

Annex 1: Measurement diagrams 21-1-0042603T03a-A1-C01

Number of pages:	65	Date of Report:	2022-Oct-22
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	WITTE-Velbert GmbH & Co.KG
Product: Model:	BTLE enabled secure vehicle access box flinkey CAN		
FCC ID:	V2TFC80	IC:	7575A-FC80
Testing has been carried out in accordance with:	FCC Regulations Title 47 CFR, Chapter I, Subchapter A, Part 15 Subpart C Intentional Radiators § 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz ISED-Regulations Radio Standards Specification RSS-Gen, Issue 5 General Requirements for Compliance of Radio Apparatus RSS-247, Issue 2 Digital Transmission Systems (DTS) Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



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1 Measurement diagrams

1.1 Radiated measurements

2.01a_BT_LE_low_standing

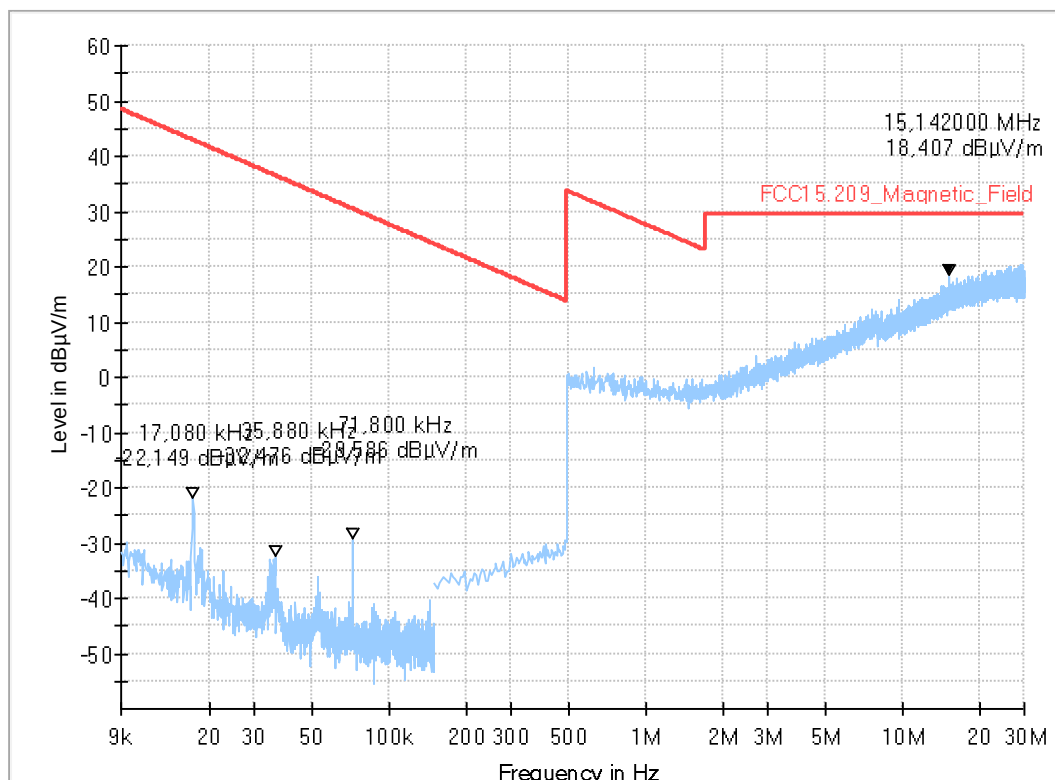
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5

Operator:	Lor/SOz
Operating Mode:	BLE CH00, TXPower 0 dBm, 1Mbps
Comment:	Channel low
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC
	Full Spectrum



2.02a_BT_LE_mid_standing

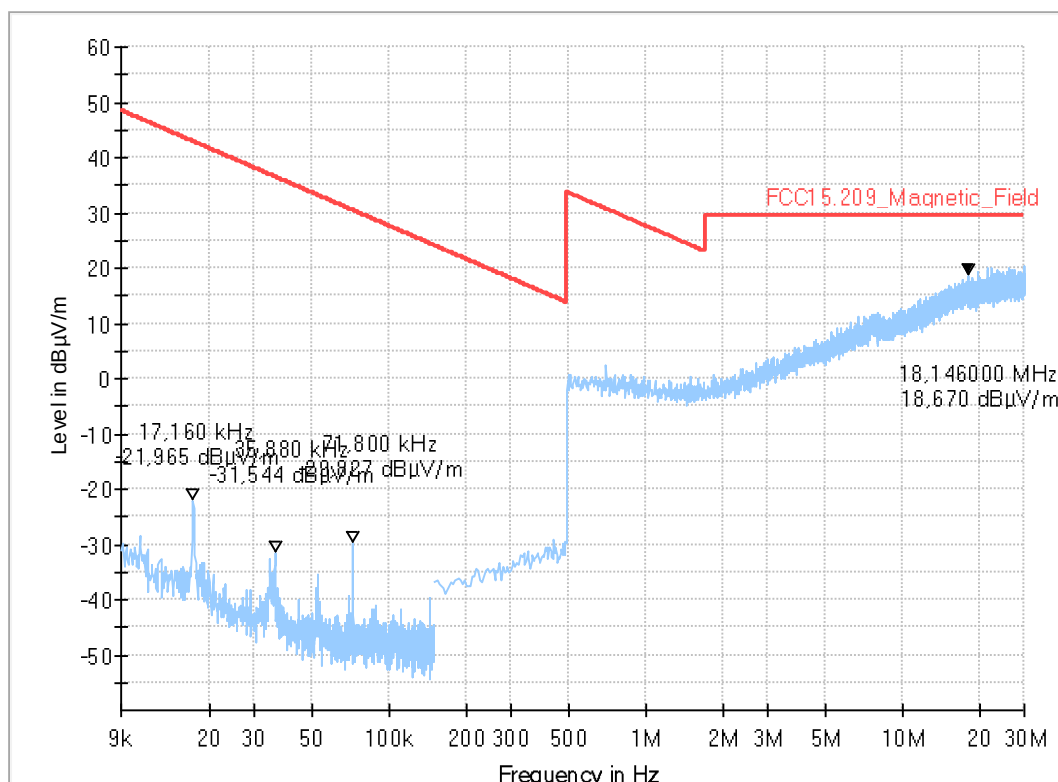
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SOz
Operating Mode:	BLE CH19, TXPower 0 dBm, 2Mbps
Comment 1:	Channel mid
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Pass

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



2.03a_BT_LE_high_standing

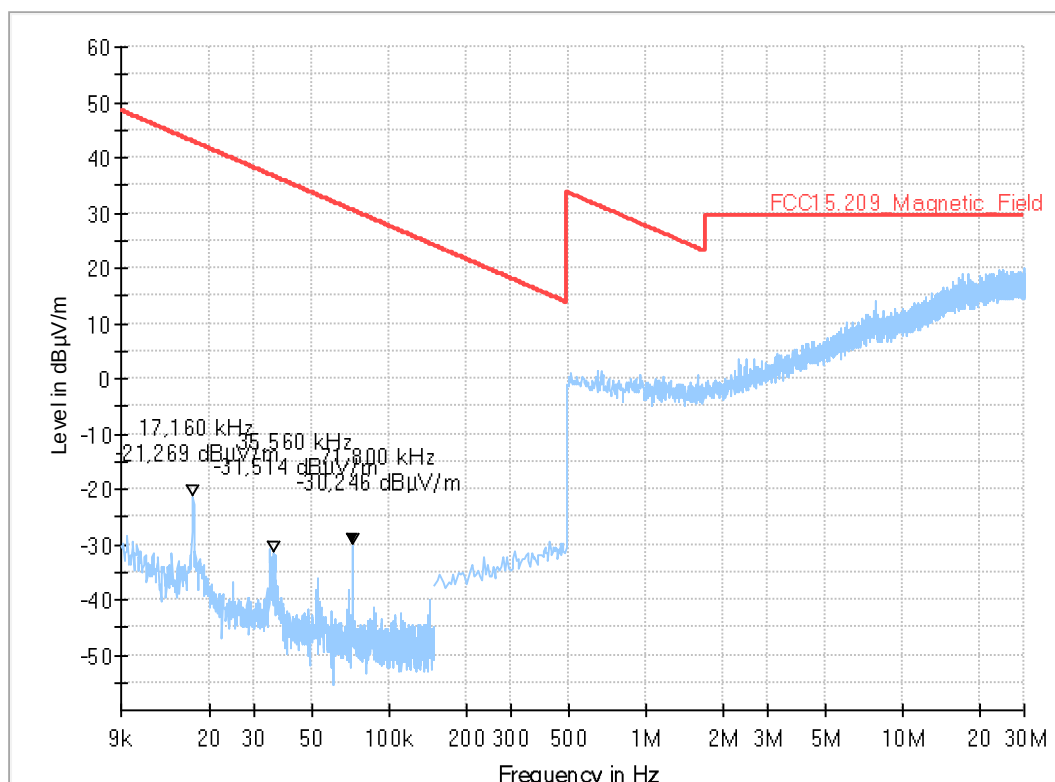
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	SOz
Operating Mode:	BLE CH39, TXPower 0 dBm, 1Mbps
Comment:	Channel high
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



3.01a_BT_LE_low_standing

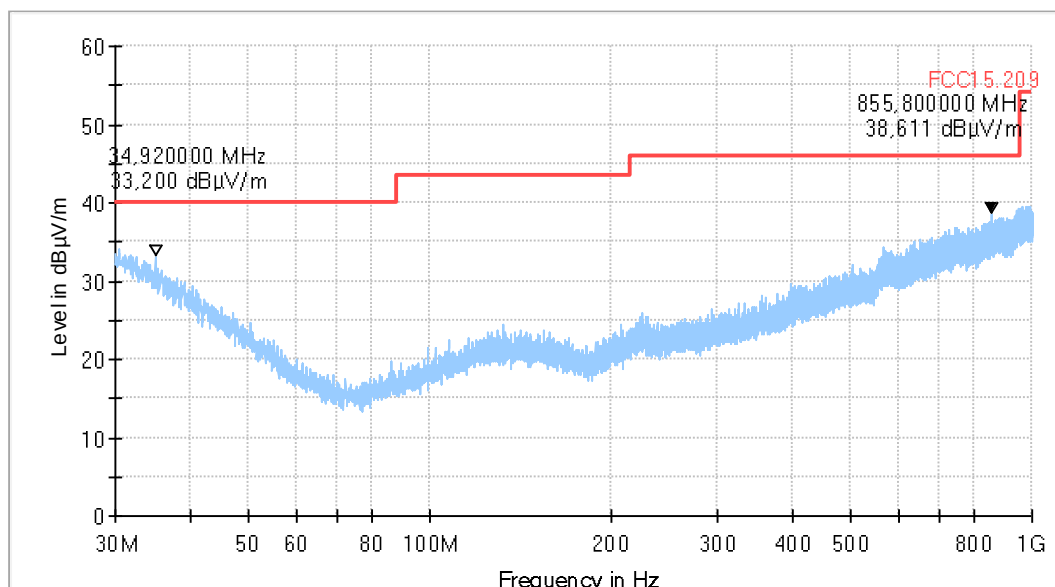
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	BLE CH0, TXPower 0 dBm, 1Mbps
Power supply:	12 V DC
Comment:	Channel no. low
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



3.02a_BT_LE_mid_standing

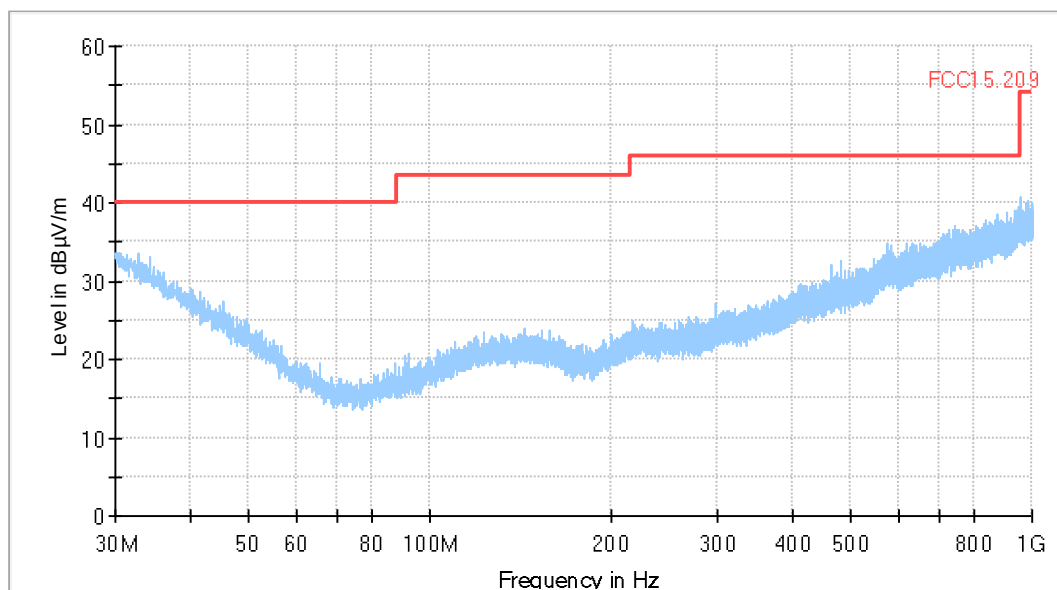
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	BLE CH19, TXPower 0 dBm, 2Mbps
Power supply:	12 V DC
Comment:	Channel no. middle
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



3.03a_BT_LE_high_standing

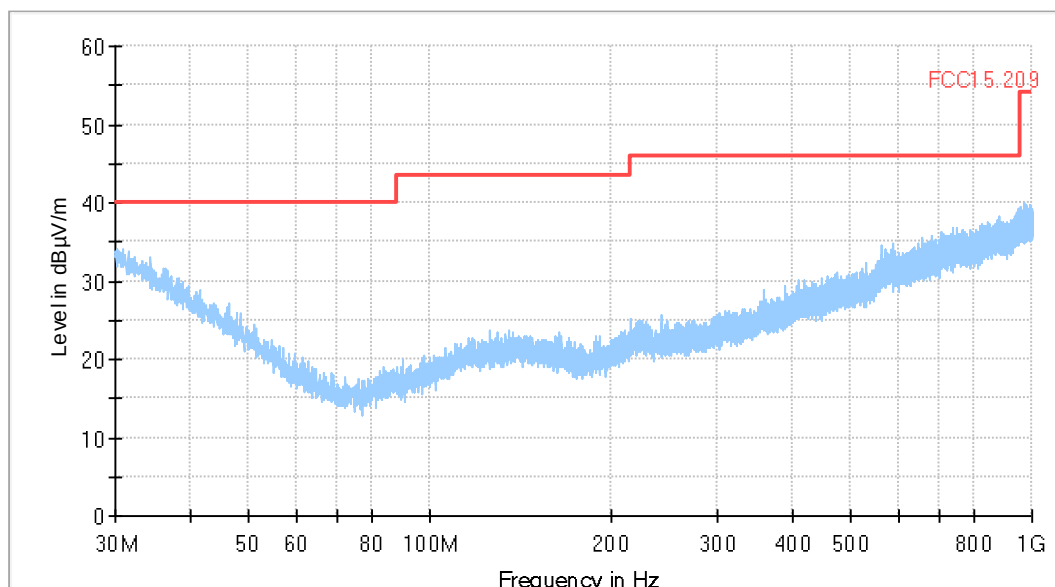
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	BLE CH39, TXPower 0 dBm, 1Mbps
Power supply:	12 V DC
Comment:	Channel no. high
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



4.11a_BT_LE_low

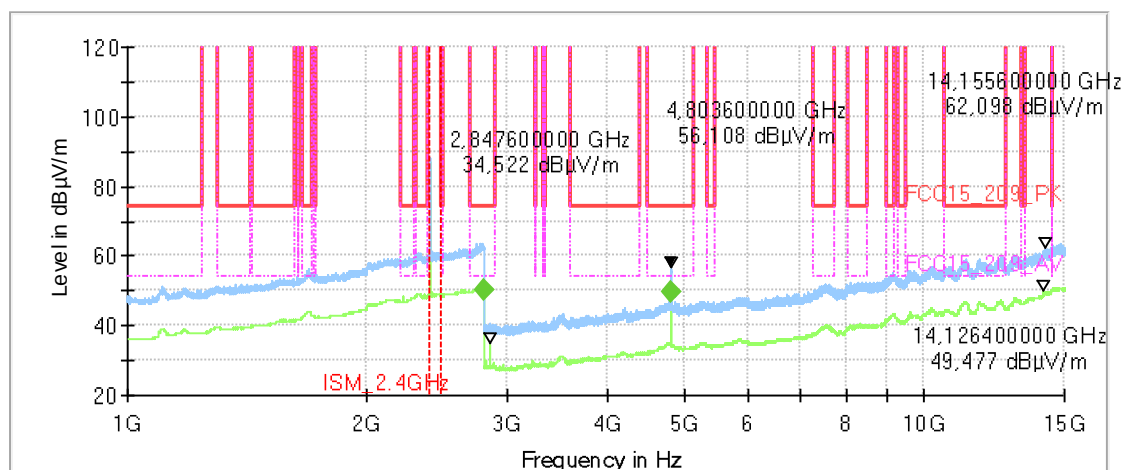
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch00 2402MHz, 0dBm
Set-up no.	1
Operator:	npe
Comment:	BLE ch00 2402MHz
Environmental Conditions:	Humidity: 45 % rH; Temperature: 21 °C
Verdict:	Passed

EUT Information

PMT Sample Nr:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
2796.800000	---	50.13	54.00	3.87	100.0	1000.000	155.0	H	262.0	0.0	40
4804.400000	---	49.73	54.00	4.27	100.0	1000.000	155.0	H	186.0	90.0	7

4.12a_BT_LE_mid

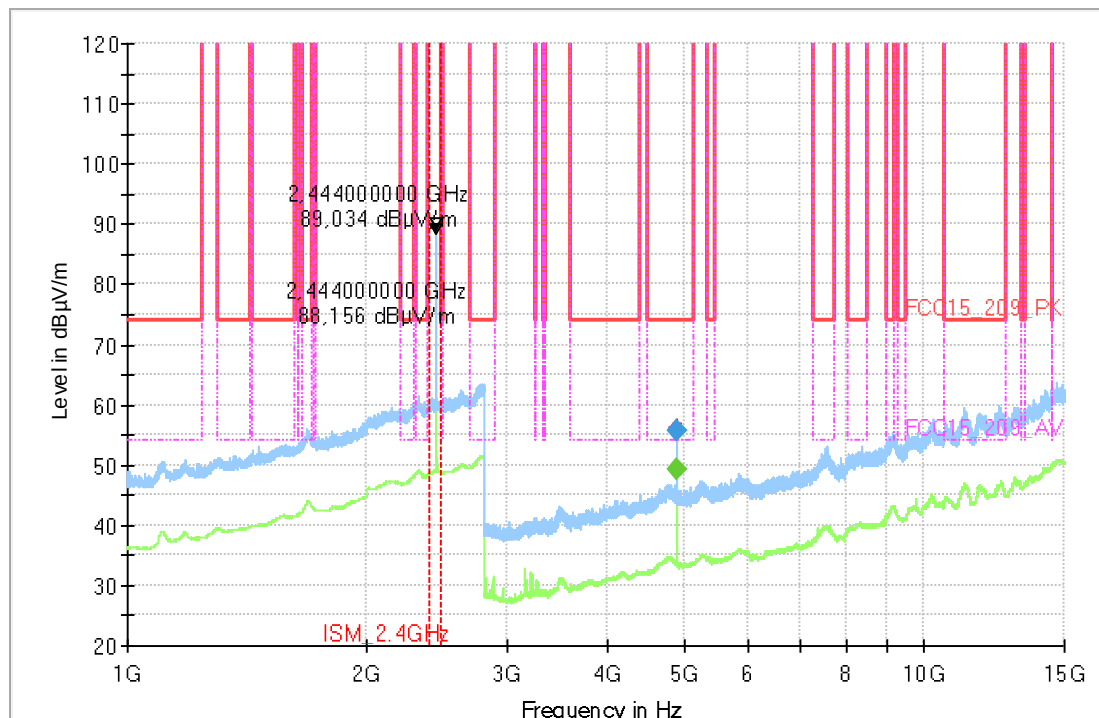
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch19 2444MHz, 0dBm
Set-up no.	1
Operator:	SOz
Comment:	BLE ch19 2444MHz
Environmental Conditions:	Humidity: 40 % rH; Temperature: 21 °C
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
4887.600000	---	49.31	54.00	4.69	100.0	1000.000	155.0	H	267.0	90.0	7
4888.400000	55.55	---	74.00	18.45	100.0	1000.000	155.0	H	268.0	90.0	7

4.13a_BT_LE_high

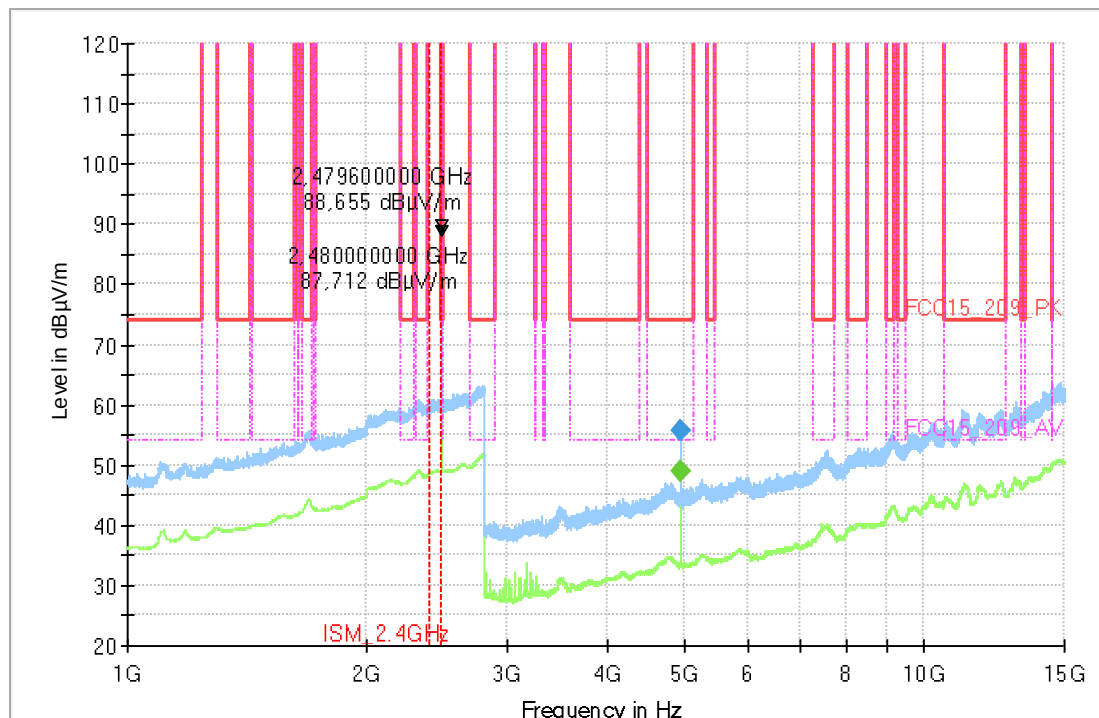
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch39 2480MHz, 0dBm
Set-up no.	1
Operator:	SOz
Comment:	BLE ch39 2480MHz
Environmental Conditions:	Humidity: 40 % rH; Temperature: 21 °C
Verdict:	Passed

EUT Information

PMT number:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum

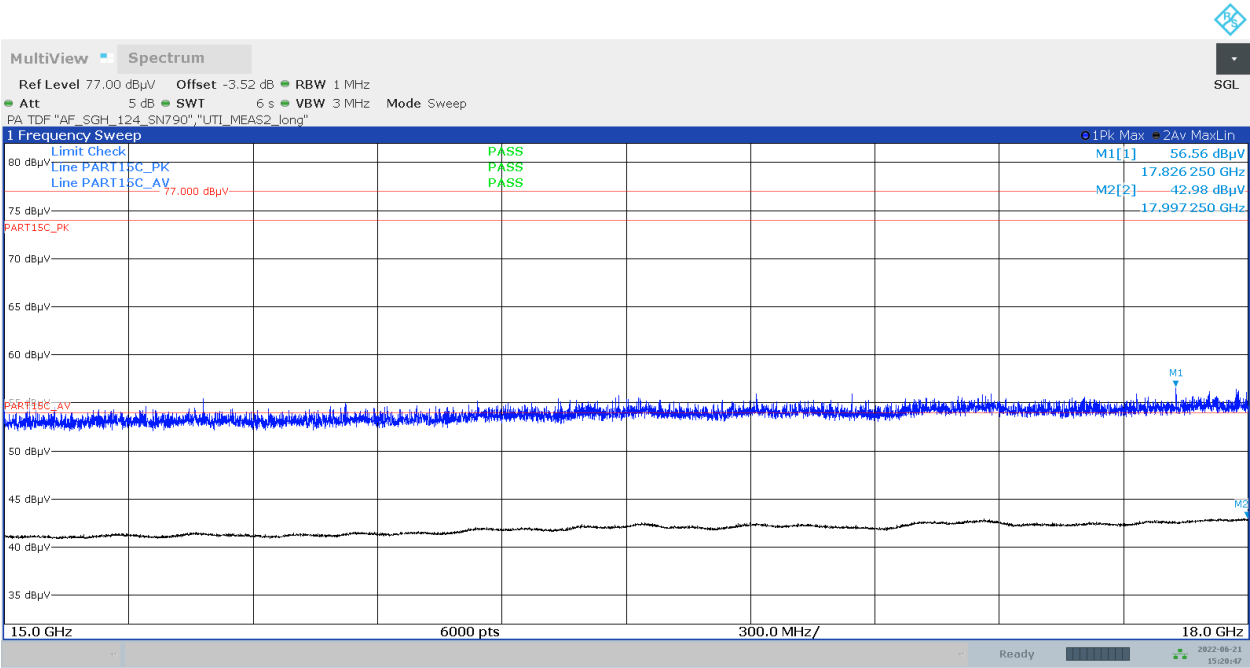


Final Result

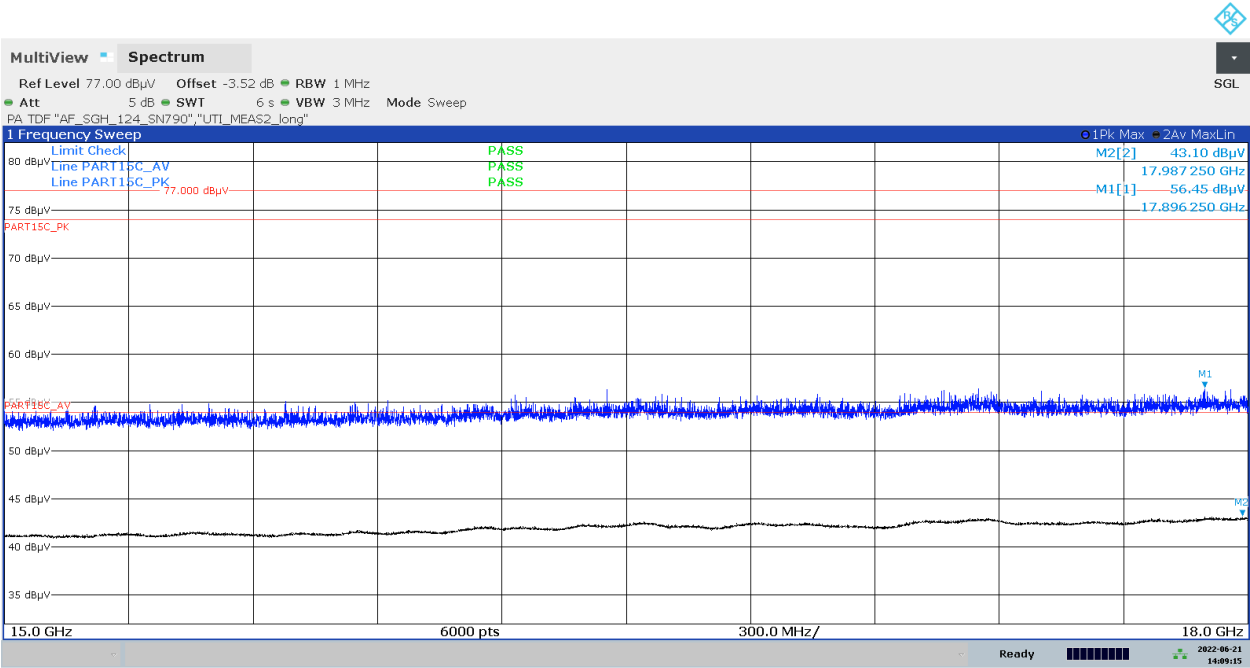
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
4959.600000	---	48.99	54.00	5.01	100.0	1000.000	155.0	H	267.0	90.0	6
4960.400000	55.72	---	74.00	18.28	100.0	1000.000	155.0	H	266.0	90.0	6



4.14a_BLE_LE_Ch00__AntH

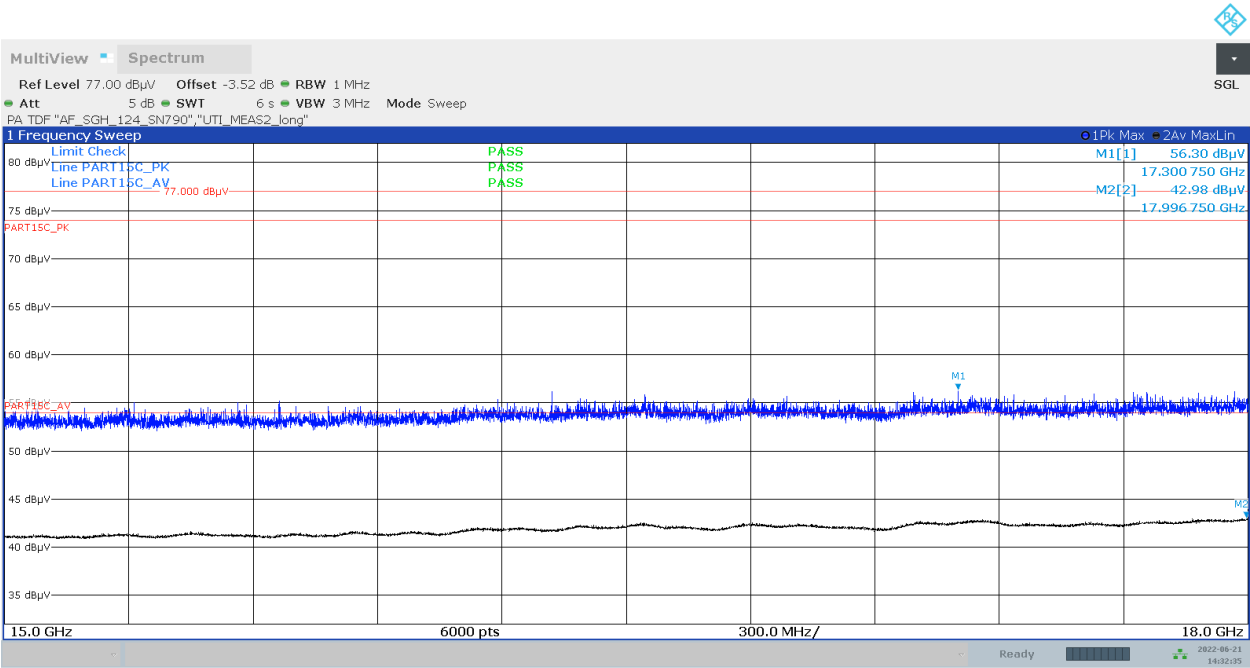


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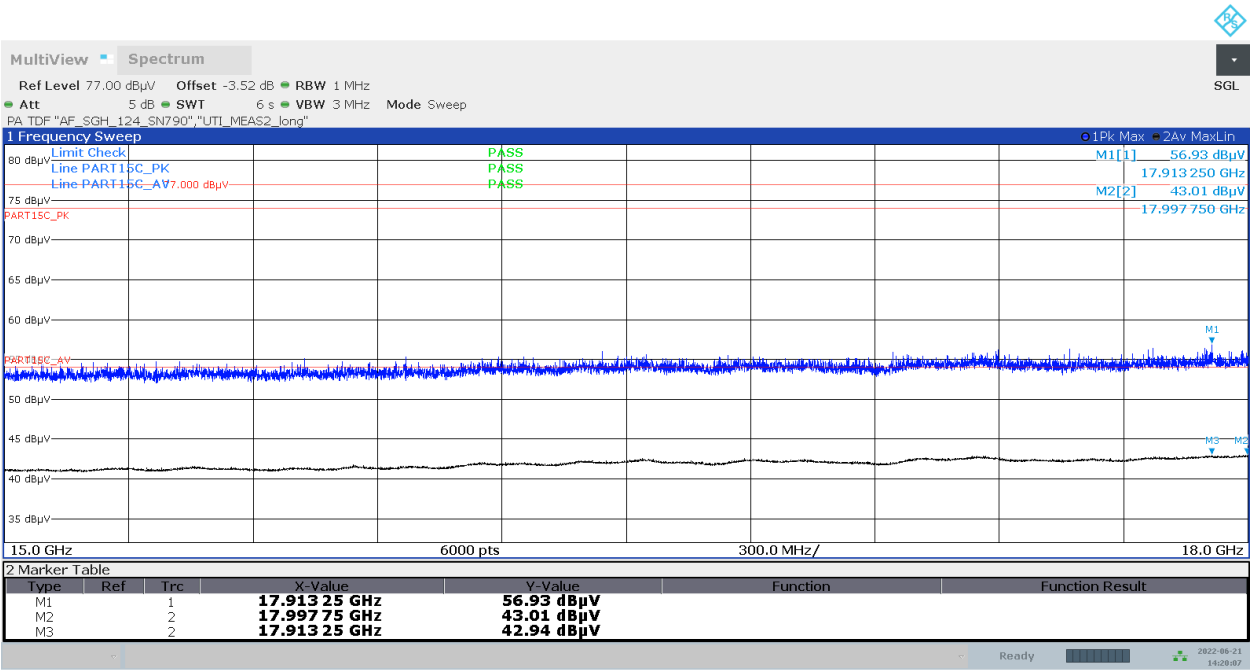




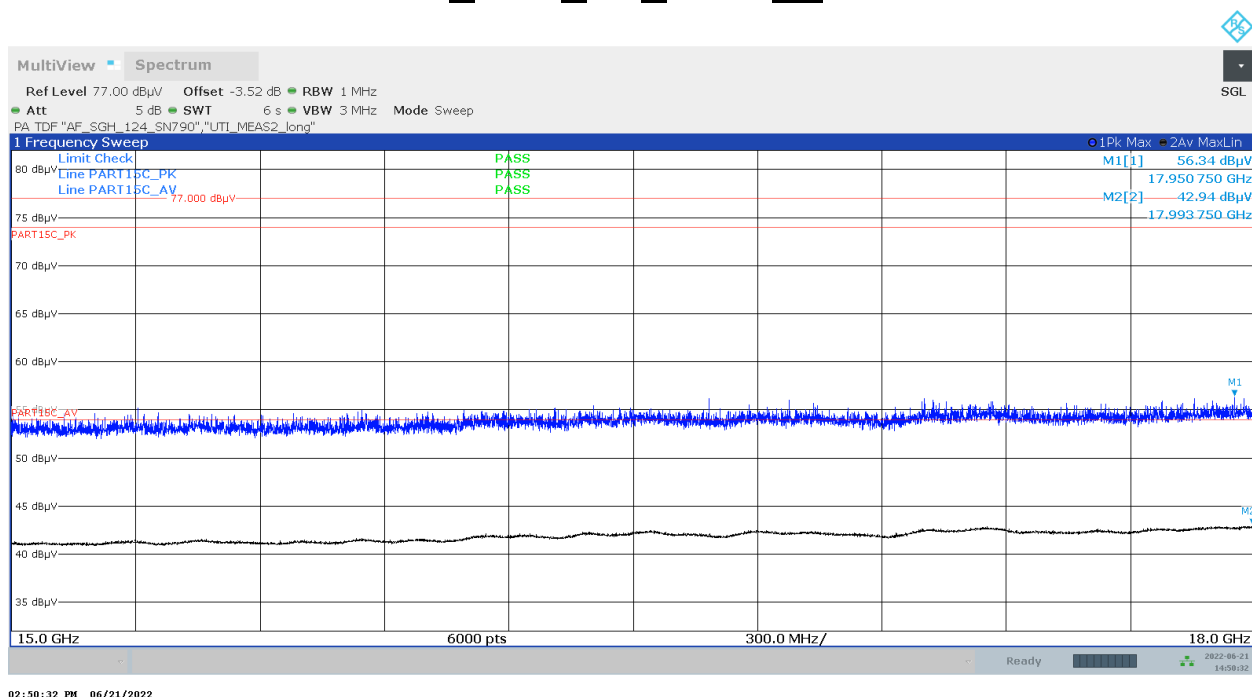
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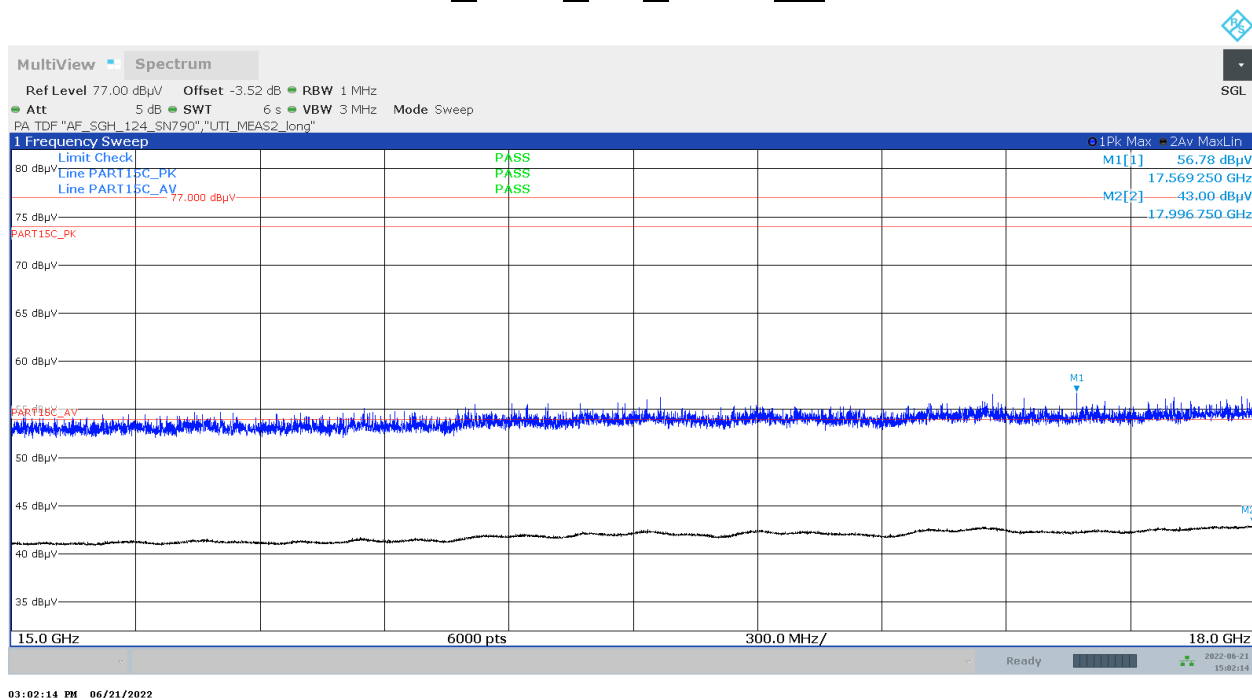
4.15b_BLE_LE_Ch19__AntV



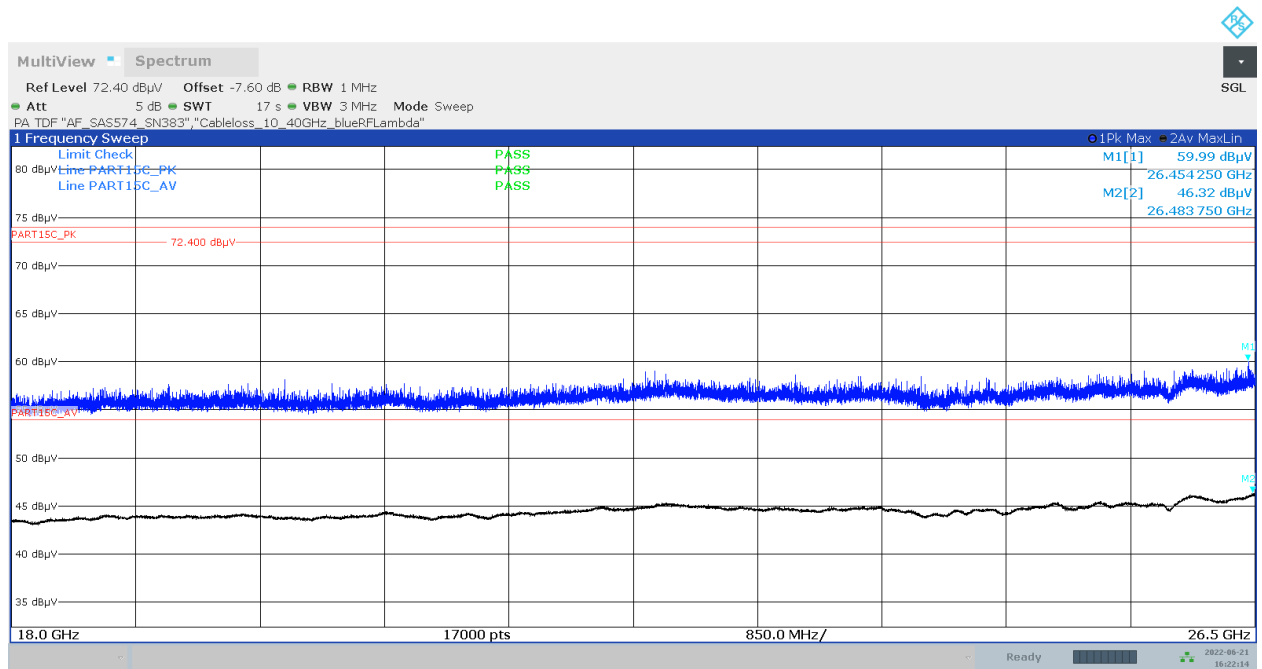
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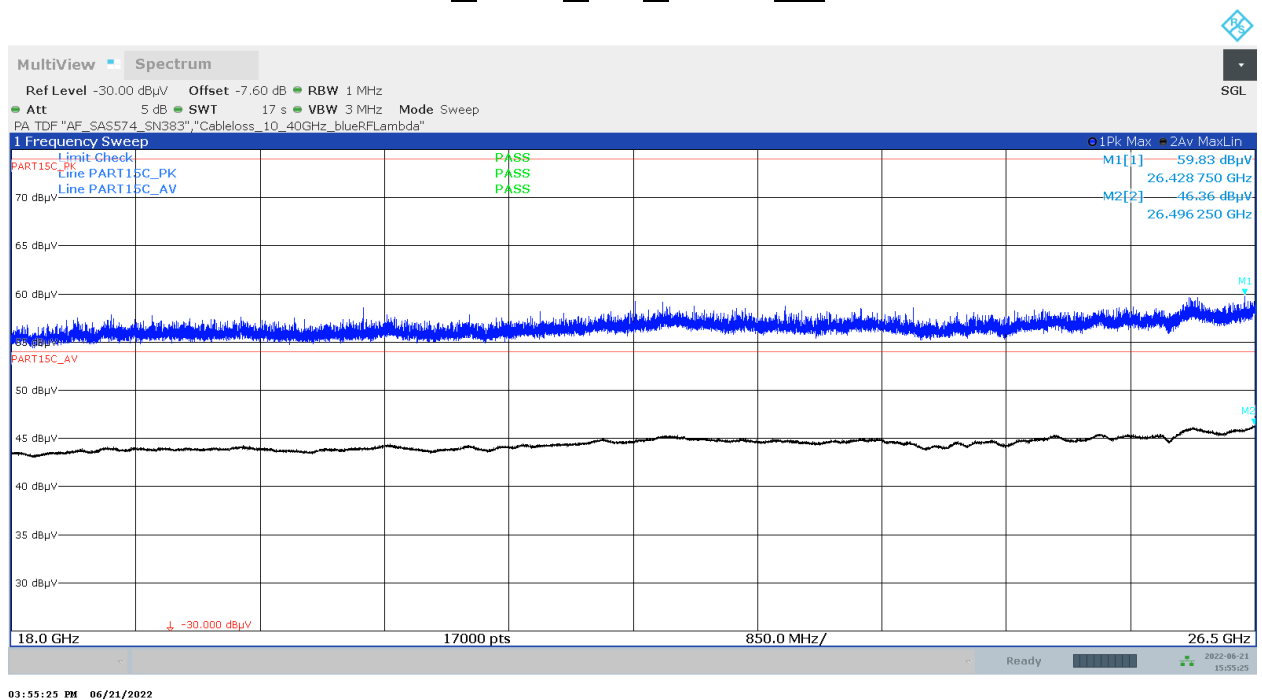
4.16b_BLE_LE_Ch39__AntV



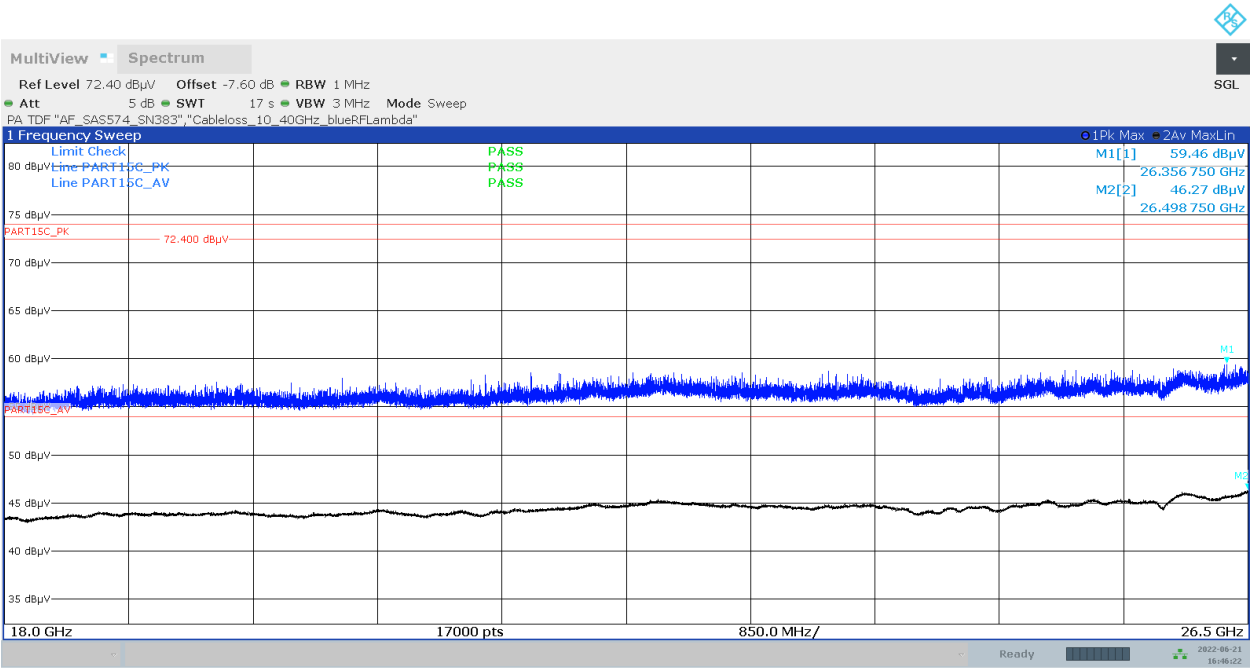
4.17a_BLE_LE_Ch00__AntH



4.17b_BLE_LE_Ch00__AntV

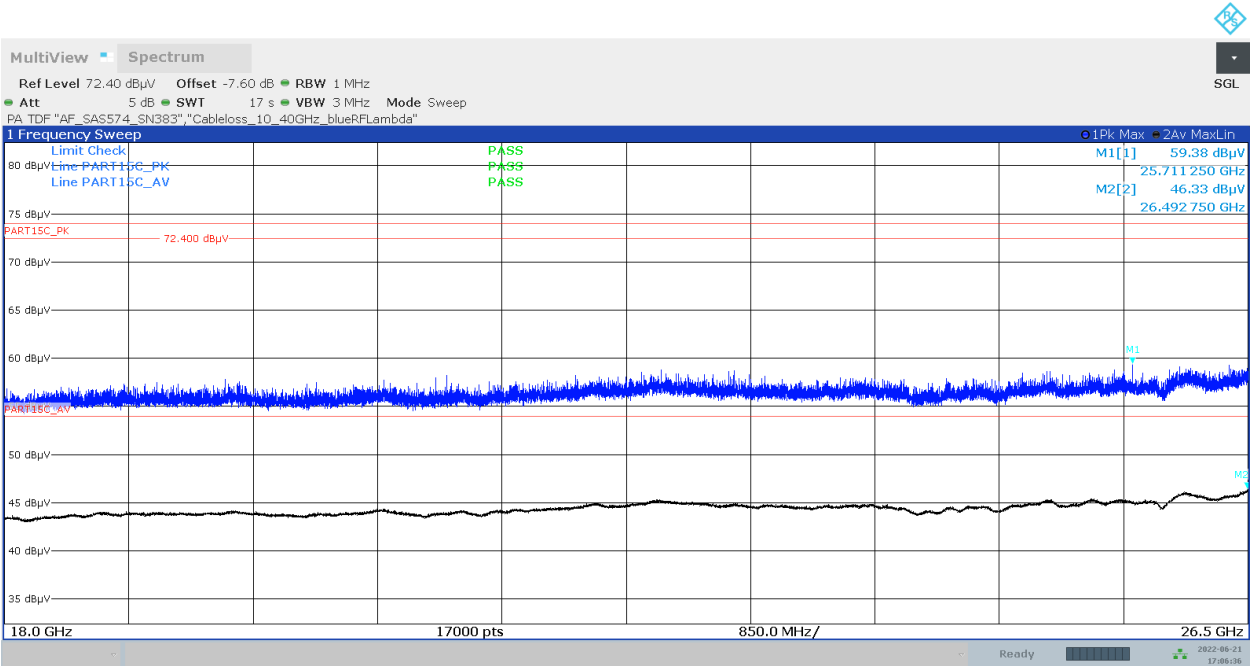


4.18a_BLE_LE_Ch19__AntH



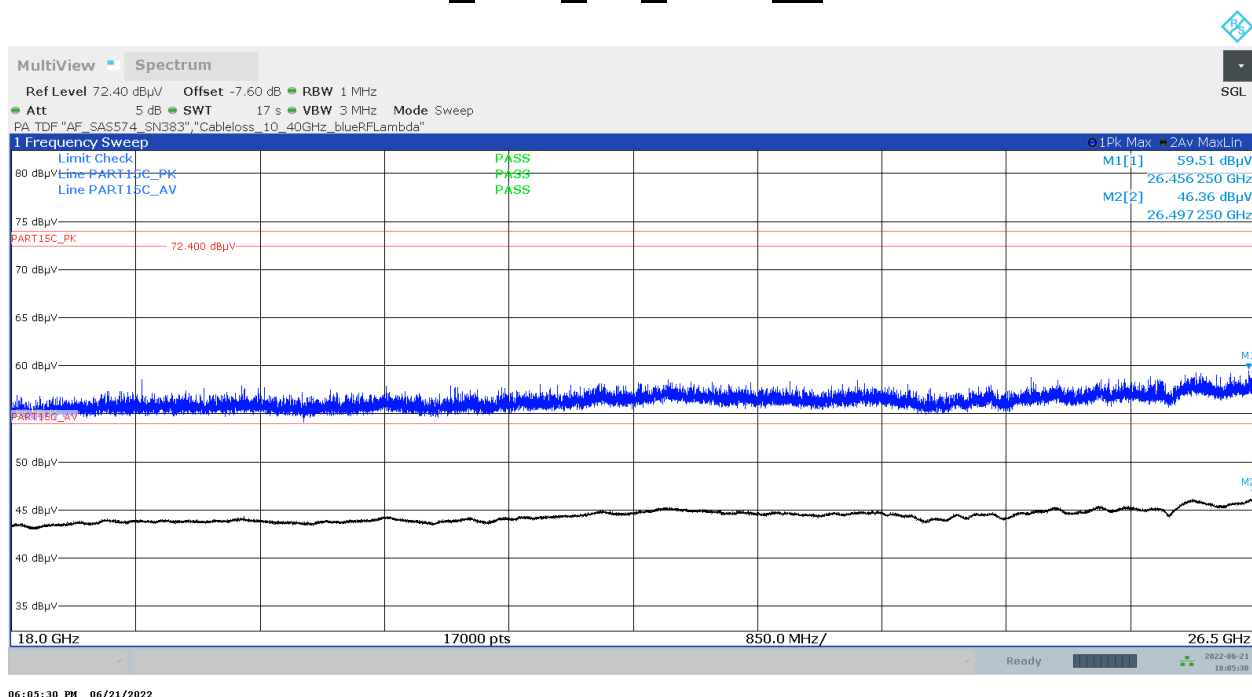
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4.18b_BLE_LE_Ch19__AntV

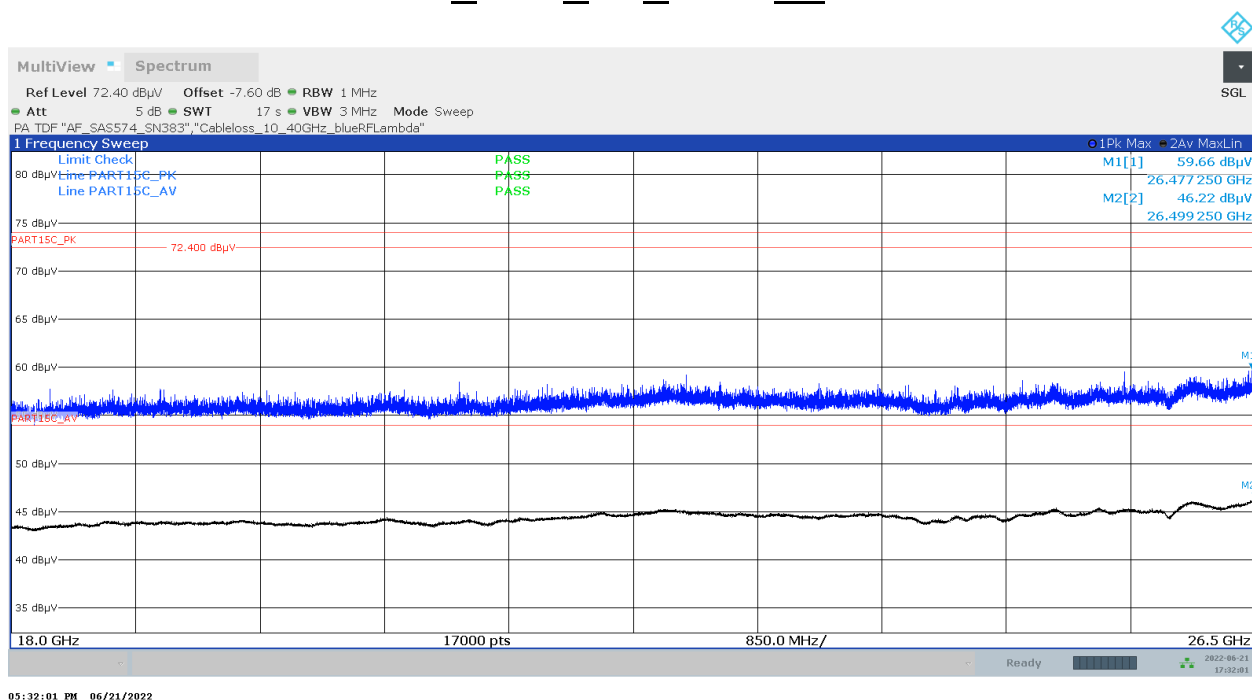


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4.19a_BLE_LE_Ch39__AntH



4.19b_BLE_LE_Ch39__AntV



9.11_BE_BT_LE_low

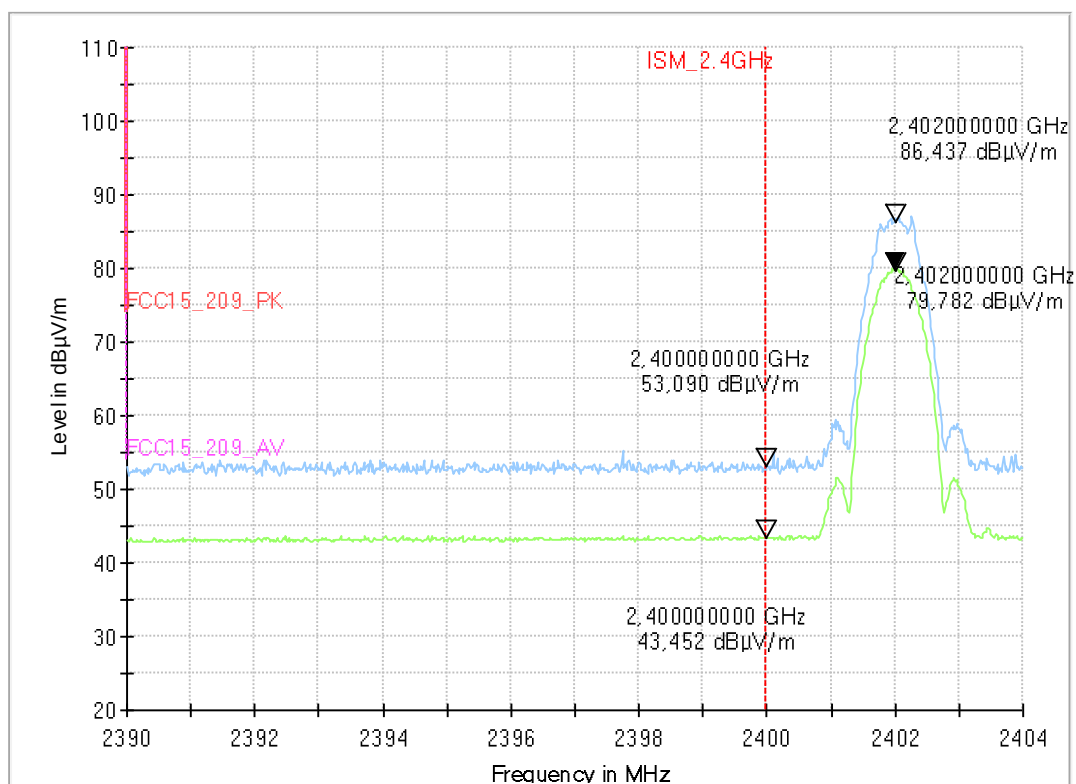
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch00 2402MHz, 0dBm, 1Mbps
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT Sample Nr:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



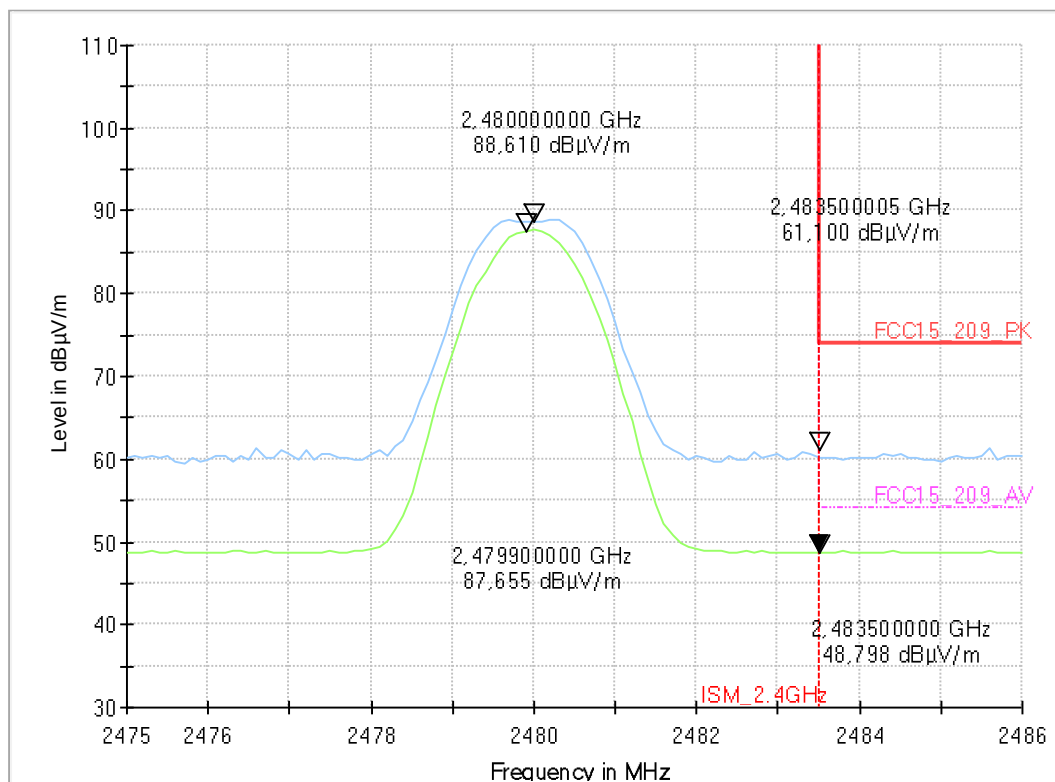
9.12_BE_BT_LE_high

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch39 2480MHz, 0dBm, 1Mbps
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT Sample Nr:	21-1-00426S28_C01
Power Supply:	12 V DC
	Full Spectrum



9.13_BE_BT_LE_low

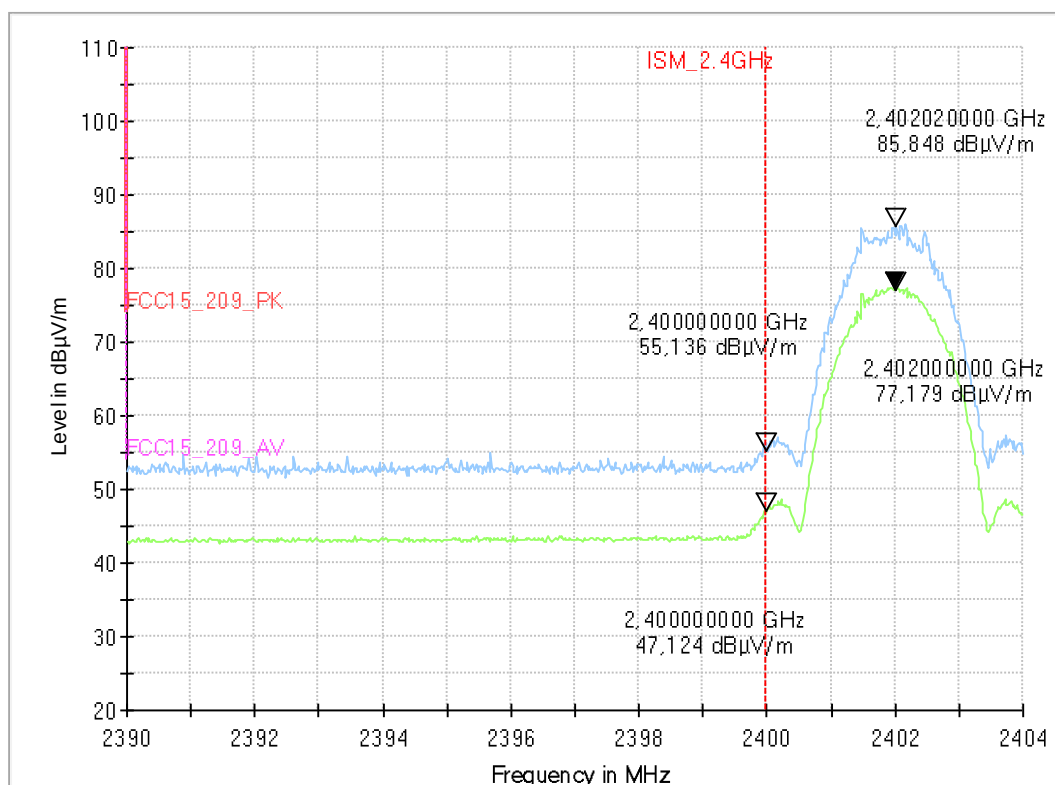
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch00 2402MHz, 0dBm, 2Mbps
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT Sample Nr:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



9.14_BE_BT_LE_high

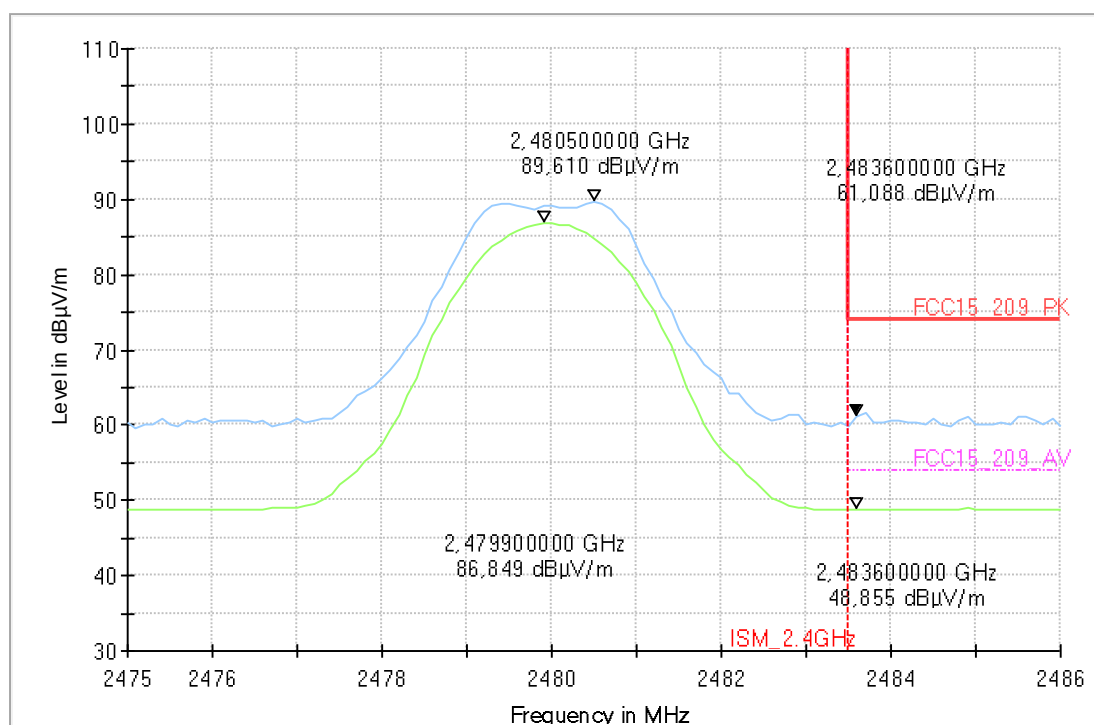
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE TX ch39 2480MHz, 0dBm, 2Mbps
Operator:	npe
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT Sample Nr:	21-1-00426S28_C01
Power Supply:	12 V DC

Full Spectrum



1.2 Conducted measurements

Peak output power (Sweep) , 1Mbps

Mode	DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	0.4	30.0	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	-0.2	30.0	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	-0.4	30.0	PASS

Peak output power (Sweep) 2 Mbps

Mode	DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	0.4	30.0	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	-0.1	30.0	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	-0.4	30.0	PASS

Minimum Emission Bandwidth 6 dB, 1Mbps

Mode	DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
BT-LE [GFSK]; 2402MHz	2402.0000	0.732674	0.500000	---	2401.6237	2402.3564
BT-LE [GFSK]; 2444MHz	2444.0000	0.732674	0.500000	---	2443.6237	2444.3564
BT-LE [GFSK]; 2480MHz	2480.0000	0.772278	0.500000	---	2479.6039	2480.3762

Minimum Emission Bandwidth 6 dB, 2Mbps

Mode	DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
BT-LE [GFSK]; 2402MHz	2402.0000	1.366336	0.500000	---	2401.3069	2402.6732
BT-LE [GFSK]; 2444MHz	2444.0000	1.504950	0.500000	---	2443.2475	2444.7524
BT-LE [GFSK]; 2480MHz	2480.0000	1.485148	0.500000	---	2479.2475	2480.7326

Duty Cycle, 1Mbps and 2Mbps

Mode	DUT Frequency	DutyCycle (%)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	100.000	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	100.000	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	100.000	PASS

Power Spectral Density, 1Mbps

Mode	DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	2401.737500	-5.726	8.0	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	2444.052500	-8.060	8.0	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	2480.047500	-8.637	8.0	PASS

Power Spectral Density, 2Mbps

Mode	DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	2402.252500	-11.642	8.0	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	2444.182500	-11.004	8.0	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	2480.082500	-13.340	8.0	PASS

Occupied Channel Bandwidth 99%, 1Mbps

Mode	DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
BT-LE [GFSK]; 2402MHz	2402.000000	1.05000	---	---	2401.4575	2402.5075
BT-LE [GFSK]; 2444MHz	2444.000000	1.06000	---	---	2443.4525	2444.5125
BT-LE [GFSK]; 2480MHz	2480.000000	1.06500	---	---	2479.4475	2480.5125

Occupied Channel Bandwidth 99%, 2Mbps

Mode	DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
BT-LE [GFSK]; 2402MHz	2402.000000	1.84000	---	---	2401.0725	2402.9125
BT-LE [GFSK]; 2444MHz	2444.000000	1.86000	---	---	2443.0625	2444.9225
BT-LE [GFSK]; 2480MHz	2480.000000	1.86000	---	---	2479.0625	2480.9225

Tx Spurious Emission, 1Mbps

Mode	DUT Frequency (MHz)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	PASS

Tx Spurious Emission, 2Mbps

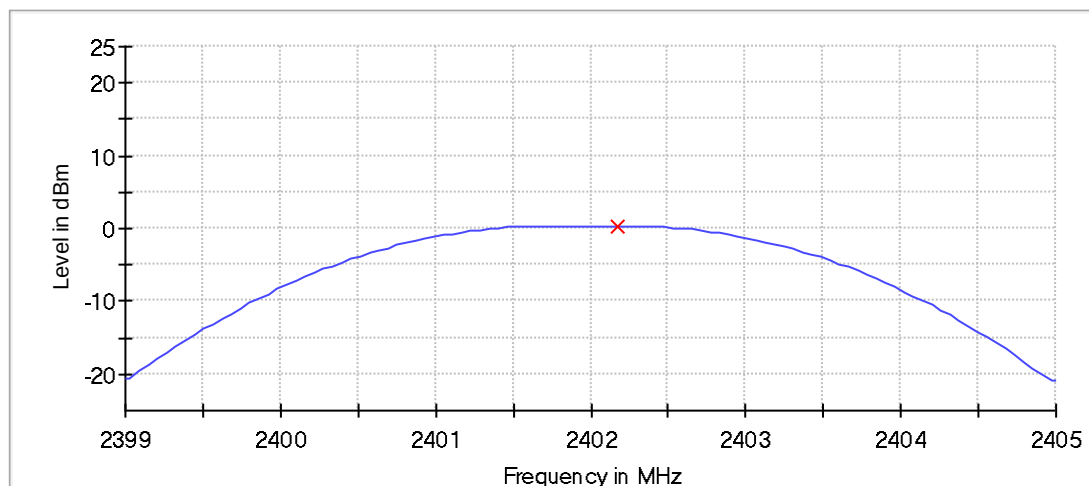
Mode	DUT Frequency (MHz)	Result
BT-LE [GFSK]; 2402MHz	2402.000000	PASS
BT-LE [GFSK]; 2444MHz	2444.000000	PASS
BT-LE [GFSK]; 2480MHz	2480.000000	PASS

Peak output power (Sweep) (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	0.4	30.0	PASS

Peak Power



— Connector 1 × Peak Connector 1

Measurement

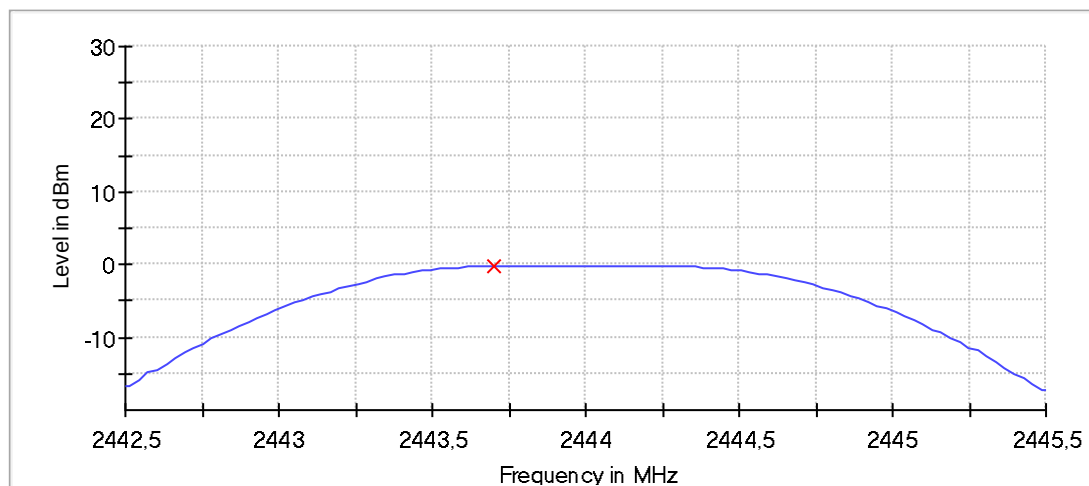
Setting	Instrument Value	Target Value
Start Frequency	2.39900 GHz	2.39900 GHz
Stop Frequency	2.40500 GHz	2.40500 GHz
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	>= 1.000 MHz
VBW	10.000 MHz	>= 6.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.50 dB

Peak output power (Sweep) (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2444.000000	-0.2	30.0	PASS

Peak Power



— Connector 1 X Peak Connector 1

Measurement

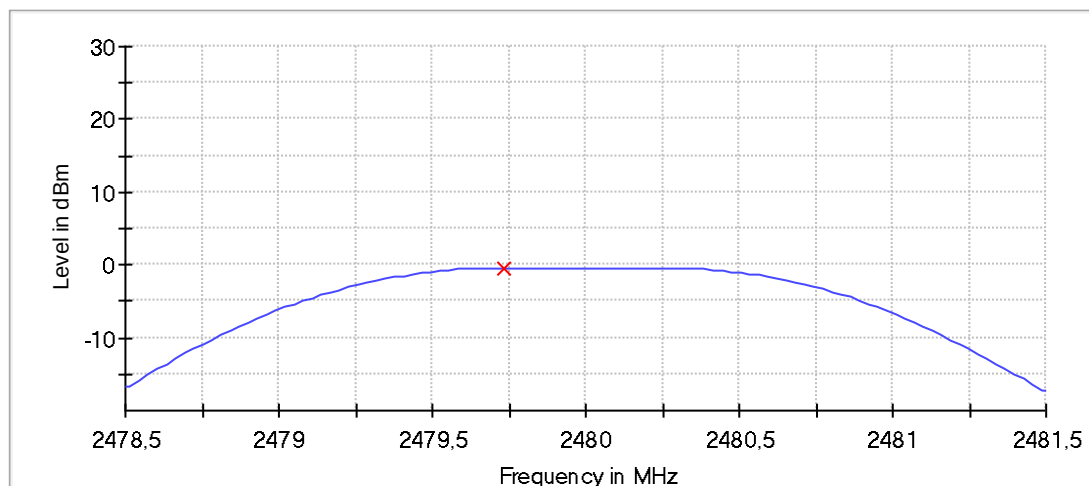
Setting	Instrument Value	Target Value
Start Frequency	2.44250 GHz	2.44250 GHz
Stop Frequency	2.44550 GHz	2.44550 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	≥ 732.675 kHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.50 dB

Peak output power (Sweep) (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	-0.4	30.0	PASS

Peak Power



— Connector 1 × Peak Connector 1

Measurement

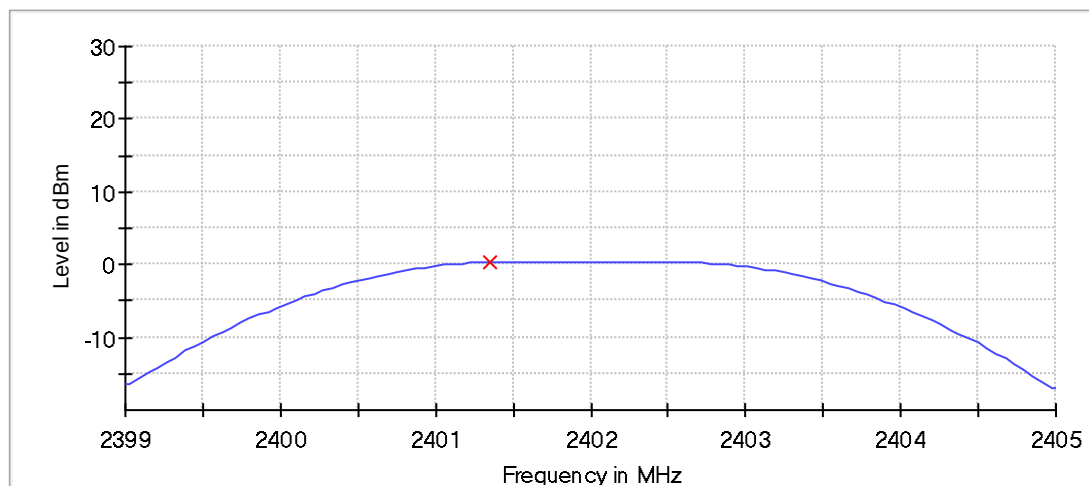
Setting	Instrument Value	Target Value
Start Frequency	2.47850 GHz	2.47850 GHz
Stop Frequency	2.48150 GHz	2.48150 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	≥ 732.675 kHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.10 dB	0.50 dB

Peak output power (Sweep) (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	0.4	30.0	PASS

Peak Power



— Connector 1 × Peak Connector 1

Measurement

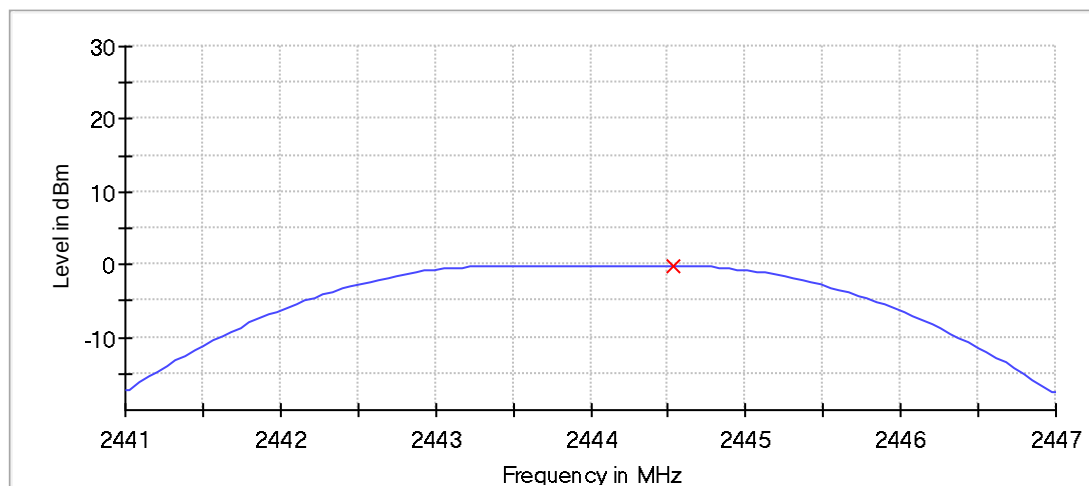
Setting	Instrument Value	Target Value
Start Frequency	2.39900 GHz	2.39900 GHz
Stop Frequency	2.40500 GHz	2.40500 GHz
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	≥ 1.000 MHz
VBW	10.000 MHz	≥ 6.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.05 dB	0.50 dB

Peak output power (Sweep) (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2444.000000	-0.1	30.0	PASS

Peak Power



— Connector 1 × Peak Connector 1

Measurement

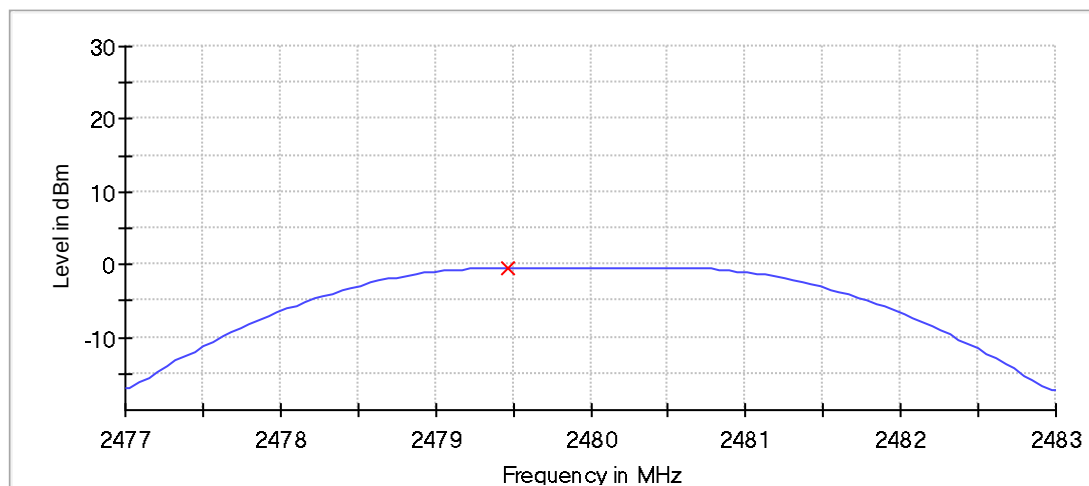
Setting	Instrument Value	Target Value
Start Frequency	2.44100 GHz	2.44100 GHz
Stop Frequency	2.44700 GHz	2.44700 GHz
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	≥ 1.366 MHz
VBW	10.000 MHz	≥ 6.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.50 dB

Peak output power (Sweep) (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	-0.4	30.0	PASS

Peak Power



— Connector 1 X Peak Connector 1

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47700 GHz	2.47700 GHz
Stop Frequency	2.48300 GHz	2.48300 GHz
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	≥ 1.505 MHz
VBW	10.000 MHz	≥ 6.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.08 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

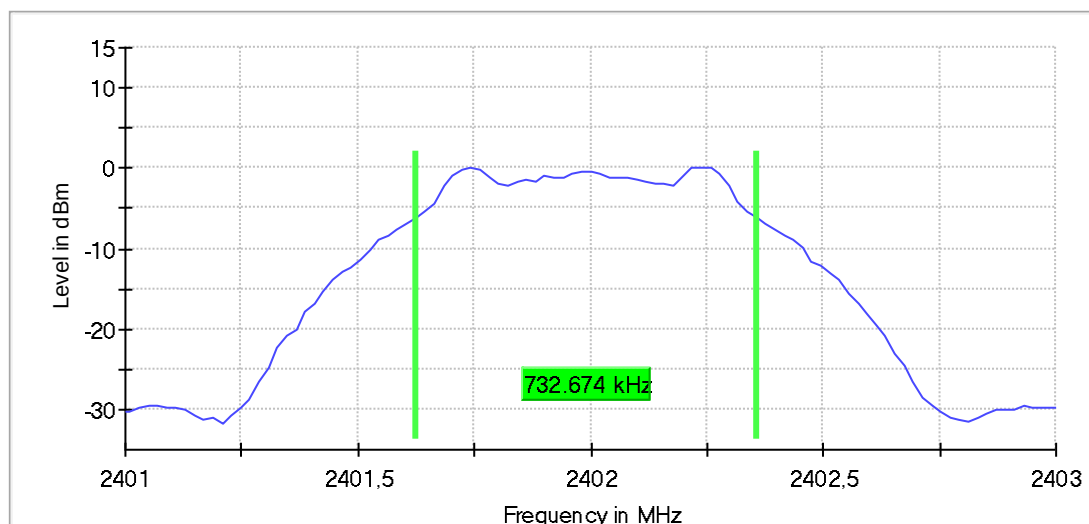
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.732674	0.500000	---	2401.623762	2402.356436

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	0.2	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.02 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

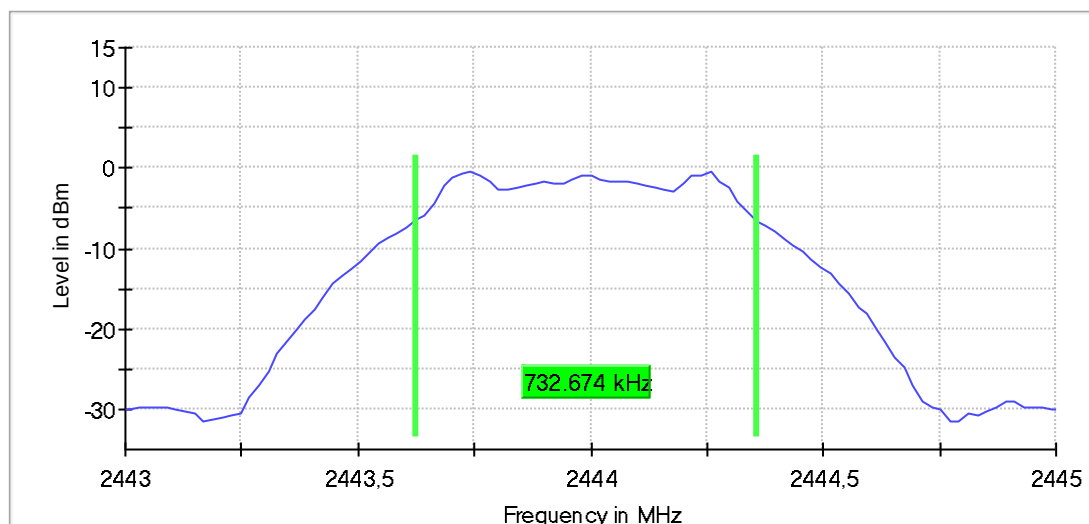
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2444.000000	0.732674	0.500000	---	2443.623762	2444.356436

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2444.000000	-0.4	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44300 GHz	2.44300 GHz
Stop Frequency	2.44500 GHz	2.44500 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.22 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

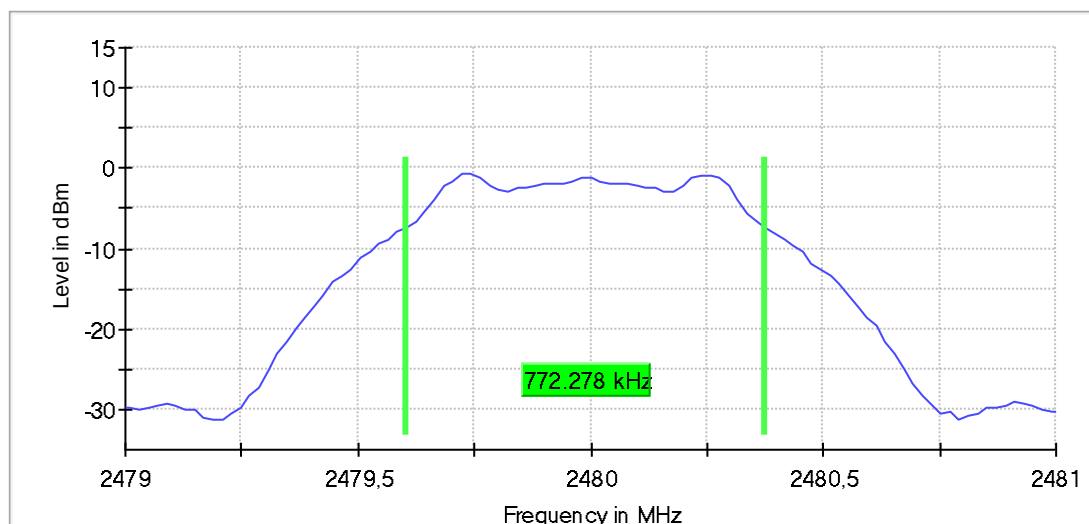
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.772278	0.500000	---	2479.603960	2480.376238

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-0.6	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	16 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.26 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

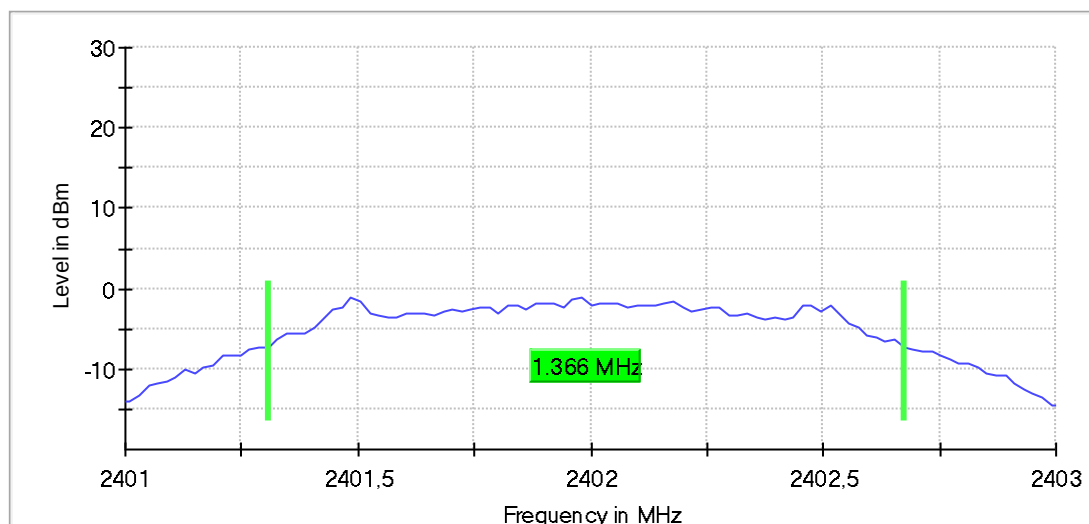
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.366336	0.500000	---	2401.306931	2402.673267

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-1.2	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

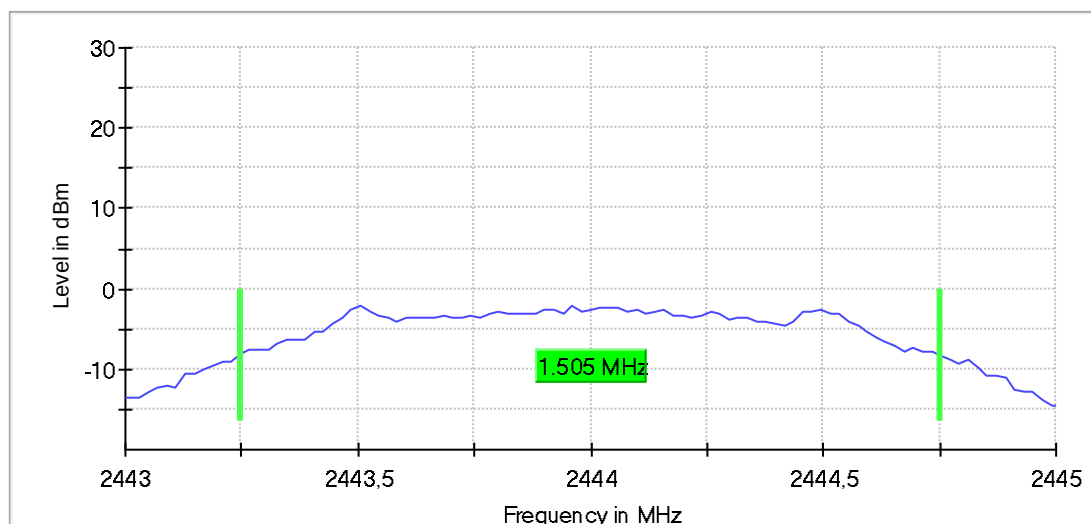
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2444.000000	1.504950	0.500000	---	2443.247525	2444.752475

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2444.000000	-2.1	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44300 GHz	2.44300 GHz
Stop Frequency	2.44500 GHz	2.44500 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

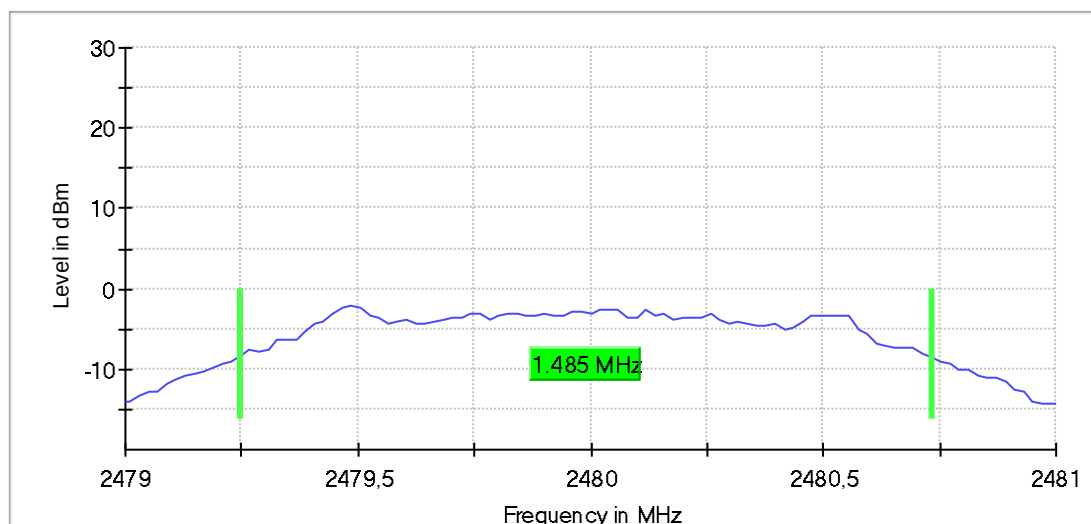
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.485148	0.500000	---	2479.247525	2480.732673

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-2.1	PASS

6 dB Bandwidth



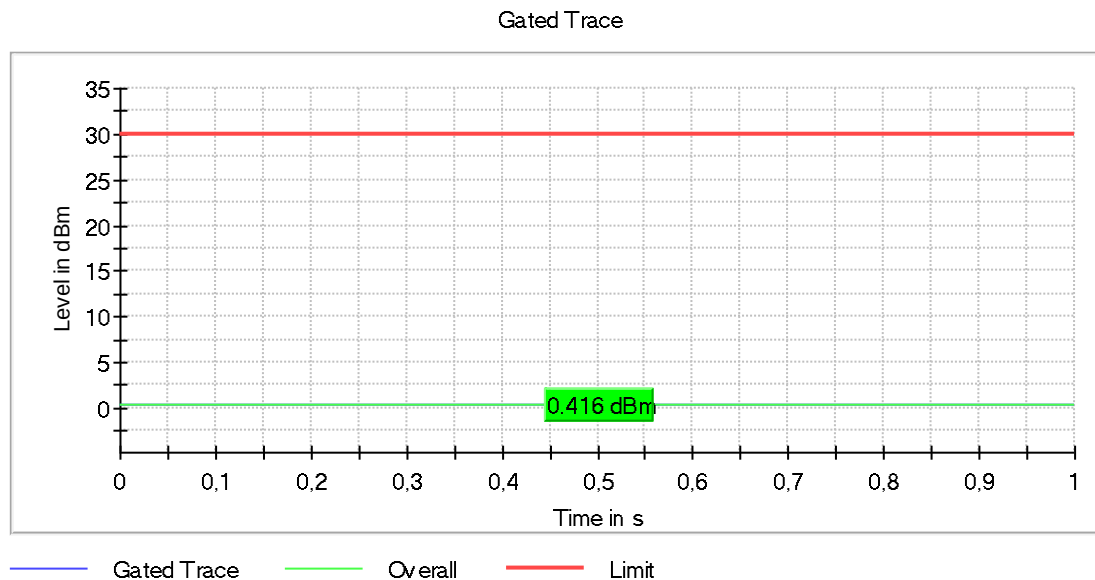
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

Duty Cycle (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2402.000000	100.000	PASS



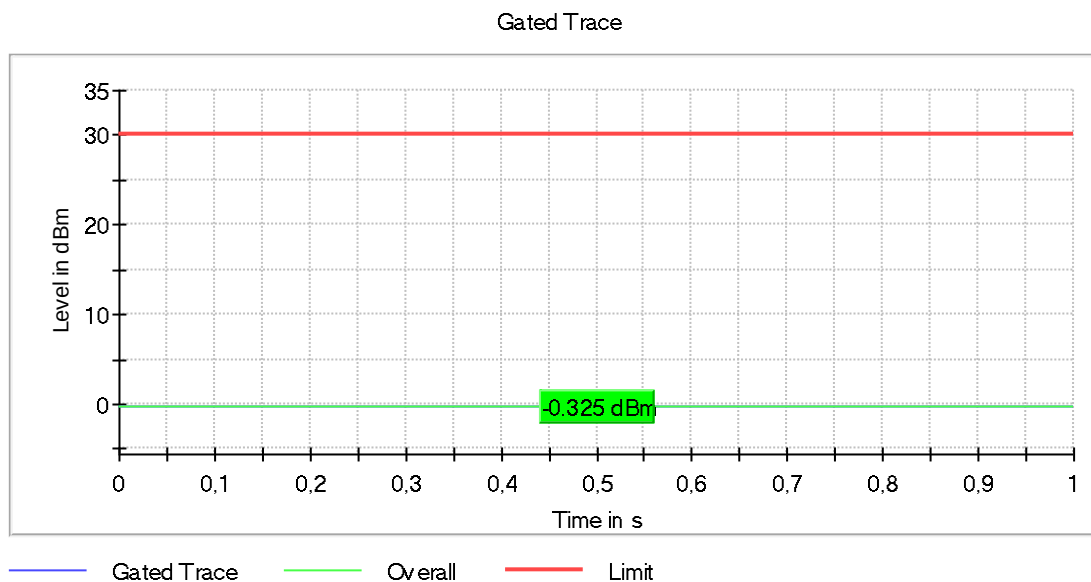
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Duty Cycle (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2444.000000	100.000	PASS



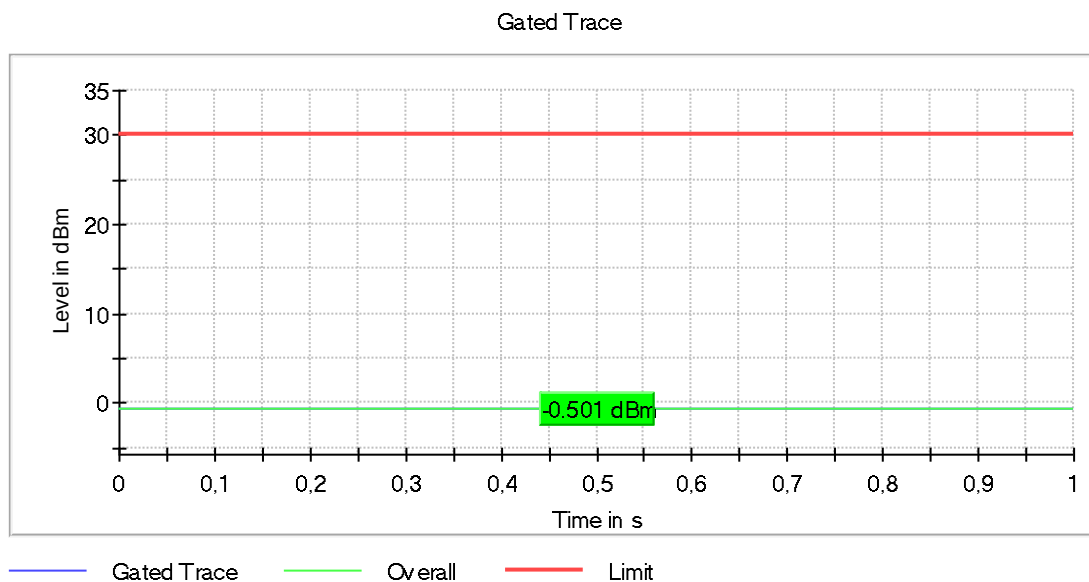
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Duty Cycle (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2480.000000	100.000	PASS



OSP PowerMeter settings

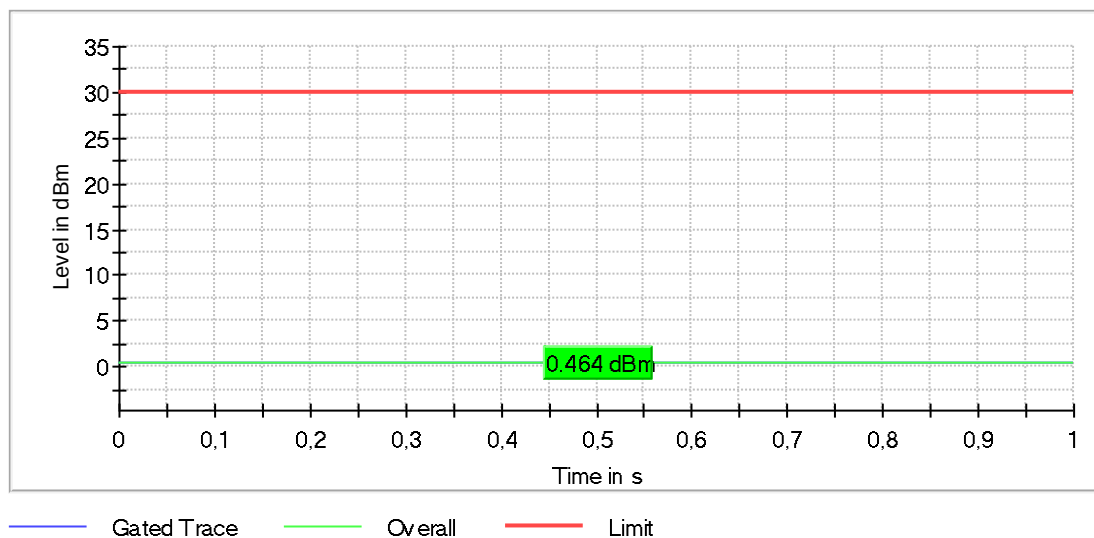
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

RF output power (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2402.000000	0.5	30.0	0.5	100.000	PASS

Gated Trace



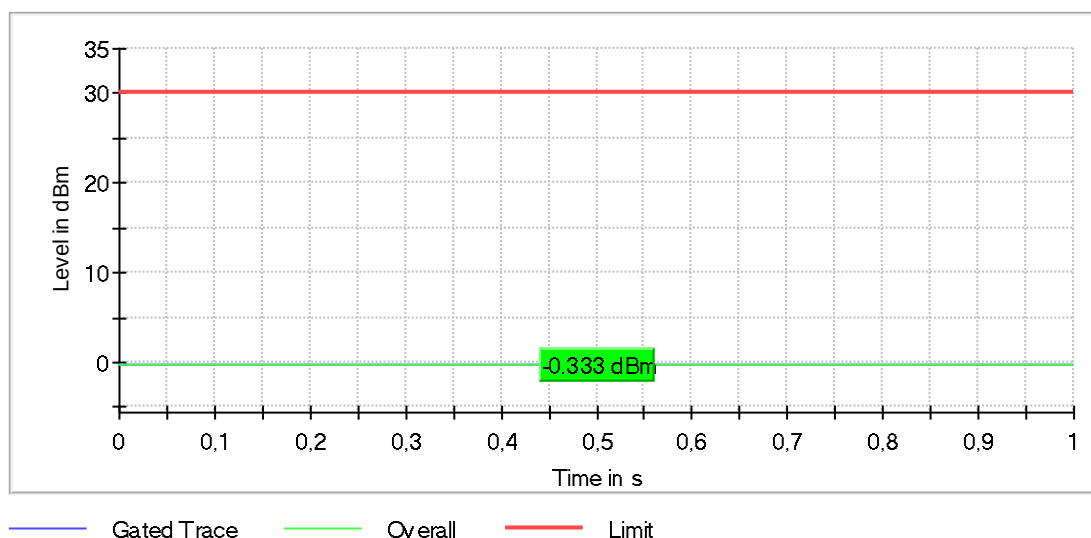
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

RF output power (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)**Result**

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2444.000000	-0.3	30.0	-0.3	100.000	PASS

Gated Trace

**OSP PowerMeter settings**

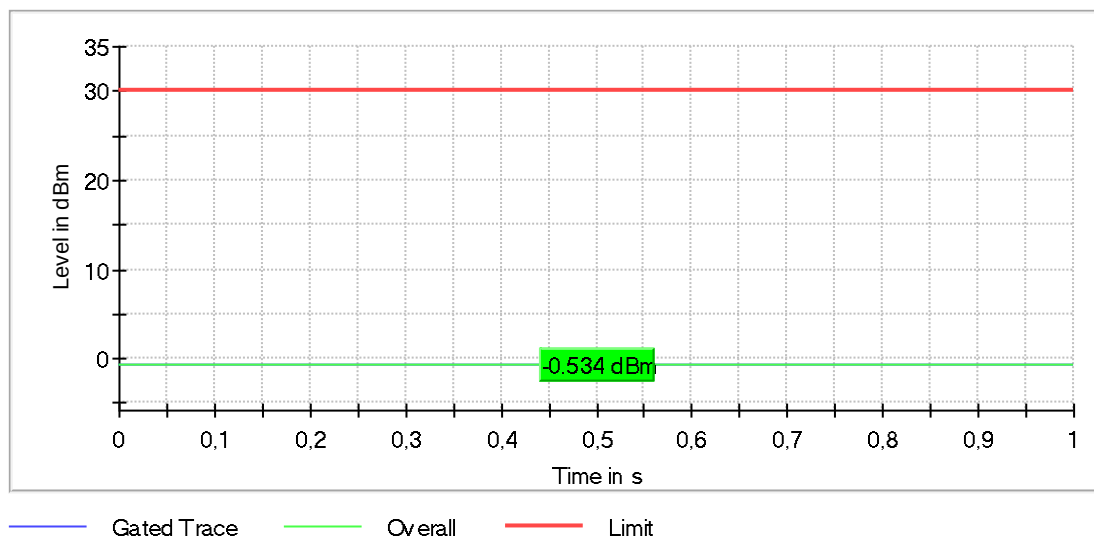
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

RF output power (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz: 2 Mbps)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2480.000000	-0.5	30.0	-0.5	100.000	PASS

Gated Trace



OSP PowerMeter settings

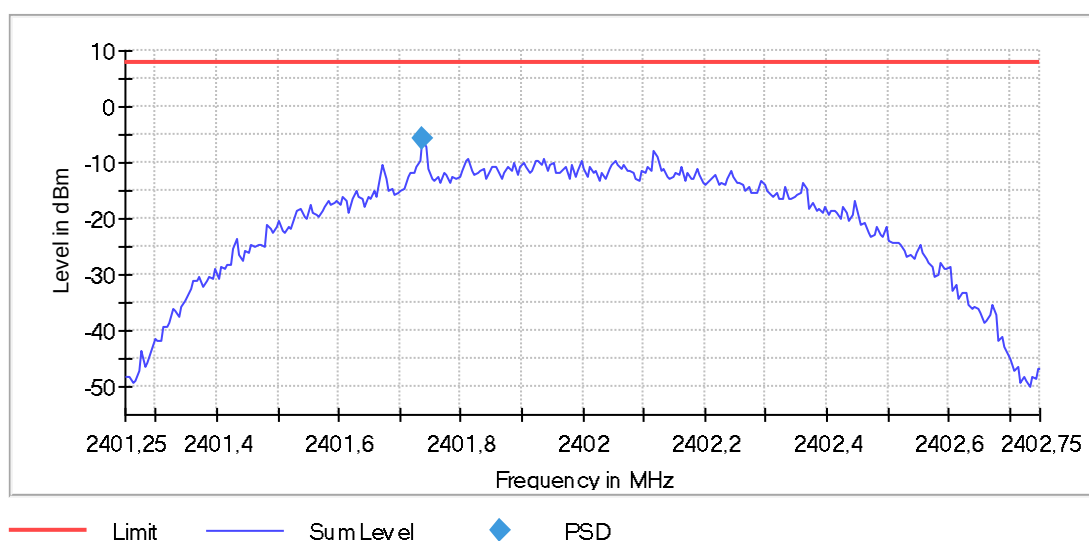
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Power Spectral Density (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2401.737500	-5.726	8.0	PASS

Power Spectral Density



Measurement

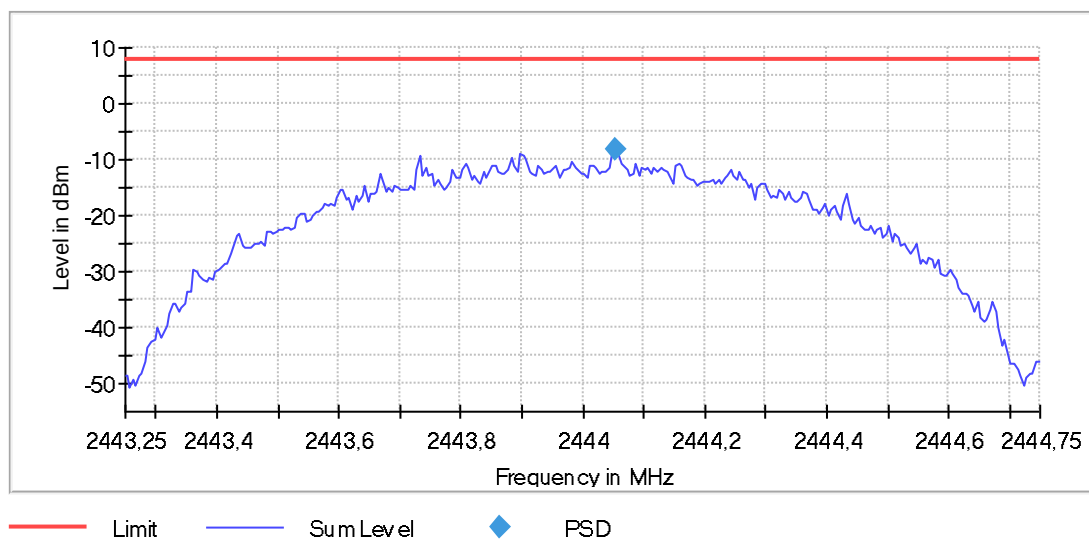
Setting	Instrument Value	Target Value
Start Frequency	2.40125 GHz	2.40125 GHz
Stop Frequency	2.40275 GHz	2.40275 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	63 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Power Spectral Density (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2444.000000	2444.052500	-8.060	8.0	PASS

Power Spectral Density



Measurement

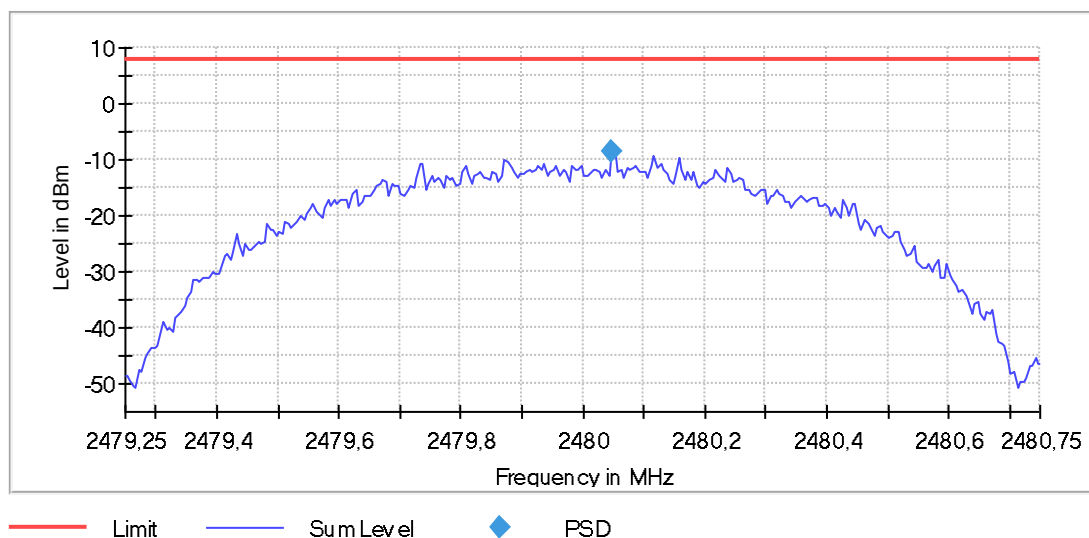
Setting	Instrument Value	Target Value
Start Frequency	2.44325 GHz	2.44325 GHz
Stop Frequency	2.44475 GHz	2.44475 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	78 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.34 dB	0.50 dB

Power Spectral Density (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.047500	-8.637	8.0	PASS

Power Spectral Density



Measurement

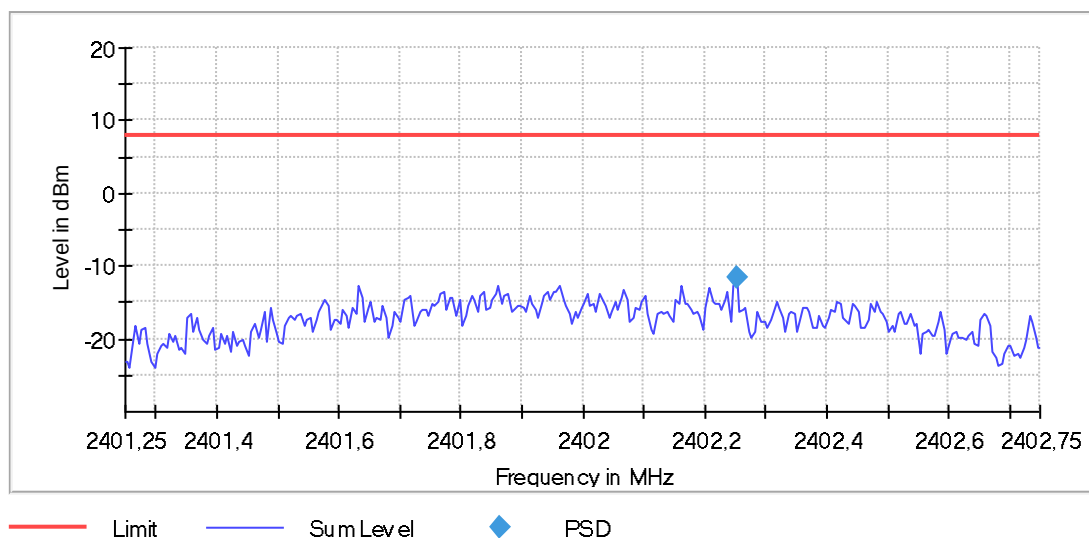
Setting	Instrument Value	Target Value
Start Frequency	2.47925 GHz	2.47925 GHz
Stop Frequency	2.48075 GHz	2.48075 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	62 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.21 dB	0.50 dB

Power Spectral Density (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2402.252500	-11.642	8.0	PASS

Power Spectral Density



Measurement

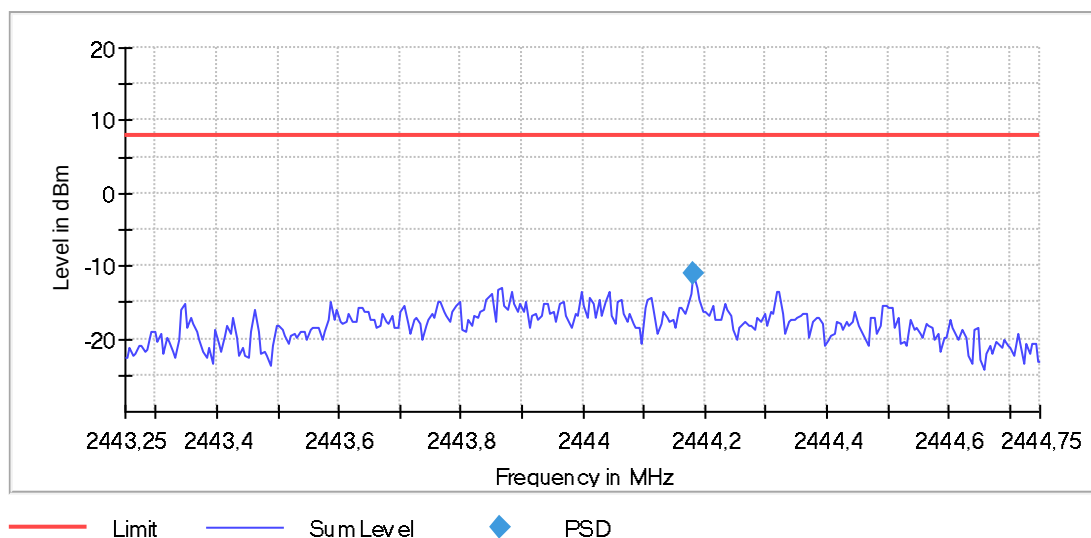
Setting	Instrument Value	Target Value
Start Frequency	2.40125 GHz	2.40125 GHz
Stop Frequency	2.40275 GHz	2.40275 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Power Spectral Density (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2444.000000	2444.182500	-11.004	8.0	PASS

Power Spectral Density



Measurement

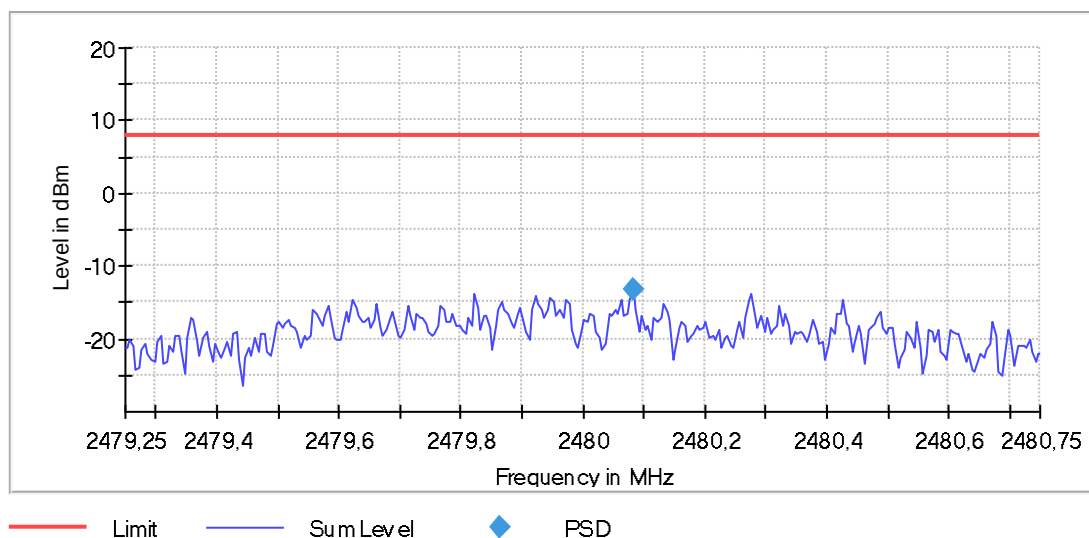
Setting	Instrument Value	Target Value
Start Frequency	2.44325 GHz	2.44325 GHz
Stop Frequency	2.44475 GHz	2.44475 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Power Spectral Density (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.082500	-13.340	8.0	PASS

Power Spectral Density



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47925 GHz	2.47925 GHz
Stop Frequency	2.48075 GHz	2.48075 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	6.000 ms	6.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Occupied Channel Bandwidth 99% (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

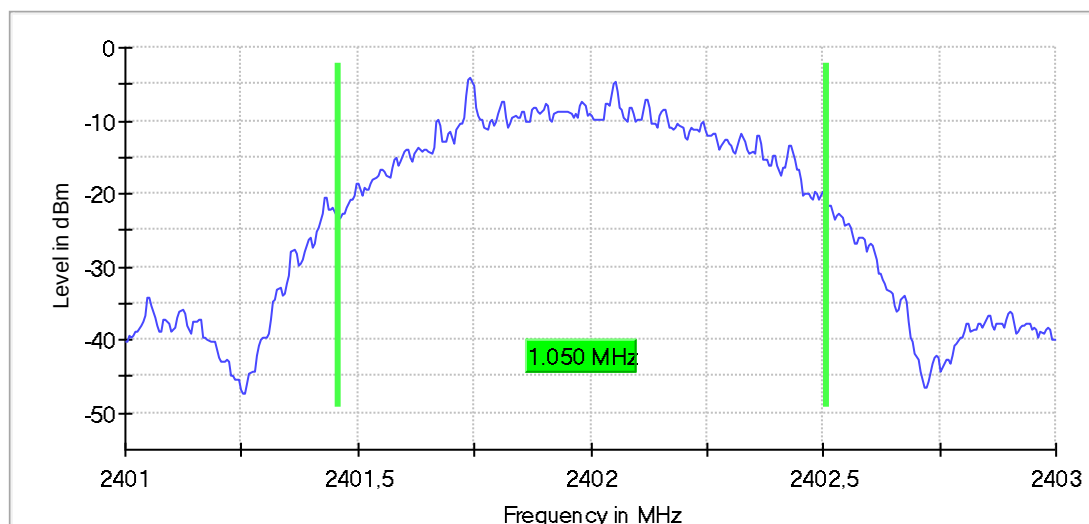
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.050000	---	---	2401.457500	2402.507500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	26 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.30 dB	0.30 dB

Occupied Channel Bandwidth 99% (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

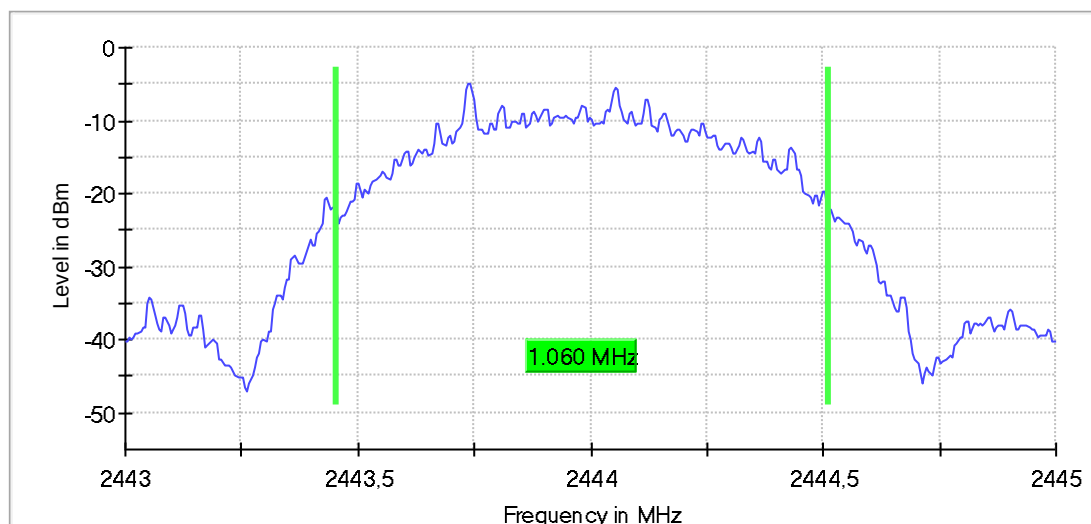
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2444.000000	1.060000	---	---	2443.452500	2444.512500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2444.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44300 GHz	2.44300 GHz
Stop Frequency	2.44500 GHz	2.44500 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	35 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.30 dB

Occupied Channel Bandwidth 99% (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

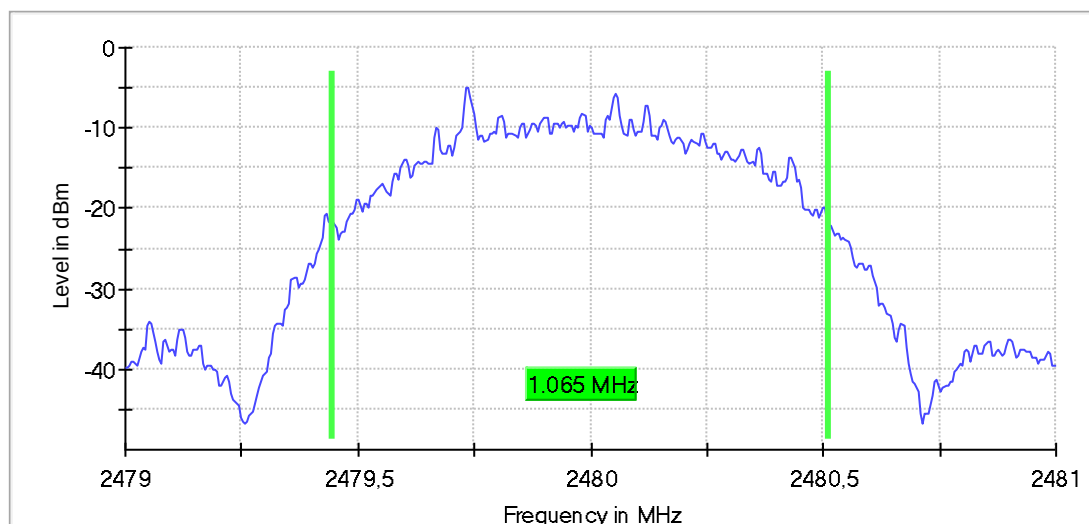
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.065000	---	---	2479.447500	2480.512500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	54 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.30 dB

Occupied Channel Bandwidth 99% (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

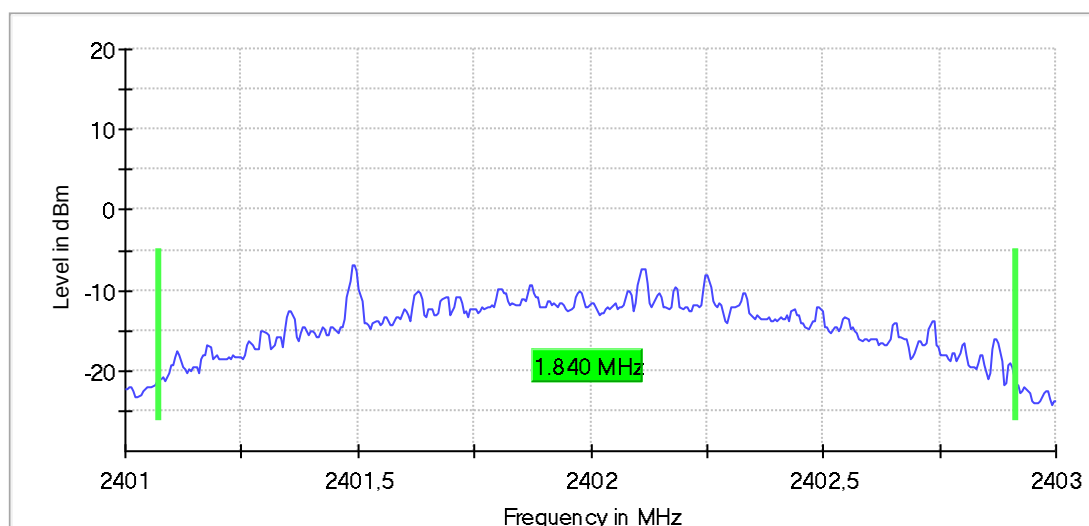
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.840000	---	---	2401.072500	2402.912500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	32 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.11 dB	0.30 dB

Occupied Channel Bandwidth 99% (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

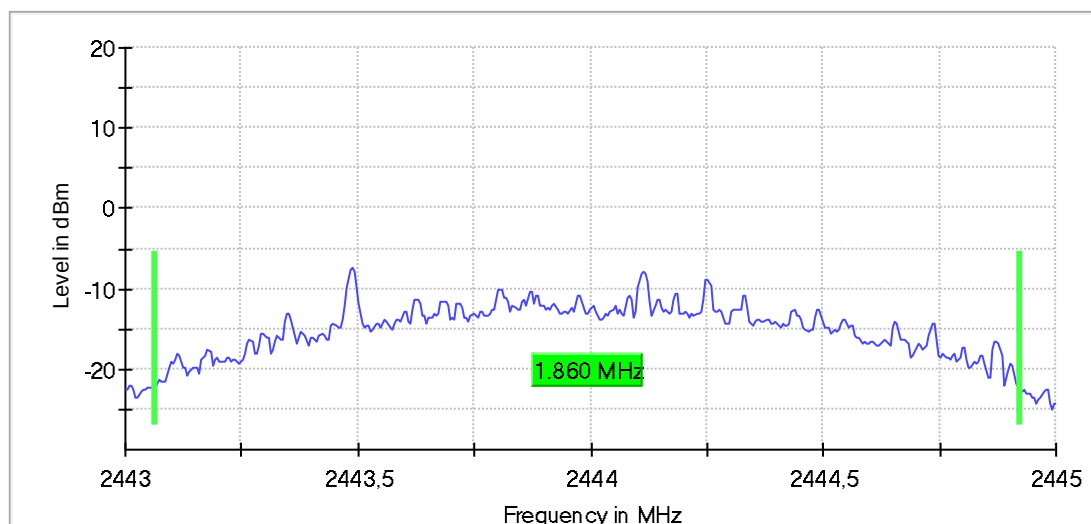
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2444.000000	1.860000	---	---	2443.062500	2444.922500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2444.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44300 GHz	2.44300 GHz
Stop Frequency	2.44500 GHz	2.44500 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	30 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.25 dB	0.30 dB

Occupied Channel Bandwidth 99% (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

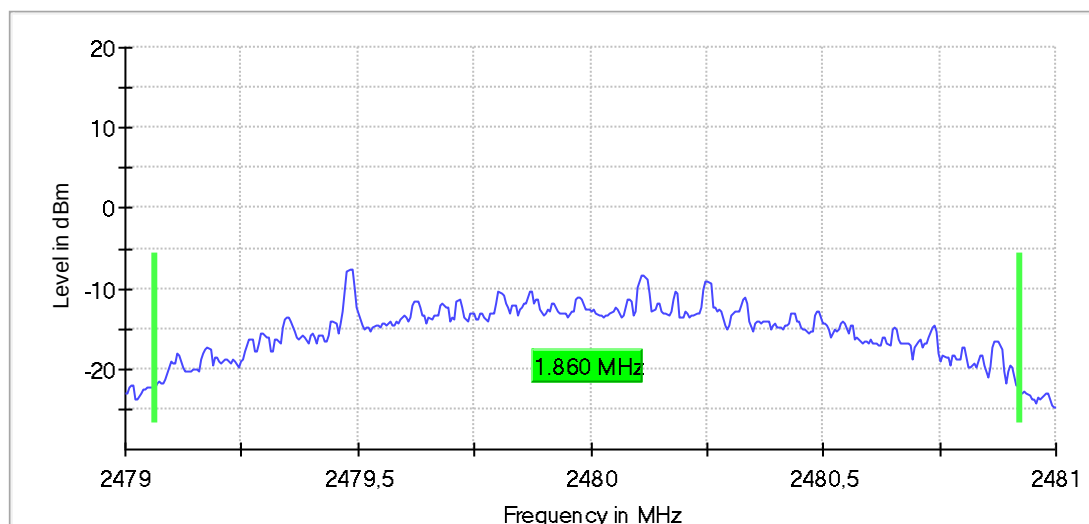
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.860000	---	---	2479.062500	2480.922500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS

99 %Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	2.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	32 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.14 dB	0.30 dB

Tx Spurious Emission (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2399.958664	1.0	-52.9	-28.2	24.7	PASS

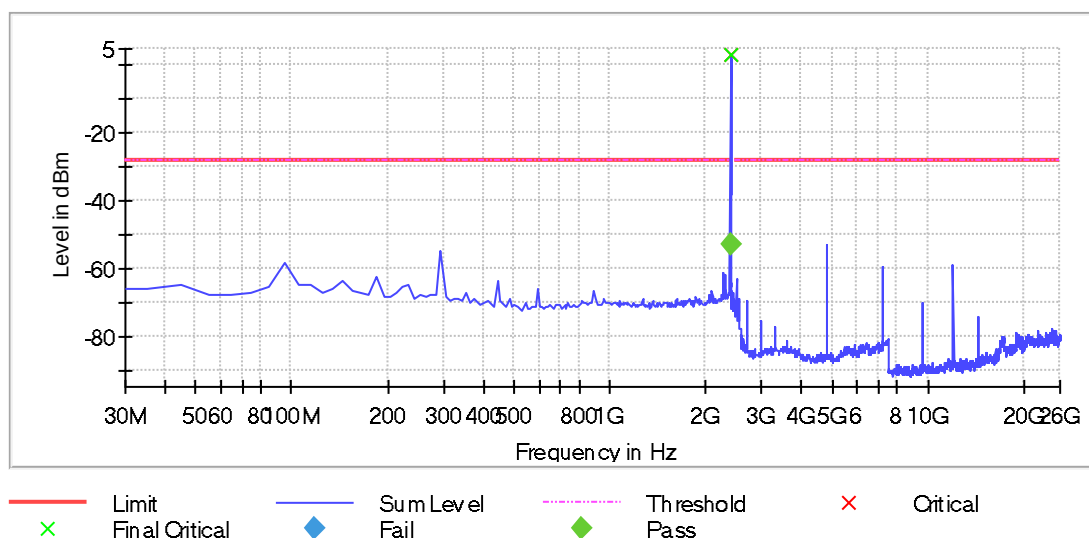
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	3.0	-31.2	-28.2
4807.166065	-53.2	25.0	-28.2
293.886555	-54.7	26.4	-28.2
94.726891	-58.1	29.9	-28.2
12013.029431	-58.7	30.5	-28.2
7205.789099	-59.7	31.5	-28.2
2265.567227	-61.1	32.9	-28.2
2305.399160	-62.1	33.9	-28.2
184.348739	-62.6	34.4	-28.2
2385.063025	-62.8	34.6	-28.2
2498.491394	-62.9	34.7	-28.2
443.256303	-63.7	35.5	-28.2
144.516807	-63.7	35.5	-28.2
114.642857	-64.7	36.5	-28.2
44.936975	-64.8	36.6	-28.2

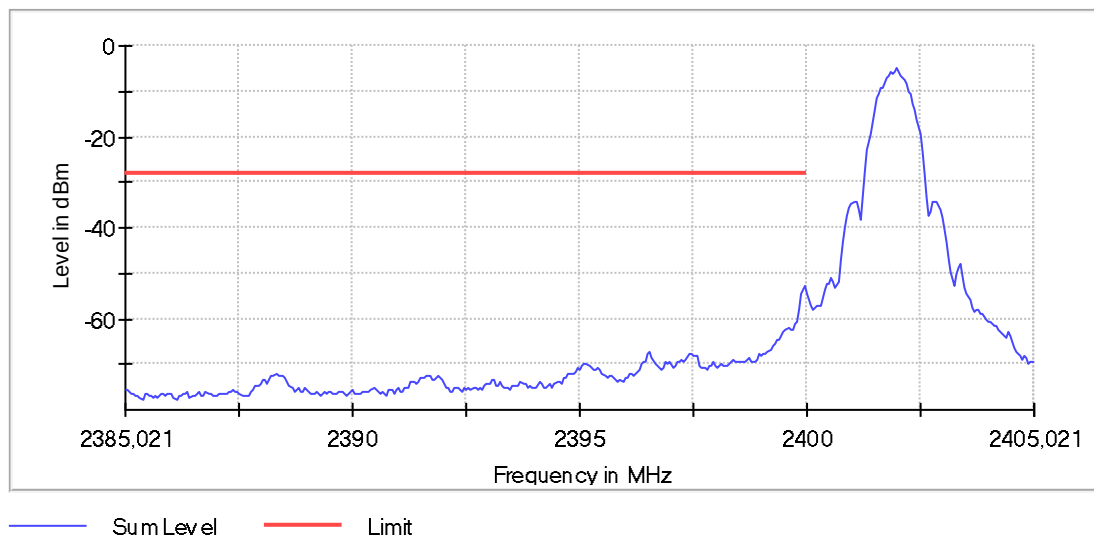
Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



FinalMeas_2395021008Hz



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	401	~ 401
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	Sample	Sample
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Linear	Average Linear
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Result
2444.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

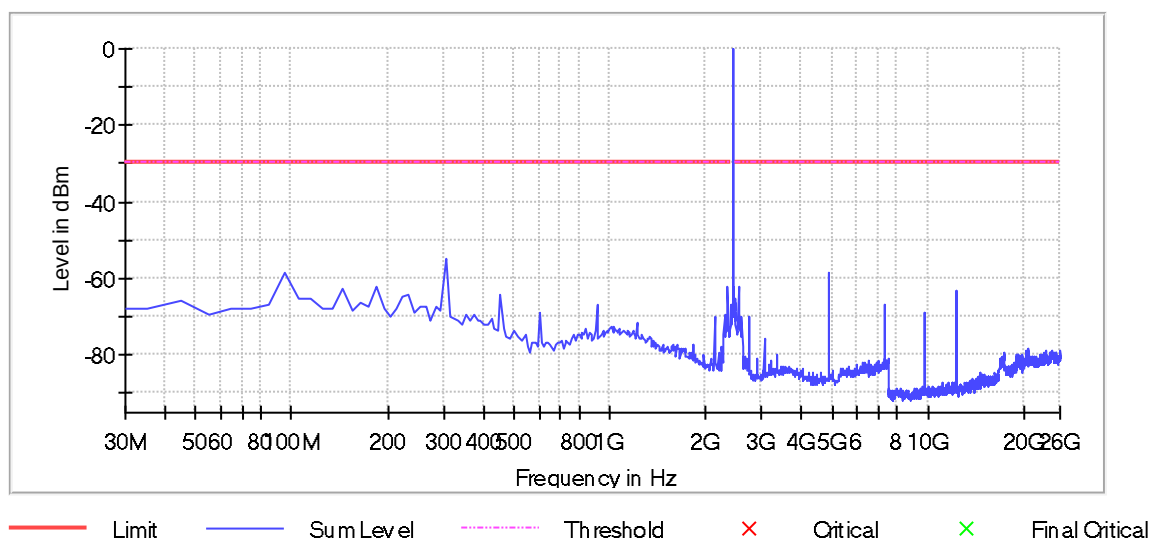
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
303.844538	-54.7	24.7	-30.0
4887.120166	-58.2	28.2	-30.0
94.726891	-58.4	28.4	-30.0
2538.468445	-62.2	32.2	-30.0
2345.231092	-62.3	32.3	-30.0
184.348739	-62.3	32.3	-30.0
144.516807	-62.6	32.6	-30.0
12222.908946	-63.0	33.0	-30.0
234.138655	-64.1	34.1	-30.0
453.214286	-64.2	34.2	-30.0
224.180672	-64.7	34.7	-30.0
114.642857	-65.0	35.0	-30.0
104.684874	-65.5	35.5	-30.0
44.936975	-65.6	35.6	-30.0
164.432773	-66.2	36.2	-30.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.50 dB

Tx Spurious Emission (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 1 Mbps)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

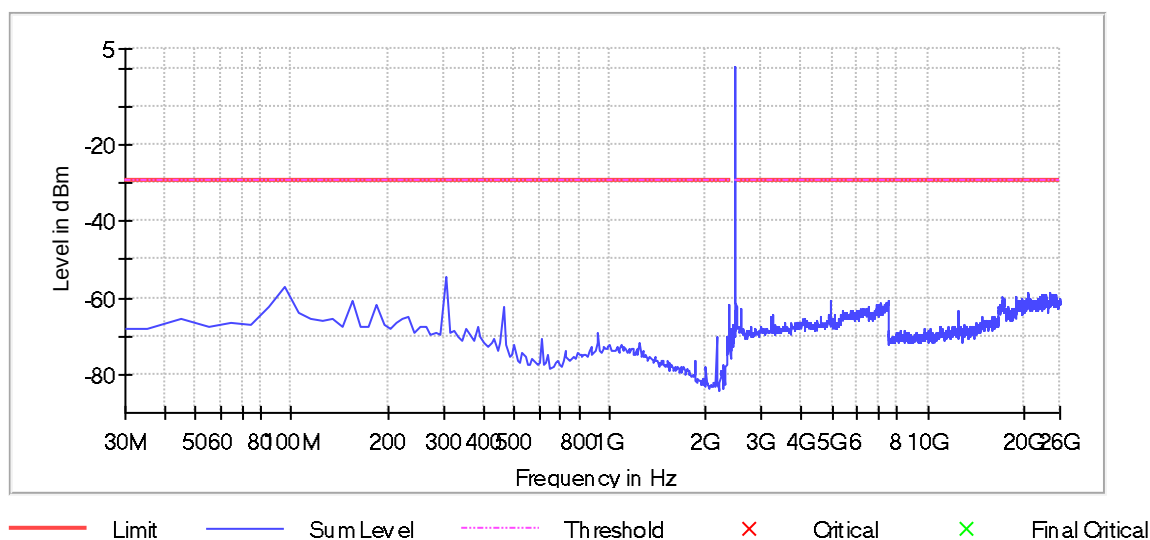
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
303.844538	-54.4	24.7	-29.6
94.726891	-57.0	27.4	-29.6
20638.078092	-58.9	29.2	-29.6
24096.092966	-58.9	29.3	-29.6
20518.146940	-59.0	29.3	-29.6
22956.747025	-59.1	29.4	-29.6
25245.433170	-59.1	29.4	-29.6
24715.737250	-59.1	29.4	-29.6
24775.702826	-59.2	29.5	-29.6
20598.101041	-59.2	29.6	-29.6
23636.356885	-59.3	29.6	-29.6
25405.341373	-59.3	29.6	-29.6
23016.712601	-59.3	29.7	-29.6
24375.932320	-59.5	29.8	-29.6
24555.829048	-59.5	29.8	-29.6

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (2402 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2399.958664	-0.1	-38.5	-30.1	8.4	PASS

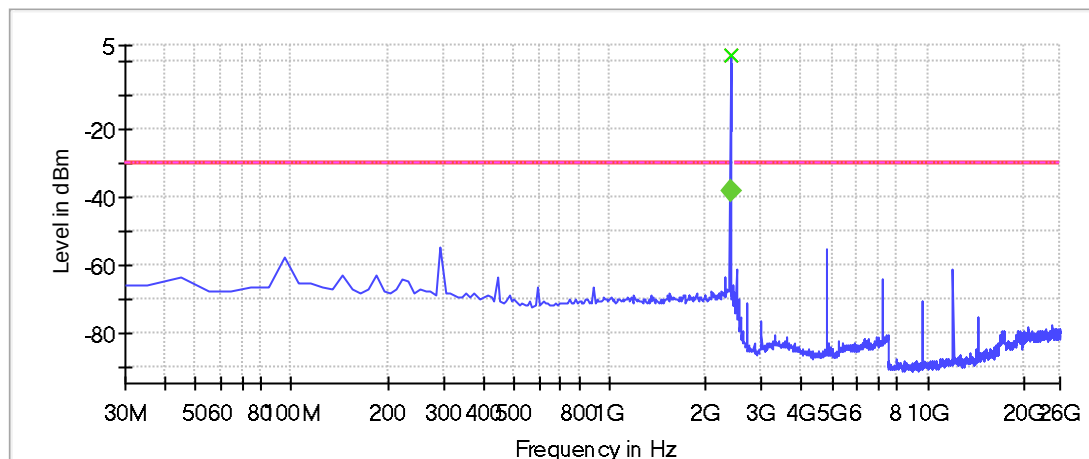
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	1.9	-32.0	-30.1
293.886555	-54.7	24.6	-30.1
4807.166065	-55.6	25.5	-30.1
94.726891	-57.5	27.4	-30.1
12013.029431	-61.1	31.0	-30.1
12003.035168	-61.1	31.0	-30.1
2498.491394	-61.4	31.3	-30.1
2385.063025	-62.6	32.5	-30.1
184.348739	-62.9	32.8	-30.1
144.516807	-63.3	33.2	-30.1
443.256303	-63.4	33.3	-30.1
2305.399160	-63.5	33.5	-30.1
44.936975	-63.7	33.6	-30.1
224.180672	-64.4	34.3	-30.1
7205.789099	-64.5	34.4	-30.1

Measurement Settings

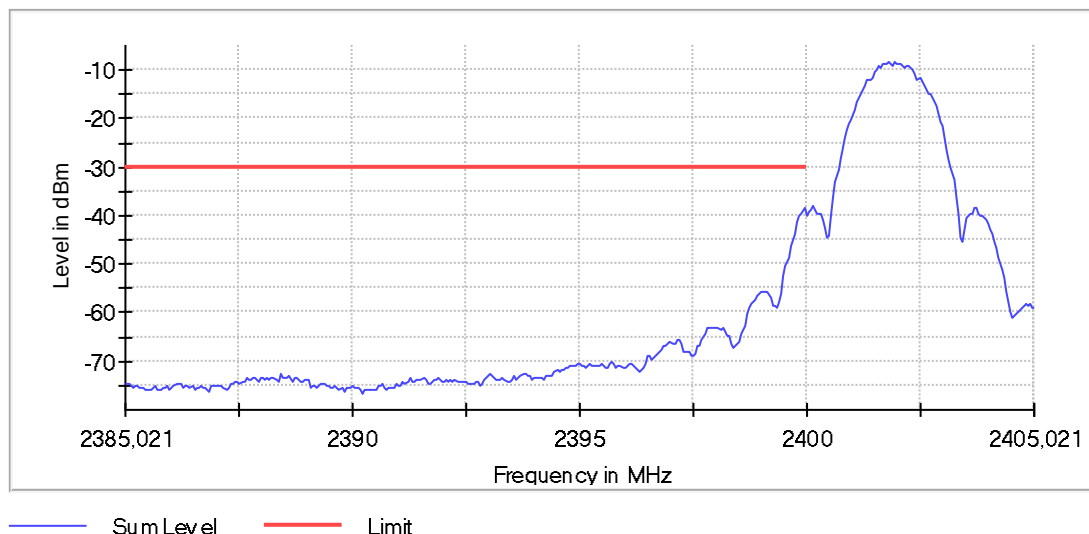
Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



— Limit
x Final Critical
— Sum Level
◆ Fail
◆ Threshold Pass
x Critical

FinalMeas_2395021008Hz



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	401	~ 401
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	Sample	Sample
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Linear	Average Linear
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (2444 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Result
2444.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

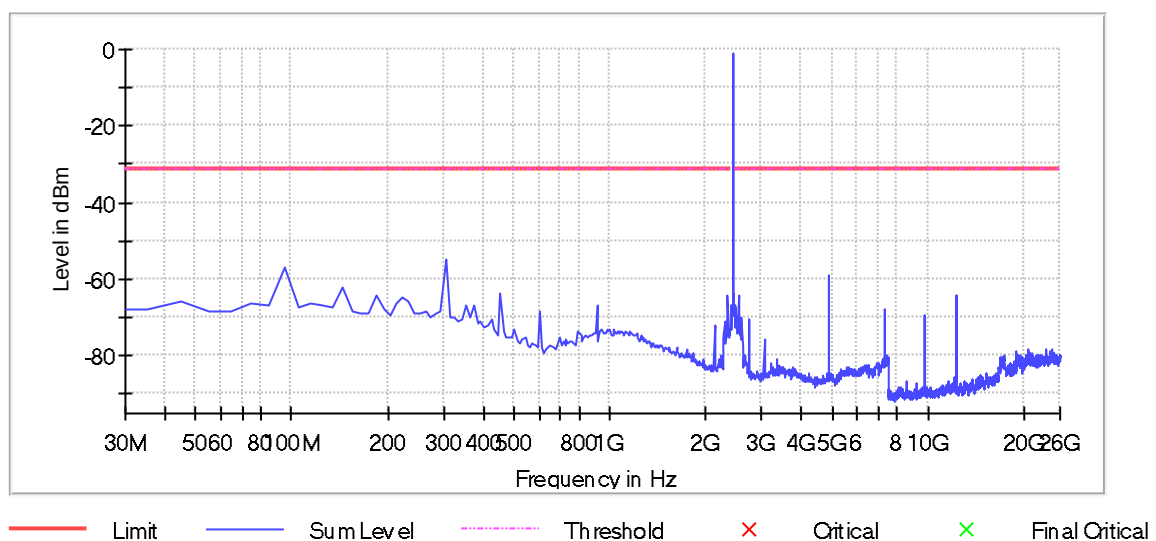
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
303.844538	-54.6	23.3	-31.2
94.726891	-57.1	25.8	-31.2
4887.120166	-59.0	27.8	-31.2
144.516807	-62.2	31.0	-31.2
453.214286	-63.7	32.5	-31.2
2538.468445	-64.0	32.8	-31.2
184.348739	-64.2	33.0	-31.2
12222.908946	-64.2	33.0	-31.2
2345.231092	-64.4	33.2	-31.2
12212.914683	-64.6	33.3	-31.2
224.180672	-64.9	33.6	-31.2
234.138655	-65.5	34.3	-31.2
44.936975	-65.7	34.5	-31.2
114.642857	-66.3	35.1	-31.2
214.222689	-66.4	35.2	-31.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Tx Spurious Emission (2480 MHz; BT-LE [GFSK] (10 dBm); 1 MHz; 2 Mbps)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
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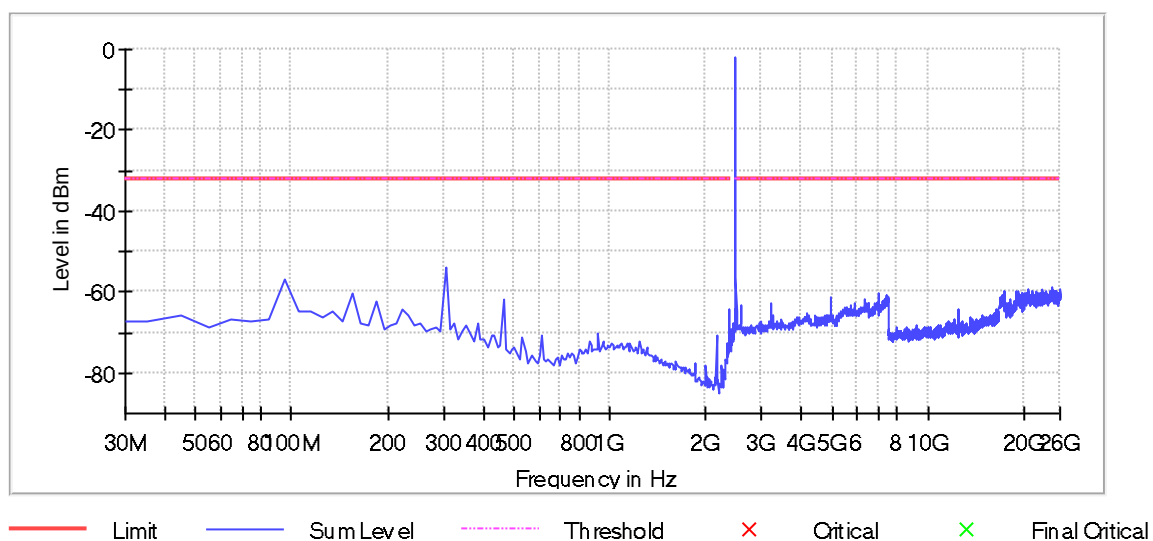
Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
303.844538	-53.8	21.7	-32.2
2488.497131	-56.3	24.2	-32.2
94.726891	-56.9	24.7	-32.2
24565.823311	-58.7	26.5	-32.2
22996.724076	-59.2	27.1	-32.2
25875.071717	-59.3	27.2	-32.2
25885.065980	-59.4	27.2	-32.2
24685.754462	-59.4	27.2	-32.2
20598.101041	-59.4	27.3	-32.2
24585.811836	-59.5	27.3	-32.2
24605.800361	-59.7	27.5	-32.2
22017.286337	-59.7	27.6	-32.2
21167.774012	-59.7	27.6	-32.2
25335.381534	-59.8	27.6	-32.2
19048.990331	-59.8	27.6	-32.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1

Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
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SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

End Of Annex 1