



FCC Test Report

Test report no.:
XPLOR_004_06002_WMC6300_PCMCIA_MESH_FCC15.247
FCC Part 15.247 for DSSS systems

Tablet PC Model: iX104-Mesh
With Model: MeshNetworks, Inc., WMC6300

FCC ID: Q2GIX104-149



Certificate # 2135.01



FCC listed # 101450

IC recognized # 3925

CETECOM Inc.

411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ U.S.A.

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CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686
Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

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The test results of this test report relate exclusively to the test item specified in 1.5. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

TEST REPORT PREPARED BY:

EMC Engineer: Pete Krebill

1.2 Testing laboratory

CETECOM Inc.

411 Dixon Landing Road, Milpitas, CA-95035, USA

Phone: +1 408 586 6200 Fax: +1 408 586 6299

E-mail: lothar.schmidt@cetecomusa.com

Internet: www.cetecom.com

1.3 Details of applicant

Name : **Xplore Technologies**
Street : **14000 Summit Road, Suite 900**
City / Zip Code : **Austin, TX 78728**
Country : **USA**
Contact : **Douglas L. Fowler**
Telephone : **+1 512 336 7797**
Tele-fax : **+1 512 336 7791**
e-mail : dfowler@xploretech.com

1.4 Application details

Date of receipt test item : 2006-03-17
Date of test : 2006-03-22 – 2006-03-23

1.5 Test item

Manufacturer : **Applicant**
Marketing Name : **iX104-Mesh**
Model No. : **iX104**
Description : **Tablet Computer**
FCC-ID : **Q2GIX104-149**

Additional information

Frequency : **2410MHz – 2470MHz**
Type of modulation : **DSSS**
Number of channels : **4**
Power supply : **via host Tablet PC**
Output power : **0.26 W EIRP**
Extreme temp. Tolerance : **0°C to +70°C**

1.6 Test standards: FCC Part 15 §15.247

Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

The Tablet PC (model# iX104-Mesh) carries pre-certified Mesh PCMCIA card with FCC ID: QJEWMC6300704. This test report covers full radiated testing as per FCC 15.247 on Tablet PC with Mesh. All conducted measurements are covered under test report #: EMCS15416-FCC247.

2 Technical test**2.1 Summary of test results**

No deviations from the technical specification(s) were ascertained in the course of the tests
Performed

Final Verdict:
(Only “passed” if all single measurements are “passed”)

Passed

Technical responsibility for area of testing:



Michael Grings
(Deputy Test Lab Manager)

2006-04-19 EMC & Radio

Date

Section

Name

Signature

2.2 Test report

TEST REPORT

Test report no.: XPLOR_004_06002_WMC6300_PCMCIA_MESH_FCC15.247

FCC Part 15.247 for DSSS systems

LIST OF MEASUREMENTS

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**MAXIMUM PEAK OUTPUT POWER
(RADIATED)**

§ 15.247 (b) (1)

EIRP:

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2410	2450	2470
T _{nom} (23)°C	V _{nom}	22.49	23.50	24.08
Measurement uncertainty		±0.5dBm		

ANALYZER SETTINGS: RBW=VBW=10MHz

LIMIT

SUBCLAUSE § 15.247 (b) (1)

Frequency range	RF power output
2400-2483.5 MHz	30dBm on Conducted

NOTE : The input supply voltage was varied from 85% to 115% of the nominal voltage.
The output power did not change.

MAXIMUM PEAK OUTPUT POWER

§ 15.247 (b) (1)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 0 ppl 22

Antenna: H

EUT: V

Test operator: Pete

Voltage: AC 110 V

Sweep: EIRP

SWEEP TABLE: "EIRP RLAN CH1"

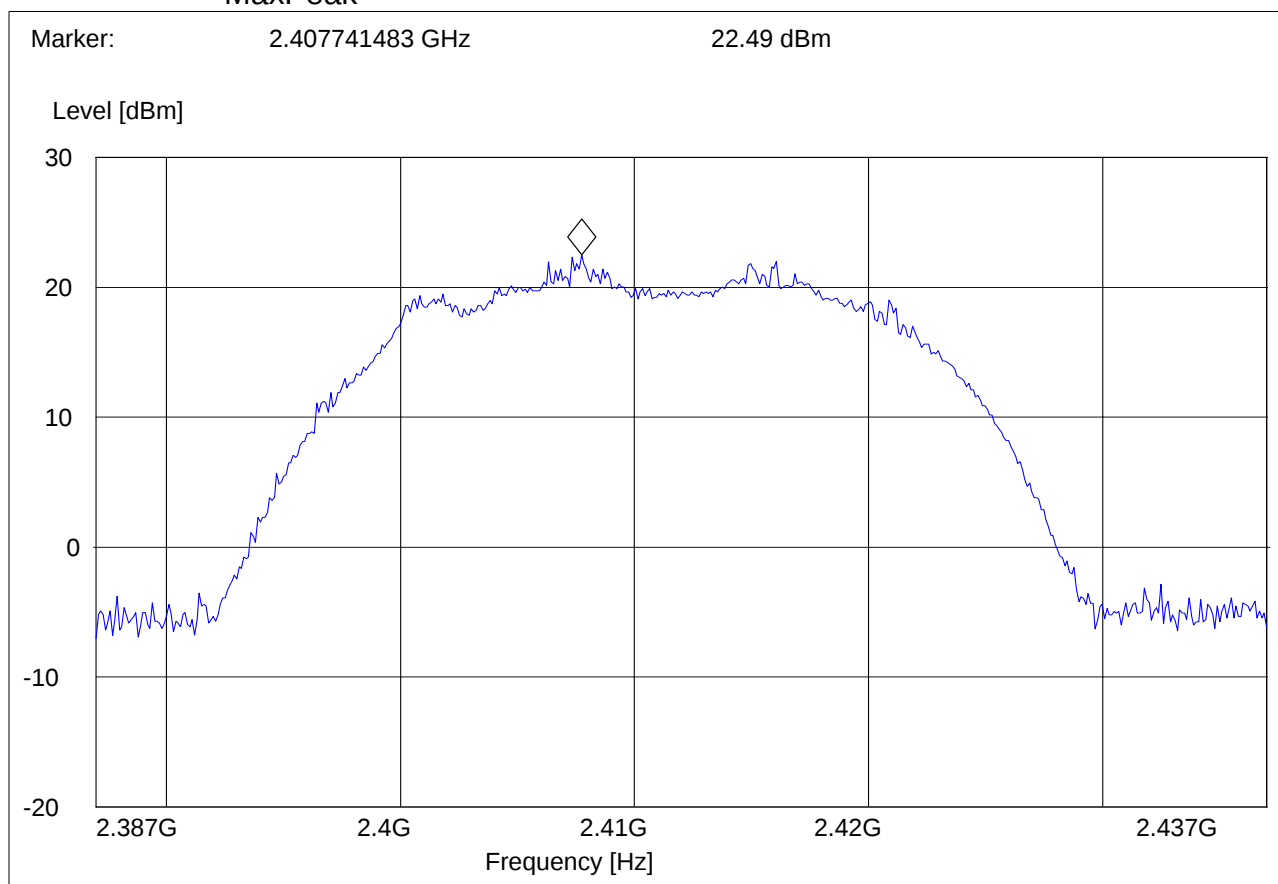
Short Description: EIRP RLAN channel-2412 MHz

Start Stop Detector Meas. IF Transducer

Frequency Frequency Time Bandw.

2.4 GHz 2.4 GHz MaxPeak Coupled 10 MHz DUMMY-DBM

MaxPeak



MAXIMUM PEAK OUTPUT POWER

§ 15.247 (b) (1)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 2 ppl 22

Antenna: H

EUT: V

Test operator: Pete

Voltage: AC 110 V

Sweep: EIRP

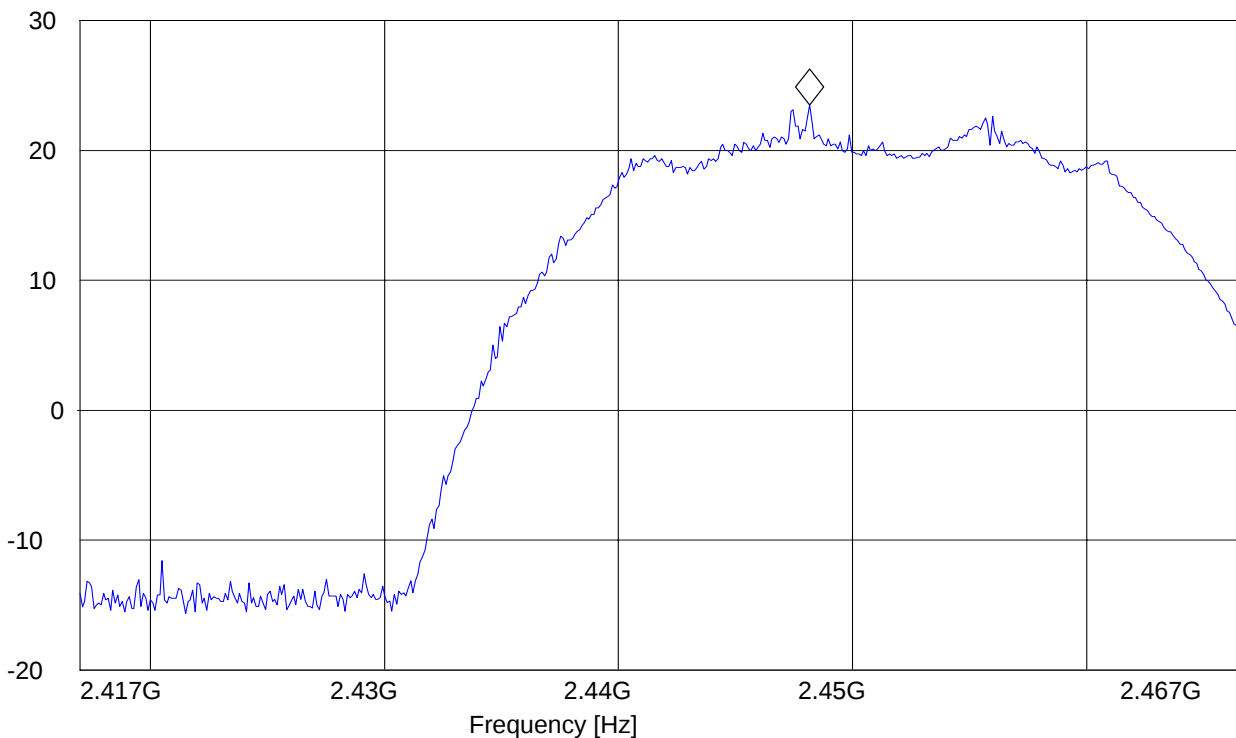
SWEEP TABLE: "EIRP RLAN CH7"

Short Description: EIRP RLAN channel-2442 MHz

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.5 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM

Marker: 2.448162325 GHz 23.5 dBm

Level [dBm]



MAXIMUM PEAK OUTPUT POWER

§ 15.247 (b) (1)

CETECOM Inc.**411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 3 ppl 22

Antenna: H

EUT: V

Test operator: Pete

Voltage: AC 110 V

Sweep: EIRP

SWEEP TABLE: "EIRP RLAN CH13"

Short Description: EIRP RLAN channel-2472 MHz

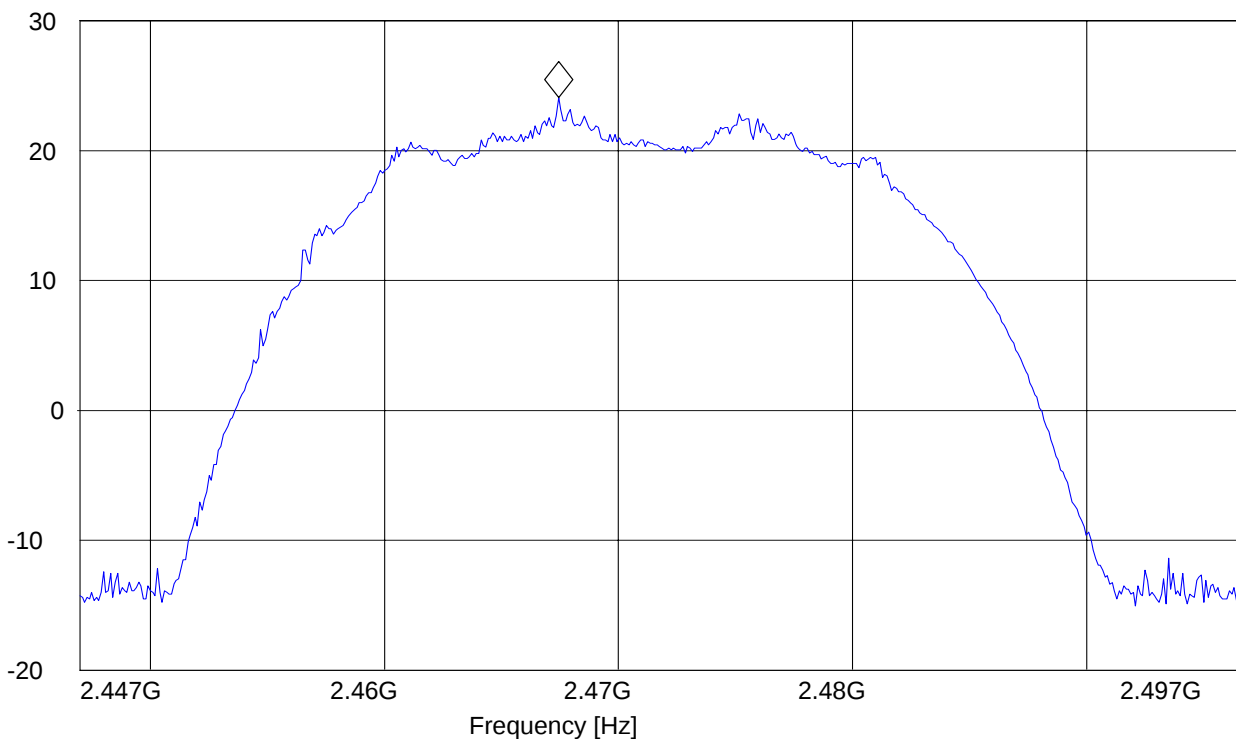
Start Stop Detector Meas. IF Transducer

Frequency Frequency Time Bandw.

2.4 GHz 2.5 GHz MaxPeak Coupled 10 MHz DUMMY-DBM

Marker: 2.467440882 GHz 24.08 dBm

Level [dBm]



EMISSION LIMITATIONS
Transmitter (Radiated)

§ 15.247 (c) (1)

LIMITS

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions, which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

NOTE:

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.

2. All measurements are done in peak mode unless specified with the plots.

Results for the radiated measurements below 30MHz according § 15.33

Frequency	Measured values	Remarks
9KHz – 30MHz	No emissions found, caused by the EUT	This is valid for all the tested channels

EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			
Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			

BAND EDGE COMPLIANCE

§15.247 (c)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 0 ppl 22

Antenna: H

EUT: V

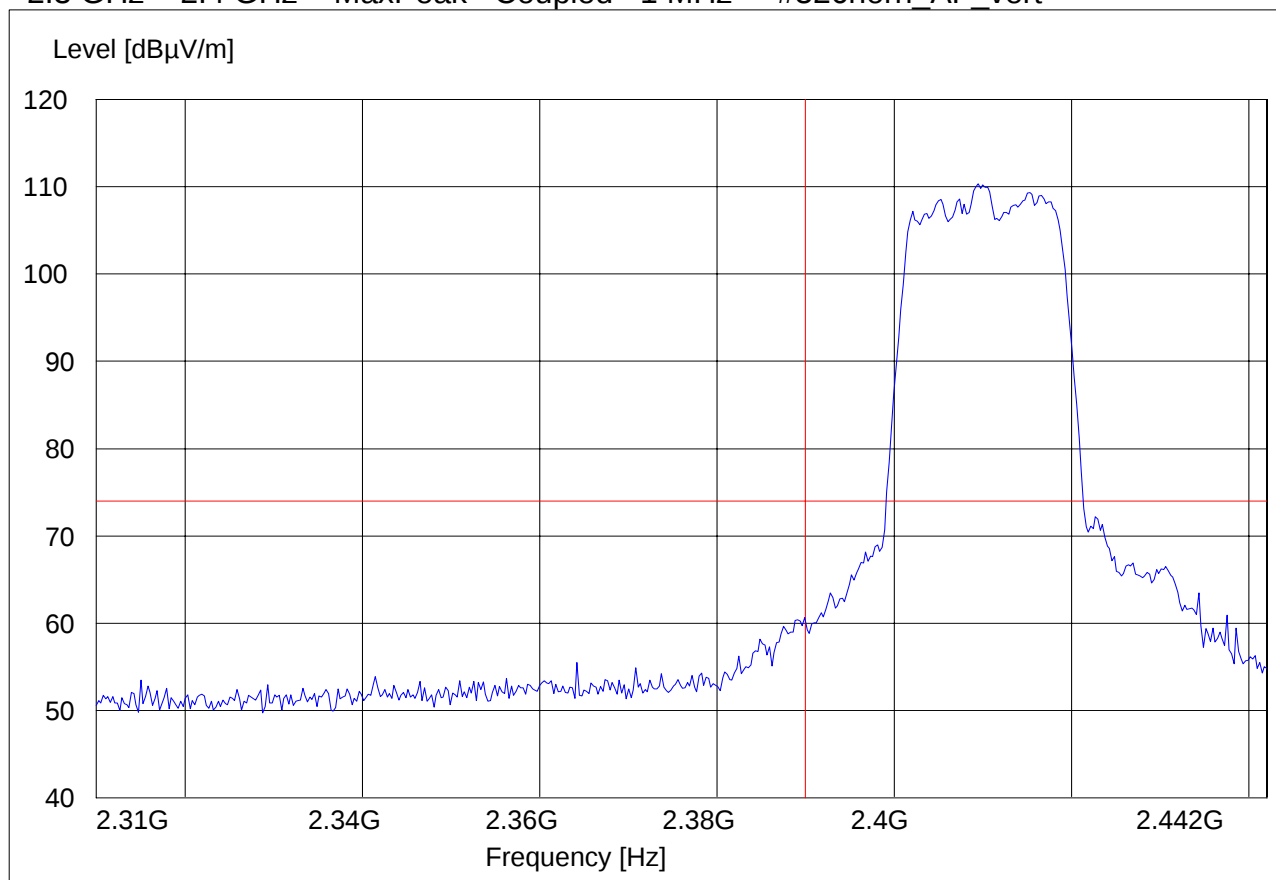
Test operator: Pete

Voltage: AC 110 V

Sweep: restricted band pk

SWEEP TABLE: "FCC15.247 LBE_PK"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



BAND EDGE COMPLIANCE

§15.247 (c)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 0 ppl 22

Antenna: H

EUT: V

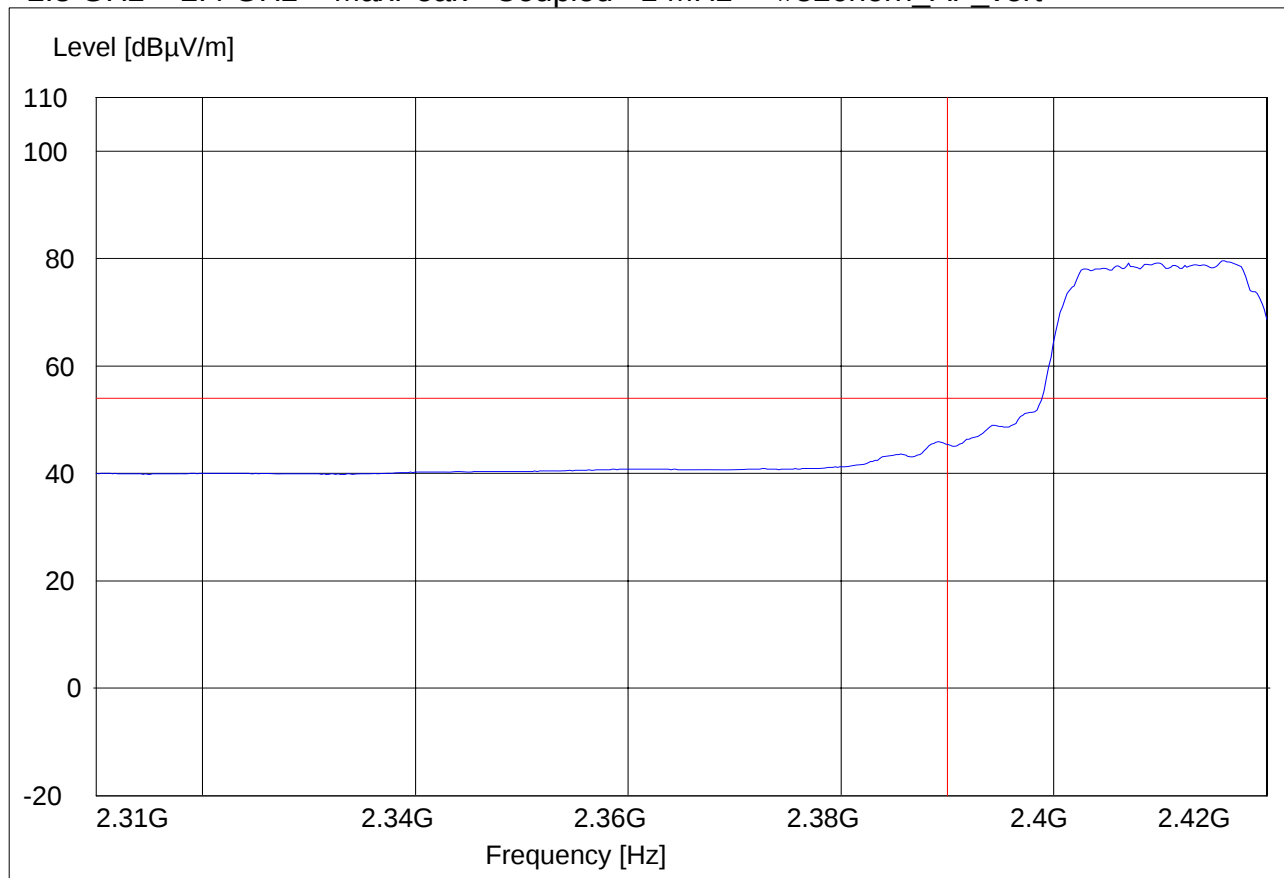
Test operator: Pete

Voltage: AC 110 V

Sweep: restricted band avg

SWEEP TABLE: "FCC15.247 LBE_AVG"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



BAND EDGE COMPLIANCE**§15.247 (c)****CETECOM Inc.****411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 3 ppl 22

Antenna: H

EUT: V

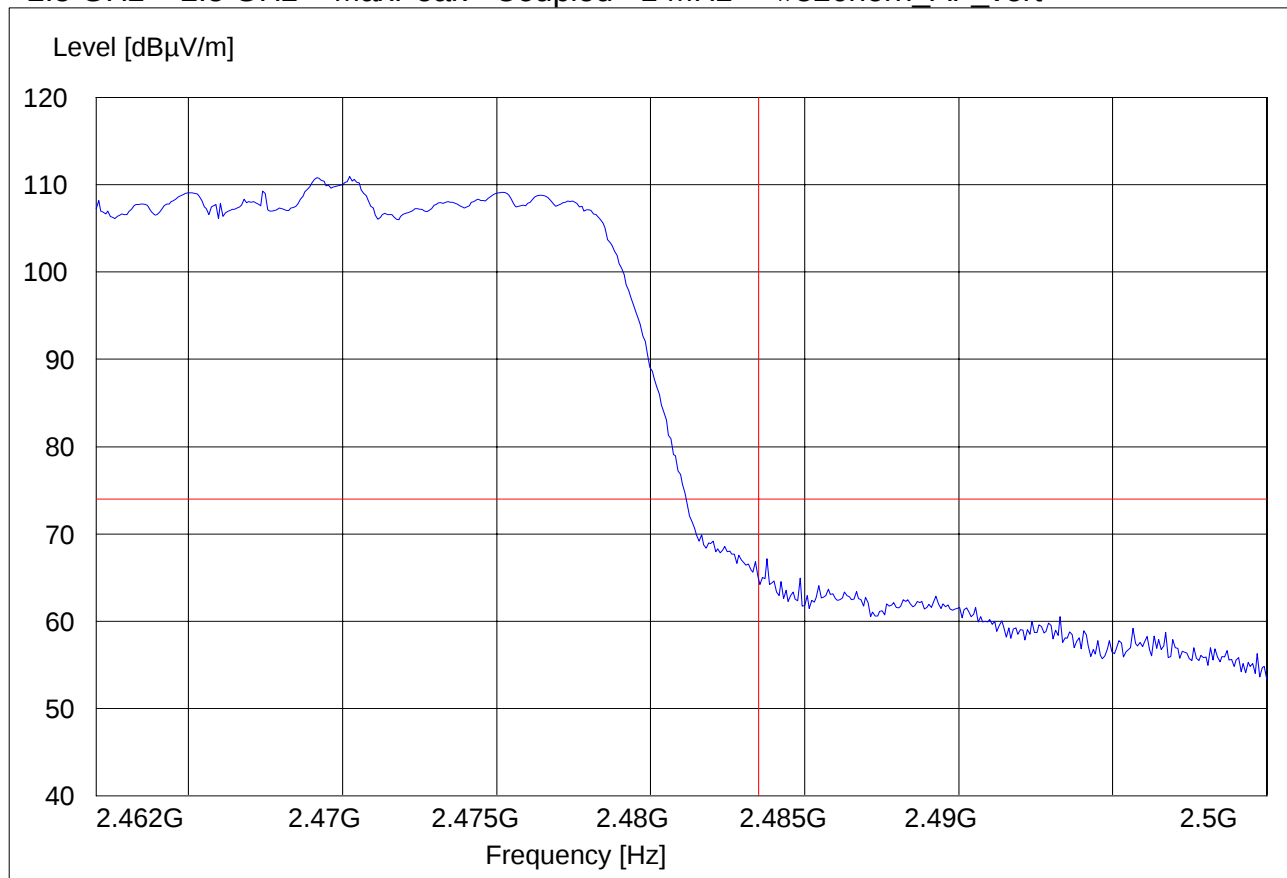
Test operator: Pete

Voltage: AC 110 V

Sweep: restricted band

SWEEP TABLE: "FCC15.247 HBE_PK"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



BAND EDGE COMPLIANCE

§15.247 (c)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mesh

Customer: Xplore

Operating Mode: TX ch 3 ppl 22

Antenna: H

EUT: V

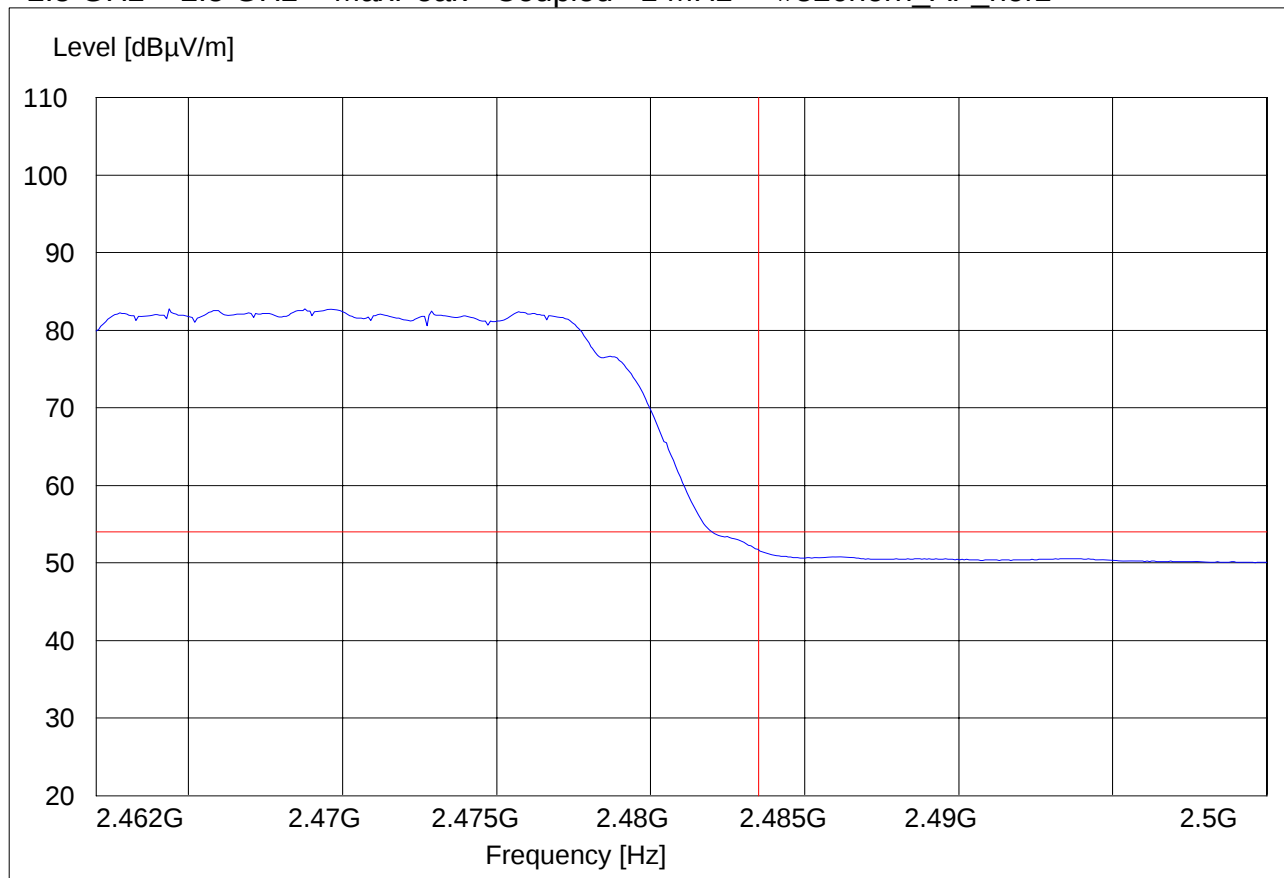
Test operator: Pete

Voltage: AC 110 V

Sweep: restricted band avg

SWEEP TABLE: "FCC15.247 HBE_AVG"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Lowest Channel (2410MHz): 30MHz – 1GHz****CETECOM Inc.****411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Mehs test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch 0: 2410Hz

Antenna: V

EUT: V

Test operator: christophe

Voltage: AC/DC

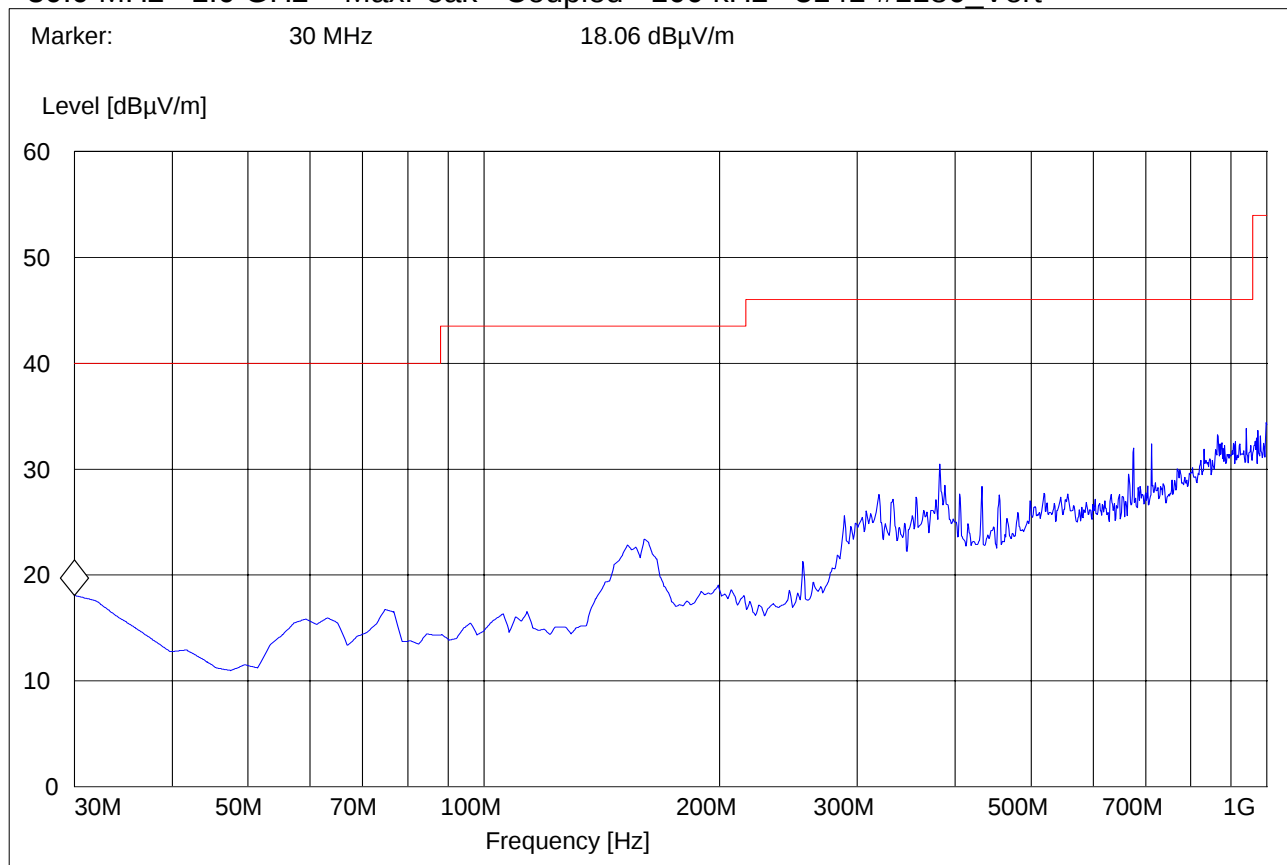
Sweep:

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Stop Detector Meas. IF Transducer

Frequency Frequency Time Bandw.

30.0 MHz 1.0 GHz MaxPeak Coupled 100 kHz 3141-#1186_Vert



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2410MHz): 1GHz – 3GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Meh's test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch 1 : 2410MHz

Antenna: H

EUT:

Test operator: christophe

Voltage: AC/DC

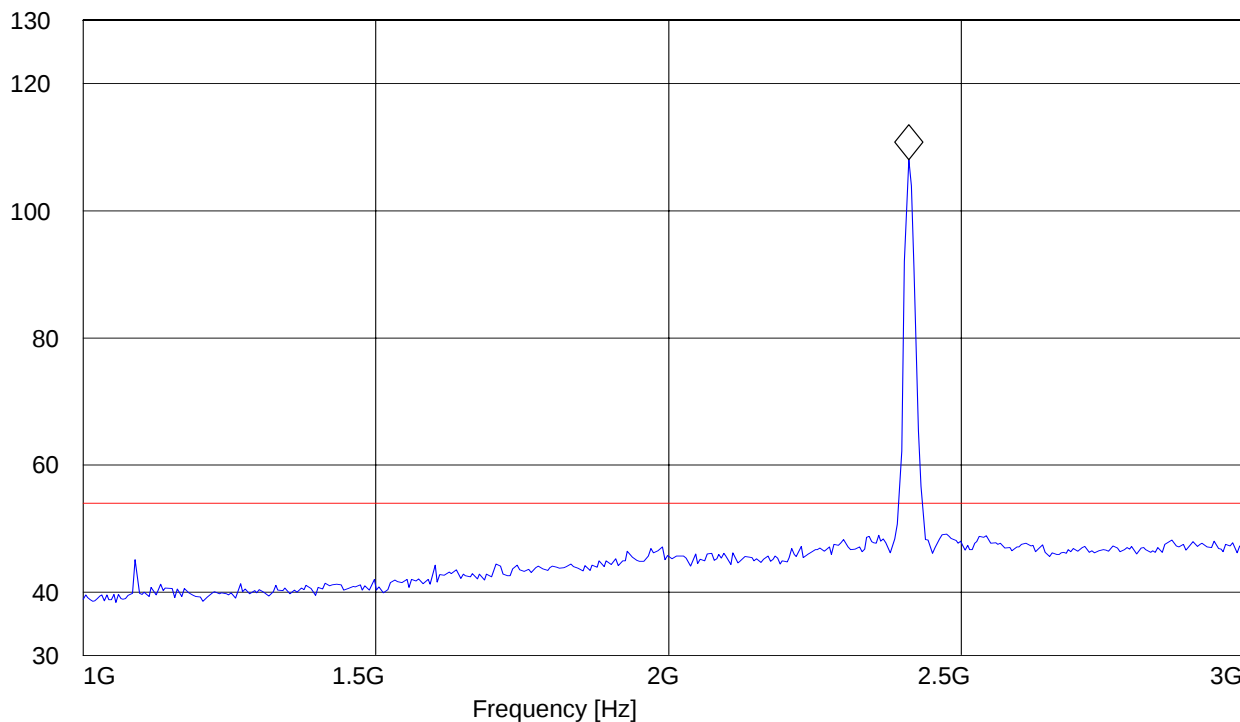
Sweep:

SWEEP TABLE: "FCC15.247_1-3G"

Start	Stop	Detector	Meas.	IF	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.410821643 GHz 108.06 dBμV/m

Level [dBμV/m]



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2410MHz): 3GHz – 18GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mehs test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch 0 : 2410Hz

Antenna: H

EUT: V

Test operator: christophe

Voltage: AC/DC

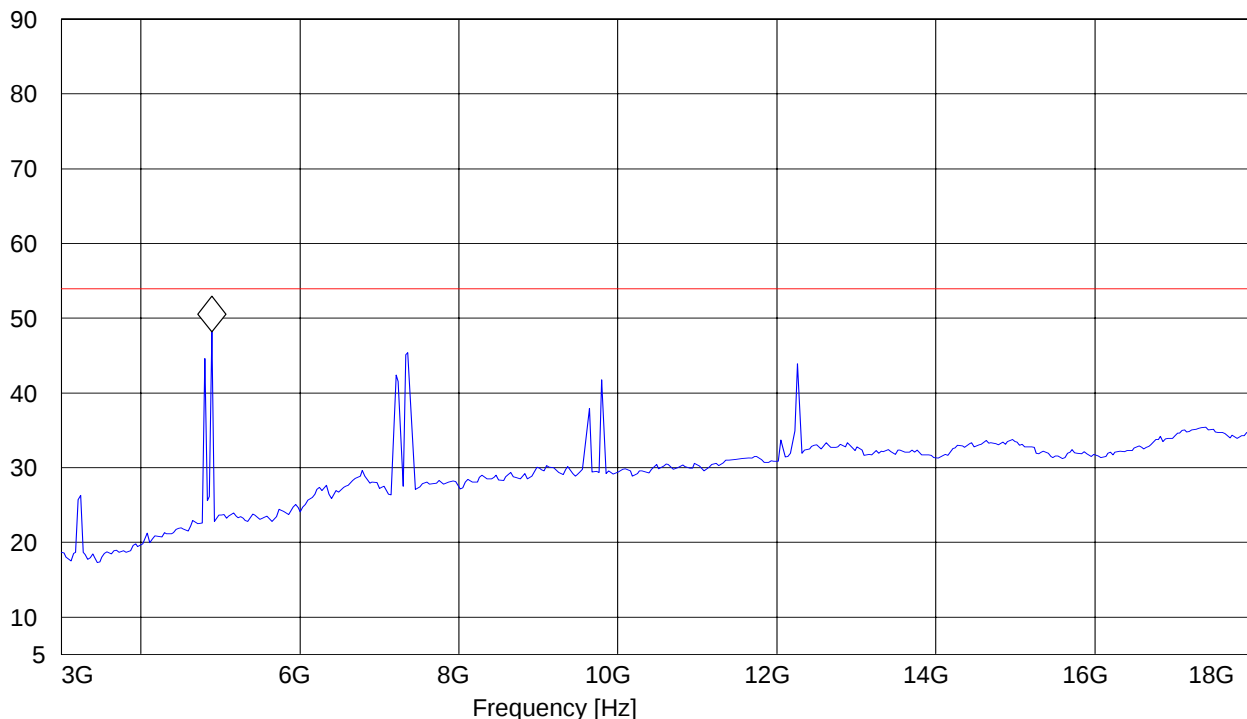
Sweep:

SWEEP TABLE: "FCC15.247_3-18G-AV"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
3.0 GHz	18.0 GHz	Average	Coupled	1 MHz	#326horn_AF_vert

Marker: 4.893787575 GHz 48.2 dBμV/m

Level [dBμV/m]



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2450MHz): 1GHz – 3GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mehs test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch3 : 2450MHz

Antenna: H

EUT:

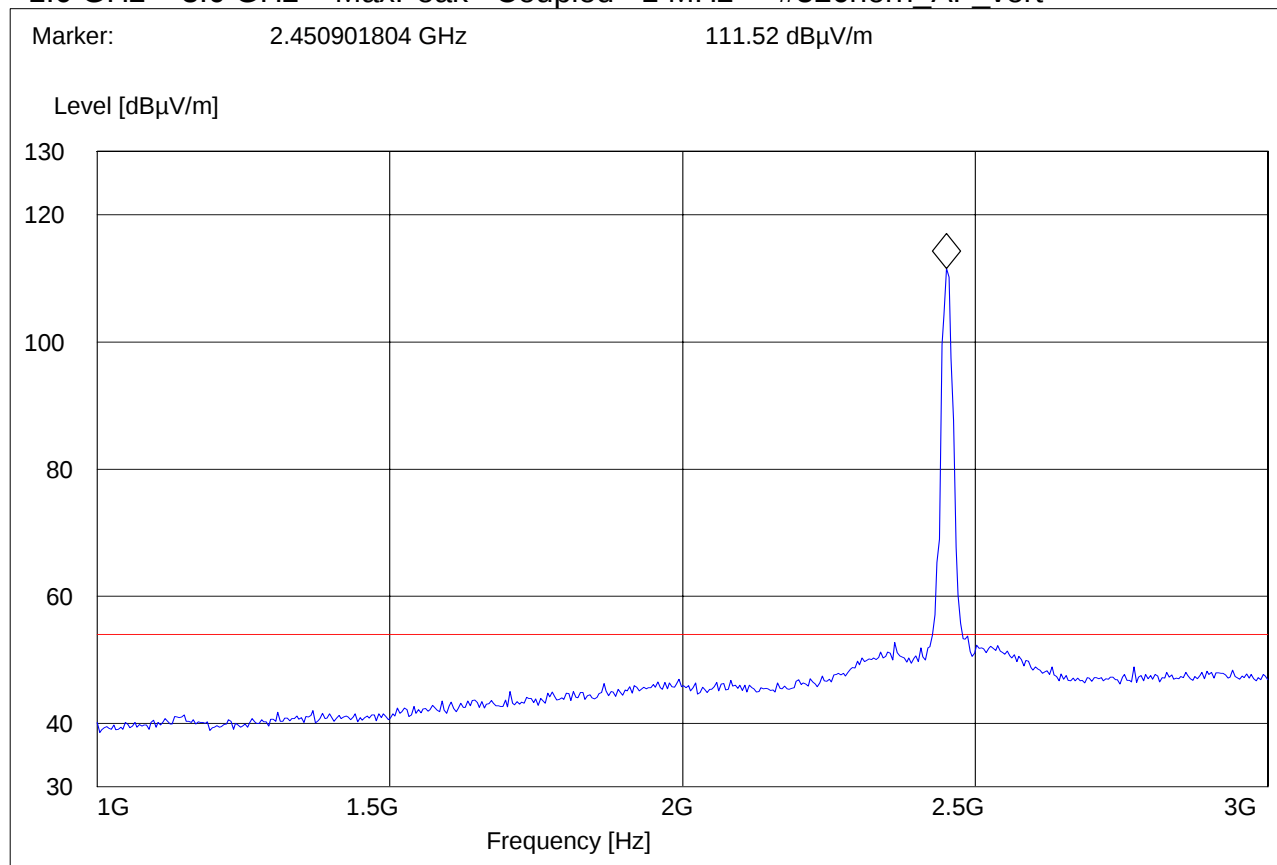
Test operator: christophe

Voltage: AC/DC

Sweep:

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2450MHz): 3GHz – 18GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mehs test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch 2 : 2450Hz

Antenna: H

EUT: V

Test operator: christophe

Voltage: AC/DC

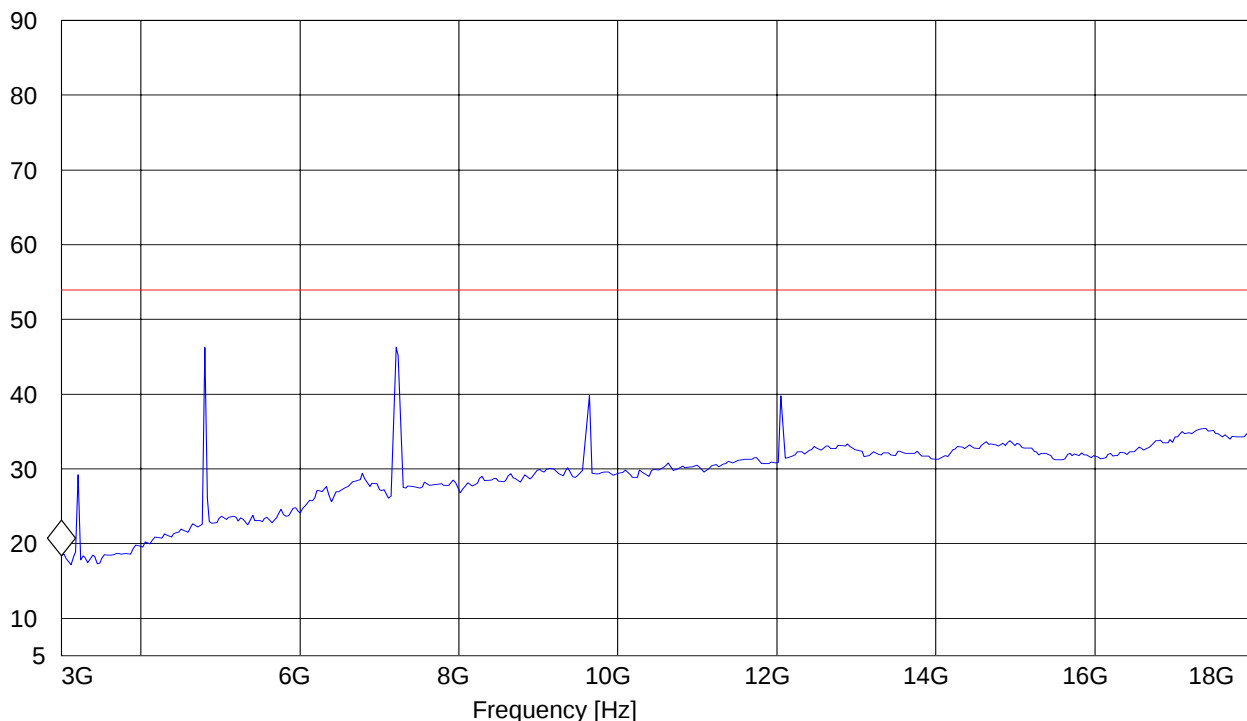
Sweep:

SWEEP TABLE: "FCC15.247_3-18G-AV"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
3.0 GHz	18.0 GHz	Average	Coupled	1 MHz	#326horn_AF_vert

Marker: 3 GHz 18.41 dBμV/m

Level [dBμV/m]



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2470MHz): 1GHz – 3GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description:

Customer: Xplore Technologies, Inc

Operating Mode: iX104-Mesh ch: 3 :2.47 Ghz

Antenna: H

EUT: V

Test operator: christophe

Voltage: Ac/Dc

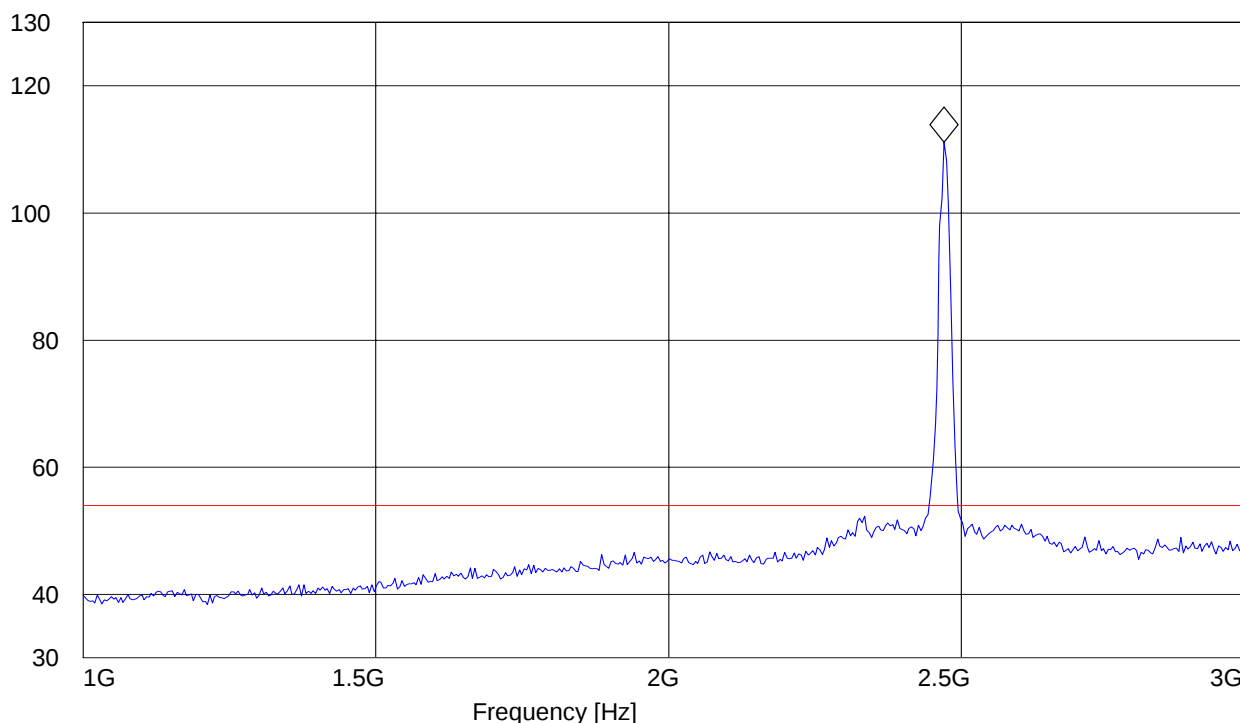
Sweep:

SWEEP TABLE: "FCC15.247_1-3G"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time		Bandw.
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.470941884 GHz 111.17 dBμV/m

Level [dBμV/m]



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2470MHz): 3GHz – 18GHz

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description:

Customer: Xplore Technologies, Inc

Operating Mode: iX104-Mesh ch: 3 :2.47 Ghz

Antenna: H

EUT: V

Test operator: christophe

Voltage: Ac/Dc

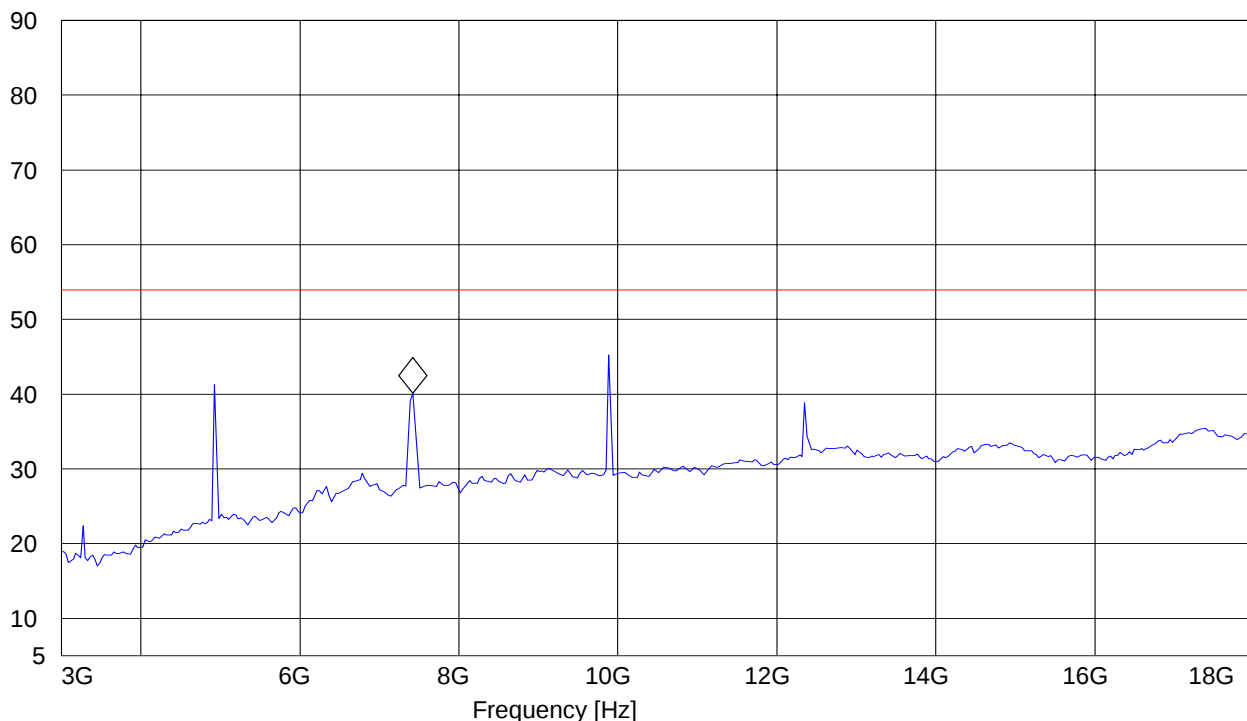
Sweep:

SWEEP TABLE: "FCC15.247_3-18G-AV"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	Average	Coupled	1 MHz	#326horn_AF_vert

Marker: 7.418837675 GHz 40.12 dBμV/m

Level [dBμV/m]



EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

18GHz – 26.5GHz

Note: This plot is valid for low, mid, high channels (worst-case plot)

CETECOM Inc.

411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Mehs test sample #2

Customer: XPLORE TECHNOLOGIES Inc

Operating Mode: Tx mode Ch 1 : 2410Hz

Antenna: H

EUT: V

Test operator: christophe

Voltage: AC/DC

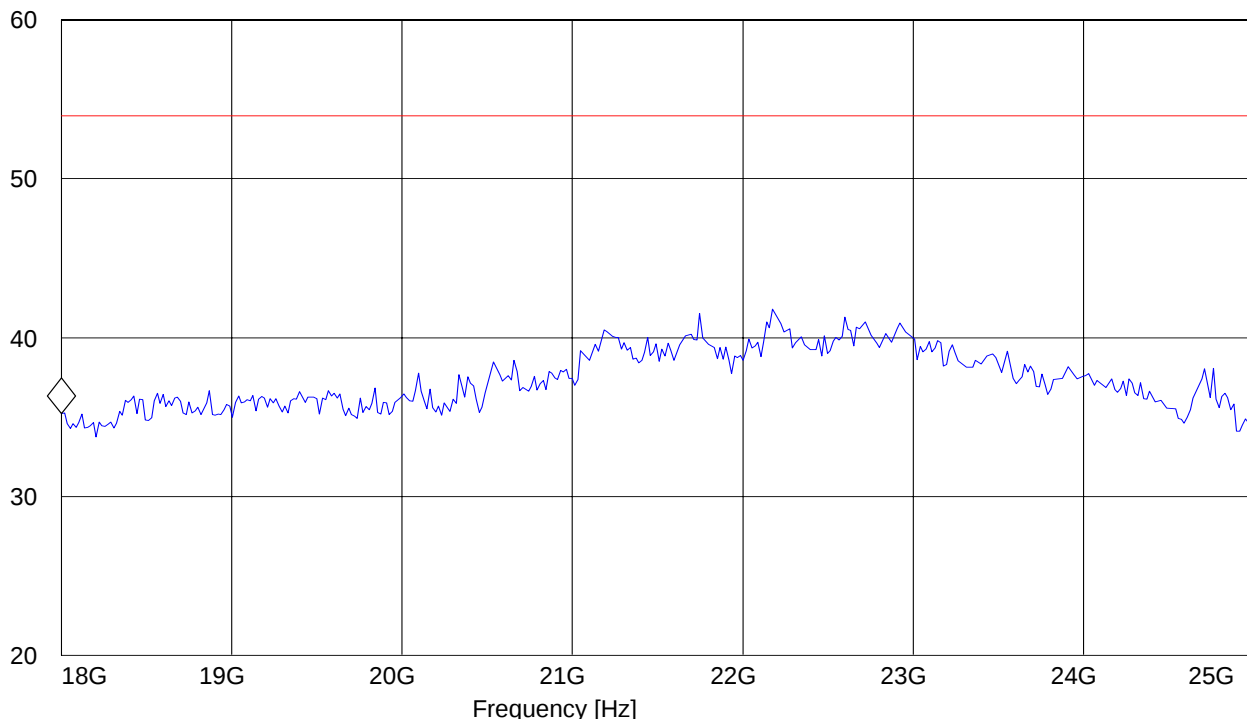
Sweep:

SWEEP TABLE: "FCC15.247_18-26.5G"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
18.0 GHz	26.5 GHz	MaxPeak	Coupled	1 MHz	3160 Horn 18-26.5G

Marker: 18 GHz 35.23 dBμV/m

Level [dBμV/m]



CONDUCTED EMISSIONS**§ 15.107/207****Measured with AC/DC power adapter****Limit**

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50
* Decreases with logarithm of the frequency		

ANALYZER SETTINGS: RBW = 10KHz**VBW = 10KHz**

LISN

411 Dixon Landing Road, CA 95035

Manufacturer: Xplore

Phase: L & N

Comment: 110 volt

SCAN TABLE: "EN 55022 Voltage"

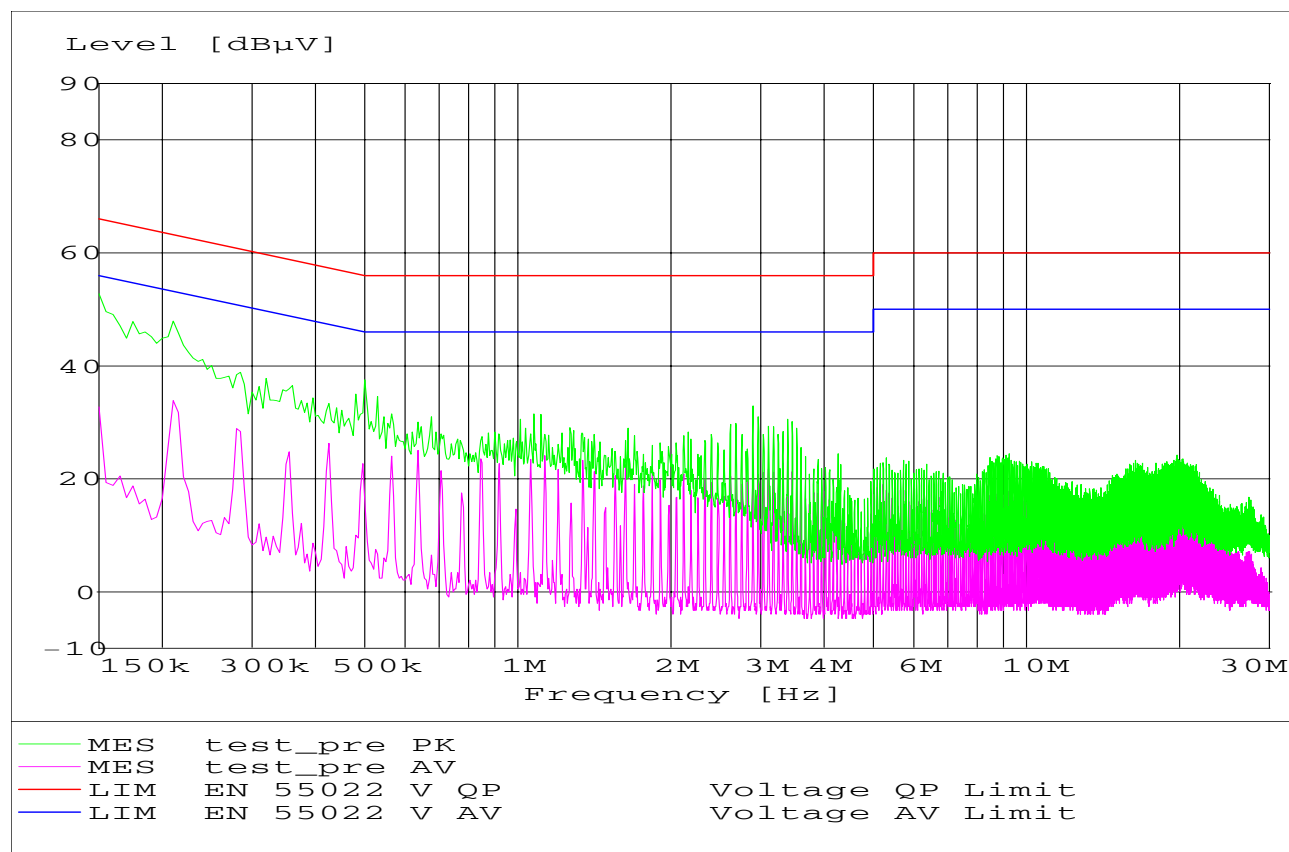
Short Description: EN 55022 Voltage

Start Stop Step Detector Meas. IF Transducer

Frequency Frequency Width Time Bandw.

150.0 kHz 30.0 MHz 5.0 kHz MaxPeak 10.0 ms 9 kHz None

Average



TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal. Due
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2006
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	826880/010	May 2006
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2006
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2006
05	Biconilog Antenna	3141	EMCO	0005-1186	May 2006
06	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	May 2006
07	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240	May 2006
08	Power Splitter	11667B	Hewlett Packard	645348	n/a
09	Climatic Chamber	VT4004	Voltsch	G1115	n/a
10	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a
11	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a
12	Pre-Amplifier	JS4-00102600	Miteq	00616	May 2006
13	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2006
14	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2006
15	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2006
16	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2006
17	Loop Antenna	6512	EMCO	00049838	July 2007

BLOCK DIAGRAMS
Radiated Testing

ANECHOIC CHAMBER

