

EXHIBIT 4

RFI/EMI TEST REPORT



EMC

TEST REPORT

REPORT NO. : F87031905

MODEL NO. : 5125

DATE OF TEST : Mar. 24, 1998

PREPARED FOR: BEHAVIOR TECH COMPUTER CORP.

ADDRESS : 12F, 18, SEC. 1, CHANG AN E. RD.,
TAIPEI, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

12F, NO.1, SEC.4, NAN-KING EAST RD.,
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**1. CERTIFICATION**

Issue Date: April 1, 1998

Product : KEYBOARD
Trade Name : BTC
Model No. : 5125
Applicant : BEHAVIOR TECH COMPUTER CORP.
Standard : FCC Part 15, Subpart B, Class B
ANSI C63.4-1992
CISPR 22: 1993 +A1+A2

We hereby certify that one sample of the designation has been tested in our facility on Mar. 24, 1998. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards

PREPARED BY: Sharon Hsiung, DATE: 4/1/98
(Sharon Hsiung)

TESTED BY: John Liao, DATE: 4/1/98
(John Liao)

APPROVED BY: Mike Su, DATE: 4/1/98
(Mike Su)

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	KEYBOARD
Model No.	:	5125
Power Supply	:	DC 5V
Data Cable	:	Shielded (1.5m)

Note: The EUT is a keyboard which is fully compatible with IBM AT and PS/2.

For more detailed features, please refer to ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT and User's Manual.



2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	PERSONAL COMPUTER	HP	D4579A	FDD DoC	Nonshielded Power (1.8m)
2	MONITOR	ADI	7133D	JVP7133D	Shielded Signal (1.2m) Nonshielded Power (1.8m)
3	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2m) Nonshielded Power (1.8m)
4	MODEM	DATATRONICS	1200C+	E2O5OV1200CK	Shielded Signal (1.2m) Nonshielded Power (1.8m)
5	MOUSE	HP	M-S34	DZL211029	Shielded Signal (1.8m)

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.



3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8590L	3544A01042	May 5, 1998
HP Preamplifier	8447D	2944A08313	Sept. 18, 1998
ROHDE & SCHWARZ TEST RECEIVER	ESVS 30	841977/008	Oct. 5, 1998
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE BiLOG Antenna	CBL6111A	1647	Aug. 2, 1998
EMCO Turn Table	1016	1722	N/A
EMCO Tower	1051	1263	N/A
Open Field Test Site	Site 4	ADT-R04	Aug. 1, 1998

Note: 1. The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months.

And the calibrations are traceable to NML/ROC and NIST/USA.

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESH3	893495/006	July 23, 1998
ROHDE & SCHWARZ Spectrum Monitor	EZM	893787/013	July 24, 1998
ROHDE & SCHWARZ Artificial Mains Network	ESH3-Z5	839135/006	Aug. 1, 1998
EMCO-L.I.S.N.	3825/2	9204-1964	July 22, 1998
Shielded Room	Site 2	ADT-C02	N/A

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months.

And the calibrations are traceable to NML/ROC and NIST/USA.



3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = $20 \log$ Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 0.15 - 30 MHz (Conducted Emission)
30 - 1000 MHz (Radiated Emission)
Input Voltage : 120 Vac, 60 Hz
Temperature : 18 °C
Humidity : 69 %
Atmospheric Pressure : 1060 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -17.1 dB at 0.173 MHz Minimum passing margin of radiated emission: -3.5 dB at 36.94 MHz

4.1.1 EUT OPERATION CONDITION

1. Turn on the power of all equipments.
2. PC reads a test program to enable all functions.
3. PC sends "H" messages to monitor and monitor display "H" patterns on screen.
4. PC sends "H" messages to modem.
5. PC sends "H" messages to printer, and the printer prints them on paper.
6. Repeat steps 3-6.



4.1.2 TEST DATA OF CONDUCTED EMISSION

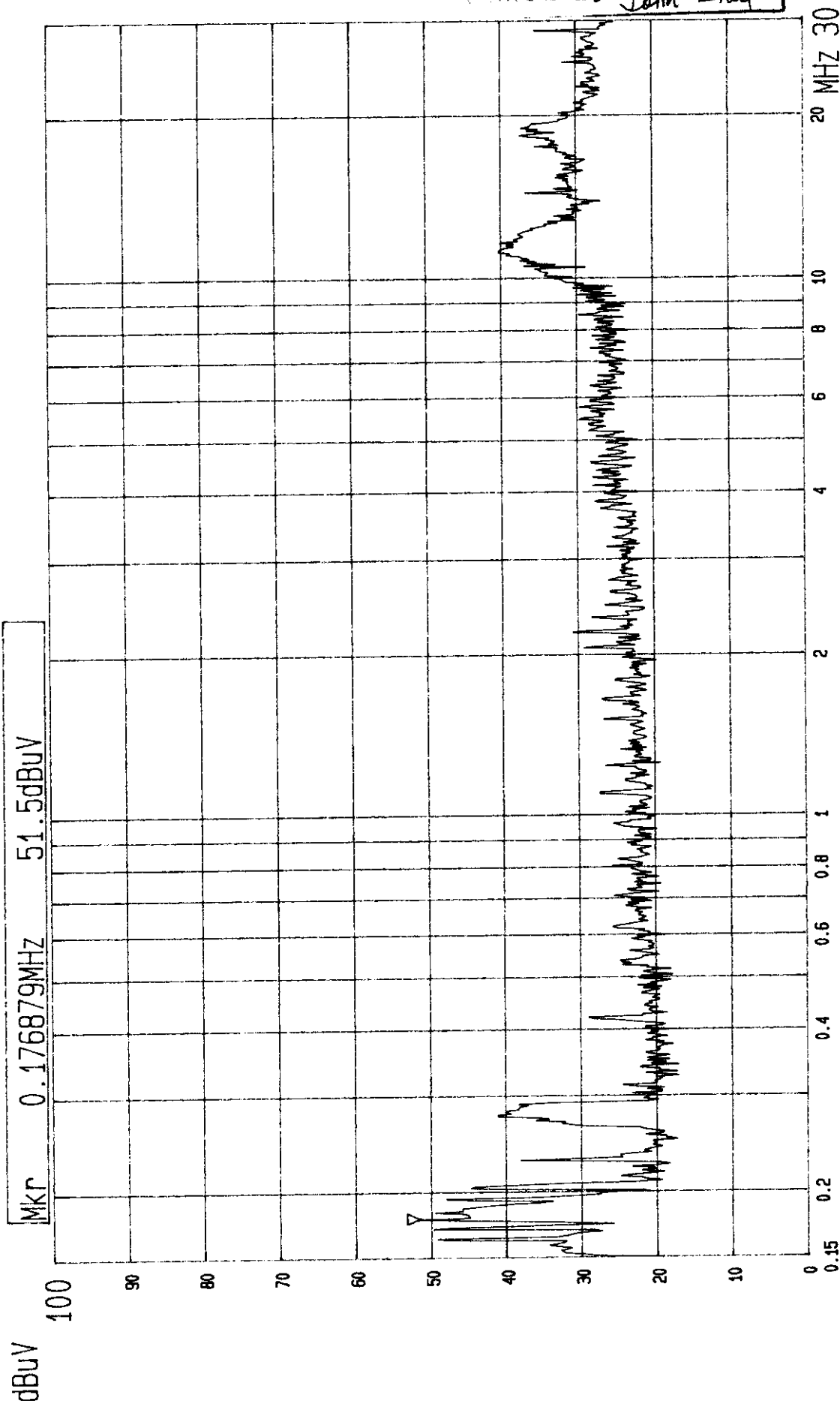
EUT: KEYBOARDMODEL: 5125

6 dB Bandwidth: 10 kHz

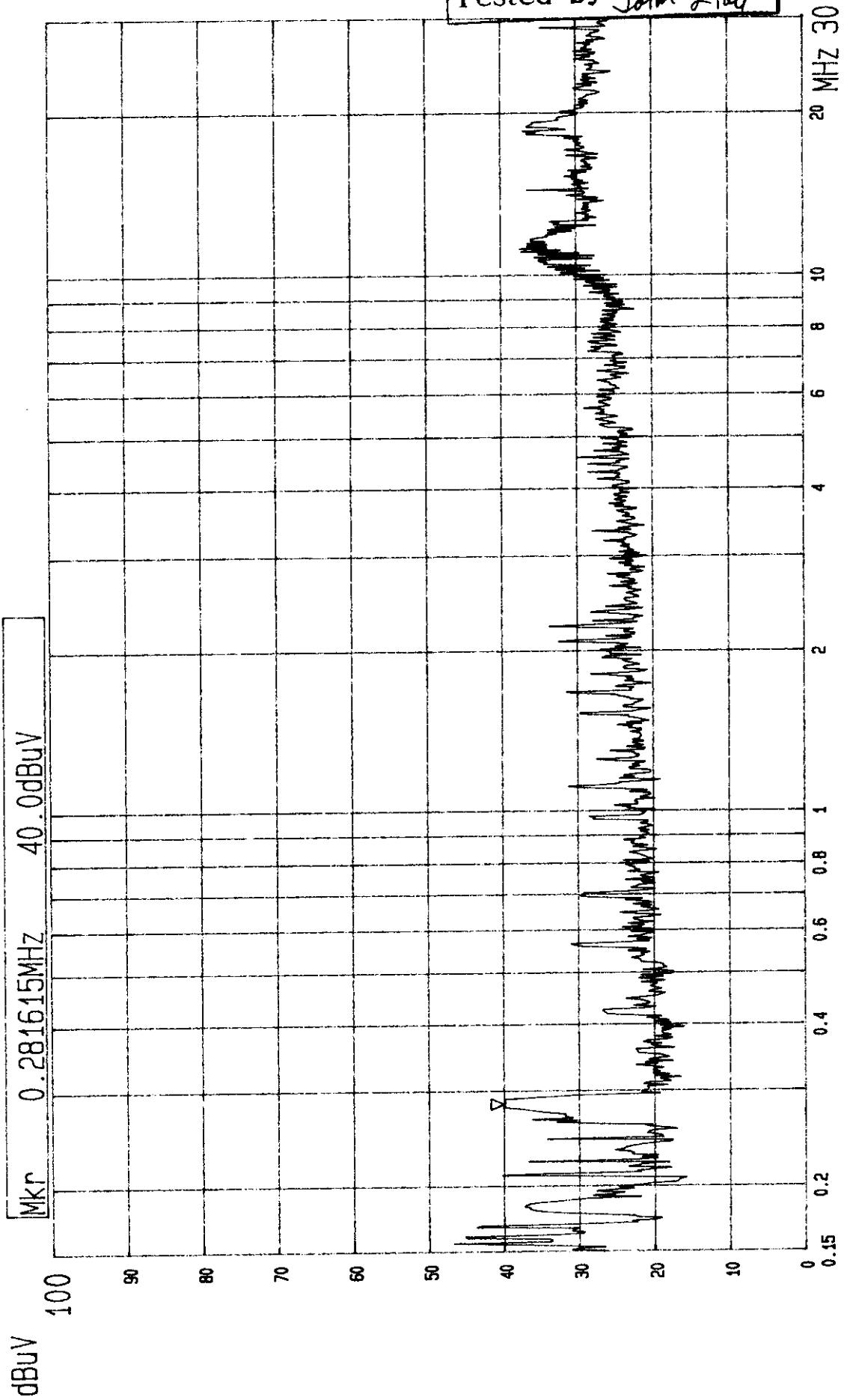
TEST PERSONNEL: *John Liad*

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.173	47.70	-	42.20	-	64.78	54.78	-17.1	-	-22.6	-
0.276	39.60	-	42.10	-	60.93	50.93	-21.3	-	-18.8	-
1.103	26.20	-	28.70	-	56.00	46.00	-29.8	-	-27.3	-
2.210	29.10	-	30.60	-	56.00	46.00	-26.9	-	-25.4	-
11.323	38.20	-	33.70	-	60.00	50.00	-21.8	-	-26.3	-
28.845	34.5	-	34.10	-	60.00	50.00	-25.5	-	-25.9	-

- Remarks:
1. "*": Undetectable
 2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 4. The emission level of other frequencies were very low against the limit.



--- Date 24.MAR.'98 Time 15:09:28
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE) ADT CORP.
MODEL: 5125 LISN: L



---- Date 24.MAR.'98 Time 15:15:12
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE) ADT CORP.
MODEL: 5125 LISN: N



4.1.3 TEST DATA OF RADIATED EMISSION

EUT: **KEYBOARD**MODEL: **5125**

ANTENNA: CHASE BILOG CBL6111A

POLARITY: Horizontal

DETECTOR FUNCTION: Quasi-peak

6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz

MEASURED DISTANCE: 10 MTEST PERSONNEL: *John Liang*

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
36.94	16.9	2.0	18.9	30.0	-11.1
41.27	15.2	5.2	20.4	30.0	-9.6
47.76	11.9	6.8	18.7	30.0	-11.3
69.39	7.6	10.5	18.1	30.0	-11.9
171.87	11.3	5.6	16.9	30.0	-13.1
199.41	11.6	12.4	24.0	30.0	-6.0
232.67	13.3	13.4	26.7	37.0	-10.3

REMARKS : 1. Emission level (dBuV/m) = Correction Factor(dB/m) + Meter Reading (dBuV).
 2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
 3. The other emission levels were very low against the limit.



TEST DATA OF RADIATED EMISSION

EUT: **KEYBOARD**MODEL: **5125**

ANTENNA: CHASE BILOG CBL6111A

POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak

6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz

MEASURED DISTANCE: 10 M

TEST PERSONNEL: *John Liad*

Frequency (MHz)	Correction Factor (dB/m)	Reading Data dBuV	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
36.94	17.5	9.0	26.5	30.0	-3.5
41.27	14.7	11.0	25.7	30.0	-4.3
43.43	13.3	11.2	24.5	30.0	-5.5
47.76	10.9	10.1	21.0	30.0	-9.0
49.10	10.2	13.1	23.3	30.0	-6.7
69.39	8.0	11.3	19.3	30.0	-10.7
79.63	7.8	10.5	18.3	30.0	-11.7
120.00	11.2	8.9	20.1	30.0	-9.9
199.44	11.1	12.6	23.7	30.0	-6.3

REMARKS :

1. Emission level (dBuV/m) = Correction Factor(dB/m) + Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.