



**FCC Part15, Subpart B  
ICES-003**

**TEST REPORT**

*For*

**907X-SPECIAL EDITION**

**MODEL NUMBER: CFVII-1**

**FCC ID: 2AEFA-CFVII1910**

**REPORT NUMBER: 4789290187.2-7**

**ISSUE DATE: December 16, 2019**

*Prepared for*

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/16/2019	Initial Issue	



Summary of Test Results				
Standard	Test Item	Limit	Result	Remark
FCC Part15, Subpart B ANSI C63.4-2014 ICES-003 Issue 6	Conducted Disturbance	Class B	PASS	
	Radiated Disturbance below 1 GHz	Class B	PASS	
	Radiated Disturbance above 1 GHz	Class B	PASS	NOTE (2)

Note:

(1) "N/A" denotes test is not applicable in this Test Report

(2) If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

This test report is only published to and used by the applicant, and it is not for evidence purpose in China.



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# 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Victor Hasselblad AB  
Address: Utvecklingsgatan 2 SE-417 56 Gothenburg Sweden

### Manufacturer Information

Company Name: Victor Hasselblad AB  
Address: Utvecklingsgatan 2 SE-417 56 Gothenburg Sweden

### EUT Information

EUT Name: 907X-SPECIAL EDITION  
Model: CFVII-1  
Sample Status: Normal  
Sample ID: 2756781  
Sample Received Date: December 3, 2019  
Date of Tested: December 3, 2019~December 10, 2019

APPLICABLE STANDARDS	
STANDARDS	TEST RESULTS
FCC Part15, Subpart B ANSI C63.4-2014 ICES-003 Issue 6	PASS

Prepared By:

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Checked By:

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Laboratory Leader

Approved By:

Stephen Guo  
Laboratory Manager



## 2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC Part15 Subpart B & ICES-003 Issue 6 & ANSI C63.4-2014.

## 3. FACILITIES AND ACCREDITATION

<p>Accreditation Certificate</p>	<p><b>A2LA (Certificate No.: 4102.01)</b>          UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Recognized No.: CN1187)</b>          UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>IC(Company No.: 21320)</b>          UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b>          UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.          Facility Name:          Chamber D, the VCCI registration No. is G-20019 and R-20004          Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
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Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People’s Republic of China

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. Measuring Instrument Calibration

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports	0.15MHz ~ 30MHz	2	3.62
Radiated emissions	30MHz ~ 1GHz	2	4.00
Radiated emissions	1GHz ~ 18GHz	2	5.78

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



## 5. EQUIPMENT UNDER TEST

### 5.1. Description of EUT

EUT Name	907X-SPECIAL EDITION
Model Name	CFVII-1
EUT Description	The CFVII-1 is a highly modular medium format digital back
Bluetooth Version	V4.2LE
Rated Input	DC 7.27 V
Remark	Bluetooth is used as a Wi-Fi connection auxiliary, Once the Wi-Fi is connected, the Bluetooth doesn't work anymore.

### 5.2. Test Mode

Test Mode	Description
Mode 1	Charging + Continuous shooting and pictures were stored in internal SD card.
Mode 2	Continuous shooting and pictures were transferred to iPad via USB
Mode 3	Continuous shooting and pictures were transferred to iPad via Wi-Fi with Bluetooth for connecting auxiliary

### 5.3. EUT Accessory

Item	Accessory	Brand Name	Model Name	Description
1	Power adapter	/	QC24-CN	Input :100 - 240V~ 50/60Hz 0.8A Max Output:3.6-8V == 3.0A/12V == 2.0A





#### 5.4. Support Units or Accessories for System Test

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
1	Power adapter	/	QC24-CN	/
2	ipad	Apple	MTXN2LL/A	DMPYQBE6KD6J

The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Specification
1	USB Cable	YES	NO	1.0m
2	USB Cable	YES	NO	1.0m

**6. MEASURING EQUIPMENT AND SOFTWARE USED**

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Dec. 10, 2018	Dec. 10, 2019
Two-Line V-Network	R&S	ENV216	101983	Dec. 10, 2018	Dec. 10, 2019
Software					
Description		Manufacturer		Name	Version
Test Software for Conducted Emissions		Farad		EZ-EMC	Ver. UL-3A1
Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec. 10, 2018	Dec. 10, 2019
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sept. 17, 2018	Sept. 17, 2021
Preamplifier	HP	8447D	2944A09099	Dec. 10, 2018	Dec. 10, 2019
EMI Measurement Receiver	R&S	ESR26	101377	Dec. 10, 2018	Dec. 10, 2019
Horn Antenna	TDK	HRN-0118	130939	Sept. 17, 2018	Sept. 17, 2021
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Dce. 10, 2018	Dec. 10, 2019
Software					
Description		Manufacturer		Name	Version
Test Software for Radiated Emissions		Farad		EZ-EMC	Ver. UL-3A1

## 7. EMISSION TEST

### 7.1. Conducted Disturbance Measurement

#### 7.1.1. Limits of conducted disturbance voltage

FREQUENCY (MHz)	Class A (dB $\mu$ V)		Class B (dB $\mu$ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46*
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

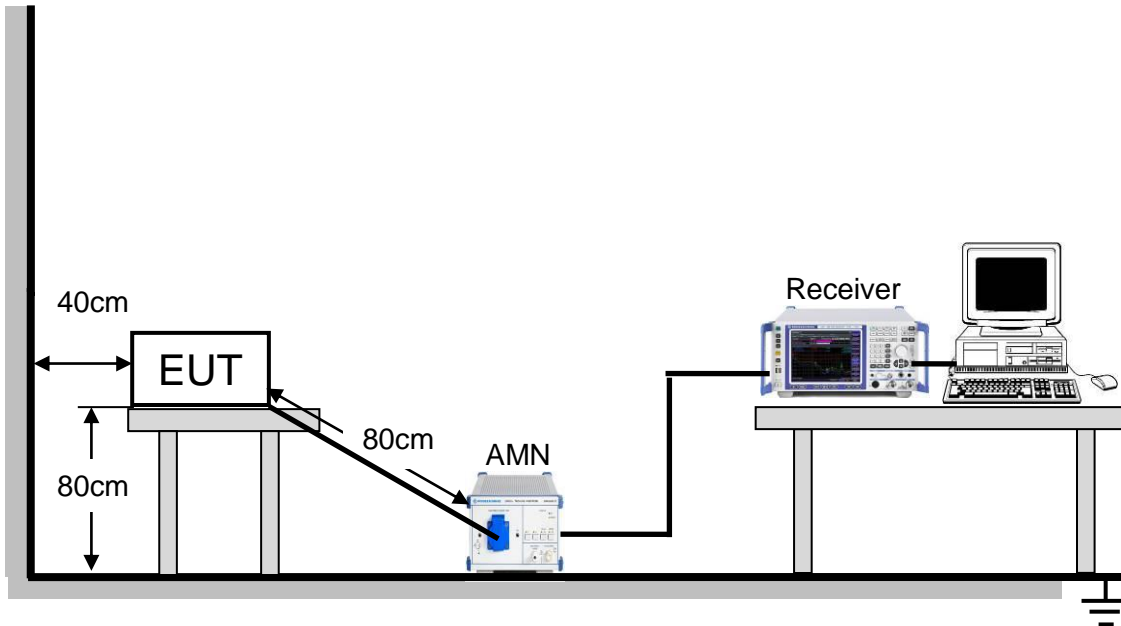
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

#### 7.1.2. Test Procedure

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item: Photographs of Test Configuration.

### 7.1.3. Test Setup



For the actual test configuration, please refer to Appendix I: Photographs of Test Configuration.

### 7.1.4. Test Environment

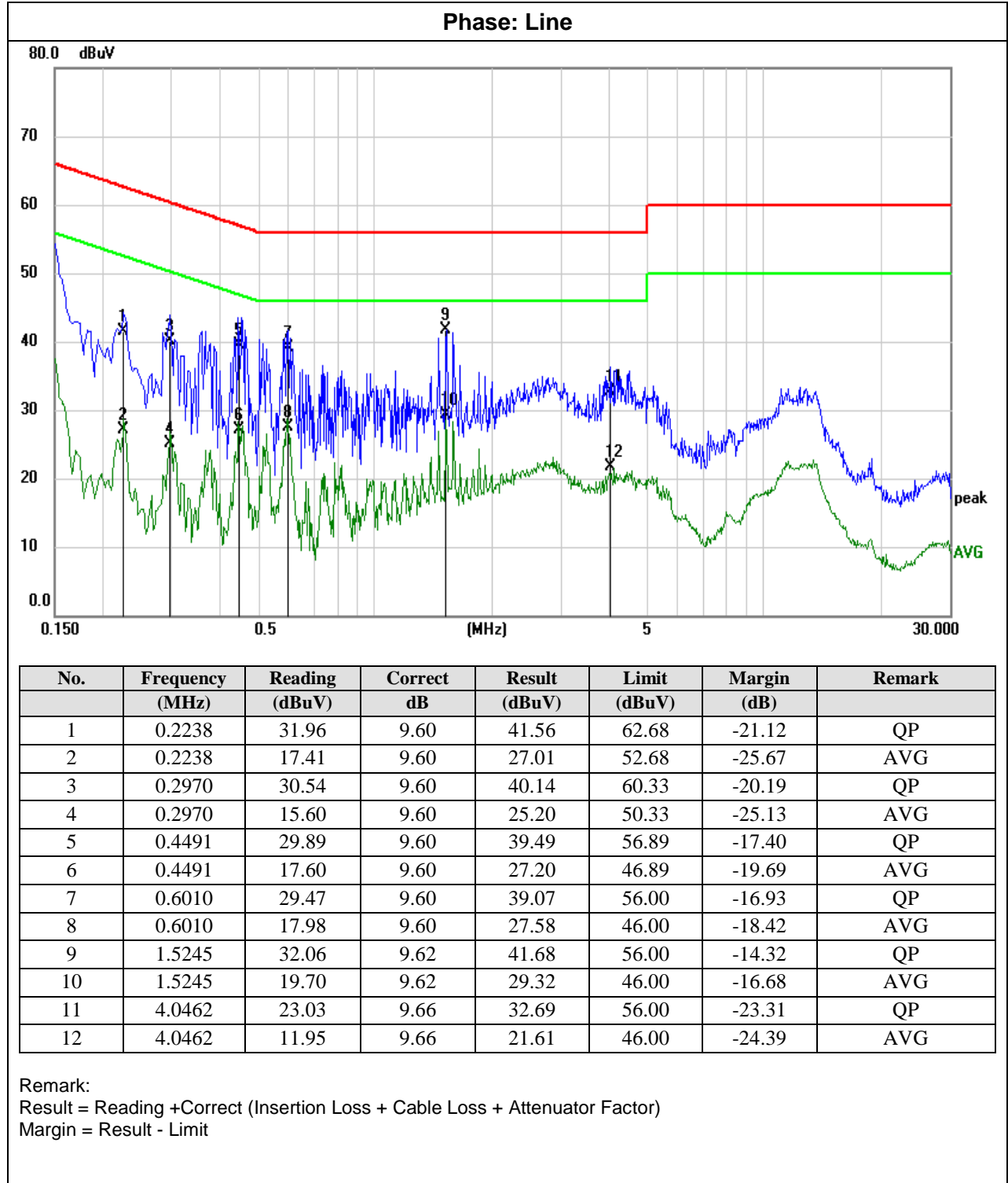
Temperature:	25°C
Humidity:	50%
ATM pressure:	101kPa

### 7.1.5. Test Mode

Pre-test Mode:	Mode 1
Final Test Mode:	Mode 1

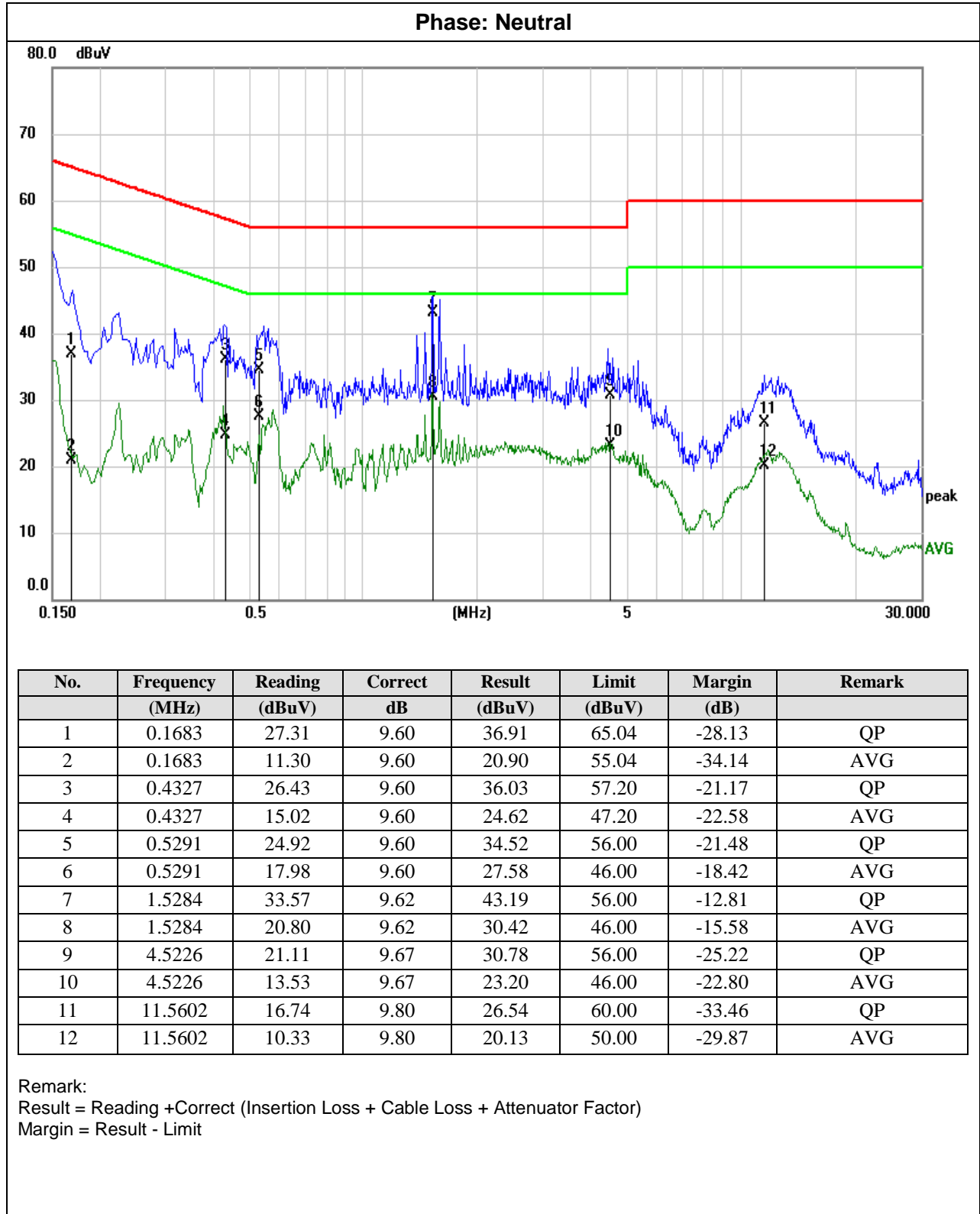
**7.1.6. Test Results**

Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz



## 7.2. Radiated Disturbance Measurement

### 7.2.1. Limits of radiated disturbance measurement

#### Below 1 GHz

##### Measurement Method and Applied Limits:

##### ANSI C63.4:

Frequency (MHz)	Class A		Class B
	Field strength (uV/m) ( at 10m)	Field strength (dBuV/m) (at 3m)	Field strength (dBuV/m) (at 3m)
30 - 88	90	49.5	40
88 - 216	150	53.9	43.5
216 - 960	210	56.9	46
Above 960	300	60	54

#### Above 1 GHz

##### Measurement Method and Applied Limits:

##### ANSI C63.4:

Frequency (MHz)	Class A				Class B	
	(dBuV/m) (at 3m)		(dBuV/m) (at 10m)		(dBuV/m) (at 3m)	
	Peak	Average	Peak	Average	Peak	Average
Above 1000	80	60	69.5	49.5	74	54

#### Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

#### NOTE:

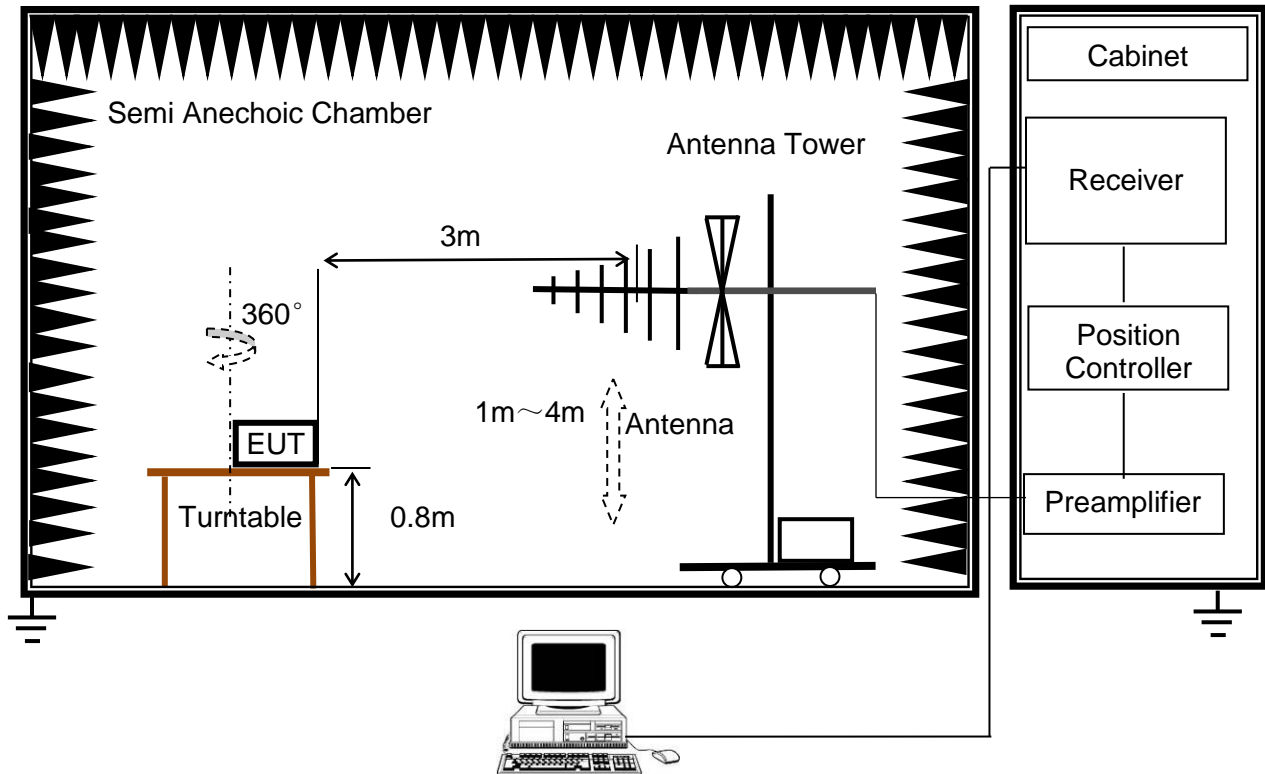
- (1) The limit for radiated test was performed according to FCC Part 15, Subpart B;
- (2) The tighter limit applies at the band edges;
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m),  
3m Emission level = 10m Emission level + 20log(10m/3m);

### 7.2.2. Test Procedure

- a. The measuring distance of at 3m shall be used for measurements at frequency up to 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the actual test configuration, please refer to the related Item:EUT Photographs of Test Configuration.

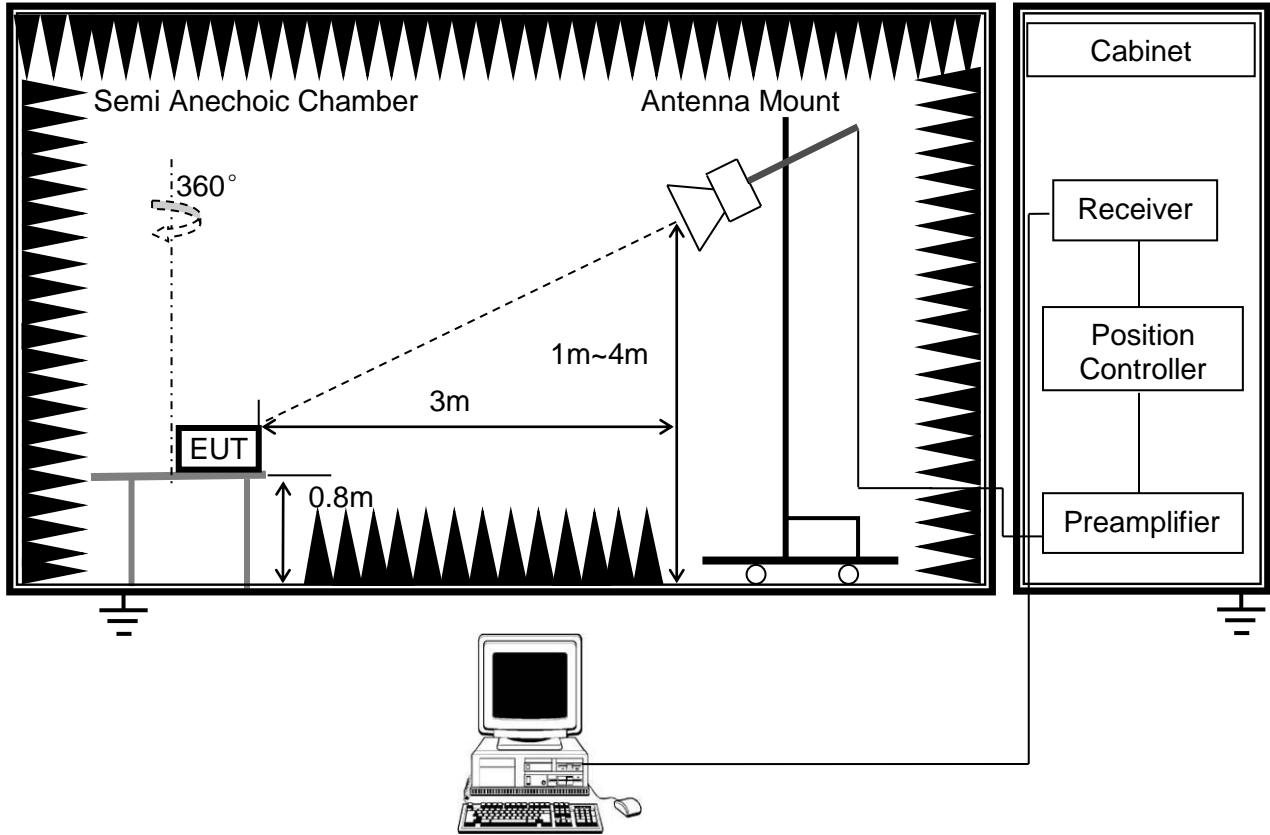
### 7.2.3. Test Setup

(a) Radiated Disturbance Test Set-Up Frequency 30MHz - 1GHz





(b) Radiated Disturbance Test Set-Up Frequency above 1GHz



For the actual test configuration, please refer to Appendix I: Photographs of Test Configuration.

**7.2.4. Test Environment**

Radiated Disturbance - below 1 GHz		Radiated Disturbance - above 1 GHz	
Temperature:	24°C	Temperature:	23.8°C
Humidity:	50%	Humidity:	62%
ATM pressure:	101kPa	ATM pressure:	101kPa

**7.2.5. Test Mode**

Radiated Disturbance - below 1 GHz		Radiated Disturbance - above 1 GHz	
Pre-test Mode:	Mode 1 & Mode 2 & Mode3	Pre-test Mode:	Mode 1 & Mode 2 & Mode3
Final Test Mode:	Mode 1 & Mode 2 & Mode3	Final Test Mode:	Mode3

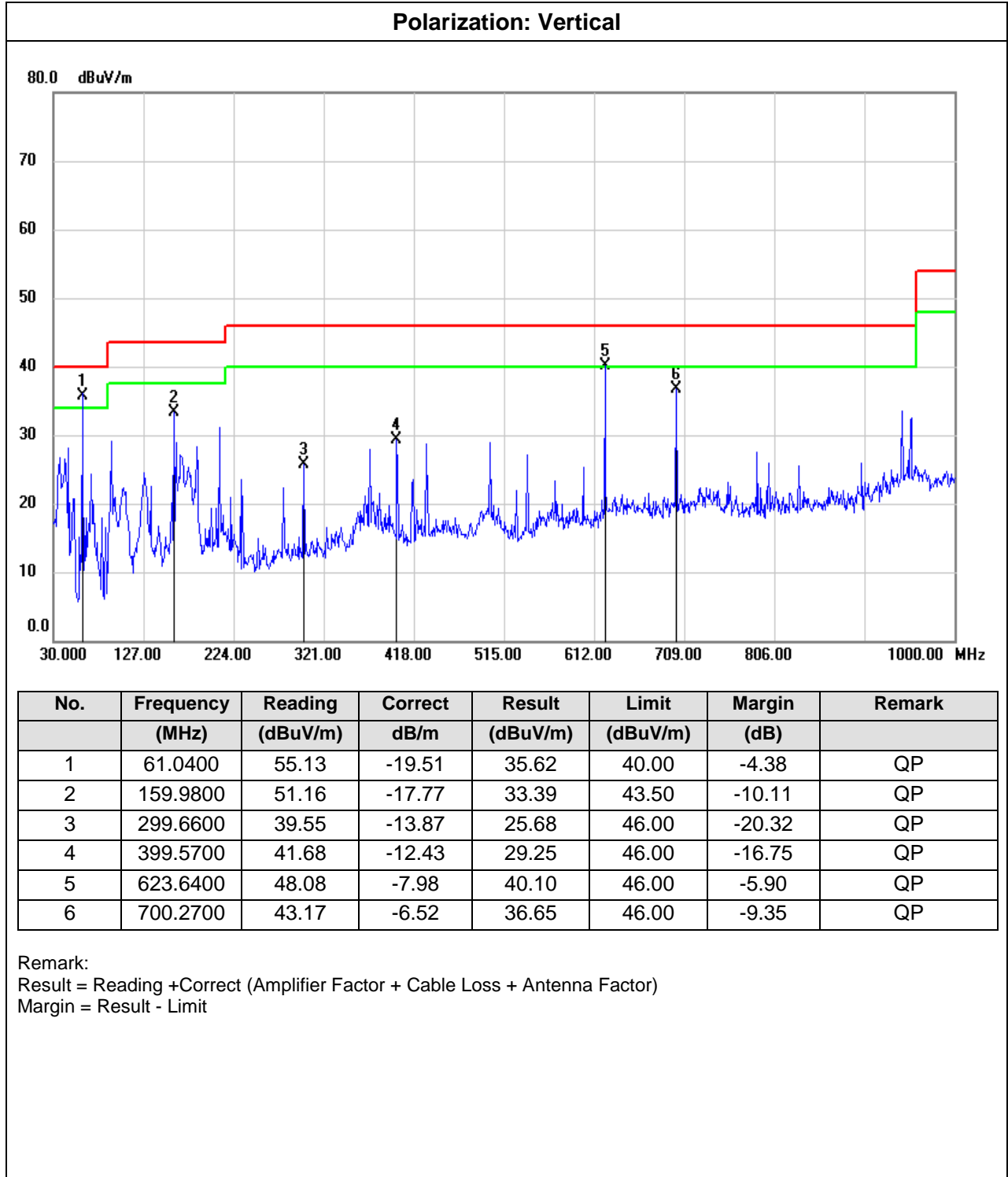
Note:

1. All test modes have been tested, but only the worst case data recorded in the report.



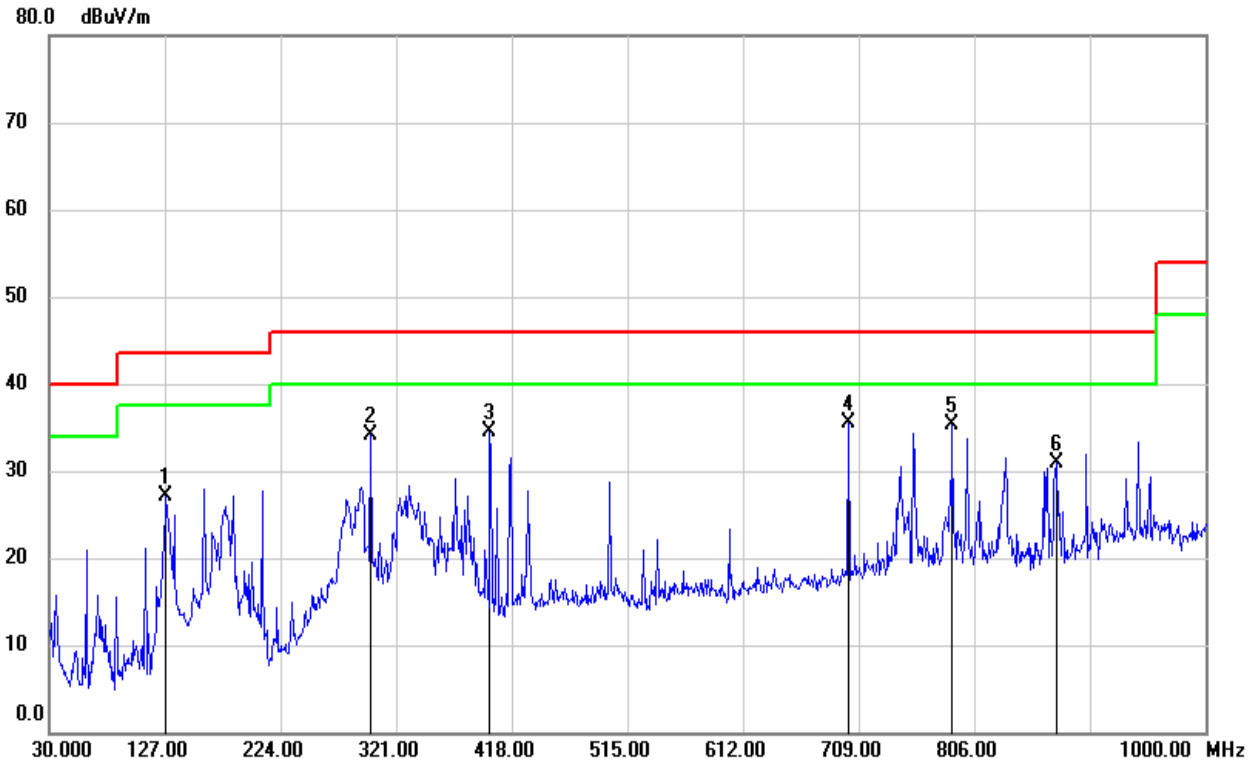
**7.2.6. Test Results – below 1GHz**

Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

**Polarization: Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	127.9700	46.83	-19.81	27.02	43.50	-16.48	QP
2	299.6600	47.95	-13.87	34.08	46.00	-11.92	QP
3	399.5700	46.98	-12.43	34.55	46.00	-11.45	QP
4	700.2700	42.05	-6.52	35.53	46.00	-10.47	QP
5	787.5700	40.91	-5.55	35.36	46.00	-10.64	QP
6	874.8700	35.24	-4.34	30.90	46.00	-15.10	QP

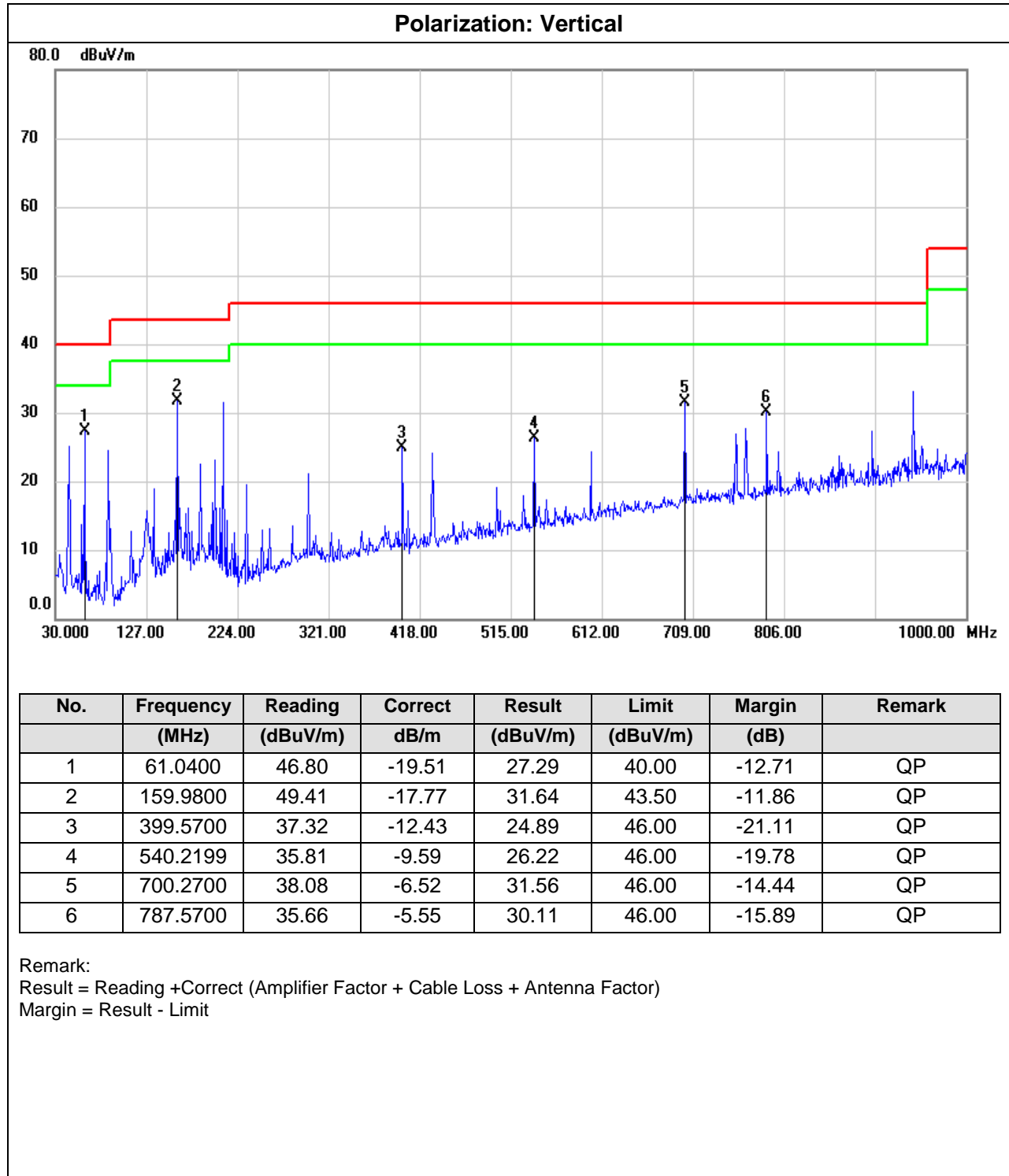
## Remark:

Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit

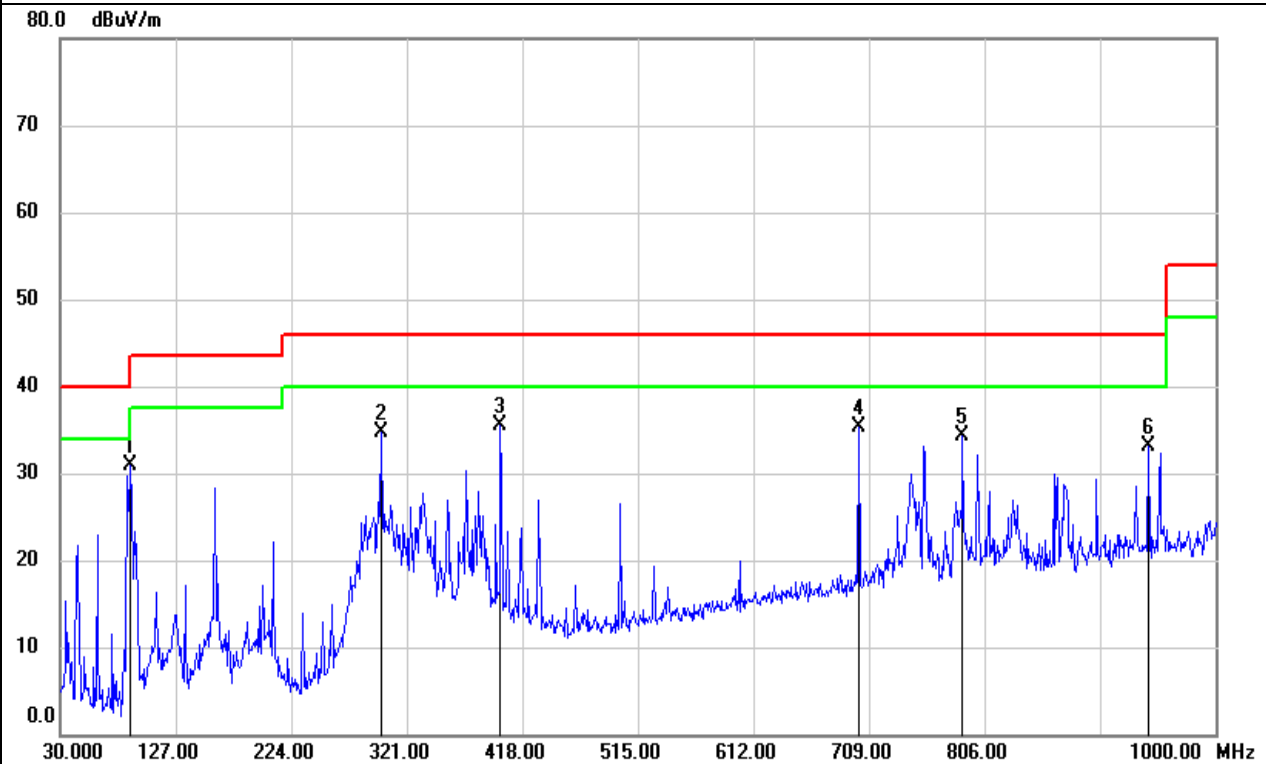


Test Mode:	Mode 2
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 2
Test Voltage:	AC 120V/60Hz

**Polarization: Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	89.1700	51.90	-21.06	30.84	43.50	-12.66	QP
2	299.6600	48.48	-13.87	34.61	46.00	-11.39	QP
3	399.5700	48.00	-12.43	35.57	46.00	-10.43	QP
4	700.2700	41.84	-6.52	35.32	46.00	-10.68	QP
5	787.5700	39.81	-5.55	34.26	46.00	-11.74	QP
6	943.7400	36.53	-3.52	33.01	46.00	-12.99	QP

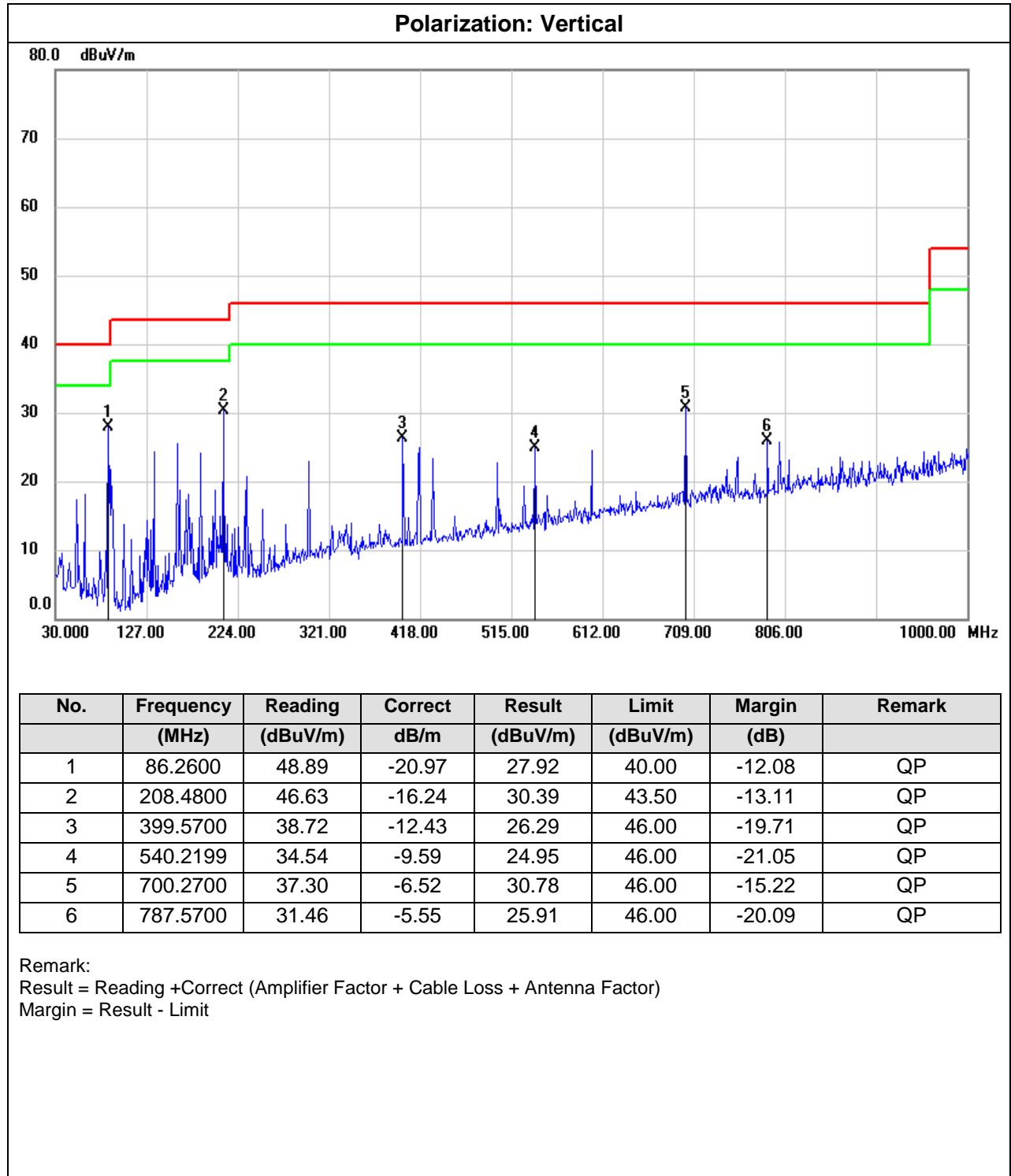
Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit

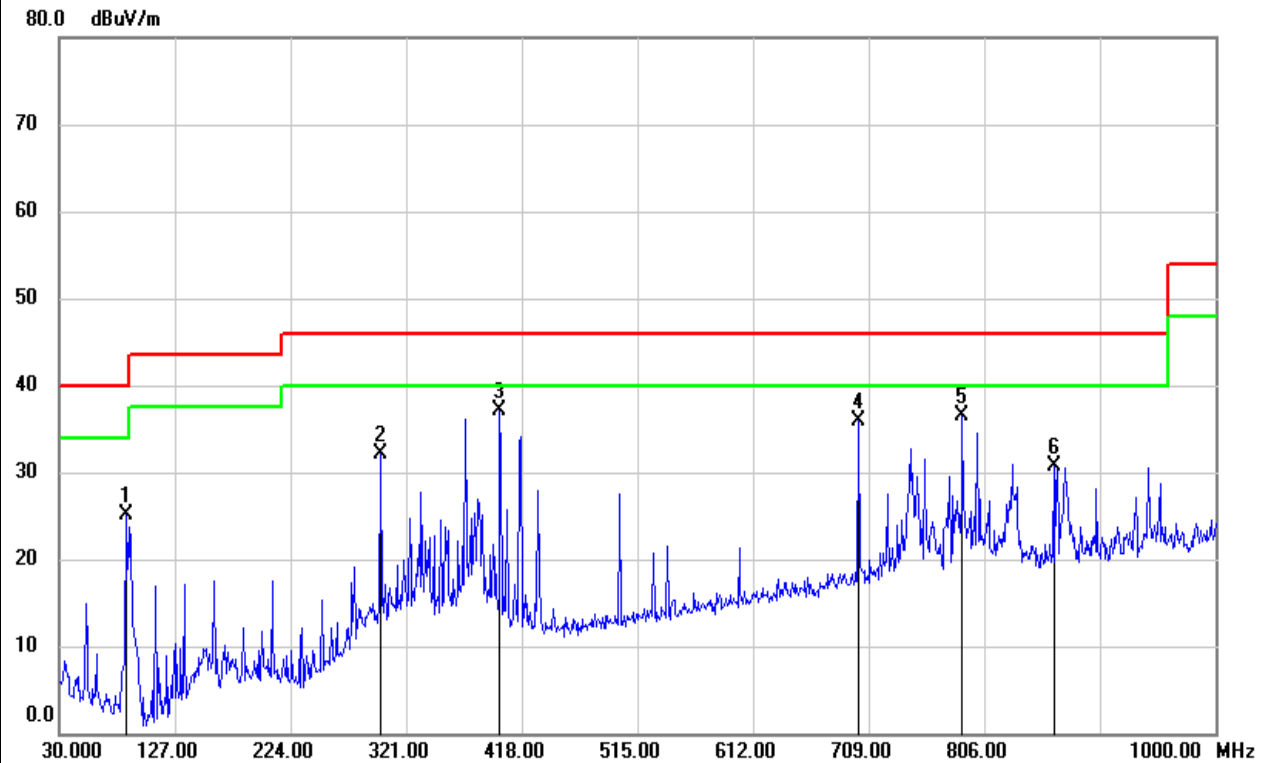


Test Mode:	Mode 3
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 3
Test Voltage:	AC 120V/60Hz

**Polarization: Horizontal**

No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	86.2600	46.14	-20.97	25.17	40.00	-14.83	QP
2	299.6600	45.92	-13.87	32.05	46.00	-13.95	QP
3	399.5700	49.44	-12.43	37.01	46.00	-8.99	QP
4	700.2700	42.51	-6.52	35.99	46.00	-10.01	QP
5	787.5700	42.03	-5.55	36.48	46.00	-9.52	QP
6	864.2000	35.26	-4.52	30.74	46.00	-15.26	QP

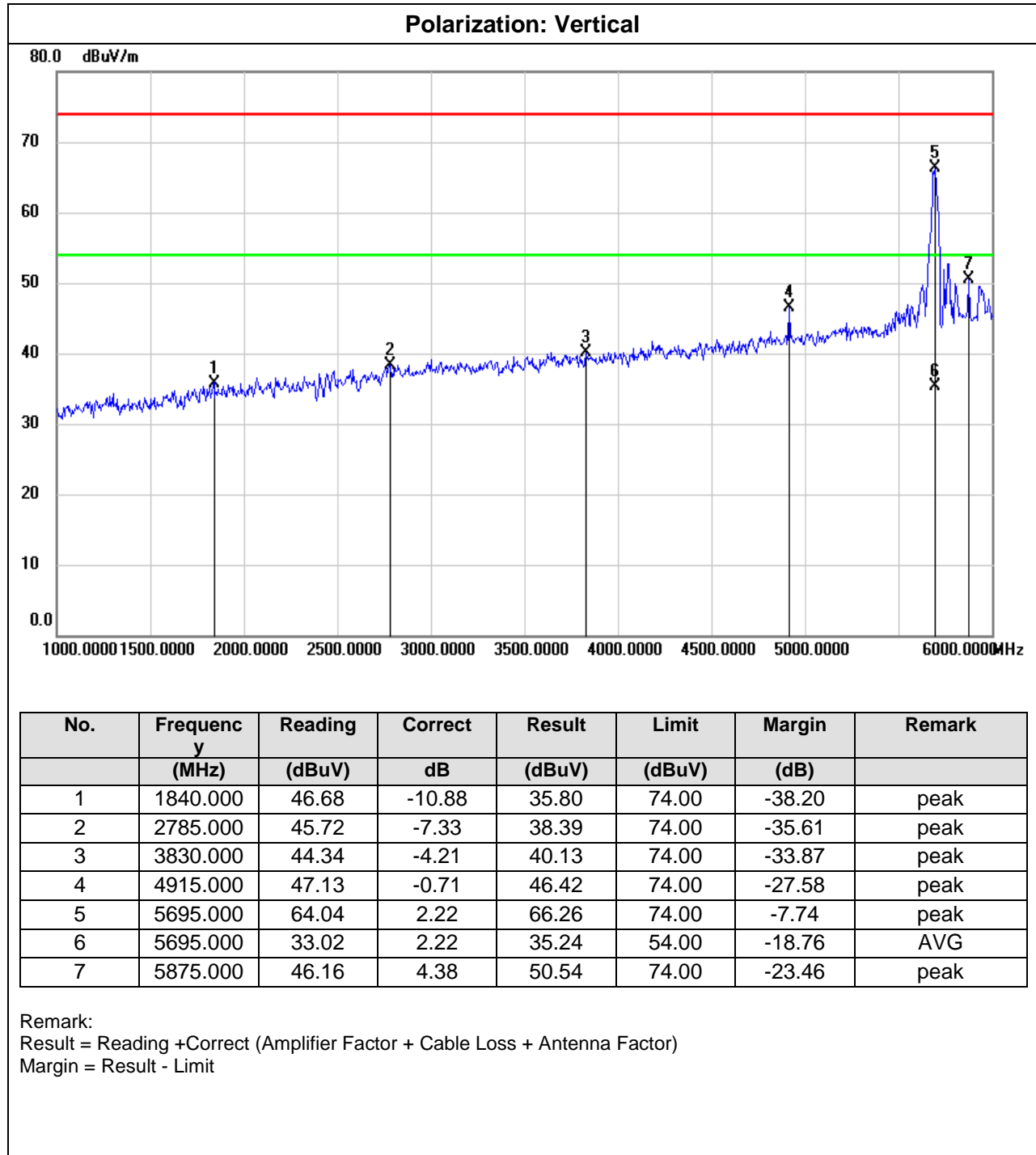
Remark:

Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit

**7.2.7. Test Results – above 1GHz**

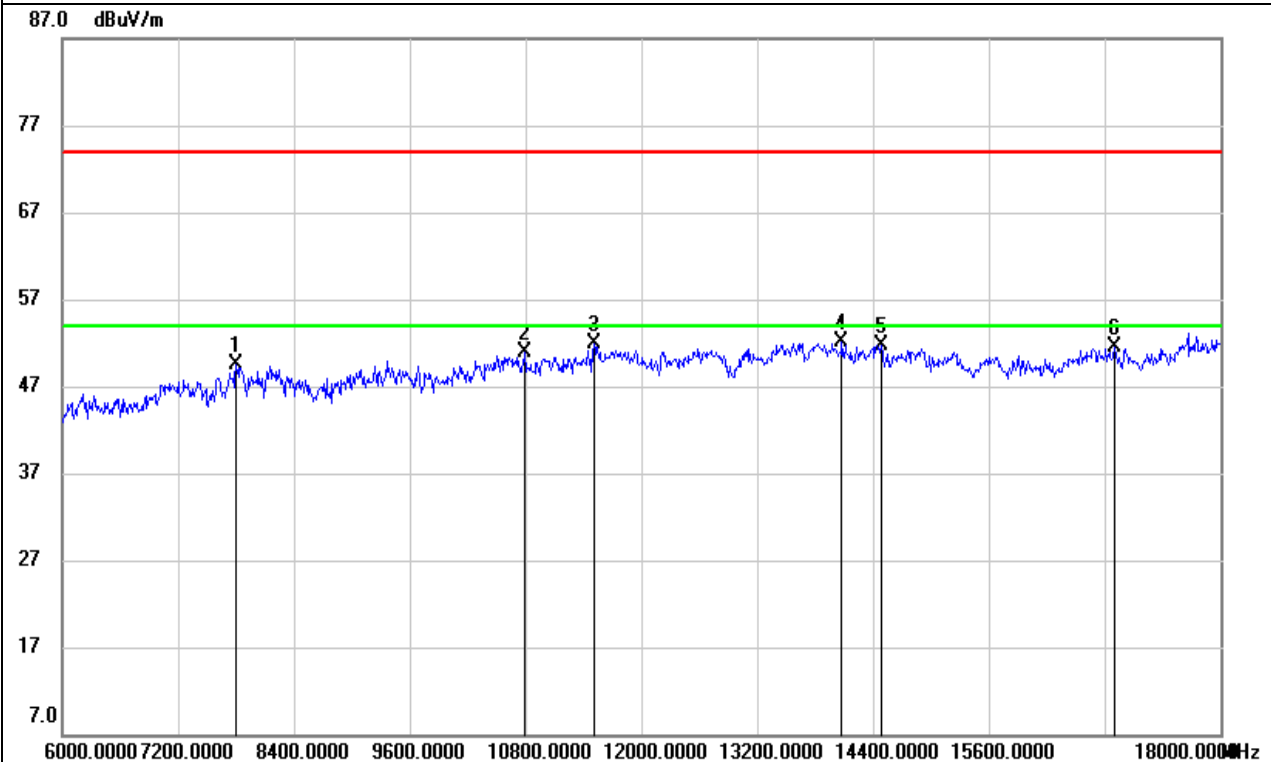
Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz







Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

**Polarization: Vertical**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	7800.000	40.10	9.41	49.51	74.00	-24.49	peak
2	10788.000	38.29	12.62	50.91	74.00	-23.09	peak
3	11508.000	37.46	14.49	51.95	74.00	-22.05	peak
4	14076.000	35.60	16.56	52.16	74.00	-21.84	peak
5	14484.000	35.13	16.65	51.78	74.00	-22.22	peak
6	16896.000	31.08	20.36	51.44	74.00	-22.56	peak

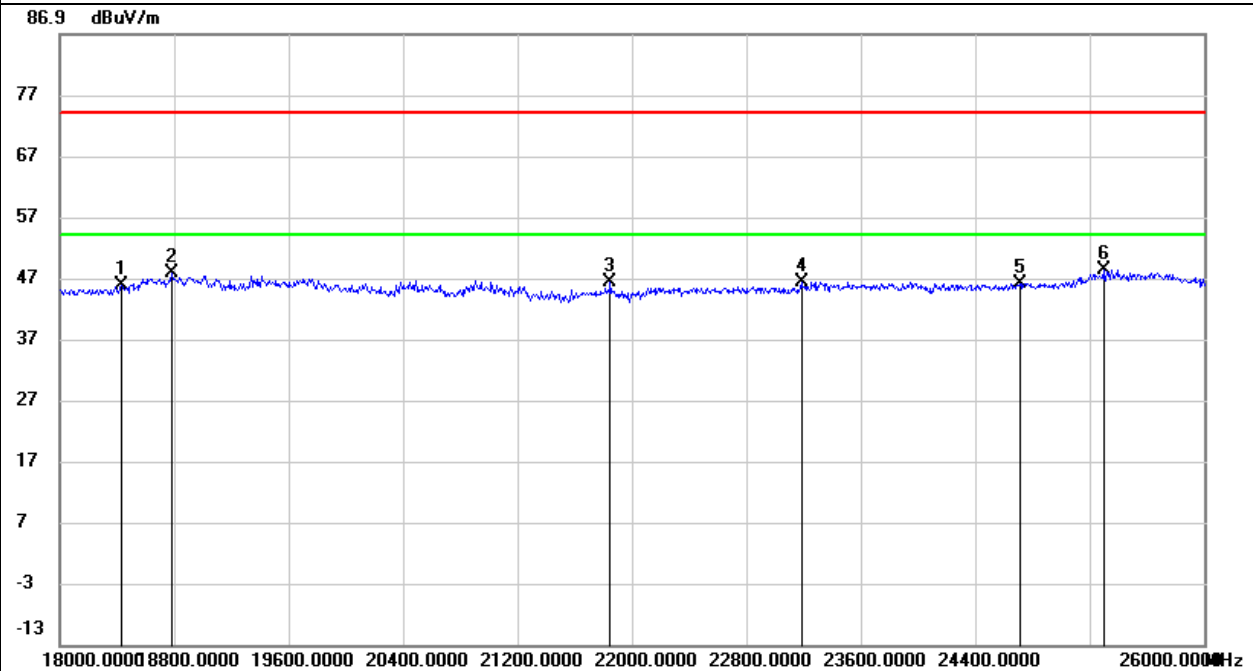
## Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

**Polarization: Vertical**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18432.000	50.11	-4.38	45.73	74.00	-28.27	peak
2	18784.000	52.55	-4.84	47.71	74.00	-26.29	peak
3	21848.000	52.26	-5.95	46.31	74.00	-27.69	peak
4	23184.000	51.70	-5.36	46.34	74.00	-27.66	peak
5	24712.000	48.15	-2.05	46.10	74.00	-27.90	peak
6	25296.000	49.65	-1.30	48.35	74.00	-25.65	peak

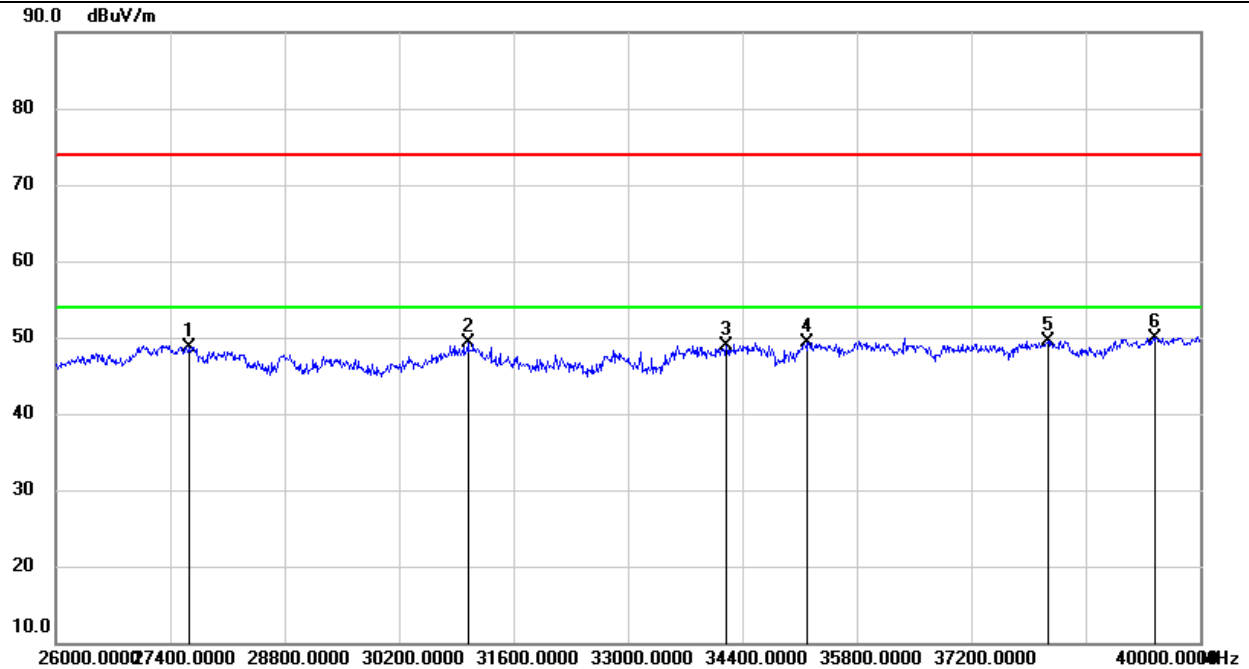
## Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

**Polarization: Vertical**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	27624.000	52.25	-3.48	48.77	74.00	-25.23	peak
2	31040.000	49.95	-0.72	49.23	74.00	-24.77	peak
3	34204.000	47.85	1.13	48.98	74.00	-25.02	peak
4	35198.000	46.87	2.37	49.24	74.00	-24.76	peak
5	38138.000	45.89	3.59	49.48	74.00	-24.52	peak
6	39440.000	45.13	4.81	49.94	74.00	-24.06	peak

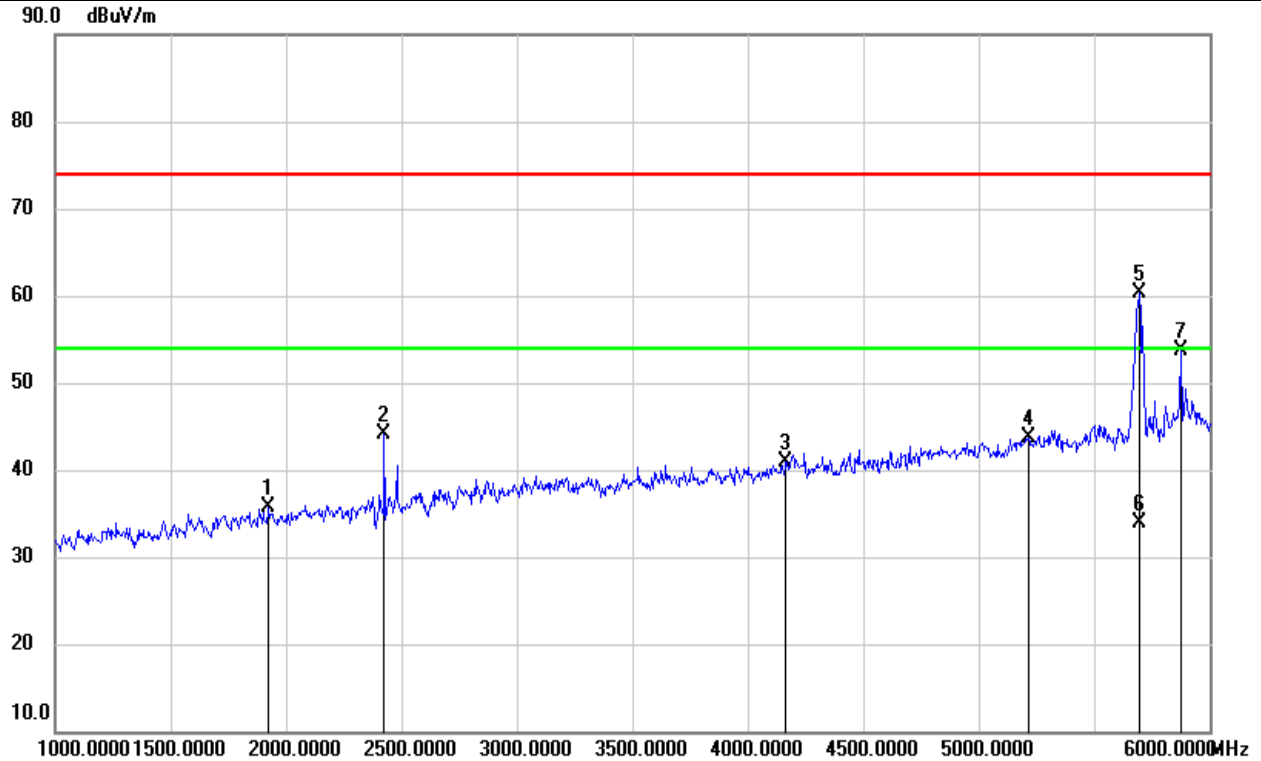
## Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



## Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	1925.000	46.47	-10.84	35.63	74.00	-38.37	peak
2	2425.000	52.99	-8.82	44.17	74.00	-29.83	peak
3	4165.000	44.14	-3.18	40.96	74.00	-33.04	peak
4	5215.000	42.87	0.92	43.79	74.00	-30.21	peak
5	5695.000	58.00	2.22	60.22	74.00	-13.78	peak
6	5695.000	31.74	2.22	33.6	54.00	-20.04	AVG
7	5875.000	49.35	4.38	53.73	74.00	-20.27	peak

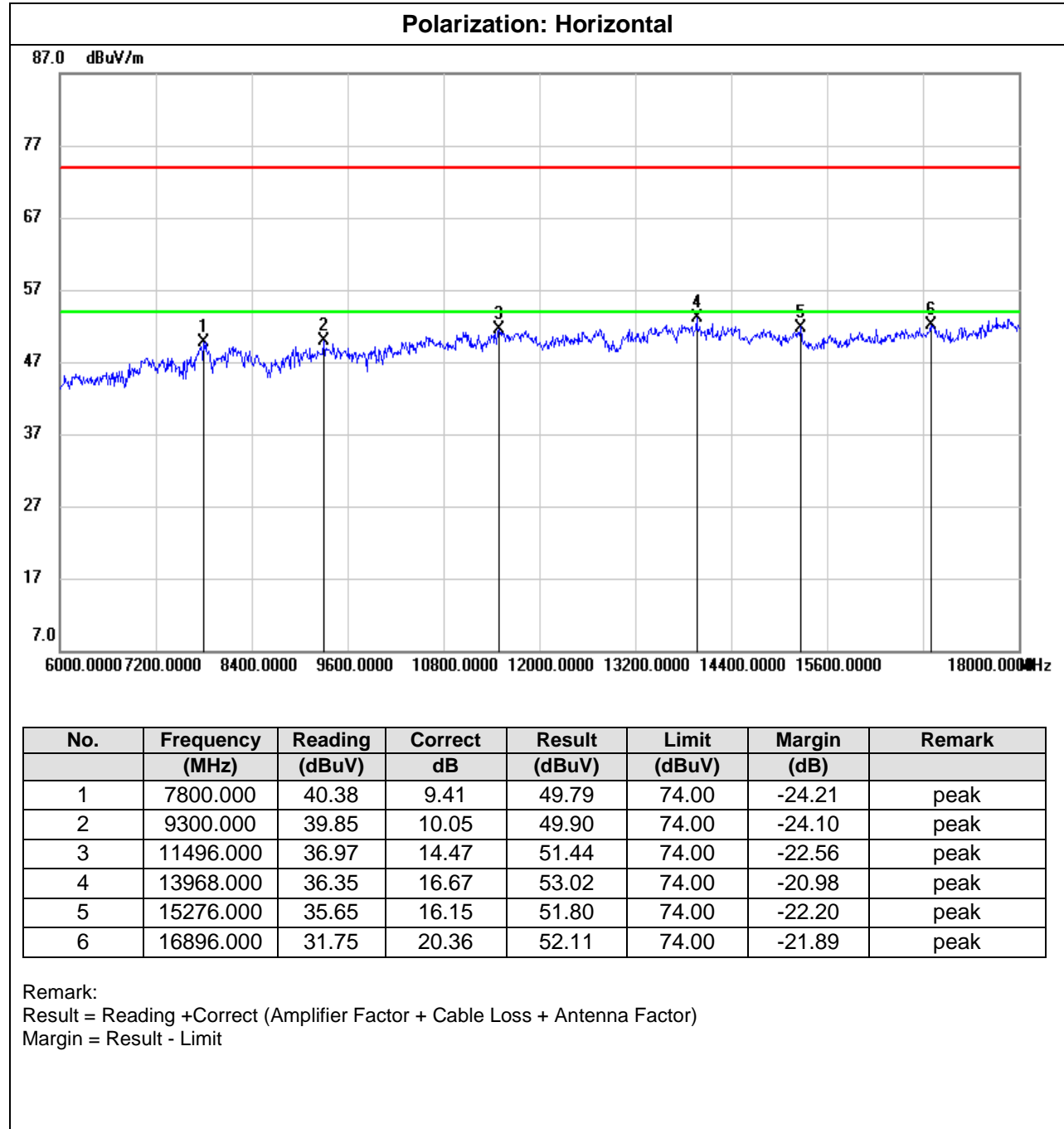
Remark:

Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit

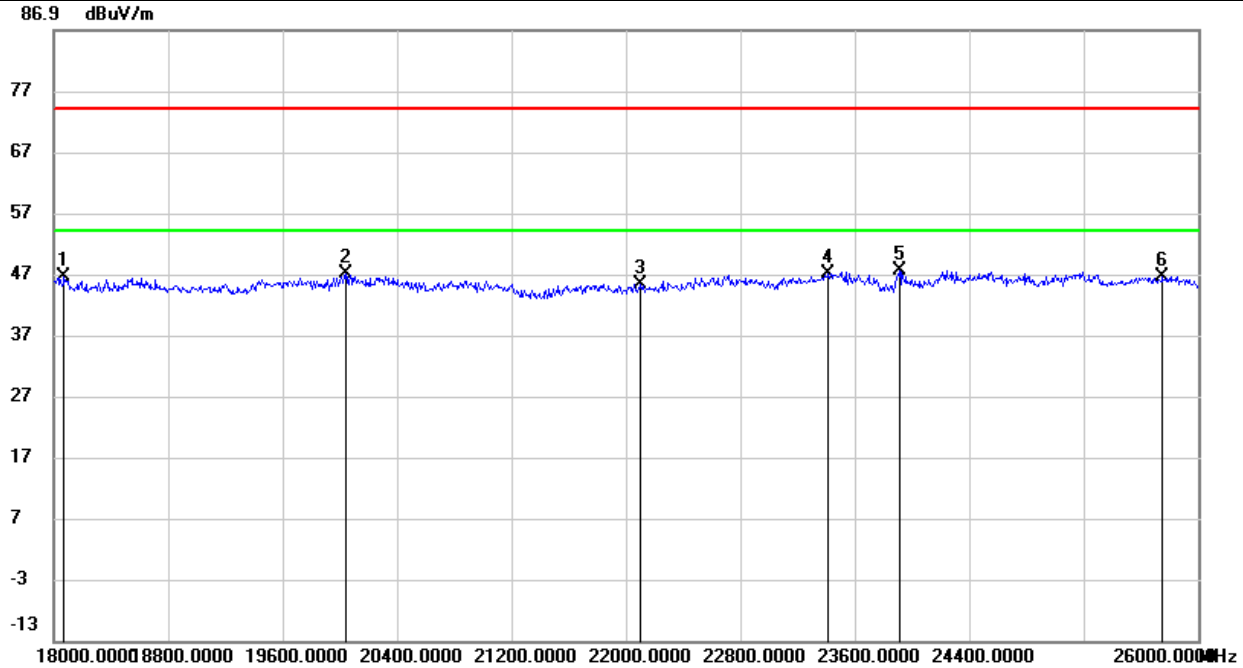


Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz





Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18072.000	50.55	-4.02	46.53	74.00	-27.47	peak
2	20040.000	51.39	-4.46	46.93	74.00	-27.07	peak
3	22096.000	51.53	-6.18	45.35	74.00	-28.65	peak
4	23416.000	51.90	-4.92	46.98	74.00	-27.02	peak
5	23912.000	51.82	-4.23	47.59	74.00	-26.41	peak
6	25752.000	48.00	-1.35	46.65	74.00	-27.35	peak

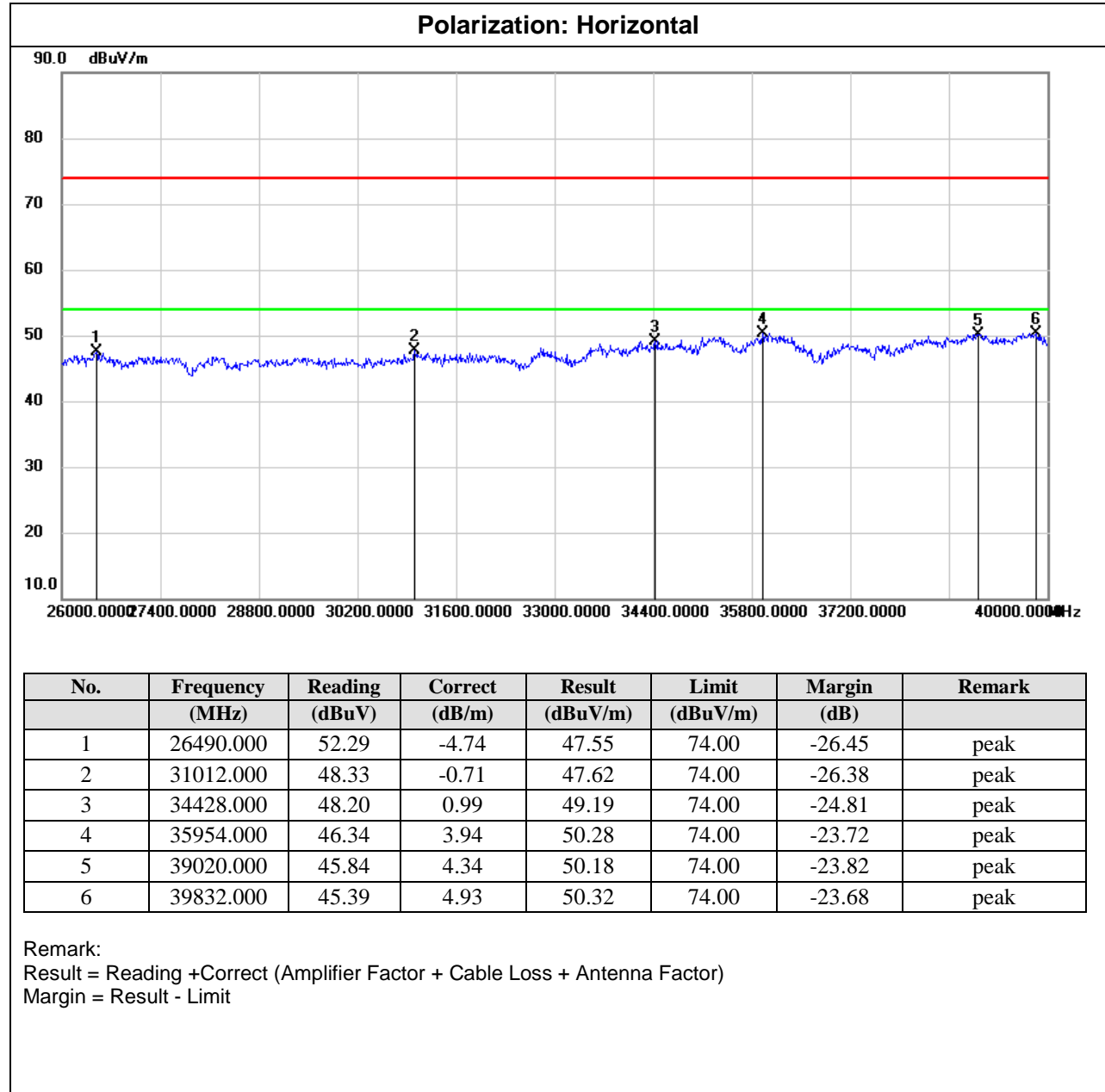
Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz



**END OF REPORT**