

Annex1: Measurement Results to
TEST REPORT
No.: 17-1-0277701T09a

According to:
FCC Regulations
Part 15.225

for

Witte Nejdek, spol. s.r.o.

BMW G3x NFC
Outer door handle NFC module
FCC-ID: 2APBZ030816

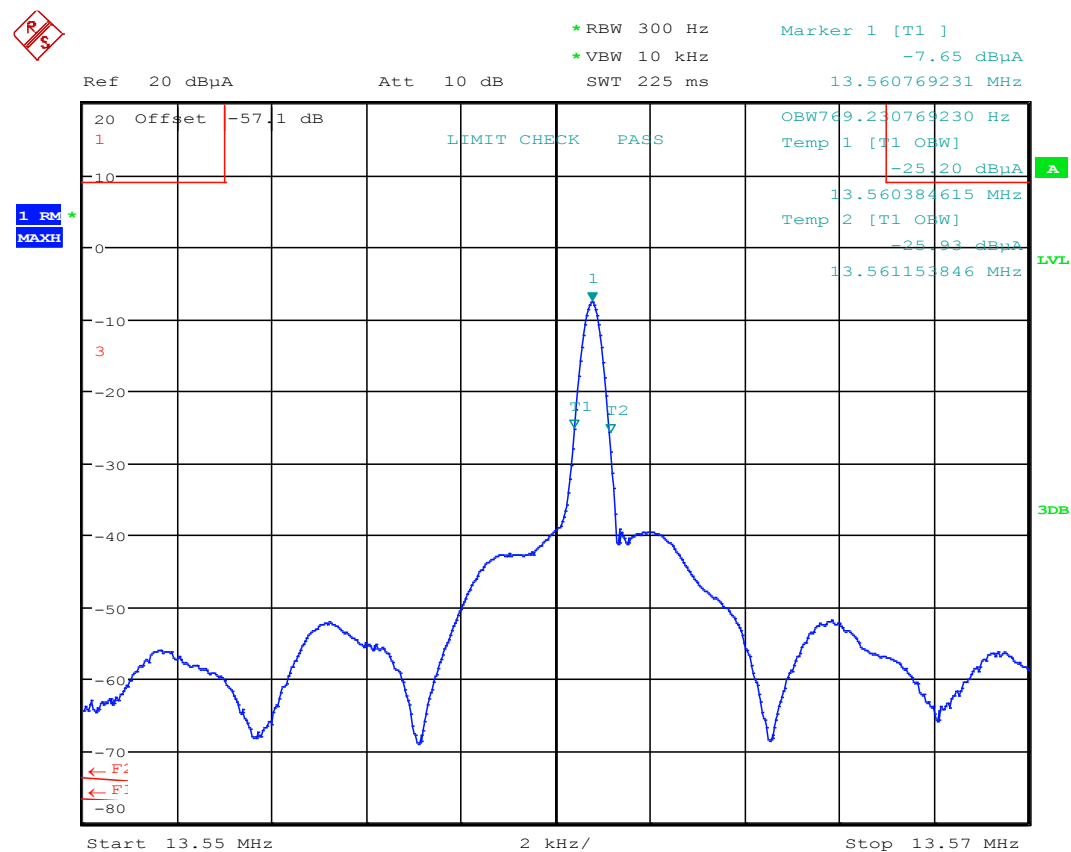
Laboratory Accreditation and Listings		
 Deutsche Akkreditierungsstelle D-PL-12047-01-01 Accredited EMC-Test Laboratory	 Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-20013, C-20009, T-20006, G-20013
 AUTHORIZED RF LABORATORY	 Authorized™ Test Lab Lab Code: 20011130-00	 MRA US-EU 0003
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1. EUT; AE and Test Se1. Measurement diagrams

1.1. Operating frequency range (99% OBW)



Date: 16.JAN.2018 14:09:26

Diagram 1: OBW 99% under Tnom Vnom

1.2. Field strength emissions within band 13.110-14.010 MHz

Diagram 2.01_EUT_standing

Date: 29.12.2017 Page 1 of 2
 Test description: Magnetic Field Strength Measurement related to 30 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 15.225; RSS-210, Issue 9

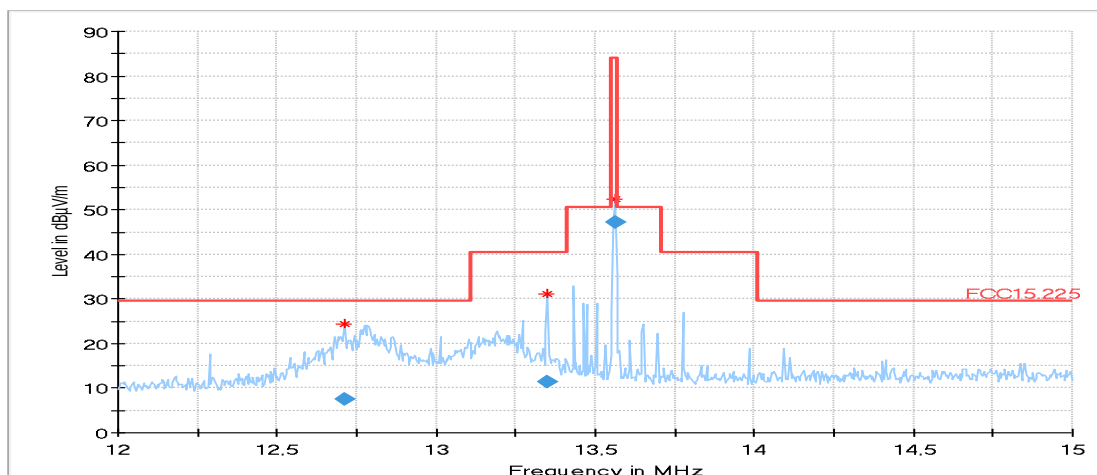
Operator:
 Operating conditions: TX-on - nominal channel, continuous, modulation on
 Power during tests: 12V DC battery
 Comment 1: nominal channel

EUT Information

Manufacturer: Witte
 Model: G3X NFC
 Type: -

EUT: -
 HW version: C4
 SW version: C4
 SVN: -
 Config: -
 Serial number: 1174721532450832
 Connected Interfaces: Battery + LIN
 Power Supply: 12 V Battery
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Measurement Time	Bandwidth (kHz)	Pol	Azimuth (deg)	Correction (dB)
12.712000	7.58	29.54	21.96	1000.0	10.000	H	34.0	0.2
13.348000	11.44	40.50	29.06	1000.0	10.000	H	34.0	0.7
13.560000	47.30	84.00	36.70	1000.0	10.000	H	238.0	0.9

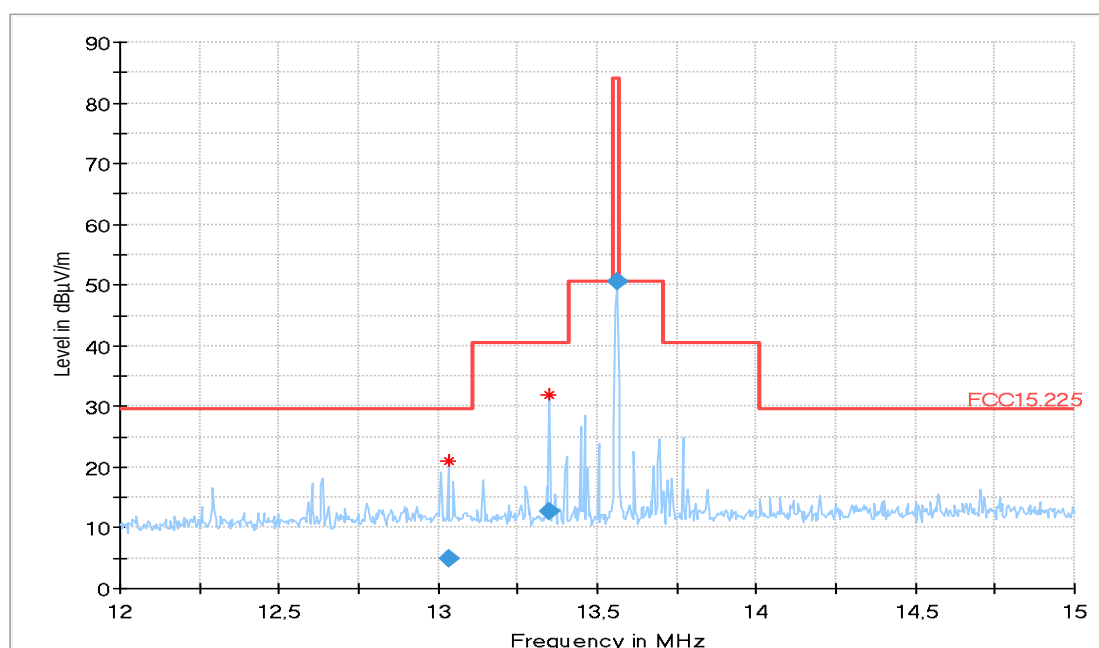
Diagram 2.02_EUT_laying

Date: 29.12.2017 Page 1 of 2
 Test description: Magnetic Field Strength Measurement related to 30 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 15.225; RSS-210, Issue 9
 Operator: HEI

EUT Information

Manufacturer: Witte
 Model: G3X NFC
 Type: -
 EUT: -
 HW version: C4
 SW version: C4
 SVN: -
 Config: -
 Serial number: 1174721532450832
 Connected Interfaces: Battery + LIN
 Power Supply: 12 V Battery
 Comments: -

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Measurement Time	Bandwidth (kHz)	Pol	Azimuth (deg)	Correction (dB)
13.032000	5.04	29.54	24.50	1000.0	10.000	H	81.0	0.5
13.348000	12.67	40.50	27.83	1000.0	10.000	V	169.0	0.7
13.560000	50.54	84.00	33.46	1000.0	10.000	H	58.0	0.9

1.3. Field strength emissions outside the band 13.110-14.010MHz (below 30 MHz) Diagram 2.03_EUT_standing

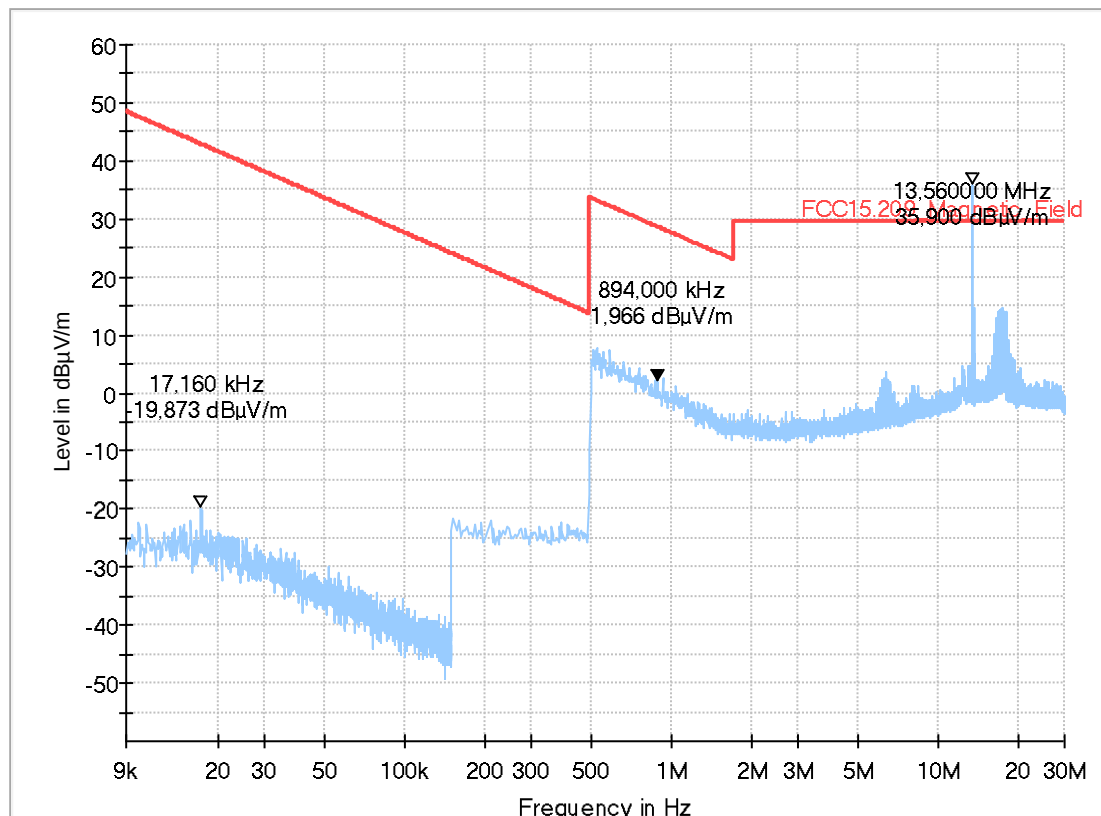
Test description:	Date: 29.12.2017 Page 1 of 1
Test site and distance:	Magnetic Field Strength Measurement related to 30/300 m distance
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Technical Data:	used accord. table, pls. see test report
Rec. antenna (pre-scan):	Please see page 2 for detailed data of measurement setup
Used filter:	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	bypass
Operator:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operating conditions:	HEI
	Humidity: 48%rH; Temperature: 20°C

EUT Information

Manufacturer:	Witte
Model:	G3X NFC
Type:	-

EUT:	-
HW version:	C4
SW version:	C4
SVN:	-
Config:	-
Serial number:	1174721532450832
Connected Interfaces:	Battery + LIN
Power Supply:	12 V Battery
Comments:	-

Full Spectrum



Remark: Carrier over limit – not relevant for compliance

Diagram 2.04_EUT_laying

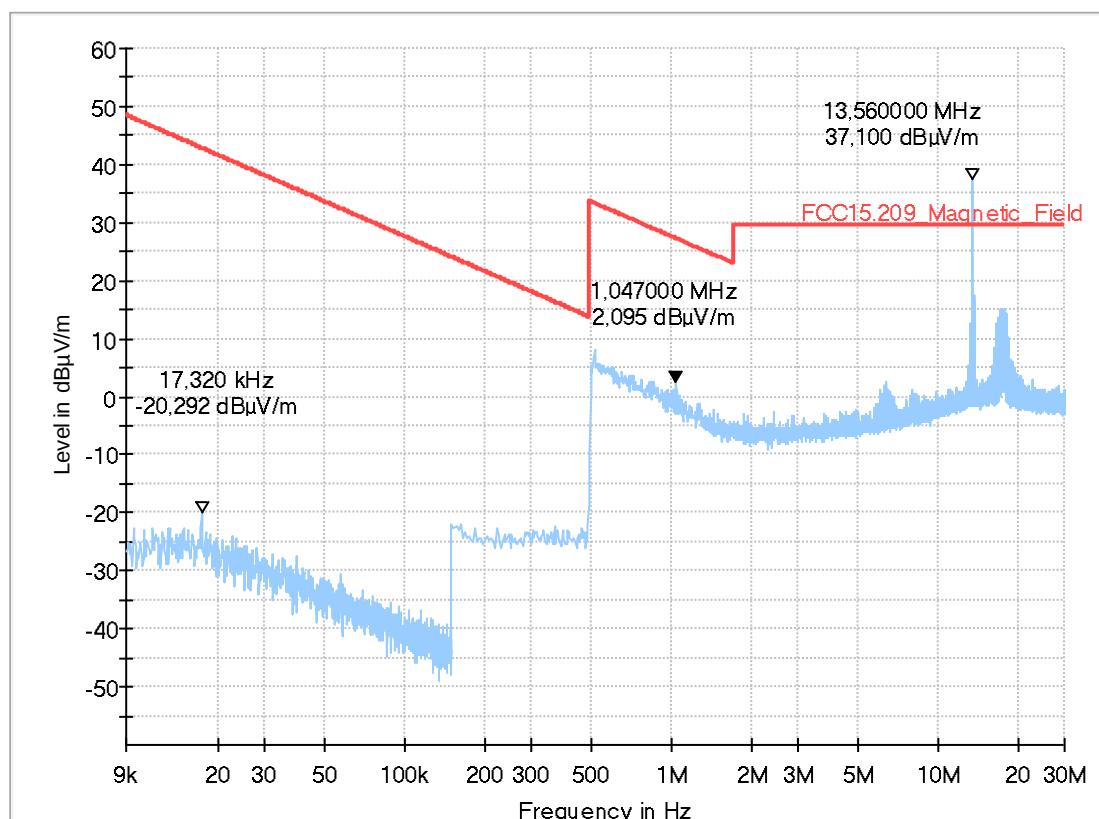
Test description:	Date: 29.12.2017 Page 1 of 1
Test site and distance:	Magnetic Field Strength Measurement related to 30/300 m distance
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Technical Data:	used accord. table, pls. see test report
Rec. antenna (pre-scan):	Please see page 2 for detailed data of measurement setup
Used filter:	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	bypass
Operator:	FCC 15.205 § 15.209; RSS-Gen, Issue 4
Operating conditions:	HEI
	Humidity: 48%rH; Temperature: 20°C

EUT Information

Manufacturer:	Witte
Model:	G3X NFC
Type:	-

EUT:	-
HW version:	C4
SW version:	C4
SVN:	-
Config:	-
Serial number:	1174721532450832
Connected Interfaces:	Battery + LIN
Power Supply:	12 V Battery
Comments:	-

Full Spectrum



Remark: Carrier over limit – not relevant for compliance

1.4. Field strength emissions outside the band 13.110-14.010MHz (above 30 MHz)

Diagram 3.01_EUT_standing

Test description: 22.12.2017 Page 1 of 2
 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 4

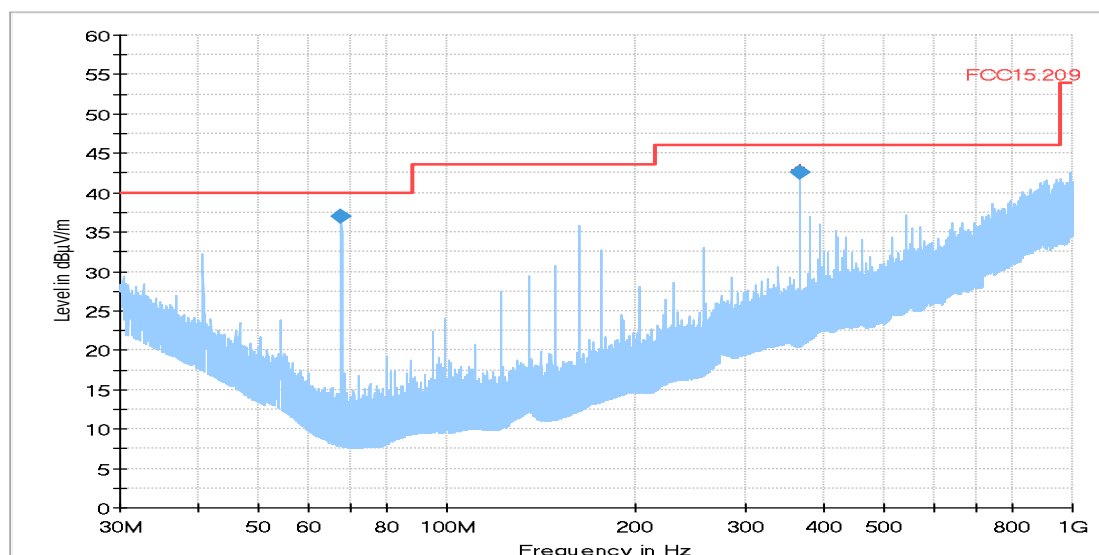
Operator: AFr
 Operating mode: Continuous NFC Communication
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Power during tests: 12 V DC Battery
 EUT Position: Standing

EUT Information

Manufacturer: Witte
 Model: G3X NFC
 Type: -

 EUT: -
 HW version: C4
 SW version: C4
 SVN: -
 Config: -
 Serial number: 1174721532450832
 Connected Interfaces: Battery + LIN
 Power Supply: 12 V Battery
 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)
67.804000	36.98	40.00	3.02	1000.0	120.000	130.0	V	121.0	6.8
366.140000	42.62	46.00	3.38	1000.0	120.000	105.0	H	89.0	16.4

Diagram 3.02_EUT_laying

22.12.2017 Page 1 of 2
 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 4

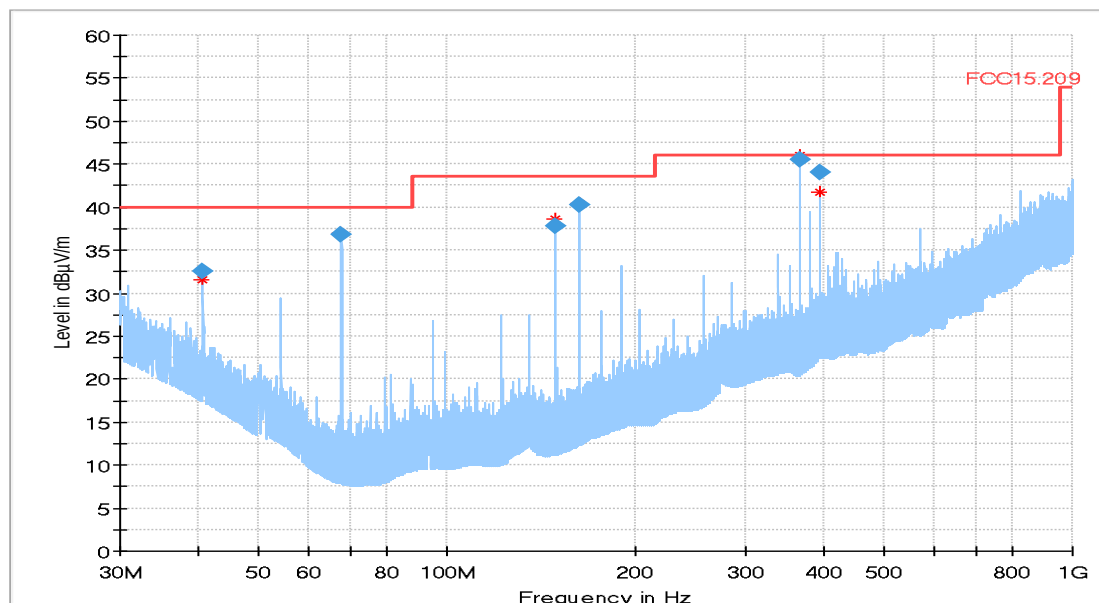
Operator: AFr
 Operating mode: Continuous NFC Communication
 Operating conditions: Humidity: 48%rH; Temperature: 20°C
 Power during tests: 12 V DC Battery
 EUT Position: Laying, andere Achse gekippt

EUT Information

Manufacturer: Witte
 Model: G3X NFC
 Type: -

EUT: -
 HW version: C4
 SW version: C4
 SVN: -
 Config: -
 Serial number: 1174721532450832
 Connected Interfaces: Battery + LIN
 Power Supply: 12 V Battery
 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)
40.684000	32.49	40.00	7.51	1000.0	120.000	192.0	H	288.0	16.8
67.804000	36.84	40.00	3.16	1000.0	120.000	118.0	V	164.0	6.8
149.168000	37.85	43.50	5.65	1000.0	120.000	105.0	V	105.0	8.6
162.728000	40.24	43.50	3.26	1000.0	120.000	105.0	V	97.0	9.5
366.140000	45.59	46.00	0.41	1000.0	120.000	105.0	H	79.0	16.4
393.264000	43.99	46.00	2.01	1000.0	120.000	209.0	V	108.0	18.4