

Annex 1: Measurement diagrams to Test Report 19-1-0097801T01a_C1



Deutsche
Akkreditierungsstelle
D-PL-12047-01-01
D-PL-12047-01-03
D-PL-12047-01-04

Number of pages:	18	Date of Report:	2020-Mai-14
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	Robert Bosch GmbH
Test Object / Tested Device(s):	BUI350		
Listing FCC ID:	2AUXS-NYON350	ISED:	25847-NYON350
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter A Subpart C: §15.247 (DTS) , RSS-247, Issue 2 (DTS) RSS-Gen., Issue 5		

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1 Measurement diagrams

1.1 Conducted

mode	Measured Peak Values (dBm)		
	2412 MHz	2437 MHz	2462 MHz
b-mode	18.90	18.80	18.40
g-mode	19.70	20.30	19.70
n-mode-HT20	20.50	21.10	20.60

1.2 Radiated

1.2.1 Radiated magnetic field measurements below 30 MHz

2.01a_laying

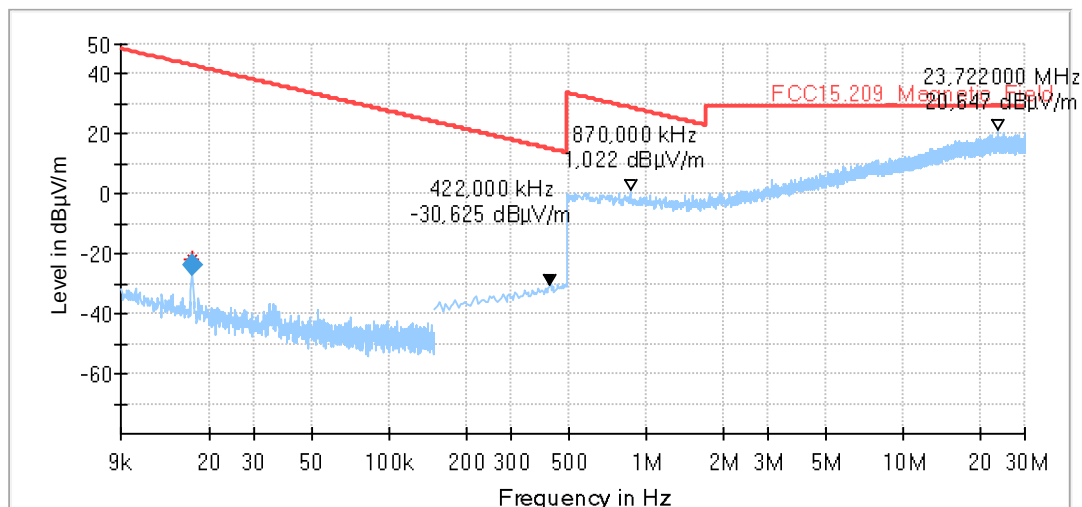
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	npe
Operating Mode:	WLAN TX n-mode MCS0
Power during tests:	12V DC
Environmental Conditions::	Humidity : 48%rH; Temperature: 21°C
EUT Setup:	laying
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margi n	Meas. Time (ms)	Bandwidt h	Pol	Azimat h	Corr. (dB/m)	Comment
0.017000	-23.47	42.99	66.45	1000.0	0.200	V	265.0	-59.4	11:35:31 - 05.05.2020

2.01a_standing

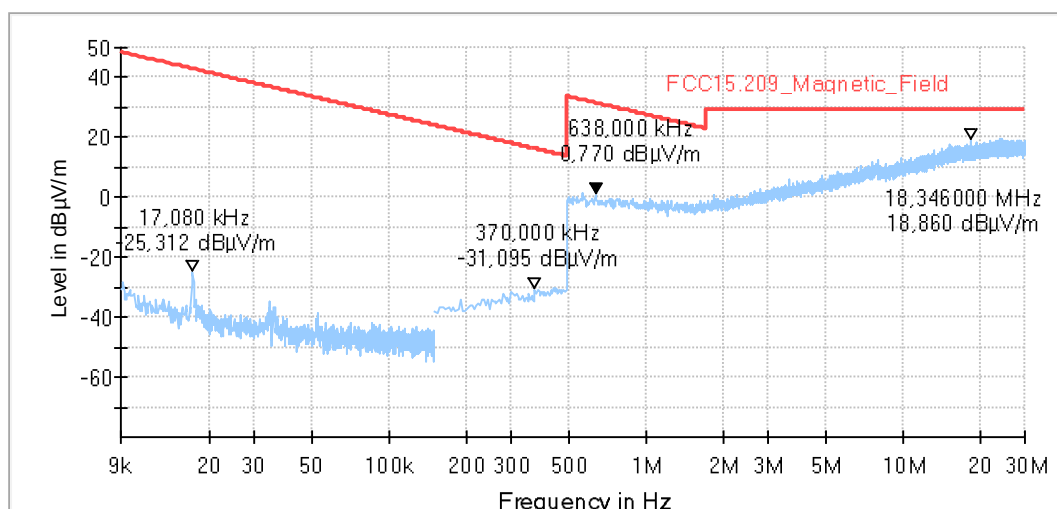
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	npe
Operating Mode:	WLAN TX n-mode MCS0 Ch6
Power during tests:	12V DC,
Environmental Conditions::	Humidity : 48%rH; Temperature: 21°C
EUT Setup:	standing
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



1.2.2 Radiated electric field measurement 30 MHz to 1 GHz

3.01a_n-mode_laying

Common Information

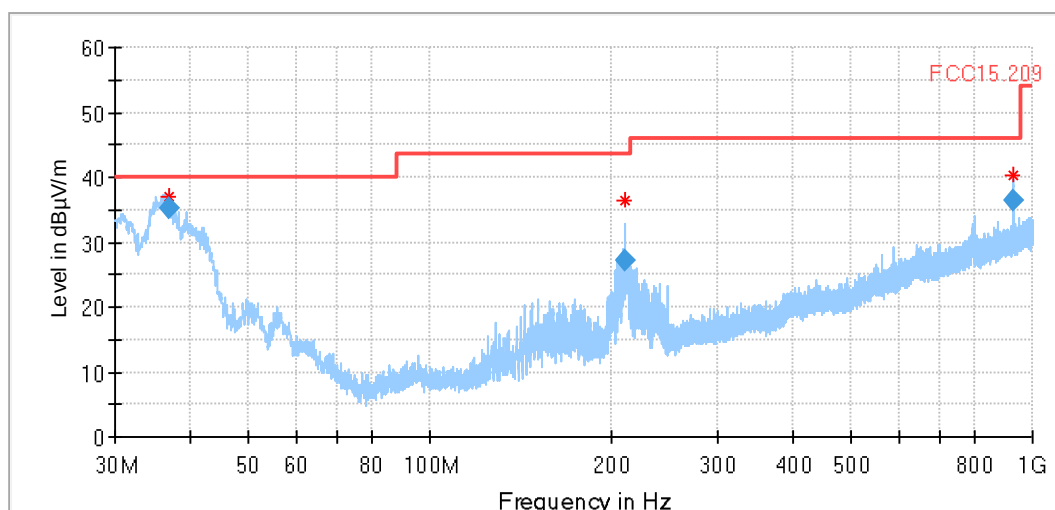
Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Antenna:	receiving antenna is directed to all sides,
Operating Mode:	n-mode MCS0 ch6
Environmental Conditions:	Humidity : 48%rH; Temperature: 21°C
Operator:	Mah
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350

HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth h	Height t	Pol	Azimuth h	Corr. (dB/m)
36.836000	35.29	40.00	4.71	1000.0	120.000	109.0	V	238.0	18.5
210.164000	27.11	43.50	16.39	1000.0	120.000	121.0	H	246.0	11.6
928.386000	36.42	46.00	9.58	1000.0	120.000	180.0	V	338.0	27.0

3.01b_n-mode_standing

Common Information

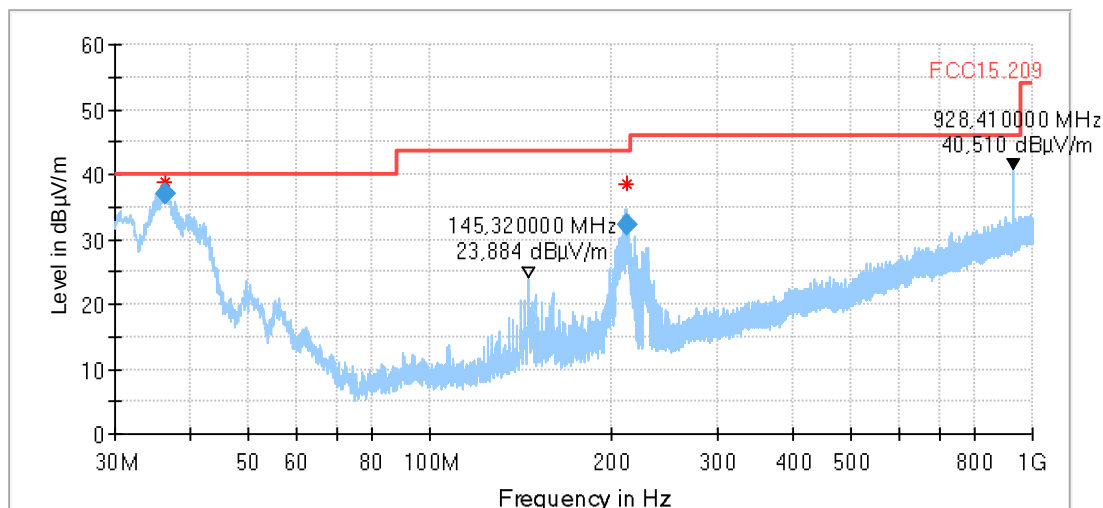
Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Antenna:	receiving antenna is directed to all sides,
Operating Mode:	WLAN TX n-mode MCS0 ch6
Environmental Conditions:	Humidity : 48%rH; Temperature: 21°C
Operator:	Mah
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350

HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margi n	Meas. Time (ms)	Bandwidt h	Heigh t	Pol	Azimut h	Corr. (dB/m)
36.330000	36.90	40.00	3.10	1000.0	120.000	266.0	H	212.0	18.7
212.084000	32.18	43.50	11.32	1000.0	120.000	134.0	H	251.0	11.7

1.2.3 Radiated electric field measurement 1 GHz to 15 GHz

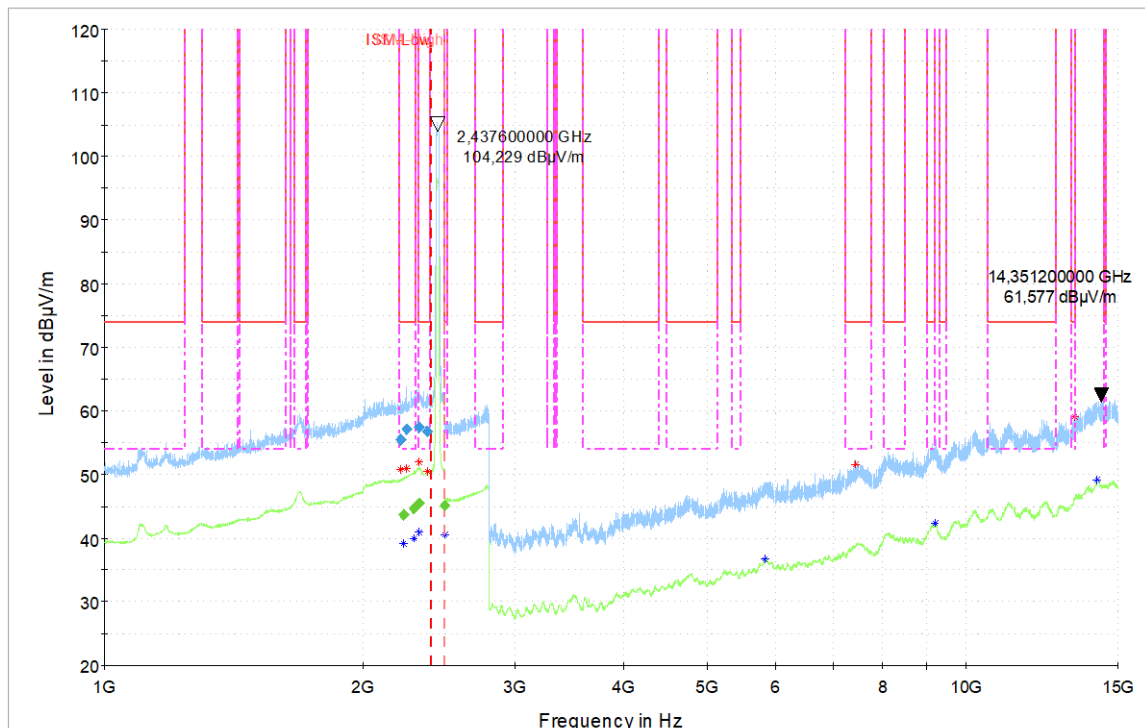
4.03a_n-mode_ch6

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN n-mode MCS0 ch6
Operator:	TFra
EUT Setup:	1
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5



Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
2207.640000	55.56		74.00	18.44	100.0	1000.000	H	205.0	90.0	35
2222.000000	---	43.73	54.00	10.27	100.0	1000.000	V	-14.0	90.0	36
2242.360000	57.15		74.00	16.85	100.0	1000.000	H	300.0	90.0	36
2285.040000	---	44.67	54.00	9.33	100.0	1000.000	V	340.0	0.0	36
2319.160000	57.49		74.00	16.51	100.0	1000.000	H	85.0	0.0	37
2320.800000	---	45.50	54.00	8.50	100.0	1000.000	V	4.0	0.0	37
2371.840000	56.75		74.00	17.25	100.0	1000.000	H	184.0	0.0	36
2483.500000	---	45.14	54.00	8.86	100.0	1000.000	H	14.0	0.0	36

Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin	Height	Pol	Azimuth	Elevation	Corr. (dB/m)
2207.640000	50.74	---	74.00	12.26	155.0	H	205.0	90.0	35
2222.000000	---	39.19	54.00	4.57	155.0	V	-14.0	90.0	36
2242.360000	50.88	---	74.00	10.16	155.0	H	300.0	90.0	36
2285.040000	---	40.00	54.00	3.41	155.0	V	340.0	0.0	36
2319.160000	51.87	---	74.00	10.63	155.0	H	85.0	0.0	37
2320.800000	---	40.97	54.00	2.85	155.0	V	4.0	0.0	37
2371.840000	50.39	---	74.00	11.23	155.0	H	184.0	0.0	36
2483.500000	---	40.58	54.00	3.36	155.0	H	14.0	0.0	36
5837.600000	---	36.73	150.00	113.27	155.0	V	90.0	90.0	---
7454.000000	51.65	---	74.00	22.35	155.0	V	0.0	90.0	---
9202.000000	---	42.44	150.00	107.56	155.0	V	135.0	0.0	---
13370.400000	59.07	---	74.00	14.93	155.0	V	90.0	90.0	---
14212.800000	---	49.11	150.00	100.89	155.0	V	90.0	90.0	---

1.2.4 Radiated electric field measurement 15 GHz to 25 GHz

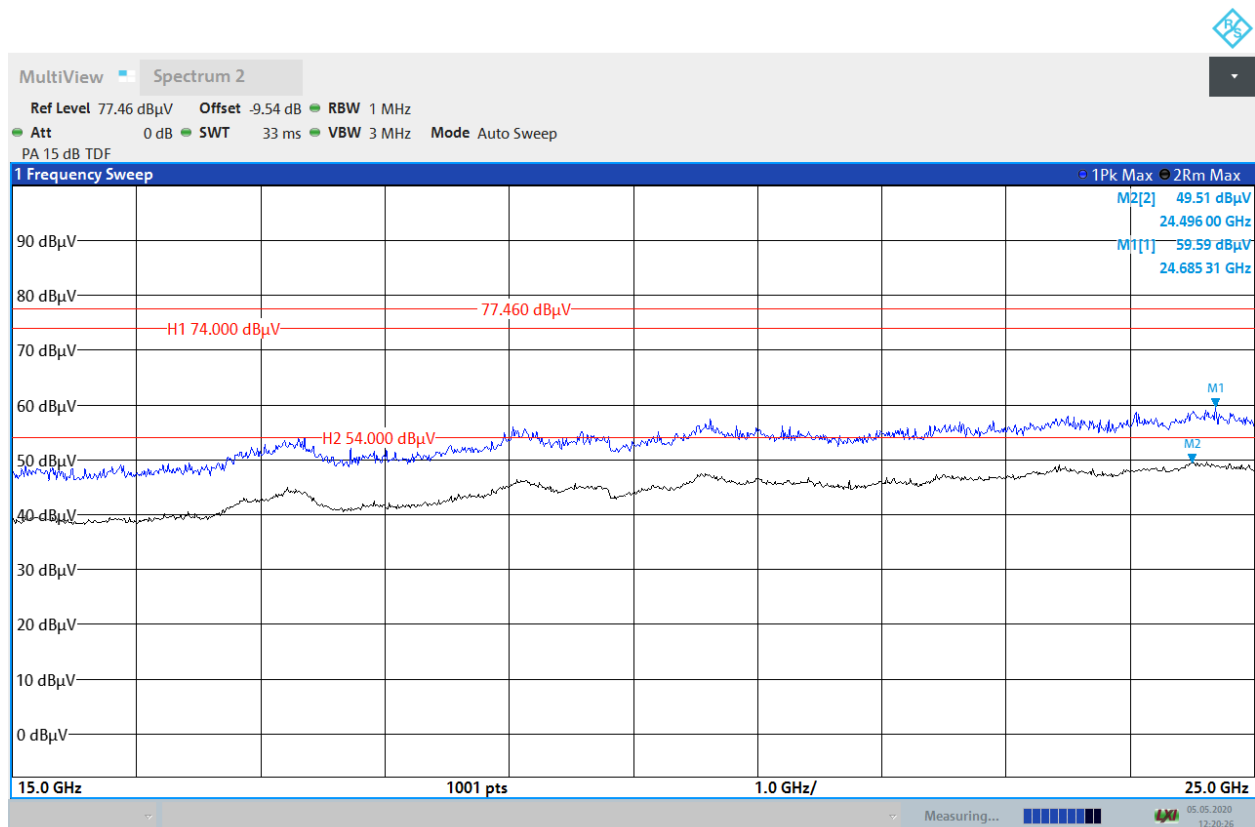
4.03c_n-mode_ch6

Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	Fully Anechoic Chamber (FAC2)
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN n-mode MCS0 ch6
Operator:	Mah
EUT Setup:	1
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5



12:20:27 05.05.2020

1.2.5 Radiated Band Edge Measurement

9.01a_b-mode_ch01

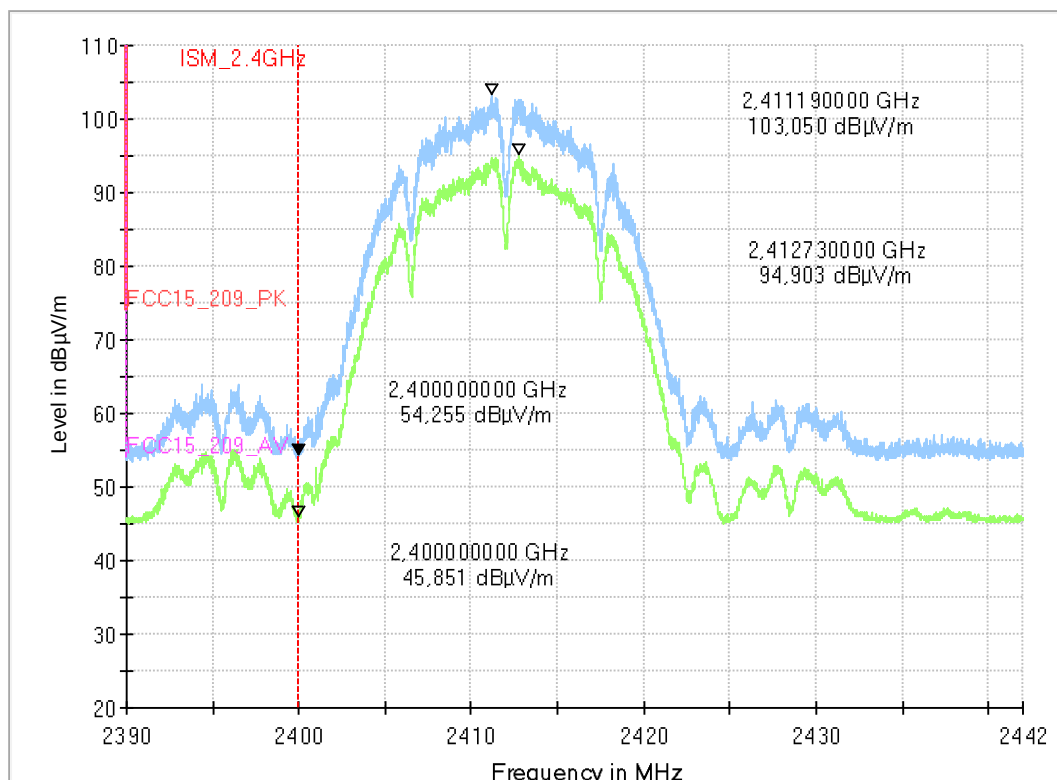
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN b-mode 2Mbit ch01
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



9.01b_b-mode_ch11

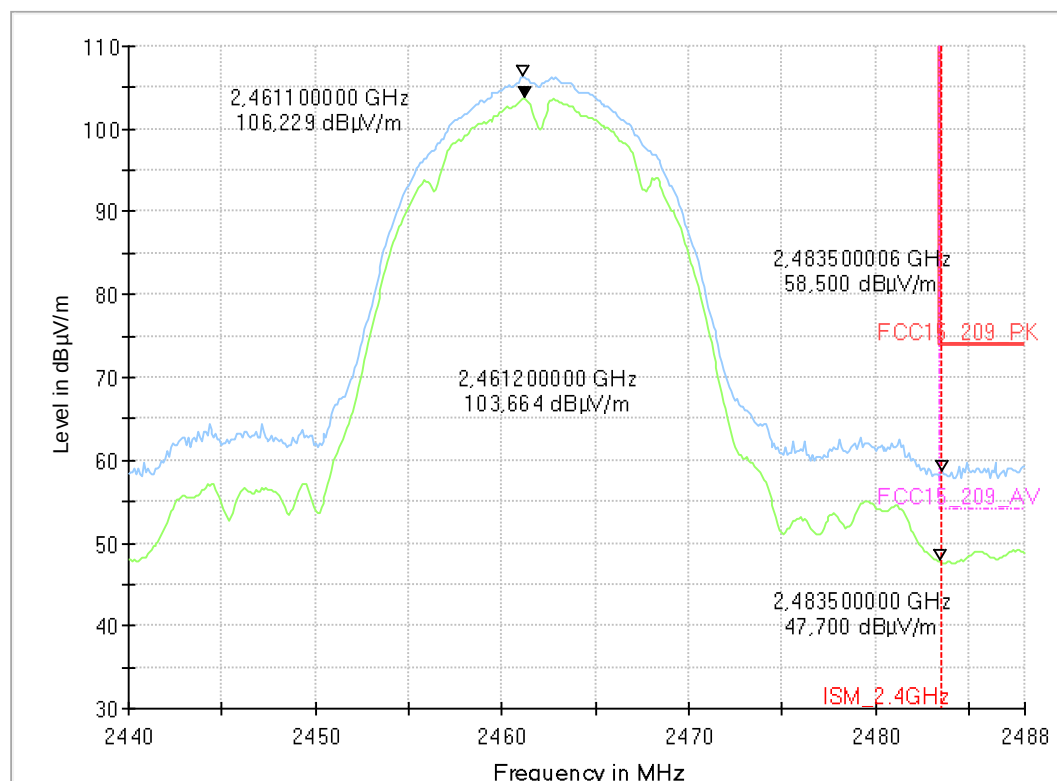
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN b-mode 2Mbit ch11
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



9.02a_g-mode_ch01

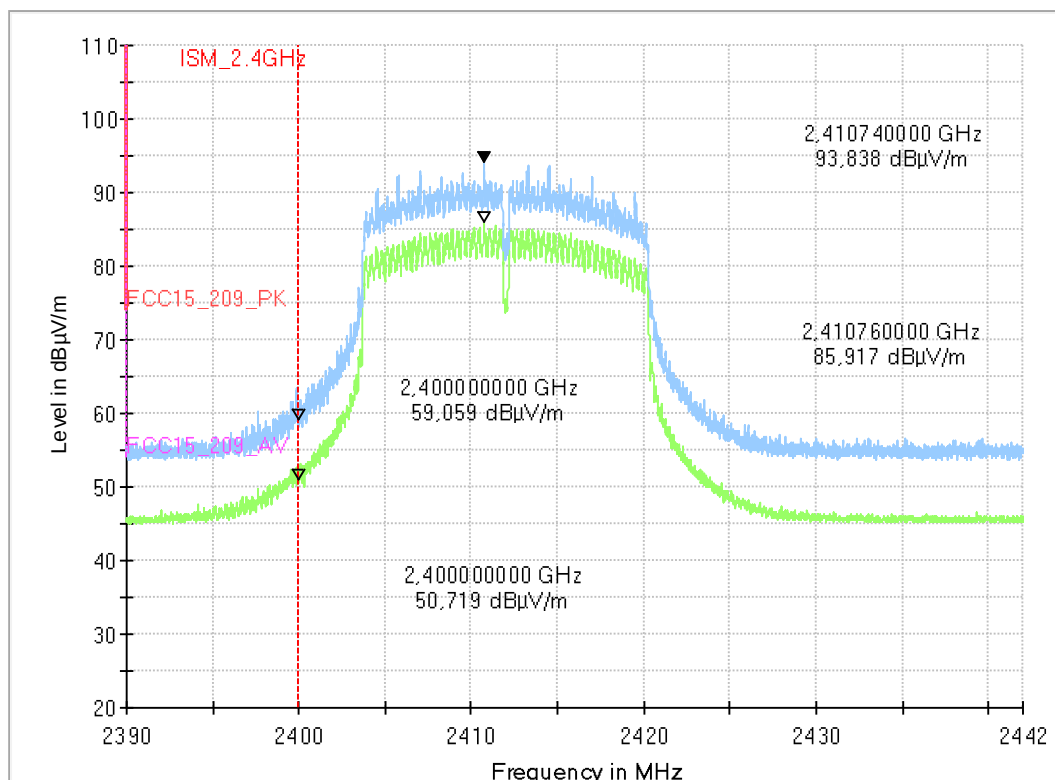
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN g-mode 6Mbit ch01
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



9.02b_g-mode_ch11

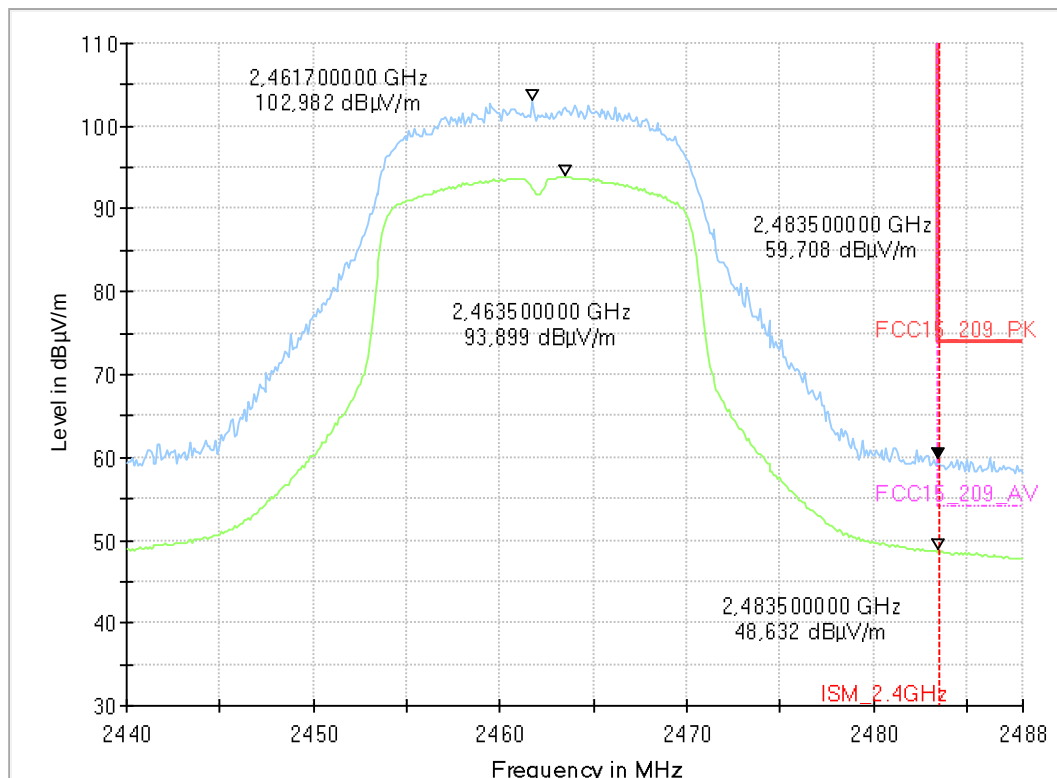
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN g-mode 6MBit ch11
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



9.03a_n-mode_ch01

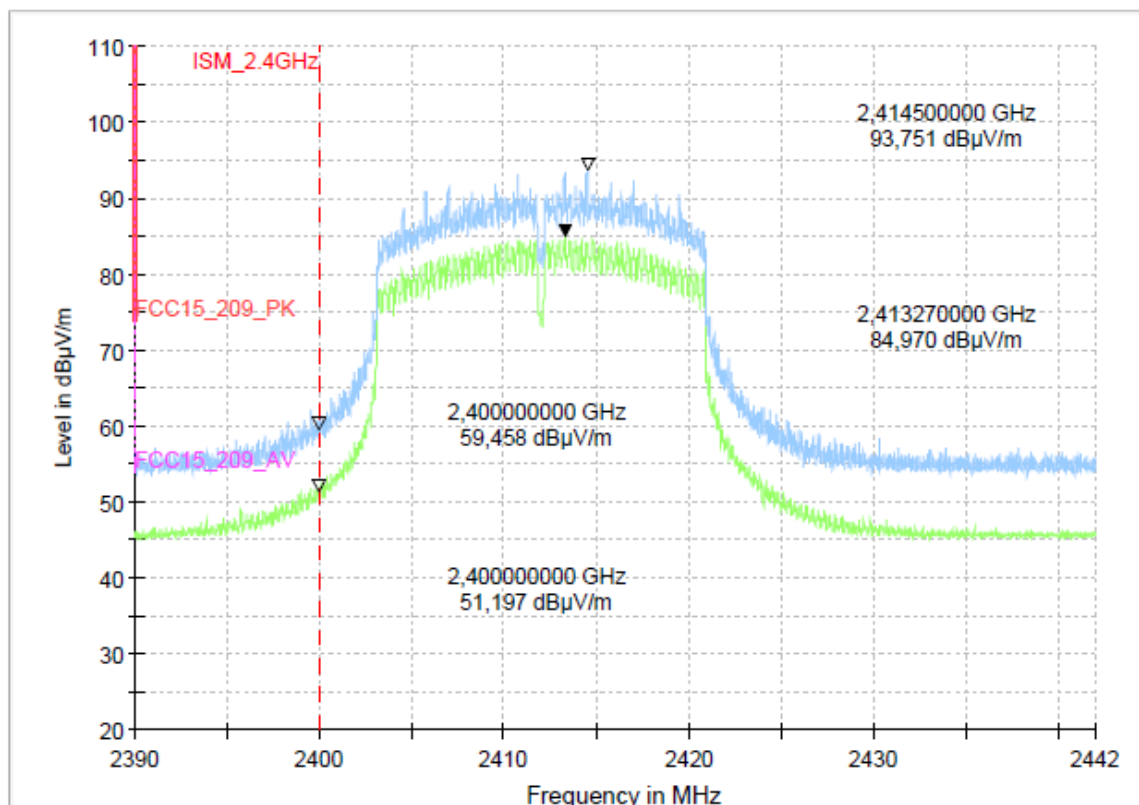
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN n-mode MCS0 ch01
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	PassedComment:

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



9.03b_n-mode_ch11

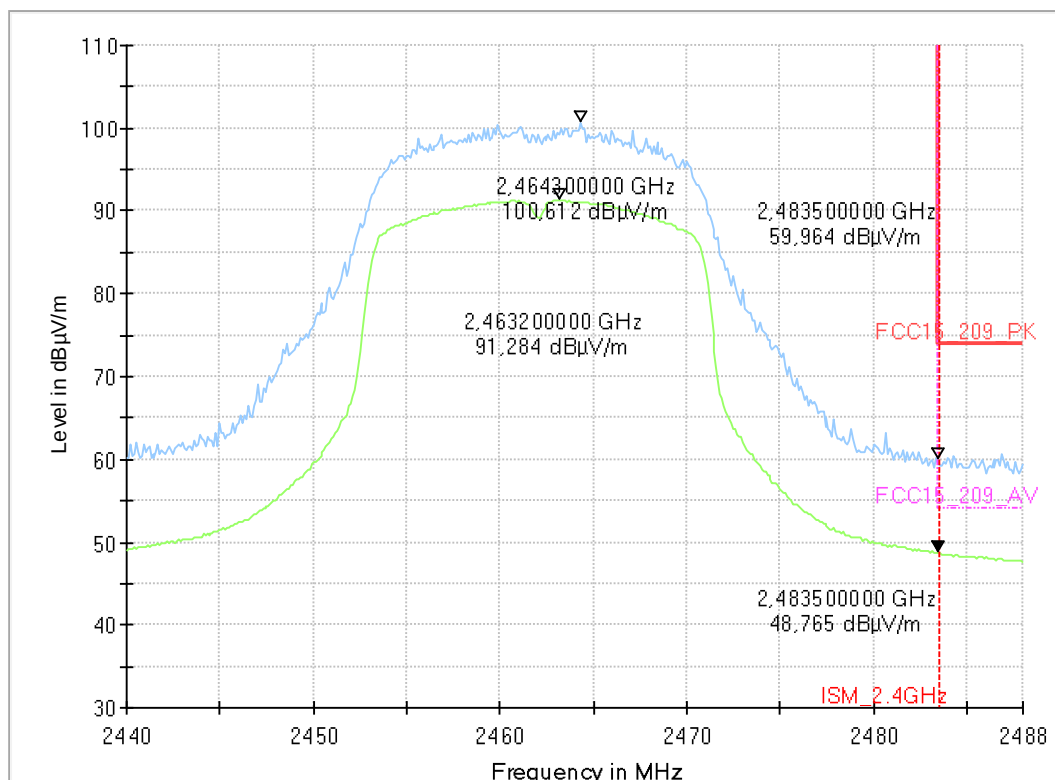
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	WLAN n-mode MCS0 ch11
Operator:	TFra
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
-----	-----
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



1.3 AC-Power Lines Conducted Emissions

1.01_WLAN

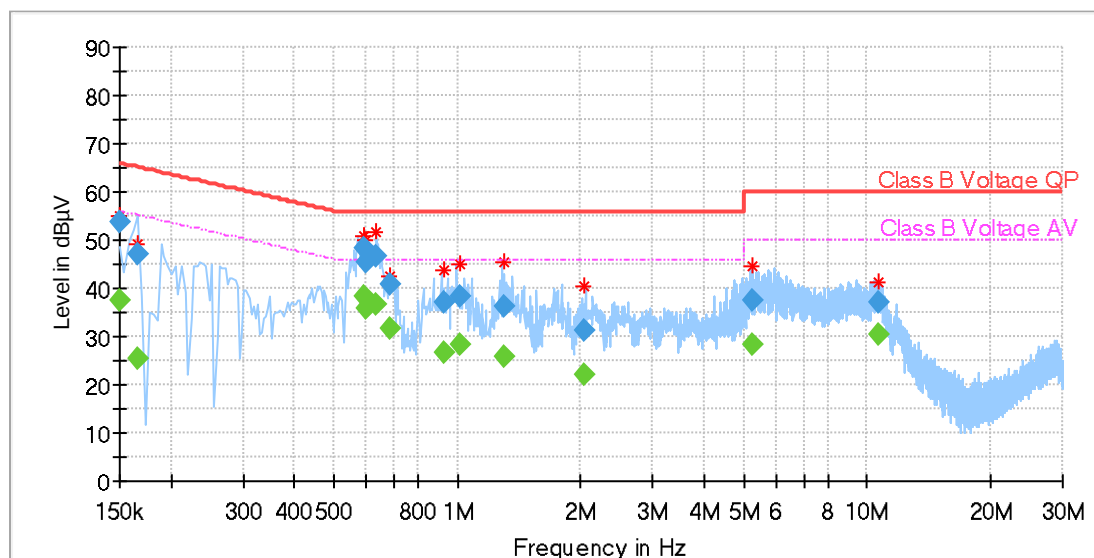
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Standard:	FCC 15.107, FCC 15.207 / RSS-Gen, Issue 5
Operating Mode:	Wlan TX mode
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity : 52%rH; Temperature: 20°C
Operator:	Mah
Verdict:	Passed

EUT Information

PMT number:	19-1-00978S09
Manufacturer:	Robert Bosch GmbH
Product:	E-Bike computer with Navigation
Model:	BUI350
HW version:	0.8.2.0
SW version:	0.197.5.0
Config:	--
Serial number:	5

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.150000	---	37.45	56.00	18.55	1000.0	9.000	N	GND	0.1
0.150000	53.93	---	66.00	12.07	1000.0	9.000	N	GND	0.1
0.166563	47.20	---	65.13	17.93	1000.0	9.000	N	GND	0.1
0.166563	---	25.53	55.13	29.60	1000.0	9.000	N	GND	0.1
0.594375	48.52	---	56.00	7.48	1000.0	9.000	L1	GND	0.2
0.594375	---	38.30	46.00	7.70	1000.0	9.000	L1	GND	0.2
0.598906	45.39	---	56.00	10.61	1000.0	9.000	N	GND	0.1
0.598906	---	35.71	46.00	10.29	1000.0	9.000	N	GND	0.1
0.631875	46.76	---	56.00	9.24	1000.0	9.000	L1	GND	0.2
0.631875	---	36.56	46.00	9.44	1000.0	9.000	L1	GND	0.2
0.684375	41.01	---	56.00	14.99	1000.0	9.000	L1	GND	0.3
0.684375	---	31.68	46.00	14.32	1000.0	9.000	L1	GND	0.3
0.928125	---	26.83	46.00	19.17	1000.0	9.000	L1	GND	0.2
0.928125	37.27	---	56.00	18.73	1000.0	9.000	L1	GND	0.2
1.015156	---	28.37	46.00	17.63	1000.0	9.000	L1	GND	0.3
1.015156	38.54	---	56.00	17.46	1000.0	9.000	L1	GND	0.3
1.305313	---	25.81	46.00	20.19	1000.0	9.000	L1	GND	0.3
1.305313	36.26	---	56.00	19.74	1000.0	9.000	L1	GND	0.3
2.034844	31.39	---	56.00	24.61	1000.0	9.000	L1	GND	0.3
2.034844	---	22.14	46.00	23.86	1000.0	9.000	L1	GND	0.3
5.247344	---	28.15	50.00	21.85	1000.0	9.000	L1	GND	0.4
5.247344	37.55	---	60.00	22.45	1000.0	9.000	L1	GND	0.4
10.654219	---	30.52	50.00	19.48	1000.0	9.000	N	GND	0.4
10.654219	36.91	---	60.00	23.09	1000.0	9.000	N	GND	0.4

End of Annex 1