

Annex 1: Measurement diagrams 21-1-0183201T01a-A1-C01

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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:	Miele & Cie. KG
Product: Model:	Wireless Food Probe System EPI7684		
FCC ID:	SSVNAEPI03	IC:	5669B-NAEPI03
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter A Subpart C: §15.247 (FHSS) RSS-247, Issue 2 (FHSS) RSS-Gen, Issue 5 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



Table of Contents

1 Measurement diagrams.....3

1.1 Conducted measurements3

1.2 Radiated measurements.....33

1 Measurement diagrams

1.1 Conducted measurements

Peak output power (Sweep)

Mode	DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
Low; 2401.620MHz	2401.620000	19.1	21.0	PASS
Mid; 2441.387MHz	2441.380000	18.3	21.0	PASS
High; 2481.287MHz	2481.280000	2.9	21.0	PASS

TX Sequence

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 20 dB	2401.620 (single)	20.0	0.088000	PASS
Minimum Emission Bandwidth 6 dB	2401.620 (single)	20.0	0.088000	PASS
Occupied Channel Bandwidth 99%	2401.620 (single)	20.0	0.088000	PASS
Emission Bandwidth 20 dB	2441.387 (single)	20.0	0.088000	PASS
Minimum Emission Bandwidth 6 dB	2441.387 (single)	20.0	0.088000	PASS
Occupied Channel Bandwidth 99%	2441.387 (single)	20.0	0.088000	PASS
Emission Bandwidth 20 dB	2481.287 (single)	20.0	0.088000	PASS
Minimum Emission Bandwidth 6 dB	2481.287 (single)	20.0	0.088000	PASS
Occupied Channel Bandwidth 99%	2481.287 (single)	20.0	0.088000	PASS

Tx Spurious Emission Conducted

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Tx Spurious Emission	2401.620 (single)	20.0	0.088000	PASS
Tx Spurious Emission	2441.387 (single)	20.0	0.088000	PASS
Tx Spurious Emission	2481.287 (single)	20.0	0.088000	PASS
Tx Spurious Emission	Hopping on	20.0	0.088000	PASS

Hopping Frequencies

Mode	Channels	Limit Min	Limit Max	Result
Hopping on	600	15	---	PASS

Carrier Frequency Separation

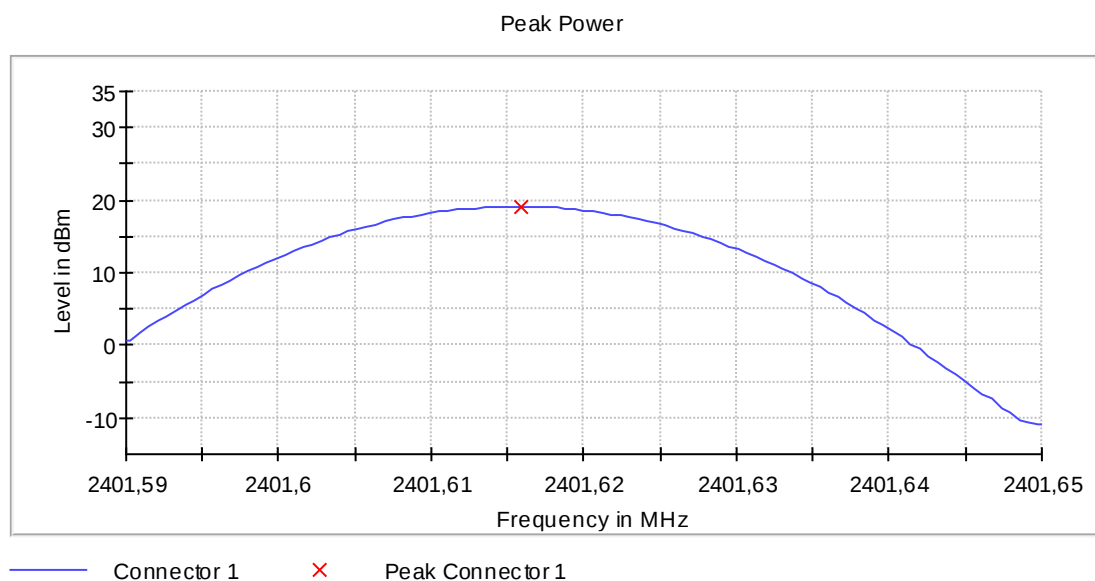
Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Carrier Frequency Separation	2401.620 (hopping)	20.0	0.020000	PASS
Carrier Frequency Separation	2441.387 (hopping)	20.0	0.020000	PASS
Carrier Frequency Separation	2481.287 (hopping)	20.0	0.020000	PASS

Peak output power (Sweep) (2401,62 MHz; 20,000 dBm; Test Mode)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2401.620000	19.1	21.0	PASS



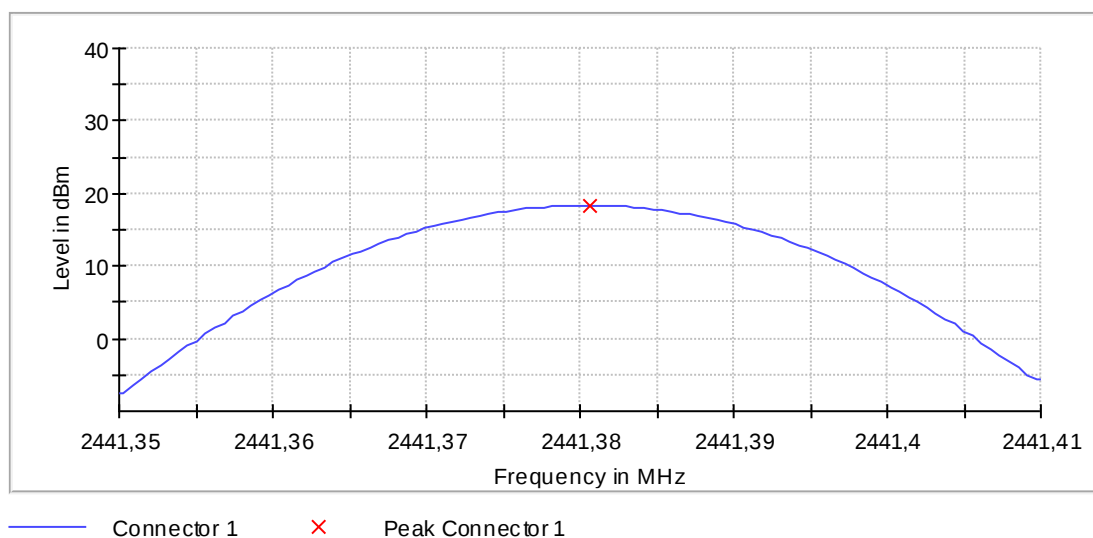
Peak output power (Sweep) (2441,38 MHz; 20,000 dBm; Test Mode)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2441.380000	18.3	21.0	PASS

Peak Power

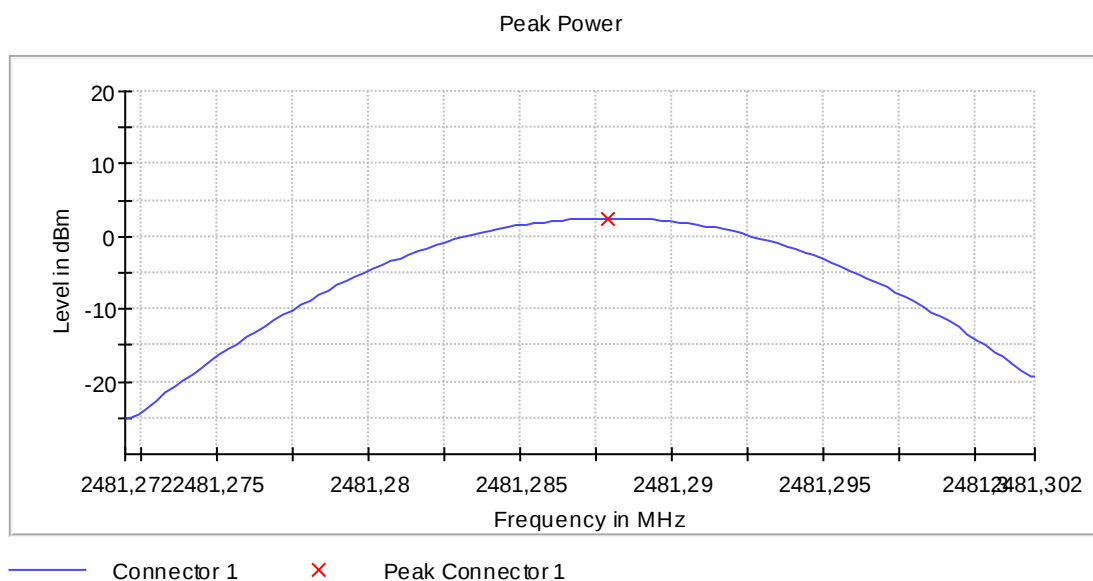


Peak output power (Sweep) (2481,28 MHz; 20,000 dBm; Test Mode)

Test according to FCC title 47 part 15 §15.247(b), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2481.280000	2.9	21.0	PASS



Emission Bandwidth 20 dB (2401,62 MHz; low (20 dBm); 133 kHz;
Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

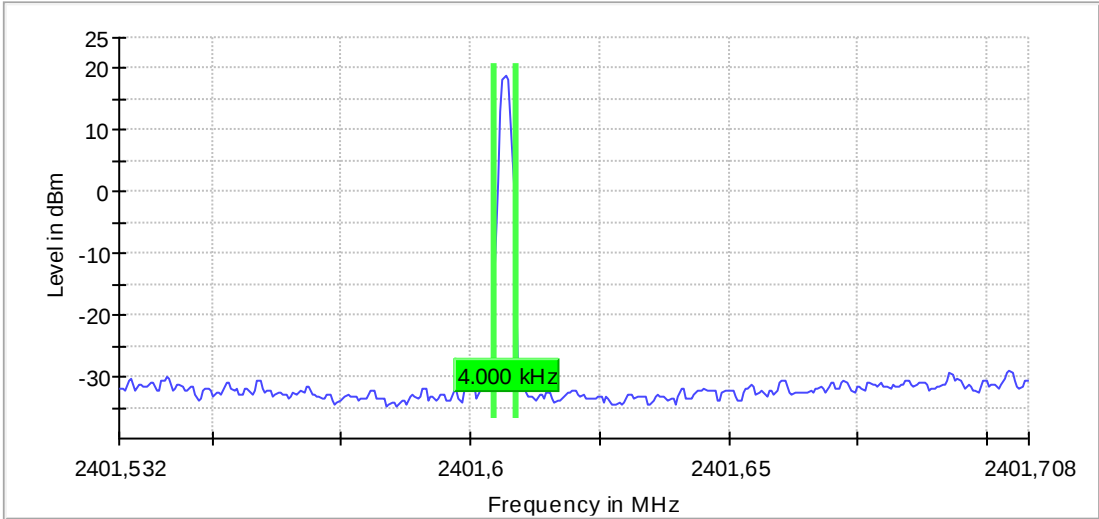
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2401.620000	0.004000	---	---	2401.604750	2401.608750

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2401.620000	18.8	PASS

20 dB Bandwidth



Minimum Emission Bandwidth 6 dB (2401,62 MHz; low (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

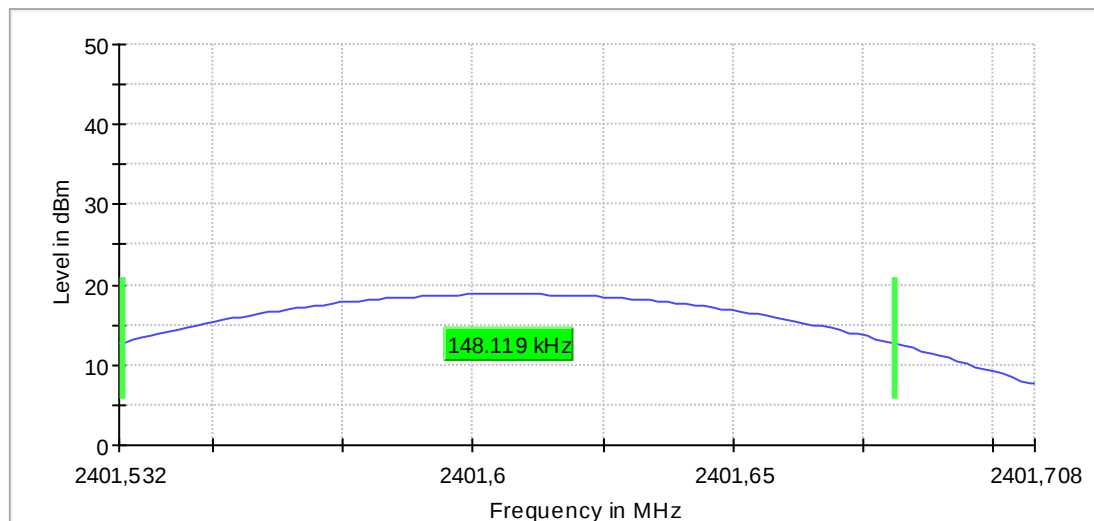
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2401.620000	0.148119	---	---	2401.532871	2401.680990

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2401.620000	18.8	PASS

6 dB Bandwidth



Occupied Channel Bandwidth 99% (2401,62 MHz; low (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

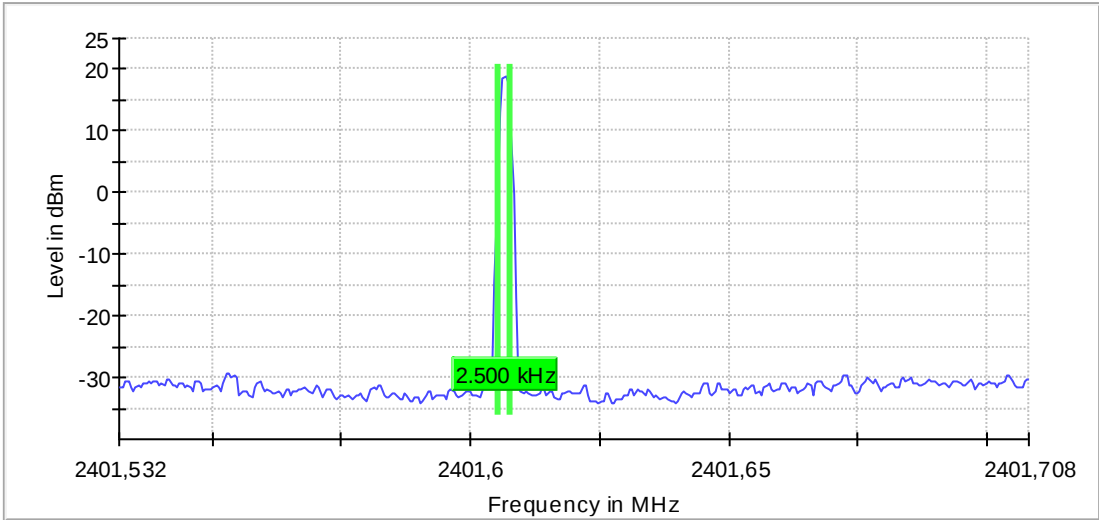
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2401.620000	0.002500	---	---	2401.605250	2401.607750

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

DUT Frequency (MHz)	Result
2401.620000	PASS

99 % Bandwidth



Emission Bandwidth 20 dB (2441,387 MHz; mid (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

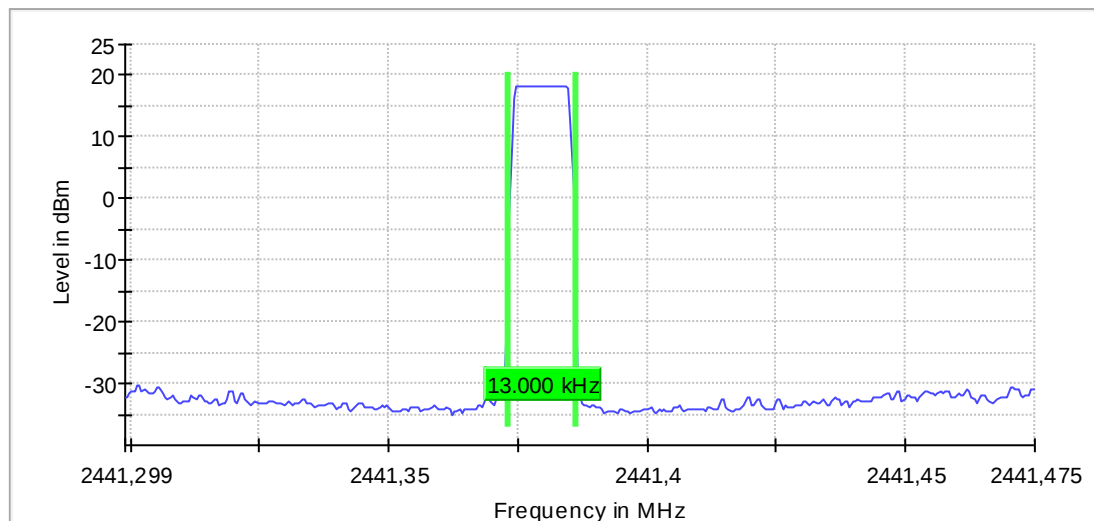
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.387000	0.013000	---	---	2441.373250	2441.386250

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.387000	18.3	PASS

20 dB Bandwidth



Minimum Emission Bandwidth 6 dB (2441,387 MHz; mid (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

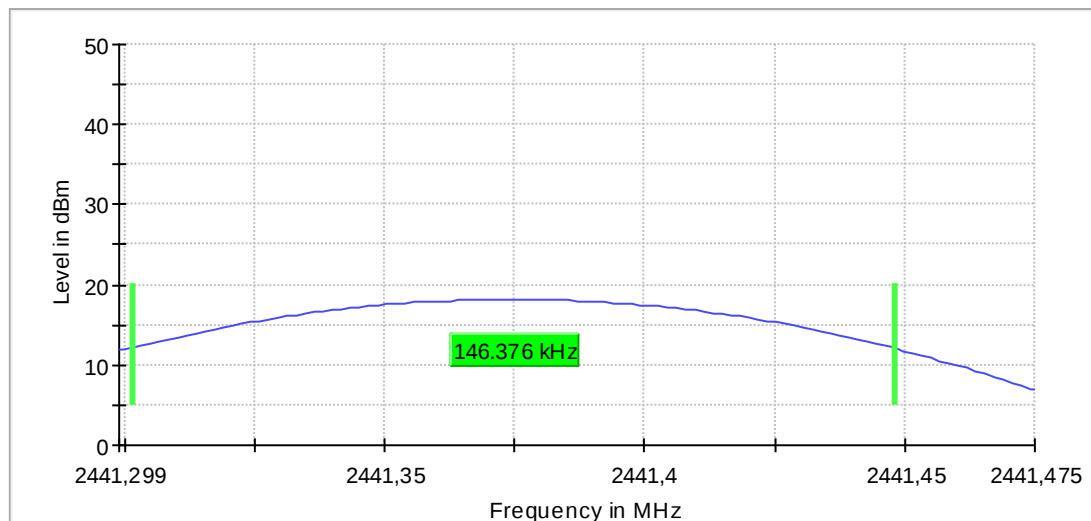
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.387000	0.146376	---	---	2441.301614	2441.447990

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.387000	18.1	PASS

6 dB Bandwidth



Occupied Channel Bandwidth 99% (2441,387 MHz; mid (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

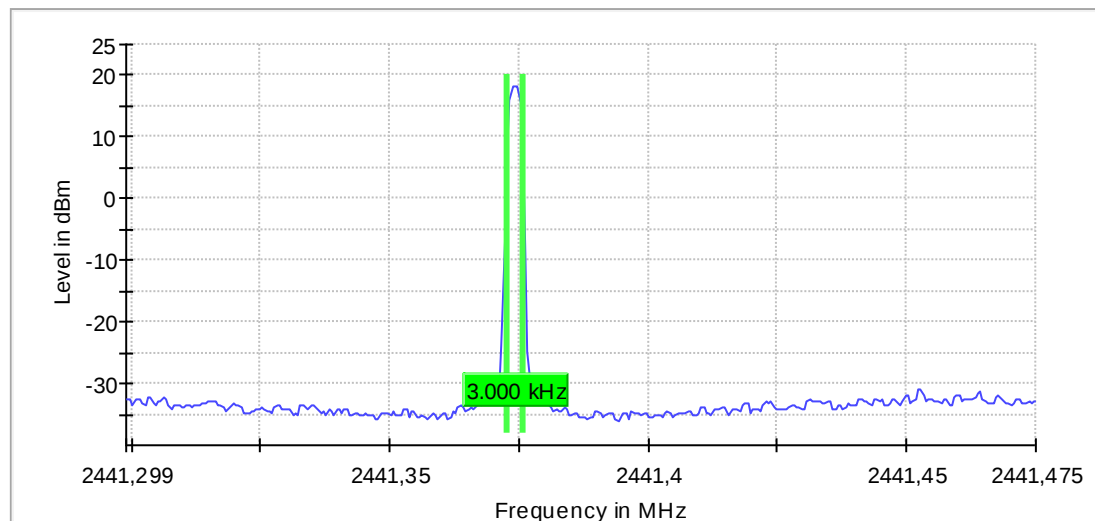
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.387000	0.003000	---	---	2441.372750	2441.375750

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

DUT Frequency (MHz)	Result
2441.387000	PASS

99 % Bandwidth



Emission Bandwidth 20 dB (2481,287 MHz; high (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

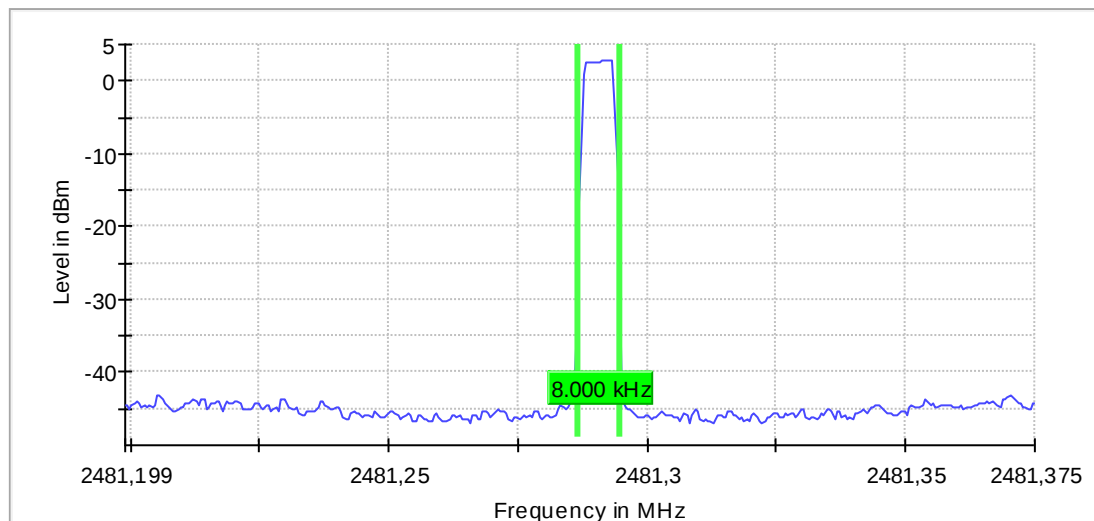
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2481.287000	0.008000	---	---	2481.286750	2481.294750

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2481.287000	2.9	PASS

20 dB Bandwidth



Minimum Emission Bandwidth 6 dB (2481,287 MHz; high (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

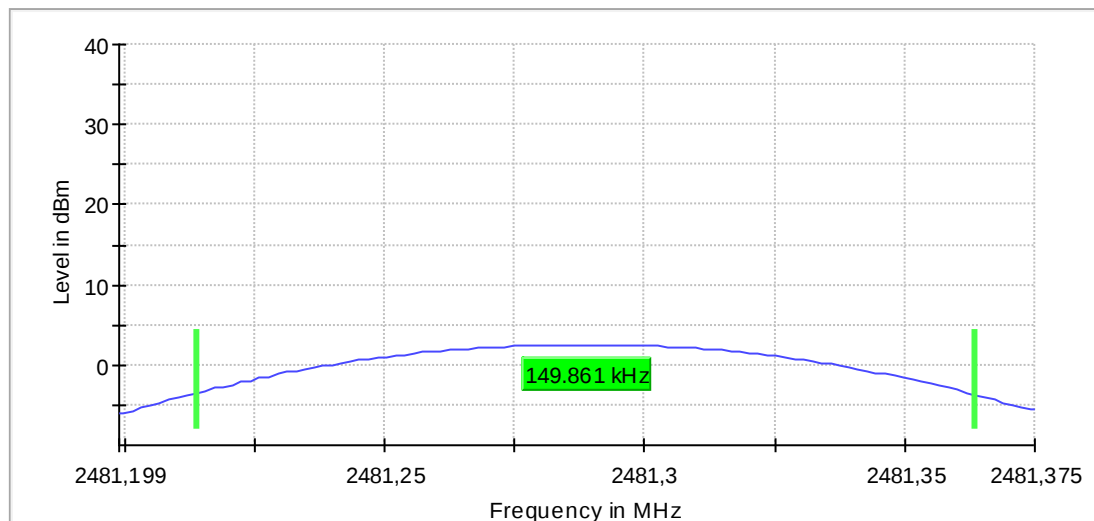
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2481.287000	0.149861	---	---	2481.213812	2481.363673

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2481.287000	2.5	PASS

6 dB Bandwidth



Occupied Channel Bandwidth 99% (2481,287 MHz; high (20 dBm); 133 kHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

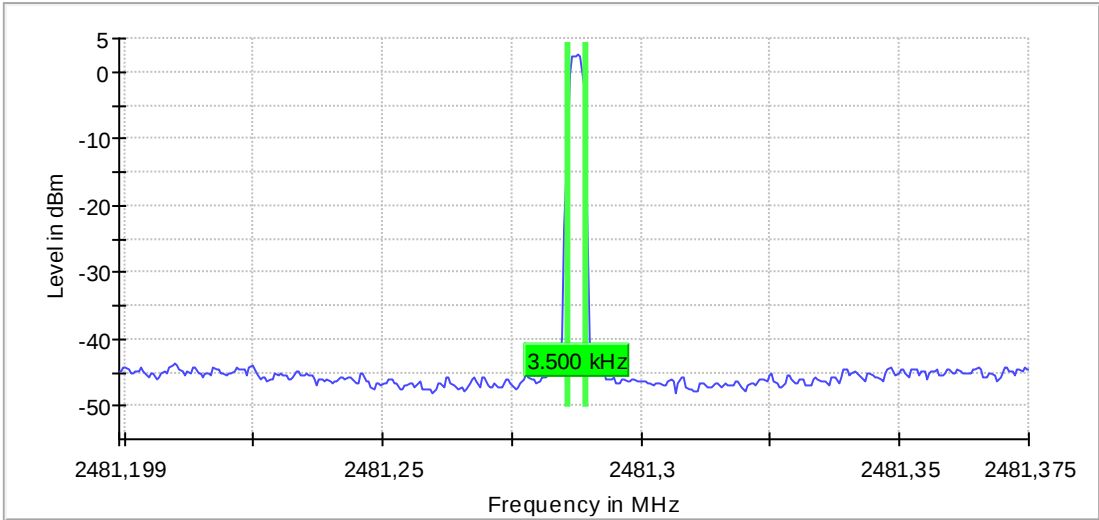
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2481.287000	0.003500	---	---	2481.285750	2481.289250

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

DUT Frequency (MHz)	Result
2481.287000	PASS

99 % Bandwidth



Tx Spurious Emission (2401,62 MHz; low (20 dBm); Test Mode)

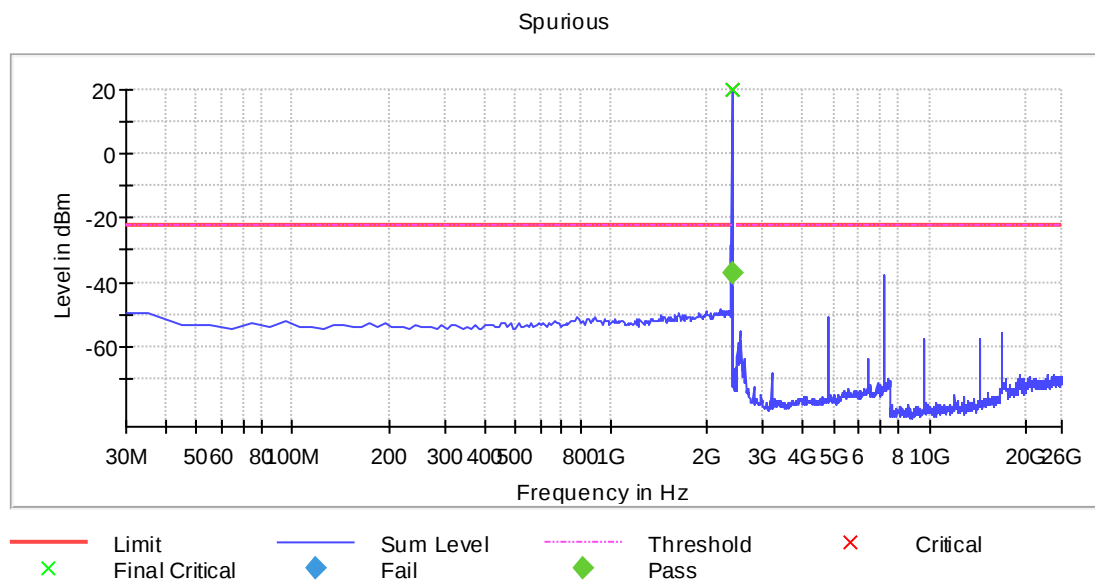
Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Result

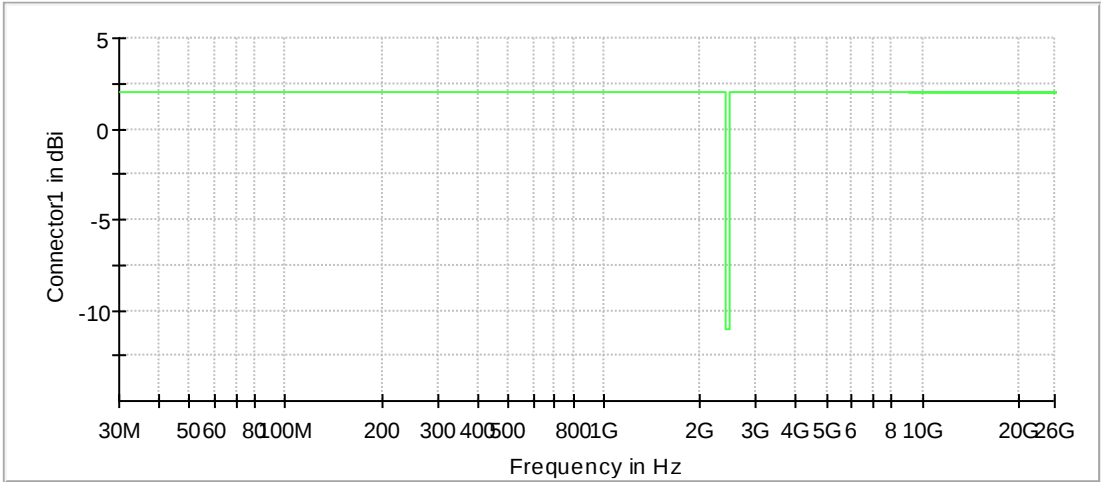
DUT Frequency (MHz)	Result
2401.620000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2399.858913	7.4	-37.5	-22.5	14.9	PASS

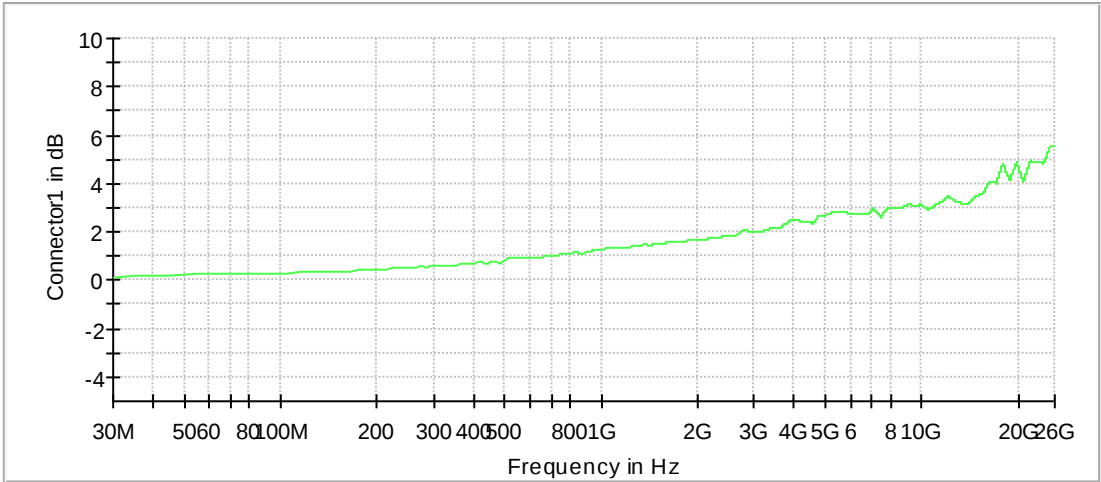


Gain



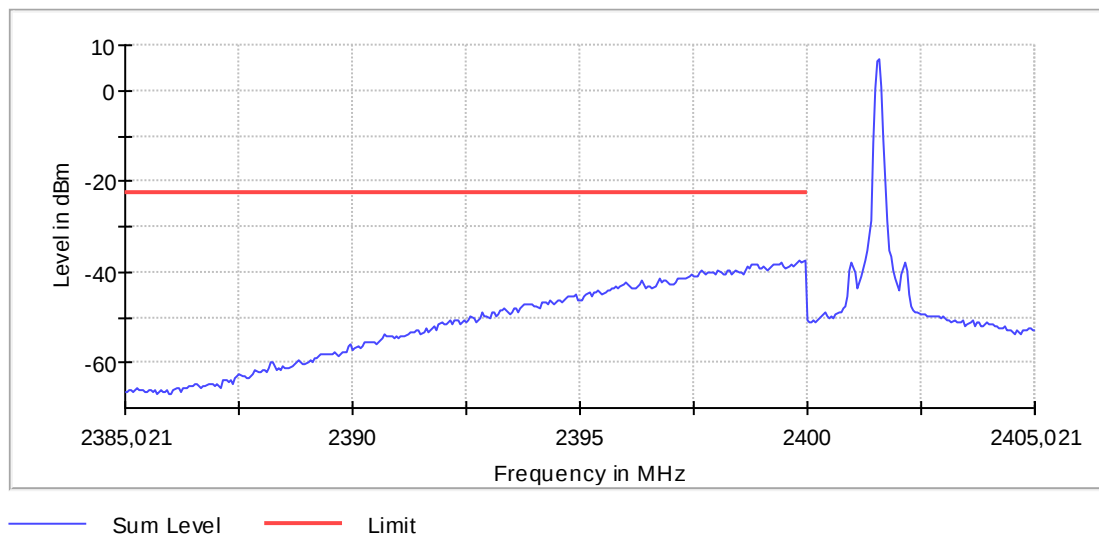
Connector1

Attenuation



Connector1

FinalMeas_2395021008Hz



Tx Spurious Emission (2441,387 MHz; mid (20 dBm); Test Mode)

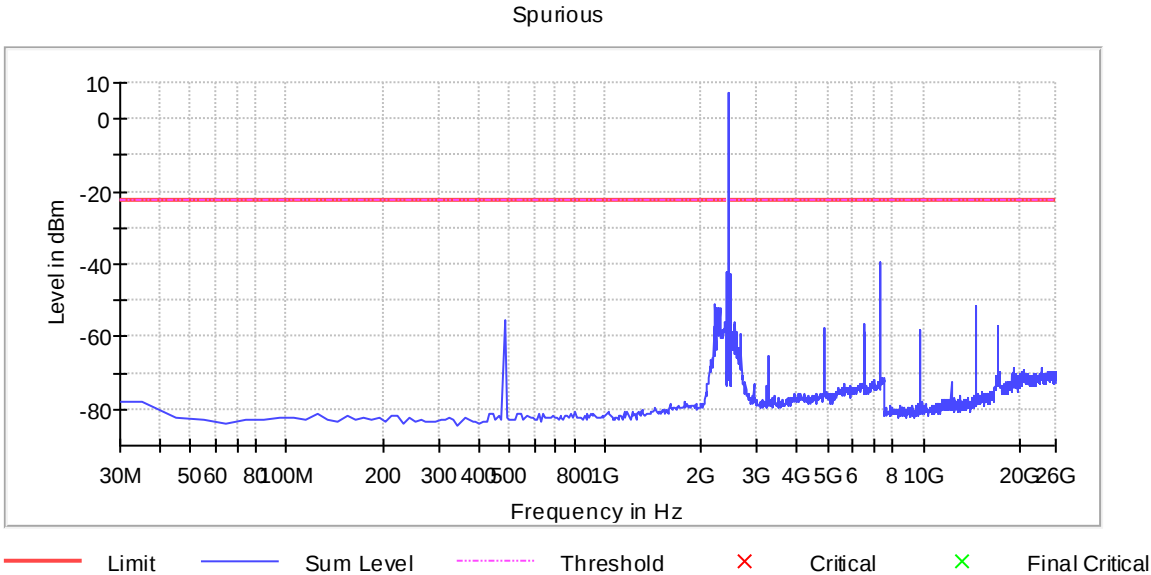
Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Result

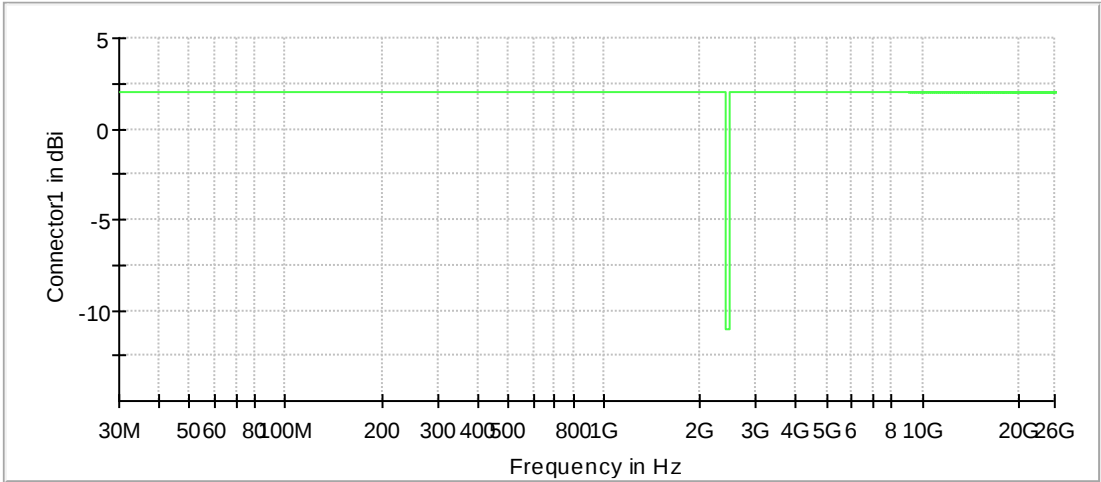
DUT Frequency (MHz)	Result
2441.387000	PASS

Final measurements

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

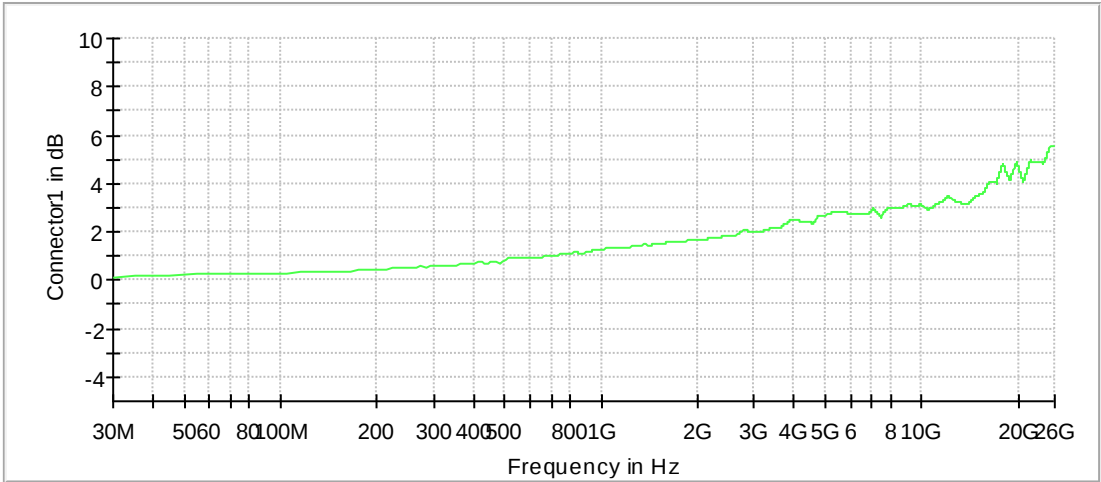


Gain



Connector1

Attenuation



Connector1

Tx Spurious Emission (2481,287 MHz; low (20 dBm); Test Mode)

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

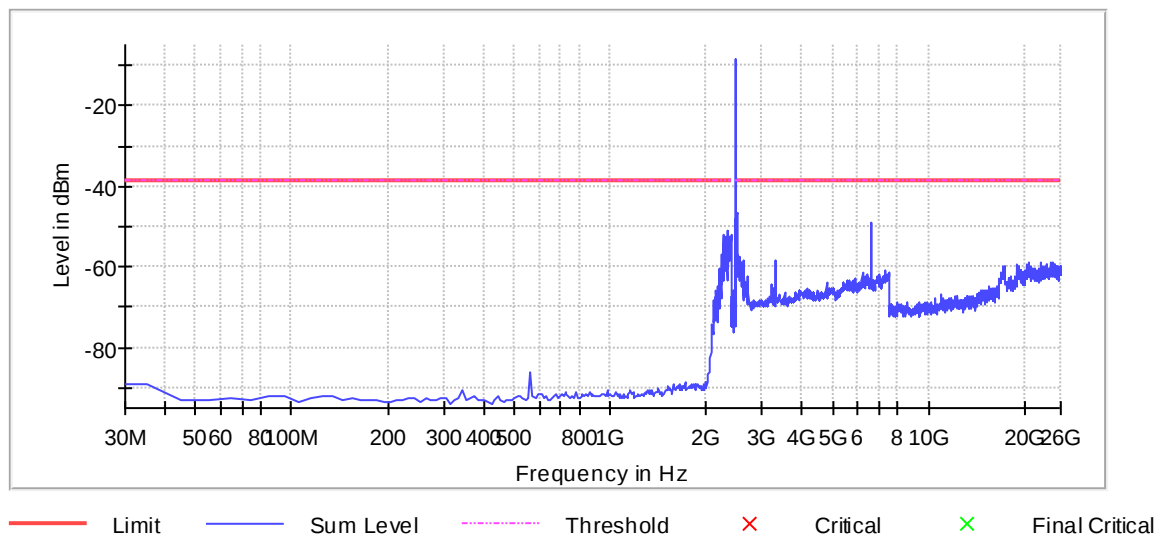
Result

DUT Frequency (MHz)	Result
2481.287000	PASS

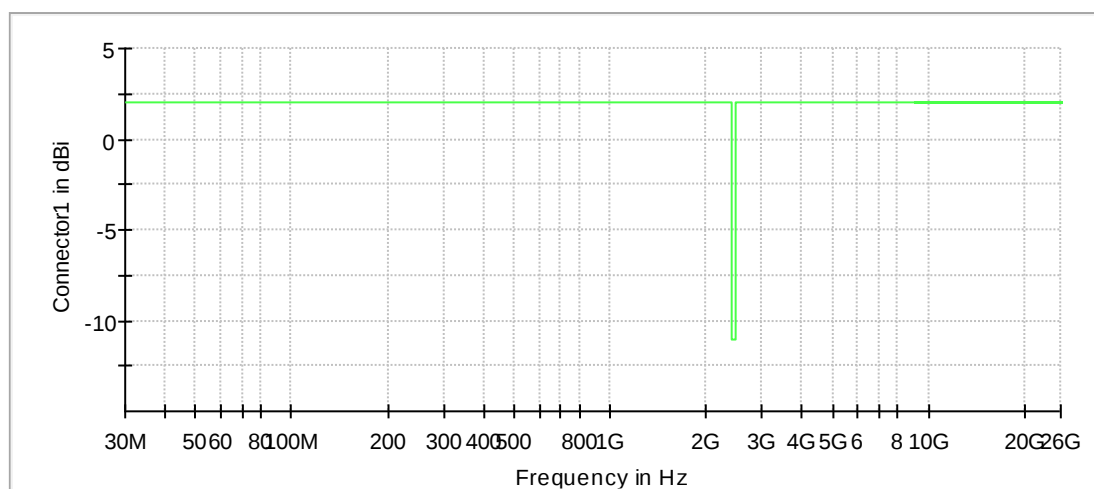
Final measurements

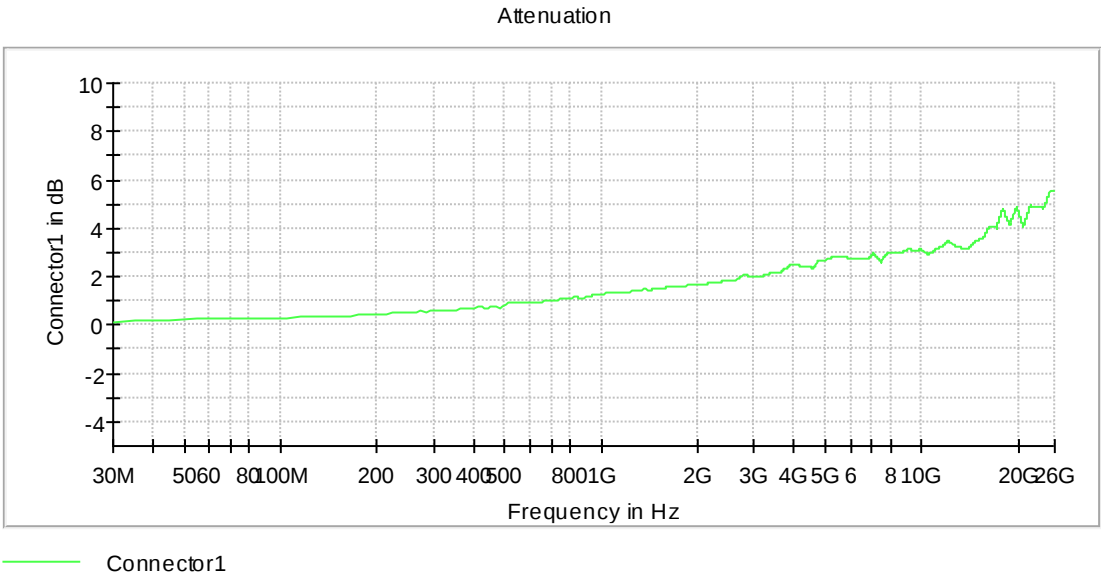
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Spurious



Gain





Tx Spurious Emission (Hopping on; (20 dBm); Test Mode)

Test according to FCC title 47 part 15 §15.247(d), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

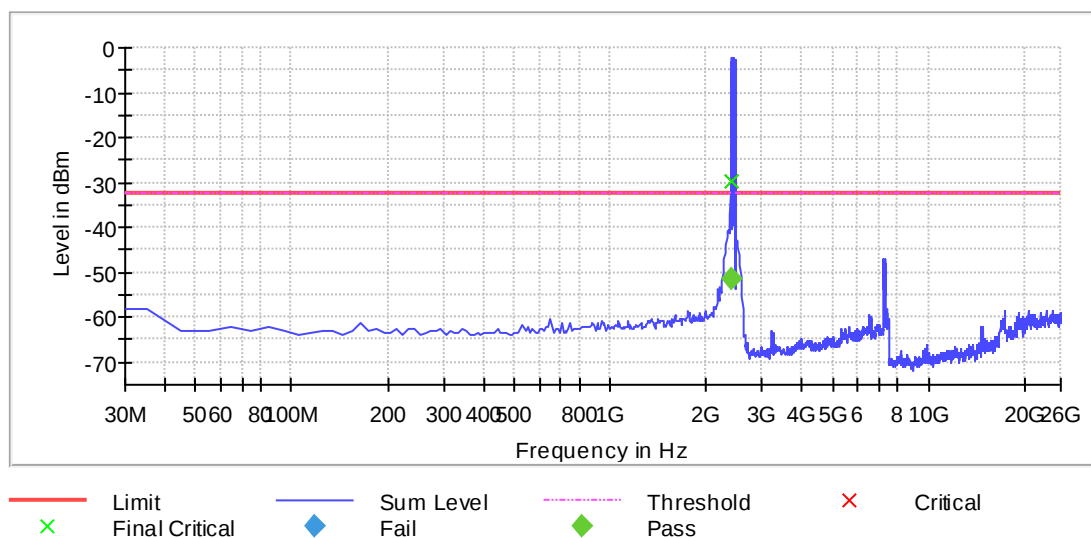
Result

DUT Frequency (MHz)	Result
Hopping on	PASS

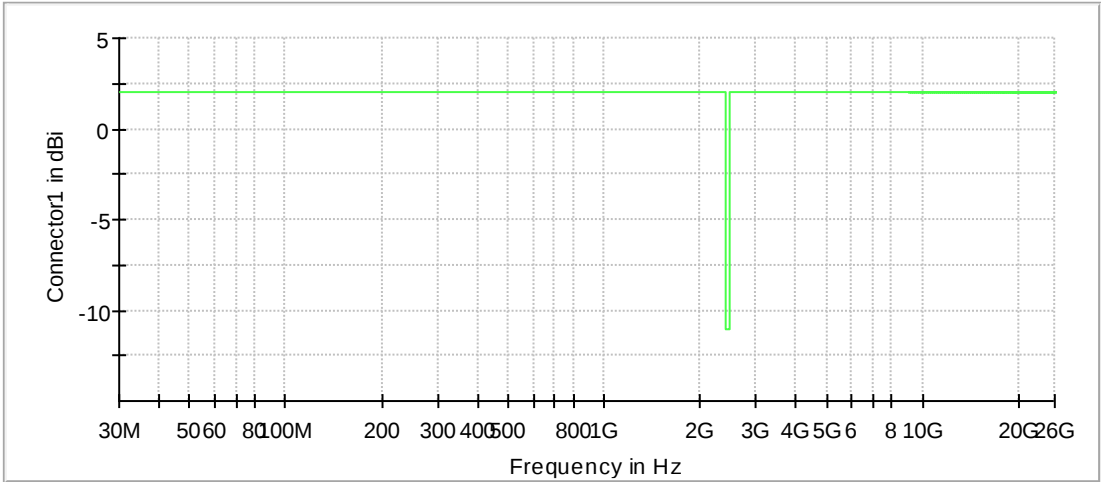
Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2398.911282	-36.5	-51.5	-32.4	19.1	PASS

Spurious

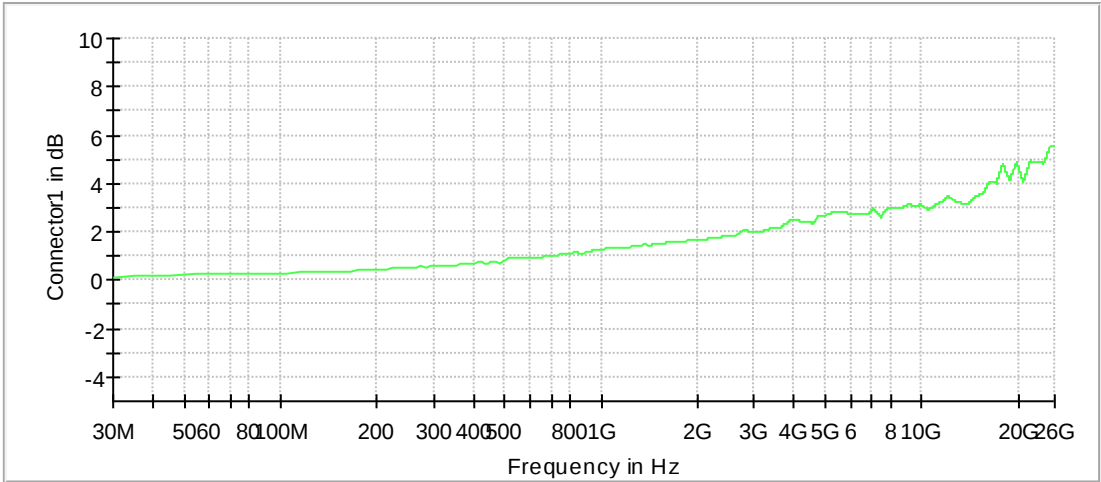


Gain



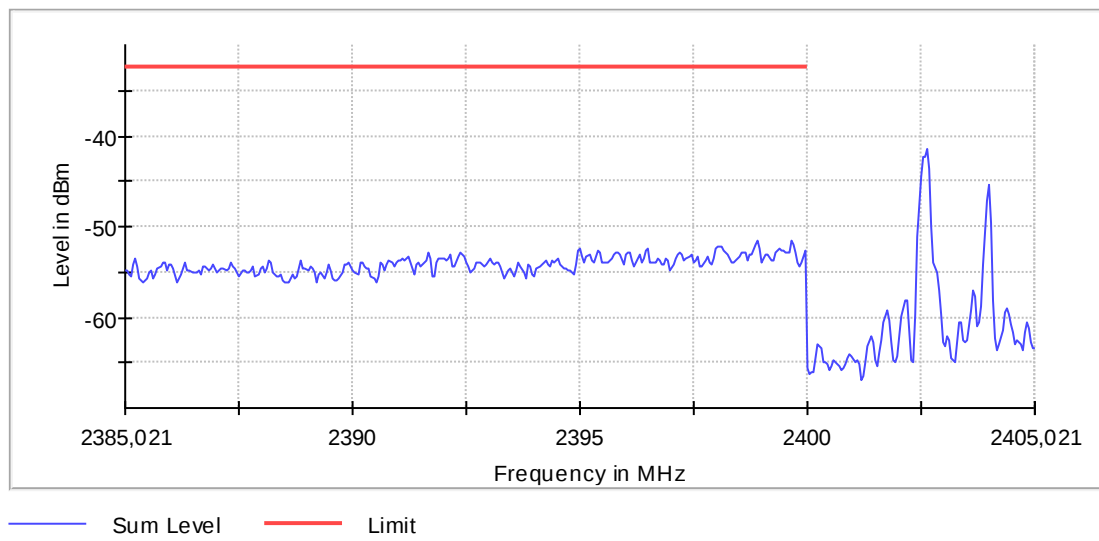
Connector1

Attenuation



Connector1

FinalMeas_2395021008Hz



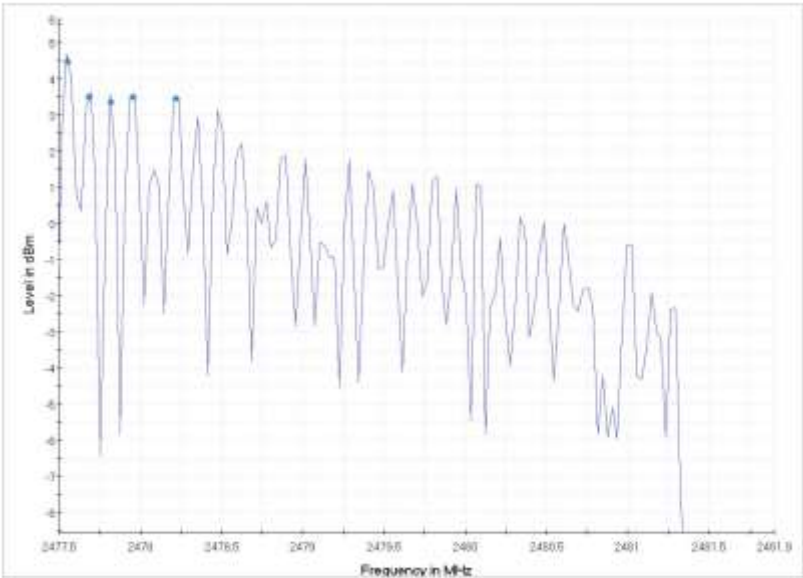
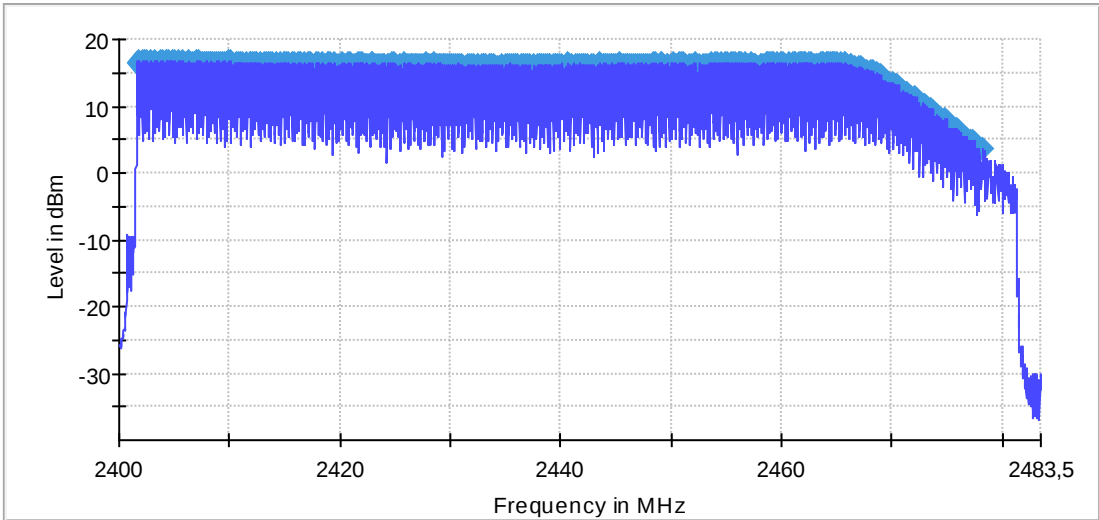
Hopping Frequencies (frequency independent;(20 dBm)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

Channels

Channels	Limit Min	Limit Max	Result
576 + 24	15	---	PASS

Sequence



Zoom: Last 24 channels not regonized by test Sytem (lower Powerlevel) were counted manually

Carrier Frequency Separation (2401,62 MHz; low (20 dBm))

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

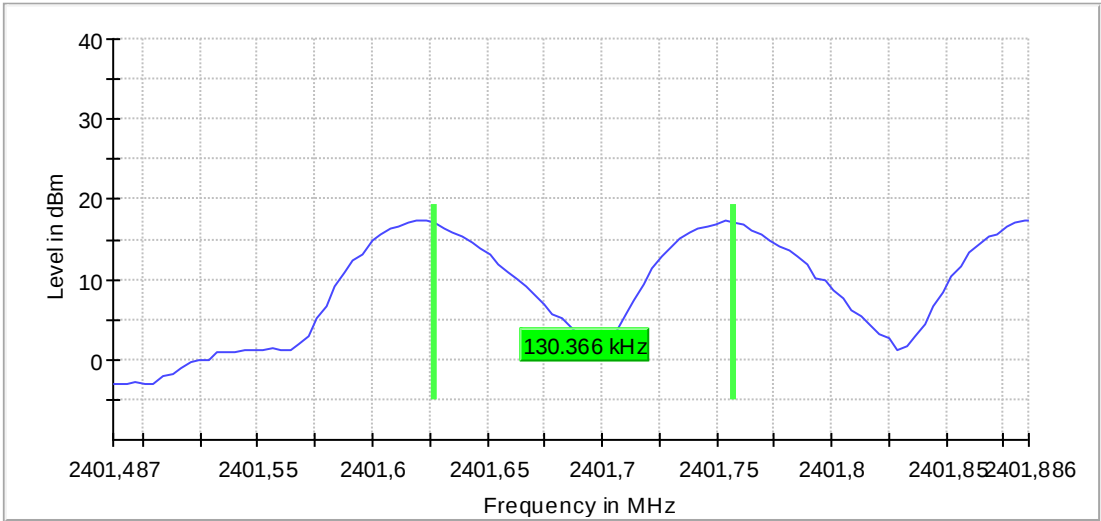
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2401.620000	0.130366	0.025000	---	2401.627243	2401.757609

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2401.620000	PASS

CFS



Carrier Frequency Separation (2441,387 MHz; mid (20 dBm))

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

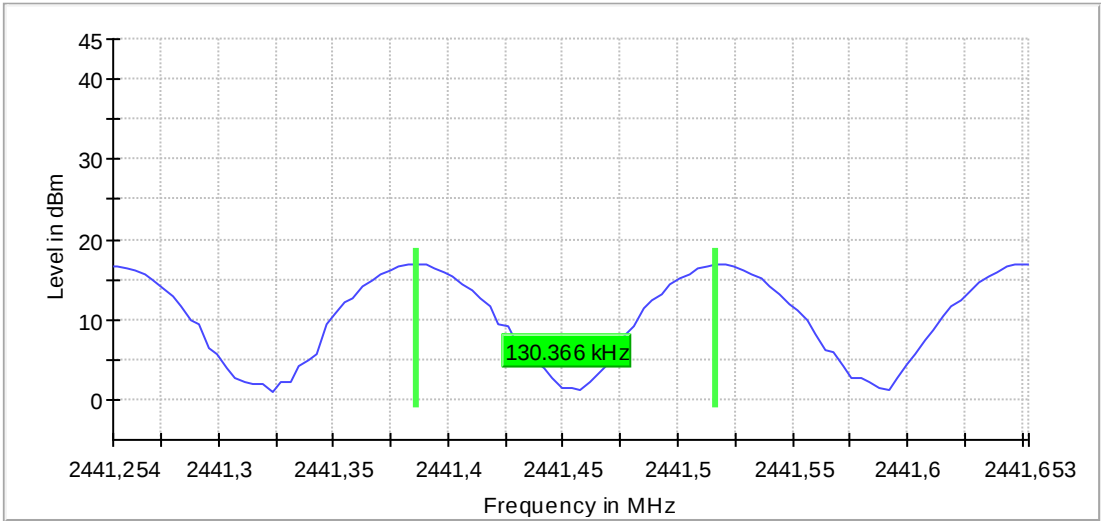
Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.387000	0.130366	0.025000	---	2441.386342	2441.516708

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.387000	PASS

CFS



Carrier Frequency Separation (2481,287 MHz; low (20 dBm))

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10-2013

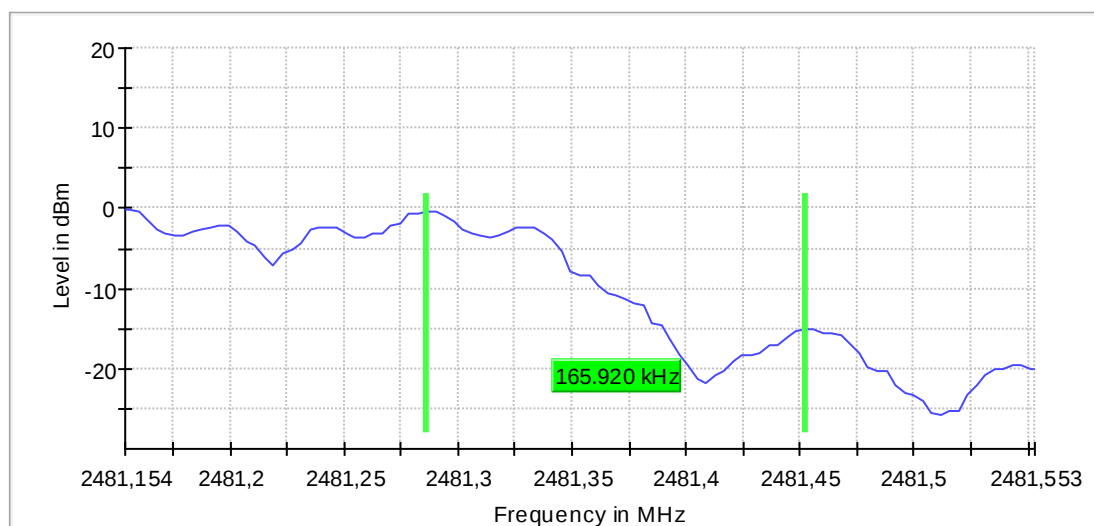
Result

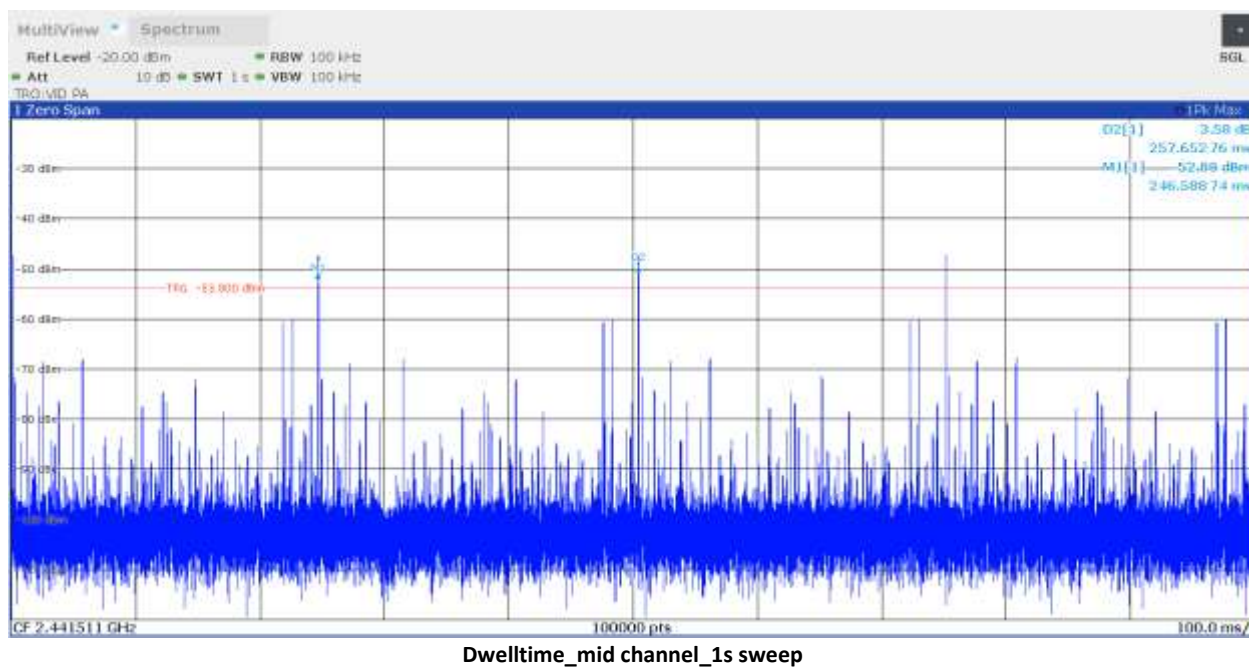
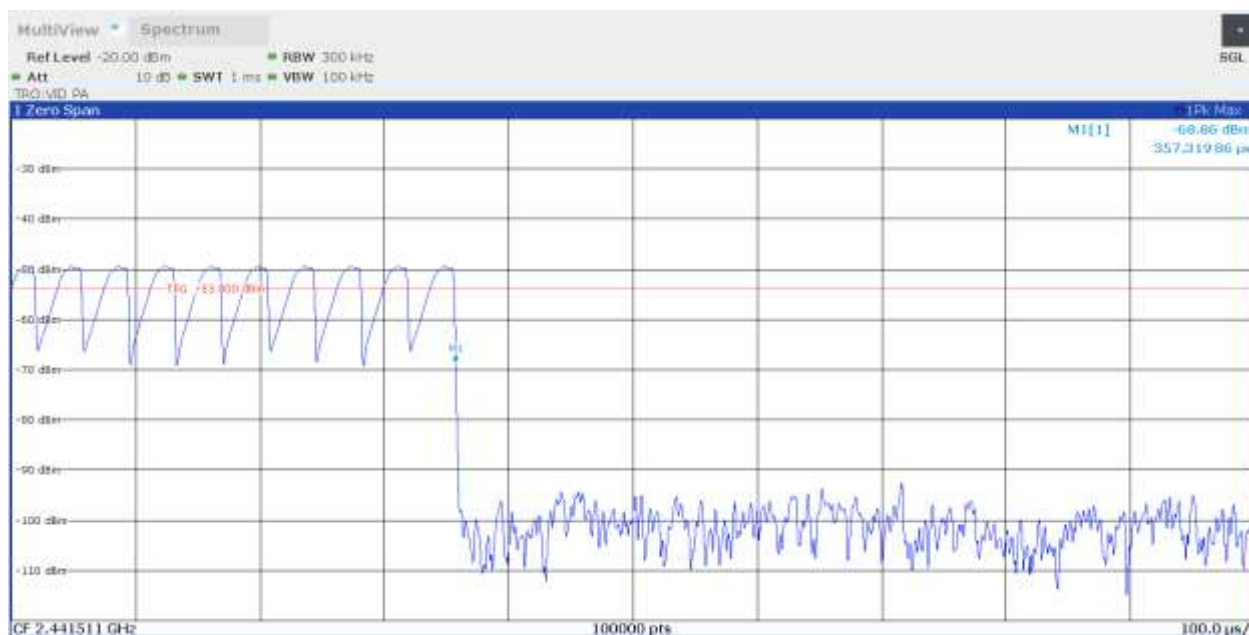
DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2481.287000	0.165920	0.025000	---	2481.286342	2481.452262

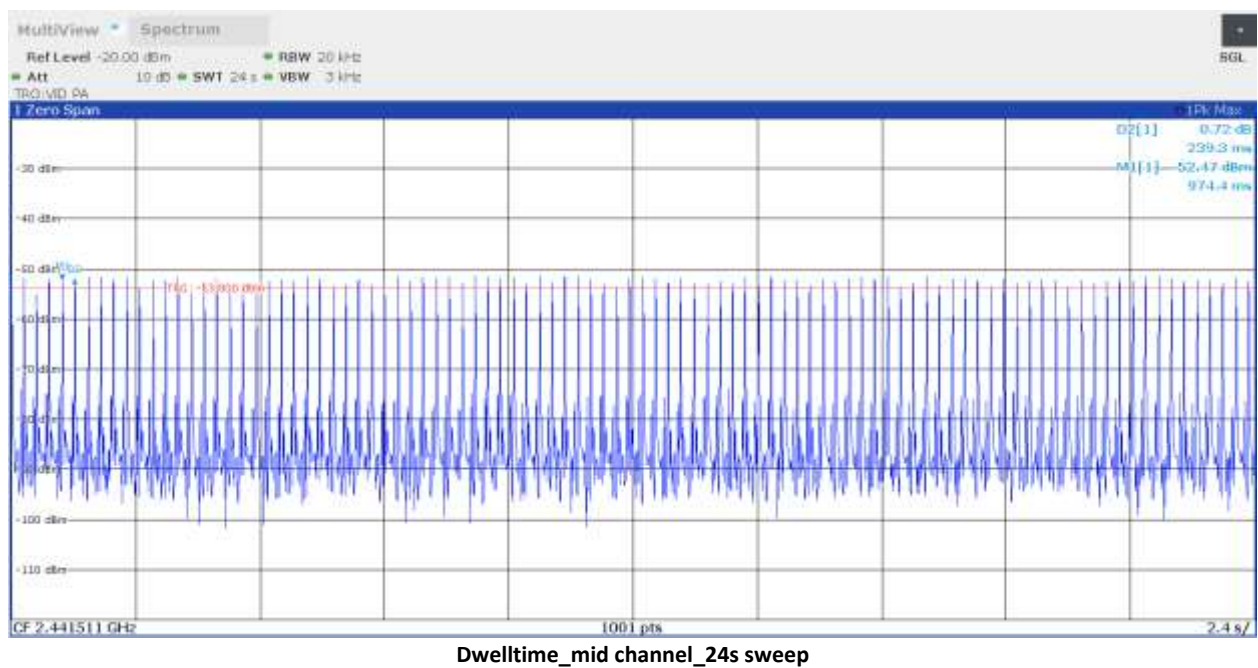
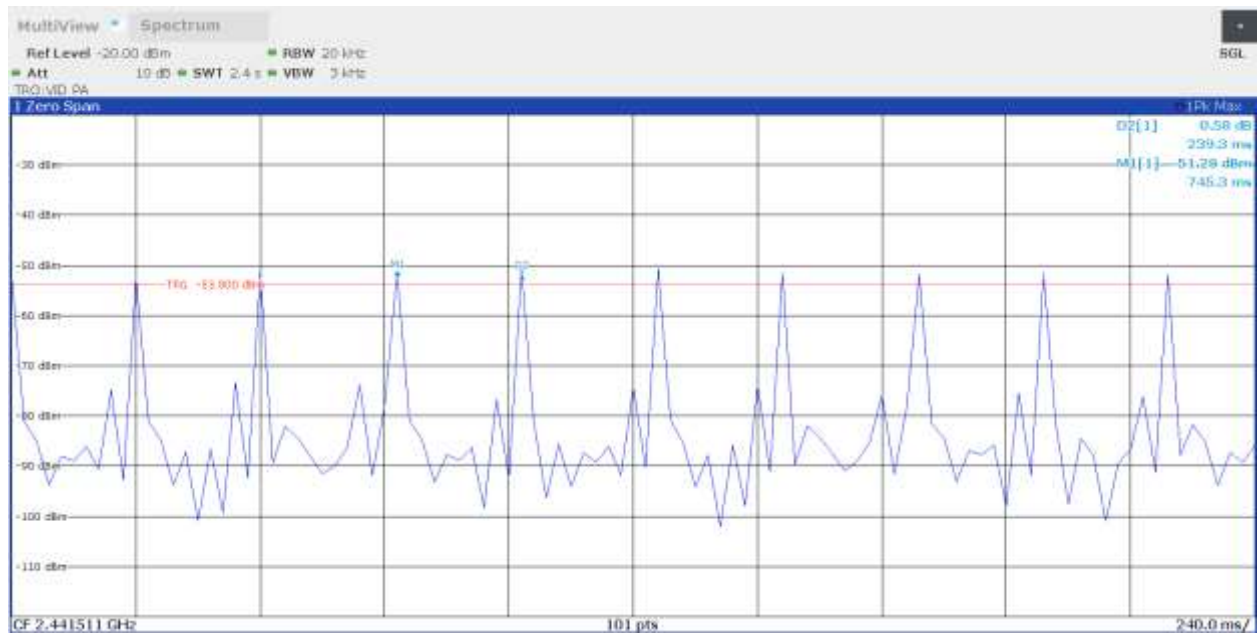
(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2481.287000	PASS

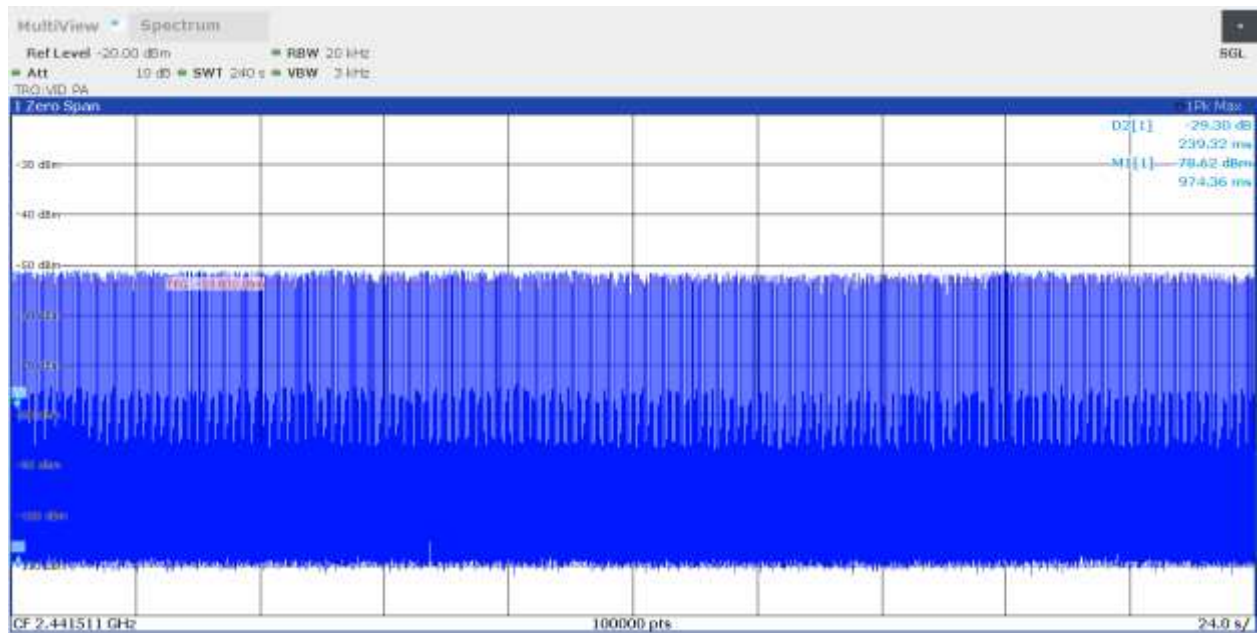
CFS







Number of Transmissions = 96



Dwelltime_mid channel_240s sweep

1.2 Radiated measurements

2.01a_FHSS_ch01

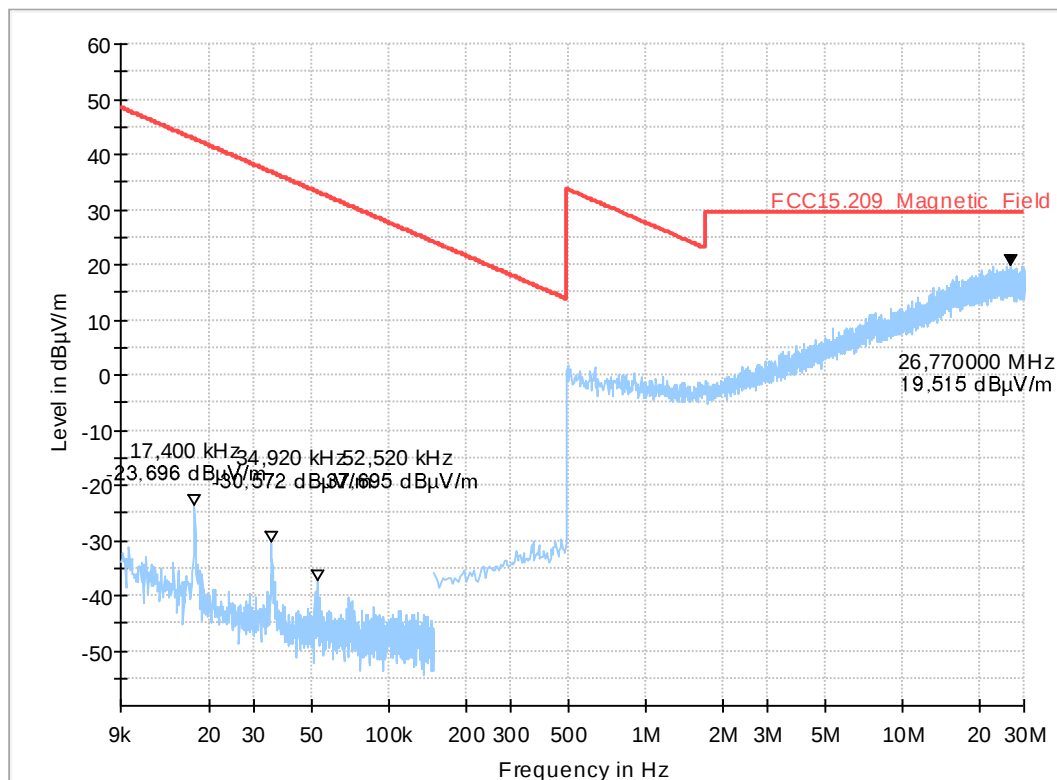
Common Information

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:	FHSS CH01
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel low
Environmental Conditions::	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S02_C01
	Full Spectrum



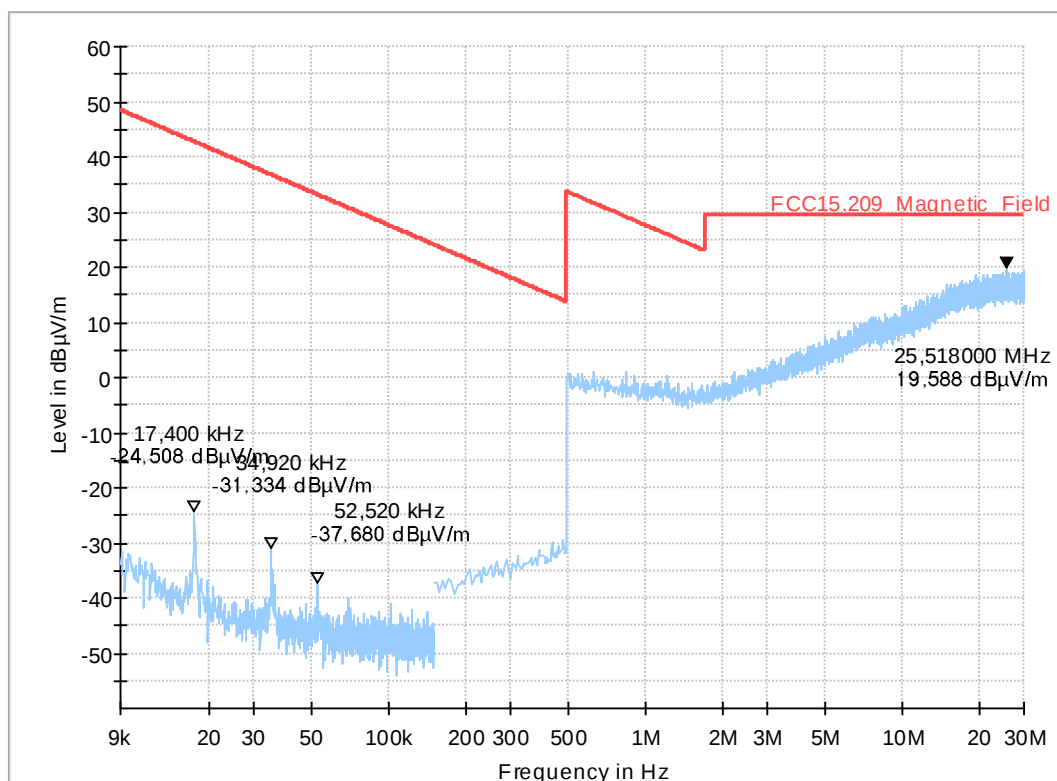
2.01b_FHSS_ch01

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:	FHSS CH01
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel low
Environmental Conditions:	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S02_C01
	Full Spectrum



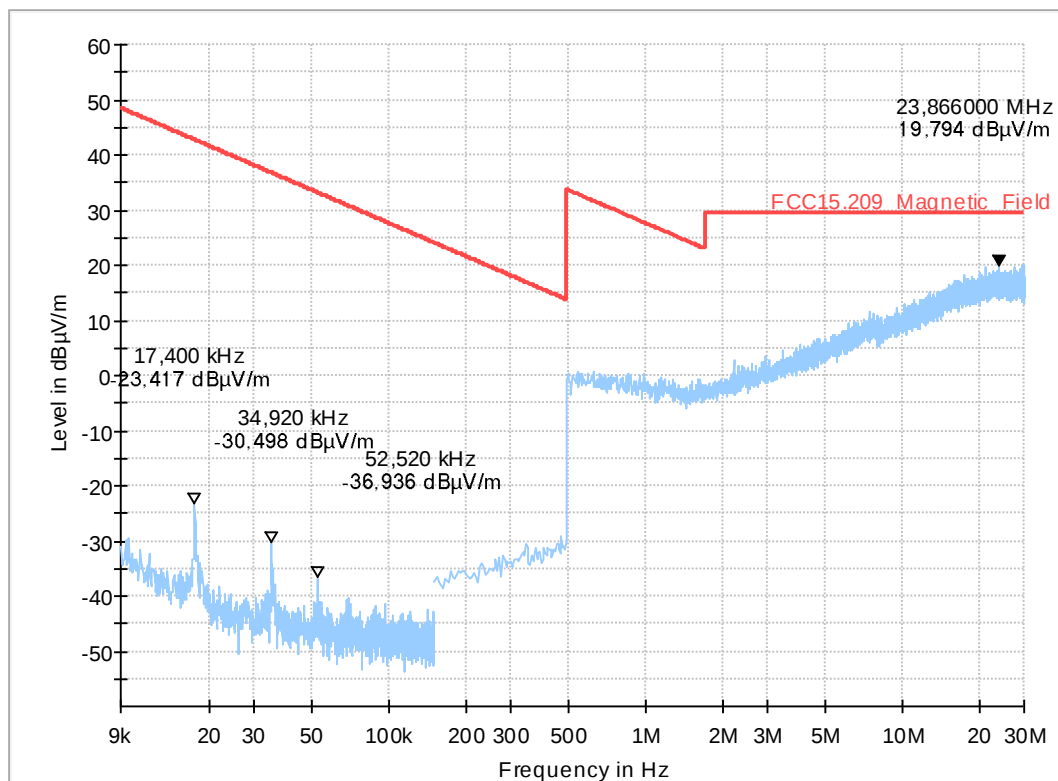
2.02a_FHSS_ch300

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:	FHSS CH300
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel mid
Environmental Conditions:	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S04_C01
	Full Spectrum



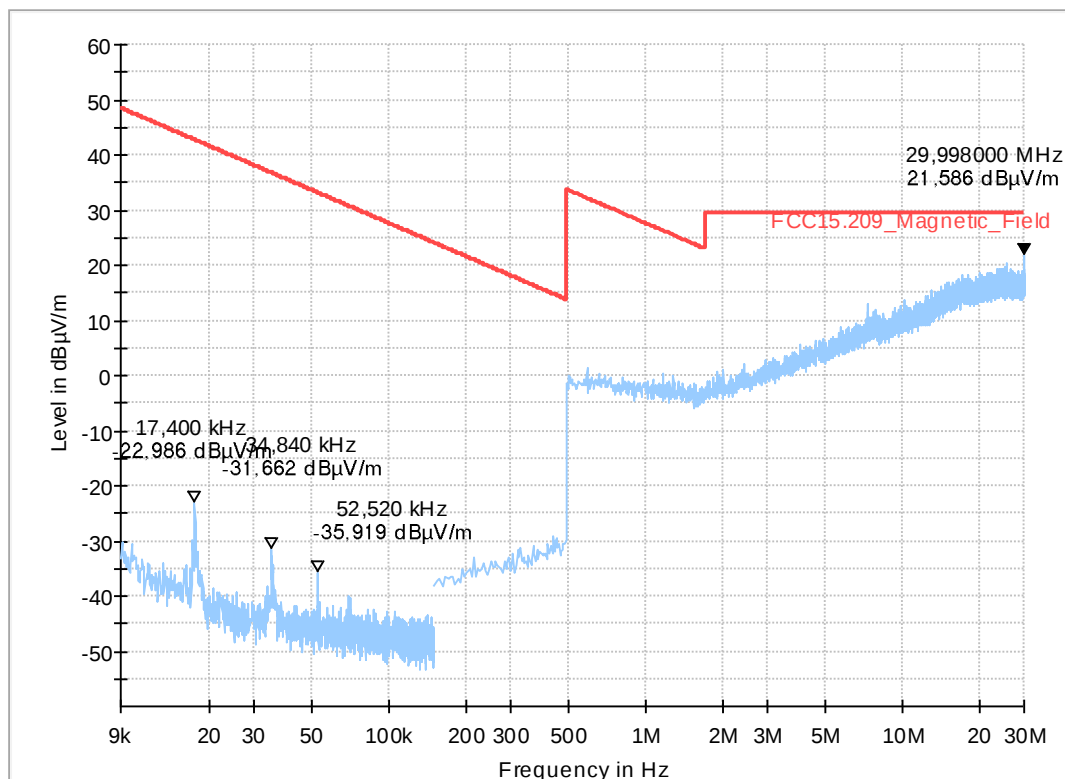
2.02b_FHSS_ch300

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:	FHSS CH300
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel mid
Environmental Conditions:	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S04_C01
	Full Spectrum



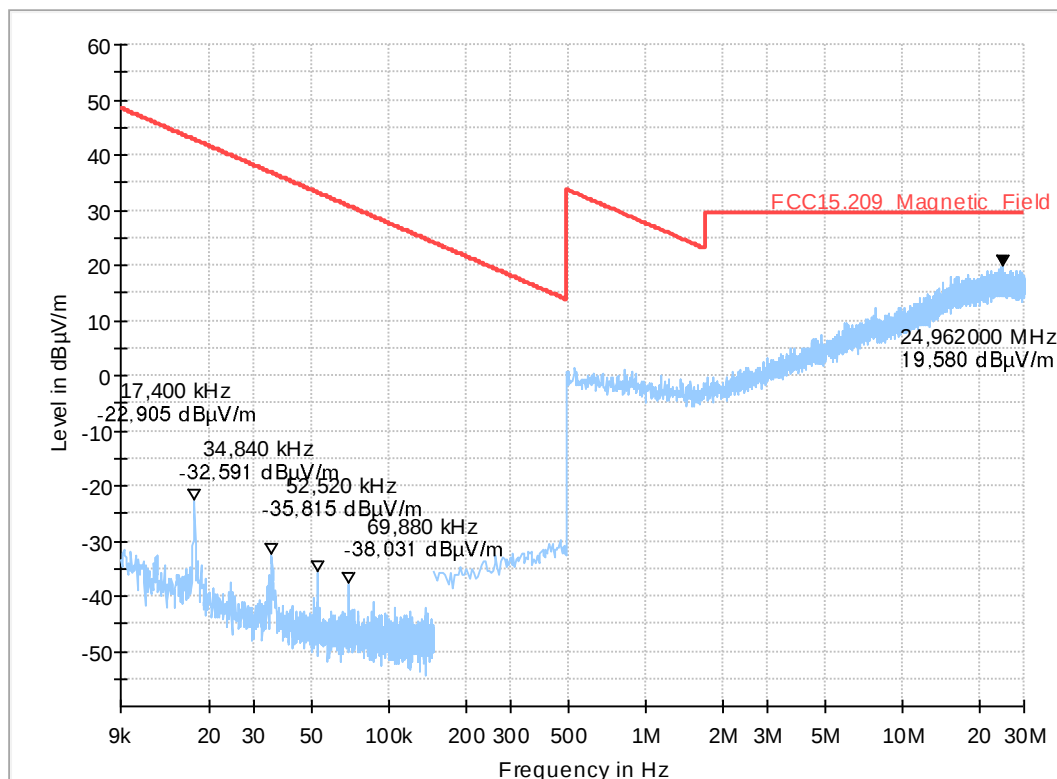
2.03a_FHSS_ch600

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:	FHSS CH600
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel high
Environmental Conditions::	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S05_C01
	Full Spectrum



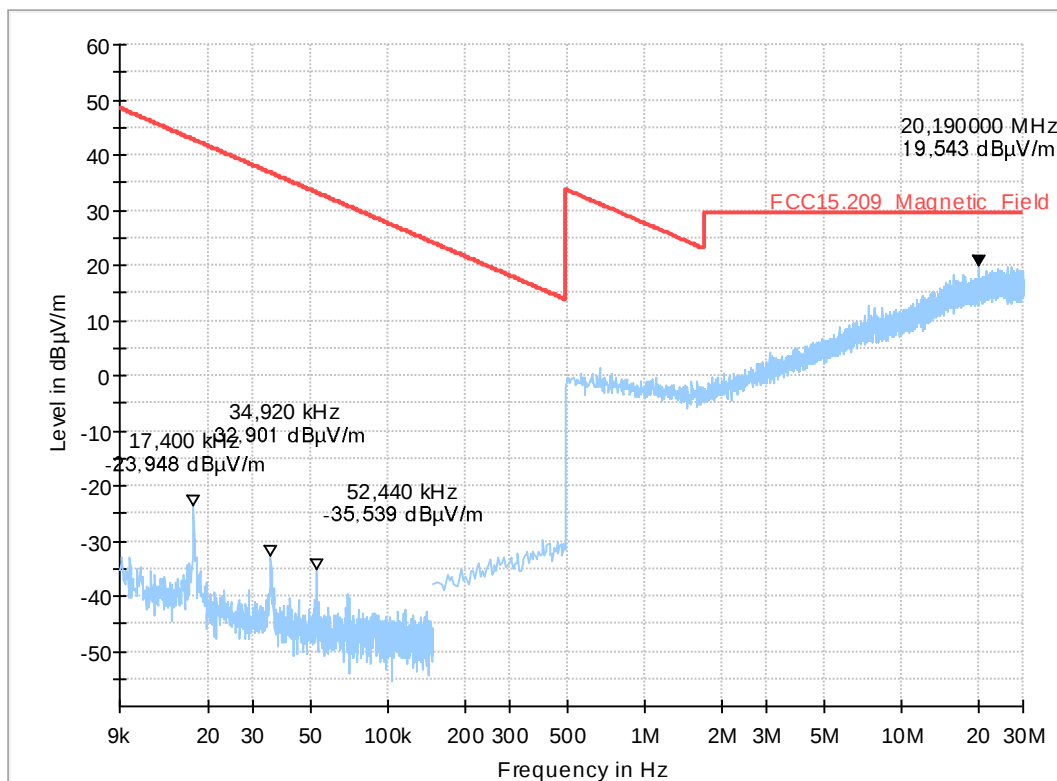
2.03b_FHSS_ch600

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:	FHSS CH600
Power during tests:	13V DC + 3.3V DC
Comment 1:	Channel high
Environmental Conditions::	Humidity: 35 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number	21-1-01832S05_C01
	Full Spectrum



3.01a_FHSS_ch01

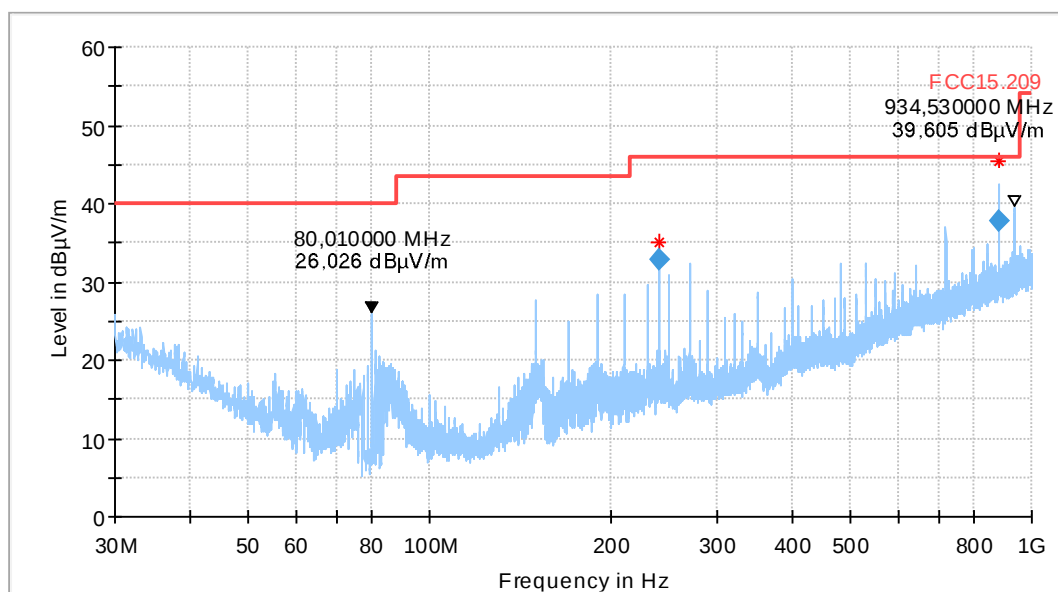
Common Information

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: 35 % rH; Temperature: 21 °C
 Operator Name: SOz
 Operating Mode: FHSS CH 01
 Power supply: 13V DC + 3.3V DC
 Comment: Channel no. low
 Verdict: PASSED

EUT Information

PMT number 21-1-01832S02_C01
 Full Spectrum



Remark: Peak @ 934 MHz is external interferer and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
239.975000	32.92	46.00	13.08	120.000	149.0	V	71.0	13.1	0.0	1.5	11.6
879.955000	37.90	46.00	8.10	120.000	109.0	V	99.0	26.2	0.0	3.5	22.7

3.01b_FHSS_ch01

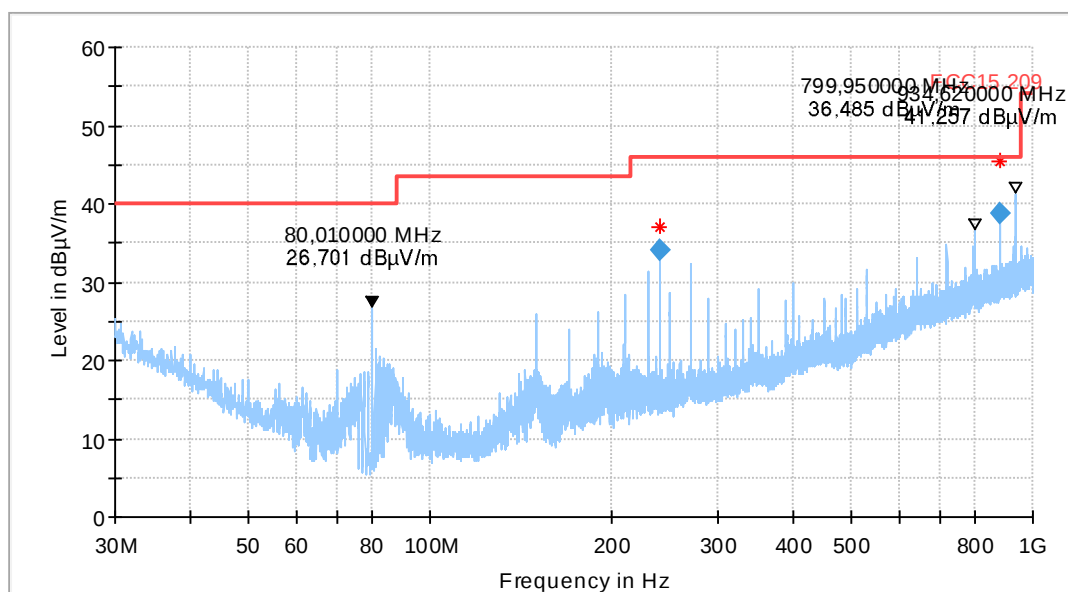
Common Information

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: 35 % rH; Temperature: 21 °C
 Operator Name: SOz
 Operating Mode: FHSS CH 01
 Power supply: 13V DC + 3.3V DC
 Comment: Channel no. low
 Verdict: PASSED

EUT Information

PMT number 21-1-01832S02_C01
 Full Spectrum



Remark: Peaks @ 799 and 934 MHz are external interferers and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
239.995000	33.96	46.00	12.04	120.000	130.0	V	281.0	13.1	0.0	1.5	11.6
879.955000	38.80	46.00	7.20	120.000	107.0	H	293.0	26.2	0.0	3.5	22.7

3.02a_FHSS_ch300

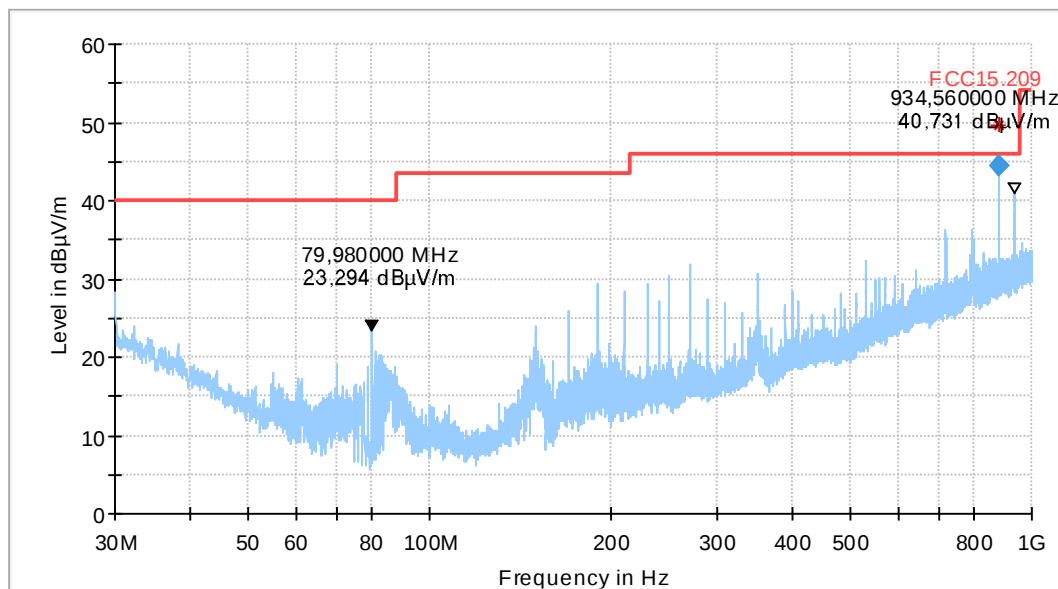
Common Information

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: 35 % rH; Temperature: 21 °C
 Operator Name: SOz
 Operating Mode: FHSS CH 300
 Power supply: 13V DC + 3.3V DC
 Comment: Channel no. mid
 Verdict: PASSED

EUT Information

PMT number 21-1-01832S04_C01
 Full Spectrum



Remark: Peak @ 934 MHz is external interferer and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
879.955000	44.55	46.00	1.45	120.000	202.0	V	98.0	26.2	0.0	3.5	22.7

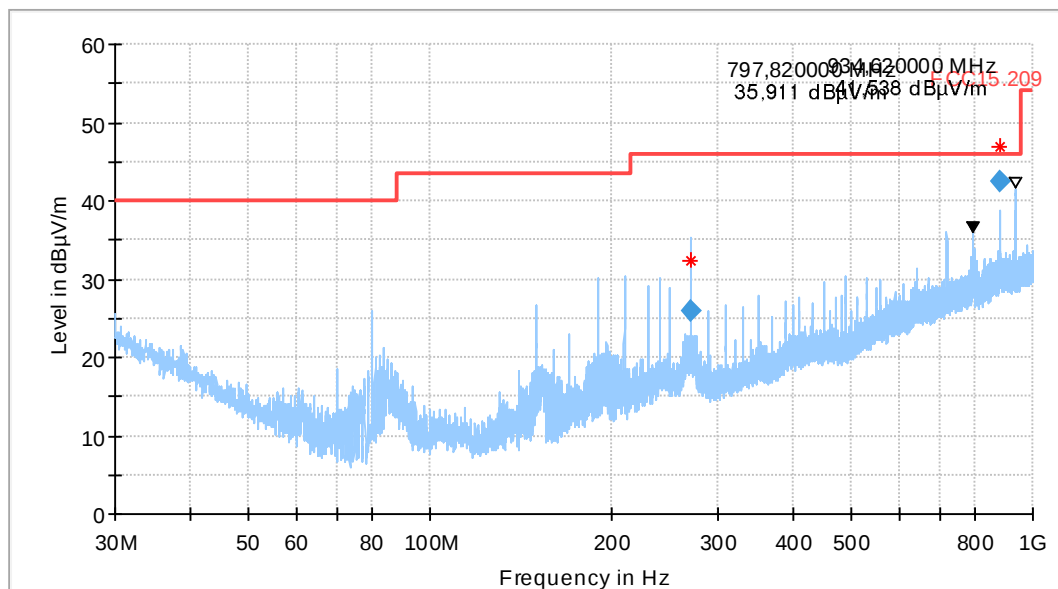
3.02b_FHSS_ch300

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: 35 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	FHSS CH 300
Power supply:	13V DC + 3.3V DC
Comment:	Channel no. mid
Verdict:	PASSED

EUT Information

PMT number	21-1-01832S04_C01
	Full Spectrum



Remark: Peaks @ 797 and 934 MHz are external interferers and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
270.003000	25.88	46.00	20.12	120.000	211.0	V	274.0	14.6	0.0	1.6	13.0
879.955000	42.47	46.00	3.53	120.000	100.0	H	38.0	26.2	0.0	3.5	22.7

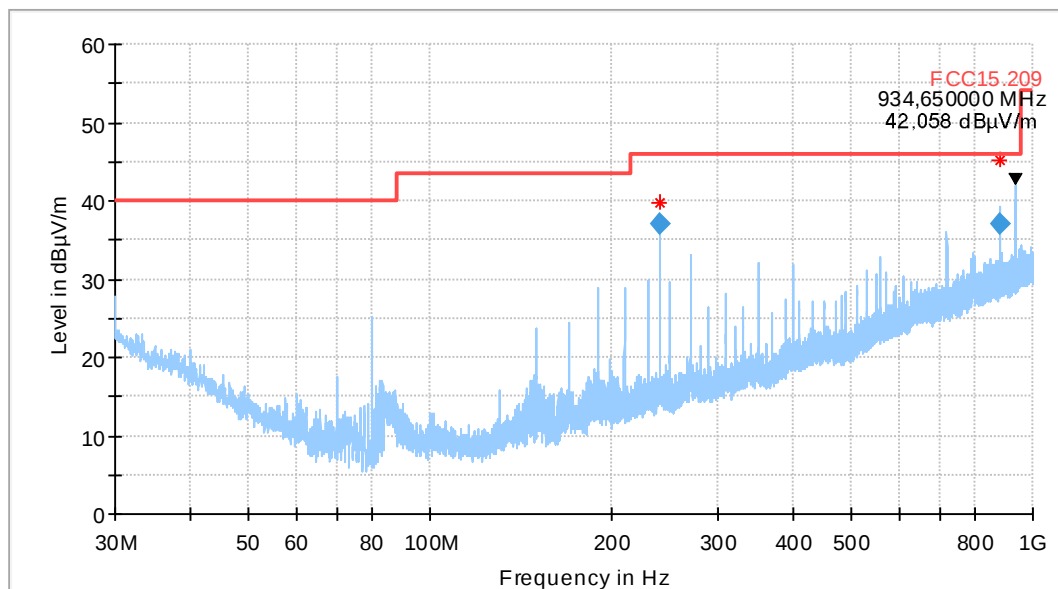
3.03a_FHSS_ch600

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: 35 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	FHSS CH 01
Power supply:	13V DC + 3.3V DC
Comment:	Channel no. high
Verdict:	PASSED

EUT Information

PMT number	21-1-01832S05_C01
	Full Spectrum



Remark: Peak @ 934 MHz is external interferer and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
239.995000	37.12	46.00	8.88	120.000	105.0	V	313.0	13.1	0.0	1.5	11.6
879.955000	36.99	46.00	9.01	120.000	184.0	V	87.0	26.2	0.0	3.5	22.7

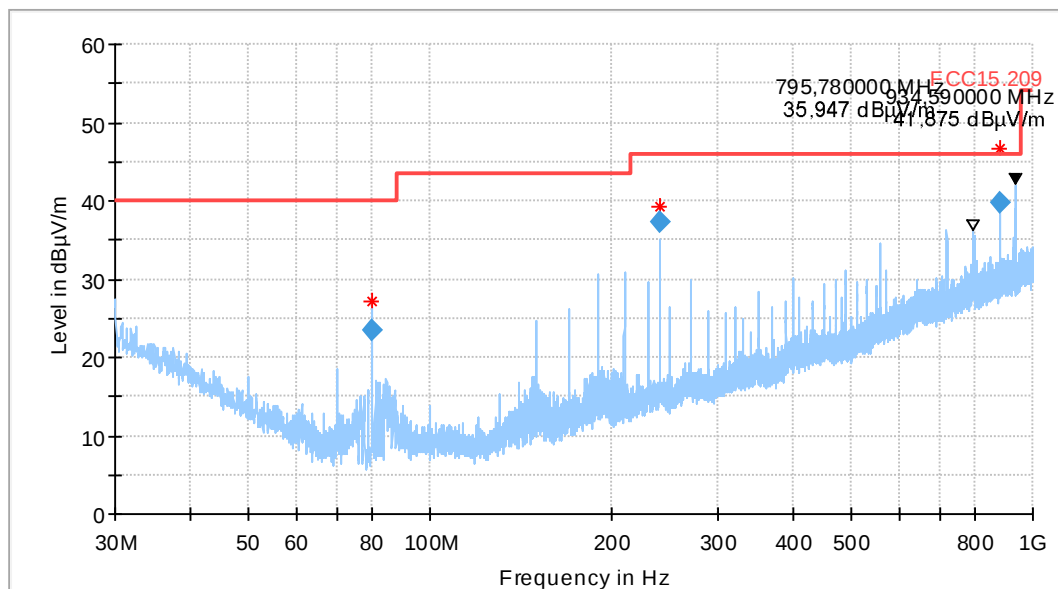
3.03b_FHSS_ch600

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: 35 % rH; Temperature: 21 °C
Operator Name:	SOz
Operating Mode:	FHSS CH 01
Power supply:	13V DC + 3.3V DC
Comment:	Channel no. high
Verdict:	PASSED

EUT Information

PMT number	21-1-01832S05_C01
	Full Spectrum



Remark: Peaks @ 795 and 934 MHz are external interferers and not caused by EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamplifier (dB)	Trd Corr. (dB/m)
80.005000	23.35	40.00	16.65	120.000	160.0	V	356.0	6.9	0.0	0.9	6.0
239.995000	37.37	46.00	8.63	120.000	112.0	V	154.0	13.1	0.0	1.5	11.6
879.955000	39.86	46.00	6.14	120.000	157.0	H	313.0	26.2	0.0	3.5	22.7

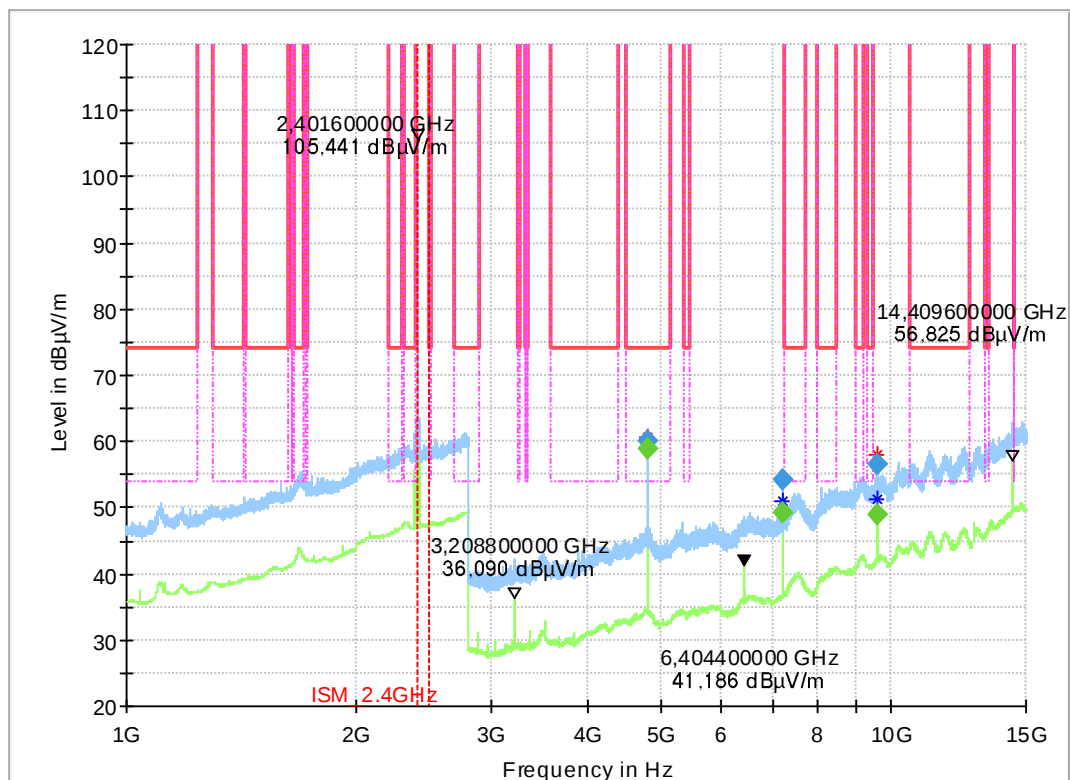
4.01a_FHSS_ch01

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:	1
Set-up no.	1
Operator:	SOz
Comment:	Channel no. low
Comment2:	-
Environmental Conditions:	Humidity: 41 % rH; Temperature: 21 °C
Verdict:	PASSED*

EUT Information

PMT number	21-1-01832S02_C01
	Full Spectrum



*Remark: Duty cycle correction factor has been applied to critical frequencies surpassing limits.

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Elevation
4803.200000	60.01	---	74.00	13.99	100.0	1000.000	155.0	V	51.0	0.0
4803.200000	---	< 35.00*	54.00	-4.83	100.0	1000.000	155.0	V	50.0	0.0
7204.800000	54.12	---	150.00	95.88	100.0	1000.000	155.0	H	46.0	90.0
7204.800000	---	49.16	150.00	100.84	100.0	1000.000	155.0	H	47.0	90.0
9606.400000	---	49.09	150.00	100.91	100.0	1000.000	155.0	H	-18.0	90.0
9606.400000	56.43	---	150.00	93.57	100.0	1000.000	155.0	H	38.0	90.0

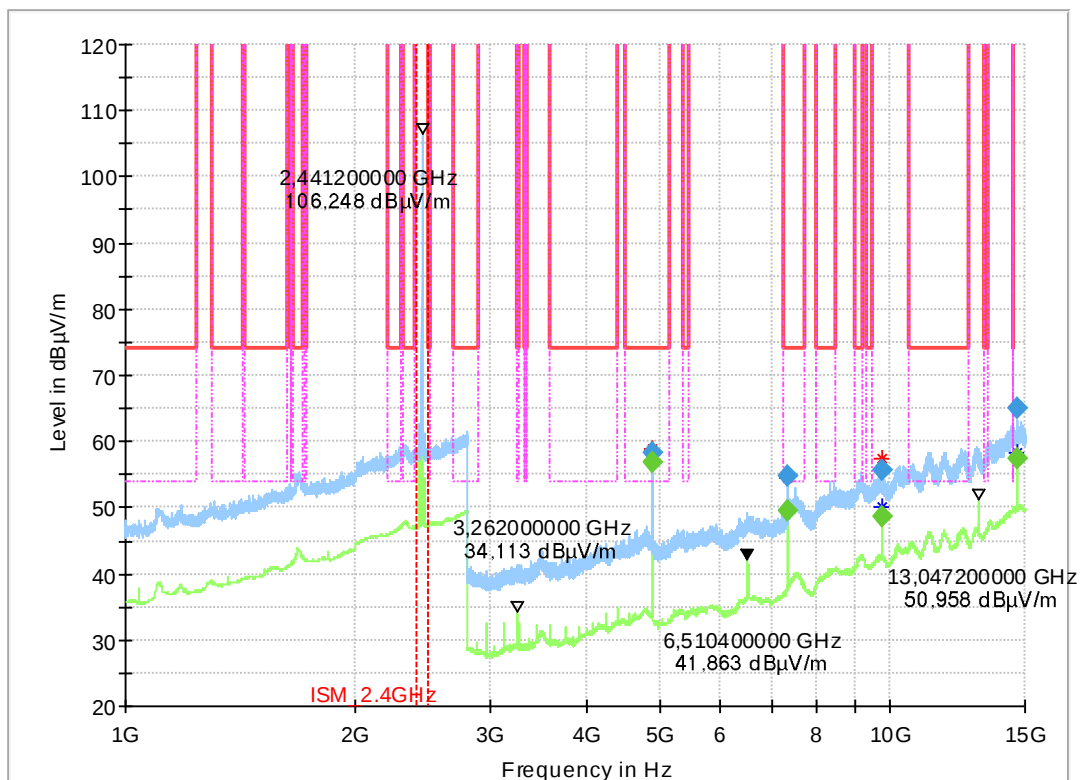
4.02a_FHSS_ch300

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:	1
Set-up no.	1
Operator:	SOz
Comment:	Channel no. mid
Comment2:	-
Environmental Conditions:	Humidity: 35 % rH; Temperature: 21 °C
Verdict:	PASSED*

EUT Information

PMT number	21-1-01832S04_C01
	Full Spectrum



*Remark: Duty cycle correction factor has been applied to critical frequencies surpassing limits.

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Elevation
4882.800000	---	< 35.00*	54.00	-2.93	100.0	1000.000	155.0	H	94.0	90.0
4882.800000	58.18	---	74.00	15.82	100.0	1000.000	155.0	H	95.0	90.0
7324.000000	54.71	---	74.00	19.29	100.0	1000.000	155.0	H	90.0	90.0
7324.000000	---	49.65	54.00	4.35	100.0	1000.000	155.0	H	89.0	90.0
9765.600000	---	48.80	150.00	101.20	100.0	1000.000	155.0	H	0.0	90.0
9765.600000	55.81	---	150.00	94.19	100.0	1000.000	155.0	H	-33.0	90.0
14648.400000	---	57.32	150.00	92.68	100.0	1000.000	155.0	H	-37.0	90.0
14648.400000	64.90	---	150.00	85.10	100.0	1000.000	155.0	H	-38.0	90.0

4.03a_FHSS_ch600

Common Information

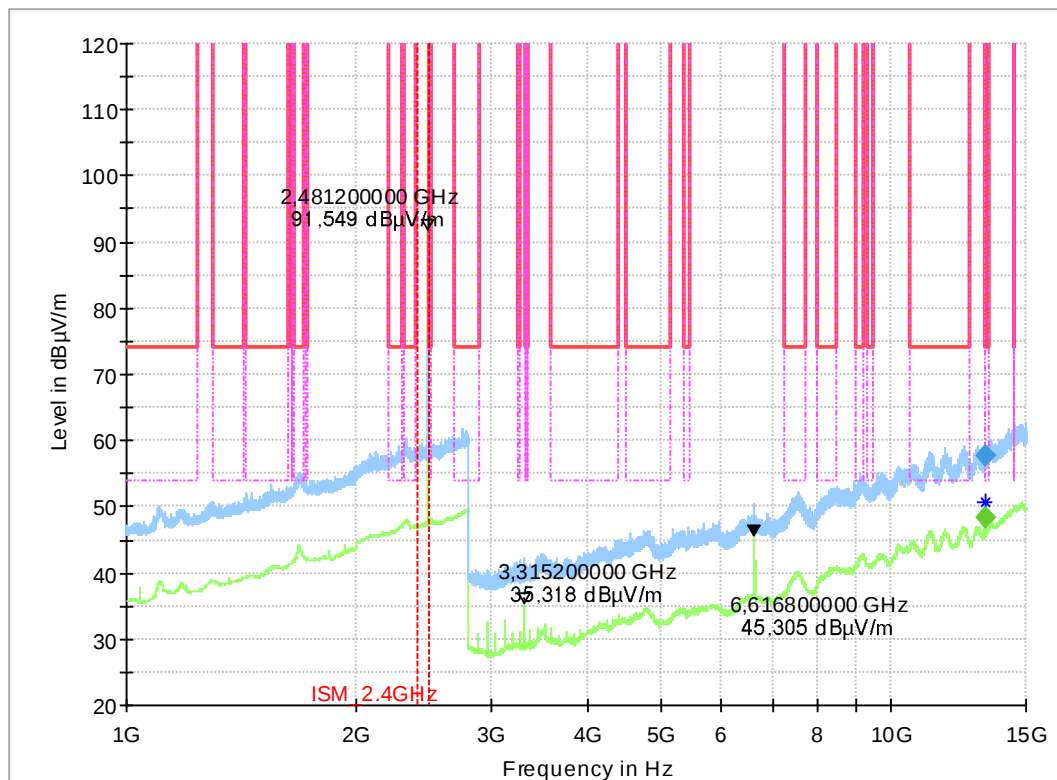
Test Description: Radiated field strength emission in 3m distance
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
 Test Standard: FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
 Antenna polarisation: horizontal/vertical

Operating Mode: 1
 Set-up no. 1
 Operator: SOz
 Comment: Channel no. high
 Comment2: -
 Environmental Conditions: Humidity: 35 % rH; Temperature: 21 °C
 Verdict: PASSED*

EUT Information

PMT number 21-1-01832S05_C01

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Elevation
13259.600000	57.67	---	74.00	16.33	100.0	1000.000	155.0	H	90.0	90.0
13260.000000	---	48.26	54.00	5.74	100.0	1000.000	155.0	H	319.0	90.0

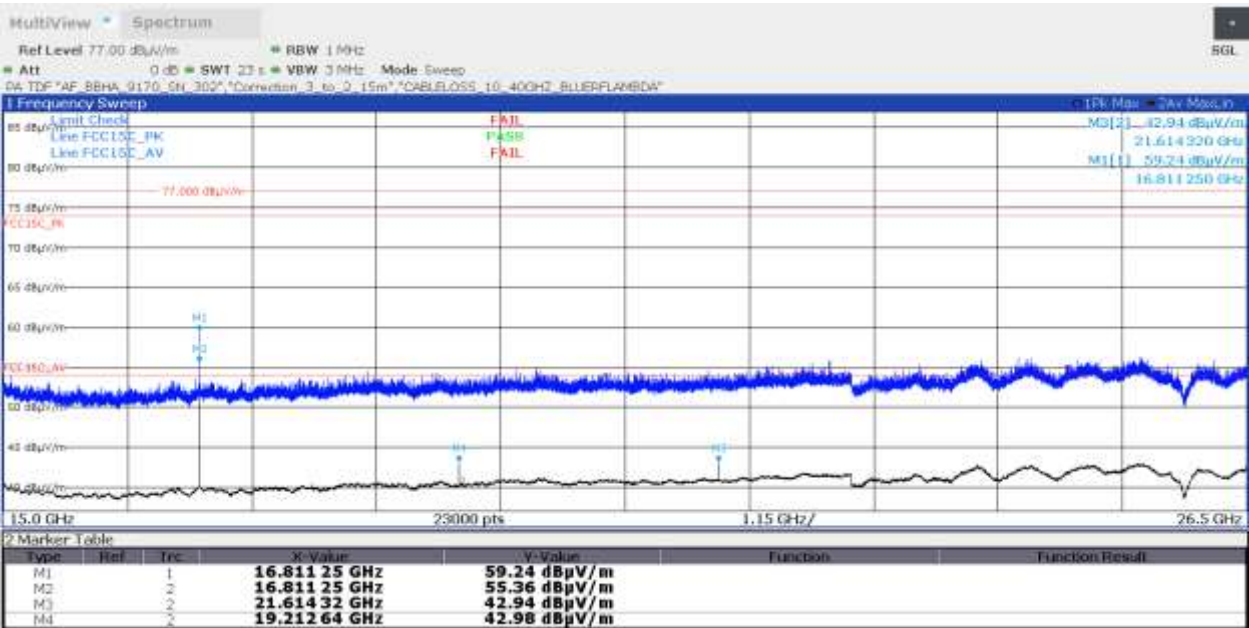
4.01b_FHSS_ch01_AntH

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:	1
Set-up no.	1
Operator:	SOz
Comment:	Channel no. low
Comment2:	-
Environmental Conditions:	Humidity: 41 % rH; Temperature: 21 °C
Verdict:	PASSED*

EUT Information

PMT number	21-1-01832S02_C01
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***Remark:** Duty cycle correction factor has been applied to critical frequencies surpassing limits:
Marker M2: < 40 dBμV/m (Average)

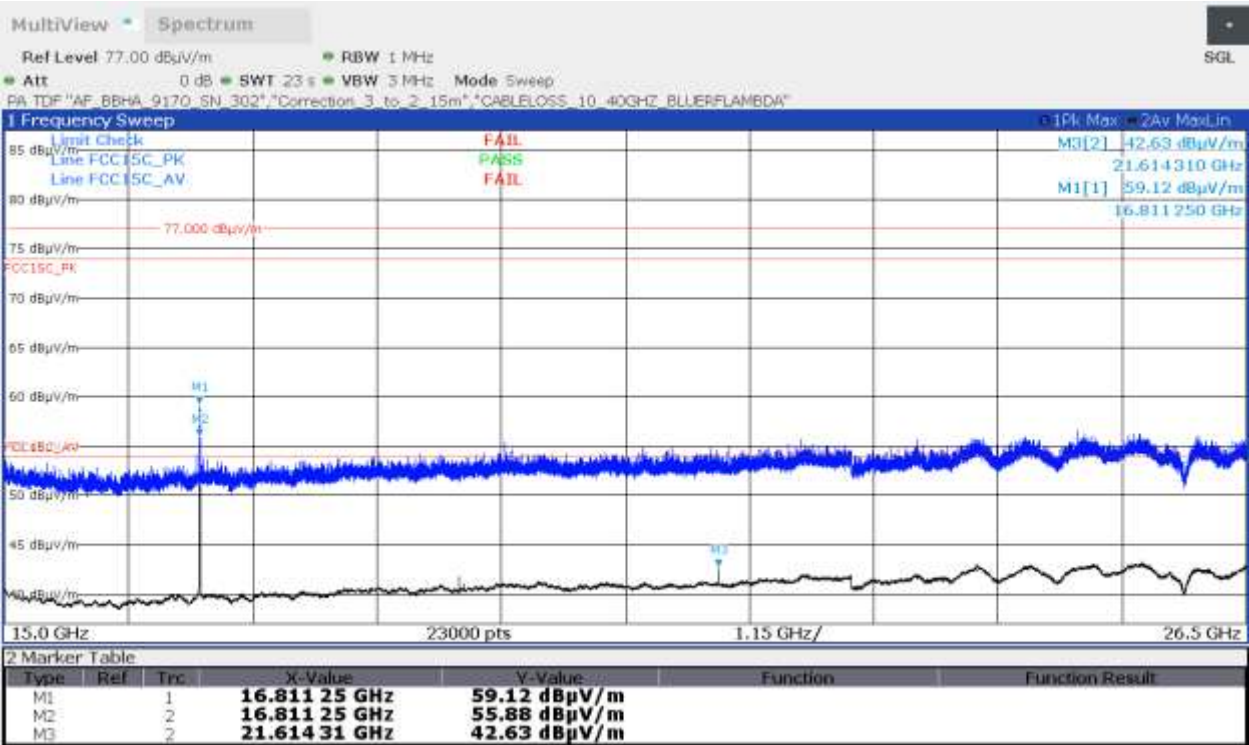
4.01c_FHSS_ch01_AntV

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:	1
Set-up no.	1
Operator:	SOz
Comment:	Channel no. low
Comment2:	-
Environmental Conditions:	Humidity: 41 % rH; Temperature: 21 °C
Verdict:	PASSED*

EUT Information

PMT number	21-1-01832S02_C01
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*Remark: Duty cycle correction factor has been applied:
Marker M2: < 40 dBµV/m (Average)

4.02b_FHSS_ch300_AntH

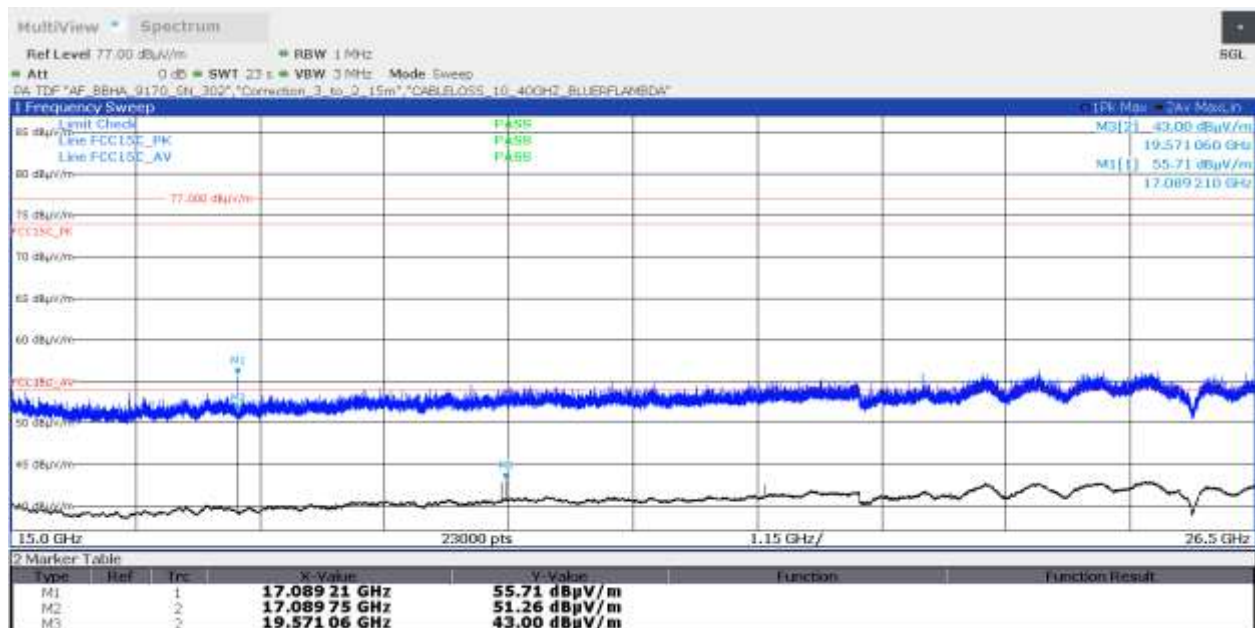
Common Information

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: 1
 Set-up no. 1
 Operator: SOz
 Comment: Channel no. mid
 Comment2: -
 Environmental Conditions: Humidity: 41 % rH; Temperature: 21 °C
 Verdict: PASSED*

EUT Information

PMT number 21-1-01832S04_C01



*Remark: Duty cycle correction factor has been applied.
 Marker M2: < 40 dBμV/m (Average)

4.02c_FHSS_ch300_AntV

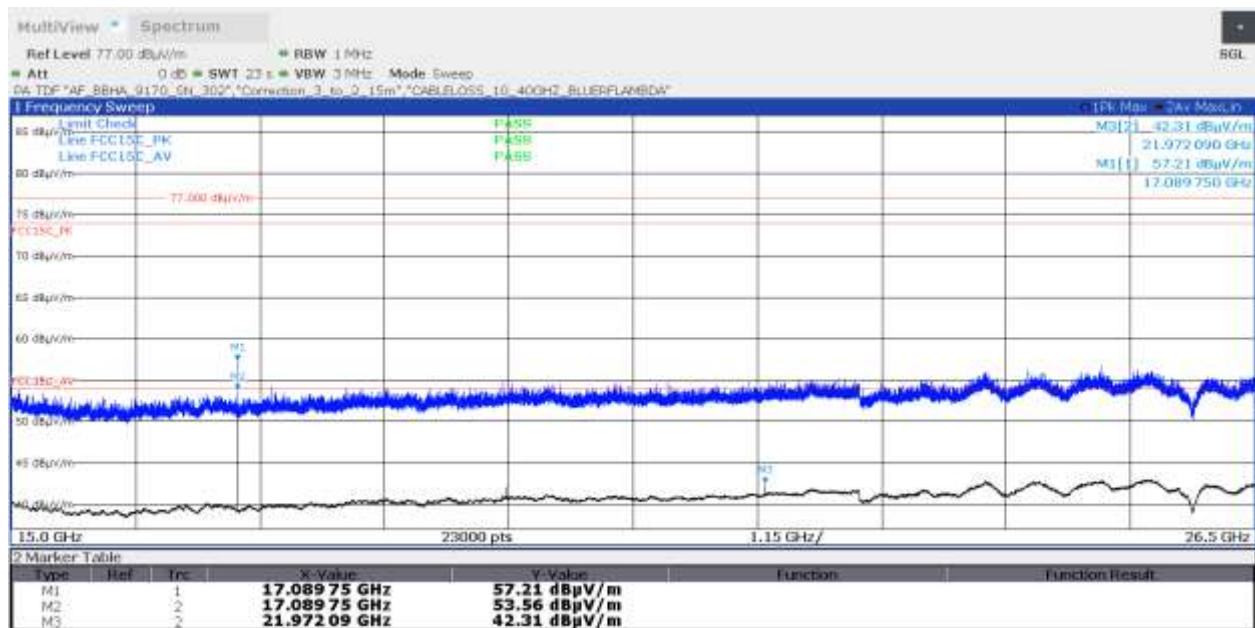
Common Information

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: 1
 Set-up no. 1
 Operator: SOz
 Comment: Channel no. mid
 Comment2: -
 Environmental Conditions: Humidity: 41 % rH; Temperature: 21 °C
 Verdict: PASSED*

EUT Information

PMT number 21-1-01832S04_C01



*Remark: Duty cycle correction factor has been applied.
 Marker M2: < 40 dBμV/m (Average)

4.03b_FHSS_ch600_AntH

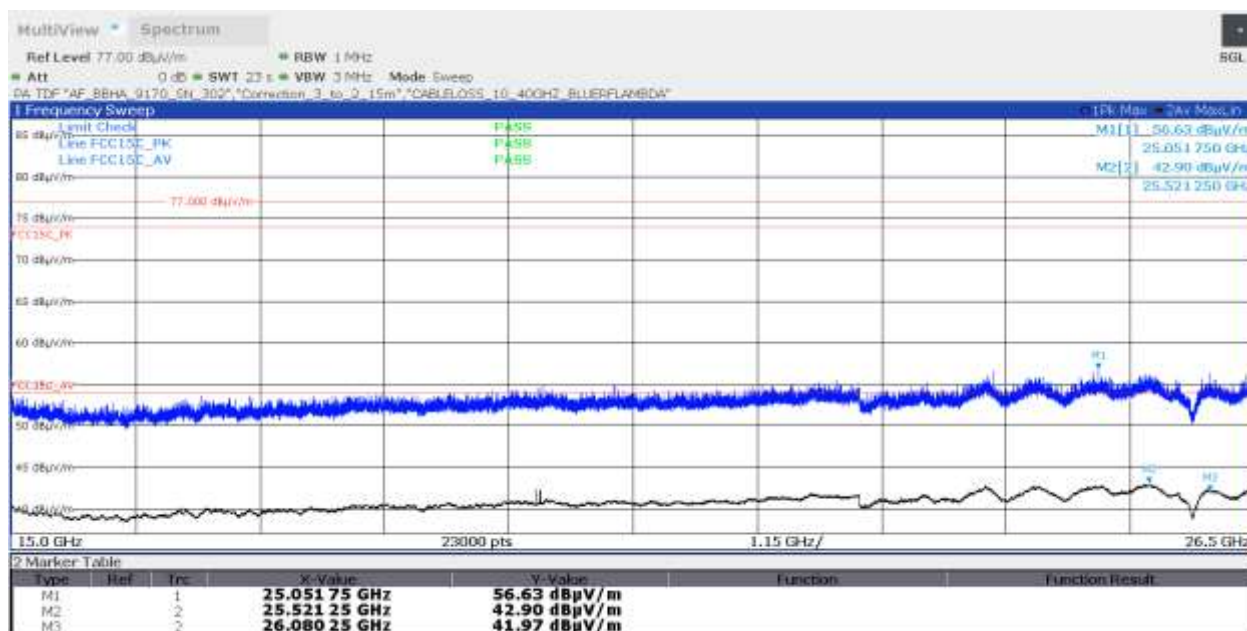
Common Information

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: 1
 Set-up no. 1
 Operator: SOz
 Comment: Channel no. high
 Comment2: -
 Environmental Conditions: Humidity: 41 % rH; Temperature: 21 °C
 Verdict: PASSED

EUT Information

PMT number 21-1-01832S05_C01



4.03c_FHSS_ch600_AntV

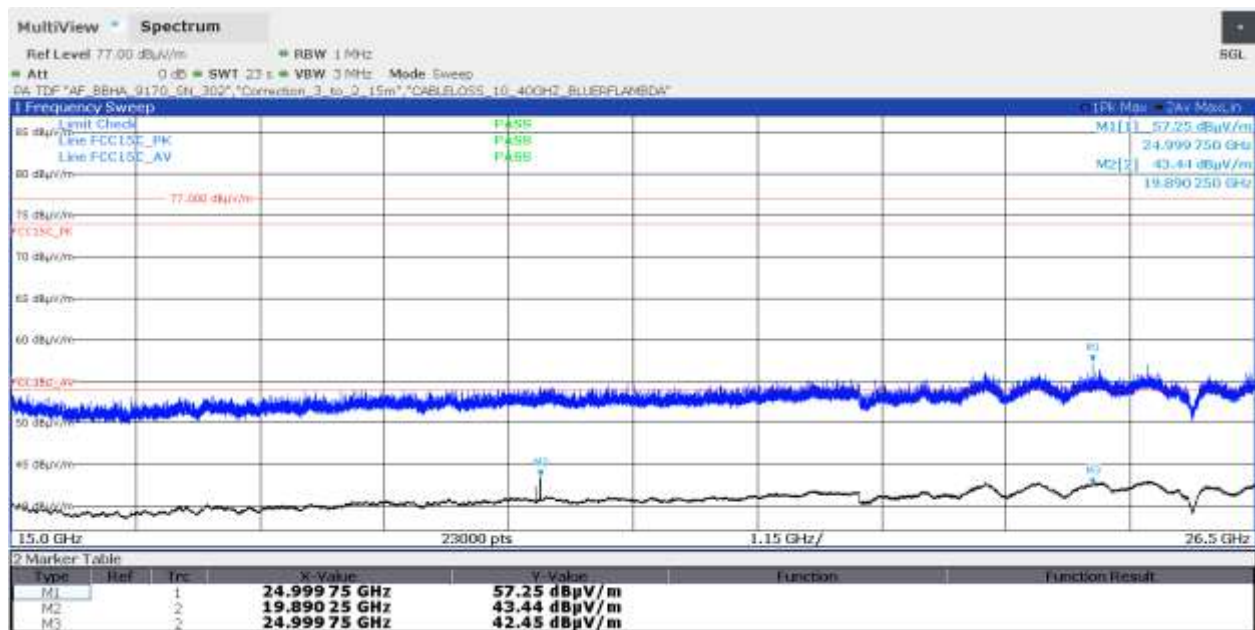
Common Information

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: 1
 Set-up no. 1
 Operator: SOz
 Comment: Channel no. high
 Comment2: -
 Environmental Conditions: Humidity: 41 % rH; Temperature: 21 °C
 Verdict: PASSED

EUT Information

PMT number 21-1-01832S05_C01



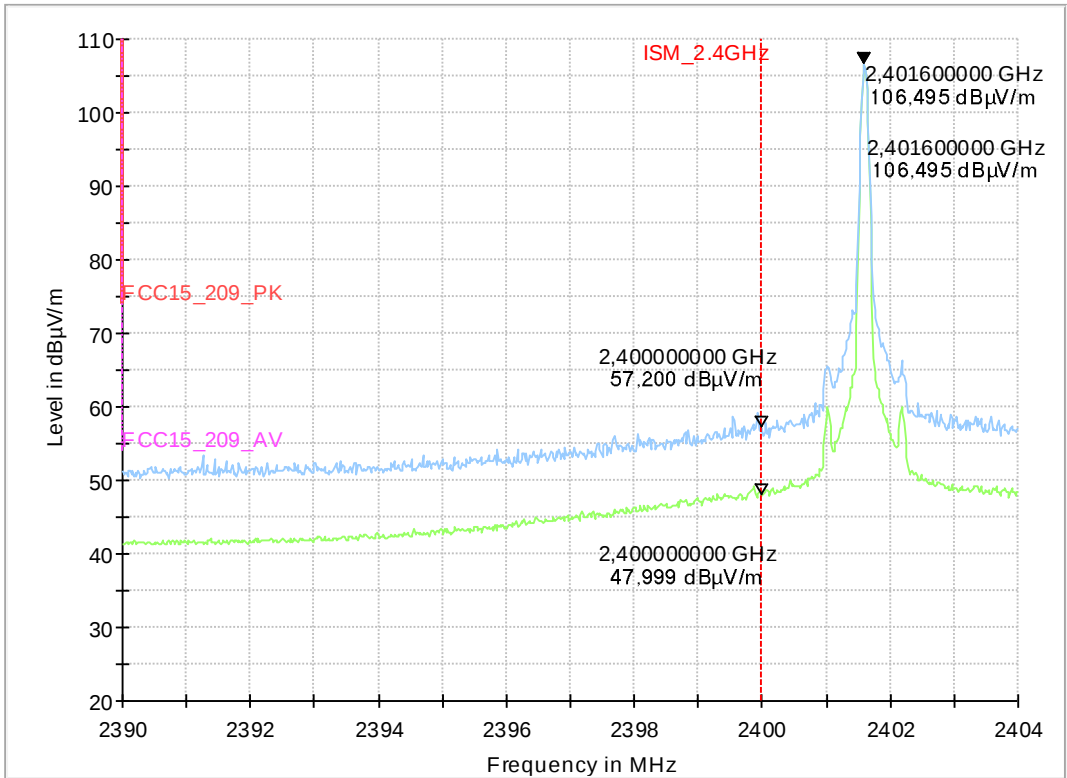
9.01_FHSS_ch01

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:	1
Operator:	SOz
Comment:	Channel no. low
Comment2:	TX-con.
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S02_C01
	Full Spectrum



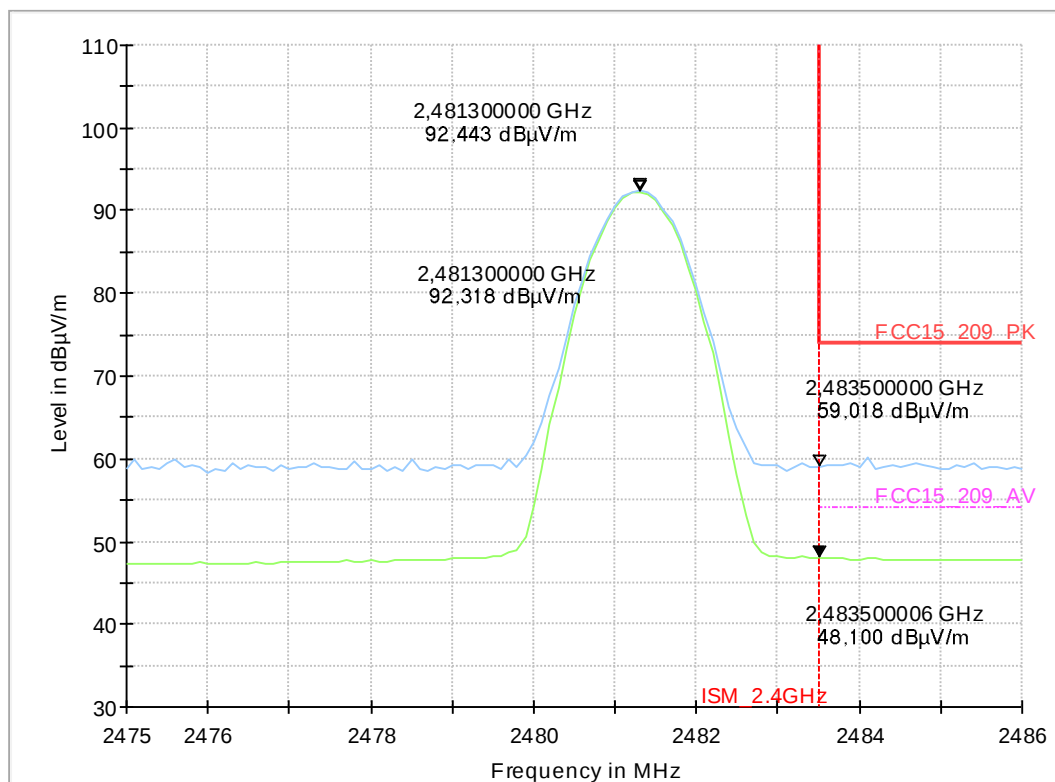
9.02_FHSS_ch600

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:	1
Operator:	SOz
Comment:	Channel no. high
Comment2:	TX-con.
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S05_C01
	Full Spectrum



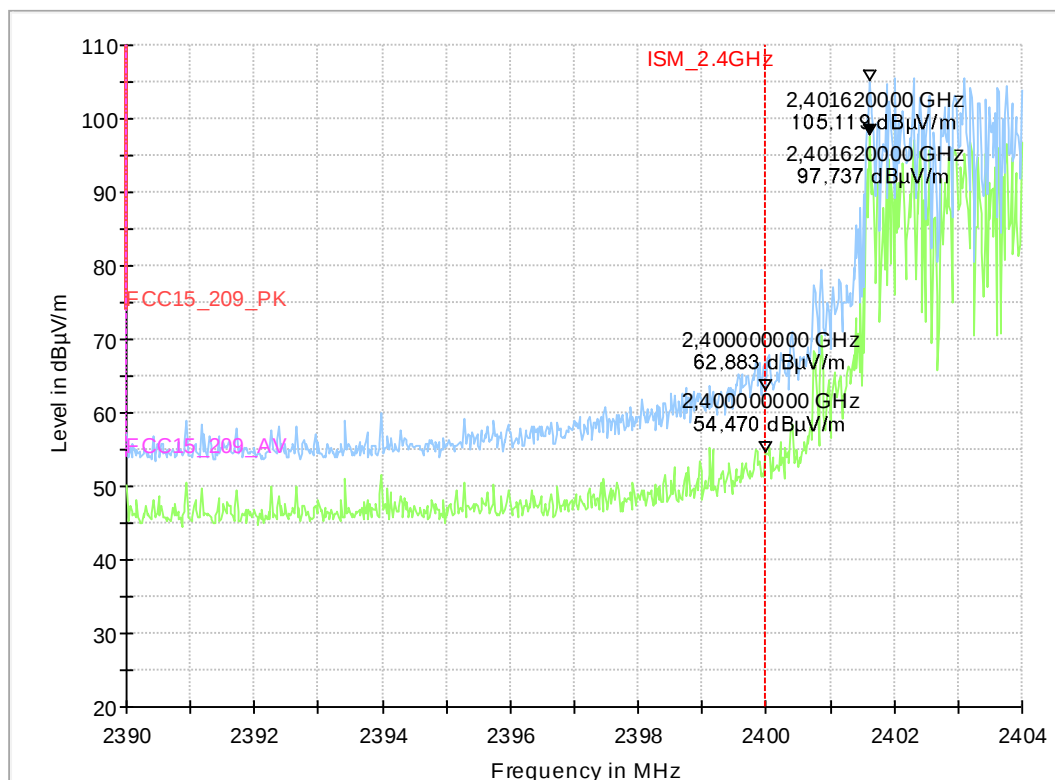
9.03_FHSS_ch01

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:	2
Operator:	SOz
Comment:	TX hopping mode
Comment2:	-
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S03_C01
	Full Spectrum



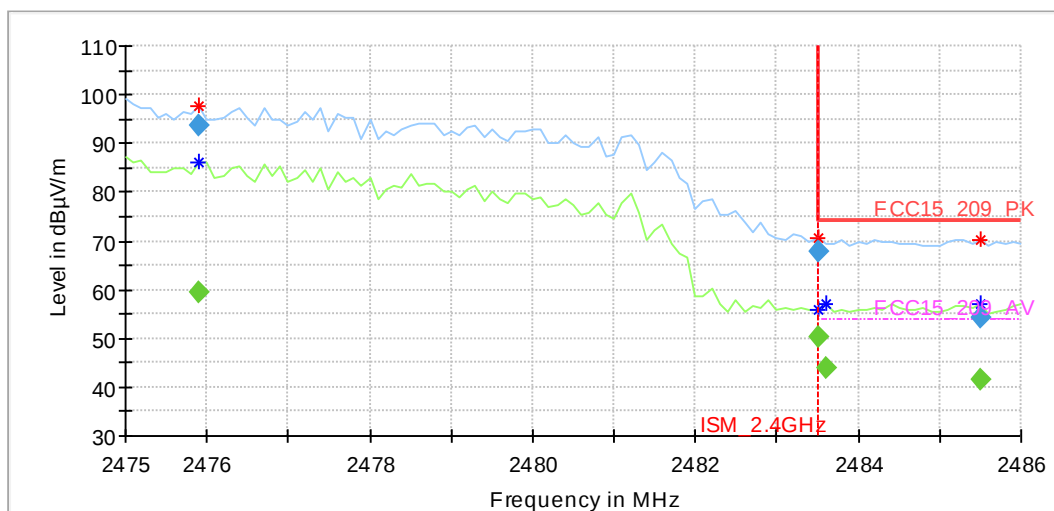
9.04_FHSS_ch600

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:	2
Operator:	SOz
Comment:	TX hopping mode
Comment2:	-
EUT Setup:	1
Verdict:	PASSED

EUT Information

PMT number:	21-1-01832S03_C01
	Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Elevation
2475.900000	---	59.47	150.00	90.53	100.0	1000.000	155.0	V	127.0	0.0
2475.900000	93.84	---	150.00	56.16	100.0	1000.000	155.0	V	127.0	0.0
2483.500000	---	50.39	54.00	3.61	100.0	1000.000	155.0	V	127.0	0.0
2483.500000	67.74	---	74.00	6.26	100.0	1000.000	155.0	V	127.0	0.0
2483.600000	---	44.07	54.00	9.93	100.0	1000.000	155.0	V	123.0	0.0
2485.500000	---	41.65	54.00	12.35	100.0	100.000	155.0	H	127.0	90.0
2485.500000	54.29	---	74.00	19.71	100.0	100.000	155.0	V	127.0	0.0

End Of Annex 1