




# FCC Test Report

FCC EVALUATION REPORT FOR VERIFICATION	
Project Reference No.	161833
Product	Baby monitor
Brand Name	/
Model	02720ARX
Alternate Model	N/A
Tested according to	FCC Rules and Regulations Part 15 Subpart B Class B 2008, ANSI C63.4-2009

Tested in period	2010-12-19 to 2010-12-24	
Issued date	2010-12-24	
Name and address of the Test House	 Nemko Shanghai Ltd. 7F, No.1 Building, No. 2007 Hong Mei Road, Xuhui district, Shanghai, P.R. China Phone : +86 21 5072 0988                      Fax : +86 21 5072 0950	
Tested by	<i>Zone Peng</i>	2010-12-27
	<b>Zone Peng</b>	<b>date</b>
Verified by	<i>Daria Liu</i>	2010-12-27
	<b>Daria Liu</b>	<b>date</b>

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## 1. Client Information

### 1.1 Applicant

Company Name: **Summer Infant, Inc.**  
Company Address: **582 Great Road  
North Smithfield, RI 02896  
USA**

### 1.2 Manufacturer

Company Name: **Foshan Shunde Alford Electronics Co. Ltd.**  
Company Address: **Xinjiao Industrial Park, Daliang, Shunde, Foshan City,  
Guangdong Province, China**

### 1.3 Scope

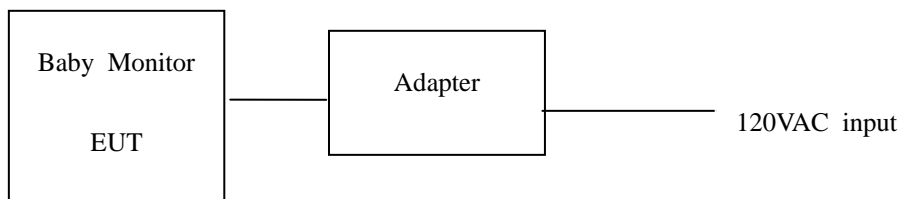
•Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

## 2. Equipment under Test (EUT)

### 2.1 Identification of EUT

Category:	<b>Baby Monitor</b>
Model Name:	<b>02720ARX</b>
Alternate model:	N/A
Brand name:	N/A
Technical data (Rating, etc.):	<b>Input: 120V/60Hz</b> <b>Only RX, no TX</b> <b>Receiver: 910 MHz – 921 MHz</b> HON-KWANG
AC to DC adapter	Model: D75750CEC Input : 120VAC 60Hz Output: 7.5VDC 750mA

### 2.2 Setup drawing



### 2.3 Additional Information Related to Testing

#### Test mode

**TM1 120V~ 60Hz, Rx mode & Channel A, AV out**

**TM2 120V~ 60Hz, Rx mode & Channel B, AV out**

**TM3 120V~ 60Hz, Rx mode & Channel A, Earphone out**

**TM4 120V~ 60Hz, Rx mode & Channel B, Earphone out**

Remark: AV out and Earphone out cannot work together

**Remark: 3 axes of EUT are pretest and Only list worse result in the report**

## 3. General Test Conditions

### 3.1 Location

These measurement tests were conducted at Shenzhen Timeway Technology Consulting Co., Ltd.  
East 5/Block 4, Anhua Industrial Zone, No.8, Tairan Rd. Chegongmiao, Futian District, Shenzhen,  
China—ELA 611

FCC-Registration No.: 899988

IC- Registration No.: IC5205A-01

Note: all test are witnessed by NEMKO engineer

### 3.2 Operating Environment

All tests and measurements were performed in a shielded enclosure or a controlled environment suitable for the tests conducted. The climatic conditions in the test area are automatically controlled and recorded continuously.

Parameters	Recording during test	Accepted deviation
Ambient temperature	20-25°C	15 – 35 °C
Relative humidity	45-55%	30 - 60%
Atmospheric pressure	101.2 kPa -101.3kPa	86-106kPa

### 3.3 Operating During Test

- The EUT is operated at 120V a.c. 60Hz during all tests.

### 3.4 Test Equipment

The test equipments used in testing are calibrated on a regular basis. For most of the testing equipments accredited calibration is conducted once a year. For certain equipment the calibration interval is longer. Between the calibrations all test equipment are controlled and verified on a regular basis. The test equipments used are defined in each test section of this report.

AE equipment:

Earphone : FCCVOC

## 4. Measurement Uncertainty

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95 %.

No.	Item	Uncertainty	Remark
1	Conducted Emission Test	3.6dB	
2	Radiated Emission Test	4.7dB	3m chamber



### 5. Conducted Emission (150 KHz to 30 MHz)

#### 5.1 Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network. This provided a 50-ohm coupling impedance for the EUT (Please refer to the test setup photographs). The other peripheral devices power cord connected to the power mains through another line impedance stabilization network.

Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2009 on conducted Emission test.

The bandwidth of test receiver is set at 9kHz. The frequency range from 150kHz to 30MHz is checked. The test result are reported as below.

#### 5.2 Measurement Equipment

	Equipment	Last Calibration	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	EMI Receiver	2010.5.14	ESH3	860905/006	R & S
<input checked="" type="checkbox"/>	Spectrum Analyzer	2010.5.14	ESA-L1500A	US37451154	R & S
<input checked="" type="checkbox"/>	PULSE LIMITER	2010.5.14	ESH3-Z2	100281	R & S
<input checked="" type="checkbox"/>	LISN	2010.5.14	ESH3-Z5	100294	R & S

#### 5.3 Test Result

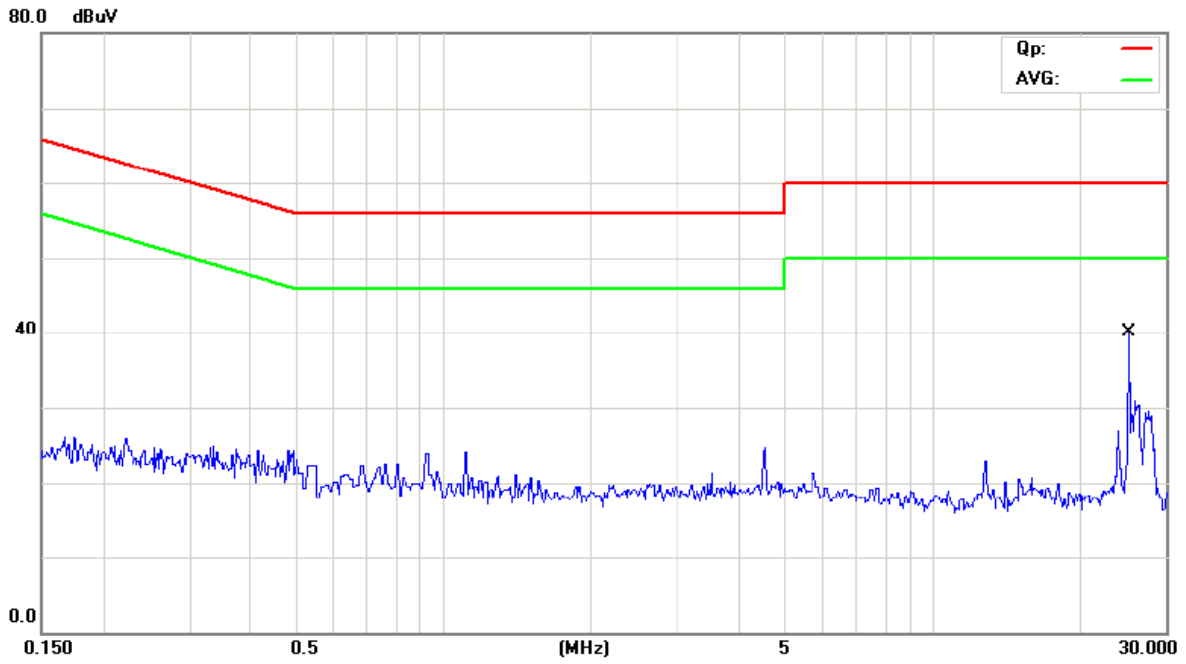
Model	Test mode	Power Line	Test Data	Test Result
02720ARX	TM3	Line	Diagram 001	Pass
		Neutral	Diagram 002	Pass

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.
2. All modes of operation were investigated and the worst -case emission are reported. See attached Plots.
3. Correct factor = LISN Factor + Cable Loss
4. The limit for Class B device is on the FCC Part section 15.107(a).
6. If PK value is lower than AV limit then no reading value listed in report .If QP value is Lower than AV limit ,then AV value don't listed in report.
7. By pre-scan, TM3(Rx Mode & Channal A, earphone out) is the worse mode, only list the worse mode in this report.

### 5.3.3 Diagram 001

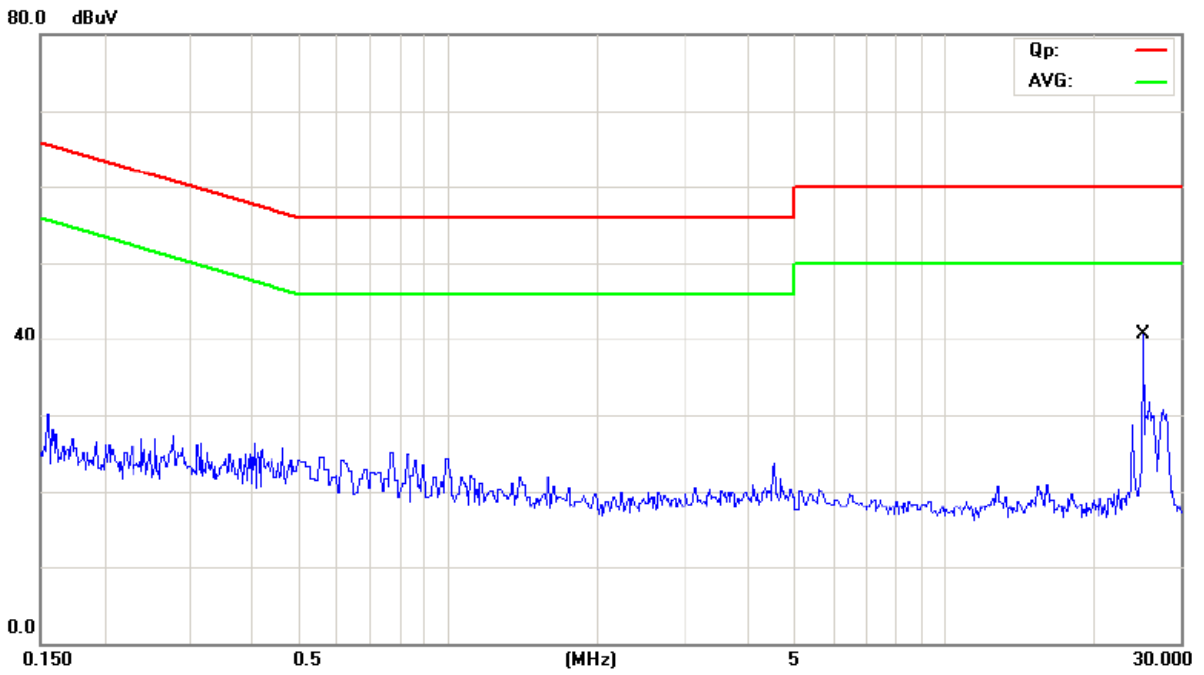
Model: 02720ARX, Test Mode: TM3, Line: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		25.1750	33.30	11.40	44.70	60.00	-15.30	QP
2	*	25.1750	30.70	11.40	42.10	50.00	-7.90	AVG

### 5.3.4 Diagram 002

Model: 02720ARX, Test Mode: TM3, Line: N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV	dBuV	dB	
1		25.1747	29.50	11.40	40.90	60.00	-19.10	QP
2	*	25.1747	31.00	11.40	42.40	50.00	-7.60	AVG



## 6. Radiated Electromagnetic Disturbances

### 6.1 Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m or 10m from the EUT on an adjustable mast.

The EUT were rotated 0 to 360 degree and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. The test result are reported as below.

For below 1GHz

RBW=120 kHz; VBW=300KHz.The frequency range from 30MHz to 1000MHz is checked.

For above 1GHz

RBW=1MHz ; VBW=1MHz,PK detector for peak emissions measurement above 1GHz

RBW=1MHz ; VBW=10Hz, PK detector for average emissions measure above 1GHz

### 6.2 Measurement Equipment

	Equipment	Last Calibration	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Spectrum Analyzer	2010-5-14	FSEM	848597、001	RS
<input checked="" type="checkbox"/>	Ultra Broadband ANT	2010-5-14	VULB9163	9163/340	Schwarebeck
<input checked="" type="checkbox"/>	Pre-amplifier	2010-5-14	8447D	2727A05017	HP
<input checked="" type="checkbox"/>	Pre-amplifier	2010-5-14	EM30265	2727A05017	EM
<input checked="" type="checkbox"/>	Signal Generator	2010-5-14	8657B	3208U02589	HP
<input checked="" type="checkbox"/>	Horn Antenna	2010-5-14	BBHA9120D	1201	Schwarebeck

### 6.3 Test Result

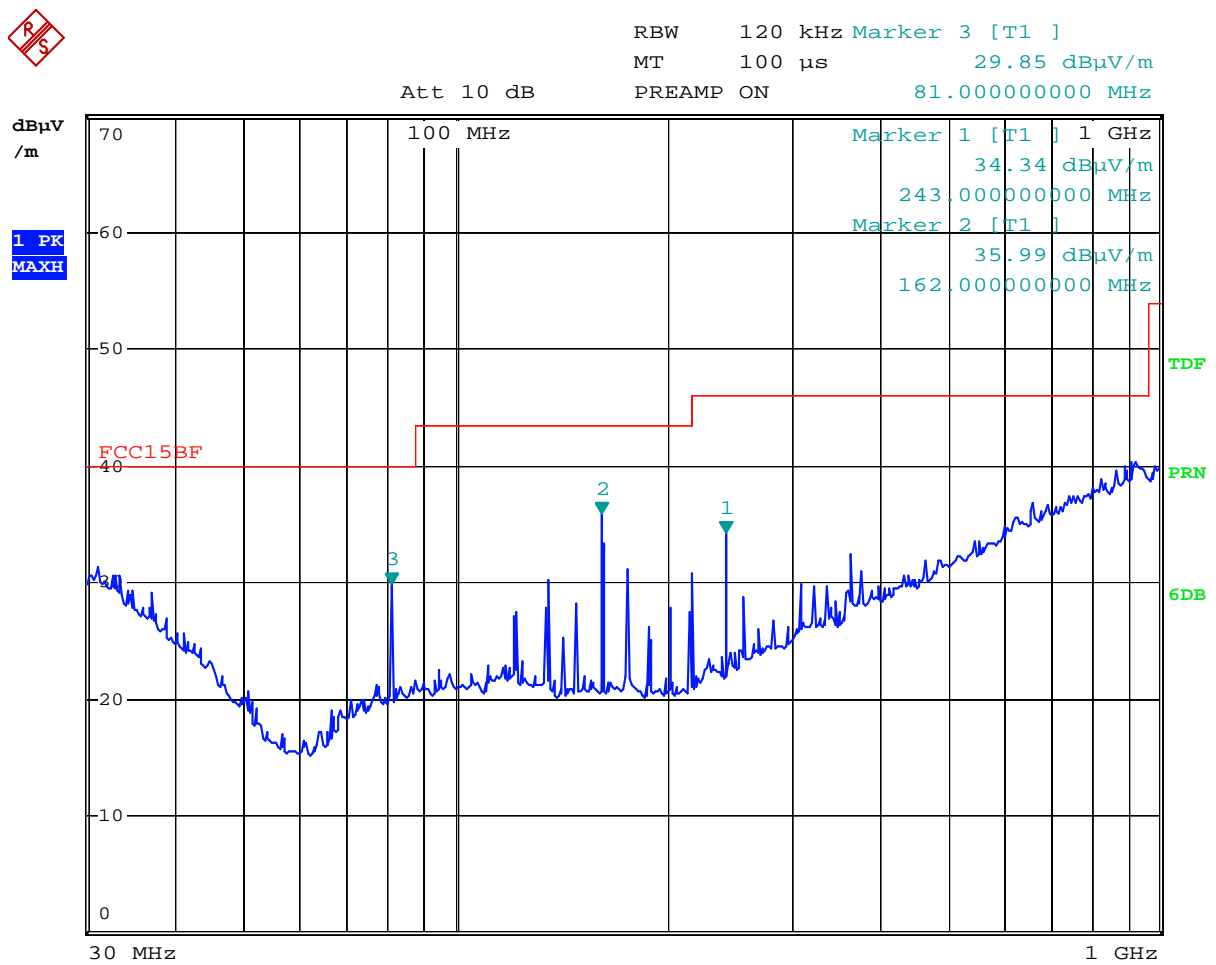
Model	Test mode	Frequency range	Antenna Polarity	Test Data	Test Result
02720ARX	TM1	30MHz~1GHz 3m test distance	Horizontal	Diagram 003	Pass
			Vertical	Diagram 004	Pass
	TM2	30MHz~1GHz 3m test distance	Horizontal	Diagram 005	Pass
			Vertical	Diagram 006	Pass
	TM3	30MHz~1GHz 3m test distance	Horizontal	Diagram 007	Pass
			Vertical	Diagram 008	Pass
	TM4	30MHz~1GHz 3m test distance	Horizontal	Diagram 009	Pass
			Vertical	Diagram 010	Pass
	TM1	1GHz~5GHz 3m test distance	Horizontal	Diagram 011	Pass
			Vertical	Diagram 012	Pass
	TM2	1GHz~5GHz 3m test distance	Horizontal	Diagram 013	Pass
			Vertical	Diagram 014	Pass
	TM3	1GHz~5GHz 3m test distance	Horizontal	Diagram 015	Pass
			Vertical	Diagram 016	Pass
	TM4	1GHz~5GHz 3m test distance	Horizontal	Diagram 017	Pass
			Vertical	Diagram 018	Pass

NOTES:

- 1.All modes were measured and the worst case emission was reported.
- 2.Measurements using CISPR quasi-peak mode.
3. The limit for Class B device is on the FCC Part section 15.109(a).
- 4: If the PK value is lower than AV limit ,then AV value is deemed to comply with AV limit too .

6.3.1 Diagram 003

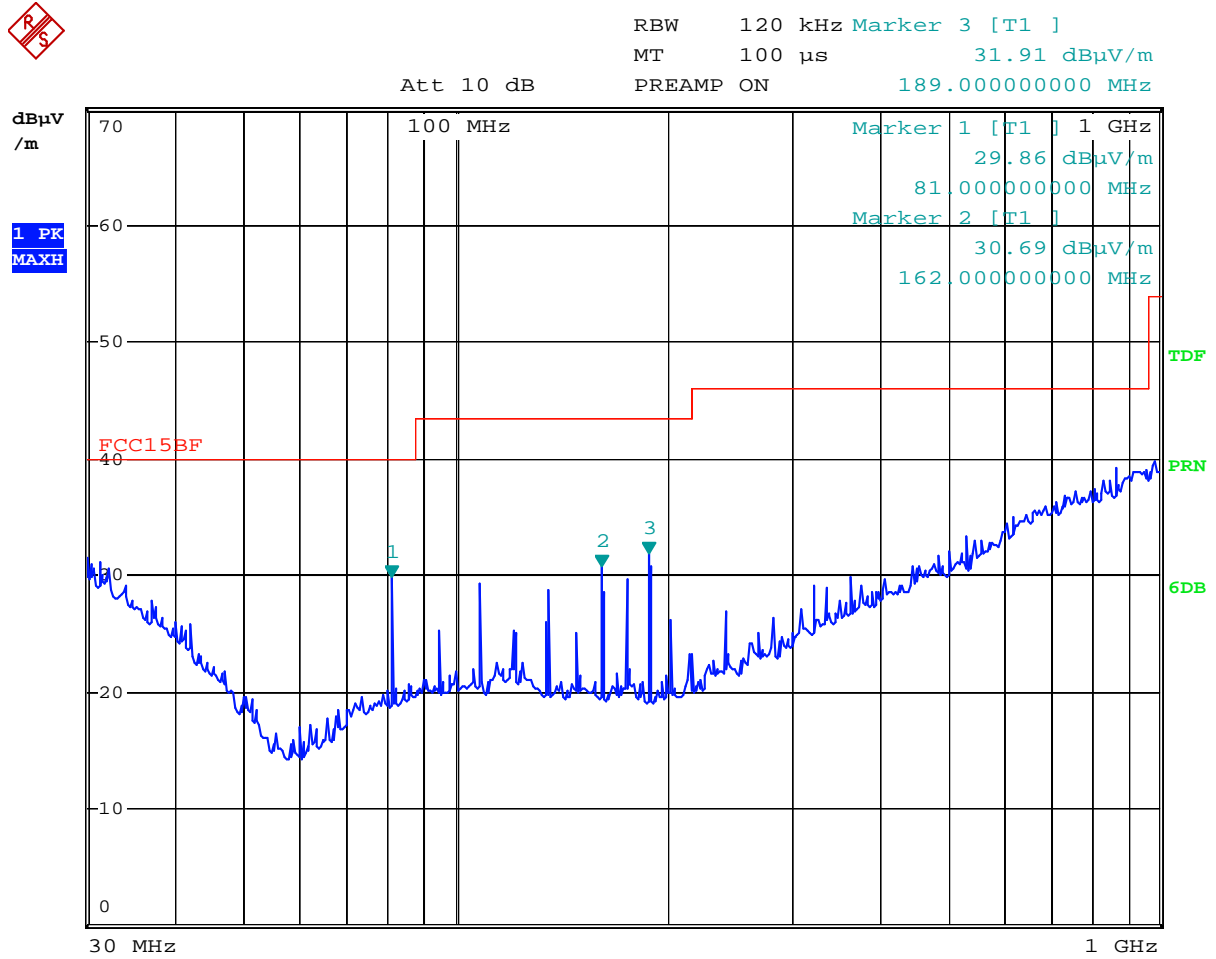
Model: 02720ARX, Test Mode: TM1, Frequency Range: 30MHz-1GHz Horizontal



Date: 24.DEC.2010 08:21:37

**6.3.2 Diagram 004**

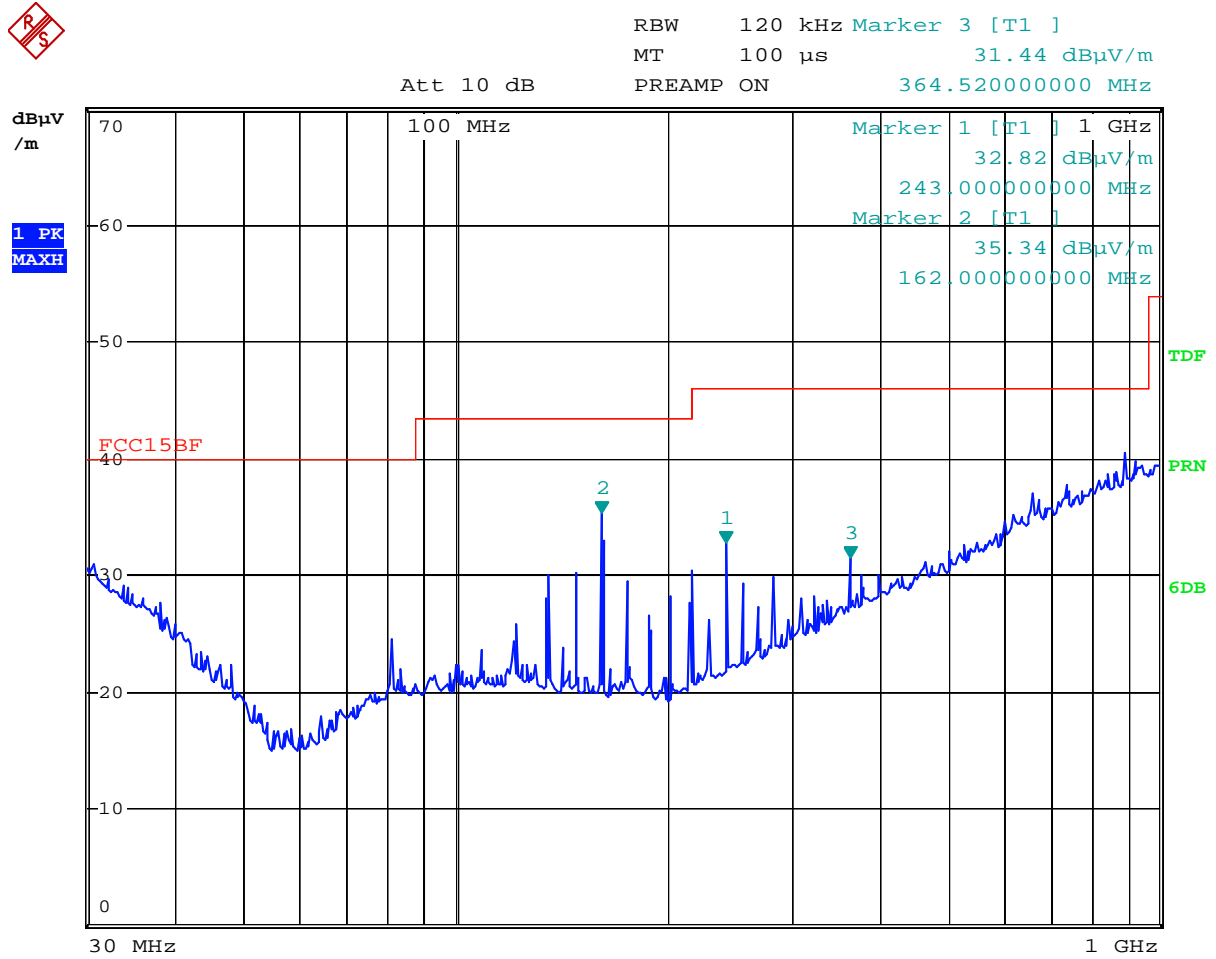
Model: 02720ARX, Test Mode: TMI, Frequency Range: 30MHz-1GHz Vertical



Date: 24.DEC.2010 08:25:53

**6.3.3 Diagram 005**

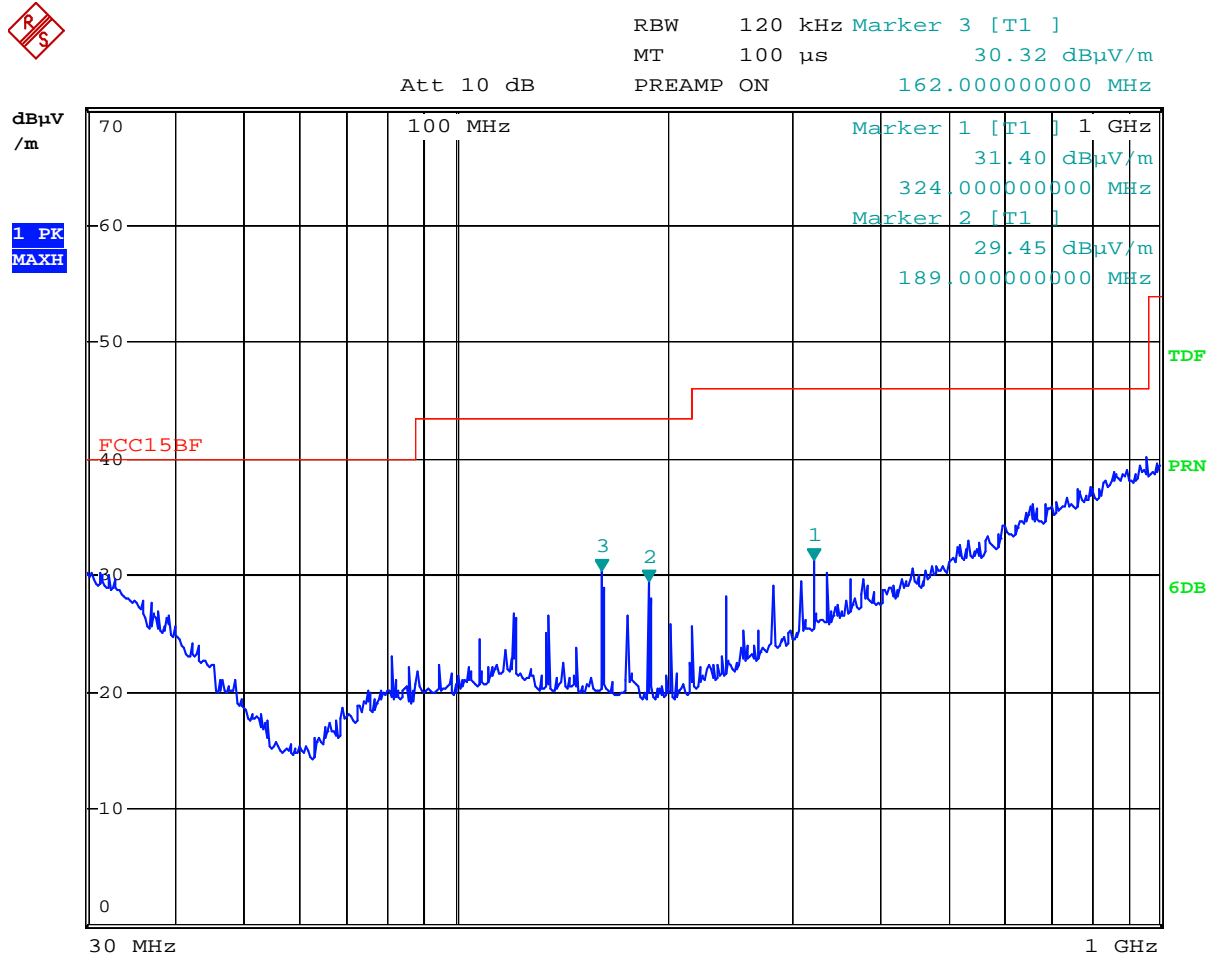
Model: 02720ARX, Test Mode: TM2, Frequency Range: 30MHz-1GHz Horizontal



Date: 24.DEC.2010 12:49:28

**6.3.4 Diagram 006**

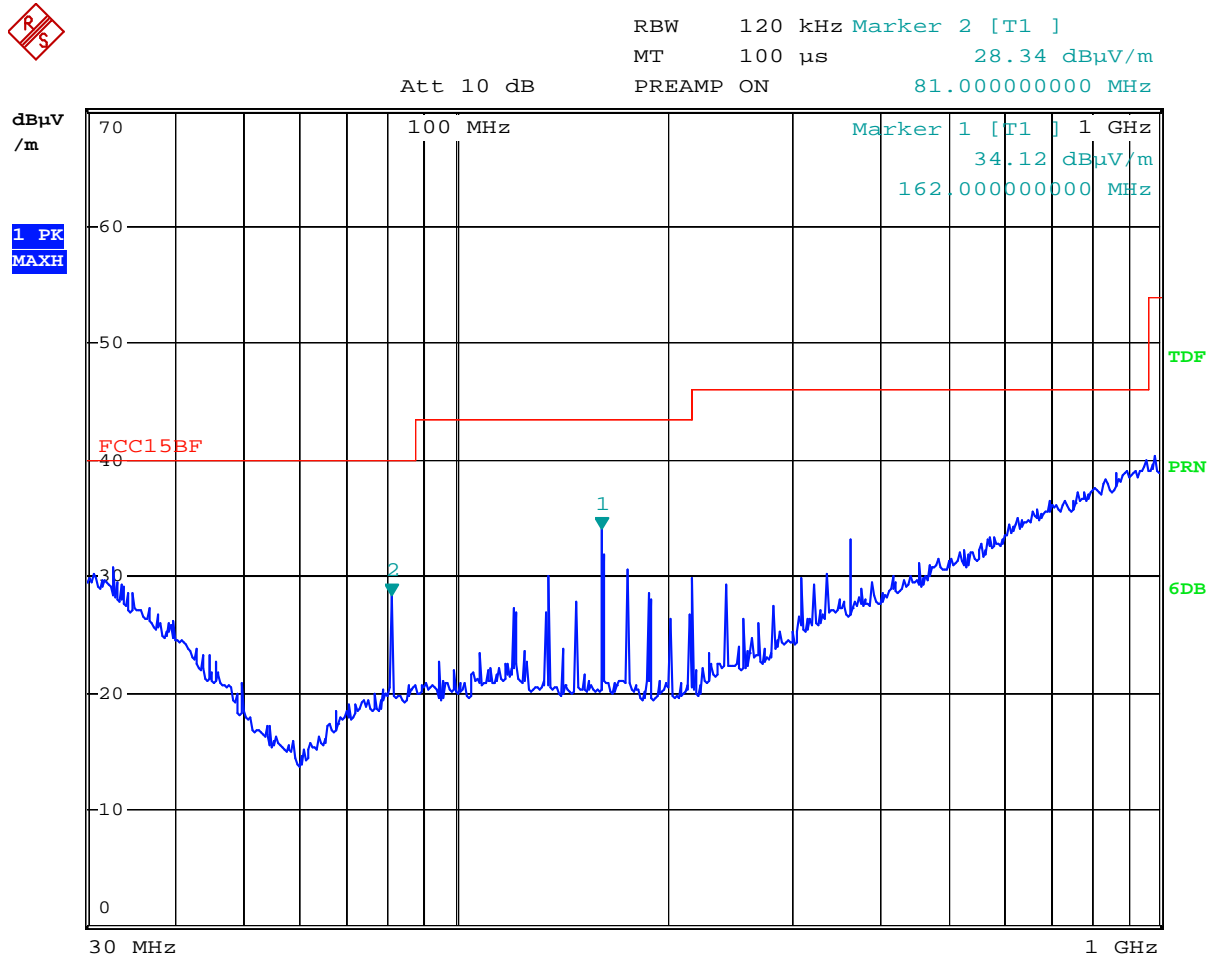
Model: 02720ARX, Test Mode: TM2, Frequency Range: 30MHz-1GHz Vertical



Date: 24.DEC.2010 12:46:15

### 6.3.5 Diagram 007

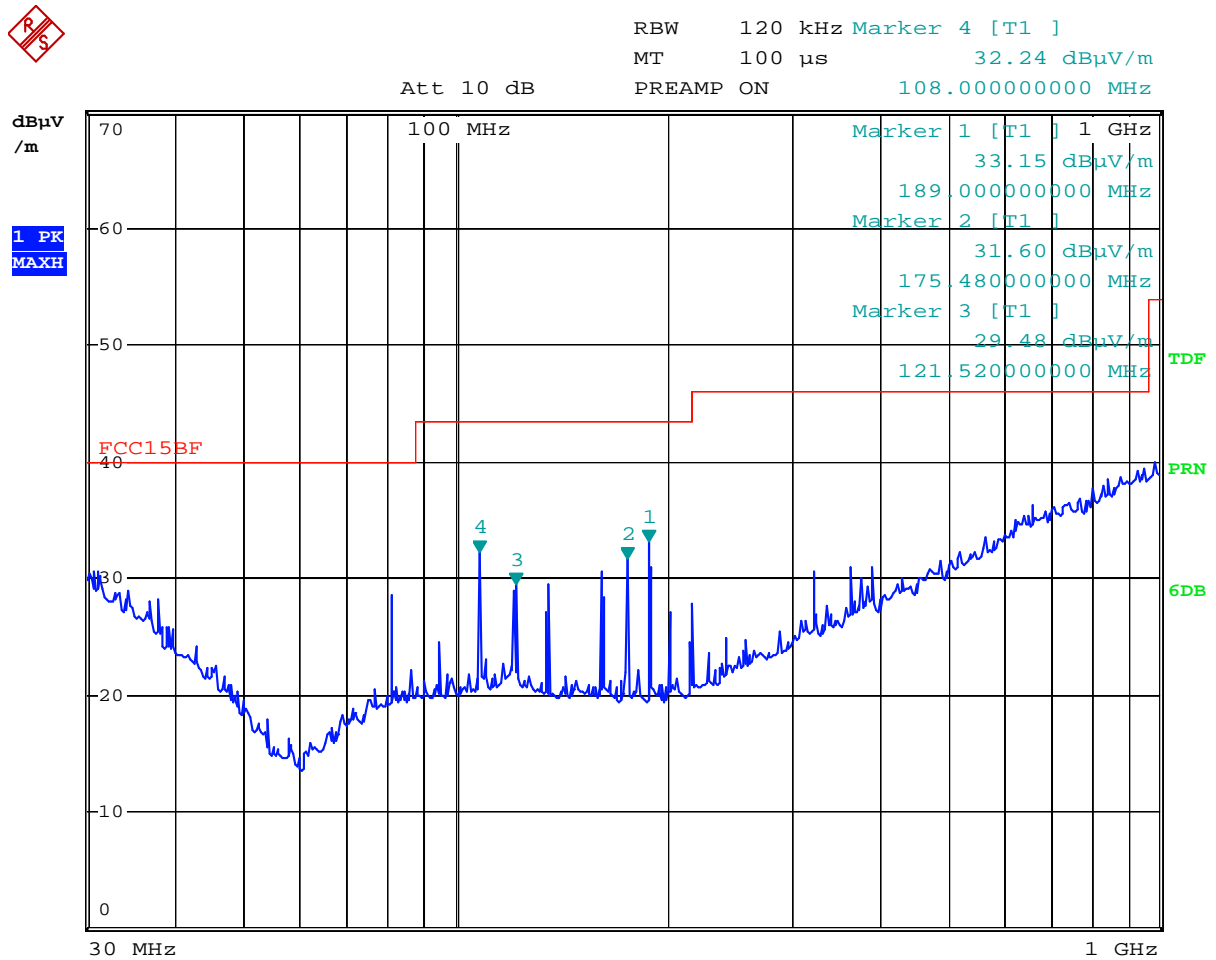
Model: 02720ARX, Test Mode: TM3, Frequency Range: 30MHz-1GHz Horizontal



Date: 24.DEC.2010 08:32:50

### 6.3.6 Diagram 008

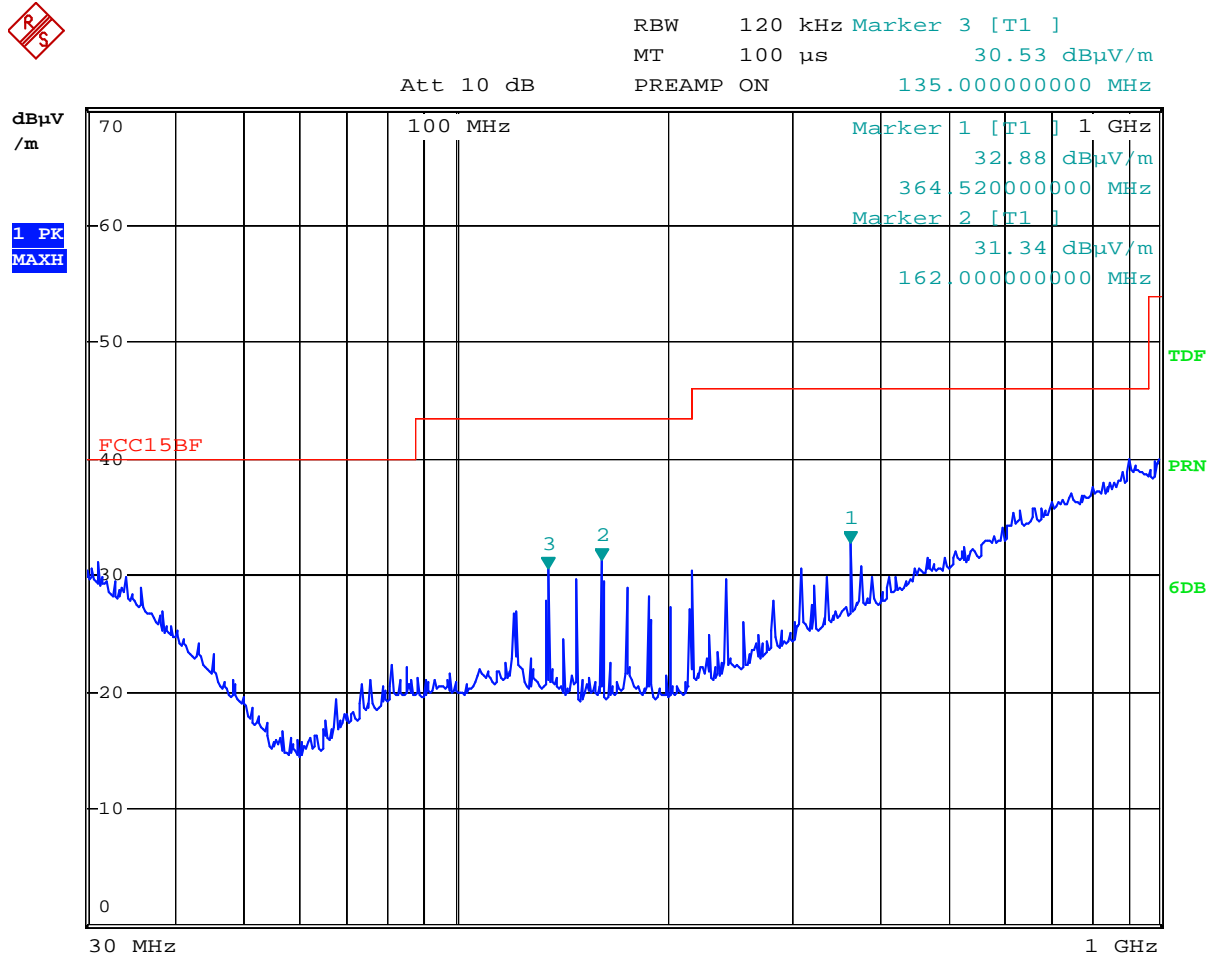
Model: 02720ARX, Test Mode: TM3, Frequency Range: 30MHz-1GHz Vertical



Date: 24.DEC.2010 08:29:39

### 6.3.7 Diagram 009

Model: 02720ARX, Test Mode: TM4, Frequency Range: 30MHz-1GHz Horizontal

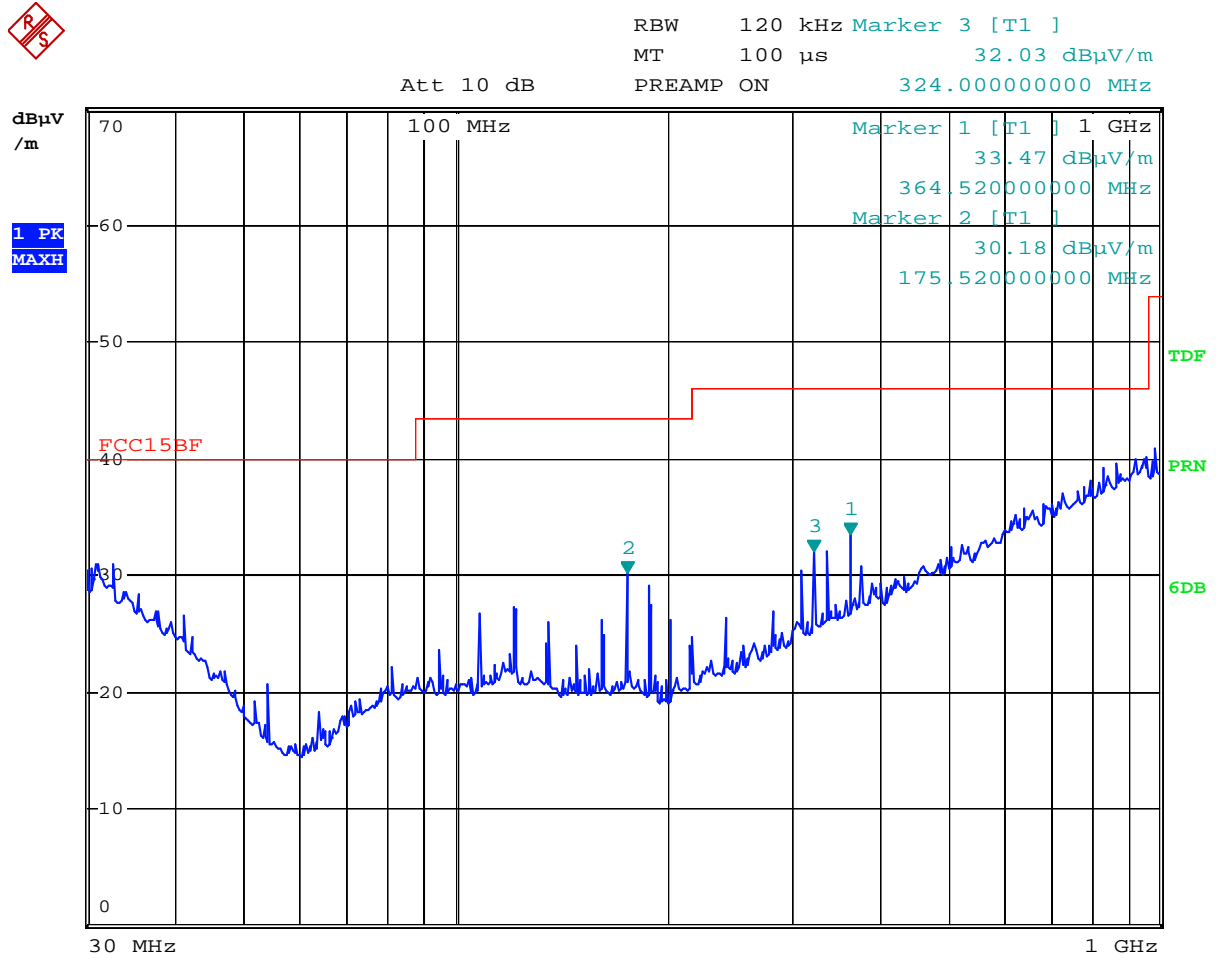


Date: 24.DEC.2010 12:37:53



**6.3.8 Diagram 010**

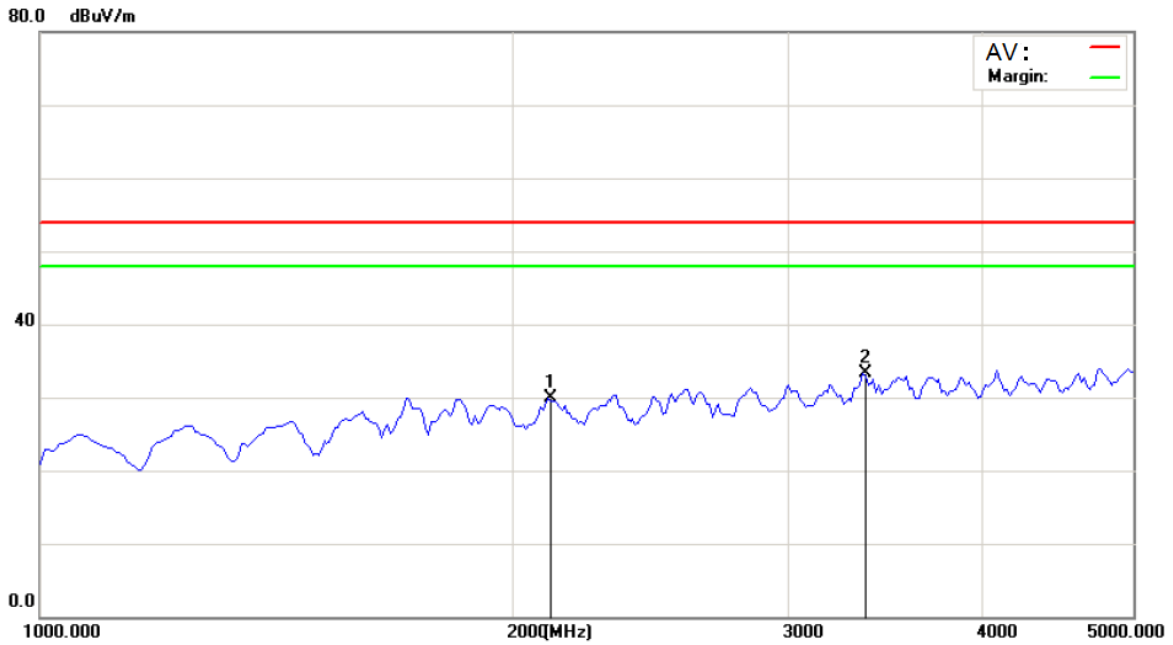
Model: 02720ARX, Test Mode: TM4, Frequency Range: 30MHz-1GHz Vertical



Date: 24.DEC.2010 12:41:09

### 6.3.1 Diagram 011

Model: 02720ARX, Test Mode: TMI, Frequency Range: 1GHz-5GHz Horizontal

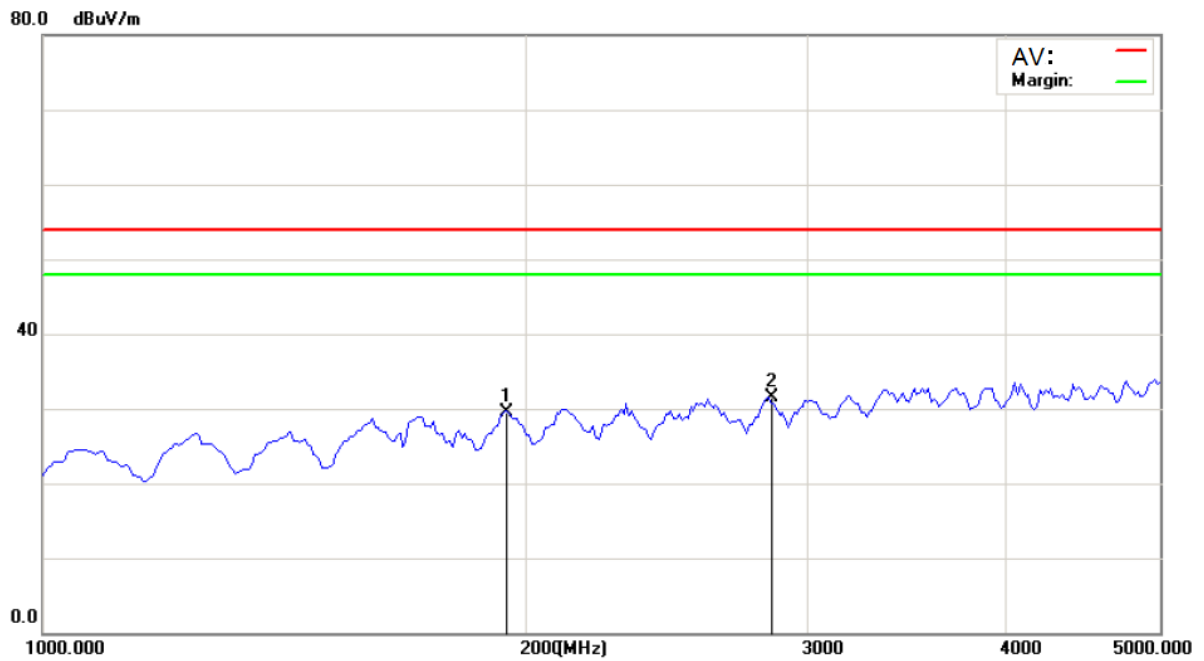


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	2120.000	29.82	74	Horizontal
2	3360.000	33.34	74	Horizontal

### 6.3.2 Diagram 012

Model: 02720ARX, Test Mode: TMI, Frequency Range: 1GHz-5GHz Vertical

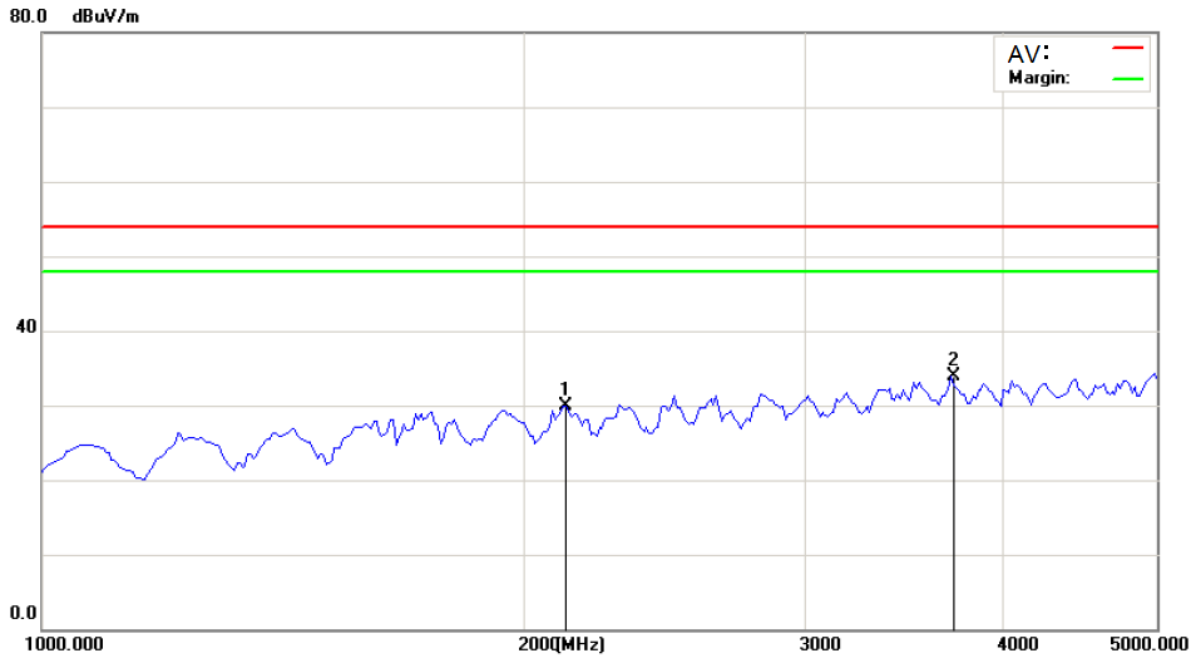


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	1950.170	29.60	74	Vertical
2	2850.000	31.55	74	Vertical

### 6.3.3 Diagram 013

Model: 02720ARX, Test Mode: TM2, Frequency Range: 1GHz-5GHz Horizontal

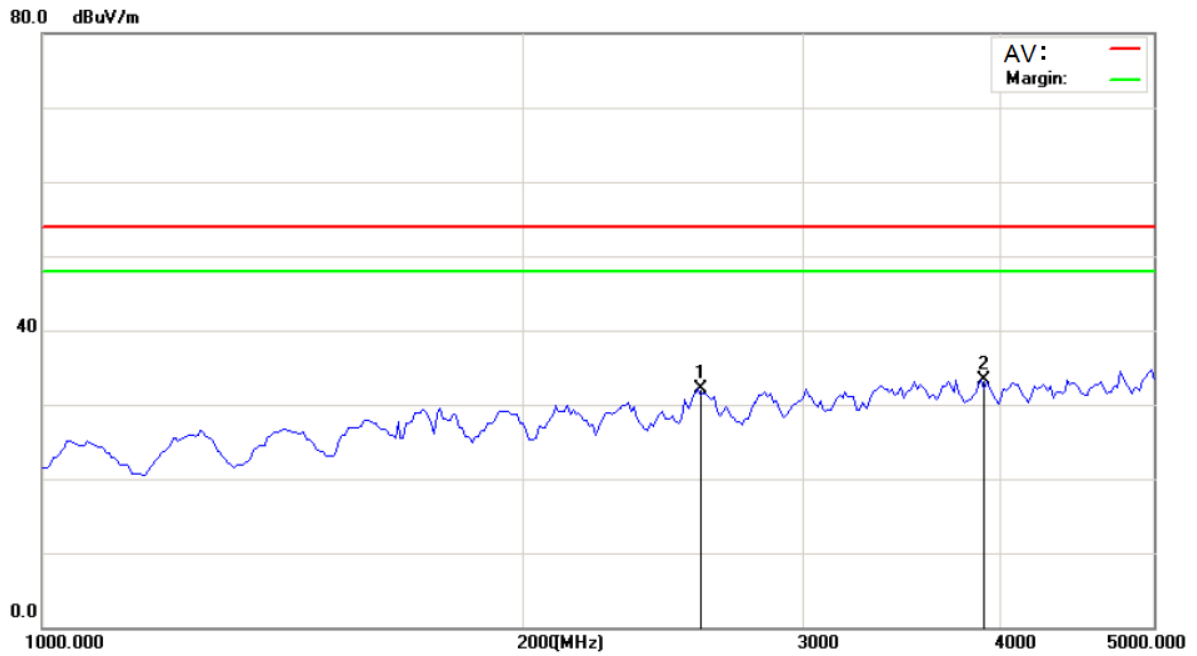


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	2130.000	29.83	74	Horizontal
2	3720.000	33.82	74	Horizontal

### 6.3.4 Diagram 014

Model: 02720ARX, Test Mode: TM2, Frequency Range: 1GHz-5GHz Vertical

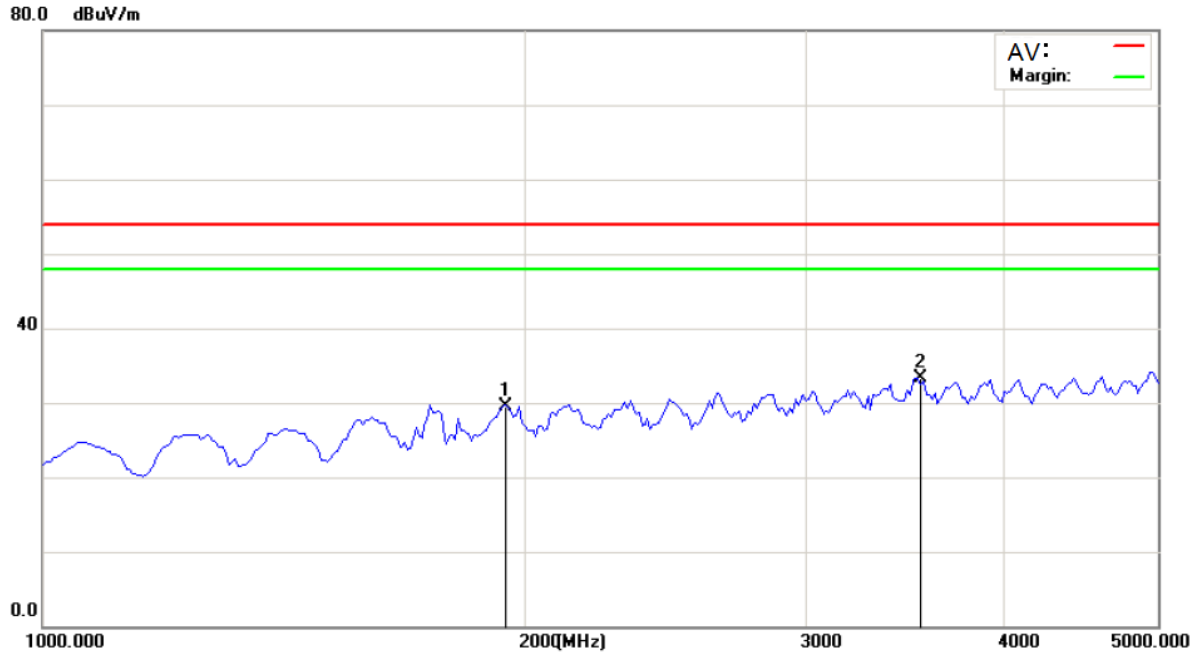


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	2590.000	32.01	74	Vertical
2	3900.000	33.37	74	Vertical

### 6.3.5 Diagram 015

Model: 02720ARX, Test Mode: TM3, Frequency Range: 1GHz-5GHz Horizontal

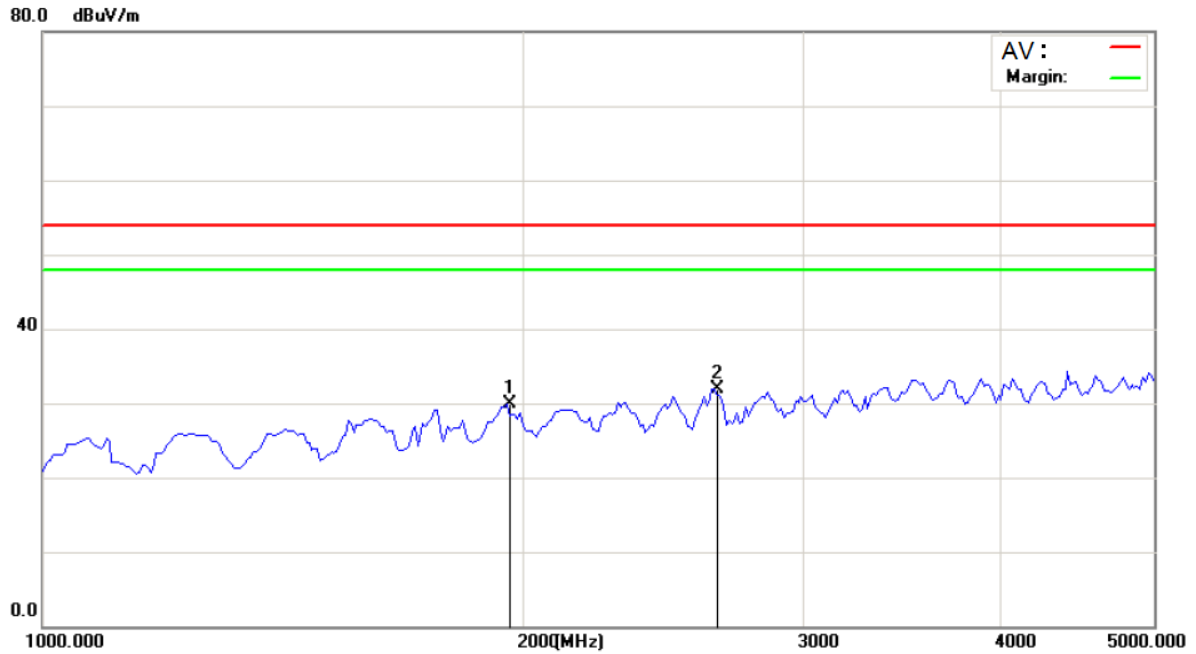


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	1950.170	29.60	74	Horizontal
2	3550.000	33.40	74	Horizontal

### 6.3.6 Diagram 016

Model: 02720ARX, Test Mode: TM3, Frequency Range: 1GHz-5GHz Vertical

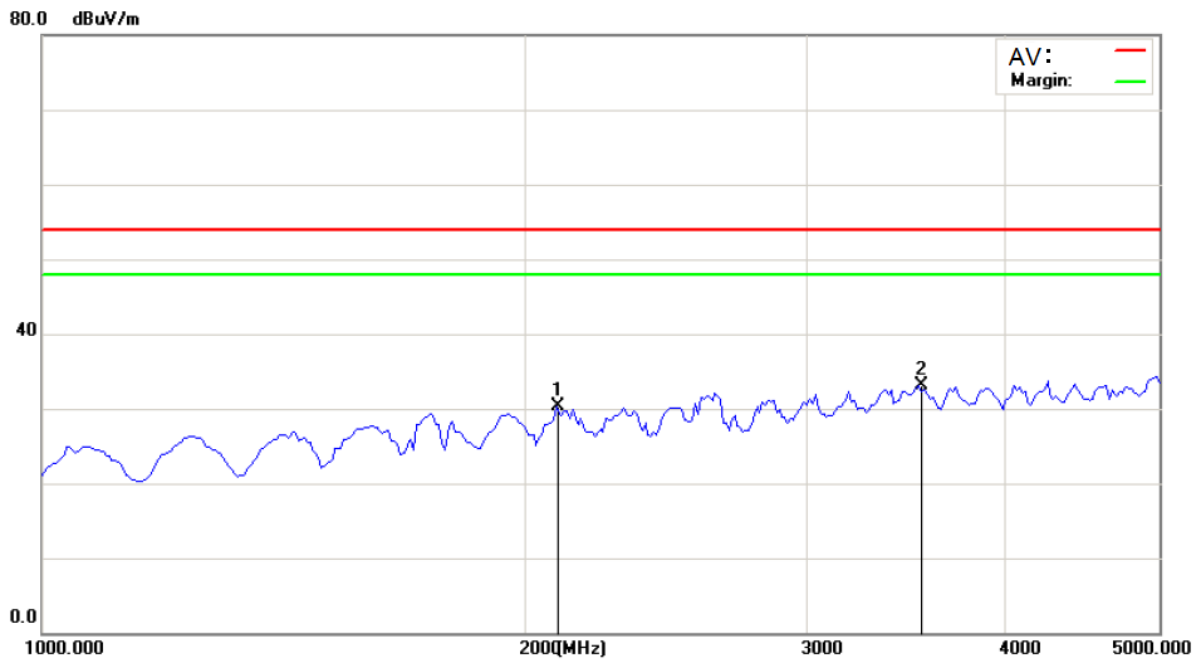


**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	1960.000	29.85	74	Vertical
2	2650.000	31.87	74	Vertical

### 6.3.7 Diagram 017

Model: 02720ARX, Test Mode: TM4, Frequency Range: 1GHz-5GHz Horizontal



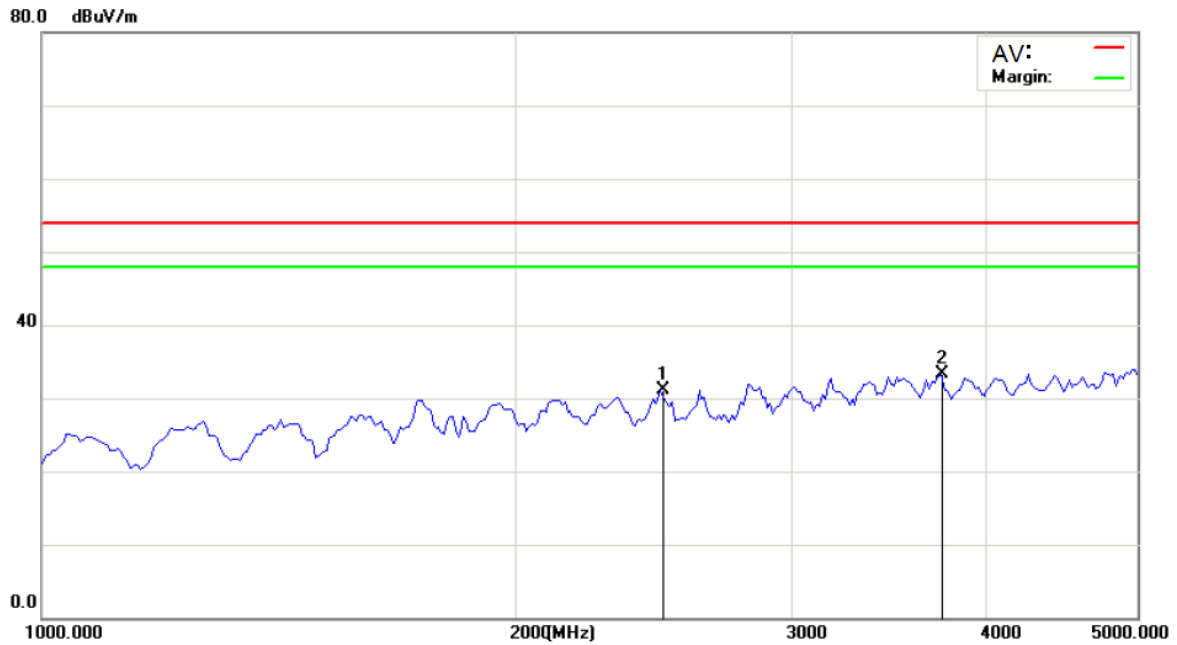
**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	2100.000	30.36	74	Horizontal
2	3550.000	33.12	74	Horizontal



### 6.3.8 Diagram 018

Model: 02720ARX, Test Mode: TM4, Frequency Range: 1GHz-5GHz Vertical



**Measurement Result:**

Marker	Frequency MHz	Peak Measurement dBuV/m	Limit dBuV/m	Polarization
1	2490.000	31.05	74	Vertical
2	3750.000	33.34	74	Vertical



## Appendix A Sample Label

### Labelling Requirements

The sample label shown shall be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time of purchase.

\*\*\* The following paragraph specified in the user manual.

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.