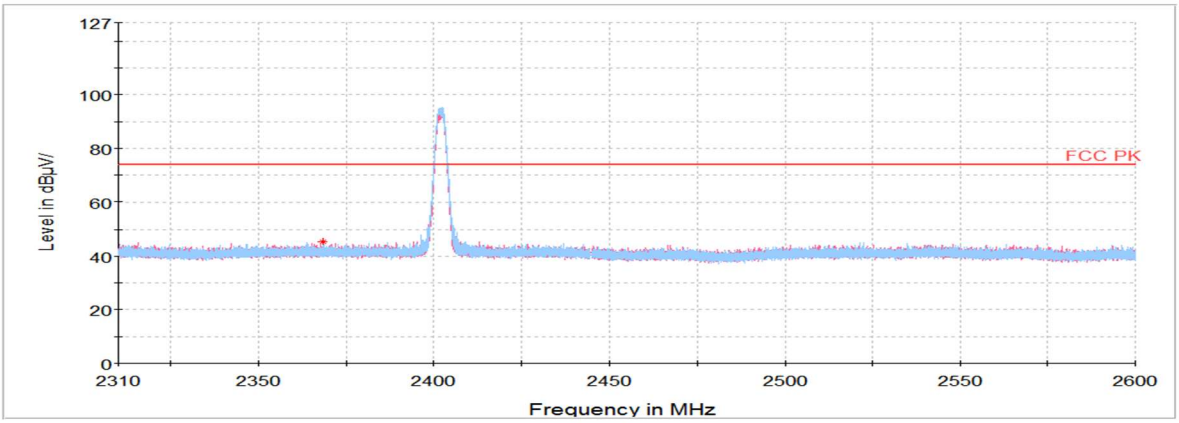
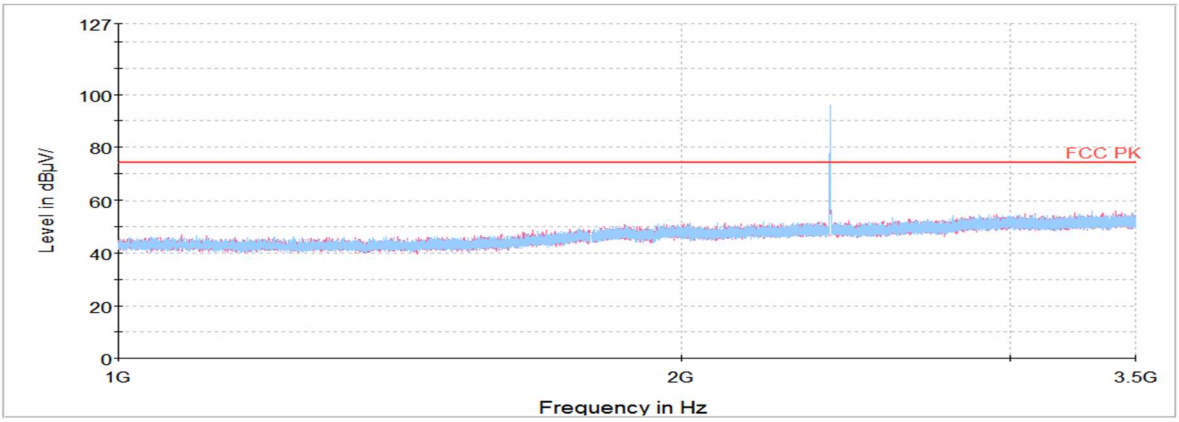
2M Bits/s(37 Bytes) Low Channel

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
2 368.51[1)]	H	41.10	31.96	-27.79	-	45.27	74.00	28.73
4 820.41[1)]	H	62.37	33.79	-54.04	-	42.12	74.00	31.88
16 827.77	H	56.01	41.26	-45.70	-	51.57	74.00	22.43
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

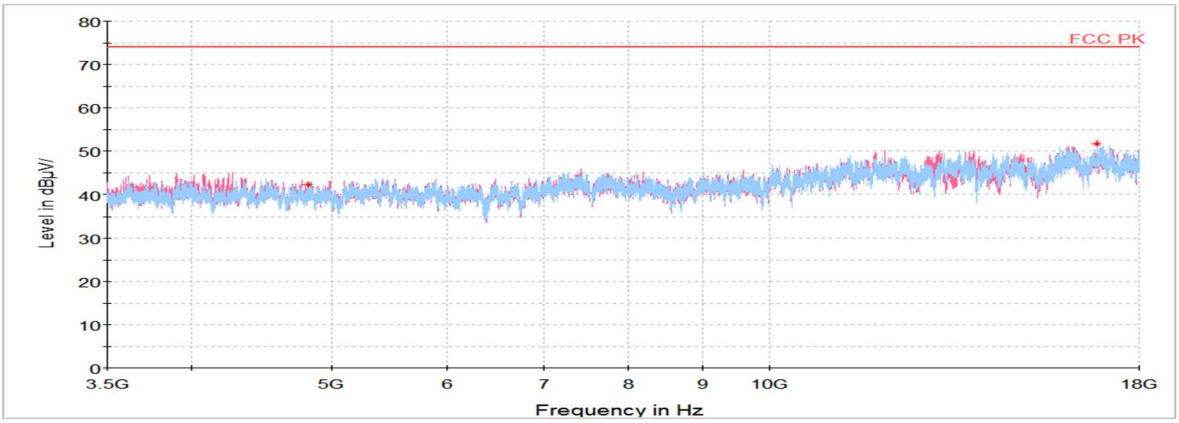
Horizontal/Vertical for Band-edge



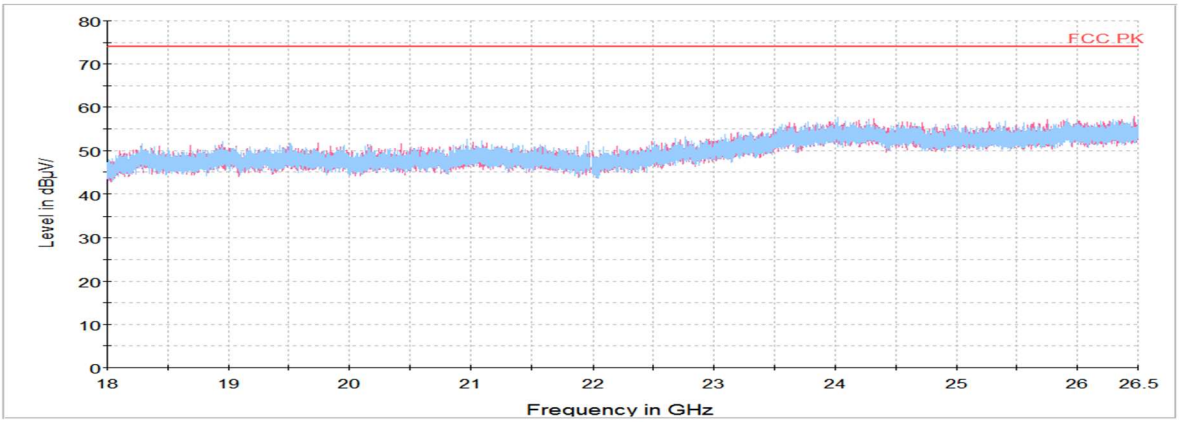
Horizontal/Vertical for 1 ㎓ ~ 3.5 ㎓



Horizontal/Vertical for 3.5 ㎓ ~ 18 ㎓



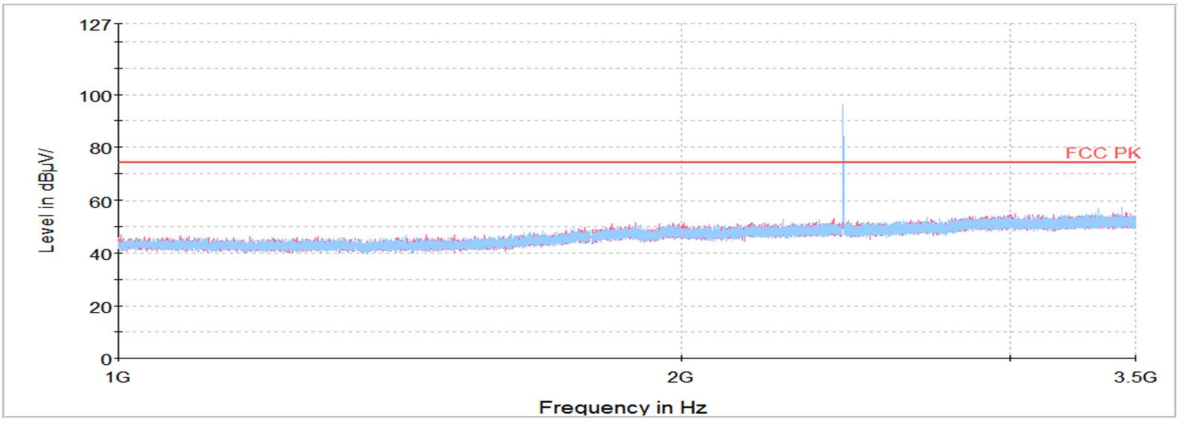
Horizontal/Vertical for 18 ㎓ ~ 26.5 ㎓



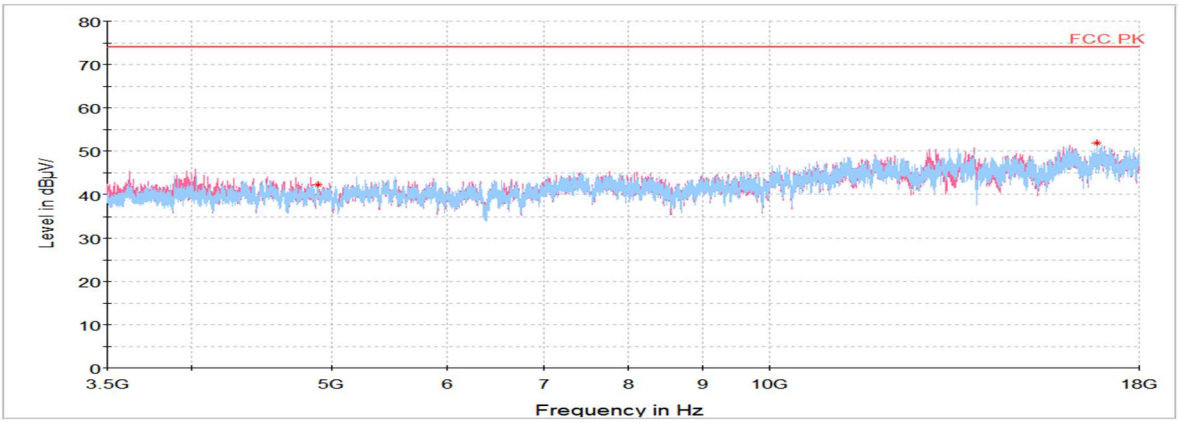
Middle Channel

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
[MHz]	[V/H]	[dB(μV)]	[dB]	[dB]	[dB]	[dB(μV/m)]	[dB(μV/m)]	[dB]
Peak data								
4 889.73[1)]	H	62.22	33.83	-53.80	-	42.25	74.00	31.75
16 835.02	H	56.20	41.27	-45.69	-	51.78	74.00	22.22
Average Data								
No spurious emissions were detected within 20 dB of the limit.								

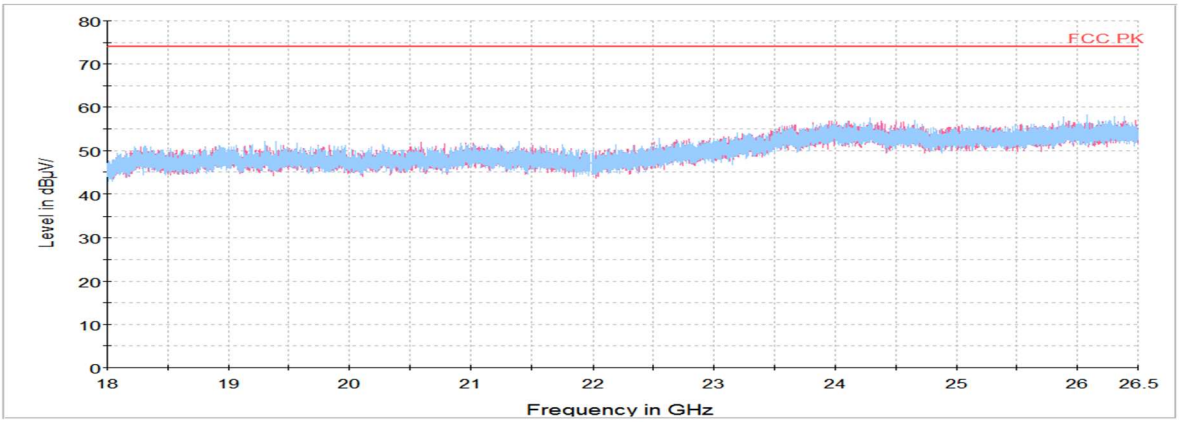
Horizontal/Vertical for 1 ㎓ ~ 3.5 ㎓



Horizontal/Vertical for 3.5 ㎓ ~ 18 ㎓



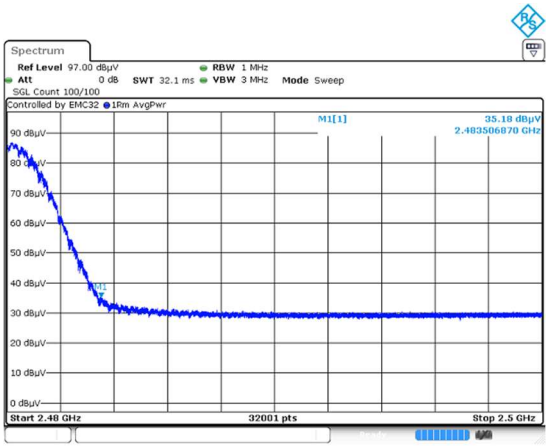
Horizontal/Vertical for 18 ㎓ ~ 26.5 ㎓



High Channel

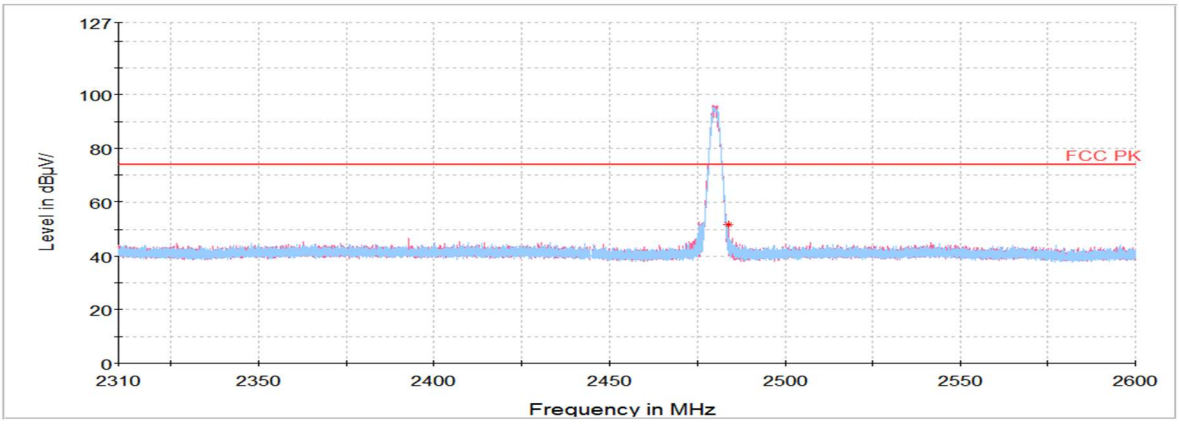
Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
[MHz]	[V/H]	[dB(μV)]	[dB]	[dB]	[dB]	[dB(μV/m)]	[dB(μV/m)]	[dB]
Peak data								
2 483.51[1)]	V	48.18	32.17	-28.54	-	51.81	74.00	22.19
4 981.27[1)]	V	64.04	33.89	-54.39	-	43.54	74.00	30.46
16 830.03	H	56.91	41.26	-45.70	-	52.47	74.00	21.53
Average Data								
2 483.51[1)]	V	35.18	32.17	-28.54	4.85	43.66	54.00	10.34

Average data

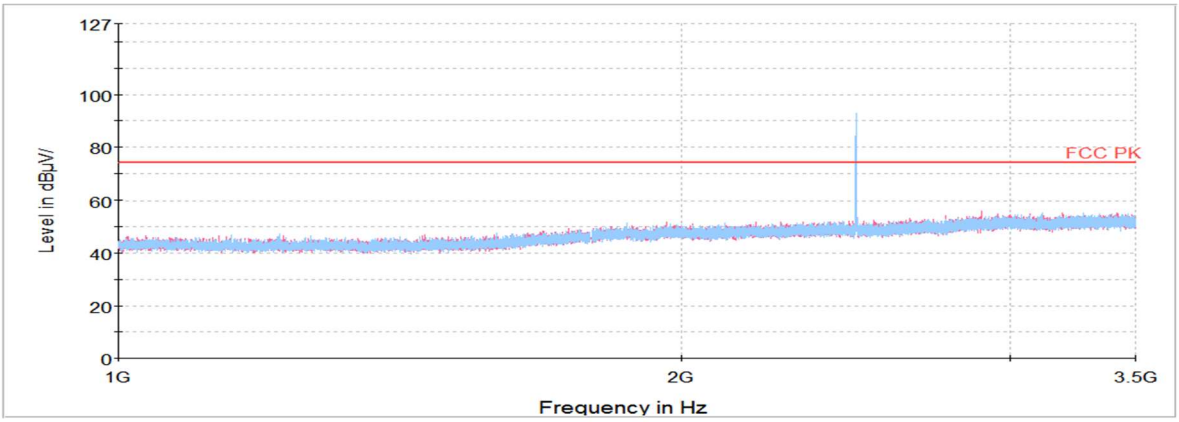


Blank

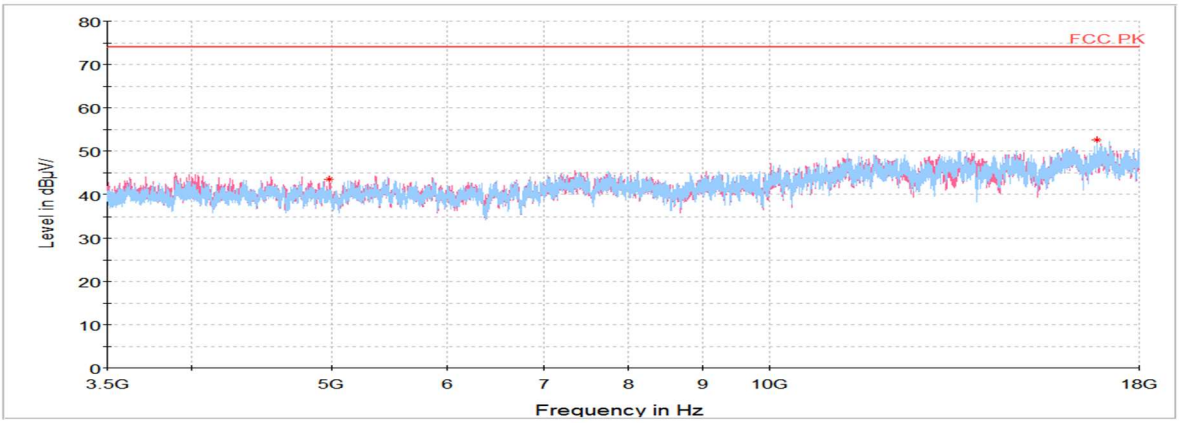
Horizontal/Vertical for Band-edge



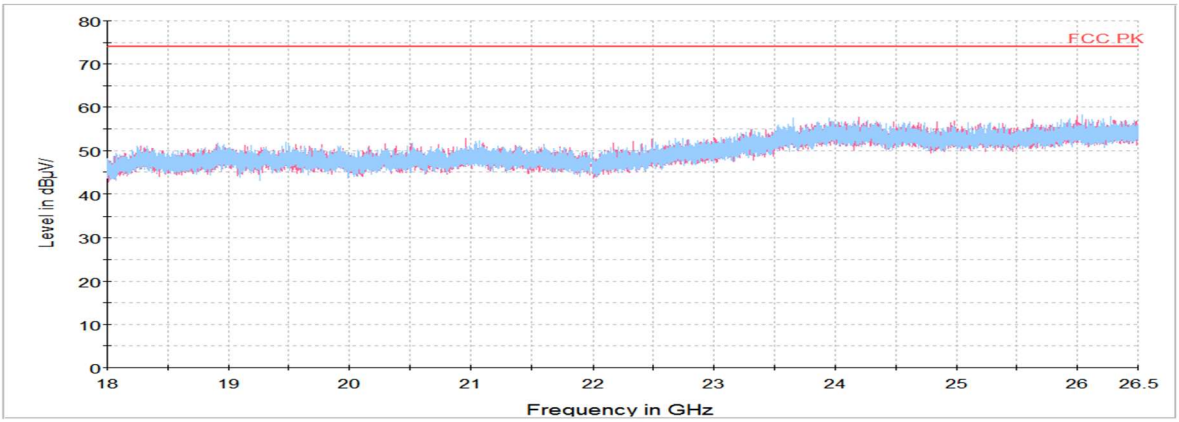
Horizontal/Vertical for 1 ㎓ ~ 3.5 ㎓



Horizontal/Vertical for 3.5 ㎓ ~ 18 ㎓

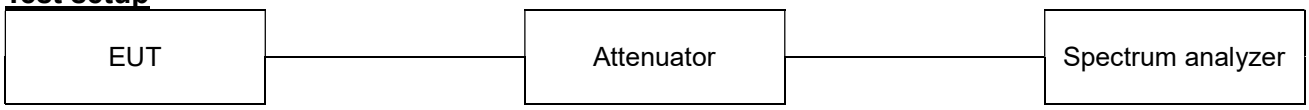


Horizontal/Vertical for 18 ㎓ ~ 26.5 ㎓



7.5. Conducted Spurious Emission

Test setup



Limit

According to §15.247(d), In any 100 ㎑ bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operation, the radio frequency power that is produced by the intentional radiator shall be at least 20 ㏈ below that in the 100 ㎑ bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation specified in §15.209(a) is not required. In addition, radiated emission limits specified in §15.209(a) (see §15.205(c)).
Limit : 20 ㏈c

Test procedure

ANSI C63.10-2013 - Section 11.11.3
KDB 558074 D01 v05 - Section 8.5
KDB 662911 D01 v02r01 – section (E)(3)(b)

Test settings

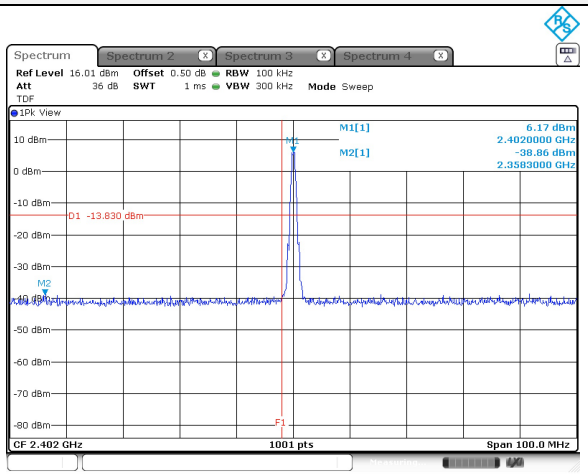
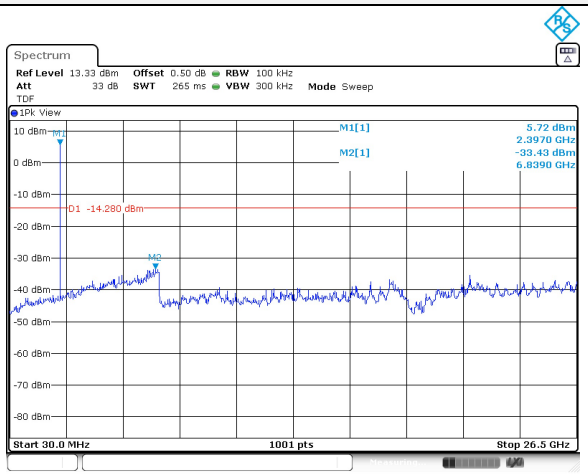
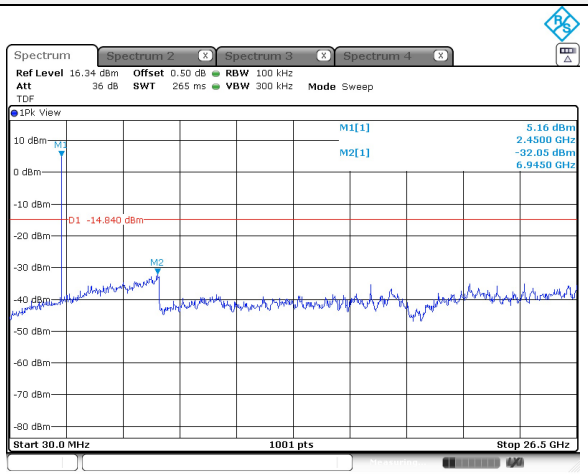
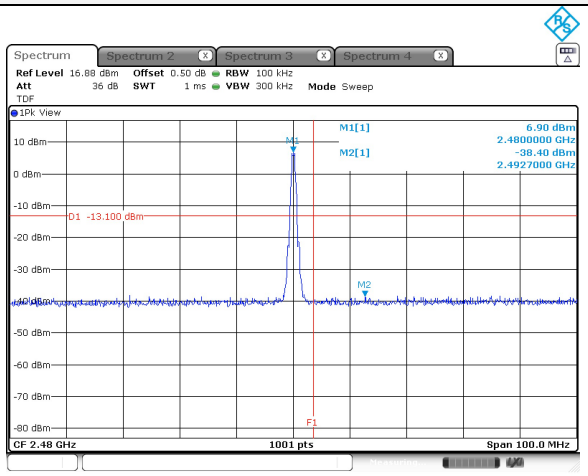
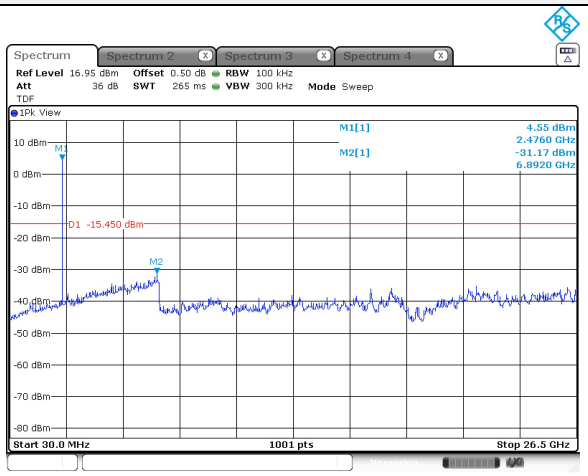
Establish an emission level by using the following procedure:

1) Set the center frequency and span to encompass frequency range to be measured.
2) Set the RBW = 100 ㎑
3) Set the VBW ≥ [3 x RBW]
4) Detector = peak
5) Sweep time = auto couple
6) Trace mode = max hold
7) Allow trace to fully stabilize.
8) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

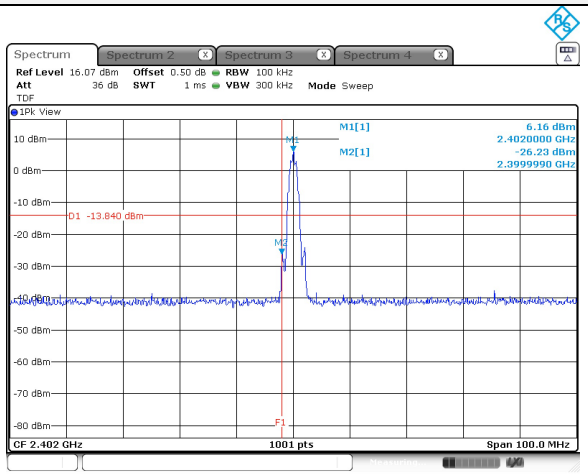
Test results

BLE_1M Bit/s(37 Bytes)

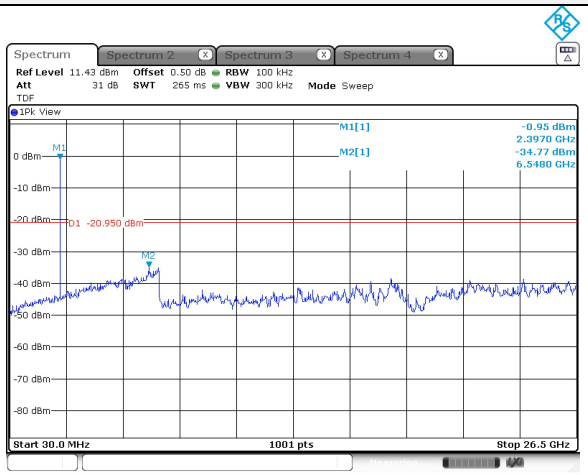
Conducted band-edge / Low ch.	Conducted spurious / Low ch.
	
Conducted band-edge / Mid ch.	**Conducted spurious / Mid ch.**
Blank	
Conducted band-edge / High ch.	**Conducted spurious / High ch.**
	

BLE_2M Bit/s(37 Bytes)

Conducted band-edge / Low ch.



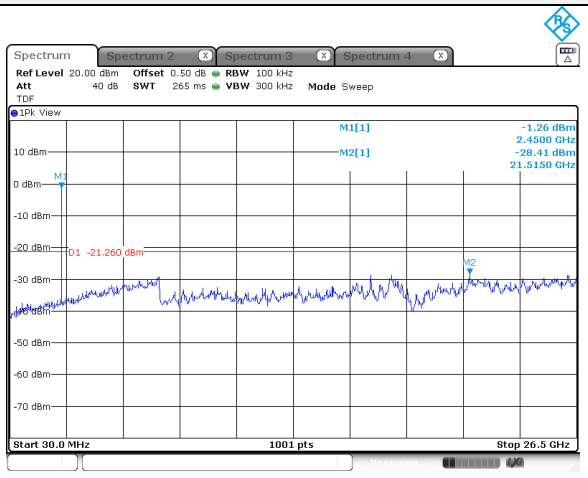
Conducted spurious / Low ch.



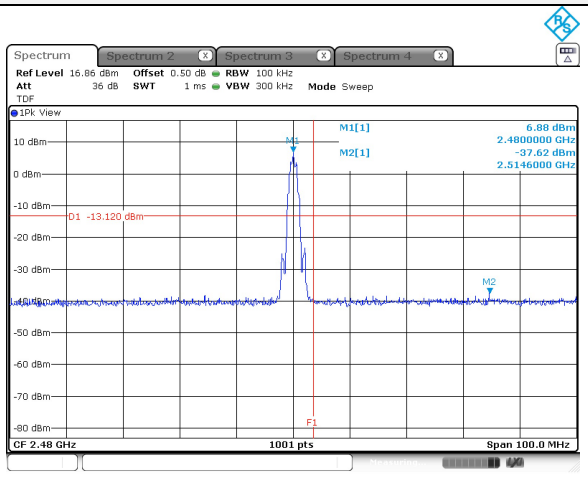
Conducted band-edge / Mid ch.

Blank

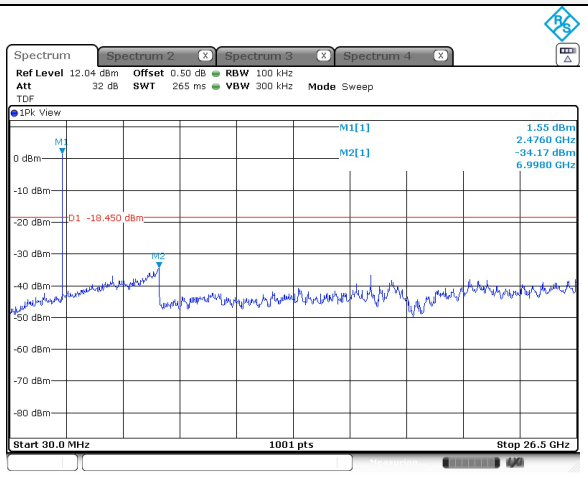
Conducted spurious / Mid ch.



Conducted band-edge / High ch.



Conducted spurious / High ch.



8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV30	100808	21.07.29
Attenuator	API Inmet	40AH2W-10	10	21.07.29
Attenuator	R&S	21-10	0008	21.01.21
Signal Generator	R&S	SMB100A	176206	21.01.21
Vector Signal Generator	R&S	SMBV100A	257566	21.07.13
Power Sensor	R&S	NRP-Z81	1137.9009.02-106225-JM	21.05.25
EMI TEST RECEIVER	R&S	ESCI7	100732	21.01.21
Bi-Log Antenna	SCHWARZBECK	VULB9168	583	22.04.23
Loop Antenna	R&S	HFH2-Z2	100355	22.08.21
Attenuator	AGILENT	8491B-006	MY37270292	22.09.02
Amplifier	SONOMA INSTRUMENT	310N	284608	21.08.20
COAXIAL FIXED ATTENUATOR	Agilent	8491B-003	2708A18758	21.04.23
Spectrum Analyzer	R&S	FSV40	100989	21.01.03
Horn antenna	ETS.lindgren	3117	155787	21.10.28
Horn antenna	ETS.lindgren	3116	00086632	21.02.17
Attenuator	API Inmet	40AH2W-10	12	21.05.12
Broadband PreAmplifier	SCHWARZBECK	BBV9718	216	21.07.28
AMPLIFIER	L-3 Narda-MITEQ	AMF-7D-01001800-22-10P	2031196	21.02.12
AMPLIFIER	L-3 Narda-MITEQ	JS44-18004000-33-8P	2000996	21.01.22
High pass Filter	WT	WT-A1698-HS	WT160411001	21.05.11
Cable Assembly	RadiAll	2301761768000PJ	1724.659	-
Cable Assembly	gigalane	RG-400	-	-
Cable Assembly	HUER+SUHNER	SUCOFLEX 104	MY4342/4	-
Antenna Mast	Innco Systems	MA4640-XP-ET	-	-
Turn Table	Innco Systems	DT2000	79	-
Antenna Mast	Innco Systems	MA4000-EP	303	-

End of test report