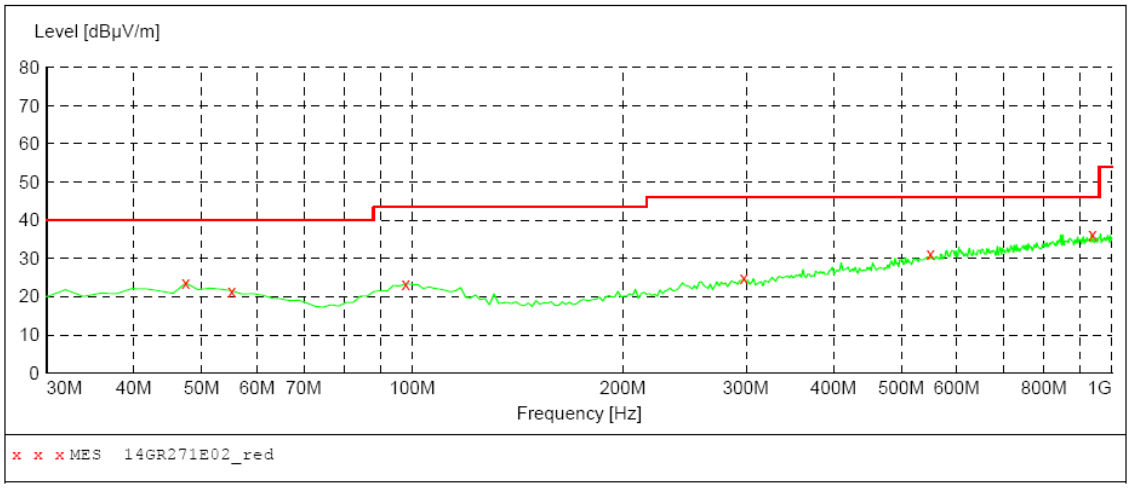
The worst Spurious Emission Data BDR Mode Below 1GHz Channel Low:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E02_red"

7/7/2014 10:54

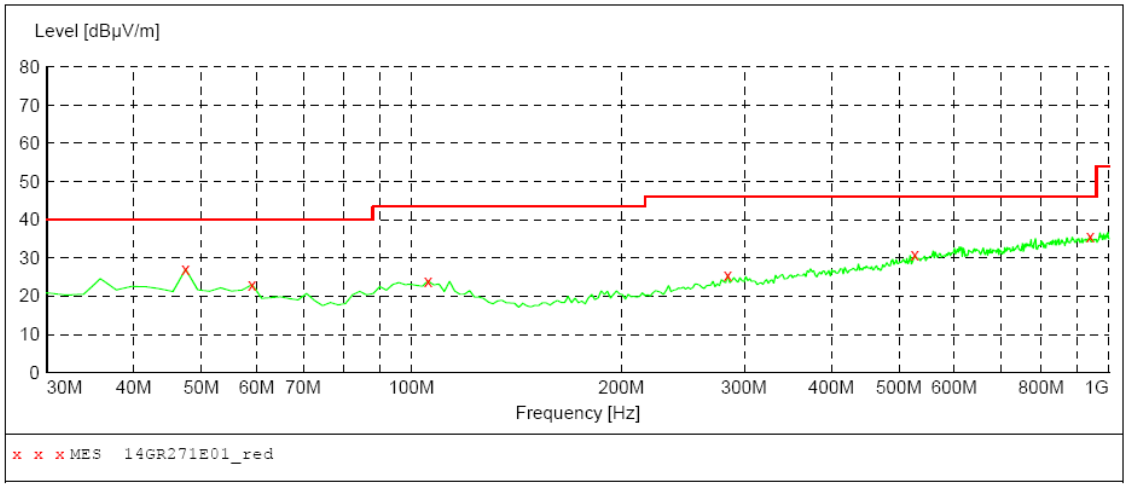
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	23.60	15.8	40.0	16.4	QP	100.0	0.00	HORIZONTAL
55.220000	21.50	15.6	40.0	18.5	QP	100.0	0.00	HORIZONTAL
97.900000	23.40	17.4	43.5	20.1	QP	100.0	0.00	HORIZONTAL
297.720000	24.90	18.7	46.0	21.1	QP	100.0	0.00	HORIZONTAL
549.920000	31.10	25.0	46.0	14.9	QP	100.0	0.00	HORIZONTAL
937.920000	36.40	29.5	46.0	9.6	QP	300.0	0.00	HORIZONTAL

The worst Spurious Emission Data BDR Mode Below 1GHz Channel Low:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E01_red"

7/7/2014 10:56

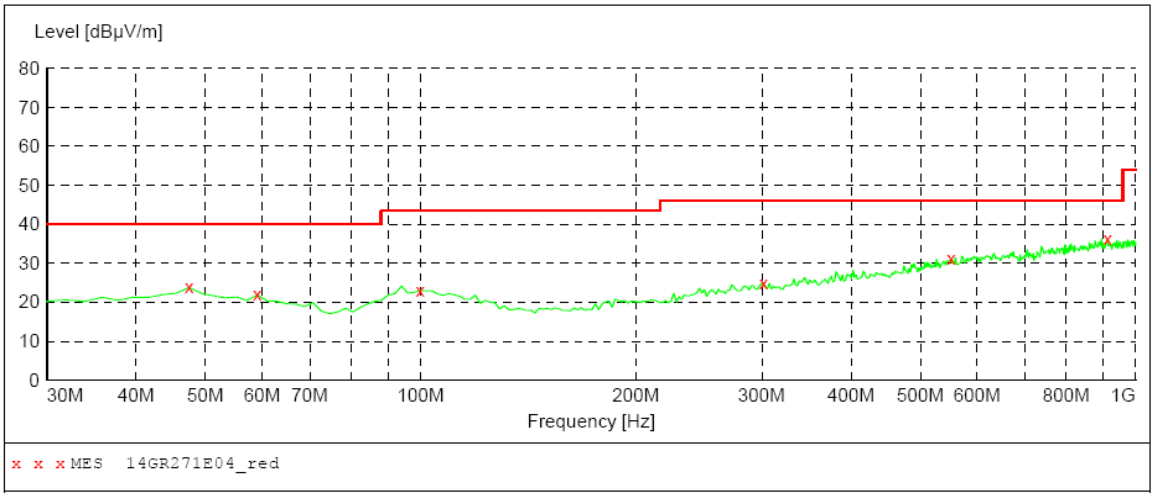
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	27.00	15.8	40.0	13.0	QP	100.0	0.00	VERTICAL
59.100000	23.00	14.6	40.0	17.0	QP	100.0	0.00	VERTICAL
105.660000	24.00	16.9	43.5	19.5	QP	100.0	0.00	VERTICAL
284.140000	25.40	18.3	46.0	20.6	QP	100.0	0.00	VERTICAL
526.640000	30.80	24.5	46.0	15.2	QP	100.0	0.00	VERTICAL
939.860000	35.50	29.5	46.0	10.5	QP	100.0	0.00	VERTICAL

The worst Spurious Emission Data BDR Mode Below 1GHz Channel Middle:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E04_red"

7/7/2014 10:59

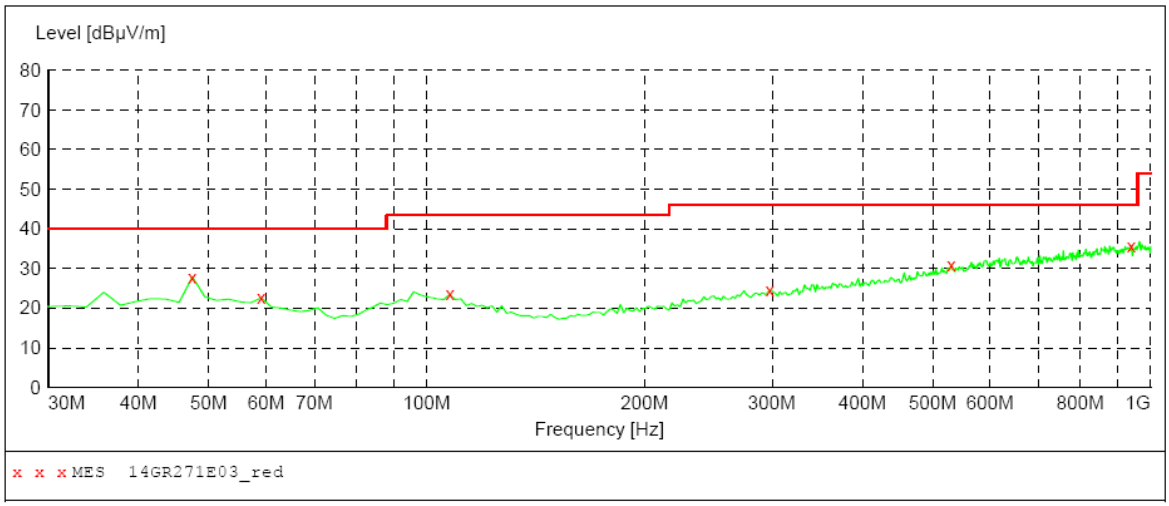
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	23.80	15.8	40.0	16.2	QP	100.0	0.00	HORIZONTAL
59.100000	21.90	14.6	40.0	18.1	QP	100.0	0.00	HORIZONTAL
99.840000	23.00	17.5	43.5	20.5	QP	100.0	0.00	HORIZONTAL
301.600000	24.80	18.8	46.0	21.2	QP	100.0	0.00	HORIZONTAL
551.860000	31.10	25.0	46.0	14.9	QP	100.0	0.00	HORIZONTAL
912.700000	36.30	29.3	46.0	9.7	QP	300.0	0.00	HORIZONTAL

The worst Spurious Emission Data BDR Mode Below 1GHz Channel Middle:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E03_red"

7/7/2014 10:57

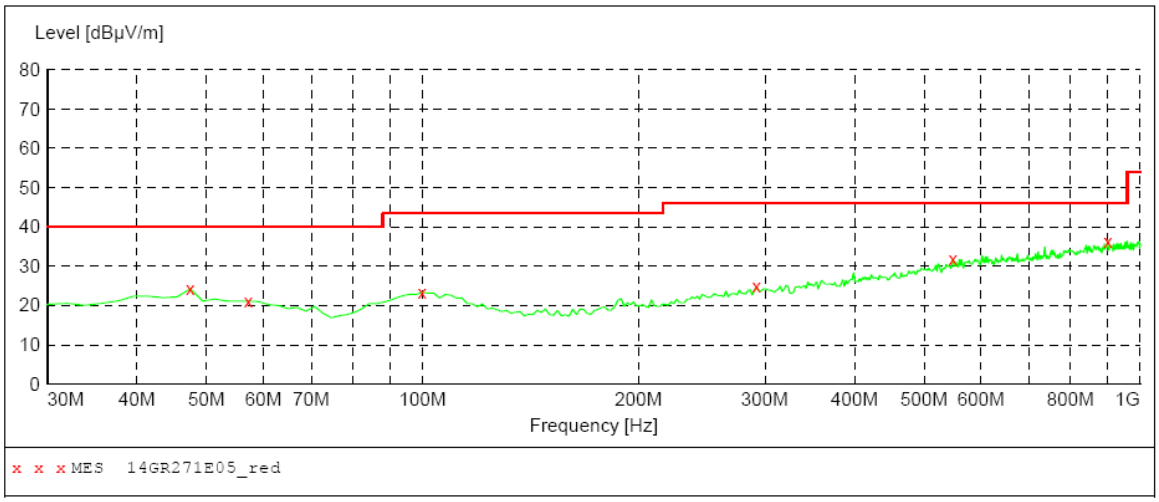
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	27.90	15.8	40.0	12.1	QP	100.0	0.00	VERTICAL
59.100000	22.60	14.6	40.0	17.4	QP	100.0	0.00	VERTICAL
107.600000	23.50	16.8	43.5	20.0	QP	100.0	0.00	VERTICAL
297.720000	24.60	18.7	46.0	21.4	QP	100.0	0.00	VERTICAL
530.520000	31.00	24.6	46.0	15.0	QP	100.0	0.00	VERTICAL
939.860000	35.80	29.5	46.0	10.2	QP	100.0	0.00	VERTICAL

The worst Spurious Emission Data BDR Mode Below 1GHz Channel High:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Horizontal

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E05_red"

7/7/2014 11:01

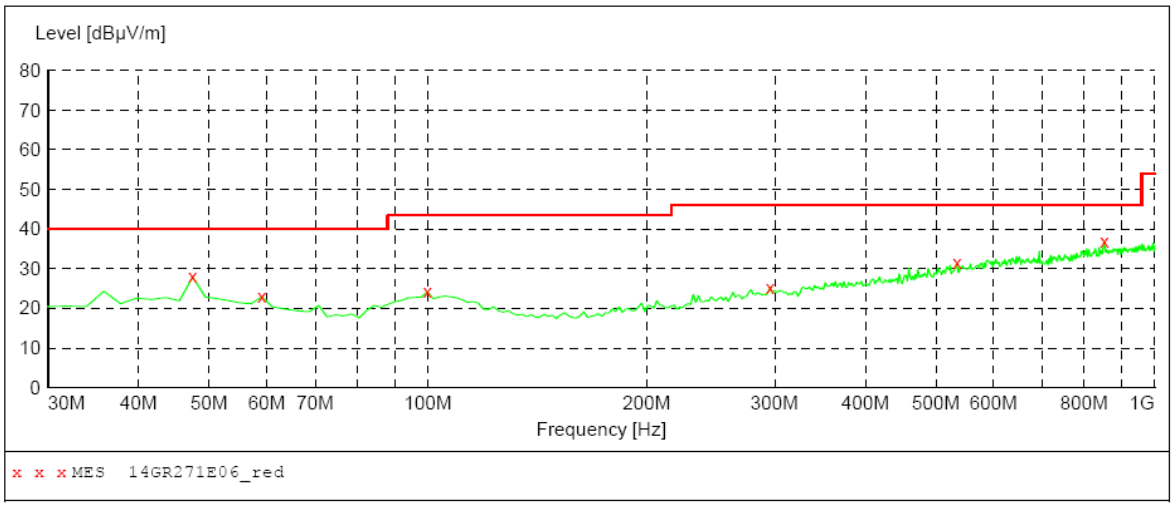
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	24.30	15.8	40.0	15.7	QP	100.0	0.00	HORIZONTAL
57.160000	21.10	15.1	40.0	18.9	QP	100.0	0.00	HORIZONTAL
99.840000	23.30	17.5	43.5	20.2	QP	100.0	0.00	HORIZONTAL
291.900000	24.80	18.5	46.0	21.2	QP	100.0	0.00	HORIZONTAL
547.980000	31.80	24.9	46.0	14.2	QP	100.0	0.00	HORIZONTAL
901.060000	36.40	29.2	46.0	9.6	QP	300.0	0.00	HORIZONTAL

The worst Spurious Emission Data BDR Mode Below 1GHz Channel High:

EUT:	Bluetooth Speaker
M/N:	HS-809
Operating Condition:	TX Mode
Test Site:	3m CHAMBER
Operator:	Chen
Test Specification:	DC 3.7V from battery
Comment:	Polarization: Vertical

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT: "14GR271E06_red"

7/7/2014 11:03

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	28.00	15.8	40.0	12.0	QP	100.0	0.00	VERTICAL
59.100000	22.90	14.6	40.0	17.1	QP	100.0	0.00	VERTICAL
99.840000	24.20	17.5	43.5	19.3	QP	100.0	0.00	VERTICAL
295.780000	25.30	18.6	46.0	20.7	QP	100.0	0.00	VERTICAL
534.400000	31.40	24.6	46.0	14.6	QP	100.0	0.00	VERTICAL
852.560000	36.80	28.7	46.0	9.2	QP	100.0	0.00	VERTICAL

The worst Spurious Emission Data BDR Mode Above 1GHz

Channel Low

Channel Low（2402MHz）								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBμV/m)	Margin (dBμV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBμV	Transd	Result dBμV/m			
2402	H	1	99.74	-7.15	92.59	N/A	N/A	P
			91.58	-7.15	84.43	N/A	N/A	A
2402	V	1	101.55	-7.15	94.4	N/A	N/A	P
			97.59	-7.15	90.44	N/A	N/A	A
4804	H	1	42.6	1.07	43.67	74	-30.33	P
			32.47	1.07	33.54	54	-20.46	A
4804	V	1	44.05	1.07	45.12	74	-28.88	P
			33.67	1.07	34.74	54	-19.26	A
7206	H	1	41.81	7.38	49.19	74	-24.81	P
			33.07	7.38	40.45	54	-13.55	A
7206	V	1	44.8	7.38	52.18	74	-21.82	P
			33.55	7.38	40.93	54	-13.07	A
9608	H	1	42.11	10.29	52.4	74	-21.6	P
			31.89	10.29	42.18	54	-11.82	A
9608	V	1	43.81	7.38	51.19	74	-22.81	P
			34.07	7.38	41.45	54	-12.55	A
12023.31	H	1	42.8	14.01	56.81	74	-17.19	P
			32.55	14.01	46.56	54	-7.44	A
12023.33	V	1	44.07	14.01	58.08	74	-15.92	P
			33.8	14.01	47.81	54	-6.19	A
25220.37	----	----	----	----	----	----	----	----

Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

Channel Mid

Channel Middle（2441MHz）								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBμV/m)	Margin (dBμV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBμV	Transd	Result dBμV/m			
2441	H	1	100.76	-6.37	94.39	N/A	N/A	P
			92.59	-6.37	86.22	N/A	N/A	A
2441	V	1	100.57	-6.37	94.2	N/A	N/A	P
			97.1	-6.37	90.73	N/A	N/A	A
4882	H	1	41.47	1.07	42.54	74	-31.46	P
			32.06	1.07	33.13	54	-20.87	A
4882	V	1	43.76	1.07	44.83	74	-29.17	P
			33.55	1.07	34.62	54	-19.38	A
7323	H	1	42.61	7.49	50.1	74	-23.9	P
			32.76	7.49	40.25	54	-13.75	A
7323	V	1	44.8	7.49	52.29	74	-21.71	P
			33.5	7.49	40.99	54	-13.01	A
9764	H	1	42.46	10.47	52.93	74	-21.07	P
			31.58	10.47	42.05	54	-11.95	A
9764	V	1	44	10.47	54.47	74	-19.53	P
			34.06	10.47	44.53	54	-9.47	A
12168.22	H	1	42.37	14.1	56.47	74	-17.53	P
			31.97	14.1	46.07	54	-7.93	A
12168.22	V	1	44.86	14.1	58.96	74	-15.04	P
			32.6	14.1	46.7	54	-7.3	A
25380.37	----	----	----	----	----	----	----	----

Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

Channel High

Channel High（2480MHz）								
Maximum Frequency (MHz)	Polarity and Level					Limit (dBμV/m)	Margin (dBμV/m)	Mark (P/Q/A)
	Polarity	Height (m)	Reading dBμV	Transd	Result dBμV/m			
2480	H	1	100.76	-6.05	94.71	N/A	N/A	P
			92.97	-6.05	86.92	N/A	N/A	A
2480	V	1	99.1	-6.05	93.05	N/A	N/A	P
			95.67	-6.05	89.62	N/A	N/A	A
4960	H	1	42.81	1.07	43.88	74	-30.12	P
			33.47	1.07	34.54	54	-19.46	A
4960	V	1	45.67	1.07	46.74	74	-27.26	P
			34.79	1.07	35.86	54	-18.14	A
7440	H	1	43.07	7.61	50.68	74	-23.32	P
			33.06	7.61	40.67	54	-13.33	A
7440	V	1	44.8	7.61	52.41	74	-21.59	P
			35.01	7.61	42.62	54	-11.38	A
9920	H	1	43.6	10.65	54.25	74	-19.75	P
			34.16	10.65	44.81	54	-9.19	A
9920	V	1	45.07	10.65	55.72	74	-18.28	P
			34.19	10.65	44.84	54	-9.16	A
12361.67	H	1	42.8	14.19	56.99	74	-17.01	P
			33	14.19	47.19	54	-6.81	A
12361.67	V	1	44.11	14.19	58.3	74	-15.7	P
			33.96	14.19	48.15	54	-5.85	A
25380.37	----	----	----	----	----	----	----	----

Remark: 1. Transd.=Antenna Factor+Cable Loss-Pre-amplifier
Margin = Level-Limit
Mark: P means Peak Value, Q means Quasi Peak Value, A means Average Value
2. Data of measurement within this frequency range shown " -" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
3. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz.
4. The test limit distance is 3m limit

The worst Spurious Emission Data BDR Mode Below 30 MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Levels (dBuV/m)	Limit (dBμV/m)	Margin (dB)	Detector Mode
5.78	22.01	8.23	1.03	29.21	67	-37.79	QP
15.11	21.87	9.07	1.19	29.75	49.5	-19.75	QP
22.64	22.7	9.25	1.08	30.87	49.5	-18.63	QP
23.67	22.56	8.43	1.66	29.33	49.5	-20.17	QP

Note:

1. The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos. The worst case data is recorded in the report.

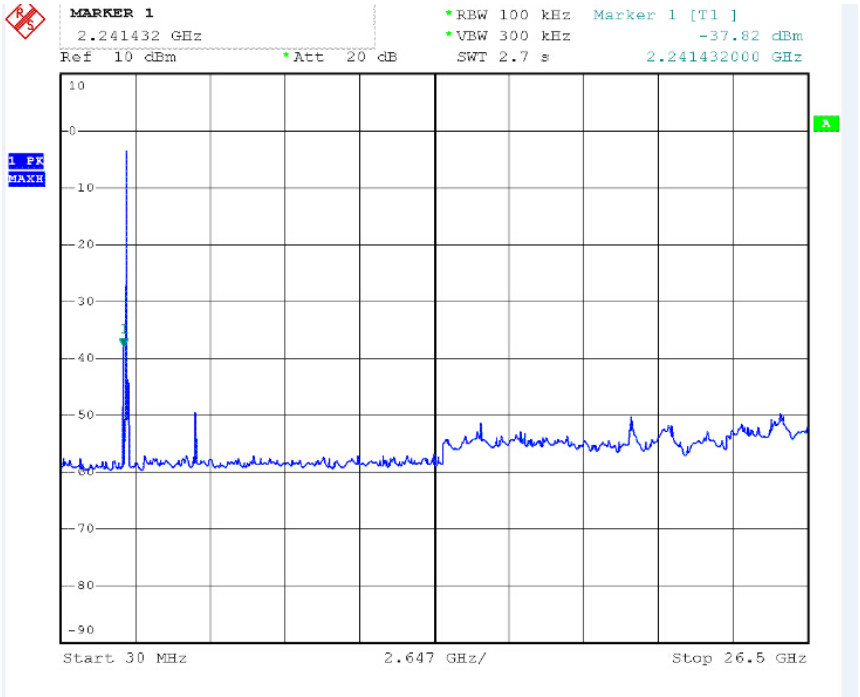
2. Emission level (dBuV/m) =Raw Value (dBuV) + Correction Factor (dB/m)

3. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)

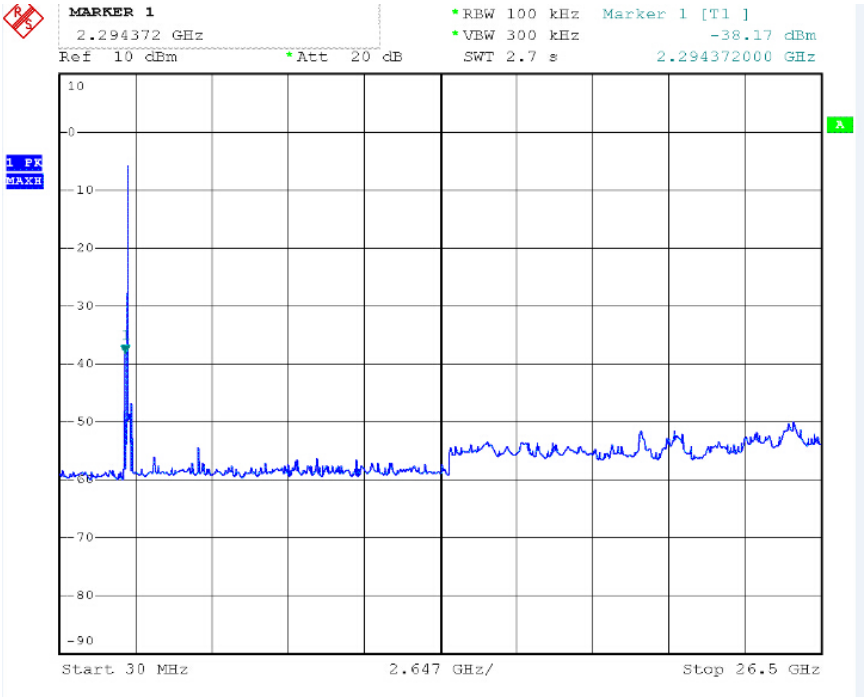
4. The other emission levels were very low against the limit.

5. Margin value = Emission level.- Limit value

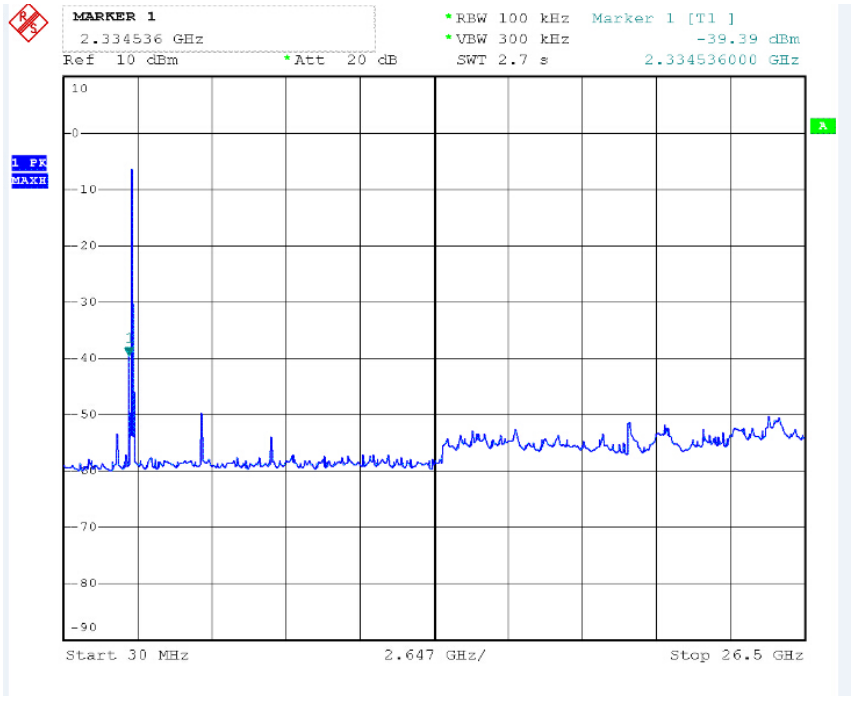
Conducted Spurious Emission
BDR 1M
Channel Low



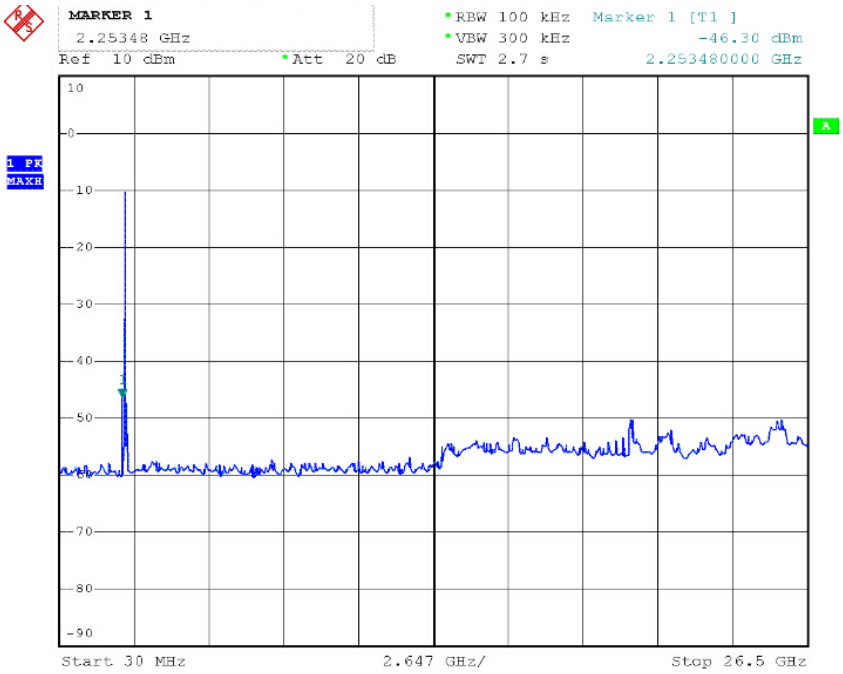
Channel Mid



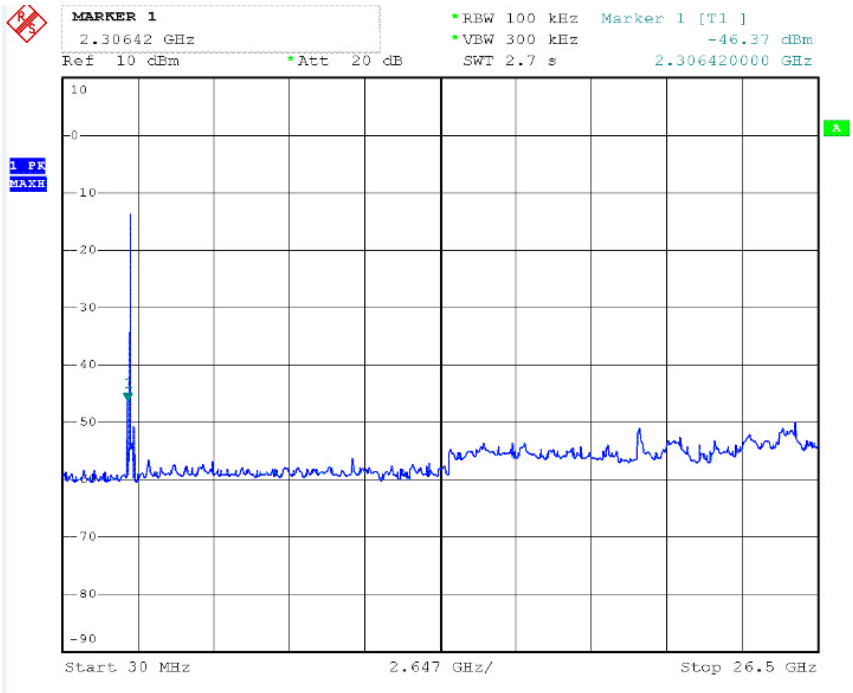
Channel High



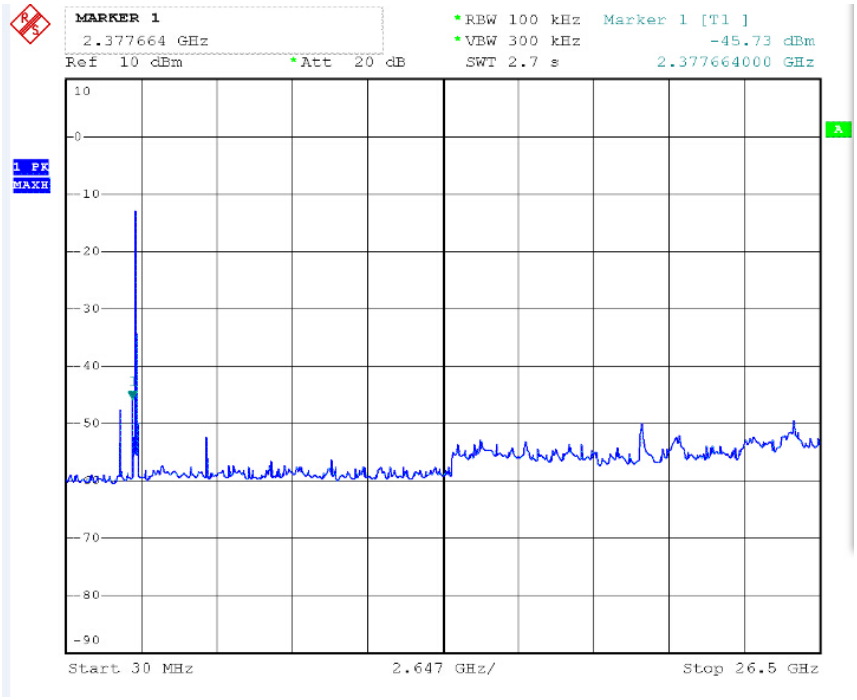
BDR 2M
Channel Low



Channel Middle



Channel High



12. ANTENNA REQUIREMENT

12.1 standard Applicable

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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

12.2 Antenna Connected Construction

The antenna is designed with permanent attachment and no consideration of replacement. The antenna used in this product is complied with standard. The maximum Gain of the antenna lower than 6.0dBi and have the definite antenna Specification.