RADIO TEST REPORT

No. 2500906STO-101

RF Performance

EQUIPMENT UNDER TEST

Equipment:	Aperio HUB
Type/Model:	AH20, AH30, AH40
Manufacturer:	ASSA ABLOY AB
Tested by request of:	ASSA ABLOY AB

SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards:

47 CFR Part 15 (2023): Subpart C: Intentional radiators. Section 15.247

RSS-GEN Issue 5 (2018): General requirements of compliance of radio apparatus (2018) Amendment 1 (2019) & Amendment 2 (2021).

RSS-247 Issue 3 (2023): Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

For details, see clause 2 – 4.

Written by:
Signed by:Bjorn Utermohl
Signed at:2025-02-28 08:55:25 +01:00
Reason:I approve this document

Approved by:
Signed by:Anders Svensson
Signed at:2025-02-28 14:30:25 +01:00
Reason:I approve this document

Revision History

Test report number	Date	Description	Changes
2407959STO-102	November 19, 2024	First release	
2500906STO-101	See page 1	Second release	Added HVIN number and corrected standard version for 47 CFR Part 15. Moved pictures to separate document

CONTENTS

1 CLIENT INFORMATION

The EUT has been tested by request of

Company	ASSA ABLOY AB Förmansvägen 11 117 43 Stockholm Sweden
Name of contact	Magnus Axelsson
Client observer	Magnus Axelsson

2 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	Aperio HUB	
Type/Model:	AH20, AH30, AH40	
Brand name:	ASSA ABLOY	
Serial number:	00.12.4B.00.2E.1A.11.29 (AH20) 00.12.4B.00.2E.1A.12.26 (AH30) 00.12.4B.00.2E.18.82.9C(AH40)	
HVIN number:	P001082870E (AH20 & AH30) P001081348F (AH40)	
Manufacturer:	ASSA ABLOY AB	
Transmitter frequency range:	2402 - 2480MHz	
Receiver frequency range:	2402 - 2480MHz	
Number of channels:	40	
Antenna:	☒ Internal antenna	☒ External antenna
Antenna connector:	☒ None, internal antenna	☒ Yes, SMA male 3.5mm.
Antenna gain:	3.6 dBi (internal) 2.3 dBi (external)	
Rating RF output power:	10 dBm	
Type of modulation:	GFSK	
Transmitter stand-by mode supported:	☐ Yes	☒ No

2.2 Additional information about the EUT

The EUT consists of the following units:

Unit	Type	Serial number	Comment
Unit 1	Aperio HUB AH20	00.12.4B.00.2E.1A.11.29	Internal & external antenna
Unit 2	Aperio HUB AH40	00.12.4B.00.2E.18.82.9C	Internal & external antenna
Unit 3	Aperio HUB AH30	00.12.4B.00.2E.1A.12.26	Internal & external antenna

During the tests the EUT supported following software:

Software	Version	Comment
FW	3.21	-

The EUT was tested with the following cables:

Port:	Type:	Length: [m]	Specifications:
DC supply	DC mains	10.0	-
Ethernet	PoE	3.0	Shielded

2.3 Peripheral equipment

Peripheral equipment is equipment needed for correct operation of the EUT, but not included as part of the testing and evaluation of the EUT.

Equipment	Type / Model	Manufacturer	Serial no.
Laptop	P61G	DELL	DP5TXF2
DC power supply	B605 D/S	Oltronix	S-605
PoE adapter	PD-3501G/AC	Microsemi	C22076555000001381

2.4 Test signals and operation modes

The EUT supports both Tx and Rx mode of operations. The Tx tests were made with the EUT in test mode continuously transmitting unmodulated and modulated signal carrier.
The unmodulated carrier was a CW signal. The modulated signal options were 1MHz and 2MHz bandwidth carrier signal.

The tests for both Tx and Rx were made on the following channels:
Channel 0 = 2402MHz
Channel 19 = 2440MHz
Channel 39 = 2480MHz

All tests on AH20 were supplied with 12VDC and for AH40 it was supplied with PoE adapter, unless otherwise stated in the report this is how the tests were performed.

2.5 Opinions and interpretations

The following type are also included as additional type in this test report:
AH30

The difference as compared to the tested type is according to the manufacturer:

Both AH20 and AH30 can only be supplied with external power supply. AH40 is the only module supported with PoE but can also be supplied with external power supply.
The models AH20, AH30, and AH40 have an identical radio design and schematic. The AH20 and AH30 are built on one PCB, while the AH40 uses a different PCB layout.
The primary distinction between the AH20 and AH30 is that the AH20 features a Wiegand interface, while the AH30 has an RS485 interface.

All three models are compatible with both external and internal antennas. Additionally, they support multiple bandwidth modulation options, including 1 MHz and 2 MHz bandwidths.

3 TEST SPECIFICATIONS

3.1 Standards

Requirements:

47 CFR Part 15 (2023): Subpart C: Intentional radiators. Section 15.247

RSS-GEN Issue 5 (2018): General requirements of compliance of radio apparatus (2018) Amendment 1 (2019) & Amendment 2 (2021).

RSS-247 Issue 3 (2023): Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices

Test methods:

ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

KDB 558074 D01 v05r02.

3.2 Additions, deviations and exclusions from standards and accreditation

No additions, deviations or exclusions have been made from standards and accreditation.

3.3 Decision rule

The statements of conformity are reported as:
Passed – When the measured values are within the specified limits.
Failed – When one or more measures values are outside the specified limits

3.4 Test site

Measurements were performed at:

Intertek Semko AB.
Torshamnsgatan 43,
P.O. Box 1103
SE-164 22 Kista

Intertek Semko AB is a FCC listed test site with site registration number 90913
Intertek Semko AB is a FCC accredited conformity assessment body with designation number SE0002
Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G
Intertek Semko AB is an ISED recognized wireless testing laboratory with CAB identifier SE0003.

Measurement chambers / conducted system

Measurement Chamber	Type of chamber	IC Site filing #
3 m SAC	Semi-anechoic 3 m	2042G-1
3 m FAR	Fully anechoic 3 m	2042G-4

Measurement System	Type of system	IC Site filing #
TS8997	TS8997 rack system.	-

4 TEST SUMMARY

The results in this report apply only to sample tested:

Requirement	Description	Result
FCC §15.203 **RSS-GEN 6.8** **FCC §15.247(b)(4)** **RSS-247 5.4(4), 5.4(5)**	**Antenna** The EUT has integrated non detachable antenna which can't be removed without breaking the EUT. The antenna gain is less than 6 dBi	**PASS**
FCC Part 15.205 **RSS-GEN 8.10**	**Restricted bands of operations** The transmit frequency, including fundamental components of modulation, of license-exempt radio apparatus shall not fall within the restricted frequency bands listed in CFR 47 §15.205 and in RSS-GEN section 8.10	**PASS**
FCC §15.207, 15.107 **RSS-GEN 8.8 table 3**	**Conducted continuous emission in the frequency range 150 kHz to 30 MHz, AC Power input port** See clause 5.3.	**PASS**
FCC §15.247 (d), 15.209(a) **RSS-GEN 8.9** **RSS-247 5.5**	**Radiated emission of electromagnetic fields in the frequency range 30 – 1000 MHz** The EUT complies with the limits. See clause 6.4.	**PASS**
FCC §15.247(d), 15.209(a) **RSS-GEN 8.9** **RSS-247 5.5**	**Radiated emission of electromagnetic fields in the frequency range above 1 GHz** The EUT complies with the limits. See clause 6.5.	**PASS**
FCC §15.247(a)(2) **RSS-GEN 6.7** **RSS-247 5.2(1)**	**Occupied bandwidth** The EUT complies with the limits. See clause 10.4 & 11.3.	**PASS**
FCC §15.247(b) **RSS-247 5.4(4)**	**Conducted output power** The EUT complies with the limits. See clause 9.4.	**PASS**
FCC §15.247(e) **RSS-247 5.2(2)**	**Peak power spectral density** The EUT complies with the limits. See clause 12.4.	**PASS**
FCC §15.247(e) **RSS-247 5.5**	Conducted **Band edge** The EUT complies with the limits. See clause 7.4.	**PASS**

5 CONDUCTED CONTINUOUS DISTURBANCES IN THE FREQUENCY-RANGE 0.15 TO 30 MHZ

Date of test:	28 October 2024	**Test location:**	Bur 4 (Cage 4)
EUT Serial:	00.12.4B.00.2E.1A.11.29 00.12.4B.00.2E.18.82.9C	**Ambient temp:**	22°C
Tested by:	Nahome Micheal Björn Utermöhl	**Relative humidity:**	36%
Test result:	Pass	**Margin:**	> 10.31dB

5.1 Test set-up and test procedure

The test method is in accordance with ANSI C63.10-2020 section 6.2.

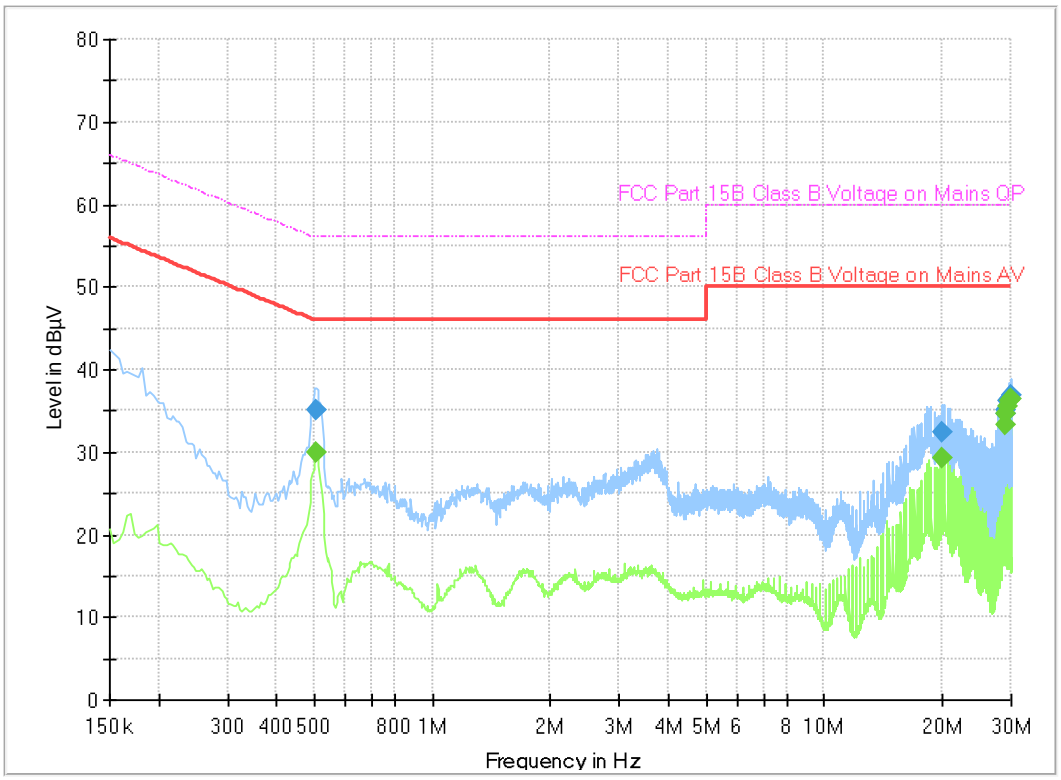
The EUT was connected to the power via Artificial Mains Networks AMN.
The EUT was placed on an insulating support 0.8 m above the floor, 0.4 m from the vertical reference ground plane (RGP) and 0.8 m from the AMN/ISN.
Overview sweeps were performed for each lead.
During the tests the EUT was operated according to the mode of operation mentioned in clause 2.4.

5.2 Requirement

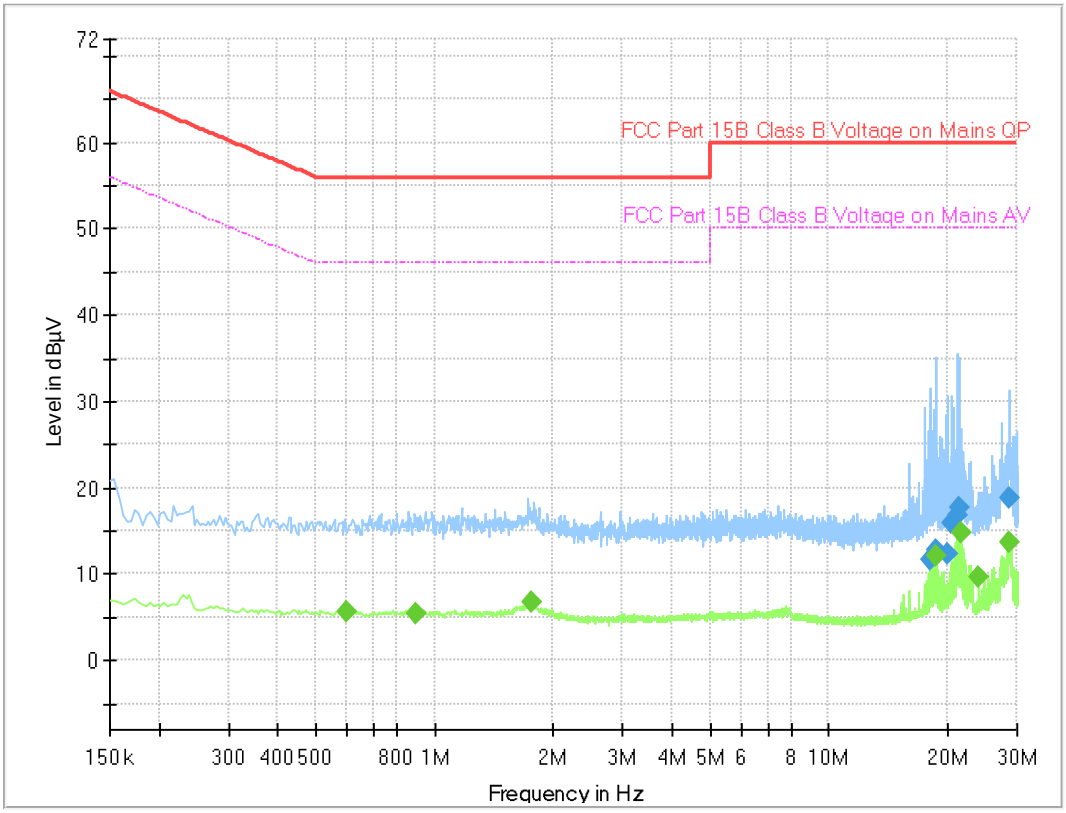
Limits for conducted emission from AC mains
The EUT shall meet the limits for the standards.
Reference: 47 CFR §15.207
RSS-GEN, section 8.8 table 4

Frequency range [MHz]	Limits [dBµV]	
	Quasi-Peak	Average
0.15 – 0.50	66 – 56	56 – 46
0,50 – 5.00	56	46
5.00 – 30.0	60	50

5.3 Test results



Diagram, Peak and Average overview sweep (AH40)



Diagram, Peak and Average overview sweep (AH20)

Measurement results, Average (AH40)

Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Line L/N	Margin [dB]
0.505000	29.92	46.00	N	26.08
20.088000	29.29	50.00	N	30.71
28.843000	33.28	50.00	L1	26.72
29.099000	34.70	50.00	L1	25.30
29.358000	35.43	50.00	N	24.57
29.615000	36.10	50.00	L1	23.90
29.873000	36.41	50.00	N	23.59

Measurement results, Quasi-peak (AH40)

Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Line L/N	Margin [dB]
0.508000	35.09	56.00	N	10.91
20.086000	32.51	60.00	N	17.49
28.843000	34.72	60.00	L1	15.28
29.101000	35.14	60.00	N	14.86
29.357000	36.22	60.00	L1	13.78
29.615000	36.49	60.00	N	13.51
29.873000	36.96	60.00	L1	13.04

Measurement results, Average (AH20)

Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Line L/N	Margin [dB]
0.600000	5.53	46.00	N	40.47
0.897000	5.48	46.00	N	40.52
1.757000	6.69	46.00	N	39.31
18.696000	12.05	50.00	N	37.95
21.600000	14.90	50.00	L1	35.10
24.065000	9.63	50.00	L1	40.37
28.755000	13.70	50.00	N	36.30

Measurement results, Quasi-peak (AH20)

Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Line L/N	Margin [dB]
18.055000	11.68	60.00	N	48.32
18.747000	12.80	60.00	N	47.20
20.003000	12.32	60.00	N	47.68
20.509000	15.93	60.00	N	44.07
21.066000	16.78	60.00	L1	43.22
21.445000	17.69	60.00	N	42.31
28.747000	18.85	60.00	N	41.15

All other measured disturbances have a margin of more than 20 dB to the limits.
Result [dBµV] = Analyser reading [dBµV] + cable loss [dB] + LISN insertion loss [dB]

6 RADIATED RF EMISSION IN THE FREQUENCY-RANGE 30 MHZ TO 26.5 GHZ

Date of test:	4 – 8 November 2024	**Test location:**	3 m SAC, 3 m FAR, 10 m SAC
EUT Serial:	00.12.4B.00.2E.1A.11.29 00.12.4B.00.2E.18.82.9C 00.12.4B.00.2E.1A.12.26	**Ambient temp:**	19 - 21°C
Tested by:	Nahome Micheal Sandipan Basu Björn Utermöhl	**Relative humidity:**	34 - 62%
Test result:	Pass	**Margin:**	See tables below.

6.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2020.
The EUT was set up in order to emit maximum disturbances.
The EUT was placed on an insulating support 0.8m above the turntable in the 3 m SAC, and 1.5 m above the turntable in the 3m FAR.
Overview sweeps were performed with the measurement receiver in max-hold mode and the peak detector activated in the frequency-range 30 – 1000 MHz. Above 1 GHz additionally the average detector was activated.
Portable device: Pre scan was made in three orthogonal EUT orientations.
All possible configurations have been tested such as different power source, orientations X/Y/Z and the antenna setups. The result presented in the report is the worst-case of all the configurations tested.

6.2 Test conditions

Test set-up:	**30 MHz to 1000 MHz**		
Test receiver set-up:			
Preview test:	Peak,	RBW 120 kHz	VBW 1 MHz
Final test:	Quasi-Peak,	RBW 120 kHz	VBW 1 MHz
EUT height above ground plane:	0.8 m		
Measuring distance:	3 m		
Measuring angle:	0 – 359°		
Antenna			
Height above ground plane:	1 – 4 m		
Polarisation:	Vertical and Horizontal		
Type:	Bilog		

Test set-up:	**1 GHz – 26.5 GHz**		
Test receiver set-up:			
Preview test:	Peak,	RBW 1 MHz	VBW 3 MHz
	Average,	RBW 1 MHz	VBW 3 MHz
Final test:	Peak,	RBW 1 MHz	VBW 3 MHz
	Average	Peak value + 20 x LOG (Duty cycle) / RBW 1 MHz VBW 3 MHz	
EUT height above ground plane:	1.5 m		
Measuring distance:	3 m		
Measuring angle:	0 – 359°		
Antenna			
Height above ground plane:	1 – 4 m		
Polarisation:	Vertical and Horizontal		
Type:	Horn		
Antenna tilt:	Activated		

6.3 Requirements

Within restricted bands and receive mode:
Reference: CFR 47 §15.209, RSS-Gen section 8.9

Field strength of emissions must comply with limits shown in table below

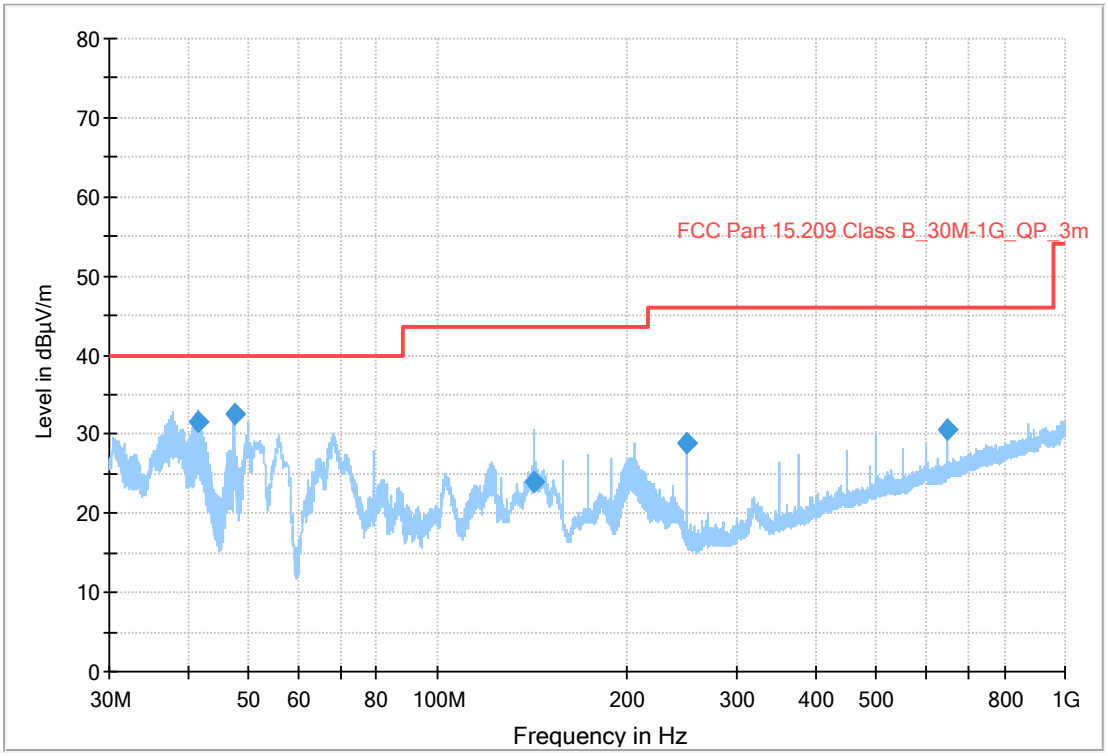
Frequency range [MHz]	Field strength at 3 m (dBµV/m)	Field strength at 10 m (dBµV/m)	Detector (dBµV/m)
30 – 88	40.0	29.5	Quasi Peak
88 – 216	43.5	33.0	Quasi Peak
216 – 960	46.0	35.5	Quasi Peak
960 – 1000	54.0	43.5	Quasi Peak
Above 1000	54.0 / 74.0	43.5 / 63.5	Average / Peak

The values for 10 m measuring distance are calculated by subtracting 10.5 dB from the 3 m limit. (i.e. an extrapolation factor of 20 dB/decade according to CFR 47 §15.31(f)(1))

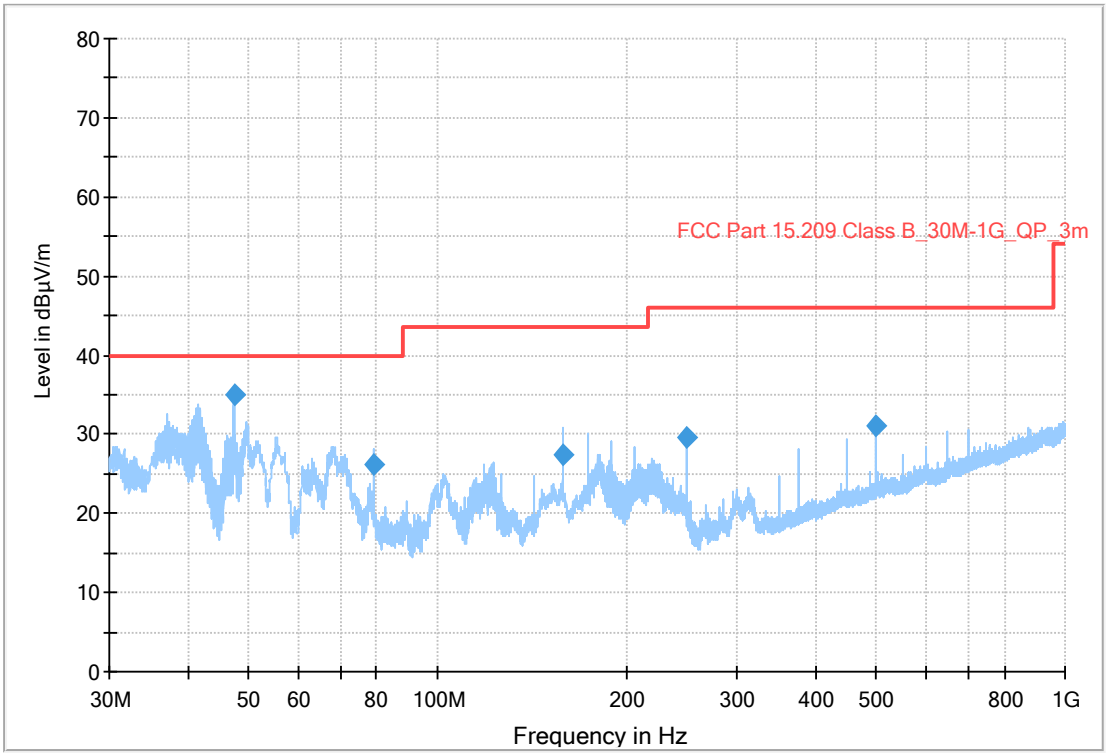
Outside the restricted bands:
Reference: CFR 47 §15.247(d), RSS-247 5.5,

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

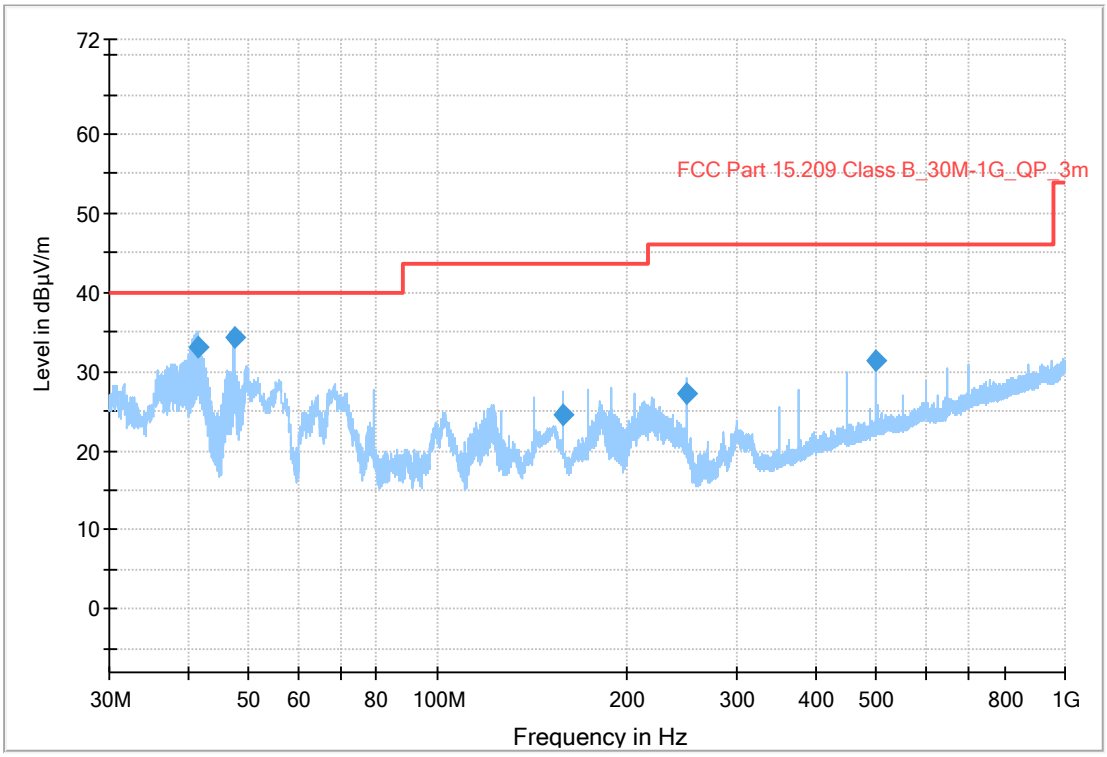
6.4 Test results 30 MHz – 1000 MHz, TX



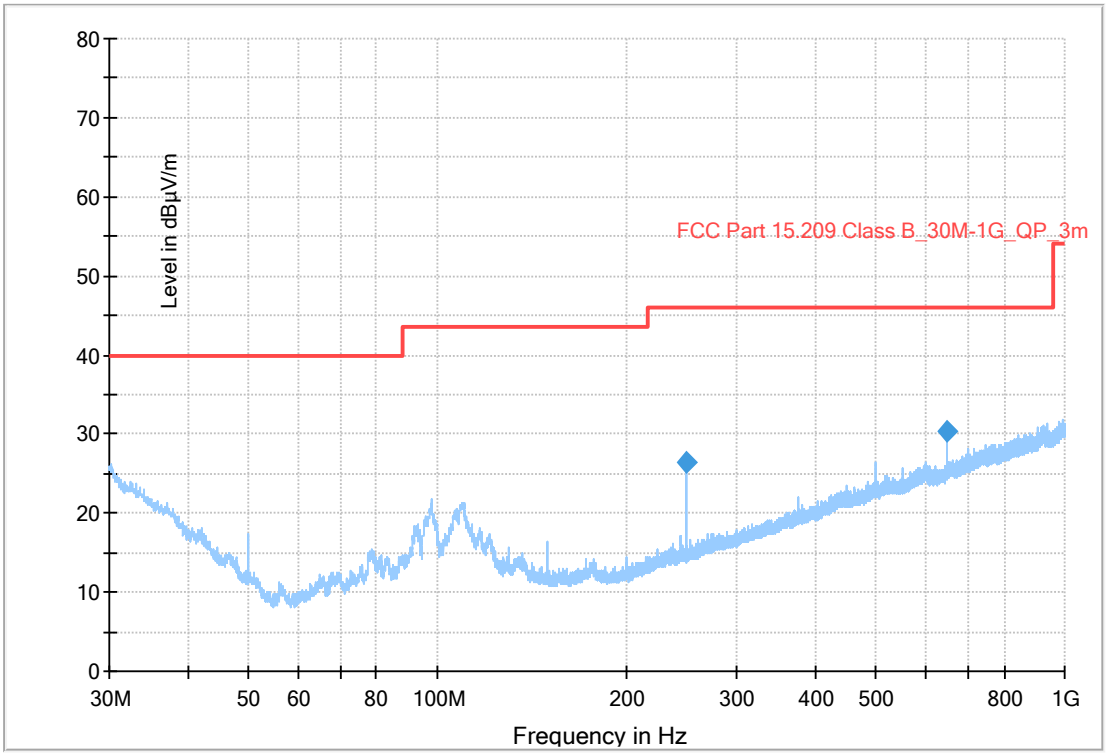
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation X. Powered via PoE, internal antenna. (AH40)



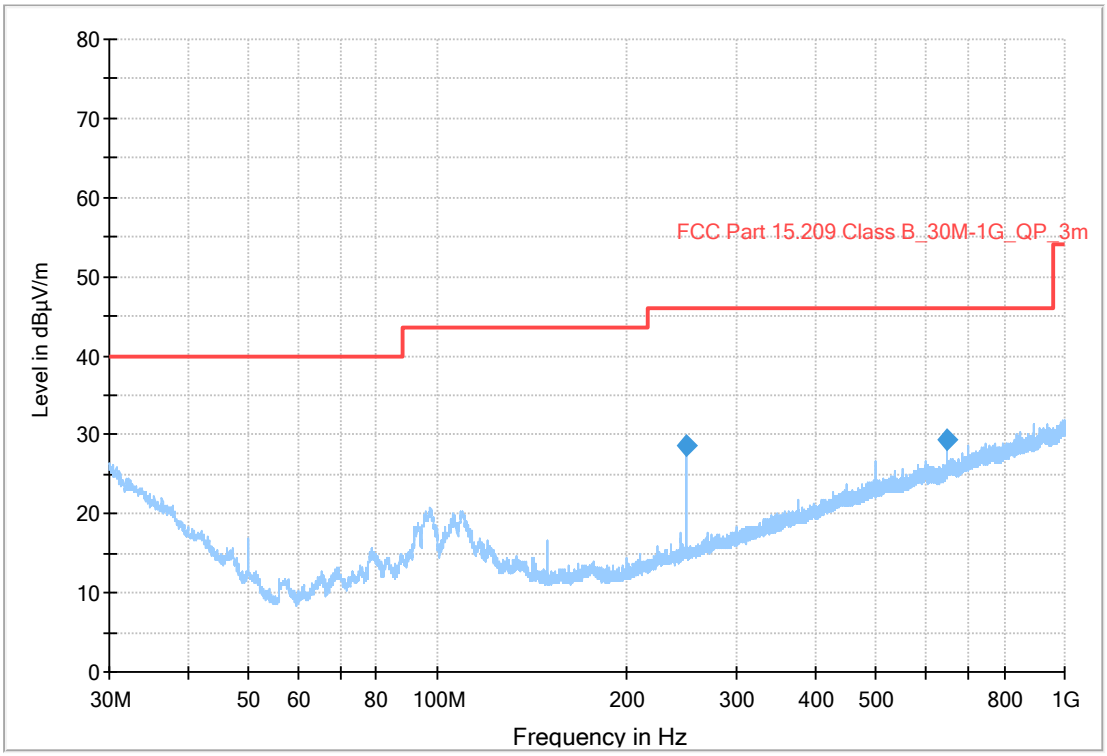
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX middle channel, EUT orientation X. Powered via PoE, internal antenna. (AH40)



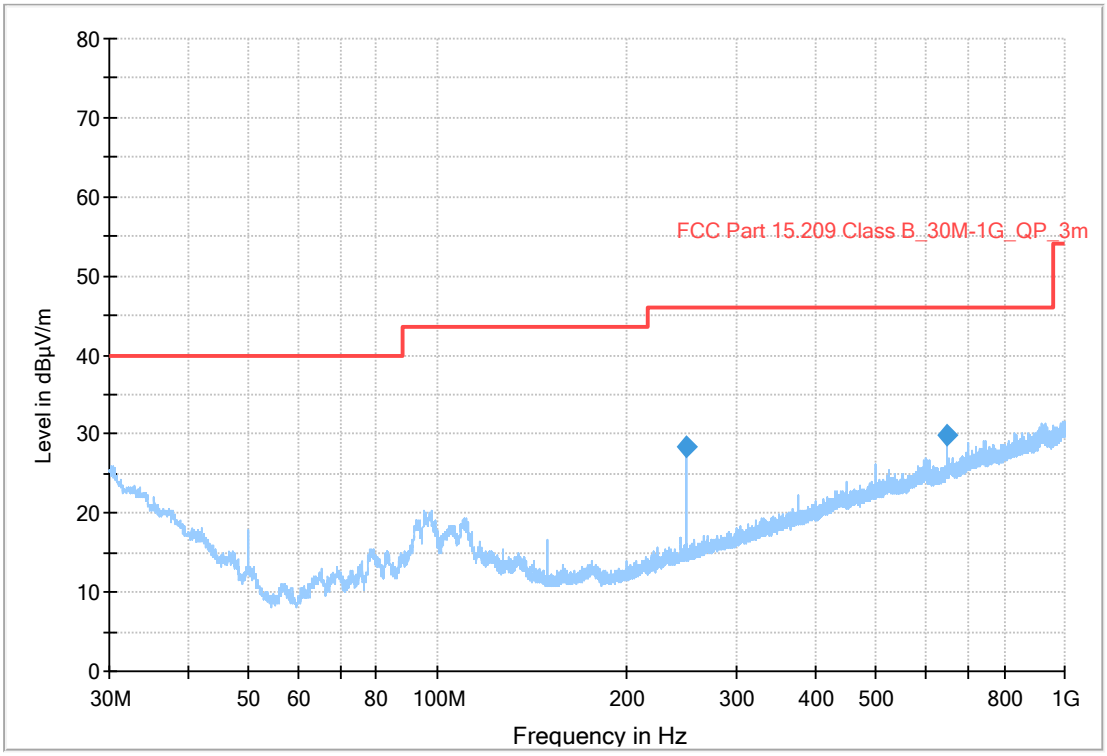
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation X. Powered via PoE, internal antenna. (AH40)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation Y. Powered via AC/DC, External antenna. (AH40)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX middle channel, EUT orientation Y, Powered via AC/DC, External antenna. (AH40)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation X. Powered via AC/DC, External antenna. (AH40)

Measurement results, Quasi Peak, model AH40

Result for Internal Antenna

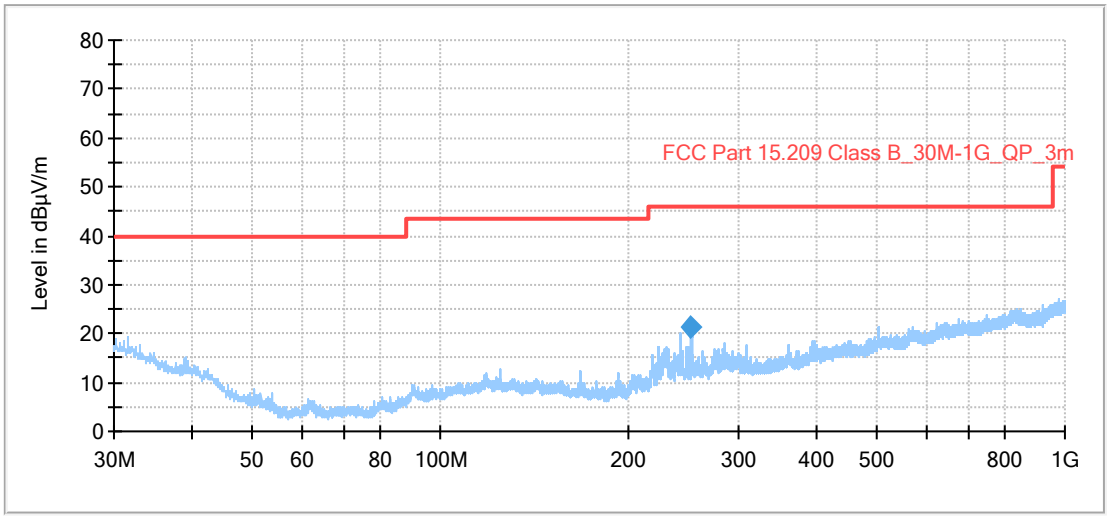
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
Y orientation, PoE feed, TX mode, Low channel					
41.460	31.48	40.0	V	8.5	13.7
47.400	32.46	40.0	V	7.5	10.2
142.290	24.06	43.5	H	19.5	9.4
250.020	28.96	46.0	H	17.1	12.0
650.080	30.67	46.0	V	15.4	22.1
X orientation, PoE feed, TX mode, Middle channel					
47.400	34.95	40.0	V	5.1	10.2
79.050	26.19	40.0	V	13.8	8.6
158.100	27.40	43.5	H	16.1	9.1
250.020	29.50	46.0	V	16.5	12.0
500.050	31.15	46.0	H	14.9	19.5
X orientation, PoE feed, TX mode, High channel					
41.460	33.14	40.0	V	6.9	13.7
47.400	34.43	40.0	V	5.6	10.2
158.100	24.48	43.5	H	19.0	9.1
250.020	27.19	46.0	H	18.8	12.0
500.050	31.30	46.0	H	14.7	19.5

Result for External Antenna, model AH40

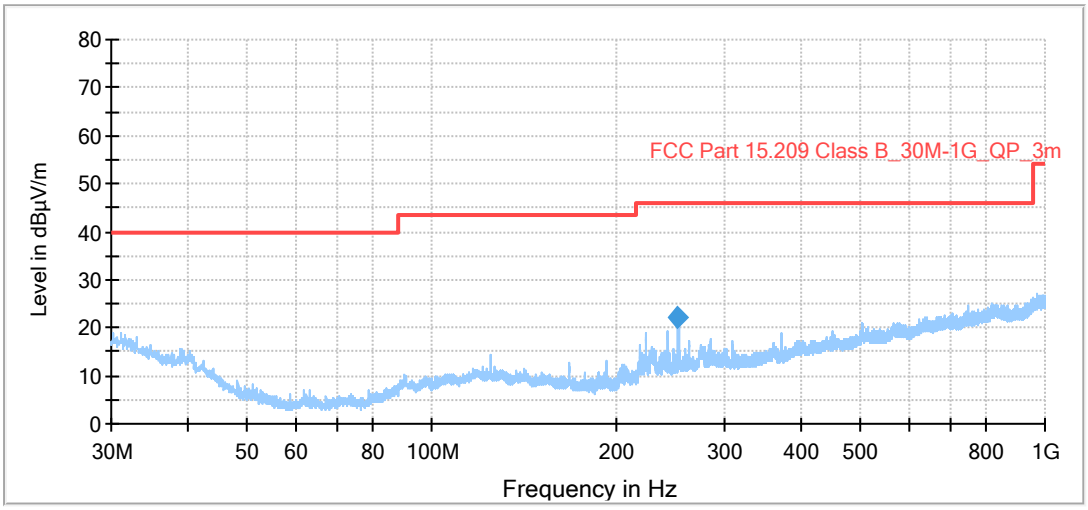
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
X orientation, Powered via AC/DC, TX mode, Low channel					
250.020	26.32	46.0	H	19.7	12.0
650.080	30.43	46.0	H	15.6	22.1
Y orientation, Powered via AC/DC, TX mode, Middle channel					
250.020	28.55	46.0	H	17.5	12.0
650.080	29.33	46.0	V	16.7	22.1
X orientation, Powered via AC/DC, TX mode, High channel					
250.020	28.36	46.0	H	17.7	12.0
650.080	29.74	46.0	V	16.3	22.1

All other measured disturbances have a margin of more than 20 dB to the limits.

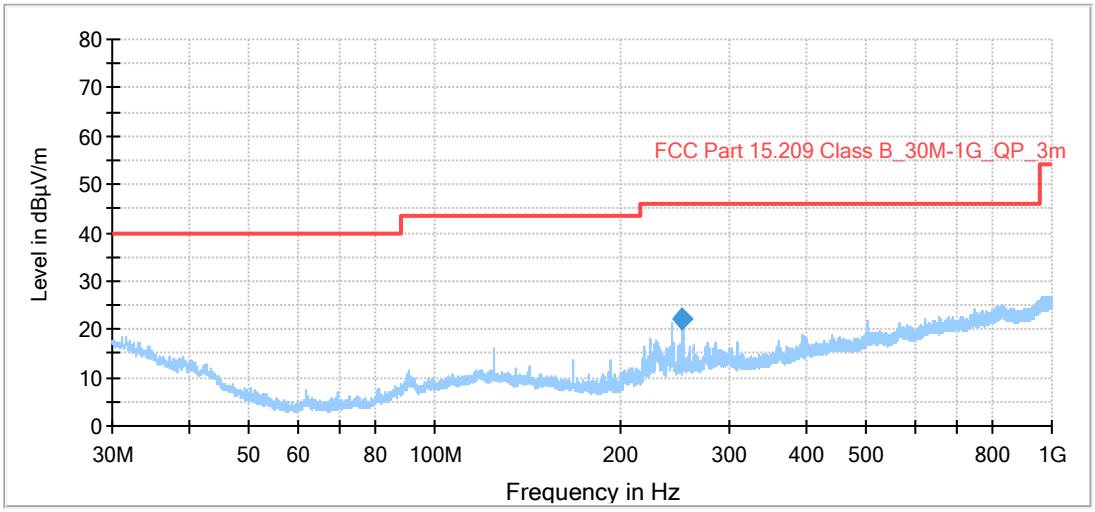
Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]



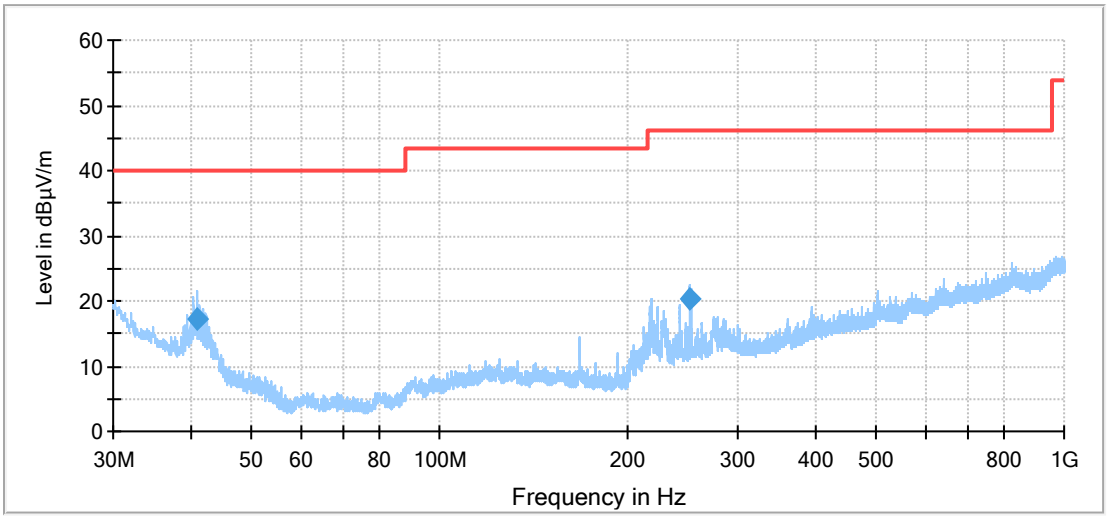
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation Z. Powered via AC/DC, internal antenna. (AH20)



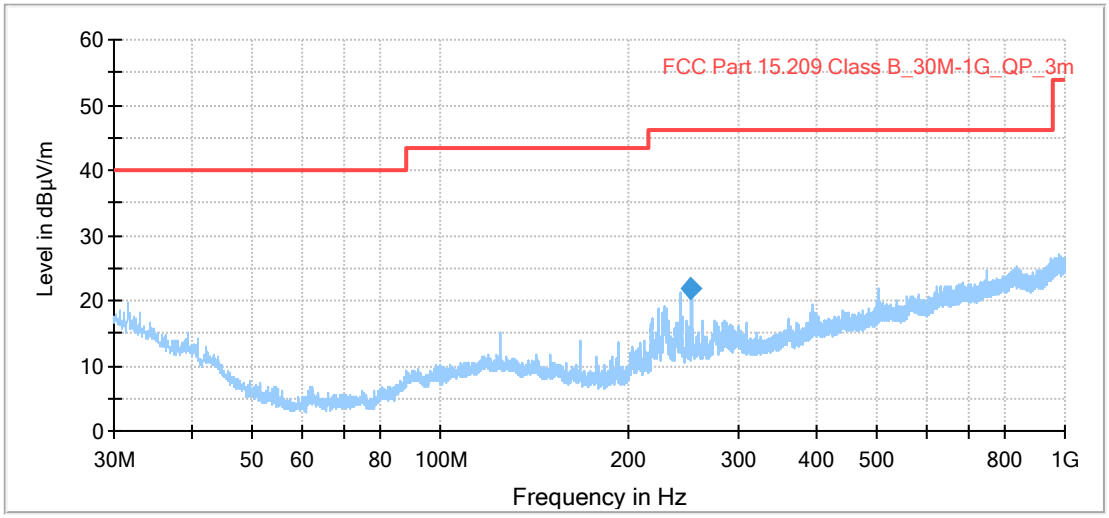
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX mid channel, EUT orientation X. Powered via AC/DC, internal antenna. (AH20)



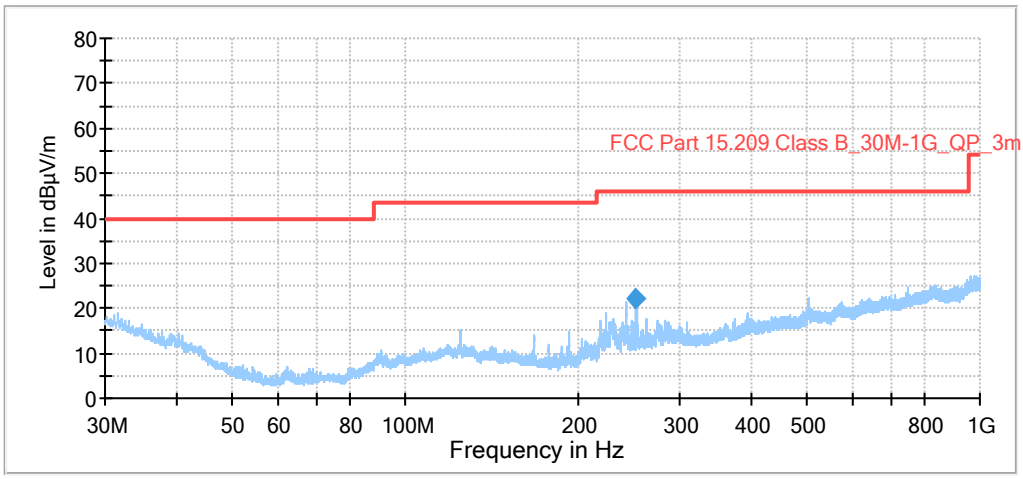
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation Z. Powered via AC/DC, internal antenna. (AH20)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation X. Powered via AC/DC, External antenna. (AH20)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX mid channel, EUT orientation X. Powered via AC/DC, External antenna. (AH20)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation X. Powered via AC/DC, External antenna. (AH20)

Measurement results, Quasi Peak, model AH20

Result for Internal Antenna

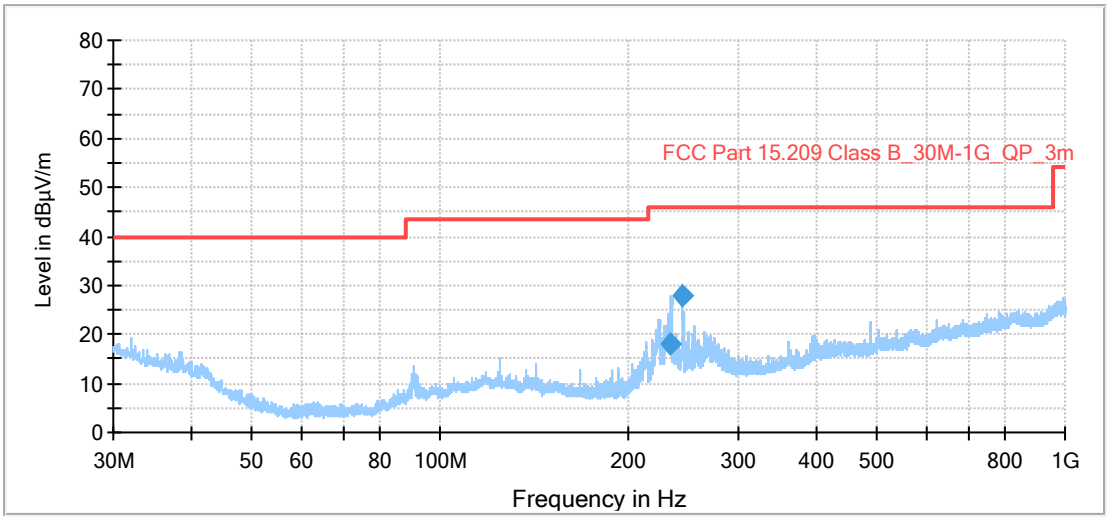
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
Z orientation, TX mode, Low channel					
252.270	21.48	46.02	H	24.54	-20
X orientation, TX mode, Middle channel					
252.330	22.01	46.02	H	24.01	-20
X orientation, TX mode, High channel					
252.150	22.15	46.02	H	23.87	-20

Result for External Antenna, model AH20

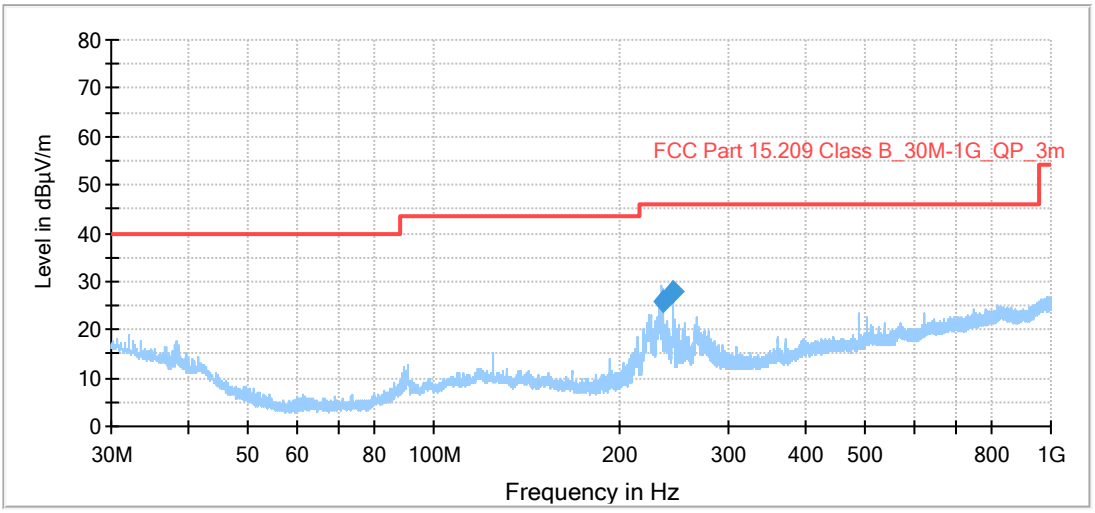
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
X orientation, TX mode, Low channel					
40.860	17.08	40.00	V	22.92	-21
252.150	20.28	46.02	H	25.74	-20
X orientation, TX mode, Middle channel					
252.300	21.81	46.02	H	24.21	-20
X orientation, TX mode, High channel					
252.270	22.22	46.02	H	23.80	-20

All other measured disturbances have a margin of more than 20 dB to the limits.

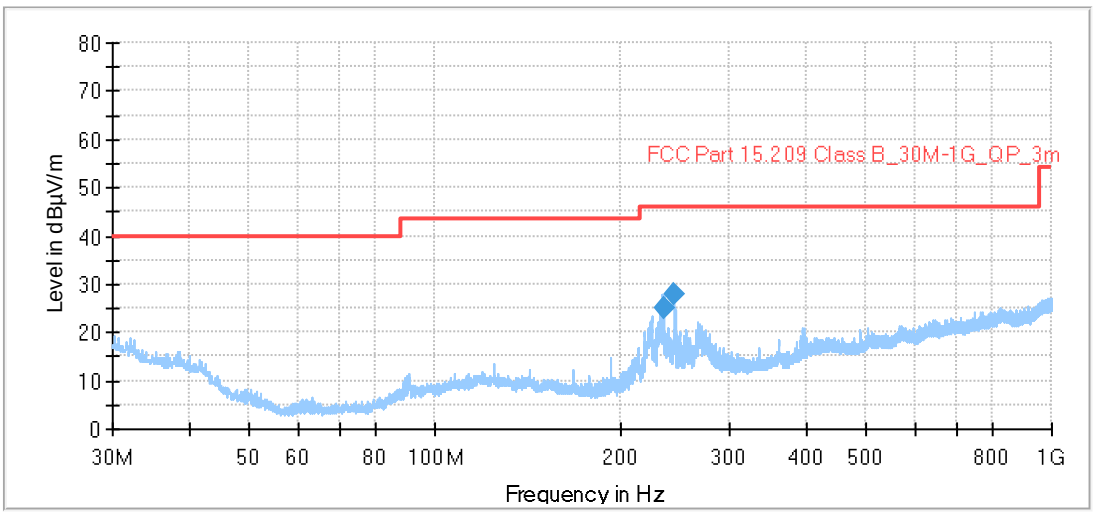
Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]



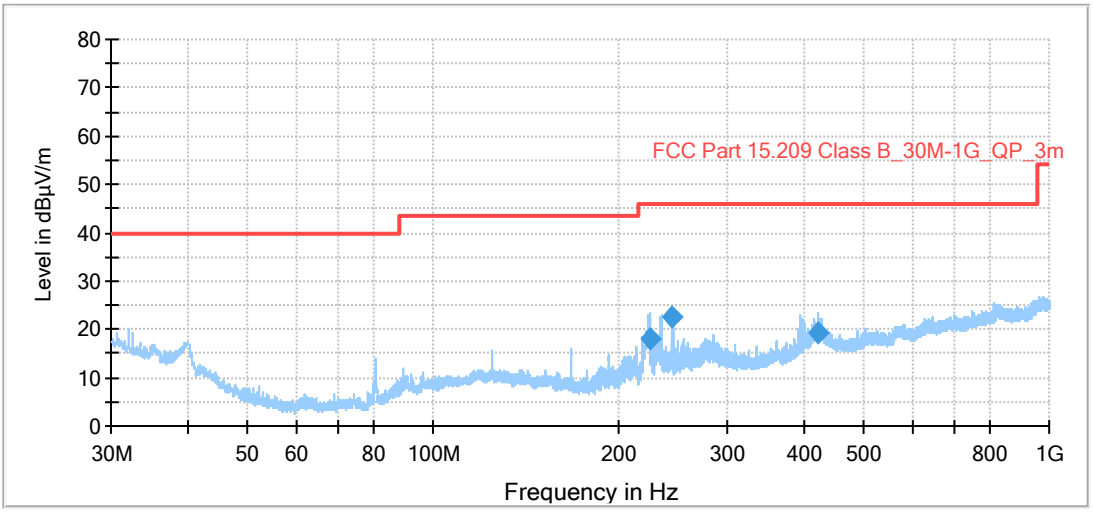
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation X. AC/DC powered, internal antenna. (AH30)



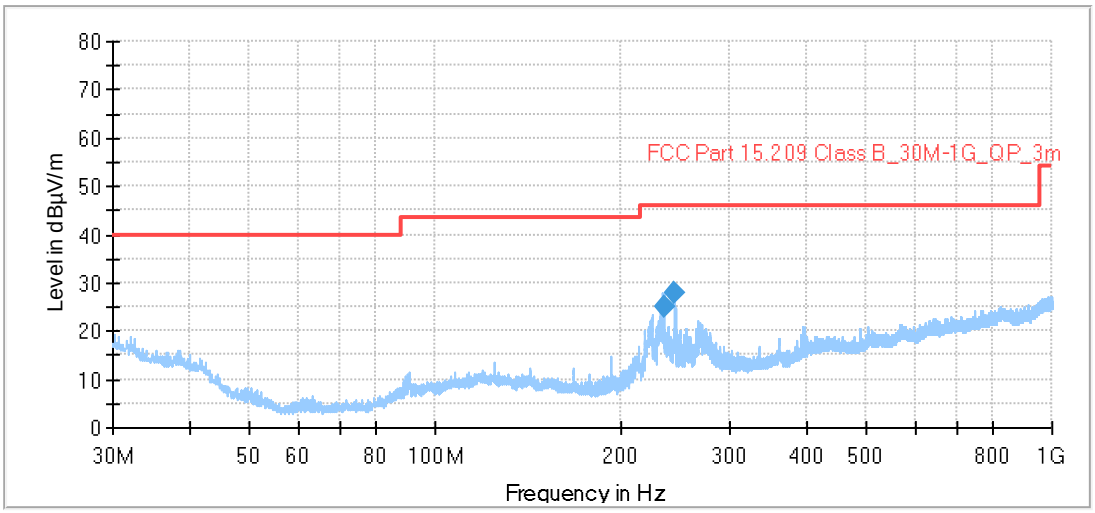
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX mid channel, EUT orientation X. AC/DC powered, internal antenna. (AH30)



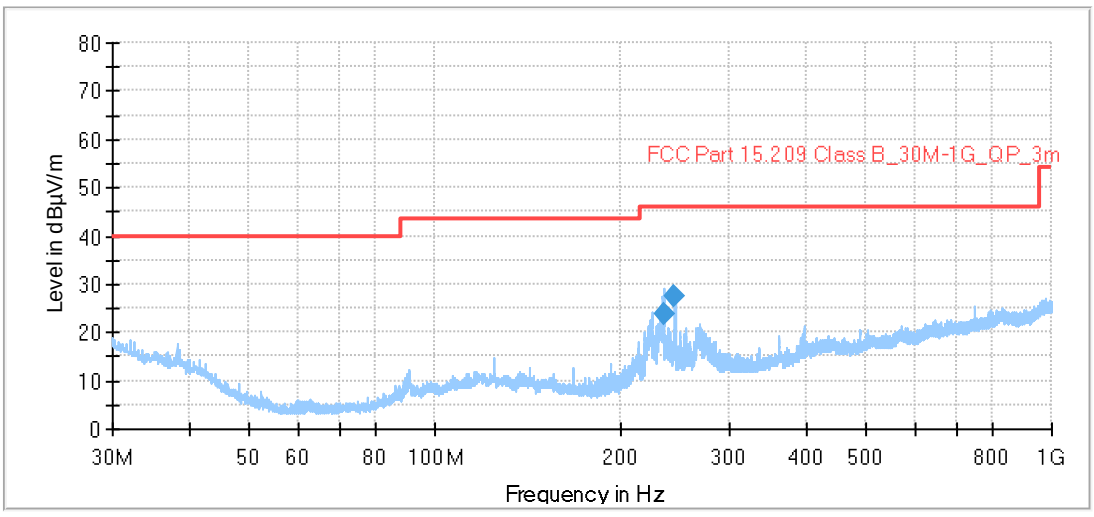
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation X. Powered via AC/DC, internal antenna. (AH30)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation Y. Powered via AC/DC, External antenna. (AH30)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX mid channel, EUT orientation Y. Powered via AC/DC, External antenna. (AH30)



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation Z. Powered via AC/DC, External antenna. (AH30)

Measurement results, Quasi Peak, model AH30

Result for Internal Antenna

Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
Z orientation, TX mode, Low channel					
234.330	18.10	46.02	H	27.92	-22
244.740	27.82	46.02	H	18.20	-21
X orientation, TX mode, Middle channel					
234.450	25.94	46.02	H	20.08	-22
244.680	27.91	46.02	H	18.11	-21
X orientation, TX mode, High channel					
234.690	26.03	46.02	H	19.99	-22
244.650	28.35	46.02	H	17.67	-21

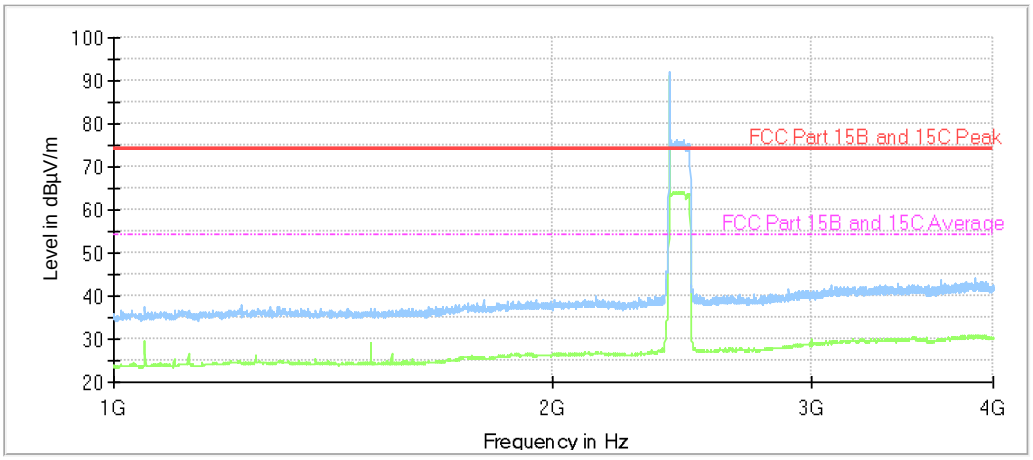
Result for External Antenna, model AH30

Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Polarization H/V	Margin [dB]	Correction factor [dB]
Y orientation, TX mode, Low channel					
224.340	18.00	46.02	H	28.02	-23
244.650	22.45	46.02	H	23.57	-21
421.920	19.36	46.02	V	26.66	-15
Y orientation, TX mode, Middle channel					
234.780	25.10	46.02	H	20.92	-22
244.740	27.79	46.02	H	18.23	-21
Z orientation, TX mode, High channel					
234.840	23.82	46.02	H	22.20	-22
244.680	27.50	46.02	H	18.52	-21

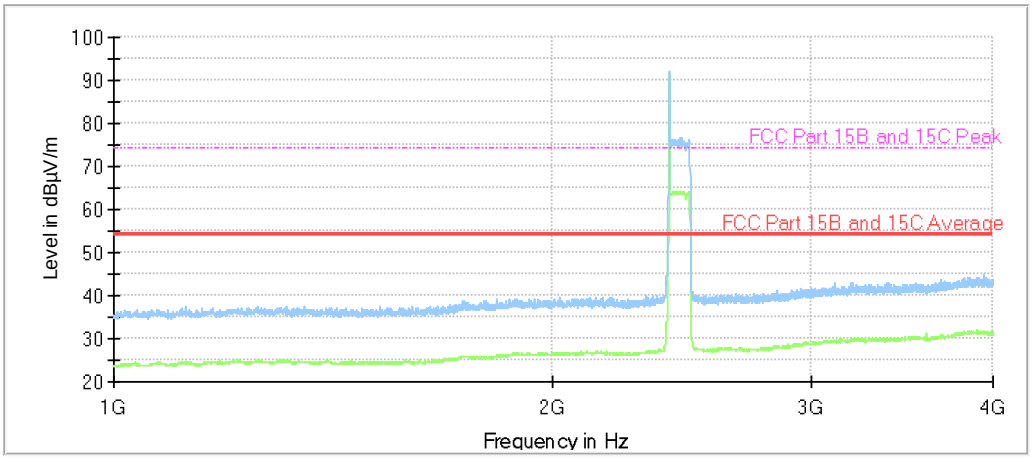
All other measured disturbances have a margin of more than 15 dB to the limits.

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

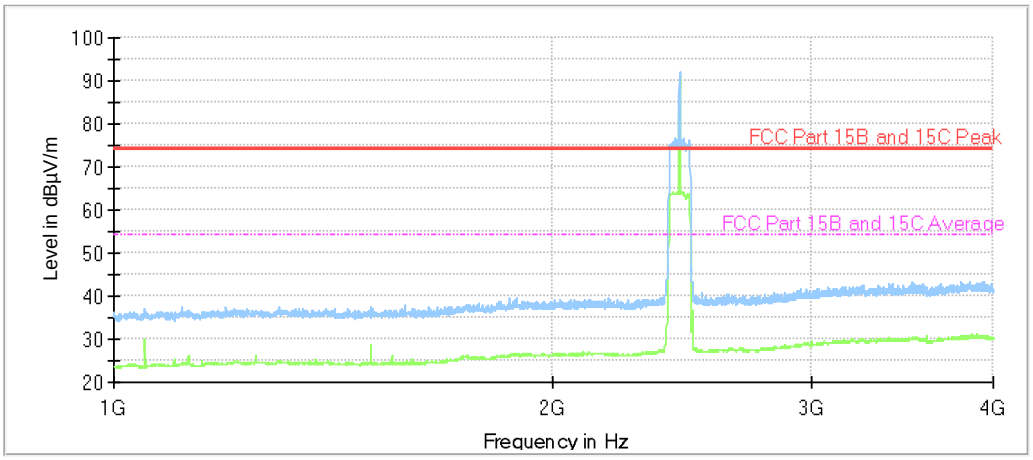
6.5 Test results 1 GHz – 26.5 GHz, TX



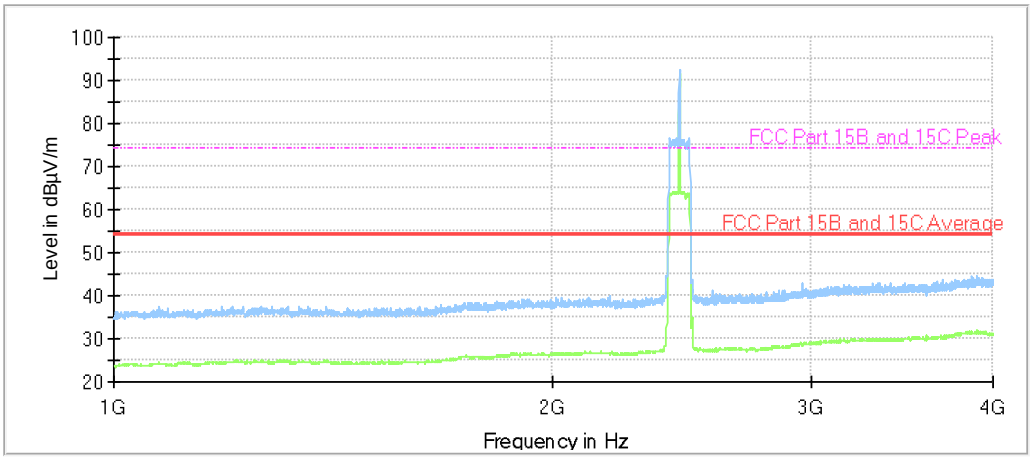
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX low channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



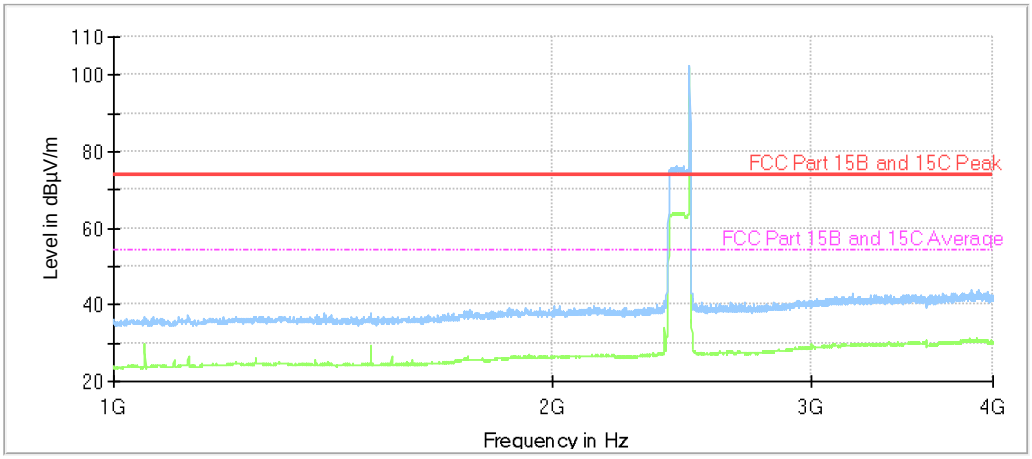
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX low channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



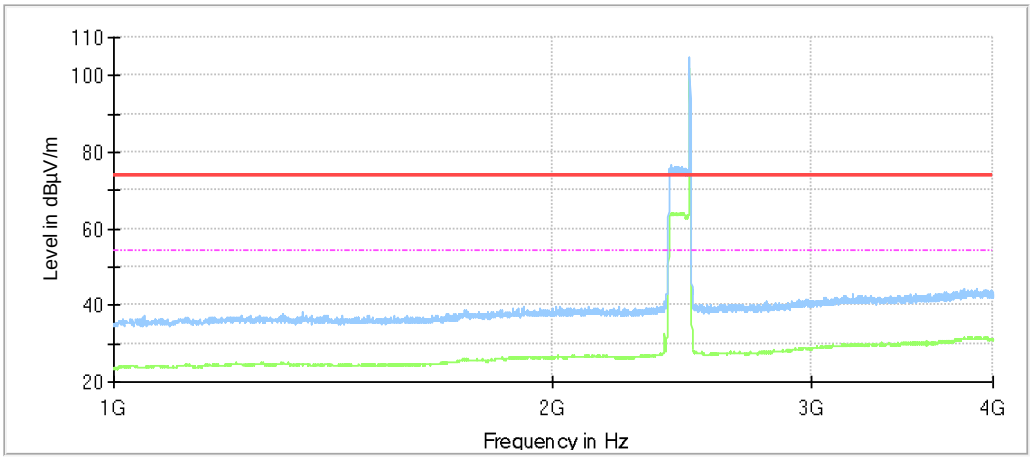
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX mid channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



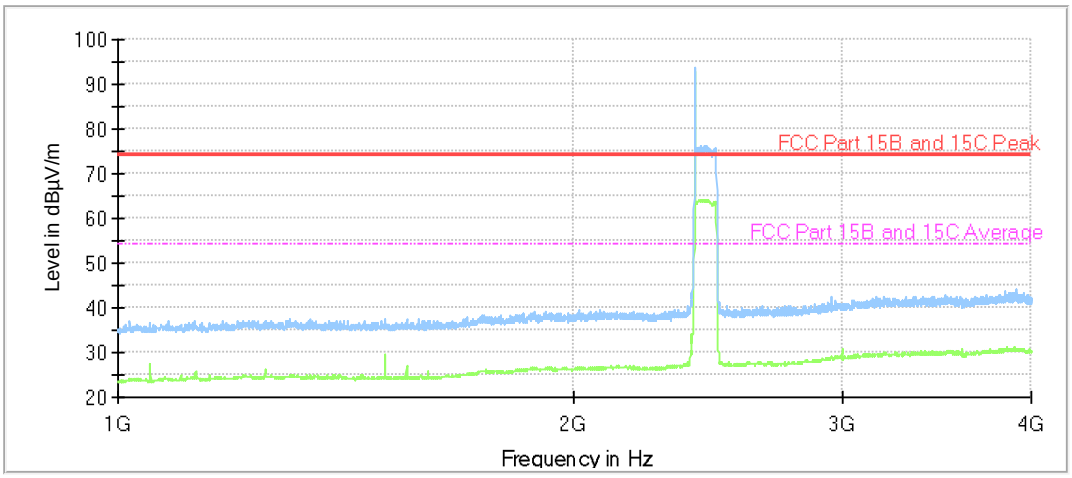
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX mid channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



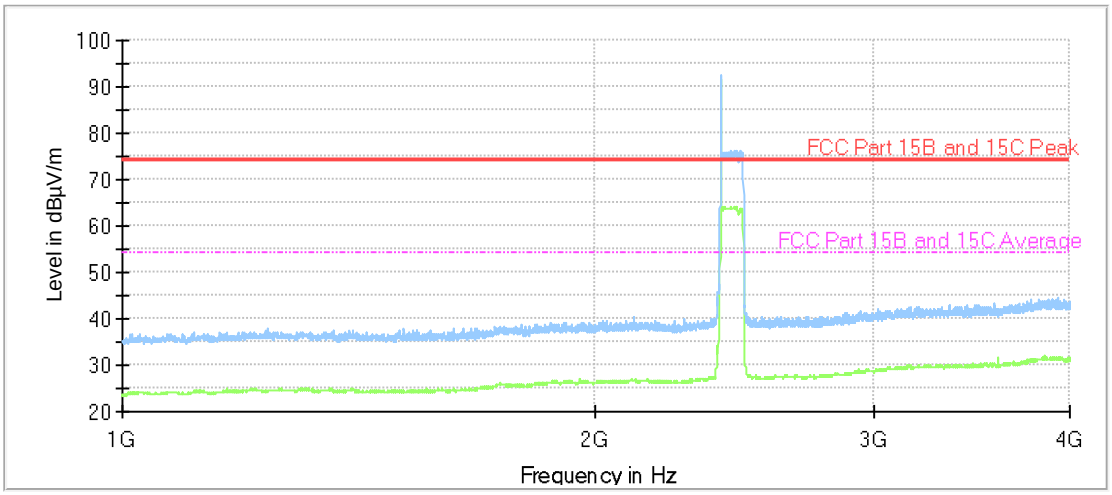
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX high channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



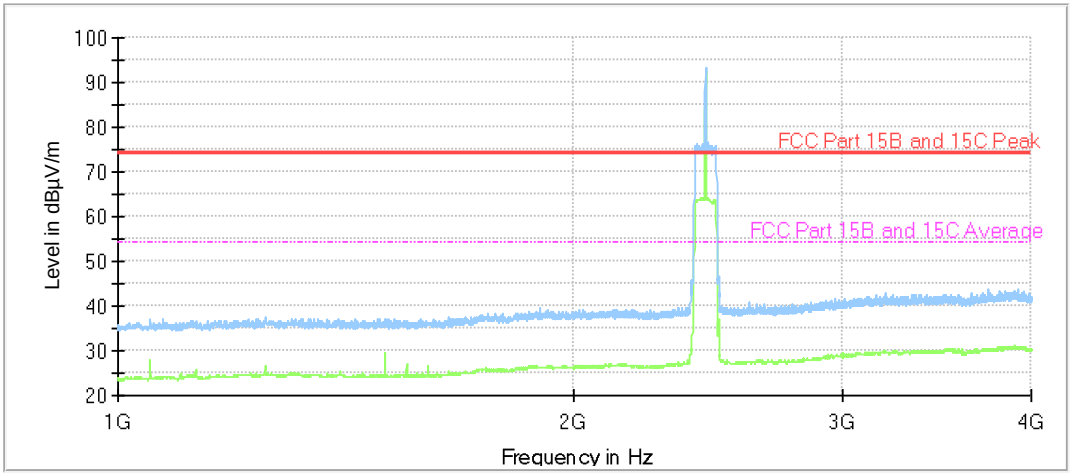
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX high channel, Internal antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



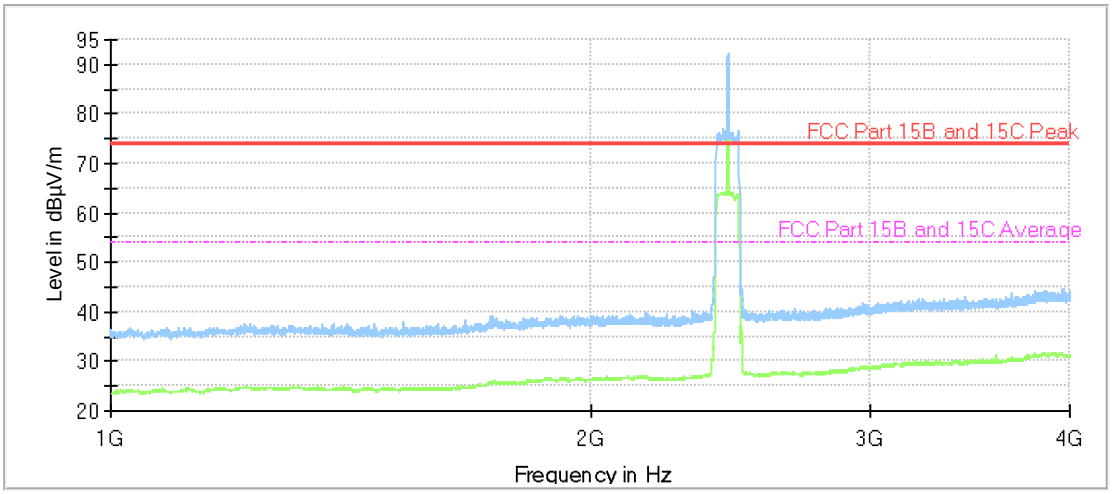
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX low channel, External antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



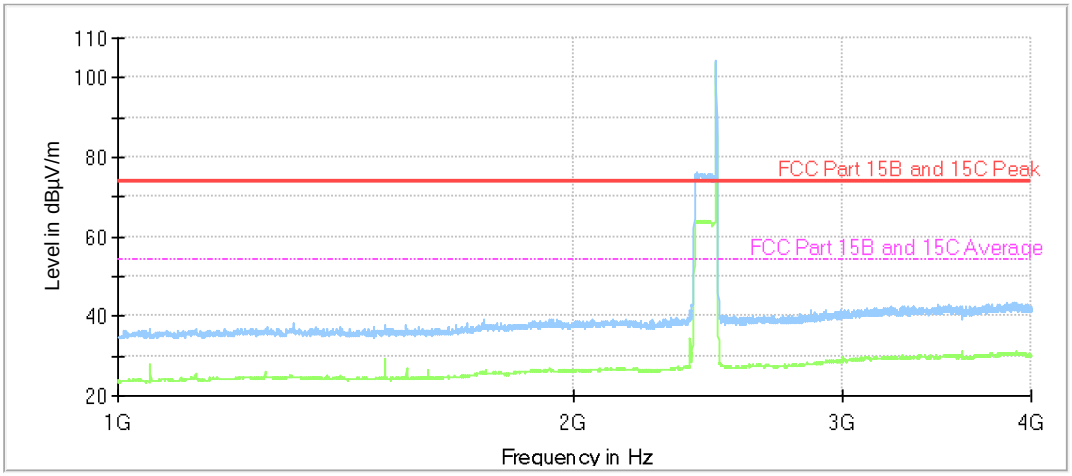
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX low channel, External antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



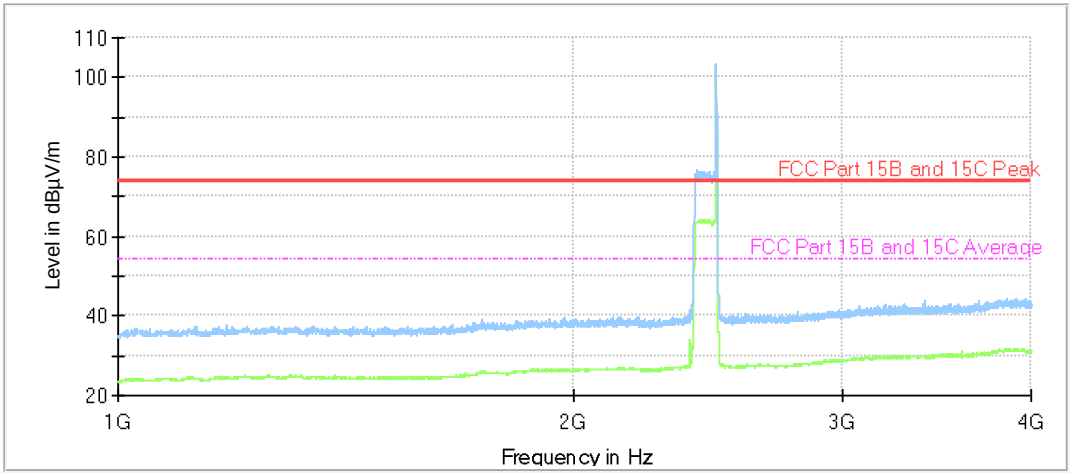
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX mid channel, External antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



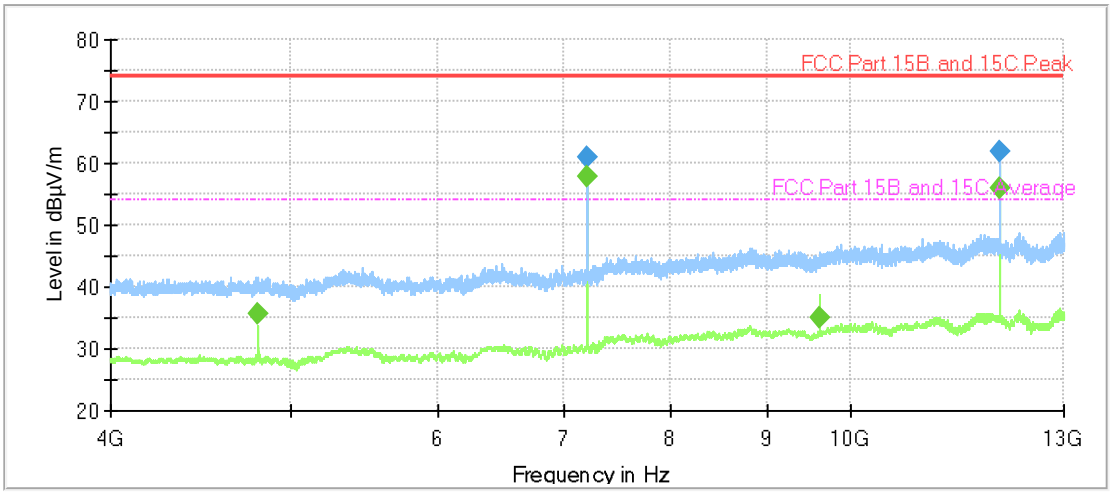
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX mid channel, External antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



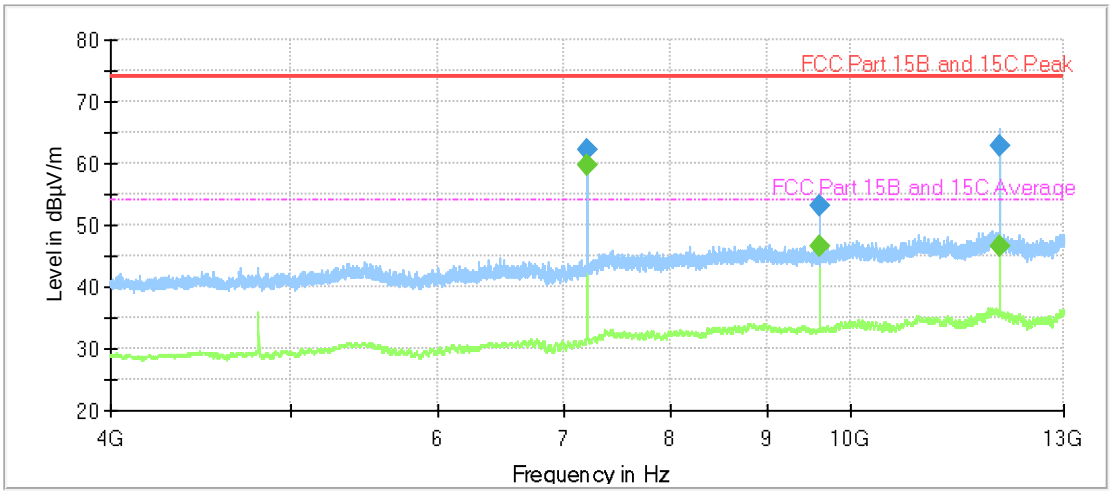
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX high channel, External antenna Carrier is attenuated by band rejection filter. Powered via PoE (AH40)



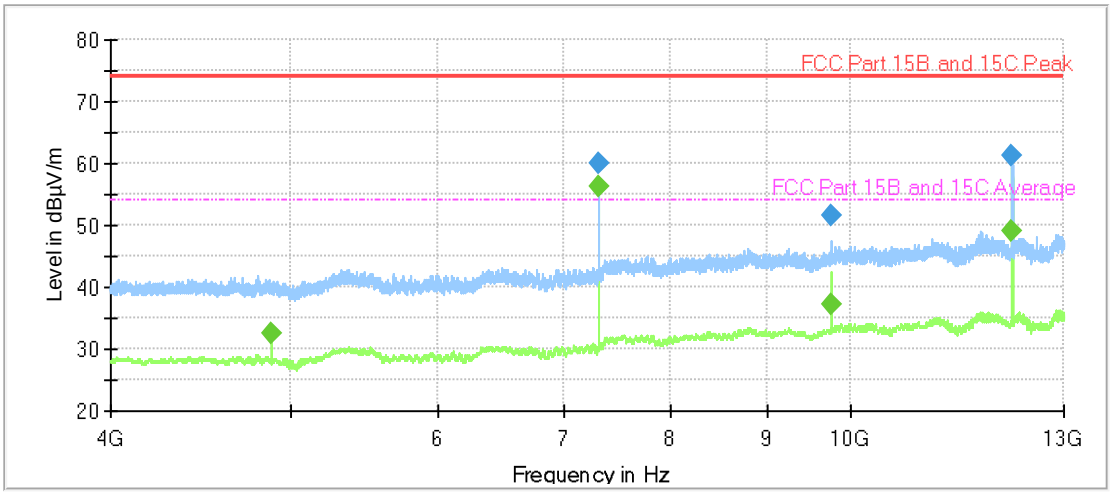
Diagram, Peak overview sweep, 1– 4 GHz at 3 m distance. TX high channel, External antenna Carrier is attenuated by band rejection filter. Powered via AC/DC (AH20)



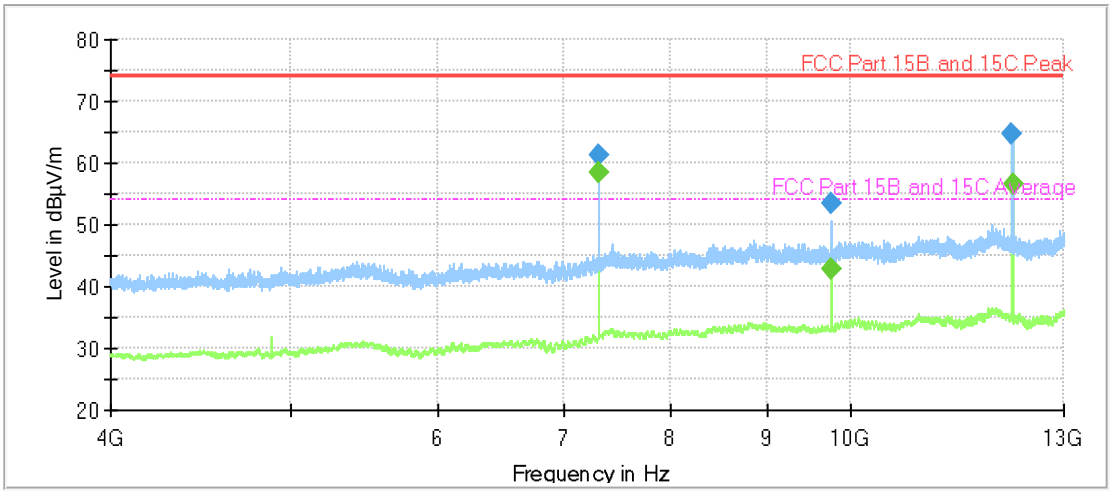
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX low channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



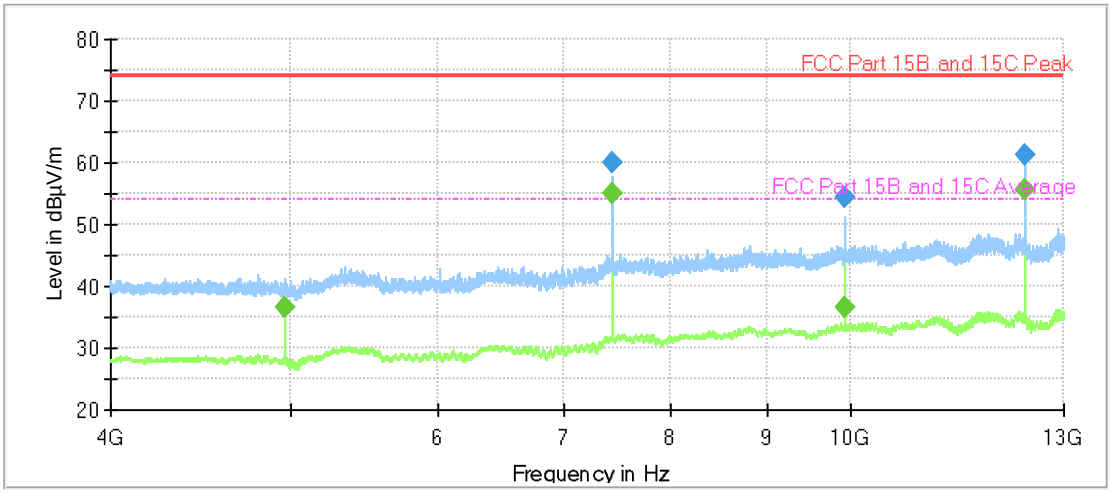
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX low channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



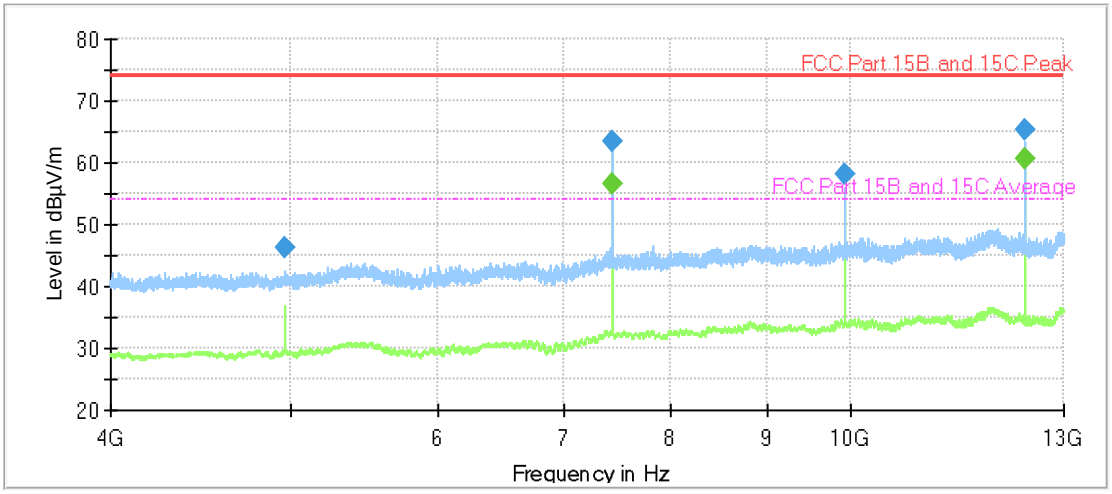
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX mid channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



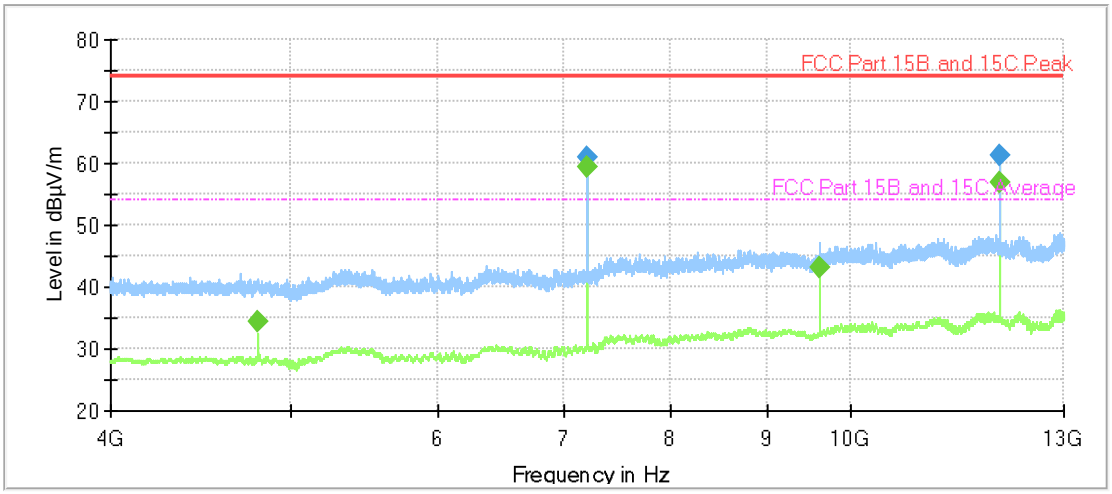
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX mid channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



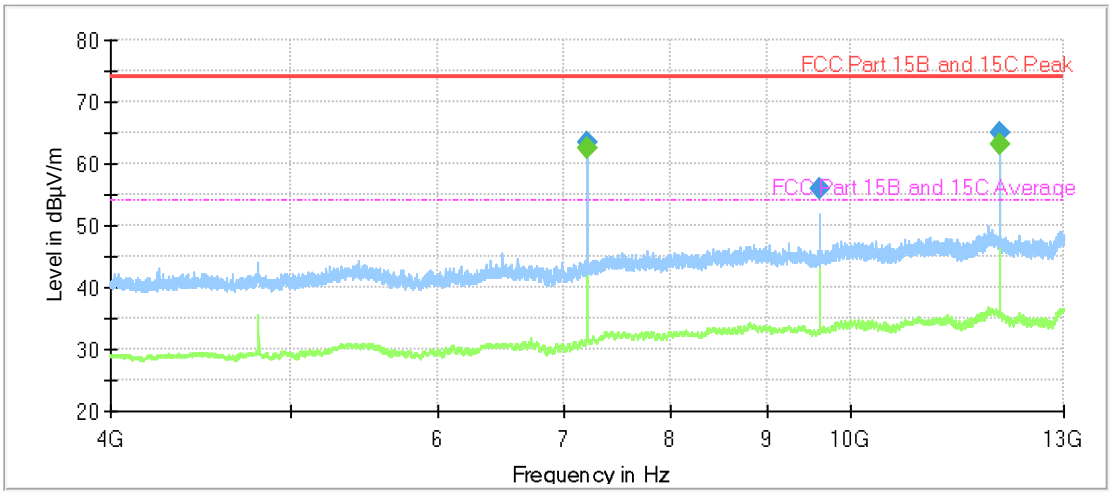
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX high channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



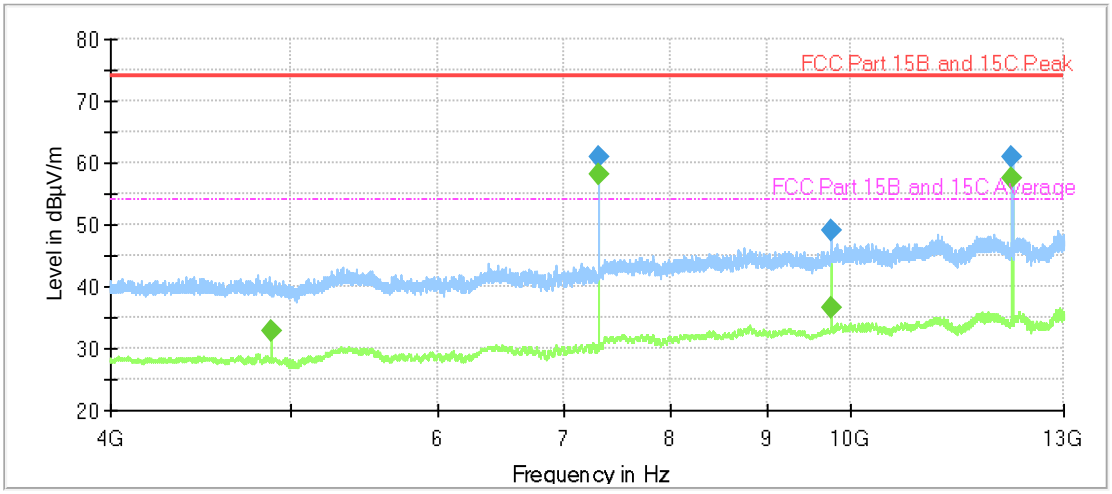
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX high channel, Internal antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



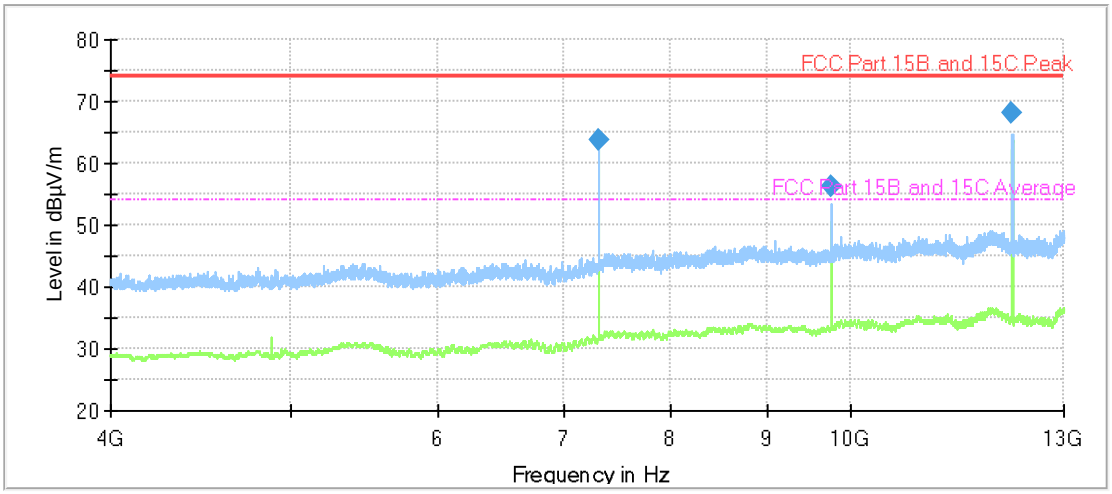
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX low channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



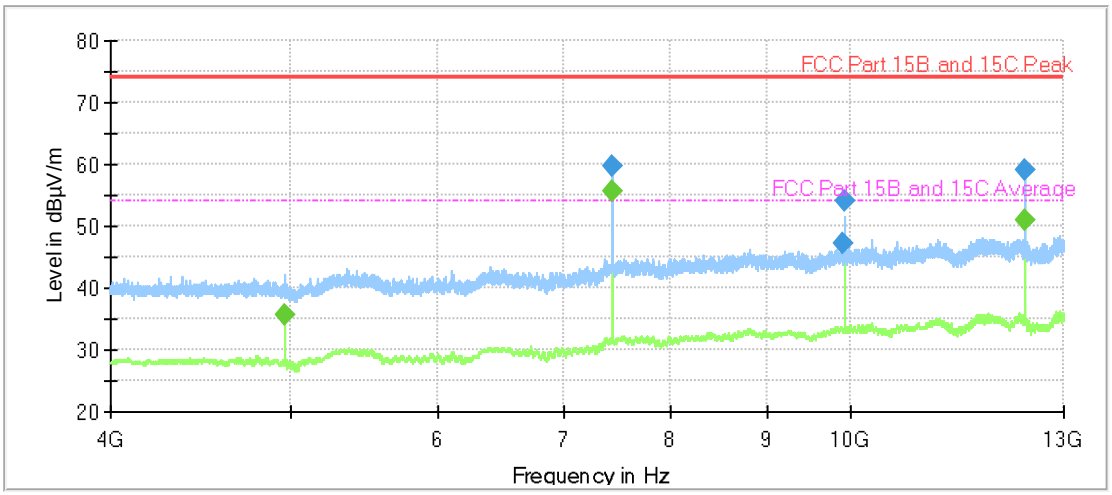
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX low channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



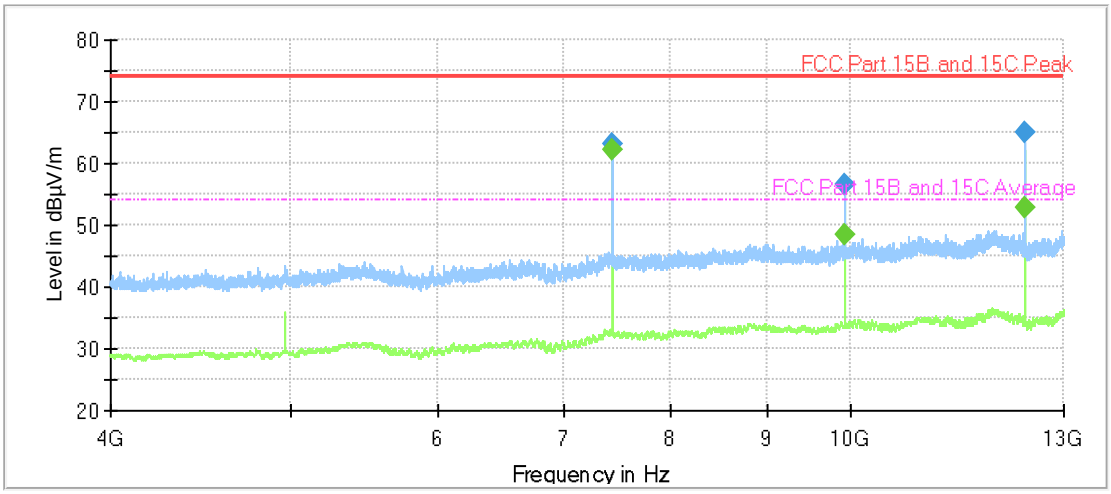
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX mid channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



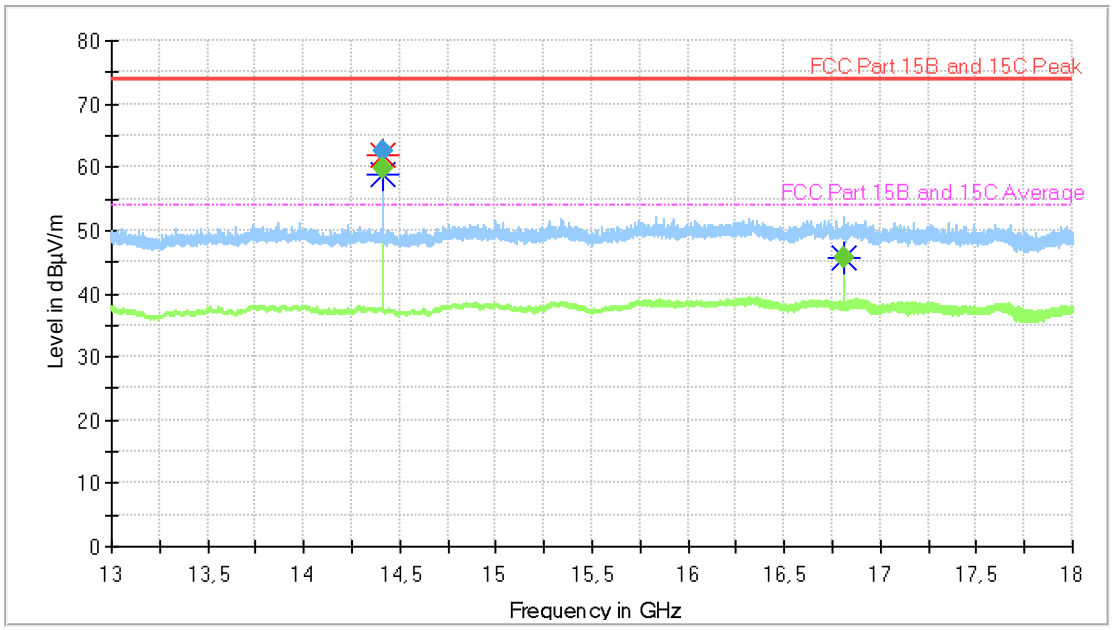
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX mid channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



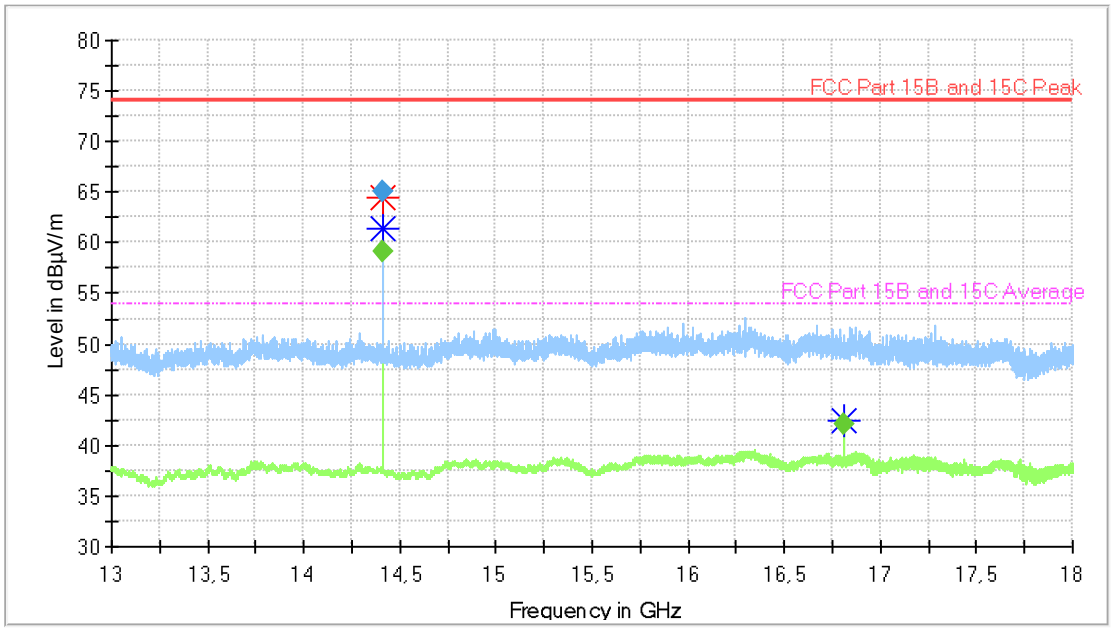
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX high channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via PoE (AH40)



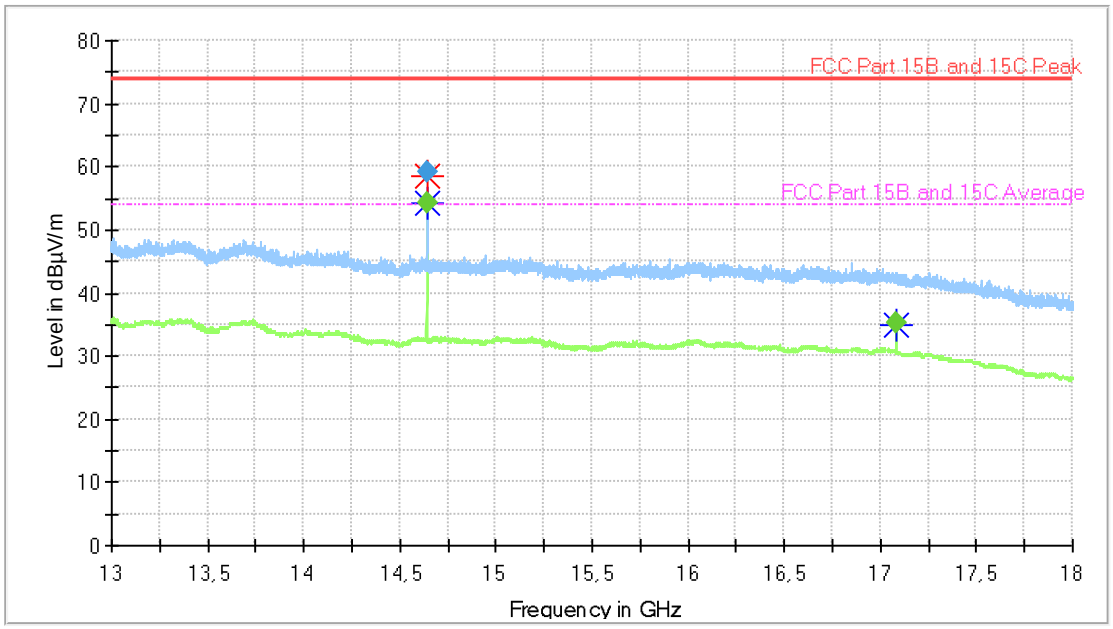
Diagram, Peak overview sweep, 4– 13 GHz at 3 m distance. TX high channel, External antenna Emissions below 4000 MHz are attenuated by high-pass filter. Powered via AC/DC (AH20)



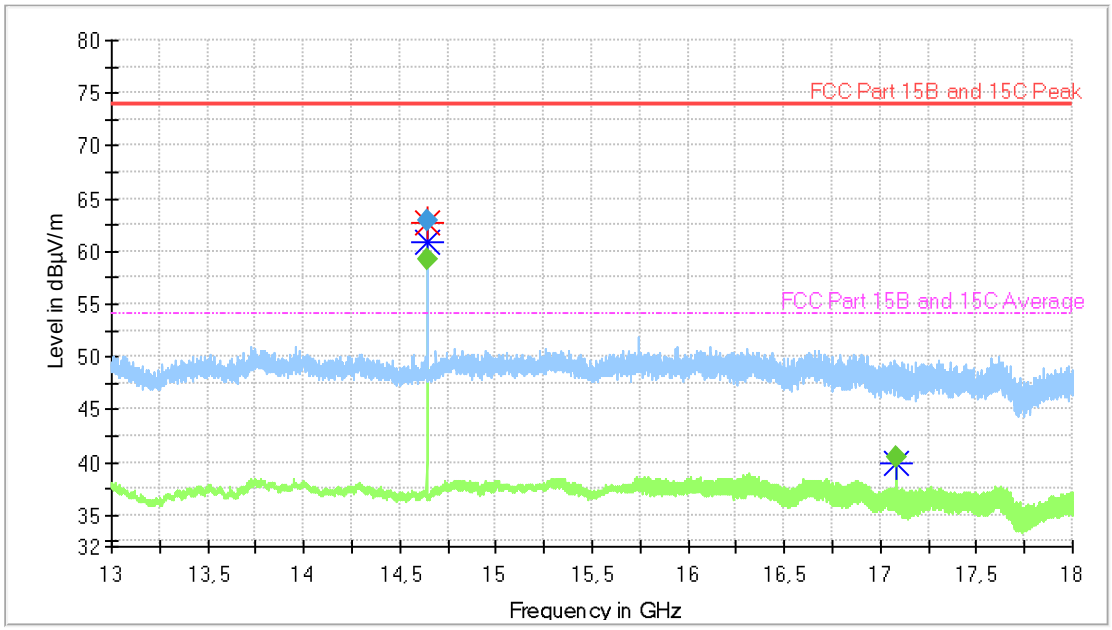
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX low channel, Internal antenna. Powered via PoE (AH40)



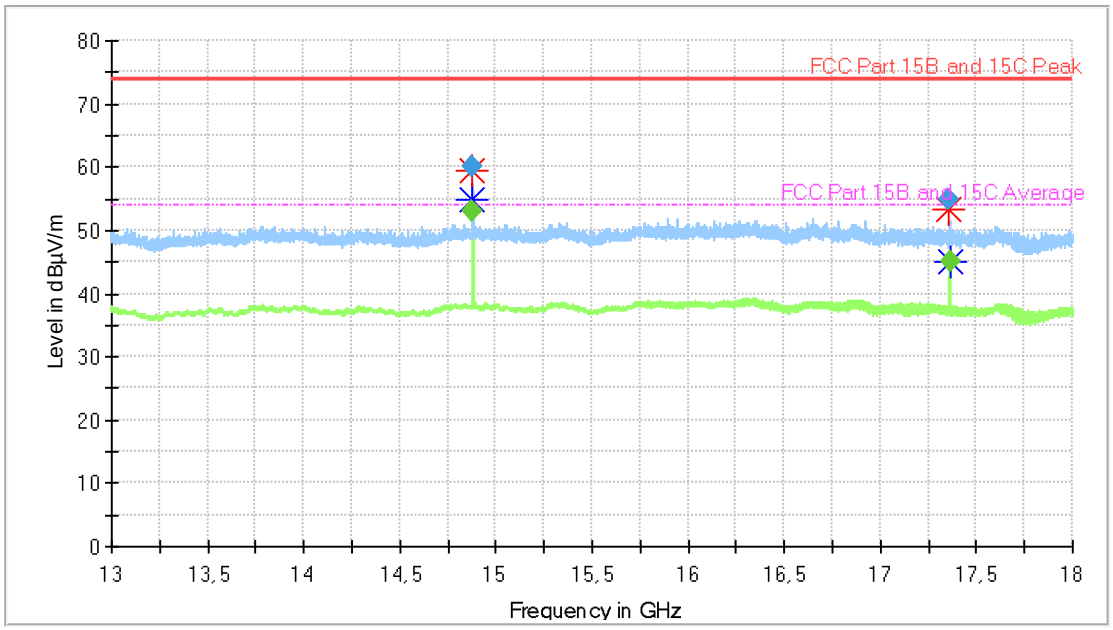
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX low channel, Internal antenna. Powered via AC/DC (AH20)



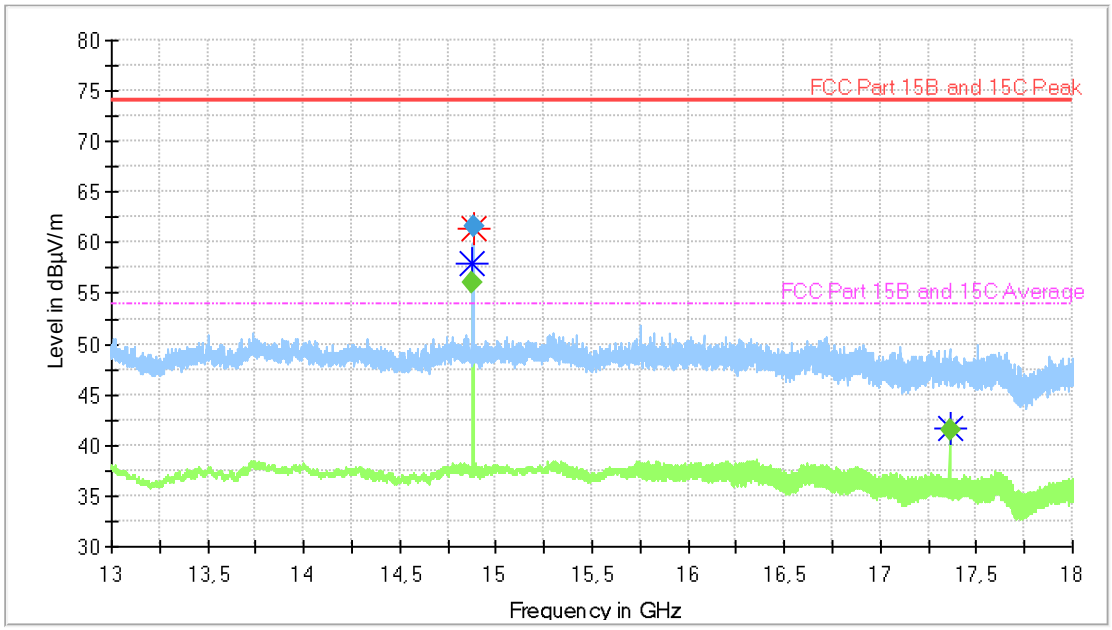
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX mid channel, Internal antenna. Powered via PoE (AH40)



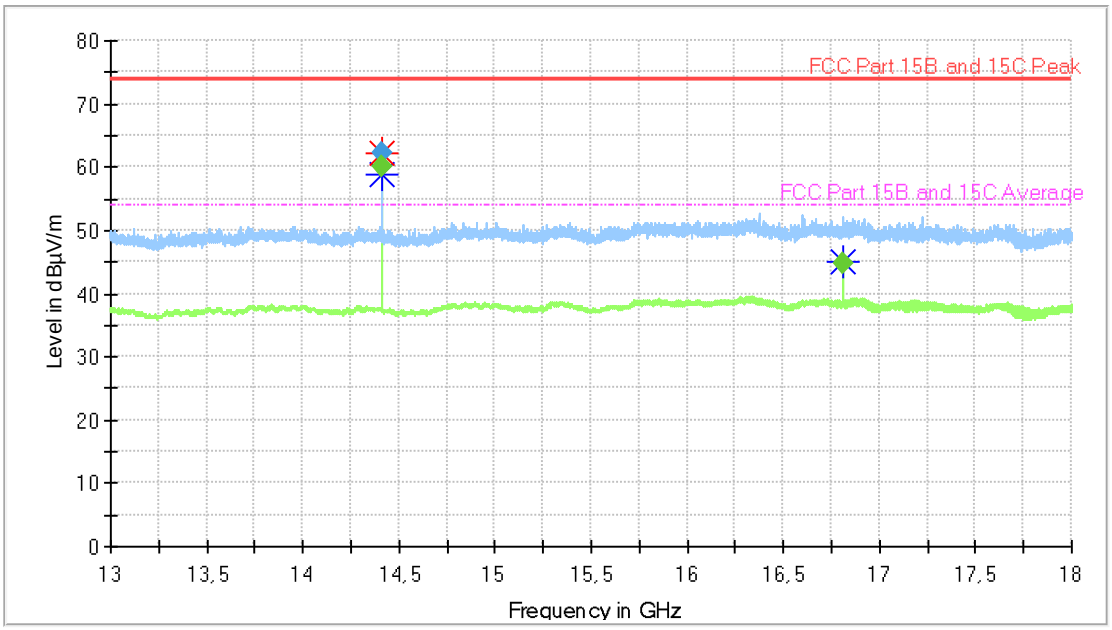
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX mid channel, Internal antenna. Powered via AC/DC (AH20)



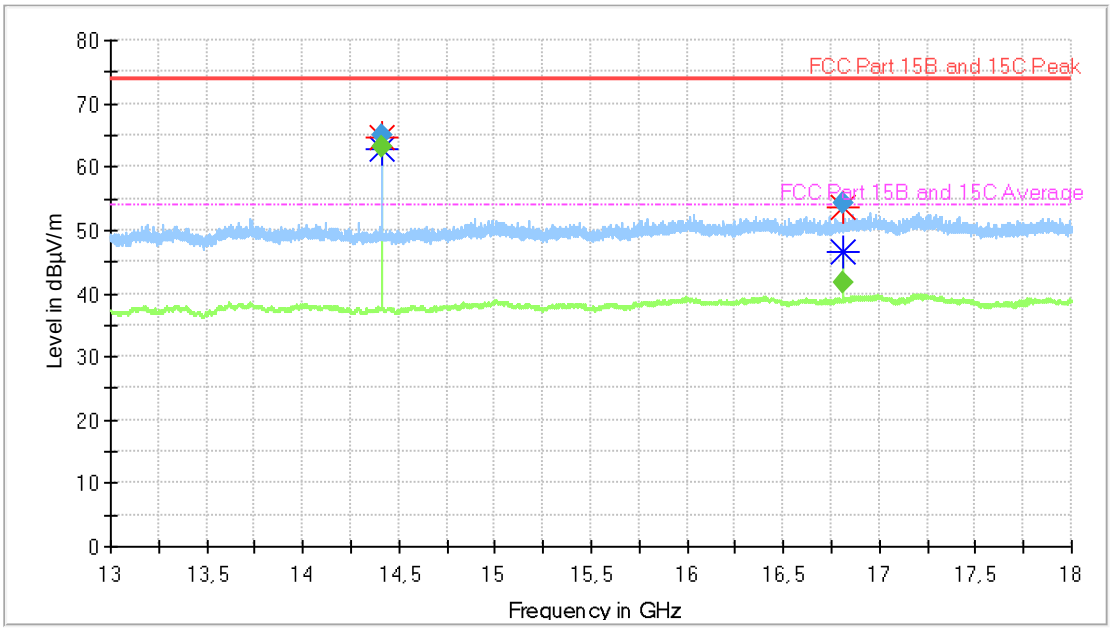
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX high channel, Internal antenna. Powered via PoE (AH40)



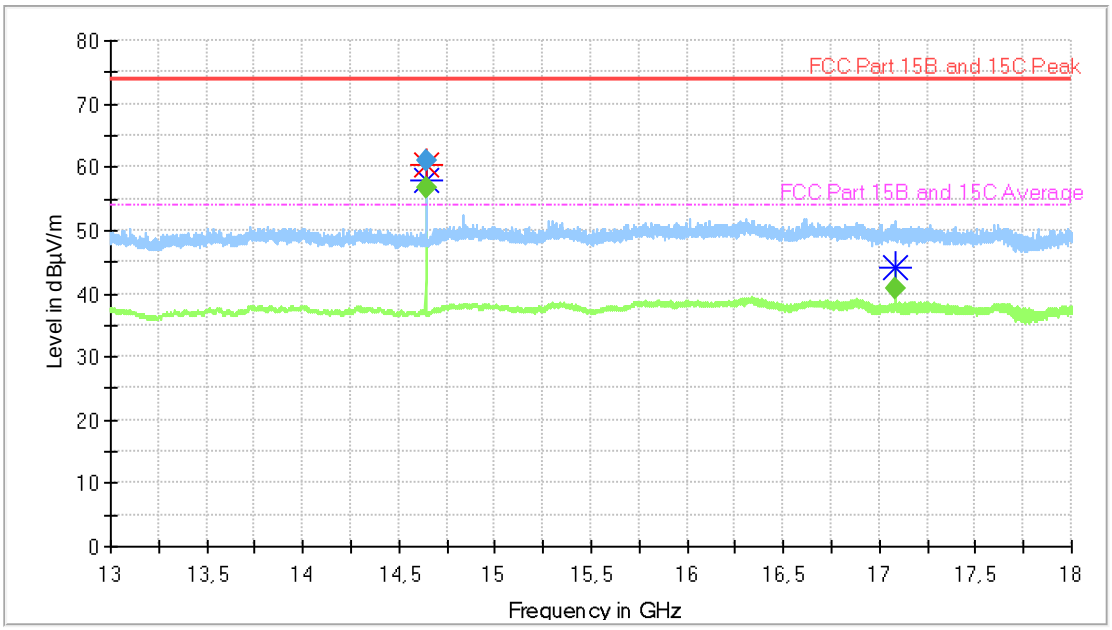
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX high channel, Internal antenna. Powered via AC/DC (AH20)



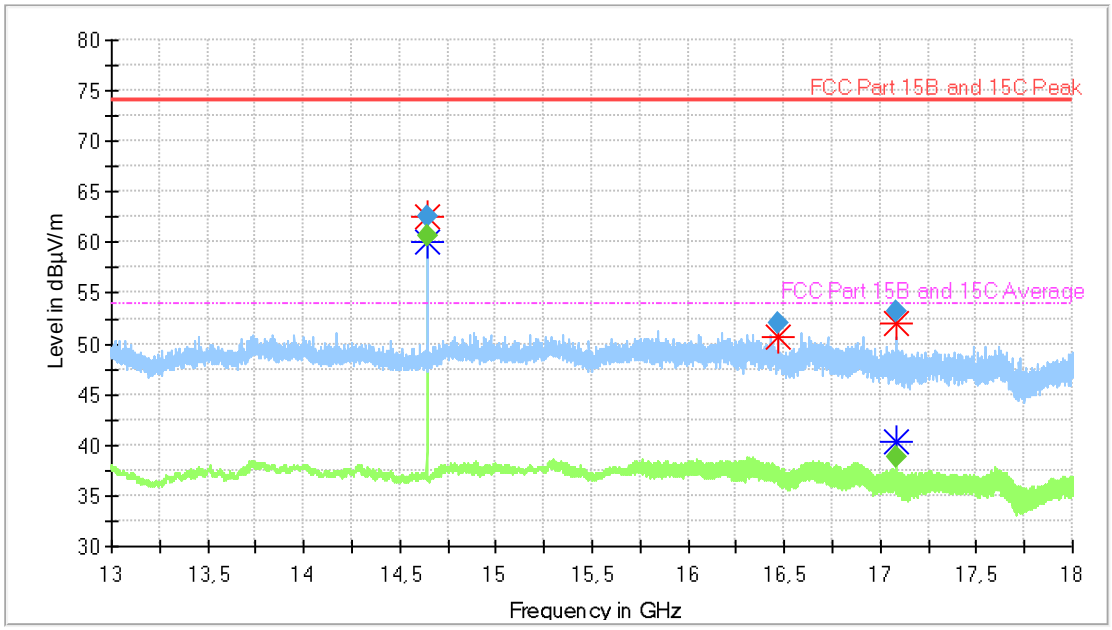
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX low channel, External antenna. Powered via PoE (AH40)



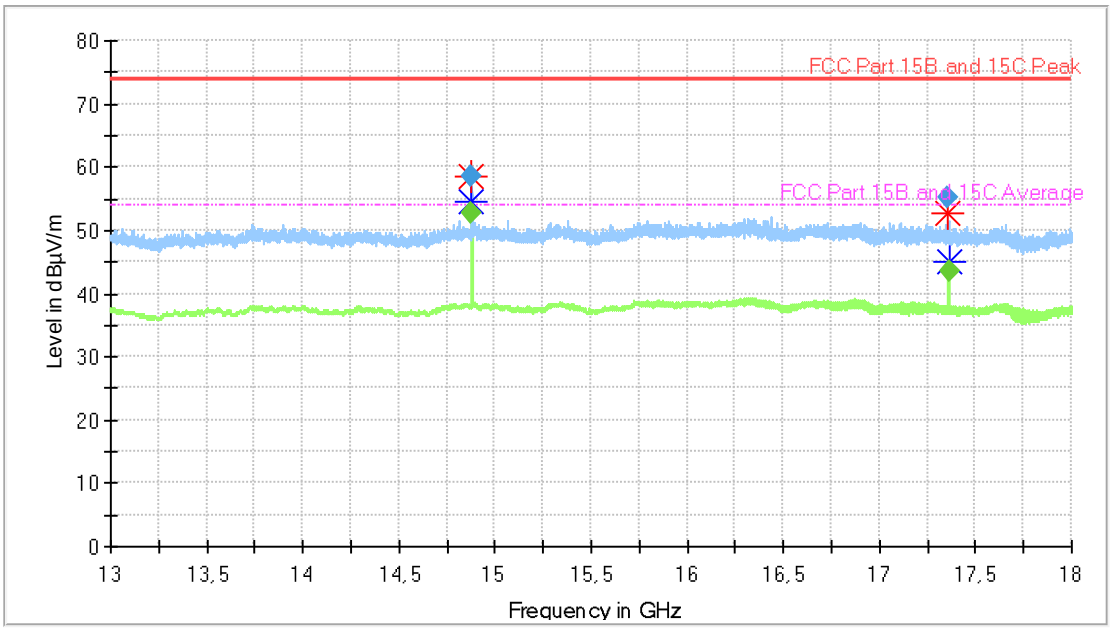
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX low channel, External antenna. Powered via AC/DC (AH20)



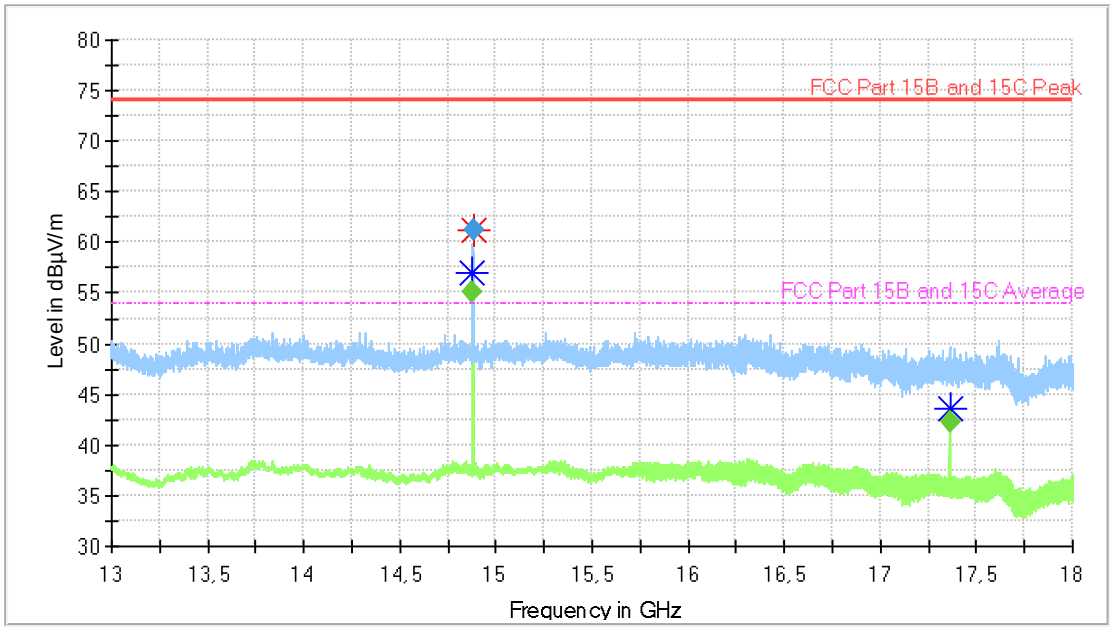
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX mid channel, External antenna. Powered via PoE (AH40)



Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX mid channel, External antenna. Powered via AC/DC (AH20)



Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX high channel, External antenna. Powered via PoE (AH40)



Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX high channel, External antenna. Powered via AC/DC (AH20)