UBIQUITI NETWORK, INC.

AIRMAX TDMA BASESTATION

Model: Rocket M3

Jan 26th, 2012
Report No.: SL11102001-UBN-001(RF_PTMP)
(This report supersedes None)

R&TTE Test Report
EN 302 326-2 V1.2.2, EN 301 126-2-3 V1.2.1

SIEMIC, INC.
Accessing global markets

Modifications made to the product : None

This Test Report is Issued Under the Authority of:	
David Zhang	
David Zhang Compliance Engineer	Leslie Bai Director of Certification

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CERTIFICATE OF TEST

Date of Issue : **Jan 26th, 2012**

Company Name : **Ubiquiti Network, Inc.**

Product Name/Model : **AirMax TDMA BaseStation / Rocket M3**

Stipulated Standard: **(1) EN 302 326-2 V1.2.2 (2007-06)**
(2) EN 301 126-2-3 V1.2.1 (2004-11)

Equipment complied with the specification **[X]**
Equipment did not comply with the specification **[ ]**

The submission documentation to a National Regulatory Body for type approval purposes shall consist of two parts; Part one: Application Form;
Part two: Test Report;

ATTESTATION OF CONFORMITY

CE

Presented To:

Ubiquiti Network, Inc.

UBIQUITI NETWORKS

91 E.Tasman Drive San Jose, CA 95134 USA

For Product/Model:

AirMax TDMA BaseStation
Rocket M3

Was evaluated and confirmed to comply with:

EN 302 326-2 V1.2.2 (2007-06)
EN 301 126-2-3 V1.2.1 (2004-11)

Leslie Bai
Director of Certification

SIEMIC, INC.
Accessing global markets

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management through out a project. Our extensive experience with China, Asia Pacific, North America, European, and international compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF , Telecom
HongKong	OFTA (US002)	RF , Telecom

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1 Executive Summary & EUT information

The purpose of this test program was to demonstrate compliance of the Ubiquiti Network, Inc., AirMax TDMA BaseStation, and model: Rocket M3 against the current Stipulated Standards. The Rocket M3 have demonstrated compliance with the EN 302 326-2 V1.2.2 (2007-06), EN 301 126-2-3 V1.2.1 (2004-11).

EUT Information

EUT Description	:	AirMax TDMA BaseStation The Rocket is a rugged, hi-power, very linear 2x2 MIMO radio with enhanced receiver performance. It features incredible range performance (50+km) and breakthrough speed (150+Mbps real TCPI/IP). The device was specifically designed for outdoor PtP bridging and PTMP AirMax base-station applications.
Model No	:	Rocket M3
Serial No	:	N/A
Input Power	:	24V, 1A POE Supply
Classification Per Stipulated Test Standard	:	**Fixed Radio Links**

2 TECHNICAL DETAILS

Purpose	Compliance testing of AirMax TDMA BaseStation with stipulated standard
Applicant / Client	Ubiquiti Networks, Inc 91 E.Tasman Drive San Jose, CA 95134 USA
Manufacturer	Ubiquiti Networks, Inc 91 E.Tasman Drive San Jose, CA 95134 USA
Laboratory performing the tests	SIEMIC Laboratories
Test report reference number	SL11102001-UBN-001(RF_PTMP)
Date EUT received	Oct 3rd 2011
Standard applied	See page 2
Dates of test (from – to)	Oct 3rd - Nov 30th 2011
No of Units:	# 1
Equipment Category:	Fixed Radio Links
Trade Name:	Ubiquiti Network, Inc.
Microprocessor (s)	unidentified
RF Operating Frequency (ies)	3,415 – 3,695MHz(TX/RX) / 5MHz Channel Separation & Bandwidth 3,420 – 3,690MHz(TX/RX) / 10MHz Channel Separation & Bandwidth 3,425 – 3,680MHz(TX/RX) / 15MHz Channel Separation & Bandwidth
Clock/Oscillator Frequency (ies)	--
Rated Input Power	24V, 1A POE Supply
Port/Connectors	RJ45, POE

3 MODIFICATION

NONE

4 TEST SUMMARY

The product was tested in accordance with the following specifications. The Pass / Fail Criteria for the immunity tests were specified in Annex Ciii.

All Testing has been performed according to below product classification:

Fixed Radio Links

Test Results Summary

Emissions			
Test Standard	**Description**	**Product Class**	**Pass / Fail**
EN 301 126-2-3 V1.2.1 (2004-11) EN 302 326-2 V1.2.2 (2007-06)	Transmitter Power	See above	Pass
	Automatic Transmit Power Control - ATPC	See above	N/A
	Remote Transmit Power Control – RTPC	See above	Pass
	Transmitter Output Frequency tolerance	See above	Pass
	Remote Frequency Control – RFC	See above	Pass
	Transmitter spectrum density masks	See above	Pass
	TX Spurious emissions – external	See above	Pass
	Receiver Input Level Range	See above	N/A
	RX Spurious emissions	See above	N/A
	Receiver Input Level Range	See above	N/A
	FER as a function of RSL	See above	Pass
	Co-channel “external” and adjacent channel interference sensitivity	See above	Pass
	CW spurious interference	See above	Pass

PS: All Measurement Uncertainty is not taken into consideration for presented test data

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 TEST RESULT

5.1.1 EN 302 326-2 V1.2.2 (2007-06) Transmitter Power & Remote Transmit Power Control Test Result

Note:

Ambient conditions:

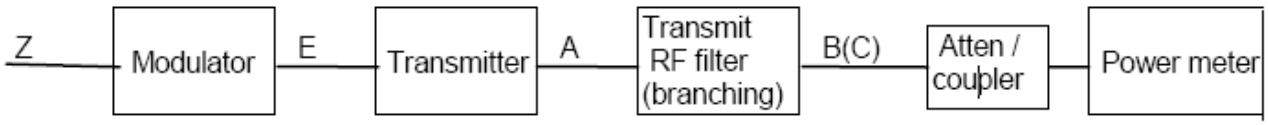
Temperature: Nominal&Extreme Relative humidity: 50 % Pressure: 1019 mbar

Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

Test Procedure

a) Configure the EUT to its maximum out power level.
b) Connect the power measuring head to the RF output port of EUT, read the value and then add the loss calculated above to calculate the true level of power.
c) Measure the power of modulated transmission burst
d) Record all measurements and observations in the test file.

Test Setup



Transmitter power measurement test setup

Test Limit:

Frequency Range	Power tolerance
Below 11,00 GHz	±2 dB
24,25 GHz to 34,50 GHz	±3 dB

Test Result (pass/fail criterion)

Test Conditions		Transmitter Power (+dBm)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	22.78	22.39	22.39
Tmin(-33°C)	Vnom(24VDC)	22.94	22.69	22.52
Tmax(+55°C)	Vnom(24VDC)	22.96	22.71	22.49
Maximum output power observed (dBm)		22.96	22.71	22.52
Remote Transmit Power Control observed (Yes/No/Not Applicable)		Yes		

5MHz Channel Separation/Bandwidth Transmitter Power Test Results @ BPSK

Test Conditions		Transmitter Power (+dBm)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	22.94	22.59	22.56
Tmin(-33°C)	Vnom(24VDC)	23.15	22.88	22.77
Tmax(+55°C)	Vnom(24VDC)	23.13	22.89	22.79
Maximum output power observed (dBm)		23.15	22.89	22.79
Remote Transmit Power Control observed (Yes/No/Not Applicable)		Yes		

10MHz Channel Separation/Bandwidth Transmitter Power Test Results @ QPSK

Test Conditions		Transmitter Power (+dBm)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	22.92	22.77	22.57
Tmin(-33°C)	Vnom(24VDC)	23.25	23.11	22.79
Tmax(+55°C)	Vnom(24VDC)	23.24	23.13	22.80
Maximum output power observed (dBm)		23.25	23.13	22.80
Remote Transmit Power Control observed (Yes/No/Not Applicable)		Yes		

15MHz Channel Separation/Bandwidth Transmitter Power Test Results @ 16QAM

5.1.2 EN 302 326-2 V1.2.2 (2007-06) RF Tolerance Test Results

Standard Requirement:

The maximum allowable RF frequency tolerance shall not exceed, by any reason, ±15 ppm, for operation in environmental profile declared by the supplier.

Ambient conditions:

Temperature: Nominal&Extreme Relative humidity: 50 % Pressure: 1019 mbar

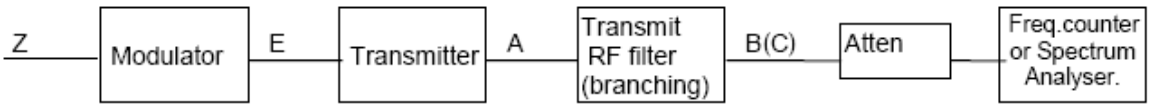
Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

Test Procedure

Traditionally, measurements have been performed with a CW signal only but if it is possible to comply with the requirements of the specification whilst the Tx signal is modulated, then this is preferable since it is easier to set up and may be of interest to regulatory bodies. Some manufacturer's equipment may not allow the modulation to be turned off.

a) Set EUT to CW transmitting mode. Connect the spectrum analyser to the RF output port of ODU
b) Tune the spectrum analyser into the nominal Tx frequency.
c) Reduce span and BW until CW is seen.
d) Chose a measurement bandwidth, for example 10kHz.
e) Put the marker of the spectrum analyser on the CW signal from the EUT.
f) Select the Frequency Count option on the spectrum analyser if available, otherwise read the marker frequency.

Test Setup



RFC measurement test setup

Test Result (pass/fail criterion)

Test Conditions		Transmitter Frequency (MHz)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	3415.0080	3555.0150	3695.0150
Tmin(-33°C)	Vnom(24VDC)	3415.0120	3555.0120	3695.0100
Tmax(+55°C)	Vnom(24VDC)	3415.0120	3555.0110	3695.0120
Maximum Frequency Deviation observed (PPM)		3.51	4.22	4.06
Remote Transmit Frequency Control observed (Yes/No/Not Applicable)		Yes		

5MHz Channel Separation/Bandwidth Transmitter Frequency Test Results @ BPSK

Test Conditions		Transmitter Frequency (MHz)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	3420.0050	3550.0170	3690.0150
Tmin(-33°C)	Vnom(24VDC)	3420.0130	3550.0120	3690.0120
Tmax(+55°C)	Vnom(24VDC)	3420.0120	3550.0120	3690.0110
Maximum Frequency Deviation observed (PPM)		3.80	4.79	4.07
Remote Transmit Frequency Control observed (Yes/No/Not Applicable)		Yes		

10MHz Channel Separation/Bandwidth Transmitter Frequency Test Results @ QPSK

Test Conditions		Transmitter Frequency (MHz)		
		Low Freq	Mid Freq	High Freq
Tnom	Vnom(24VDC)	3425.0170	3545.0170	3680.0150
Tmin(-33°C)	Vnom(24VDC)	3425.0120	3545.0120	3680.0070
Tmax(+55°C)	Vnom(24VDC)	3425.0120	3545.0120	3680.0070
Maximum Frequency Deviation observed (PPM)		4.96	4.80	4.08
Remote Transmit Frequency Control observed (Yes/No/Not Applicable)		Yes		

15MHz Channel Separation/Bandwidth Transmitter Frequency Test Results @ 16QAM

5.1.3 EN 302 326-2 V1.2.2 (2007-06) Radio Frequency (RF) spectrum masks Test Results

Standard Requirement:

The 0 dB level shown on the spectrum masks relates to the spectral power density at the carrier centre frequency,disregarding the residual of the carrier (due to modulation imperfection). The actual carrier frequency is identified with the f0 corner point; spectrum masks are shown in frequencies relative to f0; the spectrum mask is assumed to be symmetrical with respect to the centre frequency f0.

Radio frequency spectrum mask limits have been reduced to a set of curves and a set of discreet points (i.e. fx MHz/Kx dB) identifying the frequency offset from f0 and the related attenuation; each curve is divided into a number of segments; each spectrum mask is then represented by values located at discrete points on the relevant graph; the number of discreet points is dependent on the number of segments on the actual mask.

It is also assumed that the value associated with the final discreet point on the graph extends to a point equal to 2,5 times the channel separation (i.e. 2,5 × CS) on each side of the centre frequency.

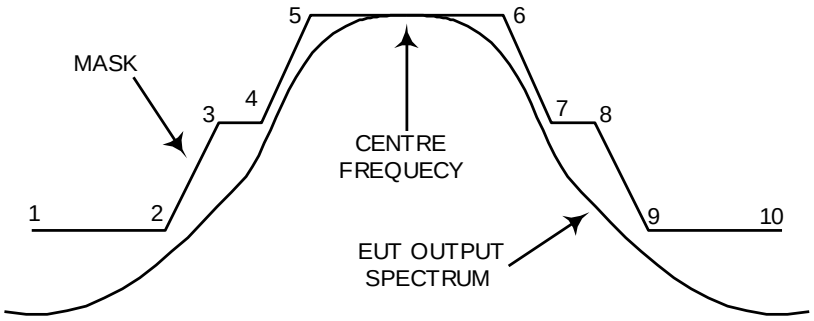
Ambient conditions:

Temperature: Nominal&Extreme	Relative humidity: 95 %	Pressure: 1019 mbar
Tested By: David Zhang	Tested Date: Jan 12 - Jan 26 2012	

Test Procedure

The test examines the R.F. Spectrum of the output signal. It is possible to see any spurious emissions which may be emitted by the EUT. Measurements are done relative to the output frequency of the EUT. Compliance with the requirements is shown, when the emitted spectrum falls below a specified limit line.

A sample spectrum mask is shown on figure below,

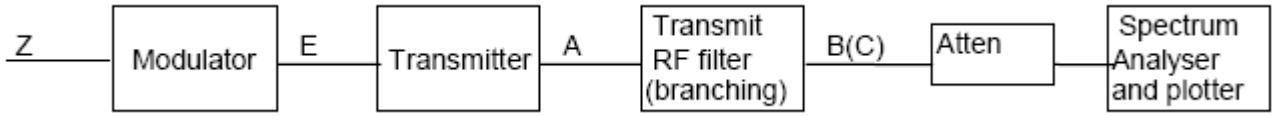


The transmitter output port shall be connected to either a Spectrum Analyser via an attenuator or an artificial load with some means of monitoring the emissions with a Spectrum Analyser. The Spectrum Analyser shall have a variable persistence display or a digital storage facility. When not stated in the relevant EN/ETS, the resolution bandwidth, frequency span, scan time and video filter settings of the Spectrum Analyser are to be set in accordance with the following indications. A power splitter or coupler may be required if the TS requires an RF link from the CRS before it can operate.

With the transmitter modulated by a signal having the characteristics given in the relevant EN/ETS, the transmitter power density, (including the spectral lines at the symbol rate if stated in the EN/ETS), shall be measured by the Spectrum Analyser and recorded. Where possible, transmitter spectral power density plots at the lowest, mid-band and highest frequencies of the supplier's declared operating range are to be recorded.

The spectrum of a single carrier has to be verified at both edges of the spectrum mask for the RF channel of the relevant product standard.

Test Setup



RF Spectrum Mask measurement test setup

Test Limit:

EqC-PET = T									
F/ChS ⇨	0	0,43	0,5	0,5	0,8		1,06	2	2,5
EqC-EMO ⇩									
2									
For EqC-SET ≠ HC	0 dB	0 dB			-25 dB		-25 dB	-45 dB	-45 dB
For EqC-SET = HC	0 dB	0 dB			-27 dB		-27 dB	-45 dB	-45 dB
4	0 dB	0 dB			-32 dB		-37 dB	-45 dB	-45 dB
6	0 dB		0 dB	-13 dB	-34 dB		-42 dB	-45 dB	-45 dB

Test Result:

SPECTRUM MASK (BPSK MODE)				
Channel Separation	**Frequency**	**Temperature**	**Voltage**	**Pass/Fail**
5MHz	Low	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	Mid	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	High	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass

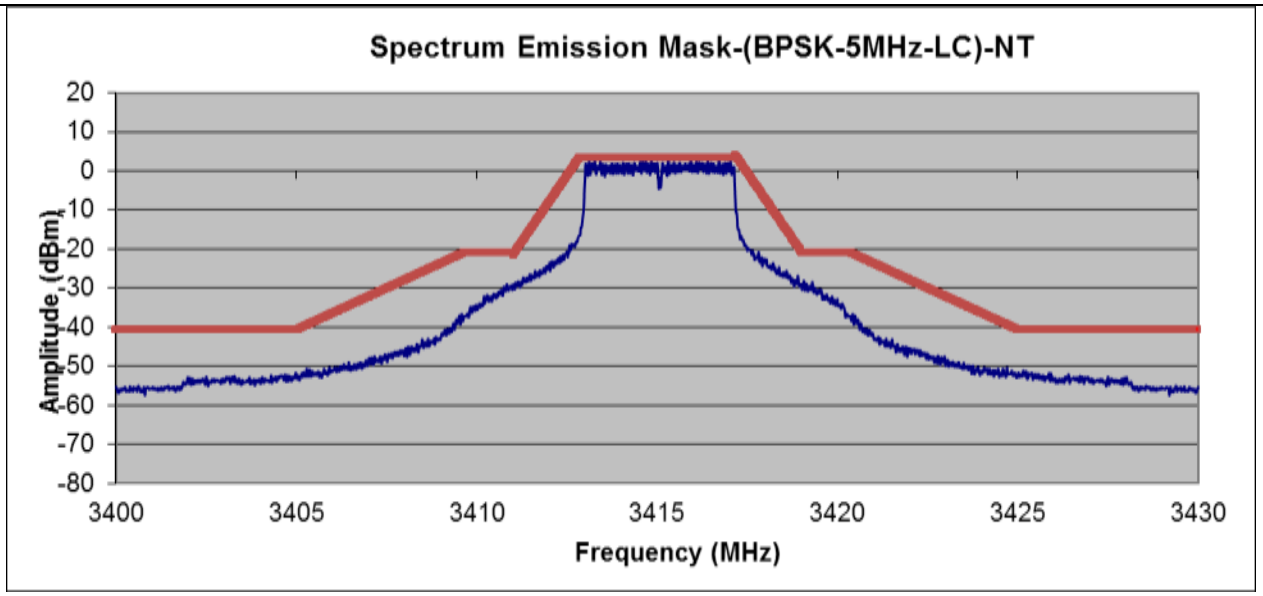
Spectrum Mask – 5MHz Channel Separation/Bandwidth @ BPSK

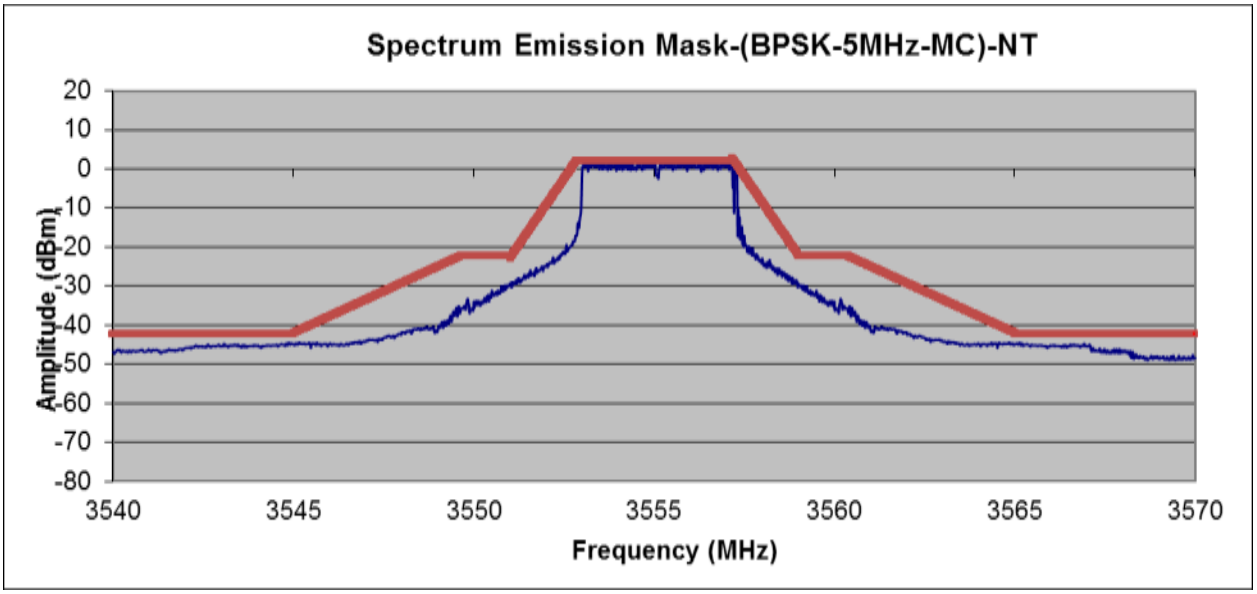
SPECTRUM MASK (QPSK MODE)				
Channel Separation	**Frequency**	**Temperature**	**Voltage**	**Pass/Fail**
10MHz	Low	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	Mid	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	High	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass

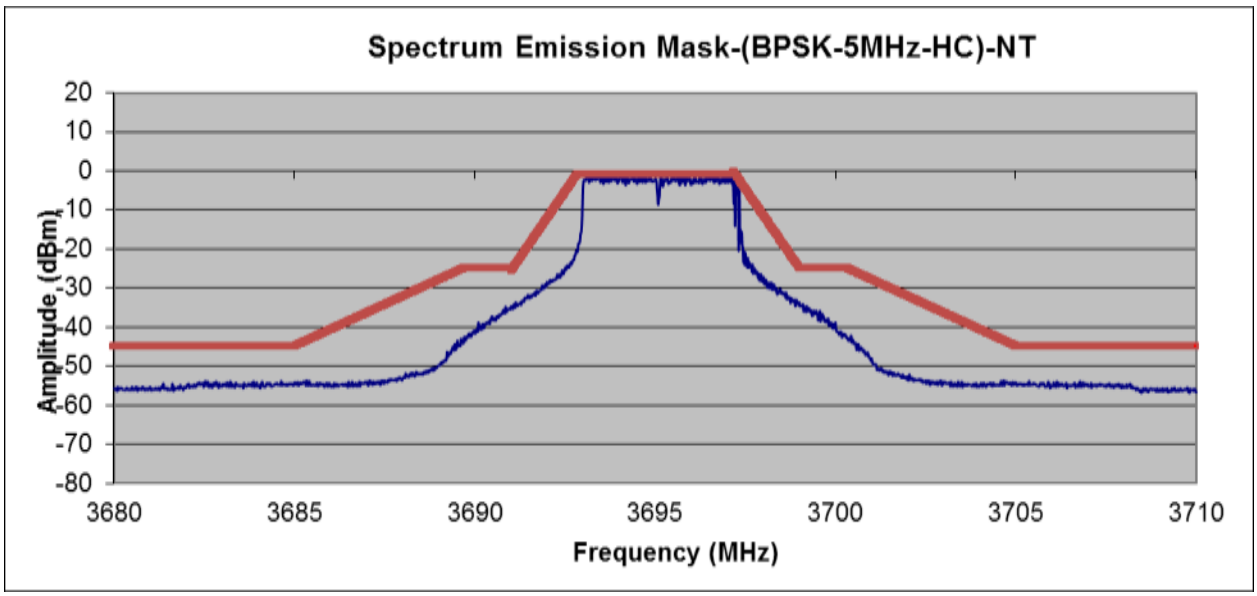
Spectrum Mask – 10MHz Channel Separation/Bandwidth @ QPSK

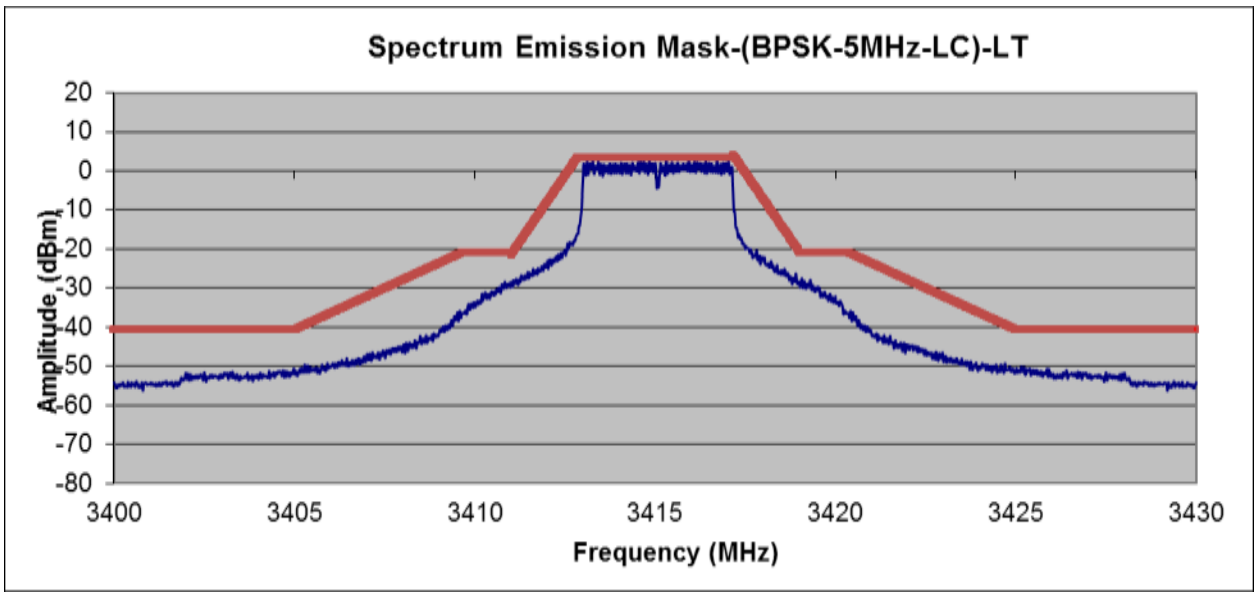
SPECTRUM MASK (16QAM MODE)				
Channel Separation	**Frequency**	**Temperature**	**Voltage**	**Pass/Fail**
15MHz	Low	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	Mid	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass
	High	Nominal	Nominal	Pass
		Low	Nominal	Pass
		High	Nominal	Pass

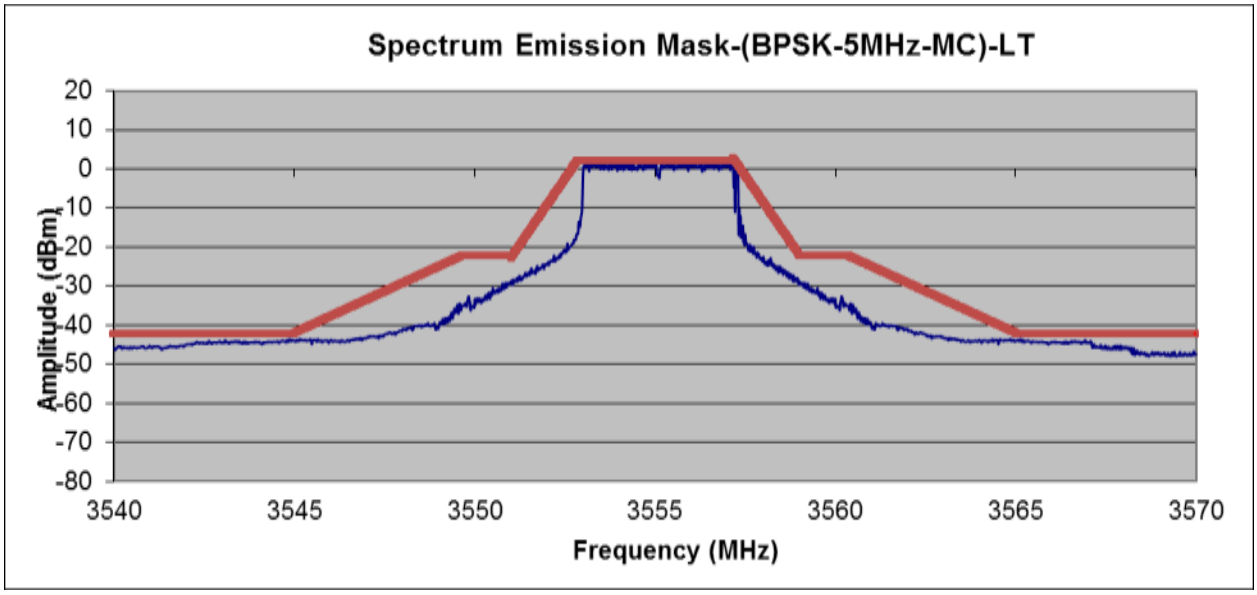
Spectrum Mask – 15MHz Channel Separation/Bandwidth @ 16QAM

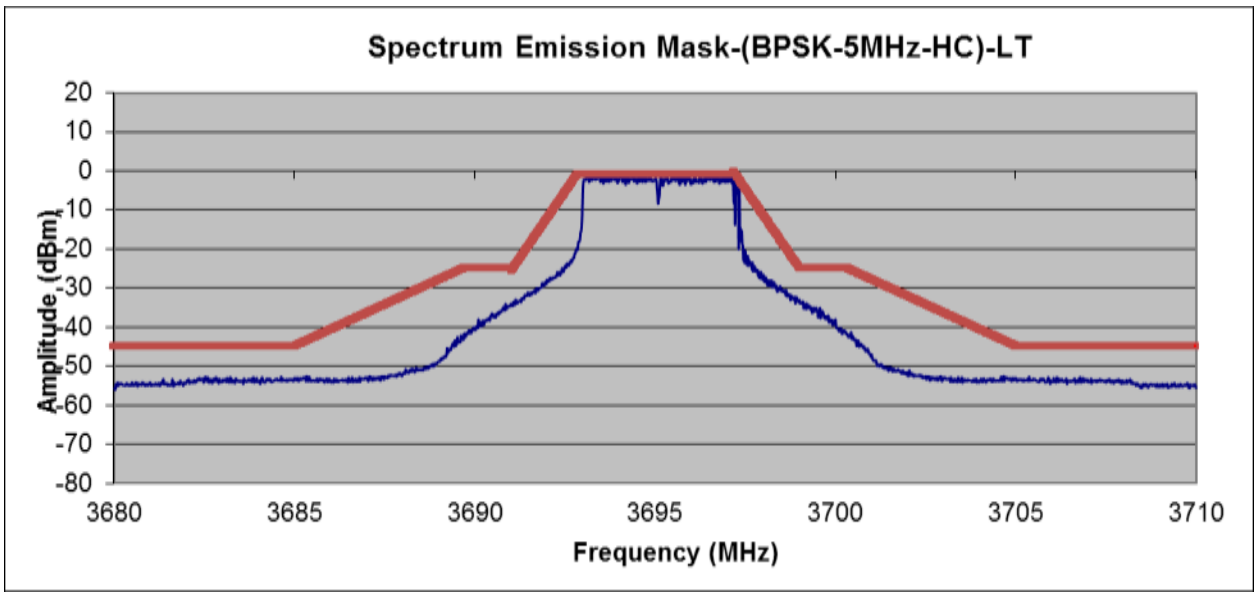

Spectrum Emission Mask-(BPSK-5MHz-LC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3400
3405
3410
3415
3420
3425
3430
Frequency (MHz)

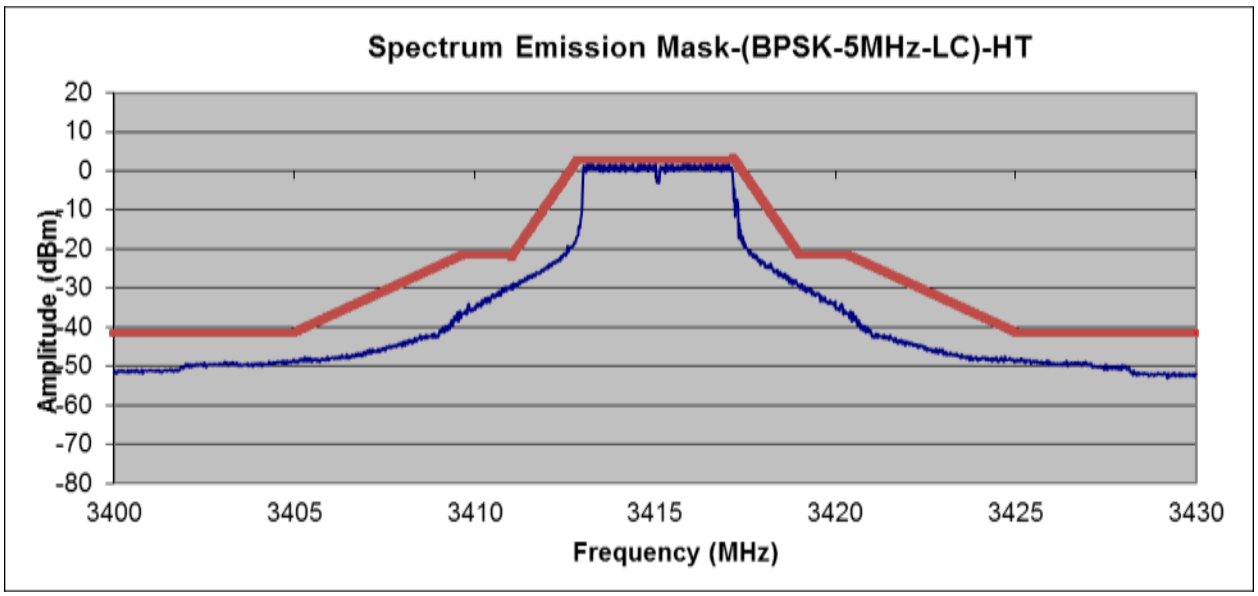

Spectrum Emission Mask-(BPSK-5MHz-MC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3540
3545
3550
3555
3560
3565
3570
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-HC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3680
3685
3690
3695
3700
3705
3710
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-LC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3400
3405
3410
3415
3420
3425
3430
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-MC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3540
3545
3550
3555
3560
3565
3570
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-HC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3680
3685
3690
3695
3700
3705
3710
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-LC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
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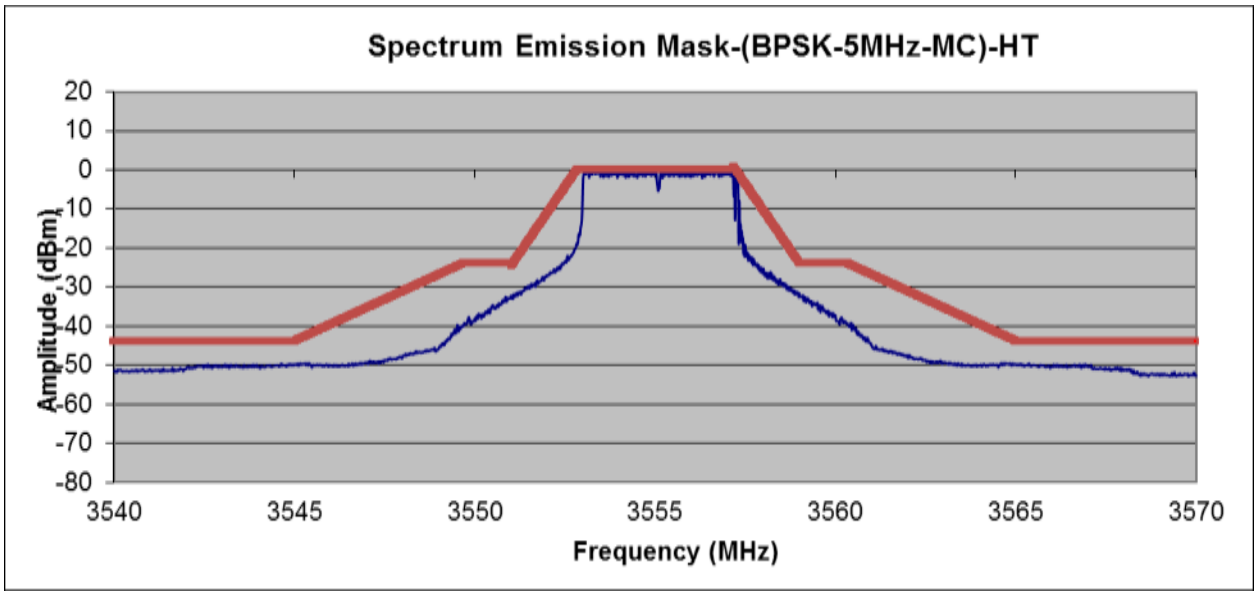
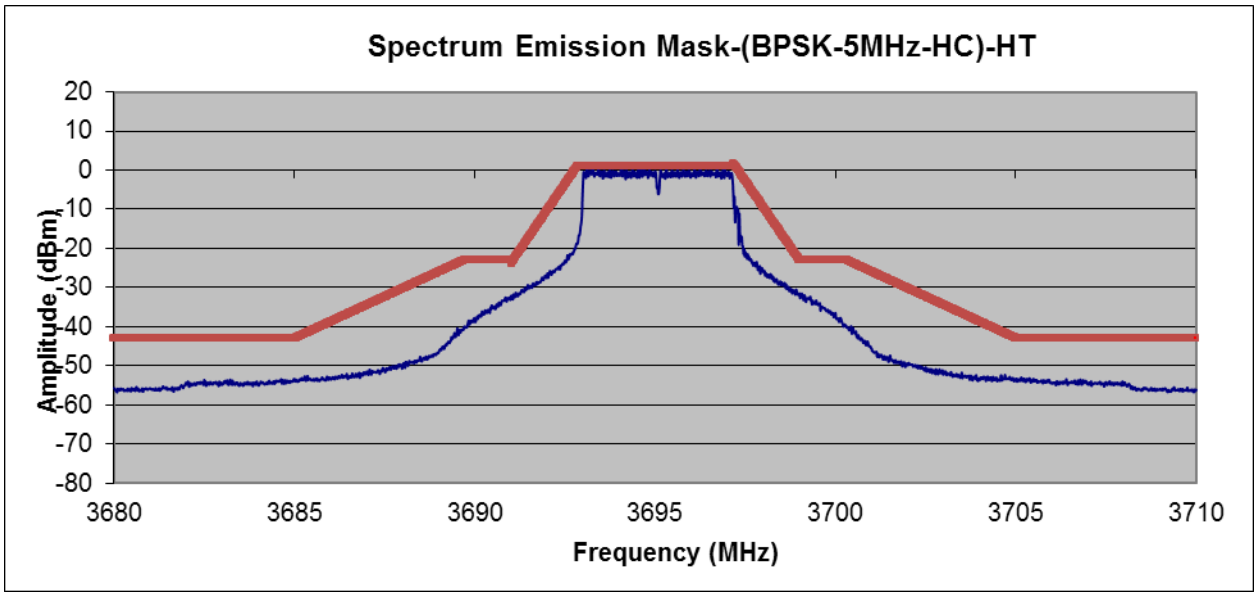
-80
3400
3405
3410
3415
3420
3425
3430
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-MC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3540
3545
3550
3555
3560
3565
3570
Frequency (MHz)


Spectrum Emission Mask-(BPSK-5MHz-HC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
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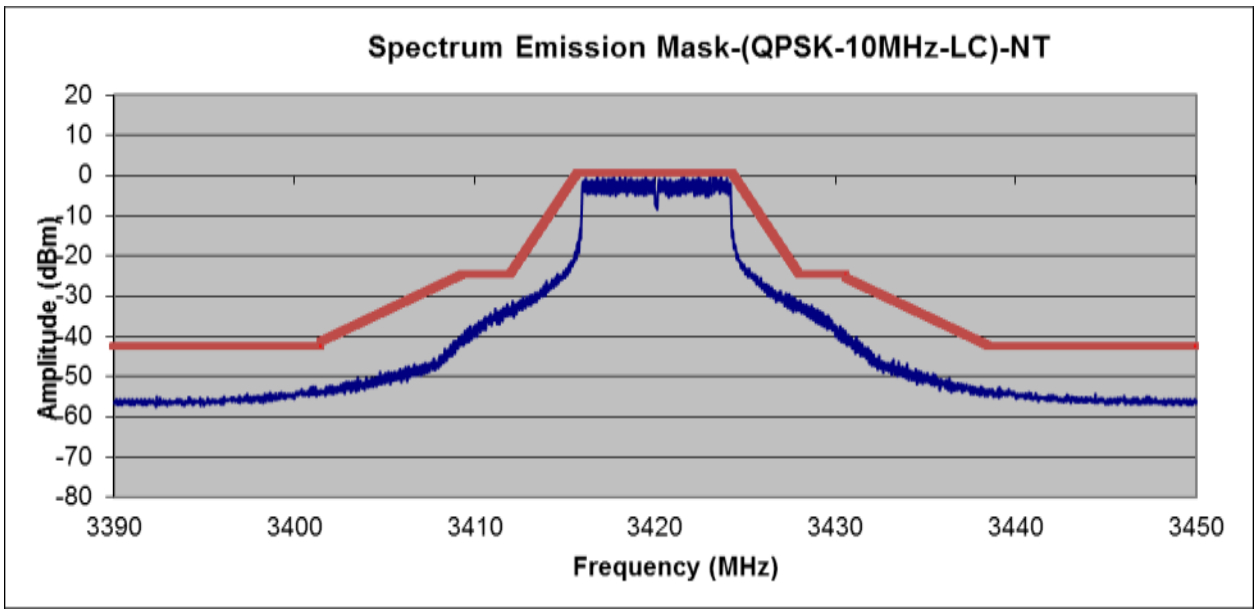
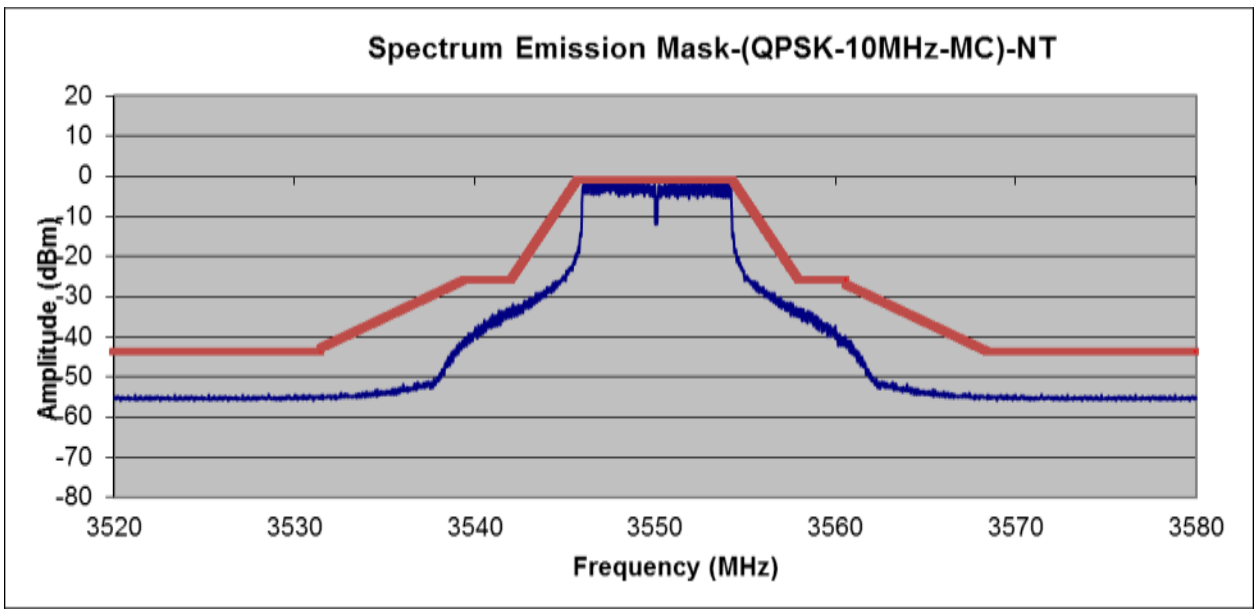
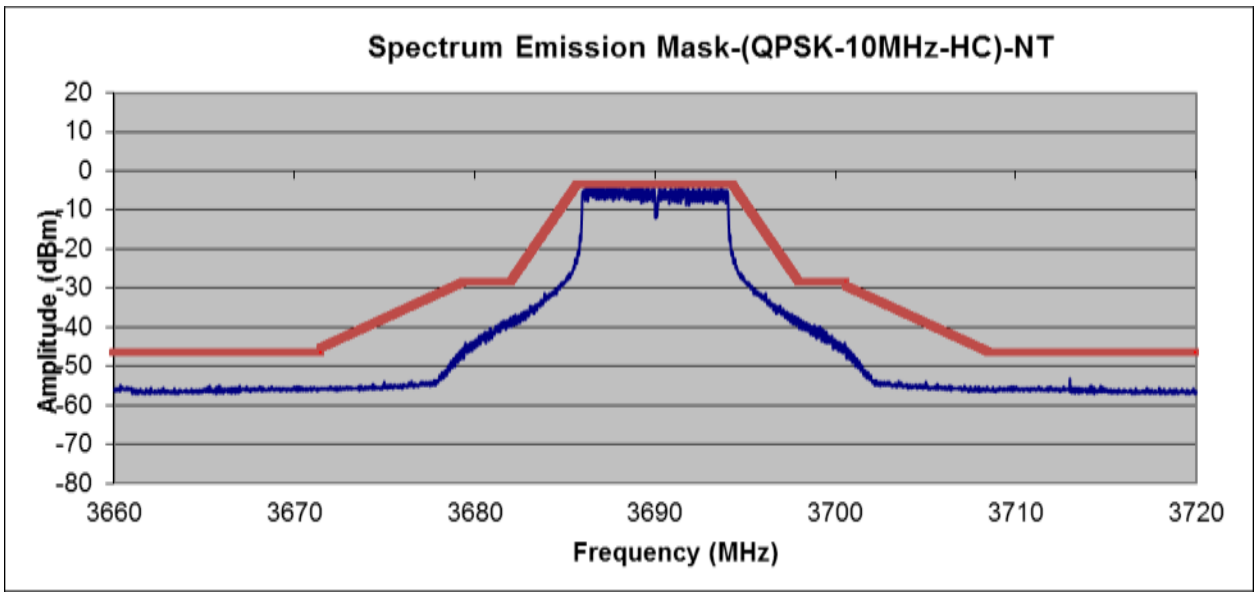
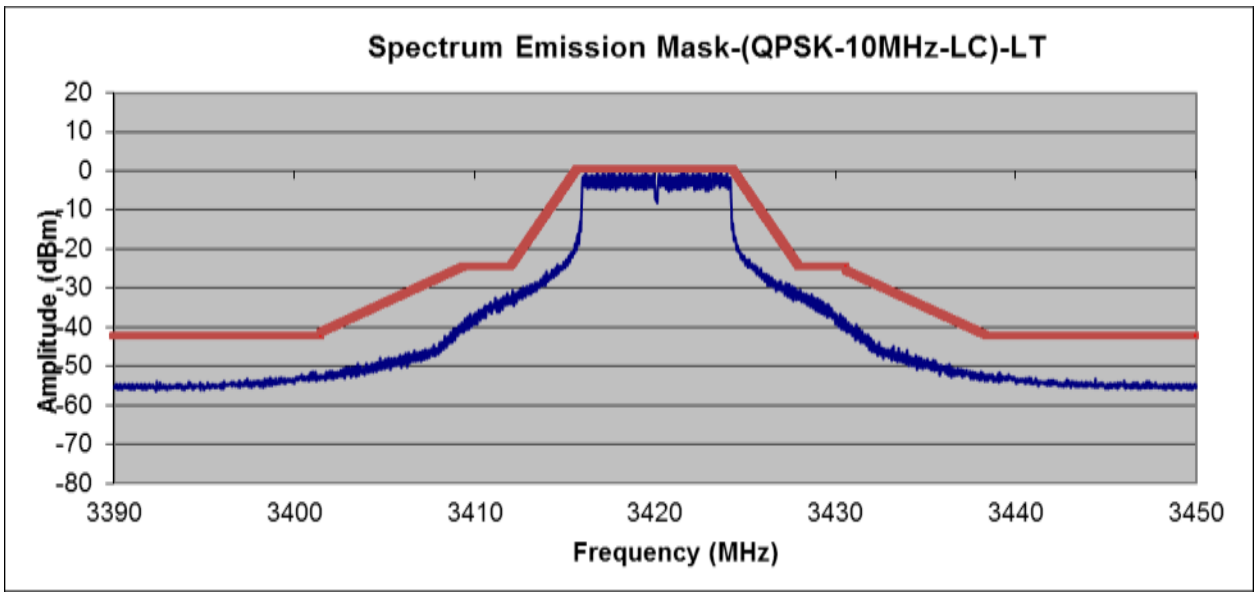
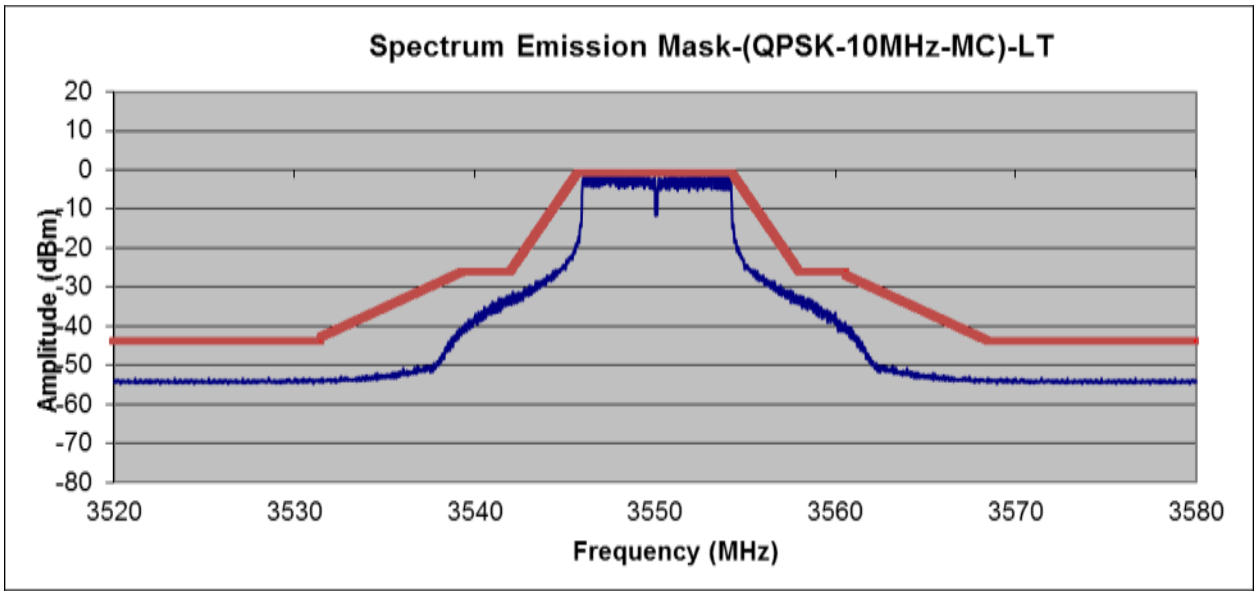
-70
-80
3680
3685
3690
3695
3700
3705
3710
Frequency (MHz)

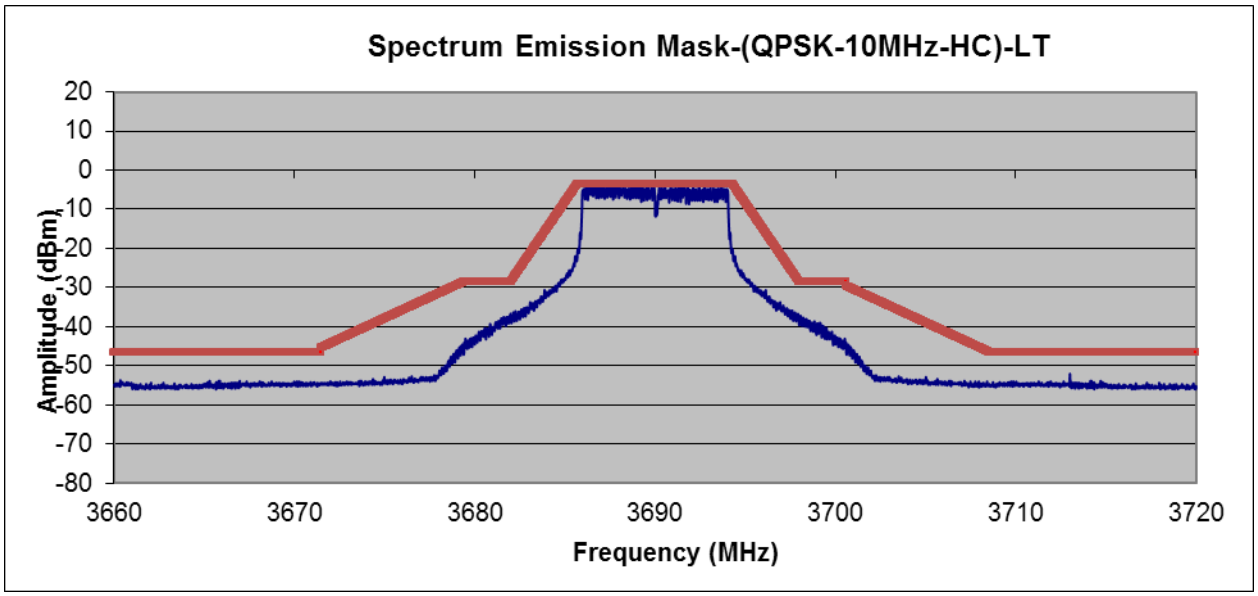

Spectrum Emission Mask-(QPSK-10MHz-LC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3390
3400
3410
3420
3430
3440
3450
Frequency (MHz)

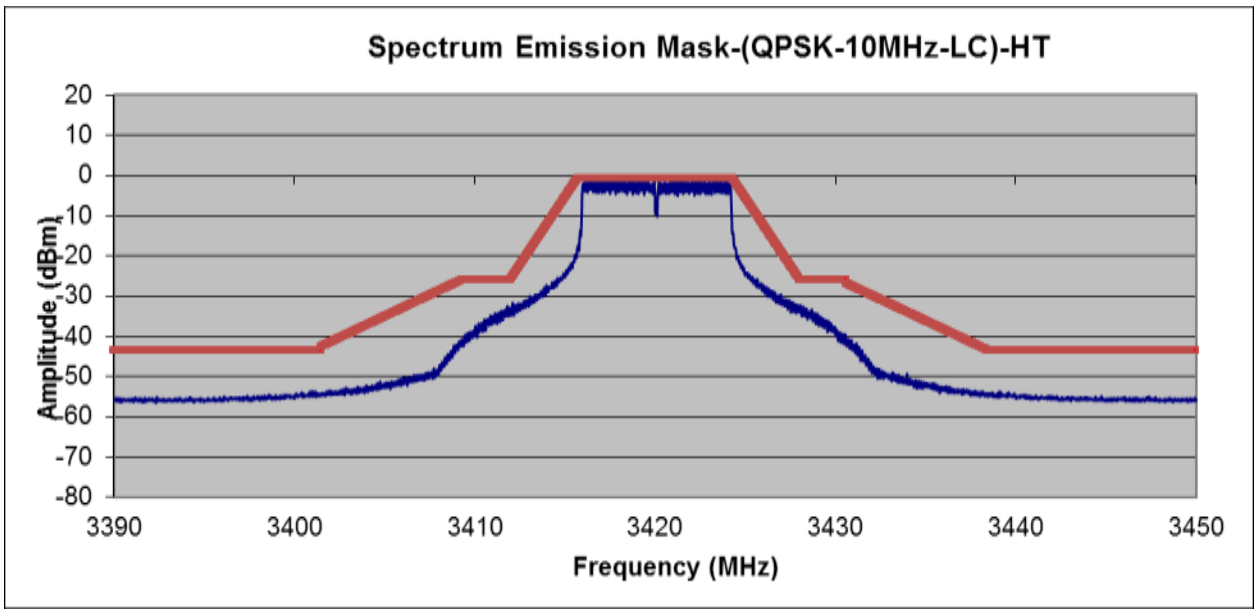

Spectrum Emission Mask-(QPSK-10MHz-MC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3520
3530
3540
3550
3560
3570
3580
Frequency (MHz)

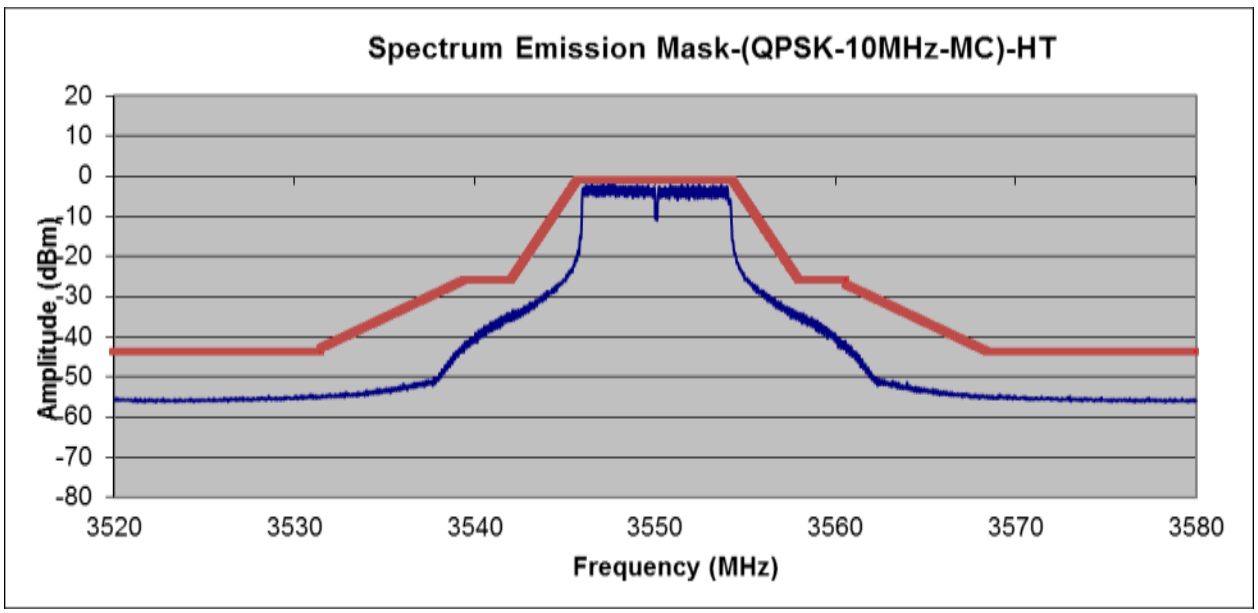

Spectrum Emission Mask-(QPSK-10MHz-HC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3660
3670
3680
3690
3700
3710
3720
Frequency (MHz)

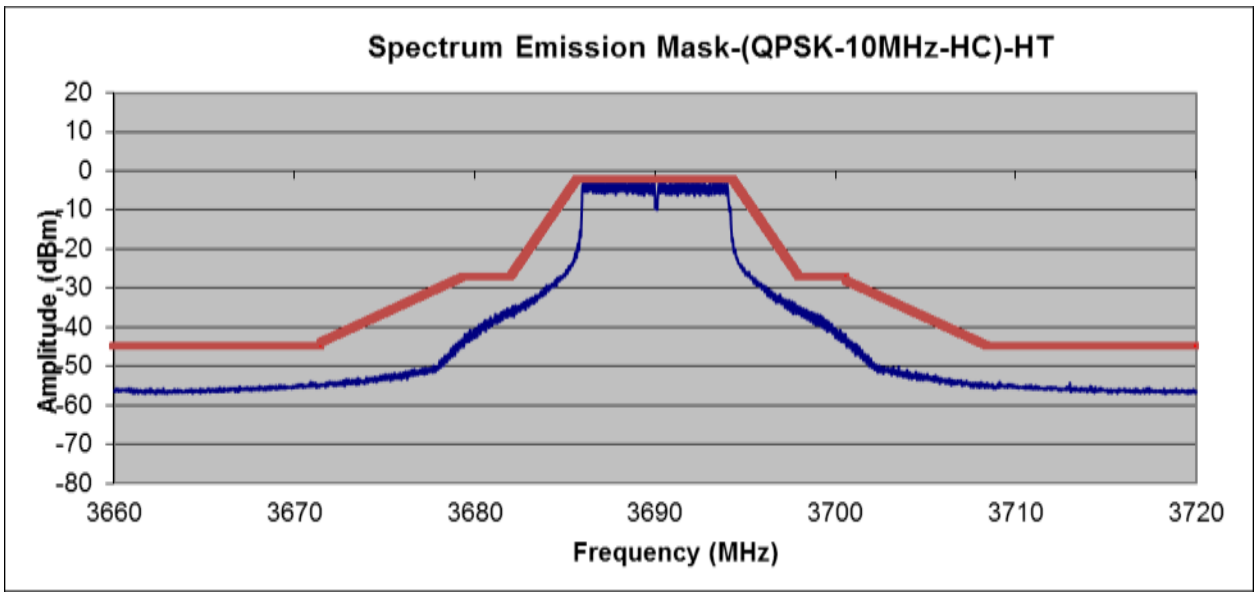

Spectrum Emission Mask-(QPSK-10MHz-LC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3390
3400
3410
3420
3430
3440
3450
Frequency (MHz)

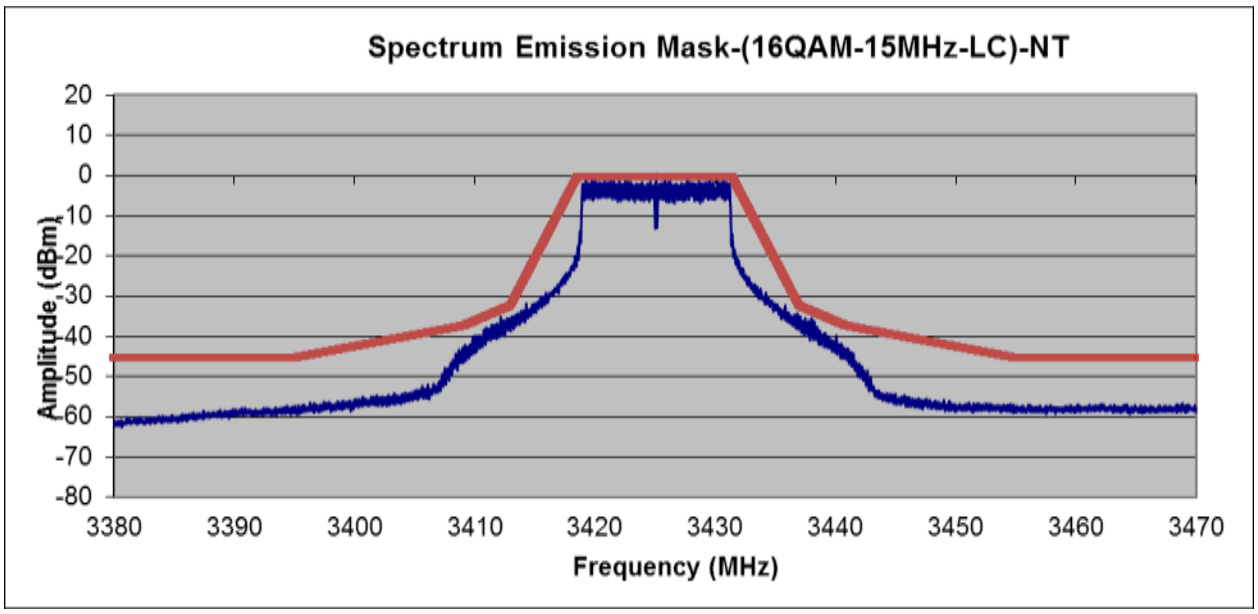

Spectrum Emission Mask-(QPSK-10MHz-MC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3520
3530
3540
3550
3560
3570
3580
Frequency (MHz)

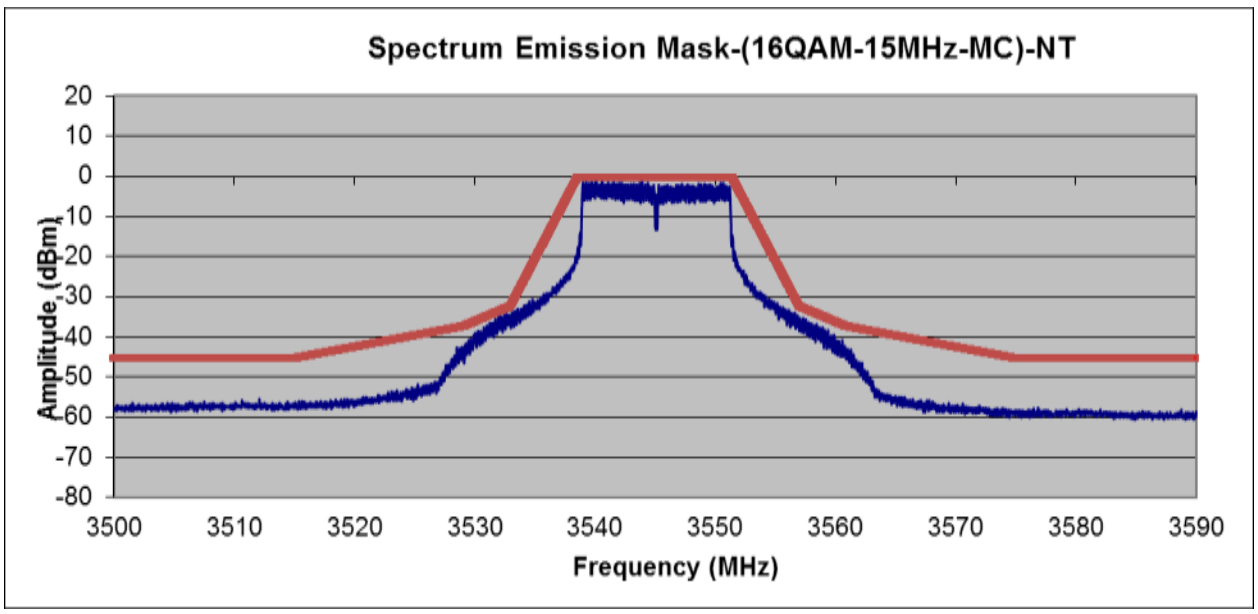

Spectrum Emission Mask-(QPSK-10MHz-HC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3660
3670
3680
3690
3700
3710
3720
Frequency (MHz)

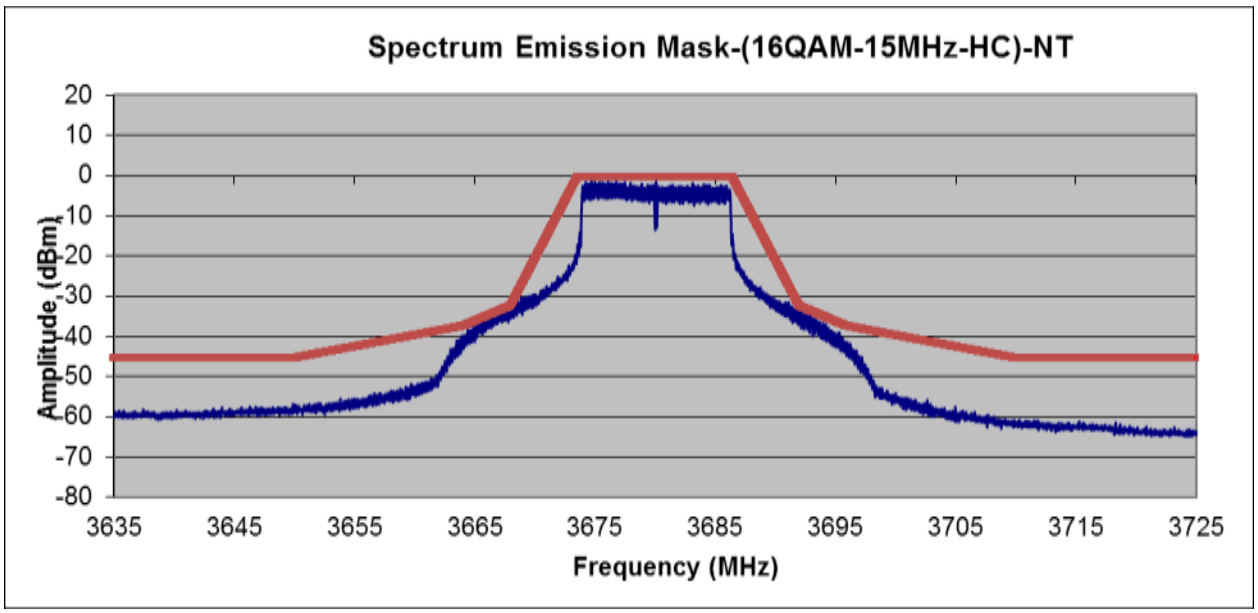

Spectrum Emission Mask-(QPSK-10MHz-LC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3390
3400
3410
3420
3430
3440
3450
Frequency (MHz)

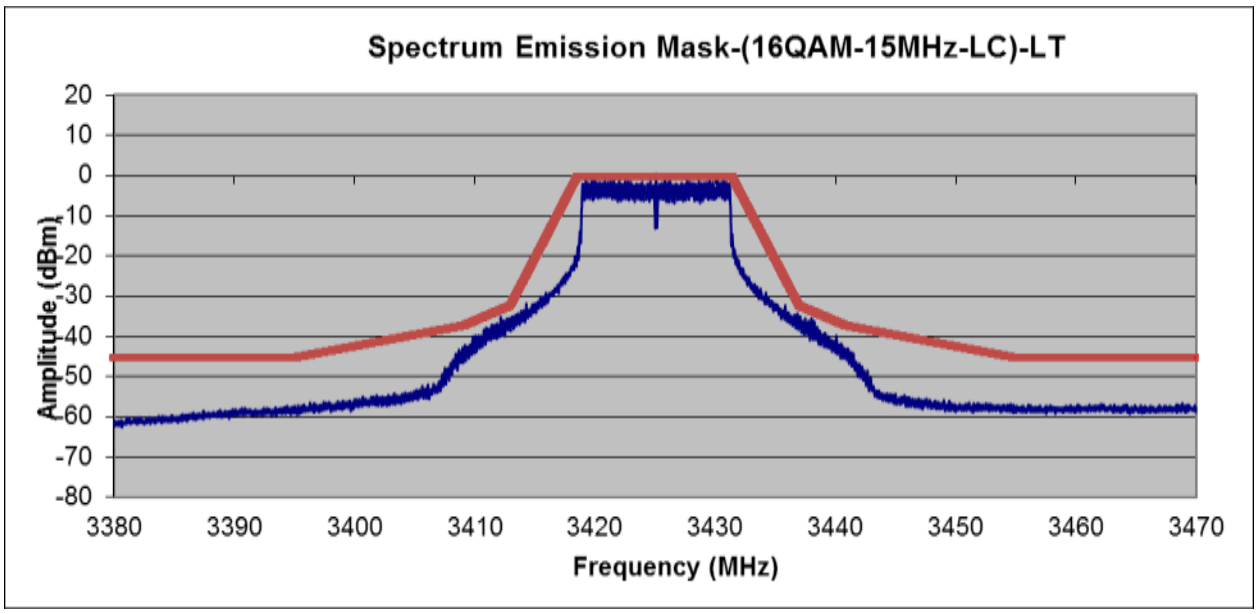

Spectrum Emission Mask-(QPSK-10MHz-MC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3520
3530
3540
3550
3560
3570
3580
Frequency (MHz)

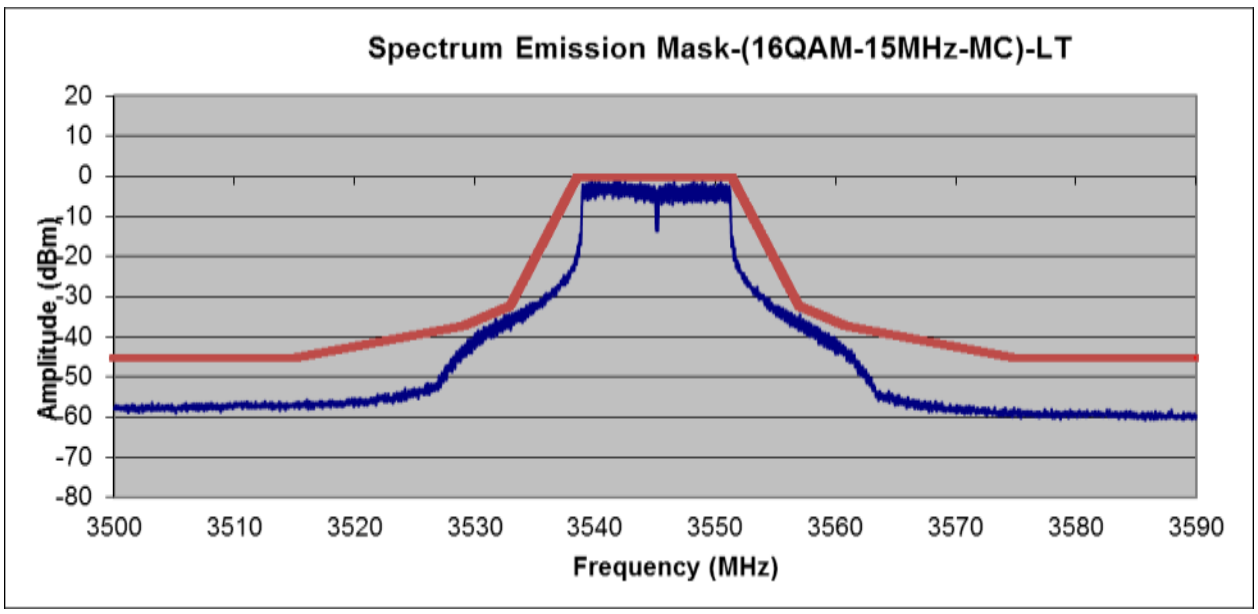

Spectrum Emission Mask-(QPSK-10MHz-HC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3660
3670
3680
3690
3700
3710
3720
Frequency (MHz)

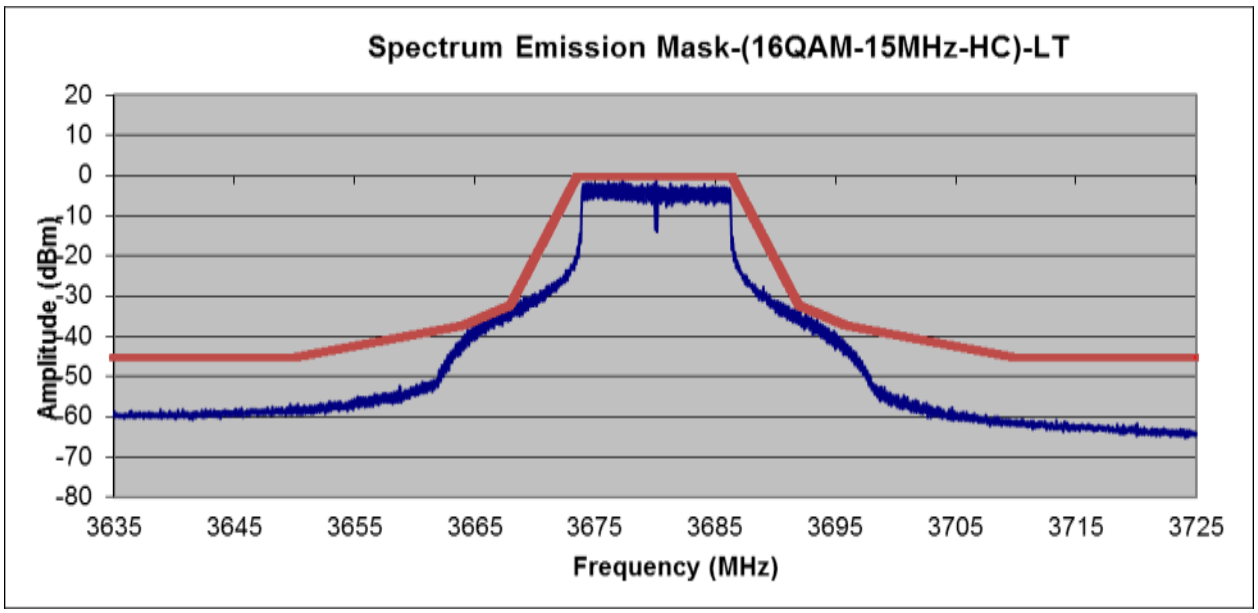

Spectrum Emission Mask-(16QAM-15MHz-LC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3380
3390
3400
3410
3420
3430
3440
3450
3460
3470
Frequency (MHz)

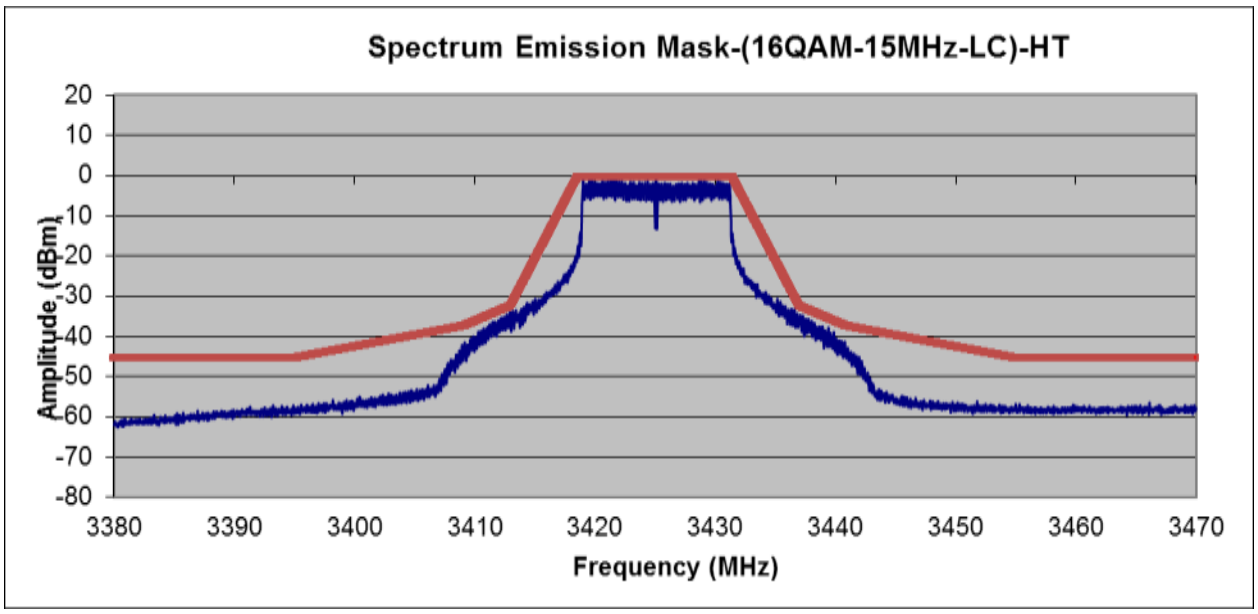

Spectrum Emission Mask-(16QAM-15MHz-MC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3500
3510
3520
3530
3540
3550
3560
3570
3580
3590
Frequency (MHz)

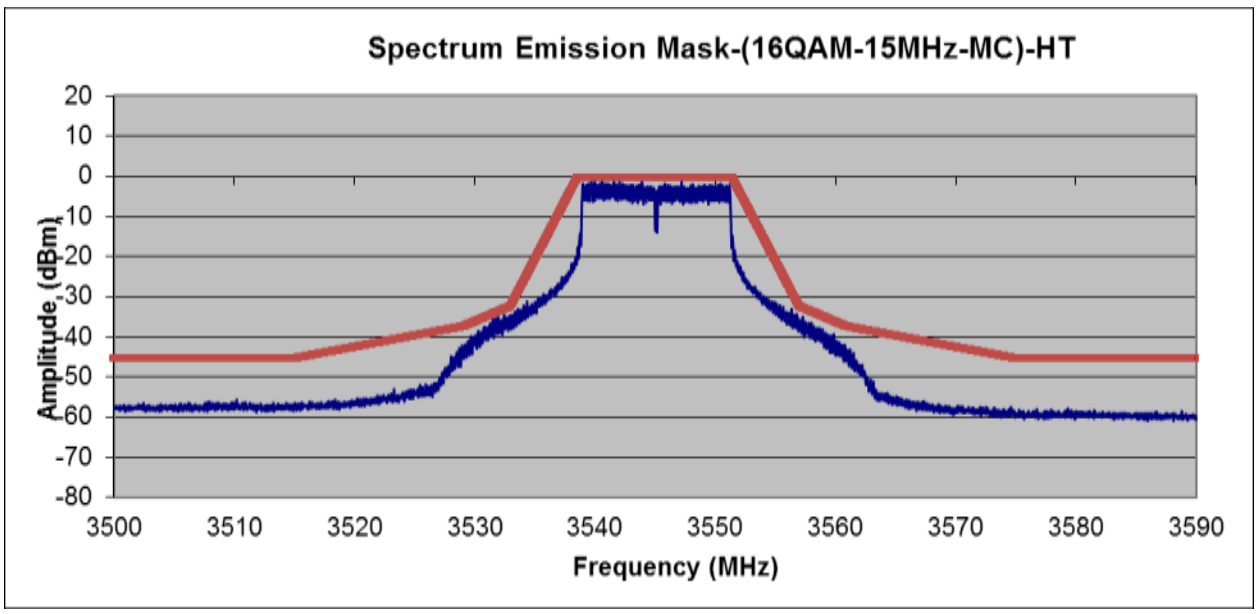

Spectrum Emission Mask-(16QAM-15MHz-HC)-NT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3635
3645
3655
3665
3675
3685
3695
3705
3715
3725
Frequency (MHz)

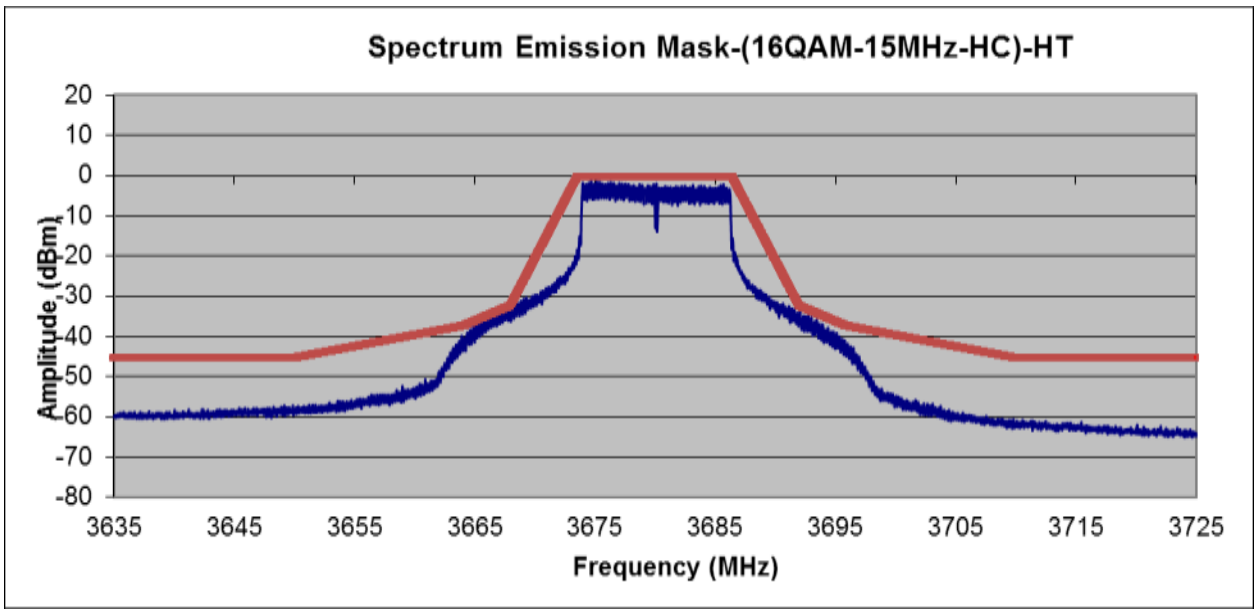

Spectrum Emission Mask-(16QAM-15MHz-LC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3380
3390
3400
3410
3420
3430
3440
3450
3460
3470
Frequency (MHz)


Spectrum Emission Mask-(16QAM-15MHz-MC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3500
3510
3520
3530
3540
3550
3560
3570
3580
3590
Frequency (MHz)


Spectrum Emission Mask-(16QAM-15MHz-HC)-LT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3635
3645
3655
3665
3675
3685
3695
3705
3715
3725
Frequency (MHz)


Spectrum Emission Mask-(16QAM-15MHz-LC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3380
3390
3400
3410
3420
3430
3440
3450
3460
3470
Frequency (MHz)


Spectrum Emission Mask-(16QAM-15MHz-MC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3500
3510
3520
3530
3540
3550
3560
3570
3580
3590
Frequency (MHz)


Spectrum Emission Mask-(16QAM-15MHz-HC)-HT
Amplitude (dBm)
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
3635
3645
3655
3665
3675
3685
3695
3705
3715
3725
Frequency (MHz)

5.1.4 EN 302 326-2 V1.2.2 (2007-06) spurious Emissions (External) Test Results

Standard Requirement:

For Fixed Service systems, spurious emissions are defined by CEPT/ERC/REC 74-01 [1] as those emissions at frequencies that are removed from the nominal carrier frequency by more than 250 % of the relevant channel separation.

It is necessary to define spurious emissions (or more precisely, according latest ITU-R definitions, unwanted emissions in the spurious domain) from transmitters in order to limit interference into other systems operating wholly externally to the system under consideration (external emissions). Limits are set out by EN 301 390.

Spurious Emissions Limit

SPURIOUS DOMAIN EMISSION LIMIT	
Type of Equipment	Mean power or , when applicable, average power during bursts duration in the reference bandwidth
BWA systems operating between 1 GHz and 6 GHz (all transmitting stations)	-36 dBm, for 9 kHz < f < 1 GHz -30 dBm , for 1 GHz < f < FUPPER

Measurement Frequency Range

Fundamental frequency range	**Frequency range for measurements**	
	Lower frequency	Upper frequency (The test should include the entire harmonic band and not be truncated at the precise upper frequency limit stated)
9 kHz - 100 MHz	9 kHz	1 GHz
100 MHz - 300 MHz	9 kHz	10th harmonic
300 MHz - 600 MHz	30 MHz	3 GHz
600 MHz - 5.2 GHz	30 MHz	5th harmonic
5.2 GHz - 13 GHz	30 MHz	26 GHz
13 GHz - 150 GHz	30 MHz	2nd harmonic
150 GHz - 300 GHz	30 MHz	300 GHz

Ambient conditions:

Temperature: 25.2°C Relative humidity: 50 % Pressure: 1019 mbar

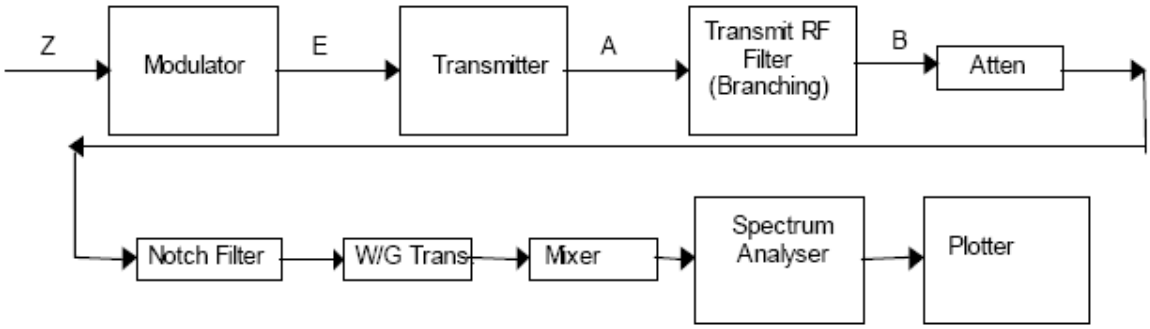
Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

5.1.4.1 Test Procedure

The transmitter output port shall be connected to either a Spectrum Analyzer via a suitable attenuator and/or notch filter to limit the power into the front end of the Analyzer. In some cases, where the upper frequency limit exceeds the basic operating range of the Analyzer, suitable waveguide transitions and mixer will be required. It is important that the circuit between the transmitter and the input to the mixer, or Spectrum Analyzer, is characterized over the frequency range to be measured. These losses should be used to set the limit line of the Analyzer to a value which ensures that the specification criteria at point C' is not exceeded.

The transmitter is to be operated at the supplier's maximum rated output power and the level and frequency of all significant signals are to be measured and plotted throughout the frequency band quoted in the relevant specification. It is recommended that each scan be taken in 5 GHz steps below 21,2 GHz and 10 GHz steps above 21,2 GHz. However, spurious emissions close to the limit should be plotted over a restricted range which clearly demonstrates that the signal does not exceed the relevant limit.The measurement for the TS is performed with one single carrier only.

Test Setup



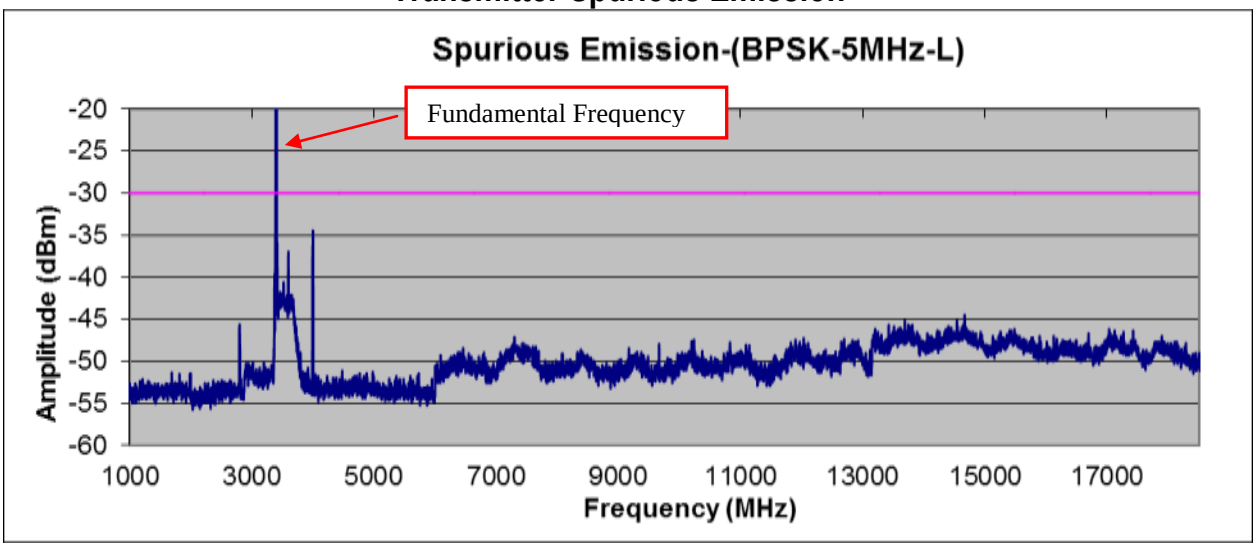
Spurious Emissions (External) measurement test setup

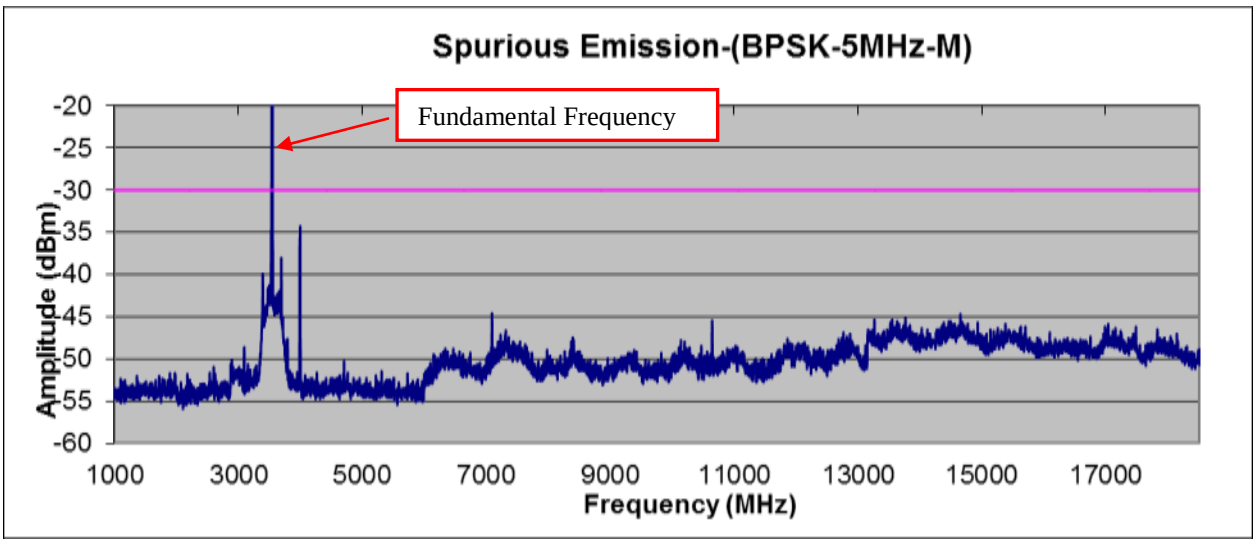
Test Result

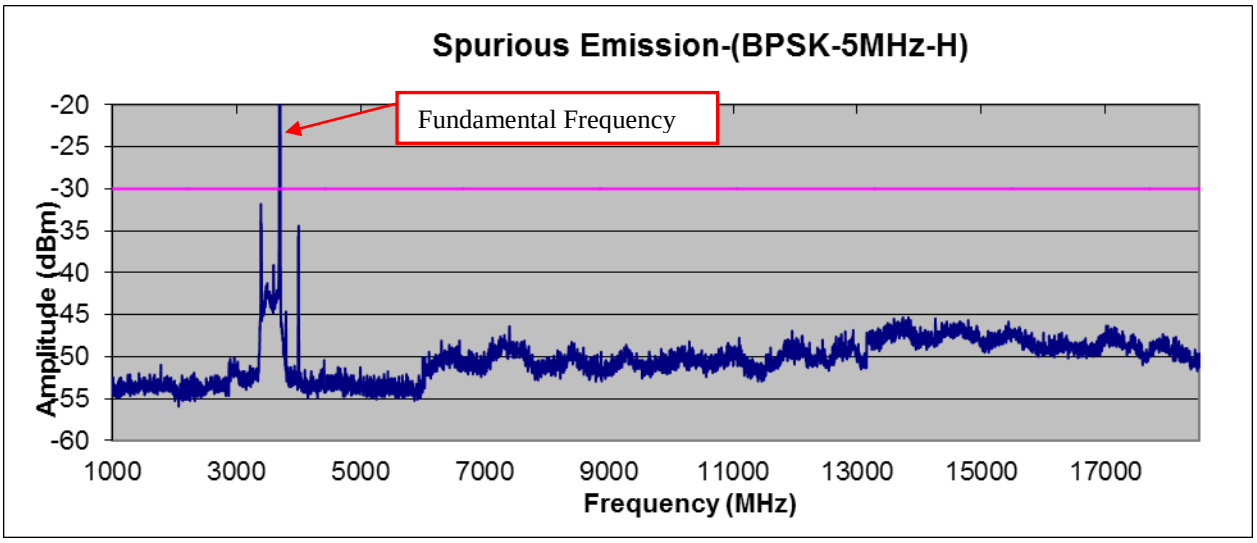
PASS

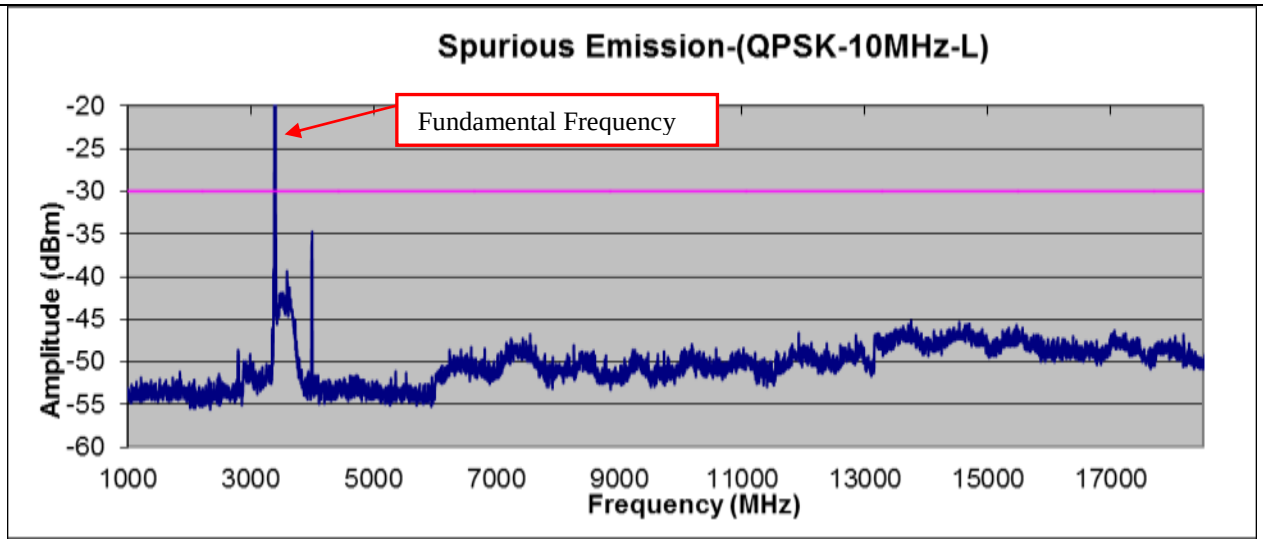
Test Plots

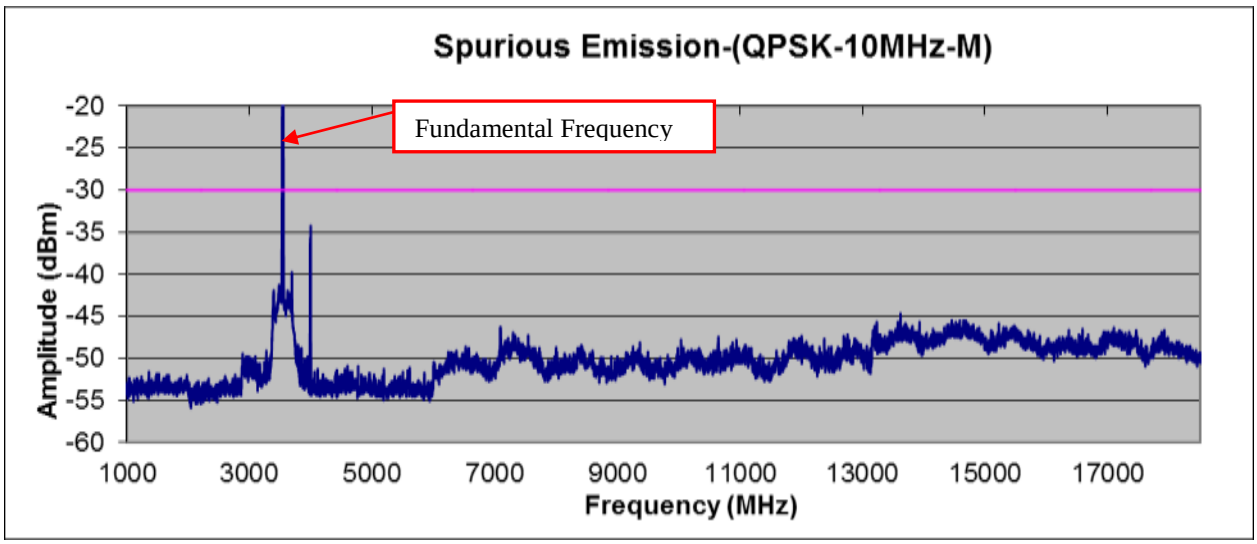
Transmitter Spurious Emission

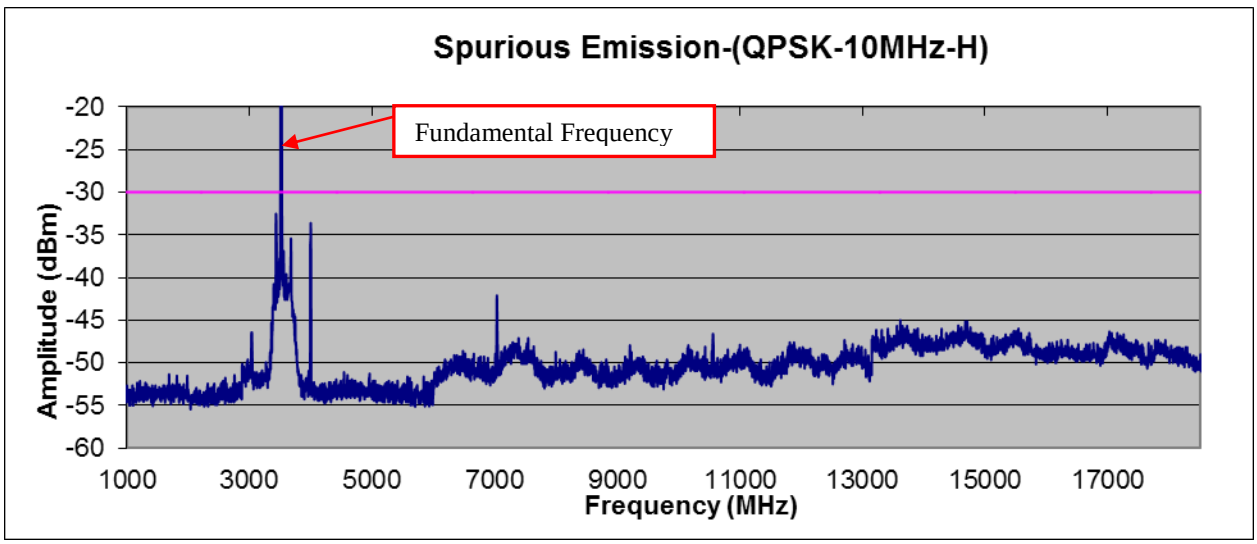


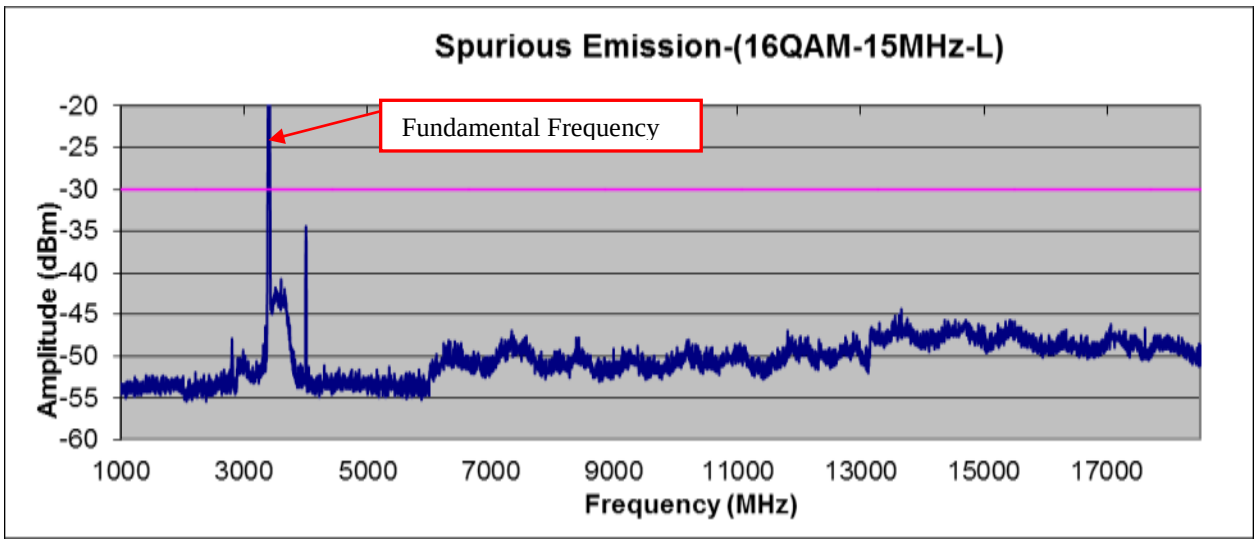


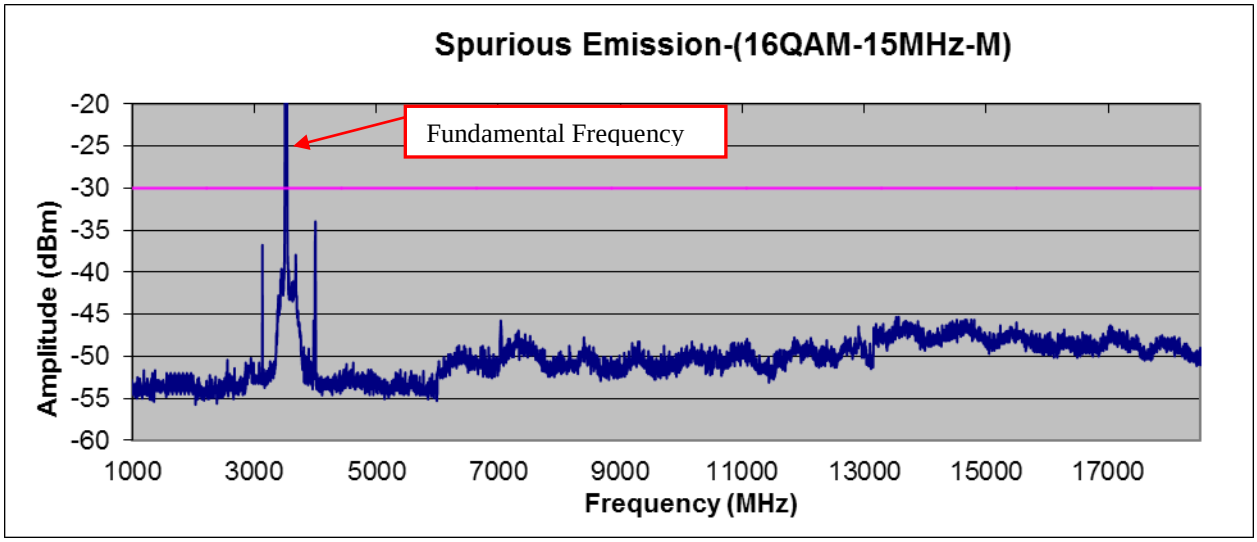


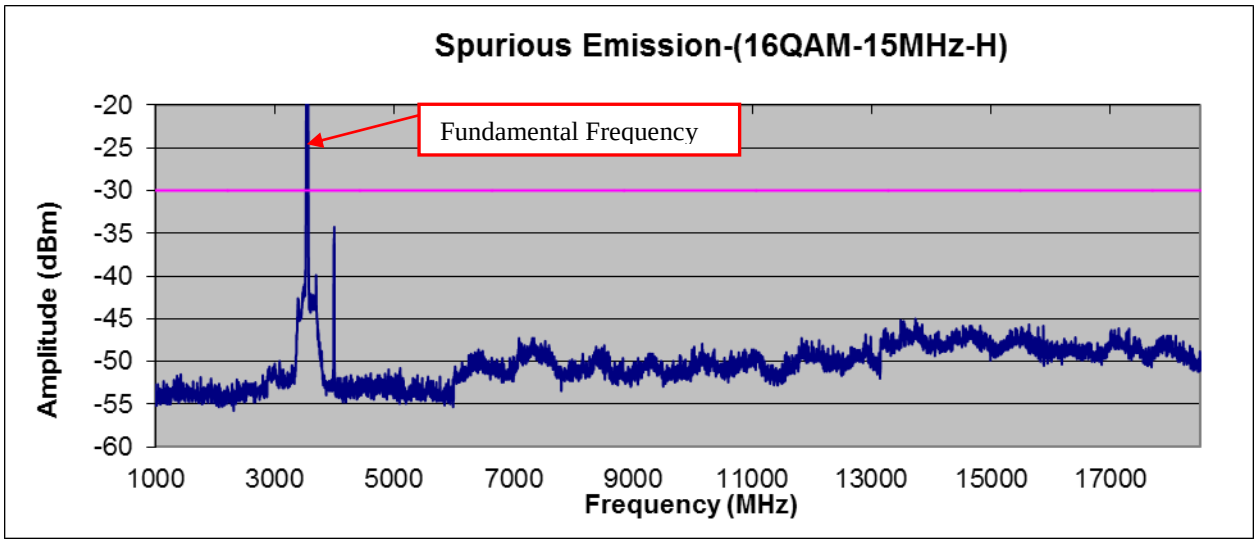

Spurious Emission-(QPSK-10MHz-L)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)


Spurious Emission-(QPSK-10MHz-M)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)


Spurious Emission-(QPSK-10MHz-H)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)


Spurious Emission-(16QAM-15MHz-L)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)


Spurious Emission-(16QAM-15MHz-M)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)


Spurious Emission-(16QAM-15MHz-H)
Fundamental Frequency
Amplitude (dBm)
-20
-25
-30
-35
-40
-45
-50
-55
-60
1000
3000
5000
7000
9000
11000
13000
15000
17000
Frequency (MHz)

5.1.5 EN 302 326-2 V1.2.2 (2007-06) Receiver Input Level Range Test Results

Note:

Standard Requirement:

Minimum RSL under single signal conditions shall be measured.

Ambient conditions:

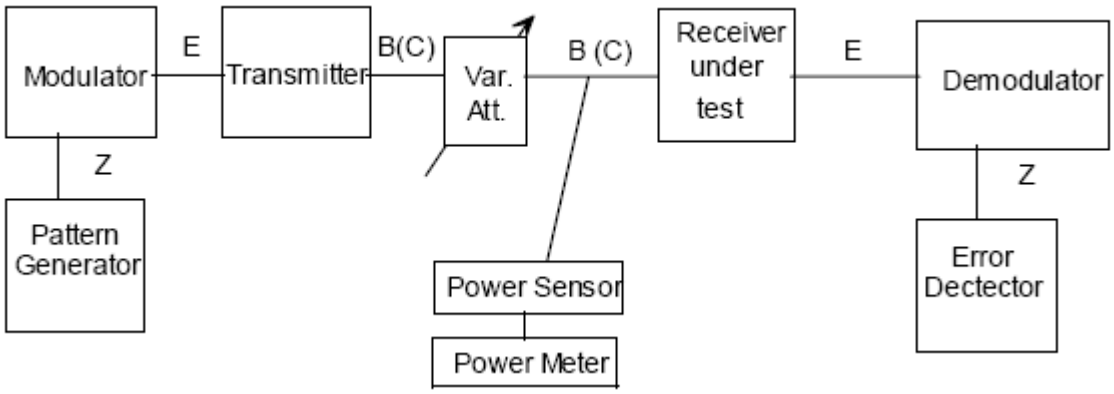
Temperature: 25°C Relative humidity: 50 % Pressure: 1019 mbar

Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

5.1.5.1 Test Procedure

a) Power the EUT on and ensure that data is passing with no errors.
b) The input level to the Rx shall be set to the upper and lower levels specified in the relevant ETS/EN or declared by the manufacturer
c) Adjust the variable attenuators such that the RSL at the EUT is set to the minimum stated level for the first BER.
c) Record the measured BER.

Test setup



Receiver Input Level Range measurement test setup

Test Result

PASS

Middle Channel					
Modulation	**Channel Separation (MHz)**	**Center Frequency (MHz)**	**Upper Receiver Input Level (dBm)**	**Lower Receiver Input Level (dBm)**	**Receiver Input Range (dB)**
BPSK	5	3555	23.0	-94.6	117.6
QPSK	10	3550	23.2	-93.2	116.4
16QAM	15	3545	23.3	-90.4	113.7
Low Channel					
BPSK	5	3555	23.1	-94.2	117.3
QPSK	10	3550	23.2	-92.8	116.0
16QAM	15	3545	23.2	-90.7	113.9
High Channel					
BPSK	5	3555	22.9	-94.5	117.4
QPSK	10	3550	23.2	-93.1	116.3
16QAM	15	3545	23.2	-90.3	113.5

Receiver Input Level Range Test Results

5.1.6 BER as a function of receiver input signal level Test Results

Note:

Standard Requirement:

The supplier shall declare the RSL threshold(s) (dBm) for the relevant BER values (i.e. 10-6 and 10-8 or 10-10), which shall not be worse than the corresponding RSL upper bound values indicated in the `s of the relevant annex(es). Equipment working at the relevant declared RSL thresholds shall produce a BER equal to or less than the corresponding values (i.e. 10-6 and 10-8 or 10-10).

Ambient conditions:

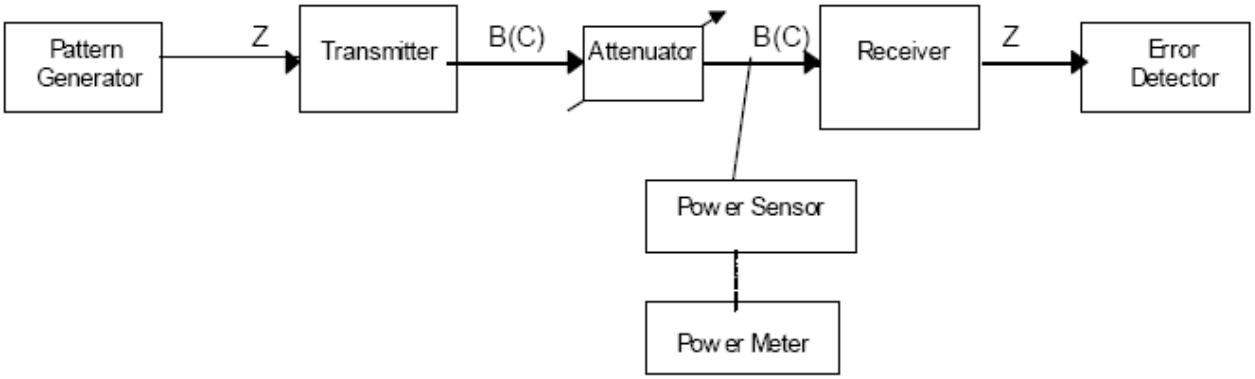
Temperature: 25°C Relative humidity: 50 % Pressure: 1019 mbar

Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

5.1.6.1 Test Procedure

a) Power the EUT on and ensure that data is passing with no errors.
b) Adjust the variable attenuators such that the RSL at the EUT is set to the minimum stated level for the first BER.
c) With the RSL set, observe the EUT BER for at least the calculated test time. Note the result.
d) Now adjust the variable attenuators whilst constantly monitoring the BER tester until you reach an RSL whereby the BER does equal the level specified. This is not a requirement of the specification but actual receiver thresholds are important information for the manufacturer.
e) Once you have achieved the pass/fail level of BER, note the settings on the variable attenuators and therefore calculate the actual RSL at the EUT.
f) Now repeat steps 'b' to 'e' for the next level of BER as specified, using the relevant RSL for that test. These levels are found in the generic specification or specified by the manufacturer.

Test setup



Test Limit:

Primary Equipment Type (EqC-PET)	Frequency Range (EqC-FR)	Equivalent Modulation Order (EqC-EMO) (Note 2)	Secondary Equipment Type (EqC-SET)	RSL for BER ≤ 10^{-6} (dBm) (T_{BER}(A,B))	Note
T	< 1 GHz	2	QP	T_{BER}(-89, GBR)	
			GM	T_{BER}(-83, GBR)	
			DQ	T_{BER}(-86, GBR)	
	1 GHz to 3 GHz	2	2 Mbits	-88	
			4 Mbits	-85	
		4	8 Mbits	-79	
	3 GHz to 11 GHz	2	LC	T_{BER}(-81, GBR)	
			HC	T_{BER}(-92,5, ChS)	
			≥ 2 Mbits	T_{BER}(-88,5, ChS)	
			< 2 Mbits (not LC or HC)	T_{BER}(-89, GBR)	
		4	≥ 4 Mbits	T_{BER}(-80,5, ChS)	
			< 4 Mbits	T_{BER}(-81, GBR)	
		6	Any	T_{BER}(-74,5, ChS)	
	26 GHz, 28 GHz and 32 GHz	2	HC	T_{BER}(-91, GBR)	
			Not HC	T_{BER}(-85, GBR)	
		4	Any	T_{BER}(-79, GBR)	
		6	Any	T_{BER}(-76, GBR)	

Note:
TBER(A, B) = (A + 10 log10(B)) dBm
where A is a constant and B is either GBR, the gross bit rate in Mbit/s or ChS, the channel separation in MHz.

Test Result

PASS

Middle Channel						25°C	-33°C	55°C
Modulation	EqC-EMO	EqC-SET	Nominal bit rate (Mbit/s)	Channel Separation (MHz)	Center Frequency (MHz)	RSL for BER≤10^-6 (dBm)	RSL for BER≤10^-6 (dBm)	RSL for BER≤10^-6 (dBm)
BPSK	1	NULL	≥2 Mbits	5	3555	-90.2	-90.1	-90.3
QPSK	2	NULL	≥2 Mbits	10	3550	-89.1	-88.4	-89.1
16QAM	4	NULL	≥4 Mbits	15	3545	-85.7	-86.3	-86.1
Low Channel						25°C	-33°C	55°C
BPSK	1	NULL	≥2 Mbits	5	3555	-91.8	-92.3	-91.9
QPSK	2	NULL	≥2 Mbits	10	3550	-88.7	-89.2	-88.9
16QAM	4	NULL	≥4 Mbits	15	3545	-86.6	-86.8	-86.6
High Channel						25°C	-33°C	55°C
BPSK	1	NULL	≥2 Mbits	5	3555	-90.1	-90.6	-90.3
QPSK	2	NULL	≥2 Mbits	10	3550	-88.1	-89.4	-88.5
16QAM	4	NULL	≥4 Mbits	15	3545	-86.2	-86.8	-86.0

RSL Test Results

5.1.7 EN 302 326-2 V1.2.2 (2007-06) Co-channel "external" and adjacent channel interference sensitivity Test Results

Standard Requirement:

The limits of Carrier to Interference ratio (C/I) in case of co-channel and adjacent channel interference shall be as specified in the relevant tables of annexes A to E in standard of EN302 217-2-2, giving maximum C/I values for 1 dB and 3 dB degradation of the RSL limits declared by the supplier for a BER ≤ 10-6 in clause 4.3.2 in standard of EN302 217-2-2.

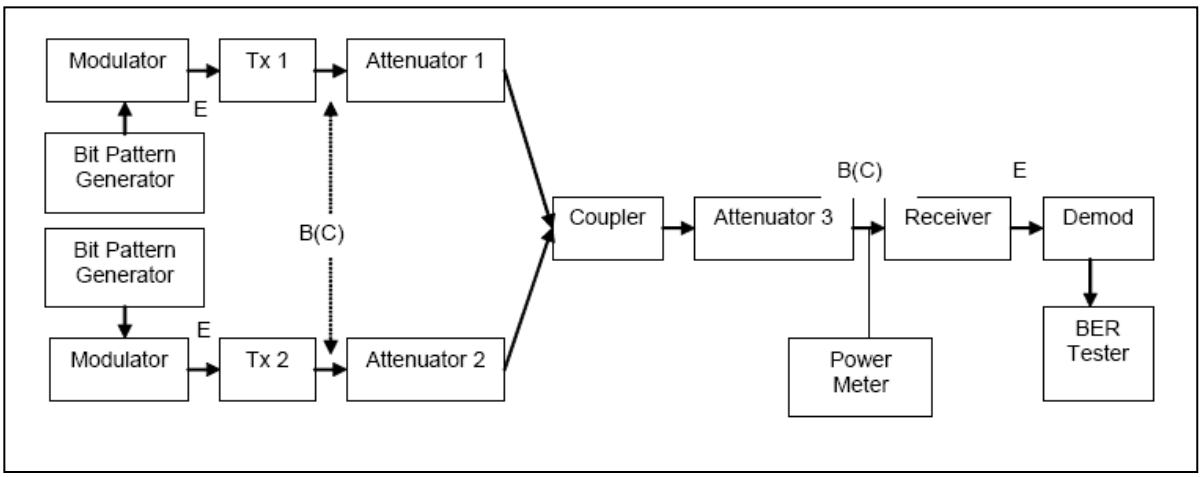
Ambient conditions:

Temperature: 25°C	Relative humidity: 50 %	Pressure: 1019 mbar
Tested By: David Zhang	Tested Date: Jan 12 - Jan 26 2012	

5.1.7.1 Test Procedure

a) Set attenuators at both paths to maximum.
b) With the interfering path attenuators set to maximum, adjust the intended path attenuators such that the RSL at the EUT is as stated in the specification.
c) Check with the BER tester that a link is being made and that the EUT is able to comply with the BER requirements of the test with no interfering signal present.
d) Set the interfering radio to one channel lower than the EUT.
e) Reduce the level of attenuation in the interfering path from the third radio until the interfering signal at the output of attenuator A2 is as stated in the specification. This will need to be calculated from the calibration performed above.
f) With the RSL and interfering level set, observe the EUT BER for at least the calculated test time. Note the result.
g) Now reduce the attenuation in the interfering path whilst constantly monitoring the BER tester until you reach an interfering signal level whereby the BER does equal the level specified. This is not a requirement of the specification but actual C/I thresholds are important information for the manufacturer.
h) Once you have achieved the pass/fail level of BER, note the settings on the variable attenuators and therefore calculate the actual C/I at the EUT.
i) Now repeat steps c) to i) for the next levels of BER and limit degradation as specified, using the relevant C/I for that test. These levels are dictated by the specification or manufacturer.
j) Determine BER compliance and then an actual RSL threshold for each level of BER.
k) The above procedure must be followed with the interfering radio set to one channel lower and one channel higher than the EUT, therefore set the interfering support radio to one channel higher than the EUT and repeat steps f) to k).

Test Setup



Co-channel and adjacent channel interference sensitivity measurement test setups

Test Limit for Co-Channel Interference Rejection:

Primary Equipment Type (EqC-PET)	Frequency Range (EqC-FR)	Modulation Order (EqC-EMO) (Note 3)	Secondary Equipment Types (EqC-SET)	Signal to Interference level (S/I) For 1 dB Threshold Degradation	Signal to Interference level (S/I) For 3 dB Threshold Degradation
T, M	< 1 GHz	2	QP	19	13
		2	GM	14	12
		2	DQ	14	12
	1 GHz to 3 GHz	Any	Any	23	Note 2
	3 GHz to 11 GHz	2	HC	19	16
		2	Not HC	23	Note 2
		4	Any	30	Note 2
		6	Any	37	Note 2
	26 GHz and 28 GHz	2	HC	19	16
	26 GHz, 28 GHz and 32 GHz	2	Not HC	23	19
		4	Any	30	26,5
		6	Any	36	32,5

Test Limit for Adjacent-Channel Interference Rejection:

Primary Equipment Type (EqC-PET)	Frequency Range (EqC-FR)	Modulation Order (EqC-EMO) (Note 3)	Sub-type (EqC-ST)	Signal to Interference level (S/I) For 1 dB Threshold Degradation	Signal to Interference level (S/I) For 3 dB Threshold Degradation
T	< 1 GHz	2	QP	11	9
		2	GM	11	9
		2	DQ	11	9
	1 GHz to 3 GHz	Any	Any	0	Note 2
	3 GHz to 11 GHz	2	HC	-10	-13
		2, 4, 6	Not HC	0	Note 2
	26 GHz and 28 GHz	2	HC	-10	-13
	26 GHz, 28 GHz and 32 GHz	2	Not HC	0	-4
		4	Any	0	-4
		6	Any	0	-4

Test Result

PASS

[L=Low Adjacent Channel, H= High Adjacent Channel]

					C/I for BER ≤ 10^-6 RSL degradation of 1 dB or 3 dB					
					Co-channel Interference		Adjacent Channel Interference			
Modulation	EqC-EMO	EqC-SET	Bit rate (Mbit/s)	Channel Separation (MHz)	1dB	3dB	L 1dB	H 1dB	L 3dB	H 3dB
BPSK	1	NULL	≥2 Mbits	5	22.50	19.62	-13.73	-14.45	-15.89	-16.24
QPSK	2	NULL	≥2 Mbits	10	25.02	20.93	-12.89	-13.21	-15.05	-15.21
16QAM	4	NULL	≥4 Mbits	15	26.13	22.31	-13.62	-14.15	-15.58	-15.98

Co-channel & adjacent channel interference sensitivity measurement Test Results

5.1.8 EN 302 326-2 V1.2.2 (2007-06) CW spurious interference Test Results

Standard Requirement:

For a receiver operating at the RSL declared by the supplier in clause 4.3.2 for a BER ≤ 10-6 threshold, the introduction of a CW interferer at a level specified by EN 301 390 [5], with respect to the wanted signal and at any frequency up to the relevant upper and lower frequency limits derived from the table set out in clause 7.1 of EN 301 390 [5], but excluding frequencies either side of the wanted frequency by up to 250 % of the separation between channels using the same polarization, shall not result in a BER greater than 10-5.

Ambient conditions:

Temperature: 25°C Relative humidity: 50 % Pressure: 1019 mbar

Tested By: David Zhang Tested Date: Jan 12 - Jan 26 2012

Test Procedure

a) With the signal generator output turned off, apply the calibration procedure of subclause 4.4.4.3 in EN301126-2-3 accordingly.

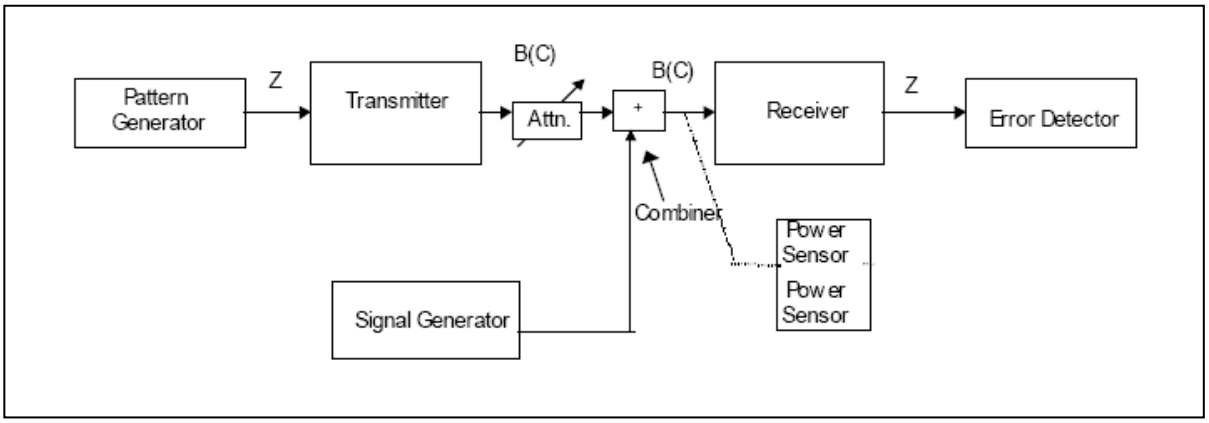
b) Switch off the transmitter. Calibrate the CW-signal generator across the frequency range required by the EN/ETS at a level x dB above the level (dBm), where x is the required increase in level for the interfering CW signal in respect to the receive signal level for a BER (typically 10-6) stated in the relevant EN/ETS.

c) Switch on the transmitter (Tx1).

d) Confirm the BER does not exceed the value specified in the relevant ETS/EN when sweeping the signal generator through the required frequency range at the calibrated level, taking into account any exclusion band stated in the EN/ETS.

e) Any frequencies, which cause the BER to exceed the level stated in the EN/ETS, shall be recorded. It is recommended that the calibration be rechecked at these frequencies.

Test Setup



CW spurious interference measurement test setup

Test Result

PASS

[CW Interference (dB) means the that level relative to manufacturer declared RSL for BER≤10^-6]

CW Interference (dB)	F low (MHz)	F high (MHz)
Channel Spacing = 5MHz		
30	30.0	3527.5
30	3582.5	17775.0
Channel Spacing = 10MHz		
30	30.0	3495.0
30	3605.0	17750.0
Channel Spacing = 15MHz		
30	30.0	3462.5
30	3627.5	17725.0

CW spurious interference measurement Test Results

No degradation of BER>10^-5, for all frequency ranges.

Annex A. TEST INSTRUMENT & METHOD

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

Instrument	Model	Serial #	Calibration Due
Permitted Freq Range			
R&S EMI Receiver	ESIB 40	100179	04/25/2012
TestEquity Environment Chamber	1007H	61201	05/17/2012
Transmitter Power			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
Adjacent channel power – RTPC			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
Transmitter power tolerance			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
Radio Frequency (RF) spectrum masks			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
HP Digital Transmissions Analyzer	3784A	3784A	05/17/2012
Digital LightWave Transmissions Analyzer	ASA-PKG-OC3	ASA-PKG-OC3	05/17/2012
TX Spurious emissions – external			
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
Precision Variable Attenuator	Flann 20110	974	Functional verification
BER as a function of RSL			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
HP Digital Transmissions Analyzer	3784A	3784A	05/17/2012
Digital LightWave Transmissions Analyzer	ASA-PKG-OC3	ASA-PKG-OC3	05/17/2012
Co-channel & Adjacent channel interference sensitivity			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
HP Digital Transmissions Analyzer	3784A	3784A	05/17/2012
Digital LightWave Transmissions Analyzer	ASA-PKG-OC3	ASA-PKG-OC3	05/17/2012
CW spurious interference			
HP Power Meter	437B	3038A03648	05/17/2012
Spectrum Analyzer (9 kHz-40GHz)	8564E	3738A00962	05/17/2012
HP Digital Transmissions Analyzer	3784A	3784A	05/17/2012
Digital LightWave Transmissions Analyzer	ASA-PKG-OC3	ASA-PKG-OC3	05/17/2012
Wiltron Synthesized Sweep Generator	68169B	973407	05/17/2012

Annex B EUT PHOTOGRAPHS

Annex B.i. Photograph 1: EUT External Photo

EUT - Front View

EUT – Rear View

EUT - Top View

EUT - Bottom View

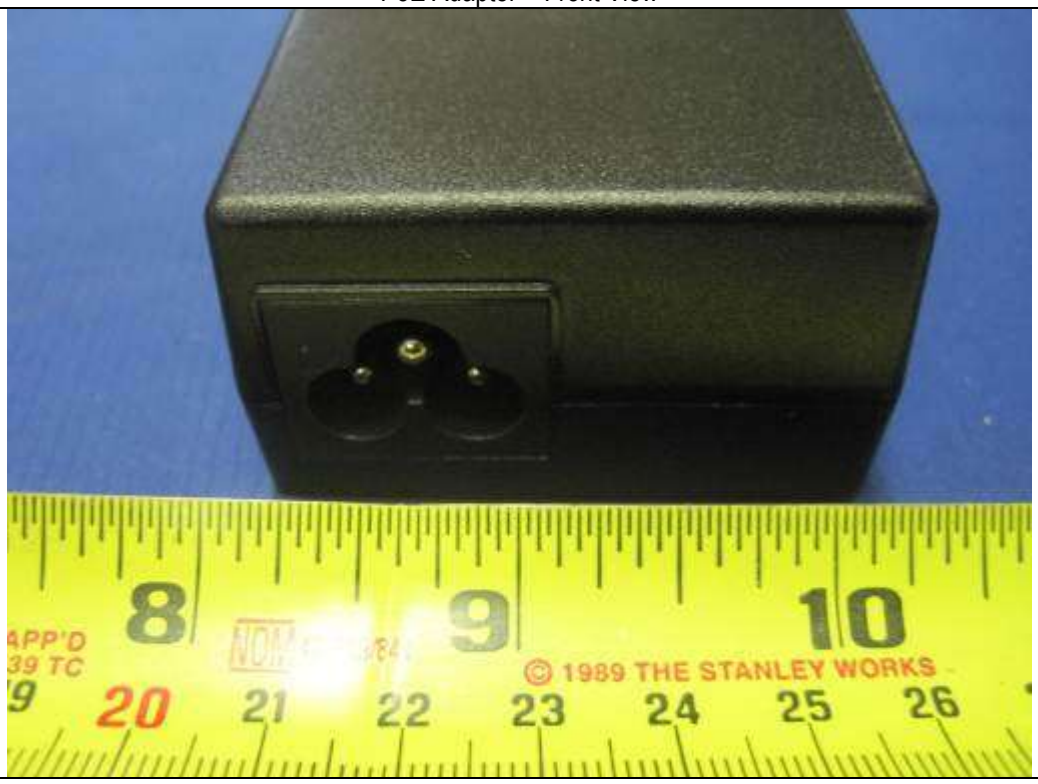
EUT - Right View

EUT - Left View

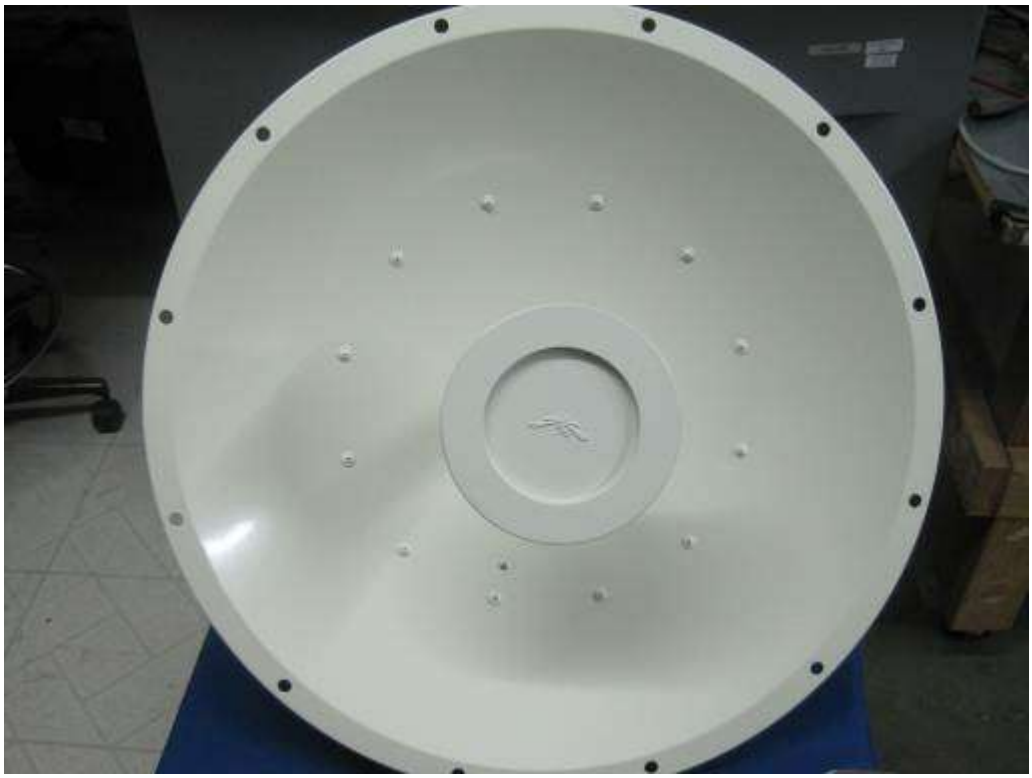
PoE Adapter – Top View

PoE Adapter - Bottom View

PoE Adapter – Front View



PoE Adapter - Rear View



Dish Antenna - Front View

Dish Antenna - Back View

Sector Antenna - Top View

Sector Antenna - Bottom View

Annex B.ii. Photograph 2: EUT Internal Photo

N/A

Annex B.iii. Photograph 3: Test Setup Photo

N/A

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

TEST CONDITIONS

Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Equipment Description (Including Brand Name)	Model & Serial Number	Cable Description (List Length, Type & Purpose)
1* PC Laptop / DELL	Latitude D600	Shielded RJ45 Cable , 2 meter (From PC to EUT)
AirMax TDMA Base station	Rocket M3	Shielded RJ45 Cable , 2 meter
2* PoE	N/A	Shielded RJ45 Cable , 2 meter
Variable Attenuator	Agilent/H281A	RF Cable, 30cm
Coupler	CMT/971722-072	Waveguide

Block Configuration Diagram for Radiated Emission

N/A

Block Configuration Diagram for Conducted Emission

N/A

Annex C.ii. EUT OPERATING CONDITIONS

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions Testing	The EUT was working normally.
Others Testing	The EUT was working normally.

Annex C.iii. PASS / FAIL CRITERIA & MONITORING METHODS

For compliance to the immunity requirements of the Directive, the EUT must comply with the correct Performance Criteria (Continuous, Transient phenomena) stipulated in the relevant standard.

Performance Criteria A (Continuous phenomena) – the equipment should continue as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment id used as intended.

Performance Criteria B (Transient phenomena) – After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level mat be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or store data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment id used as intended.

Please refer to the standard for the full Performance Criteria description.

Annex D USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

Annex E SIEMIC ACCREDITATION

SIEMIC ACCREDITATION DETAILS: A2LA 17025 & ISO Guide 65 : 2742.01 , 2742.2

ilac-MRA

A2LA The American Association for Laboratory Accreditation
World Class Accreditation

Accredited Laboratory

A2LA has accredited

SIEMIC LABORATORIES

San Jose, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 23rd day of November 2010.

President & CEO
For the Accreditation Council
Certificate Number 2742.01
Valid to September 30, 2012

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

"World Class Accreditation"

The American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

SIEMIC LABORATORIES [1]
2206 Ringwood Ave.
San Jose, CA 95131
Mr. Leslie Bai Phone: 408 526 1188 Email: leslie.bai@siemic.com
Mr. Snell Leong Phone: 408 526 1188 Email: snell.leong@siemic.com
www.siemic.com

ELECTRICAL

Valid to: September 30, 2012 Certificate Number: 2742.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following EMC, Product Safety, Radio and Telecommunication tests:

Test Description:	Test Method:
EN & IEC – Emissions & Immunity	IEC/CISPR 11; IEC/CISPR 12; EN 55011; IEC/CISPR 22; EN 55022; IEC/CISPR 20; EN 55020; EN 61000-6-1; EN 61000-6-2; EN 61000-6-3; EN 61000-6-4; EN 61204-3; EN 61326, EN 61326-1; EN 61000-3-2; EN 61000-3-3; EN 50081-1, EN 50081-2; EN 50082-1; IEC 61000-4-2; EN 61000-4-2; IEC 61000-4-3 *(limited up to 2.7 GHz and 3V/m)*; EN 61000-4-3; *(limited up to 2.7 GHz and 3V/m);* IEC 61000-4-4; EN 61000-4-4; IEC 61000-4-5; EN 61000-4-5; IEC 61000-4-6; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-8; IEC 61000-4-11; EN 61000-4-11; IEC/CISPR 24; EN 55024; EN 50412-2-1; EN 50083-2; EN 50090-2-2; EN 50091-2; EN 50130-4; EN 50130-4 +A12; IEC 60601-1-2; EN 12184; EN 55015; EN 61547; CISPR 16-1-4
Korea – Emissions & Immunity	KCC Notice 2009-27, Nov. 5, 2009; RRA Announce 2009-9, Dec. 21, 2009; KN 22:2007-12; KCC Notice 2009-27, Nov. 5, 2009; RRA Notice 2009-10, Dec. 21, 2009; KN 24:2008-5; KN 61000-4-2:2008-5; KN 61000-4-3:2008-5; KN 61000-4-4:2008-5; KN 61000-4-5:2008-5; KN 61000-4-6:2008-5; KN 61000-4-8:2008-5; KN 61000-4-11:2008-5; RRL Notice 2008-3; RRL Notice 2008-4; RRL Notice 2005-131; RRL Notice 2007-99; RRL Notice 2007-101; RRL Notice 2008-4; RRA Notice No 2008-11(2008.12.16); RRA Notice No 2008-12(2008.12.16); KN 60601-1-2; KCC Notice 2009-27; KN 301 489-1(2008-05); KN 301 489-7(2008-05); KN 301 489-17(2008-05); KN 301 489-24(2008-05); KN 16-1-1(2008-05); KN 16-1-2(2008-05); KN 16-1-3(2008-05); KN 16-1-4(2008-05); KN 16-1-5(2008-05); KN 16-2-1(2008-05); KN 16-2-2(2008-05); KN 16-2-3(2008-05); KN 16-2-4(2008-05)

US / FCC - Emissions	SAE J1113-11, SAE J1113-12; SAE J1113-41; SAE J1113-4; SAE J1113-13; FCC Method 47 CFR Part 18, FCC Report and Order ET Docket 98-153 (FCC 02-48); FCC Method 47 CFR Parts15, including Subpart G, using FCC Order 04-425 ANSI C63.4(2009); ANSI C63.10(2009); ANSI C63.4:2003 ANSI C63.4(2003) with FCC Method 47 CFR Part 11; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart E; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart C; ANSI C63.4(2003) and DA 02-2138; ANSI C63.4(2003) with FCC Method 47 CFR Part 15, Subpart B
Canada – Emissions	ICES-001; ICES-002; ICES-003 Issue 4; ICES-003 Issue 4 (2004); ICES-006 Issue 1
Vietnam – Emission & Immunity	TCN 68-193:2003; TCN 68-196:2001; TCVN 7189:2002
Australia / New Zealand – Emissions and Immunity	AS/NZS 1044; AS/NZS 4251.1; AS/NZS 4251.2; AS/NZS CISPR 22; AS/NZS 3548; AS/NZS 2279.3; AS/NZS 61000-3-3; AS/NZS CISPR 11; AS/NZS CISPR 24; AS/NZS 61000.6.3; AS/NZS 61000.6.4; AS/NZS CISPR 14.1; AS/NZS 61000.3.2
Japan – Emissions	JEITA IT-3001; VCCI-V-3:2010.4 (up to 6 GHz)
China – Emissions	GB9254; GB17625.1
Taiwan – Emissions	CNS 13438 (up to 6 GHz); CNS 13783-1; CNS 13803; CNS 13439
Singapore – Emissions & Immunity	IDA TS EMC; CISPR 22; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6
FCC – Unlicensed Radio A1 to A4	A1: 47 CFR Parts 11 (Emergency Alert System (EAS)), 15 (Radio Frequency Devices) and 18 (Industrial, Scientific, and Medical Equipment); FCC OST/MP-5(1986); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009) A2: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.4(2003); ANSI C63.4(2009); ANSI C63.10(2009) A3: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.17:2006; ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005 A4: 47 CFR Part 15 (Radio Frequency Devices); ANSI C63.10(2009); IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005
FCC – Licensed Radio B1 to B4	B1: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 24 (Personal Communications Services), 25 (Satellite Communications), and 27 (Miscellaneous Wireless Communications Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard; IEEE Std 1528:2003 + Ad1; Std IEEE 1528A:2005

FCC – Licensed Radio (continued) B1 to B4	B2: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations), 22 (Public Mobile Services), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), 90 (Private Land Mobile Radio Services), 95 (Personal Radio Services), and 97 (Amateur Radio Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard B3: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 80 (Stations in the Maritime Services) , 87 (Aviation Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard B4: 47 CFR Parts 2 (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations); 27 (Broadband Radio Services (BRS) and Educational Broadband Services (EBS)), 74 (Experimental Radio Auxiliary, Special Broadcast and Other Program Distributional Services), and 101 (Fixed Microwave Services); ANSI/TIA-603-C (2004), Land Mobile FM or PM Communications Equipment Measurement and Performance Standard
Canada – Radio	RSS 102; RSS 111; RSS 112; RSS 117; RSS 118; RSS 119; RSS 123; RSS 125; RSS 127; RSS 128; RSS 129; RSS 131; RSS 132; RSS 133; RSS 134; RSS 135; RSS 136; RSS 137; RSS 138; RSS 139; RSS 141; RSS 142; RSS 170; RSS 181; RSS 182; RSS 188; RSS 191; RSS 192; RSS 193; RSS 194; RSS 195; RSS 196; RSS 197; RSS 198; RSS 199; RSS 210; RSS 220; RSS 213; RSS 215; RSS 243; RSS 287; RSS 310; RSS Gen
CE – Radio	EN 301 502; EN 301 511; EN 301 526; EN 301 681; EN 301 721; EN 301 751; EN 301 753; EN 301 783-2; EN 301 796; EN 301 797; EN 301 840-2; EN 301 843-1; EN 301 843-4; EN 301 843-5; EN 301 893; EN 301 908-01; EN 301 908-02; EN 301 908-03; EN 301 908-04; EN 301 908-05; EN 301 908-06; EN 301 908-07; EN 301 908-08; EN 301 908-09; EN 301 908-10; EN 301 908-11; EN 301 929-2; EN 301 997-2; EN 302 018-2; EN 302 054-2; EN 302 064-2; EN 302 066-2; EN 302 077-2; EN 302 186; EN 302 195-2; EN 302 217-3; EN 302 245-2; EN 302 288-2; EN 302 291-2; EN 302 296; EN 302 297; EN 302 326-2; EN 302 326-3; EN 302 340; EN 302 372-2; EN 302 426; EN 302 454-2; EN 302 502; EN 302 510-2;
	EN 302 217-4-2; EN 300 224-1; EN 300 279; EN 300 339; EN 300 385; EN 301 839-2; EN 301 843-6; EN 302 017-2; EN 302 208-2; EN 302 217-2-2; ETS 300 329; ETS 300 445; ETS 300 446; ETS 300 683; ETS 300 826; ETS EN 300 328; ETSI EN 300 086-2; EN 302217-1; EN 302217-2-1; EN 302217-4-1; EN 302288-1; EN 302908-12; EN 302326-1; EN 301929-1; EN 301997-1; EN 300224-2; EN 301839-1; EN 301843-1; EN 301843-2; EN 301843-3; EN 301843-4; EN 301843-5; EN 302017-1; EN 302208-1; EN 300086-1; EN 300113-1; EN 300224-1; EN 300341-1; EN 302291-1; EN 302500-1; EN 302500-2; ETSI EN 300 113-2; ETSI EN 300 197; ETSI EN 300 198; ETSI EN 300 219-1; ETSI EN 300 219-2; ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 220-3; ETSI EN 300 224-2; ETSI EN 300 296-1; ETSI EN 300 296-2; ETSI EN 300 328-1; ETSI EN 300 328-2; ETSI EN 300 330; ETSI EN 300 330-1; ETSI EN 300 330-2;

CE – Radio (conitnued)	ETSI EN 300 341-2; ETSI EN 300 373-1; ETSI EN 300 373-2; ETSI EN 300 373-3; ETSI EN 300 390-1; ETSI EN 300 390-2; ETSI EN 300 422-1; ETSI EN 300 422-2; ETSI EN 300 431; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 300 454-1; ETSI EN 300 454-2; ETSI EN 300 718-2; ETSI EN 301 021; ETSI EN 301 166-1; ETSI EN 301 166-2; ETSI EN 301 178-2; ETSI EN 301 213-1; ETSI EN 301 213-2; ETSI EN 301 213-3; ETSI EN 301 213-4; ETSI EN 301 213-5; ETSI EN 301 357-1; ETSI EN 301 357-2; ETSI EN 301 390; ETSI EN 301 459; ETSI EN 301 489-01*(excluding section 9.6)*; ETSI EN 301 489-02; ETSI EN 301 489-03; ETSI EN 301 489-04; ETSI EN 301 489-05; ETSI EN 301 489-06; ETSI EN 301 489-07; ETSI EN 301 489-08; ETSI EN 301 489-09; ETSI EN 301 489-10; ETSI EN 301 489-11; ETSI EN 301 489-12; ETSI EN 301 489-13; ETSI EN 301 489-14; ETSI EN 301 489-15; ETSI EN 301 489-16; ETSI EN 301 489-17; ETSI EN 301 489-18; ETSI EN 301 489-19; ETSI EN 301 489-20; ETSI EN 301 489-22; ETSI EN 301 489-23; ETSI EN 301 489-24; ETSI EN 301 489-25; ETSI EN 301 489-26; ETSI EN 301 489-27; ETSI EN 301 489-28; ETSI EN 301 489-31; ETSI EN 301 489-32; IEC 60945
IDA – Radio	IDA TS 3G-BS; IDA TS 3G-MT; IDA TS AR; IDA TS CT-CTS; IDA TS GMPCS; IDA TS GSM-BS; IDA TS GSM-MT; IDA TS LMR; IDA TS RPG; IDA TS SRD; IDA TS UWB; IDA TS WBA
Vietnam – Radio	TCN 68-242:2006; TCN 68-243:2006; TCN 68-246:2006
Korea – Radio	KCC Notice 2009-13; KCC Notice 2008-26; RRL Notice 2008-2; RRL Notice 2005-105; RRL Notice 2008-17; RRL Notice 2005-127; RRL Notice 2005-24; RRL Notice 2005-25; RRL Notice 2005-179; RRL Notice 2008-10; RRL Notice 2007-49; RRL Notice 2007-20; RRL Notice 2007-11; RRL Notice 2007-80; RRL Notice 2004-68; KCC Notice 2009-36, Dec. 8, 2009; RRL Notice 2009-6, October 15, 2009; KCC Notice 2010-1; KCC Notice 2010-12; KCC Notice 2010-13
Taiwan – Radio	LP0002; PLMN07; PLMN01; PLMN08
Australia - New Zealand – Radio	AS 2772.2; AS/NZS 4281; AS/NZS 4268; AS/NZS 4280.1; AS/NZS 4583; AS/NZS 4280.2; AS/NZS 4281; AS/NZS 4295; AS/NZS 4582; AS/NZS 4769.1; AS/NZS 4769.2; AS/NZS 4770; AS/NZS 4771
Hong Kong – Radio	HKTA 1002; HKTA 1007; HKTA 1008; HKTA 1010; HKTA 1015; HKTA 1016; HKTA 1020; HKTA 1022; HKTA 1026; HKTA 1027; HKTA 1029; HKTA 1030; HKTA 1031; HKTA 1032; HKTA 1033; HKTA 1034; HKTA 1035; HKTA 1036; HKTA 1037; HKTA 1039; HKTA 1041; HKTA 1042; HKTA 1043; HKTA 1044; HKTA 1046; HKTA 1047; HKTA 1048; HKTA 1049; HKTA 1051; HKTA1052; HKTA1053; HKTA 1054; HKTA 1055

FCC Telephone Terminal Equipment Scope C1	ANSI/TIA-968-A:03; ANSI/TIA-968-A-1:03; ANSI/TIA-968-A-2:04; ANSI/TIA-968-A-3:05; ANSI/TIA-968-A-4:07; ANSI/TIA-968-A-5:07; TIA-968-B; FCC Rule Part 68; 47 CFR Part 68.316; 47 CFR Part 68.317; ANSI/TIA/EIA-464-C; TIA-810-B; T1.TRQ6 (2002); TCB-31-B (1998); TIA-470.110-C; TIA-810-B; TIA-920
Canada – Telecom	CS-03 Part V Issue 9:2009 Amendment 1; CS-03 Part VIII Issue 9:2009 Amendment 4; CS-03 Part I Issue 9:2006 Amendment 3; CS-03 Part II Issue 9:2004; CS-03 Part III Issue 9:2004; CS-03 Part V Issue 9:2004 ; CS-03 Part VI Issue 9:2004; CS-03 Part VII Issue 9:2006 Amendment 3; CS-03 Part VIII Issue 9:2007 Amendment 3; CS-03 Issue 9:04 + A2(06) + A3(06)
Europe – Telecom	TBR 2: 01-1997; TBR 004 Ed.1.95 + A1 (97); TBR 1; TBR 3; TBR 12:A1 01-1996; TBR 013 ed.1; TBR 024 ed.1; TBR 25; TBR 38 ed.1; ETSI ES 203 021-05 ; ETSI ES 203 021-2 ; ETSI ES 021-3; TBR 021; ETSI EG 201 121; ETSI EN 301 437; ETSI TS 101 270-1; ITU-T Recommendation Q.920; ITU-T Recommendation Q.920 – Amendment 1; ITU-T Recommendation Q.921; ITU-T Recommendation Q.921 – Amendment 1; ITU-T Recommendation Q.931; ITU-T Recommendation Q.931 – Amendment 1; Erratum 1 (02/2003) ITU-T Recommendation Q.931 (05/1998); ISDN User Network Interface Layer 3 Specification for Basic Call Control; ITU-T Recommendation P.300
Australia –Telecom Australia – Telecom	AS/CA S003.1:2010; AS/CA S003.2:2010; AS/CA S003.3:2010; AS/CA S004:2010; AS/ACIF S006:2008; AS/ACIF S041.1:2009 AS/ACIF S041.2:2009; AS/ACIF S041.3:2009; AS/ACIF S042.1:2008; AS/ACIF S043.2:2008; AS/ACIF S043.3:2008; AS/ACIF S002:05; AS/ACIF S003:06; AS/ACIF S004:06; AS/ACIF S006:01; AS/ACIF S016:01; AS/ACIF S031:01; AS/ACIF S038:01; AS/ACIF S040:01; AS/ACIF S041:05; AS/ACIF S043.2:06; AS ACIF S042.1
New Zealand – Telecom	PTC200:2006; PTC200 Issue No.2:97 + A1(980); PTC220; PTC273:2007; TNA 115; TNA 117
Singapore – Telecom	IDA TS ADSL, Issue 1, Rev. 1 (April 2006); IDA TS DLCN, Issue 1 (July 2005); IDA TS ISDN BA, Issue 1 (July 2005); IDA TS ISDN PRA, Issue 1 (July 2005); IDA TS ISDN 3 (Oct. 2000); IDA TS-PSTN, Issue 1 (March 2007); IDA TS ACLIP 07
Hong Kong – Telecom	HKTA 2011; HKTA 2012; HKTA 2013; HKTA 2014; HKTA 2015; HKTA 2017; HKTA 2018; HKTA 2019; HKTA 2022; HKTA 2023; HKTA 2024; HKTA 2026; HKTA 2027; HKTA 2028; HKTA 2029; HKTA 2030; HKTA 2031; HKTA 2032; HKTA 2033

Vietnam – Telecom	TCN 68-188:2000; TCN 68-193:2003; TCN 68-196:2001; TCN 68-143:2003; TCN 68-192:2003; TCN 68-189:2000; TCN 68-221:2004; TCN 68-222:2004; TCN 68-245:2004; TCN 68-223:2004
Korea – Telecom	RRA Notice 2009-38, Sep. 11, 2009; RRA Notice 2009-7 (including attachments 1, 3, 5 ,6); Presidential Decree 21098, RRL Notice 2007-30; RRL Notice 2008-10 (attachments 1, 3, 5, 6); RRL Notice 2009-25; RRL Notice 2008-59
China – Telecom	YD/T 514-1:98; YD/T 1277.1-2003; GB/T 17904.1-1999; GB/T 17904.2-1999; GB/T 17154.1-1997; GB/T 17154.2-1997; YD/T1091-2000; YD/T1006-1999; GB/T 17789-1999
Taiwan – Telecom	PSTN01:03; ADSL01:08; ID0002; IS6100: 93
Japan – Telecom	JATE Blue Book, Green Book; Ministerial Ordinance of the Ministry of Posts and Telecommunications No. 31 of April 1, 1985 (last amended on March 22 2004); Ordinance Concerning Technical Conditions Compliance Approval etc. of Terminal Equipment
South Africa – Telecom	DPT-TE-001; TE-002; TE-003; TE-004; TE-005; TE-006; TE-007; TE-008; TE-009; TE-010; TE-012 (telephone interface); TE-013 (telephone interface); TE-014; TE-015; TE-018; SWS-001; SWS-002; SWS-003; SWS-004; SWS-005; SWS-006; SWS-007; SWS-008; SWS-009; SWS-010
Israel – Telecom	Israel MoC Spe. 23/96
Mexico – Telecom	NOM-151-SCT1-1999; NOM-152-SCT1-1999
Argentina – Telecom	CNC-ST2-44-01
Brazil – Telecom	Resolution 392-2005
International Telecom Union	ITU-T-G.703:01; ITU-T-G.823:93; ITU-T G.824; ITU-T G.825; ITU-T-G.991.2; ITU-T-G.992.1; ITU-T-G.992.3; ITU-T-G.992.5; ITU-T-G.993.1
Product Safety	IEC 60950-1; EN 60950-1; UL 60950-1; IEC 60601-1-1; CAN/CSA 22.2 NO. 60950-1-03; SS-EN 60950-1; AS/NZ 60950-1, *(voltage surge testing up to 6kV, excluding Annex A and H)*; CNS 14336, CNS 14408; GB4943; President Notice 20664; RRL Notice 2008-10 (attachment 4); RRA Notice 2009-7 (attachment 4); TCN 68-190:2003; SABS IEC 60950; IEC/EN 61558; IEC/EN 61558-2-7; EN 62115; IEC 60215; EN 60958; EN 60598; IEC 215 (1987) + A1 (1992) + A2 (1994)
Japan - Radio	ARIB STD-T81; ARIB STD-T66; RCR STD-1; RCR STD-29; ARIB STD-T94 Fascicle 1; ARIB STD-T90; ARIB STD-T89; RCR STD-33

SAR & HAC	IEEE P1528:2003 + Ad1; IEEE 1528A:2005; FCC OET Bulletin 65 Supplement C; FCC OET Bulletin 65; ANSI C95; ANSI C63.19; FCC 47 CFR 20.19; H46-2/99-273E; EN 50360; EN 50361; IEC62209-1; IEC 62209-2; EN 50371; EN 50383; EN 50357; EN 50364; RRL 2008-18; RRL 2008-16; KCC 2009-27; RRL 2004-67; CNS 14958-1; CNS 14959; NZS 2772.1; NZS 6609.2; Resolution N 533
Japan – Notification No. 88 of MIC 2004	
Table No 13	CB Radio
Table No 21	Cordless Telephone
Table Nos 22-1 thru 22-17	Low Power Radio Equipment
Table No 36	Low Power Security System
Table No 43	Low Power Data Communication in the 2.4 GHz Band
Table No 44	Low Power Data Communication in the 2.4 GHz Band
Table No 45	Low Power Data Communication in the 5.2, 5.3, 5.6 GHz Bands
Table No 46	Low Power Data Communication in the 25 and 27 GHz Bands
Table No 47	Base Station for 5 GHz Band Wireless Access System
Table No 47	Base Station for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (limited for use in special zones, low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low spurious type)
Table No 47	Land Mobile Relay for 5 GHz Band Wireless Access System (low power type)
Table No 50	Digital Cordless Telephone
Table No 50	PHS Base Station
Table No 50	PHS Land Mobile Station
Table No 50	PHS Relay Station
Table No 50	PHS Test Station
Table No 64	Mobile Station for Dedicated Short Range Communication Systems
Table No 64	Base Station for Dedicated Short Range Communication Systems
Table No 64	Test Station for Dedicated Short Range Communication Systems
Table No 70	UWB (Ultra Wide Band) Radio System

[1]Note: This accreditation covers testing performed at the laboratory listed above and the OATS located at 44366 South Grimmer Blvd., Fremont CA 94538. At this site "Radiated Emissions" are tested at a measurement distance of 10m.

[*]Limitations for listed standards are indicated by italics and Scope excludes protocol sections of applicable standards.

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Product Certification Body

A2LA has accredited

SIEMIC LABORATORIES

San Jose, CA

for technical competence as a

Product Certification Body

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC Guide 65:1996 *General requirements for bodies operating product certification systems*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system for a Telecommunications Certification Body (TCB) meeting FCC (U.S.), IDA (Singapore), IC (Canada), OFTA (Hong Kong), and Japan (MIC) requirements.

Presented this 23rd day of November 2010.

President & CEO
For the Accreditation Council
Certificate Number 2742.01
Valid to September 30, 2012
Revised December 16, 2010

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

"World Class Accreditation"

The American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 65:1996

SIEMIC INC.
2206 Ringwood Ave.
San Jose, CA 95131
Mr. Snell Leong (Authorized Representative) Phone: 408 526 1188
www.siemic.com

PRODUCT CERTIFICATION CONFORMITY ASSESSMENT BODY (CAB)

Valid to: September 30, 2012 Certificate Number: 2742.02

In recognition of the successful completion of the A2LA Certification Body Accreditation Program evaluation, including the US Federal Communications Commission (FCC), Industry Canada (IC), Singapore (IDA) and Hong Kong (OFTA) requirements for the indicated types of product certifications, accreditation is granted to this organization to perform the following product certification schemes:

Economy	Scope

Federal Communication Commission - (FCC)

Unlicensed Radio Frequency Devices	A1, A2, A3, A4
Licensed Radio Frequency Devices	B1, B2, B3, B4
Telephone Terminal Equipment	C

**Please refer to FCC TCB Program Roles and Responsibilities, released July 22, 2010 detailing scopes, roles and responsibilities. http://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=44683&switch=P*

Industry Canada - (IC)

Radio	Scope 1-Licence-Exempt Radio Frequency Devices; Scope 2-Licensed Personal Mobile Radio Services; Scope 3-Licensed General Mobile & Fixed Radio Services; Scope 4-Licensed Maritime & Aviation Radio Services; Scope 5-Licensed Fixed Microwave Radio Services;

**Please refer to Industry Canada (IC) website at: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09888.html*

IDA – Singapore

Line Terminal Equipment	All Technical Specifications for Line Terminal Equipment – Table 1 of IDA MRA Recognition Scheme: 2009, Annex 2
Radio-Communication Equipment	All Technical Specifications for Radio-Communication Equipment – Table 2 of IDA MRA Recognition Scheme: 2009, Annex 2

**Please refer to Info-Communication Development Authority (IDA) Singapore website at: http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/20060609145118/MRARecScheme.pdf*

5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

OFTA – Hong Kong

Radio Equipment	HKTA 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1015, 1016, 1019, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055

**Please refer to the Office of the Telecommunications Authority's website at:*
http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-10xx.html

Fixed Network Equipment	HKTA 2001, 2005, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2040, 2041, 2102, 2103, 2104, 2108, 2201, 2202, 2203, 2204

**Please refer to the Office of the Telecommunications Authority's website at:*
http://www.ofta.gov.hk/en/standards/HKTASpec/hkta-2xxx.html

MIC – Japan

Terminal Equipment	Scope A1 - Terminal Equipment for the Purpose of Calls
Radio Equipment	Scope B1 - Unlicensed Station (all classes of equipment)

SIEMIC ACCREDITATION DETAILS: FCC Test Site Registration No. 783147

FEDERAL COMMUNICATIONS COMMISSION
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

June 08, 2011

Registration Number: 783147

SIEMIC Laboratories
2206 Ringwood Avenue,
San Jose, CA 95131

Attention: Leslie Bai, Director of Certification

Re: Measurement facility located at San Jose
Anechoic chamber (3 meters)
Date of Renewal: June 08, 2011

Dear Sir or Madam:

Your request for renewal of the registration of the subject measurement facility has been received. The information submitted has been placed in your file and the registration has been renewed. The name of your organization will remain on the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website www.fcc.gov under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Phyllis Parrish
Industry Analyst

SIEMIC ACCREDITATION DETAILS: Industry of Canada CAB ID : US0160

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

March 4, 2009

Mr. Leslie Bai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by Industry Canada (IC), under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name:	SIEMIC, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131 USA
Identification No.:	US0160
Recognized Scope:	CS-03 Part I, II, V, VI, VII and VIII

You may submit test data to IC to verify that the equipment to be imported into Canada satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov if you have any questions.

Sincerely,

David F. Alderman
Group Leader, Standards Coordination and Conformity Group
Standards Services Division

Enclosure

cc: CAB Program Manager

NIST

SIEMIC ACCREDITATION DETAILS: Industry of Canada Test Site Registration No. 4842-1

Industry Canada Industrie Canada

May 27, 2010

OUR FILE: 46405-4842
Submission No: 140856

Siemic Inc.
2206 Ringwood Ave
San Jose, CA, 95131
USA

Attention: Snell Leong

Dear Sir/Madame:

The Bureau has received your application for the renewal of a 3m alternative test site. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought **(4842A-1)**. Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please keep for your records the following information:

- Your primary code is: **4842**

- The company number associated to the site(s) located at the above address is: **4842A**

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 or later shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 metre OATS or 3 metre chamber). If the test facility is not accredited to ANSI C63.4-2003 or later, the test facility shall submit test data demonstrating full compliance with the ANSI standard. The Bureau will evaluate the filing to determine if recognition shall be granted.

The frequency for re-validation of the test site and the information that is required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization. However, in all cases, test site re-validation shall occur on an interval not to exceed two years. There is no fee or form associated with an OATS filing. OATS submissions are encouraged to be submitted electronically to the Bureau using the following URL;
http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_tt00052e.html.

If you have any questions, you may contact the Bureau by e-mail at certification.bureau@ic.gc.ca Please reference our file and submission number above for all correspondence.

Yours sincerely,

Dalwinder Gill

Dalwinder Gill
For: Wireless Laboratory Manager
Certification and Engineering Bureau
3701 Carling Ave., Building 94
P.O. Box 11490, Station "H"
Ottawa, Ontario K2H 8S2
Email: dalwinder.gill@ic.gc.ca
Tel. No. (613) 998-8363
Fax No. (613) 990-4752

SIEMIC ACCREDITATION DETAILS: FCC DOC CAB Recognition : US1109

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

August 28, 2008

Siemic Laboratories
2206 Ringwood Ave.,
San Jose, CA 95131

Attention: Leslie Bai

Re: Accreditation of Siemic Laboratories
Designation Number: US1109
Test Firm Registration #: 540430

Dear Sir or Madam:

We have been notified by American Association for Laboratory Accreditation that Siemic Laboratories has been accredited as a Conformity Assessment Body (CAB).

At this time Siemic Laboratories is hereby designated to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Parts 15 and 18 of the Commission's Rules.

This designation will expire upon expiration of the accreditation or notification of withdrawal of designation.

Sincerely,

George Tannahill

George Tannahill
Electronics Engineer

SIEMIC ACCREDITATION DETAILS: Australia CAB ID : US0160

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

November 20, 2008

Mr. Leslie Bai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Australian Communications and Media Authority (ACMA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name:	Siemic, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Recognized Scope:	EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771 Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar, at (301) 975-5521 or ramona.saar@nist.gov if you have questions.

Sincerely,

David F. Alderman

David F. Alderman
Group Leader, Standards Coordination and Conformity Group
Standards Services Division

Enclosure

cc: Snell Leong, Siemic, Inc.; Ramona Saar, NIST

NIST

SIEMIC ACCREDITATION DETAILS: Korea CAB ID: US0160

방송통신위원회 전파연구소
Radio Research Agency

KOREA COMMUNICATIONS COMMISSION
REPUBLIC OF KOREA
1, Wonhyoro-3ga, Yongsan-gu, Seoul, 140-848, Korea

Radio Research Agency
Tel: +82 2 710 6610
Fax: +82 2 710 6619
Homepage : www.rra.go.kr

KCC/RRA

14th Jan, 2011

Radio Research Agency
Korea Communications Commission
#1, Wonhyoro-3ga, Yongsan-gu
Seoul Korea 140-848
(Tel) 82-2-710-6610, (Fax) 82-2-710-6619
Jan 14th, 2011

Mr. David F. Alderman
Group Leader, Standards Coordination and Conformity Group
National Institute of Standards and Technology
100 Bureau Drive, Stop 2100
Gaithersburg, Maryland 20899-2100, USA

Dear Mr. David F. Alderman:

This is to confirm the recognition by Radio Research Agency of

SIEMIC, Inc. (US0160)

as an accredited Conformity Assessment Body (CAB) under the terms of Phase I of the APEC TEL MRA. The scope for which this laboratory has been recognized is given below.

Coverage	Standards	Date of Recognition
Current Scope	EMI : KCC Notice 2008-39, RRL Notice 2008-3 and KN22 EMS : KCC Notice 2008-38, RRL Notice 2008-4, KN24, KN 61000 -4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11 Radio : RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-11, RRL Notice 2007-80, RRL Notice 2004-68 Telecom : President Notice 20664, RRL Notice 2007-30, 2008-7(1,3,4,5,6)	Jan 14th, 2011
Updated Scope	SAR : RRA Notice 2008-16, RRA Notice 2008-18, KCC Notice 2009-27	

This recognition is contingent upon the maintenance of this CAB's accreditation status and is limited to the standards listed above.
If you have any inquiries about this recognition, please contact to Certification Division of Radio Research Agency with above address and telephone numbers.

Best Regards,

Ahn, Kun-Young
Director Certification Division

Enclosure

cc: Ramona Saar – NIST,
JungMin Park - RRA

SIEMIC ACCREDITATION DETAILS: Taiwan BSMI Accreditation No. SL2-IN-E-1130R

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 3, 2006

Mr. Leslie Bai
SIEMIC Laboratories
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

I am pleased to inform you that your laboratory has been recognized by the Chinese Taipei's Bureau of Standards, Metrology, and Inspection (BSMI) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. You may submit test data to BSMI to verify that the equipment to be imported into Chinese Taipei satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. The pertinent designation information is as follows:

- BSMI number: **SL2-IN-E-1130R** (Must be applied to the test reports)
- U.S Identification No: **US0160**
- Scope of Designation: **CNS 13438**
- Authorized signatory: **Mr. Leslie Bai**

The names of all recognized CABs will be posted on the NIST website at http://ts.nist.gov/mra. If you have any questions, please contact Mr. Dhillon at 301-975-5521. We appreciate your continued interest in our international conformity assessment activities.

Sincerely,

David F. Alderman
Group Leader, Standards Coordination and Conformity Group

cc: Jogindar Dhillon

NIST

SIEMIC ACCREDITATION DETAILS: Taiwan NCC CAB ID: US0160

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

March 16, 2009

Mr. LeslieBai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the National Communications Commission (NCC) for the requested scope expansion under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name:	SIEMIC, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Current Scope:	LP0002, PSTN01, ADSL01, ID0002, IS6100 and CNS 14336
Additional Scope:	PLMN07

You may submit test data to NCC to verify that the equipment to be imported into China satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. If you have any questions please contact Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov.

Sincerely,

David F. Alderman
Group Leader, Standards Coordination and Conformity Group
Standards Services Division

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACCREDITATION DETAILS: Vietnam CAB ID: US0160

BỘ THÔNG TIN VÀ TRUYỀN THÔNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 65 /QĐ-BTTTT

Hà Nội, ngày 19 tháng 01 năm 2011

QUYẾT ĐỊNH
Về việc Thừa nhận Phòng đo kiểm

BỘ TRƯỞNG BỘ THÔNG TIN VÀ TRUYỀN THÔNG

Căn cứ Nghị định số 187/2007/NĐ-CP ngày 25/12/2007 của Chính phủ quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Thông tin và Truyền thông;

Căn cứ Quyết định số 172/2003/QĐ-BBCVT ngày 29/10/2003 của Bộ trưởng Bộ Bưu chính, Viễn thông (nay là Bộ Thông tin và Truyền thông) quy định về việc thừa nhận các Phòng đo kiểm đã được các Bên tham gia Thoả thuận thừa nhận lẫn nhau về đánh giá hợp chuẩn thiết bị viễn thông với Việt Nam chỉ định;

Theo đề nghị của Vụ trưởng Vụ Khoa học và Công nghệ,

QUYẾT ĐỊNH:

Điều 1. Thừa nhận phòng đo kiểm:

SIEMIC, INC. – US0160

Địa chỉ: 2206 Ringwood Avenue, San Jose, CA 95131 USA

(đã được Viện tiêu chuẩn và công nghệ quốc gia Hoa Kỳ (NIST) chỉ định và đề nghị thừa nhận) đáp ứng đầy đủ các yêu cầu về việc thừa nhận Phòng đo kiểm đã được Bên tham gia Thoả thuận thừa nhận lẫn nhau về đánh giá hợp chuẩn thiết bị viễn thông với Việt Nam chỉ định theo Quyết định số 172/2003/QĐ-BBCVT với phạm vi thừa nhận kèm theo Quyết định này.

Điều 2. Phòng đo kiểm có tên tại Điều 1 có các quyền lợi và nghĩa vụ theo quy định tại Quyết định số 172/2003/QĐ-BBCVT.

Điều 3. Phòng đo kiểm có tên tại Điều 1 và các cơ quan, tổ chức có liên quan chịu trách nhiệm thi hành Quyết định này.

Điều 4. Quyết định này có hiệu lực đến ngày 30/09/2012./.

KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thành Hưng

Nơi nhận:
- Như Điều 3;
- Bộ trưởng (để b/c);
- Trung tâm Thông tin (để đăng website);
- Lưu: VT, KHCN.

SIEMIC ACCREDITATION DETAILS: Mexico NOM Recognition

CANIETI

CAMARA NACIONAL DE LA INDUSTRIA ELECTRONICA, DE TELECOMUNICACIONES E INFORMATICA

Laboratorio Valentín V. Rivero

México D.F. a 16 de octubre de 2006.

LESLIE BAI
DIRECTOR OF CERTIFICATION
SIEMIC LABORATORIES, INC.
ACCESSING GLOBAL MARKETS
P R E S E N T E

En contestación a su escrito de fecha 5 de septiembre del año en curso, le comento que estamos muy interesados en su intención de firmar un Acuerdo de Reconocimiento Mutuo, para lo cual adjunto a este escrito encontrara el Acuerdo en idioma ingles y español prellenado de los cuales le pido sea revisado y en su caso corregido, para que si esta de acuerdo poder firmarlo para mandarlo con las autoridades Mexicanas para su visto bueno y así poder ejercer dicho acuerdo.

Aprovecho este escrito para mencionarle que nuestro intermediario gestor será la empresa Isabel de México, S. A. de C. V., empresa que ha colaborado durante mucho tiempo con nosotros en lo relacionado a la evaluación de la conformidad y que cuenta con amplia experiencia en la gestoría de la certificación de cumplimiento con Normas Oficiales Mexicanas de producto en México.

Me despido de usted enviándole un cordial saludo y esperando sus comentarios al Acuerdo que nos ocupa.

Atentamente:

Ing. Faustino Gómez González
Gerente Técnico del Laboratorio de
CANIETI.

Culiacán 71
Hipódromo Condesa
06100 México, D.F.
Tel. 5264-0909 con 12 líneas
Fax 5264-0488
www.canieti.org

SIEMIC ACCREDITATION DETAILS: Hong Kong OFTA CAB ID : US0160

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

December 8, 2008

Mr. Leslie Bai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Office of the Telecommunications Authority (OFTA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name:	SIEMIC, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, California 95131 USA
Identification No.:	US0160
Recognized Scope:	**Radio:** HKTA 1002, 1007, 1008, 1010, 1015, 1016, 1020, 1022, 1026, 1027, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1039, 1041, 1042, 1043, 1044, 1046, 1047, 1048, 1049, 1051 **Telecom:** HKTA 2011, 2012, 2013, 2014, 2017, 2018, 2022, 2024, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033

You may submit test data to OFTA to verify that the equipment to be imported into Hong Kong satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements.

Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. If you have any questions please contact Ramona Saar at (301) 975-5521 or ramona.saar@nist.gov.

Sincerely,

David F. Alderman

David F. Alderman
Group Leader, Standards Coordination and Conformity Group
Standards Services Division

Enclosure

cc: Ramona Saar

NIST

SIEMIC ACCREDITATION DETAILS: Australia ACMA CAB ID: US0160

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

November 20, 2008

Mr. Leslie Bai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Bai:

NIST is pleased to inform you that your laboratory has been recognized by the Australian Communications and Media Authority (ACMA) under the Asia Pacific Economic Cooperation for Telecommunications Equipment Mutual Recognition Arrangement (APEC Tel MRA). Your laboratory is now designated to act as a Conformity Assessment Body (CAB) under Appendix B, **Phase I** Procedures, of the APEC Tel MRA. The pertinent information about your laboratory's designation is as follows:

CAB Name:	Siemic, Inc.
Physical Location:	2206 Ringwood Avenue, San Jose, CA 95131
Identification No.:	US0160
Recognized Scope:	EMC: AS/NZS 4251.1 (until 5/31/2009), AS/NZS 4251.2 (until 5/31/2009), AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR 22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771 Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/NZS 60950.1

You may submit test data to ACMA to verify that the equipment to be imported into Australia satisfies the applicable requirements. The designation of your organization will remain in force as long as its accreditation for the designated scope remains valid and comply with the designation requirements. Recognized CABs are listed on the NIST website at http://ts.nist.gov/mra. Please contact Ms. Ramona Saar, at (301) 975-5521 or ramona.saar@nist.gov if you have questions.

Sincerely,

David F. Alderman
Group Leader, Standards Coordination and Conformity Group
Standards Services Division

Enclosure

cc: Snell Leong, Siemic, Inc.; Ramona Saar, NIST

NIST

SIEMIC ACCREDITATION DETAILS: Australia NATA Recognition

Leslie Bai
SIEMIC, Inc.
2206 Ringwood Avenue
San Jose, CA 95131

November 4, 2008

Under Australian government legislation, the Australian Communications and Media Authority (ACMA) has determined the National Association of Testing Authorities, Australia (NATA) as an accreditation body as per Section 409(1) of the Telecommunications Act 1997 (Cth). Pursuant to Section 409(2) of the Telecommunications Act 1997 (Cth), I am pleased to advise that your laboratory has been determined as a Recognised Testing Authority (RTA).

This determination has been made on the basis of your accreditation by A2LA accreditation no. 2742.01 and the Mutual Recognition Agreement between NATA and A2LA. It is effective from 11 July 2008. RTA status applies only to the following standards and is contingent upon their continued inclusion in your laboratory's scope of accreditation.

AS/ACIF S002, AS/ACIF S003, AS/ACIF S004,
AS/ACIF S006, AS/ACIF S016, AS/ACIF S031,
AS/ACIF S038, AS/ACIF S041 and
AS/ACIF S043.2

As an RTA, your laboratory has the following obligations:
1. the laboratory shall continue to meet all of the accreditation criteria of A2LA;
2. the authorised representative of the laboratory shall notify NATA of changes to the staff or operations of the laboratory which would affect the performance of the tests for which the laboratory has been determined;
3. compliance of equipment shall be reported on test reports bearing the A2LA logo/endorsement.

Current information on the Australian Communications and Media Authority and regulatory requirements for telecommunications products within Australia can be obtained from the ACMA's web-site at "http://www.acma.gov.au". Further information about NATA may be gained by visiting "http://www.nata.asn.au".

Please note that AS/ACIF S040 and New Zealand standards do not form part of the RTA scheme.

Your RTA listing will appear on the NATA website shortly.

Kind Regards

Chris Norton,
Senior Scientific Officer
Measurement Science and Technology
National Association of Testing Authorities (NATA)
71-73 Flemington Road
North Melbourne Vic 3051
Australia
Ph: +61 3 9329 1633 Fx: +61 3 9326 5148
E-Mail: Christopher.Norton@nata.asn.au
Internet: www.nata.asn.au

SIEMIC ACCREDITATION DETAILS: VCCI Radiated Test Site Registration No. R-3083

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories
<Member No. 3081 >

Facility: SIEMIC Laboratories
(Radiation 3 meter site)

Location of Facility:
2206 Ringwood Ave , San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: R-3083

Date of Registration: October 01 , 2010

This Certificate is valid until September 30 , 2012

VCCI Council

SIEMIC ACCREDITATION DETAILS: VCCI Conducted (Main Port) Test Site Registration No. C-3421

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories
<Member No. 3081 >

Facility: SIEMIC Laboratories
(Main Ports Conducted Interference Measurement)

Location of Facility:
2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: C-3421
Date of Registration: October 01 , 2010
This Certificate is valid until September 30 , 2012

VCCI Council

SIEMIC ACCREDITATION DETAILS: VCCI Conducted (Telecom Port) Test Site Registration No. T-1597

VCCI Council

CERTIFICATE

Company: SIEMIC Laboratories

<Member No. 3081 >

Facility: SIEMIC Laboratories

(Telecominication Ports Conducted Disturbance Measurement)

Location of Facility:

2206 Ringwood Ave San Jose, CA 95131, USA

This is to certify that the following measuring facility has been registered in accordance with the Rules for Voluntary Control Measures

Registration No.: T-1597

Date of Registration: October 01 , 2010

This Certificate is valid until September 30 , 2012

VCCI Council