Prüfbericht-Nr.: *Test Report No.:*	**50046347 001**	**Auftrags-Nr.:** *Order No.:*	164063691	Seite 1 von 148 *Page 1 of 148*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	19.05.2016	
Auftraggeber: *Client:*	Lightcomm Technology Co., Ltd. RM 1808 18F, FO TAN INDUSTRIAL CENTRE, NOS. 26-28 AU PUI WAN STREET, FO TAN SHATIN NEW TERRITORIES, HONGKONG			
Prüfgegenstand: *Test item:*	Tablet			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	DL1026, MID1026-L, DL1026-***			
Auftrags-Inhalt: *Order content:*	FCC Certification			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209			
Wareneingangsdatum: *Date of receipt:*	19.05.2016			
Prüfmuster-Nr.: *Test sample No.:*	A000366608-001, A000366608-002, A000366608-003			
Prüfzeitraum: *Testing period:*	26.05.2016 - 03.06.2016			
Ort der Prüfung: *Place of testing:*	Shenzhen EMTEK Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von / *tested by:*			**kontrolliert von** / *reviewed by:*		
12.07.2016	Owen Tian/Senior Project Manager		12.07.2016	Winnie Hou/Technical Certifier	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

V04

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 PEAK OUTPUT POWER
RESULT: Pass

5.1.3 20DB BANDWIDTH AND 99% BANDWIDTH
RESULT: Pass

5.1.4 6DB BANDWIDTH AND 99% BANDWIDTH
RESULT: Pass

5.1.5 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100KHZ BANDWIDTH
RESULT: Pass

5.1.6 POWER SPECTRAL DENSITY
RESULT: Pass

5.1.7 SPURIOUS EMISSION
RESULT: Pass

5.1.8 FREQUENCY SEPARATION
RESULT: Pass

5.1.9 NUMBER OF HOPPING FREQUENCY
RESULT: Pass

5.1.10 TIME OF OCCUPANCY
RESULT: Pass

5.1.11 CONDUCTED EMISSIONS
RESULT: Pass

Contents

1. GENERAL REMARKS 4
1.1 COMPLEMENTARY MATERIALS 4
2. TEST SITES 4
2.1 TEST FACILITIES 4
2.2 LIST OF TEST AND MEASUREMENT INSTRUMENTS 5
2.3 TRACEABILITY 6
2.4 CALIBRATION 6
2.5 MEASUREMENT UNCERTAINTY 6
2.6 LOCATION OF ORIGINAL DATA 6
2.7 STATUS OF FACILITY USED FOR TESTING 7
3. GENERAL PRODUCT INFORMATION 8
3.1 PRODUCT FUNCTION AND INTENDED USE 8
3.2 RATINGS AND SYSTEM DETAILS 8
3.3 INDEPENDENT OPERATION MODES 10
3.4 NOISE GENERATING AND NOISE SUPPRESSING PARTS 10
3.5 SUBMITTED DOCUMENTS 10
4. TEST SET-UP AND OPERATION MODES 11
4.1 PRINCIPLE OF CONFIGURATION SELECTION 11
4.2 TEST OPERATION AND TEST SOFTWARE 11
4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT 11
4.4 COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE 11
4.5 TEST SETUP DIAGRAM 12
5. TEST RESULTS 14
5.1 TRANSMITTER REQUIREMENT & TEST SUITES 14
5.1.1 Antenna Requirement 14
5.1.2 Peak Output Power 15
5.1.3 20dB Bandwidth and 99% Bandwidth 16
5.1.4 6dB Bandwidth and 99% Bandwidth 17
5.1.5 Conducted Spurious Emissions measured in 100kHz Bandwidth 18
5.1.6 Power spectral density 31
5.1.7 Spurious Emission 32
5.1.8 Frequency Separation 139
5.1.9 Number of hopping frequency 140
5.1.10 Time of Occupancy 141
5.1.11 Conducted emissions 142
6. PHOTOGRAPHS OF THE TEST SET-UP 145
7. LIST OF TABLES 148
8. LIST OF PHOTOGRAPHS 148

1. General Remarks

1.1 Complementary Materials

None.

2. Test Sites

2.1 Test Facilities

Shenzhen EMTEK Co., Ltd.

(FCC Registration No.: 709623)

Bldg 69, Majialong Industry Zone, Nanshan District,
Shenzhen, Guangdong, P.R. China

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Transmitter spurious emissions				
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	2017-05-16
Loop Antenna	Schwarzbeck	FMZB 1519	1519-012	2017-05-16
Cable	H+B	3M SF104-26.5	295838/4	2017-05-28
Cable	H+B	6M SF104-26.5	295840/4	2017-05-28
Pre-Amplifier	HP	8447F	2944A07999	2017-05-16
Bilog Antenna	Schwarzbeck	VULB9163	142	2017-05-28
Cable	Schwarzbeck	AK9513	ACRX1	2017-05-16
Cable	Rosenberger	N/A	FP2RX2	2017-05-16
Cable	Schwarzbeck	AK9513	CRPX1	2017-05-28
Cable	Schwarzbeck	AK9513	CRRX2	2017-05-28
Pre-Amplifier	A.H.	PAM-0126	1415261	2017-05-16
Horn Antenna	Schwarzbeck	BBHA 9120	707	2017-05-28
Pre-Amplifier	A.H.	PAM-0126	1415261	2017-05-16
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	2017-05-16
EMI Test Receiver	Rohde & Schwarz	FSV40	132.1-3008K39-100967-AP	2017-05-16
Pre-Amplifier	Lunar EM	LNA26G40-40	J1013131028001	2017-05-16
Horn Antenna	AHS/USA	SAS-573	184	2017-05-16
Cable	H+B	0.5M SF104-26.5	289147/4	2017-05-16
Cable	H+B	3M SF104-26.5	295838/4	2017-05-16
Cable	H+B	6M SF104-26.5	295840/4	2017-05-16
Radio Spectrum Test				
EMI Test Receiver	Rohde & Schwarz	ESCI	101045	2017-05-16
Vector Signal Generater	Agilent	N5182B	My53050553	2017-05-28
Analog Signal Generator	Agilent	N5171B	My53050878	2017-05-28
Signal Analyzer	Agilent	N9010A	My53470879	2017-05-28
Power Meter	Agilent	PS-X10-100	N/A	2017-05-28
Temp. / Humidity Chamber	Kingson	THS-M1	242	2017-05-28
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	2017-05-16
L.I.S.N.	Schwarzbeck	NNLK8129	8129203	2017-05-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	2017-05-16
Voltage Probe	Rohde & Schwarz	TK9416	N/A	2017-05-16
I.S.N	Rohde & Schwarz	ENY22	1109.9508.02	2017-05-16
50Ω Coaxial Switch	Anritsu	MP59B	M20531	2017-05-16

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Maximum Peak Output Power Test	±1.0dB
Conducted Emissions Test	±2.0dB
Radiated Emission Test	±2.0dB
Power Density	±2.0dB
Occupied Bandwidth Test	±1.0dB
Band Edge Test	±3dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5℃
Humidity	±3%

2.6 Location of Original Data

The original copies of all test data taken during actual testing were retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

Shenzhen EMTEK Co., Ltd. test facility located at Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUTs are tablet with Wi-Fi, Bluetooth function.
These models are identical except the model name.
For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of Bluetooth (BDR & EDR mode)

Technical Specification	Value
Kind of Equipment	Tablet
Type Designation	DL1026, MID1026-L, DL1026-**
FCC ID	XMF-MID1026
Operating Frequency band	2402 – 2480MHz
Channel separation	1MHz
Extreme Temperature Range	0~+40℃
Operation Voltage	DC 3.7V (via built in battery)
	DC 5V (via AC/DC adapter)
Modulation	FHSS, GFSK, 8DPSK, π/4DQPSK
Bluetooth version	4.0, Dual Mode
Antenna Gain	2dBi

Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	21	2423.00	42	2444.00	63	2465.00
1	2403.00	22	2424.00	43	2445.00	64	2466.00
2	2404.00	23	2425.00	44	2446.00	65	2467.00
3	2405.00	24	2426.00	45	2447.00	66	2468.00
4	2406.00	25	2427.00	46	2448.00	67	2469.00
5	2407.00	26	2428.00	47	2449.00	68	2470.00
6	2408.00	27	2429.00	48	2450.00	69	2471.00
7	2409.00	28	2430.00	49	2451.00	70	2472.00
8	2410.00	29	2431.00	50	2452.00	71	2473.00
9	2411.00	30	2432.00	51	2453.00	72	2474.00
10	2412.00	31	2433.00	52	2454.00	73	2475.00
11	2413.00	32	2434.00	53	2455.00	74	2476.00

12	2414.00	33	2435.00	54	2456.00	75	2477.00
13	2415.00	34	2436.00	55	2457.00	76	2478.00
14	2416.00	35	2437.00	56	2458.00	77	2479.00
15	2417.00	36	2438.00	57	2459.00	78	2480.00
16	2418.00	37	2439.00	58	2460.00		
17	2419.00	38	2440.00	59	2461.00		
18	2420.00	39	2441.00	60	2462.00		
19	2421.00	40	2442.00	61	2463.00		
20	2422.00	41	2443.00	62	2464.00		

Table 5: Technical Specification of Bluetooth (Low Energy mode)

Technical Specification	**Value**
Kind of Equipment	Tablet
Type Designation	DL1026, MID1026-L, DL1026-**
FCC ID	XMF-MID1026
Operating Frequency band	2402 – 2480MHz
Channel separation	2MHz
Extreme Temperature Range	0~+40℃
Operation Voltage	DC 3.7V (via built in battery)
	DC 5V (via AC/DC adapter)
Modulation	GFSK
Bluetooth version	4.0, Dual Mode
Antenna Gain	2dBi

Table 6: RF channel and frequency of Bluetooth (Low Energy mode)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	11	2424.00	22	2446.00	33	2468.00
1	2404.00	12	2426.00	23	2448.00	34	2470.00
2	2406.00	13	2428.00	24	2450.00	35	2472.00
3	2408.00	14	2430.00	25	2452.00	36	2474.00
4	2410.00	15	2432.00	26	2454.00	37	2476.00
5	2412.00	16	2434.00	27	2456.00	38	2478.00
6	2414.00	17	2436.00	28	2458.00	39	2480.00
7	2416.00	18	2438.00	29	2460.00		
8	2418.00	19	2440.00	30	2462.00		
9	2420.00	20	2442.00	31	2464.00		
10	2422.00	21	2444.00	32	2466.00		

3.3 Independent Operation Modes

The basic operation modes are:

A. On
   1. Bluetooth mode (BDR & EDR mode)
      a. Tansmitting
         i. Low Channel
         ii. Middle Channel
         iii. High Channel
      b. Receiving
   2. Bluetooth mode (Low Energy mode)
      a. Tansmitting
         i. Low Channel
         ii. Middle Channel
         iii. High Channel
      b. Receiving
B. Standby
C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.
According to clause 3.1, all tests were applied on model DL1026 only.
Note: The model name was described as 'NS-P16AT08' in test data during testing, however the model is named 'DL1026' finally by manufacture.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

Description	Manufacturer	Part No.	Rating
AC/DC Adapter	TEKA	TEKA012-0502000UK	Input: AC 100-240V, 50/60Hz, 0.35A; Output: DC 5V, 2A

The EUT was tested with following cables:

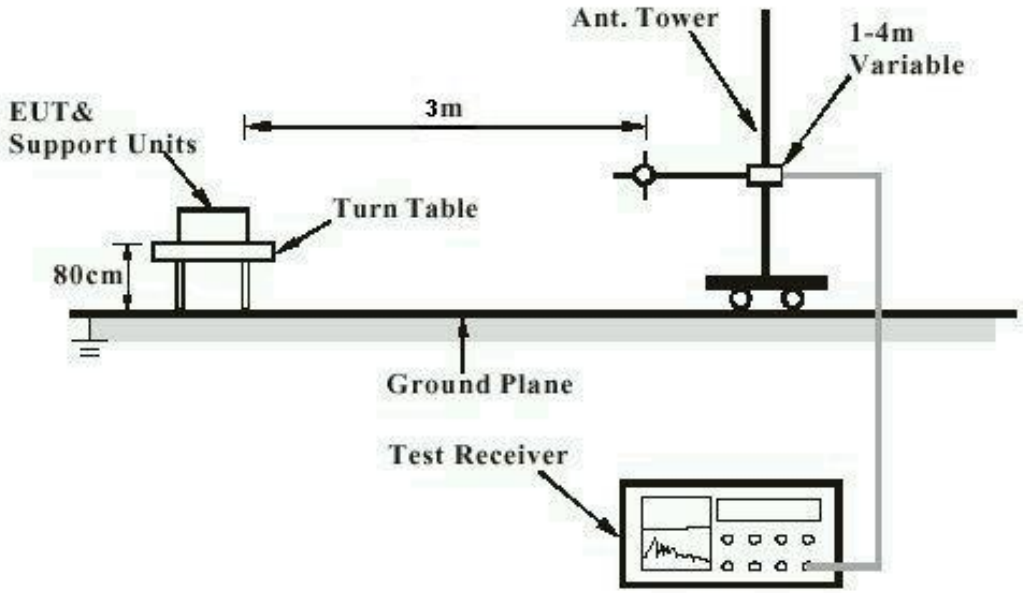
Interface(s)/Port(s):	Max. cable length, shielding	Cable classification
AC Mains of adapter	2 cores, non-shielded port, 3m	AC Power Input
Micro USB port	4 cores, non-shielded port, 3m	DC Power Input

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



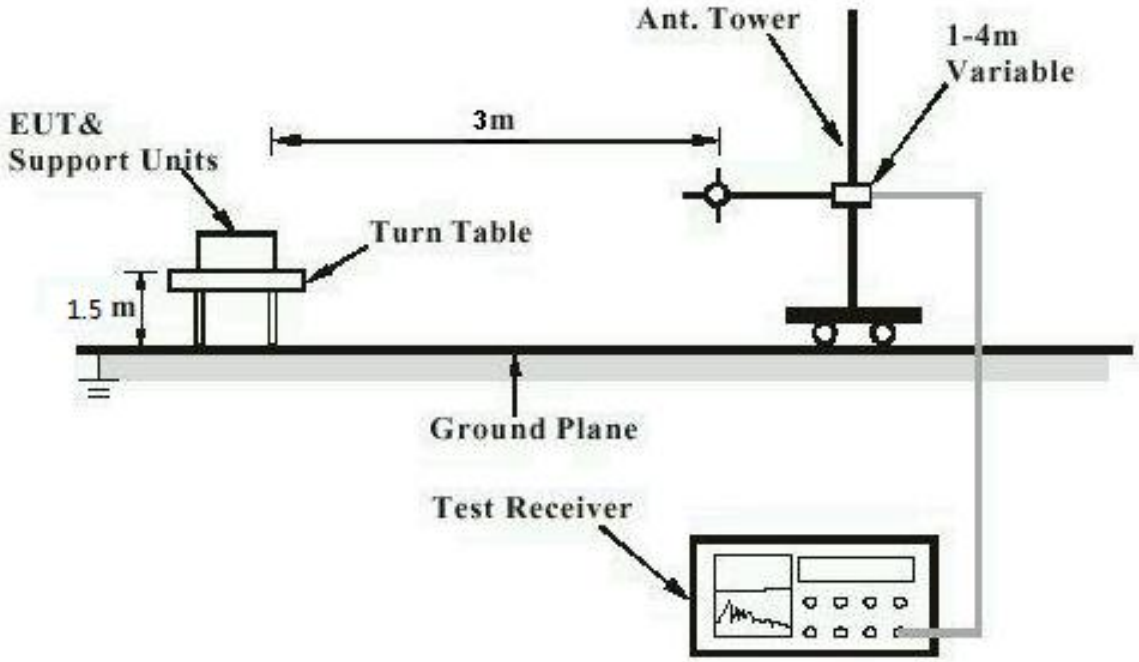


Diagram of Measurement Equipment Configuration for Conduction Measurement

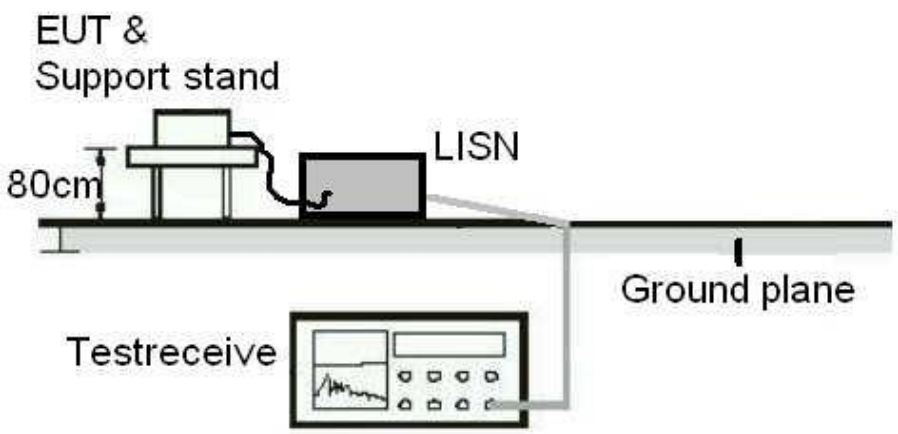
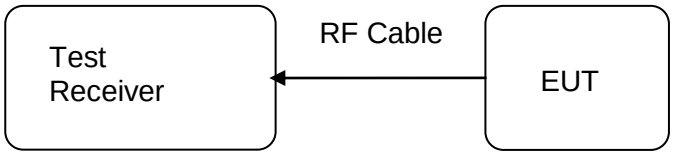


Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test standard	:	Part 15.203
Limit		The use of antennas with directional gains that do not exceed 6dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 2dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

5.1.2 Peak Output Power

RESULT: **Pass**

Test date	:	2016-05-26
Test standard	:	FCC Part 15.247(b)(1) FCC Part 15.247(b)(3)
Basic standard	:	ANSI C63.10: 2013 Clause 9.1 of KDB 558074 v03r01
Limit	:	125mW, 1W
Kind of test site	:	Shielded room

Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.1.a, A.2.a
Ambient temperature	:	25℃
Relative humidity	:	50%
Atmospheric pressure	:	101kPa

Table 7: Test result of Peak Output Power of Buletooth (BDR mode)

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low Channel	2402	5.366	21
Middle Channel	2441	6.074	21
High Channel	2480	6.244	21

Table 8: Test result of Peak Output Power of Bluetooth (EDR mode)

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low Channel	2402	5.371	21
Middle Channel	2441	6.071	21
High Channel	2480	6.232	21

Table 9: Test result of Peak Output Power of Bluetooth (Low Energy mode)

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low Channel	2402	-2.453	30
Middle Channel	2440	-1.967	30
High Channel	2480	-1.854	30

5.1.3 20dB Bandwidth and 99% Bandwidth

RESULT: **Pass**

Date of testing	:	2016-05-27
Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013 Clause 8 of KDB 558074 v03r01
Kind of test site	:	Shielded room

Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.1.a
Ambient temperature	:	25℃
Relative humidity	:	50%
Atmospheric pressure	:	101kPa

Table 10: Test result of 20dB and 99% Bandwidth of BDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low Channel	2402	0.949	0.871
Mid Channel	2441	0.935	0.869
High Channel	2480	0.914	0.866

Table 11: Test result of 20dB and 99% Bandwidth of EDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low Channel	2402	1.244	1.141
Mid Channel	2441	1.244	1.138
High Channel	2480	1.252	1.138

5.1.4 6dB Bandwidth and 99% Bandwidth

RESULT: **Pass**

Date of testing	:	2016-05-26
Test standard	:	FCC Part 15.247(a)(2)
Basic standard	:	ANSI C63.10: 2013 Clause 8 of KDB 558074 v03r01
Kind of test site	:	Shielded room

Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.2.a
Ambient temperature	:	25℃
Relative humidity	:	50%
Atmospheric pressure	:	101kPa

Table 12: Test result of 6dB Bandwidth and 99% Bandwidth of Bluetooth, Low Energy mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit of 6dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low Channel	2402	0.704	≥0.5	1.029
Mid Channel	2440	0.703	≥0.5	1.028
High Channel	2480	0.701	≥0.5	1.028

5.1.5 Conducted Spurious Emissions measured in 100kHz Bandwidth

RESULT: **Pass**

Date of testing	:	2016-05-27
Test standard	:	FCC part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);
Kind of test site	:	Shield room

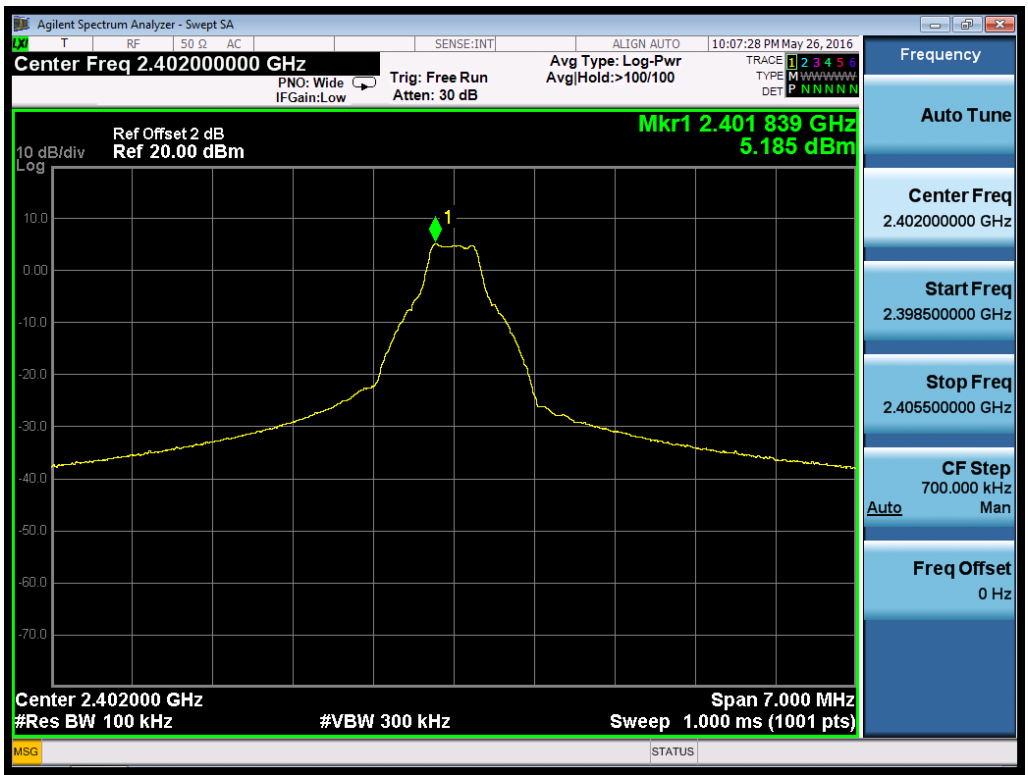
Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.1.a, A.2.a
Ambient temperature	:	25℃
Relative humidity	:	50%
Atmospheric pressure	:	101kPa

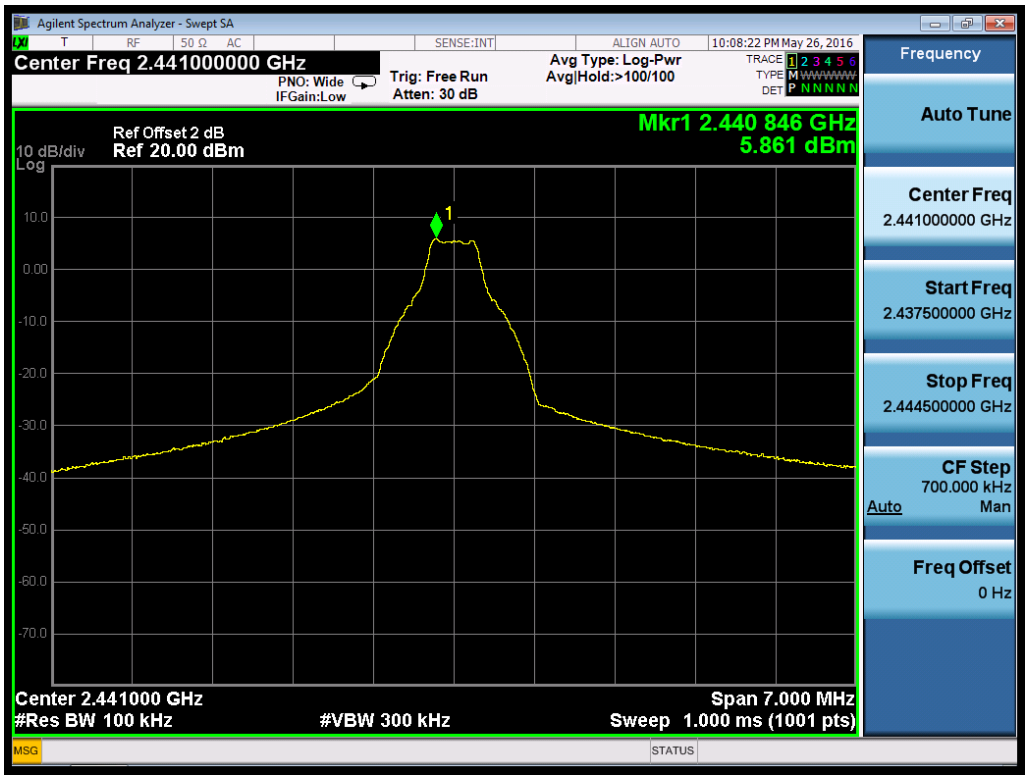
For details refer to following test plot.

Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of BDR mode

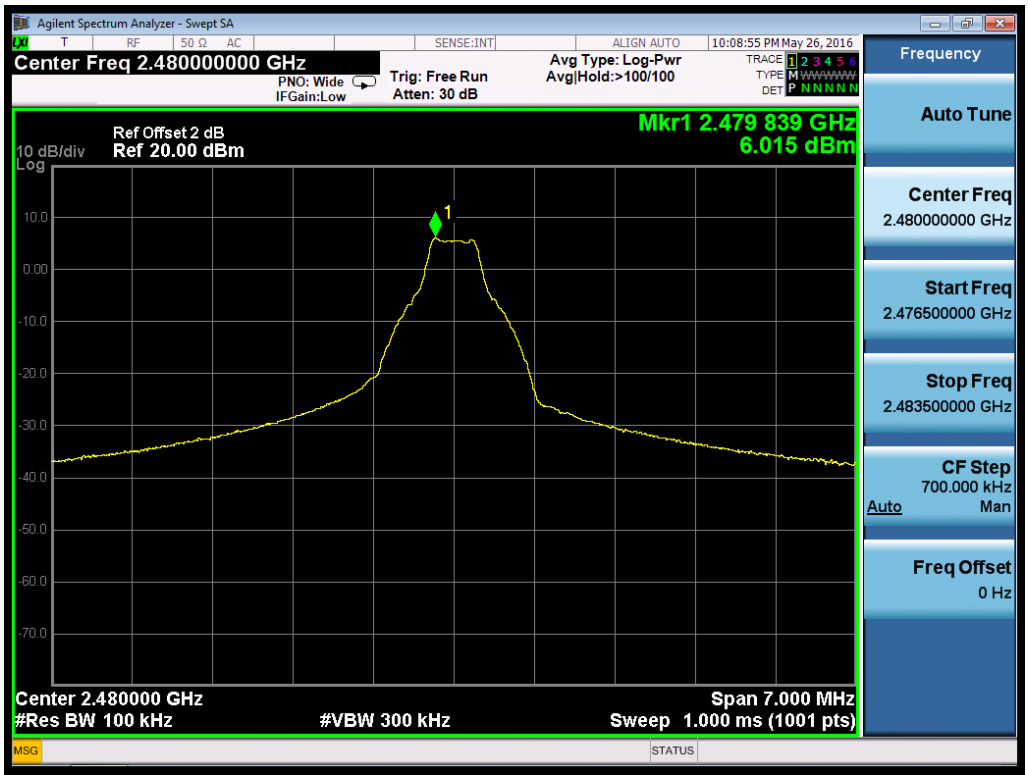
Low Channel



Middle Channel

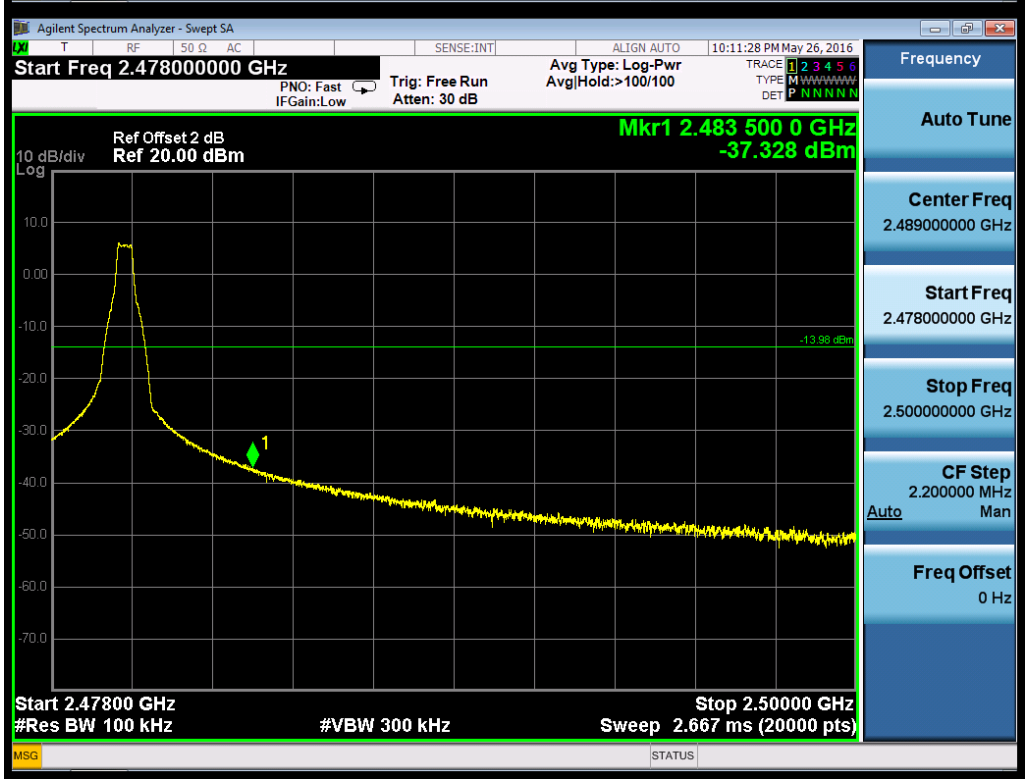


High Channel



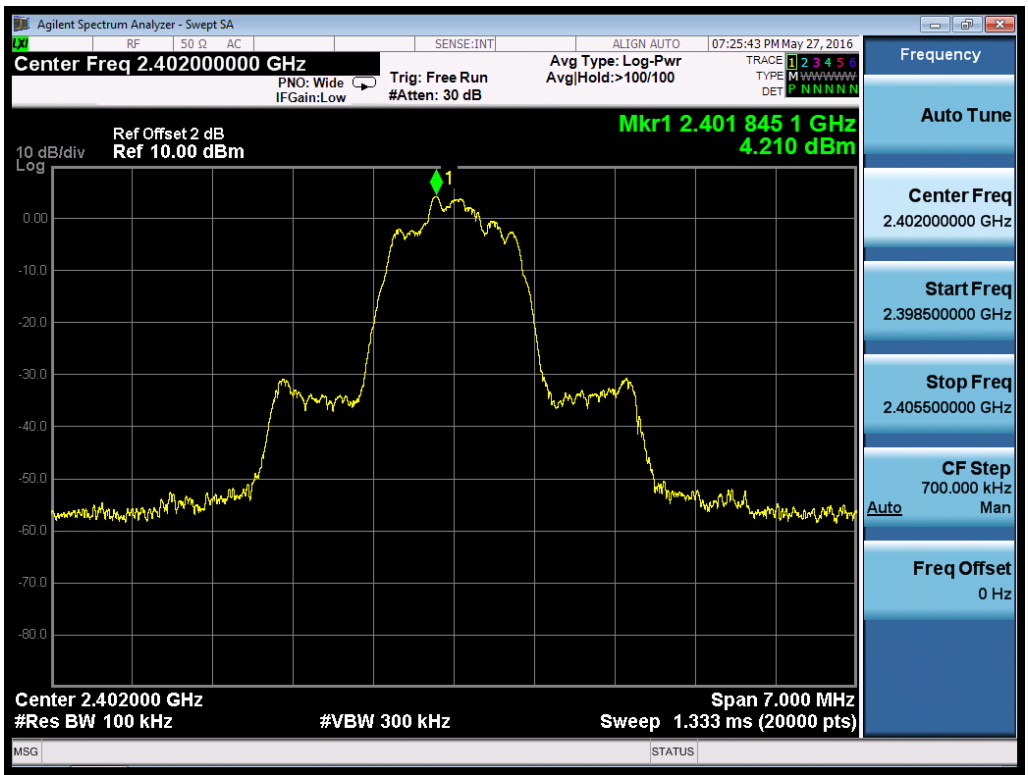
Band Edge

Agilent Spectrum Analyzer - Swept SA
Start Freq 2.390000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:12:35 PM May 26, 2016
Ref Offset 2 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.400 000 0 GHz
-32.549 dBm
-14.81 dBm
Start 2.390000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.403000 GHz
Sweep 1.333 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.396500000 GHz
Start Freq
2.390000000 GHz
Stop Freq
2.403000000 GHz
CF Step
1.300000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.478000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:11:28 PM May 26, 2016
Ref Offset 2 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.483 500 0 GHz
-37.328 dBm
-13.98 dBm
Start 2.47800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.667 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto
Man
Freq Offset
0 Hz

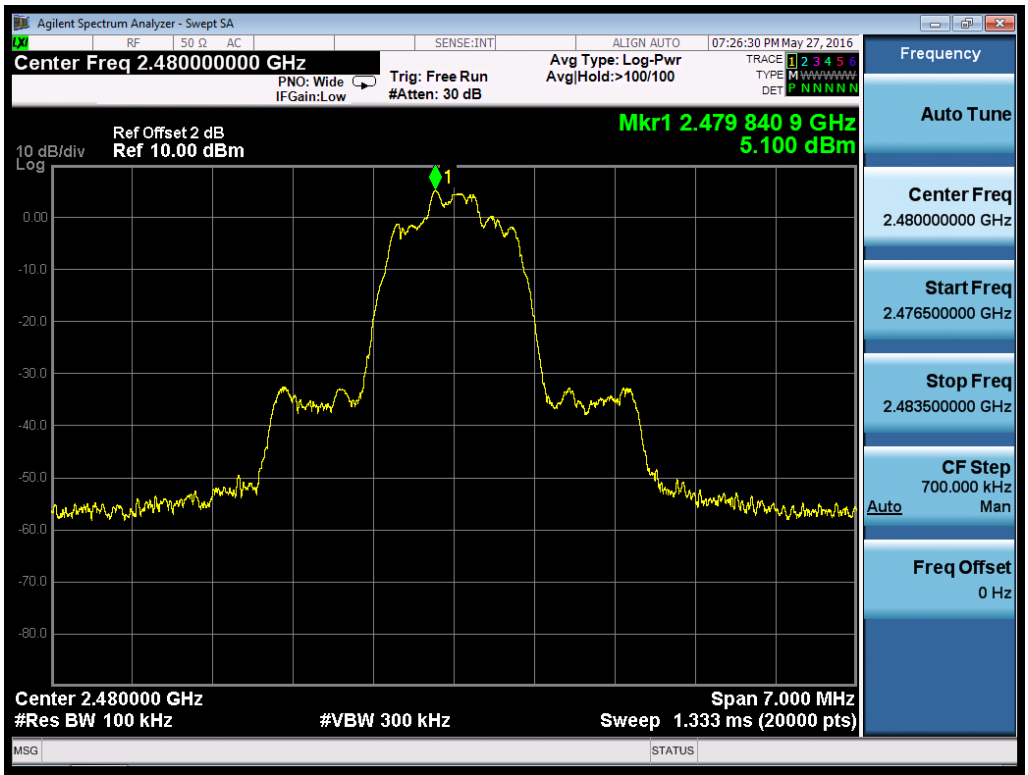
Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of EDR mode

Low Channel

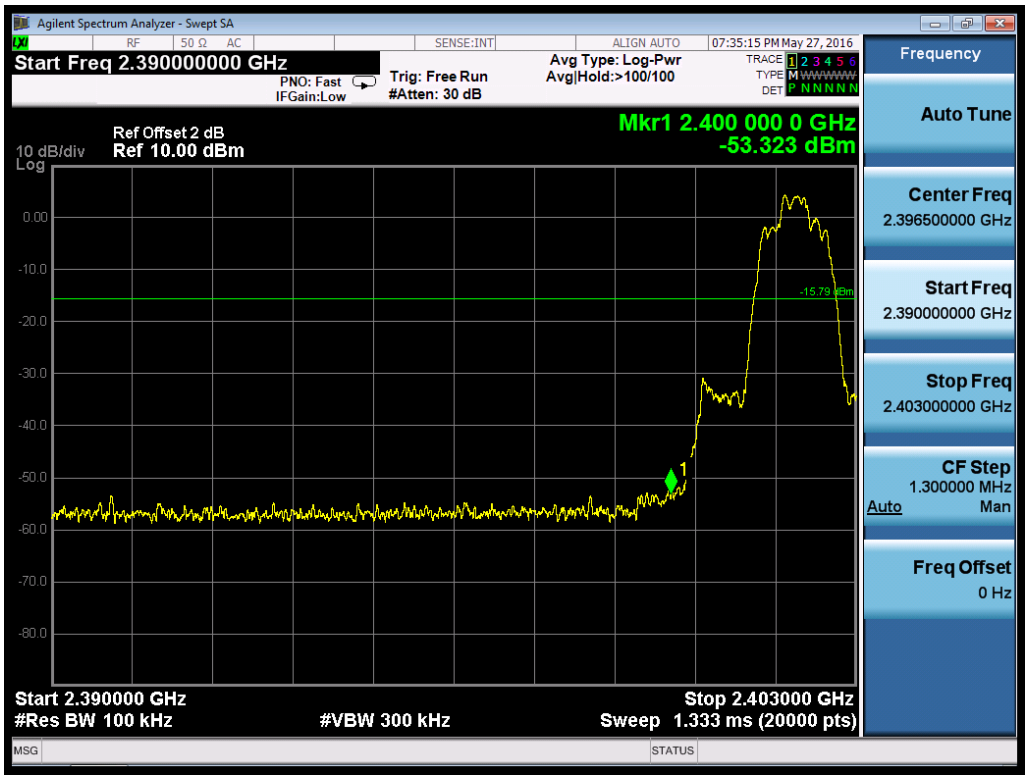


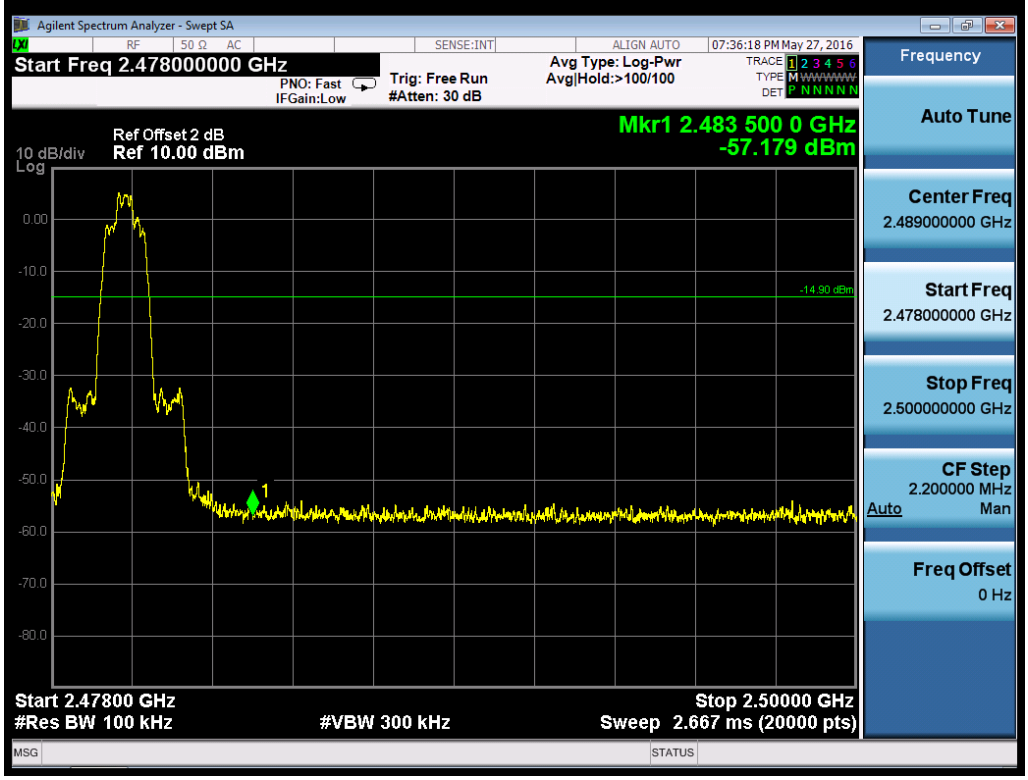
Middle Channel

High Channel



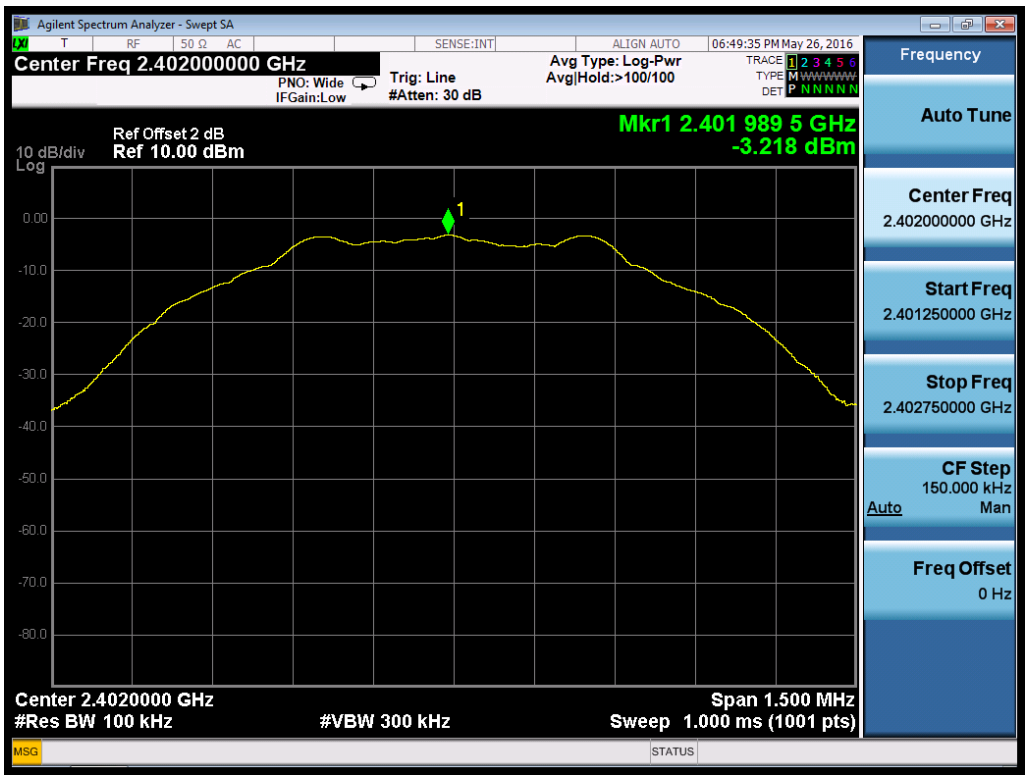
Band Edge


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.390000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
07:35:15 PM May 27, 2016
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.400 000 0 GHz
-53.323 dBm
-15.79 dBm
Start 2.390000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.403000 GHz
Sweep 1.333 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.396500000 GHz
Start Freq
2.390000000 GHz
Stop Freq
2.403000000 GHz
CF Step
1.300000 MHz
Auto
Man
Freq Offset
0 Hz

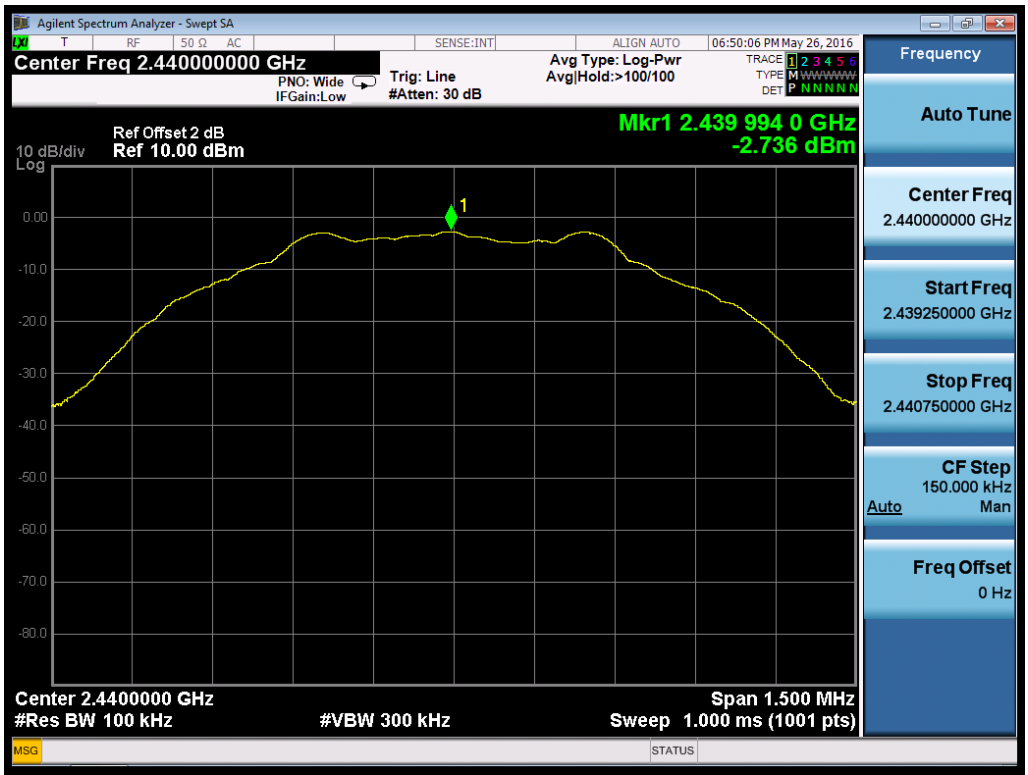

Agilent Spectrum Analyzer - Swept SA
Start Freq 2.478000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
07:36:18 PM May 27, 2016
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.483 500 0 GHz
-57.179 dBm
-14.90 dBm
Start 2.47800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.667 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto
Man
Freq Offset
0 Hz

Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of Low Energy mode

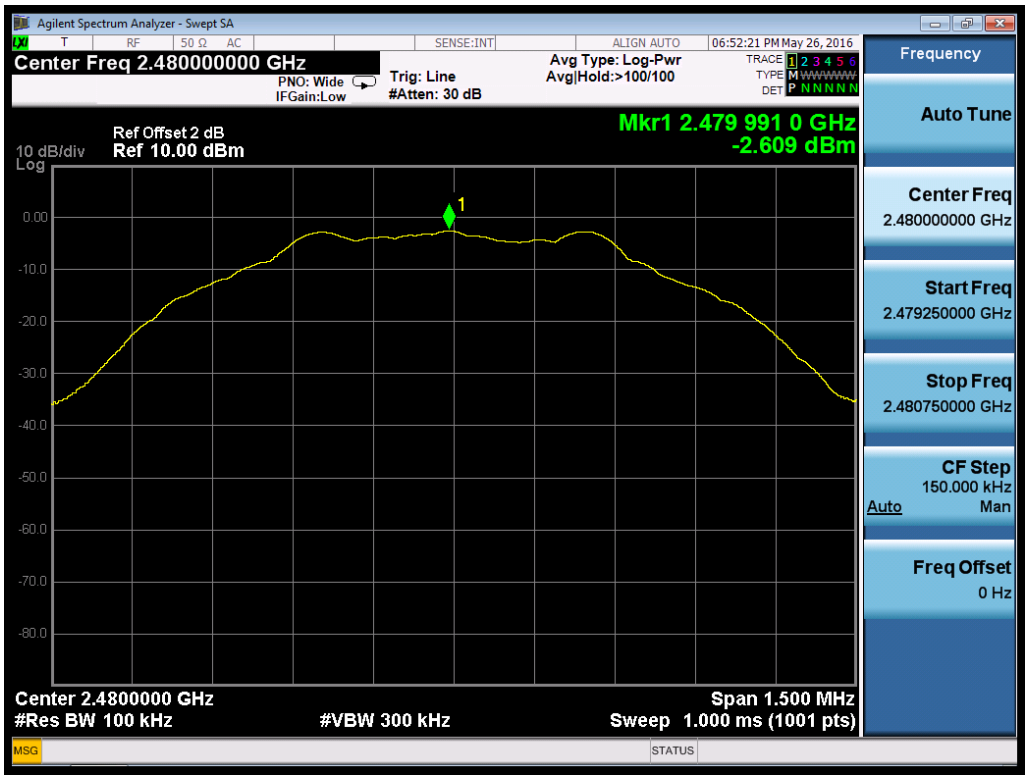
Low Channel



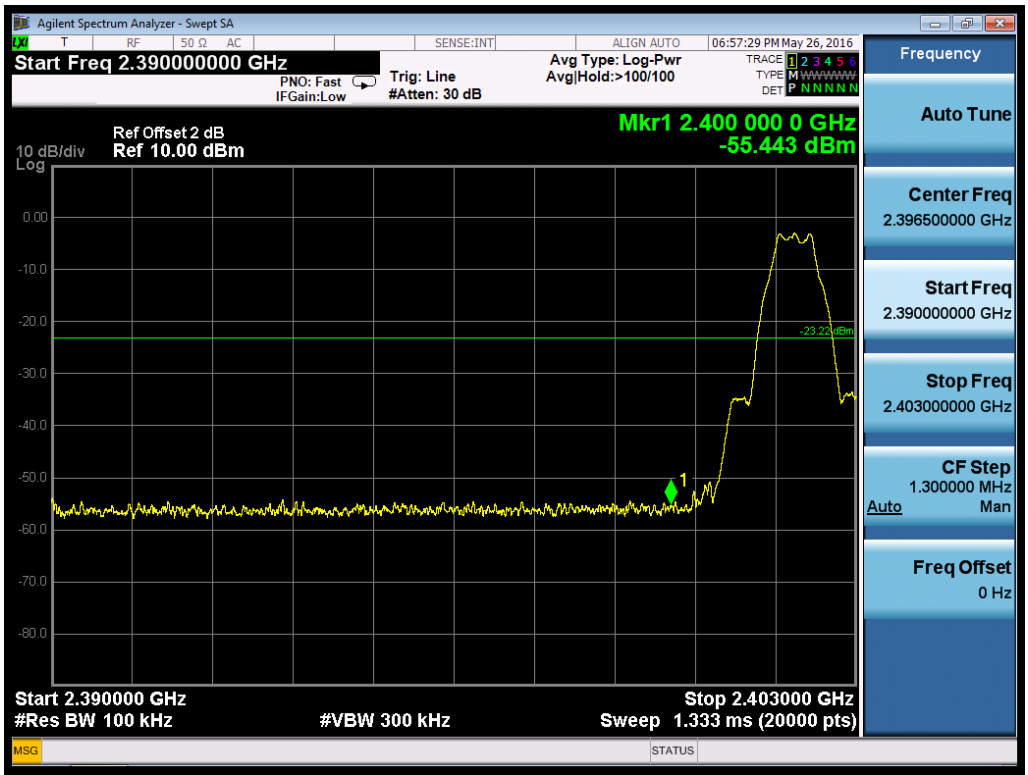
Middle Channel

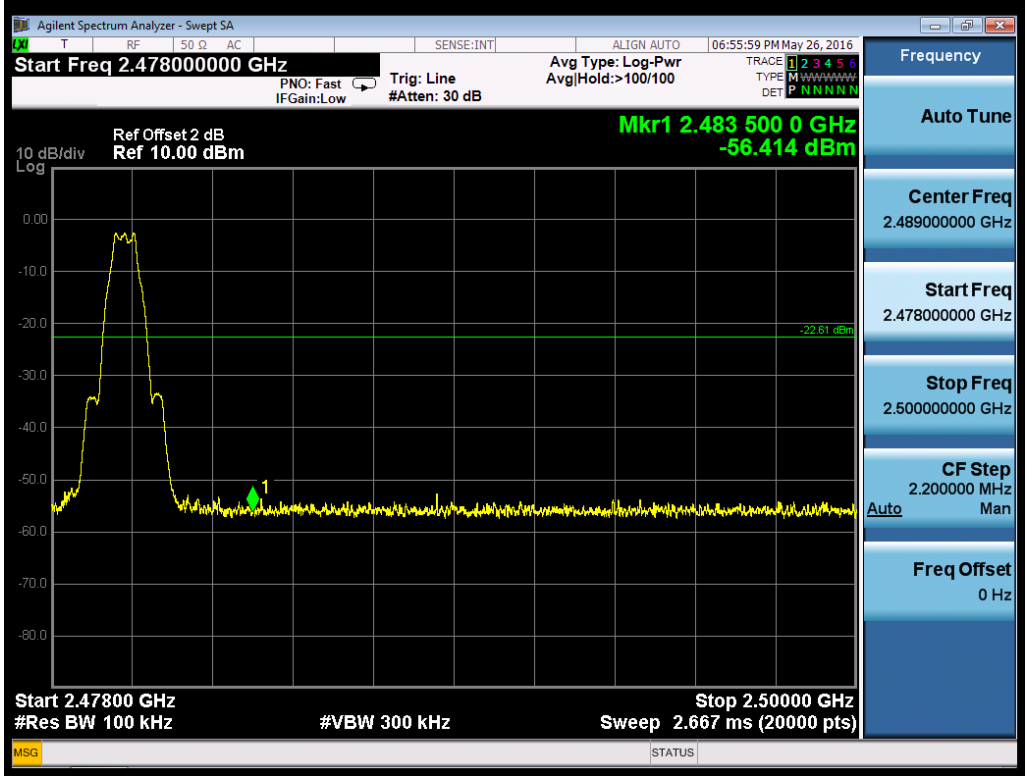


High Channel



Band Edge


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.390000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
06:57:29 PM May 26, 2016
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.400 000 0 GHz
-55.443 dBm
-23.22 dBm
Start 2.390000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.403000 GHz
Sweep 1.333 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.396500000 GHz
Start Freq
2.390000000 GHz
Stop Freq
2.403000000 GHz
CF Step
1.300000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.478000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
06:55:59 PM May 26, 2016
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.483 500 0 GHz
-56.414 dBm
-22.61 dBm
Start 2.47800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.667 ms (20000 pts)
Frequency
Auto Tune
Center Freq
2.489000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.200000 MHz
Auto
Man
Freq Offset
0 Hz

5.1.6 Power spectral density

RESULT: **Pass**

Date of testing	:	2016-05-26
Test standard	:	FCC part 15.247(e)
Basic standard	:	ANSI C63.10: 2013 Clause 10 of KDB 558074 v03r01
Limit	:	8dBm/3kHz
Kind of test site	:	Shield room

Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.2.a
Ambient temperature	:	25℃
Relative humidity	:	50%
Atmospheric pressure	:	101kPa

Table 13: Test result of power spectral density

Mode	Channel (MHz)	Result (dBm/3kHz)	Limit (dBm/3kHz)	Conclusion
Bluetooth Low Energy mode	2402	-17.699	8	Pass
	2440	-17.218	8	Pass
	2480	-17.225	8	Pass

5.1.7 Spurious Emission

RESULT: **Pass**

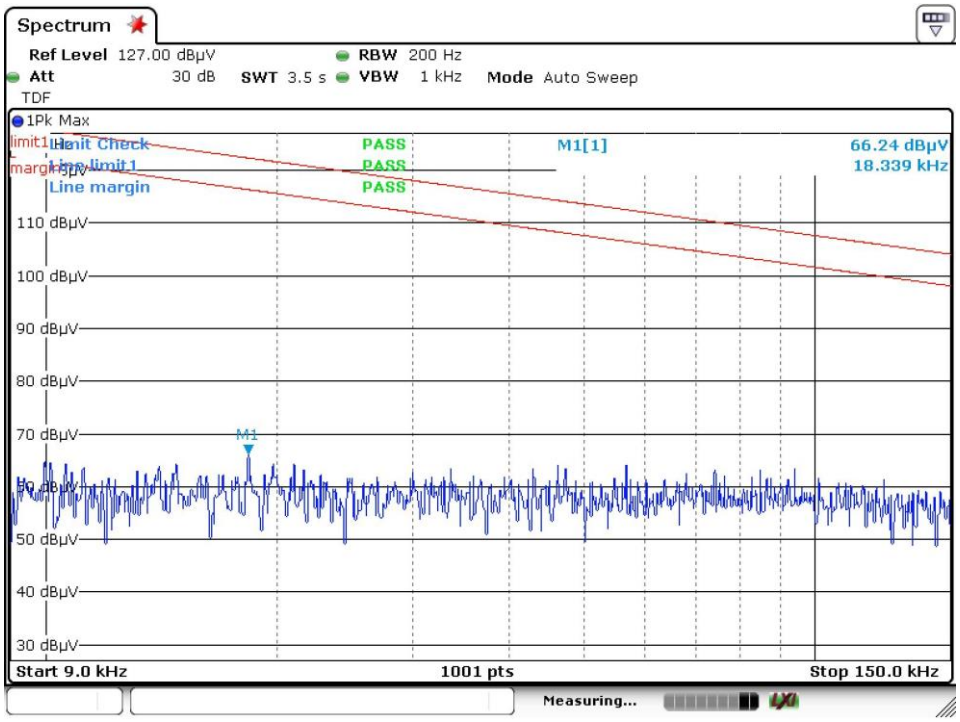
Date of testing	:	2015-06-03
Test standard	:	FCC part 15.247(d)
Basic standard	:	ANSI C63.10: 2013 Clause 11 of KDB 558074 v03r01
Limits	:	FCC part 15.209(a)
Kind of test site	:	3m Semi-Anechoic Chamber & Anechoic Chamber

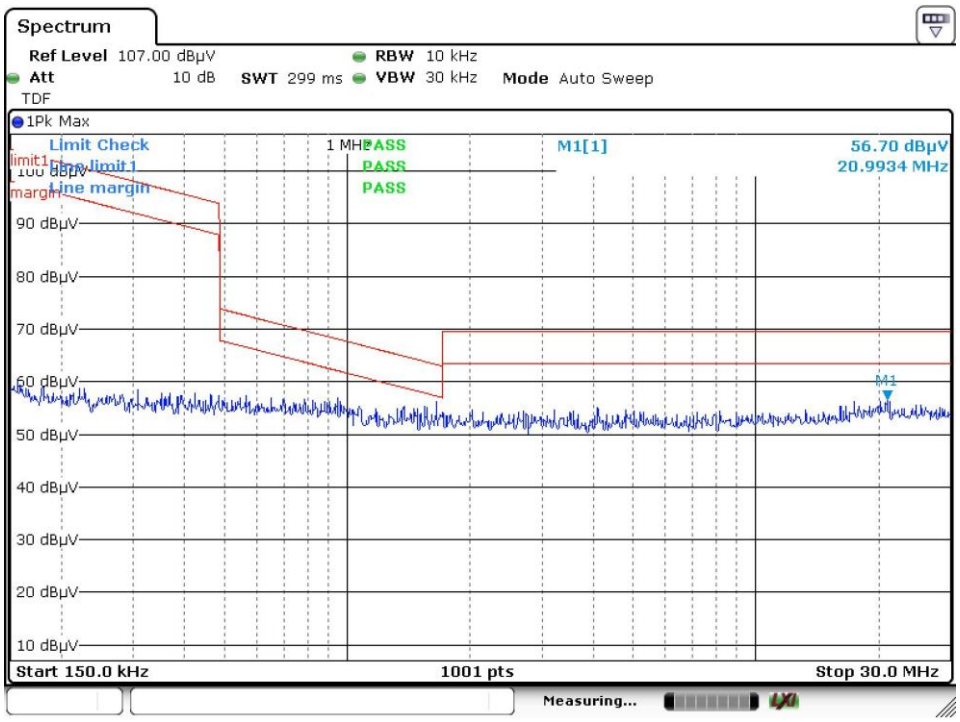
Test setup

Test channel	:	Low/ Middle/ High
Operation mode	:	A.1.a, A.2.a
Ambient temperature	:	24℃
Relative humidity	:	53%
Atmospheric pressure	:	101kPa

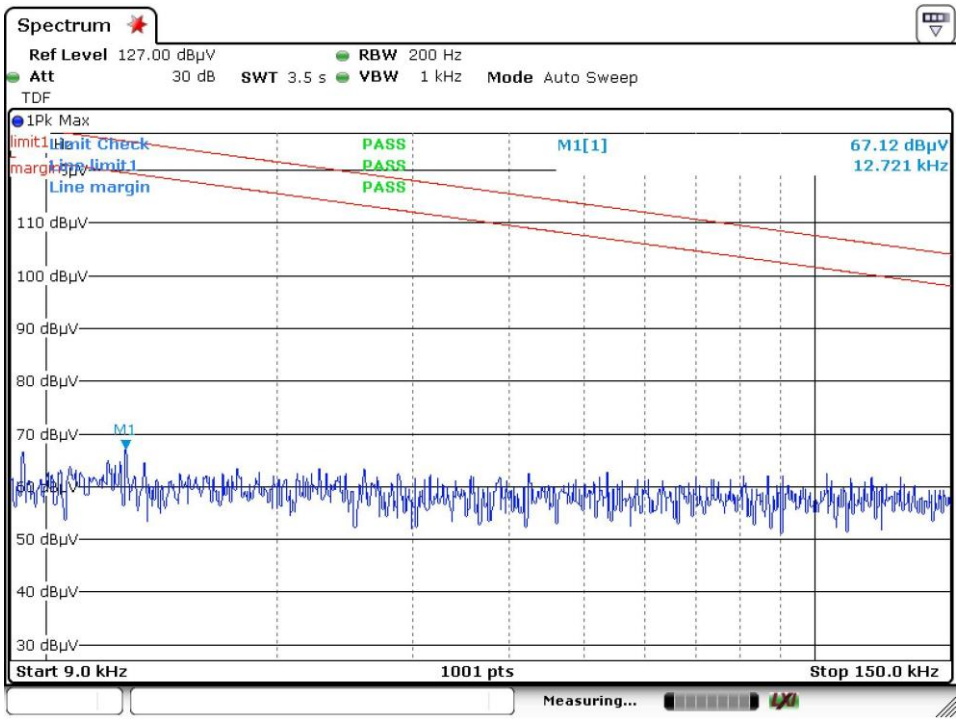
For details refer to following test plot.

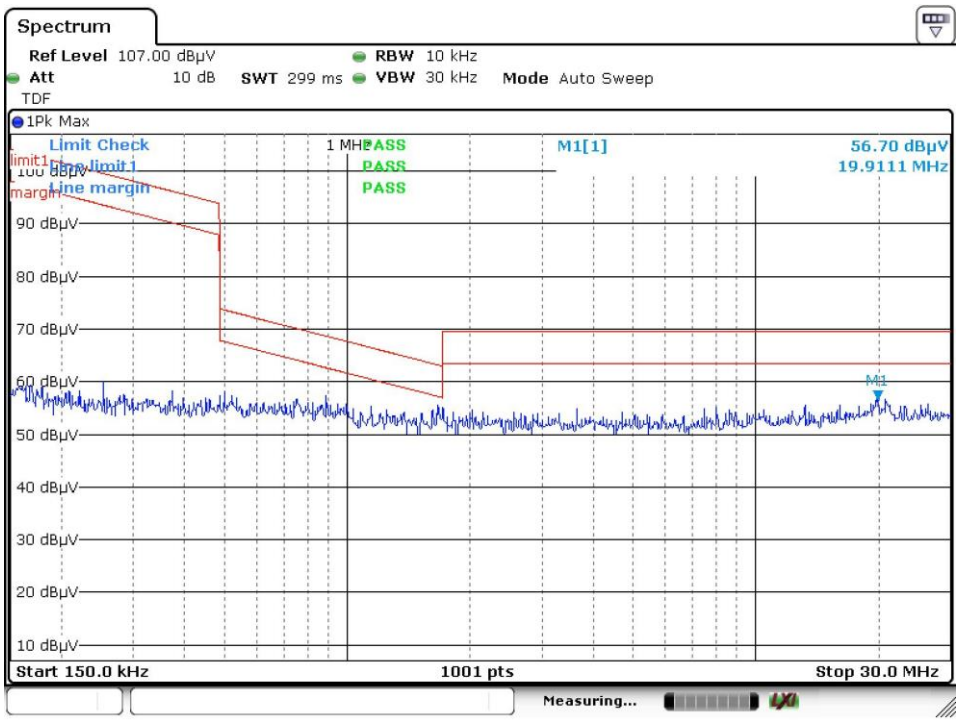
Test Plot of 2402MHz-X of BDR mode



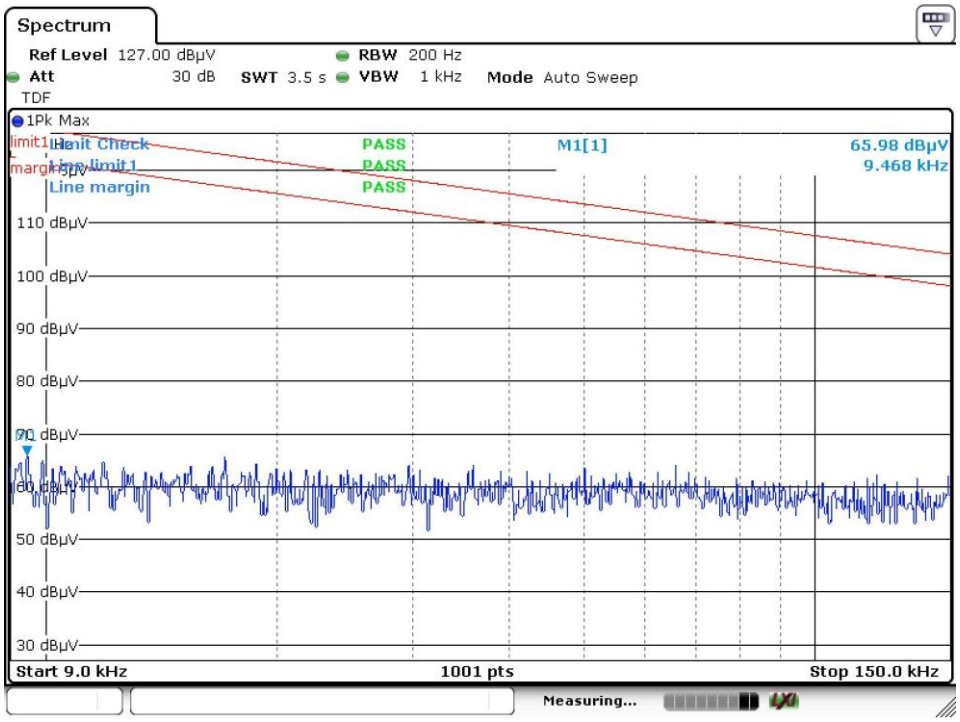


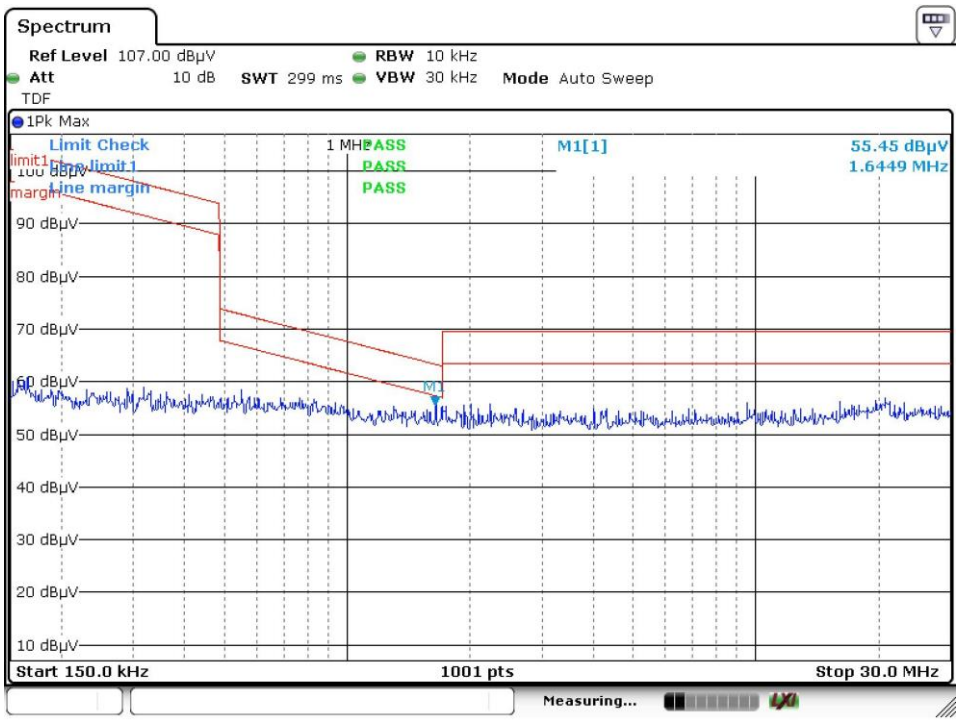
Test Plot of 2402MHz-Y of BDR mode



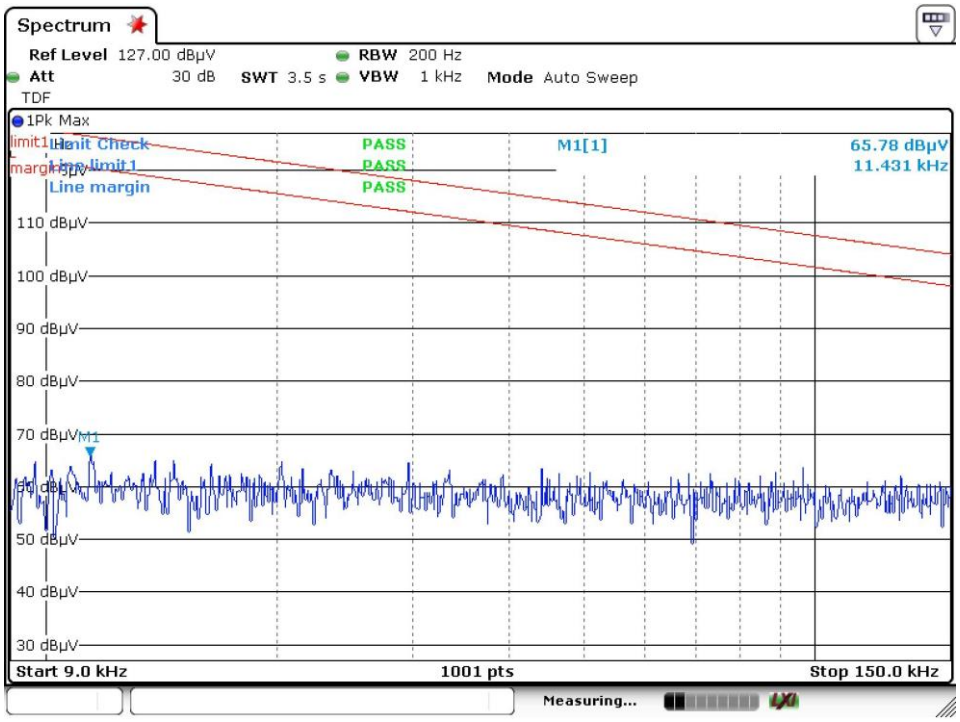


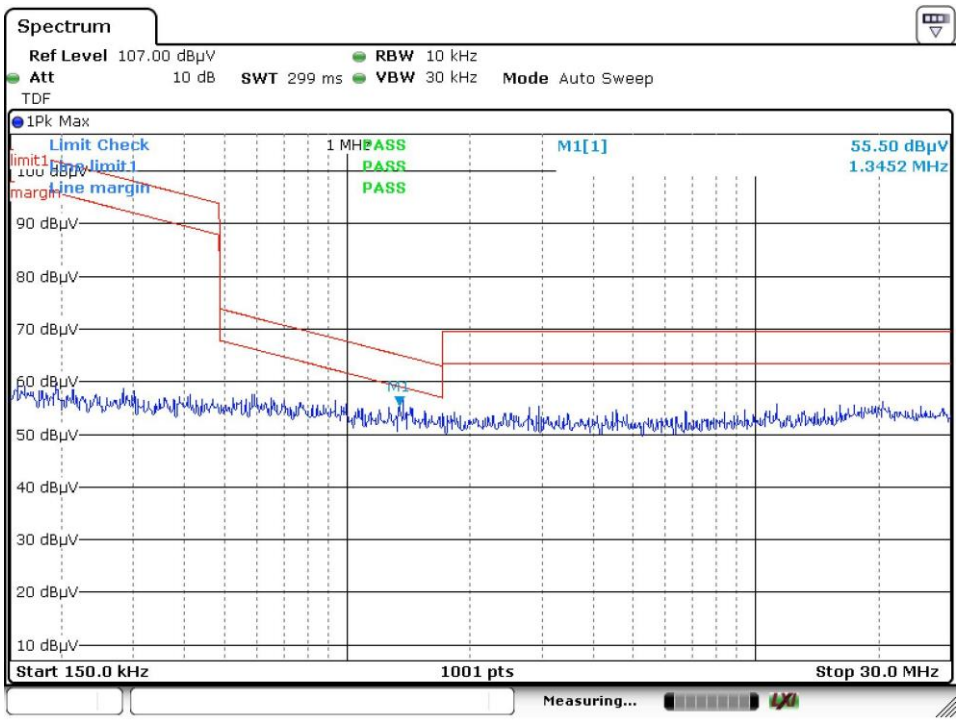
Test Plot of 2402MHz-Z of BDR mode



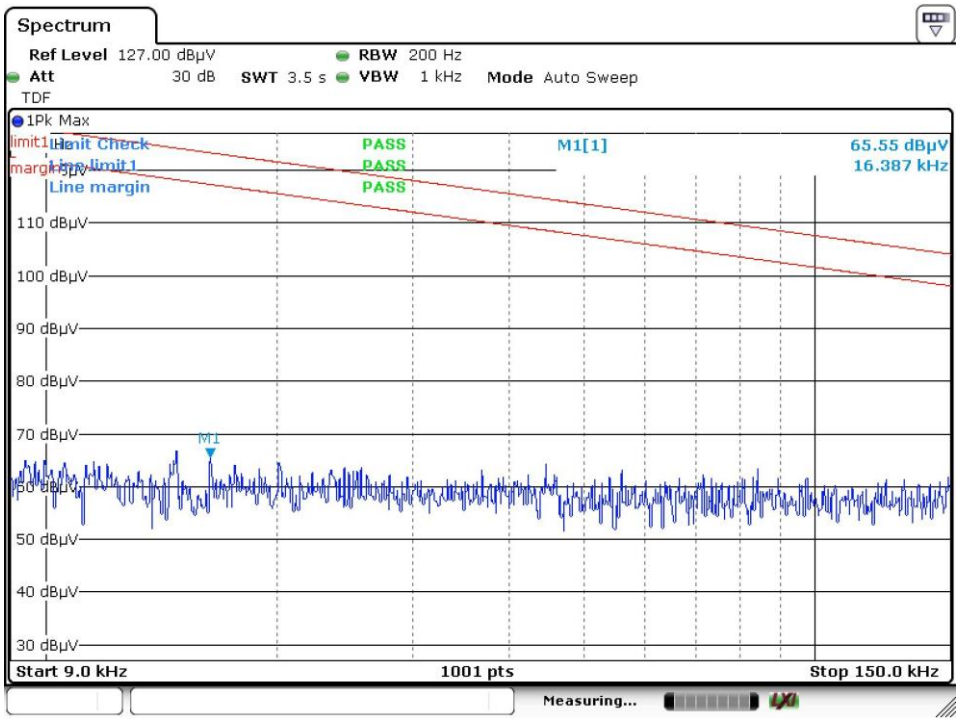


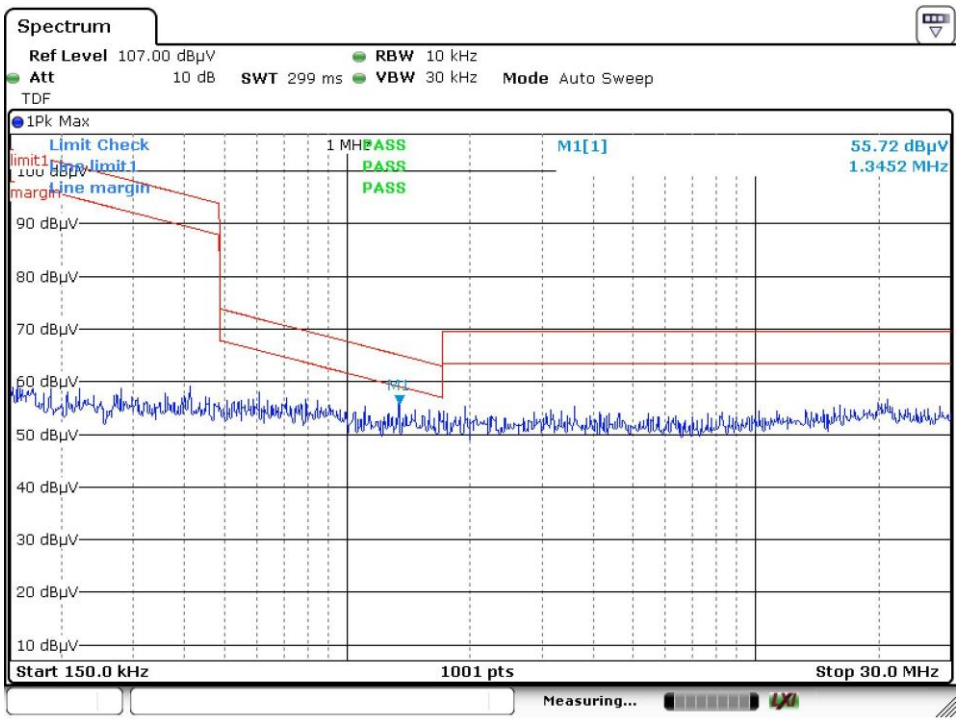
Test Plot of 2441MHz-X of BDR mode



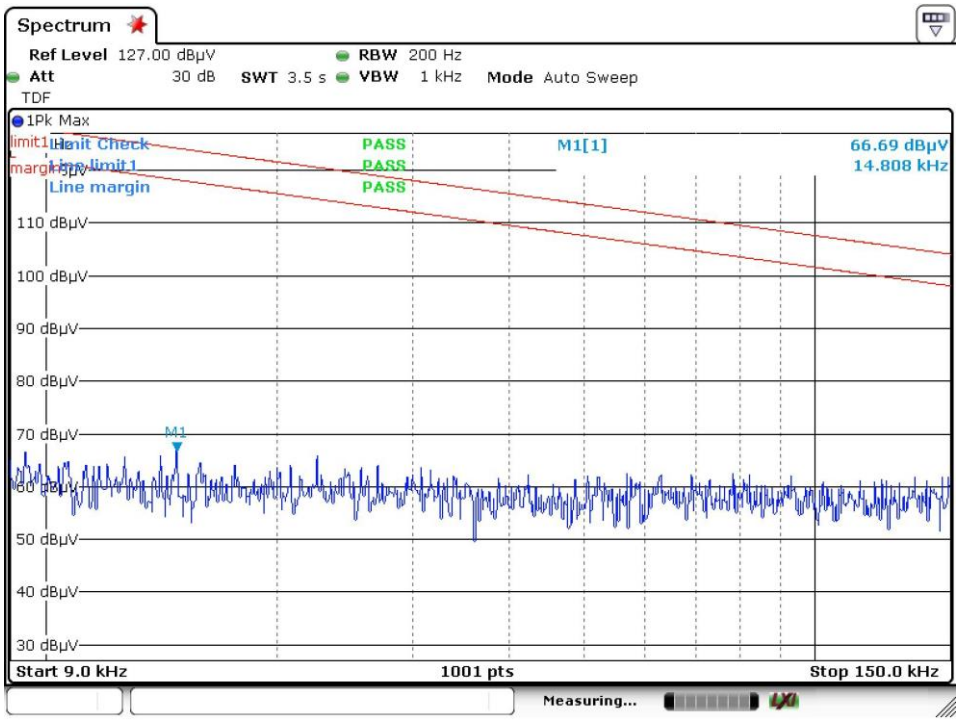


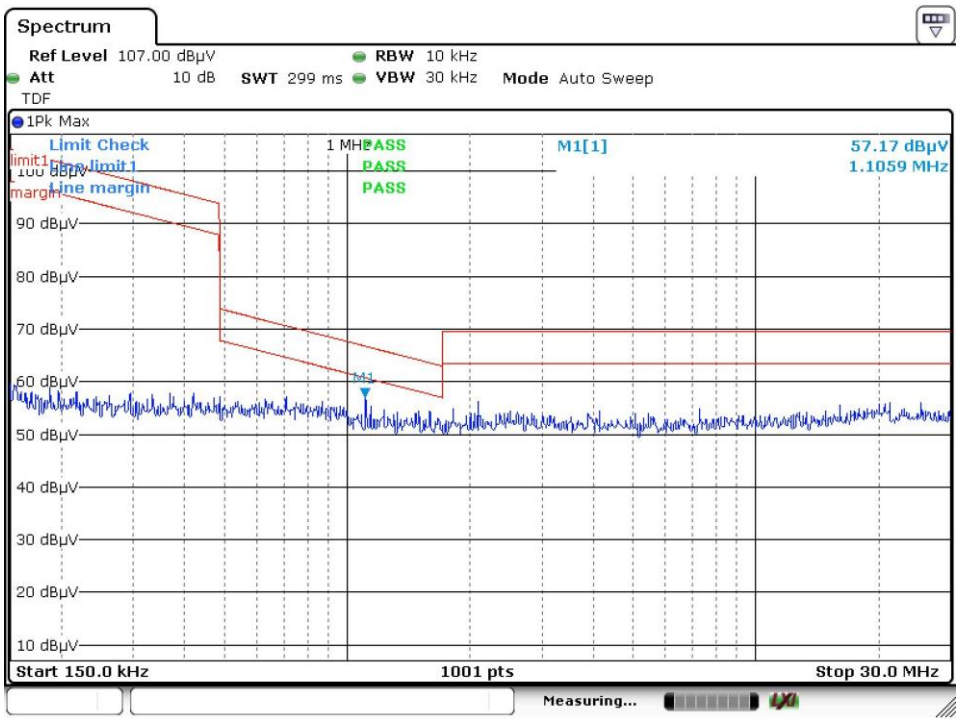
Test Plot of 2441MHz-Y of BDR mode



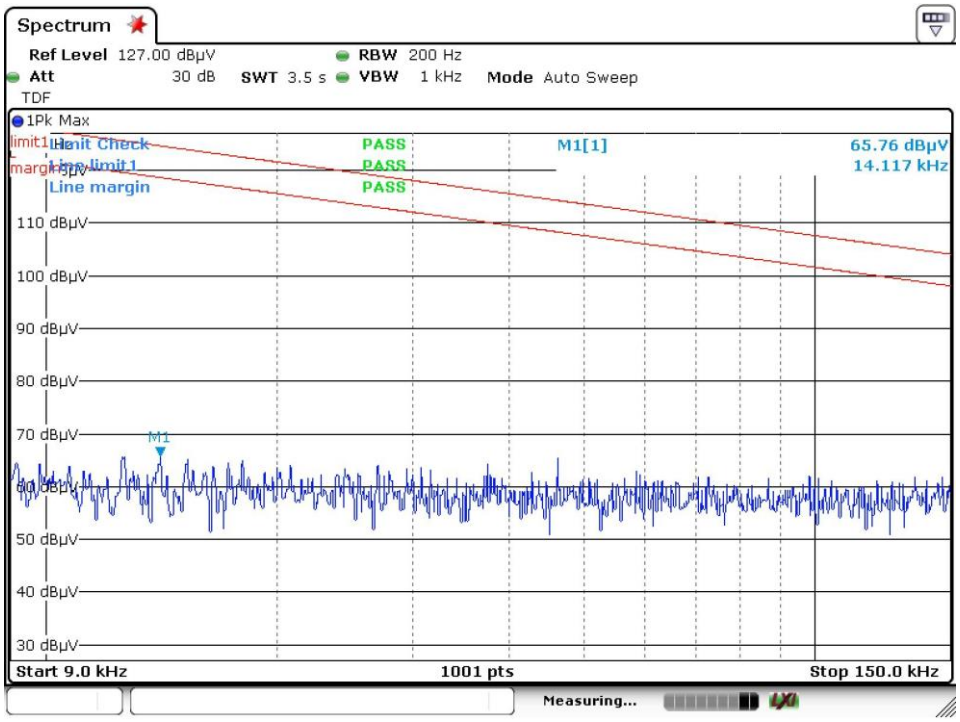


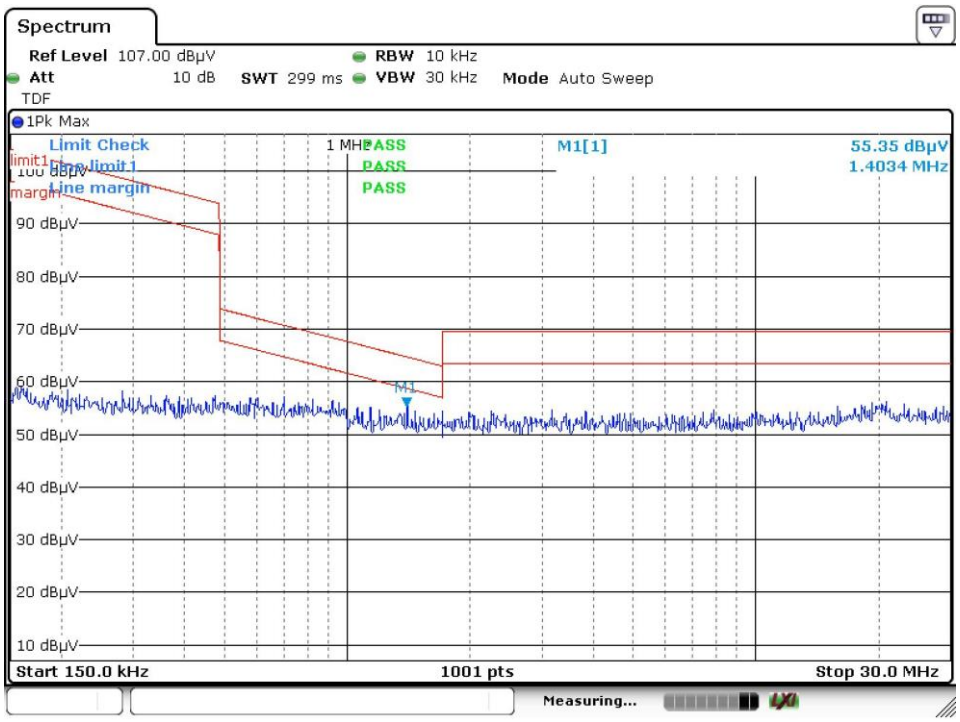
Test Plot of 2441MHz-Z of BDR mode



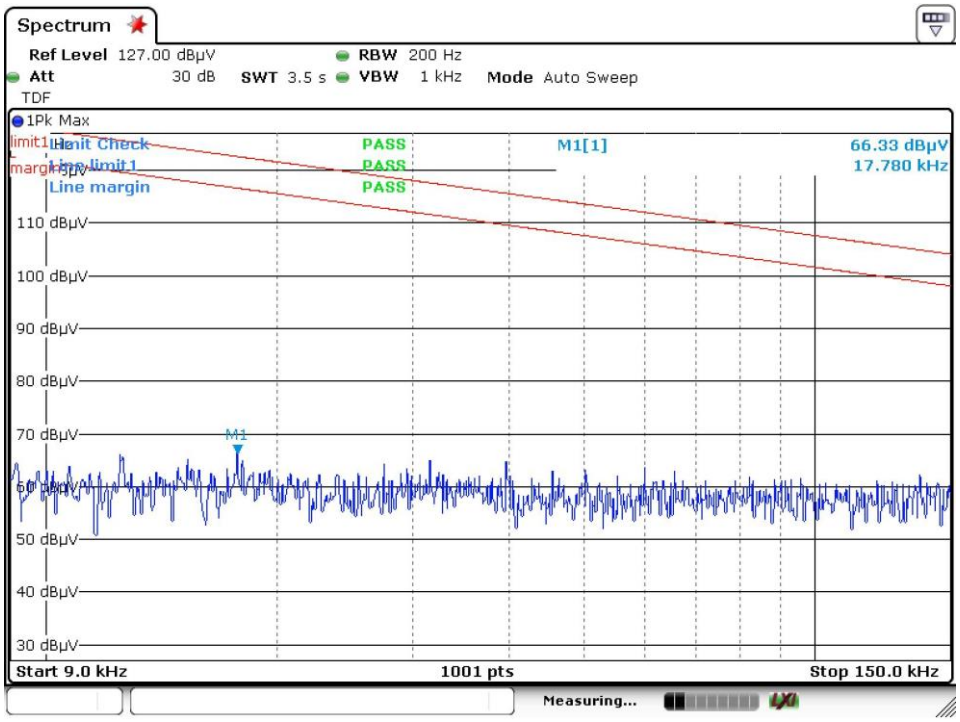


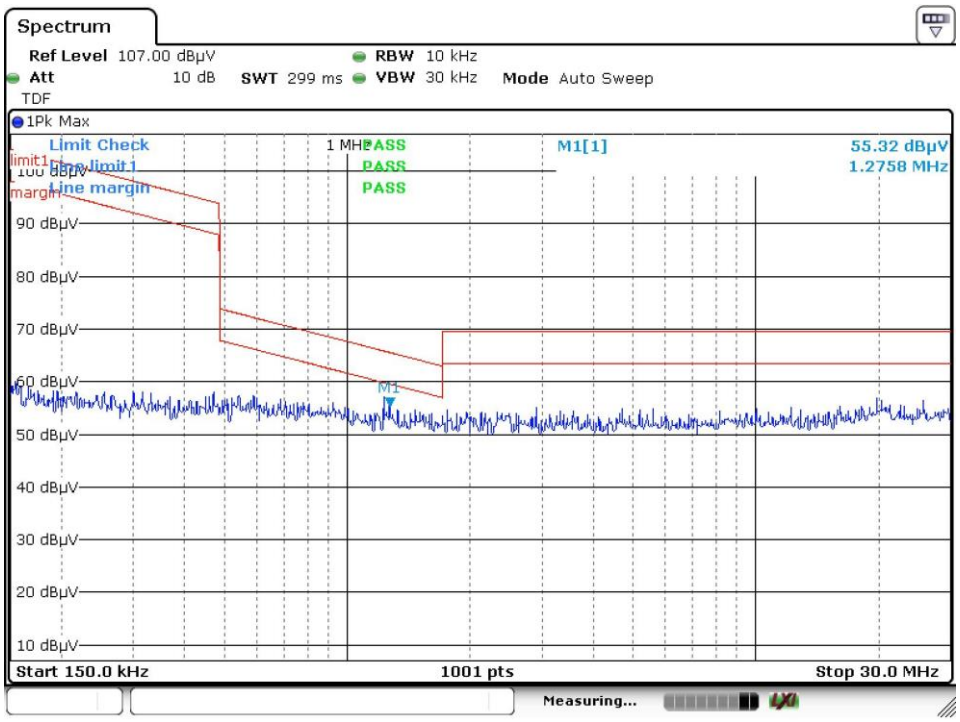
Test Plot of 2480MHz-X of BDR mode



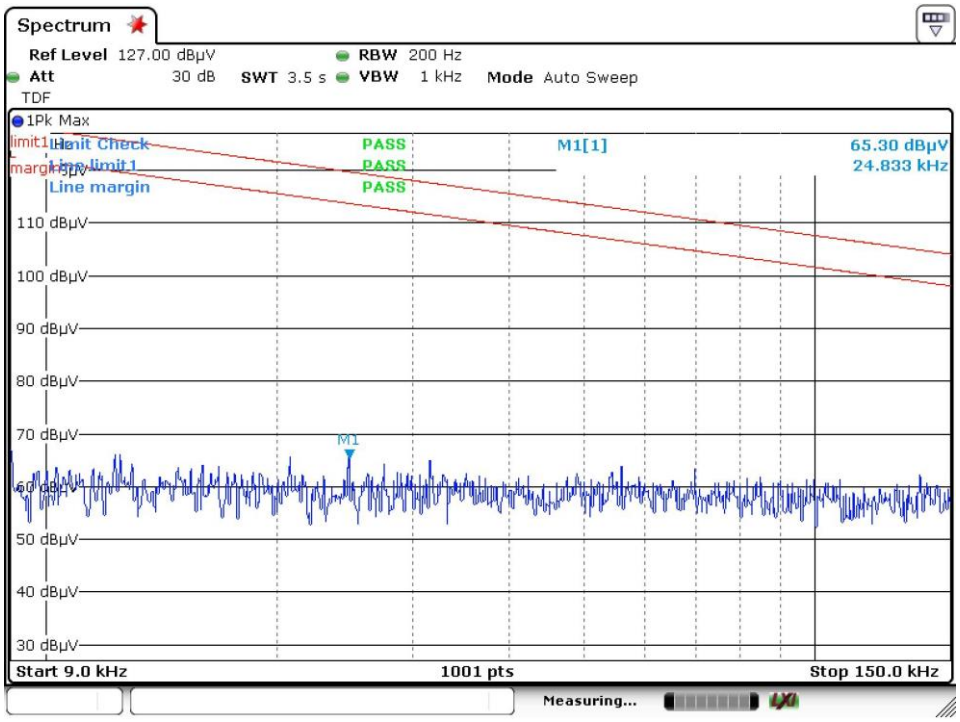


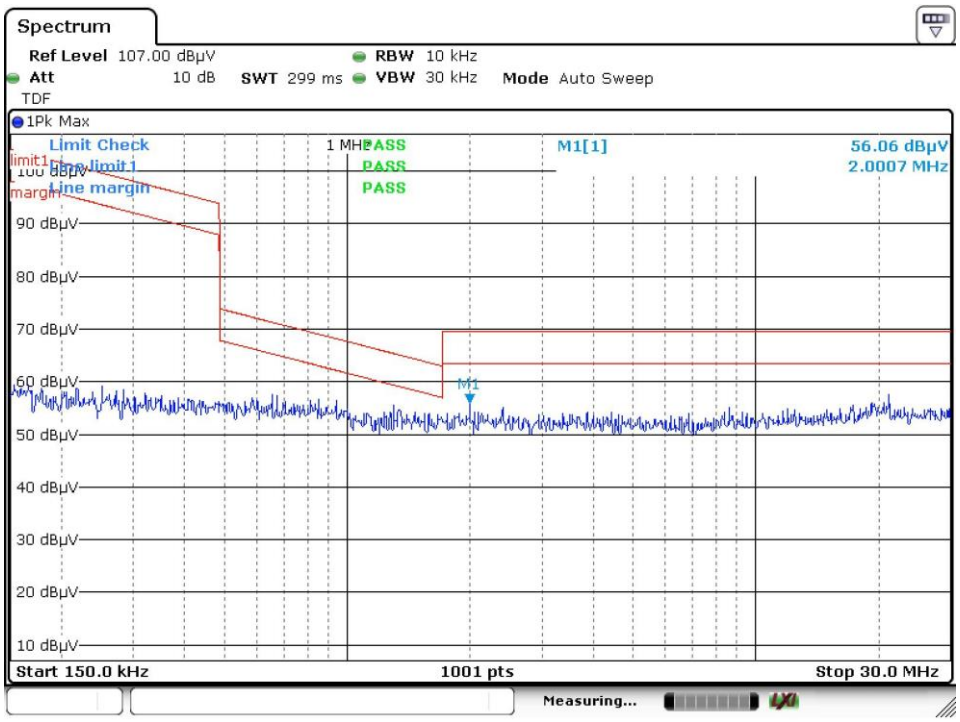
Test Plot of 2480MHz-Y of BDR mode





Test Plot of 2480MHz-Z of BDR mode





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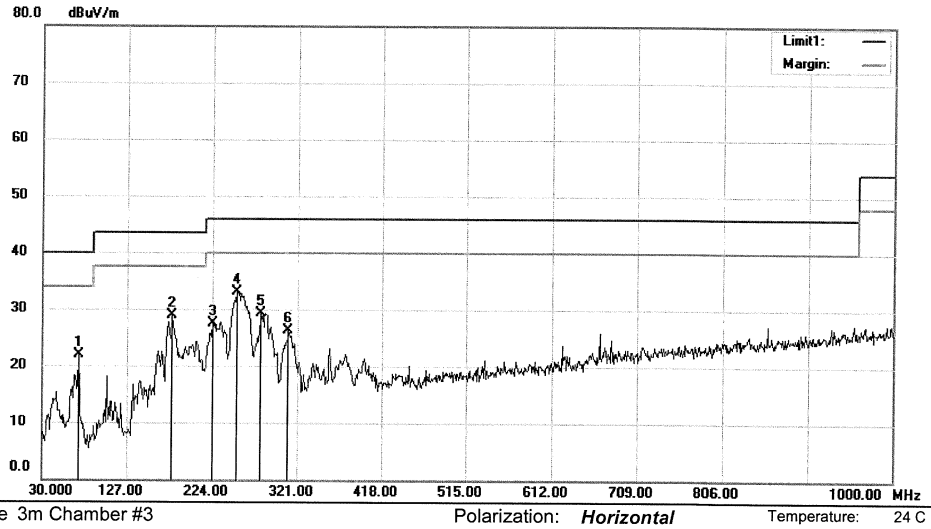
EMTEK Access to the World

Radiated Emission Measurement

File :TUV Data :#639 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2402
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		71.7100	40.16	-18.25	21.91	40.00	-18.09	QP			
2		178.4100	46.03	-17.17	28.86	43.50	-14.64	QP			
3		224.0000	41.93	-14.39	27.54	46.00	-18.46	QP			
4	*	252.1300	46.39	-13.37	33.02	46.00	-12.98	QP			
5		279.2900	41.76	-12.46	29.30	46.00	-16.70	QP			
6		310.3300	37.73	-11.47	26.26	46.00	-19.74	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

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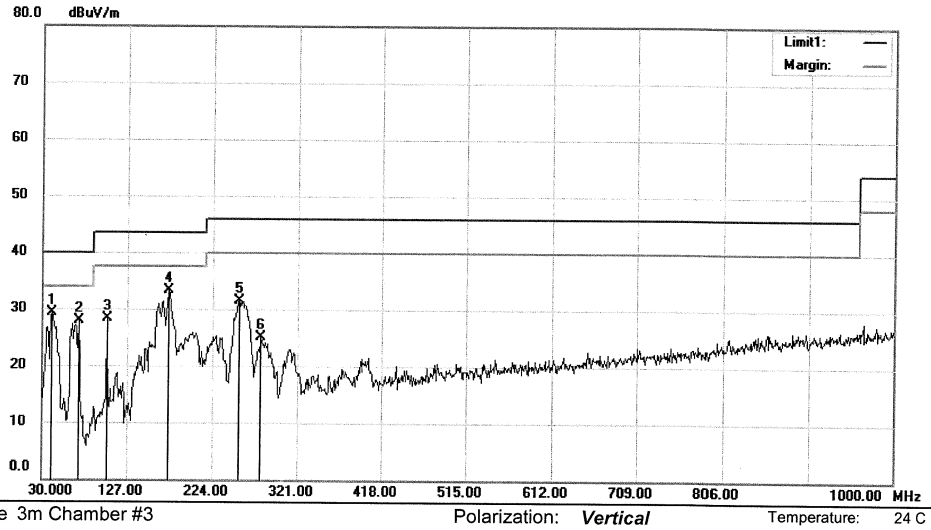
Radiated Emission Measurement

File :TUV Data :#640 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Vertical*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2402
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		40.6700	44.57	-15.34	29.23	40.00	-10.77	QP			
2		71.7100	46.10	-18.25	27.85	40.00	-12.15	QP			
3		103.7200	43.57	-15.30	28.27	43.50	-15.23	QP			
4	*	174.5300	50.48	-17.20	33.28	43.50	-10.22	QP			
5		254.0700	44.75	-13.28	31.47	46.00	-14.53	QP			
6		279.2900	37.50	-12.46	25.04	46.00	-20.96	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

File :TUV\Data :#640 *Page: 1*

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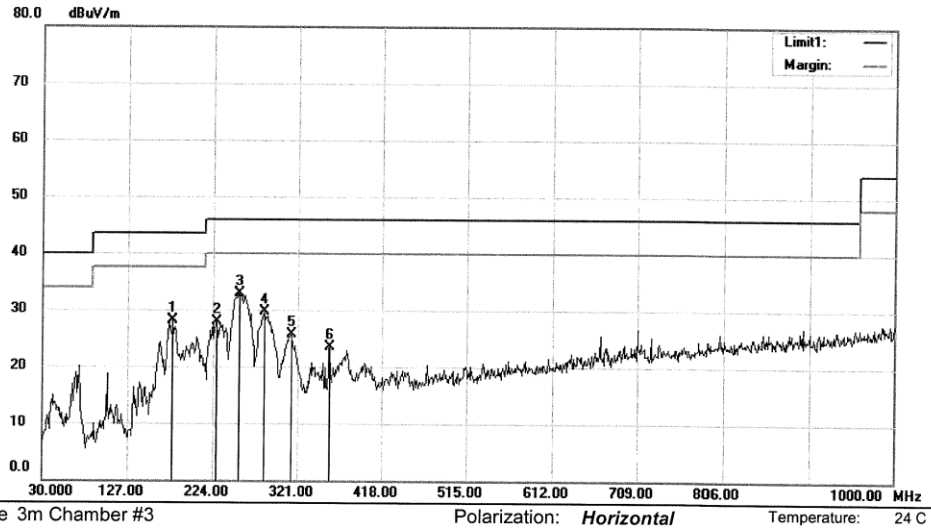
Radiated Emission Measurement

File :TUV Data :#637 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2441
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		178.4100	45.18	-17.17	28.01	43.50	-15.49	QP			
2		228.8500	42.14	-14.25	27.89	46.00	-18.11	QP			
3	*	254.0700	46.28	-13.28	33.00	46.00	-13.00	QP			
4		282.2000	41.97	-12.35	29.62	46.00	-16.38	QP			
5		313.2400	37.14	-11.43	25.71	46.00	-20.29	QP			
6		357.8600	34.06	-10.59	23.47	46.00	-22.53	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

File :TUV\Data :#637 *Page: 1*

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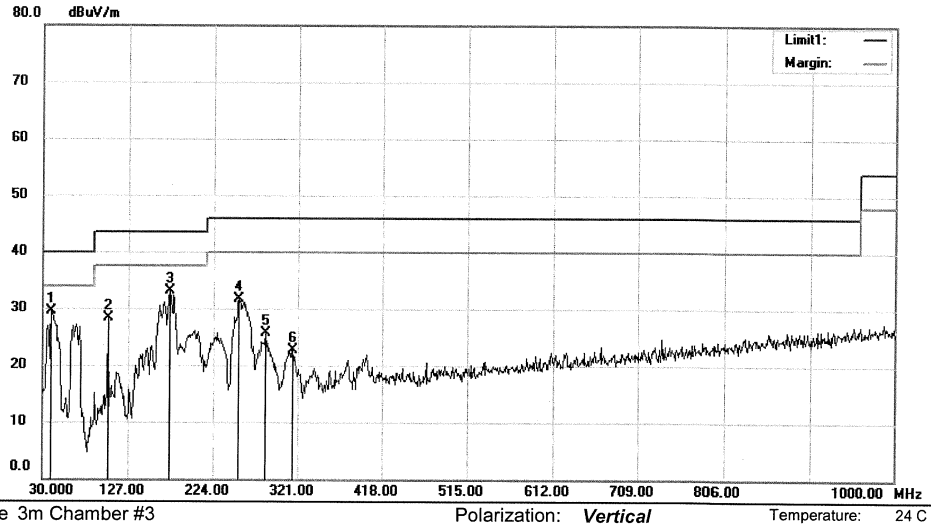
Radiated Emission Measurement

File :TUV Data :#638 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Vertical*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2441
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.7000	45.13	-15.59	29.54	40.00	-10.46	QP			
2		103.7200	43.58	-15.30	28.28	43.50	-15.22	QP			
3	*	174.5300	50.26	-17.20	33.06	43.50	-10.44	QP			
4		253.1000	45.06	-13.33	31.73	46.00	-14.27	QP			
5		284.1400	38.05	-12.28	25.77	46.00	-20.23	QP			
6		315.1800	34.11	-11.40	22.71	46.00	-23.29	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

File :TUV\Data :#638 *Page: 1*

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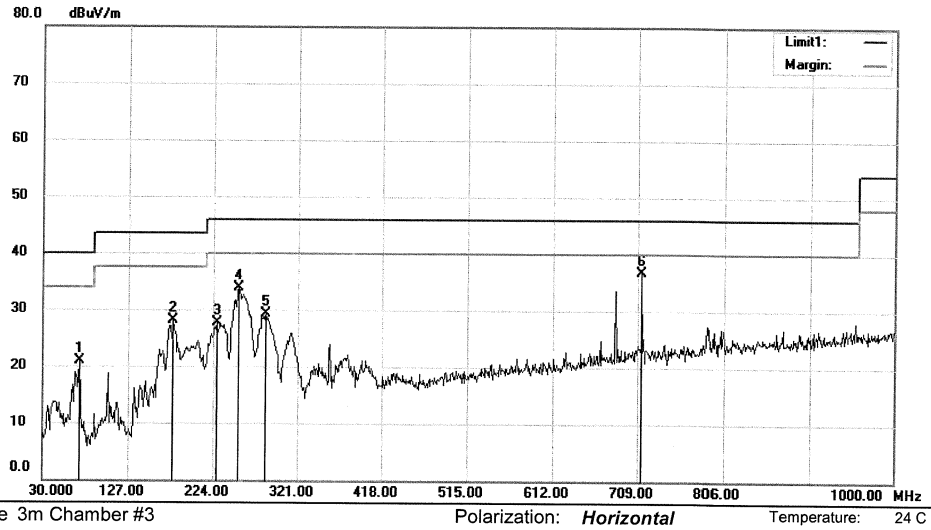
EMTEK Access to the World

Radiated Emission Measurement

File :TUV Data :#635 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2480
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		71.7100	39.22	-18.25	20.97	40.00	-19.03	QP			
2		178.4100	45.33	-17.17	28.16	43.50	-15.34	QP			
3		227.8800	42.04	-14.27	27.77	46.00	-18.23	QP			
4		253.1000	47.14	-13.33	33.81	46.00	-12.19	QP			
5		284.1400	41.49	-12.28	29.21	46.00	-16.79	QP			
6	*	713.8500	40.65	-4.04	36.61	46.00	-9.39	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

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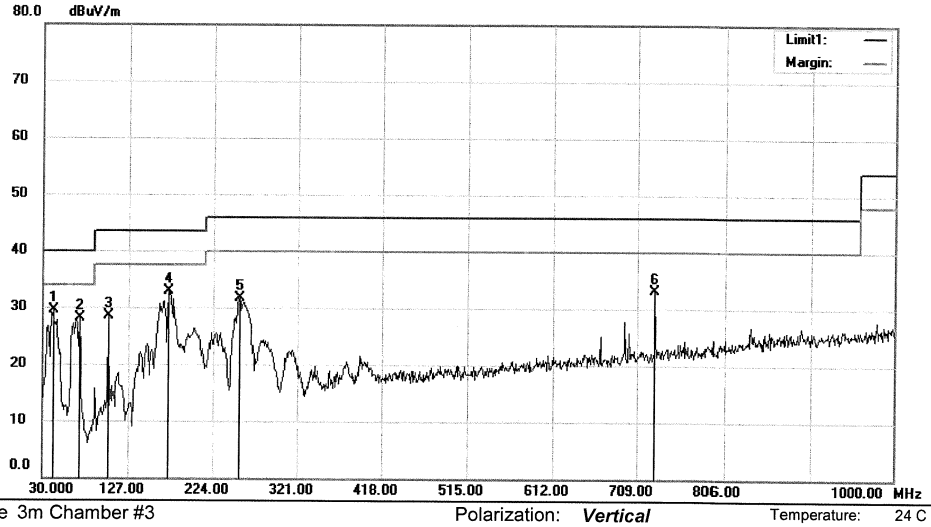
EMTEK Access to the World

Radiated Emission Measurement

File :TUV Data :#636 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Vertical*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:GFSK 2480
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	41.6400	44.60	-15.13	29.47	40.00	-10.53	QP			
2		71.7100	46.42	-18.25	28.17	40.00	-11.83	QP			
3		103.7200	43.71	-15.30	28.41	43.50	-15.09	QP			
4		172.5900	50.11	-17.21	32.90	43.50	-10.60	QP			
5		254.0700	45.06	-13.28	31.78	46.00	-14.22	QP			
6		729.3700	36.92	-3.82	33.10	46.00	-12.90	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

File :TUV\Data :#636 *Page: 1*

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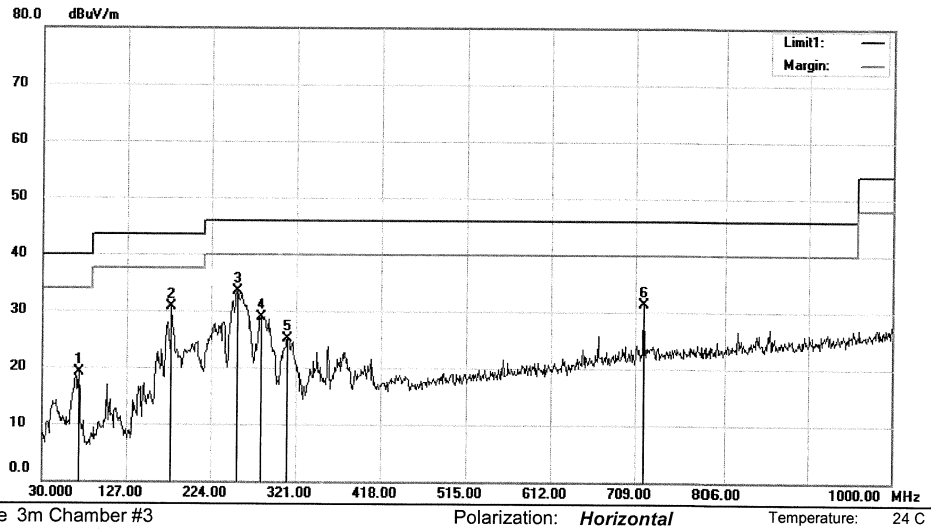
Radiated Emission Measurement

File :TUV Data :#633 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:DQPSK 2402
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		71.7100	37.35	-18.25	19.10	40.00	-20.90	QP			
2		178.4100	47.80	-17.17	30.63	43.50	-12.87	QP			
3	*	254.0700	46.74	-13.28	33.46	46.00	-12.54	QP			
4		281.2300	41.39	-12.40	28.99	46.00	-17.01	QP			
5		311.3000	36.48	-11.46	25.02	46.00	-20.98	QP			
6		718.7000	35.31	-3.97	31.34	46.00	-14.66	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

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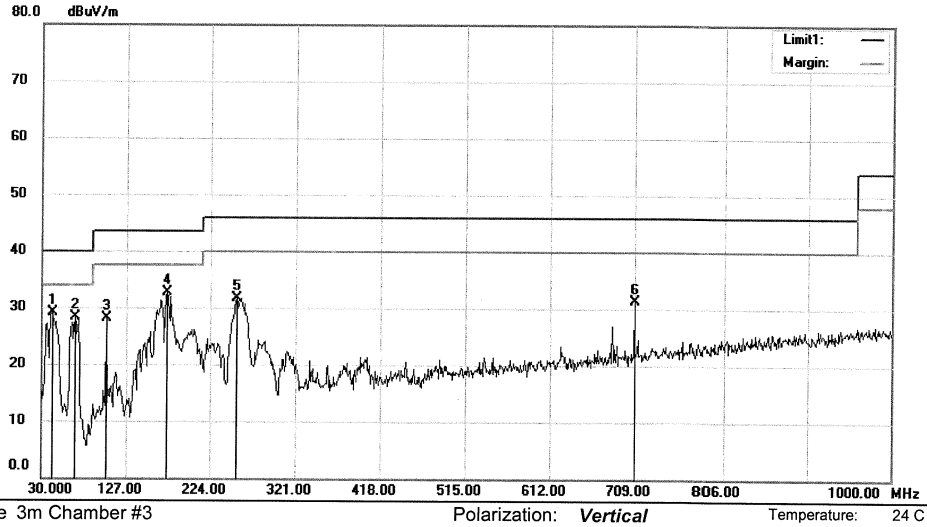
Radiated Emission Measurement

File :TUV Data :#634 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Vertical*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:DQPSK 2402
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	41.6400	44.33	-15.13	29.20	40.00	-10.80	QP			
2		67.8300	45.60	-17.29	28.31	40.00	-11.69	QP			
3		103.7200	43.37	-15.30	28.07	43.50	-15.43	QP			
4		173.5600	49.82	-17.20	32.62	43.50	-10.88	QP			
5		254.0700	44.97	-13.28	31.69	46.00	-14.31	QP			
6		709.0000	35.46	-4.11	31.35	46.00	-14.65	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

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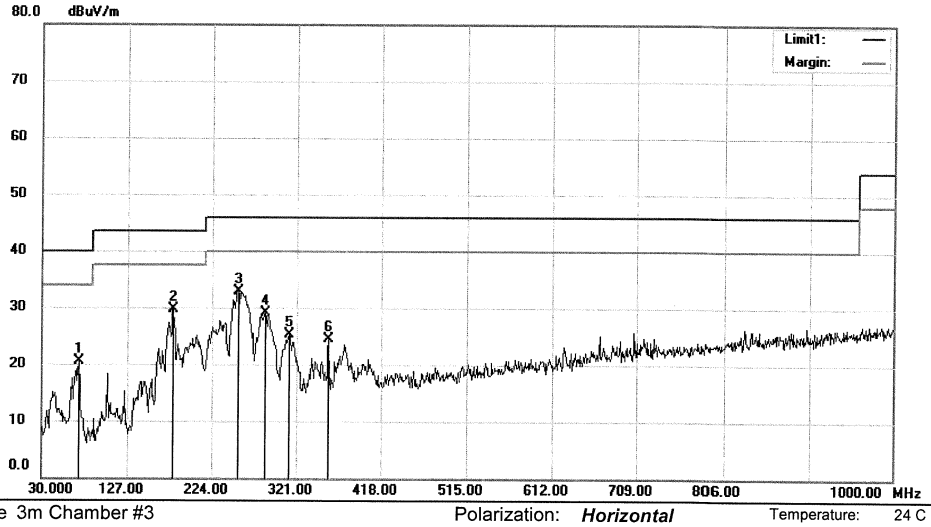
EMTEK Access to the World

Radiated Emission Measurement

File :TUV Data :#631 Date: 2016/05/27



Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
EUT: MID
M/N: NS-P16AT08
Mode:DQPSK 2441
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		71.7100	38.79	-18.25	20.54	40.00	-19.46	QP			
2		179.3800	46.90	-17.17	29.73	43.50	-13.77	QP			
3	*	254.0700	46.24	-13.28	32.96	46.00	-13.04	QP			
4		285.1100	41.25	-12.23	29.02	46.00	-16.98	QP			
5		312.2700	36.73	-11.45	25.28	46.00	-20.72	QP			
6		357.8600	35.07	-10.59	24.48	46.00	-21.52	QP			

*:Maximum data x:Over limit !:over margin Operator: KK