

**SGS-CSTC Standards
Technical Services Co., Ltd.**

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Report No.: SHEMO09070079102

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EMC TEST REPORT

Application No.: SHEMO09070079102

Applicant: Ningbo C.F Electronic Tech Co., ltd

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

EUT Name: POOLALARM RECEIVER

Model Name: PE23

FCC ID: XLVPE23-R

Standards: FCC Part 15 Section B

Date of Receipt: Jul 22, 2009

Date of Test: Jul 25, 2009 to Aug 3, 2009

Date of Issue: Aug 3, 2009

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

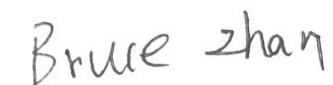
Approved by:



Tino Pan

E&E Section Manager

Tested By:



Bruce Zhan

EMC TEST Engineer

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2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission	Part 15.109	ANSI C63.4: 2003	Class B	PASS
Conducted Emission	Part 15.107	ANSI C63.4: 2003	Class B	PASS

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4 General Information

4.1 Client Information

Applicant: Ningbo C.F Electronic Tech Co., ltd
Address of Applicant: Gongren village, Gulin Town, Ningbo, China

4.2 General Description of E.U.T.

EUT Name: POOLALARM RECEIVER
Model No.: PE23
Power supply: DC 9V

4.3 Description of Support Units

Name	Model	Technical data
AC/DC adapter	ADPV25A	Input: AC 100-240V, 50/60Hz Output: DC 9V, 1.8A

4.4 Test Location

Tests were performed at SGS E&E EMC lab

SGS-CSTC EMC Laboratory, No.588 West Jindu Road, Songjiang District, Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

4.5 Test Confident level

Test Confident level is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 402683

EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 402683. Effective dates: Feb 23, 2009.

4.6 Abnormalities from Standard Conditions

None.

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5 Equipment Used during Test

Conducted Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2009-6-4	2010-6-3
2	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2009-5-8	2010-5-7

Radiated Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2009-6-4	2010-6-3
2	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2009-6-4	2010-6-3
3	ANTENNA	SCHWARZBECK	BBHA9120D	9120D-679	2009-6-4	2010-6-3
4	ANTENNA	SCHWARZBECK	BBHA9170	9170-373	2009-6-4	2010-6-3
5	TURNTABLE	INNCO	DS 2000S-1T	/	/	/

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6 Emission Test Results

6.1 Radiated Emissions

Test Requirement:	Part 15.109
Test Method:	ANSI C63.4:2003
Test Date:	Aug 3, 2009
Frequency Range:	30MHz to 2GHz
Measurement Distance:	3m
Detector:	Quasi-peak detector for below 1GHz RBW 120KHz, VBW 300KHz Average and Peak detector for above 1GHz. RBW 1MHz, VBW 3MHz
Test Procedure:	The procedure used was ANSI Standard C63.4-2003. The receiver was scanned from 30MHz to 2.0GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities and Horn antenna.
Result:	PASS

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 55 % RH Atmospheric Pressure: 1014 mbar

EUT Operation: Pre-test in battery power mode and AC/DC adapter power mode, the AC/DC adapter mode was worse than battery power mode, so compliance test was performed at AC/DC adapter mode.

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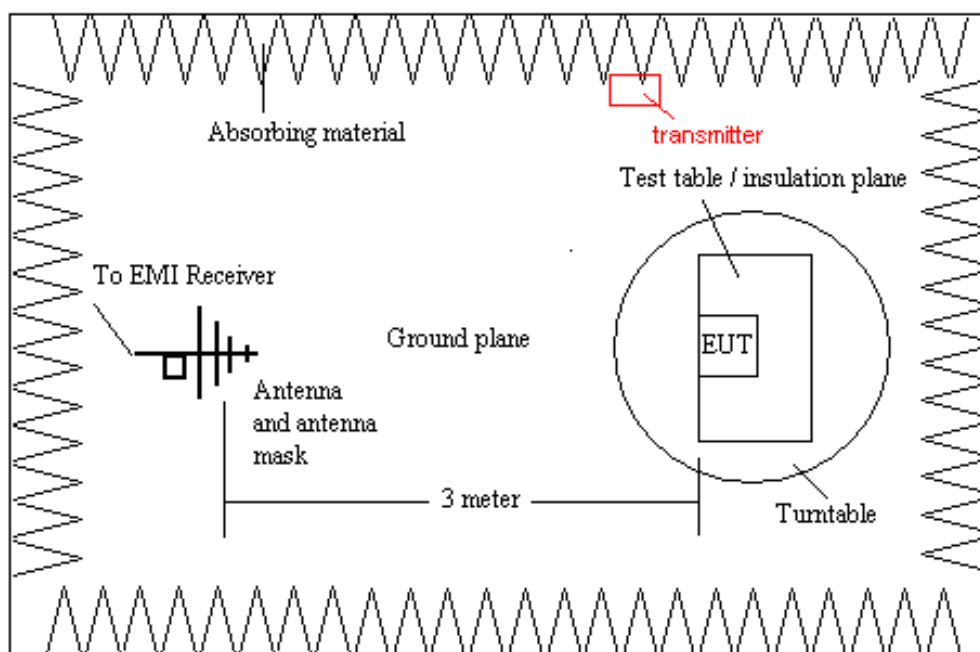
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6.1.2 Test Setup:

Put the transmitter in the shield room closed to the wall for communication with EUT.



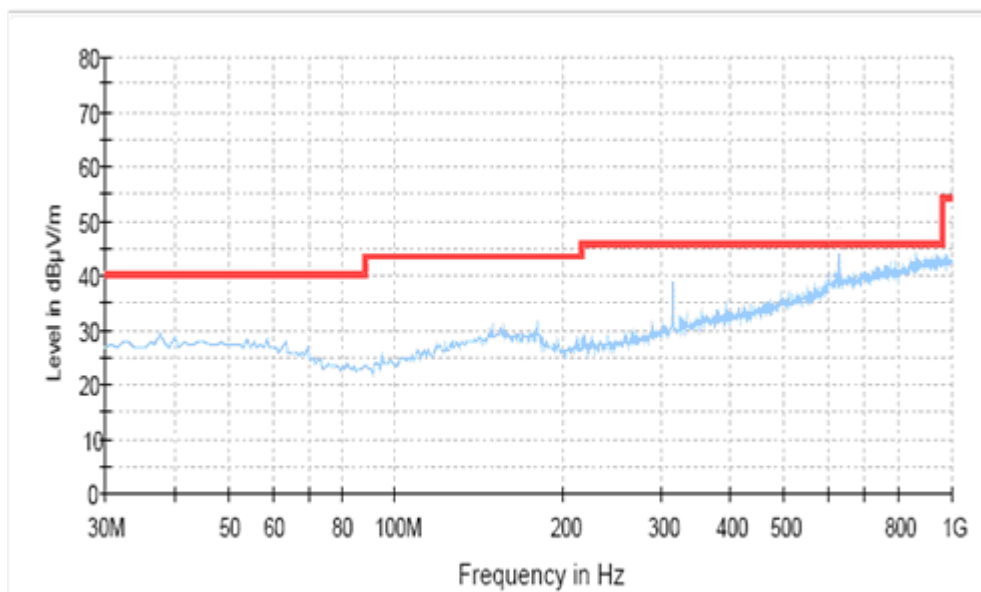
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Horizontal:
30MHz-1GHz



Frequency (MHz)	Actual Level QP (dBµV/m)	Limit (dBµV/m)	Margin (dB)
315.00	38.5	46.0	7.5
500.00	29.8	46.0	16.2
629.00	45.2	46.0	0.8
700.00	35.0	46.0	11.0
800.00	35.5	46.0	10.5
900.00	35.7	46.0	10.3
1000.00	35.6	54.0	18.4

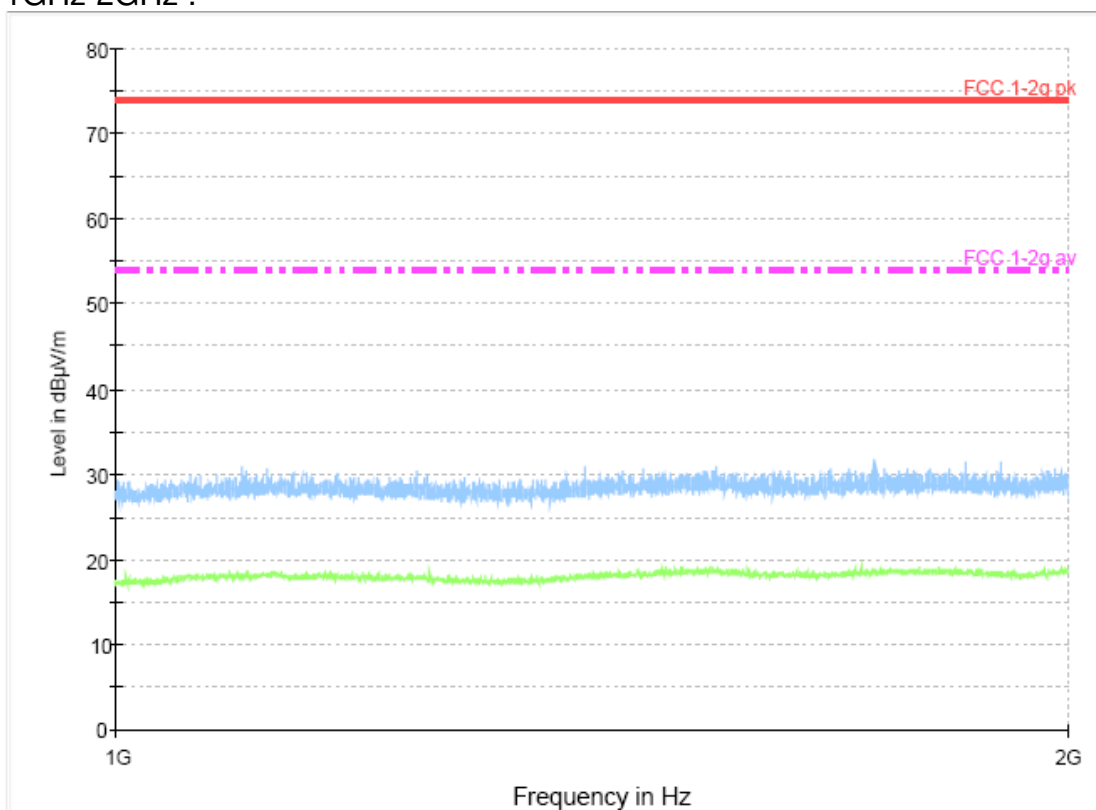
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1GHz-2GHz :



Frequency (MHz)	Actual Level AV (dBuV/m)	Actual Level Peak (dBuV/m)	Limit AV (dBuV/m)	Limit Peak (dBuV/m)
1000	*	*	54	74
1200	*	*	54	74
1400	*	*	54	74
1600	*	*	54	74
1800	*	*	54	74
2000	*	*	54	74

“*” means the emission level is 20dB lower than the relevant limit.

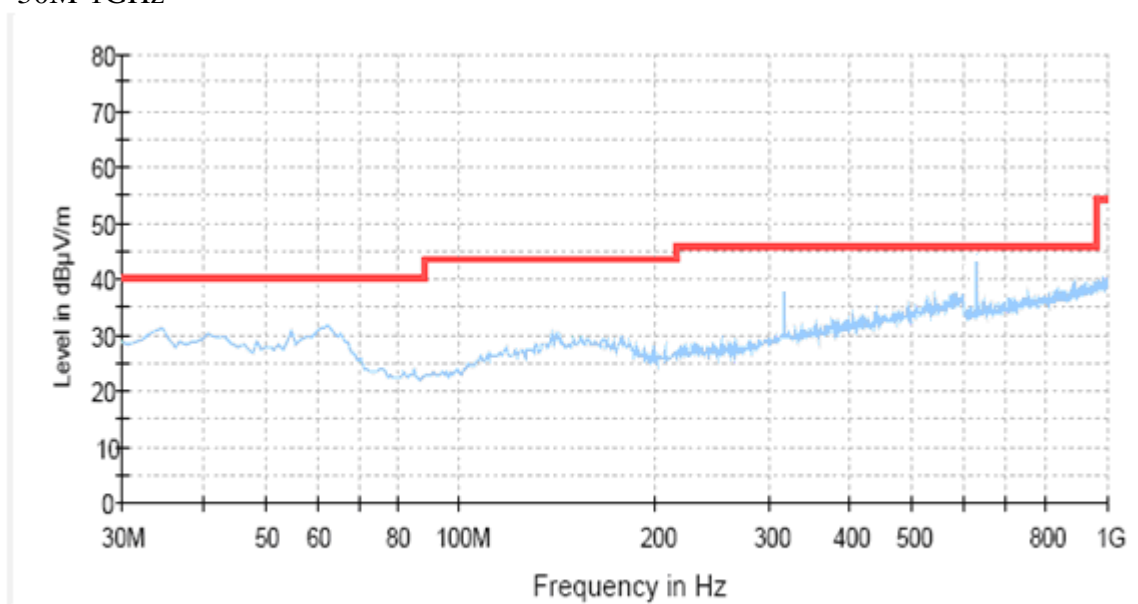
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Vertical:
30M-1GHz



Frequency (MHz)	Actual Level QP (dBuV/m)	Limit (dBuV/m)	Margin (dB)
315.00	36.9	46.0	9.1
500.00	29.4	46.0	16.6
628.98	41.7	46.0	4.3
700.00	30.2	46.0	15.8
800.00	31.8	46.0	14.2
900.00	32.6	46.0	13.4
1000.00	33.4	54.0	20.6

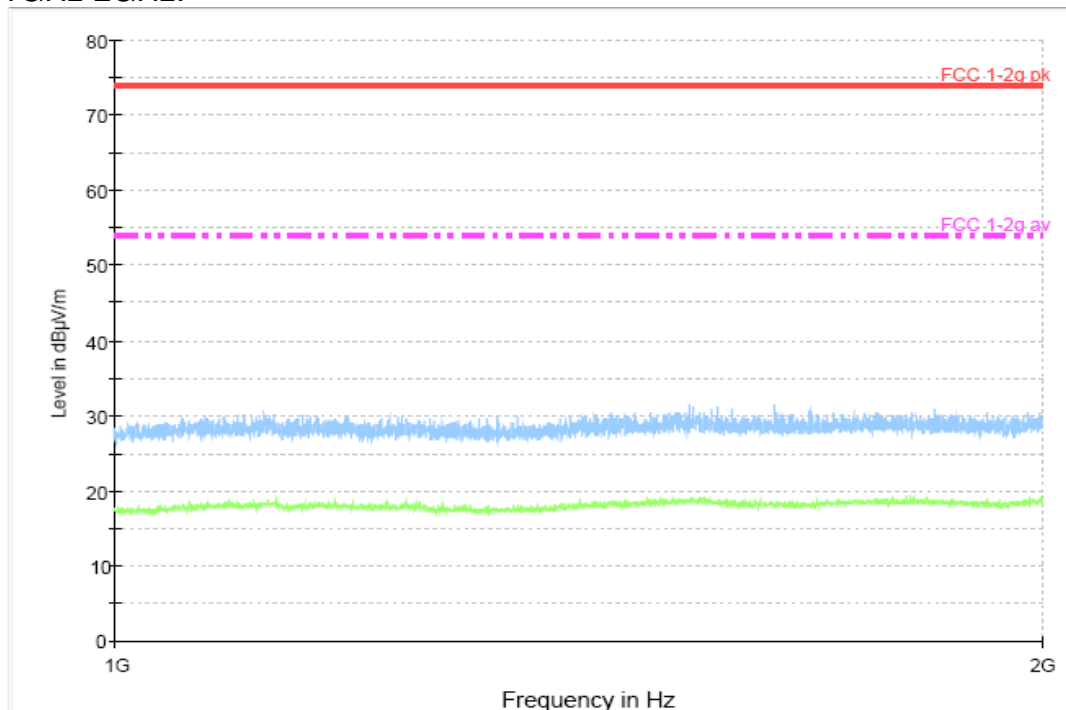
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1GHz-2GHz:



Frequency (MHz)	Actual Level AV (dBuV/m)	Actual Level Peak (dBuV/m)	Limit AV	Limit Peak
			(dBuV/m)	(dBuV/m)
1000	*	*	54	74
1200	*	*	54	74
1400	*	*	54	74
1600	*	*	54	74
1800	*	*	54	74
2000	*	*	54	74

“*” means the emission level is 20dB lower than the relevant limit.

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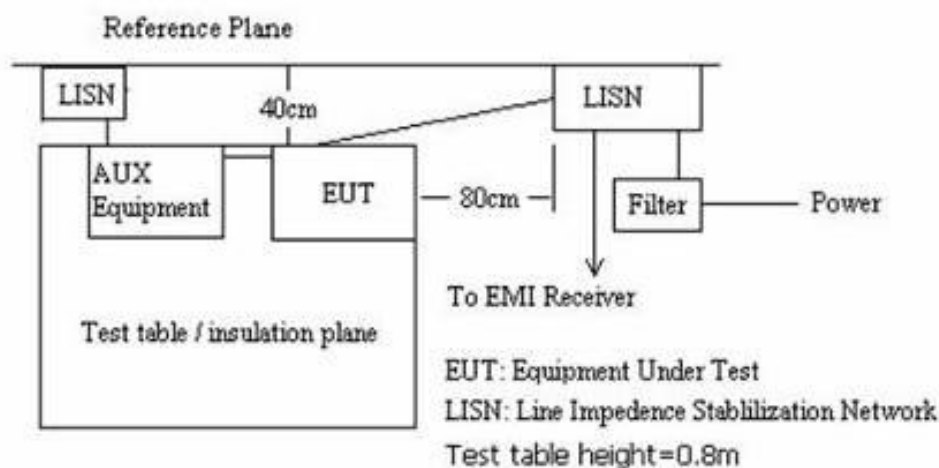
6.2 Conducted Emissions

Test Requirement: CFR 47 part 15:2007 Subpart B
Test Method: ANSI C63.4:2003
Test Date: Jul 25, 2009
Frequency Range: 150kHz to 30MHz
Limit:
66 dB μ V - 56 dB μ V between 150kHz & 500kHz Quasi-peak
56 dB μ V between 0.5MHz & 5MHz Quasi-peak
60 dB μ V between 5MHz & 30MHz Quasi-peak
Result: **PASS**

6.2.1 E.U.T. Operation

Operating Environment:
Temperature: 23°C Humidity: 57% RH Atmospheric Pressure: 1012 mbar
EUT Operation: Test in AC/DC adapter power mode with communication with transmitter,

6.2.2 Test Setup



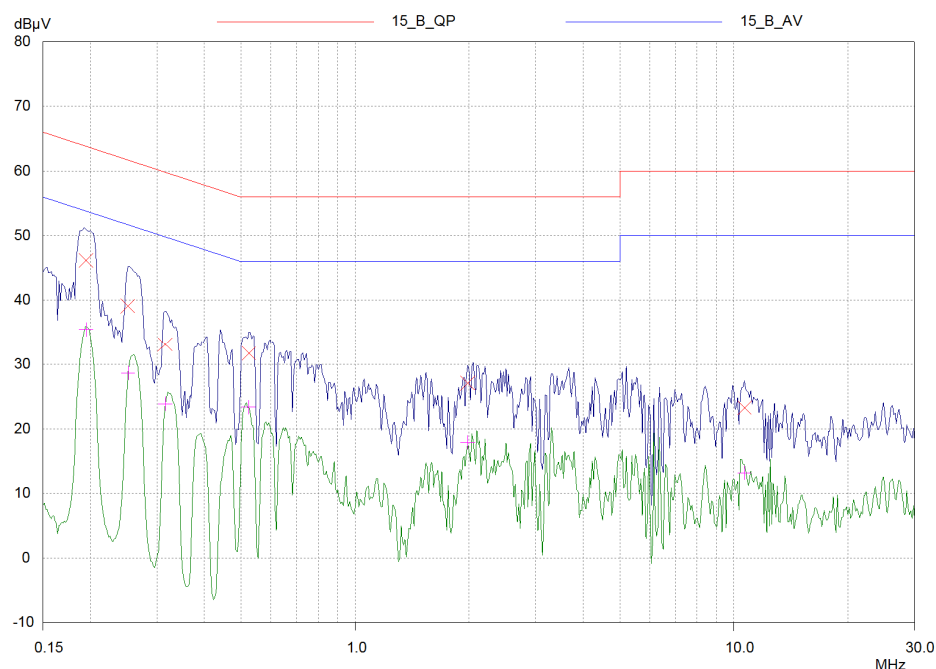
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L Line:



Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.19511	46.17	63.82	17.65
0.25178	39.14	61.70	22.56
0.31471	33.15	59.85	26.70
0.52407	31.72	56.00	24.28
1.98291	27.04	56.00	28.96
10.65309	23.23	60.00	36.77

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.19511	35.47	53.82	18.35
0.25178	28.65	51.70	23.05
0.31471	23.88	49.85	25.97
0.52407	23.33	46.00	22.67
1.98291	17.88	46.00	28.12
10.65309	13.14	50.00	36.86

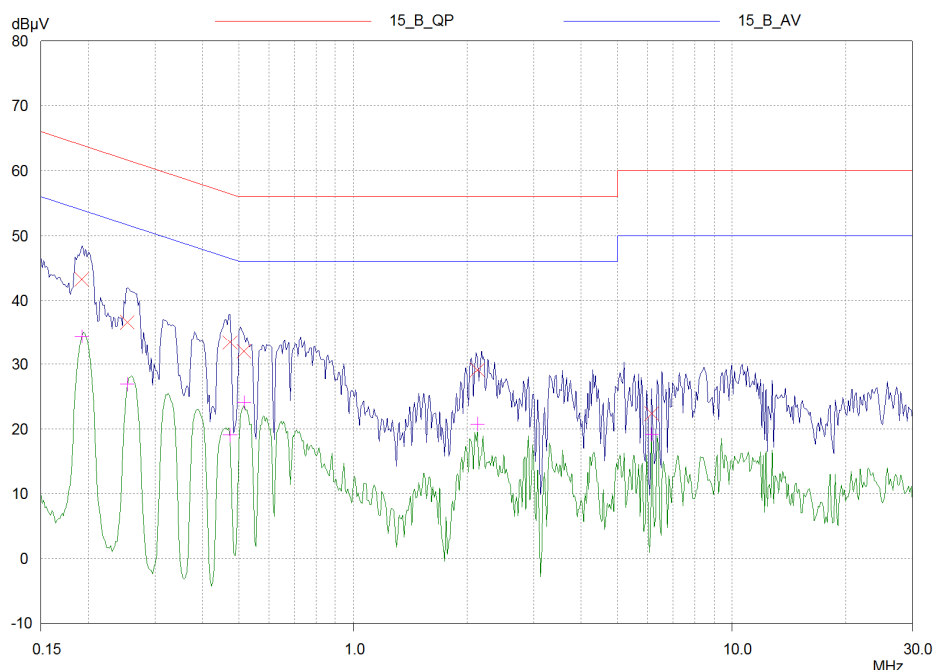
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N Line:



Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.19202	43.20	63.95	20.75
0.25379	36.59	61.63	25.04
0.4725	33.40	56.47	23.07
0.51578	32.01	56.00	23.99
2.13033	29.12	56.00	26.88
6.1475	22.33	60.00	37.67

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.19202	34.36	53.95	19.59
0.25379	26.85	51.63	24.78
0.4725	19.03	46.47	27.44
0.51578	24.05	46.00	21.95
2.13033	20.73	46.00	25.27
6.1475	19.09	50.00	30.91