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Report No.: GTI20150712F-1

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# TEST REPORT

**Product Name** .....: WLAN 11b/g/n MINI PCI - E MODULE

**Trademark** .....: /

**Model/Type reference** .....: BL-LW08-5

**Listed Model(s)** .....: /

**FCC ID**.....: YVK-BL-LW08-5

**Test Standards** .....: **FCC Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz**

**Applicant** .....: QVS Marketing Inc

**Address of applicant** .....: 2030 East Dimple Dell Road, Sandy, Utah, United States,  
84092

**Date of Receipt** .....: Dec. 01, 2015

**Date of Test Date**.....: Dec. 02, 2015 - Jan. 07, 2015

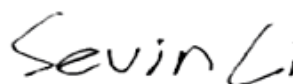
**Data of issue.** .....: Jan. 07, 2016

<b>Test result</b>	<b>Pass *</b>
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\* In the configuration tested, the EUT complied with the standards specified above

GENERAL DESCRIPTION OF EUT	
Equipment:	WLAN 11b/g/n MINI PCI - E MODULE
Model Name:	BL-LW08-5
Manufacturer:	Shenzhen Bilian Electronic Co., Ltd.
Manufacturer Address:	Building B1, Zhongxing Industrial Zone, Juling, Jutang Community, Guanlan street, Bao'an, Shenzhen, Guangdong, P.R.China
Power Rating:	DC 3.3V

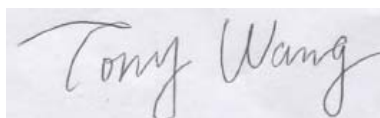
Compiled By:



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(Sevin Li)

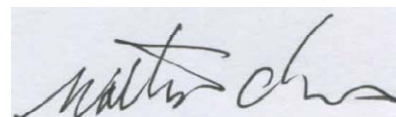
Reviewed By:



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(Tony Wang)

Approved By:



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(Walter Chen)

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# 1. SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices

[KDB558074 D01 V03r03](#): Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

[KDB662911 D01 Multiple Transmitter Output v02r01](#): Emissions Testing of Transmitters with Multiple Outputs in the Same Band

## 1.2. Test Description

FCC PART 15 15.247		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(2)	6dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF Conducted Emission	PASS
FCC Part 15.247(b)	Maximum Conducted Output Power	PASS
FCC Part 15.247(e)	Power Spectral Density	PASS
FCC Part 15.205/ 15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band Edge	PASS
FCC Part 15.203/15.247 (b)	Antenna Requirement	PASS

Remark: The measurement uncertainty is not included in the test result.

### 1.3. Test Facility

#### 1.3.1 Address of the test laboratory

**Shenzhen General Testing & Inspection Technology Co., Ltd.**

Add: 1F, 2 Block, Jiaquan Building, Guanlan High-tech Park Baoan District, Shenzhen, Guangdong, China

#### 1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

##### IC Registration No.: 9783A

The 3m alternate test site of Shenzhen GTI Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Aug, 2011.

##### FCC-Registration No.: 214666

Shenzhen GTI Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 214666, Sep 19, 2011

### 1.4. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements and is documented in the Shenzhen General Testing & Inspection Technology Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for General Testing & Inspection laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-40 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	-----	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

## 2. GENERAL INFORMATION

### 2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

### 2.2. General Description of EUT

Product Name:	WLAN 11b/g/n MINI PCI - E MODULE
Model/Type reference:	BL-LW08-5
Power supply:	DC 3.3V
Hardware version:	BL-R8192RA1 VER1.0
Software version:	Version 700.1658.813.2013
<b>WIFI :</b>	
Supported type:	802.11b/802.11g/802.11n(HT20)/802.11n(H40)
Modulation:	802.11b: DSSS 802.11g/802.11n(HT20)/802.11n(HT40): OFDM
Modulation type:	802.11b: BPSK/QPSK/CCK 802.11g/802.11n(HT20)/802.11n(HT40): BPSK/QPSK/16QAM/64QAM
Operation frequency:	802.11b/802.11g/802.11n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n(HT20): 11 802.11n(HT40): 7
Antenna port:	Ant1, Ant2
Antenna style:	External Antenna
Smart system:	SISO (For 802.11b/g/n-HT20/n-HT40) MIMO (For 802.11n20/40) 2TX & 2RX
Antenna gain:	Ant1: 2dBi Max Ant2: 2dBi Max

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

### 2.3. Description of Test Modes

**Peripherals Devices:**

No.	Product	Manufacturer	Serial No.	Certification
1	PC	Lenovo	H435	DOC
2	PC Power Supply	Bestec	ATX-250-12Z	DOC
3	Display	DELL	U2412M	DOC
4	Mouse	DELL	N889	DOC
5	Keyboard	DELL	SK-8185	DOC
6	PCI auxiliary tool	BILIAN	PCI001	/

**Note:** All the above equipment /cable were placed in worse case position to maximize emission signals during emission test.

**WIFI Operation Frequency**

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) mode for testing.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

**Data Rate Used:**

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

802.11b	IEEE 802.11b with data rate of 1Mbps using SISO mode
802.11g	IEEE 802.11g with data rate of 6Mbps using SISO mode
802.11n20	IEEE 802.11n20 with data rate of MSC0 using SISO mode of for bandwidth 20MHz
802.11n40	IEEE 802.11n40 with data rate of MSC0 using SISO mode for bandwidth 40MHz
802.11n20 MIMO	IEEE 802.11n20 with data rate of MSC8 using MIMO mode for bandwidth 20MHz
802.11n40 MIMO	IEEE 802.11n40 with data rate of MSC8 using MIMO mode for bandwidth 40MHz

Measurement Instruments List

Maximum Peak Output Power					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487B	110553	July 10,2016
2	Power Sensor	Anritsu	MA2411B	100345	July 10,2016

Power Spectral Density / 6dB Bandwidth / Band Edge Compliance of RF Emission / Spurious RF Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSU26	100105	Jan 07,2016

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrate until
1	LISN	R&S	ENV216	101112	Jan. 07, 2016
2	LISN	R&S	ENV216	101113	Jan. 07, 2016
3	EMI Test Receiver	R&S	ESCI	100920	Jan. 07, 2016
4	Cable	Schwarzbeck	AK9515E	33156	Jan. 07, 2016

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100658	Jan 07,2016
2	High pass filter	micro-tranics	HPM50111	34202	Jan 07,2016
3	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Jan 07,2016
4	Ultra-Broadband Antenna	ShwarzBeck	BBHA9170	25841	Jan. 10,2016
5	Loop Antenna	LAPLAC	RF300	9138	Jan. 10,2016
6	Spectrum Analyzer	Rohde & Schwarz	FSU	100105	Jan 07,2016
7	Horn Antenna	Schwarzbeck	BBHA 9120D	647	Jan 14,2016
8	Pre-Amplifier	HP	8447D	1937A03050	Jan. 07,2016
9	Pre-Amplifier	EMCI	EMC05183 5	980075	Jan. 07,2016
10	Antenna Mast	UC	UC3000	N/A	N/A
11	Turn Table	UC	UC3000	N/A	N/A
12	Cable Below 1GHz	Schwarzbeck	AK9515E	33155	Jan. 07,2016
13	Cable Above 1GHz	Hubersuhner	SUCOFLEX1 02	DA1580	Jan. 07,2016

Note: 1. The Cal.Interval was one year.

2. The cable loss has calculated in test result which connection between each test instruments.



### 3. TEST CONDITIONS AND RESULTS

#### 3.1. Conducted Emission (AC Main)

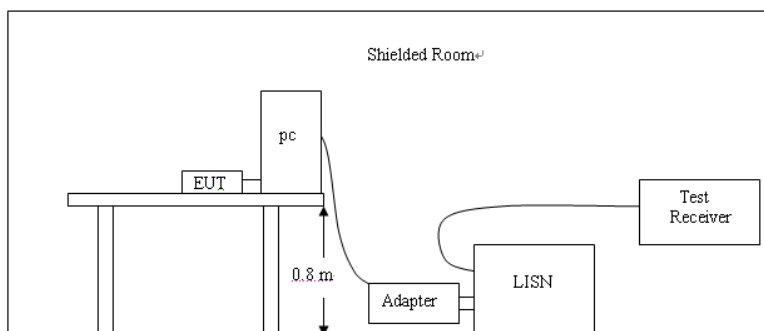
##### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

##### **TEST CONFIGURATION**



##### **TEST PROCEDURE**

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user’s manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013
4. The EUT received DC3.3V power from the PC, the PC received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

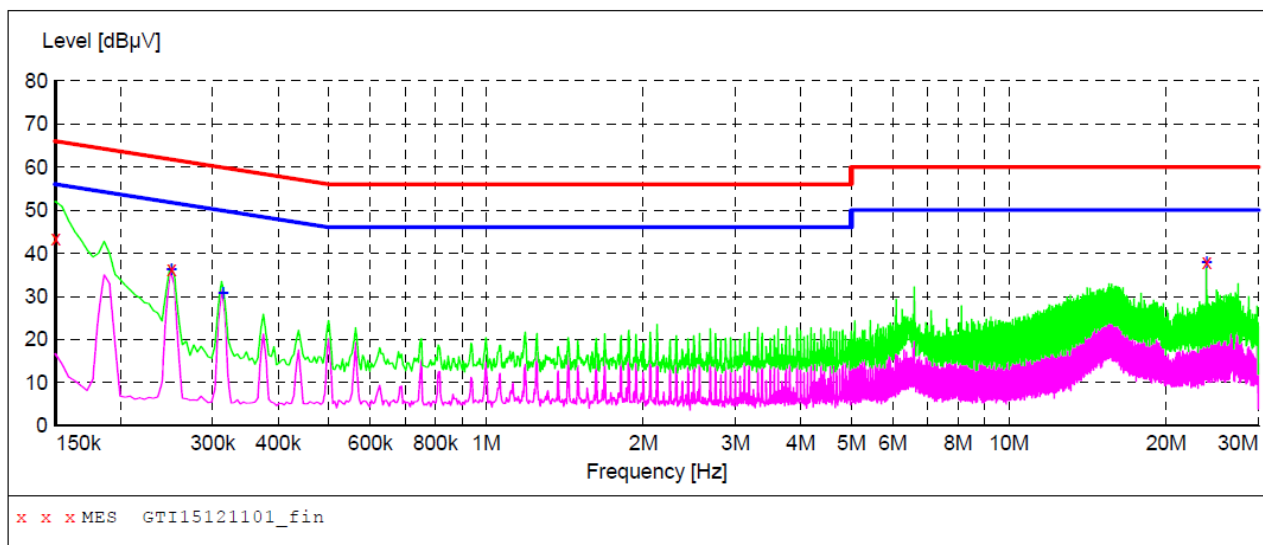
##### **TEST RESULTS**

**Note:** We tested all modes, recorded the worst case at wifi SISO-Ant1 802.11b low channel mode

LINE	L
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**SCAN TABLE: "Vo1 (9K-30M) FIN-N"**

Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "GTI15121101\_fin"**

12/11/2015 10:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	43.40	9.8	66	22.6	QP	L1	GND
0.250000	36.40	9.7	62	25.4	QP	L1	GND
23.888000	37.80	11.1	60	22.2	QP	L1	GND

**MEASUREMENT RESULT: "GTI15121101\_fin2"**

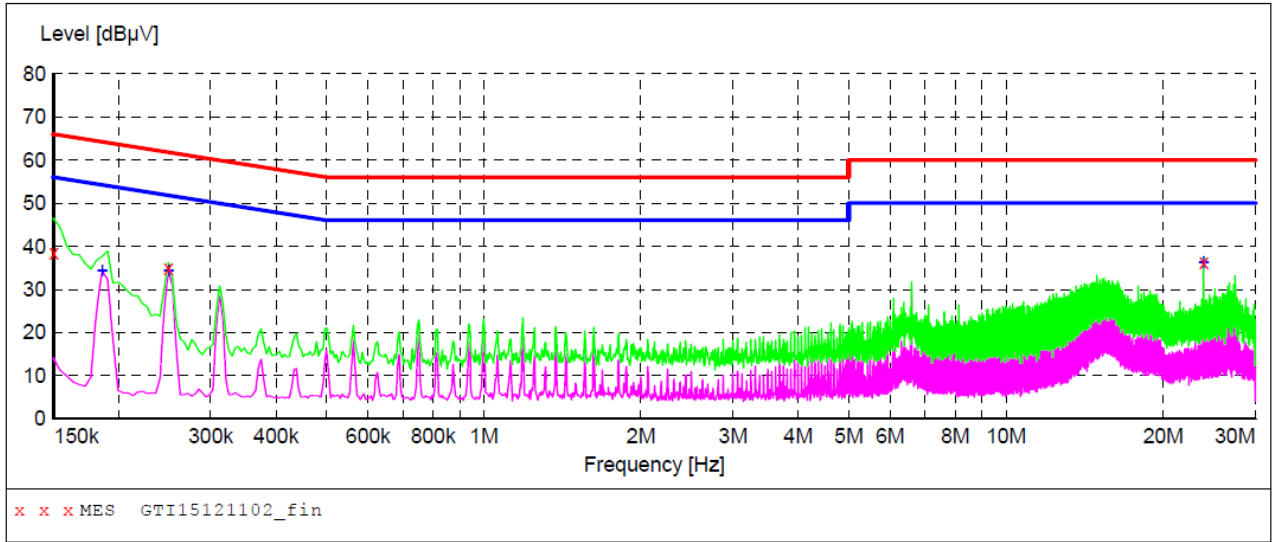
12/11/2015 10:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.250000	36.30	9.7	52	15.5	AV	L1	GND
0.314000	30.70	9.8	50	19.2	AV	L1	GND
23.888000	37.90	11.1	50	12.1	AV	L1	GND

**LINE** **N**

**SCAN TABLE: "Vol (9K-30M) FIN-N"**

Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "GTI15121102\_fin"**

12/11/2015 10:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.60	9.5	66	27.4	QP	N	GND
0.249000	34.90	9.5	62	26.9	QP	N	GND
23.891000	36.20	10.8	60	23.8	QP	N	GND

**MEASUREMENT RESULT: "GTI15121102\_fin2"**

12/11/2015 10:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	34.50	9.5	54	19.7	AV	N	GND
0.249000	34.40	9.5	52	17.4	AV	N	GND
23.891000	36.40	10.8	50	13.6	AV	N	GND

### 3.2. Radiated Emission

#### Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

The frequency spectrum above 1 GHz for Transmitter was investigated. All emission not reported are much lower than the prescribed limits. Set the RBW=1MHz, VBW=3MHz for Peak Detector while the RBW=1MHz, VBW=10Hz for Average Detector, Readings are both peak and average values. The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos.

Frequency (MHz)	Distance (Meters)	Radiated (dBuV/m)	Radiated (µV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

#### Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane..
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.

#### Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

For example

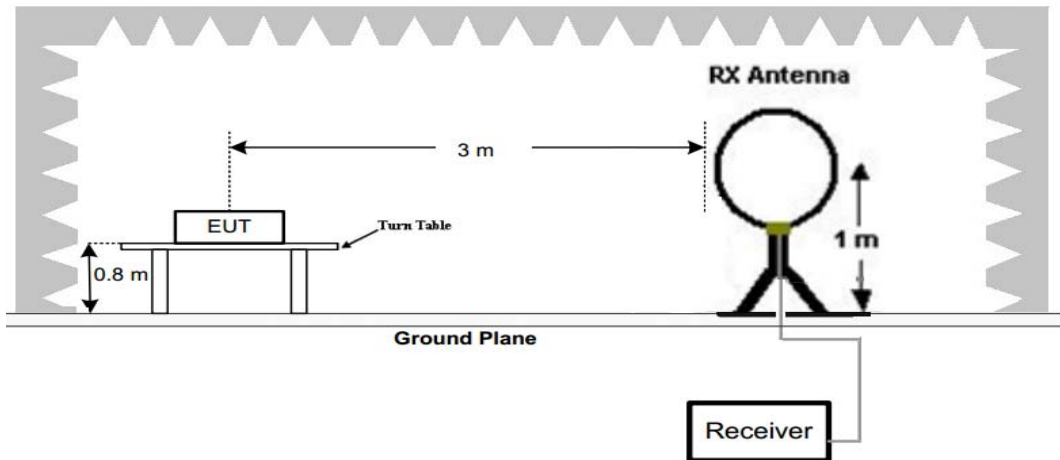
Frequency (MHz)	FS (dBµV/m)	RA (dBµV/m)	AF (dB)	CL (dB)	AG (dB)	Transd (dB)
150.00	40	58.1	12.2	1.6	31.90	-18.1

$$\text{Transd} = \text{AF} + \text{CL} - \text{AG}$$

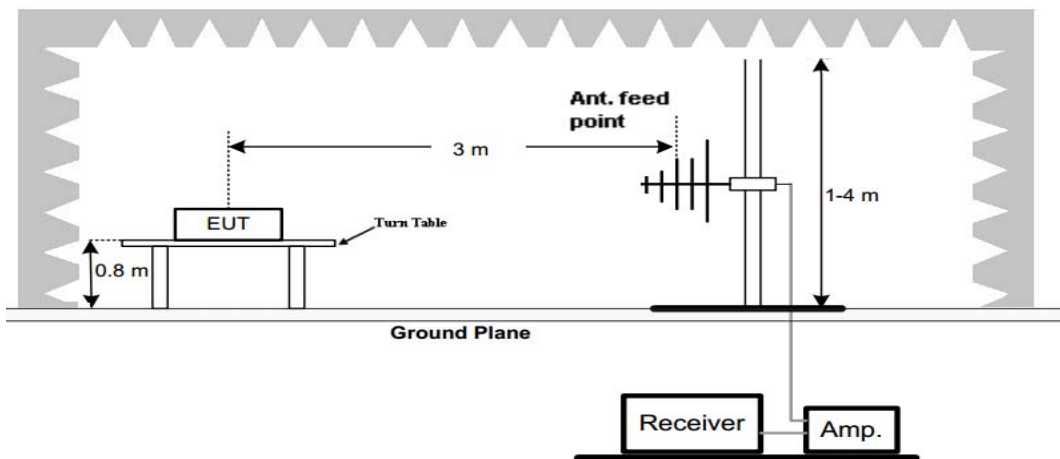
## Test Configuration

For the actual test configuration, please refer to the related Item –EUT Test Photos.

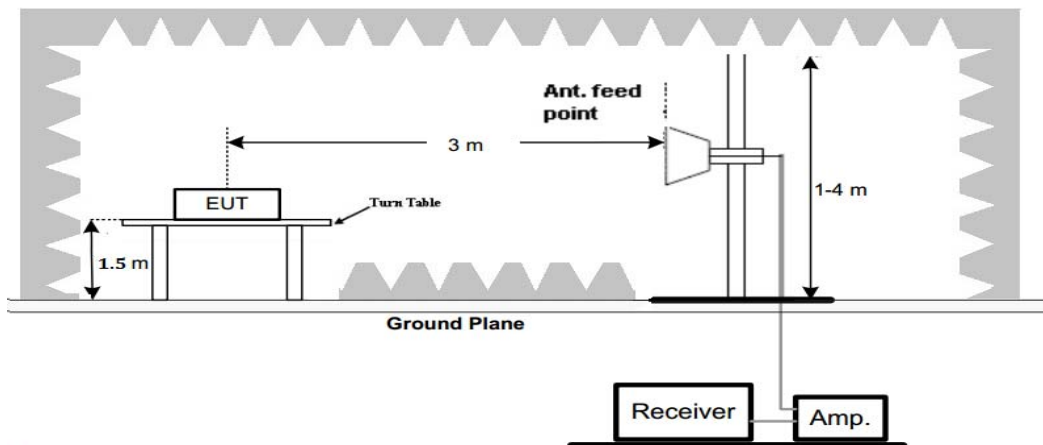
### Frequency range 9 KHz – 30MHz



### Frequency range 30MHz – 1000MHz



### Frequency range above 1GHz-25GHz



## Test Results

Remark:

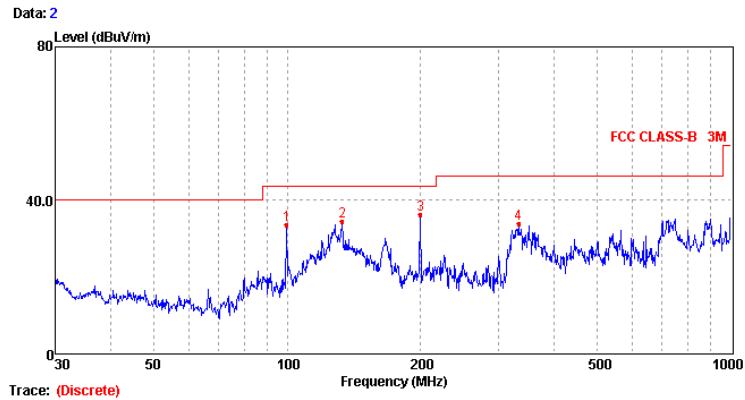
1. We tested three channels for each mode and recorded worst case at low channel of SISO-Ant1 802.11b Mode below 1GHz
2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Y axis” position was the worst, and test data recorded in this report.

For SISO-Ant1 802.11b Low Channel  
For 9 KHz-30MHz

Frequency (MHz)	Corrected Reading (dBuV/m)@3m	FCC Limit (dBuV/m) @3m	Margin (dB)	Detector	Result
0.31	55.24	97.78	42.54	QP	PASS
1.24	50.32	65.74	15.42	QP	PASS
11.24	36.17	69.54	33.37	QP	PASS
20.66	49.24	69.54	20.30	QP	PASS

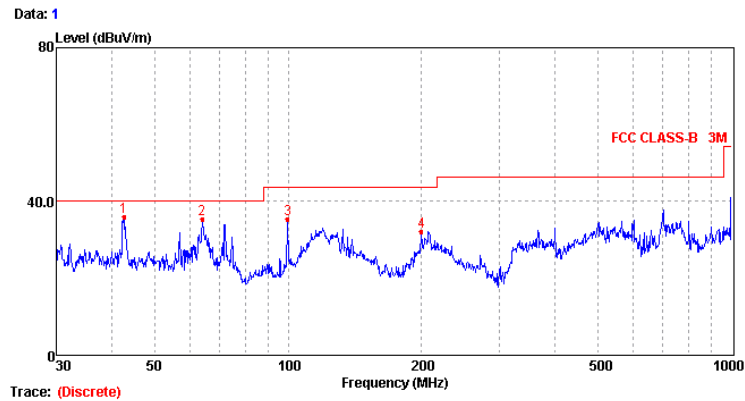
For 30MHz-1GHz

Horizontal



Mark	Frequency MHz	Level dBuV/m	Factor dB/m	Reading dBuV	Limit dBuV/m	Margin dB	Polarization	Detector
1	99.88	33.21	-19.39	52.60	43.50	10.29	HORIZONTAL	Peak
2	133.15	34.09	-18.85	52.94	43.50	9.41	HORIZONTAL	Peak
3	199.99	35.93	-17.86	53.79	43.50	7.57	HORIZONTAL	Peak
4	332.52	33.48	-15.96	49.44	46.00	12.52	HORIZONTAL	Peak

Vertical



Mark	Frequency MHz	Level dBuV/m	Factor dB/m	Reading dBuV	Limit dBuV/m	Margin dB	Polarization	Detector
1	42.60	35.78	-13.26	49.04	40.00	4.22	VERTICAL	Peak
2	63.98	35.06	-20.86	55.92	40.00	4.94	VERTICAL	Peak
3	99.88	35.23	-19.39	54.62	43.50	8.27	VERTICAL	Peak
4	199.99	31.83	-17.86	49.69	43.50	11.67	VERTICAL	Peak

For 1GHz to 25GHz

SISO-Ant1 802.11b Mode (above 1GHz)

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	56.00	PK	74.00	18.00	1.00	112	53.90	31.6	7.00	36.5	2.10
1	4824	50.61	AV	54.00	3.39	1.00	112	48.51	31.6	7.00	36.5	2.10
2	7236	50.22	PK	74.00	23.78	1.00	112	39.29	37.33	8.90	35.3	10.93
2	7236	42.86	AV	54.00	11.14	1.00	112	31.93	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	57.05	PK	74.00	16.95	1.00	174	54.95	31.60	7.00	36.50	2.10
1	4824	50.98	AV	54.00	3.02	1.00	174	48.88	31.60	7.00	36.50	2.10
2	7236	48.59	PK	74.00	25.41	1.00	174	37.66	37.33	8.90	35.30	10.93
2	7236	42.78	AV	54.00	11.22	1.00	174	31.85	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	55.86	PK	74.00	18.14	1.00	106	53.74	31.02	7.60	36.5	2.12
1	4874.00	50.37	AV	54.00	3.63	1.00	106	48.25	31.02	7.60	36.5	2.12
2	7311.00	49.84	PK	74.00	24.16	1.00	106	38.76	37.28	8.60	34.8	11.08
2	7311.00	43.21	AV	54.00	10.79	1.00	106	32.13	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	57.47	PK	74.00	16.53	1.00	184	55.35	31.02	7.60	36.5	2.12
1	4874.00	50.97	AV	54.00	3.03	1.00	184	48.85	31.02	7.60	36.5	2.12
2	7311.00	49.68	PK	74.00	24.32	1.00	184	38.60	37.28	8.60	34.8	11.08
2	7311.00	44.14	AV	54.00	9.86	1.00	184	33.06	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.66	PK	74.00	18.34	1.00	124	52.46	31.58	7.82	36.2	3.20
1	4924.00	49.39	AV	54.00	4.61	1.00	124	46.19	31.58	7.82	36.2	3.20
2	7386.00	48.97	PK	74.00	25.03	1.00	124	37.03	38.51	8.73	35.3	11.94
2	7386.00	42.11	AV	54.00	11.89	1.00	124	30.17	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	57.92	PK	74.00	16.08	1.00	170	54.72	31.58	7.82	36.2	3.20
1	4924.00	51.01	AV	54.00	2.99	1.00	170	47.81	31.58	7.82	36.2	3.20
2	7386.00	49.43	PK	74.00	24.57	1.00	170	37.49	38.51	8.73	35.3	11.94
2	7386.00	42.03	AV	54.00	11.97	1.00	170	30.09	38.51	8.73	35.3	11.94

**SISO-Ant1 802.11g Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	55.58	PK	74.00	18.42	1.00	112	53.48	31.60	7.00	36.5	2.10
1	4824	48.07	AV	54.00	5.93	1.00	112	45.97	31.60	7.00	36.5	2.10
2	7236	50.04	PK	74.00	23.96	1.00	112	39.11	37.33	8.90	35.3	10.93
2	7236	40.61	AV	54.00	13.39	1.00	112	29.68	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	56.86	PK	74.00	17.14	1.00	174	54.76	31.60	7.00	36.50	2.10
1	4824	46.31	AV	54.00	7.69	1.00	174	44.21	31.60	7.00	36.50	2.10
2	7236	50.14	PK	74.00	23.86	1.00	174	39.21	37.33	8.90	35.30	10.93
2	7236	43.64	AV	54.00	10.36	1.00	174	32.71	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	55.89	PK	74.00	18.11	1.00	106	53.77	31.02	7.60	36.5	2.12
1	4874.00	46.70	AV	54.00	7.30	1.00	106	44.58	31.02	7.60	36.5	2.12
2	7311.00	49.70	PK	74.00	24.30	1.00	106	38.62	37.28	8.60	34.8	11.08
2	7311.00	41.01	AV	54.00	12.99	1.00	106	29.93	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	54.85	PK	74.00	19.15	1.00	184	52.73	31.02	7.60	36.5	2.12
1	4874.00	46.08	AV	54.00	7.92	1.00	184	43.96	31.02	7.60	36.5	2.12
2	7311.00	50.22	PK	74.00	23.78	1.00	184	39.14	37.28	8.60	34.8	11.08
2	7311.00	39.55	AV	54.00	14.45	1.00	184	28.47	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.55	PK	74.00	18.45	1.00	184	52.35	31.58	7.82	36.2	3.20
1	4924.00	47.18	AV	54.00	6.82	1.00	184	43.98	31.58	7.82	36.2	3.20
2	7386.00	48.97	PK	74.00	25.03	1.00	184	37.03	38.51	8.73	35.3	11.94
2	7386.00	40.89	AV	54.00	13.11	1.00	184	28.95	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	56.34	PK	74.00	17.66	1.00	170	53.14	31.58	7.82	36.2	3.20
1	4924.00	45.52	AV	54.00	8.48	1.00	170	42.32	31.58	7.82	36.2	3.20
2	7386.00	50.70	PK	74.00	23.30	1.00	170	38.76	38.51	8.73	35.3	11.94
2	7386.00	39.97	AV	54.00	14.03	1.00	170	28.03	38.51	8.73	35.3	11.94



**SISO-Ant1 802.11n20 Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	55.07	PK	74.00	18.93	1.00	100	52.97	31.60	7.00	36.5	2.10
1	4824	47.87	AV	54.00	6.13	1.00	100	45.77	31.60	7.00	36.5	2.10
2	7236	48.21	PK	74.00	25.79	1.00	100	37.28	37.33	8.90	35.3	10.93
2	7236	39.65	AV	54.00	14.35	1.00	100	28.72	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	54.31	PK	74.00	19.69	1.00	159	52.21	31.60	7.00	36.50	2.10
1	4824	47.13	AV	54.00	6.87	1.00	159	45.03	31.60	7.00	36.50	2.10
2	7236	48.54	PK	74.00	25.46	1.00	159	37.61	37.33	8.90	35.30	10.93
2	7236	42.28	AV	54.00	11.72	1.00	159	31.35	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	54.50	PK	74.00	19.50	1.00	100	52.38	31.02	7.60	36.5	2.12
1	4874.00	47.14	AV	54.00	6.86	1.00	100	45.02	31.02	7.60	36.5	2.12
2	7311.00	48.50	PK	74.00	25.50	1.00	100	37.42	37.28	8.60	34.8	11.08
2	7311.00	40.67	AV	54.00	13.33	1.00	100	29.59	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	54.53	PK	74.00	19.47	1.00	189	52.41	31.02	7.60	36.5	2.12
1	4874.00	45.55	AV	54.00	8.45	1.00	189	43.43	31.02	7.60	36.5	2.12
2	7311.00	48.72	PK	74.00	25.28	1.00	189	37.64	37.28	8.60	34.8	11.08
2	7311.00	39.11	AV	54.00	14.89	1.00	189	28.03	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	54.21	PK	74.00	19.79	1.00	194	51.01	31.58	7.82	36.2	3.20
1	4924.00	46.52	AV	54.00	7.48	1.00	194	43.32	31.58	7.82	36.2	3.20
2	7386.00	48.96	PK	74.00	25.04	1.00	194	37.02	38.51	8.73	35.3	11.94
2	7386.00	41.77	AV	54.00	12.23	1.00	194	29.83	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.36	PK	74.00	18.64	1.00	164	52.16	31.58	7.82	36.2	3.20
1	4924.00	47.73	AV	54.00	6.27	1.00	164	44.53	31.58	7.82	36.2	3.20
2	7386.00	51.17	PK	74.00	22.83	1.00	164	39.23	38.51	8.73	35.3	11.94
2	7386.00	40.25	AV	54.00	13.75	1.00	164	28.31	38.51	8.73	35.3	11.94

**SISO-Ant1 802.11n40 Mode (above 1GHz)**

Frequency(MHz):				2422			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	53.74	PK	74.00	20.26	1.00	122	51.64	31.6	7.00	36.5	2.10
1	4844.00	44.15	AV	54.00	9.85	1.00	122	42.05	31.6	7.00	36.5	2.10
2	7266.00	47.11	PK	74.00	26.89	1.00	122	36.18	37.33	8.90	35.3	10.93
2	7266.00	39.52	AV	54.00	14.48	1.00	96	28.59	37.33	8.90	35.3	10.93

Frequency(MHz):				2422			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	53.45	PK	74.00	20.55	1.00	179	51.35	31.60	7.00	36.50	2.10
1	4844.00	44.80	AV	54.00	9.20	1.00	179	42.70	31.60	7.00	36.50	2.10
2	7266.00	48.67	PK	74.00	25.33	1.00	179	37.74	37.33	8.90	35.30	10.93
2	7266.00	41.25	AV	54.00	12.75	1.00	179	30.32	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	53.28	PK	74.00	20.72	1.00	102	51.16	31.02	7.60	36.5	2.12
1	4874.00	45.53	AV	54.00	8.47	1.00	102	43.41	31.02	7.60	36.5	2.12
2	7311.00	48.32	PK	74.00	25.68	1.00	102	37.24	37.28	8.60	34.8	11.08
2	7311.00	39.65	AV	54.00	14.35	1.00	102	28.57	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	53.95	PK	74.00	20.05	1.00	199	51.83	31.02	7.60	36.5	2.12
1	4874.00	44.66	AV	54.00	9.34	1.00	199	42.54	31.02	7.60	36.5	2.12
2	7311.00	49.21	PK	74.00	24.79	1.00	199	38.13	37.28	8.60	34.8	11.08
2	7311.00	40.33	AV	54.00	13.67	1.00	199	29.25	37.28	8.60	34.8	11.08

Frequency(MHz):				2452			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	54.81	PK	74.00	19.19	1.00	184	51.61	31.58	7.82	36.2	3.20
1	4904.00	44.70	AV	54.00	9.30	1.00	184	41.50	31.58	7.82	36.2	3.20
2	7356.00	47.49	PK	74.00	26.51	1.00	184	35.55	38.51	8.73	35.3	11.94
2	7356.00	38.33	AV	54.00	15.67	1.00	184	26.39	38.51	8.73	35.3	11.94

Frequency(MHz):				2452			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	55.44	PK	74.00	18.56	1.00	170	52.24	31.58	7.82	36.2	3.20
1	4904.00	44.11	AV	54.00	9.89	1.00	170	40.91	31.58	7.82	36.2	3.20
2	7356.00	50.53	PK	74.00	23.47	1.00	170	38.59	38.51	8.73	35.3	11.94
2	7356.00	39.57	AV	54.00	14.43	1.00	170	27.63	38.51	8.73	35.3	11.94

**SISO-Ant2 802.11b Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	55.89	PK	74.00	18.11	1.00	136	53.79	31.6	7.00	36.5	2.10
1	4824	51.02	AV	54.00	2.98	1.00	136	48.92	31.6	7.00	36.5	2.10
2	7236	50.28	PK	74.00	23.72	1.00	136	39.35	37.33	8.90	35.3	10.93
2	7236	42.50	AV	54.00	11.50	1.00	136	31.57	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	57.13	PK	74.00	16.87	1.00	189	55.03	31.60	7.00	36.50	2.10
1	4824	51.50	AV	54.00	2.50	1.00	189	49.40	31.60	7.00	36.50	2.10
2	7236	50.13	PK	74.00	23.87	1.00	189	39.20	37.33	8.90	35.30	10.93
2	7236	41.95	AV	54.00	12.05	1.00	189	31.02	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	56.16	PK	74.00	17.84	1.00	130	54.04	31.02	7.60	36.5	2.12
1	4874.00	49.02	AV	54.00	4.98	1.00	130	46.90	31.02	7.60	36.5	2.12
2	7311.00	48.30	PK	74.00	25.70	1.00	130	37.22	37.28	8.60	34.8	11.08
2	7311.00	42.58	AV	54.00	11.42	1.00	130	31.50	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	57.41	PK	74.00	16.59	1.00	199	55.29	31.02	7.60	36.5	2.12
1	4874.00	51.03	AV	54.00	2.97	1.00	199	48.91	31.02	7.60	36.5	2.12
2	7311.00	49.14	PK	74.00	24.86	1.00	199	38.06	37.28	8.60	34.8	11.08
2	7311.00	43.25	AV	54.00	10.75	1.00	199	32.17	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	54.96	PK	74.00	19.04	1.00	148	51.76	31.58	7.82	36.2	3.20
1	4924.00	50.54	AV	54.00	3.46	1.00	148	47.34	31.58	7.82	36.2	3.20
2	7386.00	49.90	PK	74.00	24.10	1.00	148	37.96	38.51	8.73	35.3	11.94
2	7386.00	41.81	AV	54.00	12.19	1.00	148	29.87	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	57.91	PK	74.00	16.09	1.00	185	54.71	31.58	7.82	36.2	3.20
1	4924.00	52.34	AV	54.00	1.66	1.00	185	49.14	31.58	7.82	36.2	3.20
2	7386.00	49.55	PK	74.00	24.45	1.00	185	37.61	38.51	8.73	35.3	11.94
2	7386.00	43.51	AV	54.00	10.49	1.00	185	31.57	38.51	8.73	35.3	11.94

**SISO-Ant2 802.11g Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	54.42	PK	74.00	19.58	1.00	136	52.32	31.60	7.00	36.5	2.10
1	4824	47.75	AV	54.00	6.25	1.00	136	45.65	31.60	7.00	36.5	2.10
2	7236	50.51	PK	74.00	23.49	1.00	136	39.58	37.33	8.90	35.3	10.93
2	7236	39.09	AV	54.00	14.91	1.00	136	28.16	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	57.17	PK	74.00	16.83	1.00	189	55.07	31.60	7.00	36.50	2.10
1	4824	47.34	AV	54.00	6.66	1.00	189	45.24	31.60	7.00	36.50	2.10
2	7236	50.79	PK	74.00	23.21	1.00	189	39.86	37.33	8.90	35.30	10.93
2	7236	42.79	AV	54.00	11.21	1.00	189	31.86	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	54.94	PK	74.00	19.06	1.00	130	52.82	31.02	7.60	36.5	2.12
1	4874.00	46.62	AV	54.00	7.38	1.00	130	44.50	31.02	7.60	36.5	2.12
2	7311.00	49.04	PK	74.00	24.96	1.00	130	37.96	37.28	8.60	34.8	11.08
2	7311.00	39.17	AV	54.00	14.83	1.00	130	28.09	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	55.17	PK	74.00	18.83	1.00	199	53.05	31.02	7.60	36.5	2.12
1	4874.00	48.33	AV	54.00	5.67	1.00	199	46.21	31.02	7.60	36.5	2.12
2	7311.00	50.26	PK	74.00	23.74	1.00	199	39.18	37.28	8.60	34.8	11.08
2	7311.00	40.21	AV	54.00	13.79	1.00	199	29.13	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.73	PK	74.00	18.27	1.00	200	52.53	31.58	7.82	36.2	3.20
1	4924.00	46.30	AV	54.00	7.70	1.00	200	43.10	31.58	7.82	36.2	3.20
2	7386.00	50.50	PK	74.00	23.50	1.00	200	38.56	38.51	8.73	35.3	11.94
2	7386.00	41.08	AV	54.00	12.92	1.00	200	29.14	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	56.80	PK	74.00	17.20	1.00	185	53.60	31.58	7.82	36.2	3.20
1	4924.00	47.03	AV	54.00	6.97	1.00	185	43.83	31.58	7.82	36.2	3.20
2	7386.00	51.69	PK	74.00	22.31	1.00	185	39.75	38.51	8.73	35.3	11.94
2	7386.00	40.61	AV	54.00	13.39	1.00	185	28.67	38.51	8.73	35.3	11.94

**SISO-Ant2 802.11n20 Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	53.81	PK	74.00	20.19	1.00	124	51.71	31.60	7.00	36.5	2.10
1	4824	46.19	AV	54.00	7.81	1.00	124	44.09	31.60	7.00	36.5	2.10
2	7236	48.98	PK	74.00	25.02	1.00	124	38.05	37.33	8.90	35.3	10.93
2	7236	39.88	AV	54.00	14.12	1.00	124	28.95	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	56.07	PK	74.00	17.93	1.00	174	53.97	31.60	7.00	36.50	2.10
1	4824	48.11	AV	54.00	5.89	1.00	174	46.01	31.60	7.00	36.50	2.10
2	7236	48.74	PK	74.00	25.26	1.00	174	37.81	37.33	8.90	35.30	10.93
2	7236	56.07	PK	74.00	17.93	1.00	174	53.97	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	53.63	PK	74.00	20.37	1.00	124	51.51	31.02	7.60	36.5	2.12
1	4874.00	44.92	AV	54.00	9.08	1.00	124	42.80	31.02	7.60	36.5	2.12
2	7311.00	49.75	PK	74.00	24.25	1.00	124	38.67	37.28	8.60	34.8	11.08
2	7311.00	38.78	AV	54.00	15.22	1.00	124	27.70	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	52.82	PK	74.00	21.18	1.00	204	50.70	31.02	7.60	36.5	2.12
1	4874.00	47.28	AV	54.00	6.72	1.00	204	45.16	31.02	7.60	36.5	2.12
2	7311.00	49.43	PK	74.00	24.57	1.00	204	38.35	37.28	8.60	34.8	11.08
2	7311.00	39.34	AV	54.00	14.66	1.00	204	28.26	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.00	PK	74.00	19.00	1.00	209	51.80	31.58	7.82	36.2	3.20
1	4924.00	48.14	AV	54.00	5.86	1.00	209	44.94	31.58	7.82	36.2	3.20
2	7386.00	49.21	PK	74.00	24.79	1.00	209	37.27	38.51	8.73	35.3	11.94
2	7386.00	41.20	AV	54.00	12.80	1.00	209	29.26	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.62	PK	74.00	18.38	1.00	179	52.42	31.58	7.82	36.2	3.20
1	4924.00	47.10	AV	54.00	6.90	1.00	179	43.90	31.58	7.82	36.2	3.20
2	7386.00	50.92	PK	74.00	23.08	1.00	179	38.98	38.51	8.73	35.3	11.94
2	7386.00	40.15	AV	54.00	13.85	1.00	179	28.21	38.51	8.73	35.3	11.94

**SISO-Ant2 802.11n40 Mode (above 1GHz)**

Frequency(MHz):				2422			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	53.06	PK	74.00	20.94	1.00	146	50.96	31.6	7.00	36.5	2.10
1	4844.00	43.64	AV	54.00	10.36	1.00	146	41.54	31.6	7.00	36.5	2.10
2	7266.00	46.75	PK	74.00	27.25	1.00	146	35.82	37.33	8.90	35.3	10.93
2	7266.00	37.01	AV	54.00	16.99	1.00	146	26.08	37.33	8.90	35.3	10.93

Frequency(MHz):				2422			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	53.60	PK	74.00	20.40	1.00	194	51.50	31.60	7.00	36.50	2.10
1	4844.00	44.66	AV	54.00	9.34	1.00	194	42.56	31.60	7.00	36.50	2.10
2	7266.00	47.87	PK	74.00	26.13	1.00	194	36.94	37.33	8.90	35.30	10.93
2	7266.00	40.21	AV	54.00	13.79	1.00	194	29.28	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	53.49	PK	74.00	20.51	1.00	126	51.37	31.02	7.60	36.5	2.12
1	4874.00	44.45	AV	54.00	9.55	1.00	126	42.33	31.02	7.60	36.5	2.12
2	7311.00	48.29	PK	74.00	25.71	1.00	126	37.21	37.28	8.60	34.8	11.08
2	7311.00	40.78	AV	54.00	13.22	1.00	126	29.70	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	52.58	PK	74.00	21.42	1.00	214	50.46	31.02	7.60	36.5	2.12
1	4874.00	45.03	AV	54.00	8.97	1.00	214	42.91	31.02	7.60	36.5	2.12
2	7311.00	48.94	PK	74.00	25.06	1.00	214	37.86	37.28	8.60	34.8	11.08
2	7311.00	39.30	AV	54.00	14.70	1.00	214	28.22	37.28	8.60	34.8	11.08

Frequency(MHz):				2452			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	52.97	PK	74.00	21.03	1.00	199	49.77	31.58	7.82	36.2	3.20
1	4904.00	46.14	AV	54.00	7.86	1.00	199	42.94	31.58	7.82	36.2	3.20
2	7356.00	47.98	PK	74.00	26.02	1.00	199	36.04	38.51	8.73	35.3	11.94
2	7356.00	39.80	AV	54.00	14.20	1.00	199	27.86	38.51	8.73	35.3	11.94

Frequency(MHz):				2452			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	53.54	PK	74.00	20.46	1.00	185	50.34	31.58	7.82	36.2	3.20
1	4904.00	46.33	AV	54.00	7.67	1.00	185	43.13	31.58	7.82	36.2	3.20
2	7356.00	50.07	PK	74.00	23.93	1.00	185	38.13	38.51	8.73	35.3	11.94
2	7356.00	39.23	AV	54.00	14.77	1.00	185	27.29	38.51	8.73	35.3	11.94

**MIMO 802.11n20 Mode (above 1GHz)**

Frequency(MHz):				2412			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	54.70	PK	74.00	19.30	1.00	209	52.60	31.60	7.00	36.5	2.10
1	4824	46.02	AV	54.00	7.98	1.00	209	43.92	31.60	7.00	36.5	2.10
2	7236	46.89	PK	74.00	27.11	1.00	209	35.96	37.33	8.90	35.3	10.93
2	7236	39.35	AV	54.00	14.65	1.00	209	28.42	37.33	8.90	35.3	10.93

Frequency(MHz):				2412			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4824	55.21	PK	74.00	18.79	1.00	224	53.11	31.60	7.00	36.50	2.10
1	4824	47.31	AV	54.00	6.69	1.00	224	45.21	31.60	7.00	36.50	2.10
2	7236	48.05	PK	74.00	25.95	1.00	224	37.12	37.33	8.90	35.30	10.93
2	7236	42.90	AV	54.00	11.10	1.00	224	31.97	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	53.97	PK	74.00	20.03	1.00	209	51.85	31.02	7.60	36.5	2.12
1	4874.00	44.32	AV	54.00	9.68	1.00	209	42.20	31.02	7.60	36.5	2.12
2	7311.00	49.19	PK	74.00	24.81	1.00	209	38.11	37.28	8.60	34.8	11.08
2	7311.00	38.01	AV	54.00	15.99	1.00	209	26.93	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	54.08	PK	74.00	19.92	1.00	254	51.96	31.02	7.60	36.5	2.12
1	4874.00	46.39	AV	54.00	7.61	1.00	254	44.27	31.02	7.60	36.5	2.12
2	7311.00	49.90	PK	74.00	24.10	1.00	254	38.82	37.28	8.60	34.8	11.08
2	7311.00	39.65	AV	54.00	14.35	1.00	254	28.57	37.28	8.60	34.8	11.08

Frequency(MHz):				2462			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	55.26	PK	74.00	18.74	1.00	259	52.06	31.58	7.82	36.2	3.20
1	4924.00	47.06	AV	54.00	6.94	1.00	259	43.86	31.58	7.82	36.2	3.20
2	7386.00	49.59	PK	74.00	24.41	1.00	259	37.65	38.51	8.73	35.3	11.94
2	7386.00	41.69	AV	54.00	12.31	1.00	259	29.75	38.51	8.73	35.3	11.94

Frequency(MHz):				2462			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4924.00	54.99	PK	74.00	19.01	1.00	229	51.79	31.58	7.82	36.2	3.20
1	4924.00	46.34	AV	54.00	7.66	1.00	229	43.14	31.58	7.82	36.2	3.20
2	7386.00	51.07	PK	74.00	22.93	1.00	229	39.13	38.51	8.73	35.3	11.94
2	7386.00	40.64	AV	54.00	13.36	1.00	229	28.70	38.51	8.73	35.3	11.94

**MIMO 802.11n40 Mode (above 1GHz)**

Frequency(MHz):				2422			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	52.08	PK	74.00	21.92	1.00	231	49.98	31.6	7.00	36.5	2.10
1	4844.00	43.17	AV	54.00	10.83	1.00	231	41.07	31.6	7.00	36.5	2.10
2	7266.00	46.53	PK	74.00	27.47	1.00	231	35.60	37.33	8.90	35.3	10.93
2	7266.00	36.59	AV	54.00	17.41	1.00	231	25.66	37.33	8.90	35.3	10.93

Frequency(MHz):				2422			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4844.00	52.79	PK	74.00	21.21	1.00	244	50.69	31.60	7.00	36.50	2.10
1	4844.00	43.94	AV	54.00	10.06	1.00	244	41.84	31.60	7.00	36.50	2.10
2	7266.00	48.30	PK	74.00	25.70	1.00	244	37.37	37.33	8.90	35.30	10.93
2	7266.00	41.03	AV	54.00	12.97	1.00	244	30.10	37.33	8.90	35.30	10.93

Frequency(MHz):				2437			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	52.36	PK	74.00	21.64	1.00	211	50.24	31.02	7.60	36.5	2.12
1	4874.00	44.14	AV	54.00	9.86	1.00	211	42.02	31.02	7.60	36.5	2.12
2	7311.00	46.82	PK	74.00	27.18	1.00	211	35.74	37.28	8.60	34.8	11.08
2	7311.00	39.12	AV	54.00	14.88	1.00	211	28.04	37.28	8.60	34.8	11.08

Frequency(MHz):				2437			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4874.00	52.81	PK	74.00	21.19	1.00	264	50.69	31.02	7.60	36.5	2.12
1	4874.00	45.39	AV	54.00	8.61	1.00	264	43.27	31.02	7.60	36.5	2.12
2	7311.00	50.04	PK	74.00	23.96	1.00	264	38.96	37.28	8.60	34.8	11.08
2	7311.00	39.07	AV	54.00	14.93	1.00	264	27.99	37.28	8.60	34.8	11.08

Frequency(MHz):				2452			Polarity:			HORIZONTAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	52.10	PK	74.00	21.90	1.00	249	48.90	31.58	7.82	36.2	3.20
1	4904.00	45.26	AV	54.00	8.74	1.00	249	42.06	31.58	7.82	36.2	3.20
2	7356.00	47.97	PK	74.00	26.03	1.00	249	36.03	38.51	8.73	35.3	11.94
2	7356.00	40.21	AV	54.00	13.79	1.00	249	28.27	38.51	8.73	35.3	11.94

Frequency(MHz):				2452			Polarity:			VERTICAL		
No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
1	4904.00	53.96	PK	74.00	20.04	1.00	235	50.76	31.58	7.82	36.2	3.20
1	4904.00	44.50	AV	54.00	9.50	1.00	235	41.30	31.58	7.82	36.2	3.20
2	7356.00	50.52	PK	74.00	23.48	1.00	235	38.58	38.51	8.73	35.3	11.94
2	7356.00	38.30	AV	54.00	15.70	1.00	235	26.36	38.51	8.73	35.3	11.94



### 3.3. Maximum Conducted (average) Output Power

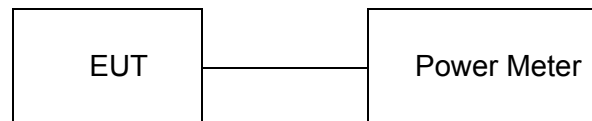
#### Limit

30dBm for digital modulation systems.

#### Test Procedure

- Measurement using a RF average power meter
  1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power Meter.
  2. Ensure EUT transmitting with a duty cycle  $\geq 98\%$ .
  3. Record the value of Power Meter.

#### Test Configuration



**Test Results**

**WIFI**

SISO Mode					
Ant. Port	Test Mode	Channel	Output power AV(dBm)	Limit (dBm)	Result
Ant1	802.11b	01	16.66	30.00	Pass
		06	16.67		
		11	16.62		
	802.11g	01	13.62	30.00	Pass
		06	14.16		
		11	14.07		
	802.11n(H20)	01	13.87	30.00	Pass
		06	14.11		
		11	14.11		
	802.11n(H40)	03	13.92	30.00	Pass
		06	14.27		
		09	14.19		
Ant2	802.11b	01	16.27	30.00	Pass
		06	16.64		
		11	16.44		
	802.11g	01	14.47	30.00	Pass
		06	14.34		
		11	14.44		
	802.11n(H20)	01	14.40	30.00	Pass
		06	14.29		
		11	14.48		
	802.11n(H40)	03	14.13	30.00	Pass
		06	14.35		
		09	14.11		

MIMO*2 Mode						
Test Mode	Channel	Ant 1-Output power AV(dBm)	Ant 2-Output power AV(dBm)	Total power	Limit (dBm)	Result
802.11n(H20)	01	13.87	14.40	17.15	30.00	Pass
	06	14.11	14.29	17.21		
	11	14.11	14.48	17.31		
802.11n(H40)	03	13.92	14.13	17.04	30.00	Pass
	06	14.27	14.35	17.32		
	09	14.19	14.11	17.16		

### 3.4. Power Spectral Density

#### Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

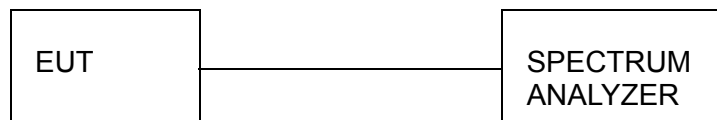
#### Test Procedure

- Use this procedure when the maximum (average) conducted output power was used to demonstrate compliance to the output power limit.
  1. Set analyzer center frequency to DTS channel center frequency.
  2. Set span to at least 1.5 times the OBW
  3. RBW:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
  4. VBW:  $\geq 3 \times \text{RBW}$ .
  5. Detector: power averaging (RMS)
  6. Sweep time: Auto couple.
  7. Swoop points:  $\geq 8001$ .
  8. Trace mode = Average (100 traces)
  9. Use the peak marker function to determine the maximum power level.
  10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Note: 1.The OBW test data please see the section 3.5

2. For MIMO test mode, Total PSD is the sum of the Power Spectral Density linear units levels measured at the various output ports

#### Test Configuration

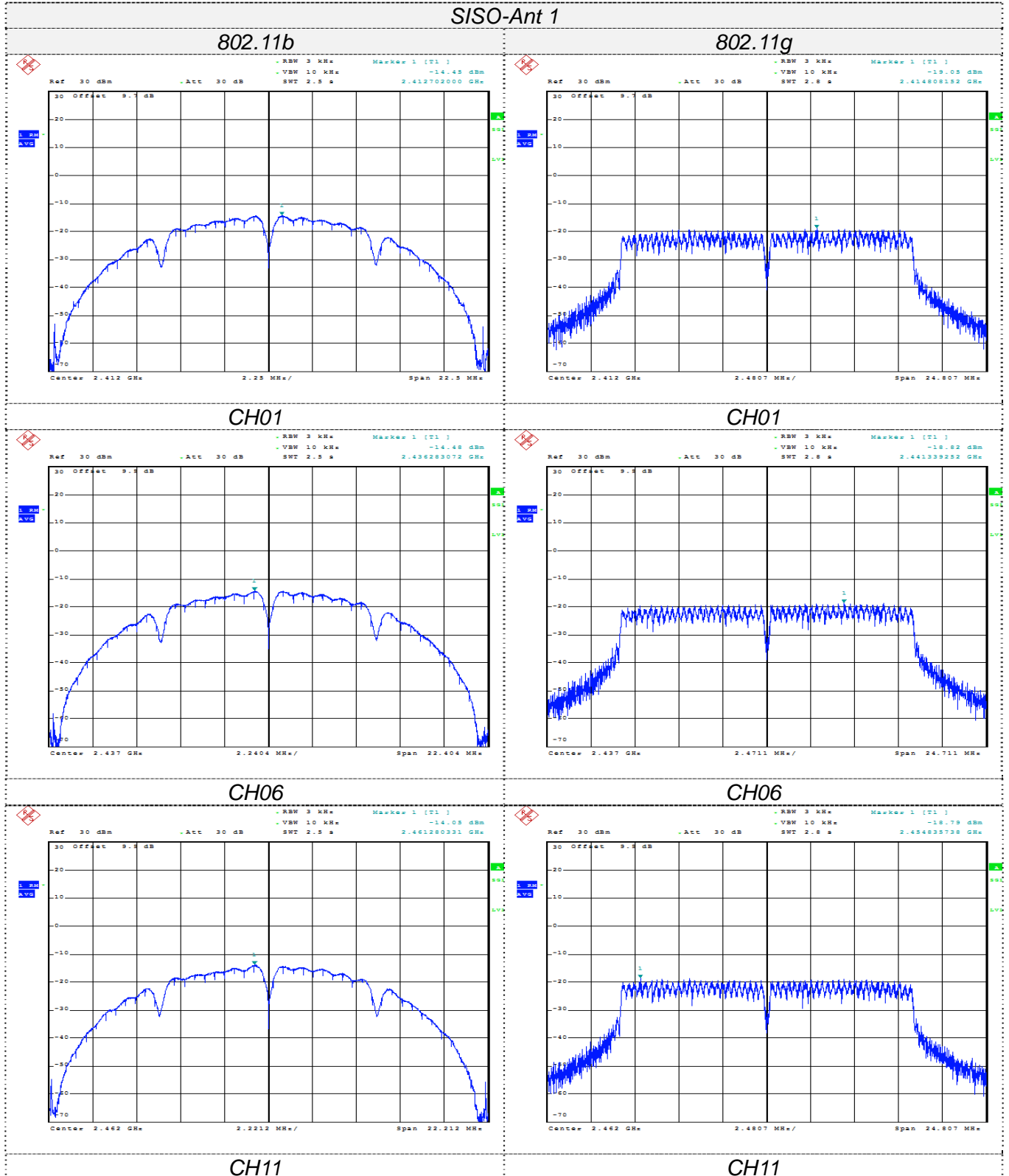


**Test Results**

SISO Mode					
Ant. Port	Test Mode	Channel	Power Spectral Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
Ant1	802.11b	01	-14.45	8.00	Pass
		06	-14.48		
		11	-14.05		
	802.11g	01	-19.05	8.00	Pass
		06	-18.82		
		11	-18.79		
	802.11n(H20)	01	-19.05	8.00	Pass
		06	-18.51		
		11	-18.83		
	802.11n(H40)	03	-21.14	8.00	Pass
		06	-20.56		
		09	-21.17		
Ant2	802.11b	01	-14.64	8.00	Pass
		06	-14.17		
		11	-14.57		
	802.11g	01	-18.48	8.00	Pass
		06	-18.22		
		11	-18.53		
	802.11n(H20)	01	-18.65	8.00	Pass
		06	-18.68		
		11	-18.16		
	802.11n(H40)	03	-20.88	8.00	Pass
		06	-20.78		
		09	-20.95		

MIMO*2 Mode						
Test Mode	Channel	Ant 1-Power Spectral Density (dBm/3KHz)	Ant 2-Power Spectral Density (dBm/3KHz)	Total Spectral Density	Limit (dBm/3KHz)	Result
802.11n(H20)	01	-19.05	-18.65	-15.84	30.00	Pass
	06	-18.51	-18.68	-15.58		
	11	-18.83	-18.16	-15.47		
802.11n(H40)	03	-21.14	-20.88	-18.00	30.00	Pass
	06	-20.56	-20.78	-17.66		
	09	-21.17	-20.95	-18.05		

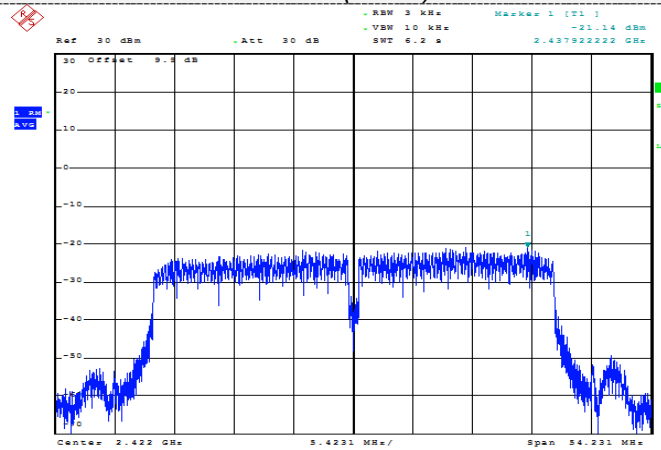
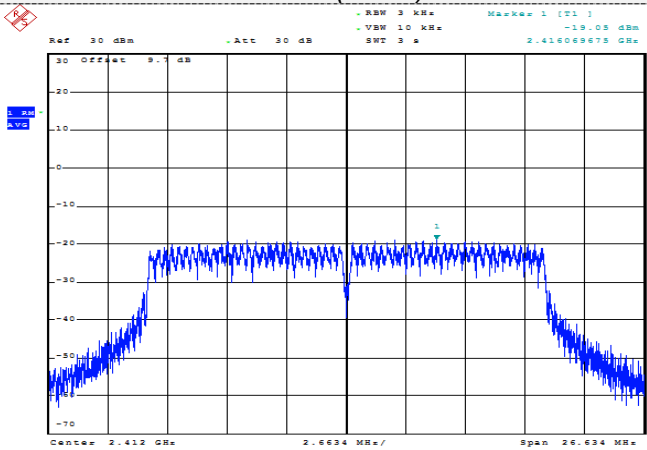
Test plot as follows:



SISO-Ant 1

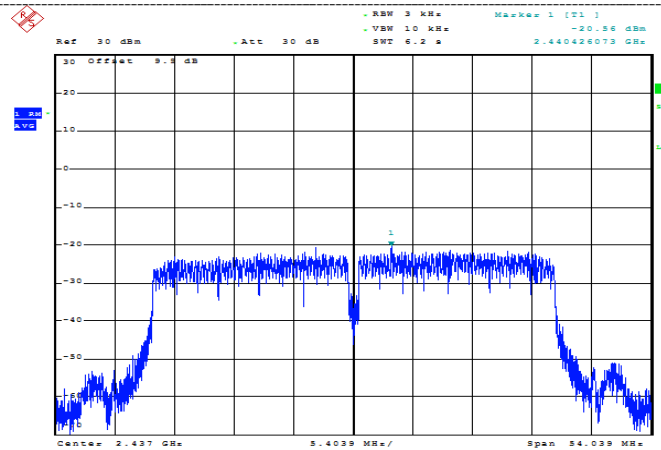
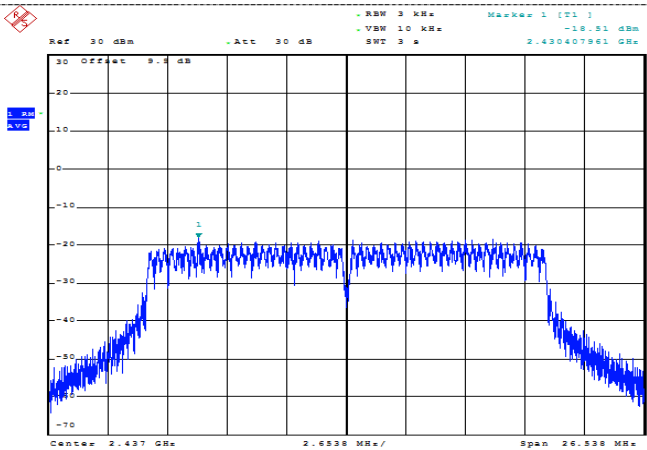
802.11n(HT20)

802.11n(HT40)



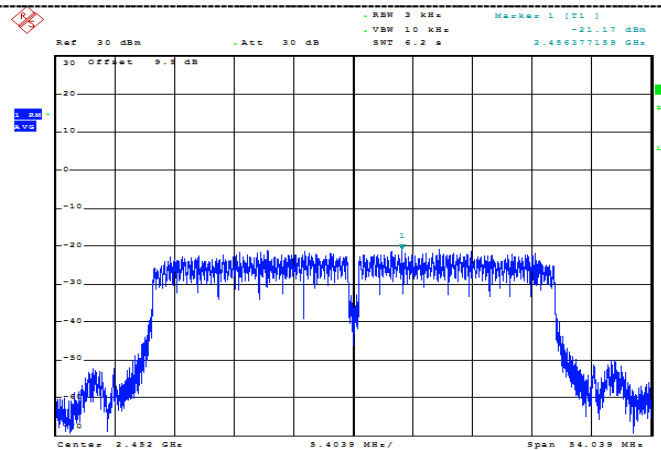
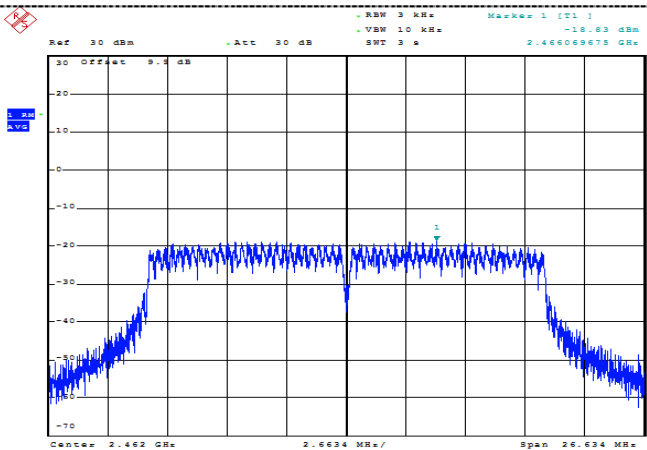
CH01

CH03



CH06

CH06

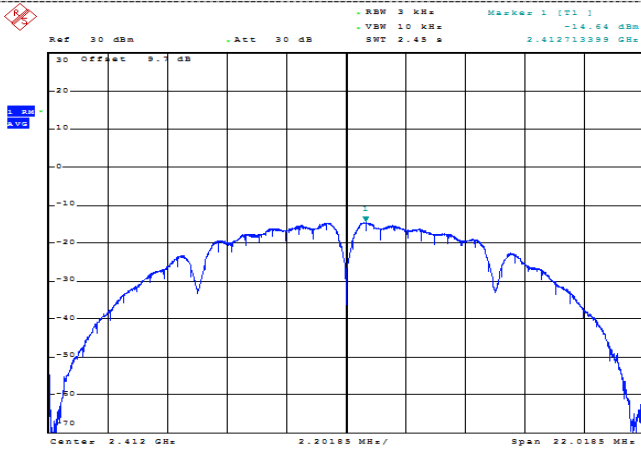


CH11

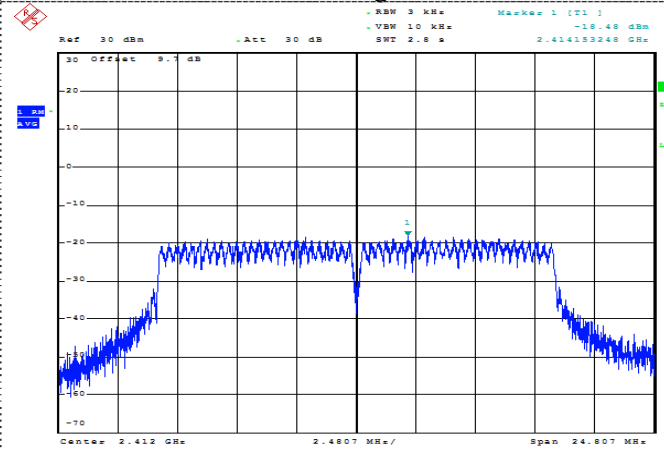
CH09

SISO-Ant 2

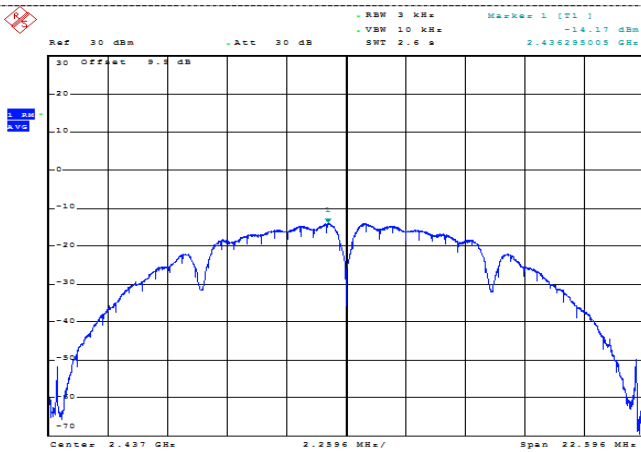
802.11b



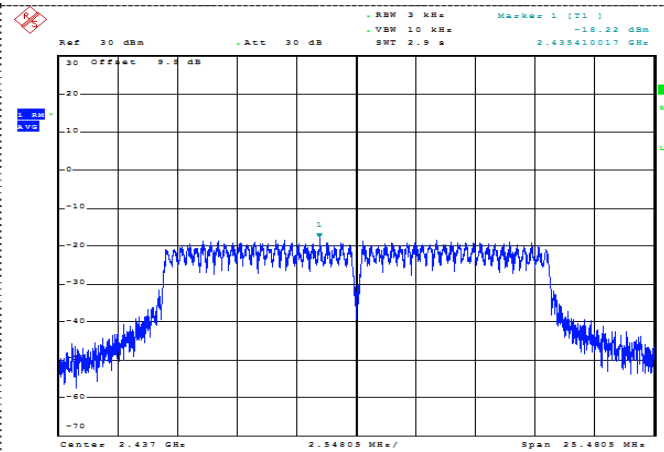
802.11g



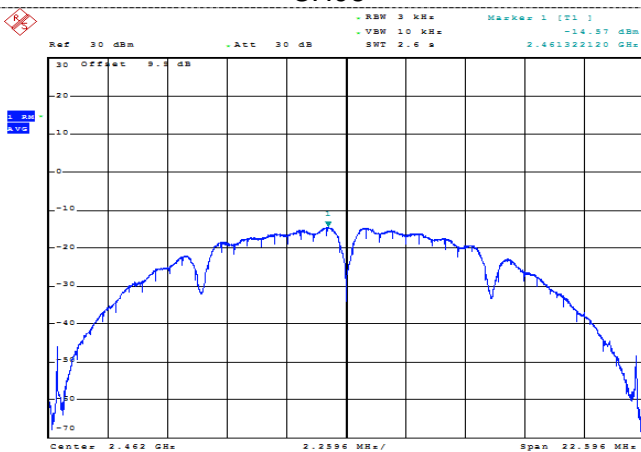
CH01



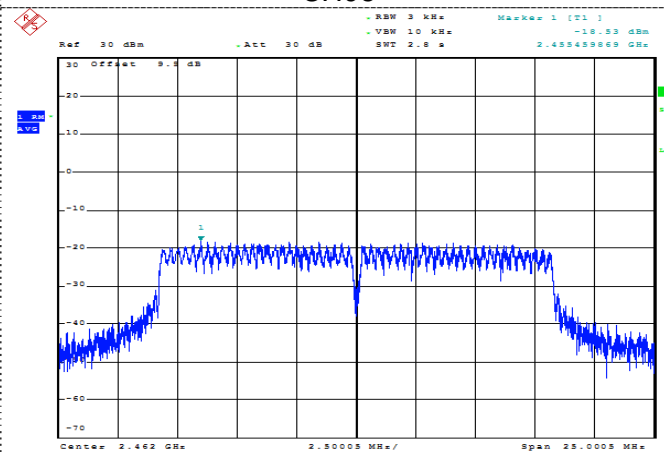
CH01



CH06



CH06



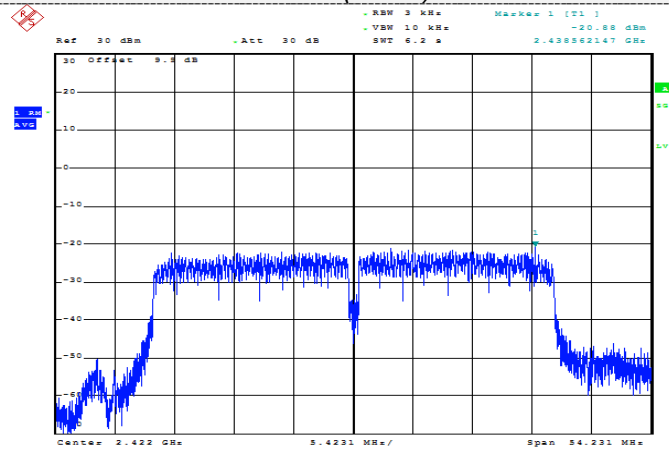
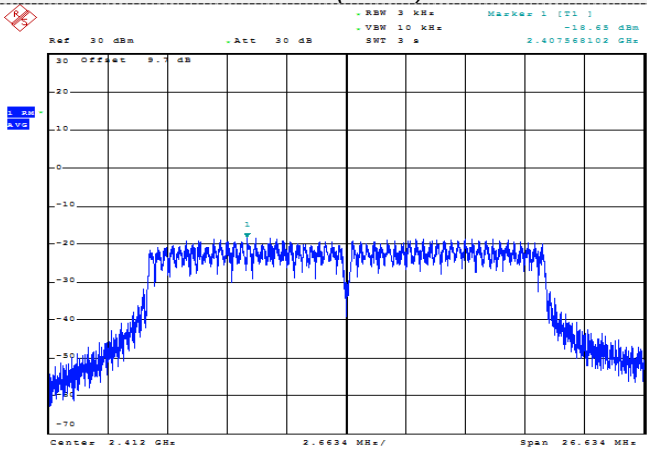
CH11

CH11

SISO-Ant 2

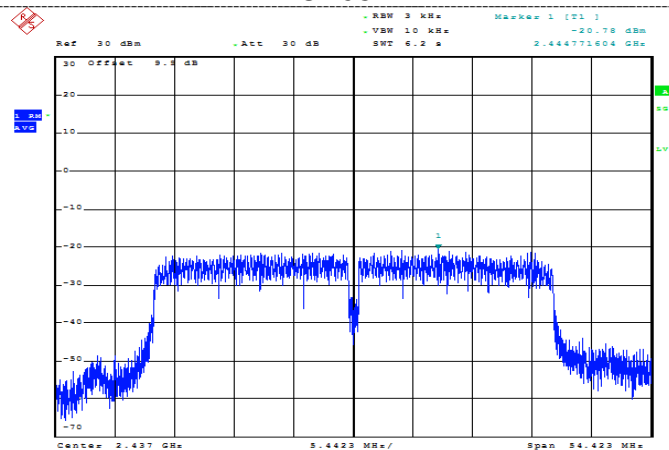
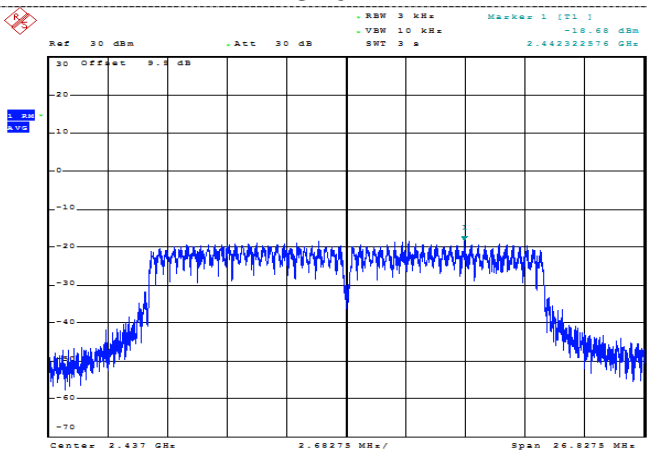
802.11n(HT20)

802.11n(HT40)



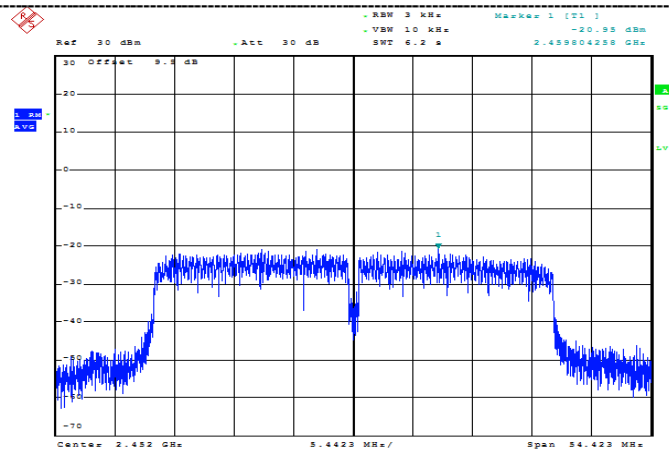
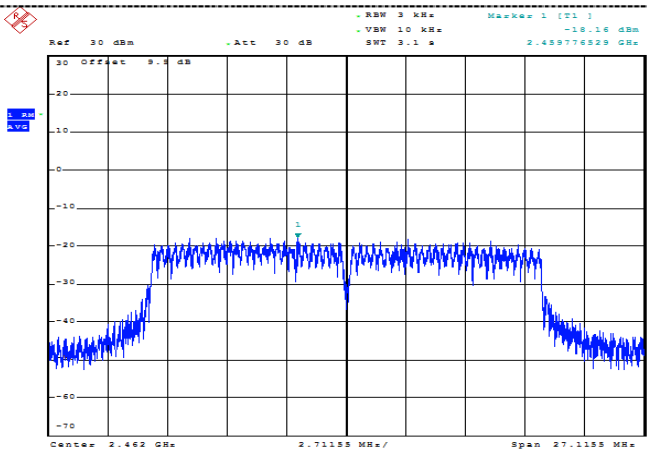
CH01

CH03



CH06

CH06



CH11

CH09



### 3.5. 6dB Bandwidth

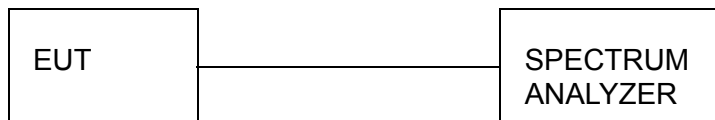
#### Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz

#### Test Procedure

1. The transmitter output was connected to the spectrum analyzer.
2. Set SA as follow:
  - a) RBW: 100 kHz.
  - b) VBW:  $\geq 3 \times$  RBW.
  - c) Detector: Peak.
  - d) Trace mode: max hold.
  - e) Sweep: auto couple.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### Test Configuration

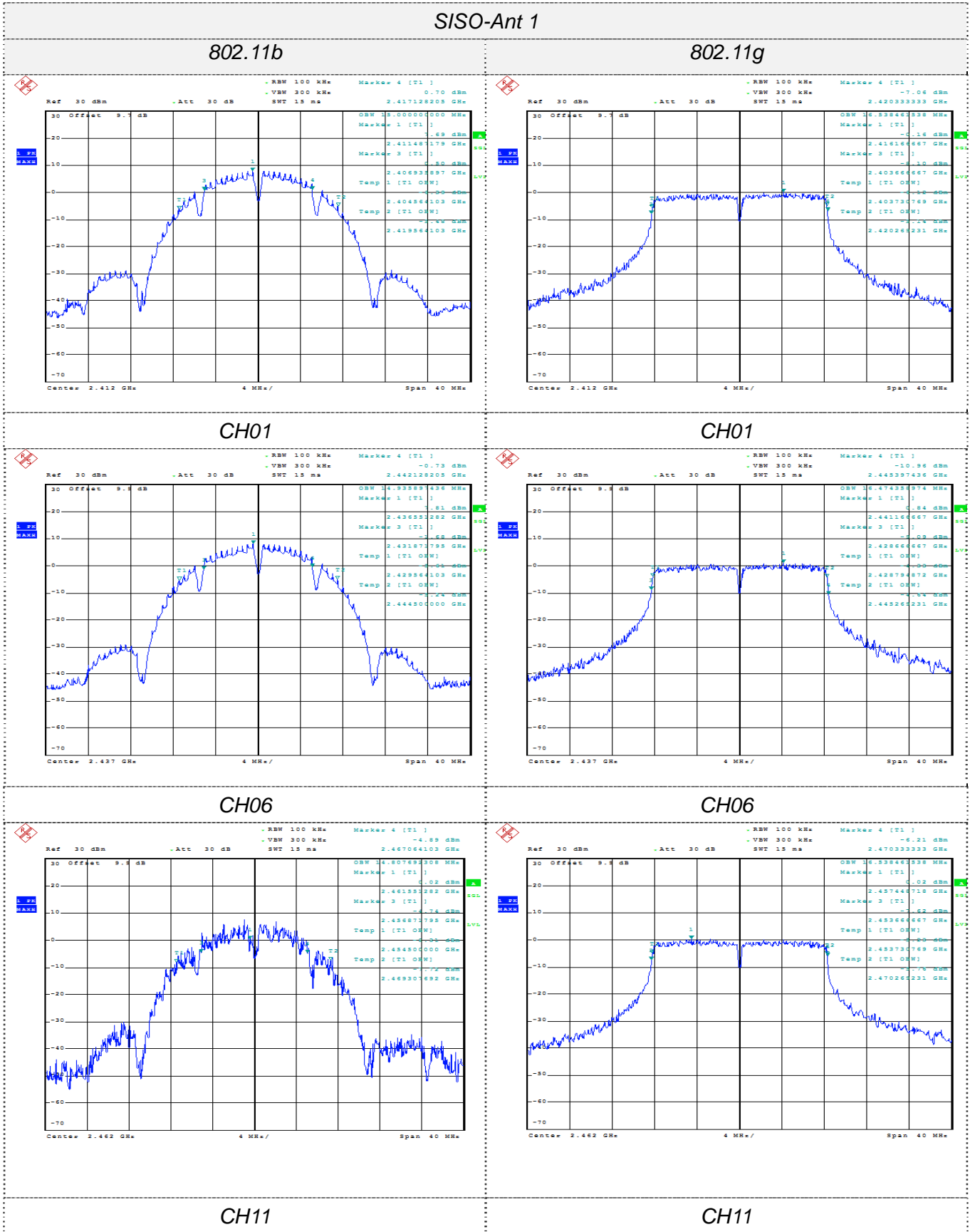


#### Test Results

WIFI

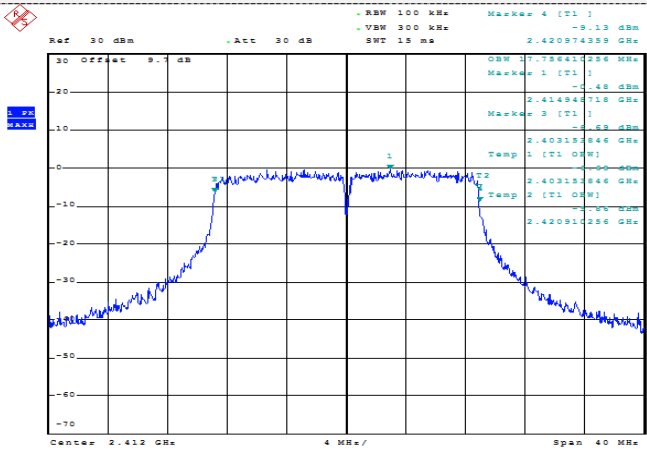
SISO Mode						
Ant. Port	Test Mode	Channel	6dB Bandwidth (MHz)	99% OBW (MHz)	Limit (KHz)	Result
Ant1	802.11b	01	10.192	15.000	≥500	Pass
		06	10.256	14.936		
		11	10.192	14.808		
	802.11g	01	16.667	16.538	≥500	Pass
		06	16.731	16.474		
		11	16.667	16.538		
	802.11n (HT20)	01	17.821	17.756	≥500	Pass
		06	17.821	17.692		
		11	17.821	17.756		
	802.11n (HT40)	03	36.538	36.154	≥500	Pass
		06	36.538	36.026		
		09	36.667	36.026		
Ant2	802.11b	01	10.192	14.679	≥500	Pass
		06	10.256	15.064		
		11	10.256	15.064		
	802.11g	01	16.667	16.538	≥500	Pass
		06	16.667	16.987		
		11	16.603	16.667		
	802.11n (HT20)	01	17.821	17.756	≥500	Pass
		06	17.756	17.885		
		11	17.821	18.077		
	802.11n (HT40)	03	36.538	36.154	≥500	Pass
		06	36.667	36.282		
		09	36.667	36.282		

Test plot as follows:

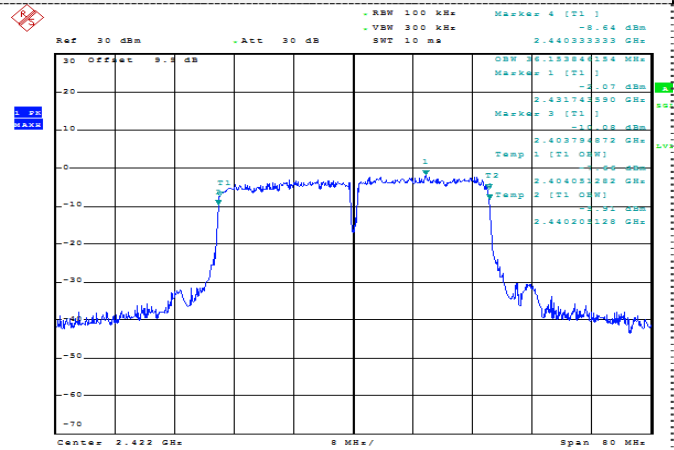


SISO-Ant 1

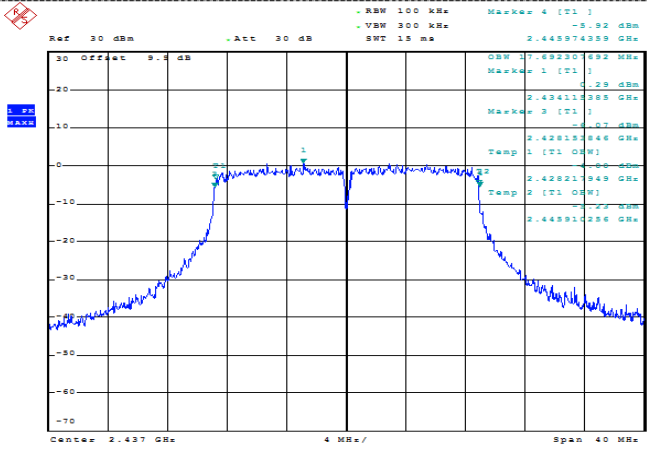
802.11n(HT20)



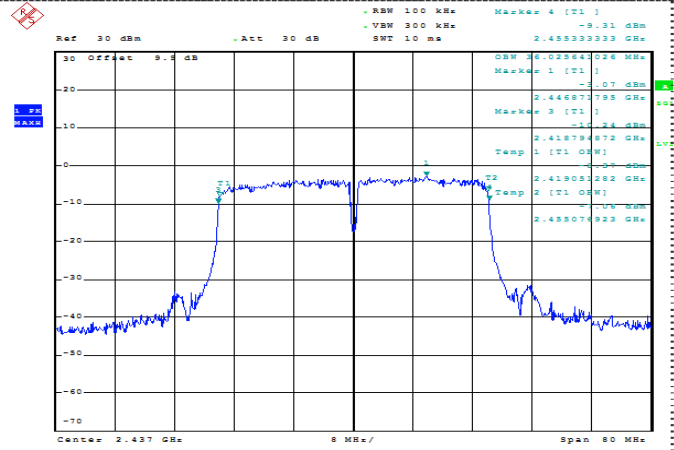
802.11n(HT40)



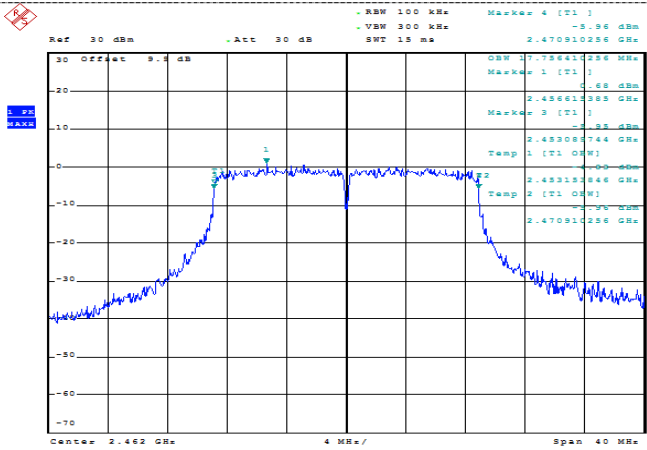
CH01



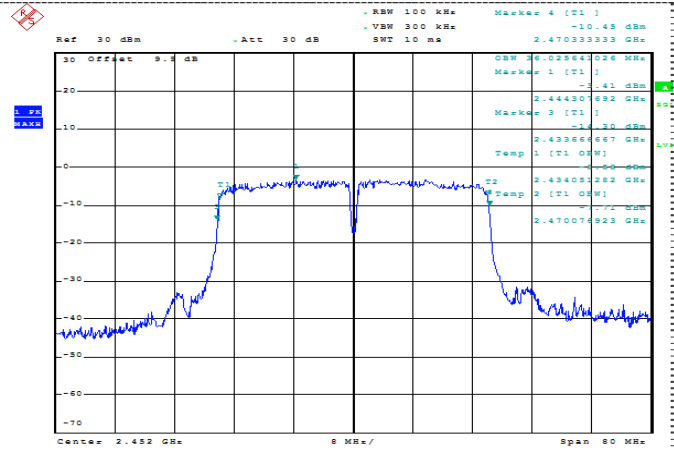
CH03



CH06



CH06



CH11

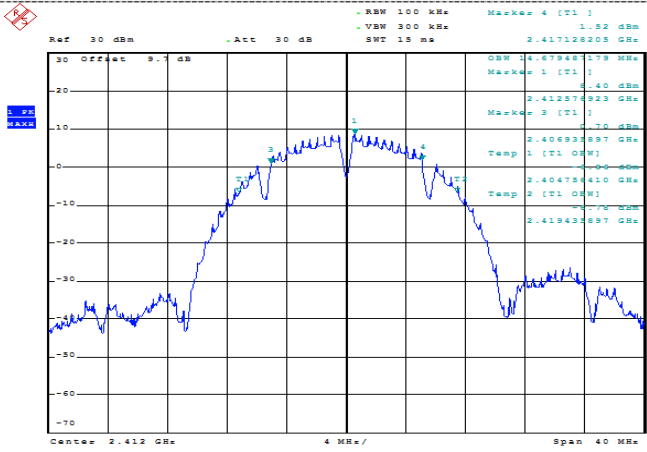


CH09

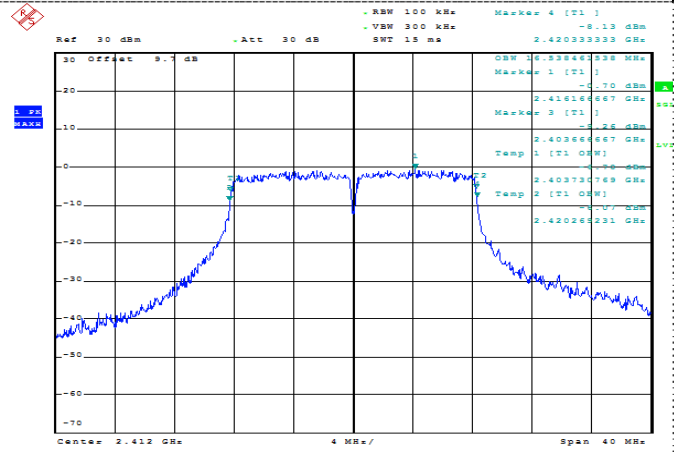


SISO-Ant 2

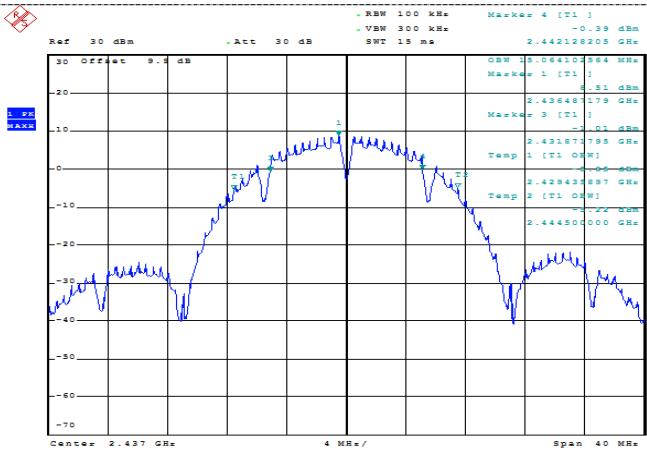
802.11b



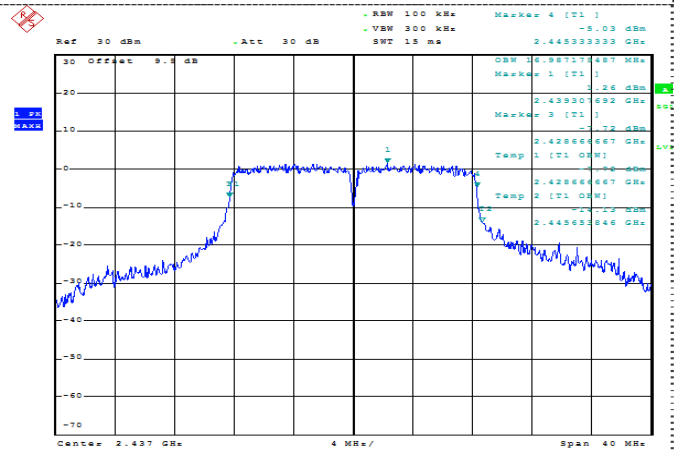
802.11g



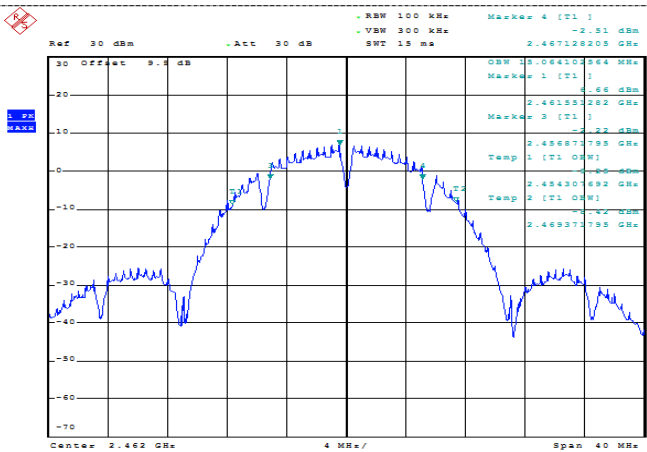
CH01



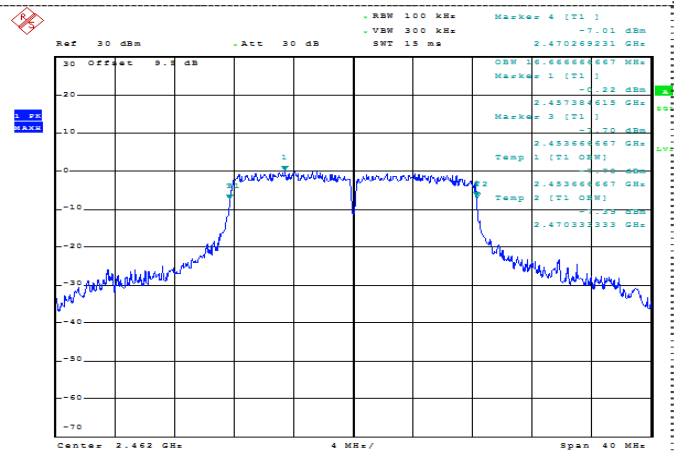
CH01



CH06



CH06



CH11



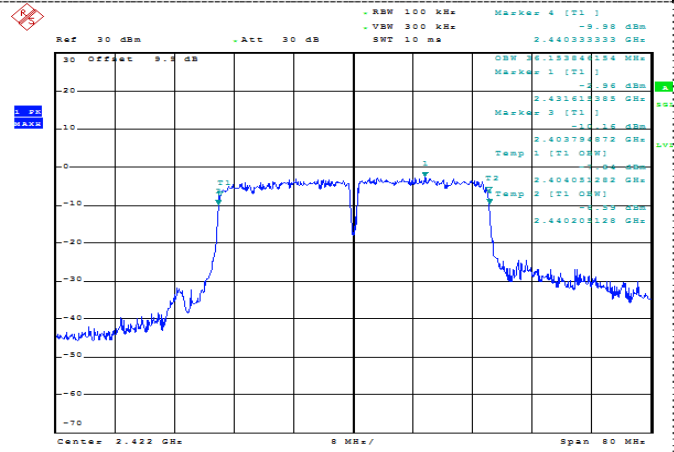
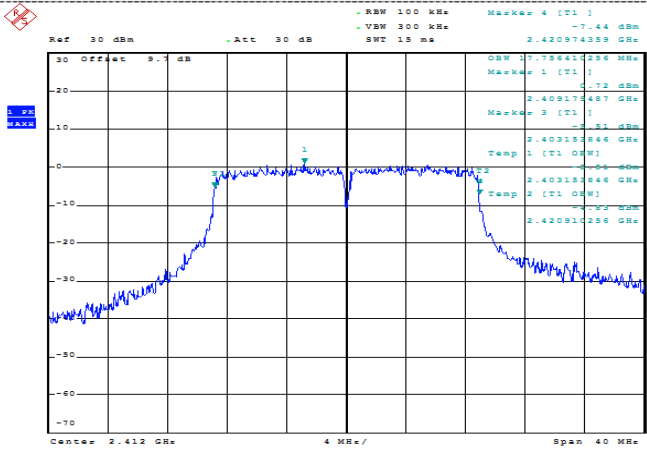
CH11



SISO-Ant 2

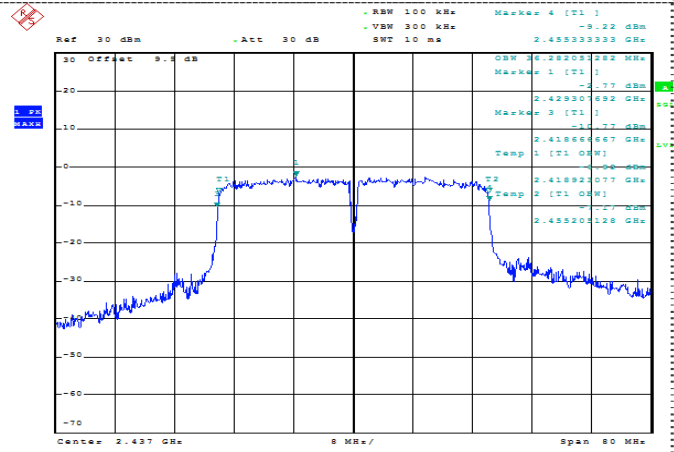
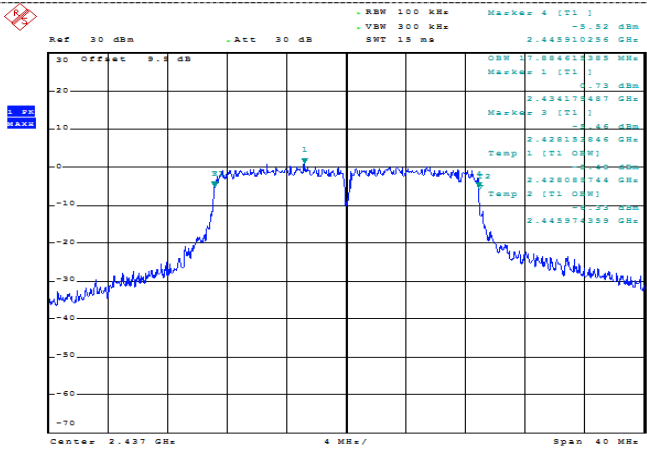
802.11n(HT20)

802.11n(HT40)



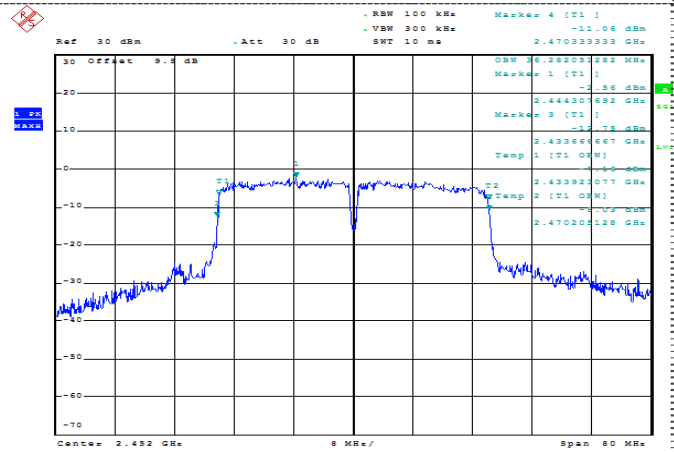
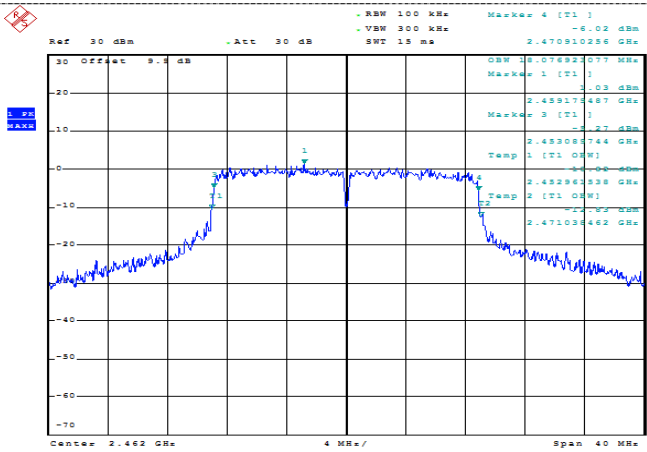
CH01

CH03



CH06

CH06



CH11

CH09

### 3.6. Band Edge Compliance of RF Emission

#### Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)

#### Test Procedure

##### **Test Procedure for conducted method**

- Use this procedure when the maximum (average) conducted output power was used to demonstrate compliance to the output power limit.
  1. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a spectrum analyzer
  2. Turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
  3. Set spectrum analyzer RBW =100 kHz, VBW=300 kHz, Detector=RMS, Sweep point= $\geq 8001$ , Sweep time=Auto, trace= Average( 100 traces)
  4. Marker the highest point which fall into restricted frequency bands
  5. Repeat above procedures until all measured frequencies were complete.

Note: For the MIMO test mode, the additional 3 dB( $10 \log(N_{ANT})$ ) had been add to offset of test plots.

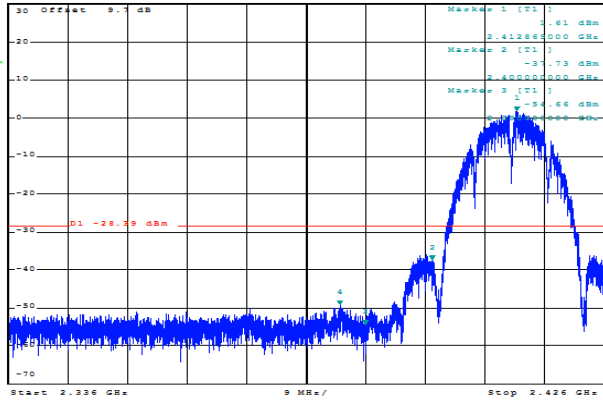
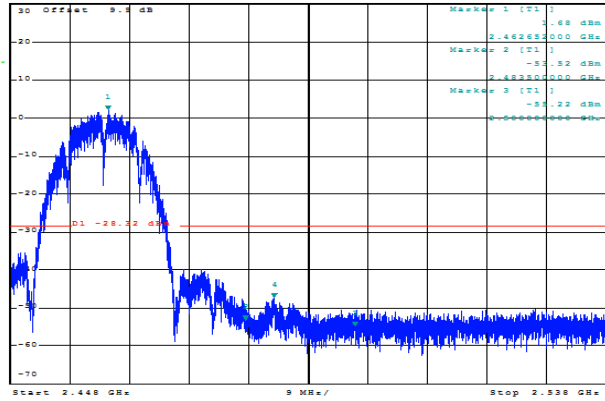
**Test Procedure for radiated method**

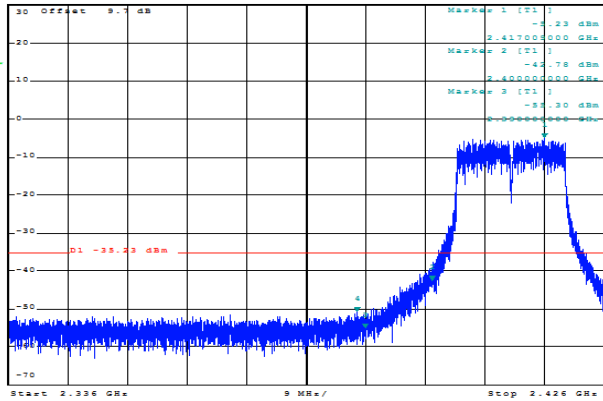
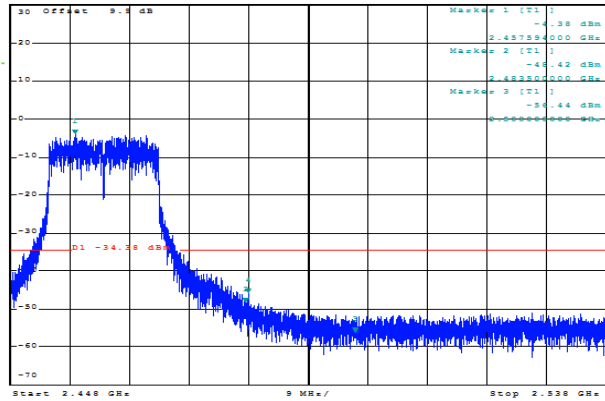
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel
7. Test the EUT in the lowest channel, the highest channel
8. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
9. Repeat above procedures until all frequencies measured was complete.

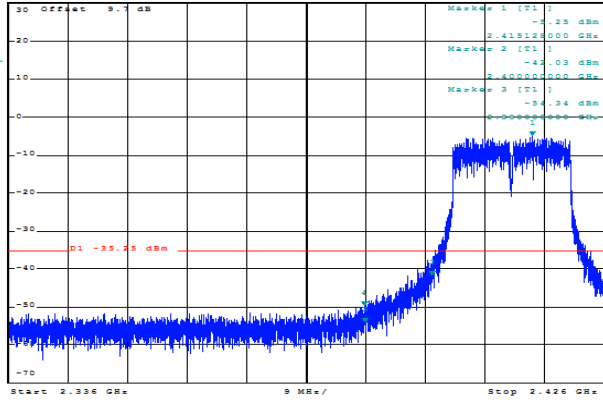
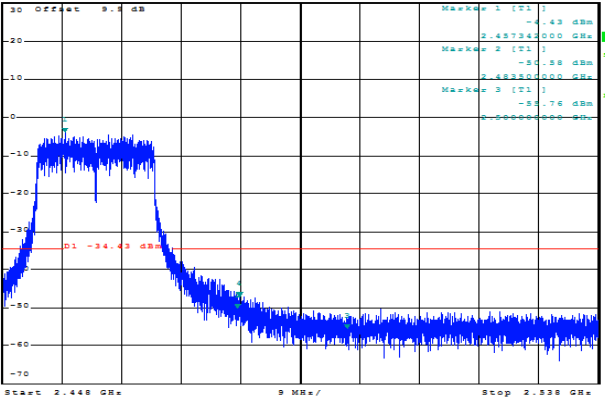
**Test Results**

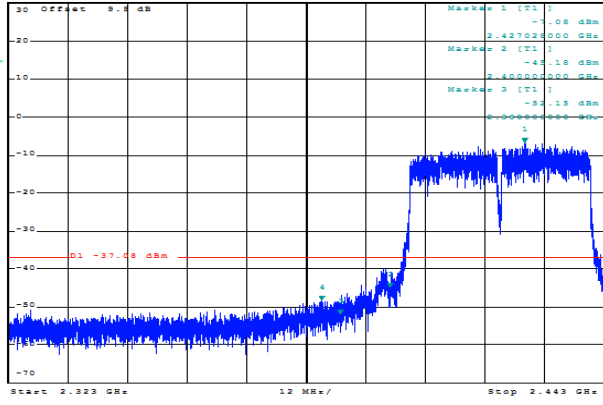
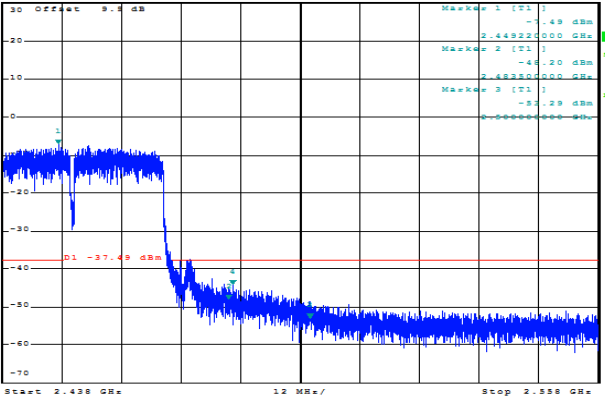


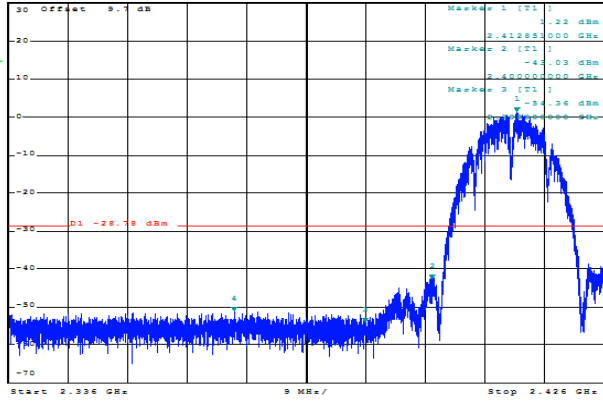
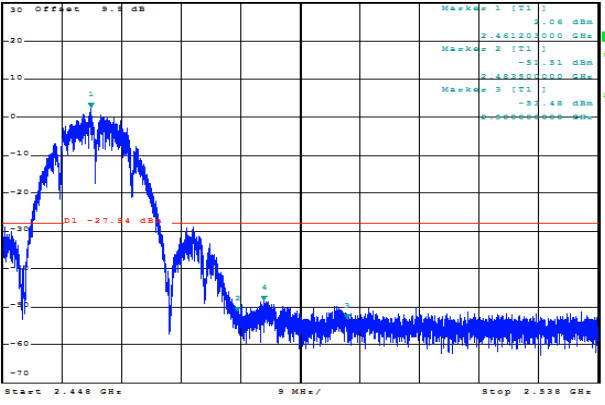
**A. Conducted measurements**

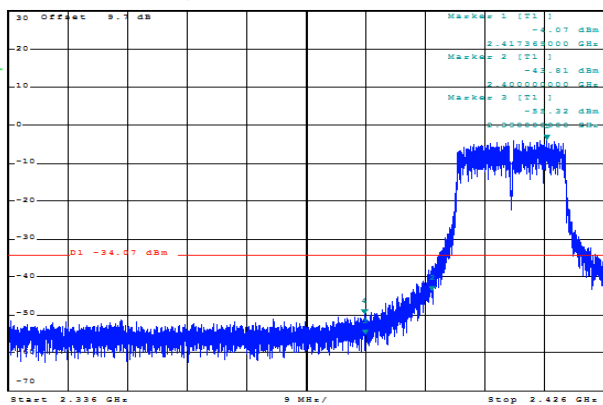
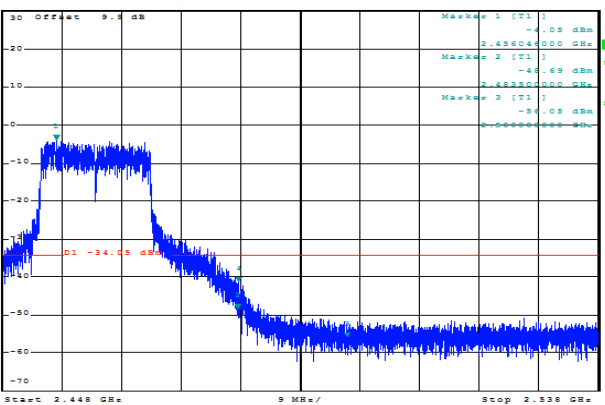
SISO-Ant1 802.11b			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2386.040	51.203	30	PASS
2487.825	49.207	30	PASS
			
2412		2462	

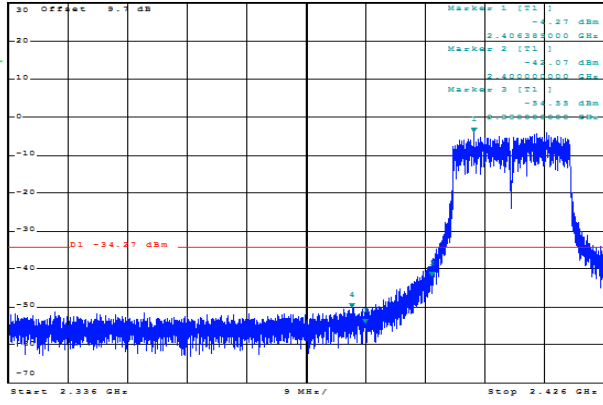
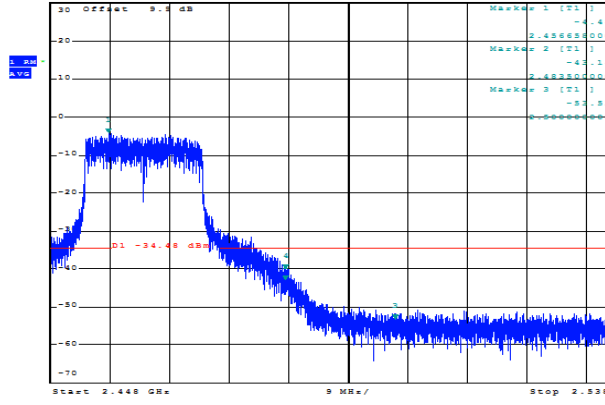
SISO-Ant1 802.11g			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2388.605	45.709	30	PASS
2483.847	41.838	30	PASS
			
2412		2462	

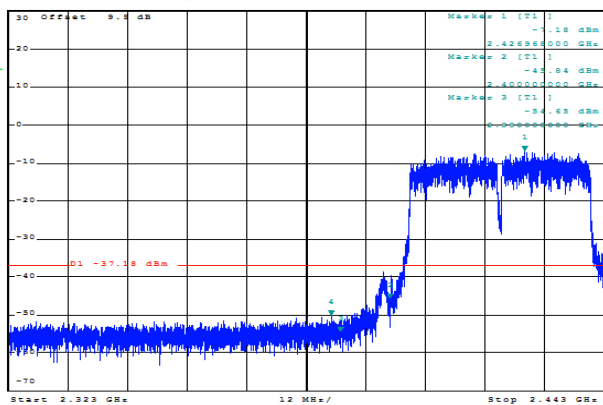
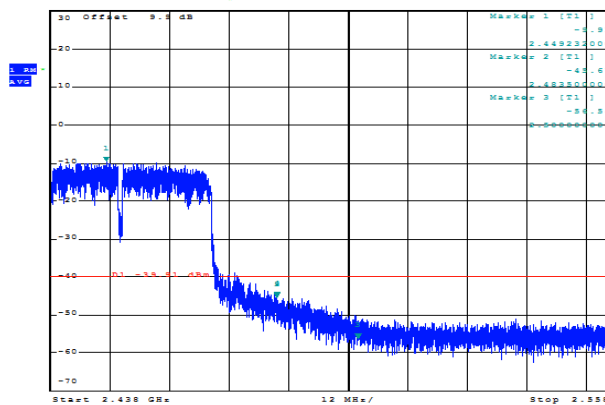
SISO-Ant1 802.11n20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2389.829	44.730	30	PASS
2483.748	42.945	30	PASS
		2412	
		2462	

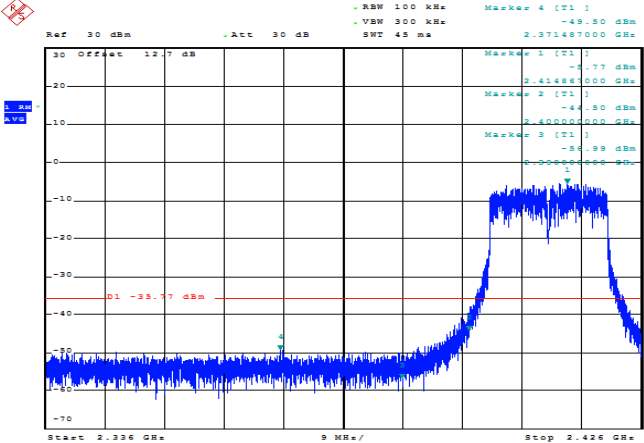
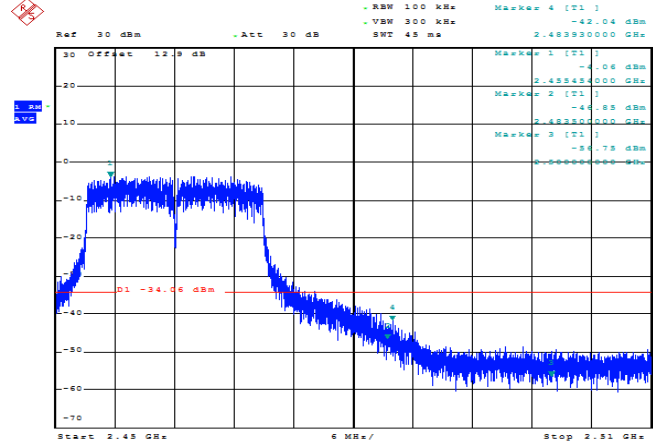
SISO-Ant1 802.11n40			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2386.120	41.288	30	PASS
2484.440	36.991	30	PASS
		2422	
		2452	

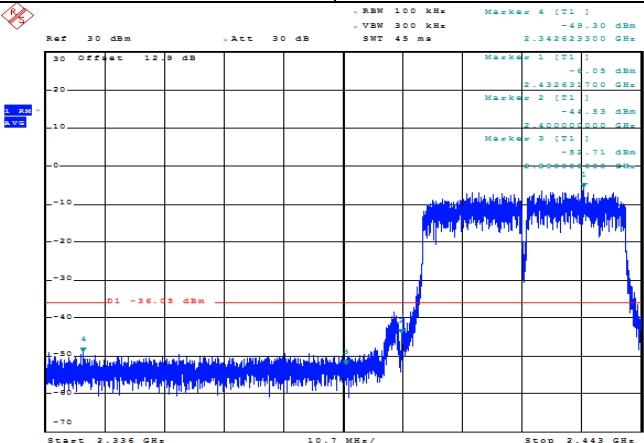
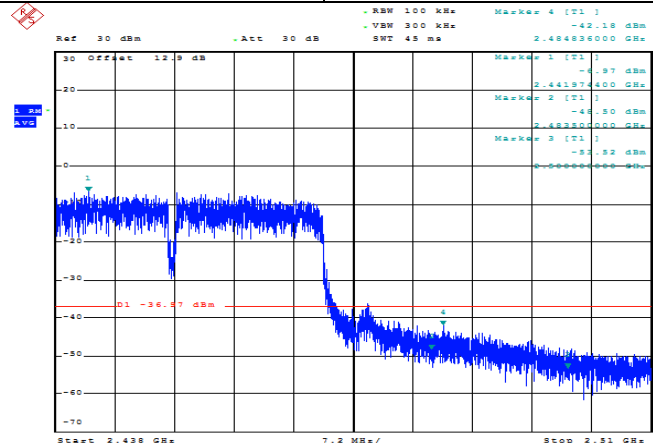
SISO-Ant2 802.11b			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2370.029	52.708	30	PASS
2487.582	50.624	30	PASS
			
2412		2462	

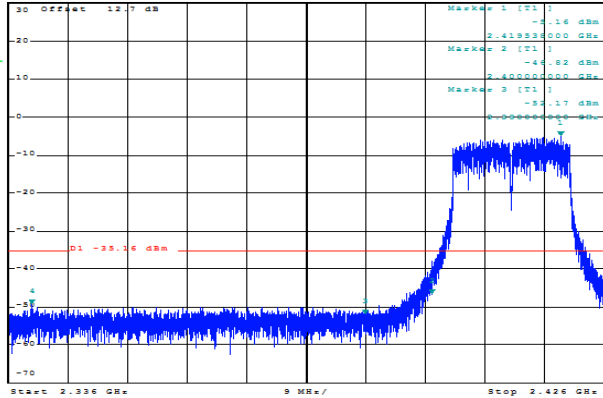
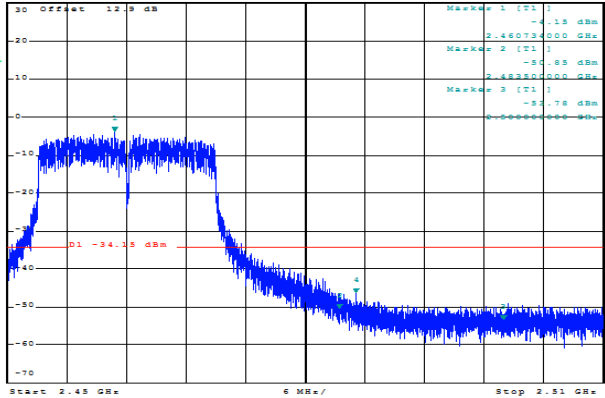
SISO-Ant2 802.11g			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2389.838	45.790	30	PASS
2483.559	37.497	30	PASS
			
2412		2462	

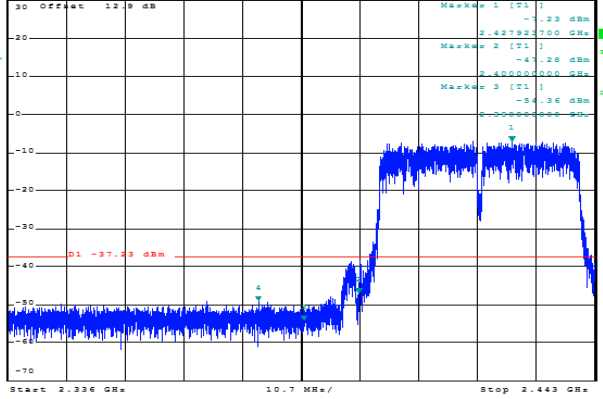
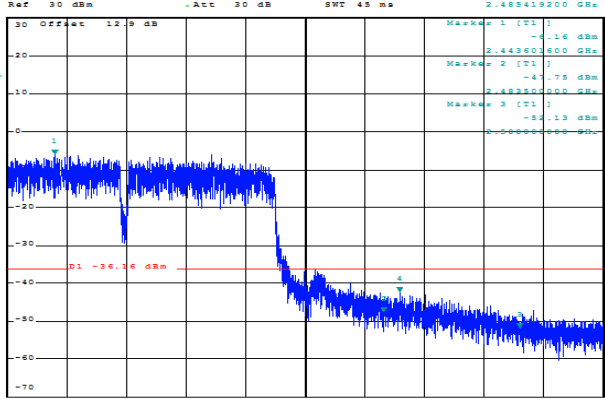
SISO-Ant2 802.11n20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2387.921	46.219	30	PASS
2483.523	35.695	30	PASS
			
2412		2462	

SISO-Ant2 802.11n40			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2387.920	43.195	30	PASS
2483.588	35.372	30	PASS
			
2422		2452	

MIMO-Ant1 802.11n20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2371.487	43.726	30	PASS
2483.930	37.984	30	PASS
			
2412		2462	

MIMO-Ant1 802.11n40			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2342.623	43.248	30	PASS
2484.836	35.213	30	PASS
			
2422		2452	

MIMO-Ant2 802.11n20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2339.438	44.327	30	PASS
2485.118	42.501	30	PASS
			
2412		2462	

MIMO-Ant2 802.11n40			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2381.646	42.094	30	PASS
2485.419	36.419	30	PASS
			
2422		2452	

**B. Radiated measurements**

**SISO-Ant1 802.11b**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	51.02	PK	74.00	22.98	1.00	220	56.33	27.49	3.32	36.12	-5.31
2390.00	42.13	AV	54.00	11.87	1.00	220	47.44	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.41	PK	74.00	24.59	1.00	180	54.72	27.49	3.32	36.12	-5.31
2390.00	38.11	AV	54.00	15.89	1.00	180	43.42	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.94	PK	74.00	24.06	1.00	225	55.66	27.45	3.38	36.55	-5.72
2483.50	41.91	AV	54.00	12.09	1.00	225	47.63	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.77	PK	74.00	23.23	1.00	170	56.49	27.45	3.38	36.55	-5.72
2483.50	40	AV	54.00	14.00	1.00	170	45.72	27.45	3.38	36.55	-5.72

**SISO-Ant1 802.11g**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.65	PK	74.00	24.35	1.00	215	54.96	27.49	3.32	36.12	-5.31
2390.00	41.15	AV	54.00	12.85	1.00	215	46.46	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	50.00	PK	74.00	24.00	1.00	175	55.31	27.49	3.32	36.12	-5.31
2390.00	40.56	AV	54.00	13.44	1.00	175	45.87	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.25	PK	74.00	24.75	1.00	225	54.97	27.45	3.38	36.55	-5.72
2483.50	39.61	AV	54.00	14.39	1.00	225	45.33	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.49	PK	74.00	23.51	1.00	190	56.21	27.45	3.38	36.55	-5.72
2483.50	39.23	AV	54.00	14.77	1.00	190	44.95	27.45	3.38	36.55	-5.72

**SISO-Ant1 802.11n20**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.01	PK	74.00	24.99	1.00	240	54.32	27.49	3.32	36.12	-5.31
2390.00	40.97	AV	54.00	13.03	1.00	240	46.28	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.76	PK	74.00	24.24	1.00	192	55.07	27.49	3.32	36.12	-5.31
2390.00	40.29	AV	54.00	13.71	1.00	192	45.60	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	51.17	PK	74.00	22.83	1.00	235	56.89	27.45	3.38	36.55	-5.72
2483.50	41.22	AV	54.00	12.78	1.00	235	46.94	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.22	PK	74.00	23.78	1.00	200	55.94	27.45	3.38	36.55	-5.72
2483.50	39.56	AV	54.00	14.44	1.00	200	45.28	27.45	3.38	36.55	-5.72

**SISO-Ant1 802.11n40**

Frequency(MHz):			2422			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	48.49	PK	74.00	25.51	1.00	240	53.80	27.49	3.32	36.12	-5.31
2390.00	37.94	AV	54.00	16.06	1.00	240	43.25	27.49	3.32	36.12	-5.31
Frequency(MHz):			2422			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	48.20	PK	74.00	25.80	1.00	192	53.51	27.49	3.32	36.12	-5.31
2390.00	36.89	AV	54.00	17.11	1.00	192	42.20	27.49	3.32	36.12	-5.31
Frequency(MHz):			2452			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	48.91	PK	74.00	25.09	1.00	235	54.63	27.45	3.38	36.55	-5.72
2483.50	37.72	AV	54.00	16.28	1.00	235	43.44	27.45	3.38	36.55	-5.72
Frequency(MHz):			2452			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.13	PK	74.00	24.87	1.00	200	54.85	27.45	3.38	36.55	-5.72
2483.50	36.74	AV	54.00	17.26	1.00	200	42.46	27.45	3.38	36.55	-5.72



**SISO-Ant2 802.11b**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	51.23	PK	74.00	22.77	1.00	250	56.54	27.49	3.32	36.12	-5.31
2390.00	43.16	AV	54.00	10.84	1.00	250	48.47	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.34	PK	74.00	24.66	1.00	192	54.65	27.49	3.32	36.12	-5.31
2390.00	38.62	AV	54.00	15.38	1.00	192	43.93	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.83	PK	74.00	23.17	1.00	255	56.55	27.45	3.38	36.55	-5.72
2483.50	42.14	AV	54.00	11.86	1.00	255	47.86	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.62	PK	74.00	24.38	1.00	182	55.34	27.45	3.38	36.55	-5.72
2483.50	40.72	AV	54.00	13.28	1.00	182	46.44	27.45	3.38	36.55	-5.72

**SISO-Ant2 802.11g**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	50.42	PK	74.00	23.58	1.00	245	55.73	27.49	3.32	36.12	-5.31
2390.00	39.79	AV	54.00	14.21	1.00	245	45.10	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	48.58	PK	74.00	25.42	1.00	187	53.89	27.49	3.32	36.12	-5.31
2390.00	39.29	AV	54.00	14.71	1.00	187	44.60	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.63	PK	74.00	23.37	1.00	255	56.35	27.45	3.38	36.55	-5.72
2483.50	40.71	AV	54.00	13.29	1.00	255	46.43	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.80	PK	74.00	24.20	1.00	202	55.52	27.45	3.38	36.55	-5.72
2483.50	40.85	AV	54.00	13.15	1.00	202	46.57	27.45	3.38	36.55	-5.72

**SISO-Ant2 802.11n20**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.63	PK	74.00	24.37	1.00	270	54.94	27.49	3.32	36.12	-5.31
2390.00	40.87	AV	54.00	13.13	1.00	270	46.18	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	50.79	PK	74.00	23.21	1.00	204	56.10	27.49	3.32	36.12	-5.31
2390.00	40.05	AV	54.00	13.95	1.00	204	45.36	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.80	PK	74.00	24.20	1.00	212	55.52	27.45	3.38	36.55	-5.72
2483.50	39.70	AV	54.00	14.30	1.00	212	45.42	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	50.80	PK	74.00	23.20	1.00	265	56.52	27.45	3.38	36.55	-5.72
2483.50	41.33	AV	54.00	12.67	1.00	265	47.05	27.45	3.38	36.55	-5.72

**SISO-Ant2 802.11n40**

Frequency(MHz):			2422			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	48.39	PK	74.00	25.61	1.00	270	53.70	27.49	3.32	36.12	-5.31
2390.00	37.47	AV	54.00	16.53	1.00	270	42.78	27.49	3.32	36.12	-5.31
Frequency(MHz):			2422			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	48.47	PK	74.00	25.53	1.00	204	53.78	27.49	3.32	36.12	-5.31
2390.00	37.43	AV	54.00	16.57	1.00	204	42.74	27.49	3.32	36.12	-5.31
Frequency(MHz):			2452			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	47.97	PK	74.00	26.03	1.00	265	53.69	27.45	3.38	36.55	-5.72
2483.50	37.02	AV	54.00	16.98	1.00	265	42.74	27.45	3.38	36.55	-5.72
Frequency(MHz):			2452			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	47.63	PK	74.00	26.37	1.00	212	53.35	27.45	3.38	36.55	-5.72
2483.50	37.87	AV	54.00	16.13	1.00	212	43.59	27.45	3.38	36.55	-5.72

**MIMO 802.11n20**

Frequency(MHz):			2412			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.10	PK	74.00	24.90	1.00	262	54.41	27.49	3.32	36.12	-5.31
2390.00	38.85	AV	54.00	15.15	1.00	262	44.16	27.49	3.32	36.12	-5.31
Frequency(MHz):			2412			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	49.44	PK	74.00	24.56	1.00	226	54.75	27.49	3.32	36.12	-5.31
2390.00	39.67	AV	54.00	14.33	1.00	226	44.98	27.49	3.32	36.12	-5.31
Frequency(MHz):			2462			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	49.74	PK	74.00	24.26	1.00	257	55.46	27.45	3.38	36.55	-5.72
2483.50	39.35	AV	54.00	14.65	1.00	257	45.07	27.45	3.38	36.55	-5.72
Frequency(MHz):			2462			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	48.78	PK	74.00	25.22	1.00	234	54.50	27.45	3.38	36.55	-5.72
2483.50	38.65	AV	54.00	15.35	1.00	234	44.37	27.45	3.38	36.55	-5.72

**MIMO 802.11n40**

Frequency(MHz):			2422			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	47.55	PK	74.00	26.45	1.00	262	52.86	27.49	3.32	36.12	-5.31
2390.00	38.89	AV	54.00	15.11	1.00	262	44.20	27.49	3.32	36.12	-5.31
Frequency(MHz):			2422			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	47.26	PK	74.00	26.74	1.00	226	52.57	27.49	3.32	36.12	-5.31
2390.00	37.56	AV	54.00	16.44	1.00	226	42.87	27.49	3.32	36.12	-5.31
Frequency(MHz):			2452			Polarity:			HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	47.43	PK	74.00	26.57	1.00	257	53.15	27.45	3.38	36.55	-5.72
2483.50	36.33	AV	54.00	17.67	1.00	257	42.05	27.45	3.38	36.55	-5.72
Frequency(MHz):			2452			Polarity:			VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	47.94	PK	74.00	26.06	1.00	234	53.66	27.45	3.38	36.55	-5.72
2483.50	36.05	AV	54.00	17.95	1.00	234	41.77	27.45	3.38	36.55	-5.72

### 3.7. Spurious RF Conducted Emission

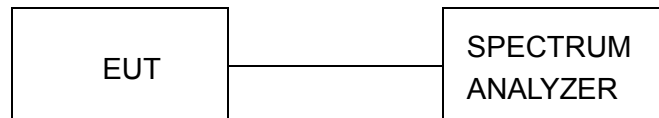
#### Limit

1. Below -20dB of the highest emission level in operating band.
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

#### Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10:2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100 kHz and VBM= 300 KHz to measure the peak field strength, and measured frequency range from 30MHz to 26.5GHz.

#### Test Configuration



#### Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandage measurement data.

Note: For the MIMO test mode, the additional 3 dB( $10 \log(N_{ANT})$ ) had been add to offset of test plots.

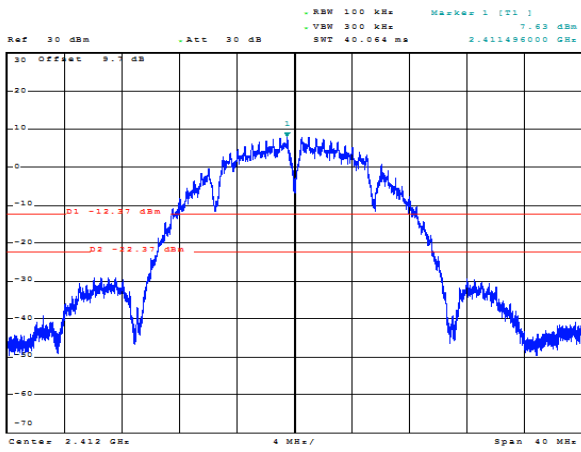
Test plot as follows:

Test Mode:

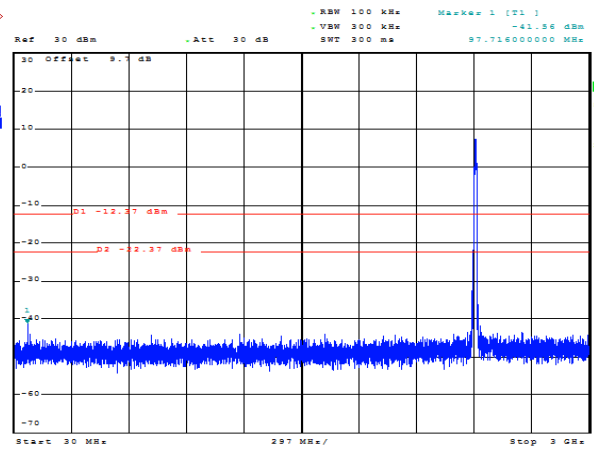
SISO-Ant1 802.11b

Test channel :

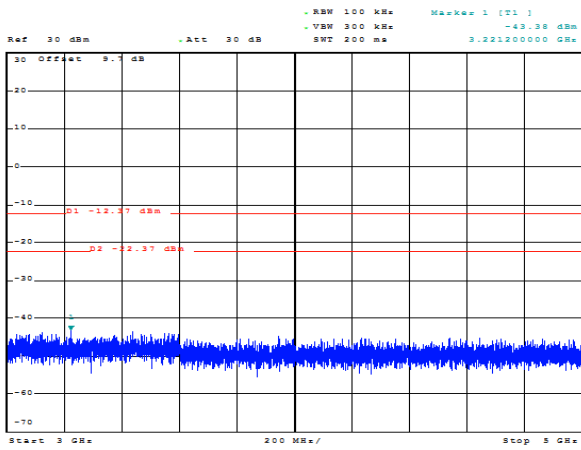
01



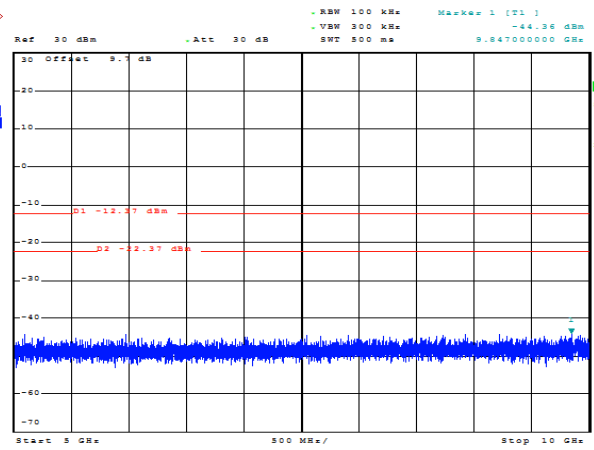
Reference level



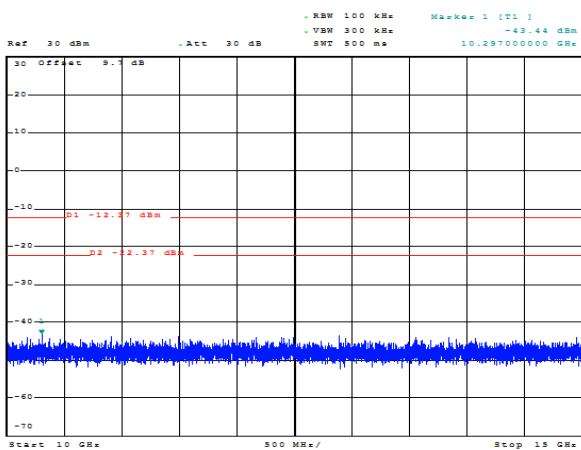
30MHz-3GHz



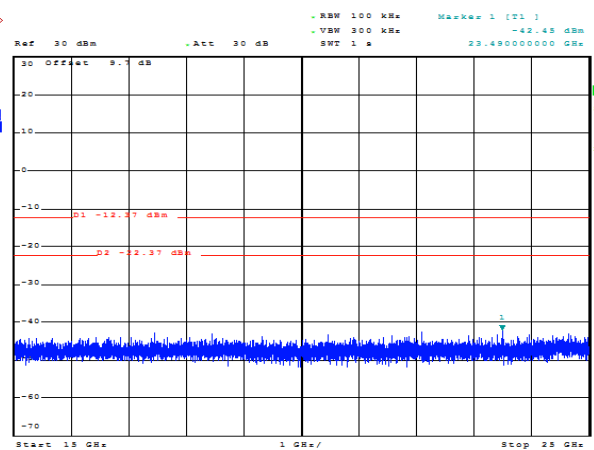
3GHz-5GHz



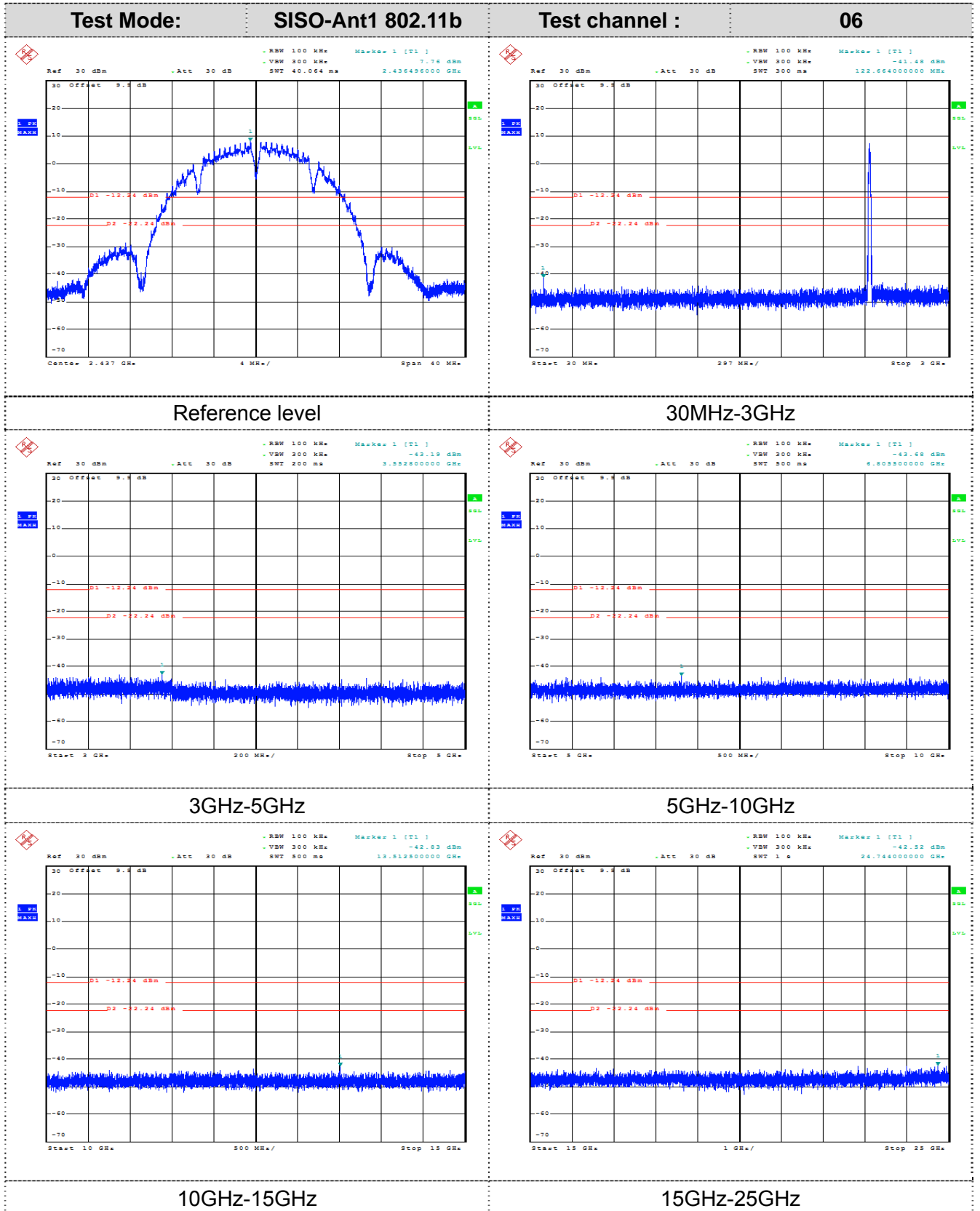
5GHz-10GHz

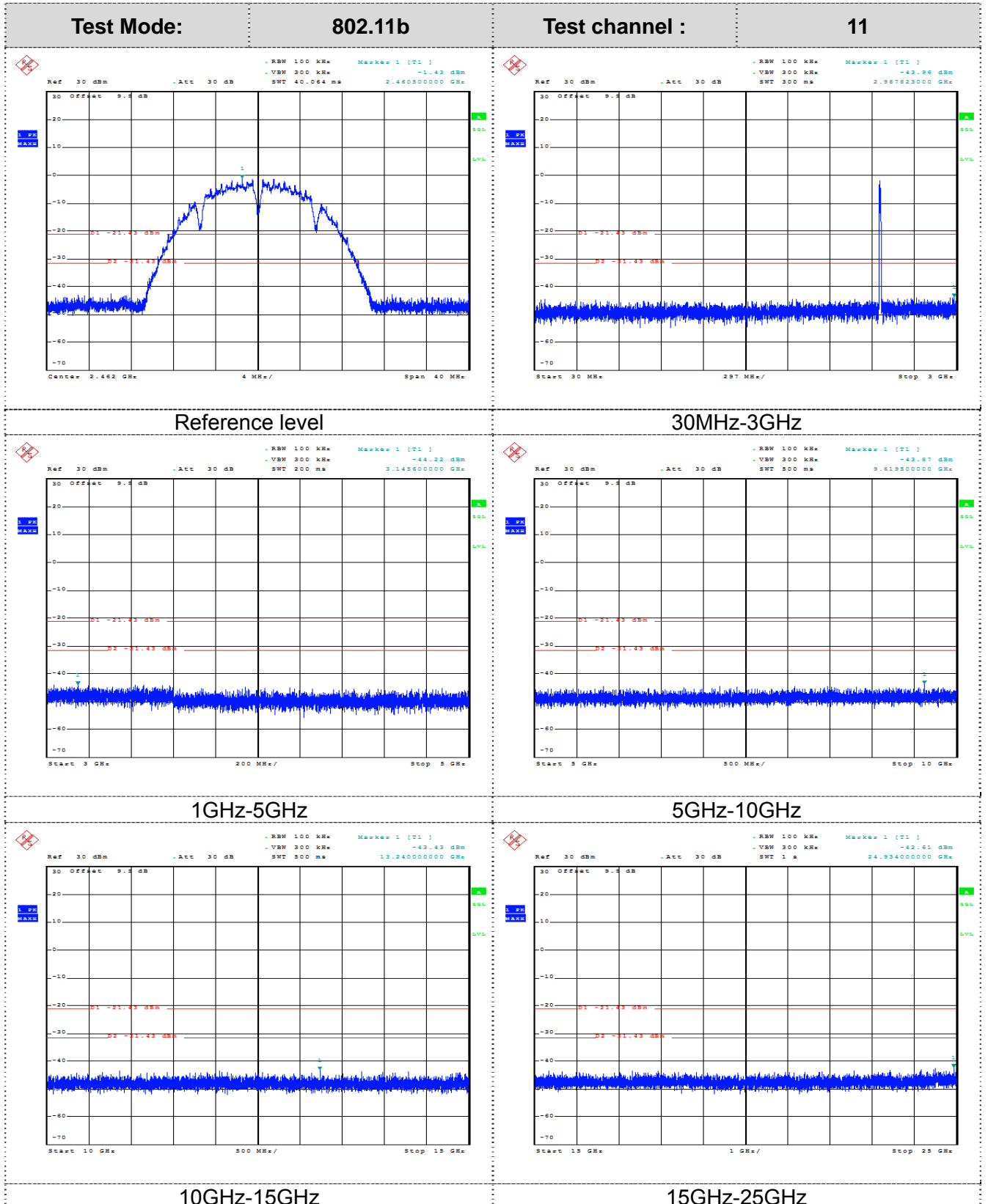


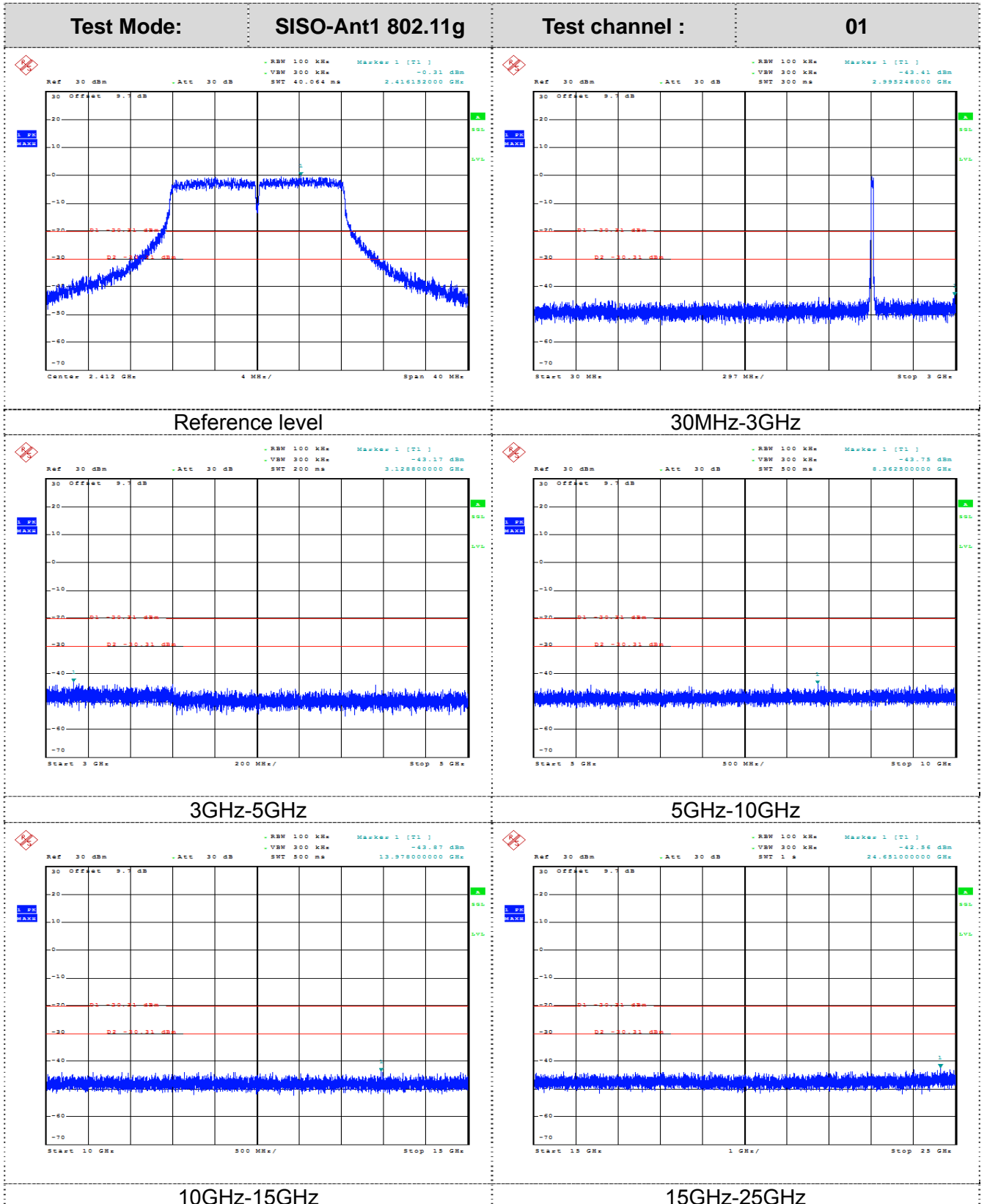
10GHz-15GHz



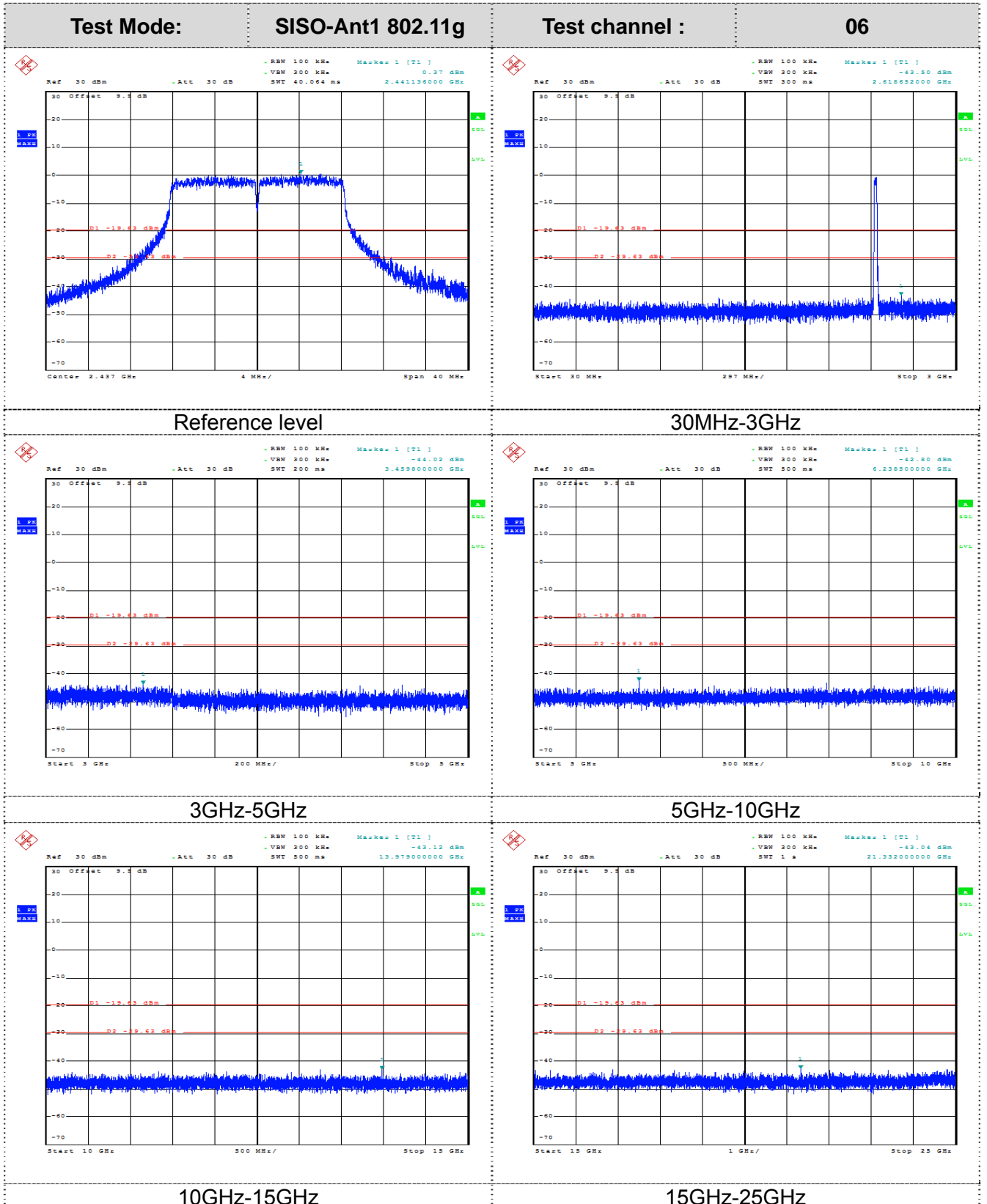
15GHz-25GHz

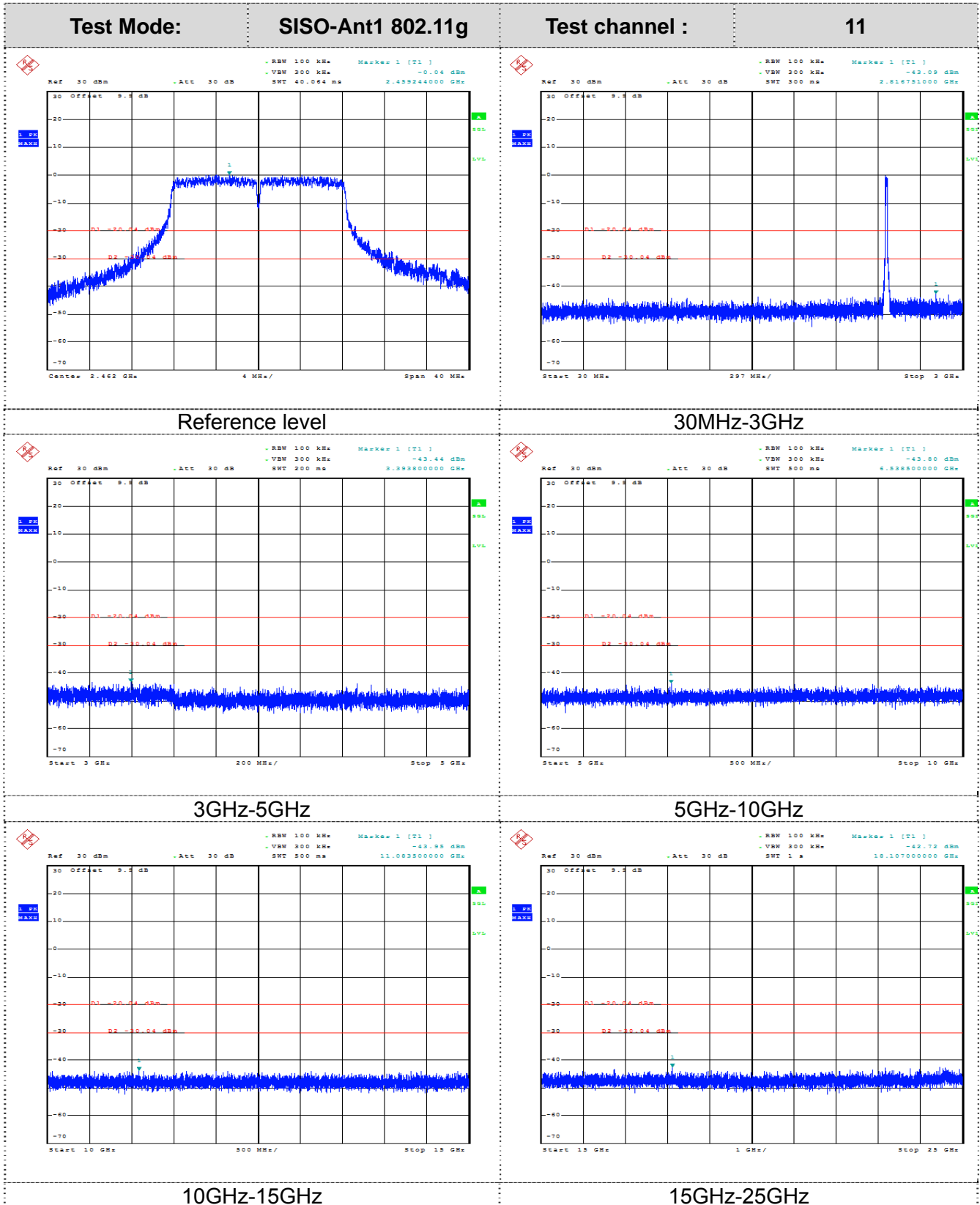


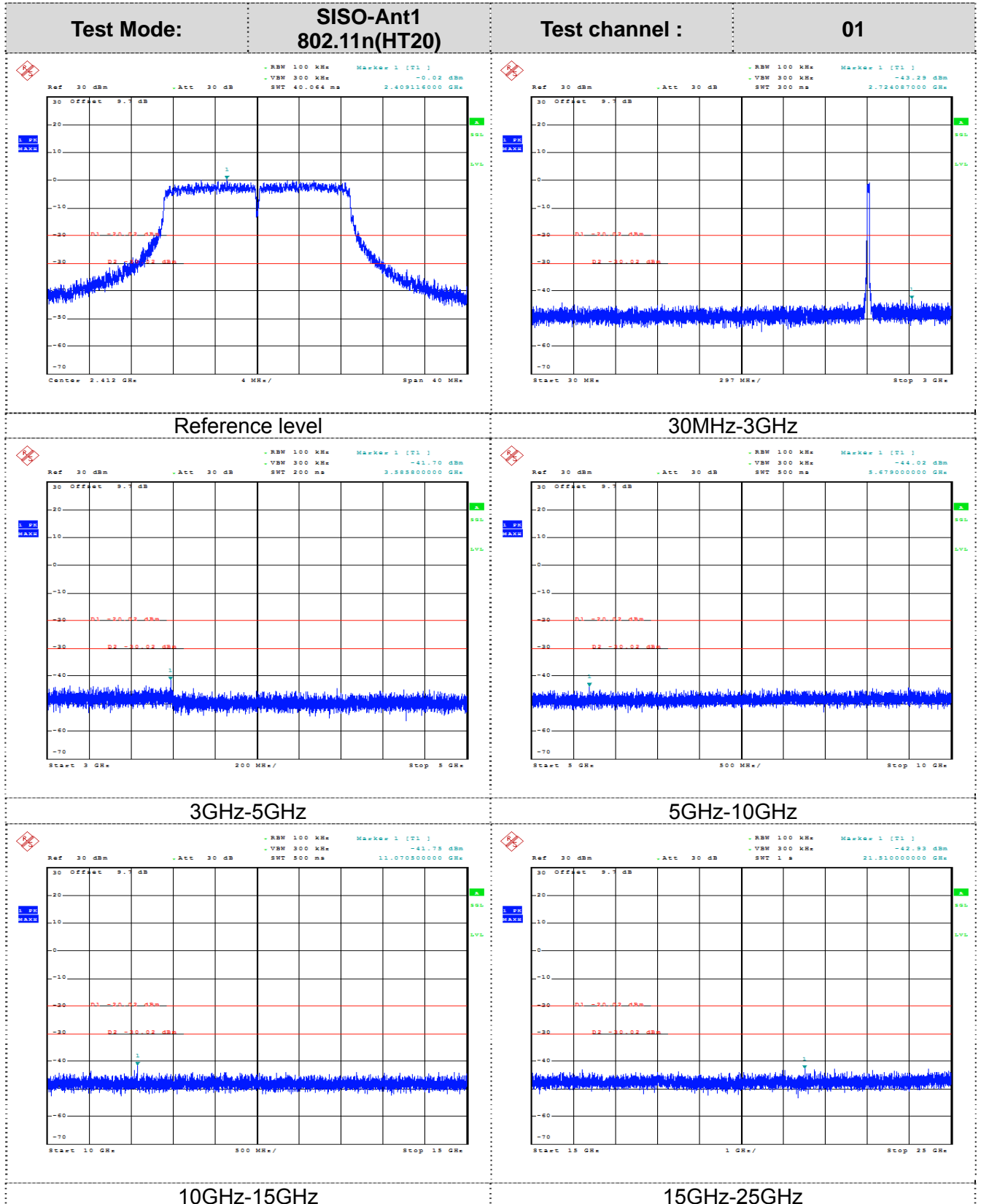


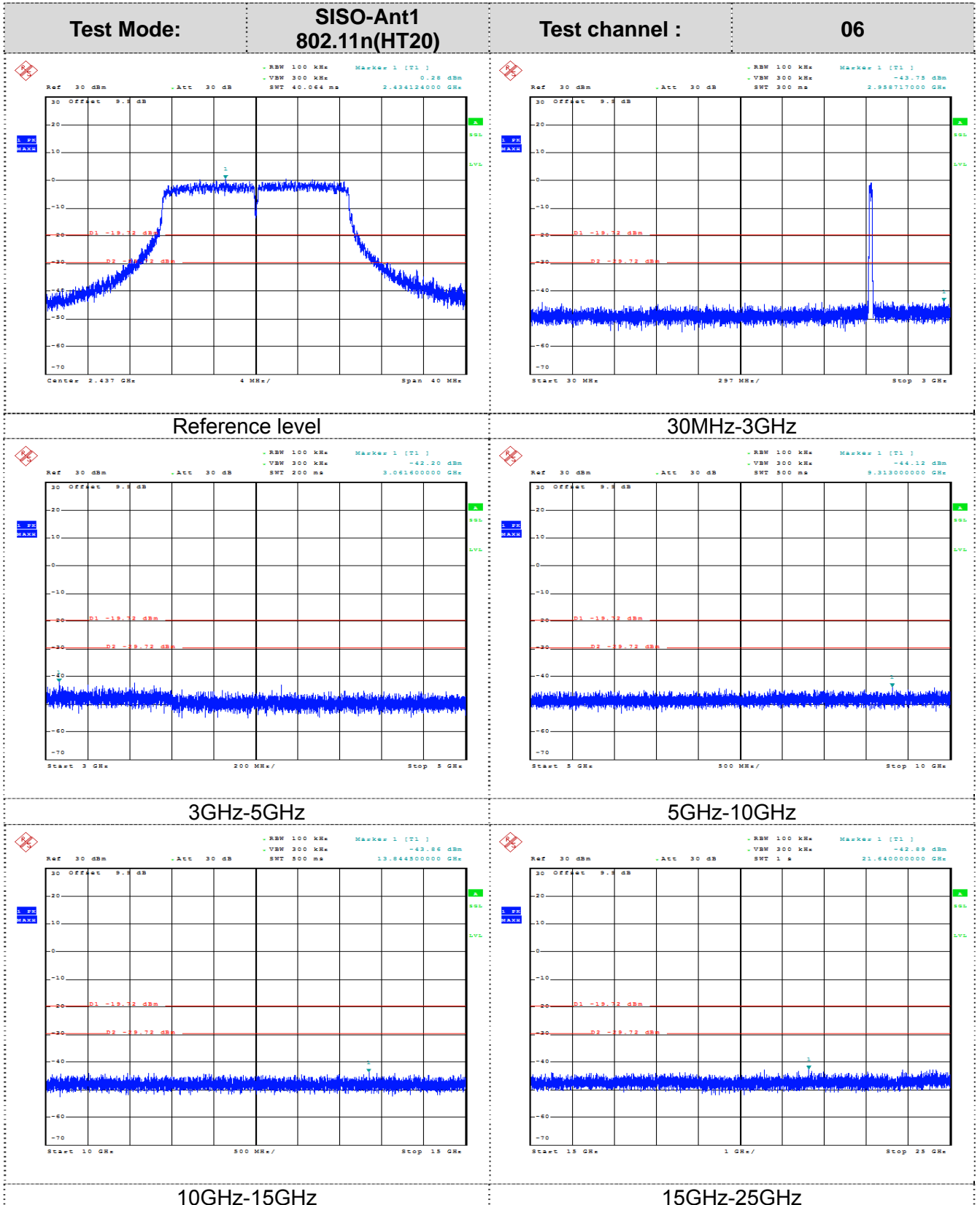


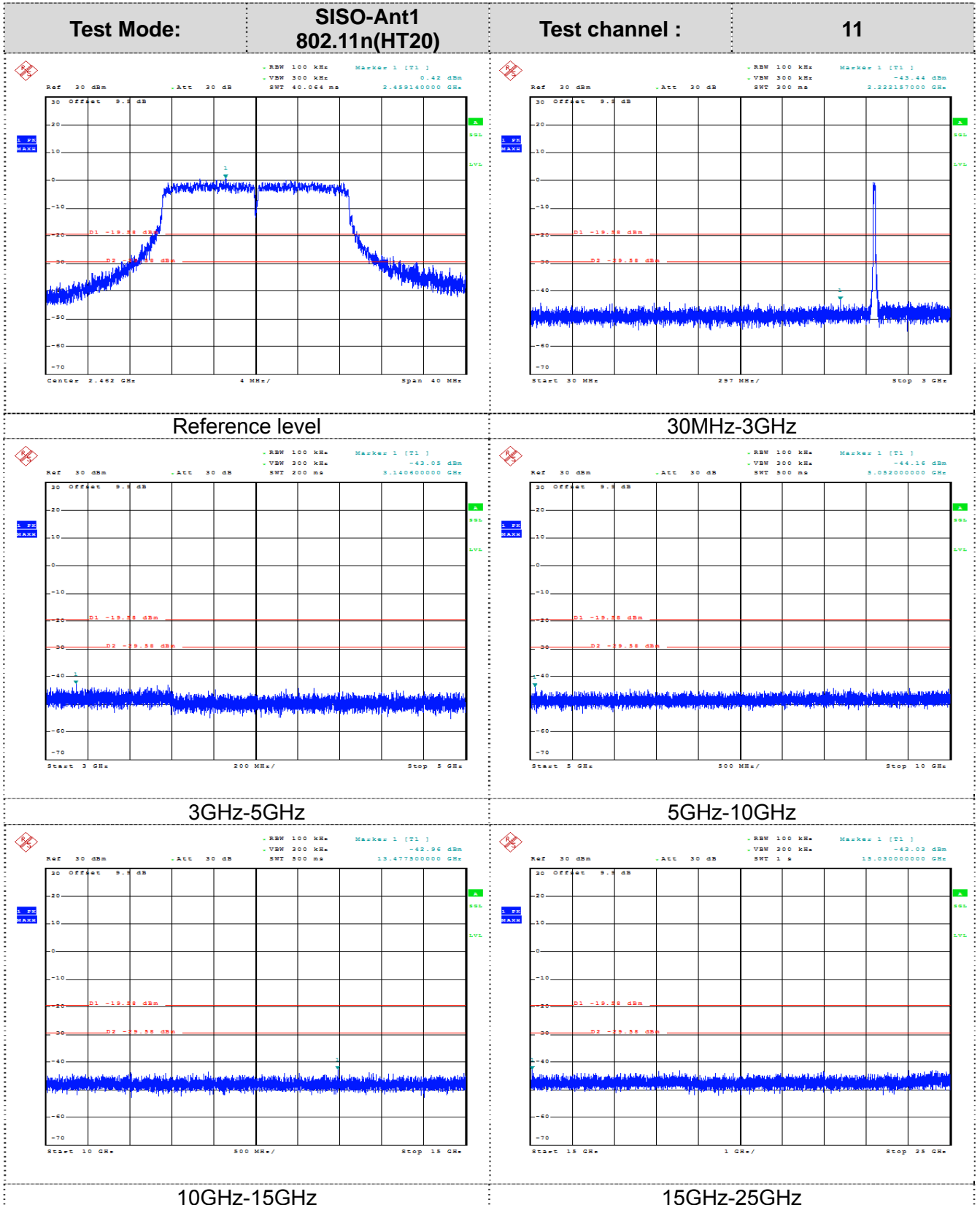


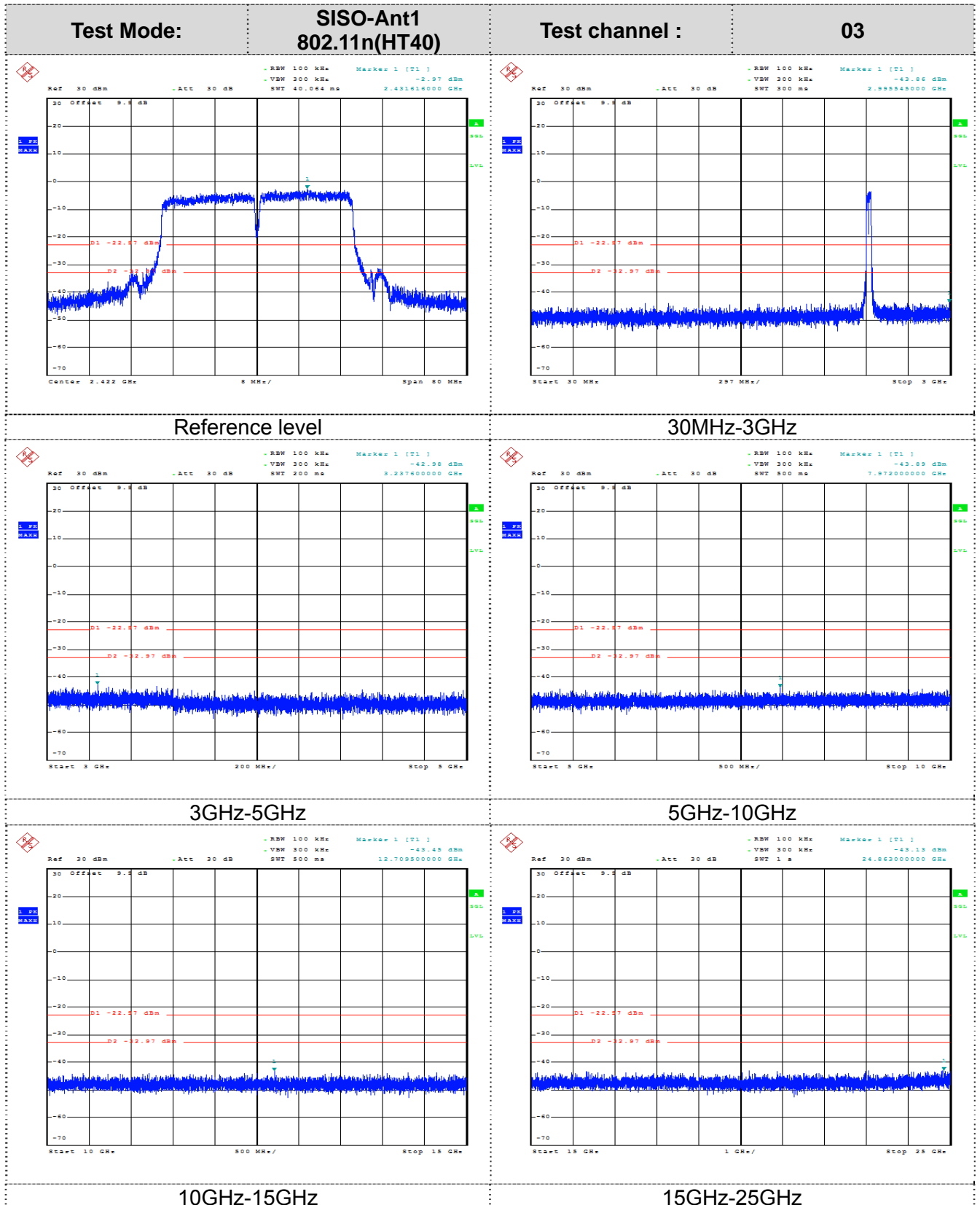


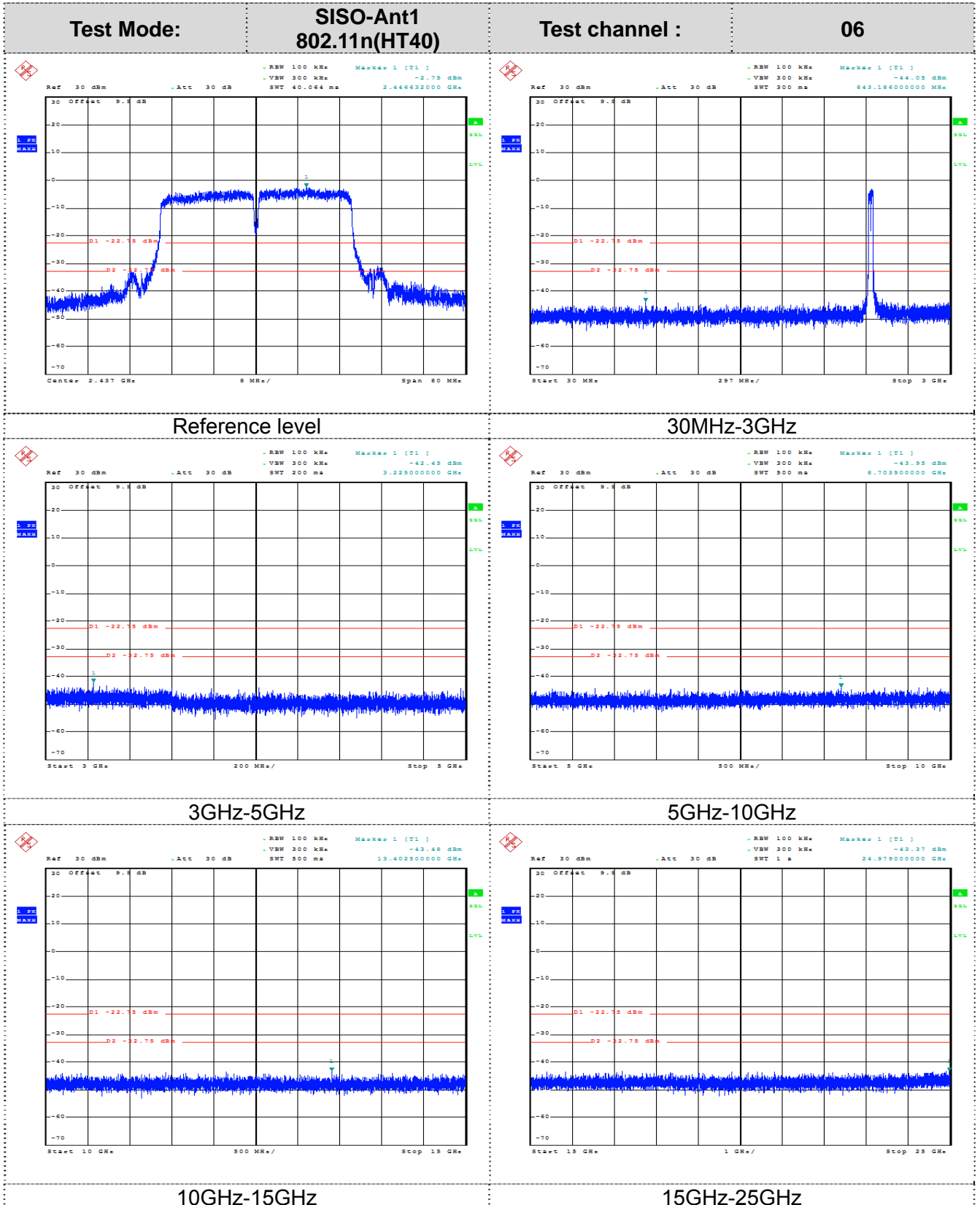


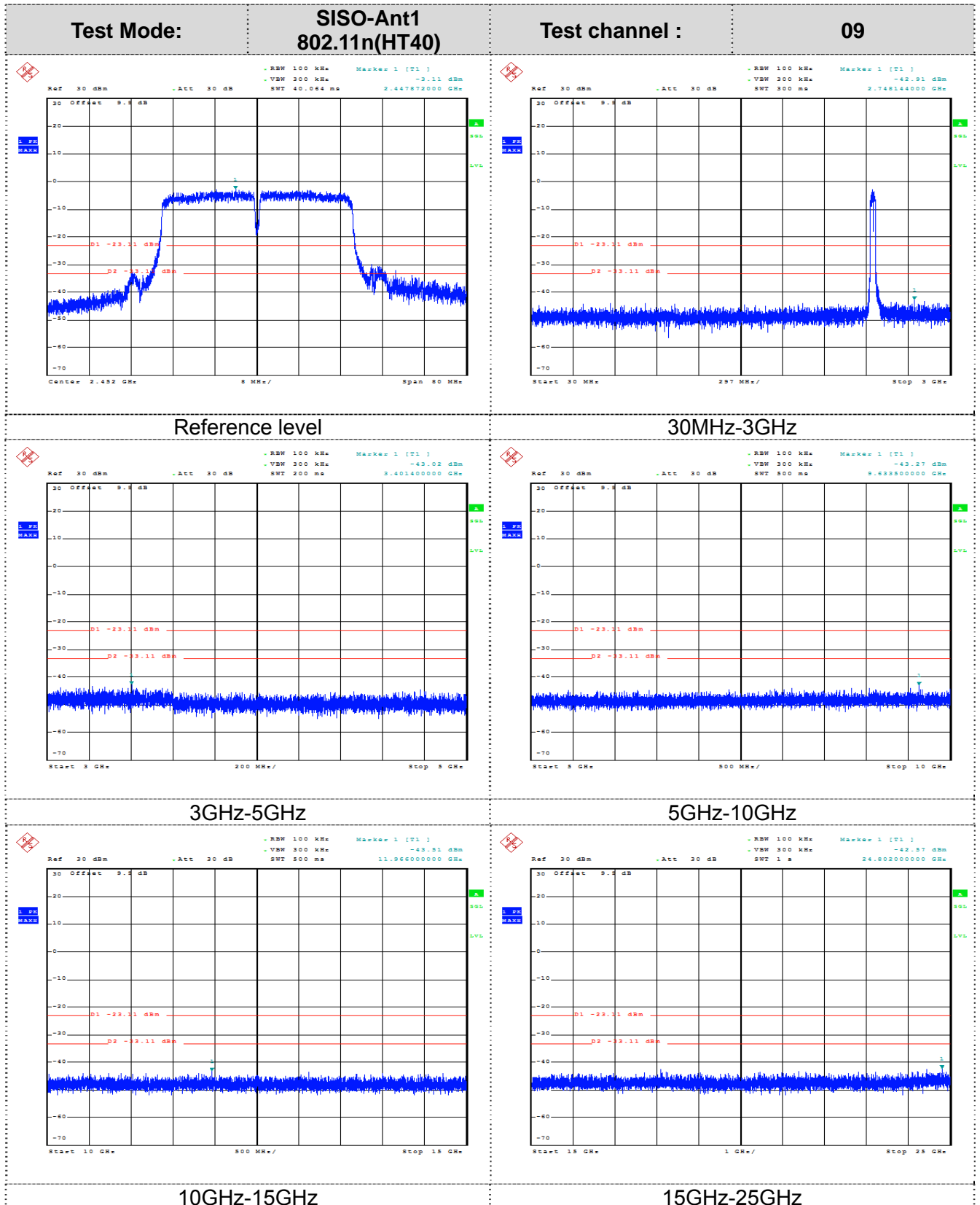




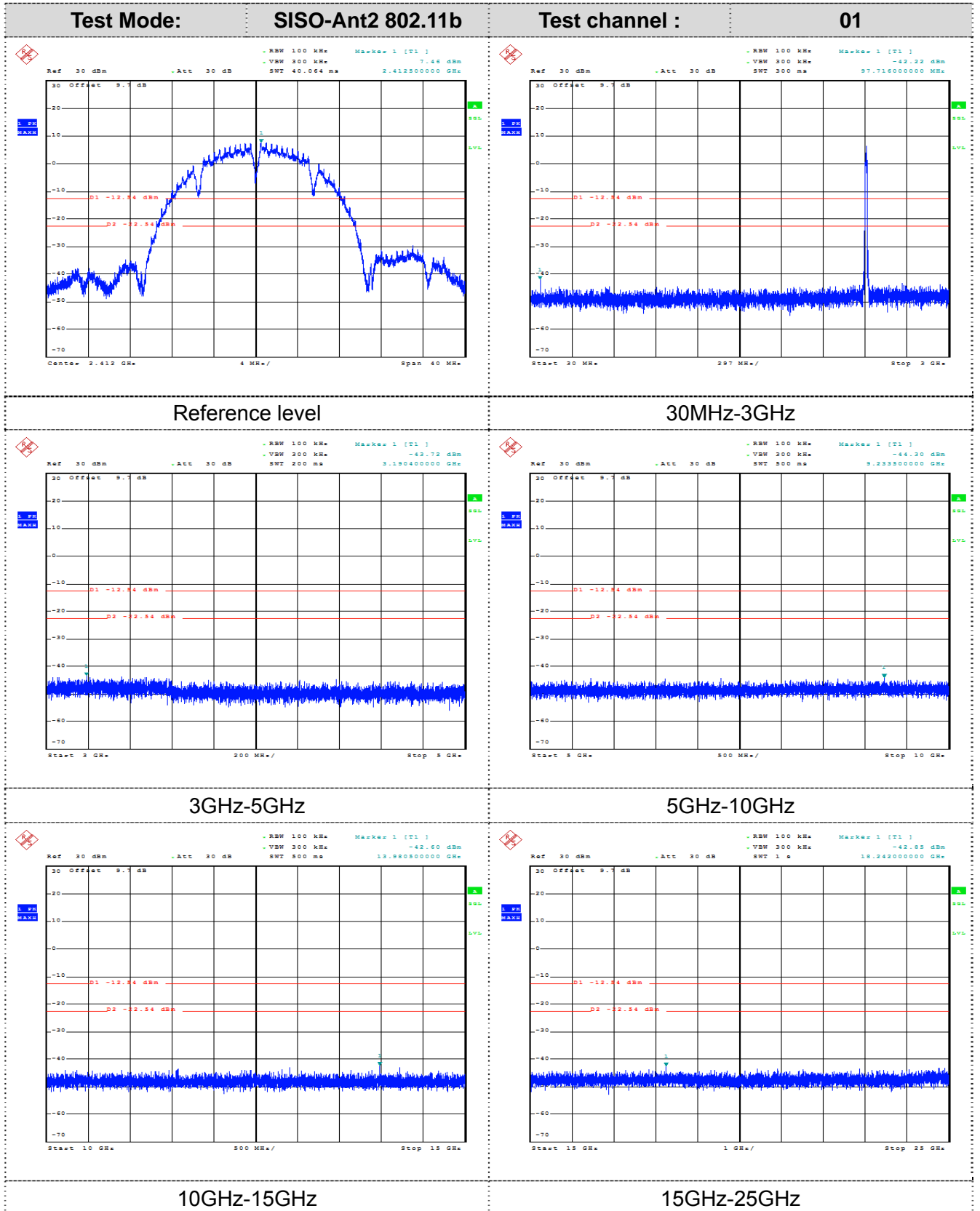










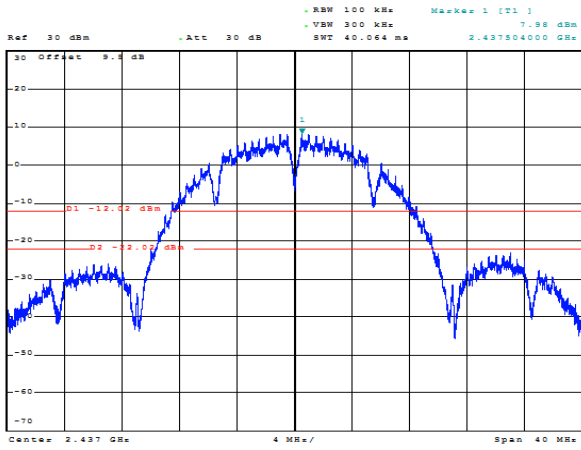


Test Mode:

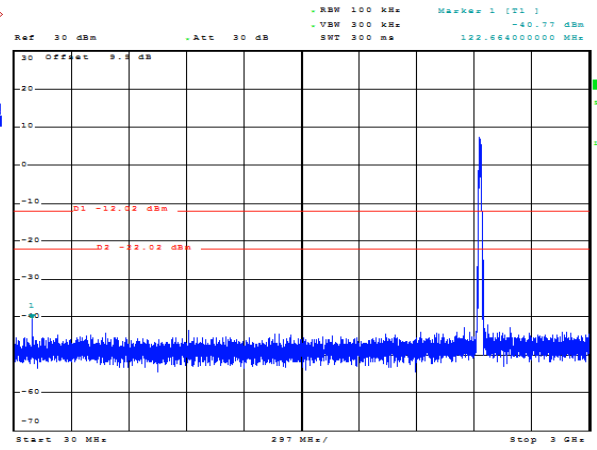
SISO-Ant2 802.11b

Test channel :

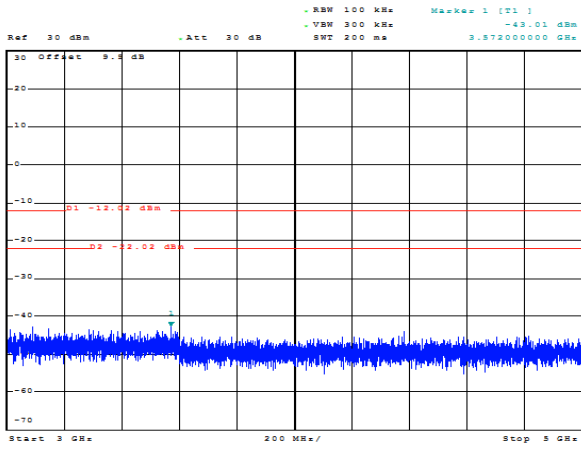
06



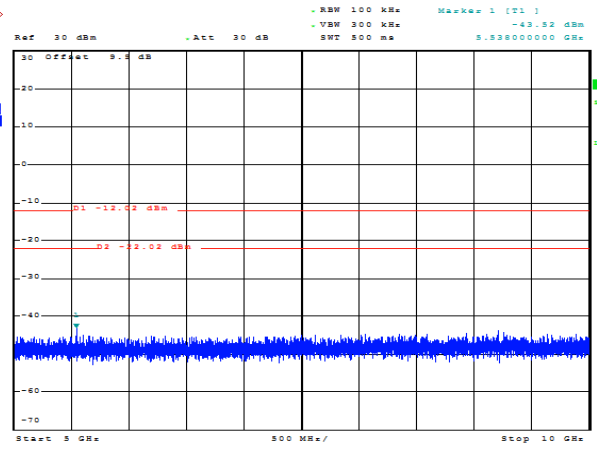
Reference level



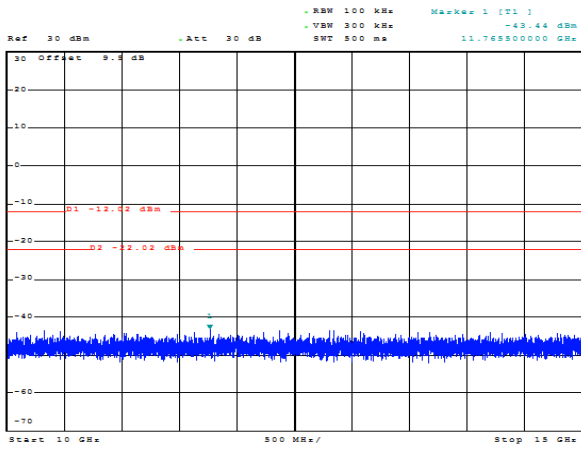
30MHz-3GHz



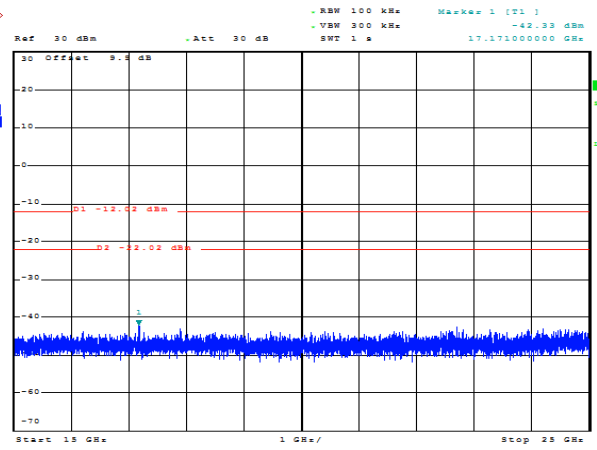
3GHz-5GHz



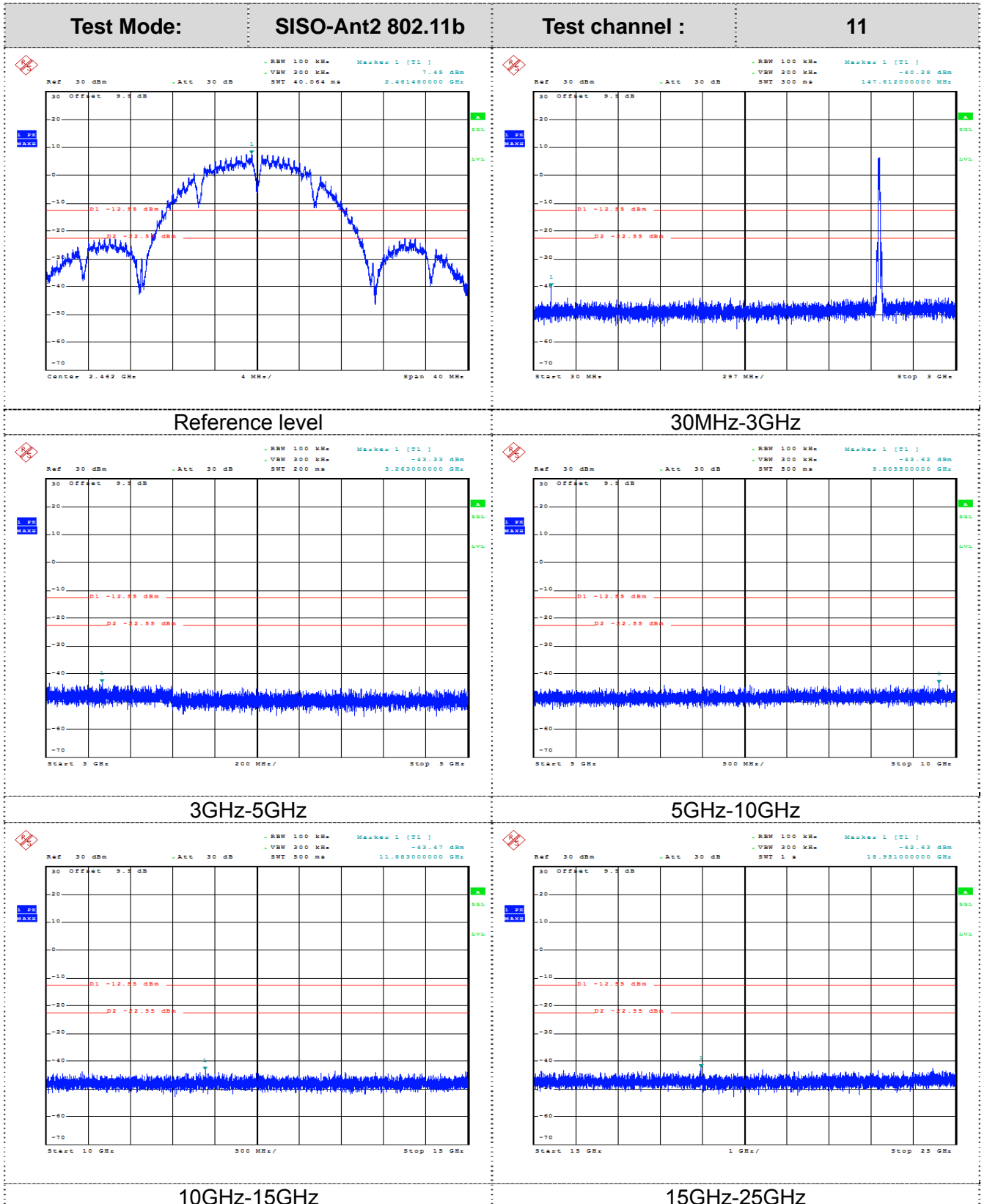
5GHz-10GHz

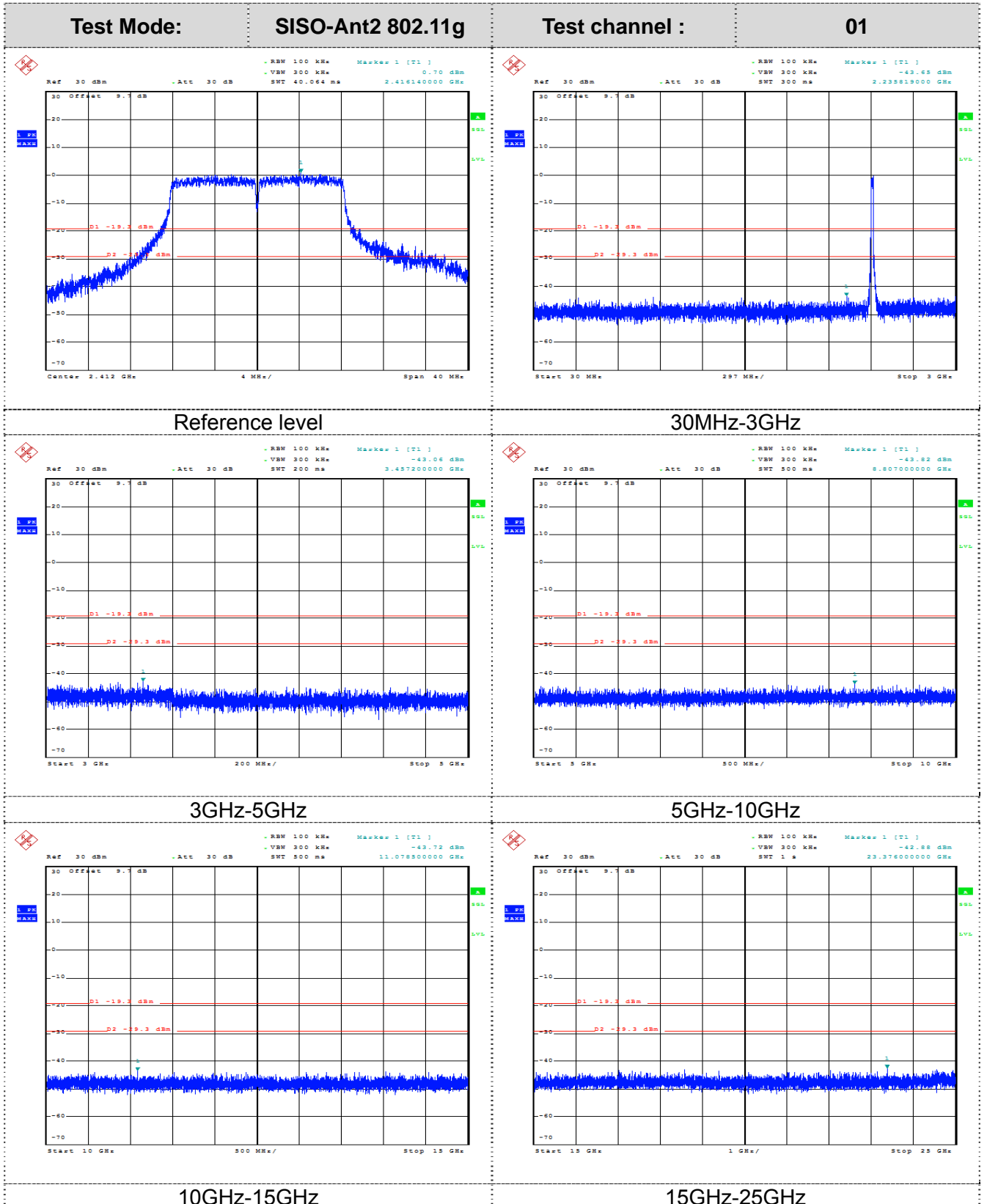


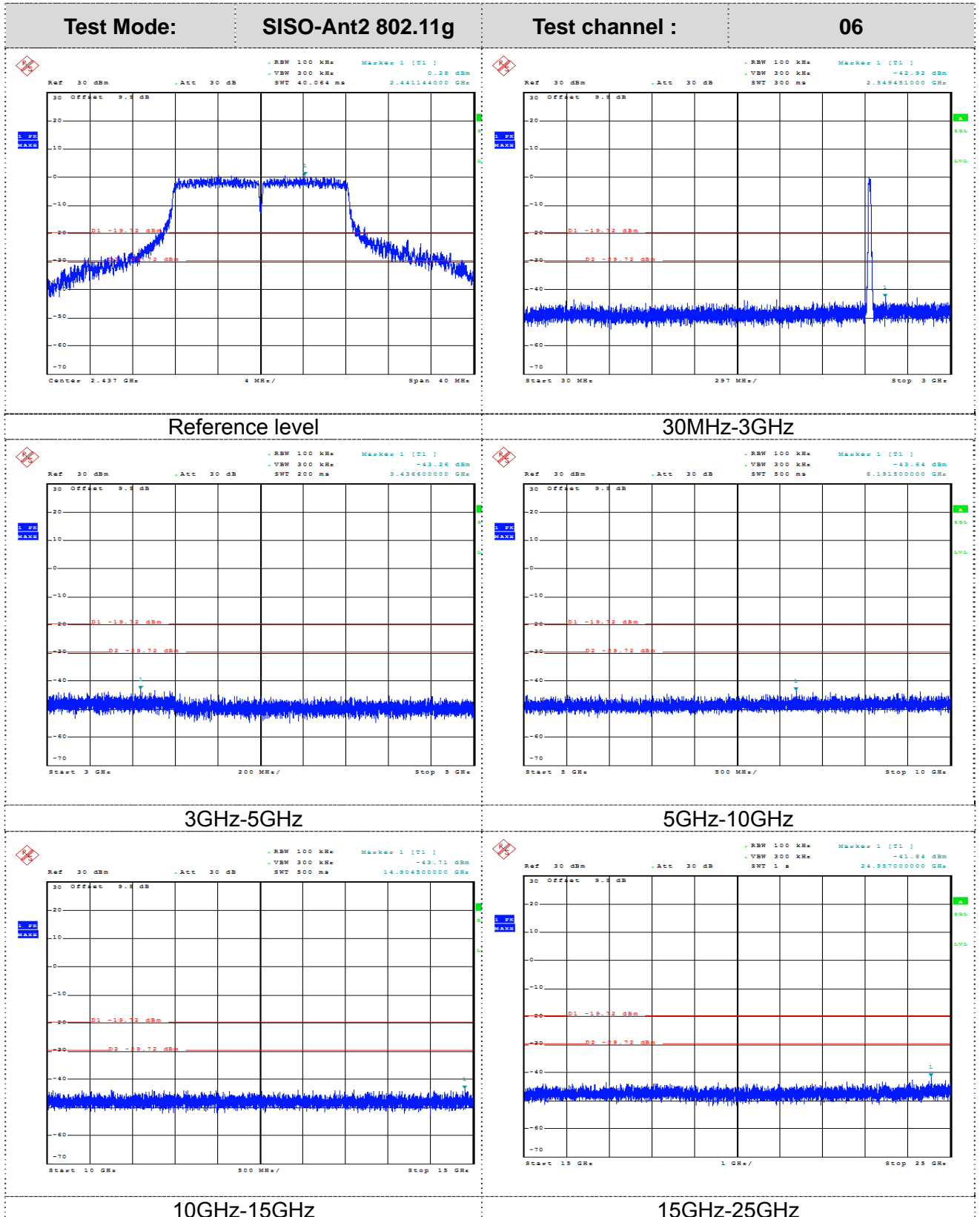
10GHz-15GHz

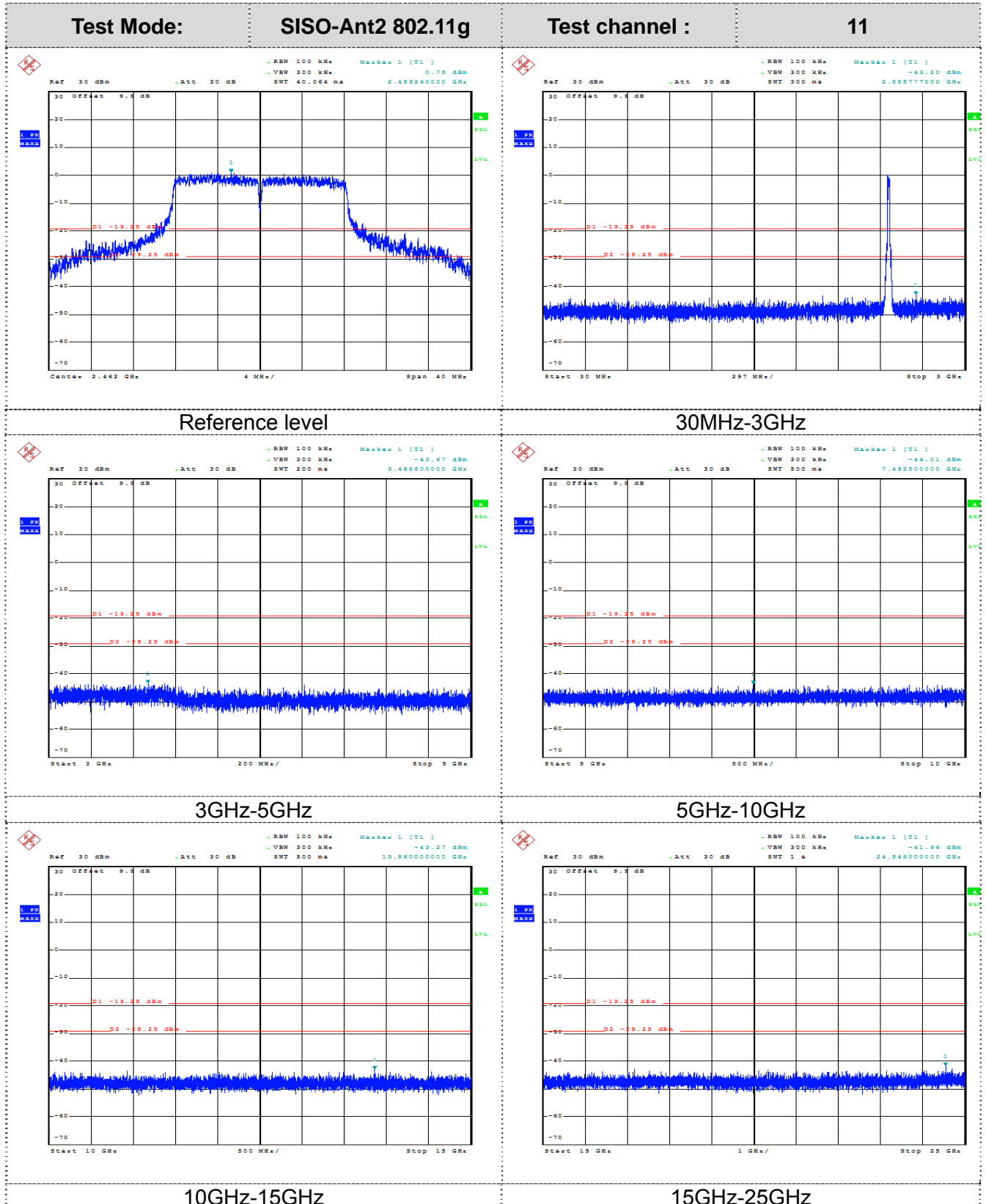


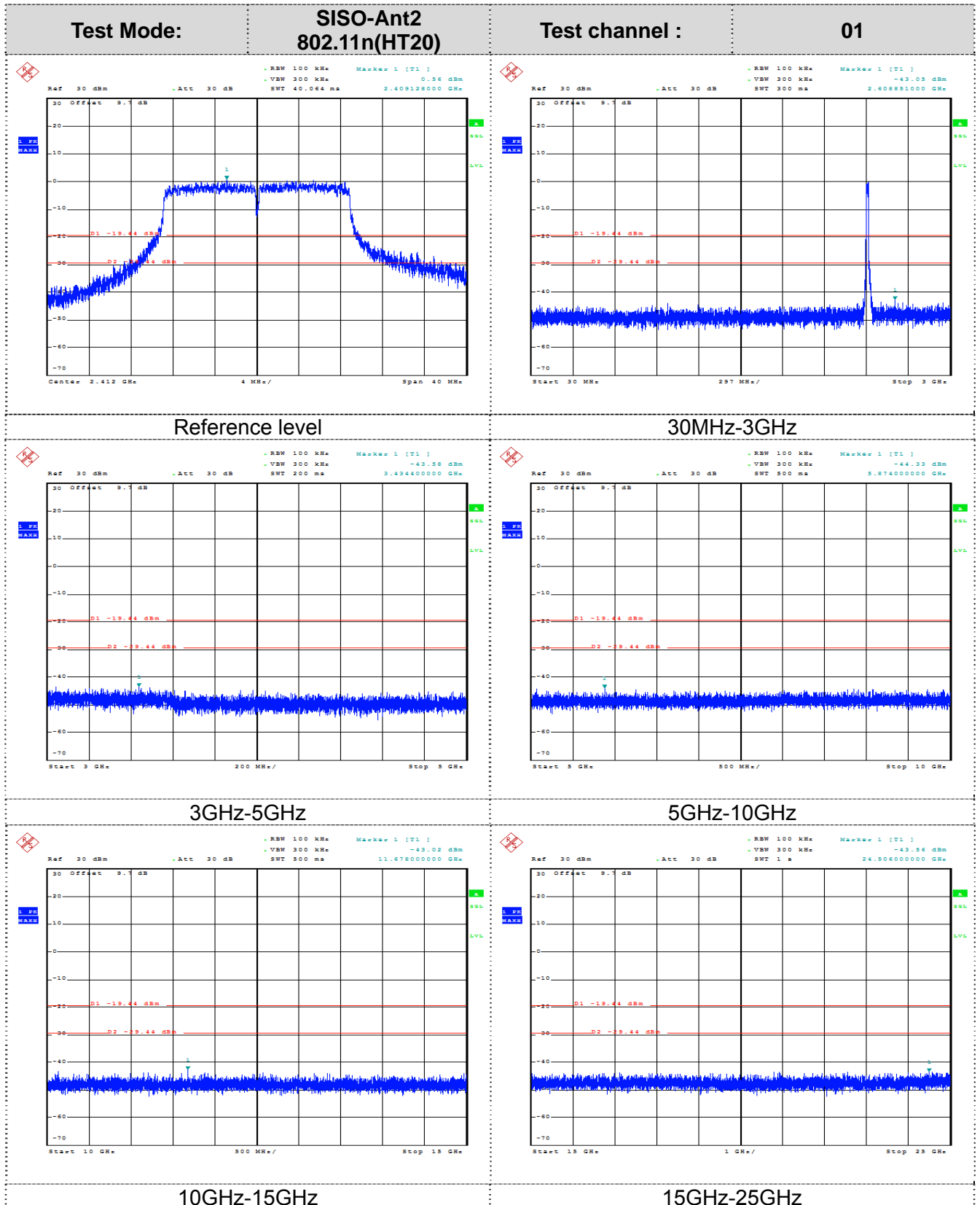
15GHz-25GHz

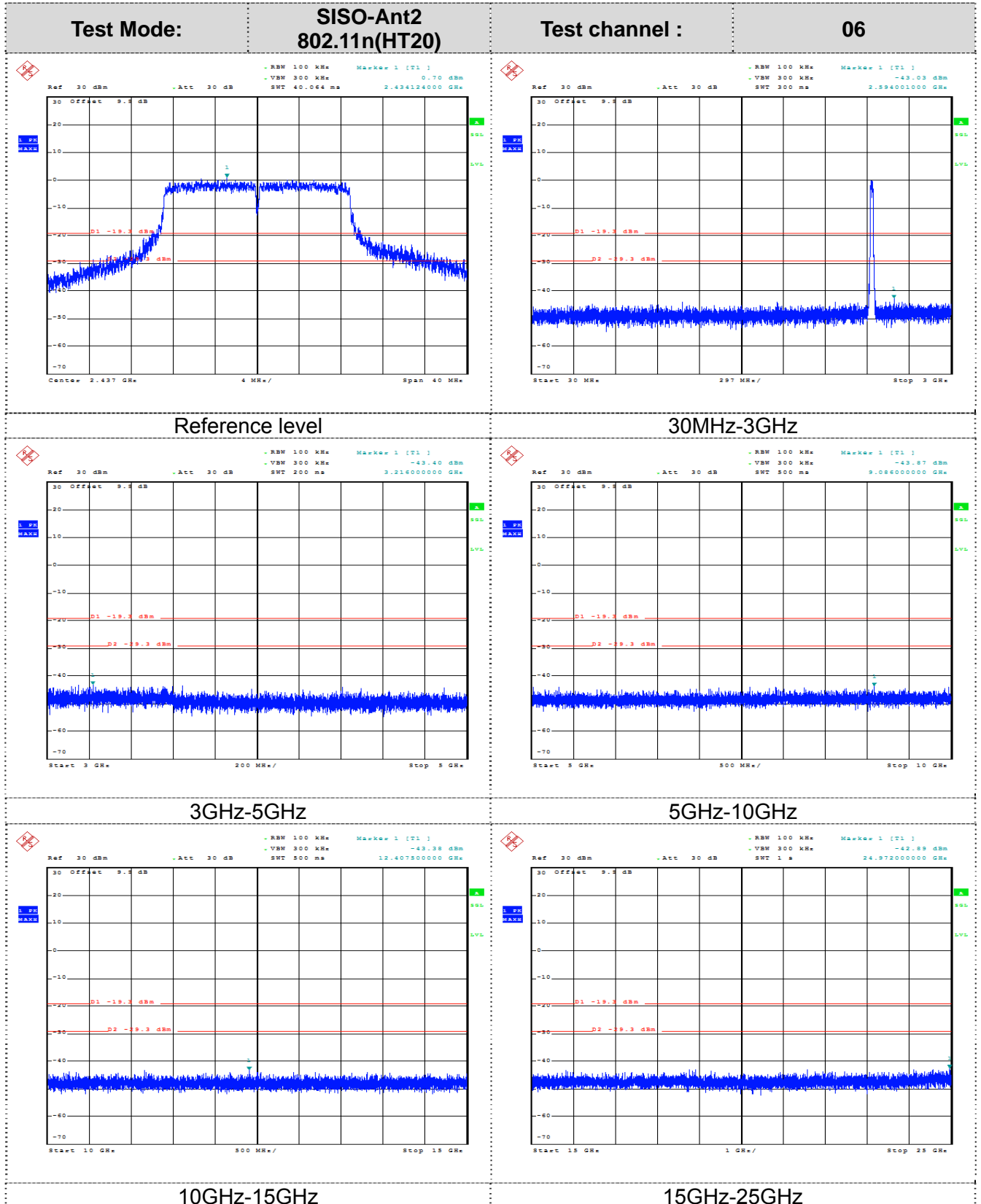




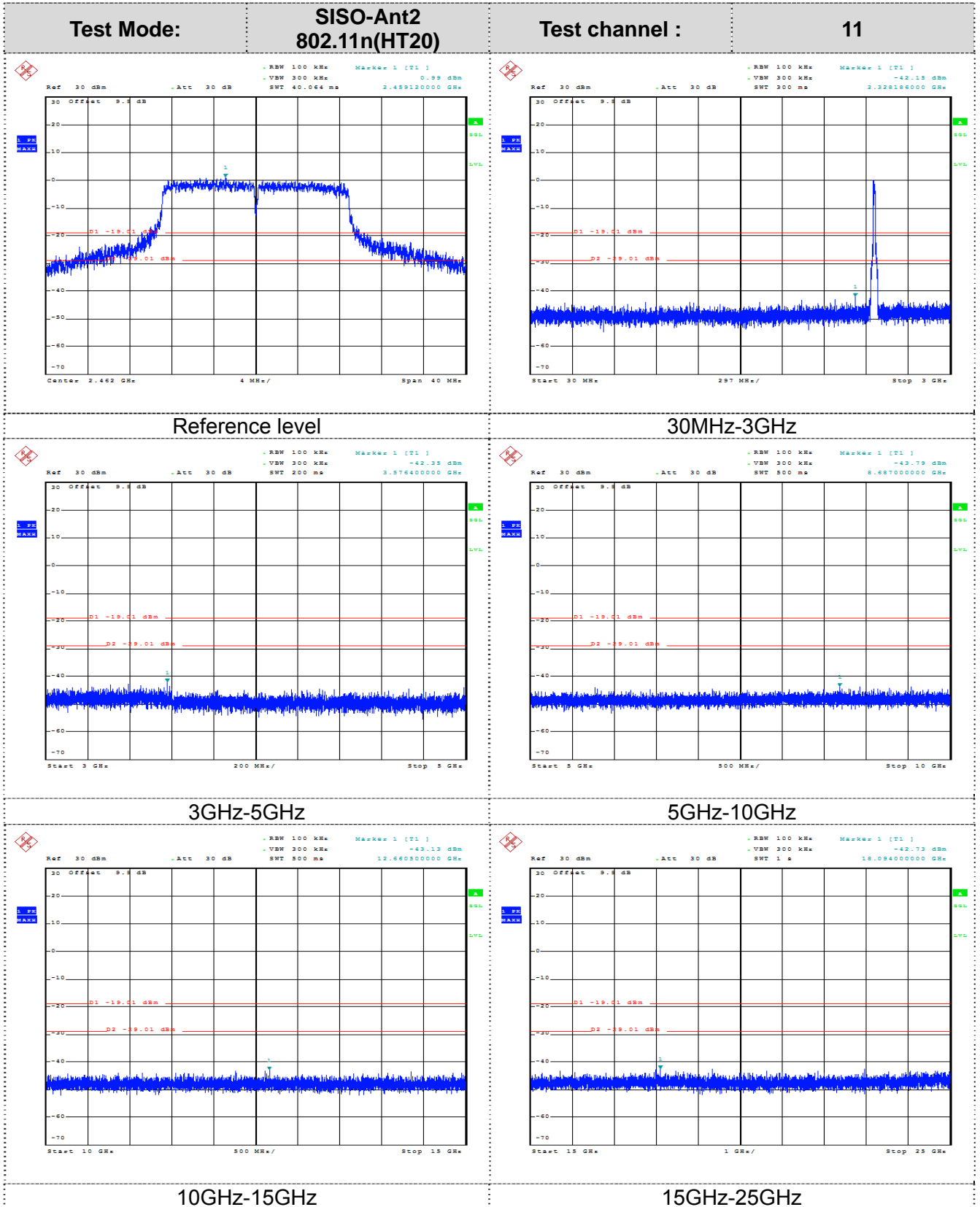


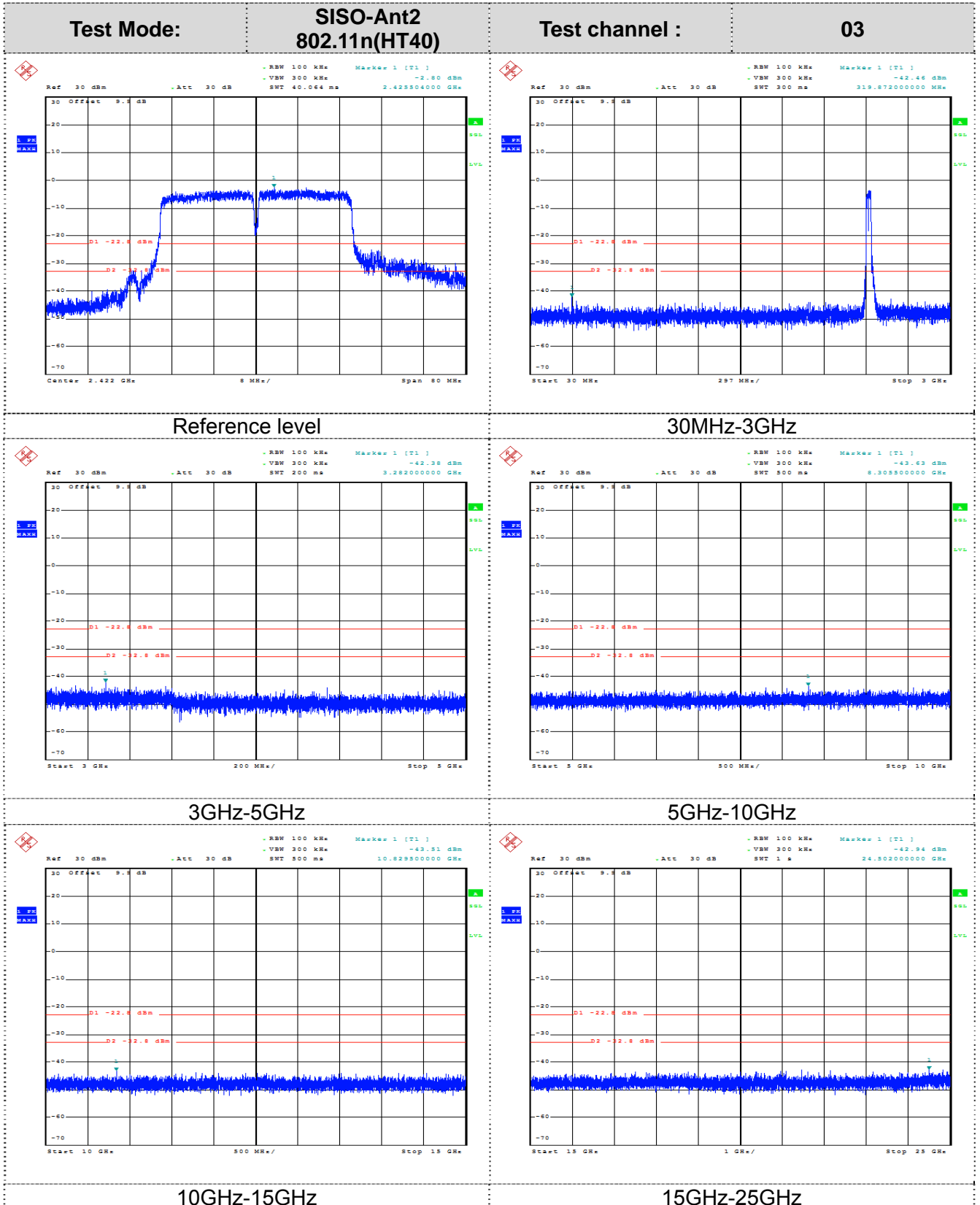


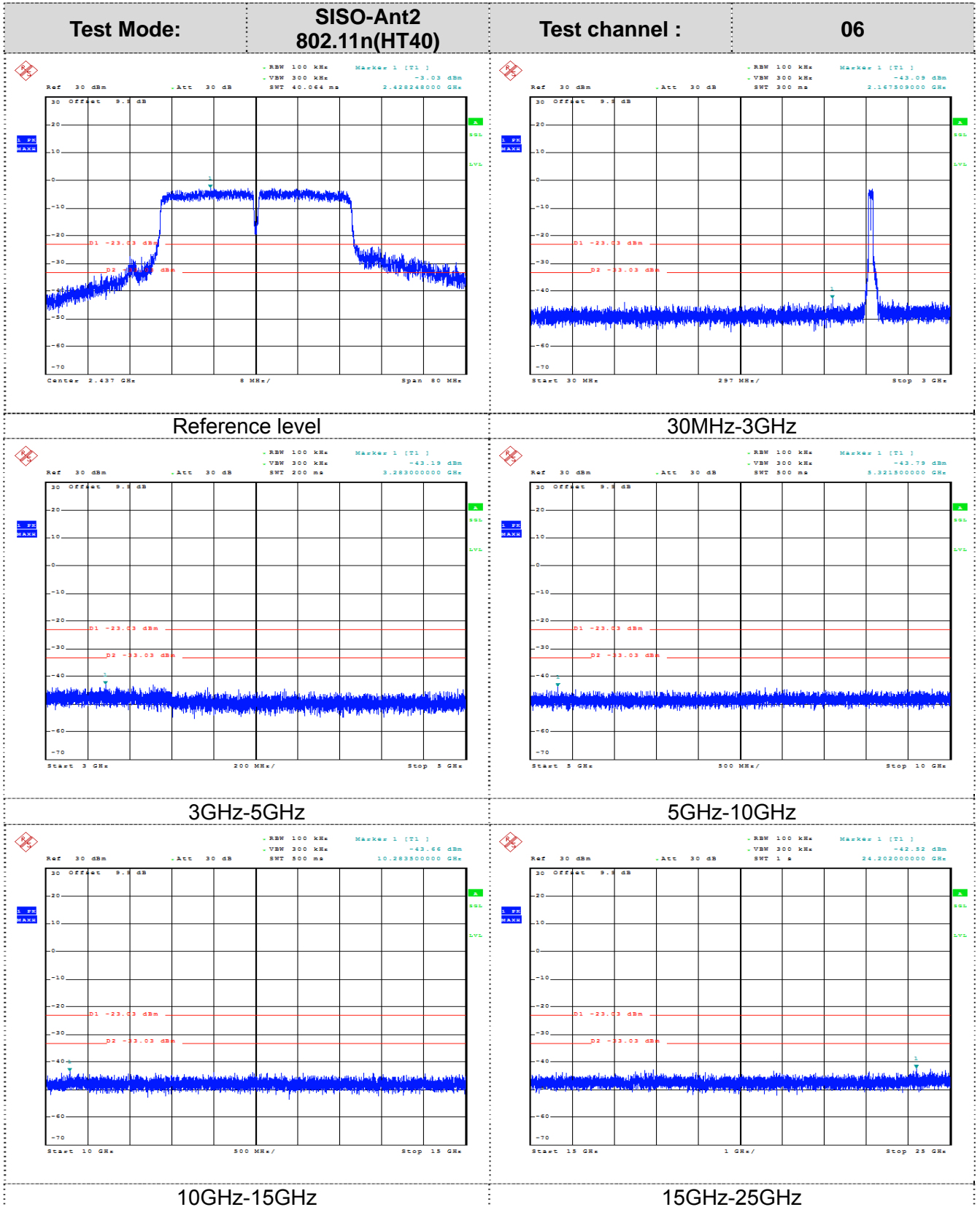


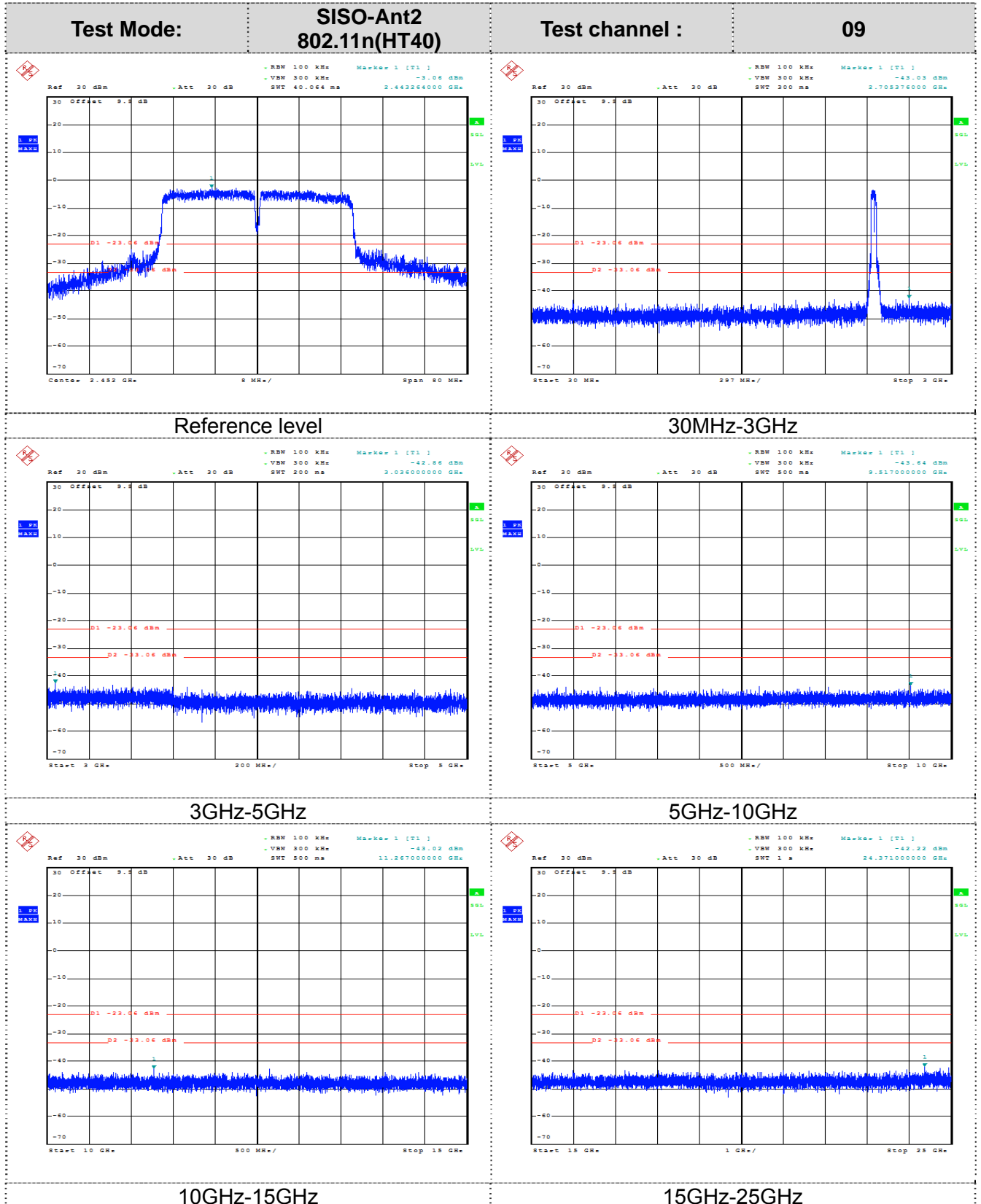


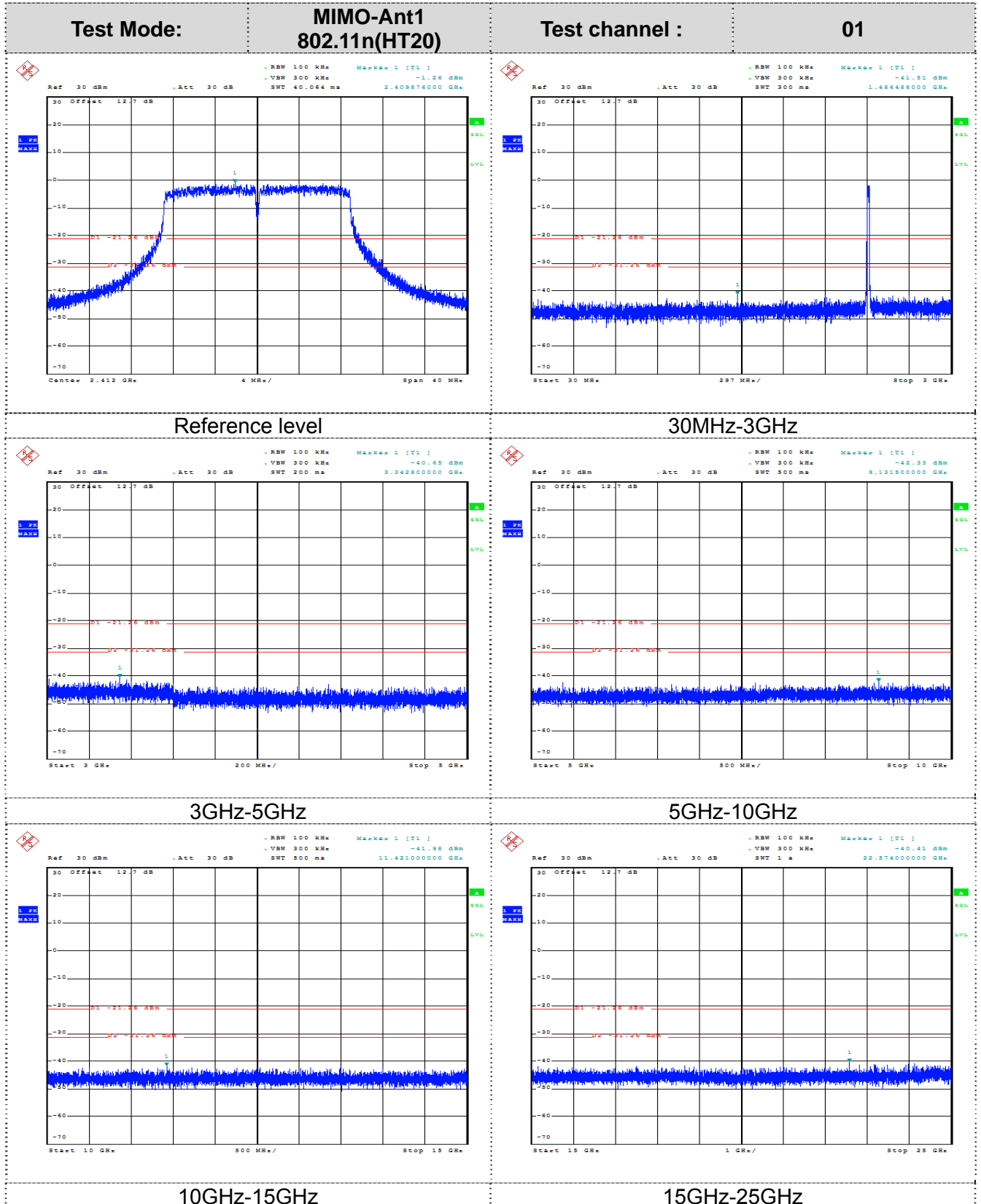


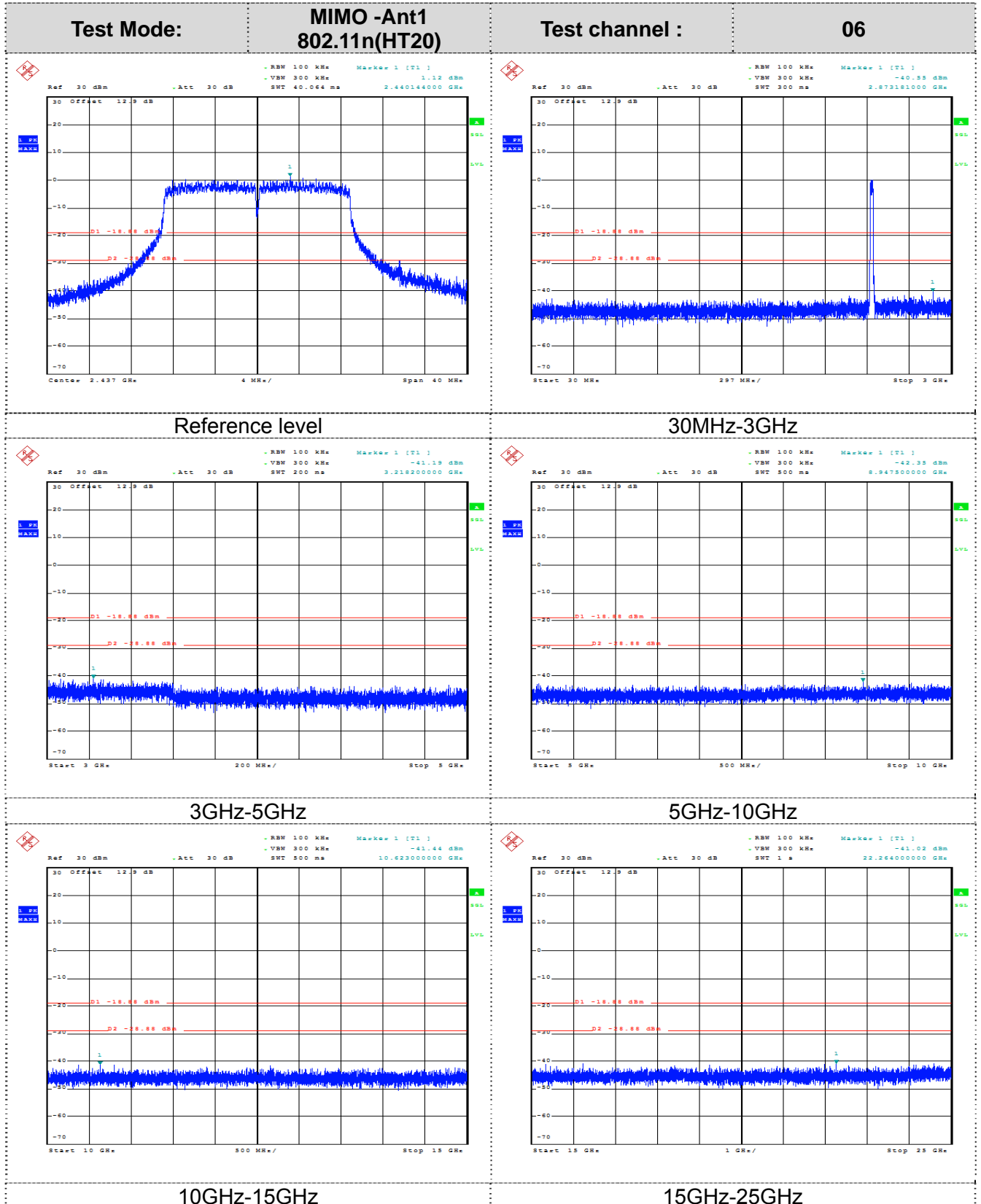


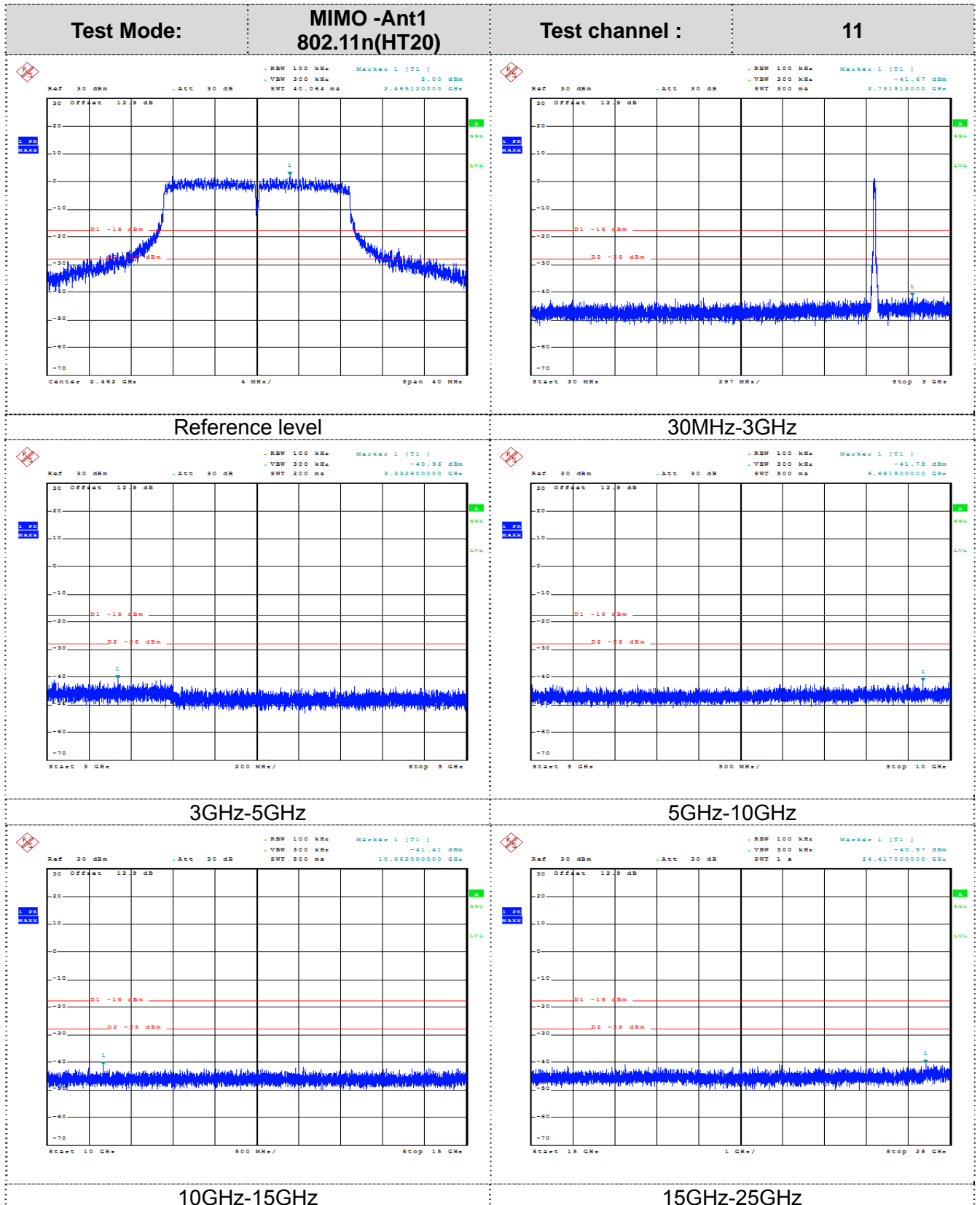


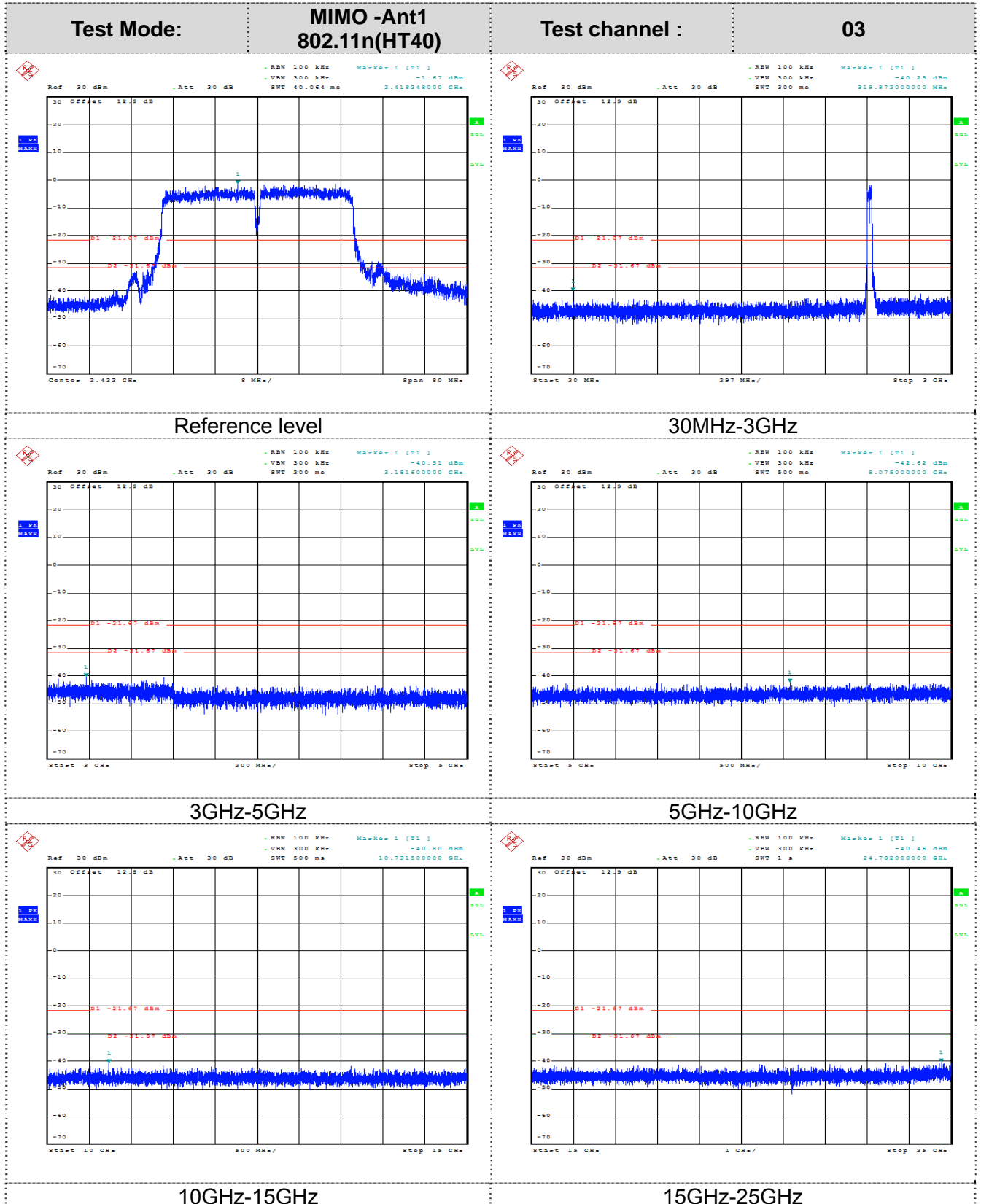




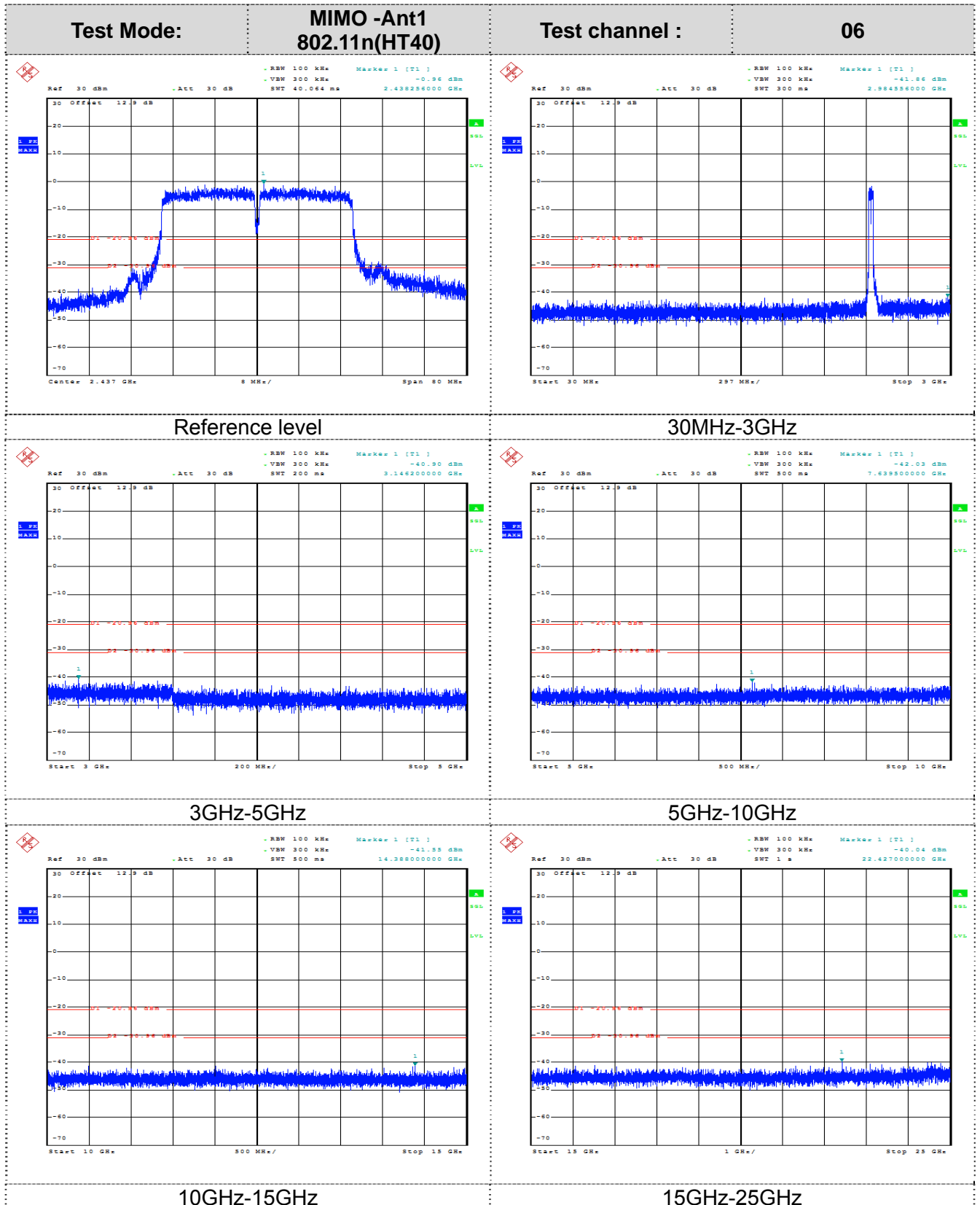


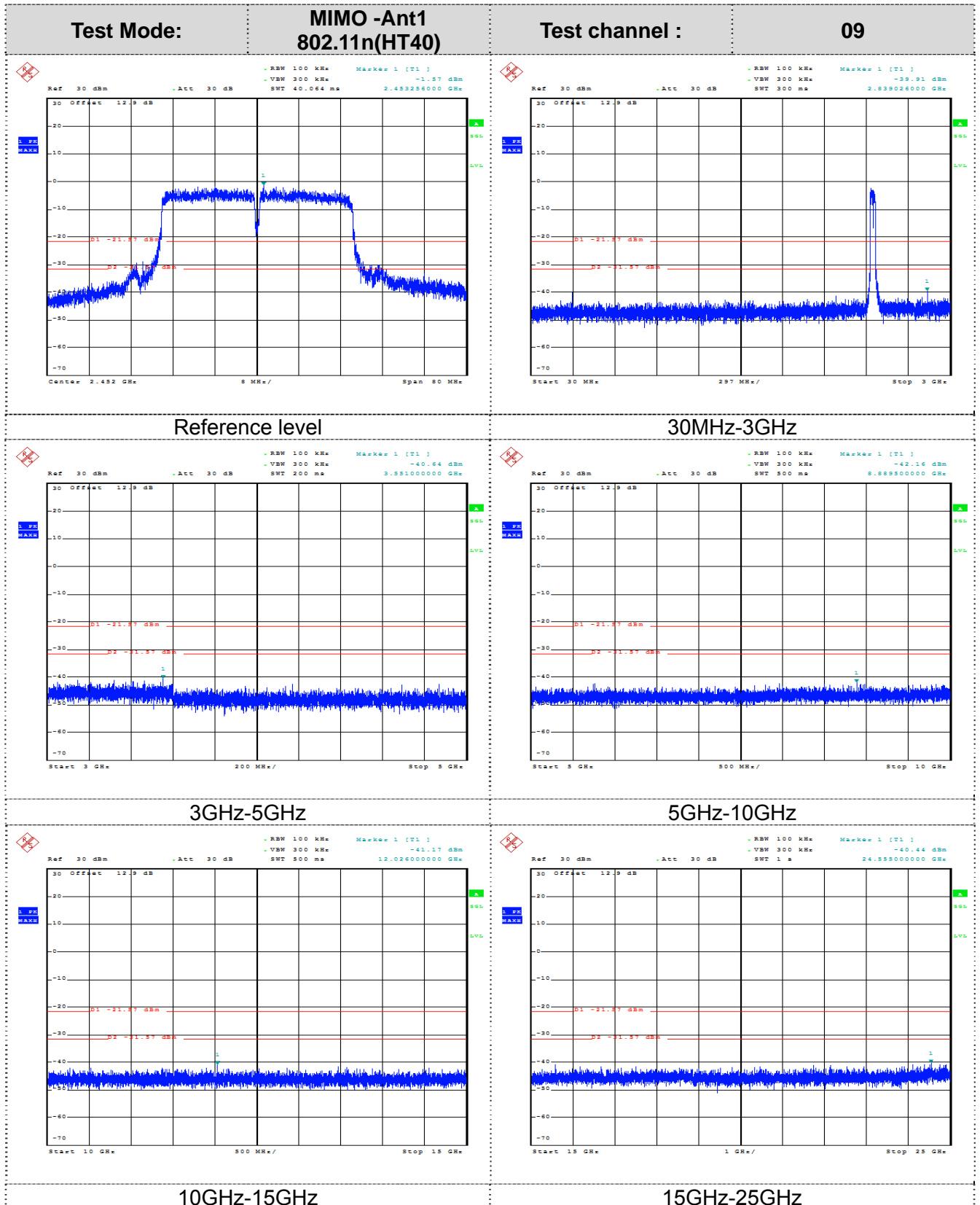


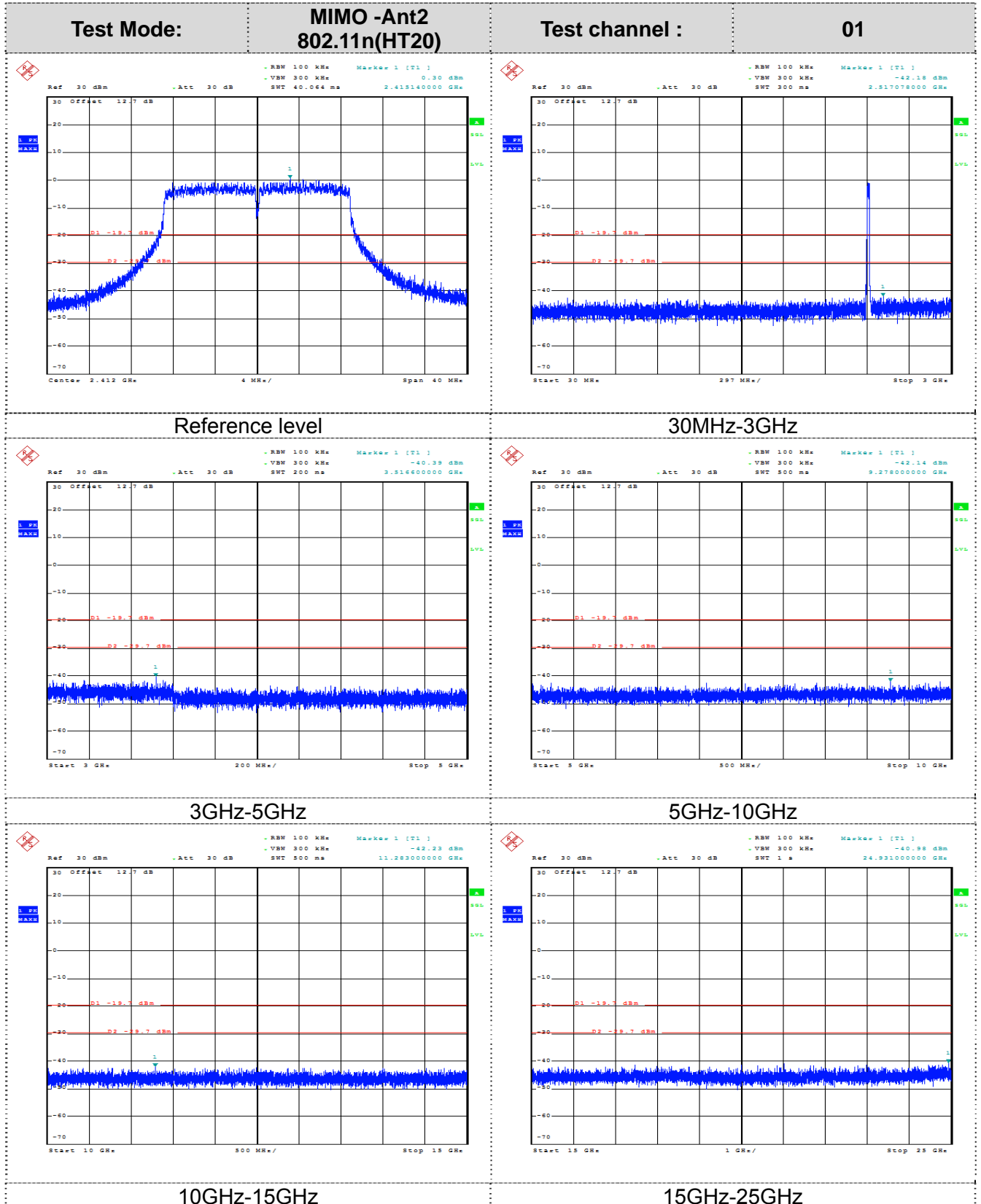


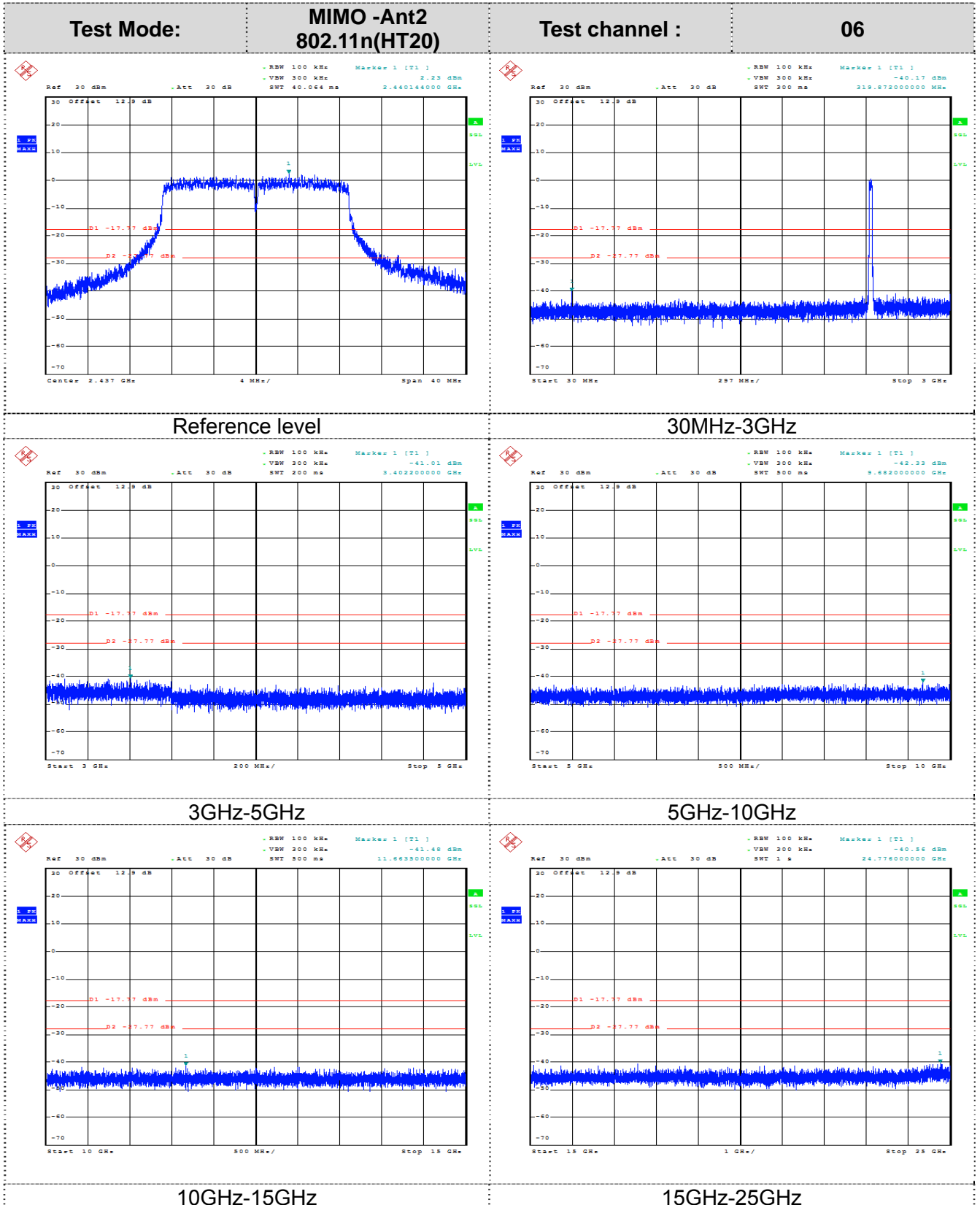


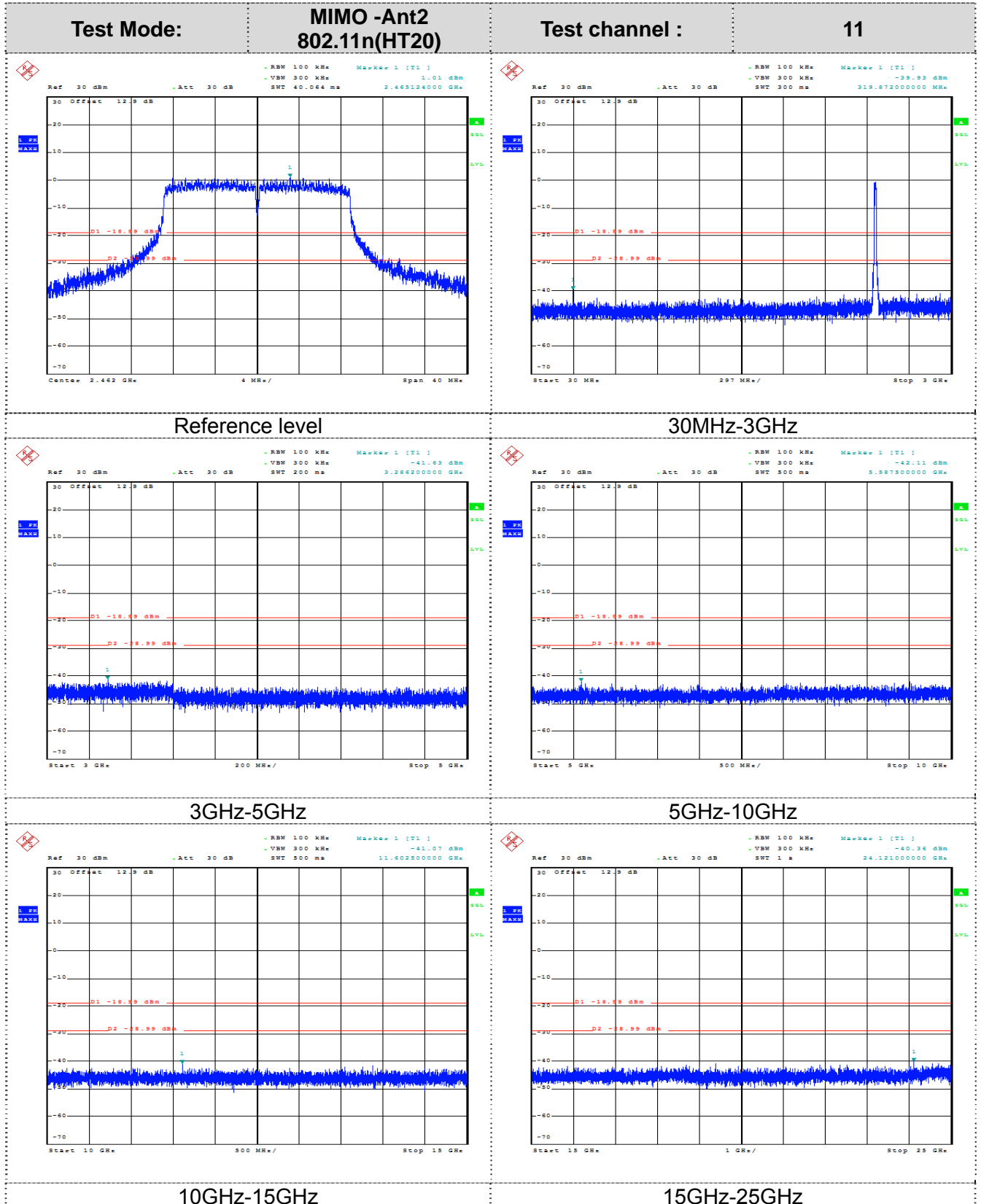


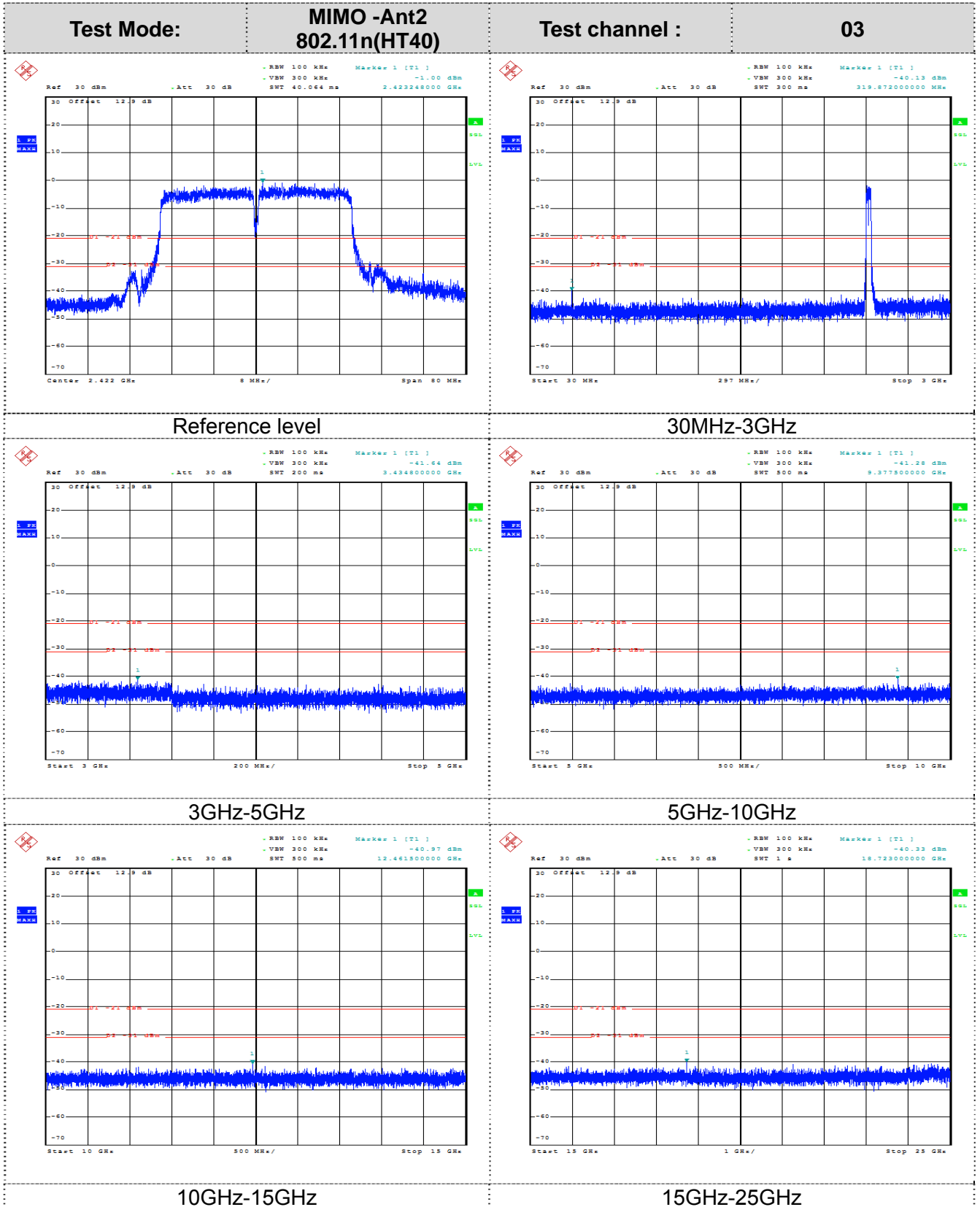


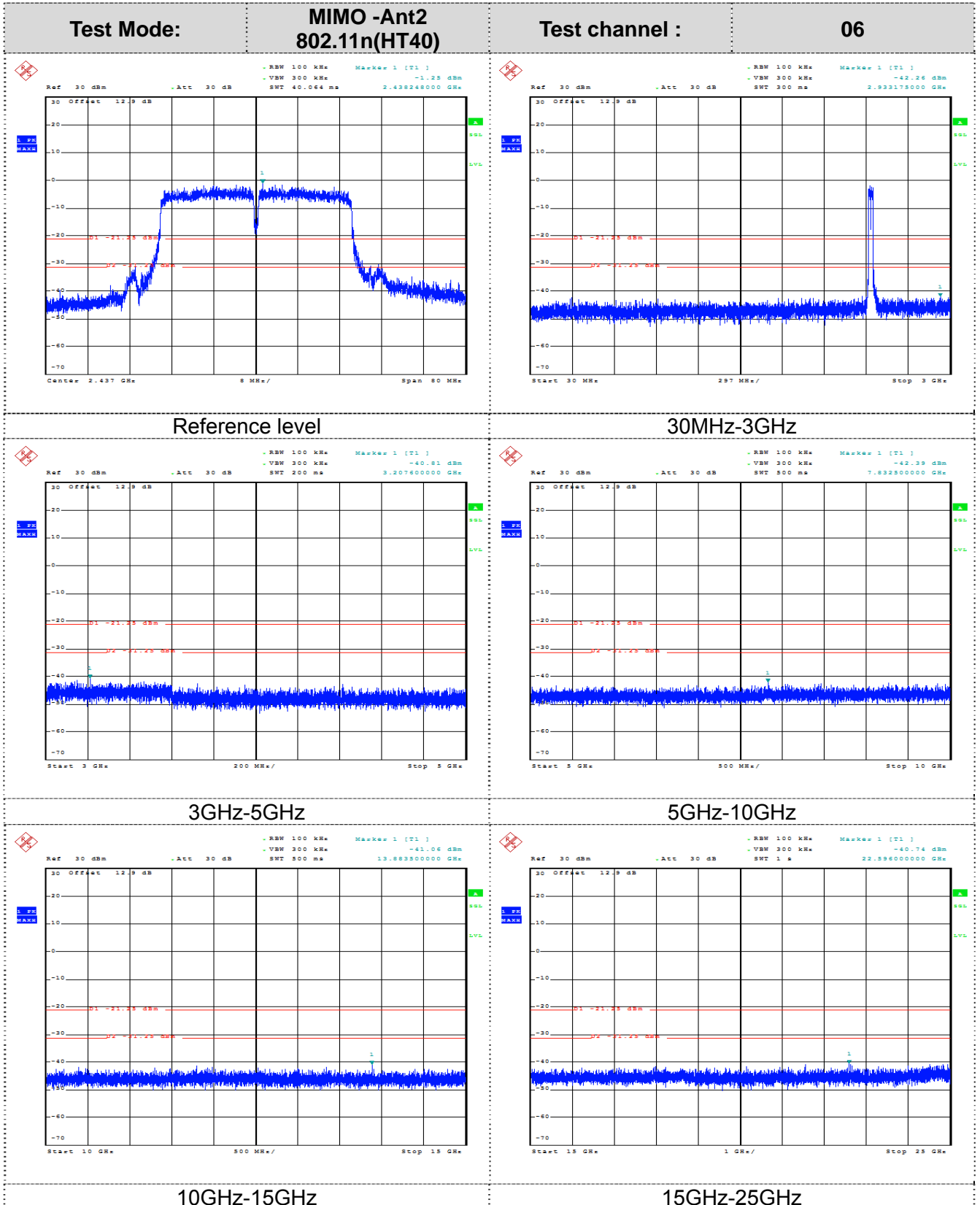


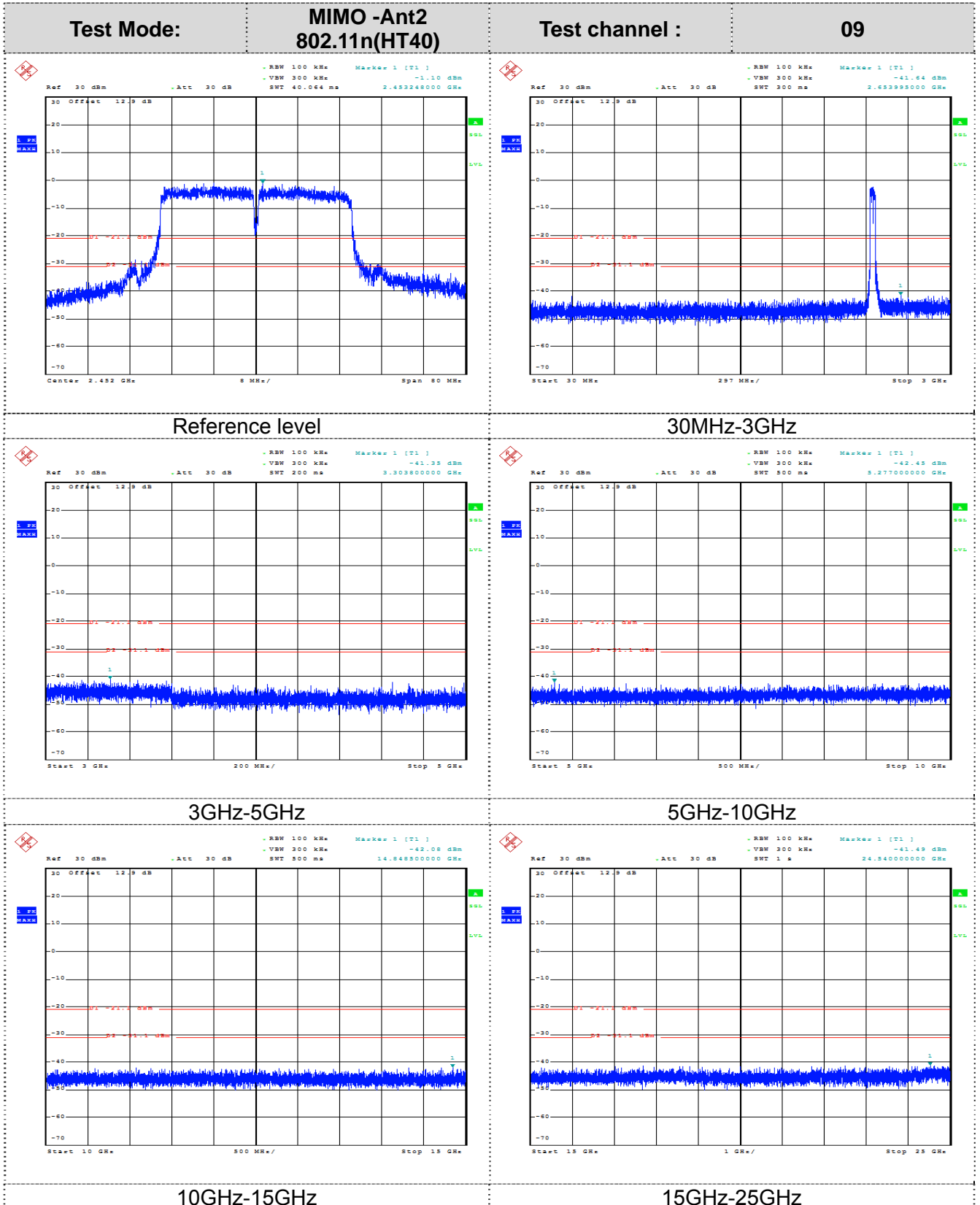














### 3.8. Antenna Requirement

#### Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:

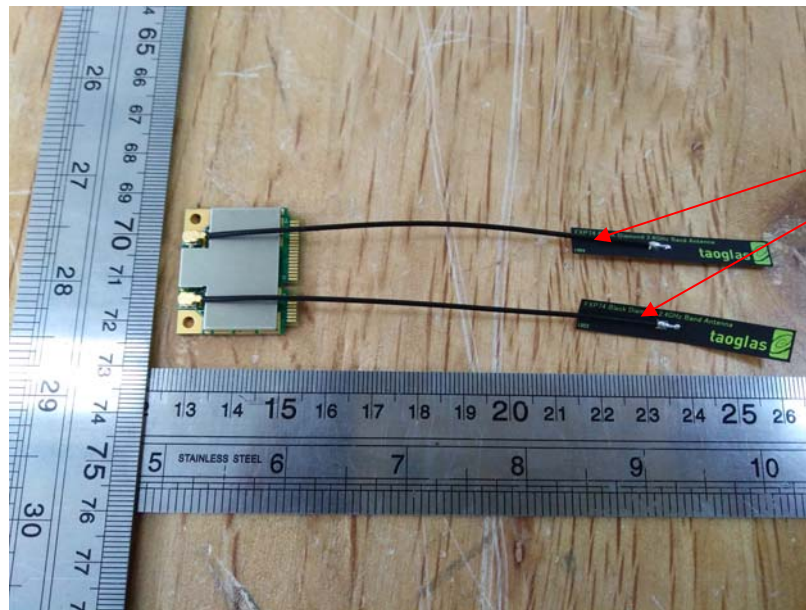
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

#### **FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1) (I):**

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### Test Result:

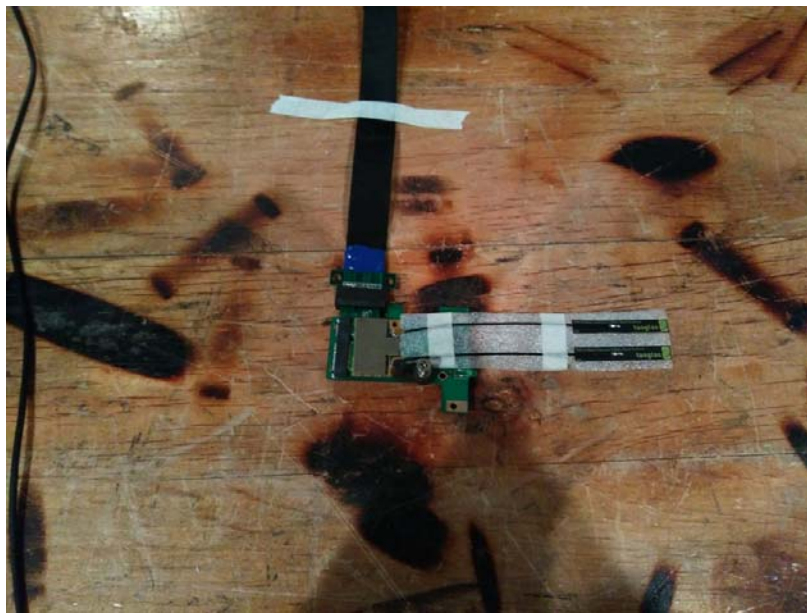
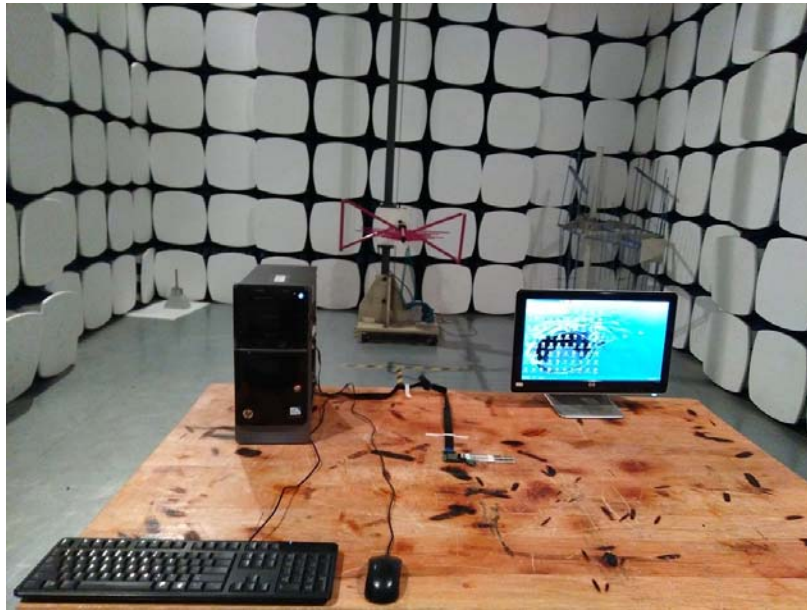
The maximum gain of wifi antenna was 2dBi.



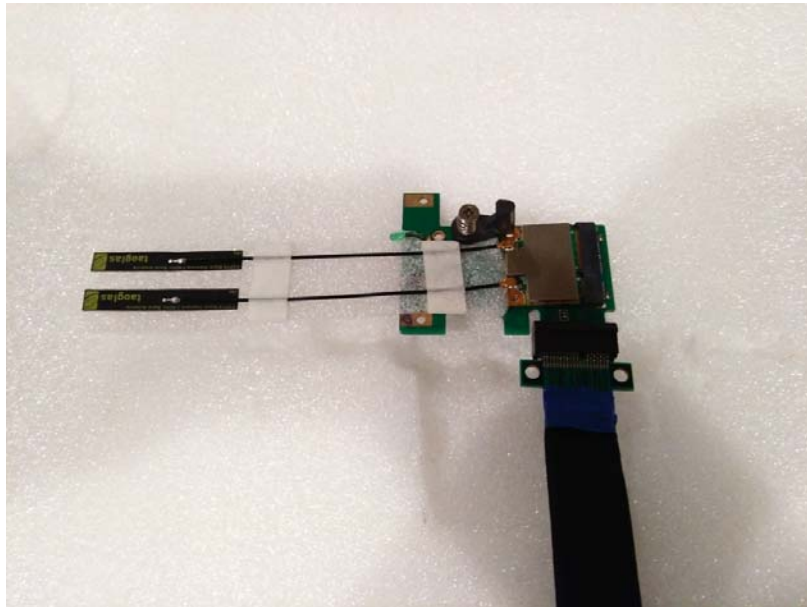
WiFi  
Antenna

## 4. EUT TEST PHOTO

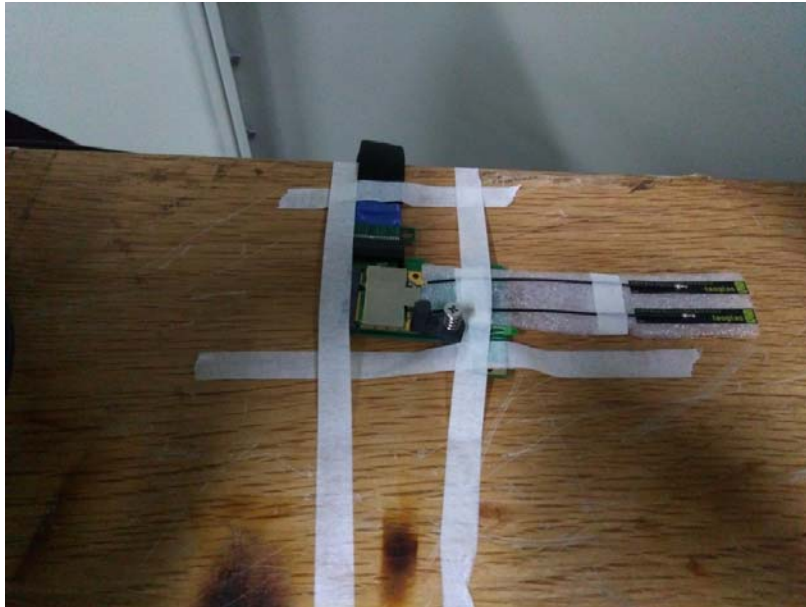
Radiated Emission (30MHz-1GHz)



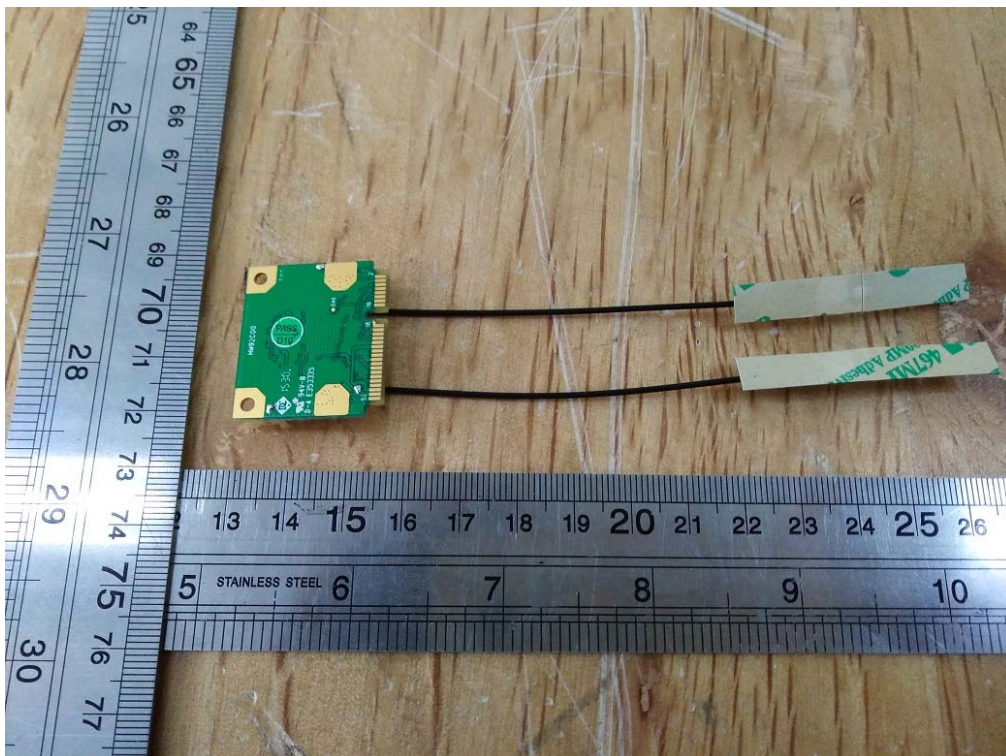
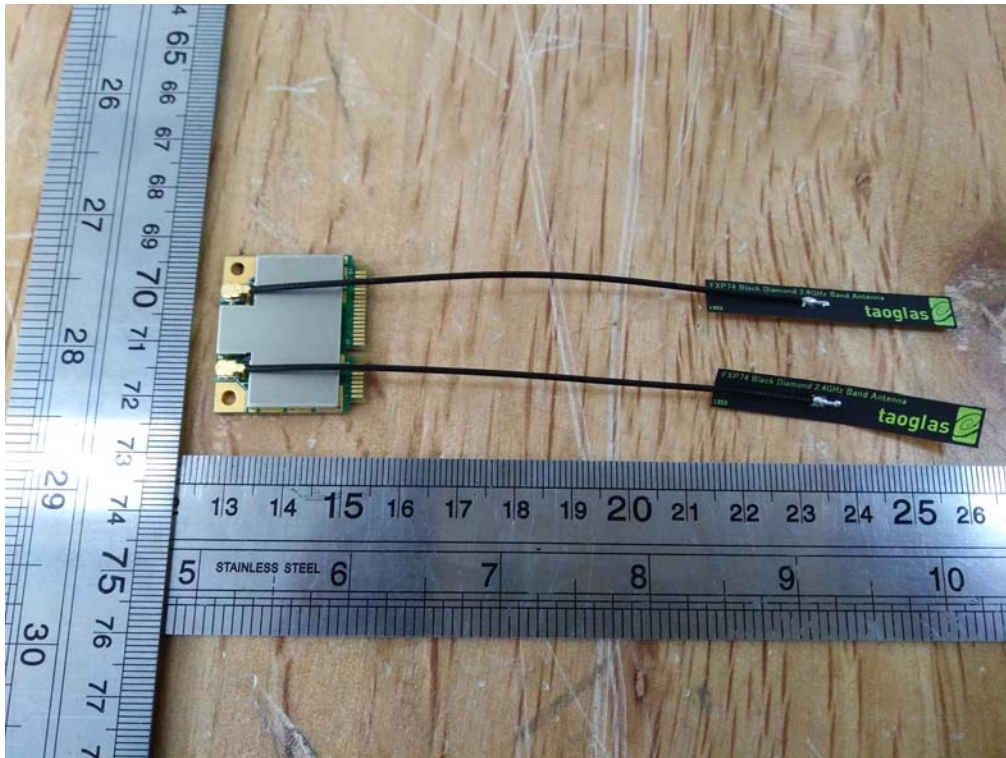
Radiated Emission (1GHz-25GHz)

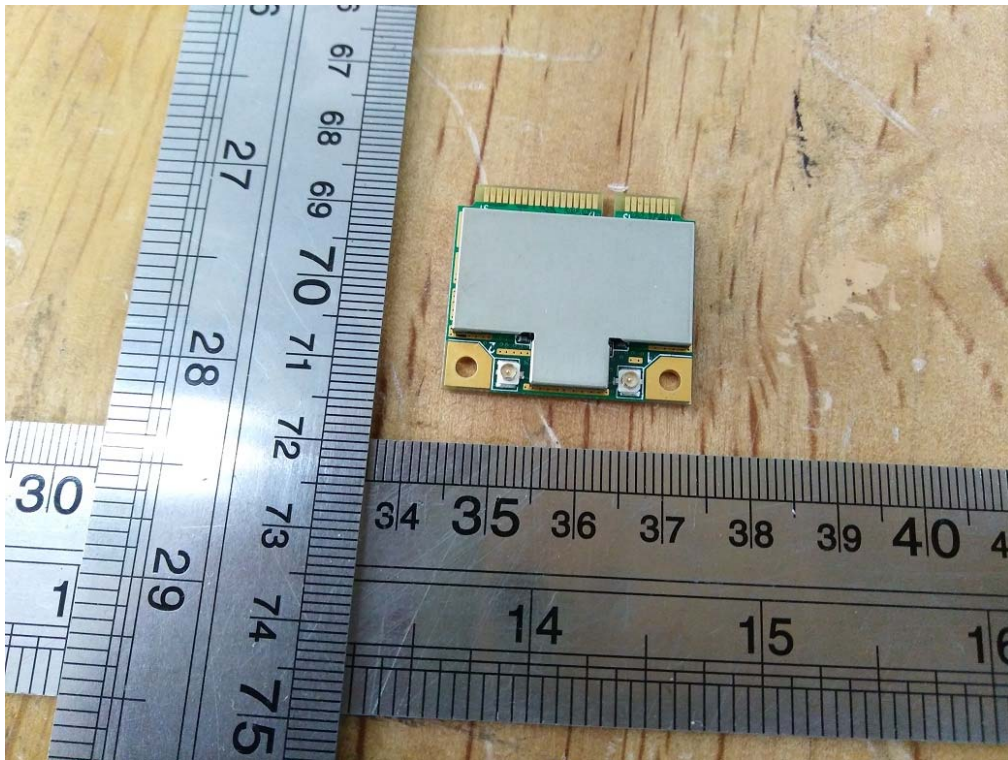
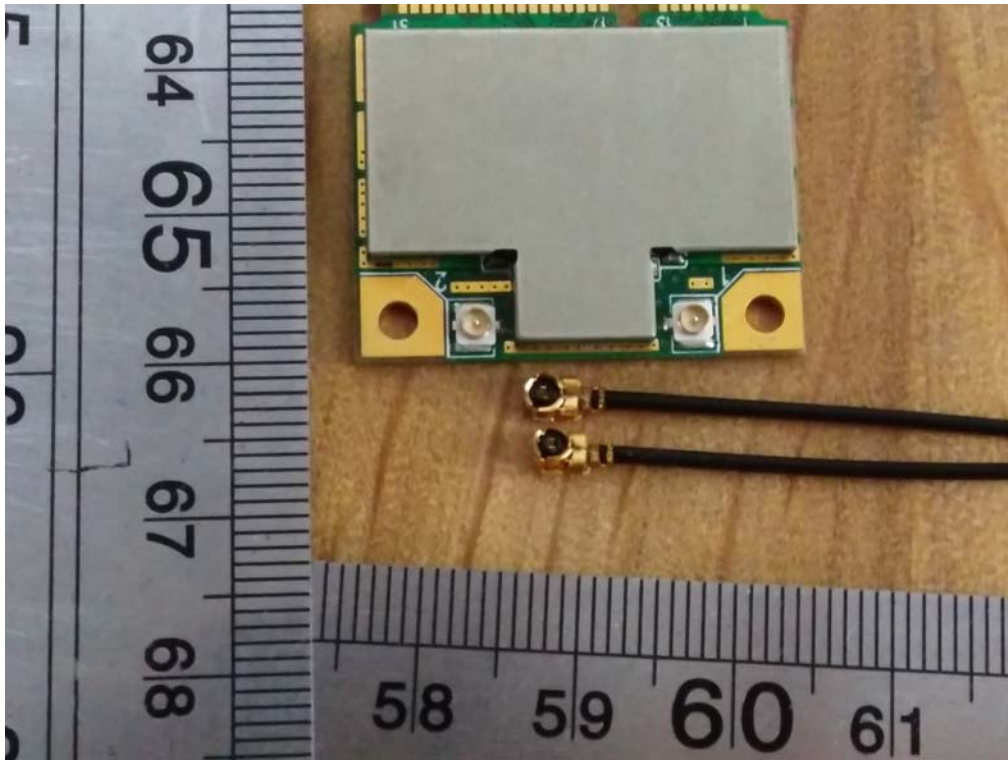


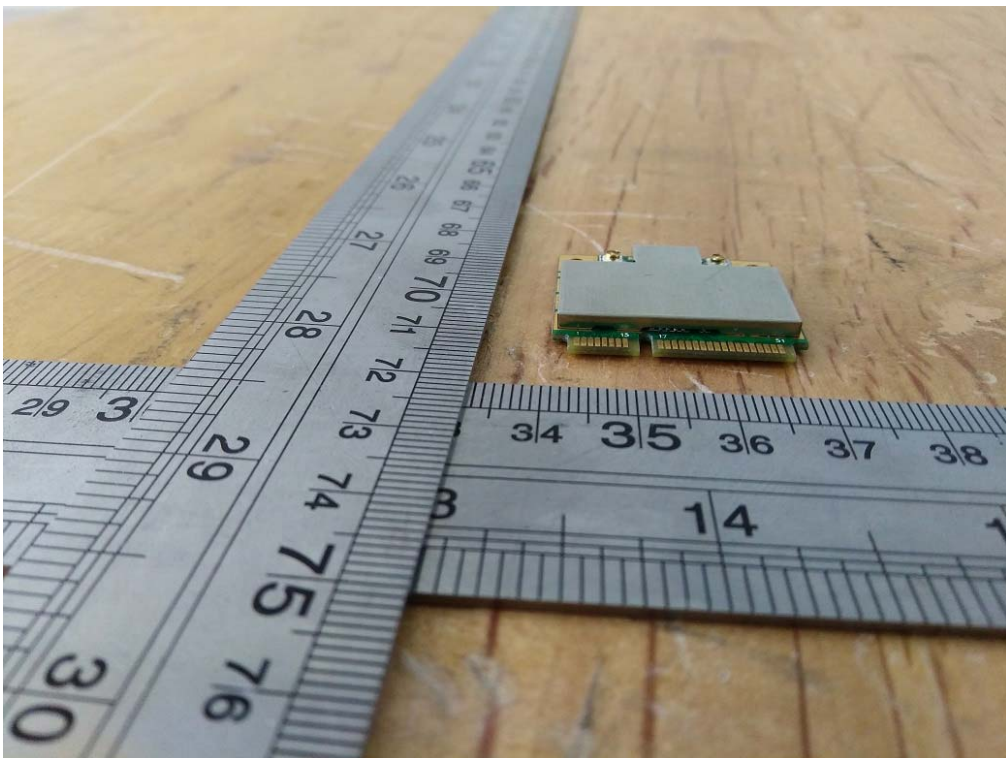
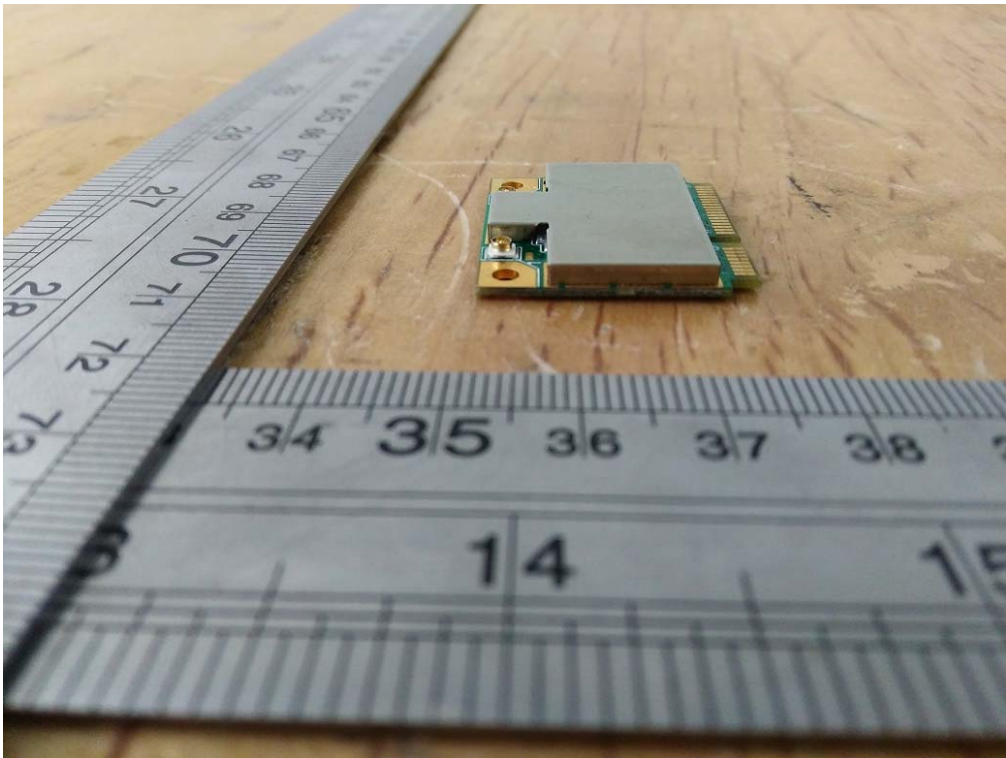
Conducted Emission

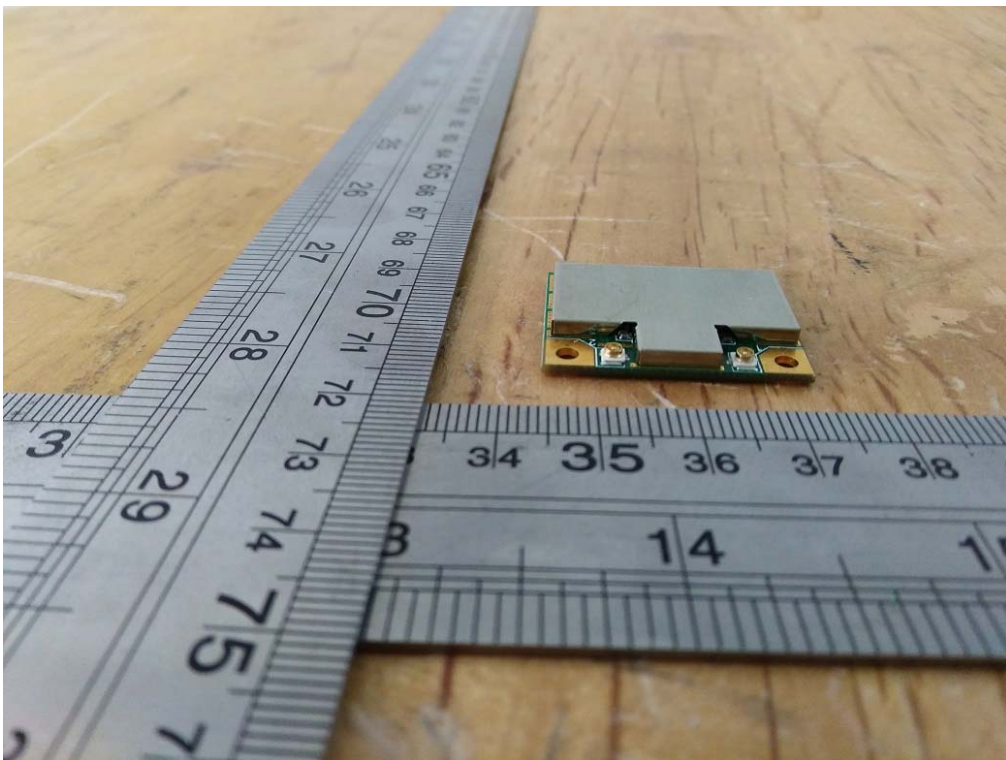
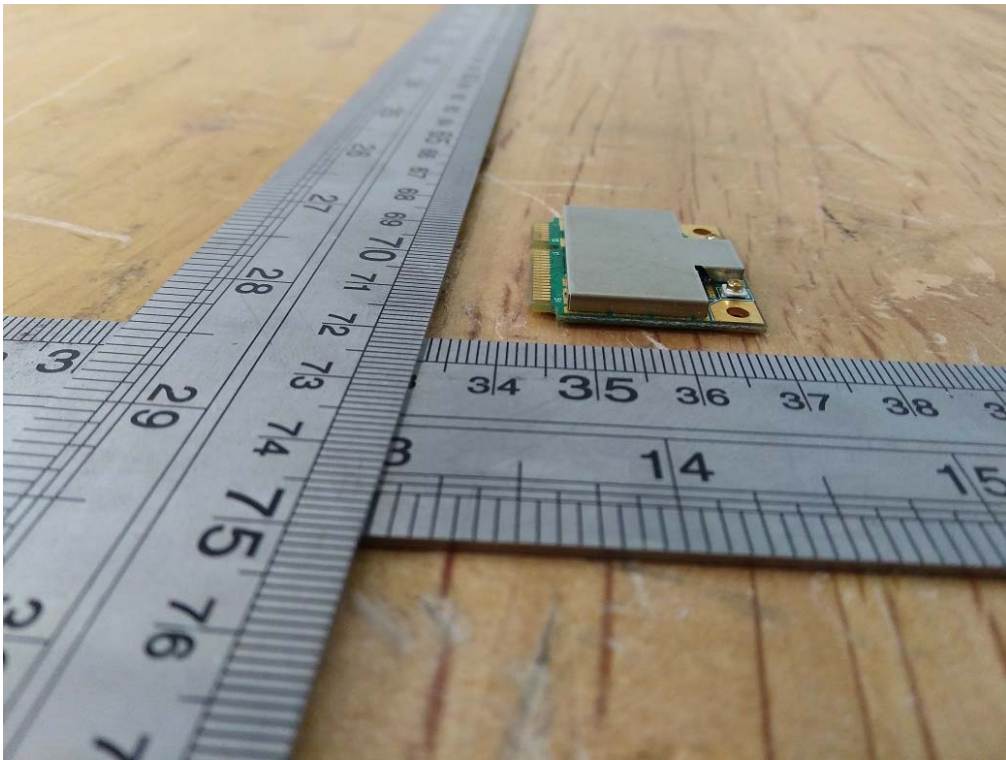


## 5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

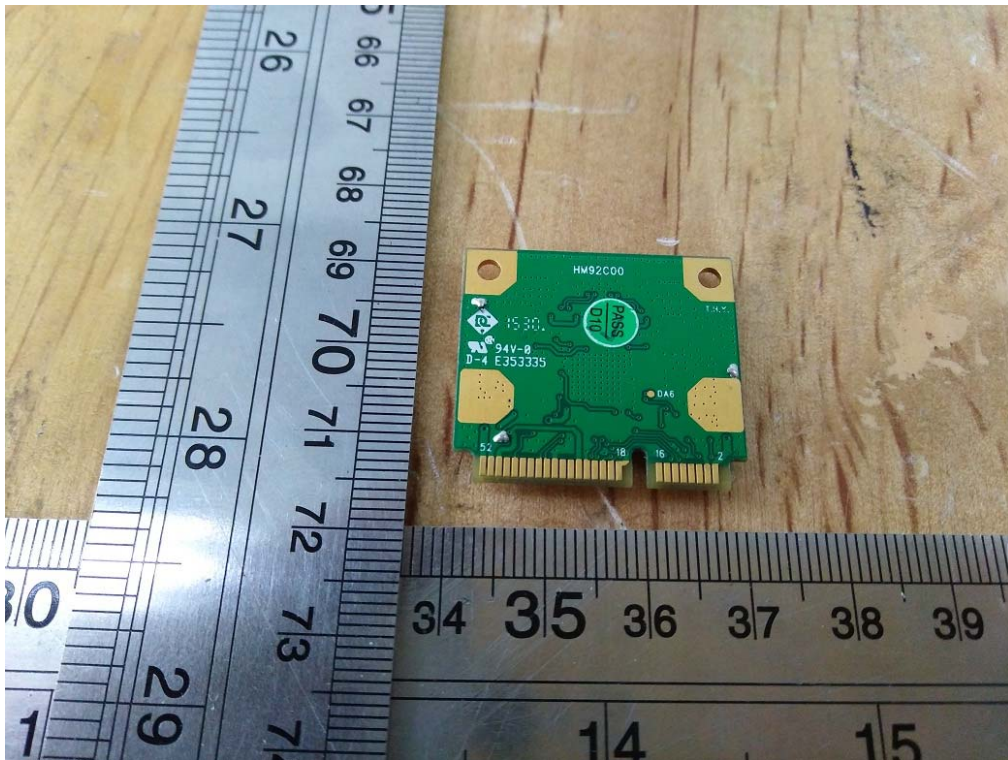
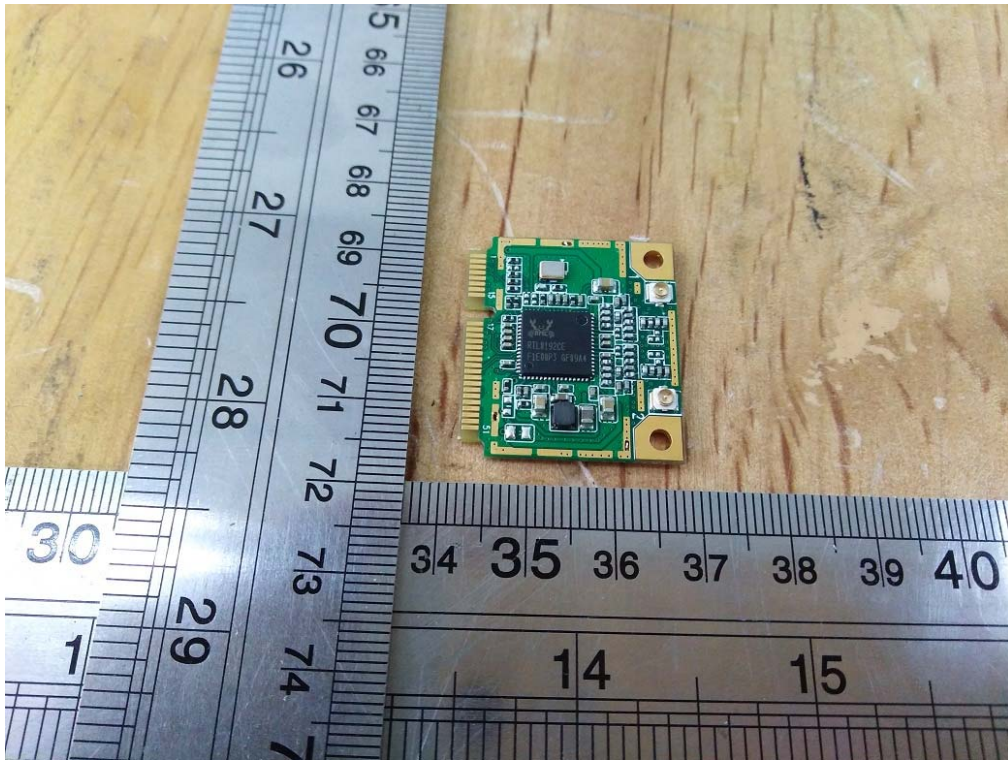












\*\*\*\*\*THE END\*\*\*\*\*