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Test Report for FCC & ISED

FCC ID :ZNFTONETF8QC
IC ID :2703C-TONETF8QC

Report Number		ESTRFC2206-003		
Applicant	Company name	LG Electronics Inc.		
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	Contack person	Sung-Won, Kim		
Product	Product name	LG TONE FREE		
	Factory address1	222 LG-ro Jinwi-myeon, Pyeongtaek-si,Gyeonggi-do, Korea		
	Model No.	TONE-TF8QC	Manufacturer	LG Electronics Inc.
	Serial No.	NONE	Country of origin	KOREA
Test date	26-May-22 ~ 13-Jun-22		Date of issue	13-Jun-22
Testing location	140-16, Eongmalli-ro, Majang-myeon, Icheon-si, Gyeonggi-do, Korea			
Standard	FCC PART 15 Subpart C (15.247), ANSI C 63.10(2013), RSS-247 (2017)			
Measurement facility registration number	FCC : 659627 , ISED : 4475A			
Tested by	Senior Engineer H.G. Lee	(Signature)		
Reviewed by	Engineering Manager I.K. Hong	(Signature)		
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable			

* Note
- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned
- This test report is not related to KOLAS accreditation
- additional model name : TONE-UTF8QC(korea,UK,Australia) / TONE-DTF8QC(Germany) only change model name.

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1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.
ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Suite 1015 World Meridian III , 123 Gasan Digital 2-ro, Geumcheon-gu,
Seoul 153-759, R.O. Korea
EMC/Telecom/Safety Test Lab : 347-69, Jungbu-daero 147beon-gil, Majang-myeon, Icheon-si,
Gyeonggi-do 467-811, R. O. Korea

1.3 Official Qualification(s)

MSIP : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication
KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements
FCC : Conformity Assessment Body(CAB) with registration number 659627 under APEC TEL MRA between the RRA and the FCC
VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test (Bluetooth)

Modulation Type	: GFSK(FHSS) , 8DPSK
Transfer Rate	: BDR ,EDR (2M)
Number of Channel	: 79
Channel Spacing	: 1 MHz
PEAK Output Power	: GFSK : 10.11 dBm 8DPSK : 10.44 dBm
Rating	: Earbud: 5 Vd.c.; 136 mA; Class III; Lithium ion coin battery of earbud: 3,7 Vd.c.; 68 mAh;
Receipt Date	: 19-May-22
X-tal list(s) or Frequencies generated	The highest operating frequency is 2480 MHz(Bluetooth) Blutooth : 2.4 GHz

2.2 General descriptions of EUT

Category	Specification	
Device Type	Bluetooth Earbud	
Operating Frequency	2 402 MHz ~ 2 480 MHz	
RF Peak Power	GFSK	10.11 dBm
	8DPSK	10.44 dBm
Number of Channel	79	
Antenna Type	Internal Antenna	
Antenna Gain	-3.0 dBi	
Rating Supply Voltage	Earbud: 5 Vd.c.; 136 mA; Class III; Lithium ion coin battery of earbud: 3,7 Vd.c.; 68 mAh;	

3. Test Standards

Test Standard : FCC PART 15 Subpart C (15.247)& RSS-247

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.10 (2013)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

Summary of Test Results

Applied Satandard : 47 CFR Part 15 Subpart C & RSS-247				remark
FCC & IC Standard	Test Type	Result	Remark	Limit
15.207 & RSS-GEN	AC Power Conducted Emission	N/A		
15.205 & 15.209 & RSS-247	Intentional Radiated Emission	Pass	Meet the requirement	
15.247(a)(1) & RSS-GEN & RSS-247	Carrier Frequency Separation & 20 Bandwidth ,99% Bandwidth	Pass	Meet the requirement	>25 kHz
15.247(b) & RSS-247	Maximum Peak ouput power	Pass	Meet the requirement	30dBm(1W)
15.247(a)(1)(ii) & RSS-247	Number of Hopping Frequency	Pass	Meet the requirement	>75
15.209 & RSS-247	Transmitter Radiated Emission	Pass	Meet the requirement	
15.247(a)(1)(iii) & RSS-247	Time of Occupancy (Dwell Time)	Pass	Meet the requirement	<400ms
15.247(d) & RSS-247	Band Edge Measurement	Pass	Meet the requirement	

4. Measurement Condition

4.1 EUT Operation

a. Channel

Ch.	Frequency	Ch.	Frequency
0	2402 MHz	40	2442 MHz
1	2403 MHz	41	2443 MHz
2	2404 MHz	42	2444 MHz
3	2405 MHz	43	2445 MHz
4	2406 MHz	…	…
…	…	78	2480 MHz
38	2440 MHz		

b. Measurement Channel : Low (2402 MHz), Middle (2440 MHz), High (2480 MHz)

c. Test Mode : 8DPSK, GFSK (worst case)

d. Test rate : 3 Mbps

4.2 EUT Operation.

* The EUT was in the following operation mode during all testing

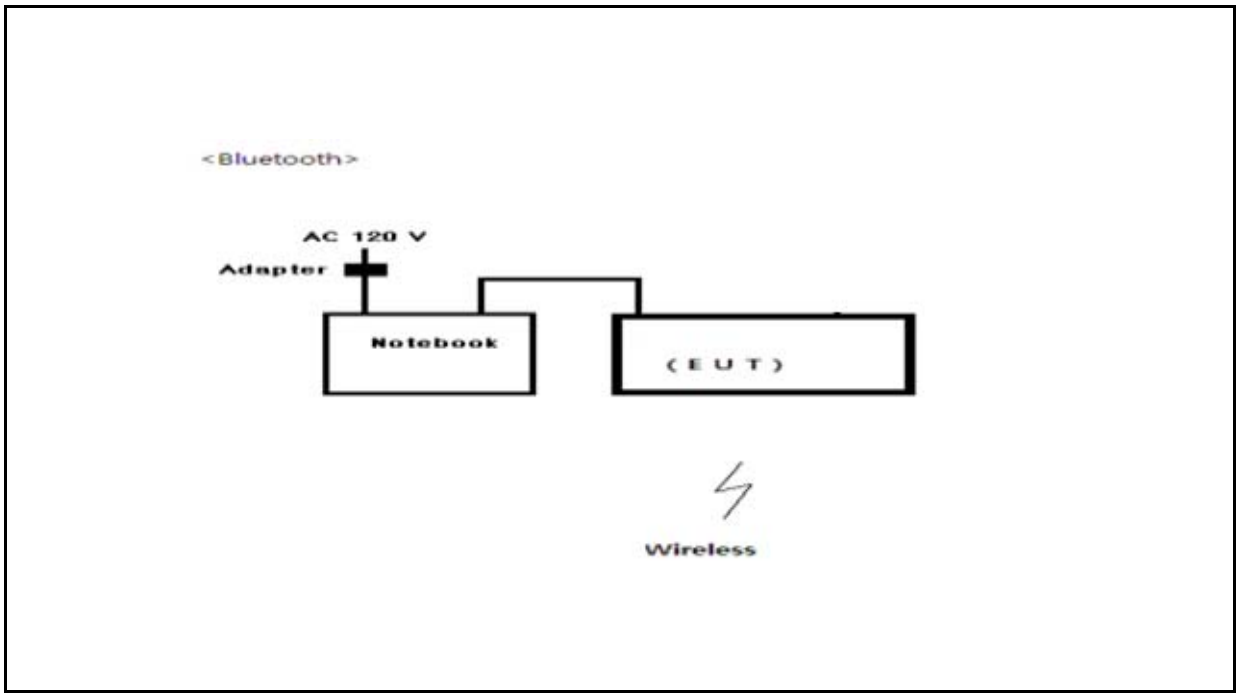
* The operational conditions of the EUT was determined by the manufacturer according to emission

* Execute a RF test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.

* Transmit mode was each test. Each channel (low, middle, high), also set the test after

* The EUT was measured up to tenth harmonic or 40 GHz of the highest operating frequencies.

4.3 Configuration and Peripherals



4.4 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
LG TONE FREE	TONE-TF8QC	NONE	LG Electronics Inc.	EUT

4.5 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Notebook	Power	Adapter	-	0.5	Unshielded	

5. Carrier Frequency Separation

5.1 Test procedure

According to §15.247(a)(1),& RSS-247 & RSS-GEN Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

5.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 30 KHz

. VBW= 300 KHz

. Span= 3 MHz

. Sweep= suitable duration based on the EUT specification.

20dB Bandwidth Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4440A	US42041291	2022-11-29
-Spectrum Analyzer <=> EUT	Loss: 1 dB	-	

5.3 Measurement results

EUT	LG TONE FREE	MODEL	TONE-TF8QC
MODE	GFSK,8DPSK	ENVIRONMENTAL CONDITION	23 ℃, 40 % R.H .
INPUT POWER	DC 3.7 V		

(GFSK)

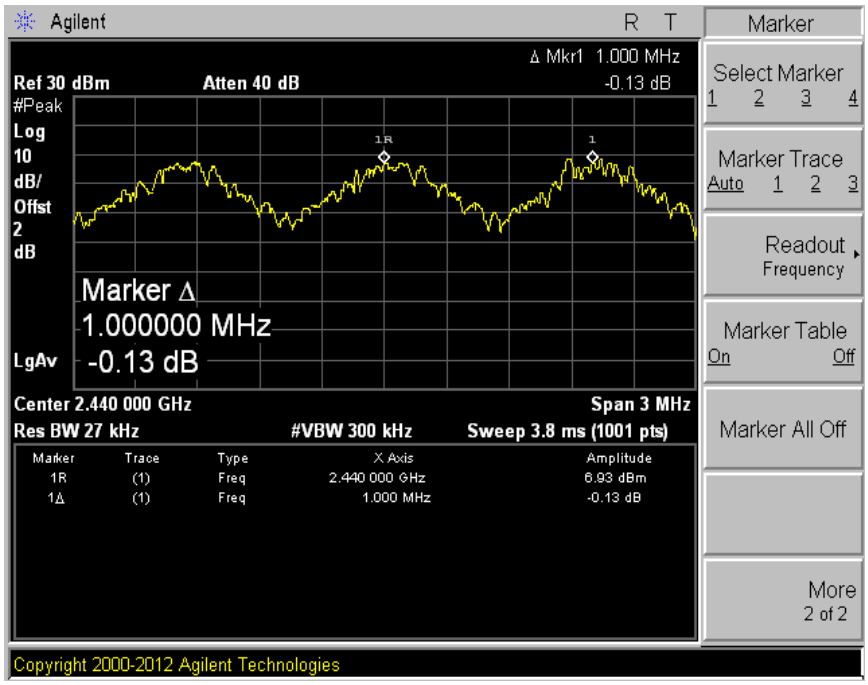
CHANNEL	Channel Frequency (MHz)	Bandwidth at 99% (kHz)	Bandwidth at 20dB below(kHz)	Channel Separation (kHz)	Limit (kHz)	PASS/FAIL
0	2402	890	963	1000	642	PASS
38	2440	895	969	1000	646	PASS
78	2480	900	982	1000	654	PASS

(8DPSK)

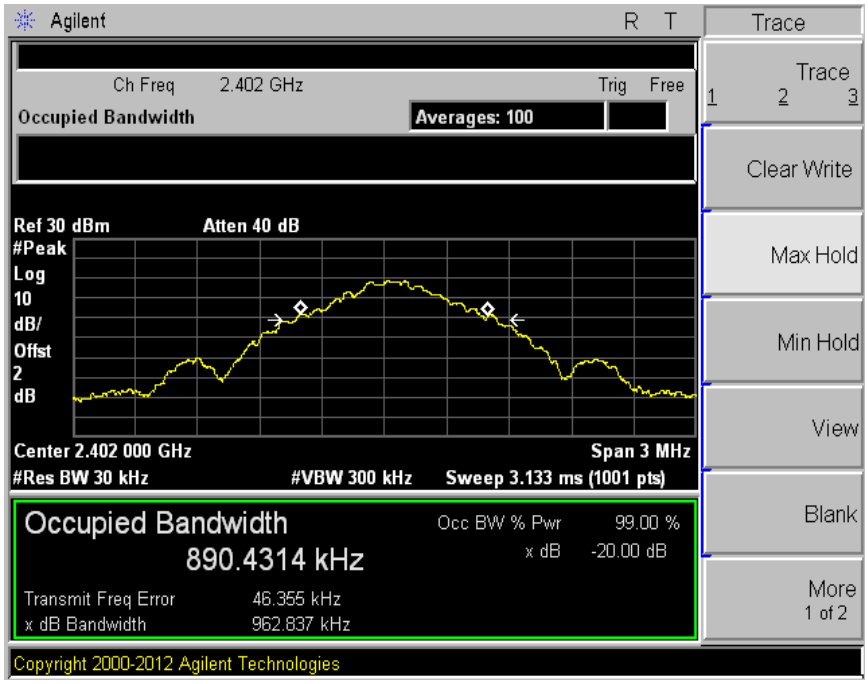
CHANNEL	Channel Frequency (MHz)	Bandwidth at 99% (MHz)	Bandwidth at 20dB below(kHz)	Channel Separation (kHz)	Limit (kHz)	PASS/FAIL
0	2402	1.214	1355	1000	903	PASS
38	2440	1.212	1356	1000	904	PASS
78	2480	1.216	1351	1000	901	PASS

5.4 Trace data (GFSK)

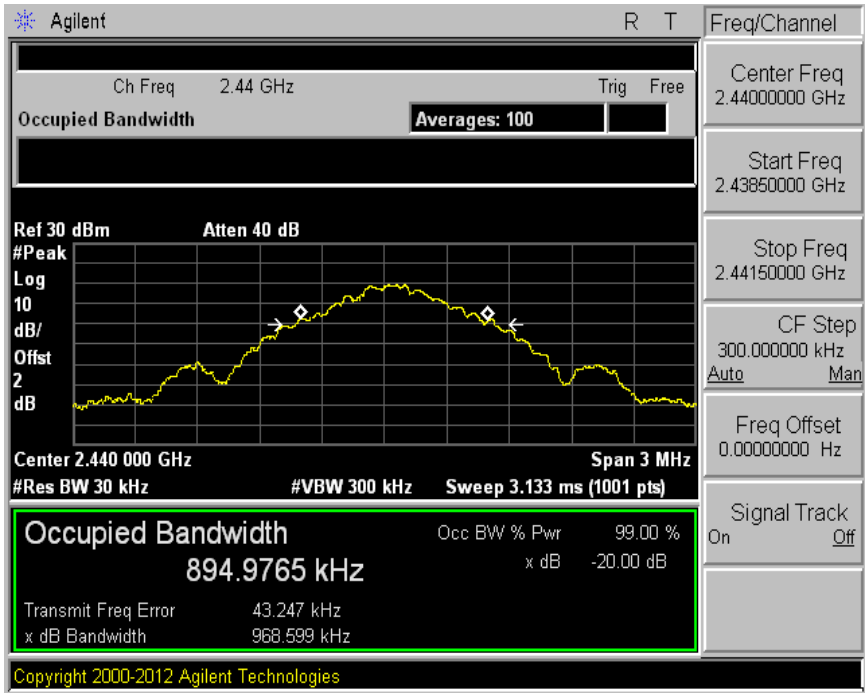
Channel Separation



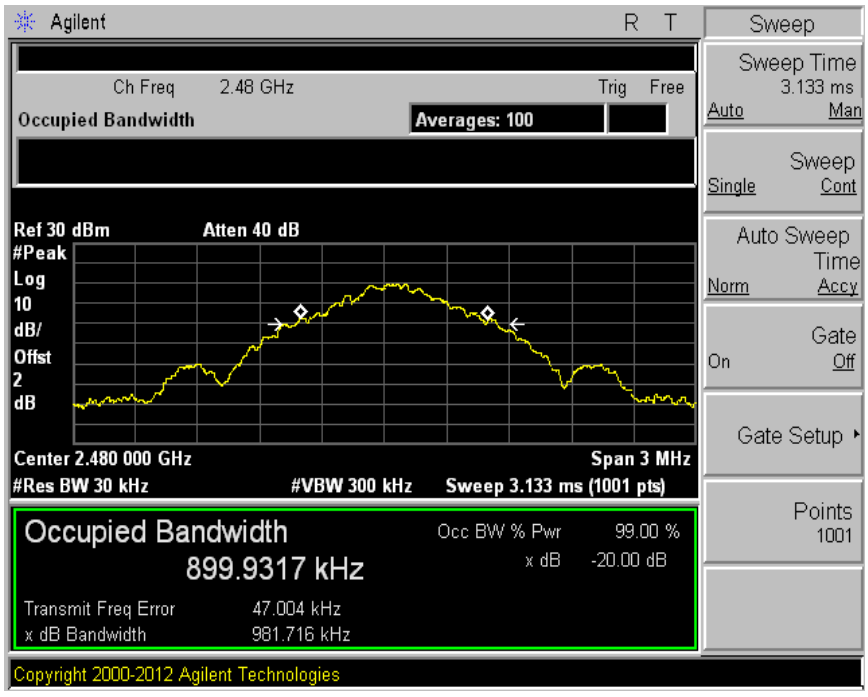
20dB bandwidth(Ch 0)



20dB bandwidth(CH 38)

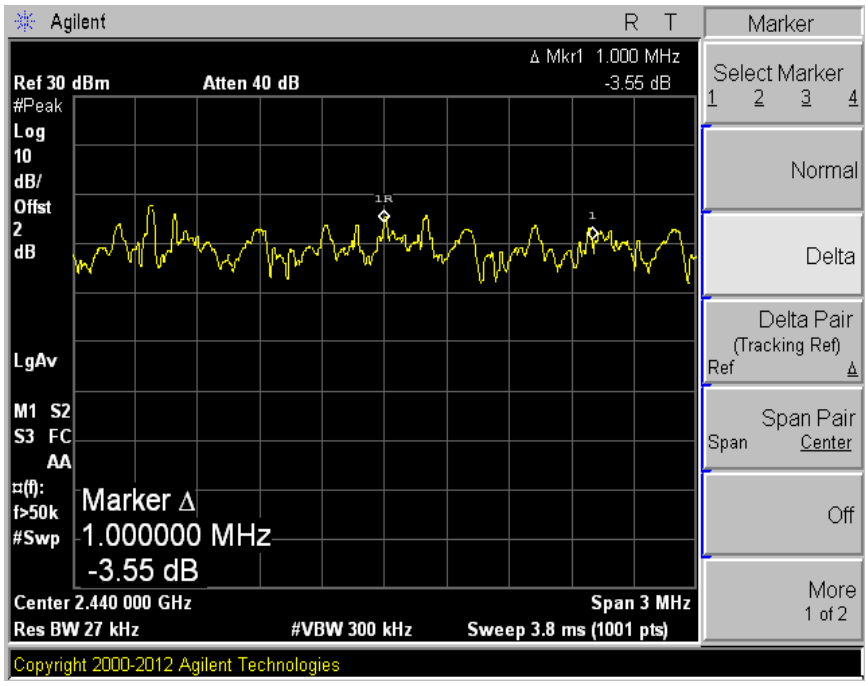


20dB bandwidth(CH 78)

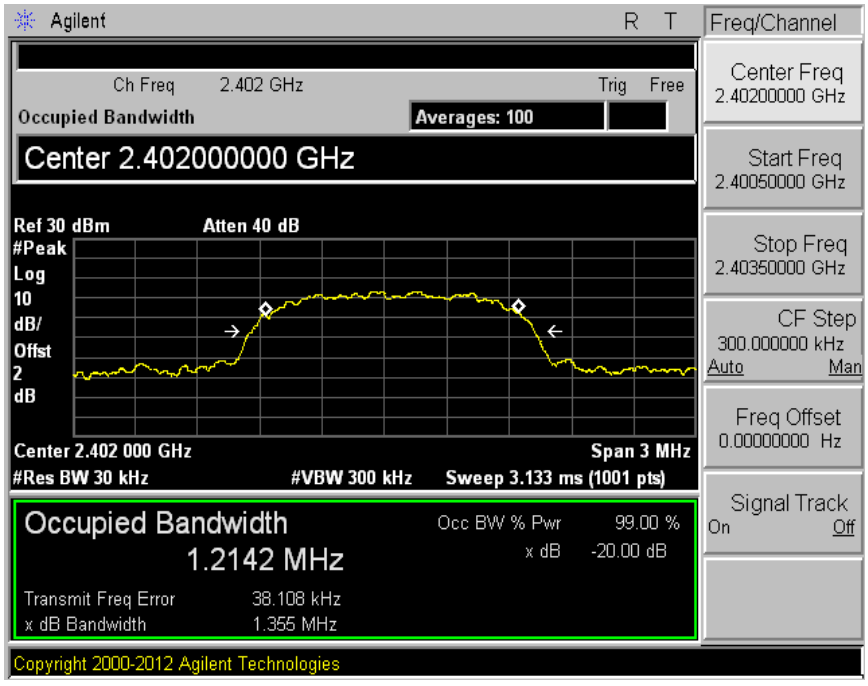


(8DPSK)

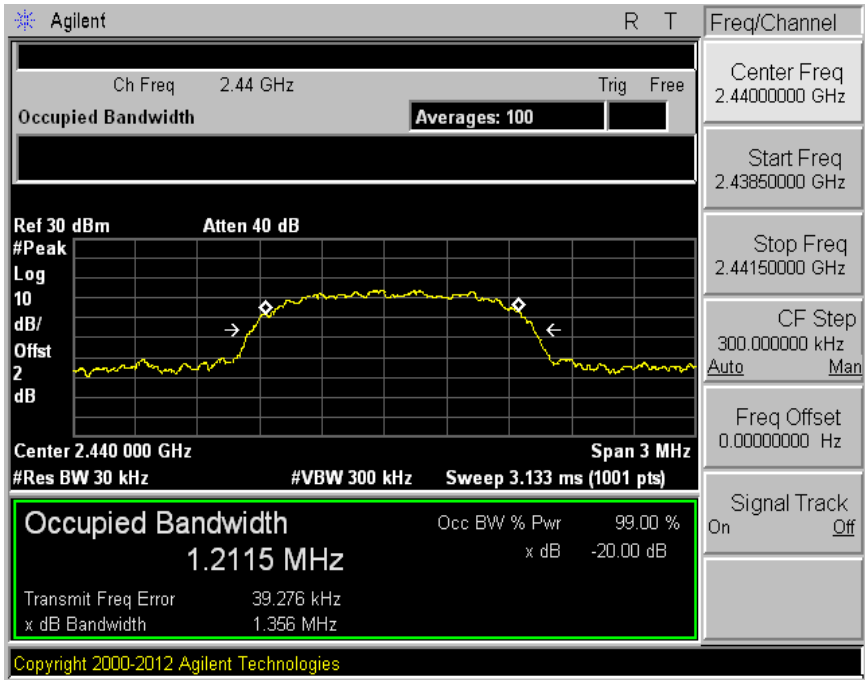
Channel Separation



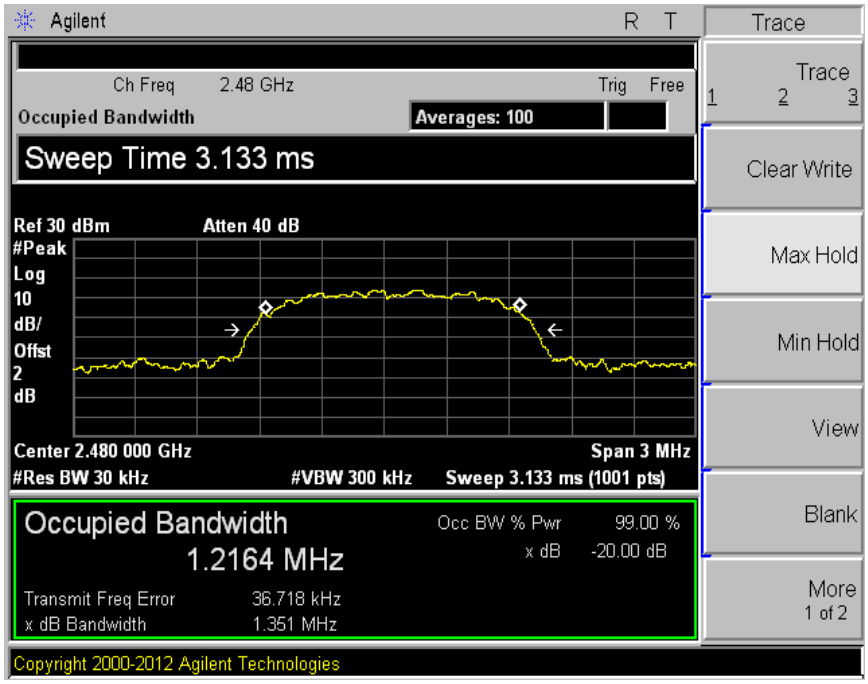
20dB bandwidth(Ch 0)



20dB bandwidth(CH 38)



20dB bandwidth(CH 78)



6. MAXIMUM PEAK OUTPUT POWER

6.1 Test procedure

The transmitter antenna terminal is connected to the input of a Power Sensor. Measurement is made while EUT is operating in transmission mode at the appropriate center frequency. The maximum peak output power measurement is 30 dBm.

Limits : FCC§15.247 & RSS 247 section 5.4 d

Description	Model	Serial Number	Cal. Due Date
Power Meter	N1921A	MY45100570	2022-12-02
Power Sensor	N1921A	MY45240427	2022-12-02
Power Meter <=> EUT	Loss: 1 dB	-	

6.2 Measurement results

EUT	LG TONE FREE	MODEL	TONE-TF8QC
MODE	GFSK,8DPSK	ENVIRONMENTAL CONDITION	23 ℃, 41 % R.H.
INPUT POWER	DC 3.7 V		

Left_GFSK

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[mW]	PASS/ FAIL
		(dBm)	(mW)		
0	2402	9.27	8.45	125	PASS
38	2440	9.86	9.68	125	PASS
78	2480	10.11	10.26	125	PASS

Left_8DPSK

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[mW]	PASS/ FAIL
		(dBm)	(mW)		
0	2402	9.88	9.73	125	PASS
38	2440	10.44	11.07	125	PASS
78	2480	10.70	11.75	125	PASS

Left_GFSK

CHANNEL	Channel Frequency (MHz)	Average Power Output(dBm)			Limit[mW]	PASS/FAIL
		(dBm)	(mW)	factor		
0	2402	9.06	10.26	1.05	125	PASS
38	2440	9.63	11.69	1.05	125	PASS
78	2480	9.88	12.39	1.05	125	PASS

Left_8DPSK

CHANNEL	Channel Frequency (MHz)	Average Power Output(dBm)			Limit[mW]	PASS/FAIL
		(dBm)	(mW)	factor		
0	2402	6.75	5.94	0.99	125	PASS
38	2440	7.46	6.99	0.99	125	PASS
78	2480	7.80	7.56	0.99	125	PASS

Note : 8DPSK mode is max power in three different modulations.

7. Number of Hopping Frequency

7.1 Test procedure

According to §15.247(a)(1)(ii), & RSS-247 Frequency hopping systems operating in the 2 400 MHz – 2 483.5 MHz bands shall use at least 15 hopping frequencies.

7.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 100 KHz

. VBW= 100 KHz

. Span= the frequency band of operation

. Sweep= suitable duration based on the EUT specification.

The Number of Hopping Frequency Test Instruments

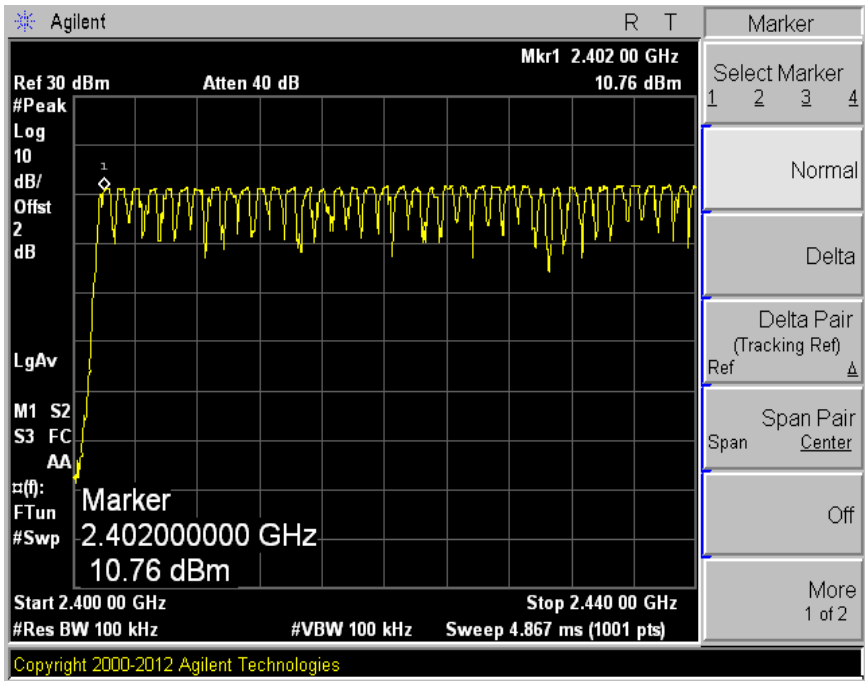
Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4440A	US42041291	2022-11-29
-Spectrum Analyzer <=> EUT	Loss: 1 dB		

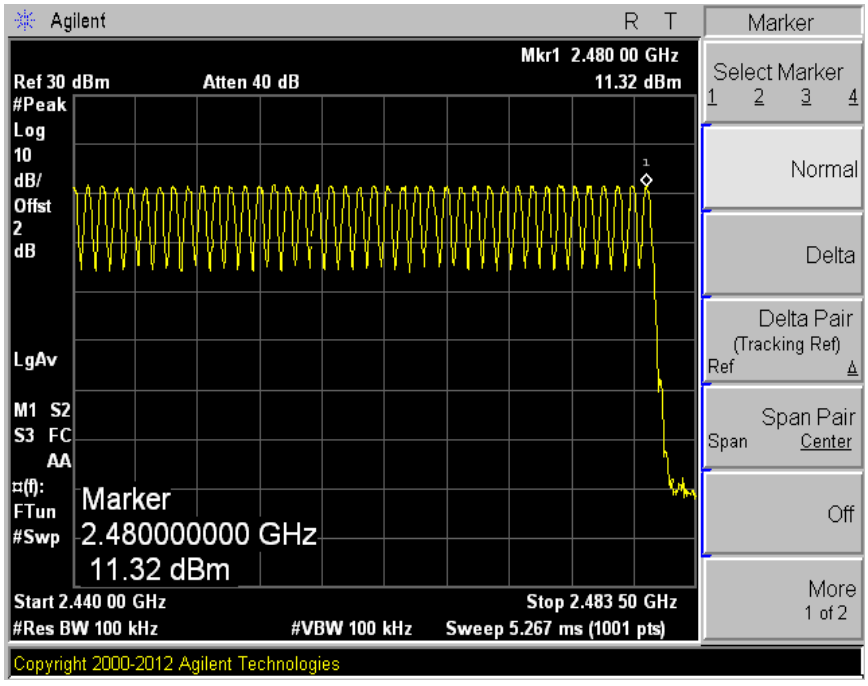
7.3 Measurement results

EUT	LG TONE FREE	MODEL	TONE-TF8QC
MODE	GFSK,8DPSK	ENVIRONMENTAL CONDITION	23 ℃, 42 % R.H.
INPUT POWER	DC 3.7 V		

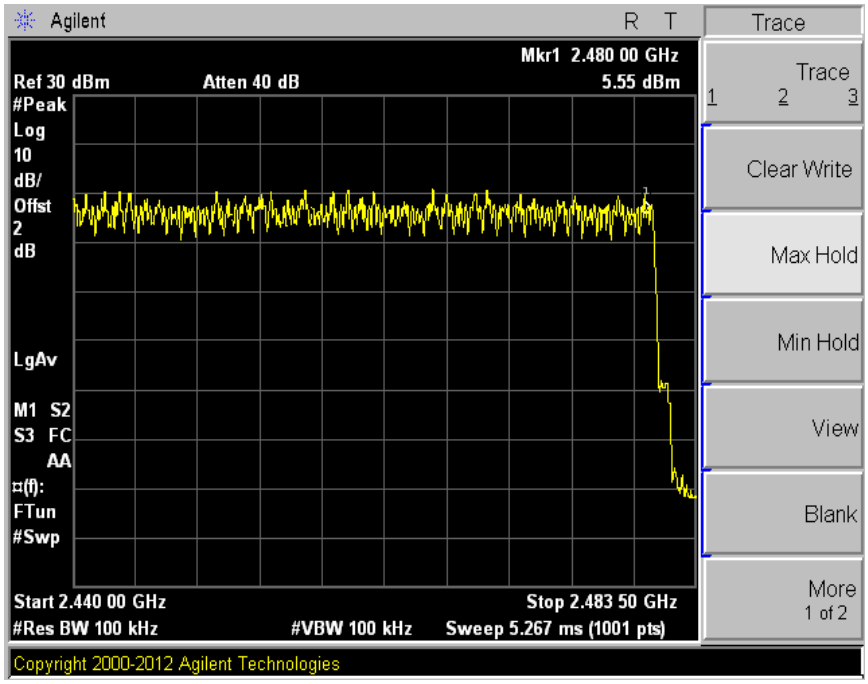
Number of CH	Limit (Number of CH)	PASS/FAIL
79	>15	PASS

7.4 Trace data (GFSK)





Trace data (8DPSK)



8. Time of Occupancy (Dwell Time)

8.1 Test procedure

According to §15.247(a)(1)(iii), & RSS-247 Frequency hopping systems operating in the 2 400 MHz – 2 483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

8.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 1 MHz

. VBW= 1 MHz

. Span= zero span, centered on a hoppong channel

. Sweep = as necessary to capture the entire dwell time per hoppong channel

. Detector function = Peak

. Trace = Max hold

The Time of Occupancy Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4440A	US42041291	2022-11-29
-Spectrum Analyzer <=> EUT	Loss: 1 dB		

8.3 Measurement results

EUT	LG TONE FREE	MODEL	TONE-TF8QC
MODE	GFSK,8DPSK	ENVIRONMENTAL CONDITION	23 ℃, 43 % R.H.
INPUT POWER	DC 3.7 V		

GFSK

A. DH1 Mode

One peiod for each particular channel : 0.409 ms X 320.1 = 130.98 ms

Channel	Pulse Time(ms)	Limit(ms)	PASS/FAIL
38	130.98	400	PASS

Calculation:The Bluetooth system hops at a rate of 1600 times per second. This means there are 1600 timeslots in one second, the DH1 data rate operates on a one-slot transmission and one-slot receiving basis. Thus there are 1600/(1+1)=800 transmissions per second. In one period for each particular channel there are 10.13x31.6=320.1 times of tramsmissions.

B. DH3 Mode

One peiod for each particular channel : 1.677 ms X 159.9 = 268.15 ms

Channel	Pulse Time(ms)	Limit(ms)	PASS/FAIL
38	268.15	400	PASS

Calculation: The Bluetooth system hops at a rate of 1600 times per second. This means there are 1600 timeslots in one second, the DH5 data rate operates on a five-slot transmission and one-slot receiving basis. Thus there are 1600/(3+1)=400 transmissions per second. In one period for each particular channel there are 5.06x31.6=159.9 times of tramsmissions.

C. DH5 Mode

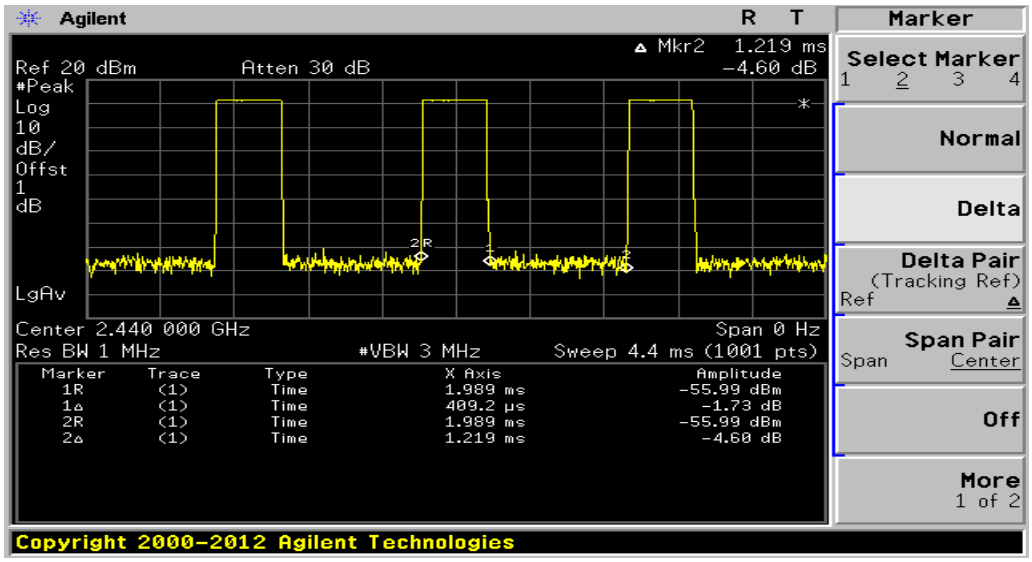
One peiod for each particular channel : 2.921 ms X 106.81 = 311.99 ms

Channel	Pulse Time(ms)	Limit(ms)	PASS/FAIL
38	311.99	400	PASS

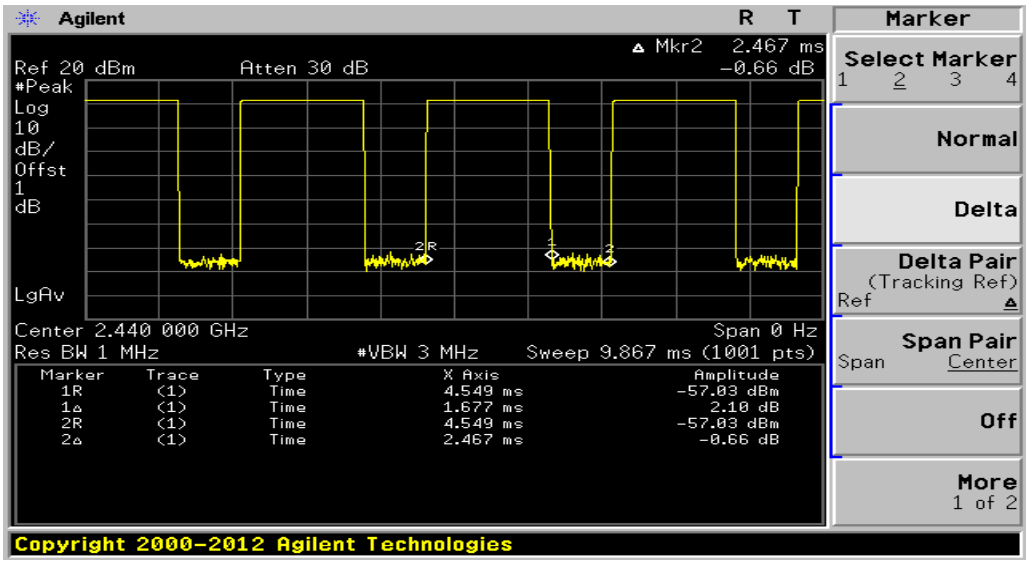
Calculation: The Bluetooth system hops at a rate of 1600 times per second. This means there are 1600 timeslots in one second, the DH5 data rate operates on a five-slot transmission and one-slot receiving basis. Thus there are 1600/(5+1)=266.7 transmissions per second. In one period for each particular channel there are 3.38x31.6=106.81 times of tramsmissions.

8.4 Trace data Left

DH1



DH3


Agilent
R T
Marker
Mkr2 2.467 ms
Ref 20 dBm
Atten 30 dB
-0.66 dB
#Peak
Log
10
dB/
Offst
1
dB
LgAv
Center 2.440 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 9.867 ms (1001 pts)
Marker Trace Type X Axis Amplitude
1R (1) Time 4.549 ms -57.03 dBm
1Δ (1) Time 1.677 ms 2.10 dB
2R (1) Time 4.549 ms -57.03 dBm
2Δ (1) Time 2.467 ms -0.66 dB
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
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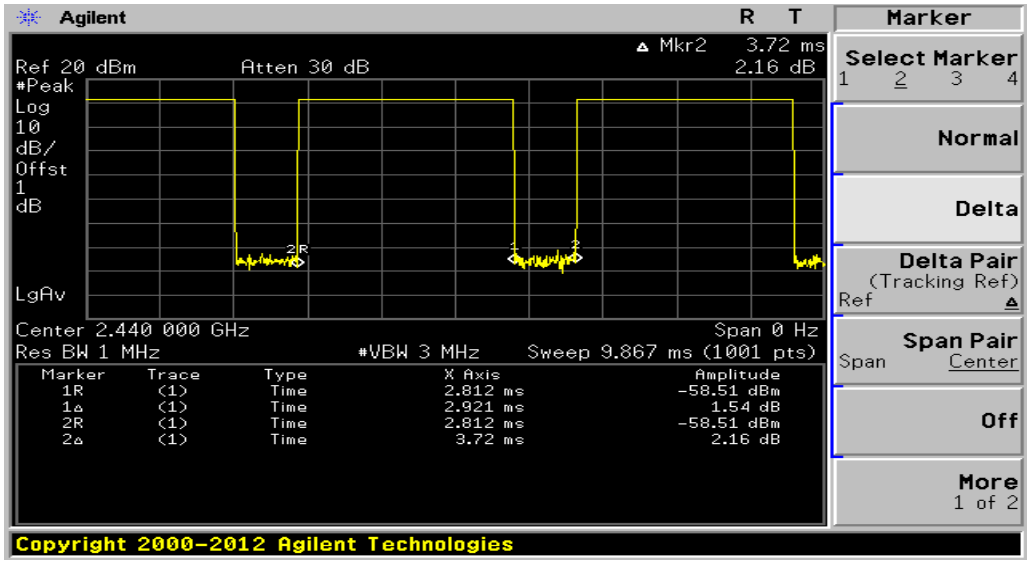
DH5


Agilent
R T
Marker
Mkr2 3.72 ms
Ref 20 dBm
Atten 30 dB
2.16 dB
#Peak
Log
10
dB/
Offst
1
dB
LgAv
Center 2.440 000 GHz
Span 0 Hz
Res BW 1 MHz
#VBW 3 MHz
Sweep 9.867 ms (1001 pts)
Marker Trace Type X Axis Amplitude
1R (1) Time 2.812 ms -58.51 dBm
1Δ (1) Time 2.921 ms 1.54 dB
2R (1) Time 2.812 ms -58.51 dBm
2Δ (1) Time 3.72 ms 2.16 dB
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
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8DPSK

A. 3DH1 Mode

One peiod for each particular channel : 0.422 ms X 320.1 = 135.08 ms

Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	135.08	400	PASS

B. 3DH3 Mode

One peiod for each particular channel : 1.711 ms X 159.9 = 273.59 ms

Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	273.59	400	PASS

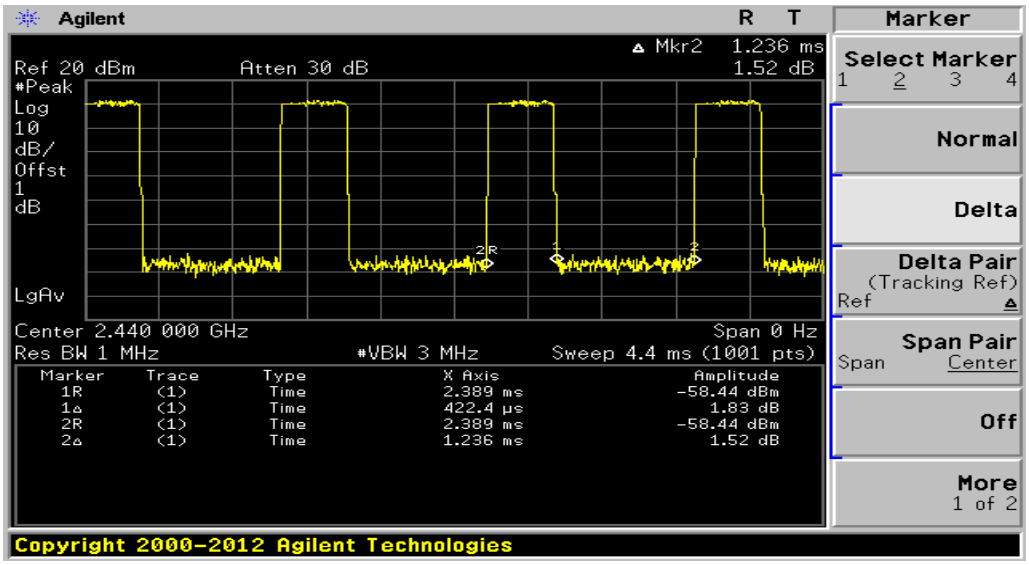
B. 3DH5 Mode

One peiod for each particular channel : 2.977 ms X 106.81 = 317.97 ms

Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	317.97	400	PASS

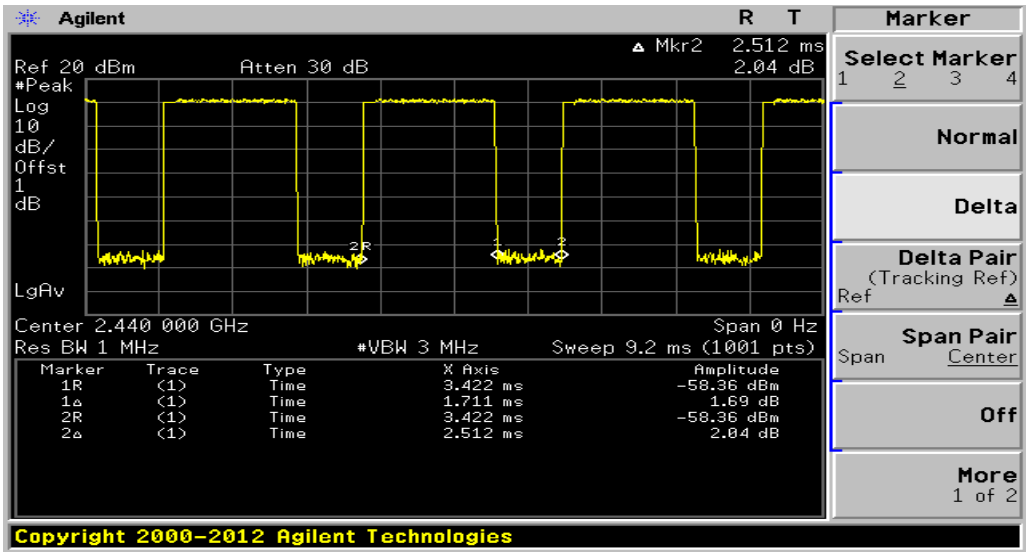
Trace data

3DH1

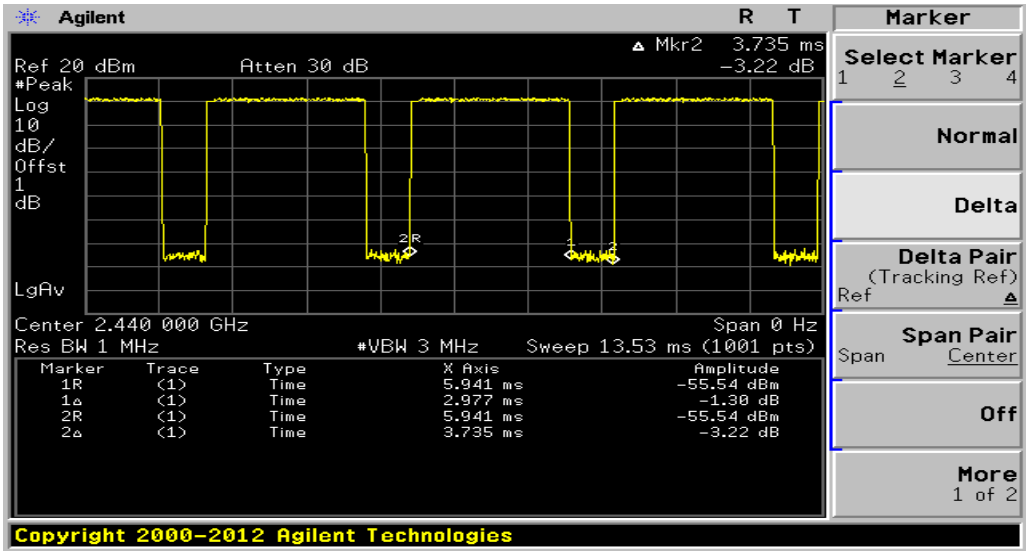


8DPSK

3DH3



3DH5



9. band-edge and out of band emissions.

9.1 Test procedure

The radio frequecy power at 20dB down from the highest inband power level is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The band edge&out of band emission shall be at least 20dB below of the highest inband power level.

Limit & RSS-247 section 5.5

9.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 100 KHz

. VBW= >100 KHz

. Span= suitable frequency span

. Sweep= suitable duration based on the EUT specification.

Band Edge&Out of Emission Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4440A	US42041291	2022-11-29
Spectrum Analyzer	FSV40	100939	2022-12-02
-Spectrum Analyzer <=> EUT	Loss: 1 dB		

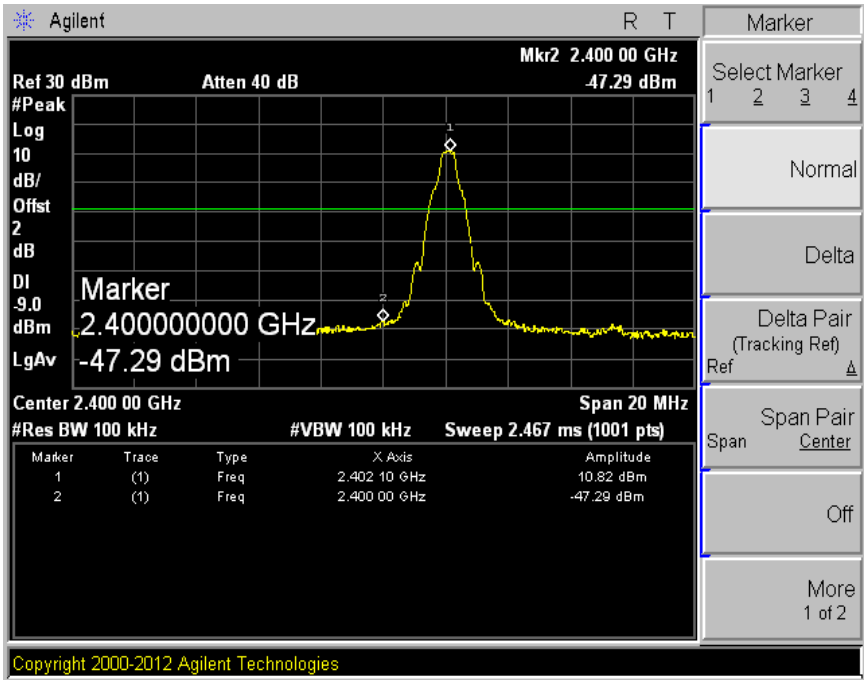
9.3 Measurement results of band-edge & out of emission

EUT	LG TONE FREE	MODEL	TONE-TF8QC
MODE	GFSK,8DPSK	ENVIRONMENTAL CONDITION	23 ℃, 42 % R.H.
INPUT POWER	DC 3.7 V		

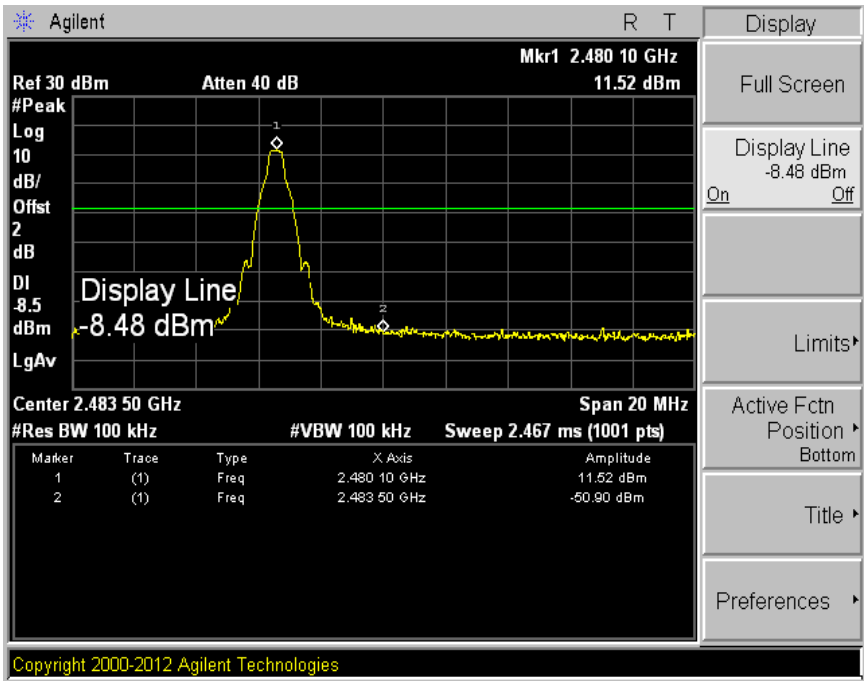
* Refer to attach spectrum analyzer data chart.

9.4 Trace data of band-edge & Out of Emission

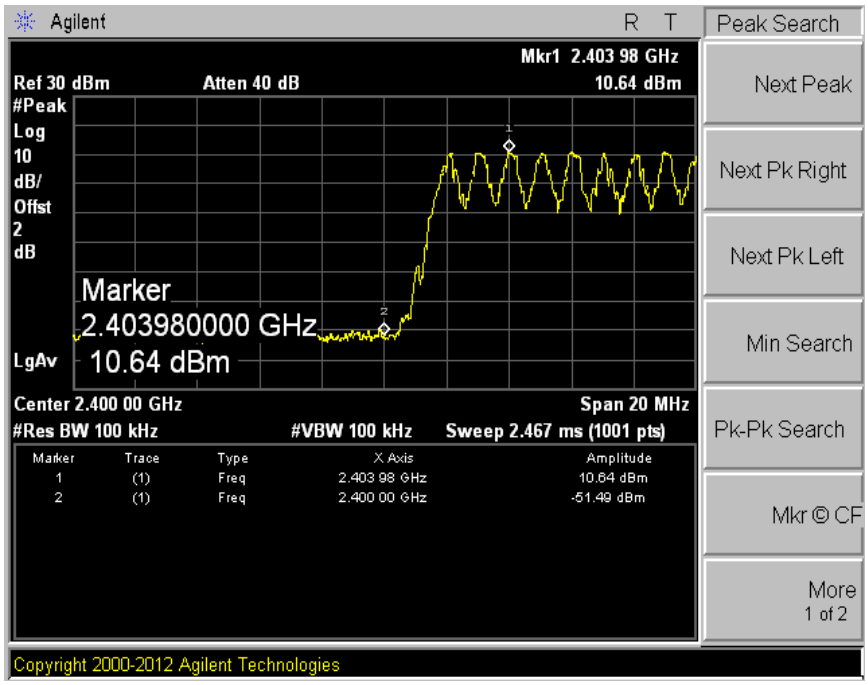
CH0 (GFSK)



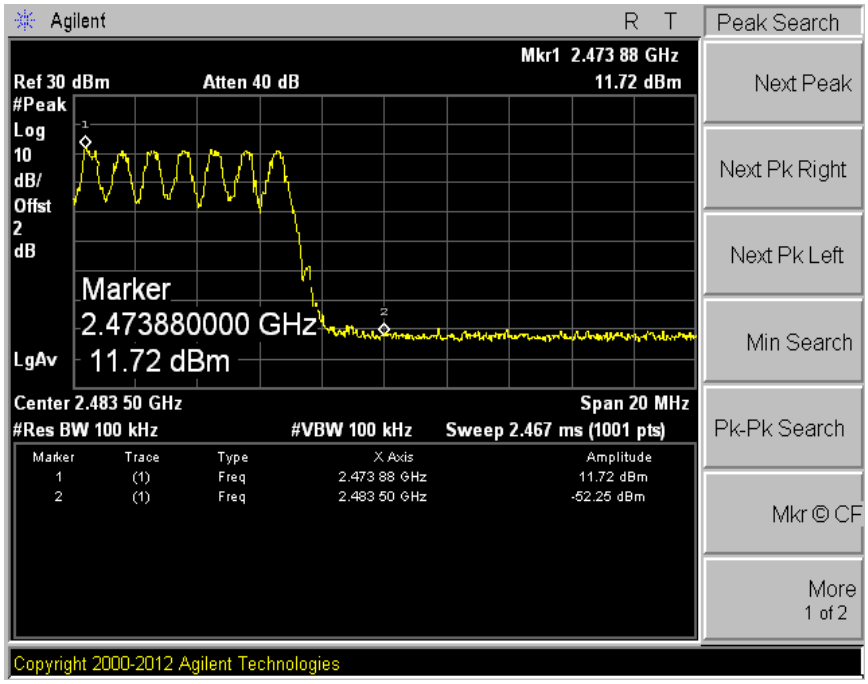
CH78



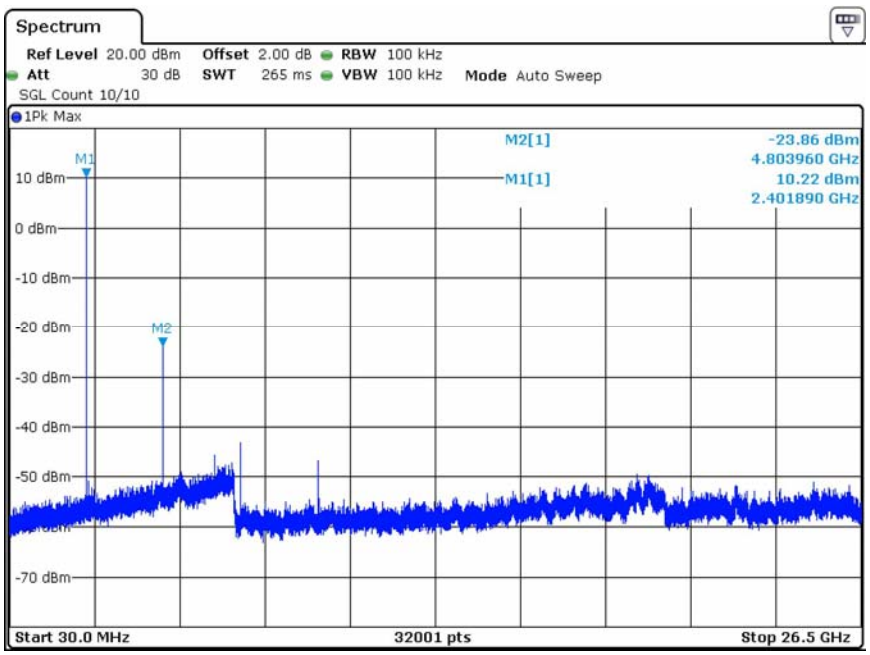
CH0


Agilent
R T
Peak Search
Mkr1 2.403 98 GHz
Ref 30 dBm
Atten 40 dB
10.64 dBm
#Peak
Log
10
dB/
Offst
2
dB
Marker
2.403980000 GHz
LgAv
10.64 dBm
Center 2.400 00 GHz
Span 20 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 2.467 ms (1001 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.403 98 GHz 10.64 dBm
2 (1) Freq 2.400 00 GHz -51.49 dBm
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr © CF
More
1 of 2
Copyright 2000-2012 Agilent Technologies

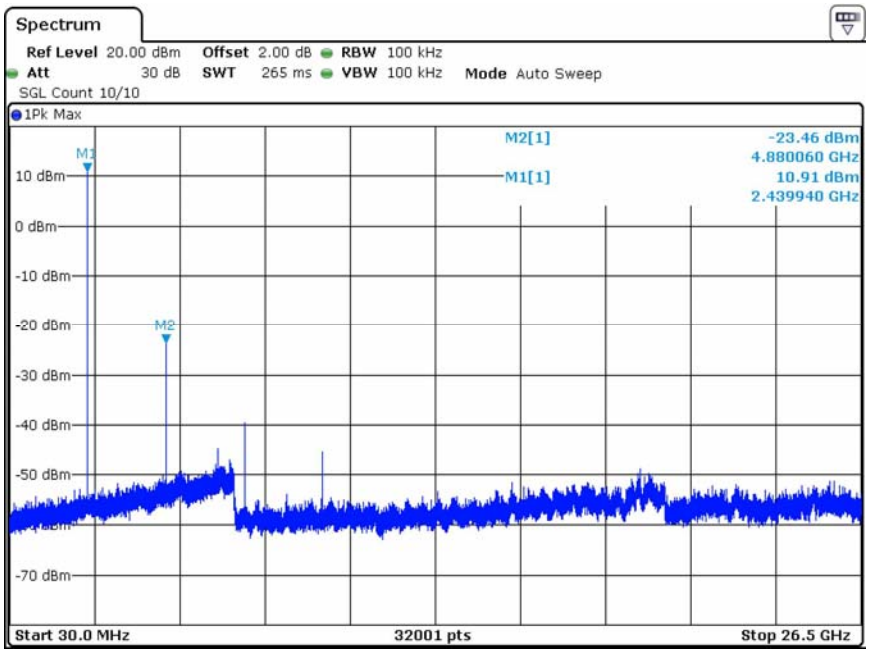
CH78


Agilent
R T
Peak Search
Mkr1 2.473 88 GHz
Ref 30 dBm
Atten 40 dB
11.72 dBm
#Peak
Log
10
dB/
Offst
2
dB
Marker
2.473880000 GHz
LgAv
11.72 dBm
Center 2.483 50 GHz
Span 20 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 2.467 ms (1001 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.473 88 GHz 11.72 dBm
2 (1) Freq 2.483 50 GHz -52.25 dBm
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr © CF
More
1 of 2
Copyright 2000-2012 Agilent Technologies

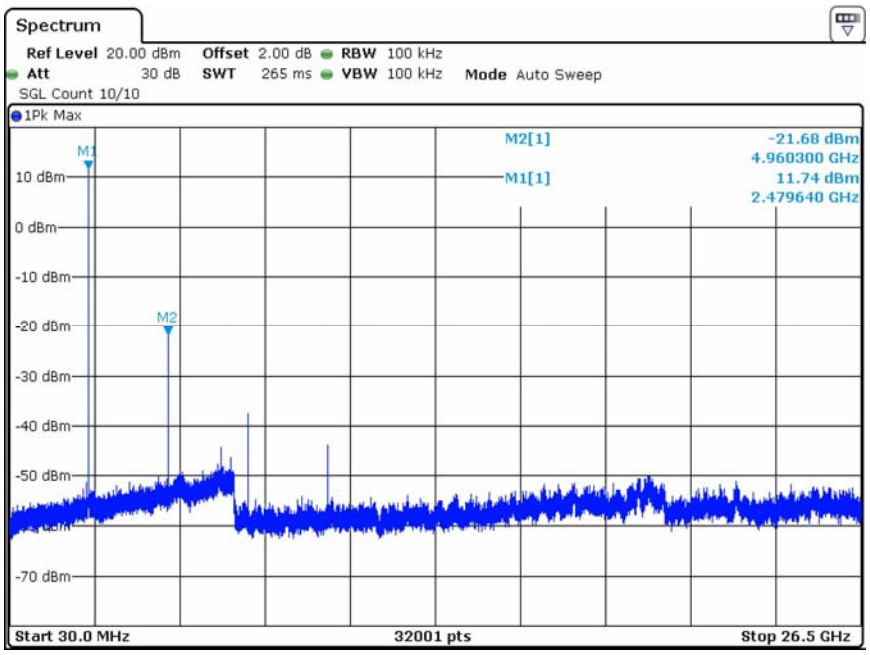
CH0


Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M2[1] -23.86 dBm
4.803960 GHz
M1[1] 10.22 dBm
2.401890 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

CH38

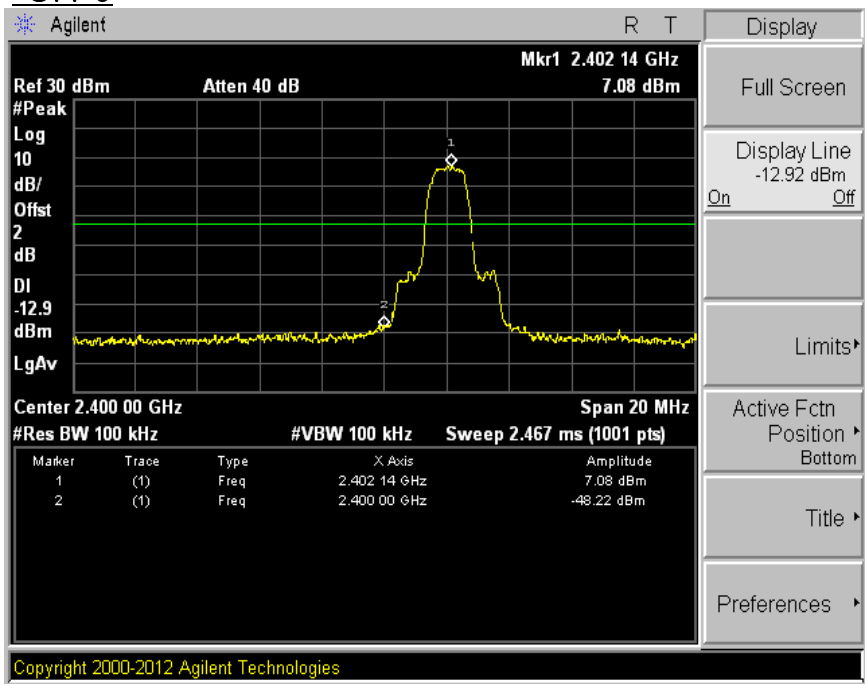

Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M2[1] -23.46 dBm
4.880060 GHz
M1[1] 10.91 dBm
2.439940 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

CH78

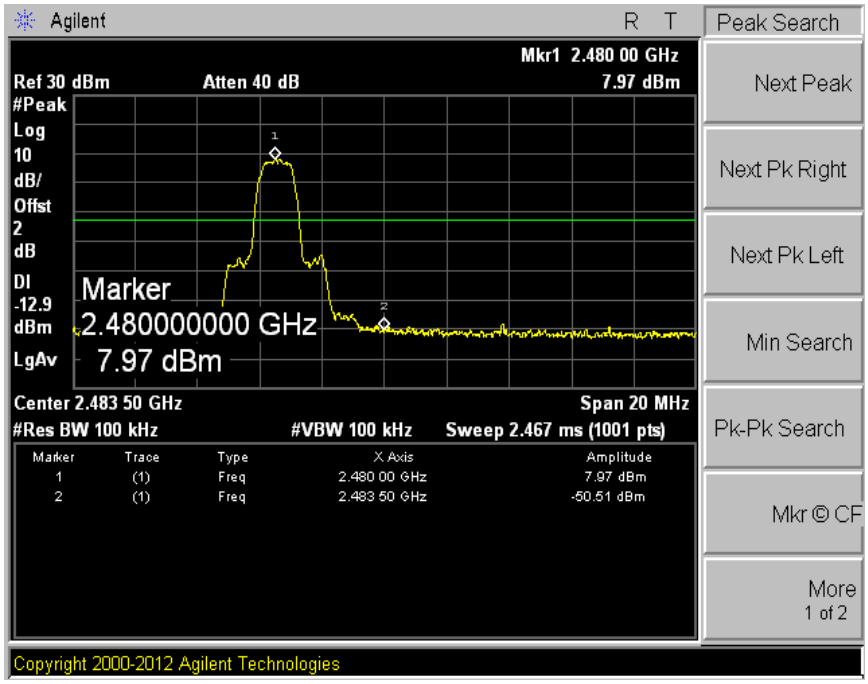

Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M1[1] -21.68 dBm
4.960300 GHz
M1[1] 11.74 dBm
2.479640 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

8DPSK

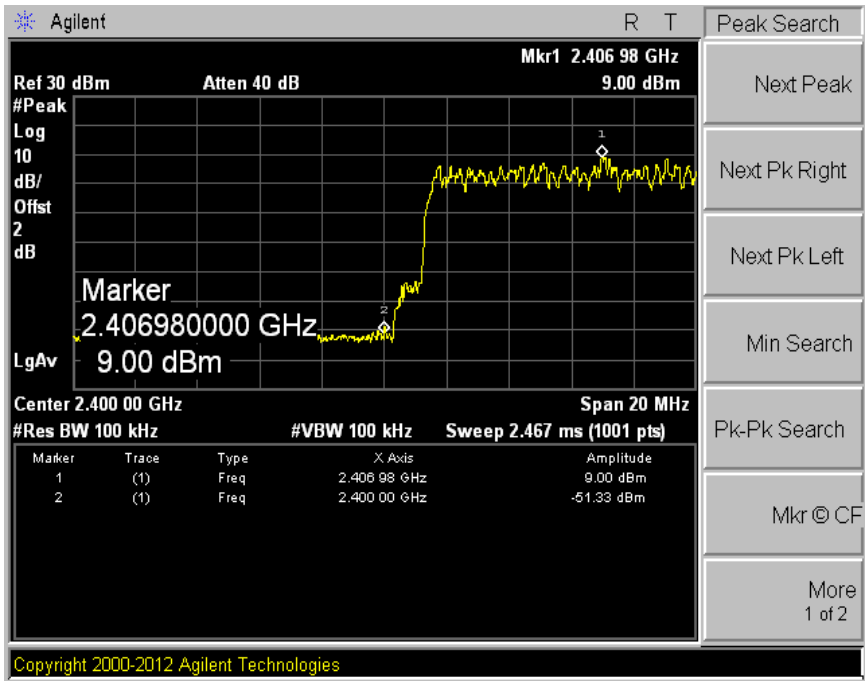
CH 0



CH78



CH 0


Agilent
R T
Peak Search
Mkr1 2.406 98 GHz
Ref 30 dBm
Atten 40 dB
9.00 dBm
#Peak
Log
10
dB/
Offst
2
dB
Next Peak
Next Pk Right
Next Pk Left
Min Search
Marker
2.406980000 GHz
LgAv
9.00 dBm
Pk-Pk Search
Center 2.400 00 GHz
Span 20 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 2.467 ms (1001 pts)
Mkr © CF
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.406 98 GHz 9.00 dBm
2 (1) Freq 2.400 00 GHz -51.33 dBm
More
1 of 2
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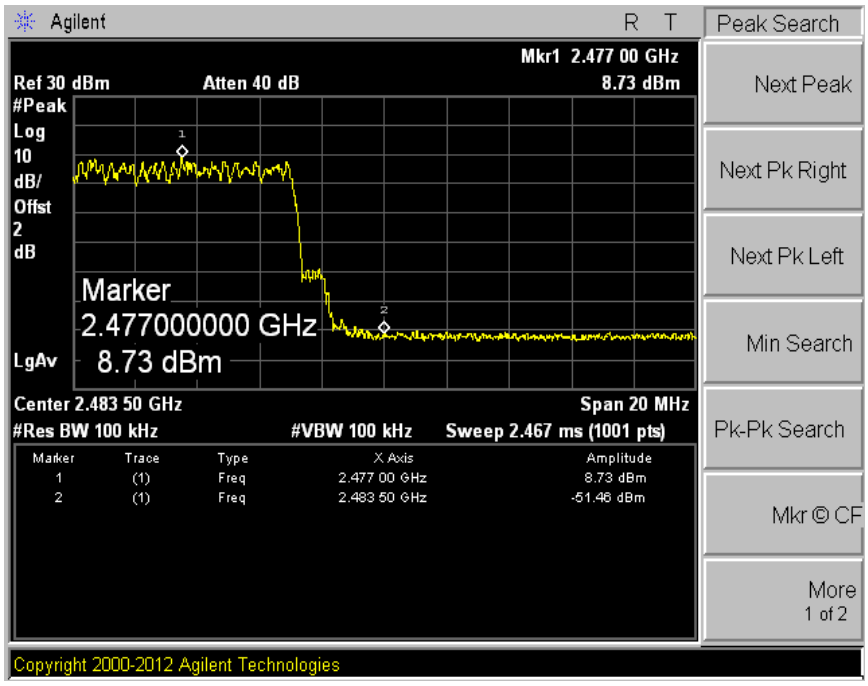
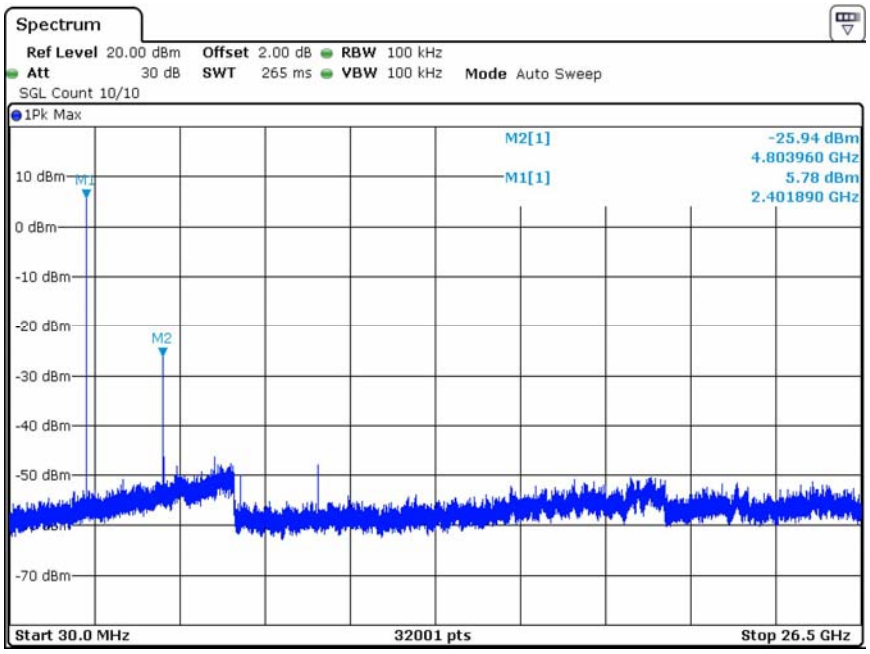
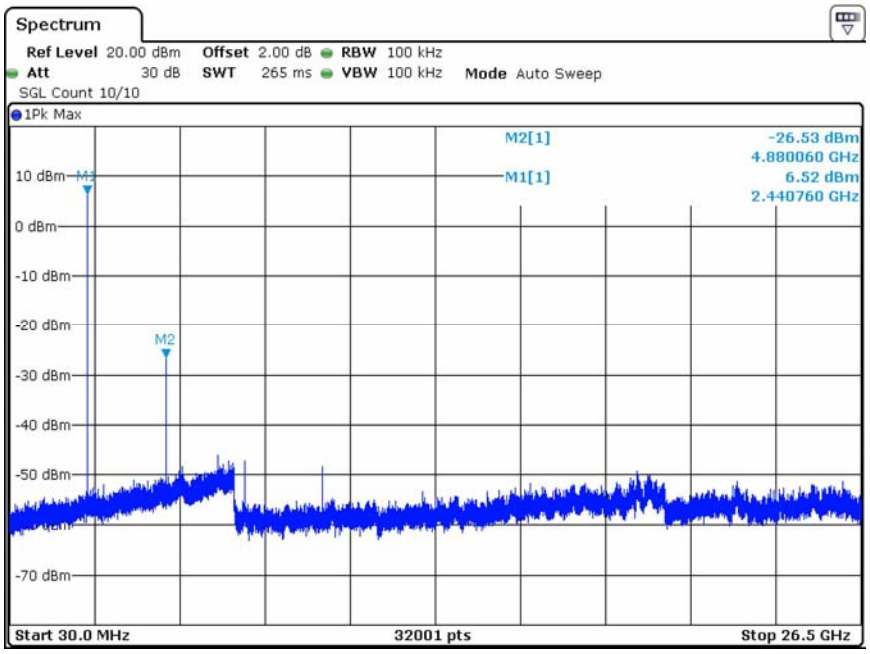
CH78


Agilent
R T
Peak Search
Mkr1 2.477 00 GHz
Ref 30 dBm
Atten 40 dB
8.73 dBm
#Peak
Log
10
dB/
Offst
2
dB
Next Peak
Next Pk Right
Next Pk Left
Min Search
Marker
2.477000000 GHz
LgAv
8.73 dBm
Pk-Pk Search
Center 2.483 50 GHz
Span 20 MHz
#Res BW 100 kHz
#VBW 100 kHz
Sweep 2.467 ms (1001 pts)
Mkr © CF
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.477 00 GHz 8.73 dBm
2 (1) Freq 2.483 50 GHz -51.46 dBm
More
1 of 2
Copyright 2000-2012 Agilent Technologies

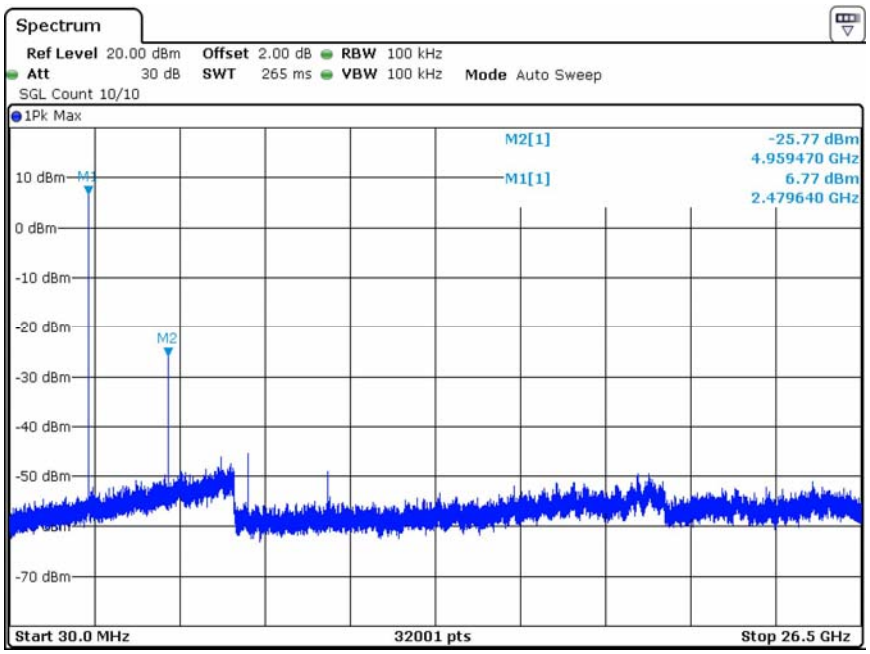
CH 0


Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M2[1] -25.94 dBm
4.803960 GHz
M1[1] 5.78 dBm
2.401890 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

CH38


Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M2[1] -26.53 dBm
4.880060 GHz
M1[1] 6.52 dBm
2.440760 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

CH78


Spectrum
Ref Level 20.00 dBm Offset 2.00 dB RBW 100 kHz
Att 30 dB SWT 265 ms VBW 100 kHz Mode Auto Sweep
SGL Count 10/10
1Pk Max
M2[1] -25.77 dBm
4.959470 GHz
M1[1] 6.77 dBm
2.479640 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
M1
M2
Start 30.0 MHz
32001 pts
Stop 26.5 GHz

10. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC PART 15.205, 15.209. The test setup was made according to ANSI C 63.10 (2013) Semi-anechoic chamber, which allows a 3 m distance measurement. The EUT was placed in the center of styrofoam turntable. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

10.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESCI7	ROHDE & SCHWARZ	100916	19-Jul-22
Logbicon Antenna	VULB 9168	SCHWARZBECK	193	9-Dec-23
Turn Table	DT3000-2t	Innco System GmbH	N/A	-
Antenna Mast	MA4000-EP	Innco System GmbH	N/A	-
PREAMPLIFIER	8449B	HP	3008A00581	20-Jul-22
Horn Antenna	BBHA9120D	SCHWARZBECK	469	3-Dec-22
TEST Receiver	ESU	ROHDE & SCHWARZ	100529	19-Jul-22
Turn Table	DT1500-S	Innco System GmbH	N/A	-
Antenna Mast	MA4000-EP	Innco System GmbH	N/A	-
Horn Antenna	BBHA 9170	SCHWARZBECK	752	22-Jul-22
Antenna Master & Turn table controller	C02000-P	Innco System GmbH	CO2000/642 /28051111/L	-

10.2 Environmental Condition

Below 1 GHz -Test Place : 10 m Semi-anechoic chamber

BT Basic Rate Mode
Temperature (°C) : 23.6 ℃
Humidity (% R.H.) : 44.5 % R.H.

BT EDR Mode
Temperature (°C) : 23.4 ℃
Humidity (% R.H.) : 43.0 % R.H.

Above 1 GHz-Test Place : 3 m Semi-anechoic chamber

BT Basic Rate Mode
Temperature (°C) : 23.1 ℃
Humidity (% R.H.) : 46.0 % R.H.

BT EDR Mode
Temperature (°C) : 23.4 ℃
Humidity (% R.H.) : 47.5 % R.H.

10.3 Test Data for Bluetooth (Basic Rate)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
32.10	5.16	H	1.4	12.03	0.77	40.00	17.96	22.04
99.20	15.53	V	1.8	9.93	1.46	43.50	26.92	16.58
111.60	14.72	H	1.6	10.31	2.01	43.50	27.03	16.47
244.80	17.58	V	1.6	9.85	2.18	46.00	29.62	16.38
247.10	17.53	H	1.4	11.75	2.26	46.00	31.54	14.46
431.90	7.56	V	1.6	16.73	2.91	46.00	27.20	18.80

Remark	H : Horizontal, V : Vertical Bluetooth (Basic Rate , 38 CH , 2 440 MHz) *CL = Cable Loss (In case of below 1 000 MHz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1 GHz. *Result Value = Reading + Ant Factor + Cable loss *Margin = Limit - Result

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Test Data for Bluetooth (EDR)

Measurement Distance : 3 m

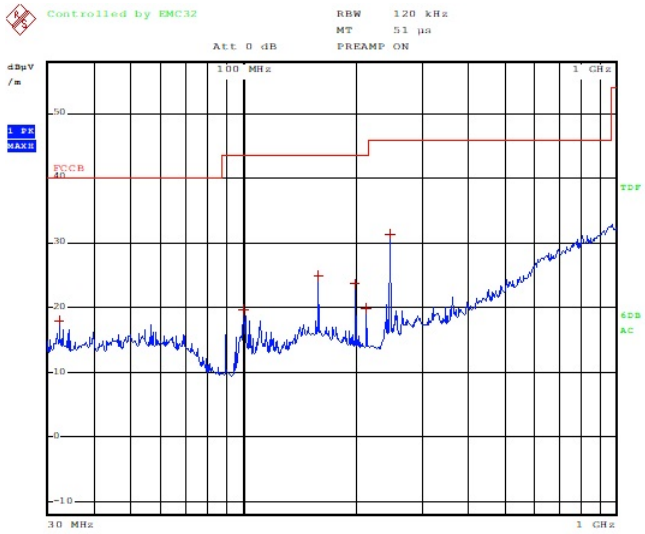
Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
99.40	18.12	V	1.0	7.90	1.37	43.50	27.39	16.11
250.30	17.33	H	1.0	11.71	2.28	46.00	31.32	14.68
480.00	7.79	H	1.3	16.72	2.91	46.00	27.42	18.58
600.00	9.71	V	1.4	19.70	3.67	46.00	33.08	12.92
796.50	6.01	H	1.6	22.60	4.30	46.00	32.90	13.10
972.50	5.91	V	1.8	24.50	4.83	54.00	35.24	18.76

Remark	H : Horizontal, V : Vertical Bluetooth (EDR , 38 CH , 2 440 MHz) *CL = Cable Loss(In case of below 1 000 MHz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1 GHz. *Result Value = Reading + Ant Factor + Cable loss *Margin = Limit - Result

Restricted Band Edges for BT(Basic Rate)

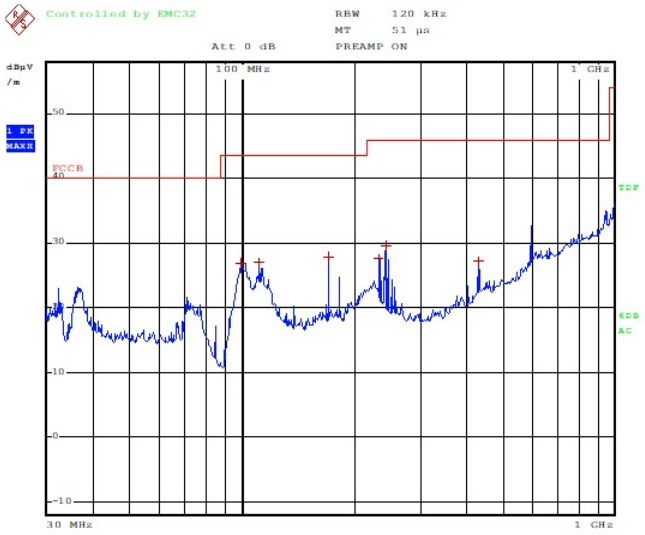
Band Edges(CH Middle) BDR

Polarity:Horizontal



ESTR-22-00166

Polarity:Vertical

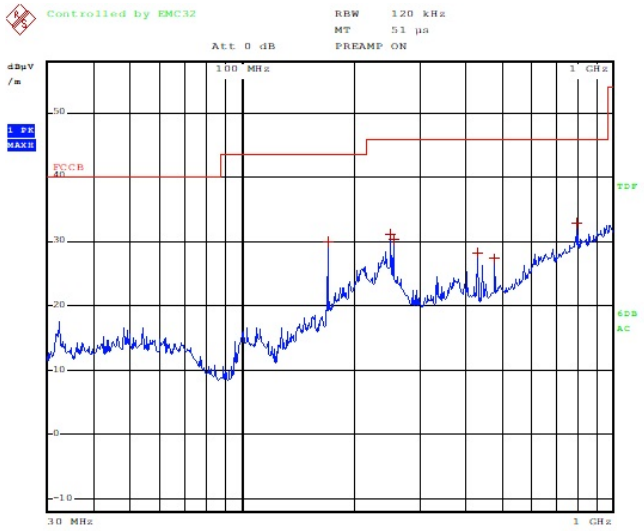


ESTR-22-00166

Restricted Band Edges for BT(EDR)

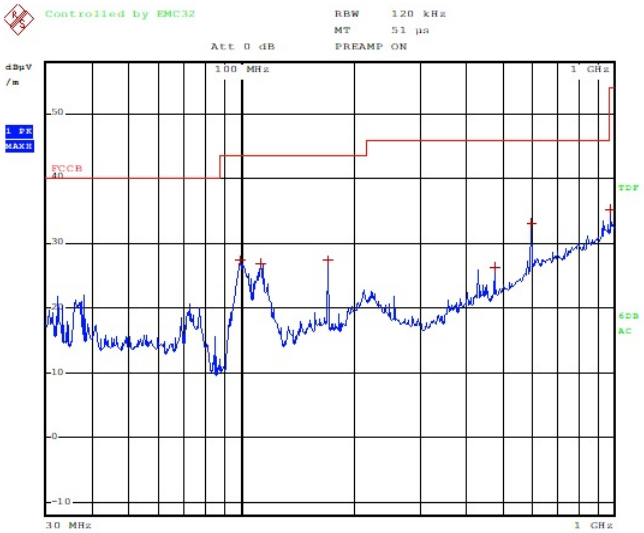
Band Edges(CH Middle) EDR

Polarity:Horizontal



ESTR-22-00166

Polarity:Vertical



ESTR-22-00166

10.4 Test Data for Bluetooth(Basic Rate)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
2390.00	50.17	H	1.5	27.89	-29.82		74.00	48.24	25.76
2390.00	50.21	V	1.5	27.89	-29.82		74.00	48.28	25.72
4804.00	40.52	H	1.5	31.50	-27.28		74.00	44.74	29.26
4804.00	40.61	V	1.5	31.50	-27.28		74.00	44.83	29.17
Average (RBW:1 MHz VBW:3 MHz)									
2390.00	36.82	H	1.5	27.89	-29.82	1.20	54.00	36.09	17.91
2390.00	36.67	V	1.5	27.89	-29.82	1.20	54.00	35.94	18.06
4804.00	26.26	H	1.5	31.50	-27.28	1.20	54.00	31.68	22.32
4804.00	26.18	V	1.5	31.50	-27.28	1.20	54.00	31.60	22.40

Remark	H : Horizontal, V : Vertical TEST MODE : Bluetooth Basic Rate-CH0 (2 402 MHz) *This test was radiated up to 26.5 GHz but no noise was measured. *The TX signal wasn't detected from 3th harmonics. *Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor *Margin = Limit - Result *The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz. FYI : Duty Cycle Correction Factor (79 channel hopping) a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 295.934 ms, where τ = pulse width b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1 c. Worst Case Dwell Time = τ [ms] x H ' = 3.746 ms d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = -28.528 dB

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Test Data for Bluetooth(Basic Rate)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
4880.00	40.17	H	1.5	31.58	-27.24		74.00	44.51	29.49
4880.00	40.08	V	1.5	31.58	-27.24		74.00	44.42	29.58
Average (RBW:1 MHz VBW:3 MHz)									
4880.00	26.05	H	1.5	31.58	-27.24	1.20	54.00	31.59	22.41
4880.00	25.87	V	1.5	31.58	-27.24	1.20	54.00	31.41	22.59

Remark	H : Horizontal, V : Vertical TEST MODE : Bluetooth Basic Rate-CH38 (2 440 MHz) *This test was radiated up to 26.5 GHz but no noise was measured. *The TX signal wasn't detected from 3th harmonics. *Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor *Margin = Limit - Result *The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz. FYI : Duty Cycle Correction Factor (79 channel hopping) a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 295.934 ms, where τ = pulse width b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1 c. Worst Case Dwell Time = τ [ms] x H ' = 3.746 ms d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = -28.528 dB

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Test Data for Bluetooth(Basic Rate)

Measurement Distance : 3 m

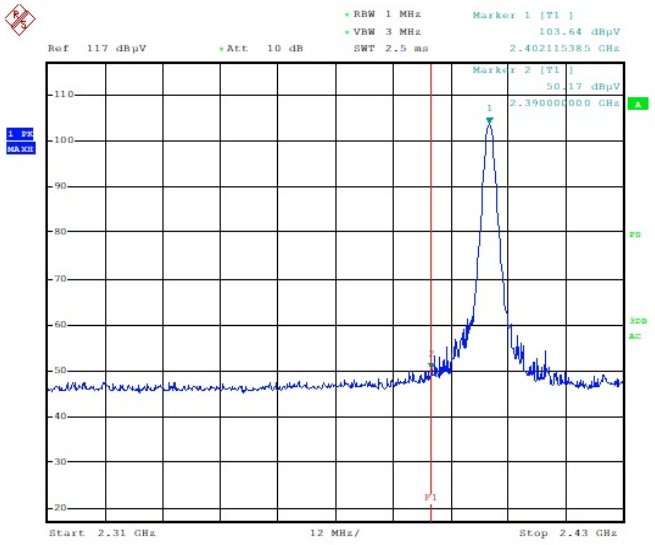
Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
2483.50	65.73	H	1.5	27.48	-29.75		74.00	63.46	10.54
2483.50	63.39	V	1.7	27.48	-29.75		74.00	61.12	12.88
4960.00	39.13	H	1.5	31.66	-27.17		74.00	43.62	30.38
4960.00	38.68	V	1.7	31.66	-27.17		74.00	43.17	30.83
Average (RBW:1 MHz VBW:3 MHz)									
2483.50	52.70	H	1.5	27.48	-29.75	1.20	54.00	51.63	2.37
2483.50	48.91	V	1.7	27.48	-29.75	1.20	54.00	47.84	6.16
4960.00	35.69	H	1.5	31.66	-27.17	1.20	54.00	41.38	12.62
4960.00	33.89	V	1.7	31.66	-27.17	1.20	54.00	39.58	14.42

Remark	H : Horizontal, V : Vertical TEST MODE : Bluetooth Basic Rate-CH78 (2 480 MHz) *This test was radiated up to 26.5 GHz but no noise was measured. *The TX signal wasn't detected from 3th harmonics. *Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor *Margin = Limit - Result *The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz. FYI : Duty Cycle Correction Factor (79 channel hopping) a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 295.934 ms, where τ = pulse width b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1 c. Worst Case Dwell Time = τ [ms] x H ' = 3.746 ms d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = -28.528 dB

Restricted Band Edges for BT(Basic Rate)

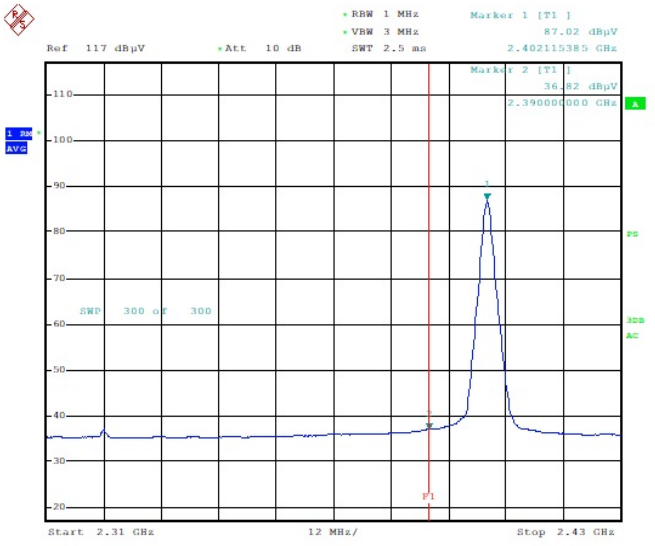
Band Edges(CH Low)

Detector mode:Peak Polarity:Horizontal



ESTR=22-00166

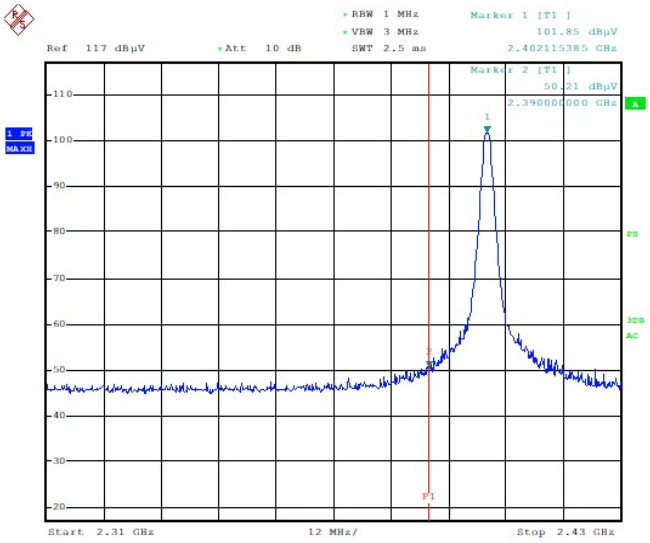
Detector mode:Average Polarity:Horizontal



ESTR=22-00166

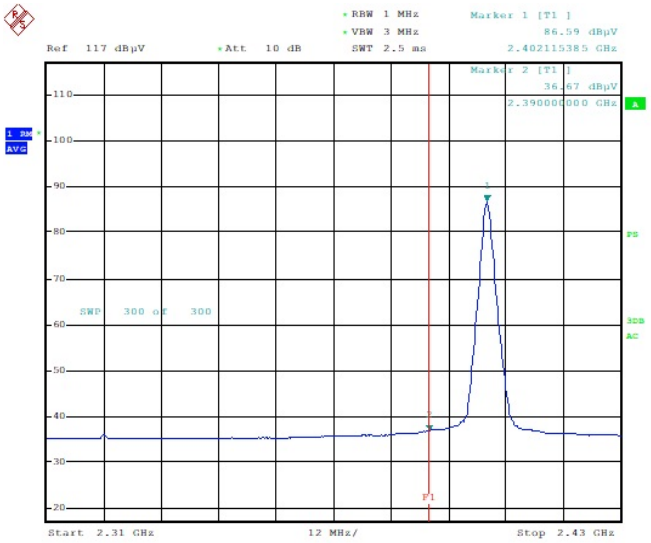
Band Edges(CH Low)

Detector mode:Peak Polarity:Vertical



ESTR=22-00166

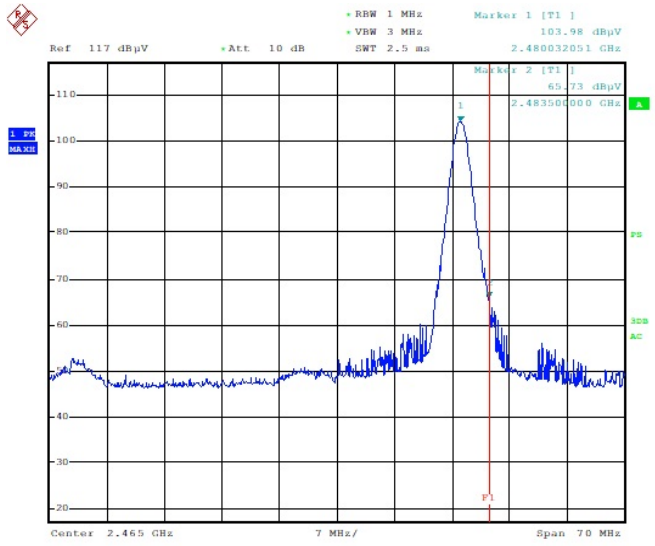
Detector mode:Average Polarity:Vertical



ESTR=22-00166

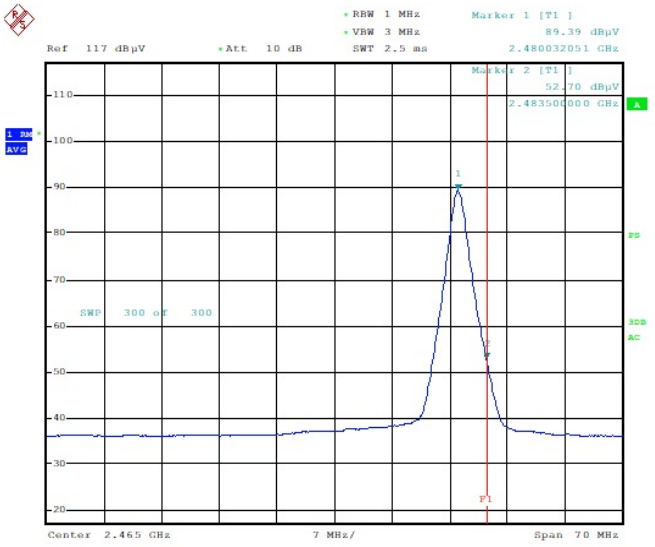
Band Edges(CH High)

Detector mode:Peak Polarity:Horizontal



ESTR=22-00166

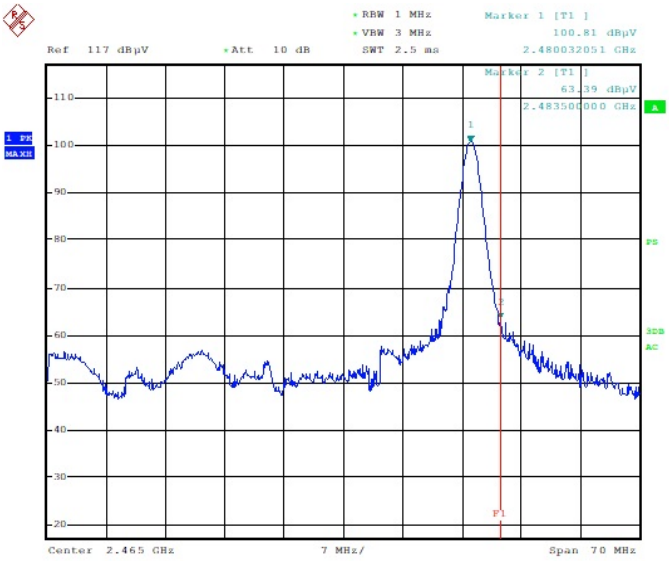
Detector mode:Average Polarity:Horizontal



ESTR=22-00166

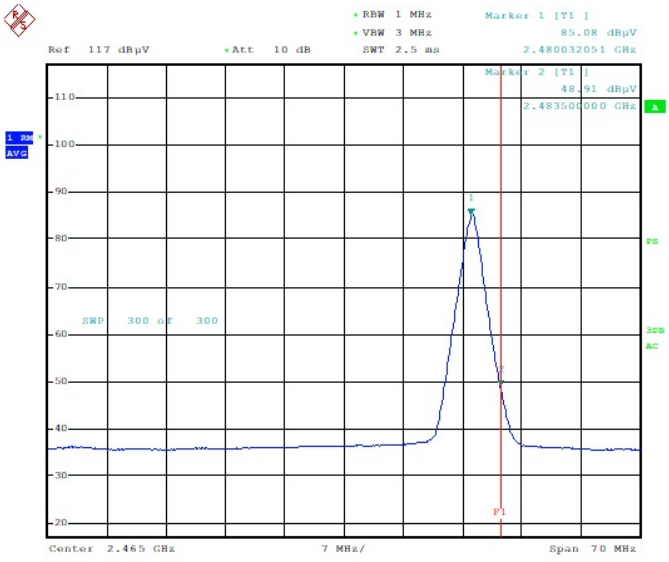
Band Edges(CH High)

Detector mode:Peak Polarity:Vertical



ESTR=22-00166

Detector mode:Average Polarity:Vertical

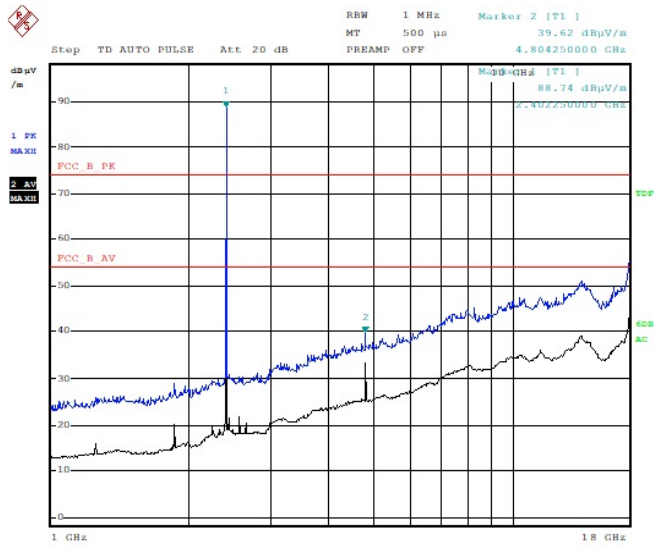


ESTR=22-00166

Restricted Band Edges for BT(Basic Rate)

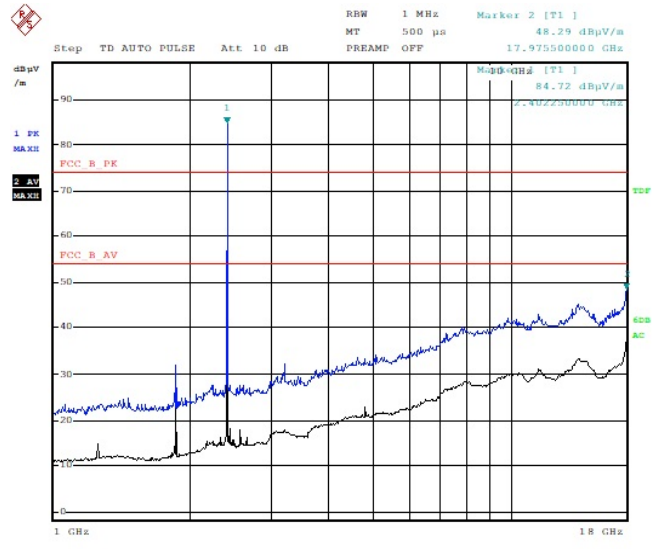
Band Edges(CH Low)

Polarity:Horizontal



ESTR=22-00166

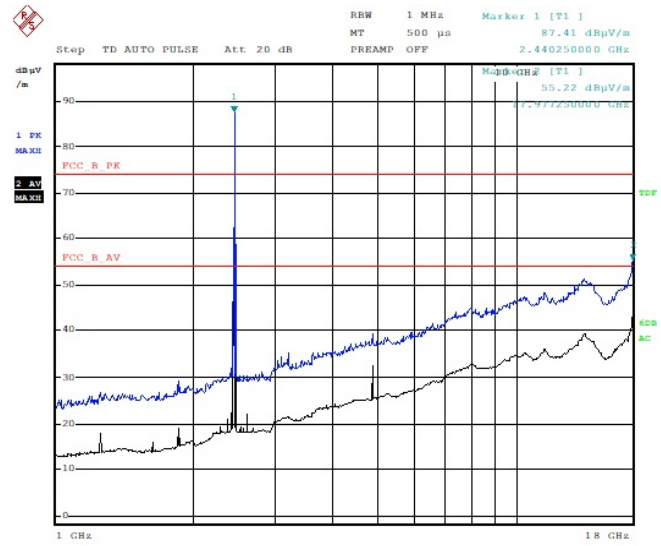
Polarity:Vertical



ESTR=22-00166

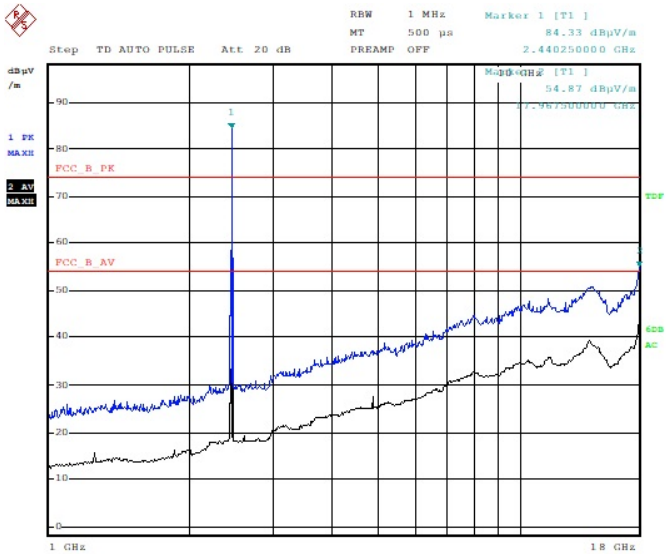
Band Edges(CH Middle)

Polarity:Horizontal



ESTR=22-00166

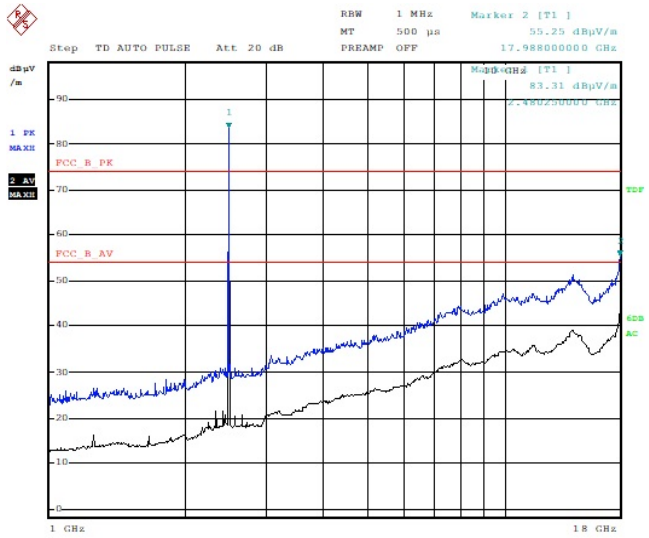
Polarity:Vertical



ESTR=22-00166

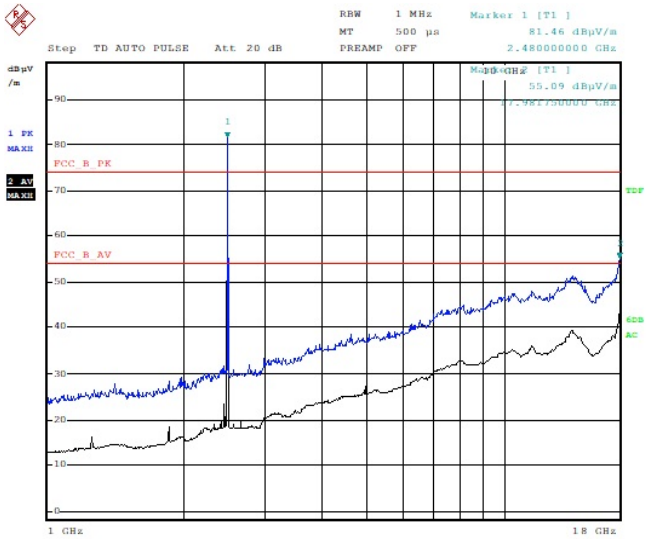
Band Edges(CH HIgh)

Polarity:Horizontal



ESTR=22-00166

Polarity:Vertical



ESTR=22-00166

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Test Data for Bluetooth(EDR)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
2390.00	47.97	H	1.6	27.89	-29.82		74.00	46.04	27.96
2390.00	48.81	V	1.5	27.89	-29.82		74.00	46.88	27.12
4804.00	32.87	H	1.6	31.50	-27.28		74.00	37.09	36.91
4804.00	33.56	V	1.5	31.50	-27.28		74.00	37.78	36.22
Average (RBW:1 MHz VBW:3 MHz)									
2390.00	36.48	H	1.6	27.89	-29.82	1.18	54.00	35.73	18.27
2390.00	35.96	V	1.5	27.89	-29.82	1.18	54.00	35.21	18.79
4804.00	23.67	H	1.6	31.50	-27.28	1.18	54.00	29.07	24.93
4804.00	23.59	V	1.5	31.50	-27.28	1.18	54.00	28.99	25.01

Remark

H : Horizontal, V : Vertical TEST MODE : Bluetooth EDR-CH0 (2 402 MHz)
*This test was radiated up to 26.5 GHz but no noise was measured.
*The TX signal wasn't detected from 3th harmonics.
*Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor
*Margin = Limit - Result
*The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz.

FYI : Duty Cycle Correction Factor (79 channel hopping)
a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 296.25 ms, where τ = pulse width
b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1
c. Worst Case Dwell Time = τ [ms] x H ' = 3.79ms
d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = - 28.427 dB

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Test Data for Bluetooth(EDR)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
4880.00	32.09	H	1.5	31.58	-27.24		74.00	36.43	37.57
4880.00	33.15	V	1.7	31.58	-27.24		74.00	37.49	36.51
Average (RBW:1 MHz VBW:3 MHz)									
4880.00	23.63	H	1.5	31.58	-27.24	1.18	54.00	29.15	24.85
4880.00	23.53	V	1.7	31.58	-27.24	1.18	54.00	29.05	24.95

Remark

H : Horizontal, V : Vertical TEST MODE : Bluetooth EDR-CH38 (2 440 MHz)
*This test was radiated up to 26.5 GHz but no noise was measured.
*The TX signal wasn't detected from 3th harmonics.
*Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor
*Margin = Limit - Result
*The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz.

FYI : Duty Cycle Correction Factor (79 channel hopping)
a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 296.25 ms, where τ = pulse width
b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1
c. Worst Case Dwell Time = τ [ms] x H ' = 3.79ms
d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = - 28.427 dB

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Test Data for Bluetooth(EDR)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Duty Cycle Correction (dB)	Result Value		
				Ant Factor (dB)	Cable (dB)		Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK(RBW:1 MHz VBW:3 MHz)									
2483.50	61.99	H	1.5	27.48	-29.75		74.00	59.72	14.28
2483.50	63.19	V	1.7	27.48	-29.75		74.00	60.92	13.08
4960.00	44.63	H	1.5	31.66	-27.17		74.00	49.12	24.88
4960.00	44.93	V	1.7	31.66	-27.17		74.00	49.42	24.58
Average (RBW:1 MHz VBW:3 MHz)									
2483.50	51.88	H	1.5	27.48	-29.75	1.18	54.00	50.79	3.21
2483.50	49.68	V	1.7	27.48	-29.75	1.18	54.00	48.59	5.41
4960.00	35.31	H	1.5	31.66	-27.17	1.18	54.00	40.98	13.02
4960.00	35.20	V	1.7	31.66	-27.17	1.18	54.00	40.87	13.13

Remark

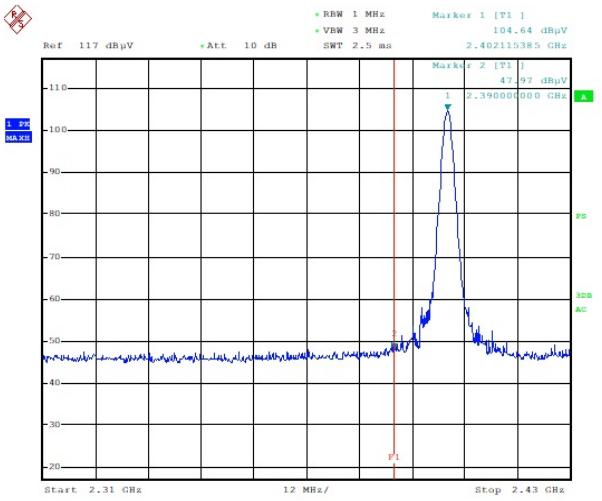
H : Horizontal, V : Vertical TEST MODE : Bluetooth EDR-CH78 (2 480 MHz)
*This test was radiated up to 26.5 GHz but no noise was measured.
*The TX signal wasn't detected from 3th harmonics.
*Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain + Duty Cycle Correction Factor
*Margin = Limit - Result
*The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 1 kHz for average detection at frequency above 1 GHz.

FYI : Duty Cycle Correction Factor (79 channel hopping)
a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 296.25 ms, where τ = pulse width
b. 100 ms/ Δt [ms] = H → Round up to next highest integer, H ' =1
c. Worst Case Dwell Time = τ [ms] x H ' = 3.79ms
d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = - 28.427 dB

Restricted Band Edges for BT(EDR)

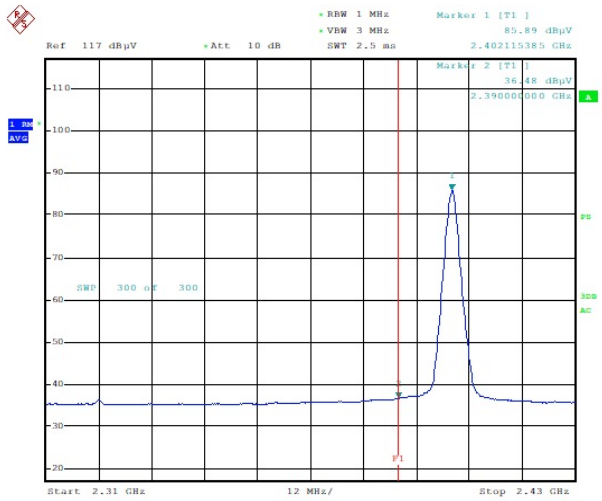
Band Edges(CH Low)

Detector mode:Peak Polarity:Horizontal



ESTR=22-00166

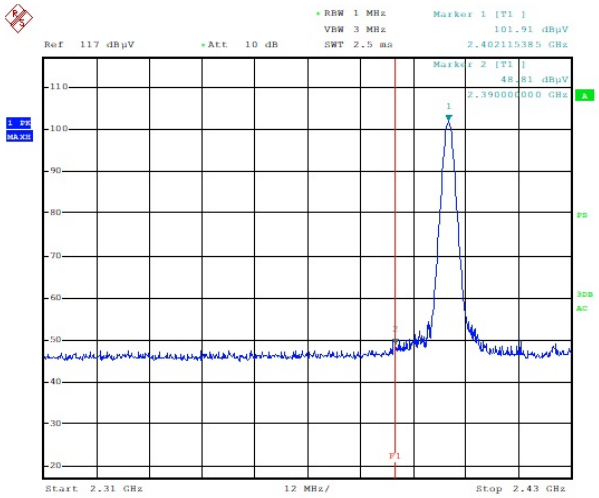
Detector mode:Average Polarity:Horizontal



ESTR=22-00166

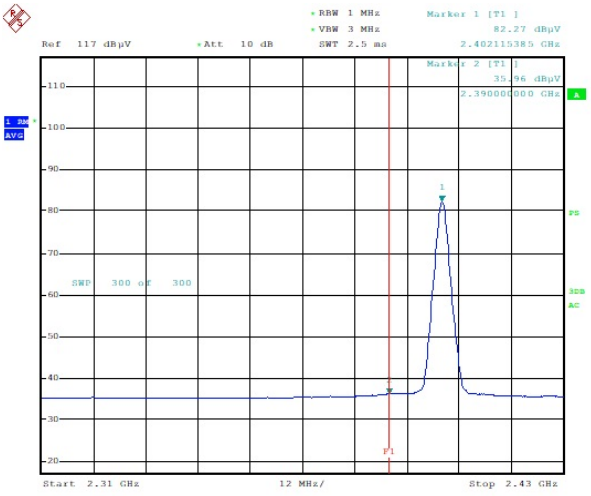
Band Edges(CH Low)

Detector mode:Peak Polarity:Vertical



ESTR=22-00166

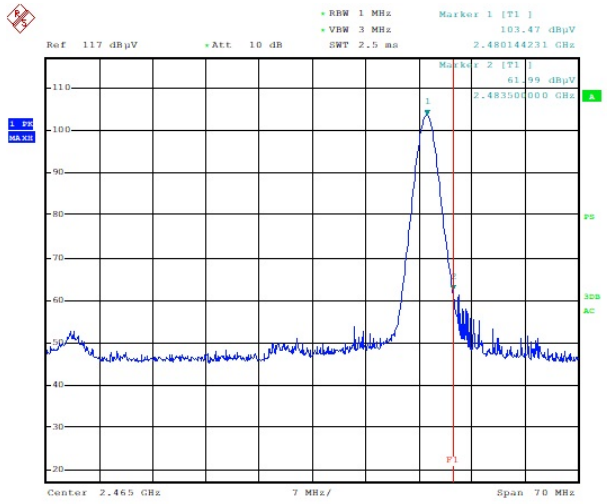
Detector mode:Average Polarity:Vertical



ESTR=22-00166

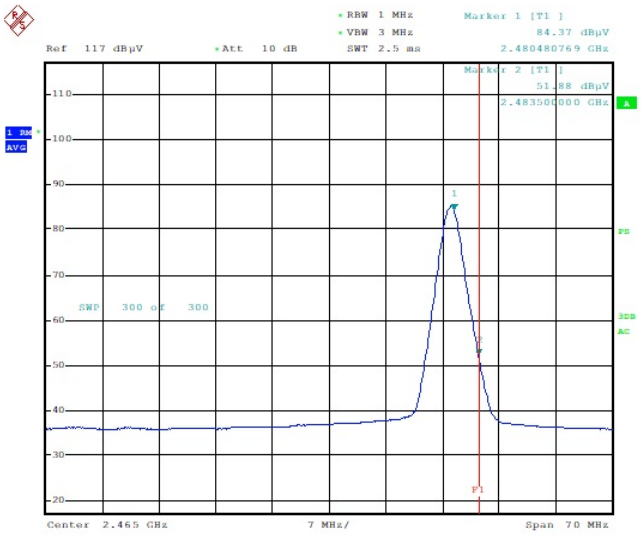
Band Edges(CH High)

Detector mode:Peak Polarity:Horizontal



ESTR=22-00166

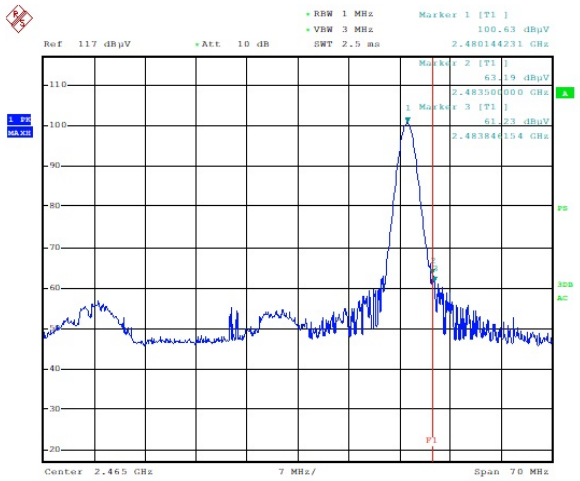
Detector mode:Average Polarity:Horizontal



ESTR=22-00166

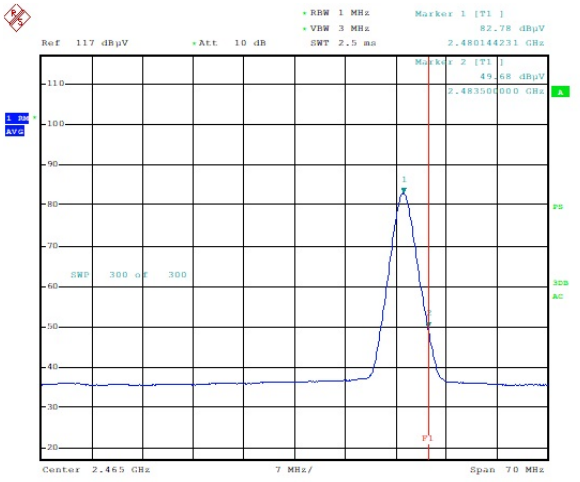
Band Edges(CH High)

Detector mode:Peak Polarity:Vertical



ESTR=22-00166

Detector mode:Average Polarity:Vertical

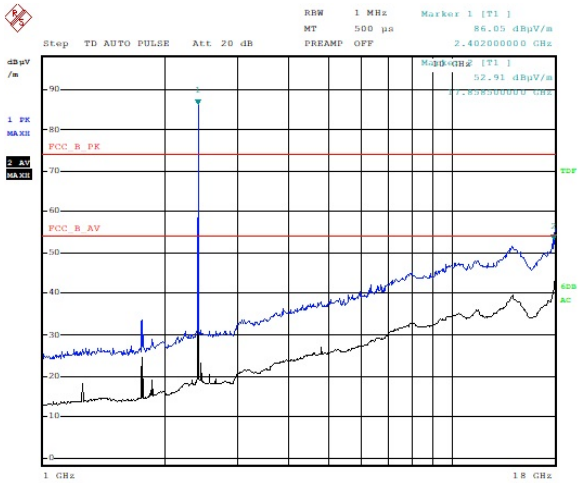


ESTR=22-00166

Restricted Band Edges for BT(EDR)

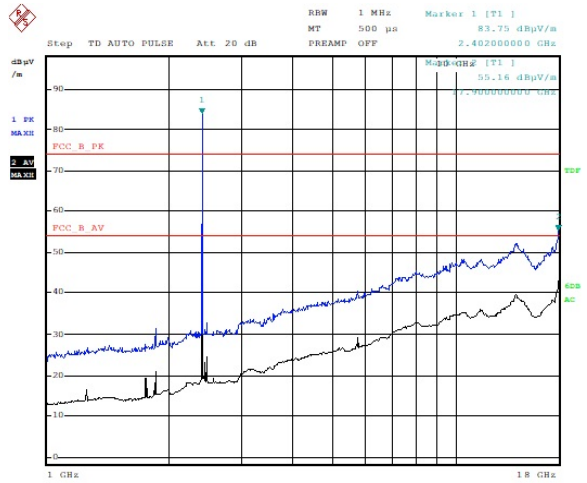
Band Edges(CH Low)

Polarity:Horizontal



ESTR=22-00166

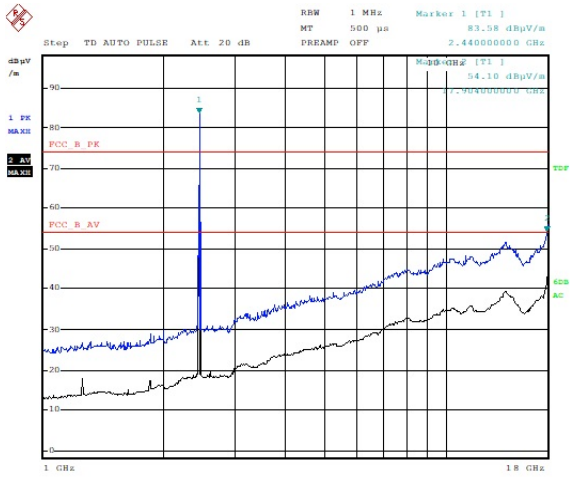
Polarity:Vertical



ESTR=22-00166

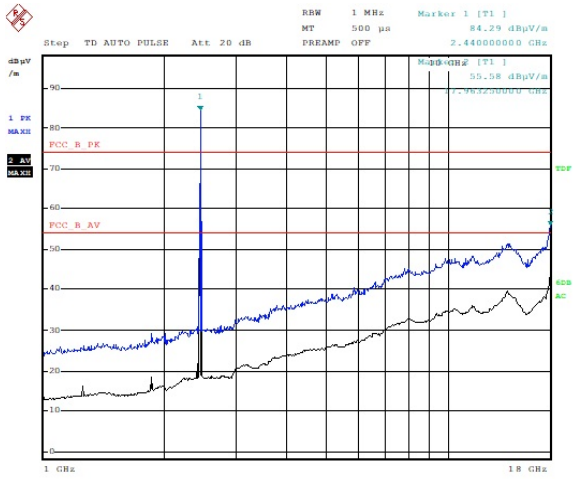
Band Edges(CH Middle)

Polarity:Horizontal



ESTR=22-00166

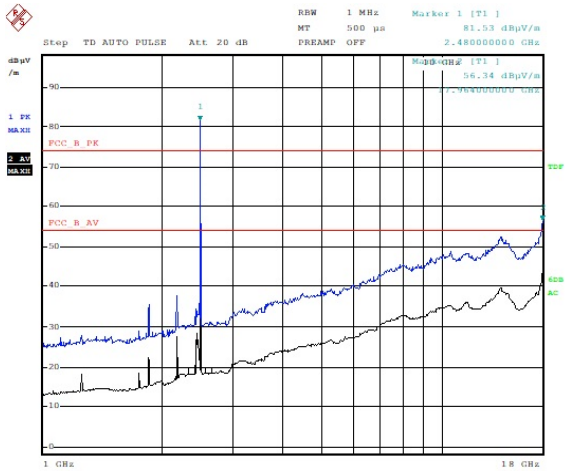
Polarity:Vertical



ESTR=22-00166

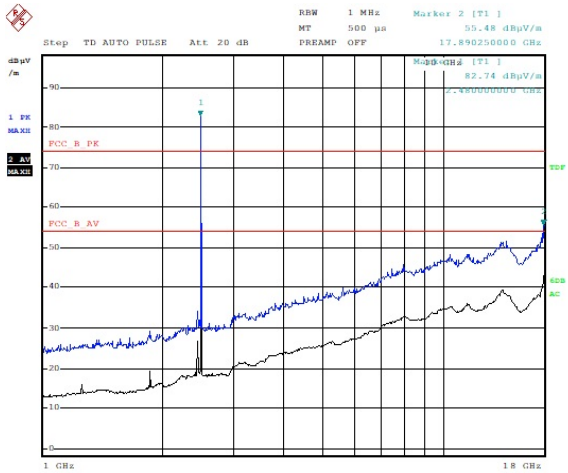
Band Edges(CH HIgh)

Polarity:Horizontal



ESTR=22-00166

Polarity:Vertical



ESTR=22-00166

11. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 MHz to 30 MHz was measured in accordance to FCC PART 15.207. The test setup was made according to ANSI C 63.4 (2009) in a shielded room. The EUT was placed on a non-conductive table at least 0.8 m above the ground plan. A grounded vertical reference plane was positioned in a distance of 0.4 m from the EUT. The distance from the EUT to other metal surfaces was at least 0.8 m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0 m. The test receiver with Quasi Peak detector complies with CISPR 16.

11.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST RECEIVER	ESPI	Rohde & Schwarz	100005	19-Jul-22
LISN	ESH3-Z5	Rohde & Schwarz	836679/025	19-Jul-22
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	19-Jul-22

11.2 Environmental Condition

Test Place : Shielded Room

BT Basic Mode

Temperature (°C) : 21.5 °C

Humidity (% R.H.) : 46.5 % R.H.

BT EDR Mode

Temperature (°C) : 21.5 °C

Humidity (% R.H.) : 46.5 % R.H.

11.3 Test Data for Bluetooth (Basic Rate)

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dB)
0.29	0.04	0.17	N	60.58	32.71	32.92	50.58	22.14	22.35
0.45	0.04	0.18	H	56.88	38.54	38.76	46.88	32.82	33.04
0.47	0.04	0.18	H	56.51	40.37	40.59	46.51	34.14	34.36
0.52	0.04	0.18	H	56.00	42.04	42.26	46.00	34.90	35.12
0.55	0.04	0.18	H	56.00	45.81	46.03	46.00	35.94	36.16
0.57	0.04	0.18	H	56.00	47.36	47.58	46.00	41.62	41.84
Remark	H : Hot Line, N : Neutral Line TEST MODE : *Correction Factor = Lisn + Cable *Result = Correction Factor + Reading								

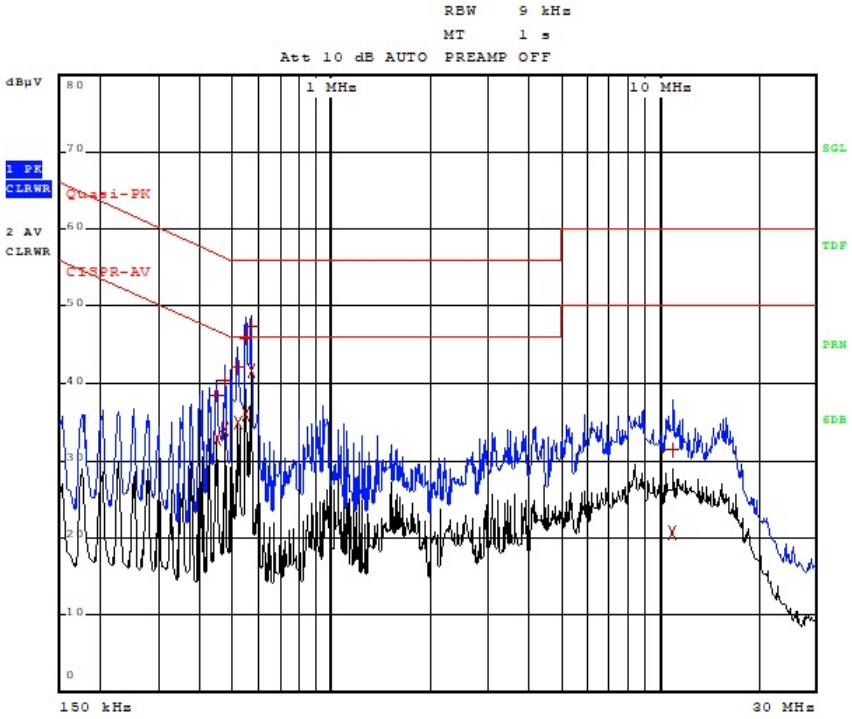
11.3-1 Test Data for Bluetooth (EDR)

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dB)
0.25	0.05	0.17	H	61.79	37.21	37.43	51.79	30.14	30.36
0.45	0.04	0.18	H	56.93	40.50	40.72	46.93	34.09	34.31
0.47	0.04	0.18	H	56.50	42.82	43.04	46.50	33.96	34.18
0.52	0.04	0.18	H	56.00	44.89	45.11	46.00	34.53	34.75
0.55	0.04	0.18	N	56.00	42.71	42.93	46.00	42.71	42.93
0.57	0.04	0.18	H	56.00	49.12	49.34	46.00	40.57	40.79
Remark	H : Hot Line, N : Neutral Line TEST MODE : *Correction Factor = Lisn + Cable *Result = Correction Factor + Reading								

Appendix 1. Special diagram for Bluetooth (Basic Rate)

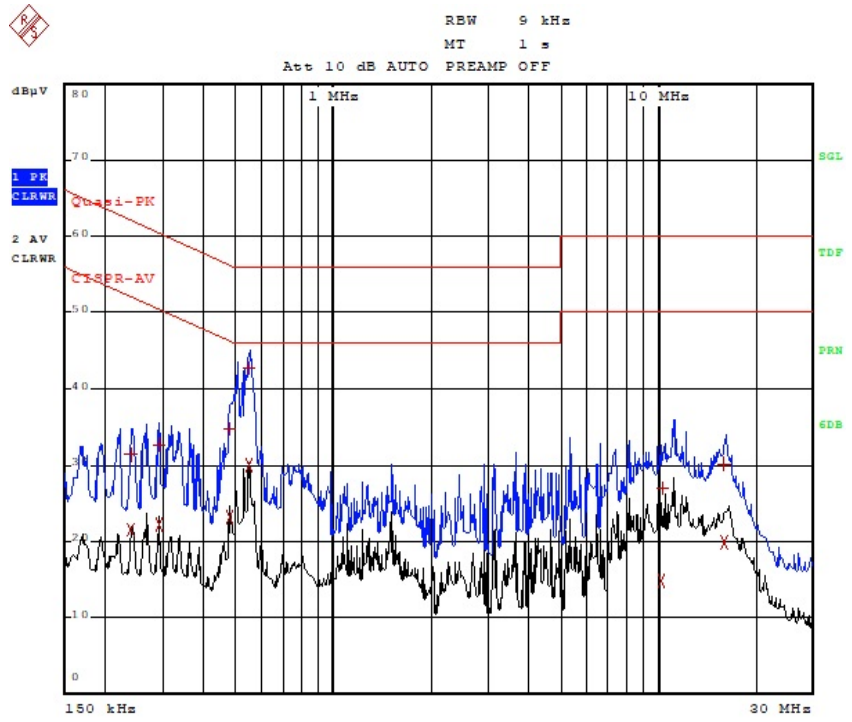
*CONDUCTED EMISSION

*HOT



Comment: ESTR-22-00166

*NEUTRAL

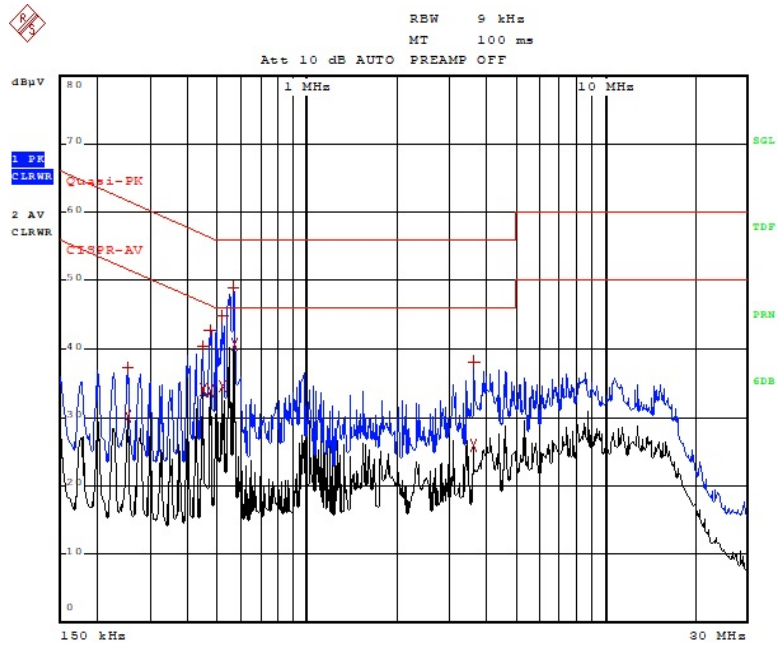


Comment: ESTR-22-00166

Special diagram for Bluetooth EDR

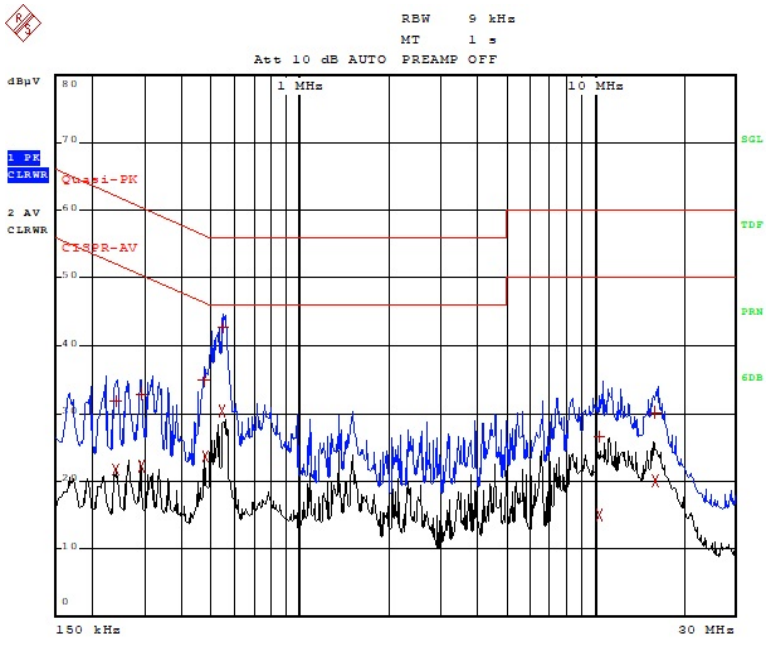
*CONDUCTED EMISSION

*HOT



Comment: ESTR-22-00166

*NEUTRAL



Comment: ESTR-22-00166