



ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)

100 ft Road, Peenya Industrial Estate, Bangalore-560 058

(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)

E-mail: etdcbg@stqc.gov.in



Report No.: TR/EMC/62971-4

TEST REPORT

Page 01 of 16

1. Scope

1.	Service request number	62971
2.	Test requested by (Name & Address of the Organization)	M/s. CEM Solutions Pvt. Ltd. #143/A1, Bommasandra Industrial Area, Hebbagodi Village, Bangalore-560099.
3.	Description of the equipment:	
	a) Nomenclature	2 nd Gen 1/2 port PRI PCI/PCIe+LEC Low Profile Card
	b) Manufactured by	CEM Solutions Pvt. Ltd.
	c) Model / type no.	2aCP1/2/e/L-H
	d) No. of samples submitted	01
	e) Serial no.	PA079058J1400001
4.	Date of submission of test samples	08/09/2014
5.	Condition of test samples on receipt	Good
6.	Test carried out at	In-house
7.	Date of start of tests	09/09/2014
8.	Date of completion of tests	09/09/2014
9.	Applicable test specification	FCC Part 15: 2007 Class B
10.	Test category	Performance Test
11.	Environment condition	Temp: 25±5 °C & RH: 45 to 70%

2. Major equipment used

SN	Nomenclature	Make	Model	Cal. Due
1.	EMI Receiver	R&S	ESCI	21/10/2014
2.	V network	R&S	ESH3Z5	04/06/2015
3.	EMI Receiver	R&S	ESCI7	12/12/2014
4.	Bi-Log Antenna	Electro-metrics	EM-6917B-1	04/06/2015

This report refers only to the item tested and shall not be reproduced except in full. Refer to information contained on the cover.



Date of Release: 16/05/2014



ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)

100 ft Road, Peenya Industrial Estate, Bangalore-560 058

(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)

E-mail: etdcbg@stqc.gov.in

Report No.: TR/EMC/62971-4

Page 02 of 16

Test Parameter : 1) Conducted Emission measurement on power line
2) Radiated Emission measurement @ 3mts. Distance

Test Specification : FCC Part 15: 2007 Class B

Detector used : Quasi Peak (QP) / Average (Avg)

Detector Bandwidth

Frequency (MHz)	Detector Bandwidth (kHz)
0.15 - 30	9
30 - 1000	120

Limits:

Class B				
Conducted Emission measurement on power line			Radiated Emission measurement @ 3mts. distance	
Freq (MHz)	QP (dB μ V)	AVG (dB μ V)	Freq (MHz)	QP (dB μ V/m)
0.15 - 0.5	66-56	56-46	30 - 88	40
0.5 - 5	56	46	88-216	43.5
5 - 30	60	50	216-960	46
			960-1000	54

EUT Configuration: The EUT is a 2nd Gen 1/2 port PRI PCI/PCIe+LEC Low Profile Card, inserted in a PCIe slot of a desktop PC which was powered by 230V AC main supply.

Remark: The Image of EUT and test setup for Radiated Emission measurement are shown in Annexure 'A' and 'B' respectively. The graphs for Conducted Emission measurement on power line and Radiated Emission measurement tests are shown in Annexure 'C' and 'D' respectively.

Summary of test results:

Conducted Emission measurement on power line:
Meets the Class B Limits of FCC Part 15:2007.
Few Significant emission are reported in page no. 03

Radiated Emission measurement @ 3mts. Distance
Meets the Class B Limits of FCC Part 15:2007.
Few Significant emission are reported in page no. 04





ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)

100 ft Road, Peenya Industrial Estate, Bangalore-560 058

(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)

E-mail: etdcbg@stqc.gov.in

Report No.: TR/EMC/62971-4

Page 03 of 16

Results: (1) Conducted Emission measurement on power line.

Frequency (MHz)	Qp Reading (dB μ V)	Qp Limit (dB μ V)	Avg Reading (dB μ V)	Avg Limit (dB μ V)
On Phase to ground				
0.154	56.02	66.00	39.27	56.00
0.190	53.24	64.86	36.78	54.86
0.278	48.04	62.57	36.59	52.57
0.298	51.51	62.00	41.66	52.00
0.342	46.81	60.57	34.82	50.57
7.922	33.00	60.00	25.76	50.00
13.518	31.52	60.00	22.99	50.00
On Neutral to ground				
0.158	57.38	66.00	42.60	56.00
0.202	56.60	64.57	41.68	54.57
0.230	51.84	63.71	37.13	53.71
0.382	44.81	59.43	30.18	49.43
0.430	48.58	58.00	31.66	48.00
0.514	41.21	56.00	27.77	46.00
3.278	35.88	56.00	32.30	46.00

M/S



MS



ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)
100 ft Road, Peenya Industrial Estate, Bangalore-560 058
(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)
E-mail: etdcbg@stqc.gov.in

Report No.:TR/EMC/62971-4

Page 04 of 16

Results: (2) Radiated Emission measurement

Frequency (MHz)	Emission level measured (dB μ V/m)	Angle (deg)	Polarisation (H/V)*	Limit (dB μ V/m)
30.40	27.12	270	V	40
31.56	27.17	90	V	40
32.12	26.37	180	V	40
527.96	27.12	90	H	47
630.44	29.43	90	V	47
766.28	34.27	180	H	47

(H/V)*:H-Horizontal polarization, V-Vertical polarization

Hemant Kumar Sahu
Tested By
(Hemant Kumar Sahu)
(Scientist 'B')

Dr. N.C. Joshi
Approved By
Dr. N.C. JOSHI
Scientist 'E'
Electronics Test & Development Centre
Ministry of Comm. & IT., STQC Directorate,
Govt. of India, Bangalore - 560 058.

[Signature]
Issued By
CO-ORDINATOR
TESTING SERVICES,
E.T.D.C., BANGALORE





ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)

100 ft Road, Peenya Industrial Estate, Bangalore-560 058

(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)

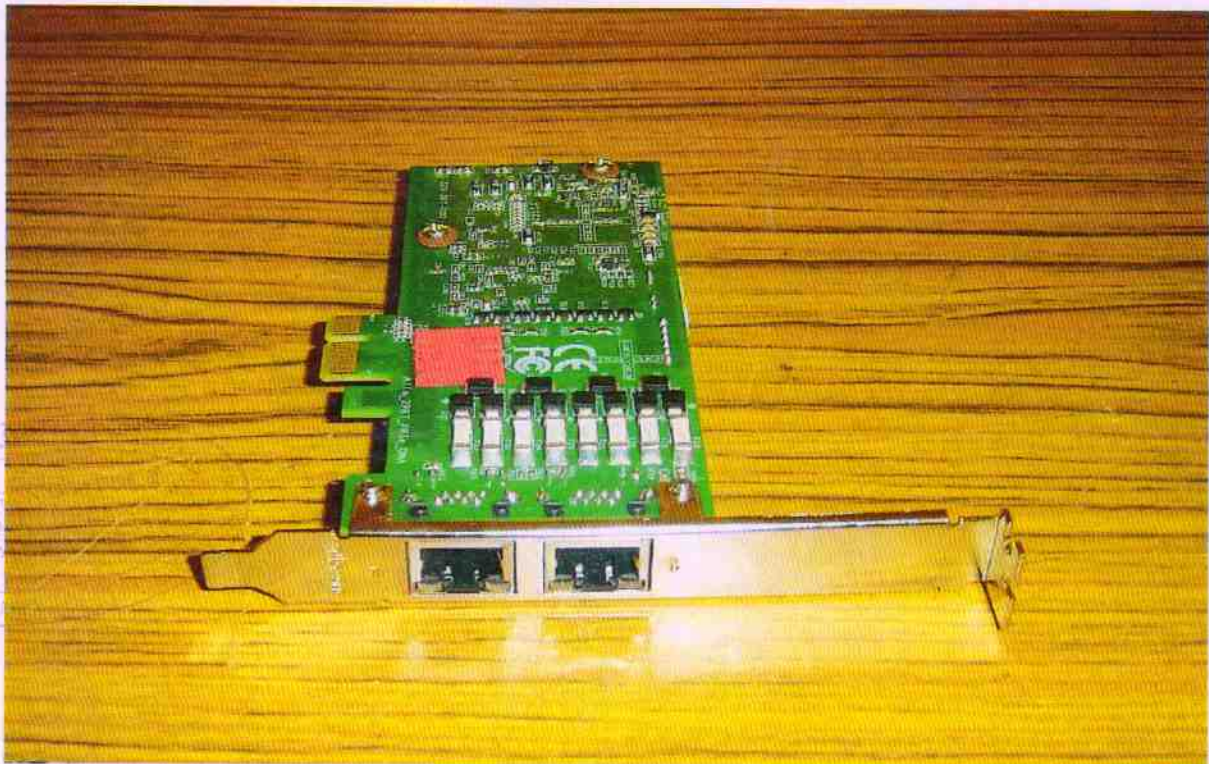
E-mail: etdcbg@stqc.gov.in

Report No.: TR/EMC/62971-4

Annexure "A"

Page 05 of 16

Image of EUT



GOVERNMENT OF INDIA
ELECTRONICS TEST AND DEVELOPMENT CENTRE
BANGALORE
DEPT. OF COMMUNICATIONS & INFORMATION TECHNOLOGY

302

EP



ELECTRONICS TEST AND DEVELOPMENT CENTRE

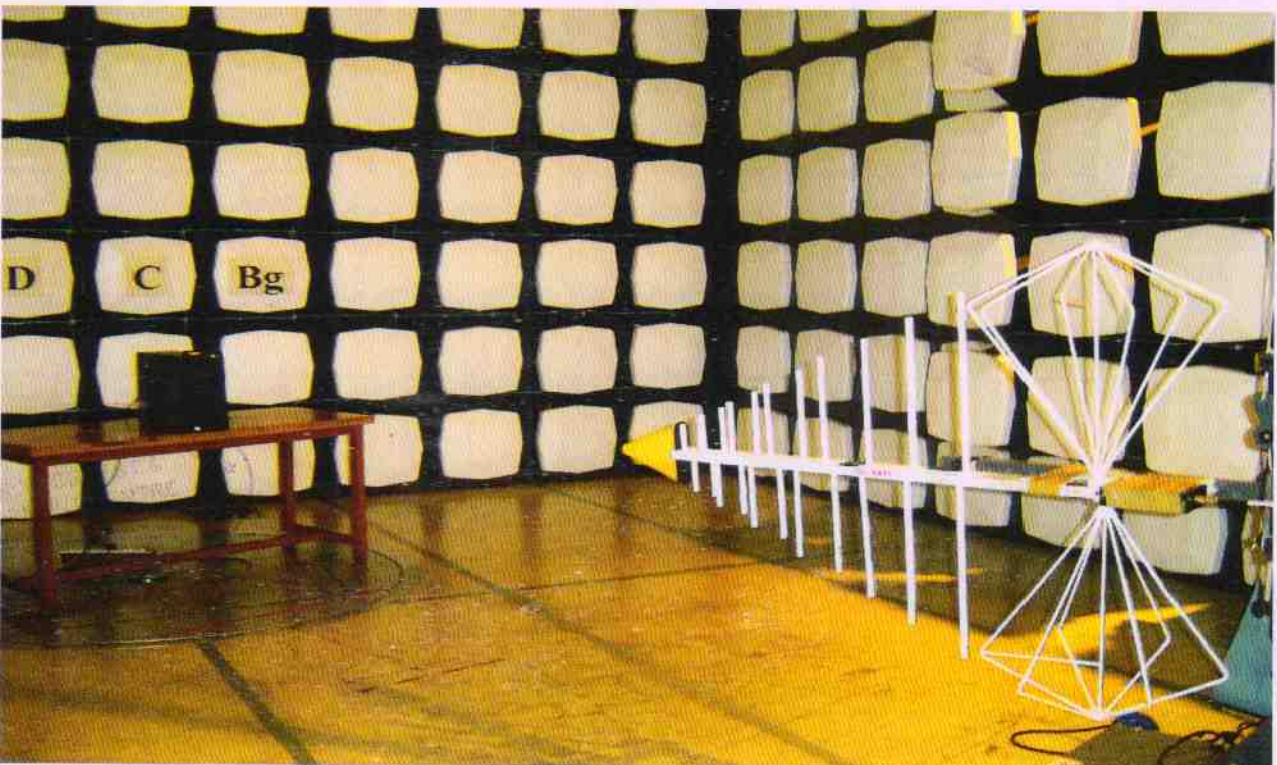
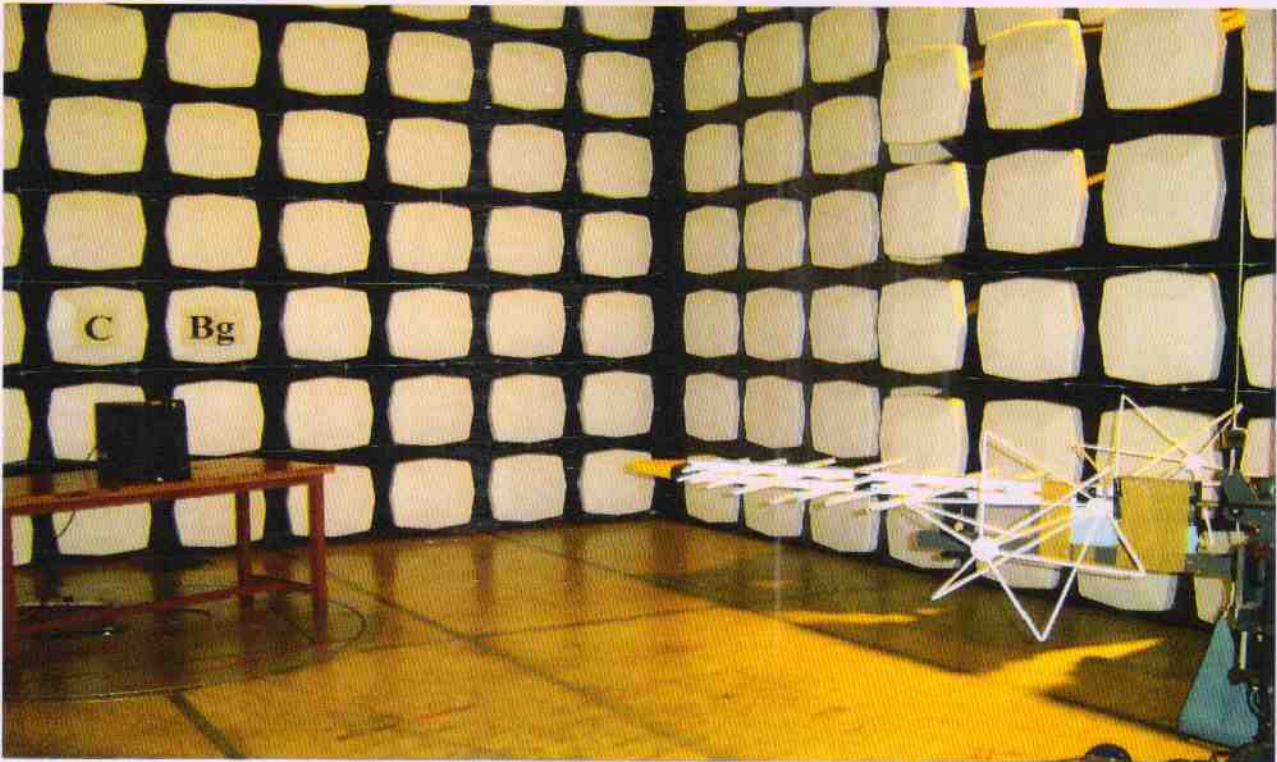
(STQC Directorate, Ministry of Communications & Information Technology)
100 ft Road, Peenya Industrial Estate, Bangalore-560 058
(Tel: 2839 5992, 2839 4647. Fax: 080 - 2839 1804)
E-mail: etdcbg@stqc.gov.in

Report No.: TR/EMC/62971-4

Annexure "B"

Page 06 of 16

EUT Test Setup for Radiated disturbance measurement



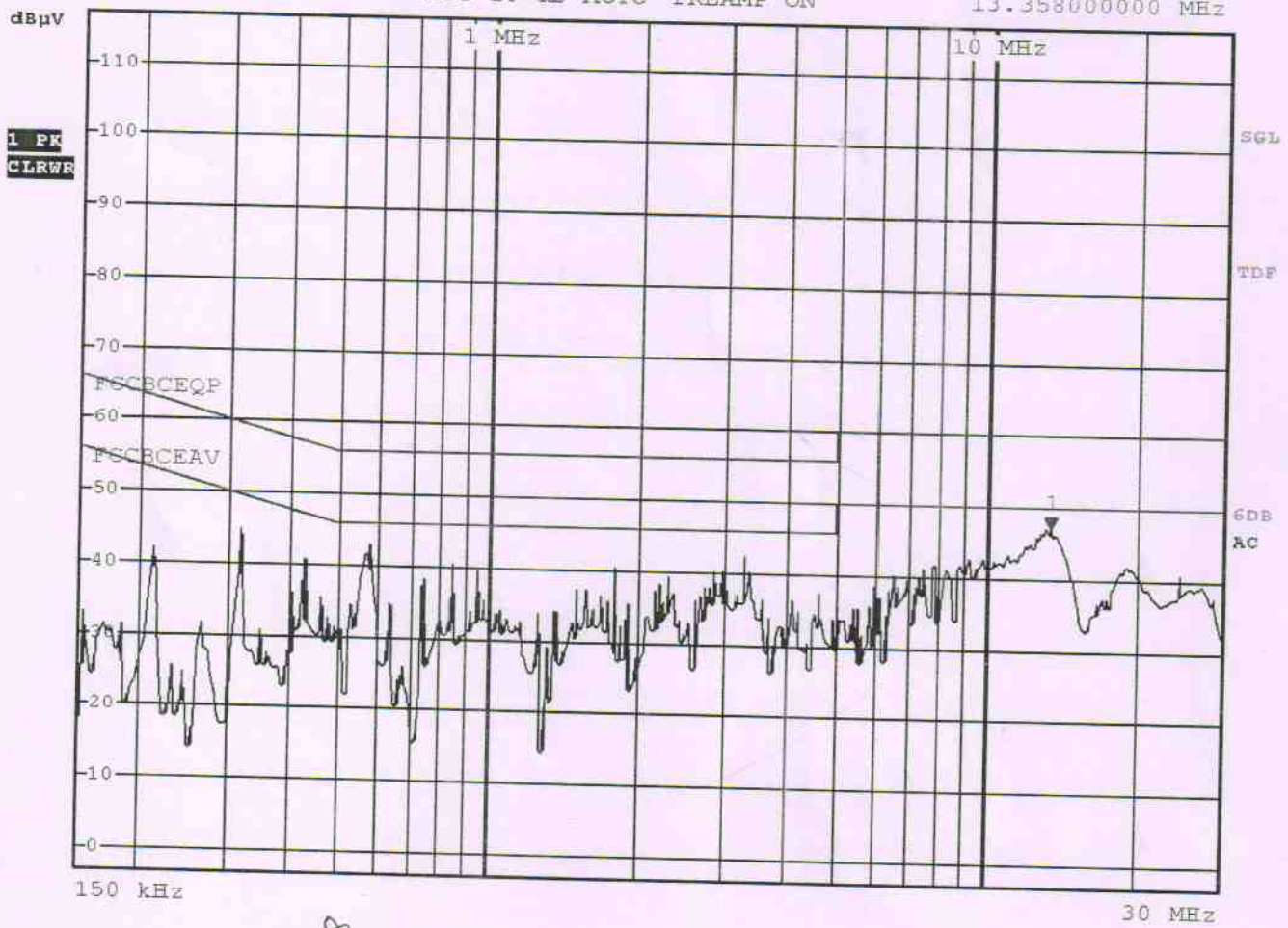
GOVERNMENT OF INDIA
ELECTRONICS DEVELOPMENT BOARD
BANGALORE

148

149

Annexure 'C' (Continued...)
Graphs of Conducted Emission measurement on power line

RBW 9 kHz Marker 1 [T1]
MT 1 s 47.18 dBµV
Att 10 dB AUTO PREAMP ON 13.358000000 MHz



M-B

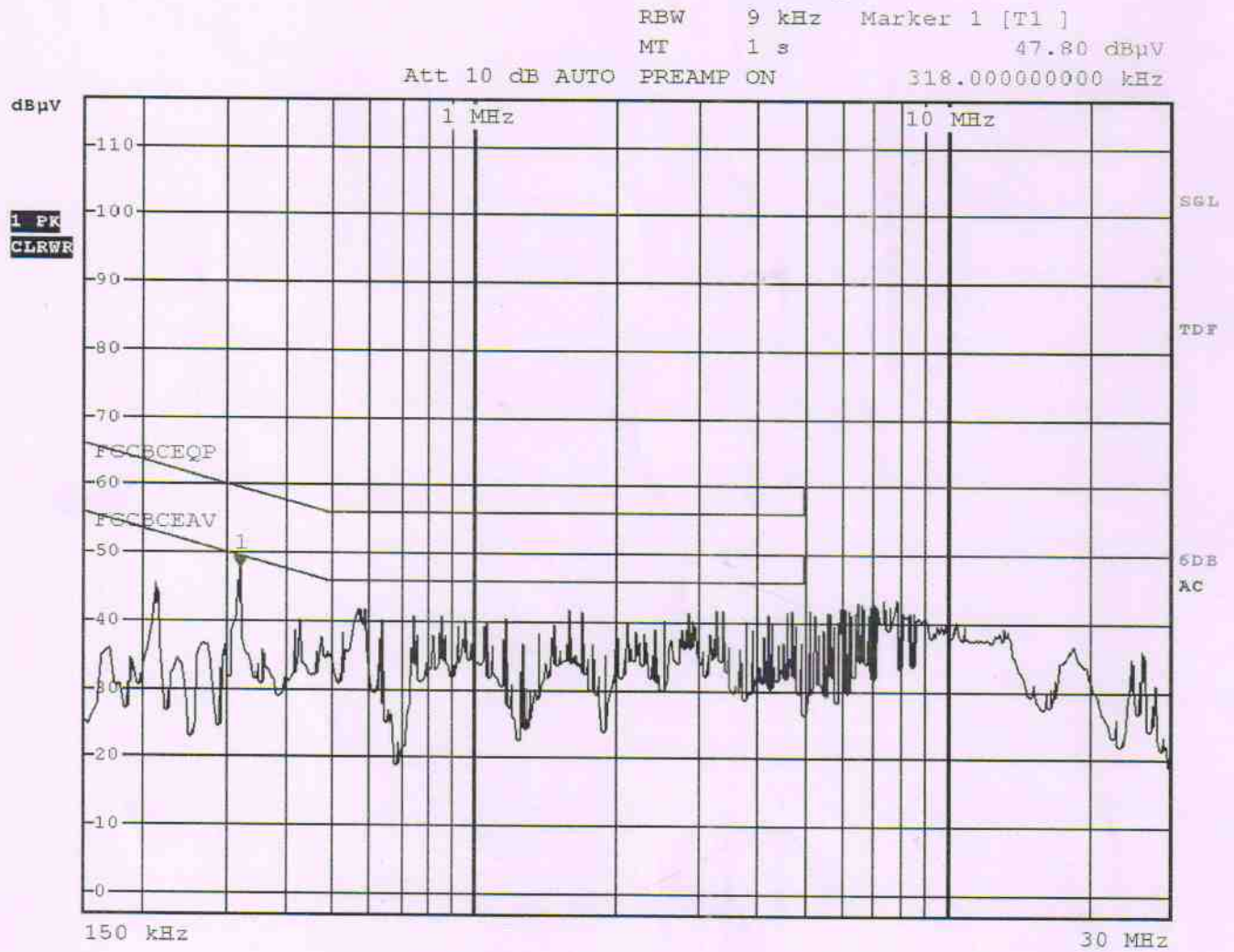
(M)

SRF NO:62971, CE test on 2nd Gen 1/2/4 port PRI PCI/PCIe+LEC
card, Model : 2aCP1/2/4/e/L on LINE

Date: 8.SEP.2014 11:49:46



Graphs of Conducted Emission measurement on power line

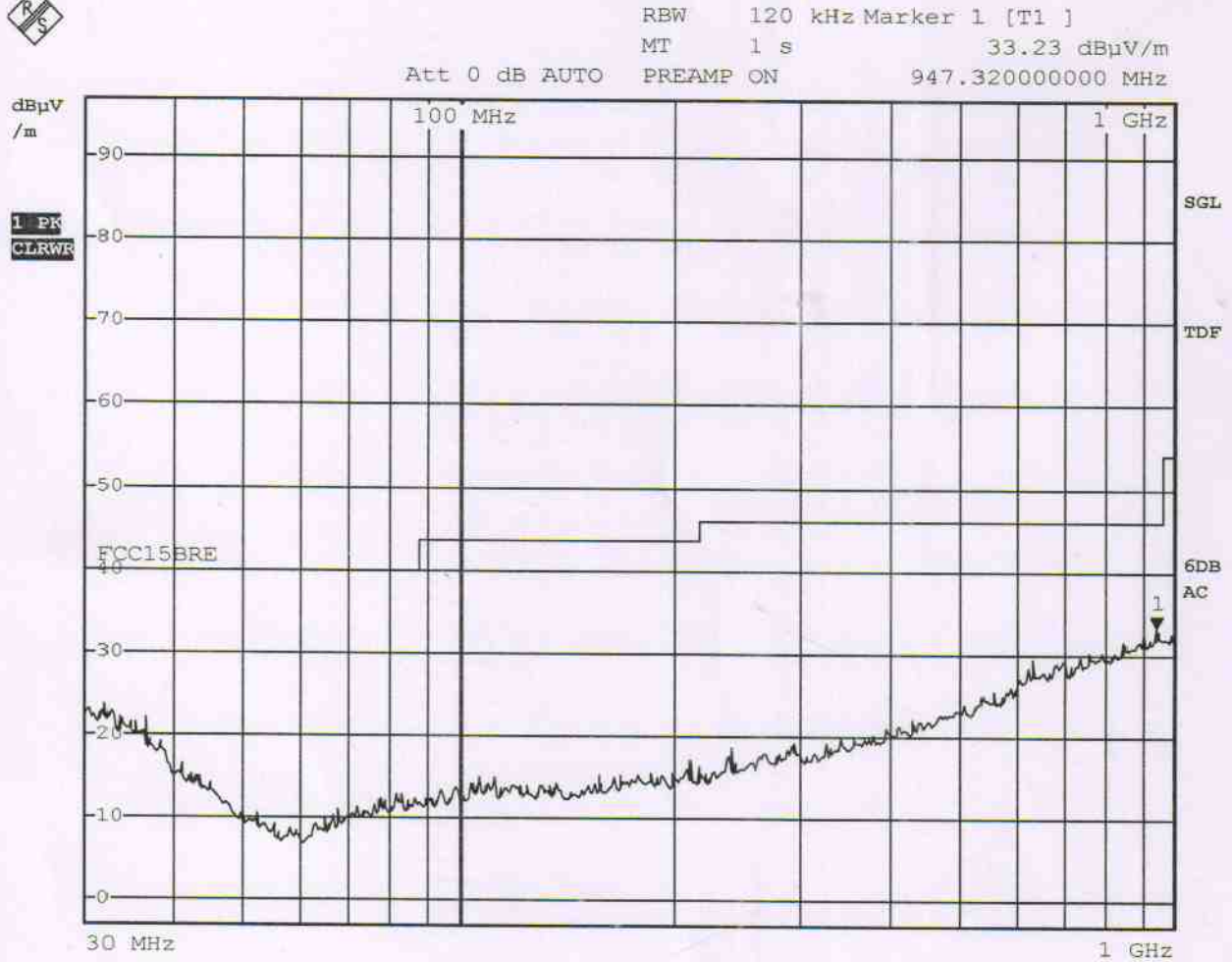


SRF NO:62971, CE test on 2nd Gen 1/2/4 port PRI PCI/PCIe+LEC card, Model : 2aCP1/2/4/e/L on NEUTRAL

Date: 8.SEP.2014 12:04:00



Graph of Radiated emission measurement @ 3mts. Distance



MSB

MSB

SRF No:62971,RE Test on 2nd Gen 1/2 port PRI PCI/PCIe+LEC Low Profile Card,Model:2aCP1/2/e/L-H, Angle:0 deg,Antenna:HP
Date: 9.SEP.2014 11:22:56



