

Annex 1: Measurement diagrams to TEST REPORT No.: 18-1-0048601T03a

According to:
FCC Regulations
Part 15.209
Part 15.247

ISED-Regulations
RSS-Gen, Issue 5
RSS-247, Issue 2

for

Robert Bosch Car Multimedia GmbH

AIVIV20

Navigationsystem with WLAN and Bluetooth

FCC ID: YBN-AIVIV20
ISED: 9595A-AIVIV20







Laboratory Accreditation and Listings		
 DAKKS Deutsche Akkreditierungsstelle D-PL-12047-01-04 Accredited EMC-Test Laboratory	 Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-4452, C-20009, T-20006, G-20013
 AUTHORIZED RF LABORATORY	 ctia Authorized Test Lab Lab Code: 20011130-00	 MRA US-EU 0003
accredited according to DIN EN ISO/IEC 17025		
<p align="center">CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com</p>		

Table of contents

1. CONDUCTED RF MEASUREMENTS ON ANTENNA PORT	3
1.1. Duty Cycle	3
1.2. Peak Power Conducted	4
1.3. Number of Hopping Frequencies	11
1.4. 20dB Emission Bandwidth	12
1.5. 99 % Occupied Bandwidth	21
1.6. Carrier Frequency Separation	30
1.7. Time of Channel occupancy	33
1.8. 20dBc Conducted Spurious Emissions	35
1.9. Frequency Stability	43
2. RADIATED FIELD STRENGTH MEASUREMENTS	45
2.1. Magnetic field emissions radiated Bluetooth BDR below 30 MHz	45
2.2. Spurious emissions radiated Bluetooth BDR 30 MHz to 1 GHz	52
2.3. Spurious emissions radiated Bluetooth BDR 1 GHz to 18 GHz	59
2.4. Spurious emissions radiated Bluetooth 18 GHz to 26.5 GHz	62
3. RADIATED BAND EDGE MEASUREMENTS	64
3.1. Radiated emissions on Bluetooth BDR band-edge low	64
3.2. Radiated emissions on Bluetooth EDR band-edge high	68

1. Conducted RF Measurements on Antenna Port

1.1. Duty Cycle

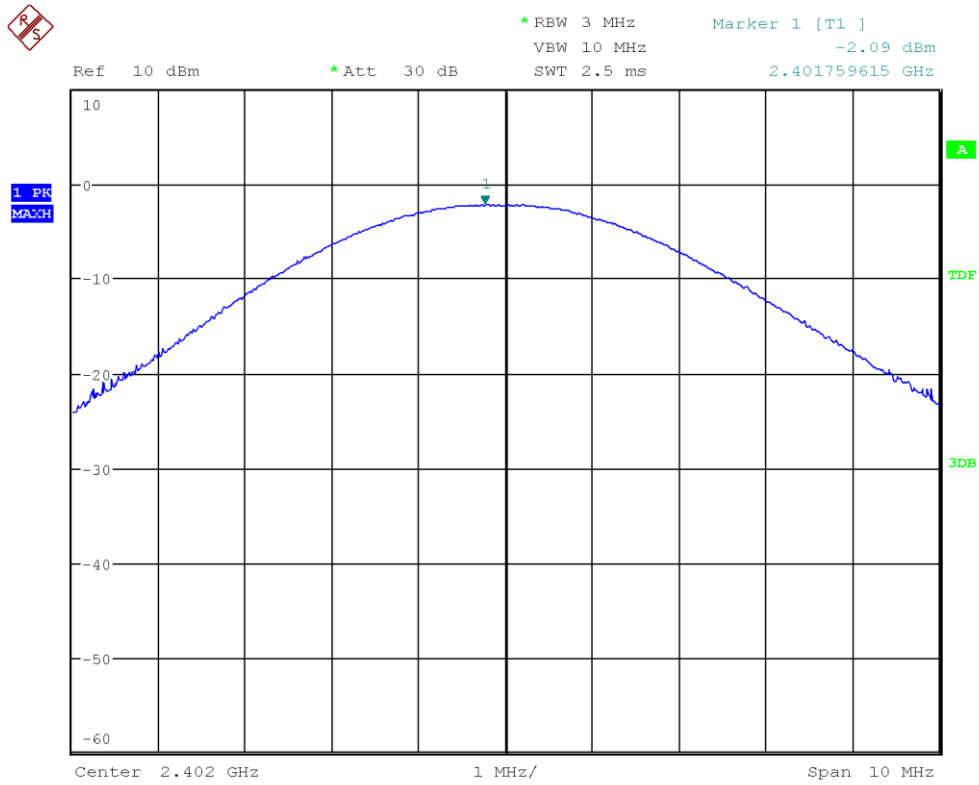
Modulation	DUT	DutyCycle (%)	DutyCycle (dB)
	Frequency (MHz)		
DH5	2402	77.61	1.10
	2441	77.61	1.10
	2480	77.61	1.10
2DH5	2402	77.57	1.10
	2441	77.57	1.10
	2480	77.56	1.10
3DH5	2402	77.58	1.10
	2441	77.58	1.10
	2480	77.58	1,10

1.2. Peak Power Conducted

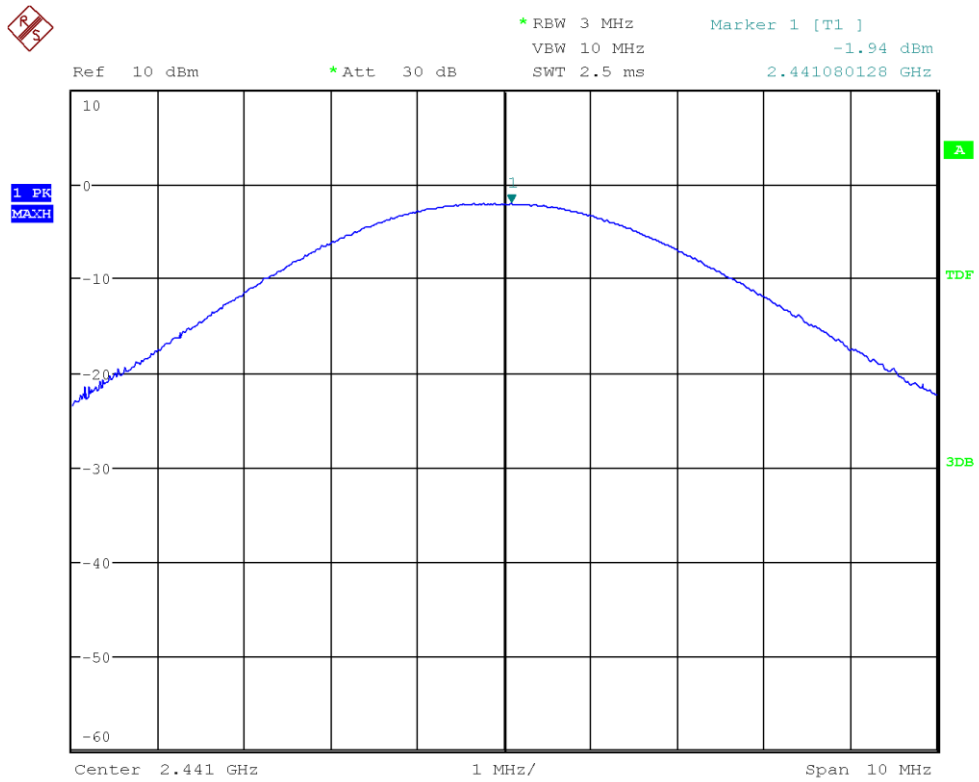
The antenna gain was measured at 3 different frequencies.

Modulation	DUT Frequency (MHz)	Peak Power (dbm)	Antenna Gain (dBi)	EIRP (dBm)
DH5	2402	-2.09	-5.30	-7.39
	2441	-1.94	-5.40	-7.34
	2480	-2.23	-3.30	-5.53
2DH5	2402	-3.08	-5.30	-8.38
	2441	-2.74	-5.40	-4.68
	2480	-2.87	-3.30	-6.17
3DH5	2402	-2.76	-5.30	-8.06
	2441	-2.47	-5.40	-7.87
	2480	-2.65	-3.30	-5.95

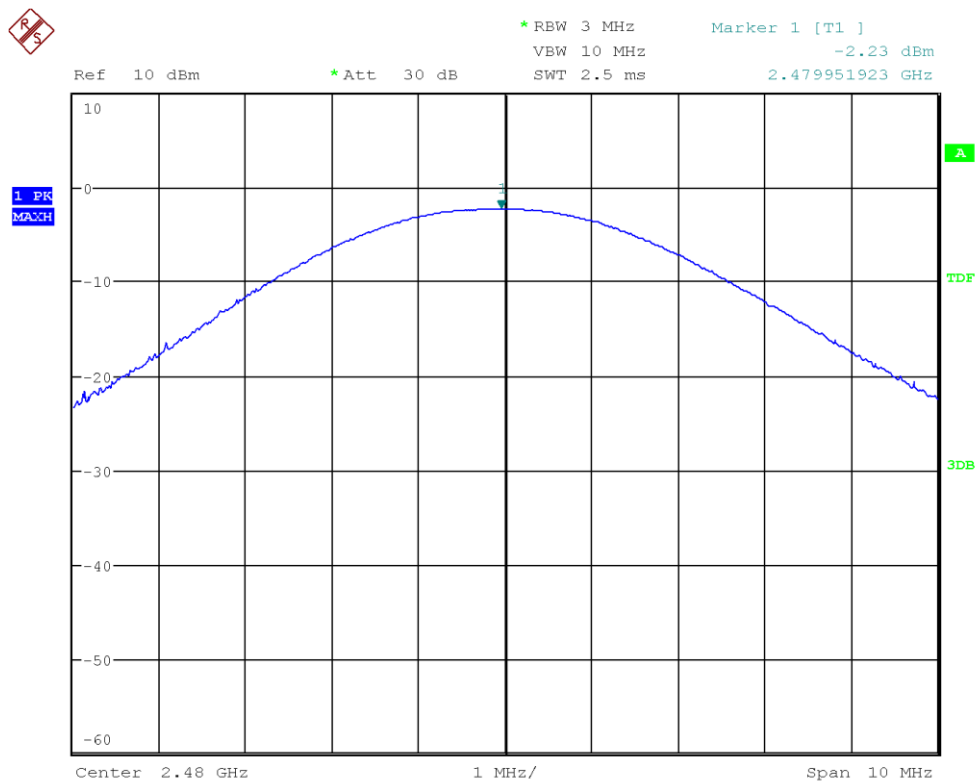
DH5 Channel 0, 39, 78



BT_Peak_Power_2402_DH5

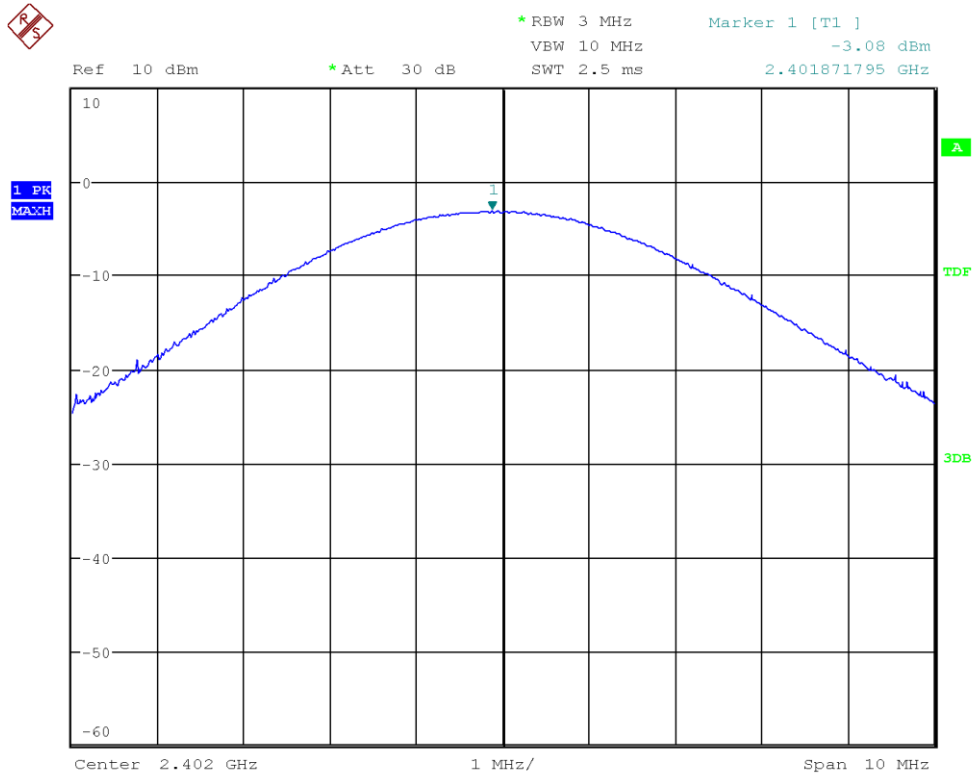


BT_Peak_Power_2441_DH5

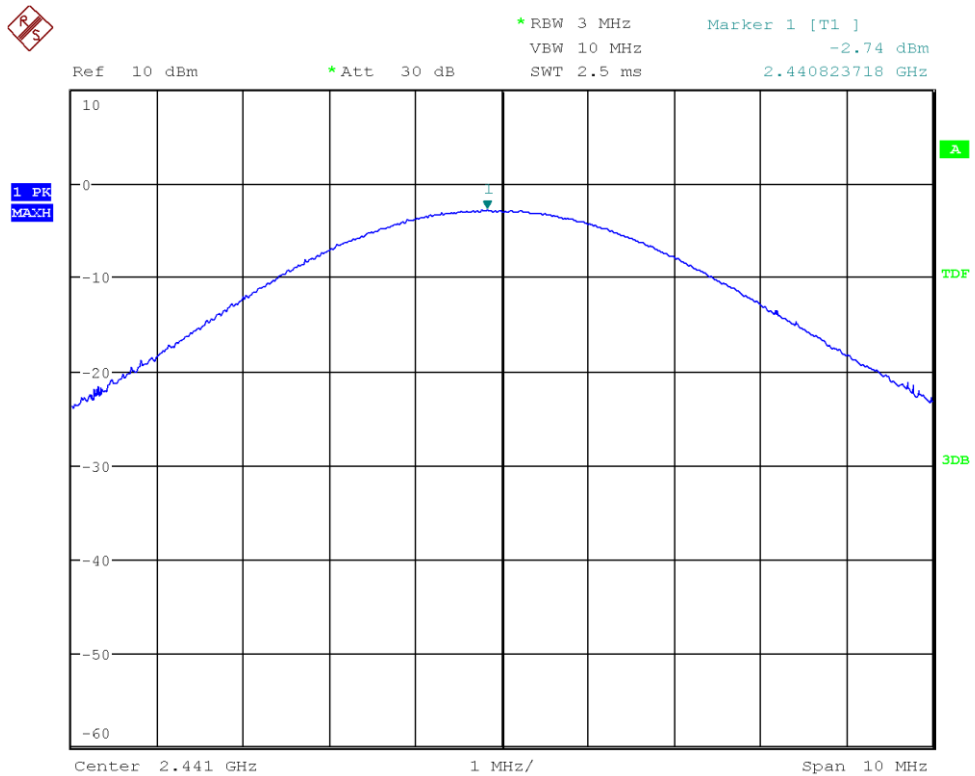


BT_Peak_Power_2480_DH5

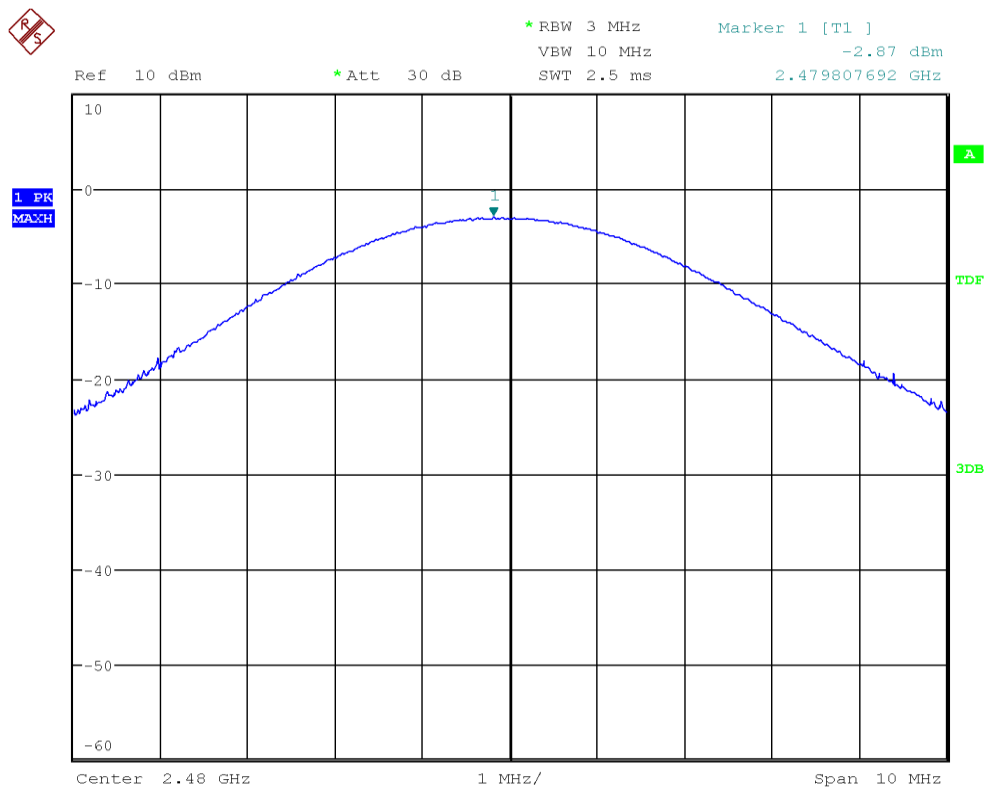
2-DH5 Channel 0, 39, 78



BT_Peak_Power_2402_2DH5

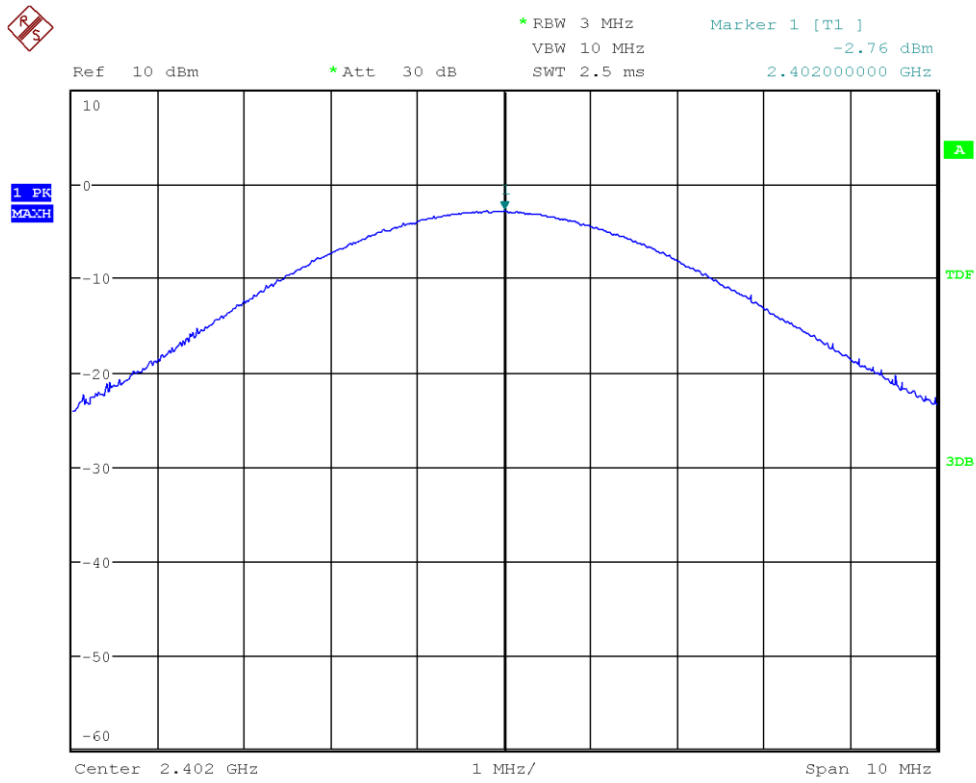


BT_Peak_Power_2441_2DH5

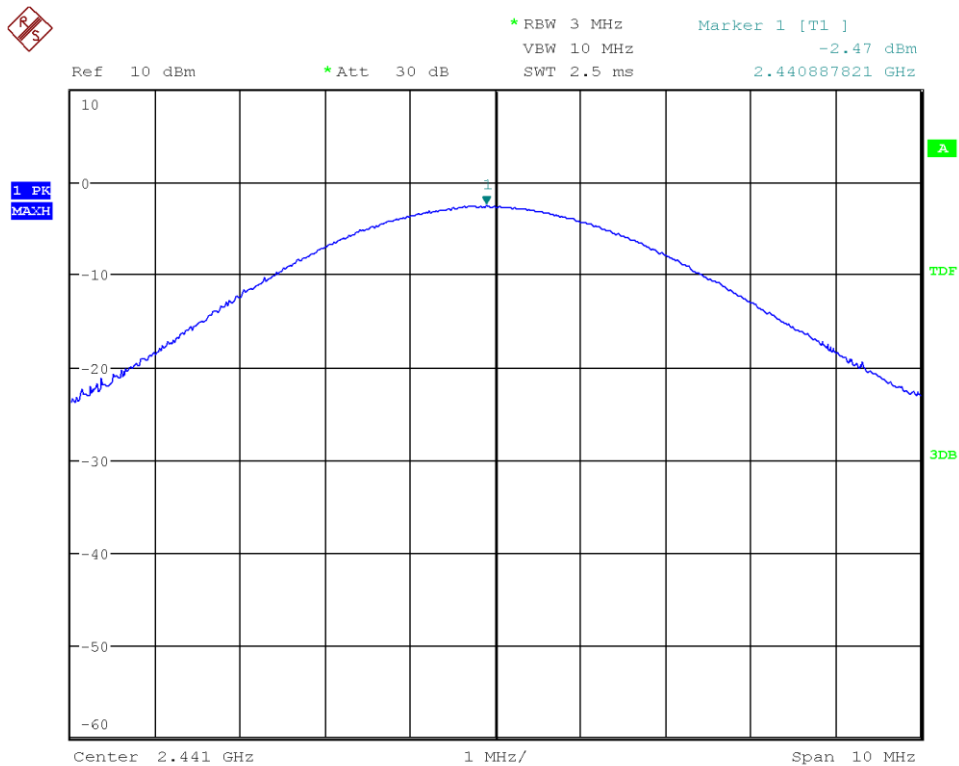


BT_Peak_Power_2480_2DH5

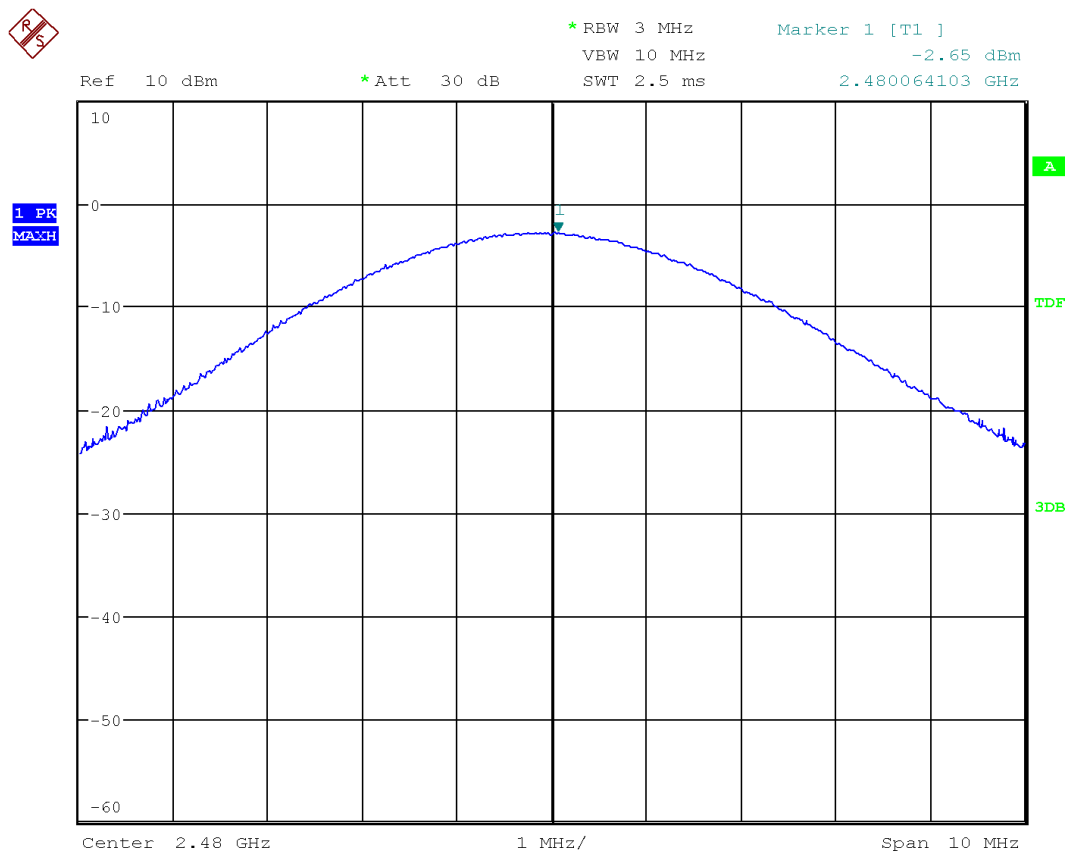
3-DH5 Channel 0, 39, 78



BT_Peak_Power_2402_3DH5



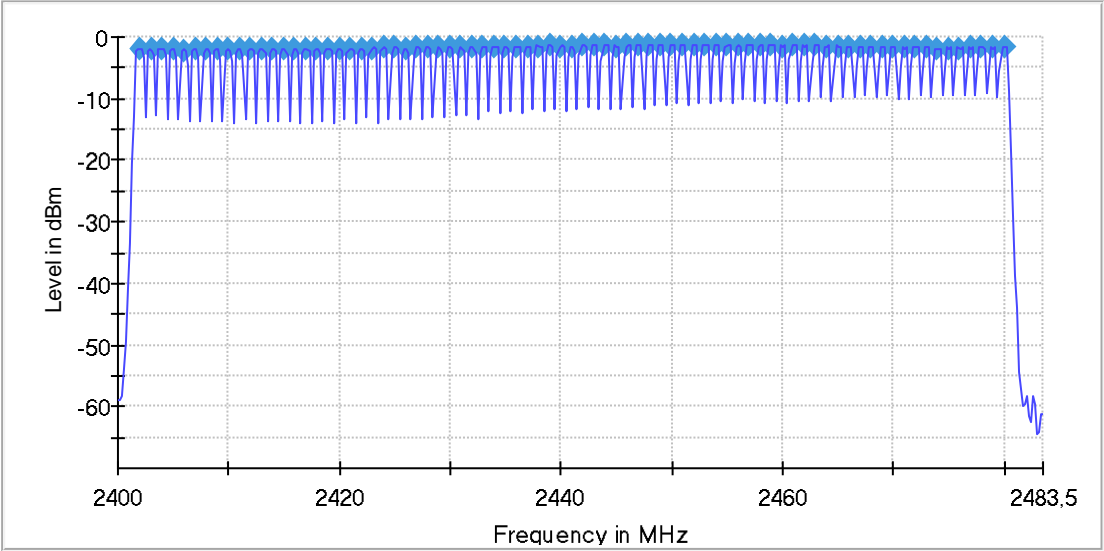
BT_Peak_Power_2441_3DH5



1.3. Number of Hopping Frequencies

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS



1.4. 20dB Emission Bandwidth

1.4.1. DH5

Emission Bandwidth 20 dB (2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

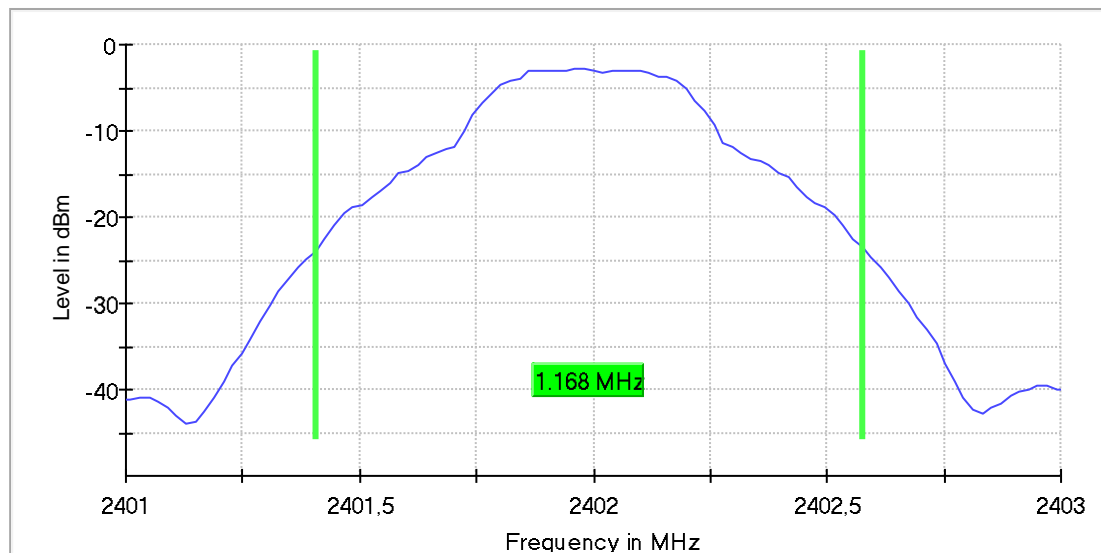
Expanded Uncertainty (K=2) < 2%

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.168316	---	---	2401.405941	2402.574257

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-2.7	PASS



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	41.830 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.04 dB	0.50 dB

Emission Bandwidth 20 dB (2441 MHz; 4,000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

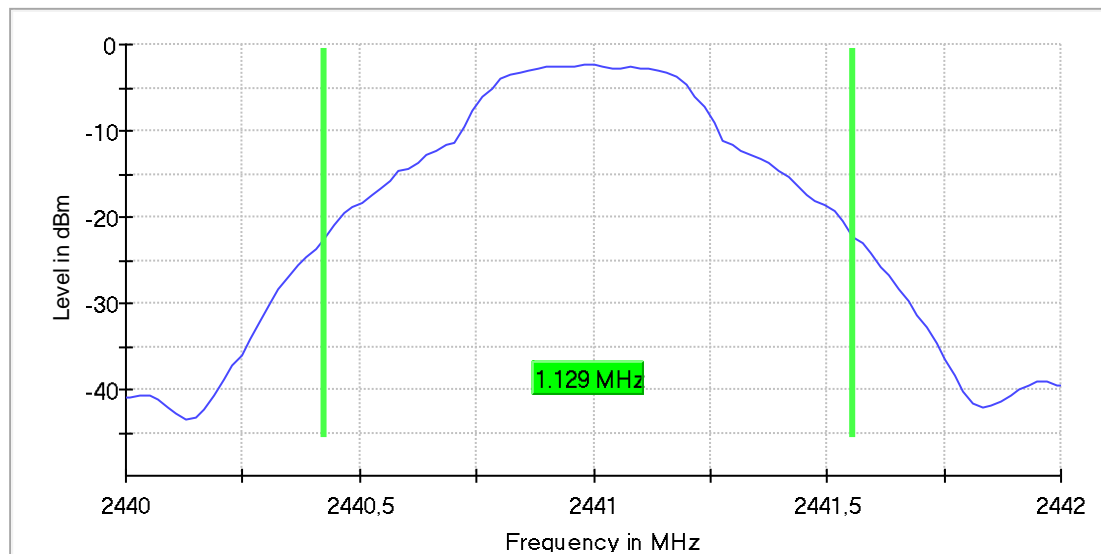
Expanded Uncertainty (K=2) < 2%

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.128712	---	---	2440.425743	2441.554455

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-2.4	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 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	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.19 dB	0.50 dB

Emission Bandwidth 20 dB (2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

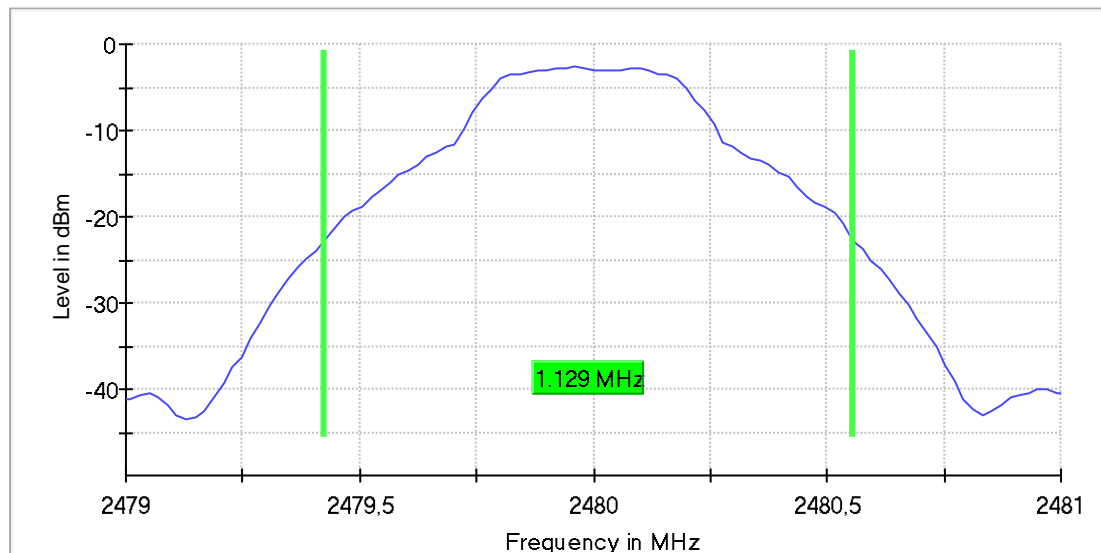
Expanded Uncertainty (K=2) < 2%

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.128712	---	---	2479.425743	2480.554455

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-2.6	PASS



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	41.830 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.21 dB	0.50 dB

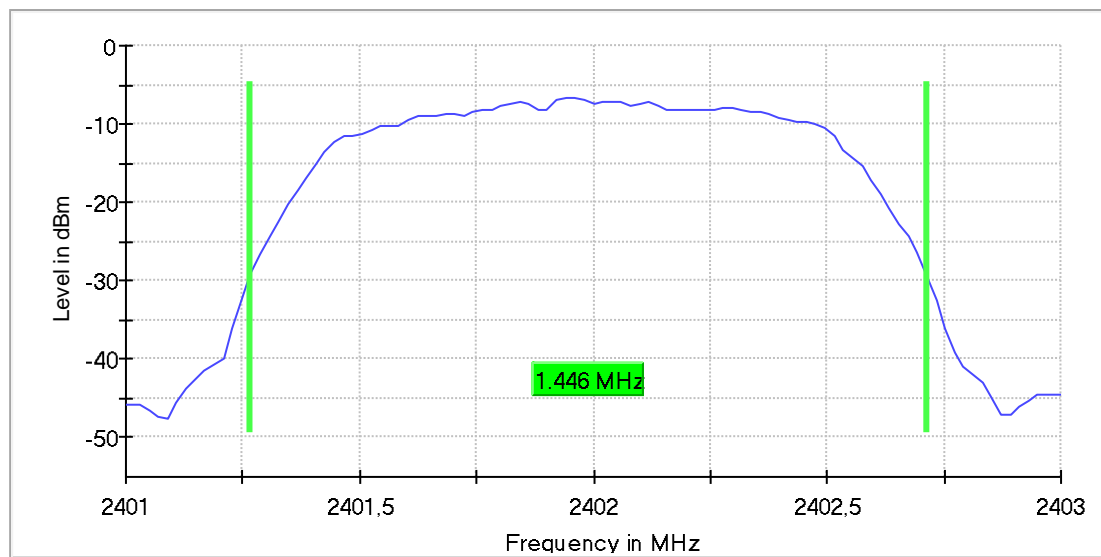
1.4.2. 2-DH5

Emission Bandwidth 20 dB (2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.445544	---	---	2401.267327	2402.712871

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-6.6	PASS



Measurement

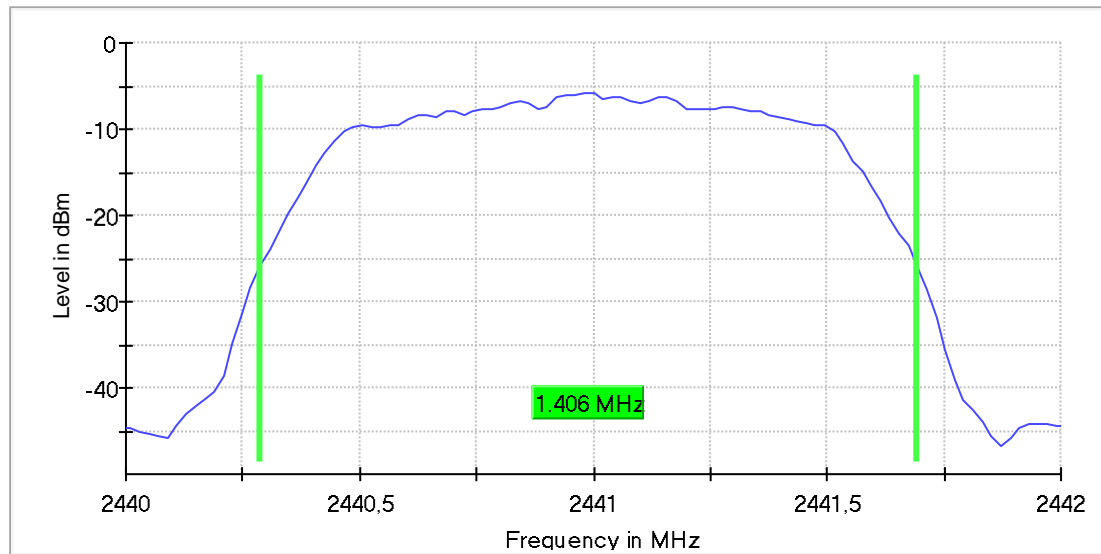
Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
SweepTime	41.830 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.40 dB	0.50 dB

Emission Bandwidth 20 dB (2441 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.405940	---	---	2440.287129	2441.693069

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-5.7	PASS

**Measurement**

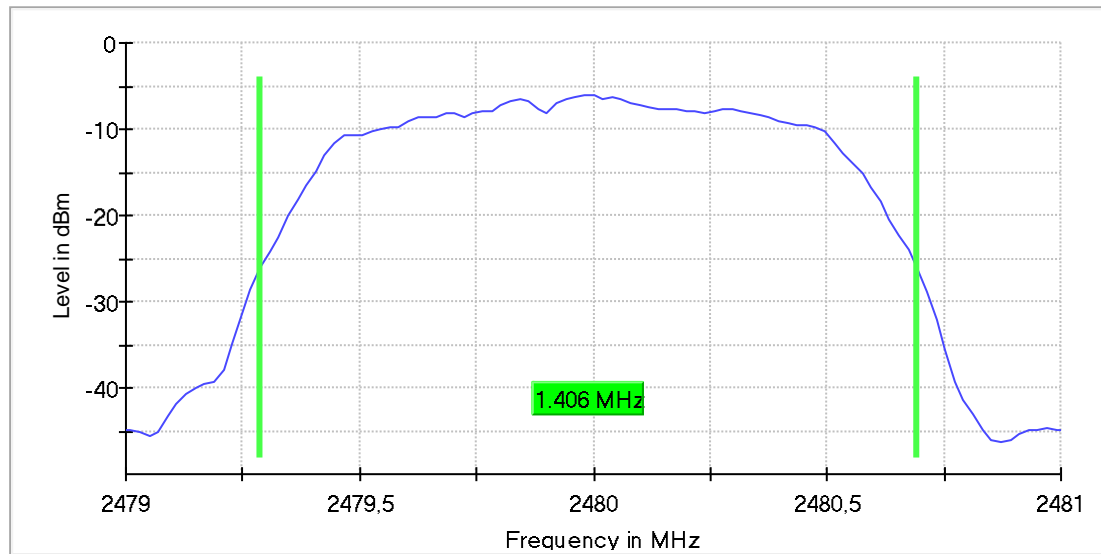
Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
SweepTime	41.830 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	17 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.05 dB	0.50 dB

Emission Bandwidth 20 dB (2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.405940	---	---	2479.287129	2480.693069

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-6.0	PASS

**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	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	18 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

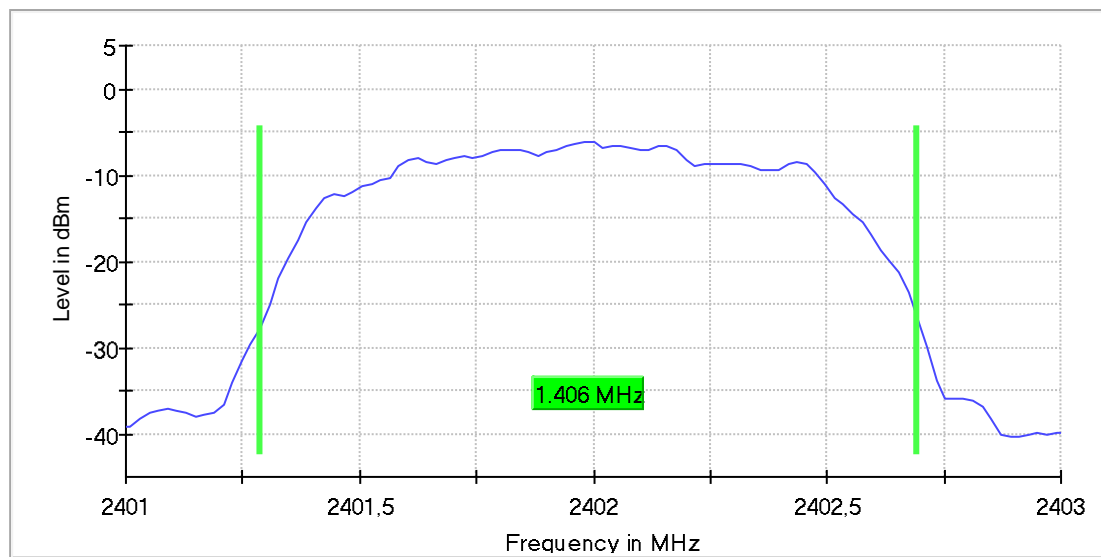
1.4.3. 3-DH5

Emission Bandwidth 20 dB (2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.405940	---	---	2401.287129	2402.693069

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-6.2	PASS



Measurement

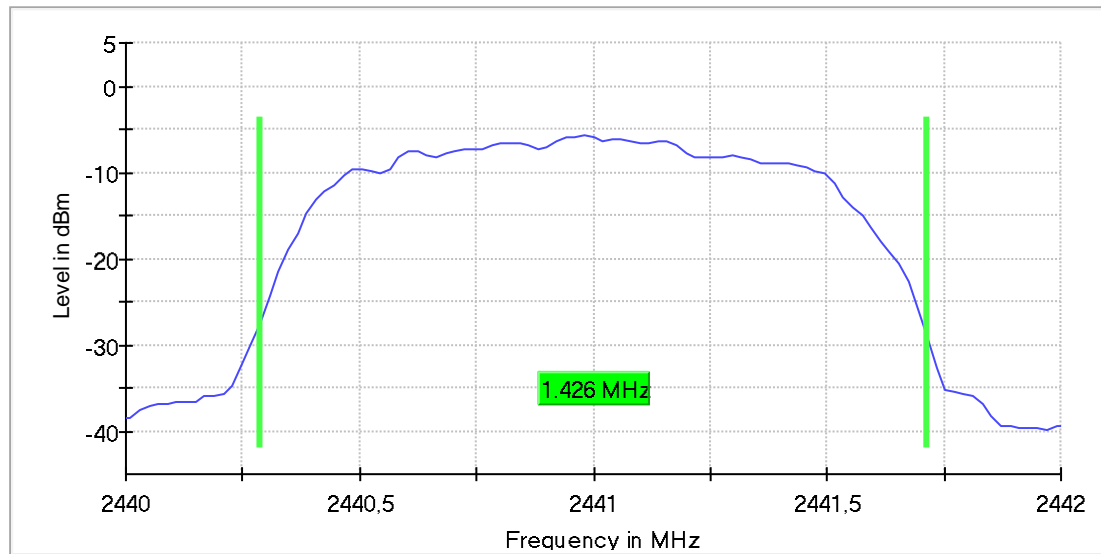
Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
SweepTime	41.830 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

Emission Bandwidth 20 dB (2441 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.425742	---	---	2440.287129	2441.712871

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-5.7	PASS

**Measurement**

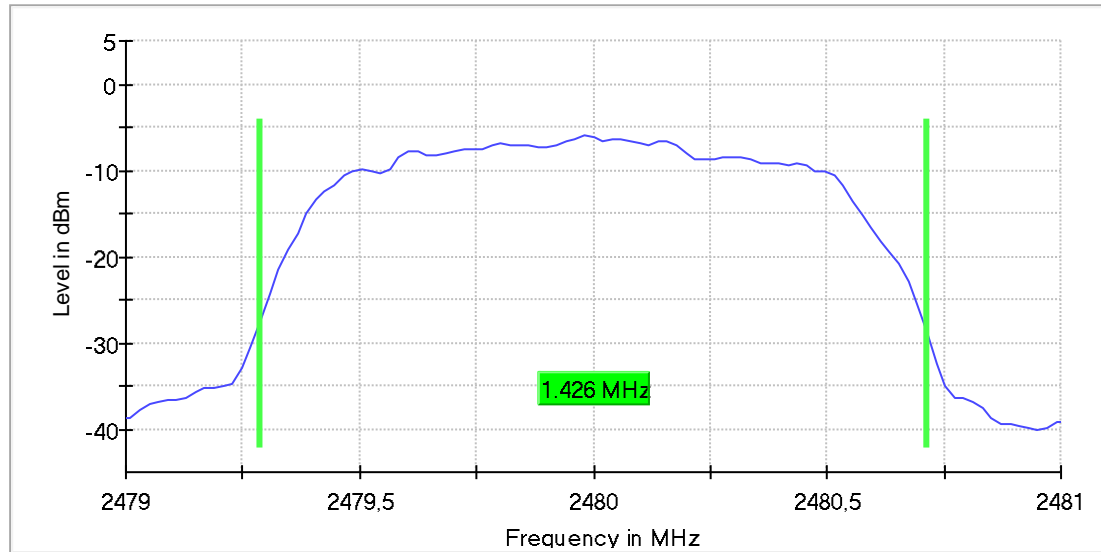
Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

Emission Bandwidth 20 dB (2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.425742	---	---	2479.287129	2480.712871

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-6.0	PASS

**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	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	21 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.01 dB	0.50 dB

1.5. 99 % Occupied Bandwidth

1.5.1. DH5

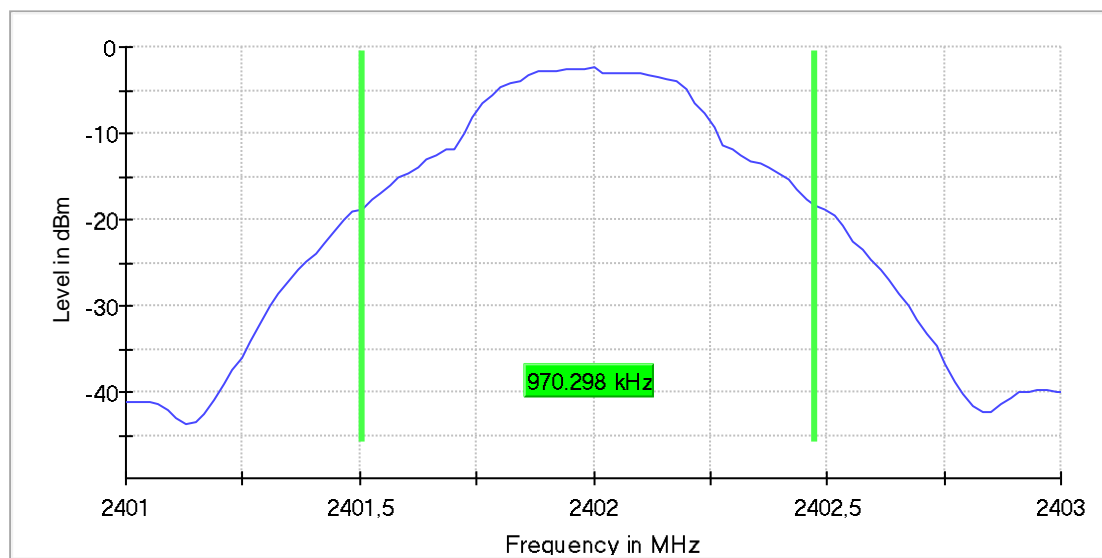
99% Occupied Bandwidth(2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

99% Occupied Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.970298	---	---	2401.504950	2402.475248

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-2.4	PASS



Measurement

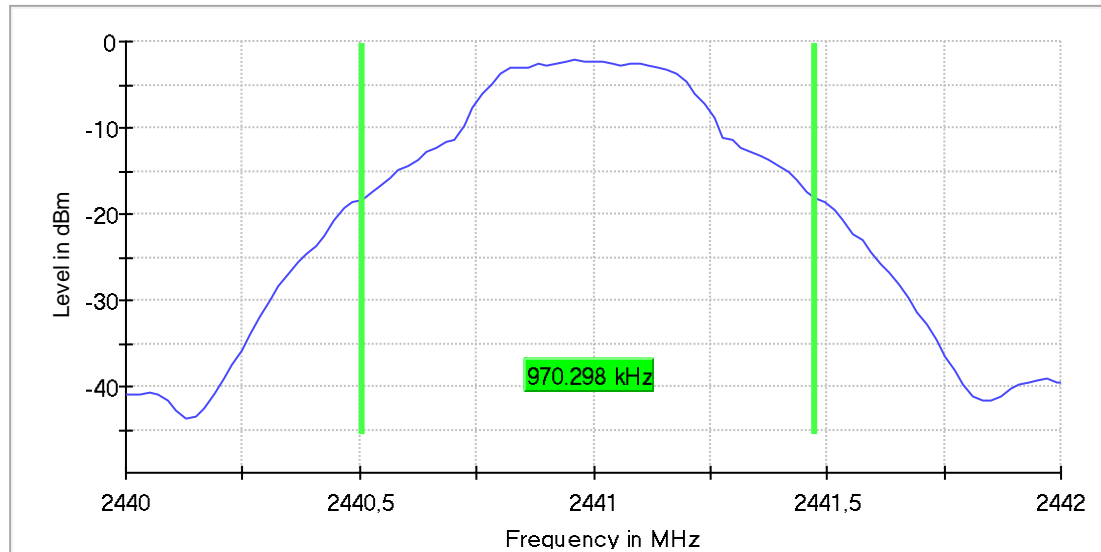
Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	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	0.26 dB	0.50 dB

99% Occupied Bandwidth(2441 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.970298	---	---	2440.504950	2441.475248

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-2.2	PASS

**Measurement**

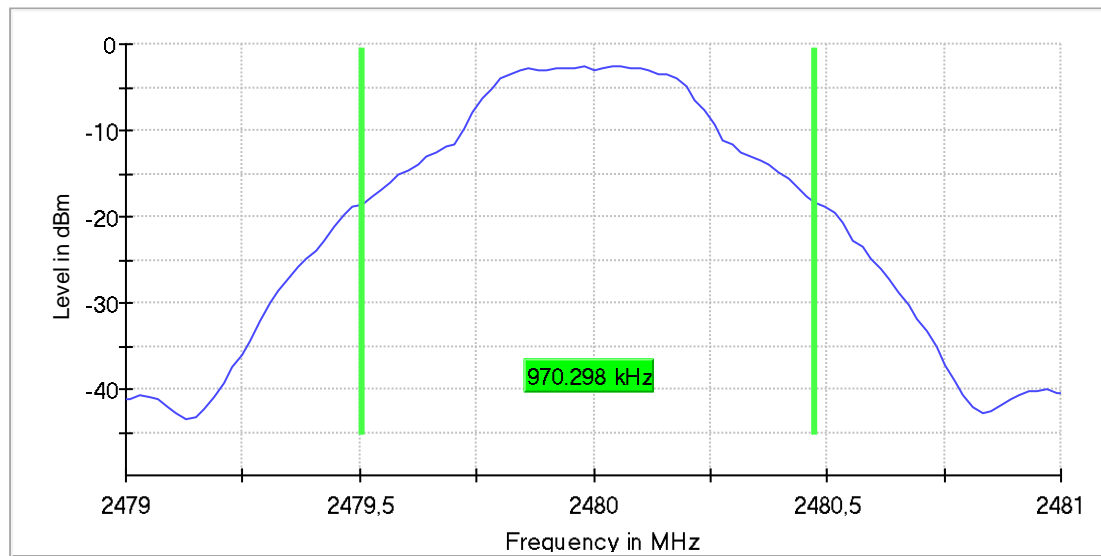
Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.20 dB	0.50 dB

99% Occupied Bandwidth(2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.970298	---	---	2479.504950	2480.475248

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-2.5	PASS

**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	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	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	0.31 dB	0.50 dB

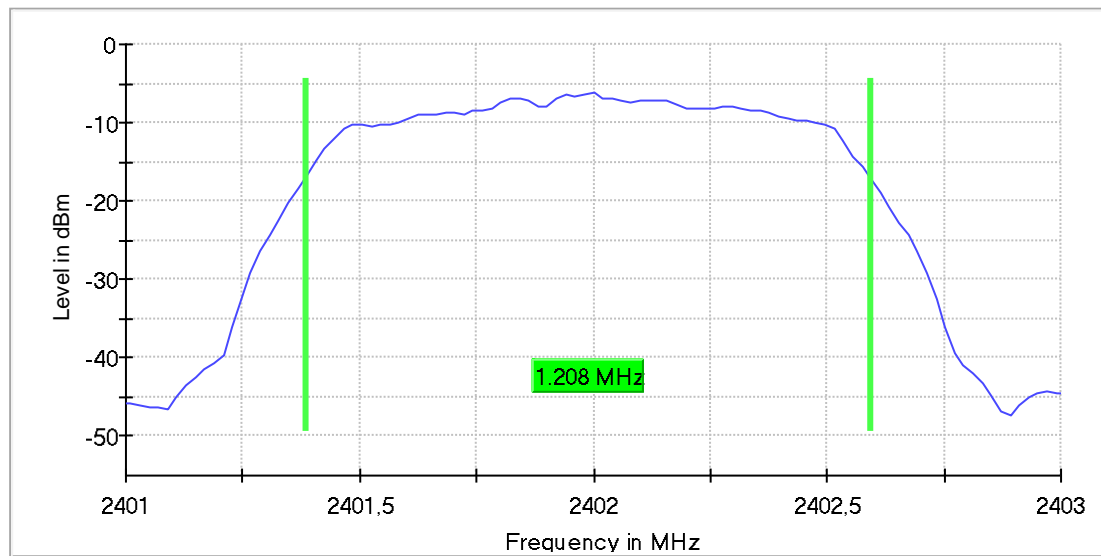
1.5.2. 2-DH5

99% Occupied Bandwidth(2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.207920	---	---	2401.386139	2402.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-6.2	PASS

**Measurement**

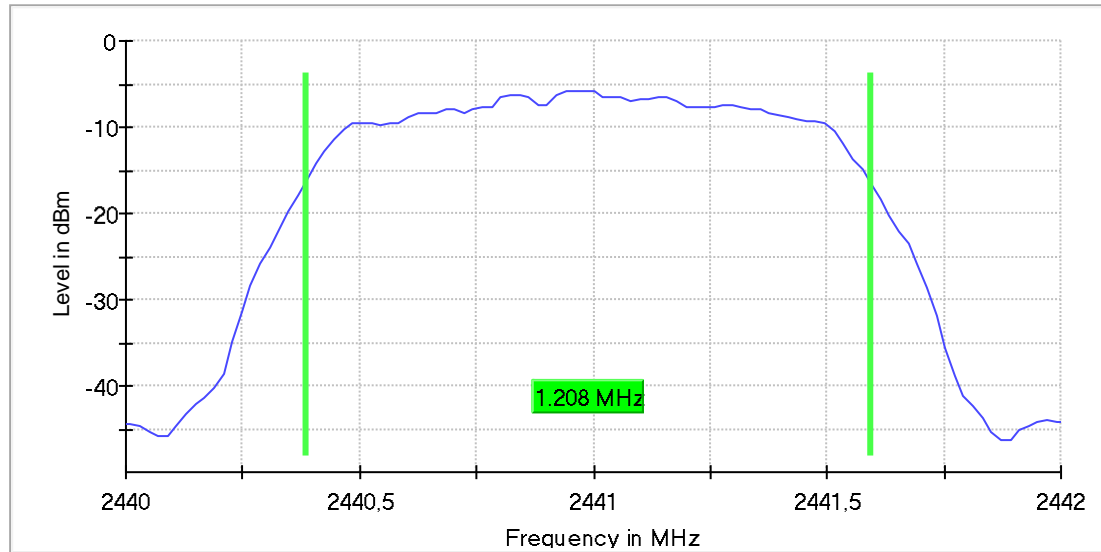
Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.02 dB	0.50 dB

99% Occupied Bandwidth(2441 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.207920	---	---	2440.386139	2441.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-5.7	PASS

**Measurement**

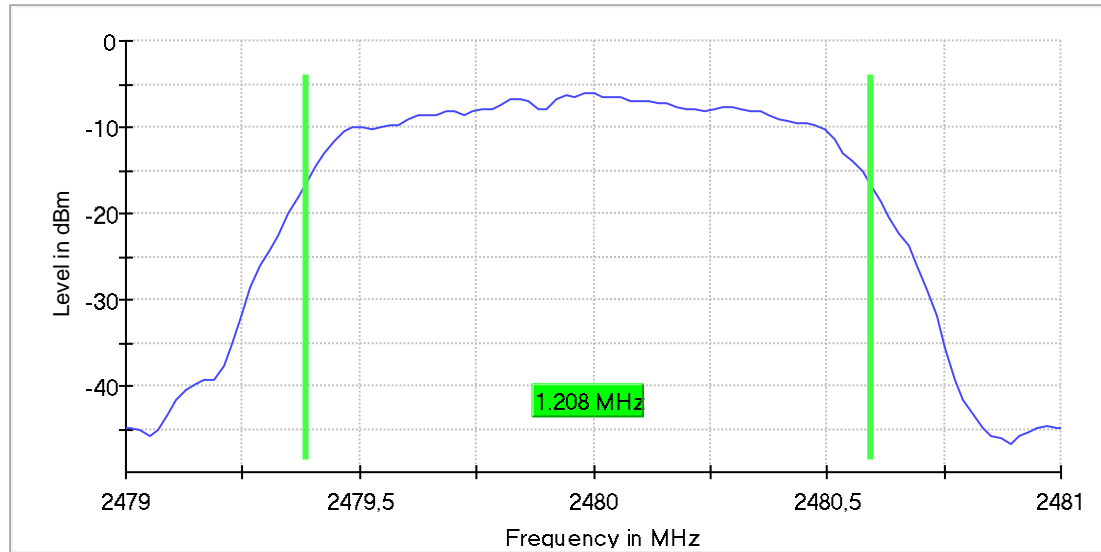
Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

99% Occupied Bandwidth(2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.207920	---	---	2479.386139	2480.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-5.9	PASS

**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	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.45 dB	0.50 dB

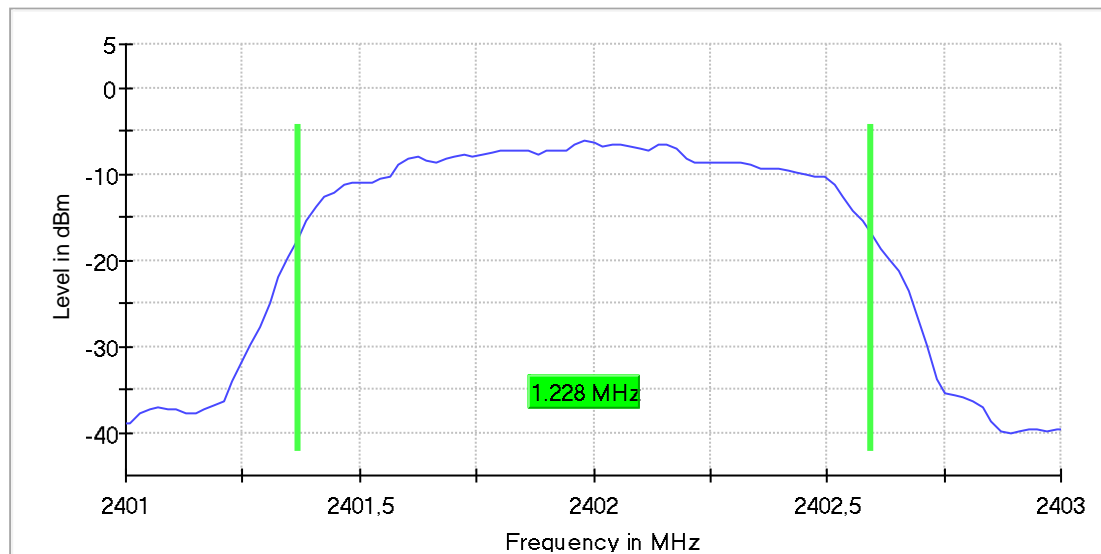
1.5.3. 3-DH5

99% Occupied Bandwidth(2402 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.227722	---	---	2401.366337	2402.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-6.2	PASS



Measurement

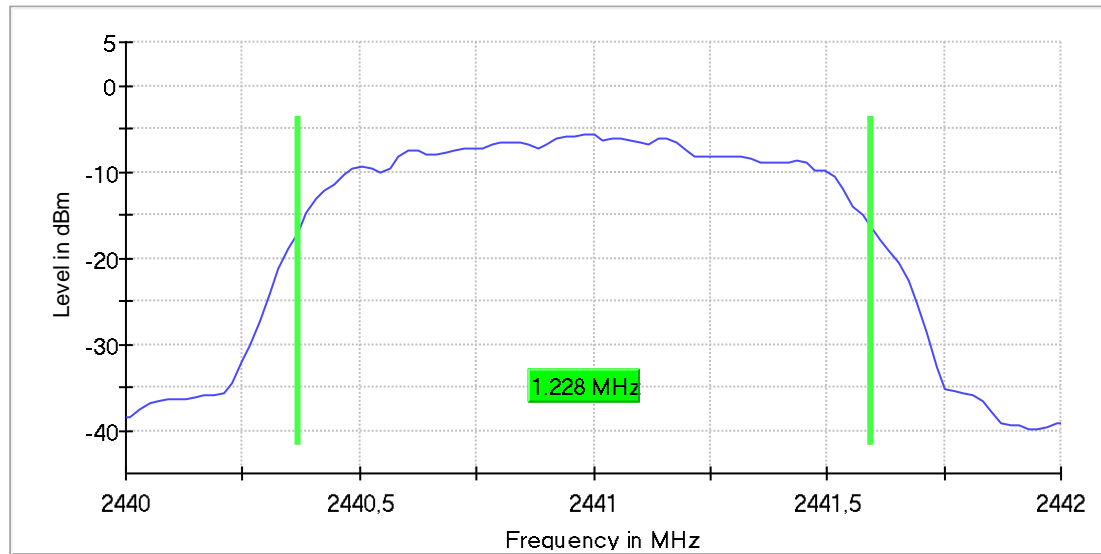
Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	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	0.01 dB	0.50 dB

99% Occupied Bandwidth(2441 MHz; 4,000 dBm; 1 MHz; Test Mode)**99% Occupied Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.227722	---	---	2440.366337	2441.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-5.7	PASS

**Measurement**

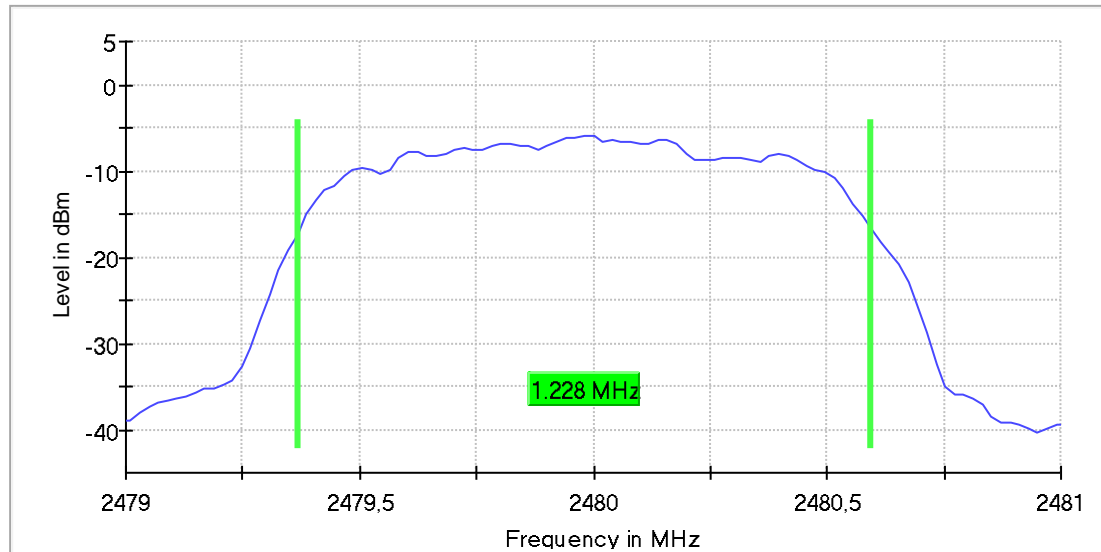
Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

99% Occupied Bandwidth(2480 MHz; 4,000 dBm; 1 MHz; Test Mode)

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.227722	---	---	2479.366337	2480.594059

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

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-6.0	PASS

**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	~ 20
SweepTime	41.830 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	20 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.13 dB	0.50 dB

1.6. Carrier Frequency Separation

Carrier Frequency Separation (2402 MHz; 4,000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

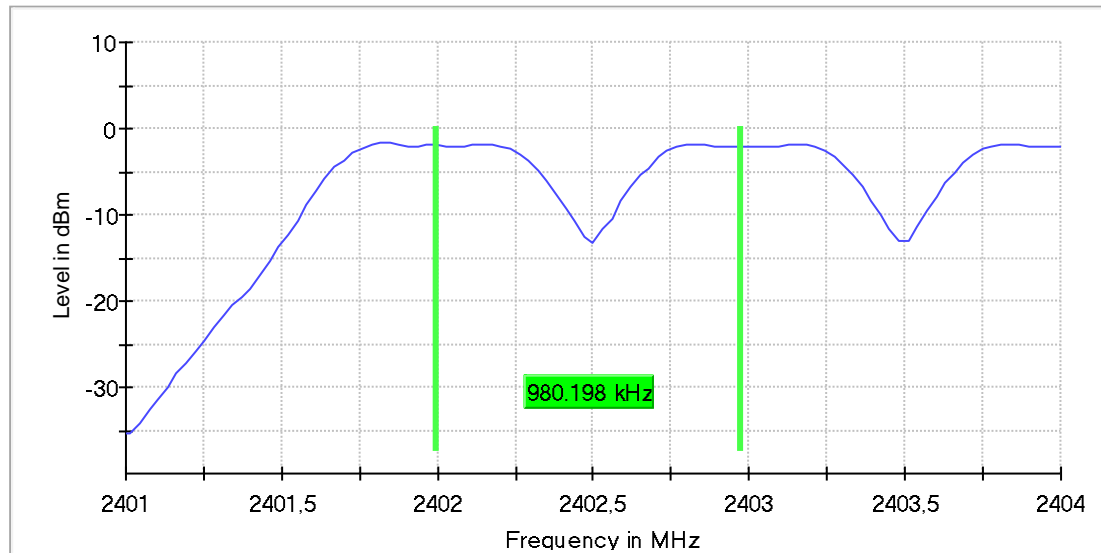
Expanded Uncertainty(k = 2) < 1%

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	0.980198	0.778877	---	2401.995050	2402.975248

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

DUT Frequency (MHz)	Result
2402.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
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	17 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.02 dB	0.50 dB

Carrier Frequency Separation (2441 MHz; 4,000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

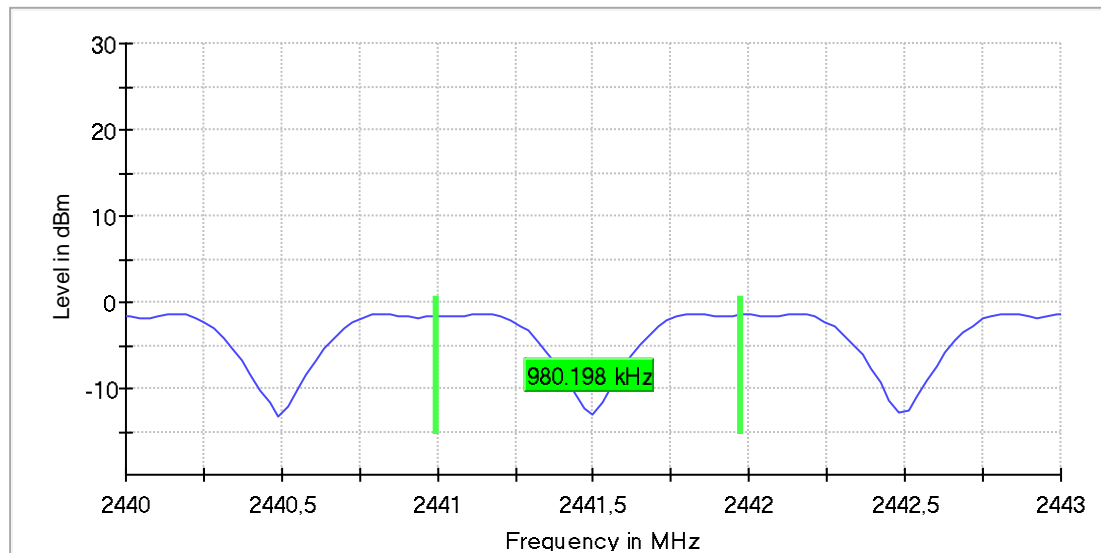
Expanded Uncertainty(k = 2) < 1%

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	0.980198	0.752475	---	2440.995050	2441.975248

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

DUT Frequency (MHz)	Result
2441.000000	PASS

**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
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	13 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

Carrier Frequency Separation (2480 MHz; 4,000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v03r05 and ANSI C63.10

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

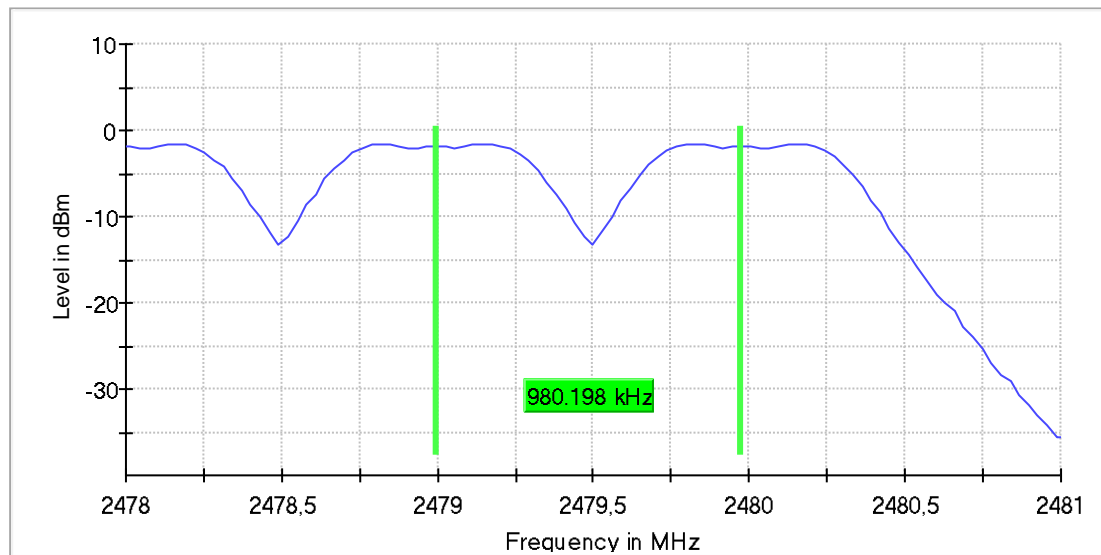
Expanded Uncertainty(k = 2) < 1%

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2480.000000	0.980198	0.752475	---	2478.995050	2479.975248

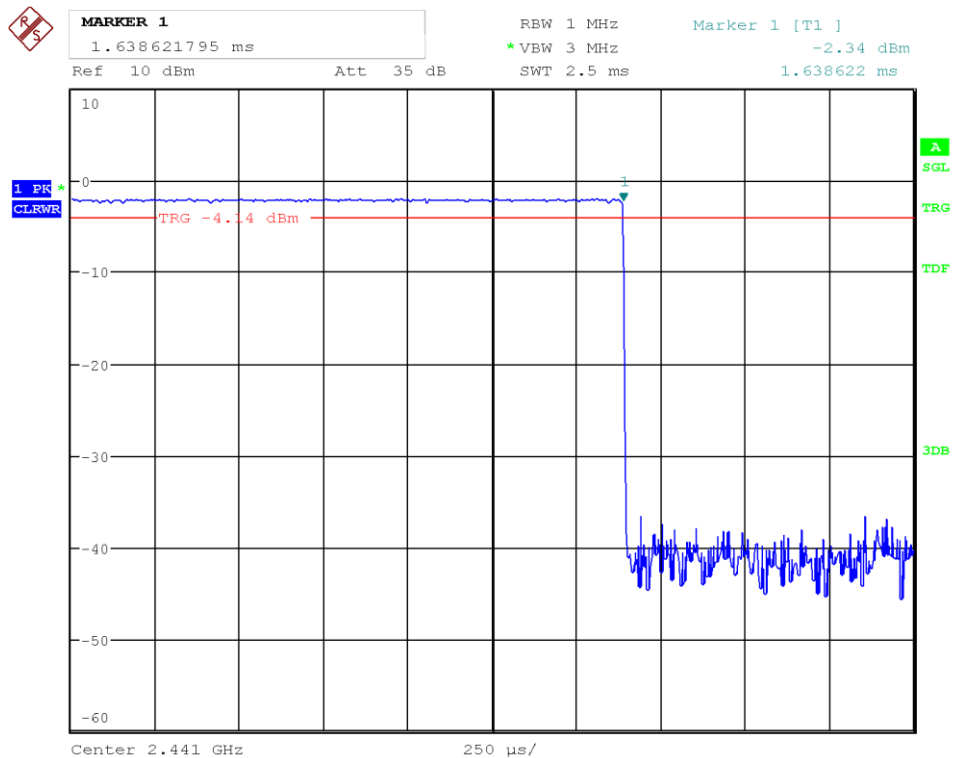
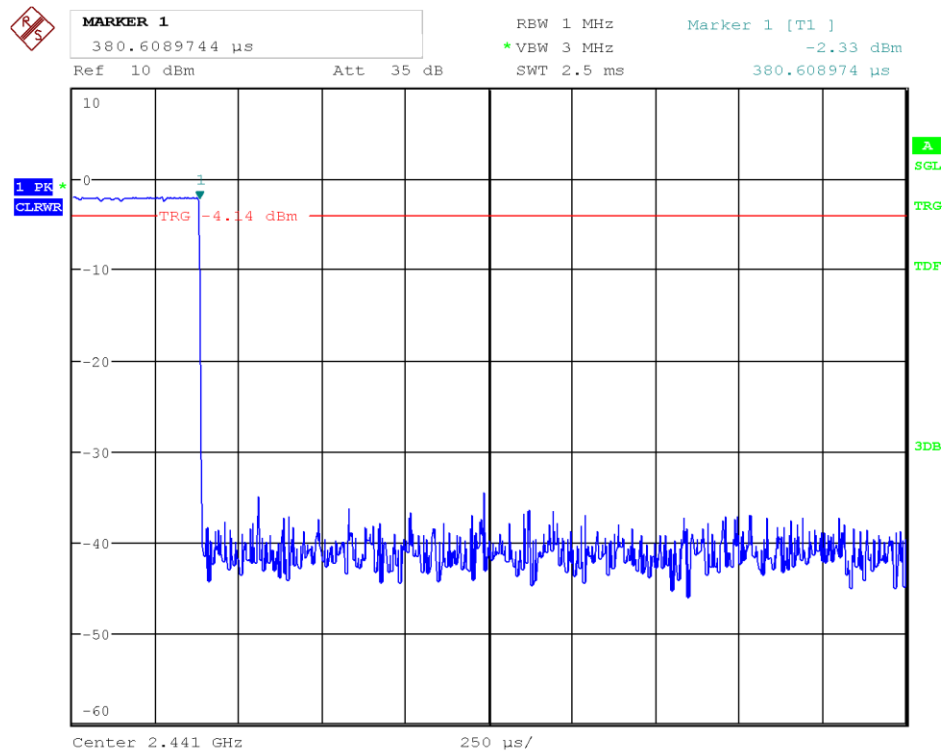
(continuation of the "Result" table from column 6 ...)

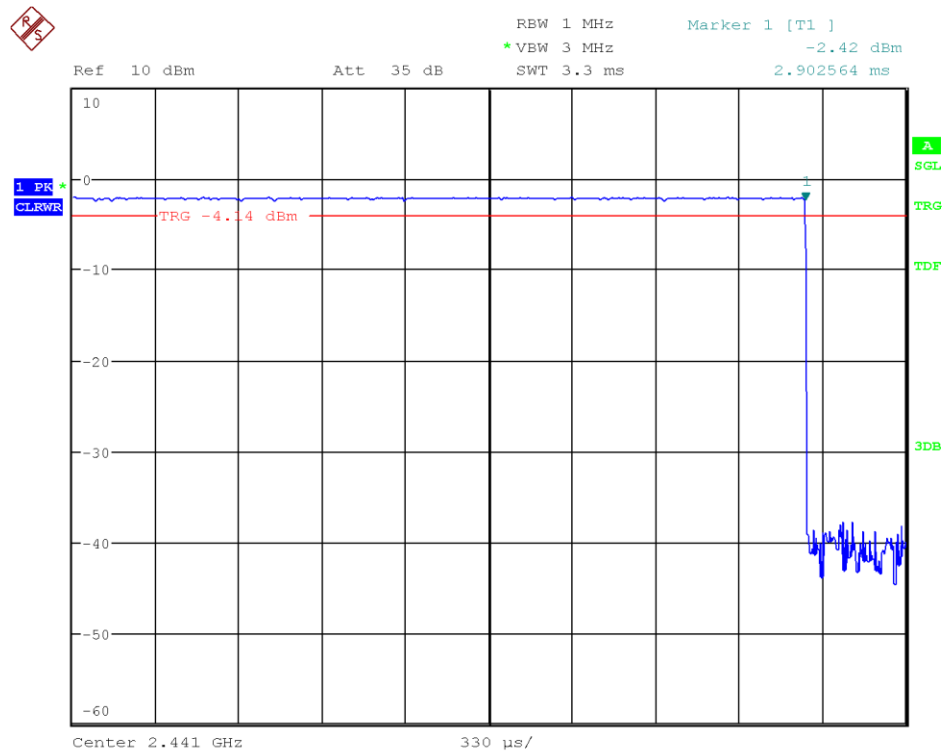
DUT Frequency (MHz)	Result
2480.000000	PASS

**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
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	20 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.01 dB	0.50 dB

1.7. Time of Channel occupancy

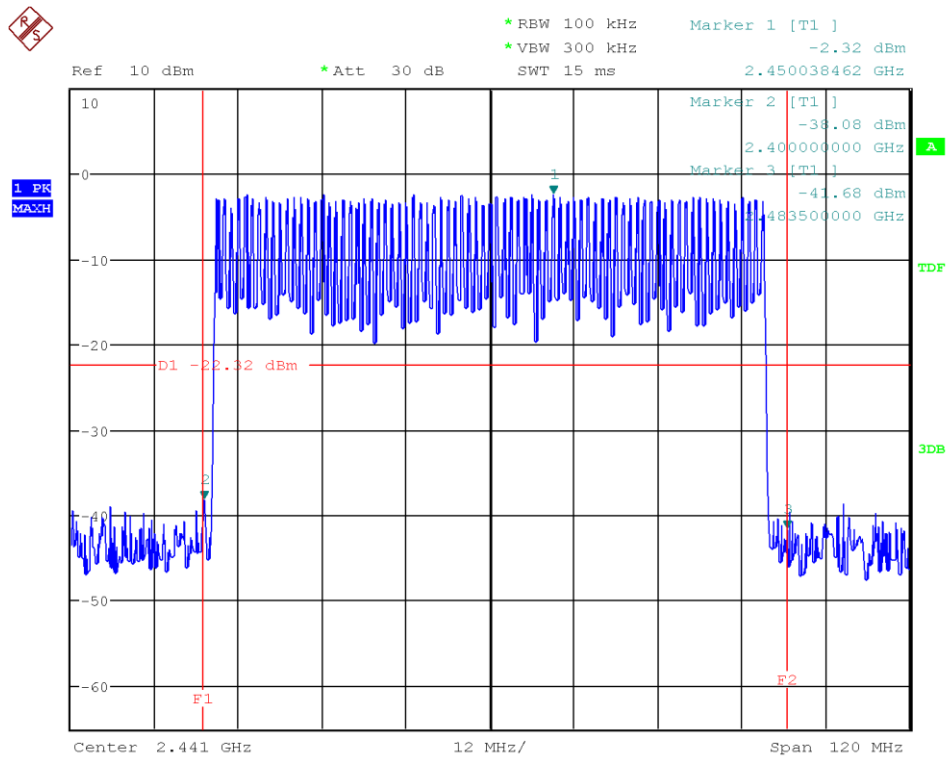




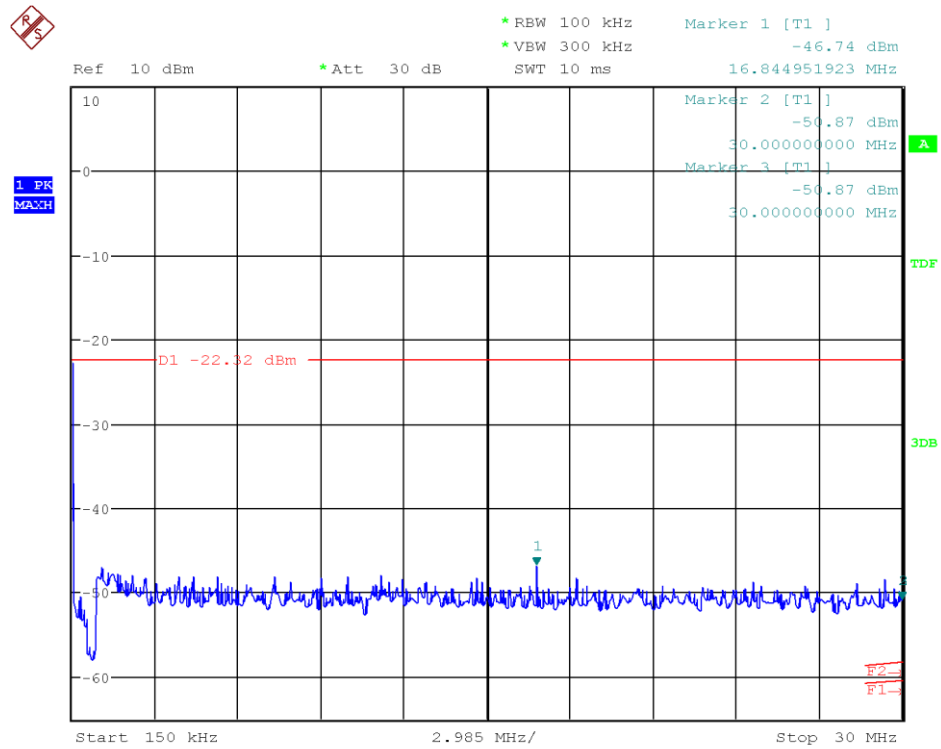
DwT_Hopping_ON_Ch39_DH5

1.8. 20dBc Conducted Spurious Emissions

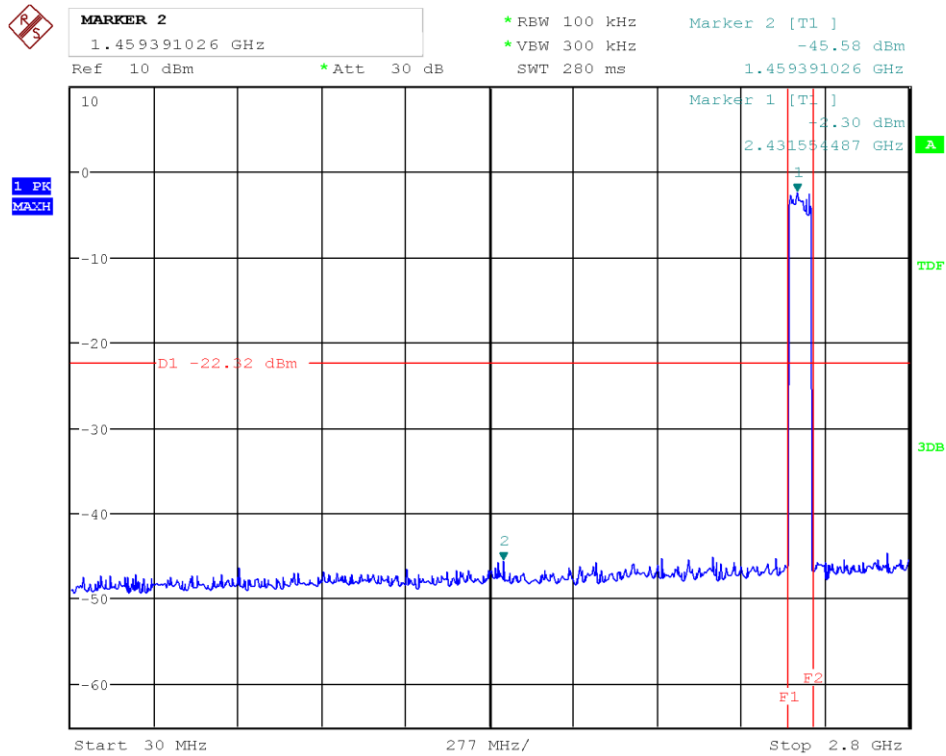
1.8.1. Hopping ON



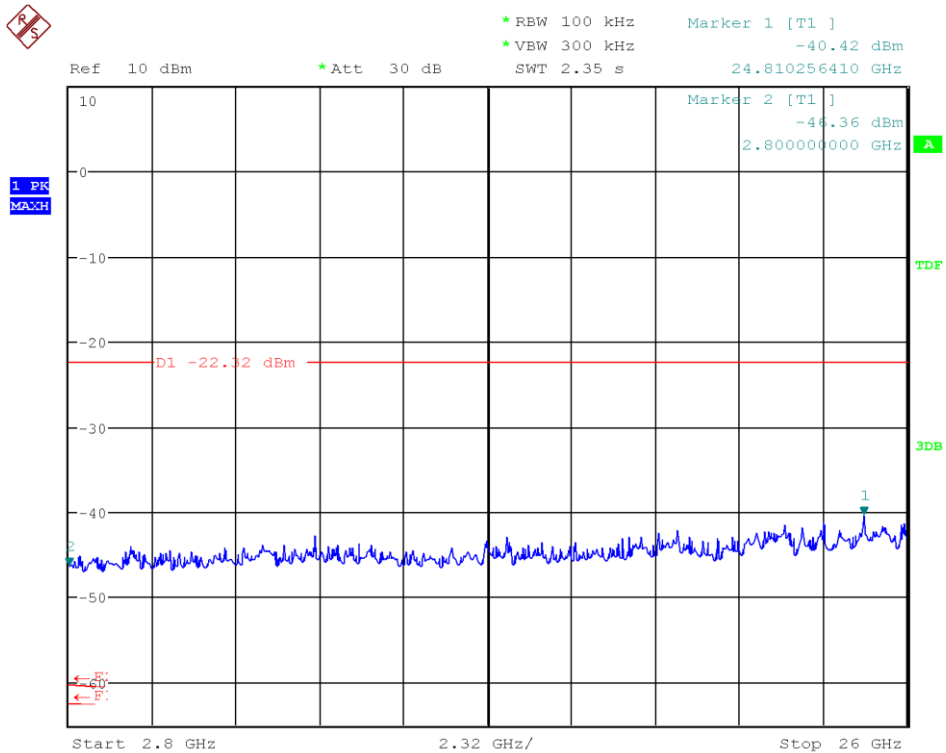
20dBc_REF_Hopping ON_DH5



20dBc_0.15MHz-30MHz_Hopping ON_DH5

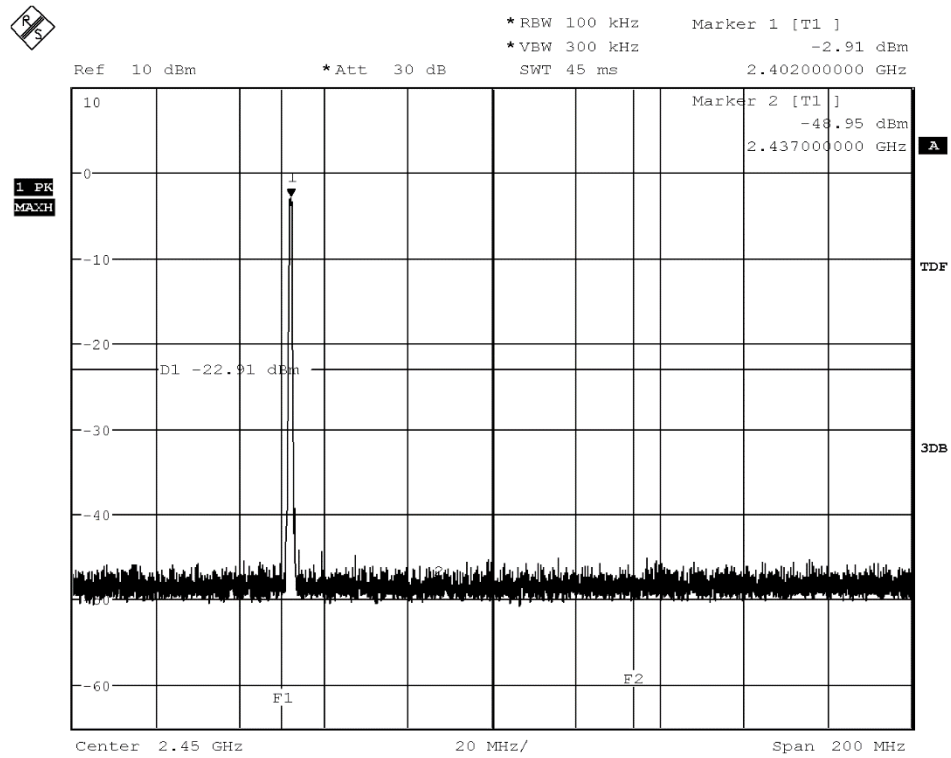


20dBc_0.30MHz-2.8Ghz_Hopping ON

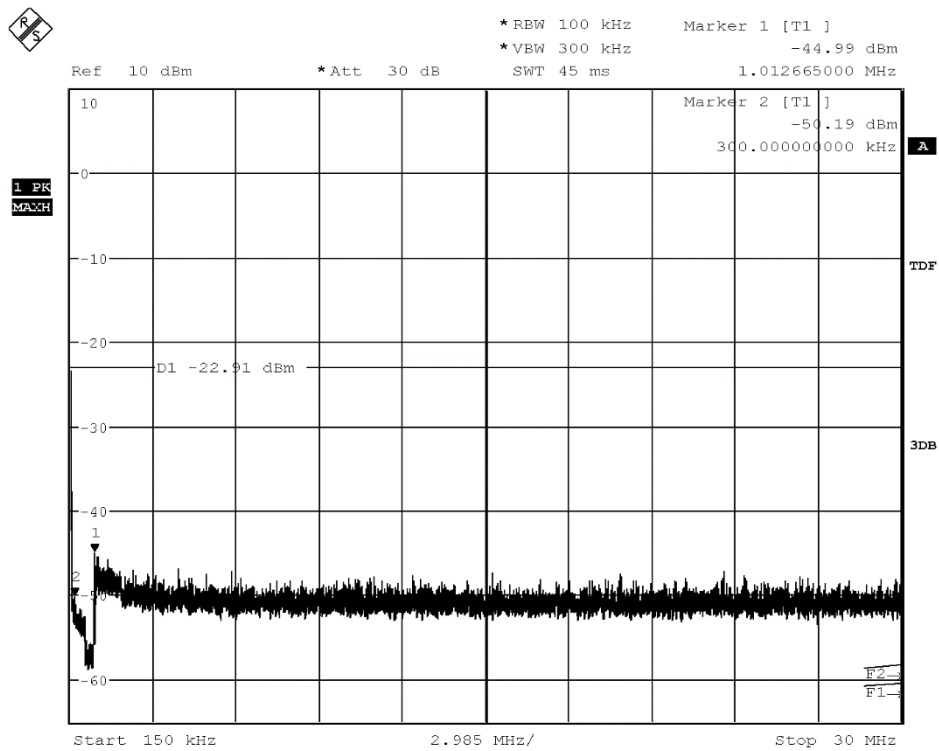


20dBc_2.8GHz-26Ghz_Hopping ON

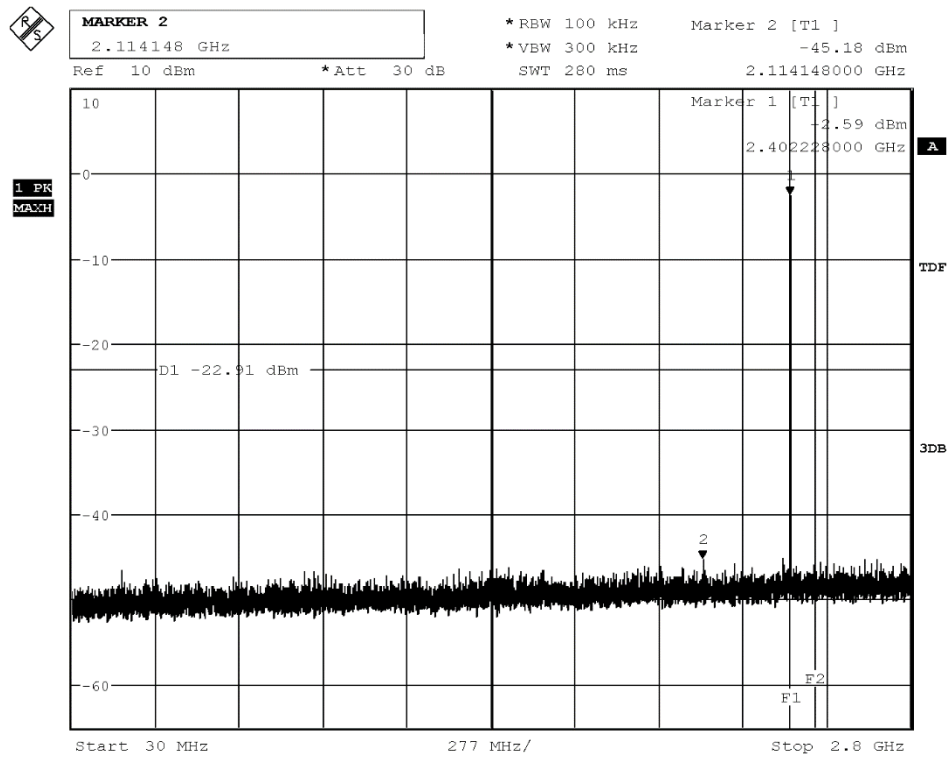
1.8.2. Hopping OFF



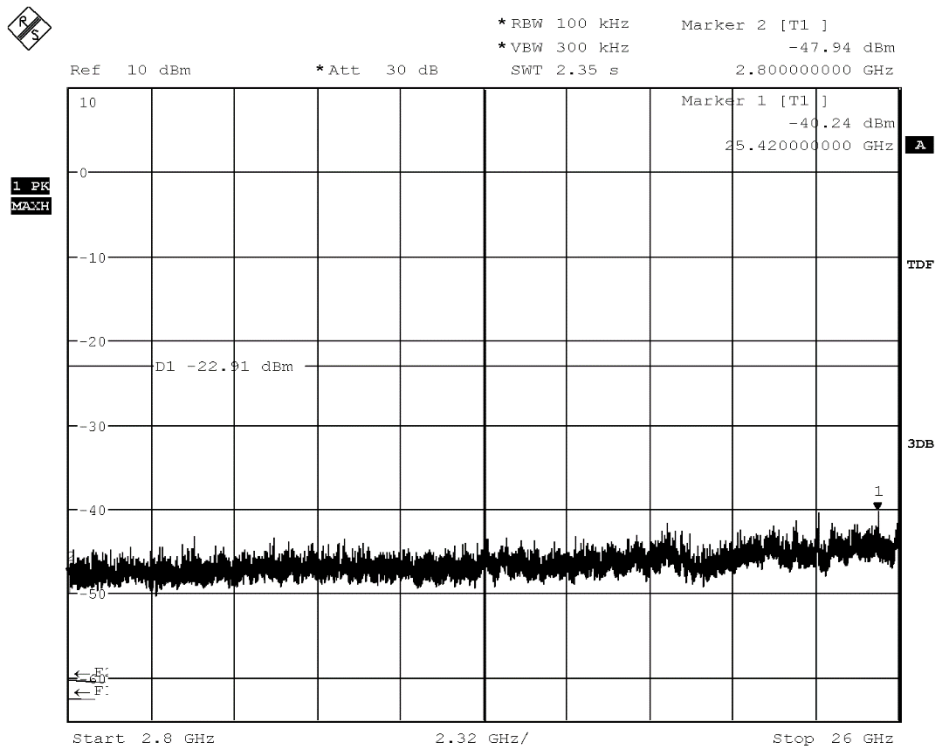
20dBc_REF_2402_DH5



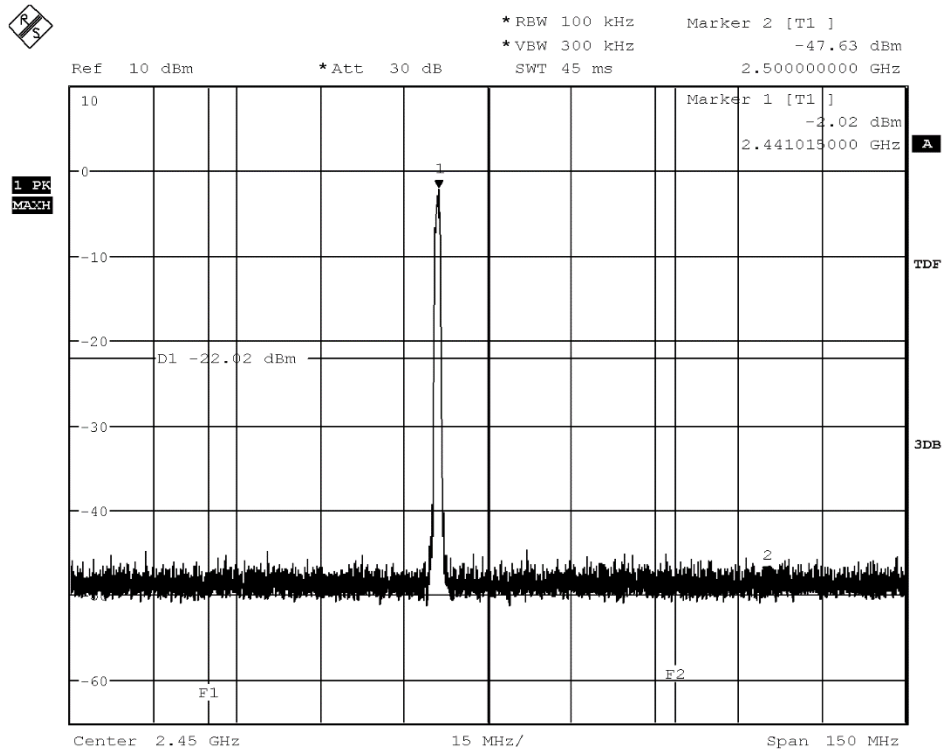
20dBc_0.15MHz-30MHz_2402_DH5



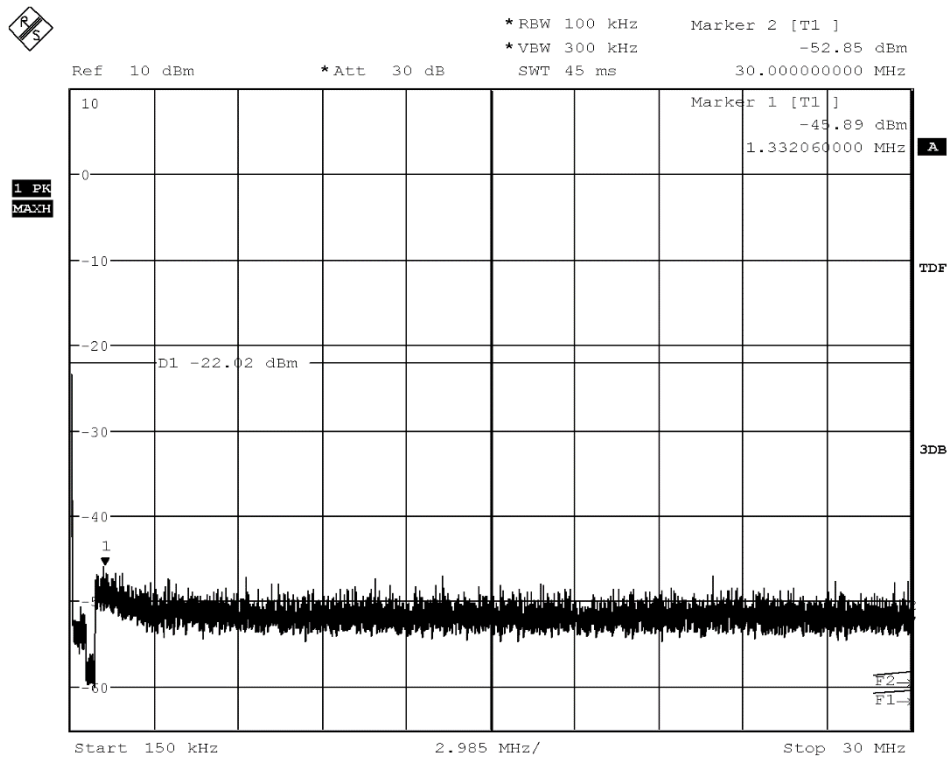
20dBc_0.30MHz-2.8Ghz_2402_DH5



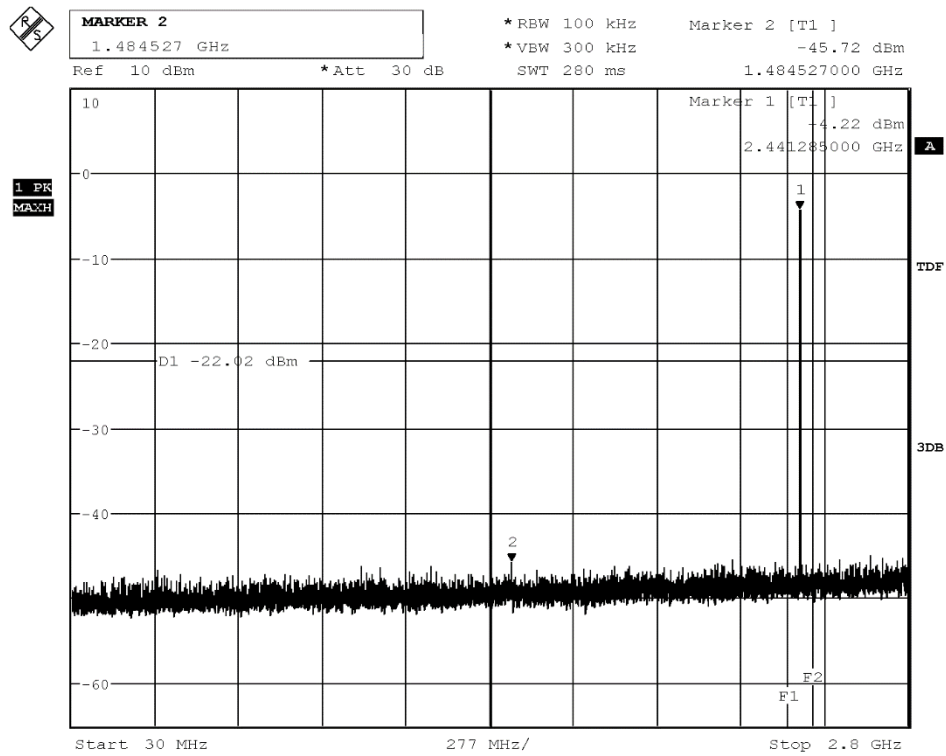
20dBc_2.8GHz-26Ghz_2441_DH5



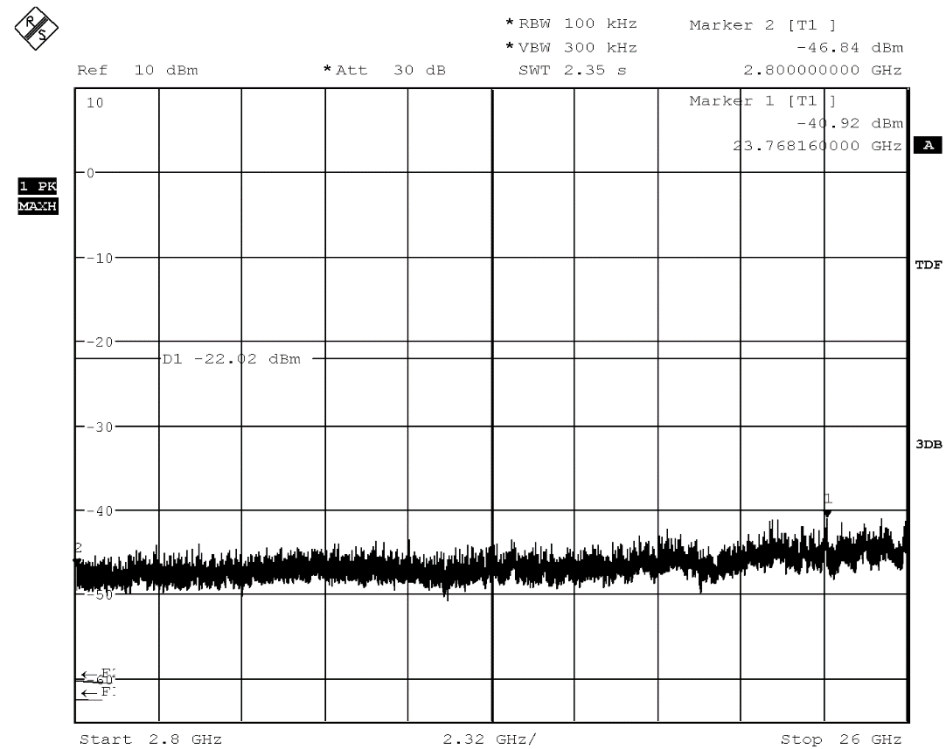
20dBc_REF_2442_2-DH5



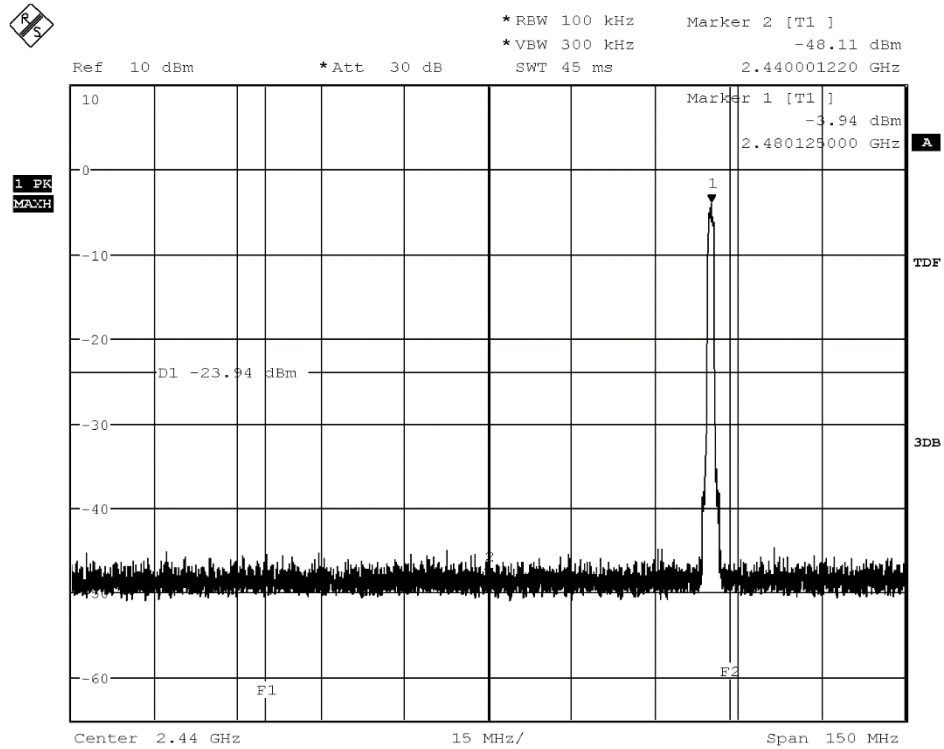
20dBc_0.15MHz-30MHz_2442_2-DH5



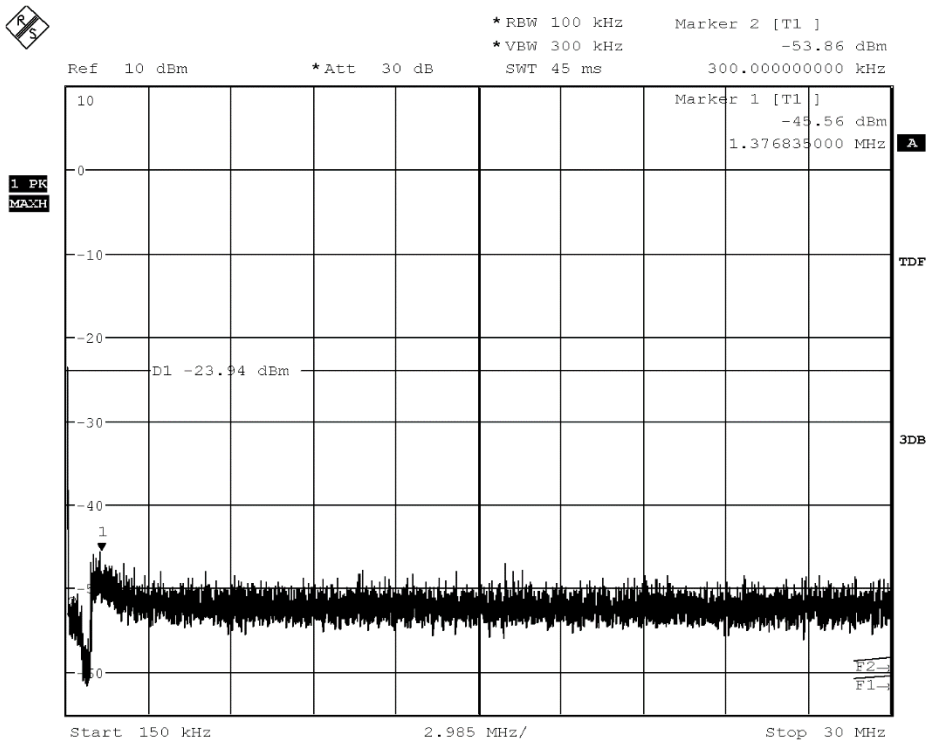
20dBc_0.30MHz-2.8Ghz_2442_2-DH5



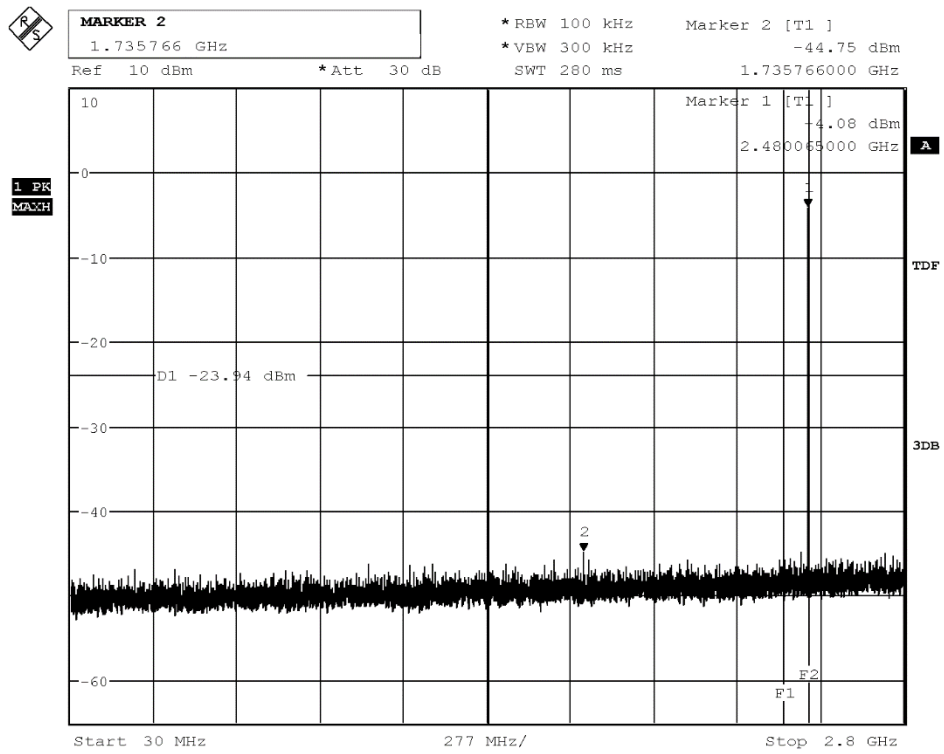
20dBc_2.8GHz-26Ghz_2442_2-DH5



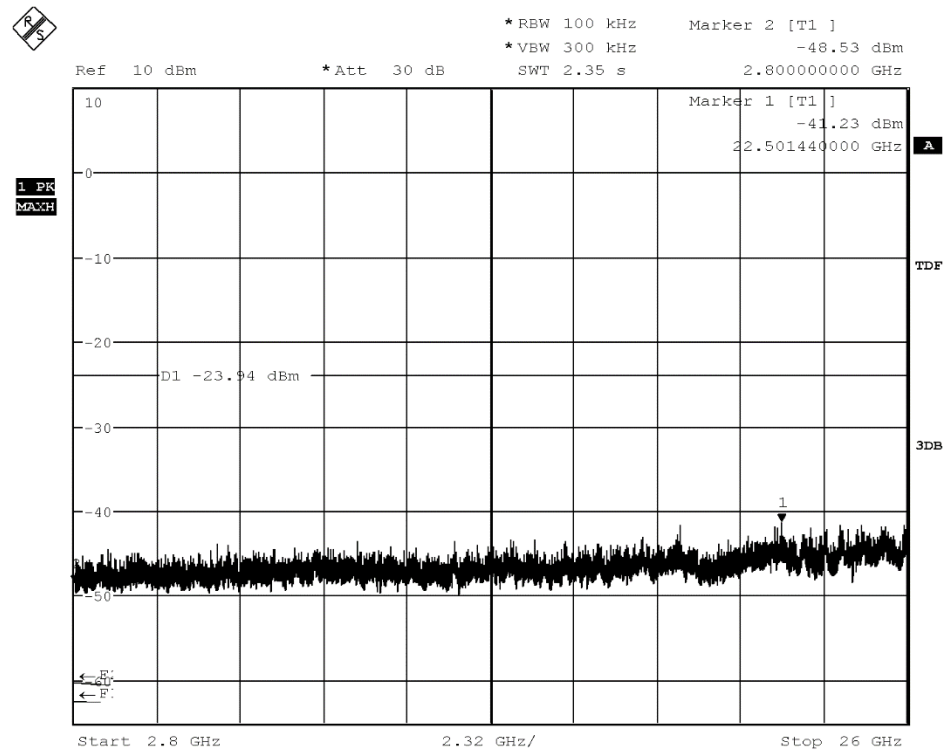
20dBc_REF_2480_3-DH5



20dBc_0.15MHz-30MHz_2480_3-DH5



20dBc_0.30MHz-2.8GHz_2480_3-DH5



20dBc_2.8GHz-26GHz_2480_3-DH5

1.9. Frequency Stability

1.9.1. Tmin – Vnom

Modulation	Channel	99% OBW	Tnom - Vnom		Tmin - Vnom	
			left Bandedge	right Bandedge	left Bandedge	right Bandedge
	MHZ	in MHZ	in HZ	in HZ	in HZ	in HZ
DH5	2402	0,950496	2401504950	2402475248	2401545455	2402594059
	2441	0,950496	2440504950	2441455446	2440544554	2441495050
	2481	0,950496	2479504950	2480475280	2479544554	2480495050
2-DH5	2402	1,227722	2401326733	2402534653	2401405941	2402633663
	2441	1,227722	2440326733	2441534653	2440405941	2441633663
	2481	1,227722	2479326733	2480534653	2479405941	2480633663
3-DH5	2402	1,227722	2401326733	2402554455	2401405941	2402633663
	2441	1,227722	2440326733	2441554455	2440405941	2441633663
	2481	1,227722	2479326733	2480554455	2479405941	2480633663

1.9.2. Tmax – Vnom

Modulation	Channel	99% OBW	Tnom - Vnom		Tmax - Vnom	
			left Bandedge	right Bandedge	left Bandedge	right Bandedge
	MHZ	in MHZ	in HZ	in HZ	in HZ	in HZ
DH5	2402	0,970298	2401504950	2402475248	2401504950	2402475248
	2441	0,950496	2440504950	2441455446	2401504950	2402475248
	2481	0,970298	2479504950	2480475280	2401504950	2402475248
2-DH5	2402	1,20792	2401326733	2402534653	2401366337	2402594059
	2441	1,20792	2440326733	2441534653	2440366337	2441594059
	2481	1,20792	2479326733	2480534653	2479366337	2480594059
3-DH5	2402	1,227722	2401326733	2402554455	2401366337	2402594059
	2441	1,227722	2440326733	2441554455	2440366337	2441594059
	2481	1,227722	2479326733	2480554455	2479366337	2480594059

1.9.3. Tnom – Vmin

Modulation	Channel	99% OBW	Tnom - Vnom		Tnom - Vmin	
			left Bandedge	right Bandedge	left Bandedge	right Bandedge
	MHZ	in MHZ	in HZ	in HZ		
DH5	2402	0,970298	2401504950	2402475248	2401504950	2402475248
	2441	0,950496	2440504950	2441455446	2440504950	2441475248
	2481	0,970298	2479504950	2480475280	2479504950	2480475248
2-DH5	2402	1,20792	2401326733	2402534653	2401386139	2402594059
	2441	1,20792	2440326733	2441534653	2440386139	2441594059
	2481	1,20792	2479326733	2480534653	2479386139	2480594059
3-DH5	2402	1,227722	2401326733	2402554455	2401366337	2402594059
	2441	1,227722	2440326733	2441554455	2440366337	2441594059
	2481	1,227722	2479326733	2480554455	2479363636	2480597403

1.9.4. Tnom – Vmax

Modulation	Channel	99% OBW	Tnom - Vnom		Tnom - Vmax	
			left Bandedge	right Bandedge	left Bandedge	right Bandedge
	MHZ	in MHZ	in HZ	in HZ		
DH5	2402	0,970298	2401504950	2402475248	2401504950	2402475248
	2441	0,950496	2440504950	2441455446	2440504950	2441475248
	2481	0,970298	2479504950	2480475280	2479504950	2480475248
2-DH5	2402	1,20792	2401326733	2402534653	2401386139	2402594059
	2441	1,20792	2440326733	2441534653	2440386139	2441594059
	2481	1,20792	2479326733	2480534653	2479386139	2480594059
3-DH5	2402	1,227722	2401326733	2402554455	2401386139	2402594059
	2441	1,227722	2440326733	2441554455	2440366337	2441594059
	2481	1,227722	2479326733	2480554455	2479366337	2480613861

2. Radiated Field Strength Measurements

2.1. Magnetic field emissions radiated Bluetooth BDR below 30 MHz

2.01a_DH5_TX_0_2402MHz_laying

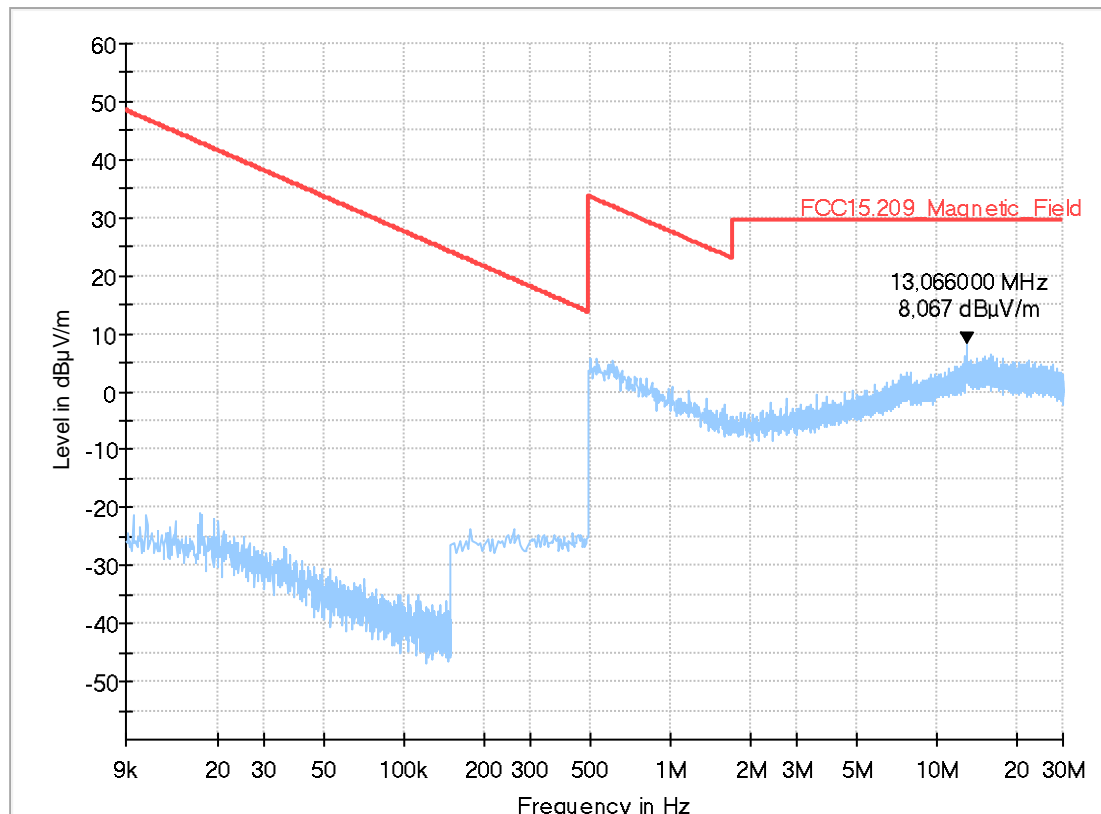
Date:	05.11.2018	Page 1 of 2
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	DH5_TX_0_2402MHz_laying	
Operator:	LKu	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	laying_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.01b_DH5_TX_0_2402MHz_standing

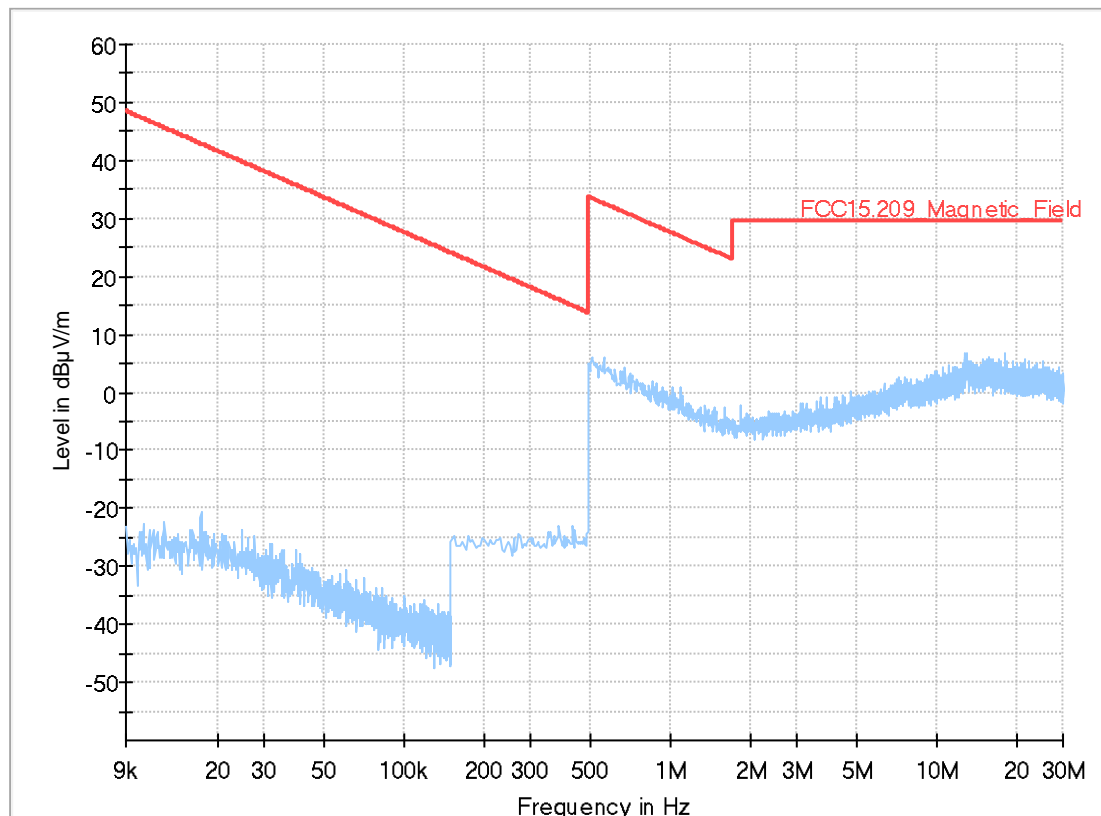
Date:	05.11.2018	Page 1 of 2
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	DH5_TX_0_2402MHz_standing	
Operator:	LKU	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	standing_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.02a_2DH5_TX_39_2441MHz_laying

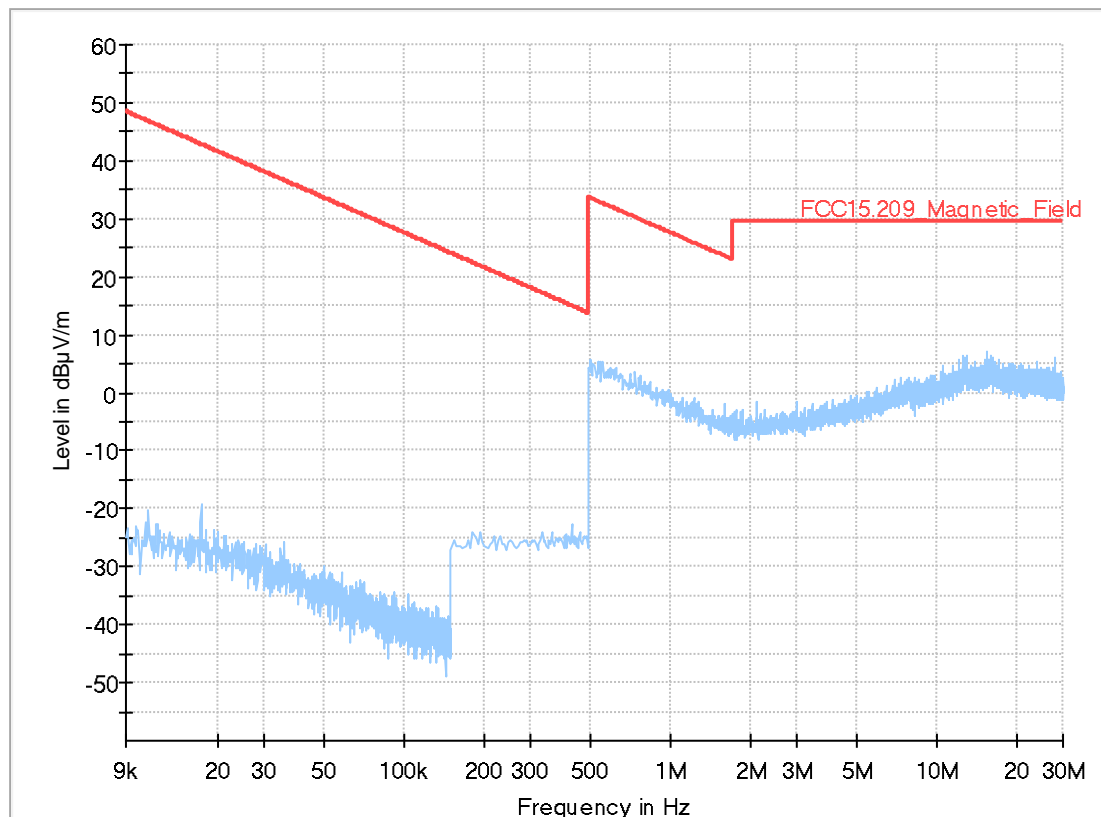
Date:	05.11.2018	Page 1 of 2
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	2DH5_TX_39_2441MHz_laying	
Operator:	LKU	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	laying_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20
	Navigations- und Multimediagerät

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.02b_2DH5_TX_39_2441MHz_standing

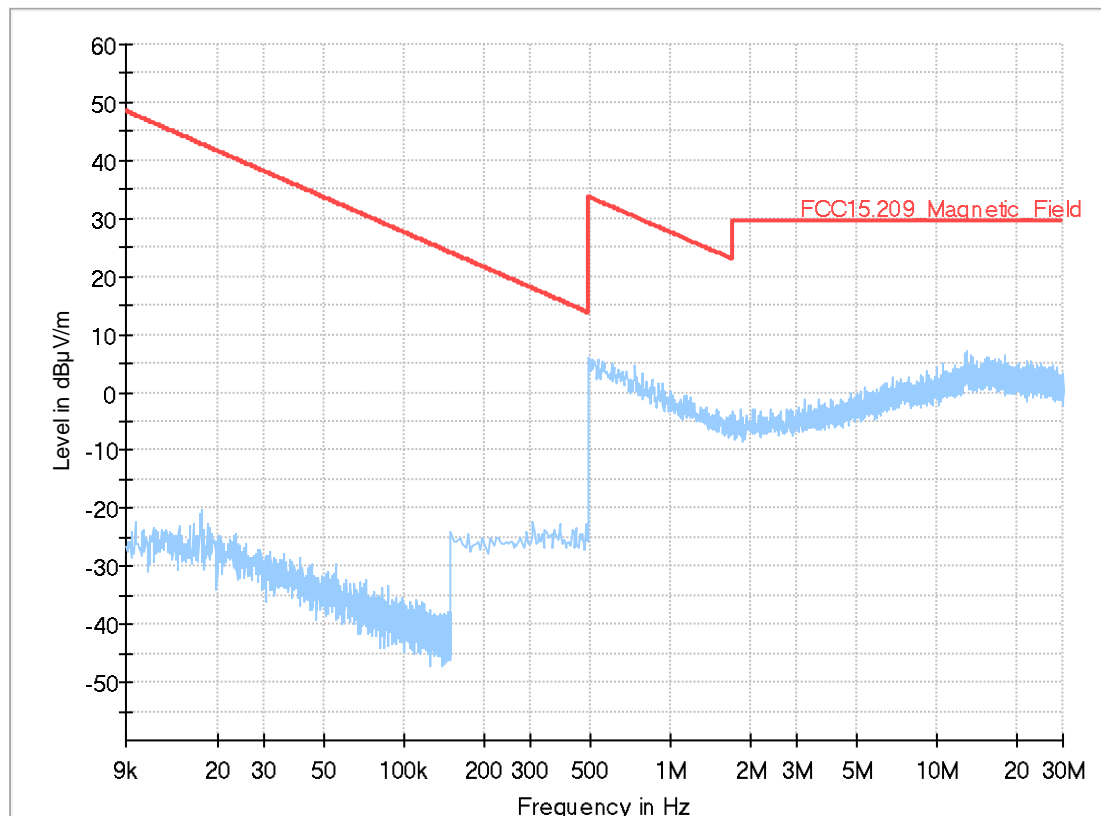
Date:	05.11.2018	Page 1 of 2
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	2DH5_TX_39_2441MHz_standing	
Operator:	LKU	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	standing_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.03a_3DH5_TX_78_2480MHz_laying

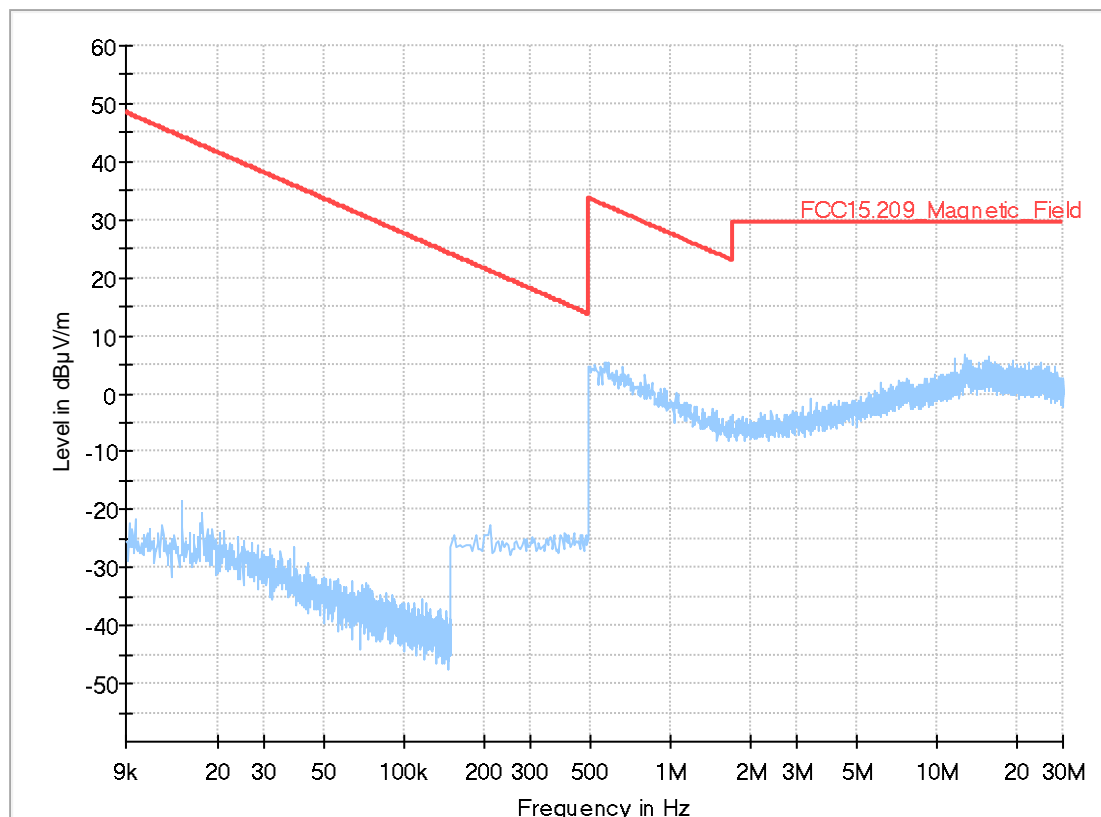
Date:	05.11.2018	Page 1 of 2
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	3DH5_TX_78_2480MHz_laying	
Operator:	LKU	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	laying_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.03b_3DH5_TX_78_2480MHz_standing

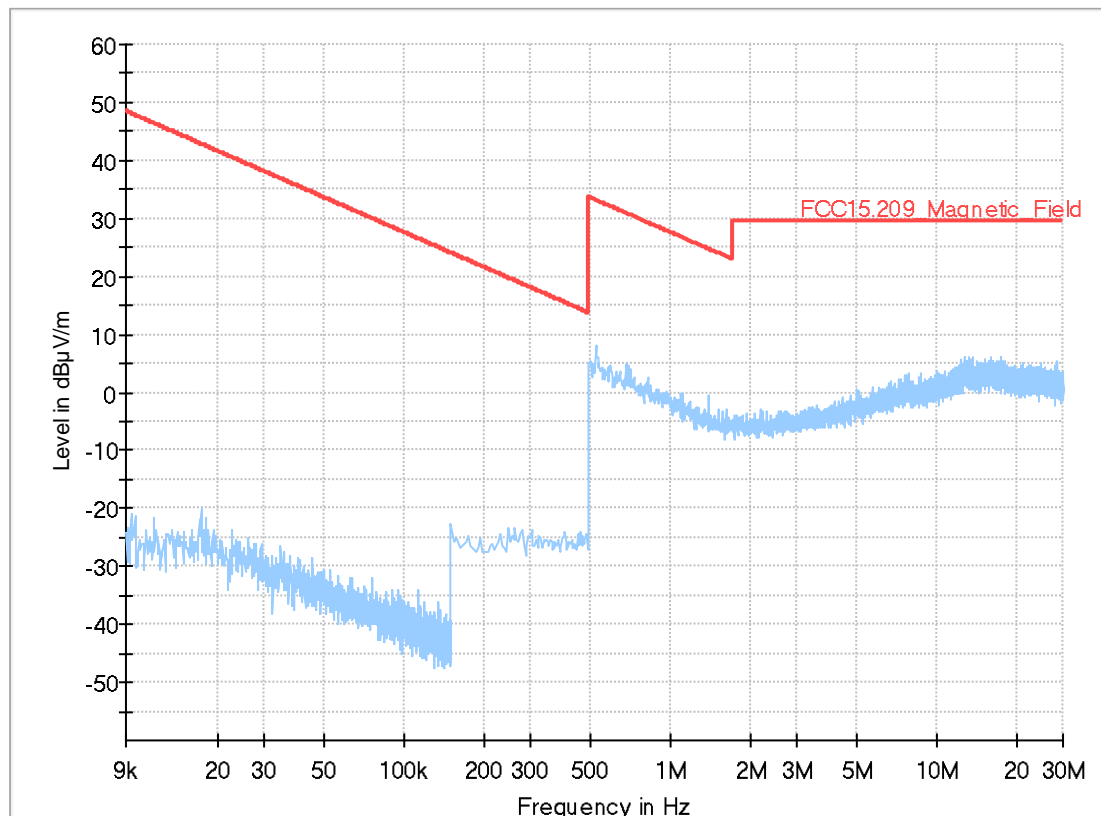
Date:	05.11.2018	Page 1 of 3
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test 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 specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operatingmode:	3DH5_TX_78_2480MHz_standing	
Operator:	LKU	
Operating conditions:	Humidity: 48%rH; Temperature: 20°C	
Comment:	standing_TX	

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



2.2. Spurious emissions radiated Bluetooth BDR 30 MHz to 1 GHz

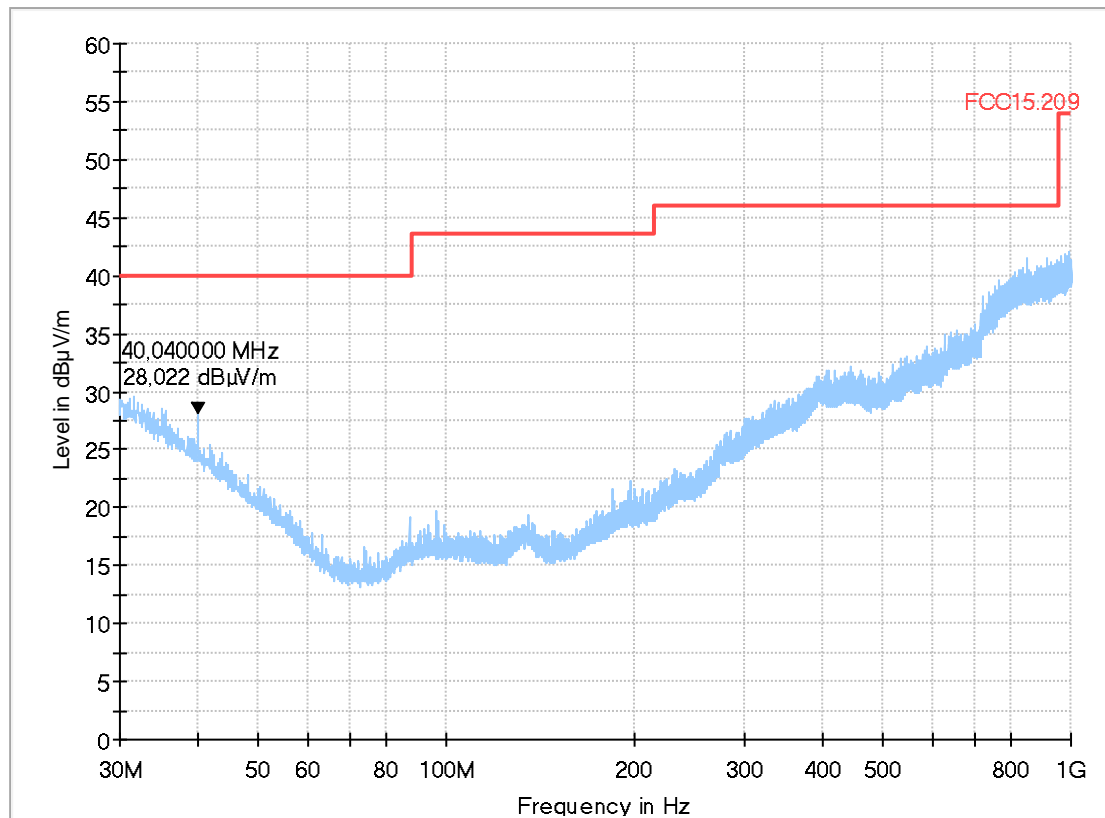
3.01a_DH5_TX_0_2402MHz_laying

Test description:	05.11.2018 Page 1 of 1 Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operatingmode:	DH5_TX_0_2402MHz_laying
Operator:	LKu
Operating conditions:	Humidity: 48%rH; Temperature: 20°C
Comment 1:	laying_TX

EUT Information

Manufacturer:Robert Bosch Car Multimedia GmbH	-
Model:	AIVIV20
Type:	Navigations- und Multimediagerät
-----	-----
EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



3.01b_DH5_TX_0_2402MHz_standing

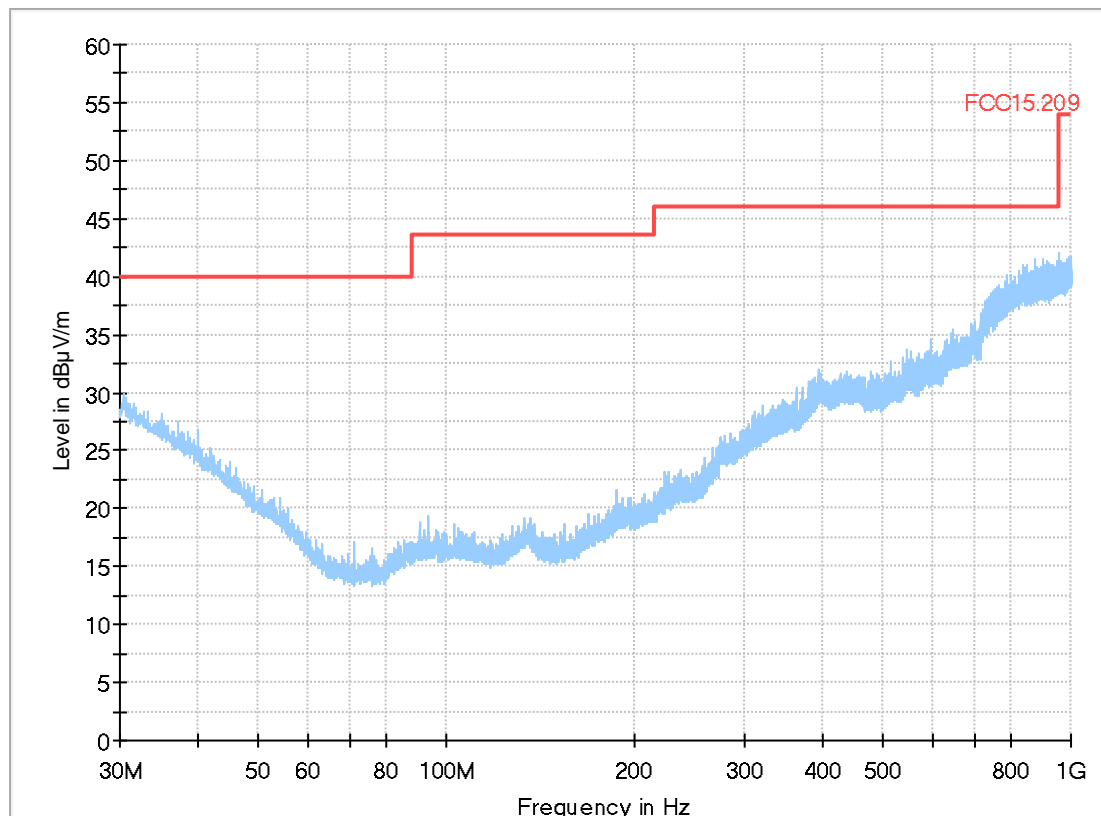
Test description:	05.11.2018 Page 1 of 1
Test site and distance:	Electric Field Strength Measurement
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Used filter:	not used
Technical Data:	not used
Test specification.:	please see page 2 for detailed data of measurement setup
Operatingmode:	FCC 15.209; RSS-Gen: Issue 3
Operator:	DH5_TX_0_2402MHz_standing
Operating conditions:	LKu
Comment 1:	Humidity: 48%rH; Temperature: 20°C
	standing_TX

EUT Information

Manufacturer:Robert Bosch Car Multimedia GmbH	-
Model:	AIVIV20
Type:	Navigations- und Multimediagerät

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	tbd
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



3.02a_2DH5_TX_39_2441MHz_laying

05.11.2018 Page 1 of 2

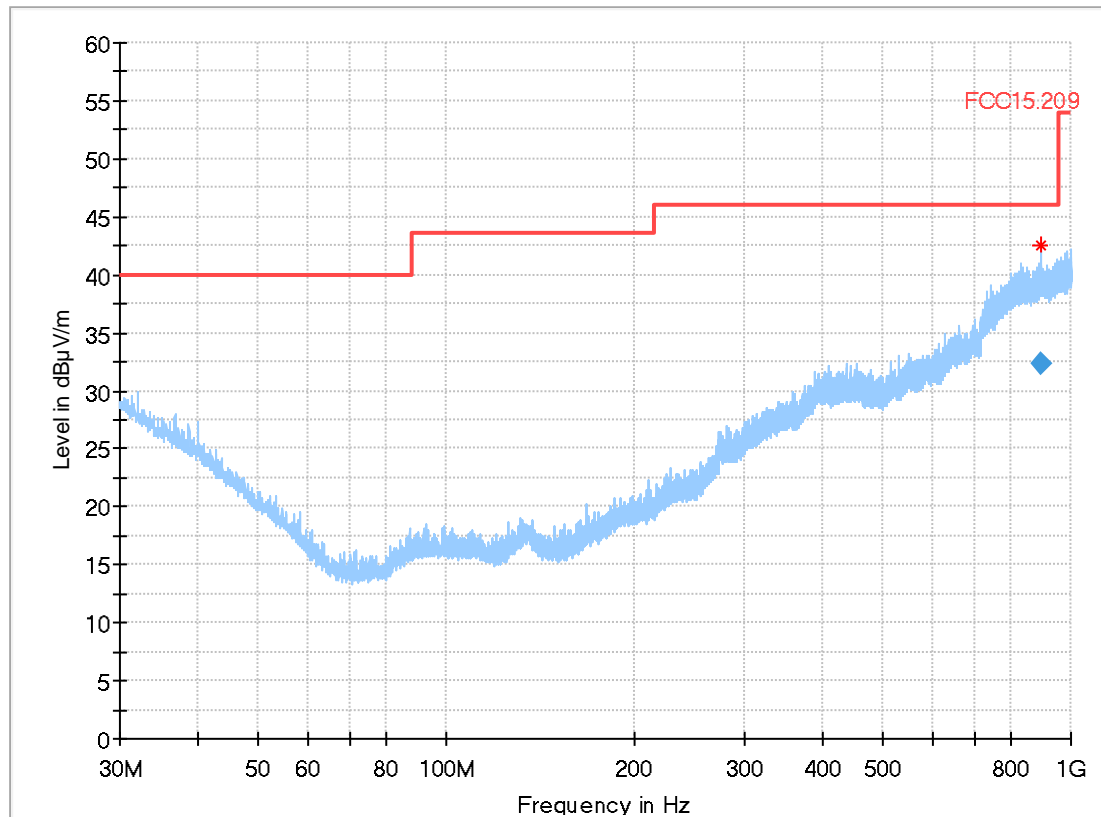
Test description: Electric Field Strength Measurement
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
 Version of Testsoftware: EMC32 V9.25.0
 Distance correction: not used
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3
 Operatingmode: 2DH5_TX_39_2441MHz_laying
 Operator: LKu
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Comment 1: laying_TX

EUT Information

Manufacturer: Robert Bosch Car Multimedia GmbH
 Model: AIVIV20
 Type: Navigations- und Multimediagerät

EUT: FCC
 HW version: tbd
 SW version: 283C37820R
 SVN: -
 Config: -
 Serial number: tbd
 Connected Interfaces: -
 Power Supply: -
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
898.076000	32.29	46.00	13.71	1000.0	120.000	353.0	V	223.0	26.9

3.02b_2DH5_TX_39_2441MHz_standing

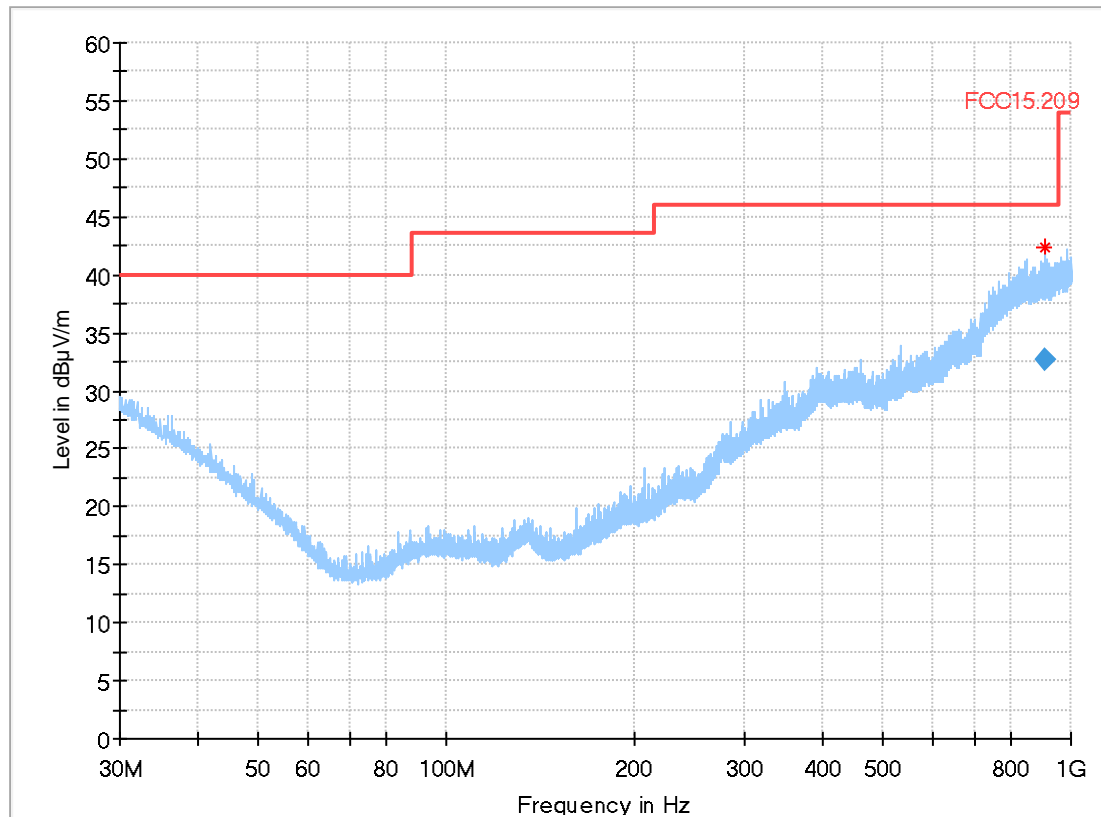
05.11.2018 Page 1 of 2
 Test description: Electric Field Strength Measurement
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
 Version of Testsoftware: EMC32 V9.25.0
 Distance correction: not used
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3
 Operatingmode: 2DH5_TX_39_2441MHz_standing
 Operator: LKu
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Comment 1: standing_TX

EUT Information

Manufacturer: Robert Bosch Car Multimedia GmbH
 Model: AIVIV20
 Type: Navigations- und Multimediagerät

 EUT: FCC
 HW version: tbd
 SW version: 283C37820R
 SVN: -
 Config: -
 Serial number: tbd
 Connected Interfaces: -
 Power Supply: -
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Correction (dB)
909.824000	32.66	46.00	13.34	1000.0	120.000	129.0	H	0.0	27.4

3.03a_3DH5_TX_78_2480MHz_laying

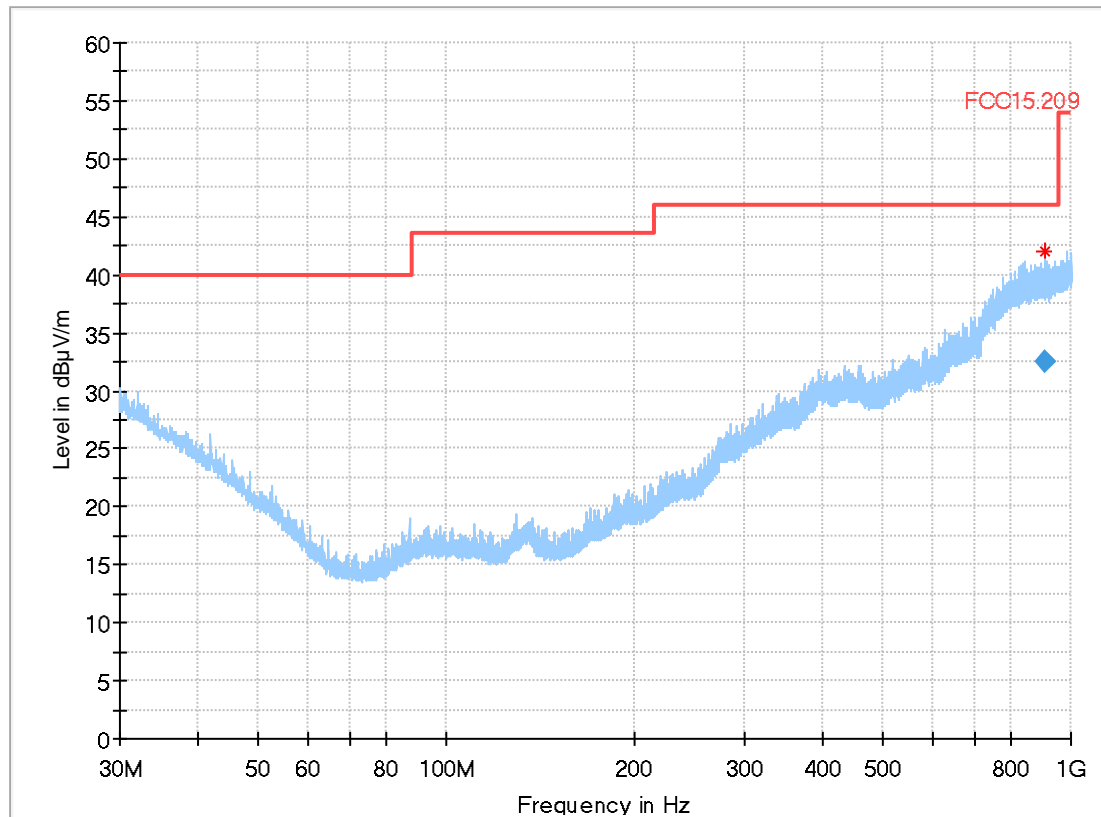
05.11.2018 Page 1 of 2
 Test description: Electric Field Strength Measurement
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
 Version of Testsoftware: EMC32 V9.25.0
 Distance correction: not used
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3
 Operatingmode: 3DH5_TX_78_2480MHz_laying
 Operator: LKu
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Comment 1: laying_TX

EUT Information

Manufacturer: Robert Bosch Car Multimedia GmbH
 Model: AIVIV20
 Type: Navigations- und Multimediagerät

 EUT: FCC
 HW version: tbd
 SW version: 283C37820R
 SVN: -
 Config: -
 Serial number: tbd
 Connected Interfaces: -
 Power Supply: -
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Correction (dB)
909.556000	32.57	46.00	13.43	1000.0	120.000	254.0	V	206.0	27.2

3.03b_3DH5_TX_78_2480MHz_standing

05.11.2018 Page 1 of 2

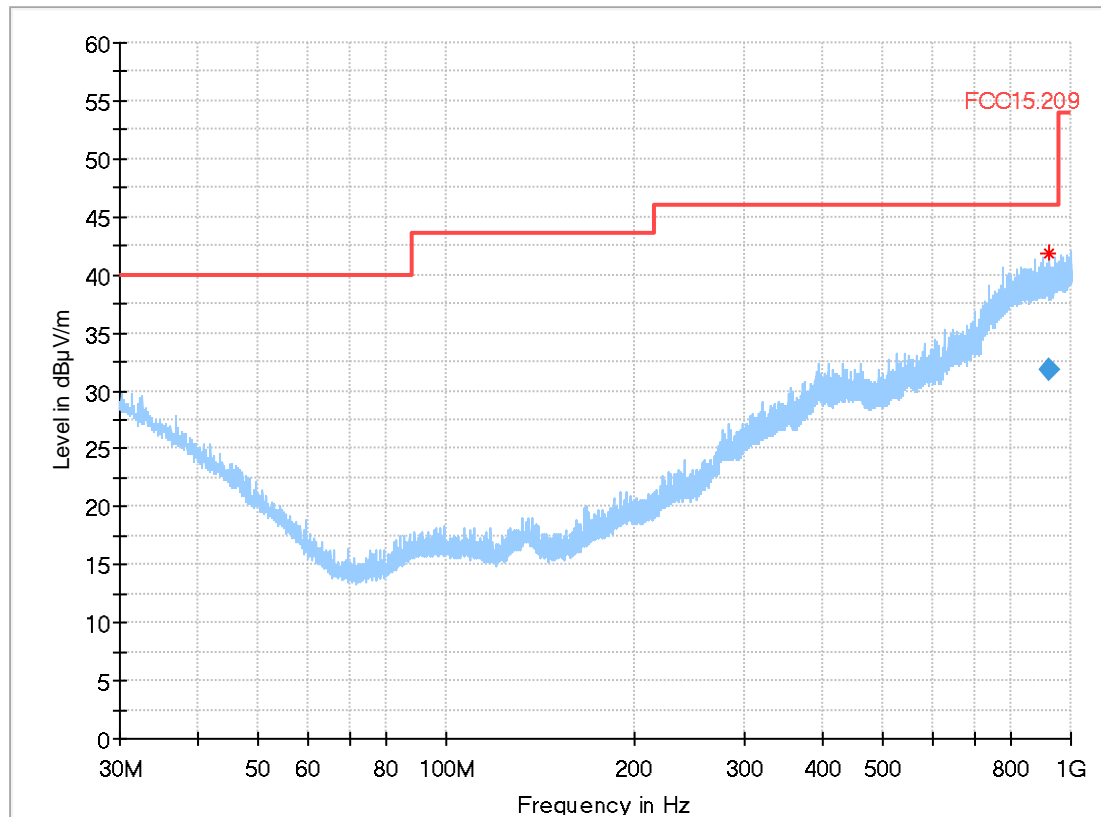
Test description: Electric Field Strength Measurement
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
 Version of Testsoftware: EMC32 V9.25.0
 Distance correction: not used
 Used filter: not used
 Technical Data: please see page 2 for detailed data of measurement setup
 Test specification.: FCC 15.209; RSS-Gen: Issue 3
 Operatingmode: 3DH5_TX_78_2480MHz_standing
 Operator: LKu
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Comment 1: standing_TX

EUT Information

Manufacturer: Robert Bosch Car Multimedia GmbH
 Model: AIVIV20
 Type: Navigations- und Multimediagerät

EUT: FCC
 HW version: tbd
 SW version: 283C37820R
 SVN: -
 Config: -
 Serial number: tbd
 Connected Interfaces: -
 Power Supply: -
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Correction (dB)
925.200000	31.77	46.00	14.23	1000.0	120.000	264.0	H	343.0	26.5

2.3. Spurious emissions radiated Bluetooth BDR 1 GHz to 18 GHz

4.01a_TX_CH0_DH5

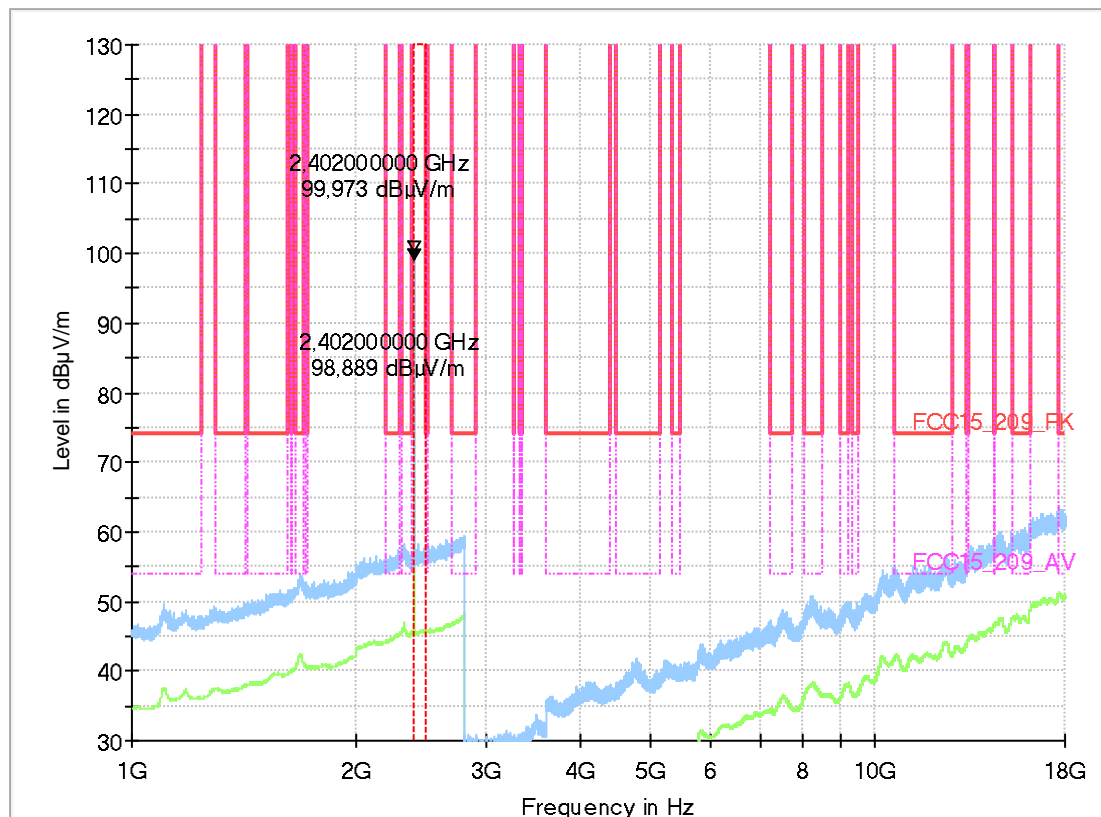
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	Bluetooth_TX_DH5_CH:0
Operator Name:	HEI

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20
	Navigations- und Multimediagerät
EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	0005111
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



4.02a_TX_CH39_2DH5

Common Information

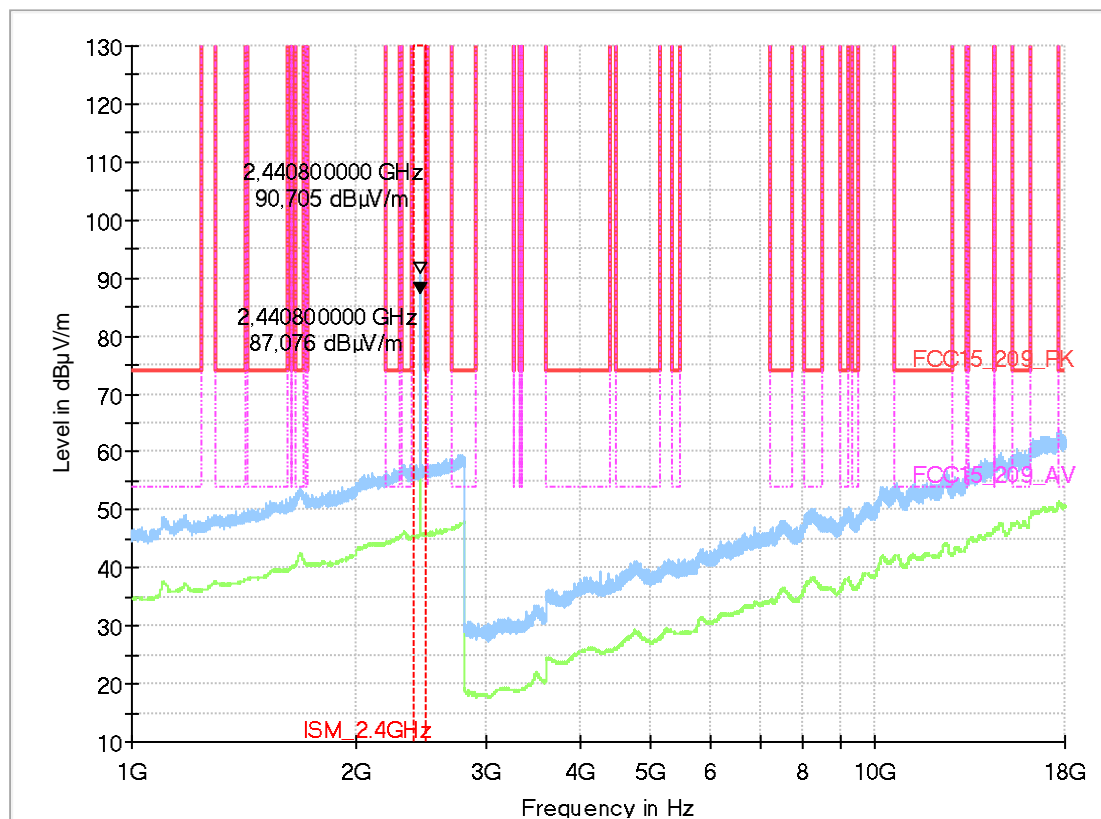
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	Bluetooth_TX_2DH5_CH:39
Operator Name:	HEI

EUT Information

Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	0005111
Connected Interfaces:	-
Power Supply:	-
Comments:	-

Full Spectrum



4.03a_TX_CH78_3DH5

Common Information

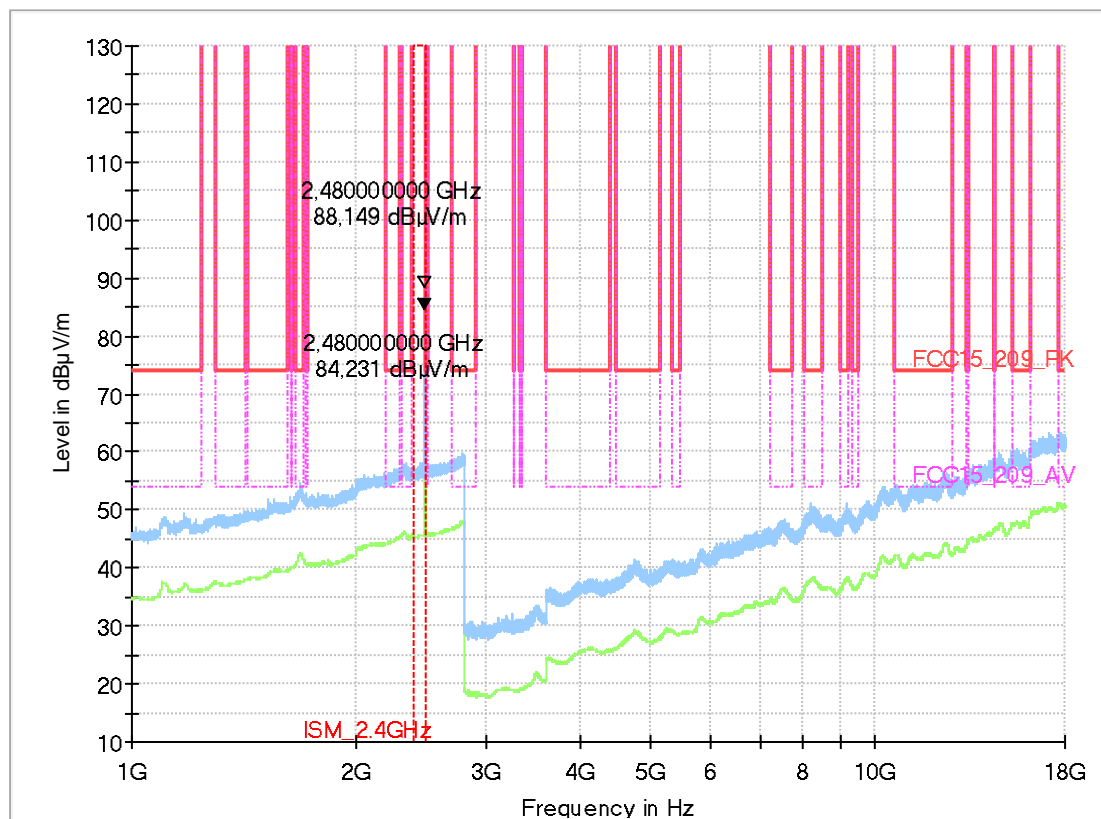
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	Bluetooth_TX_3DH5_CH:79
Operator Name:	HEI

EUT Information

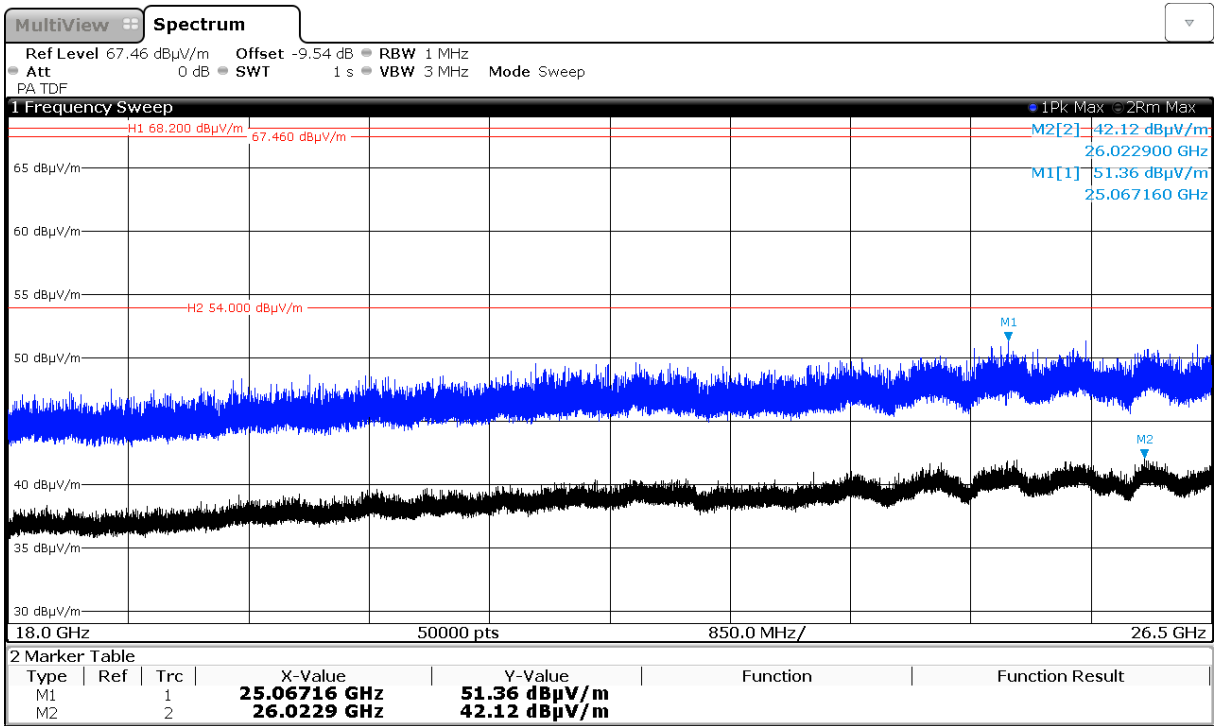
Model:	Manufacturer:Robert Bosch Car Multimedia GmbH
Type:	AIVIV20

EUT:	FCC
HW version:	tbd
SW version:283C37820R	283C37820R
SVN:	-
Config:	-
Serial number:	0005111
Connected Interfaces:	-
Power Supply:	-
Comments:	-

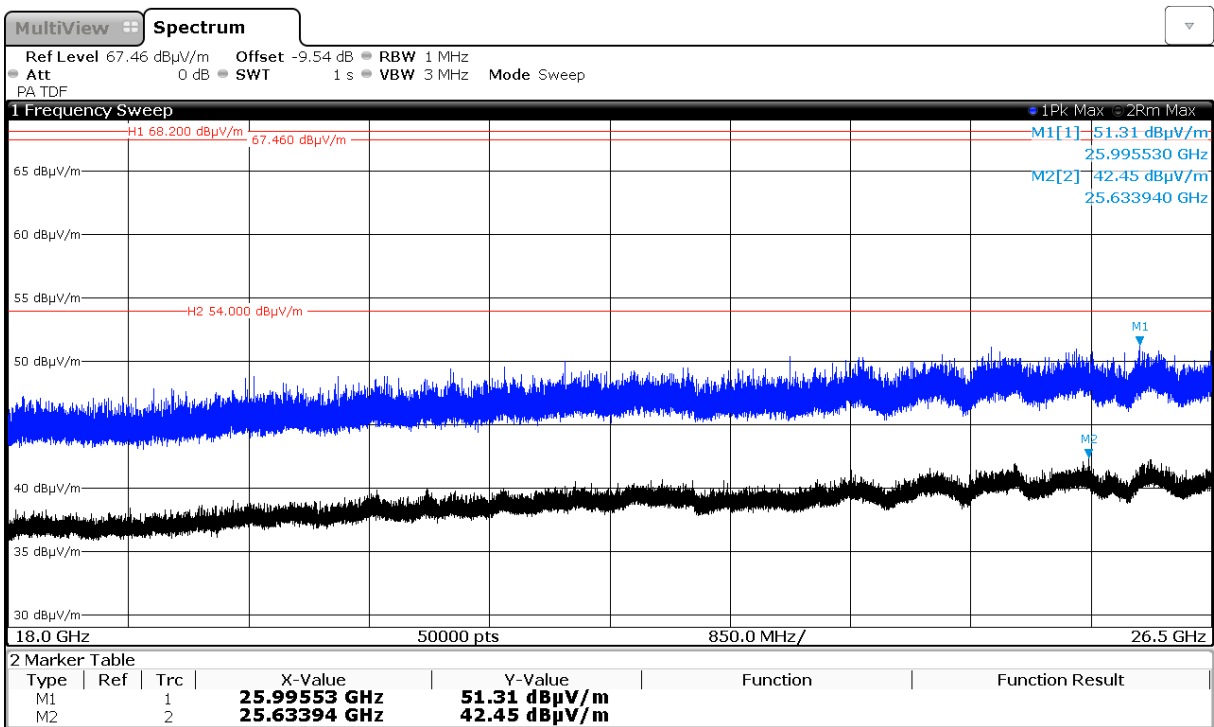
Full Spectrum



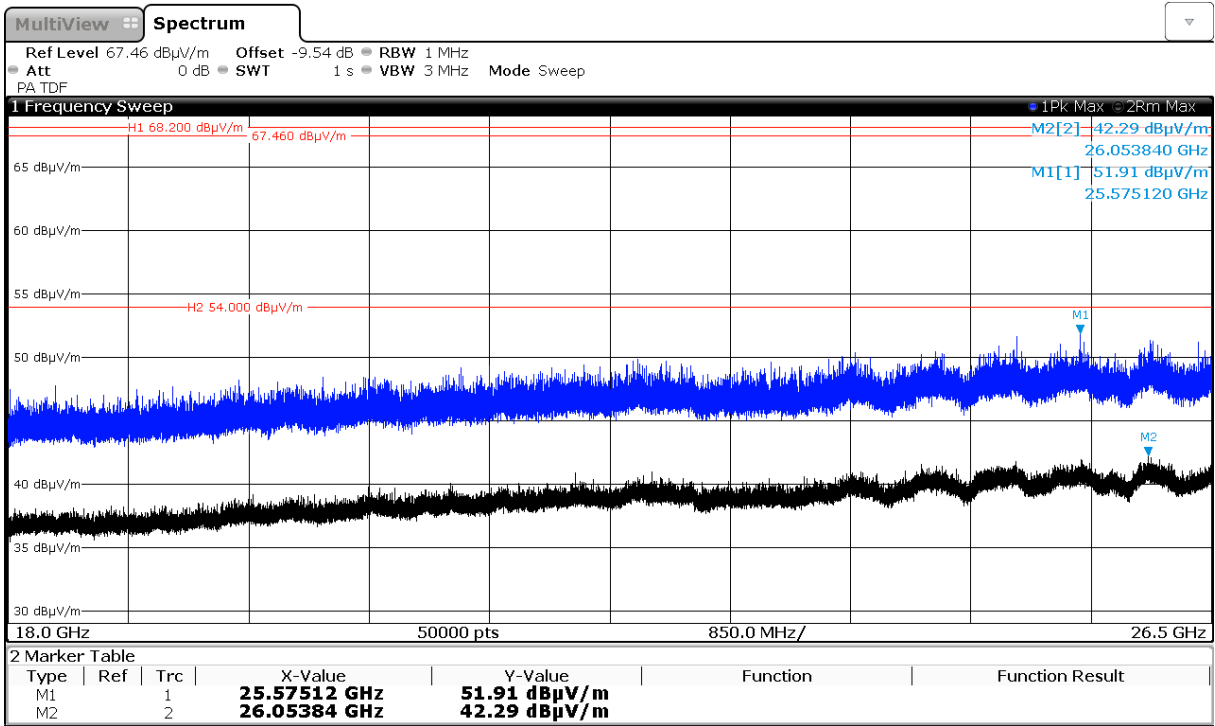
2.4. Spurious emissions radiated Bluetooth 18 GHz to 26.5 GHz



4.01b_BT_DH5



4.02b_BT_2DH5



4.03b_BT_3DH5

3. Radiated Band Edge Measurements

3.1. Radiated emissions on Bluetooth BDR band-edge low

Diagram No.: 9.01a_BT_EDR_ch00

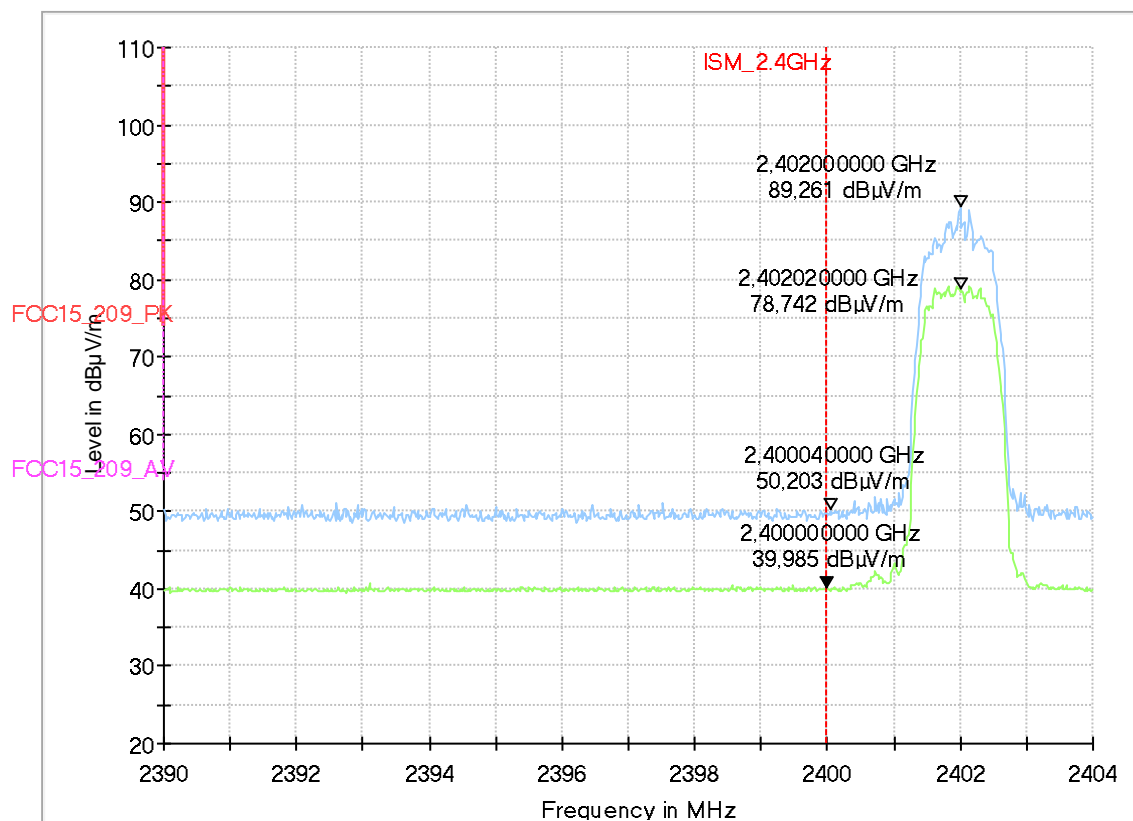
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR 2-DH5 ch00
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum



9.02a_BT_EDR_ch00

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Version of Testsoftware:	EMC32 V9.26.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR DH5 ch00
Operator Name:	MSo
Comment:	Channel no. low

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial No.:	0005000
Connected Devices:	13.5VDC

Full Spectrum

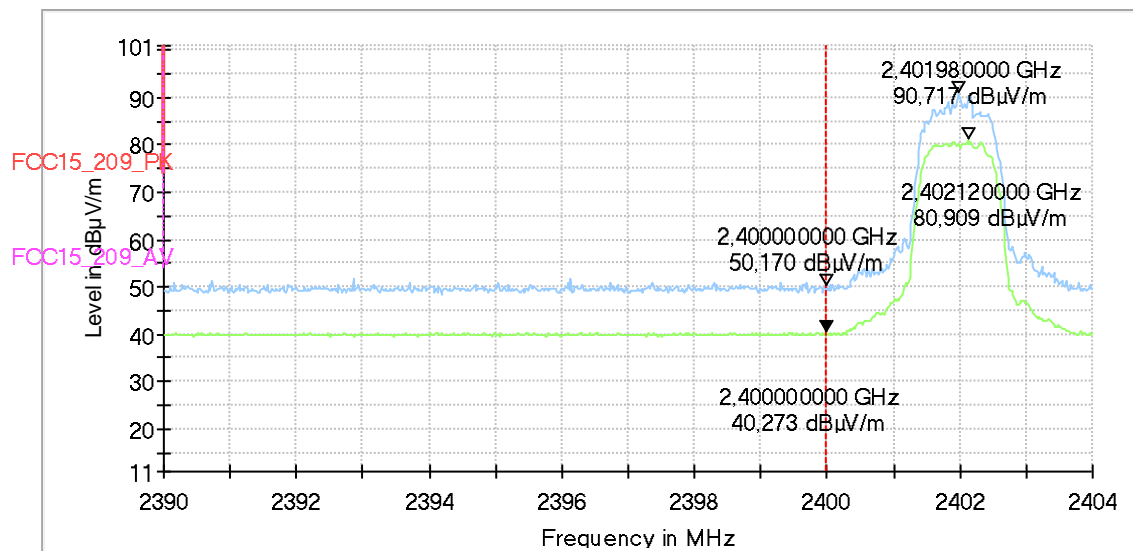


Diagram No.: 9.03a_BT_BR_ch00

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR DH5 ch00
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum

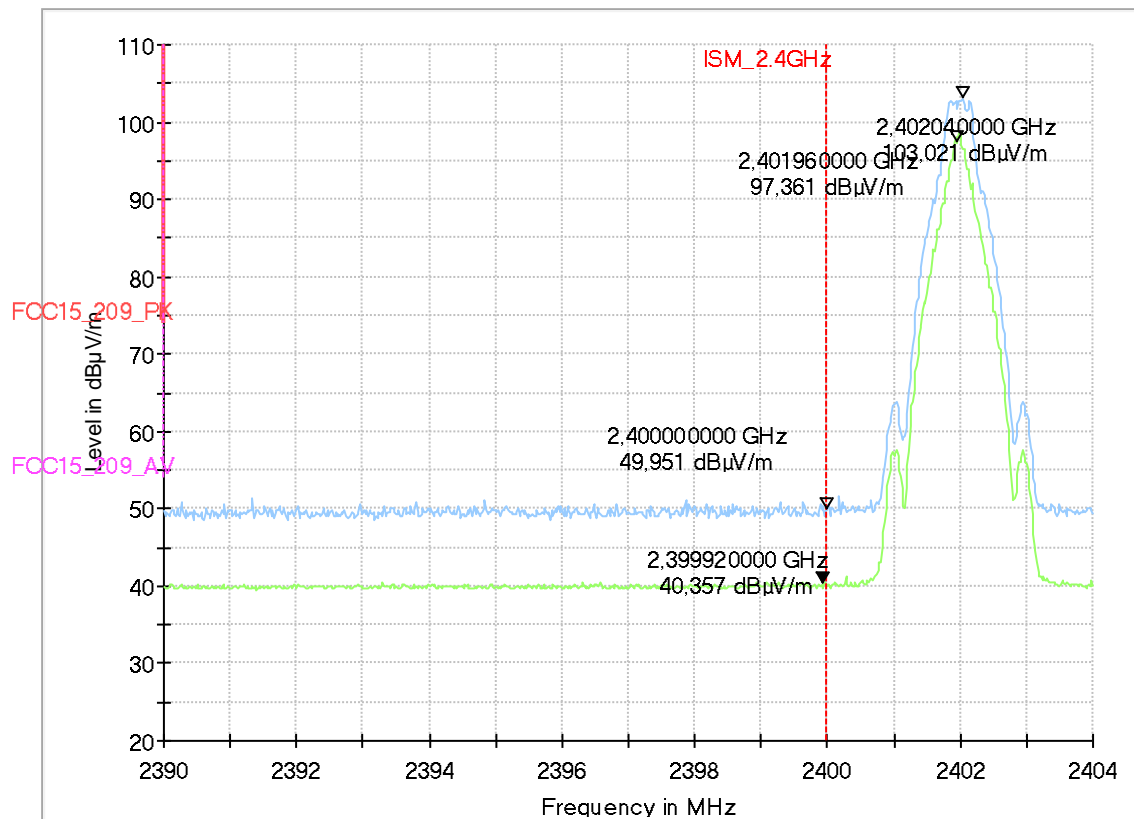


Diagram No.: 9.04a_BT_EDR_ch00

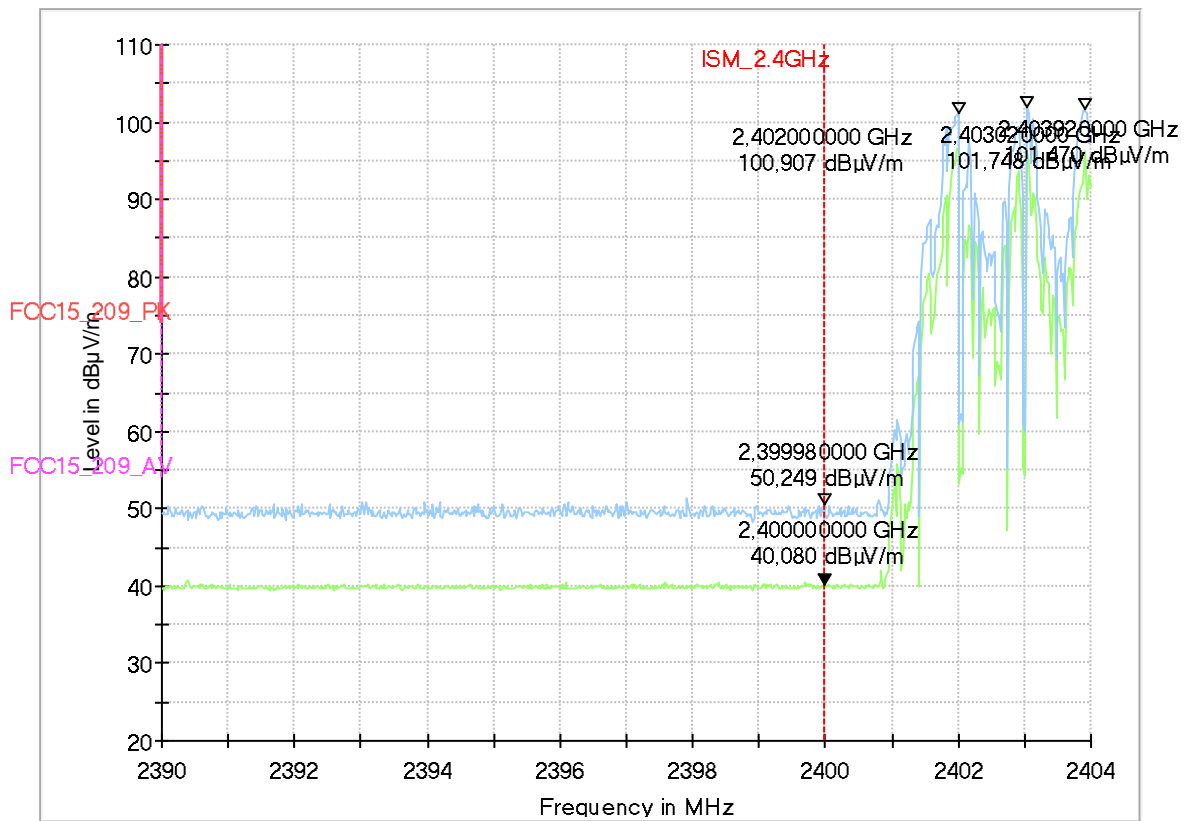
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR Hopping ON
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum



3.2. Radiated emissions on Bluetooth EDR band-edge high

Diagram No.: 9.01b_BT_EDR_ch78

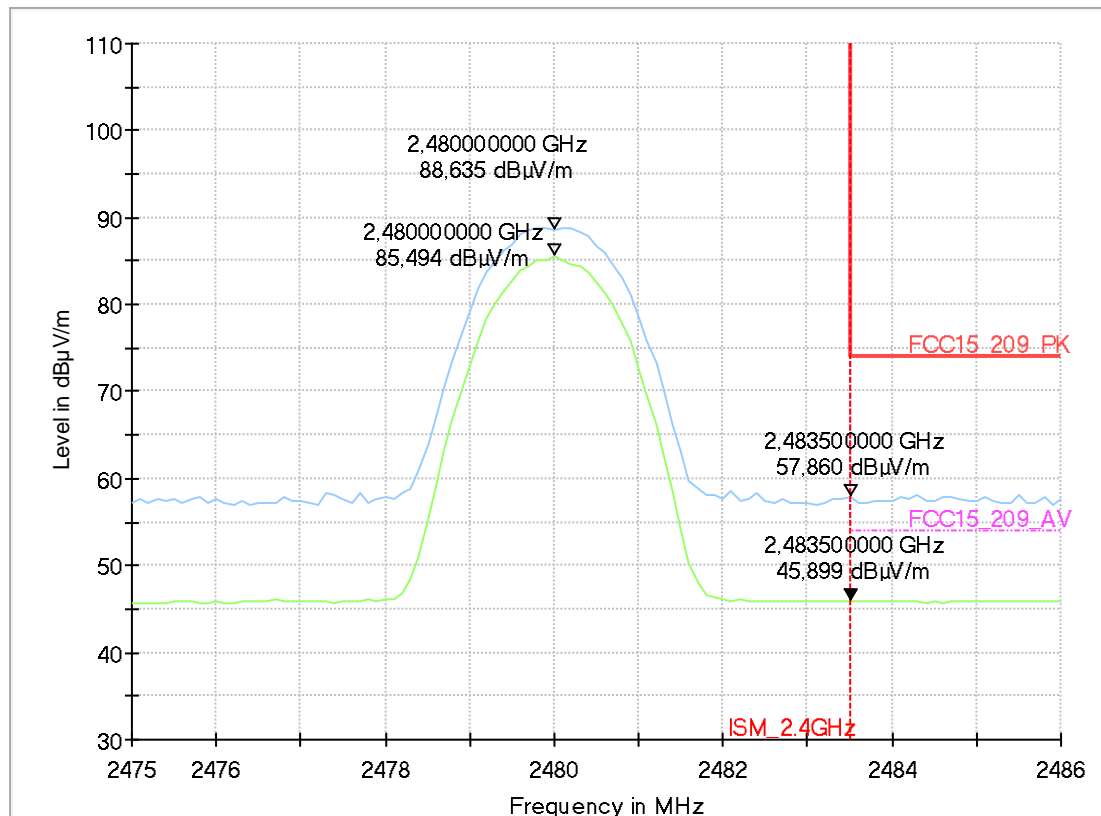
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR 2-DH5 ch78
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum



9.02b_BT_EDR_ch78

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Version of Testsoftware:	EMC32 V9.26.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR DH5 ch78
Operator Name:	MSo
Comment:	Channel no. 78 / high

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial No.:	0005000
Connected Devices:	13.5VDC

Full Spectrum

Full Spectrum

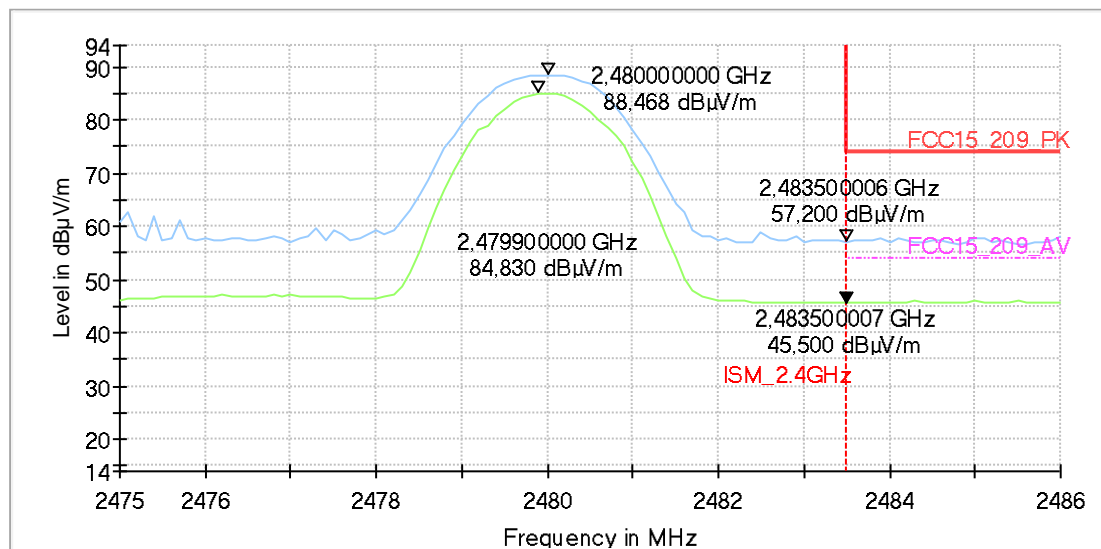


Diagram No.: 9.03b_BT_BR_ch78

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR DH5 ch78
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum

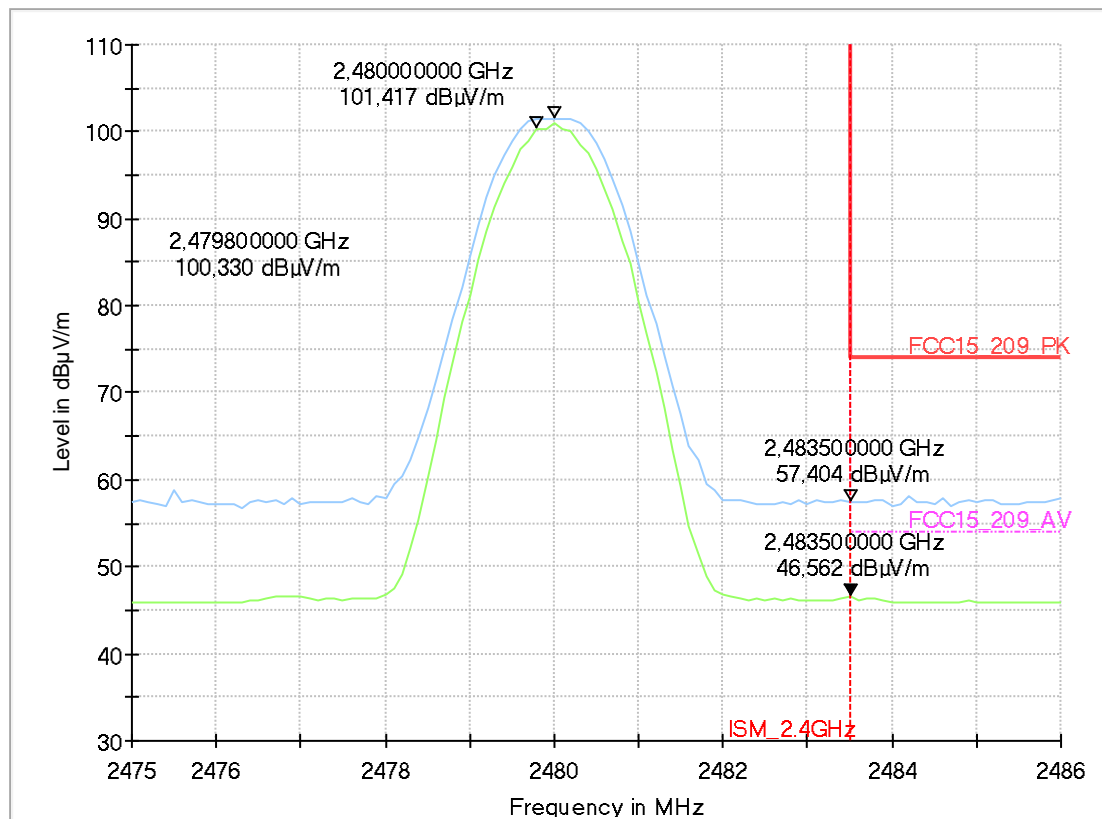


Diagram No.: 9.04b_BT_EDR_ch78

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	BT EDR Hopping ON
Operator Name:	HEI

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVISBX0
EUT Model:	18-1-00482S06
HW:	tbd
SW:	283C24194R
Serial Nr.:	
Connected Devices:	13.5VDC

Full Spectrum

