FCC Part 15
EMI TEST REPORT

of

E.U.T. : Wireless TV BOX
MODEL : WTVB-12
FCC ID. : Q77WTVB

for

APPLICANT : BEYOND BROADBAND NETWORKS, INC.

ADDRESS : 7F-3,No.186, Jian Yi Rd., Chung Ho City. Taipei County, Taiwan, R.O.C.

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN
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Report Number : ET92S-10-058-01

TEST REPORT CERTIFICATION

Applicant : BEYOND BROADBAND NETWORKS, INC.
7F-3,No.186, Jian Yi Rd., Chung Ho City. Taipei County, Taiwan, R.O.C.

Manufacturer : UNIVERSAL MICROELECTRONICS CO., LTD.
3, 27 TH RD., TAICHUNG INDUSTRIAL PARK. TAICHUNG, TAIWAN. R.O.C.

Description of EUT :

a) Type of EUT : Wireless TV BOX

b) Trade Name : BBN

c) Model No. : WTVB-12

d) Power Supply : Adaptor: Model: MW41-0900500,I/P: AC 120V/ 60Hz, O/P: DC 9V, 500mA

Regulation Applied : FCC Rules and Regulations Part 15 Subpart B & C (2003)

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.
2. The testing report shall not be reproduced expect in full, without the written approval of ETC.

Issued Date : Dec. 15, 2003

Test Engineer : Andy Kuo

Approve & Authorized Signer : Win-Po Tsai

Signature
Win-Po Tsai
Manager of EMC Testing Department I
Electronics Testing Center, Taiwan

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1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : Wireless TV BOX
b) Trade Name : BBN
c) Model No. : WTVB-12
d) Power Supply : Adaptor: Model: MW41-0900500,I/P: AC 120V/ 60Hz, O/P: DC 9V, 500mA

1.2 Characteristics of Device

2.4GHz wireless series uses FM modulation technology to provide ISM band wireless audio and video connection. Watch cable TV on additional CRT or LCD monitor in separate rooms via 2.4GHz wireless transmission. Transmits CATV signals via the Transmitter or signals from other video equipment such as VCR, DVD, VCD, satellite receiver, and video camera by wireless. Transmitting range is about 30~40 meters indoors (estimated)
Built-in 433MHz and IR remote give commands over the transmitter and the receiver separately.
Encoded 433MHz remote avoids interference caused by other 433MHz products.
Memory function enables the devices to remain on last used channel.

1.3 Test Methodology

The Wireless TV BOX designed with a transmitting method of FM modulation technology, which operates at 2.4 GHz ISM band.

1.4 Modifiction List of EUT

No modifications were required. (That is the EUT complied with the requirements as tested.)

1.5 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wen-ming Road, Lo-shan Tsun, Kweishan Hsiang, Taoyuan, Taiwan, R.O.C.
This site has been accreditation as a FCC filing site.

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:
A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :
A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

For unintentional device, according to §15.107(a) Line Conducted Emission Limits is as following:

Frequency MHz	Quasi Peak dBμV	Average dBμV
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

*Decreases with the logarithm of the frequency.
For intentional device, according to §15.207(a) Line Conducted Emission Limits is same as above table.

(2) Radiated Emission Requirement

① For intentional device, acording to §15.249, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Firld Strength of Harmonics (microvolts/meter)
902-928MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

②Field strength limits are specified at a distance of 3 meters.

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

③ For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

Frequency MHz	**Distance Meters**	**Radiated dBμV/m**	**Radiated μV/m**
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
above 960	3	54.0	500

(3) Antenna Requirement

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

2.3 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.25
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

For the purposes of this test report ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT during the test. The EUT was set the RF channel under the hightest, middle and lowest frequency and transmit the maximun RF power.

3.2 Devices for Tested System

Device	Manufacture	Model	Cable Description
*Wireless TV BOX	UNIVERSAL MICROELECTRONICS CO., LTD.	WTVB-12 DEVICE	2.0m, Unshielded Power Line (Adaptor) 1.8m, Unshielded TV Cable 1.8m, Unshielded AV Signal Line
DVD Player	Pioneer	DV-566K-S	1.8m, Unshielded Power Line

Remark “*” means equipment under test.

4 RADIATED EMISSION MEASUREMENT

4.1 Applicable Standard

For intentional radiators, according to §15.249 (a), operation under this provision is limited to fundamental and harmonics, and the out band emission shall be comply with §15.249 (c)

4.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively.
2. For emission frequencies measured below 1 GHz, it is performed in a semi-anechoic chamber to determine the accurate frequencies of higher emissions. For emission frequencies measured above 1 GHz, a pre-scan be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0° to 360° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

   Note : A band pass filter was used to avoid pre-amplifier saturated when measure TX operation mode in frequency band above 1 GHz.
5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the datarate, placement of ANT. cables associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration

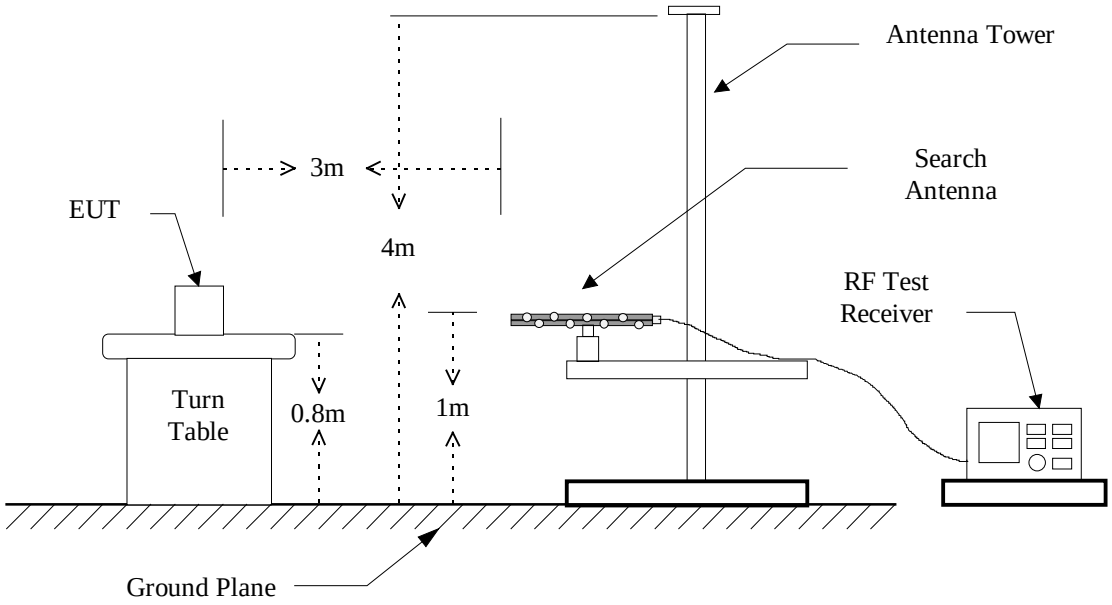
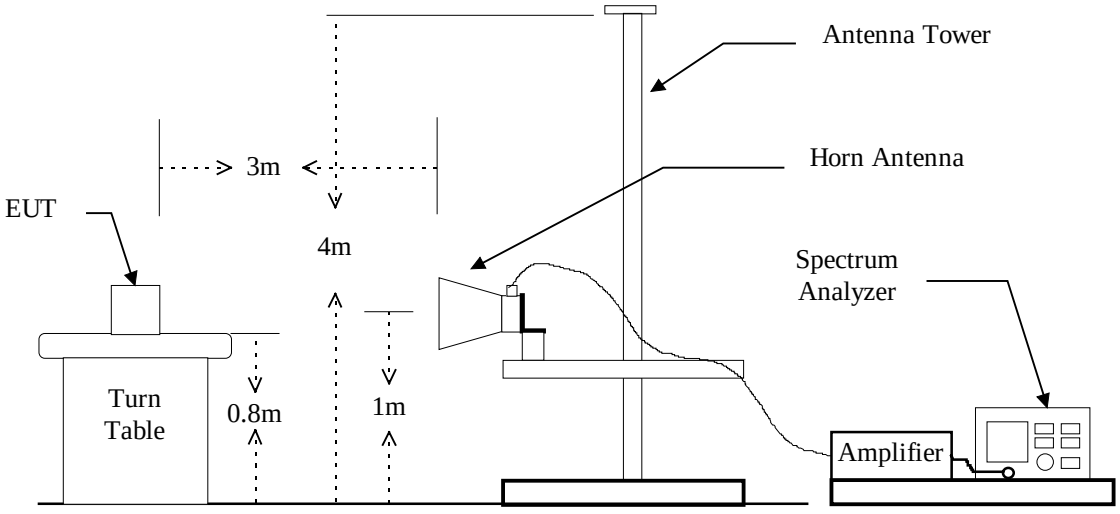


Figure 2 : Frequencies measured above 1 GHz configuration



4.3 Measuring Instrument

The following instrument are used for radiated emissions measurement :

Equipment	Manufacturer	Model No.	Next Cal. Due
EMI Test Receiver	Hewlett-Packard	8546A	08/27/2004
Horn Antenna	EMCO	3115	06/05/2004
LogBicone Antenna	Schwarzbeck	9160	10/28/2004
Horn Antenna	EMCO	3116	06/28/2004
Preamplifier	Hewlett-Packard	8449B	09/04/2004
Spectrum Analyzer	Hewlett-Packard	8564EC	09/10/2004

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	RF Test Receiver	Peak	100 kHz	300 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

4.4 Radiated Emission Data

4.4.1 Fundamental and harmonics emissions

a) Channel 1

Operation Mode : Transmitting
Fundamental Frequency : 2410 MHz
Test Date : Nov. 28, 2003 Temperature : 20 ℃ Humidity : 67 %

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak (H/V Max.)	Result @3m (dBuV/m) Ave (H/V Max.)	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
2408.420	51.3	47.5	66.7	63.2	28.3	95.0	91.5	114.0	94.0	-2.5	180	1.0
4817.500	56.8	49.2	60.8	54.2	-4.6	56.2	49.8	74.0	54.0	-4.2	180	1.0
7231.580	54.9	44.8	61.7	53.5	-1.0	60.7	52.5	74.0	54.0	-1.5	180	1.0
9639.000	---	---	50.0	37.8	0.1	50.1	37.9	74.0	54.0	-16.1	180	1.0
12050.00	---	---	---	---	2.9	---	---	74.0	54.0	---	---	---
14460.00	---	---	---	---	3.8	---	---	74.0	54.0	---	---	---
16870.00	---	---	---	---	2.8	---	---	74.0	54.0	---	---	---
19280.00	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
21690.00	---	---	---	---	1.3	---	---	74.0	54.0	---	---	---
24100.00	---	---	---	---	-0.4	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. Item "Margin" referred to Average limit while there is only peak result.
4. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.
5. See page 15~20 for Ch1 Radiated Emissions graph.(1GHz~25GHz)

b) Channel 2

Operation Mode : Transmitting
Fundamental Frequency : 2430 MHz
Test Date : Nov. 28, 2003 Temperature : 20 ℃ Humidity : 67 %

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak (H/V Max.)	Result @3m (dBuV/m) Ave (H/V Max.)	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
2429.830	52.5	49.0	67.5	63.8	28.3	95.8	92.1	114.0	94.0	-1.9	180	1.0
4859.670	50.7	41.3	56.3	49.7	-4.6	51.7	45.1	74.0	54.0	-8.9	180	1.0
7289.200	53.2	42.2	60.3	51.5	-1.0	59.3	50.5	74.0	54.0	-3.5	180	1.0
9719.000	---	---	50.3	37.6	0.1	50.4	37.7	74.0	54.0	-16.3	180	1.0
12150.000	---	---	---	---	2.9	---	---	74.0	54.0	---	---	---
14580.000	---	---	---	---	3.8	---	---	74.0	54.0	---	---	---
17010.000	---	---	---	---	2.8	---	---	74.0	54.0	---	---	---
19440.000	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
21870.000	---	---	---	---	1.3	---	---	74.0	54.0	---	---	---
24300.000	---	---	---	---	-0.4	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. Item "Margin" referred to Average limit while there is only peak result.
4. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

c) Channel 4
Operation Mode : Transmitting
Fundamental Frequency : 2470 MHz
Test Date : Nov. 28, 2003 Temperature : 25 ℃ Humidity : 62 %

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak (H/V Max.)	Result @3m (dBuV/m) Ave (H/V Max.)	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
2470.000	50.3	46.7	63.3	59.5	28.3	91.6	87.8	114.0	94.0	-6.2	180	1.0
4939.400	50.0	40.8	59.0	51.5	-4.6	54.4	46.9	74.0	54.0	-7.1	180	1.0
7405.530	53.2	40.0	54.8	44.7	-1.0	53.8	43.7	74.0	54.0	-10.3	180	1.0
9875.530	---	---	50.4	37.5	0.1	50.5	37.5	74.0	54.0	-16.5	180	1.0
12350.000	---	---	---	---	2.9	---	---	74.0	54.0	---	---	---
14820.000	---	---	---	---	3.8	---	---	74.0	54.0	---	---	---
17290.000	---	---	---	---	2.8	---	---	74.0	54.0	---	---	---
19760.000	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
22230.000	---	---	---	---	1.3	---	---	74.0	54.0	---	---	---
24700.000	---	---	---	---	-0.4	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. Item "Margin" referred to Average limit while there is only peak result.
4. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

4.4.2 Other Emission

Operation Mode: Transmitting Mode

Test Date : Nov. 28, 2003 Temperature : 22 ℃ Humidity : 67 %

Emission **Frequency** (MHz)	**Meter Reading** (dBuV)		CORR'd **Factor** (dB)	**Results** (dBuV/m)		**Limit** (3m) (dBuV/m)	**Margins** (dB)	**Table Degree** (deg)		**Ant. High** (m)	
	HOR.	**VERT.**		**HOR.**	**VERT.**			**HOR.**	**VERT.**	**HOR.**	**VERT.**
58.130	15.6#	20.9#	7.5	23.1#	28.4#	40.0	-11.6	70	74	1.0	1.0
101.780	***	13.5#	9.4	***	22.9#	43.5	-20.6	***	144	***	1.0
293.840	6.3#	***	17.5	23.8#	***	46.0	-22.2	167	***	1.0	***
322.940	7.0#	8.5#	17.5	24.5#	26.0#	46.0	-20.0	246	246	1.0	1.0
441.280	8.4#	***	21.3	29.7#	***	46.0	-16.3	180	180	1.0	1.0
625.580	8.3#	***	24.9	33.2#	***	46.0	-12.8	224	***	1.0	***
730.340	***	9.9#	26.6	***	36.5#	46.0	-9.5	***	321	***	1.0
785.630	***	8.7#	27.9	***	36.6#	46.0	-9.4	***	298	***	1.0
856.440	-1.3#	***	28.6	37.3#	***	46.0	-18.7	180	***	1.0	***
911.730	***	8.8#	30.4	***	39.2#	46.0	-6.8	***	186	***	1.0

Note :

1. Item of margin shown in above table refer to Q.P. limit.
2. Remark "***" means that the emissions level is too low to be measured.
3. Item "Margin" referred to Q.P. limit while there is only peak result.

4.5 Field Strength Calculation

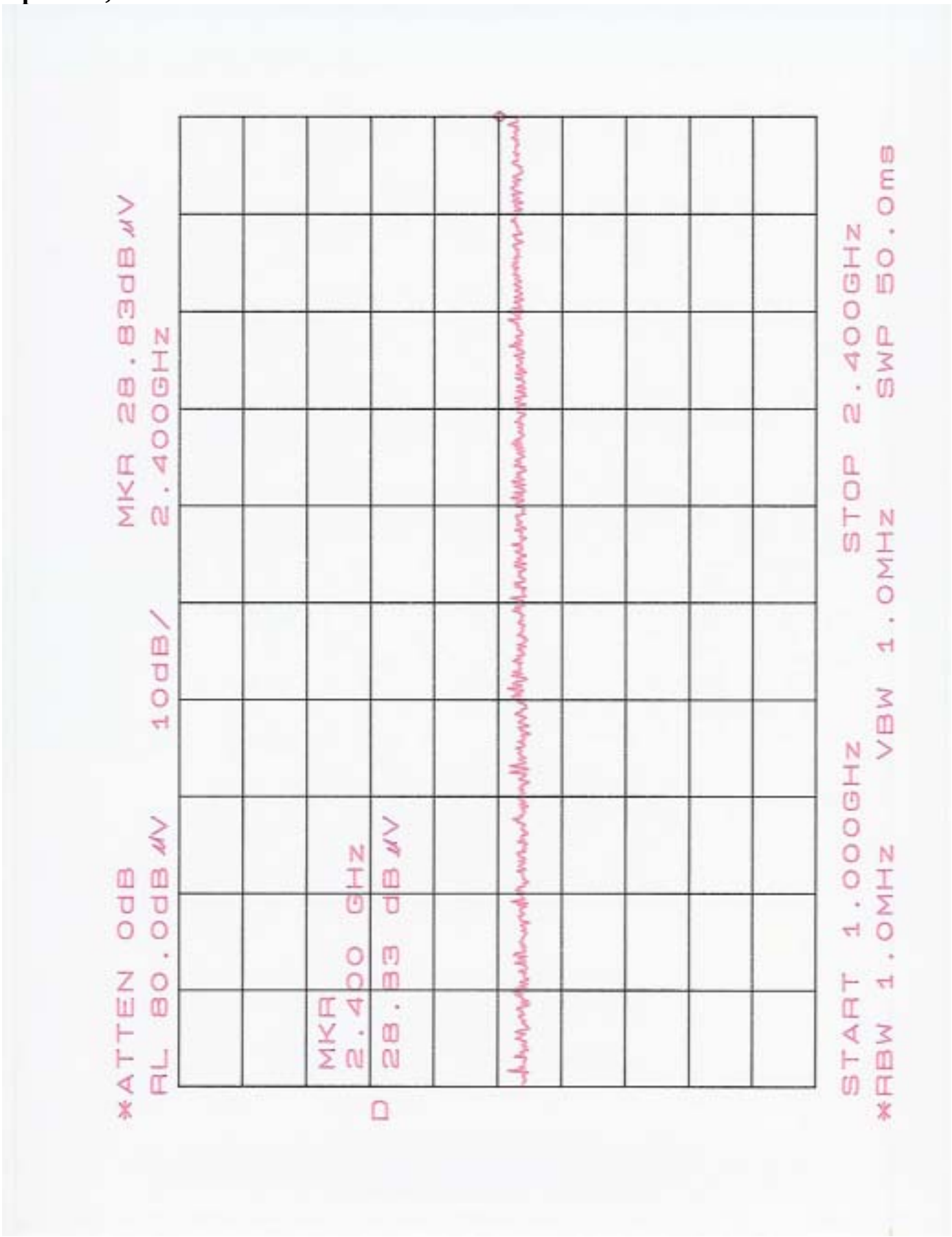
The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss(if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where

Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Opt: Ch1, Ant: Horizontal



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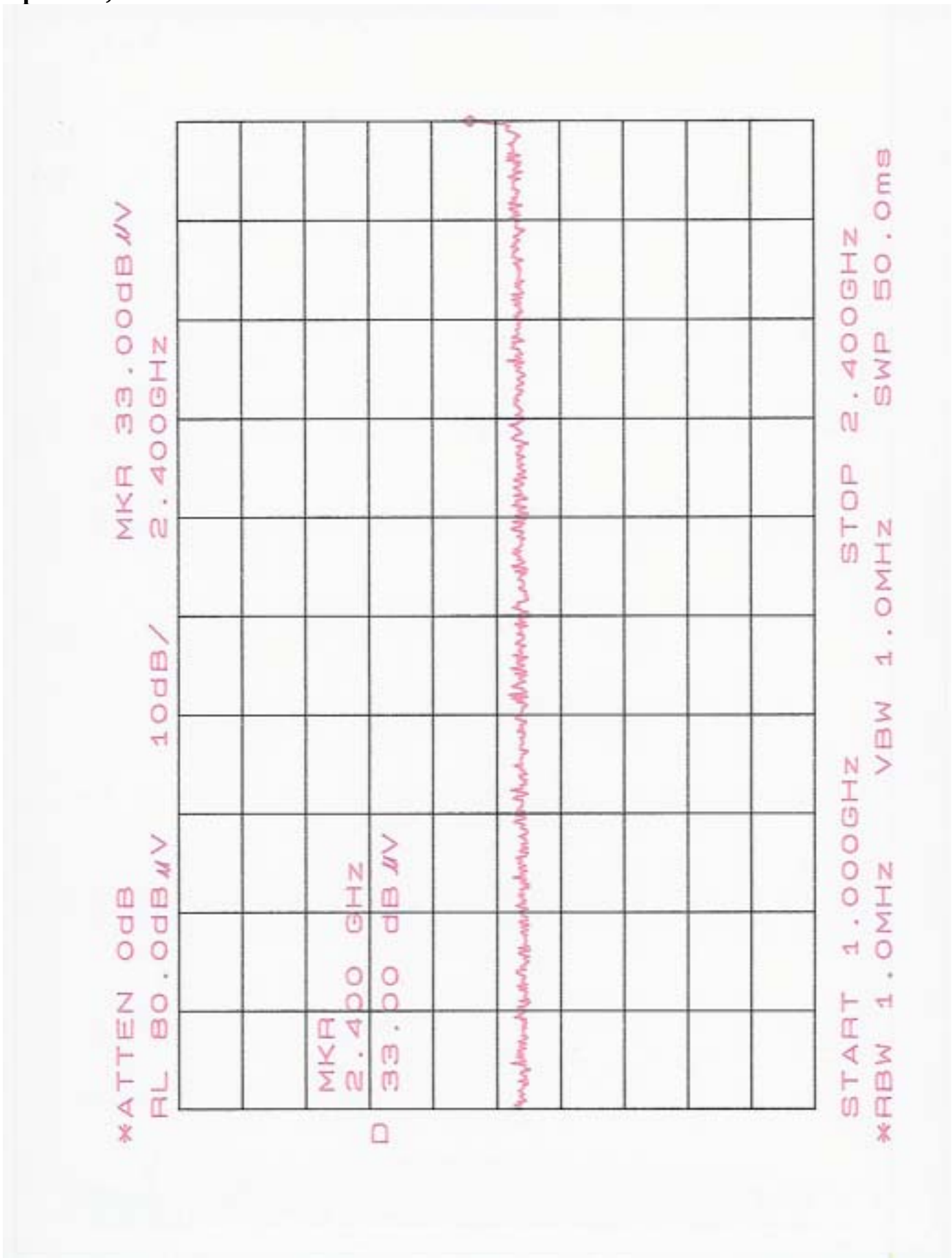

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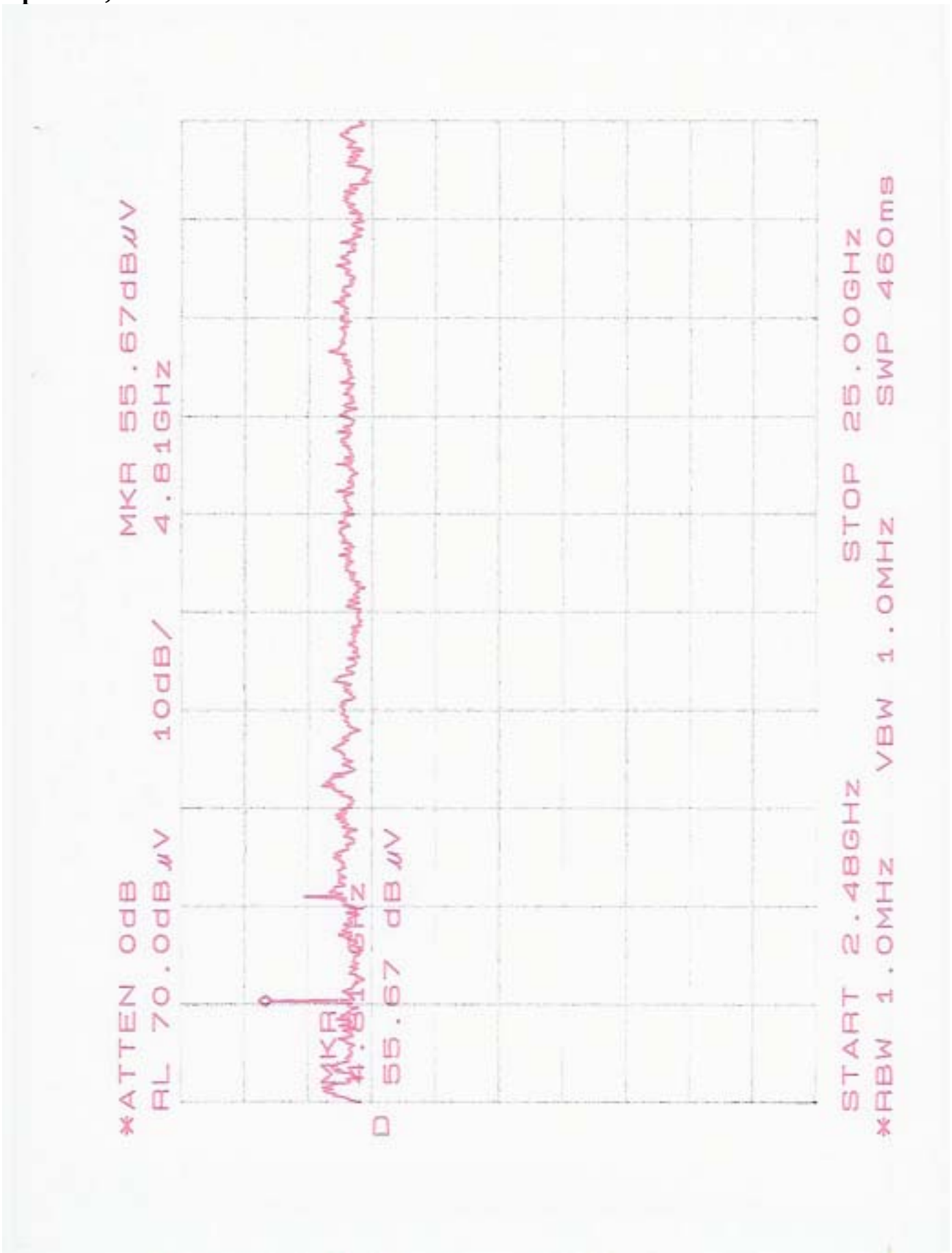
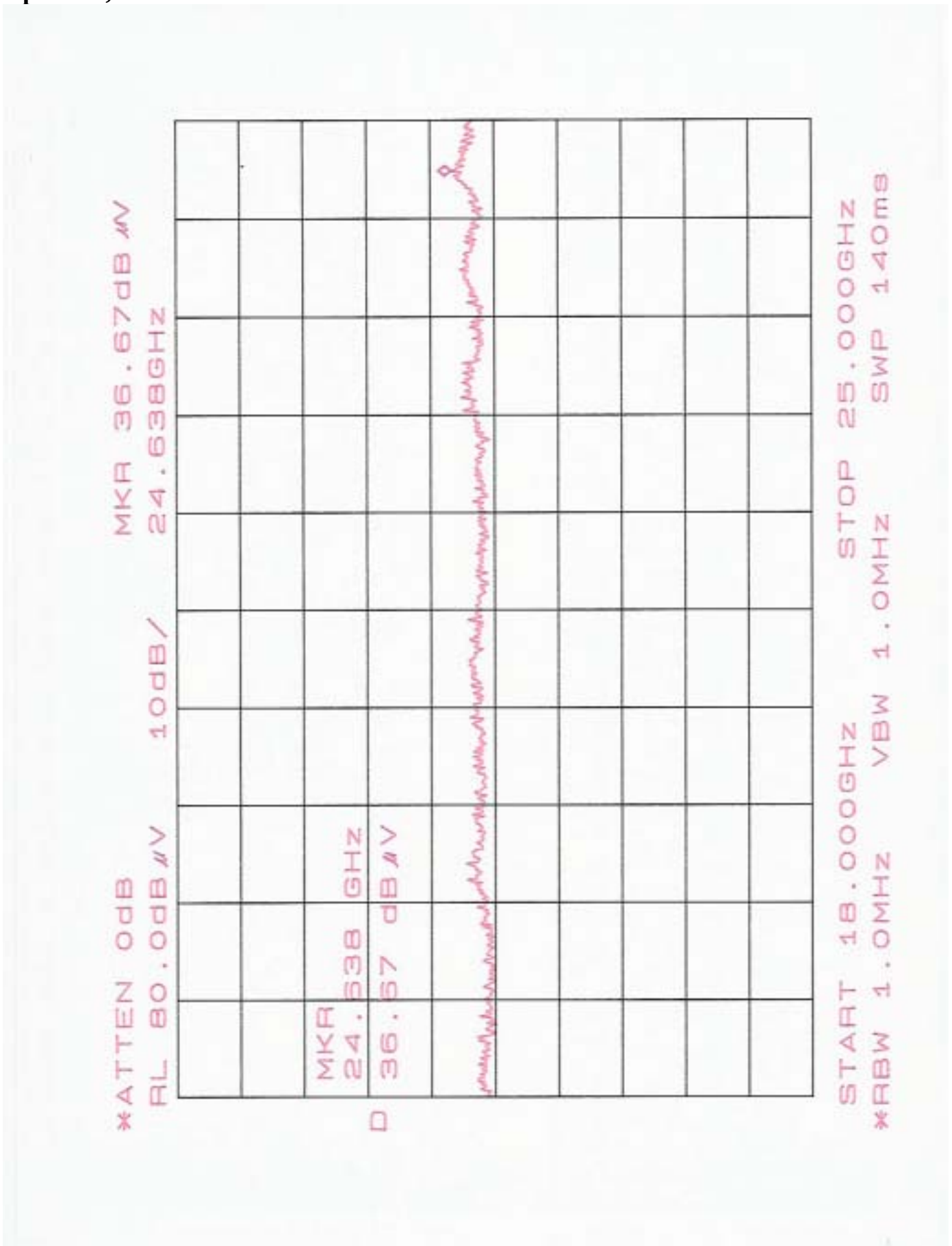


Opt: Ch1, Ant: Vertical

Opt: Ch1, Ant: Horizontal



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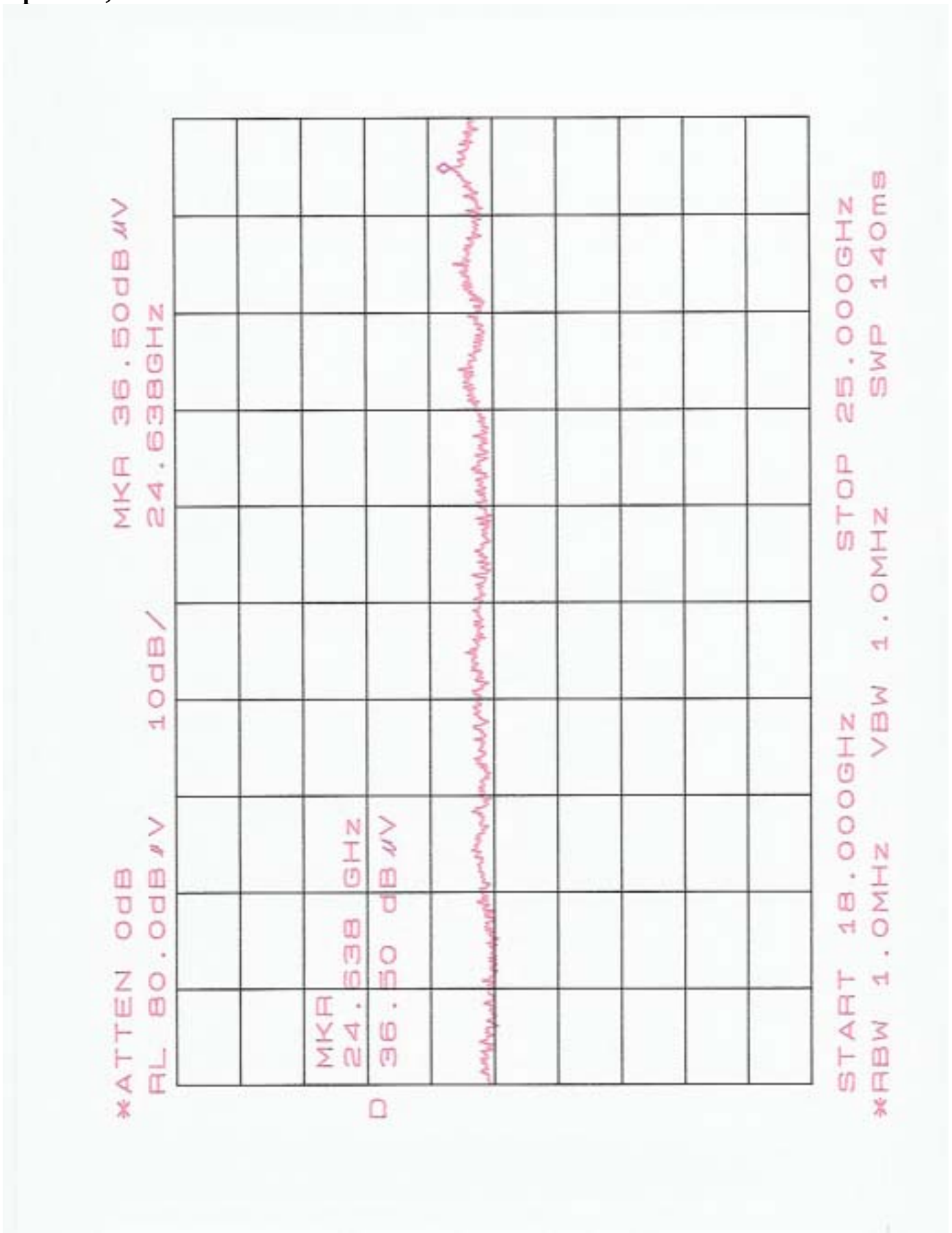


4.6 Photos of Radiation Measuring Setup

5 CONDUCTED EMISSION MEASUREMENT

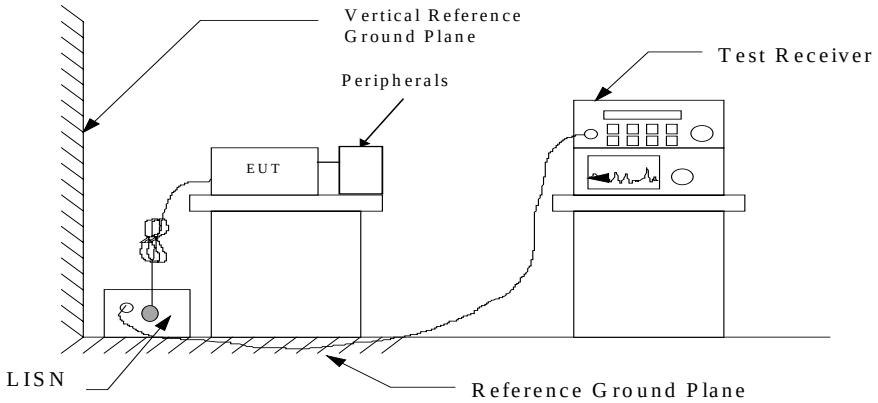
5.1 Applicable Standard

For intentional digital devices, Line Conducted Emission Limits are in accordance to §15.207(a) .

5.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 4 to 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



5.3 Conducted Emission Data

Temperature : 20 ℃
Humidity : 67 %
Test Date : Nov. 28, 2003
Operation Mode : Transmitting Mode

Freq. (MHz)	Meter Reading (dBuV)				Factor (dB)	Result (dBuV)				Limit (dBuV)		Margins (dB)
	Q.P Value		AVG. Value			Q.P Value		AVG. Value		Q.P Value	AVG. Value	Q.P. or AVG.
	L1	L2	L1	L2		L1	L2	L1	L2			
0.150	49.2#	49.3#	----	----	0.1	49.3#	49.4#	----	----	66.0	56.0	-16.6
0.173	48.8#	48.0#	----	----	0.1	48.9#	48.1#	----	----	64.8	54.8	-15.9
0.189	***	47.4#	----	----	0.1	***	47.5#	----	----	64.1	54.1	-16.6
0.224	***	46.0#	----	----	0.1	***	46.1#	----	----	62.7	52.7	-16.6
0.251	***	45.0#	----	----	0.1	***	45.1#	----	----	61.7	51.7	-16.6
0.267	***	44.9#	----	----	0.1	***	45.0#	----	----	61.2	51.2	-16.2
0.450	46.0#	***	----	----	0.1	46.1#	***	----	----	56.9	46.9	-10.8
0.470	45.9#	***	----	----	0.1	46.0#	***	----	----	56.5	46.5	-10.5
0.502	45.7#	***	----	----	0.1	45.8#	***	----	----	56.0	46.0	-10.2
0.520	45.5#	***	----	----	0.1	45.6#	***	----	----	56.0	46.0	-10.4

Note:

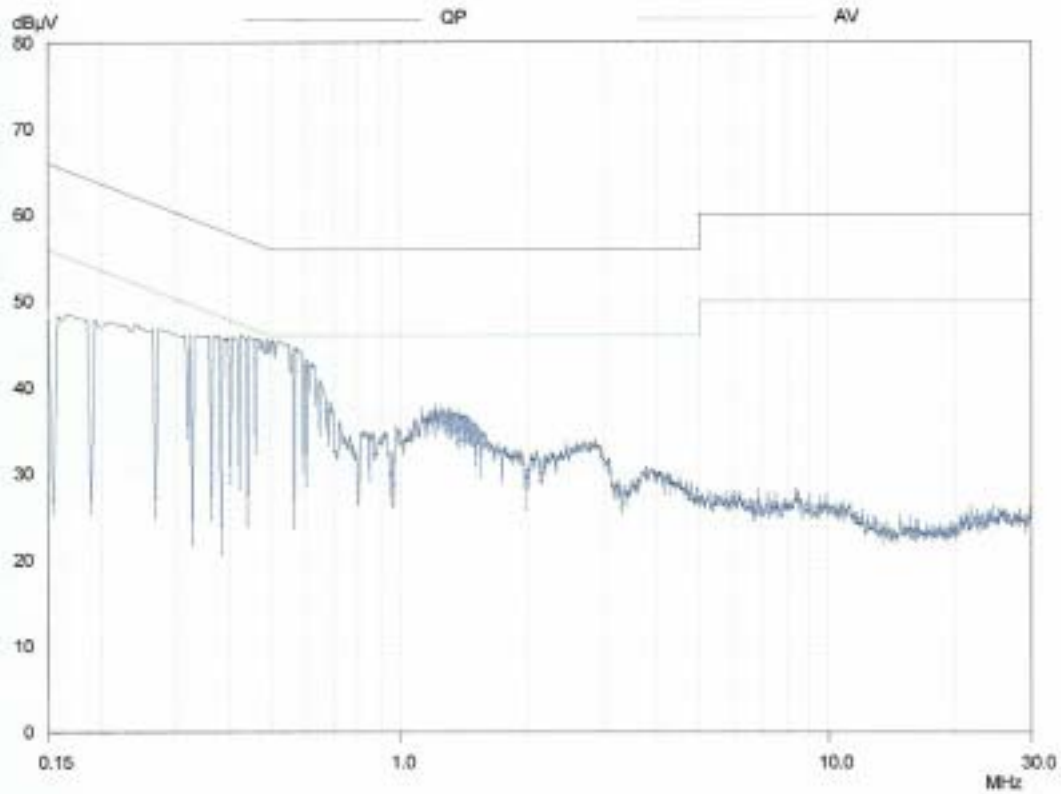
1. The full frequency range scanning test data is shown in next two pages.
2. “***” means the value was too low to be measured.
3. If the data table appeared symbol of "----" means the Q.P. value is under the limit for AVG. so, the AVG. value doesn't need to be measured.
4. The estimated measurement uncertainty of the result measurement is ±3dB.

Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2410MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L1

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	8
	Acc Margin:	30 dB

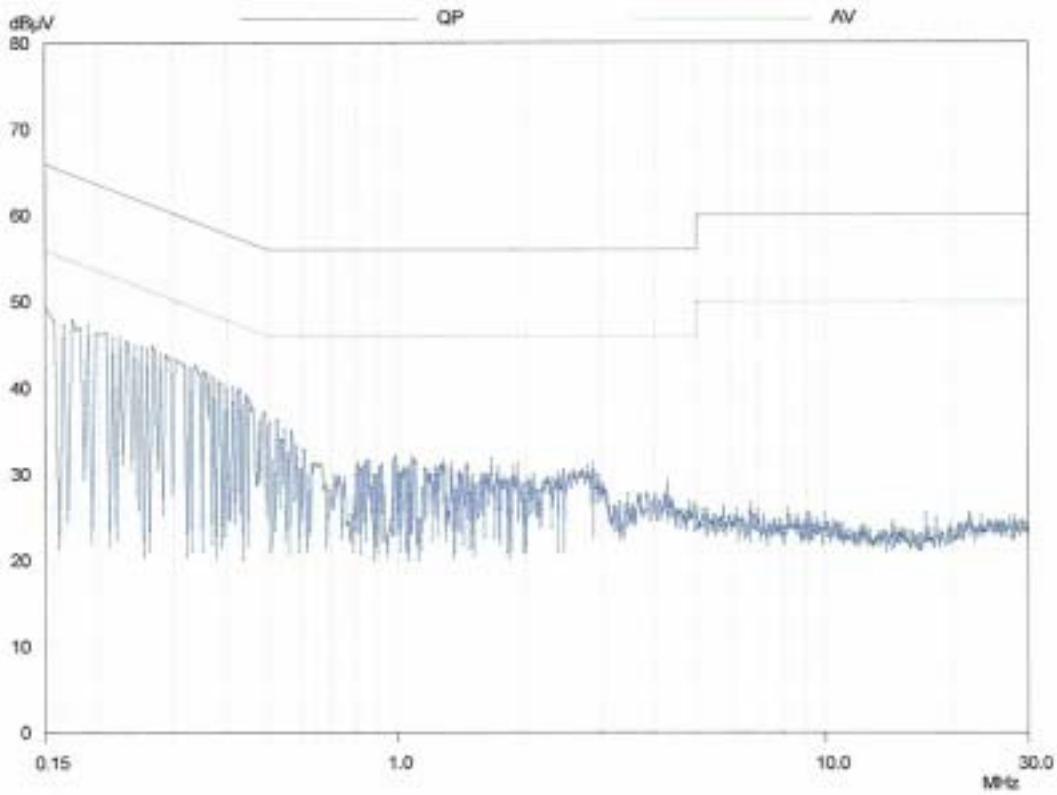


Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2410MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L2

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	8
	Acc Margin:	30 dB

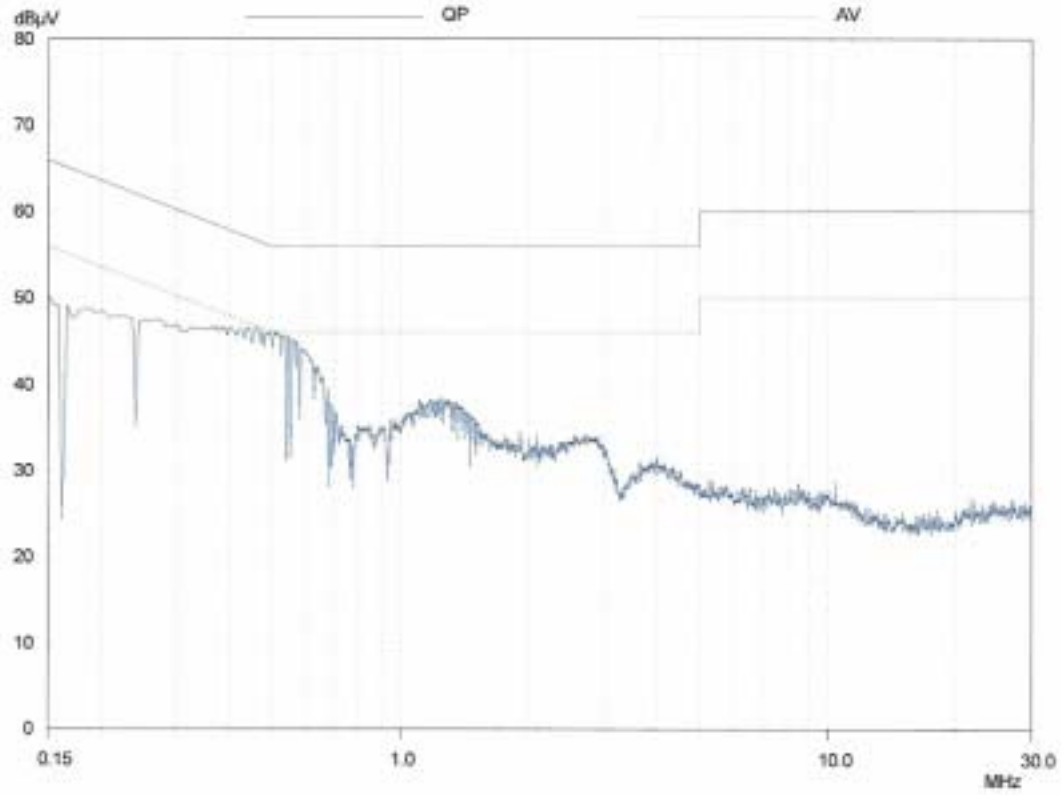


Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2430MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L1

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	8
	Acc Margin:	30 dB

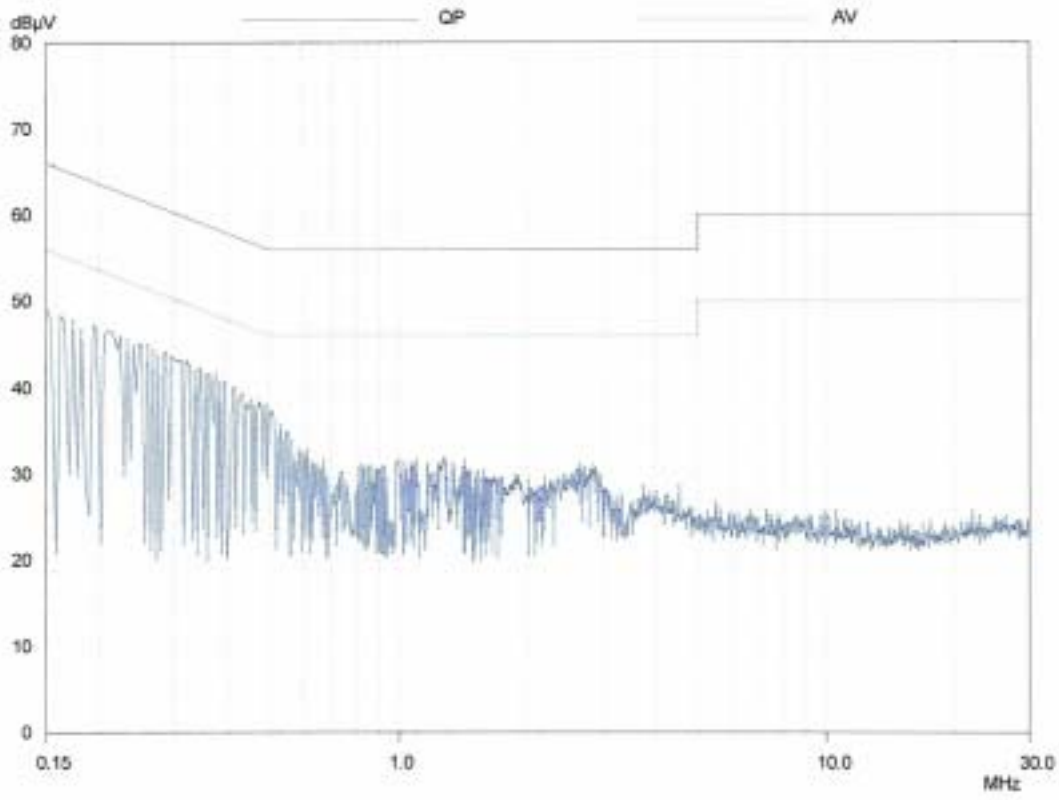


Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2430MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L2

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	6
	Acc Margin:	30 dB

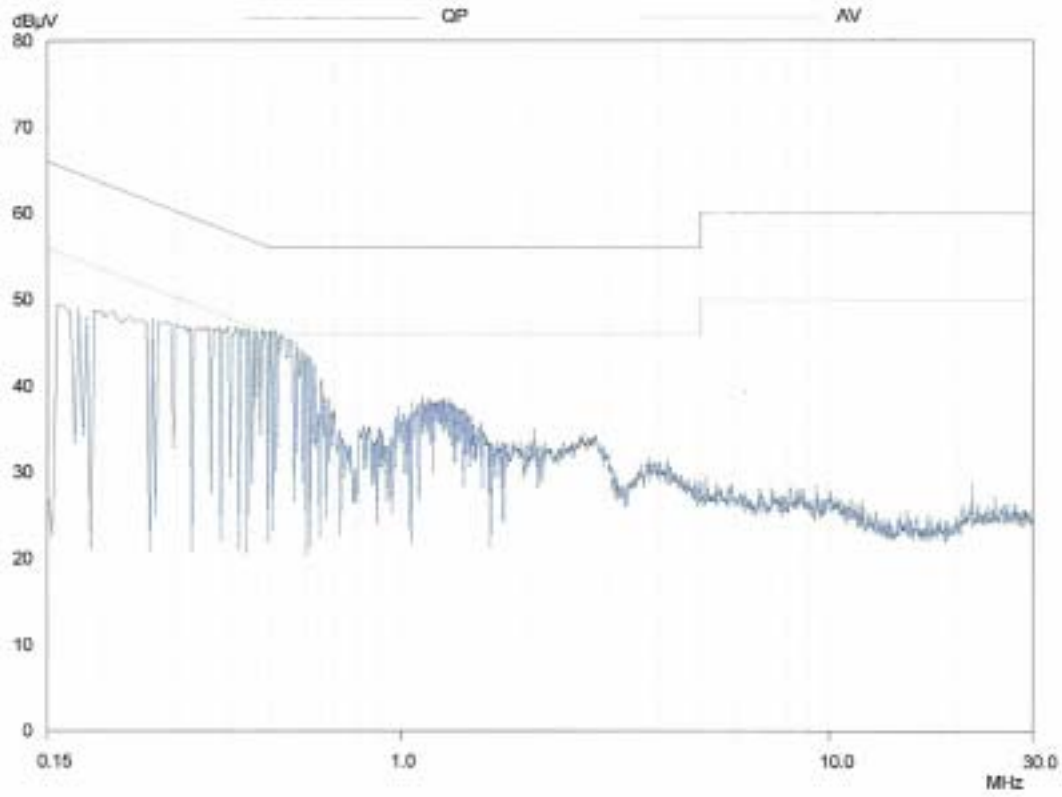


Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2470MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L1

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	6
	Acc Margin:	30 dB

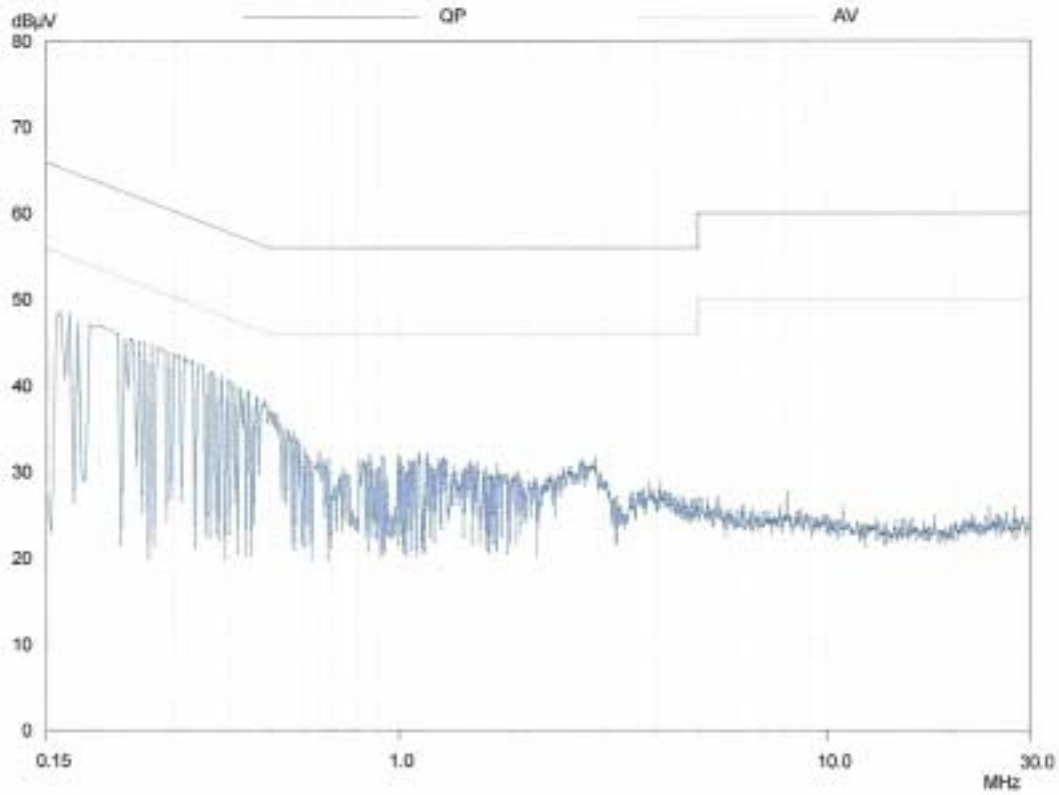


Conducted Emission Test

Peak Value

EUT:	TV BOX
Manuf:	2.4GHz TRANSMITTER & 433MHz RECEIVER
Op Cond:	Transmitting (2470MHz)
Operator:	An. K.
Test Spec:	FCC 15 B
Comment:	L2

Prescan Measurement:	Detector:	X PK
	Meas Time:	see scan settings
	Peaks:	8
	Acc Margin:	30 dB



5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dBμV is obtained, and LISN Factor is 0.1 dB, then the total of field strength is 22.6 dBμV.

RESULT = 22.5 + 0.1 = 22.6 dBμV
Level in μV = Common Antilogarithm[(22.6 dBμV)/20]
= 13.48 μV

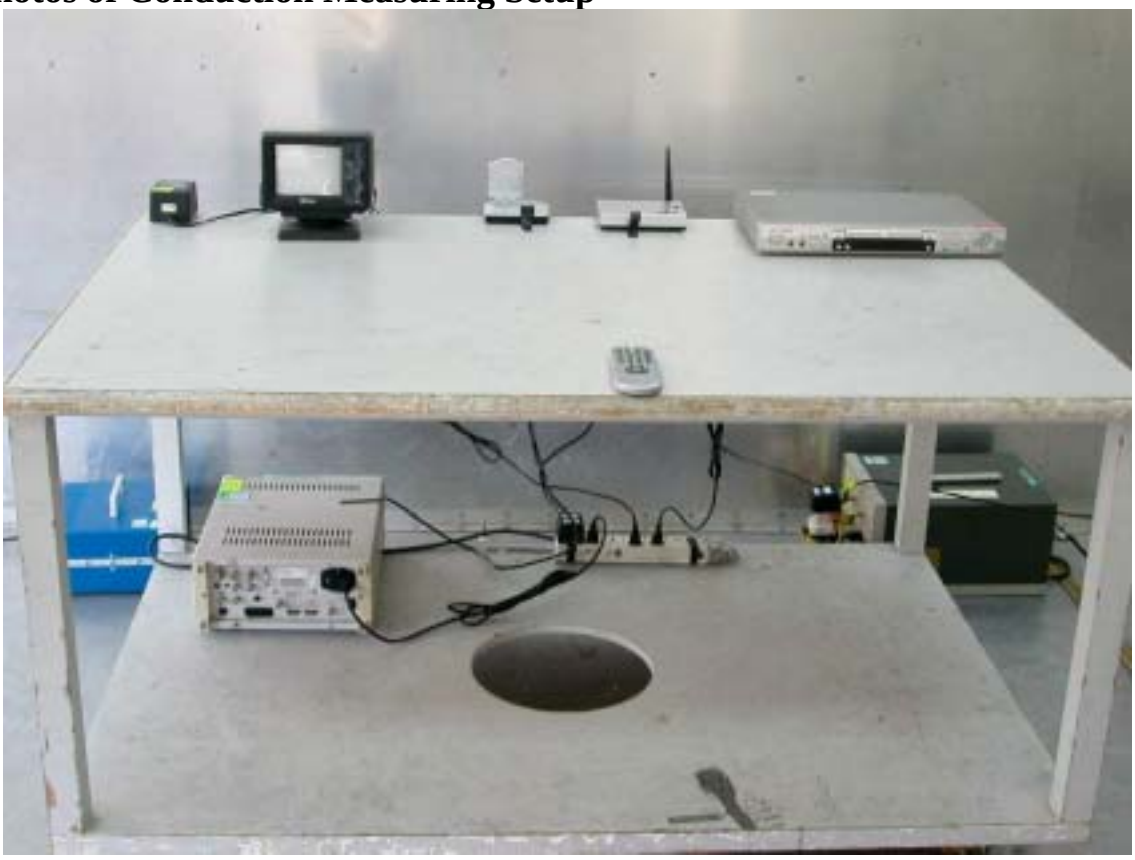
5.5 Conducted Measurement Equipment

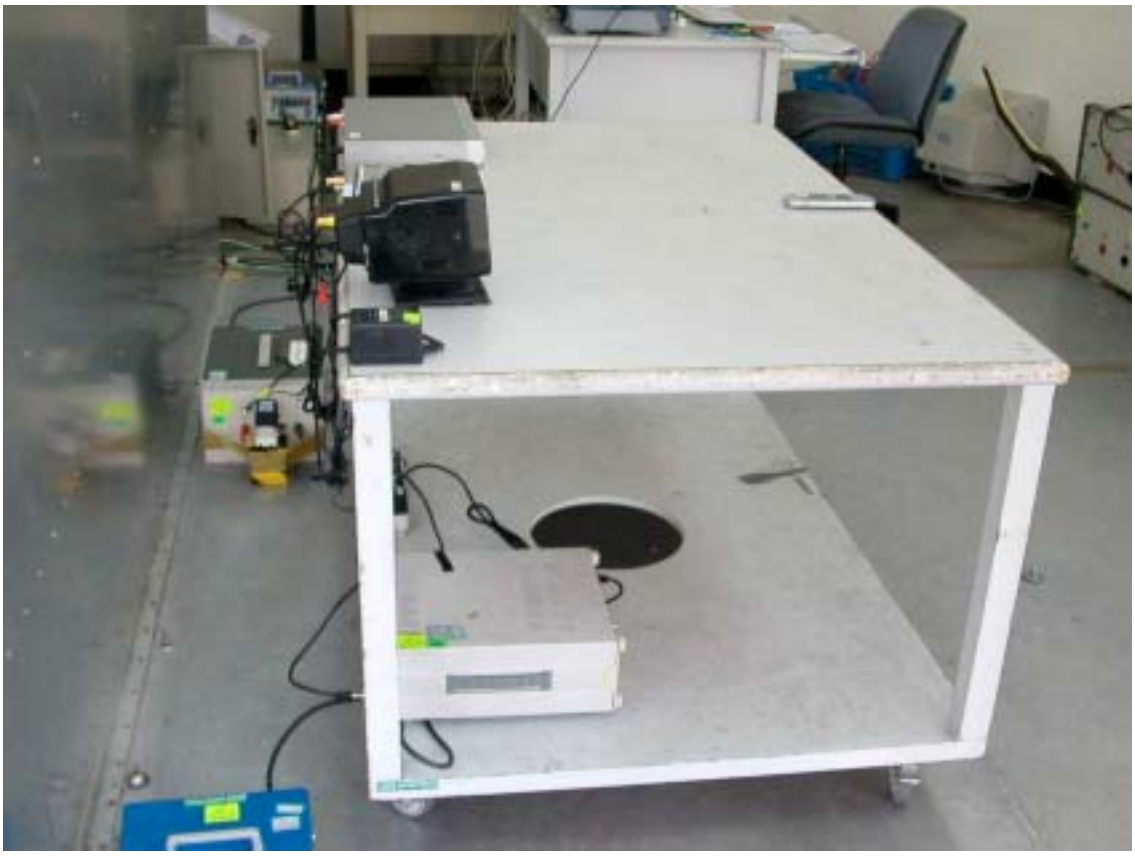
The following test equipment are used during the conducted test .

Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
EMI Test Receiver	R&S	ESCS30	13054409-001	Sep. 23, 2004
LISN	EMCO	3825	13057704-001	Nov. 02, 2004

Note: The standards used to perform this calibration are traceable to NML/ROC and NIST/USA.

5.6 Photos of Conduction Measuring Setup





6 ANTENNA REQUIREMENT

6.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible part shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

6.2 Antenna Construction and Directional Gain

An external specify type antenna was used.