

Annex 1: Measurement diagrams to TEST REPORT No.: 18-1-0048401T03a

According to:
FCC Regulations
Part 15.205 & Part 15.209
Part 15.247

ISED-Regulations
RSS-Gen, Issue 4
RSS-247, Issue 2

for

Robert Bosch Car Multimedia
Navigation System with Bluetooth and WLAN
AIVIL12F0

FCC ID: YBN-AIVIL12F0
ISED: 9595A-AIVIL12F0

Laboratory Accreditation and Listings		
 Deutsche Akkreditierungsstelle D-PL-12047-01-01 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.:4452, C-20009, T-20006, G-20013
 	  Lab Code: 20011130-00	 MRA US-EU 0003
accredited according to DIN EN ISO/IEC 17025		
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1. Measurement diagrams

1.1. General Limit – Maximum power output conducted

Bluetooth FHSS (EDR Mode)	8DPSK (3 Mbps)	3-DH1	Channel No. 0 (2402 MHz)	-5,00	0,32
			Channel No. 39 (2441 MHz)	-5,20	0,30
			Channel No. 78 (2480 MHz)	-4,90	0,32
		3-DH3	Channel No. 0 (2402 MHz)	-4,90	0,32
			Channel No. 39 (2441 MHz)	-5,10	0,31
			Channel No. 78 (2480 MHz)	-4,80	0,33
		3-DH5	Channel No. 0 (2402 MHz)	-4,90	0,32
			Channel No. 39 (2441 MHz)	-5,10	0,31
			Channel No. 78 (2480 MHz)	-4,90	0,32

1.2. General Limit - Radiated field strength emissions below 30 MHz

Diagram No. 2.02a_BT_EDR_ch00_laying

Date:	07.07.2018	Page 1 of 1
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	
Operator:	HEI	
Operating conditions:	BT_EDR_CH:0_Packet Data:3-DH5	
Power during tests:	13,5 Volt	
Comment 1:	DUT Laying	

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--

Full Spectrum

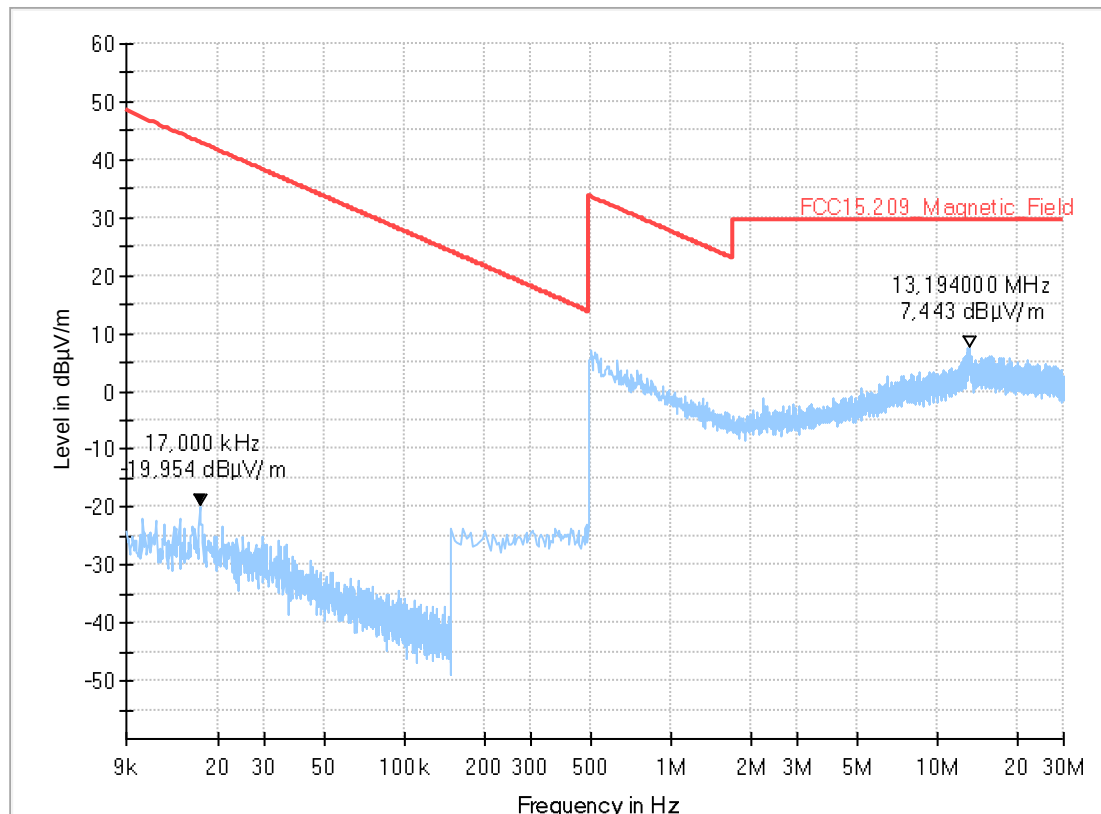


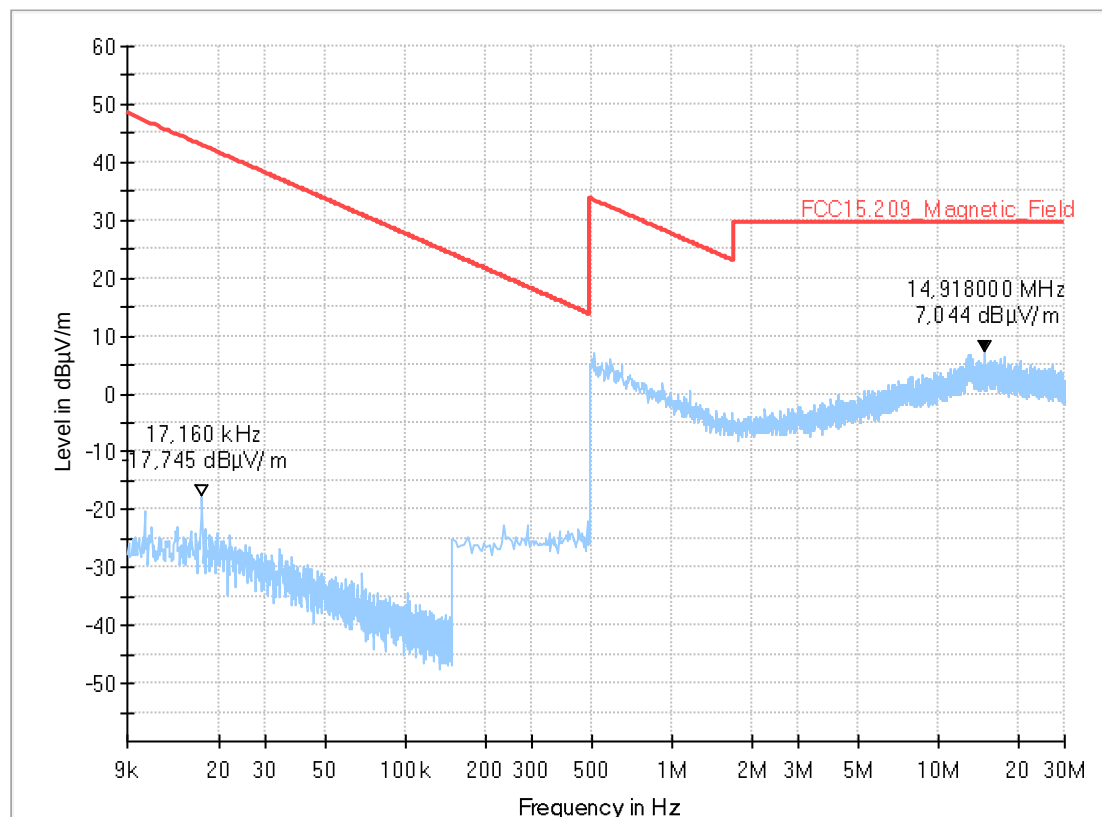
Diagram No. 2.02b_BT_EDR_ch00_standing

Date:	07.07.2018	Page 1 of 1
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	
Operator:	HEI	
Operating conditions:	BT_EDR_CH:0_Packet Data:3-DH5	
Power during tests:	13,5 Volt	
Comment 1:	DUT Standing	

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--

Full Spectrum



1.3. General Limit - Radiated field strength emissions, 30 MHz - 1 GHz

Diagram No. 3.02a_BT_EDR_ch00_laying

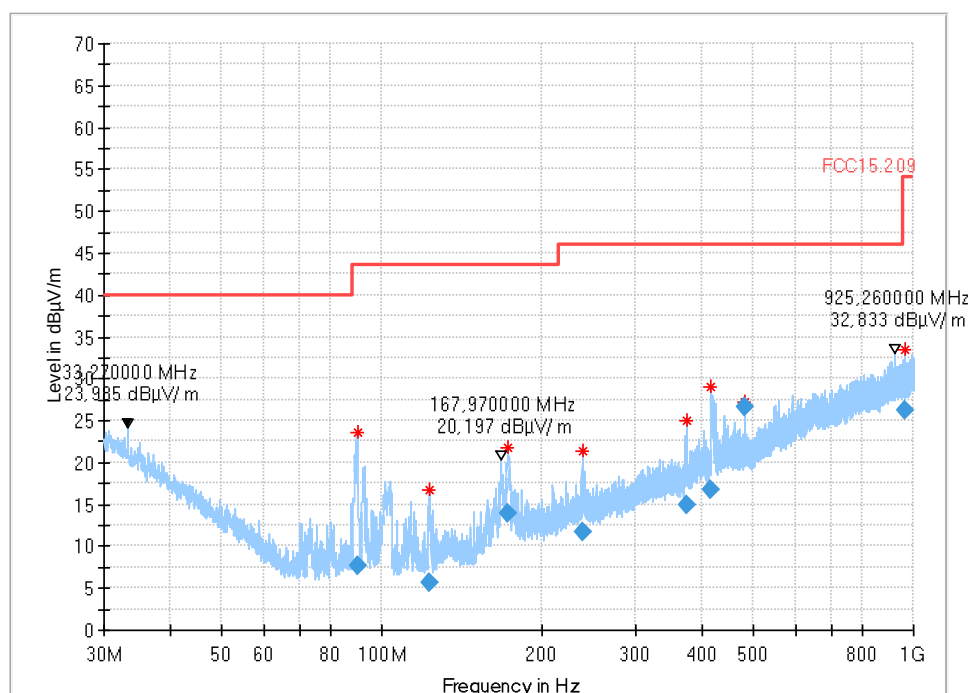
07.07.2018 Page 1 of 2

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
Operator: HEI
Operating conditions: BT_EDR_CH:0_Packet Data:3-DH5
Power during tests: 13.5Voult
Comment 1: DUT Laying

EUT Information

Manufacturer: Robert Bosch Car Multimedia
Product: AIVIL12F0
EUT Model: AIVIL12F0
HW: 001
SW: X317
Serial Nr.: 0007625
Connected Devices: --

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
89.795000	7.68	43.50	35.82	1000.0	120.000	182.0	V	283.0	0.0
122.973000	5.62	43.50	37.88	1000.0	120.000	182.0	H	60.0	0.0
172.769000	13.98	43.50	29.52	1000.0	120.000	105.0	V	183.0	0.0
238.525000	11.73	46.00	34.27	1000.0	120.000	182.0	V	149.0	0.0
374.525000	14.85	46.00	31.15	1000.0	120.000	182.0	V	10.0	0.0
415.615000	16.69	46.00	29.31	1000.0	120.000	105.0	H	90.0	0.0
479.965000	26.66	46.00	19.34	1000.0	120.000	105.0	V	65.0	0.0
963.633000	26.28	54.00	27.72	1000.0	120.000	182.0	H	110.0	0.0

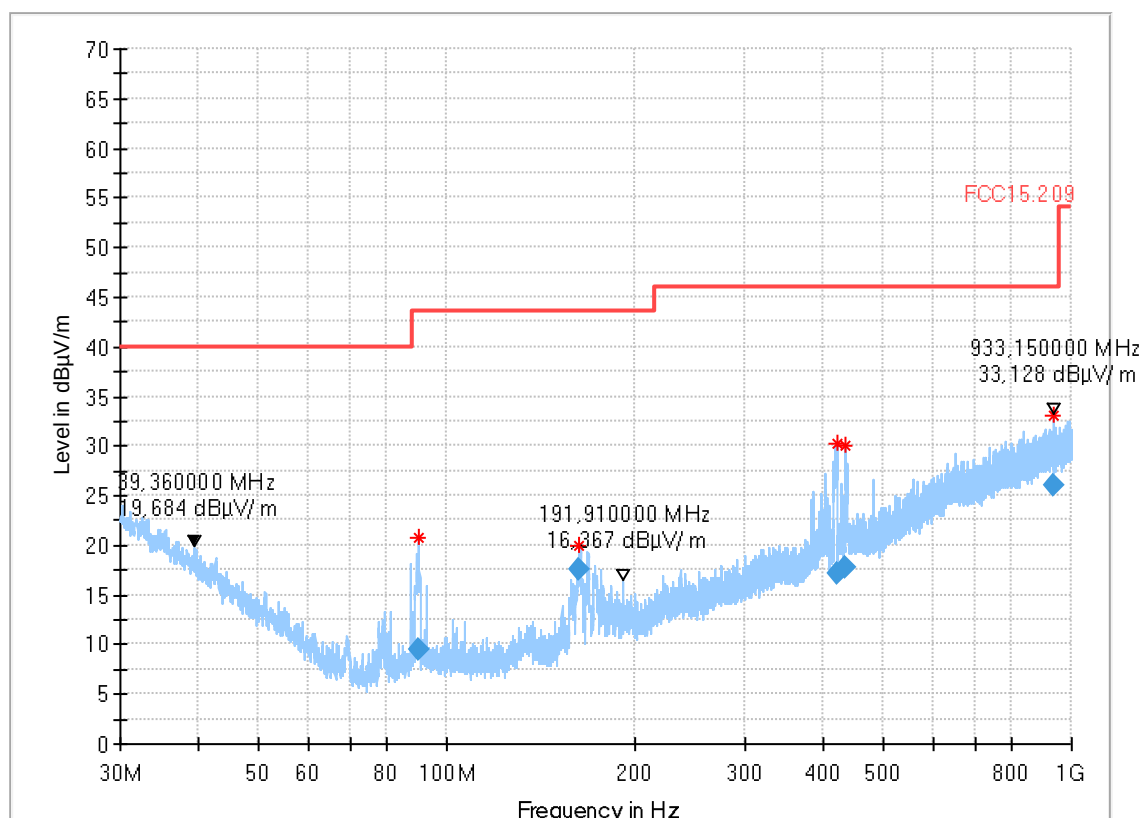
Diagram No. 3.02b_BT_EDR_ch00_standing

07.07.2018 Page 1 of 1
 Electric Field Strength Measurement
 Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
 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
 Operator: HEI
 Operating conditions: BT_EDR_CH:0_Packet Data:3-DH5
 Power during tests: 13.5Voult
 Comment 1: DUT standing

EUT Information

Manufacturer: Robert Bosch Car Multimedia
 Product: AIVIL12F0
 EUT Model: AIVIL12F0
 HW: 001
 SW: X317
 Serial Nr.: 0007625
 Conected Devices: --

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
89.879000	9.40	43.50	34.10	1000.0	120.000	105.0	V	202.0	0.0
162.925000	17.53	43.50	25.97	1000.0	120.000	105.0	V	90.0	0.0
420.725000	17.12	46.00	28.88	1000.0	120.000	182.0	H	77.0	0.0
433.235000	17.77	46.00	28.23	1000.0	120.000	105.0	V	303.0	0.0
933.153000	26.09	46.00	19.91	1000.0	120.000	182.0	H	121.0	0.0

1.4. General Limit - Radiated emissions, above 1 GHz

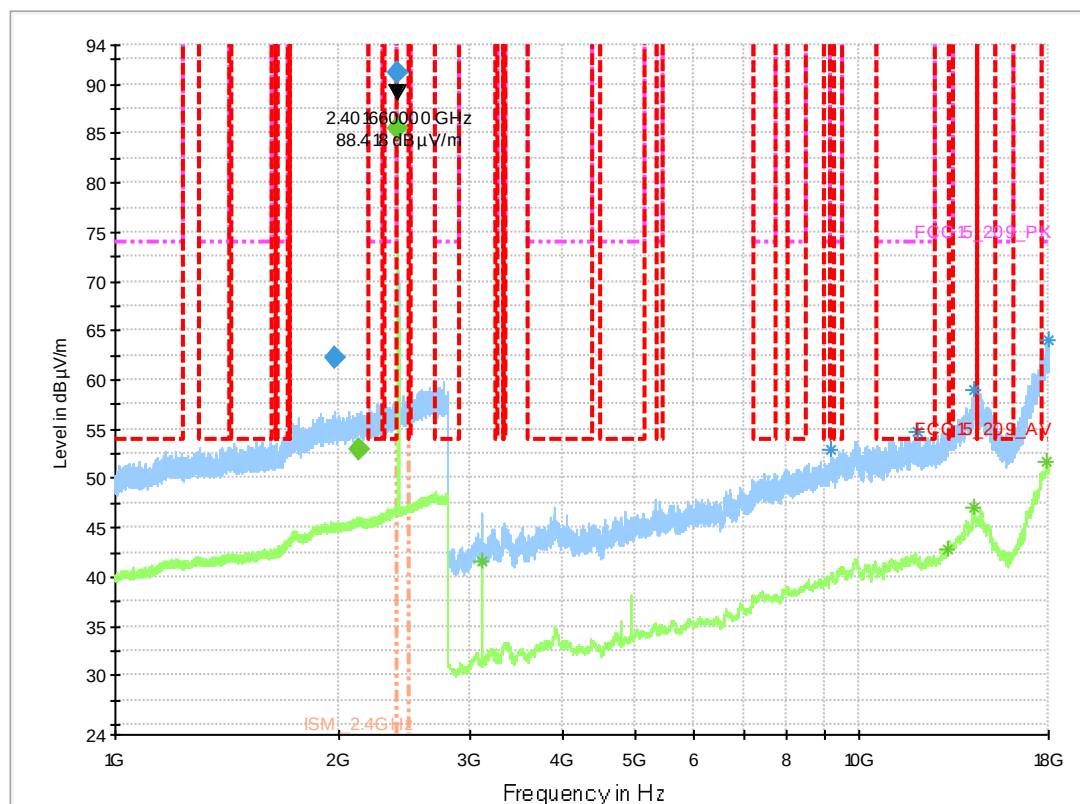
8.02a_BT_EDR_ch00_standing

Common Information

Test Description:	Radiated Spurious Emissions Bluetooth/WLAN 2.4GHz ISM band
Test Site:	CETECOM GmbH Essen
Test Standard:	FAR2 FCC Part 15.247,
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C
Operator Name:	DLe
Comment:	DUT Standing

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--



8.02b_BT_EDR_ch00_laying

Common Information

Test Description:	Radiated Spurious Emissions Bluetooth/WLAN 2.4GHz ISM band
Test Site:	CETECOM GmbH Essen
Test Standard:	FAR2 FCC Part 15.247,
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C
Operator Name:	DLe
Comment:	DUT Laying

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--

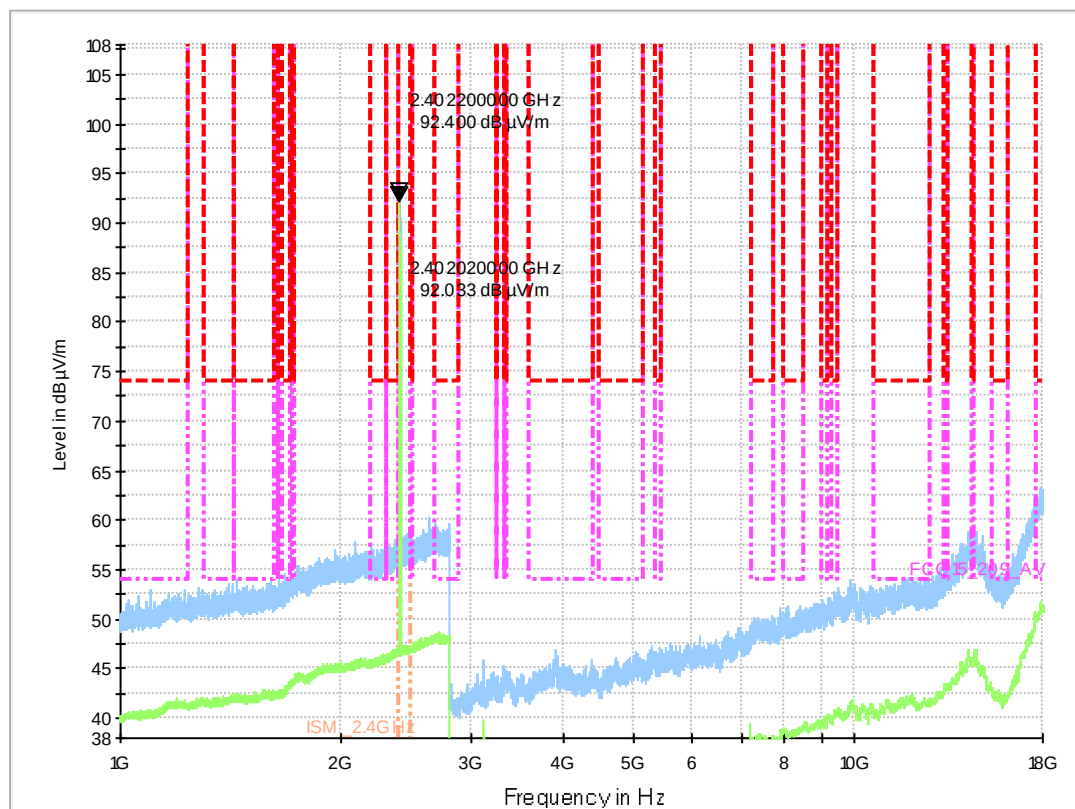
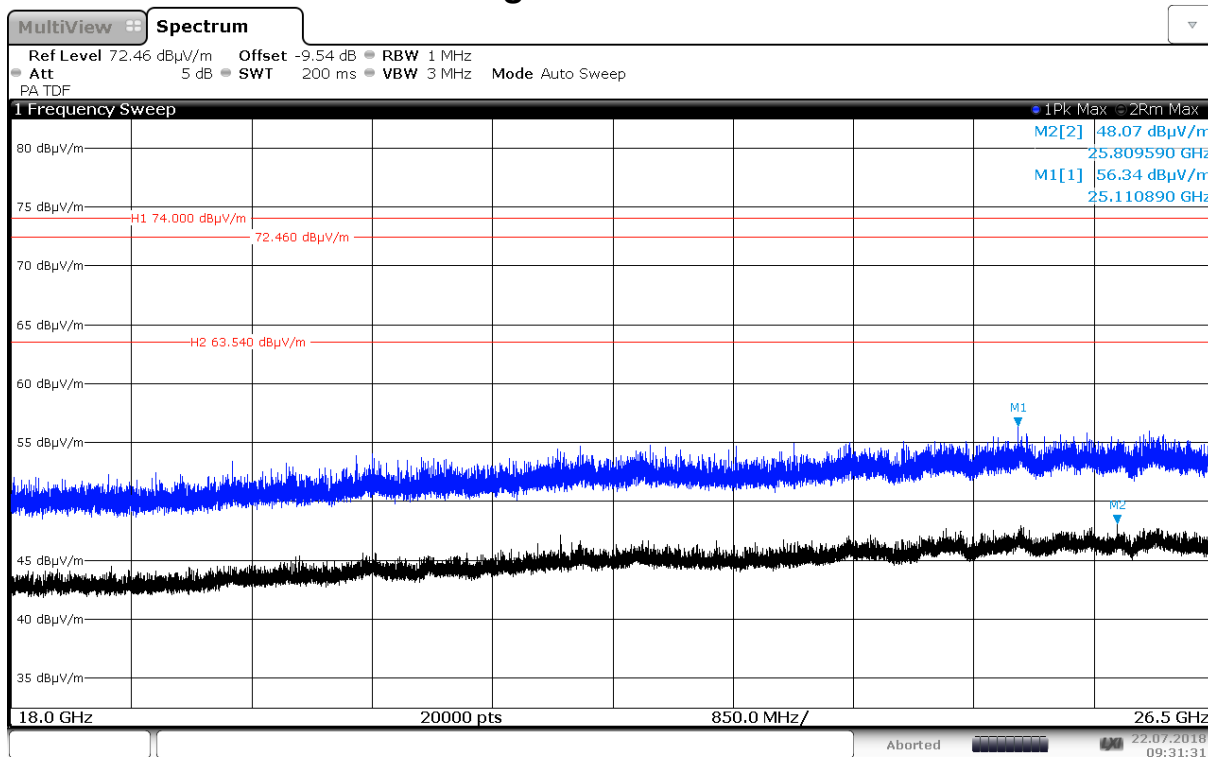


Diagram No.: 4.10c



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1.5. RF-Parameter - Band Edge compliance measurements

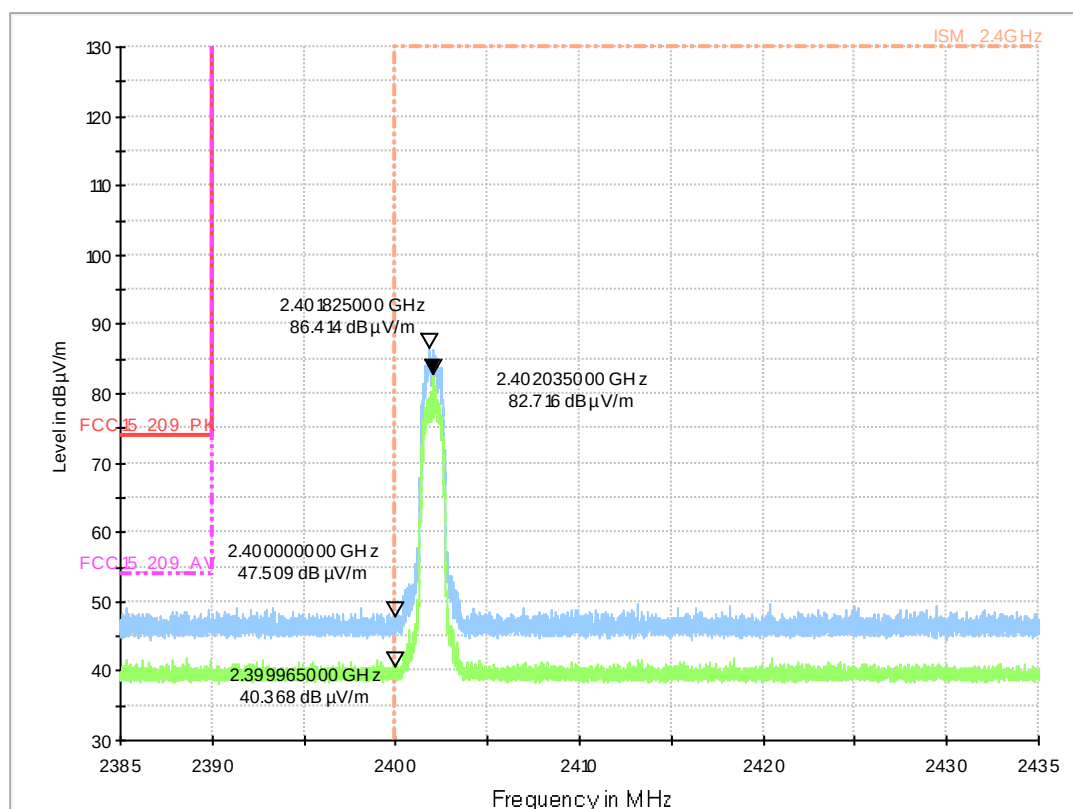
9.02a_BT_EDR_ch00_laying

Common Information

Test Description:	Band edge BT-EDR
Test Site:	CETECOM GmbH Essen
Test Standard:	
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C
Operator Name:	TFr

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Conected Devices:	--



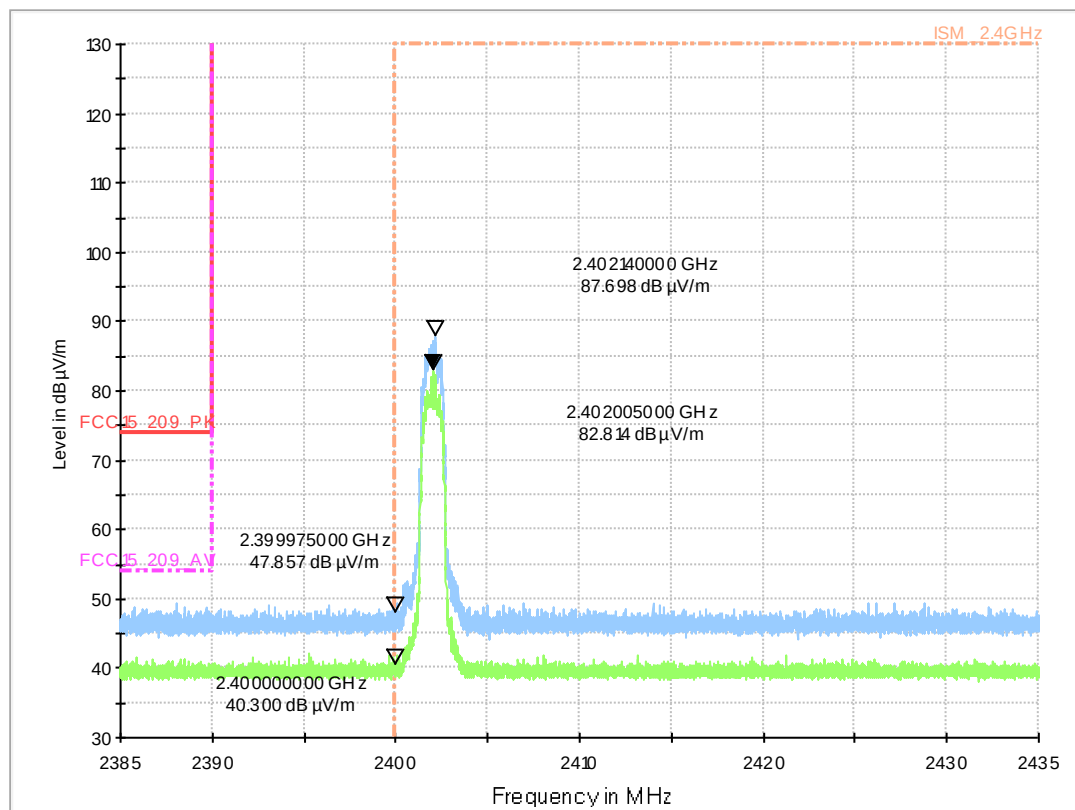
9.02a_BT_EDR_ch00_standing

Common Information

Test Description:	Band edge BT-EDR
Test Site:	CETECOM GmbH Essen
Test Standard:	
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C
Operator Name:	TFR

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--



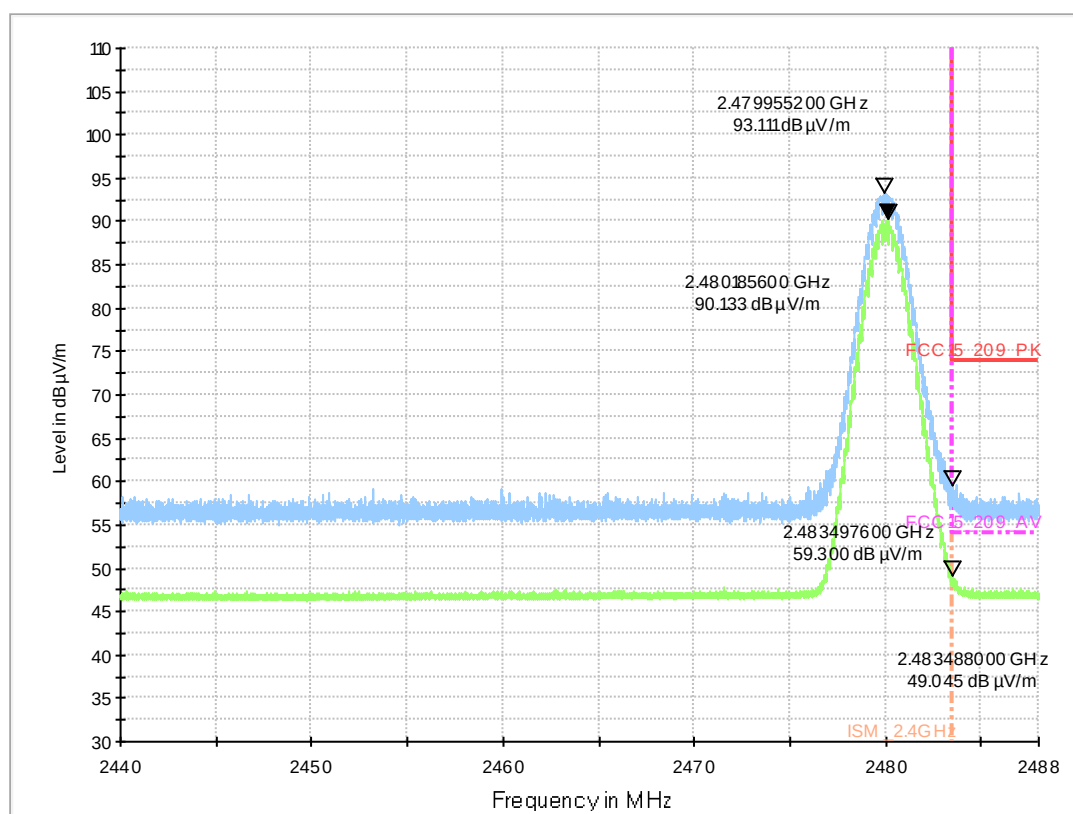
9.02b_BT_EDR_ch78_laying

Common Information

Test Description:	Band edge BT-EDR
Test Site:	CETECOM GmbH Essen
Test Standard:	
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C
Operator Name:	TFr

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--



9.02b_BT_EDR_ch78_standing

Common Information

Test Description:	Band edge BT-EDR
Test Site:	CETECOM GmbH Essen
Test Standard:	
Environment Conditions:	Humidity: 48%rH; Temperature: 18°C

EUT Information

Manufacturer:	Robert Bosch Car Multimedia
Product:	AIVIL12F0
EUT Model:	AIVIL12F0
HW:	001
SW:	X317
Serial Nr.:	0007625
Connected Devices:	--

