	-69.770	-51.359	-26.359	-25.000	PEAK
2		5197.800	20.101	-71.110	-51.010	-26.010	-25.000	PEAK
3		6930.400	25.831	-70.890	-45.060	-20.060	-25.000	PEAK
4		8663.000	31.255	-71.610	-40.355	-15.355	-25.000	PEAK
5		10395.600	33.823	-71.130	-37.308	-12.308	-25.000	PEAK
6	*	12128.200	37.232	-69.830	-32.599	-7.599	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1752.6_HSDPA_Idle**

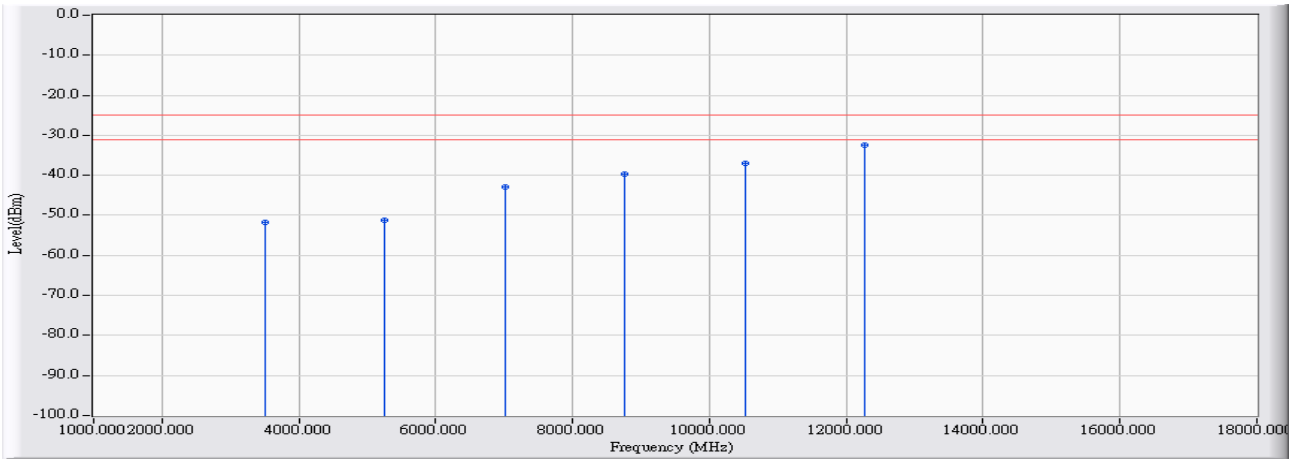


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	17.728	-70.480	-52.752	-27.752	-25.000	PEAK
2		5257.800	20.451	-70.650	-50.200	-25.200	-25.000	PEAK
3		7010.400	27.562	-68.230	-40.668	-15.668	-25.000	PEAK
4		8763.000	31.386	-71.300	-39.914	-14.914	-25.000	PEAK
5		10515.600	34.454	-69.950	-35.496	-10.496	-25.000	PEAK
6	*	12268.200	35.981	-69.940	-33.959	-8.959	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB4-H	**Time : 2017/02/24**
Limit : FCC_Part27(outband)_00M_PK	**Margin : 6**
Probe : CB4_CE_Sub_B432_1-18GHz_3M_1116 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : Advanced Industrial 4G/LTE Router, WWAN Failover Manager	**Note : Mode 4: WCDMA Band 4_HSDPA Mode _1752.6_HSDPA_Idle**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3505.200	18.551	-70.230	-51.680	-26.680	-25.000	PEAK
2		5257.800	20.194	-71.420	-51.226	-26.226	-25.000	PEAK
3		7010.400	26.027	-68.960	-42.933	-17.933	-25.000	PEAK
4		8763.000	31.864	-71.600	-39.735	-14.735	-25.000	PEAK
5		10515.600	33.674	-70.780	-37.107	-12.107	-25.000	PEAK
6	*	12268.200	37.565	-70.120	-32.555	-7.555	-25.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

8. Frequency Stability Over Temperatures Variation

8.1. Test Equipment

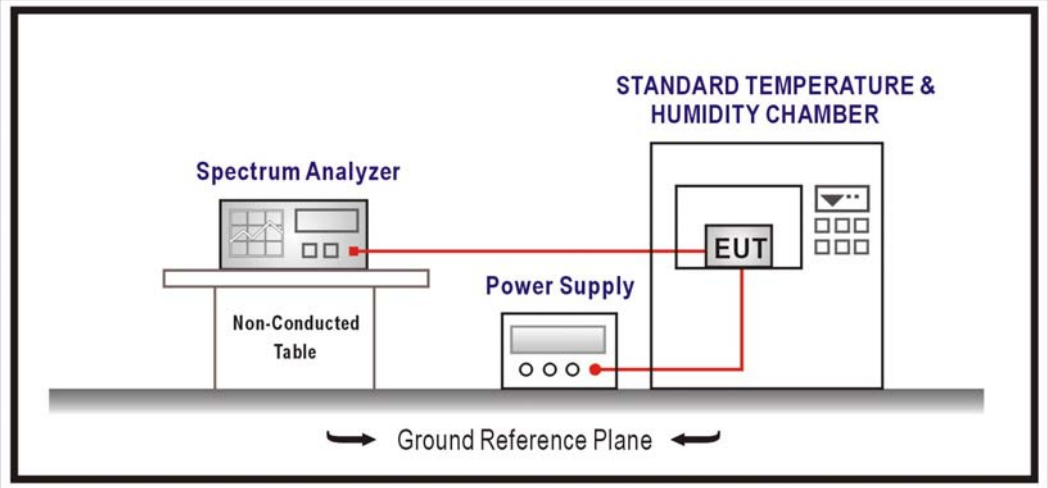
The following test equipments are used during the test:

Frequency Stability Over Temperatures Variation / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2018/01/18
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

Note: All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

The frequency stability shall be measured with variation of ambient temperature as follows: From -30° to +50° centigrade for all equipment. Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range.

8.4. Test Procedure

Power must be turned off when changing from one temperature to another. Power warm up is at least 15 min and power applied should perform before recording frequency error. The temperature range step is 10 degrees in this test items. All temperature levels shall be holding the ± 0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

8.5. Uncertainty

The measurement uncertainty is defined as ±100KHz

8.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Frequency Stability Over Temperatures Variation		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/06	Test Site	SR10-H

1712.4 MHz

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-30	-6	0.0034
-20	-5	0.0029
-10	6	-0.0036
0	11	-0.0062
+10	11	-0.0062
+20	23	-0.0133
+30	-21	0.0122
+40	24	-0.0143
+50	26	-0.0153

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Frequency Stability Over Temperatures Variation		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/06	Test Site	SR10-H

1732.6 MHz

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-30	-4	0.0021
-20	-3	0.0019
-10	-3	0.0020
0	8	-0.0045
+10	-7	0.0043
+20	22	-0.0127
+30	-20	0.0115
+40	-4	0.0025
+50	20	-0.0118

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Frequency Stability Over Temperatures Variation		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2017/02/06	Test Site	SR10-H

1752.6 MHz

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-30	11	-0.0061
-20	9	-0.0053
-10	-5	0.0029
0	-6	0.0037
+10	-8	0.0047
+20	-21	0.0118
+30	-21	0.0122
+40	-22	0.0128
+50	-19	0.0108

9. Frequency Stability Over Voltage Variation

9.1. Test Equipment

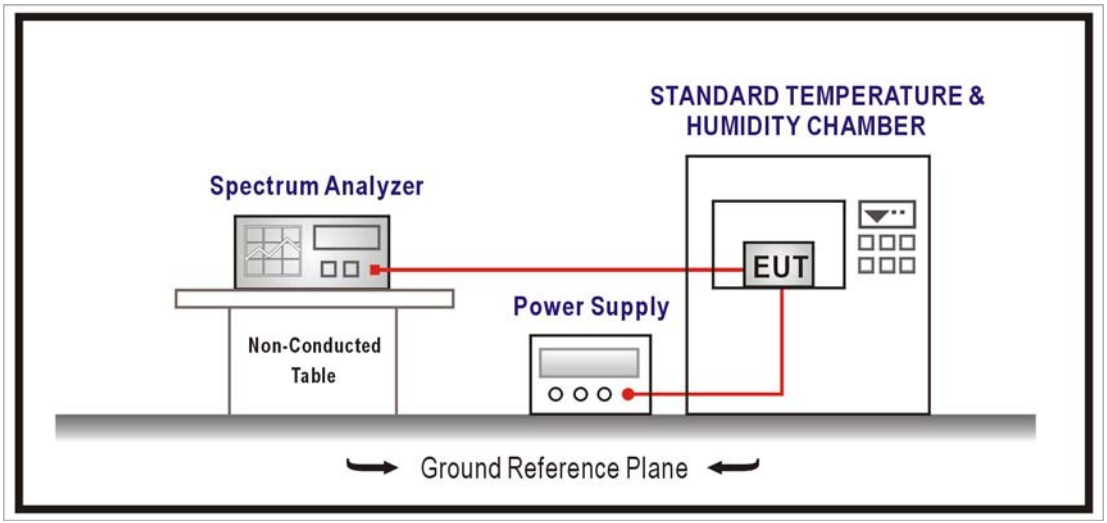
The following test equipments are used during the test:

Frequency Stability Over Voltage Variation / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2018/01/18
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

Note: All equipments that need to calibrate are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.
(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

9.4. Test Procedure

Power must be removed when changing from one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.

EUT is connected the external power supply to control the DC input power. The various Volts set from the minimum 4.5 Volts to 5.5 Volts. Each step shall be record the frequency error rate.

9.5. Uncertainty

The measurement uncertainty is defined as ±100KHz.

9.6. Test Result

Product	Advanced Industrial 4G/LTE Router, WWAN Failover Manager		
Test Item	Frequency Stability Over Voltage Variation		
Test Mode	Mode 1: WCDMA Band 4_Link mode		
Date of Test	2016/12/28	Test Site	SR10-H

1712.4 MHz

Voltage (VDC)	Frequency Error(Hz)	Frequency Error(ppm)
4.2	17	-0.0098
3.7	19	-0.0111
3.4	20	-0.0119

1732.6 MHz

Voltage (VDC)	Frequency Error(Hz)	Frequency Error(ppm)
4.2	-11	0.0065
3.7	-3	0.0016
3.4	5	-0.0031

1752.6 MHz

Voltage (VDC)	Frequency Error(Hz)	Frequency Error(ppm)
4.2	-12	0.0069
3.7	-18	0.0100
3.4	-18	0.0101