Annex 1: Measurement diagrams to Test Report 19-1-0150502T11a

Number of pages:	23	**Date of Report:**	2020-Jul-21
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:**	MYNXG Product GmbH
Test Object / Tested Device(s):	**Sensor Device, SENSE MCE IBC**		
FCC ID: **Contains FCC ID:**	2ASE6SENSEMCEIBC ZMONL668AM00 2AC7Z-ESPWROOM32D	**IC:** **Contains IC:**	26095-SENSEMCEIBC 21374-NL668AM00 21098-ESPWROOM32D
Testing has been carried out in accordance with:	**Title 47 CFR, Chapter I** **FCC Regulations, Subchapter A** **Subpart C: §15.247 (DTS)** **RSS-247, Issue2 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices** Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		

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1 Measurement diagrams

1.1 Conducted peak output power

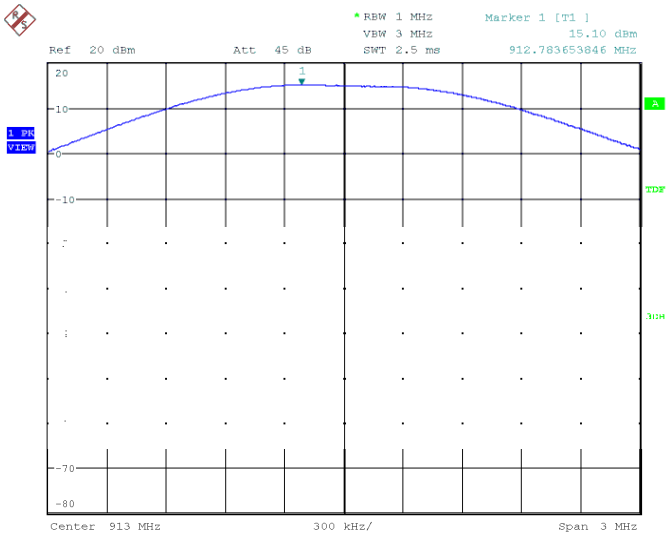

Diagram 1: maximum conducted peak power of channel 1

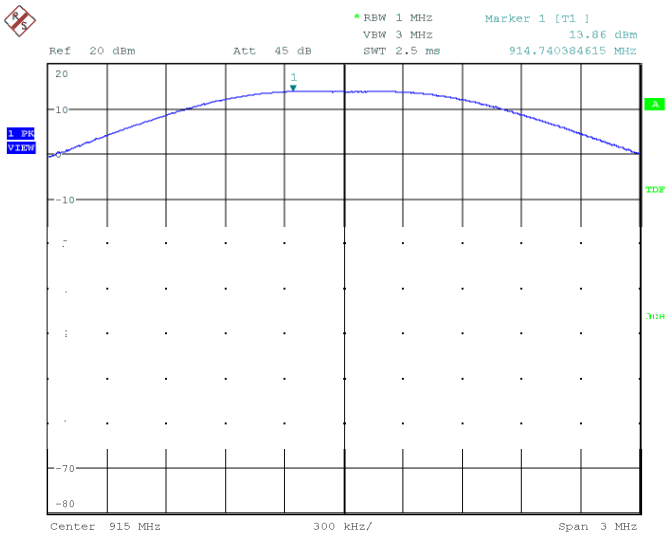

Diagram 2: maximum conducted peak power of channel 3

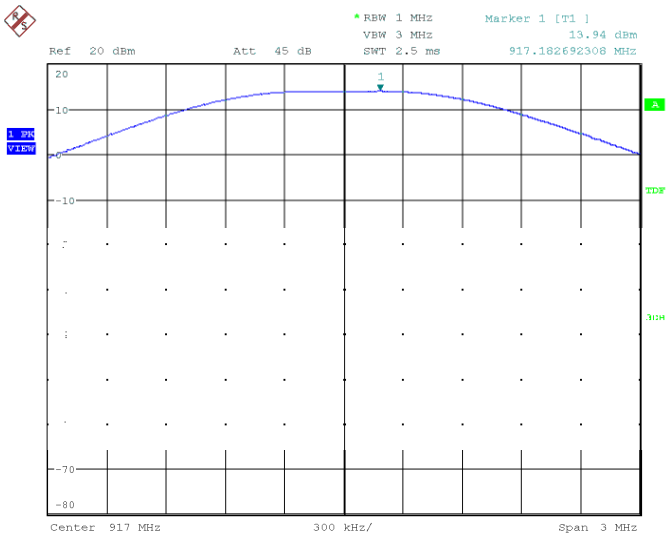

Diagram 3: maximum conducted peak power of channel 5

1.2 6 dB Bandwidth

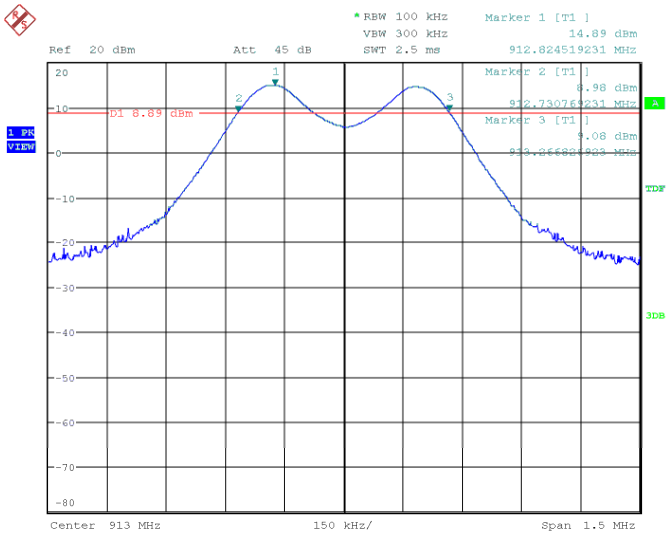

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Diagram 4: 6 dB bandwidth of channel 1

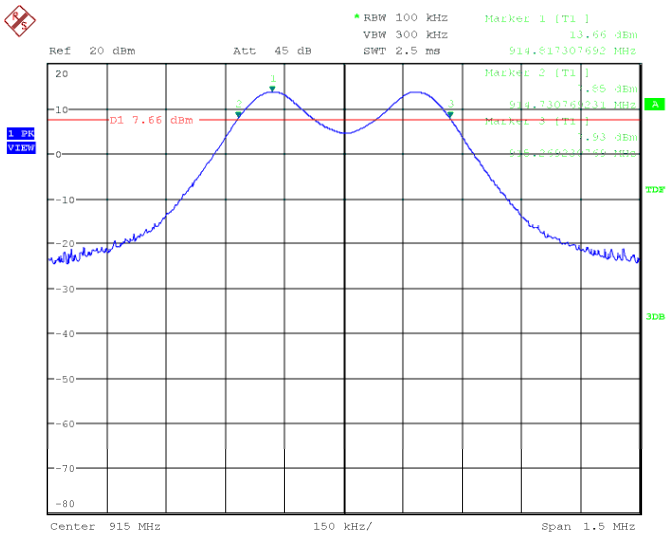

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Diagram 5: 6 dB bandwidth of channel 3

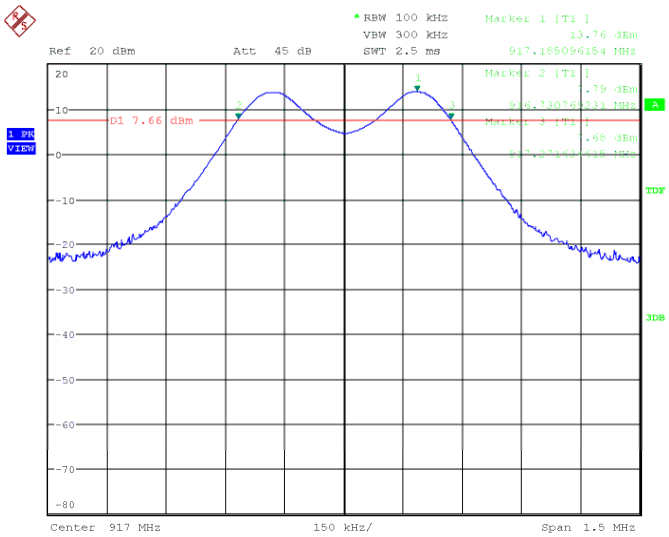

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Diagram 6: 6 dB bandwidth of channel 5

1.3 99% Occupied Bandwidth

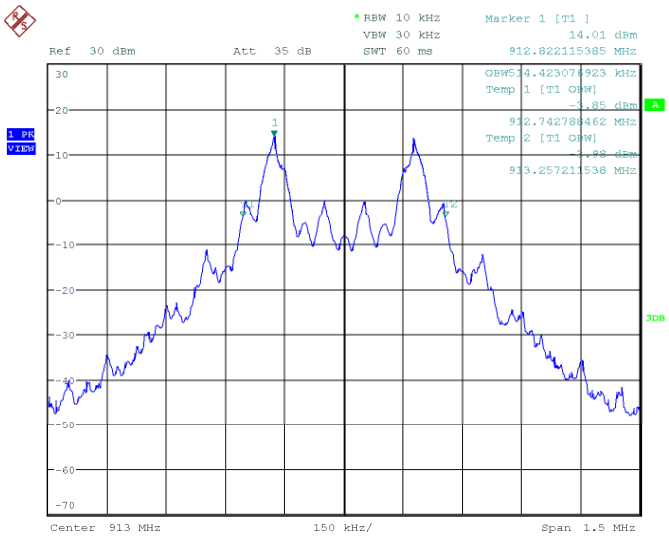

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Diagram 7: 99% occupied bandwidth of channel 1

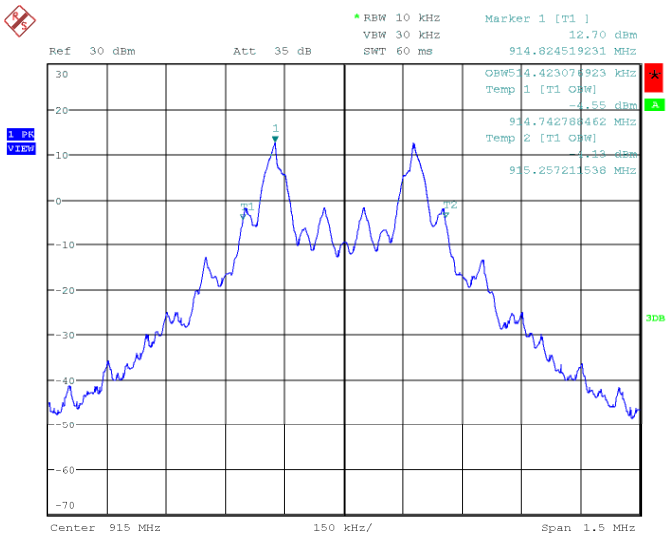

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Diagram 8: 99% occupied bandwidth of channel 3

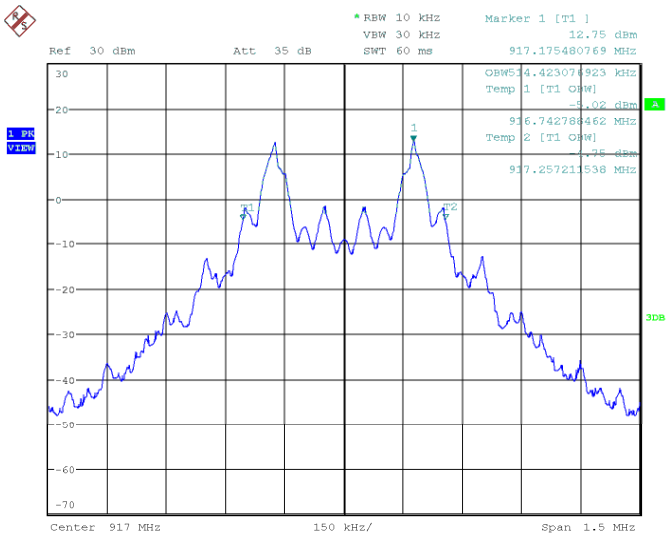

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Diagram 9: 99% occupied bandwidth of channel 5

1.4 Power spectrum density

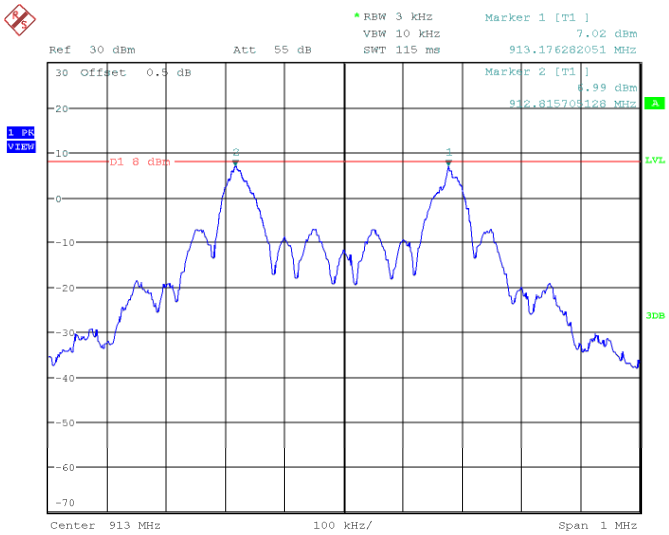

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Diagram 10: PSD of channel 1

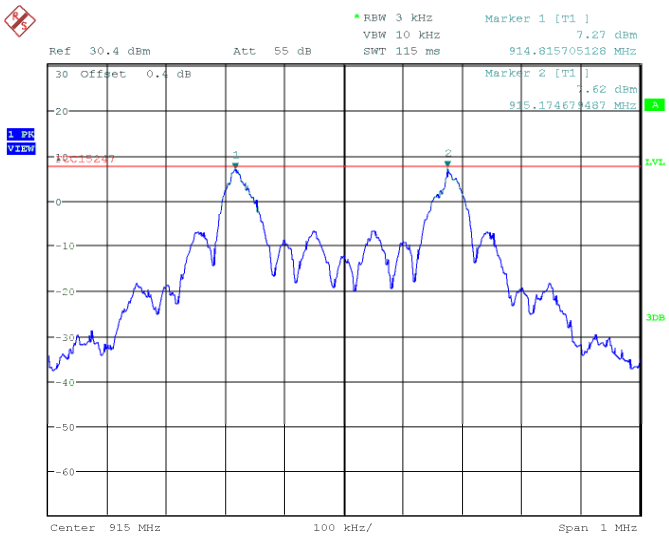

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Diagram 11: PSD of channel 3

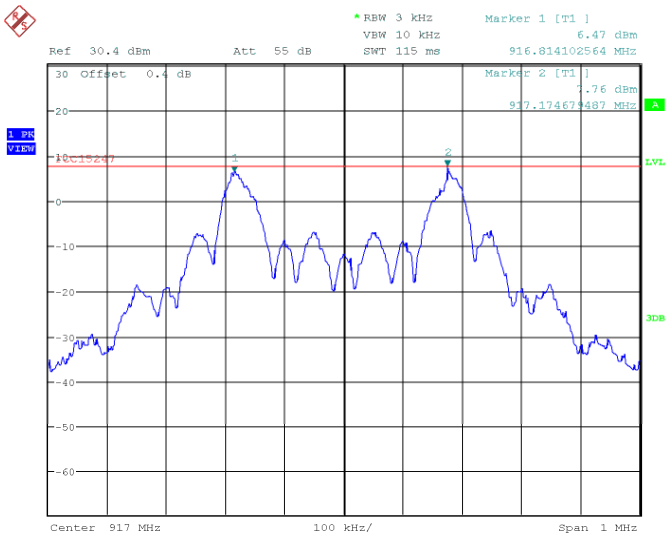

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Diagram 12: PSD of channel 5

1.5 Conducted spurious emissions

1.5.1 Channel 1

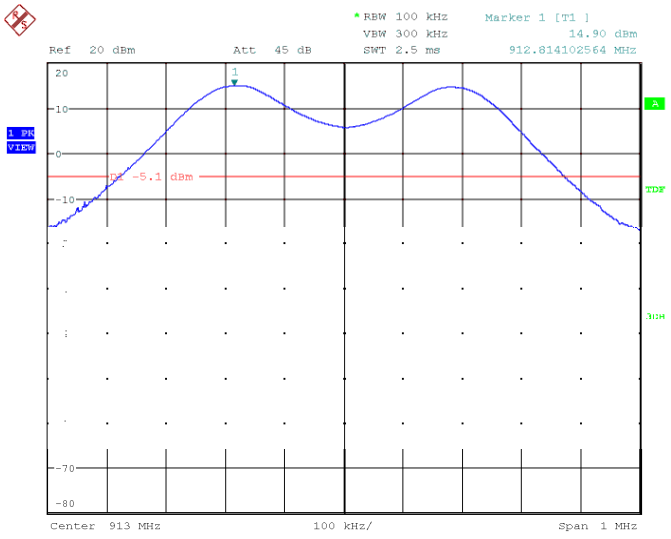

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Diagram 13: conducted spurious emissions of channel 1 (carrier)

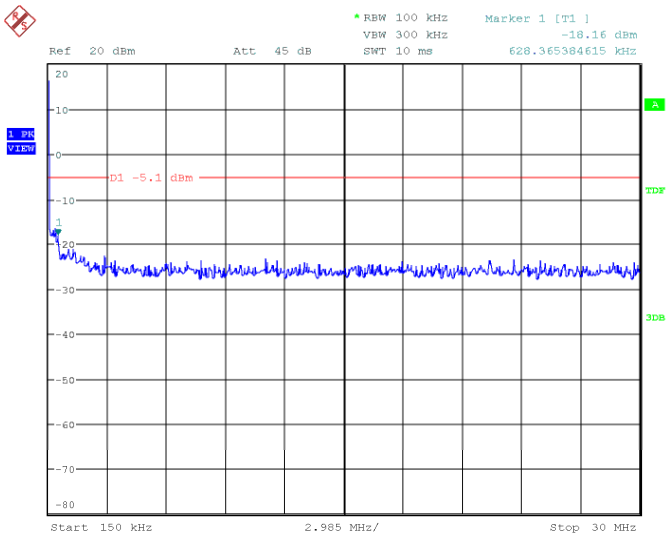

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Diagram 14: conducted spurious emissions of channel 1 (150 kHz – 30 MHz)

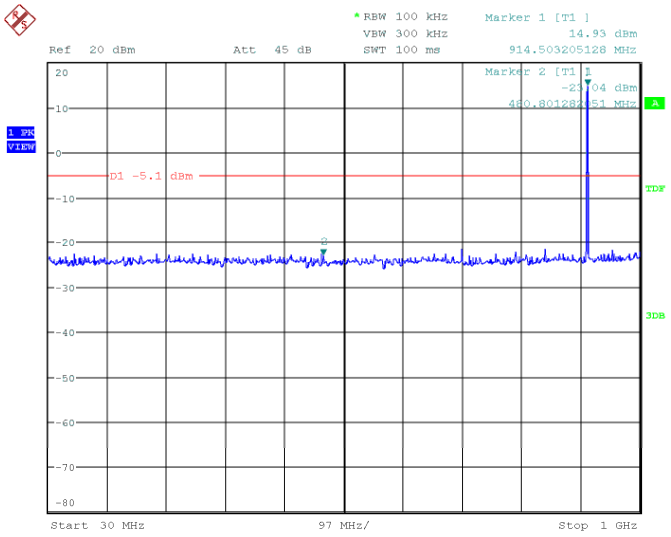

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Diagram 15: conducted spurious emissions of channel 1 (30 MHz – 1 GHz)

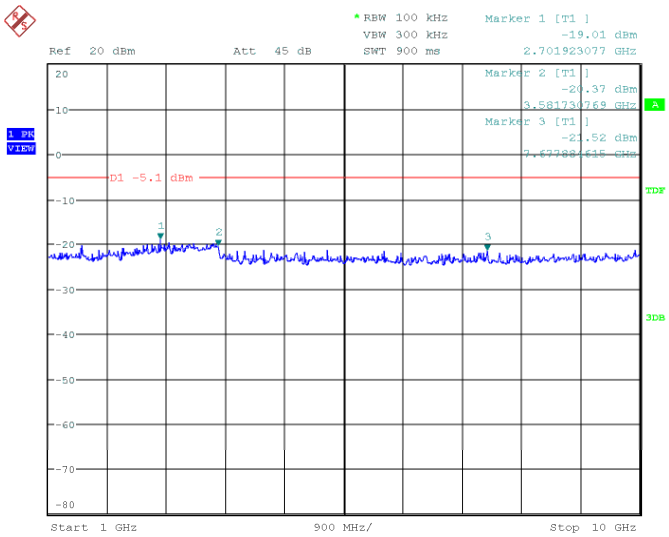

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Diagram 16: conducted spurious emissions of channel 1 (1 GHz – 10 GHz)

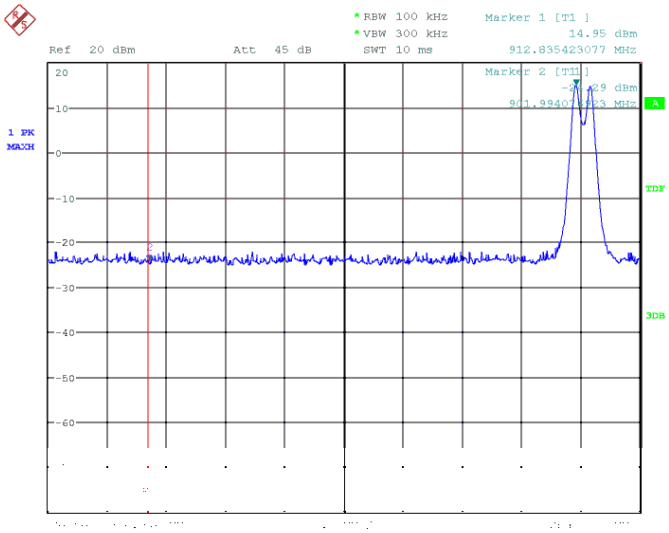

Diagram 17: conducted spurious emissions of channel 1 (Band edge)

1.5.2 Channel 3

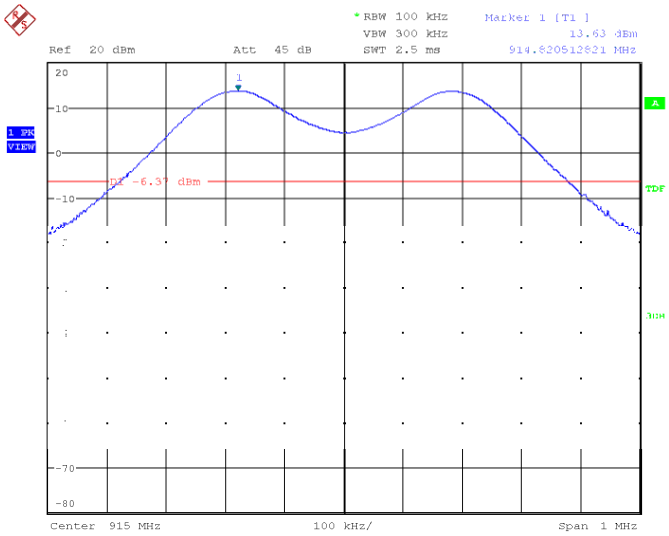

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Diagram 18: conducted spurious emissions of channel 3 (carrier)

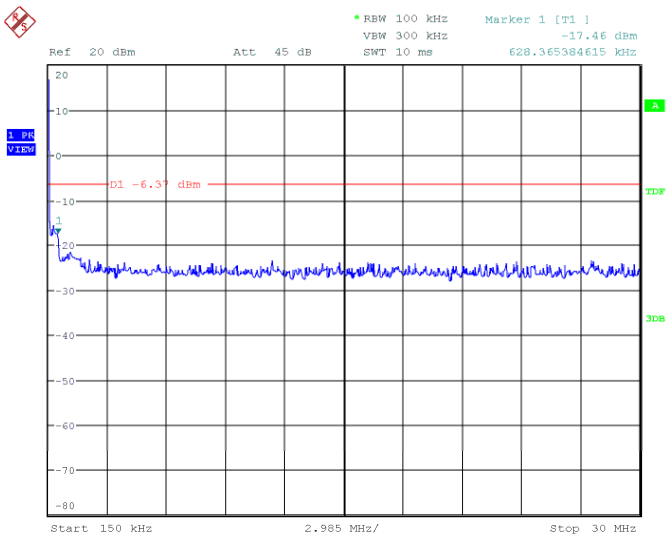

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Diagram 19: conducted spurious emissions of channel 3 (150 kHz – 30 MHz)

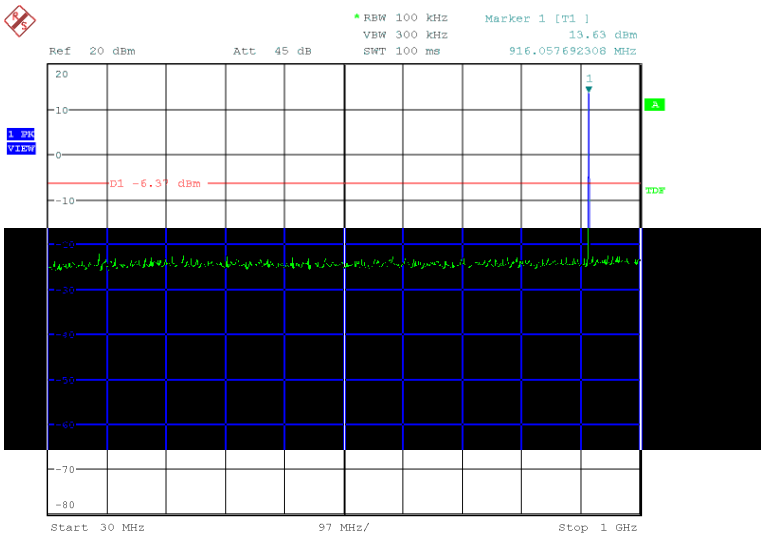

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Diagram 20: conducted spurious emissions of channel 3 (30 MHz – 1 GHz)

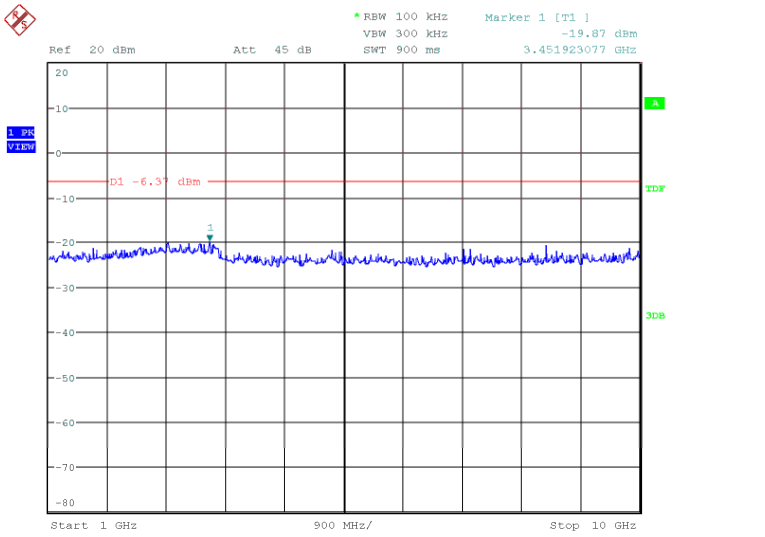

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Diagram 21: conducted spurious emissions of channel 3 (1 GHz – 10 GHz)

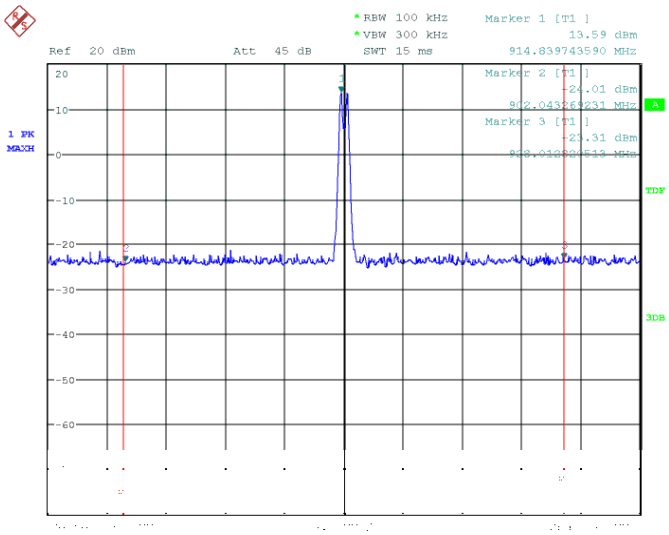

Diagram 22: conducted spurious emissions of channel 3 (Band edge)

1.5.3 Channel 5

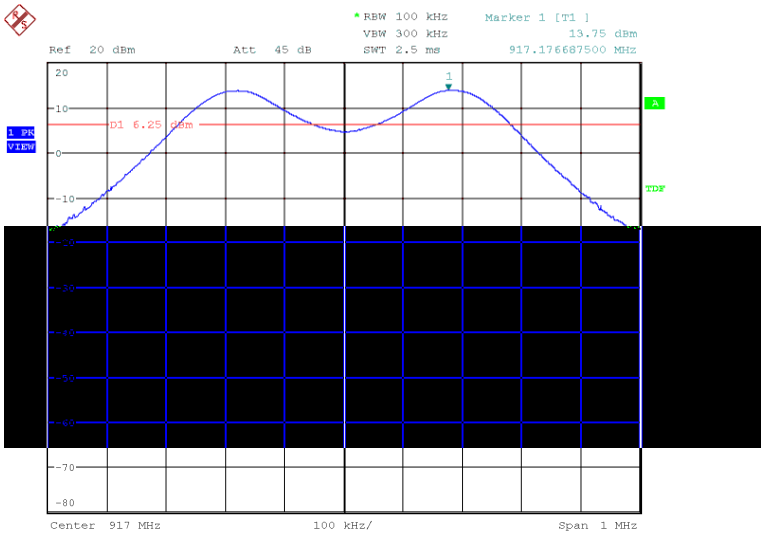

Diagram 23: conducted spurious emissions of channel 5 (carrier)

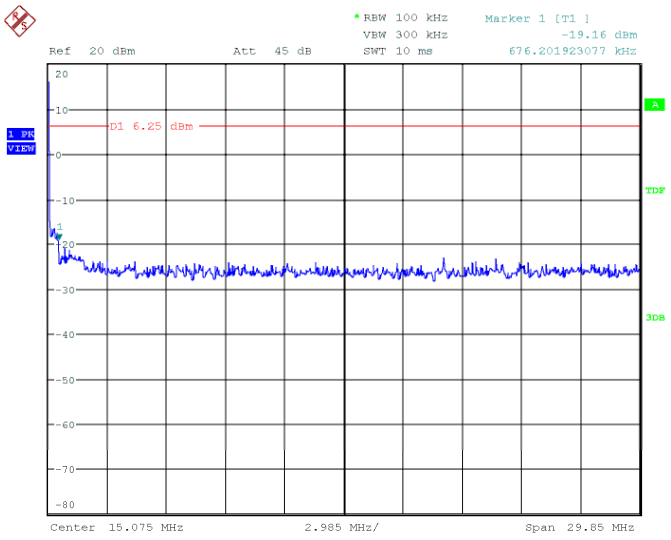

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Diagram 24: conducted spurious emissions of channel 5 (150 kHz – 30 MHz)

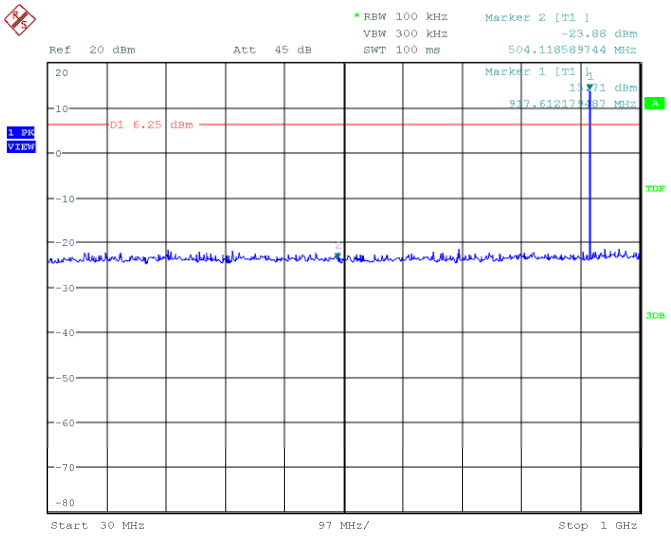

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Diagram 25: conducted spurious emissions of channel 5 (30 MHz – 1 GHz)

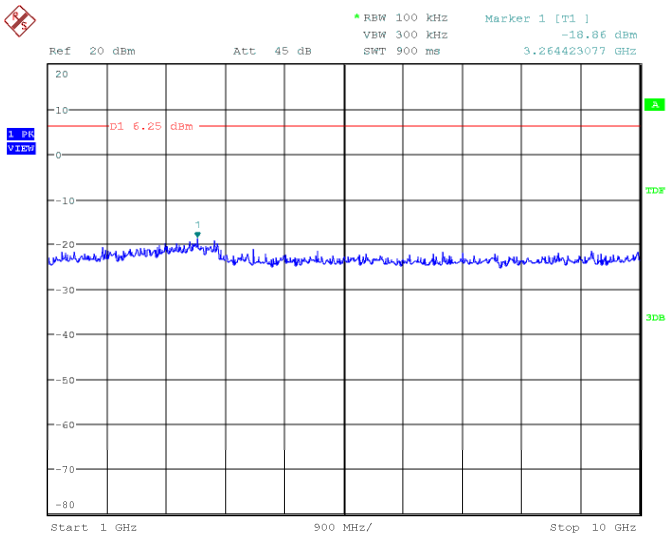

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Diagram 26: conducted spurious emissions of channel 5 (1 GHz – 10 GHz)

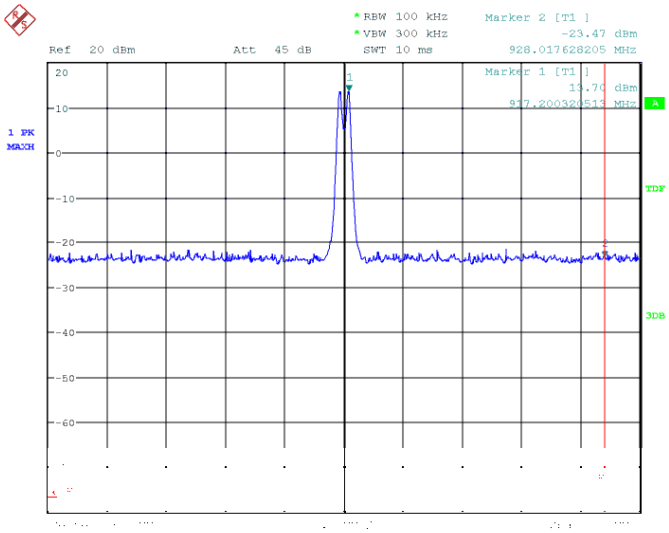


Diagram 27: conducted spurious emissions of channel 5 (Band edge)

1.6 Radiated field strength emissions 30 MHz – 1 GHz

Diagram 3.00_Carrier_F1_worstcase

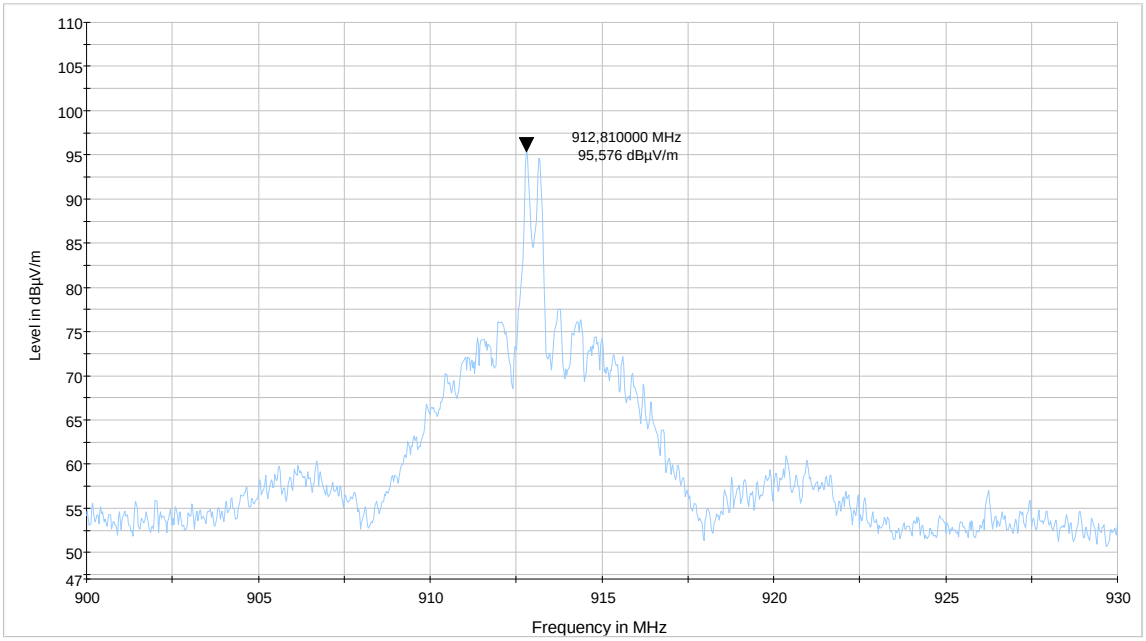
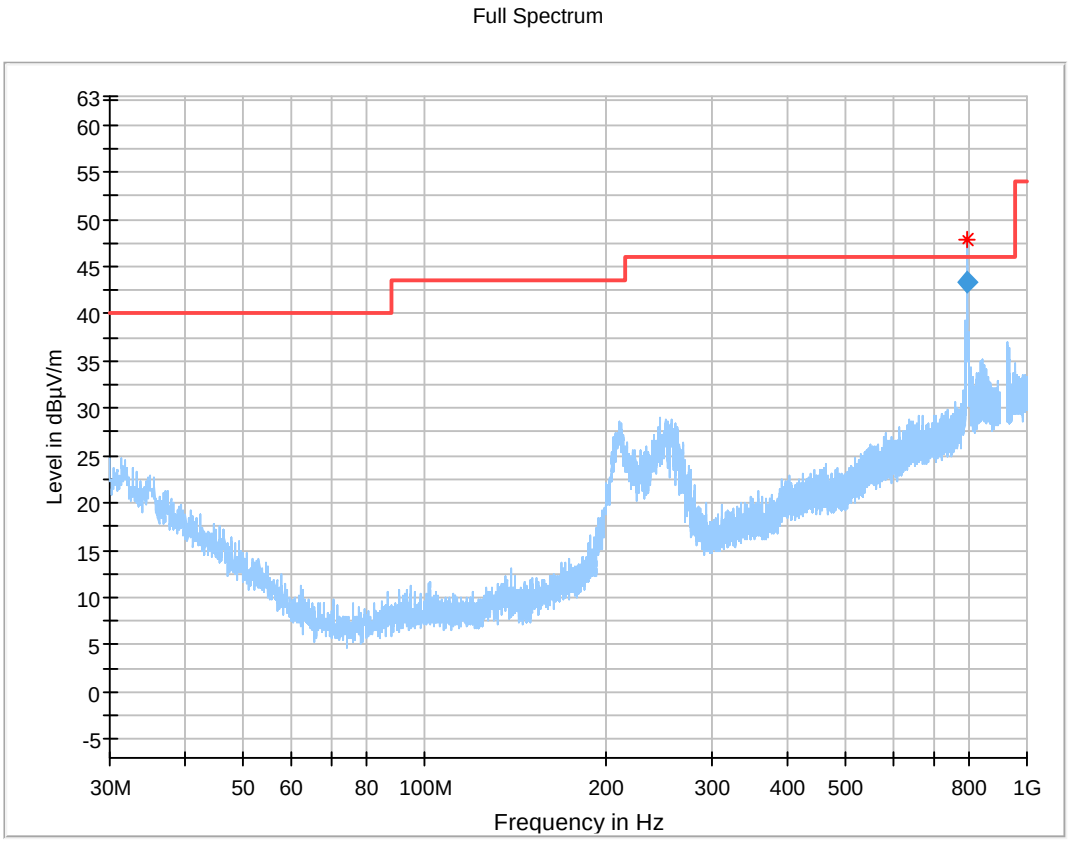


Diagram 3.01_RSE_TX_F1_standing

Common Information

Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC15.247 : 3 m meas. distance in the anechoic room
Antenna:	receiving antenna is directed to all sides, h=1.55 m height
EUT:	S100
Operating Mode:	TX CHannel 1
Environmental Conditions::	Humidity : 48% rH; Temperature: 20 °C
Operator:	MSouissi
Verdict:	Pass



Final_Result

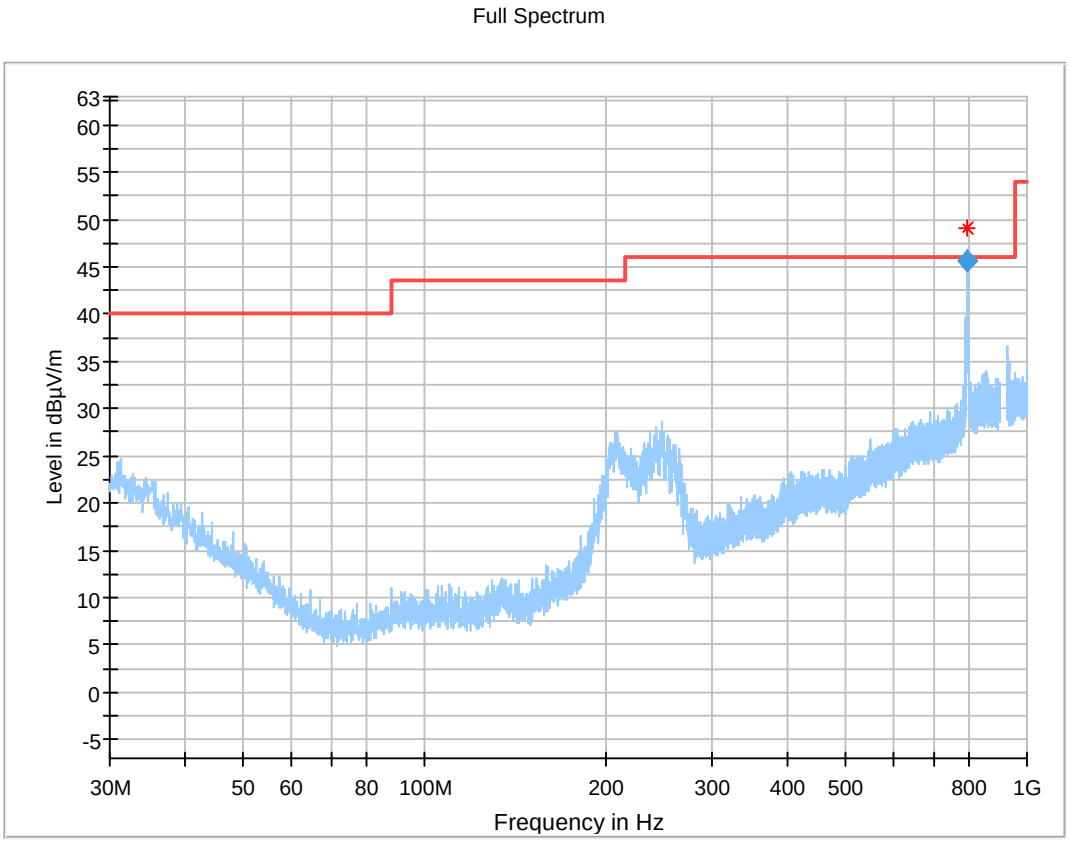
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
794.518000	43.33	46.00	2.67	1000.0	120.000	109.0	H	200.0	25.2

Remark: the wanted signal at 913 MHz is cut out in order to avoid overload.

Diagram 3.02_RSE_TX_F1_lying

Common Information

Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC15.247: 3 m meas. distance in the anechoic room
Antenna:	receiving antenna is directed to all sides, h=1.55 m height
EUT:	S100
Operating Mode:	TX CHannel 1
Environmental Conditions::	Humidity : 46% rH; Temperature: 20 °C
Operator:	MSouissi
Verdict:	Pass



Final_Result

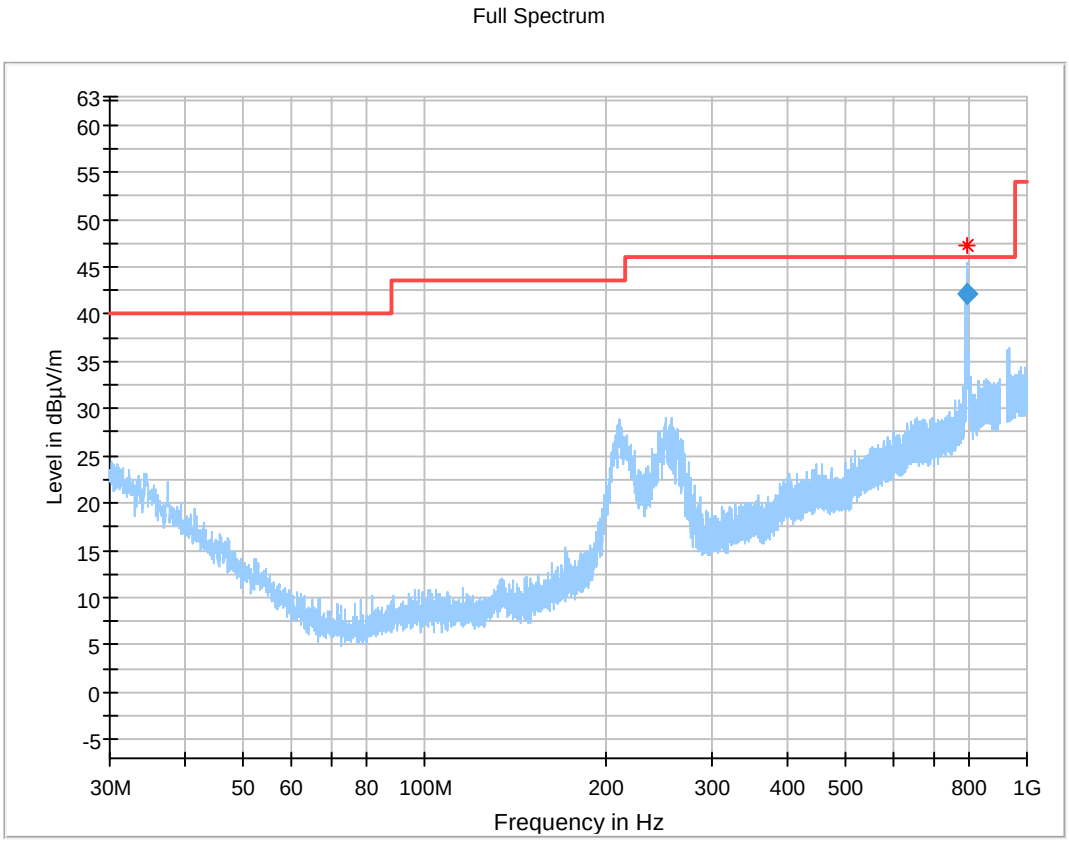
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
794.738000	45.64	46.00	0.36	1000.0	120.000	105.0	H	32.0	25.2

Remark: the wanted signal at 913 MHz is cut out in order to avoid overload.

Diagram 3.03_RSE_TX_F5_standing

Common Information

Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC15.247: 3 m meas. distance in the anechoic room
Antenna:	receiving antenna is directed to all sides, h=1.55 m height
EUT:	S100
Operating Mode:	TX CHannel 5
Environmental Conditions::	Humidity : 46% rH; Temperature: 20 °C
Operator:	MSouissi
Verdict:	Pass



Final_Result

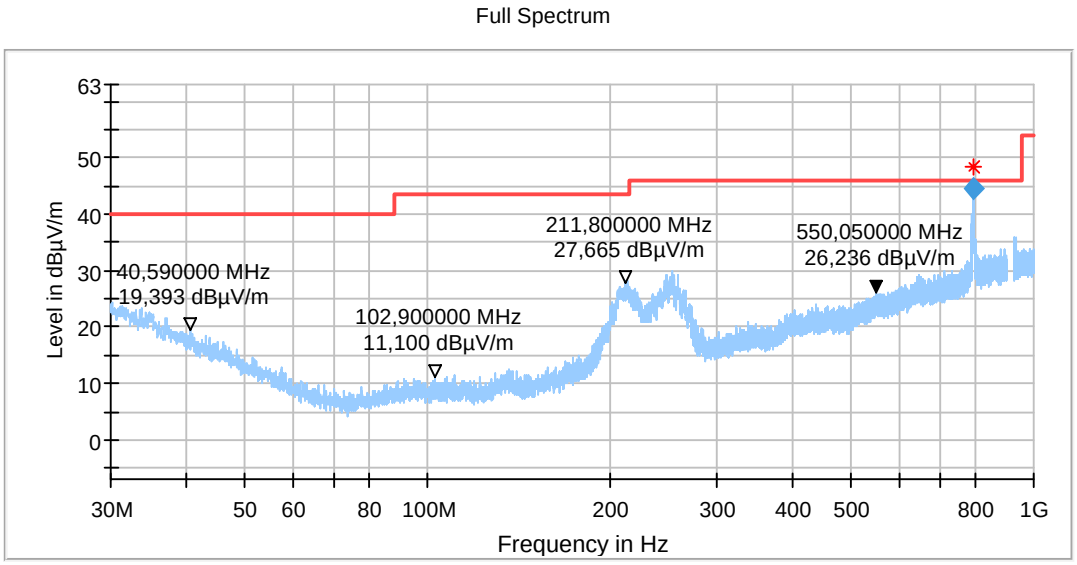
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
794.174000	42.15	46.00	3.85	1000.0	120.000	109.0	H	314.0	25.2

Remark: the wanted signal at 913 MHz is cut out in order to avoid overload.

Diagram 3.04_RSE_TX_F5_lying

Common Information

Test Description:	Electric Fieldstrength Measurement
Test Spec.:	FCC15.247: 3 m meas. distance in the anechoic room
Antenna:	receiving antenna is directed to all sides, h=1.55 m height
EUT:	S100
Operating Mode:	TX CHannel 5
Environmental Conditions::	Humidity : 46% rH; Temperature: 20°C
Operator:	MSouissi
Verdict:	Passed



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
794.660000	44.69	46.00	1.31	1000.0	120.000	109.0	H	322.0	25.2

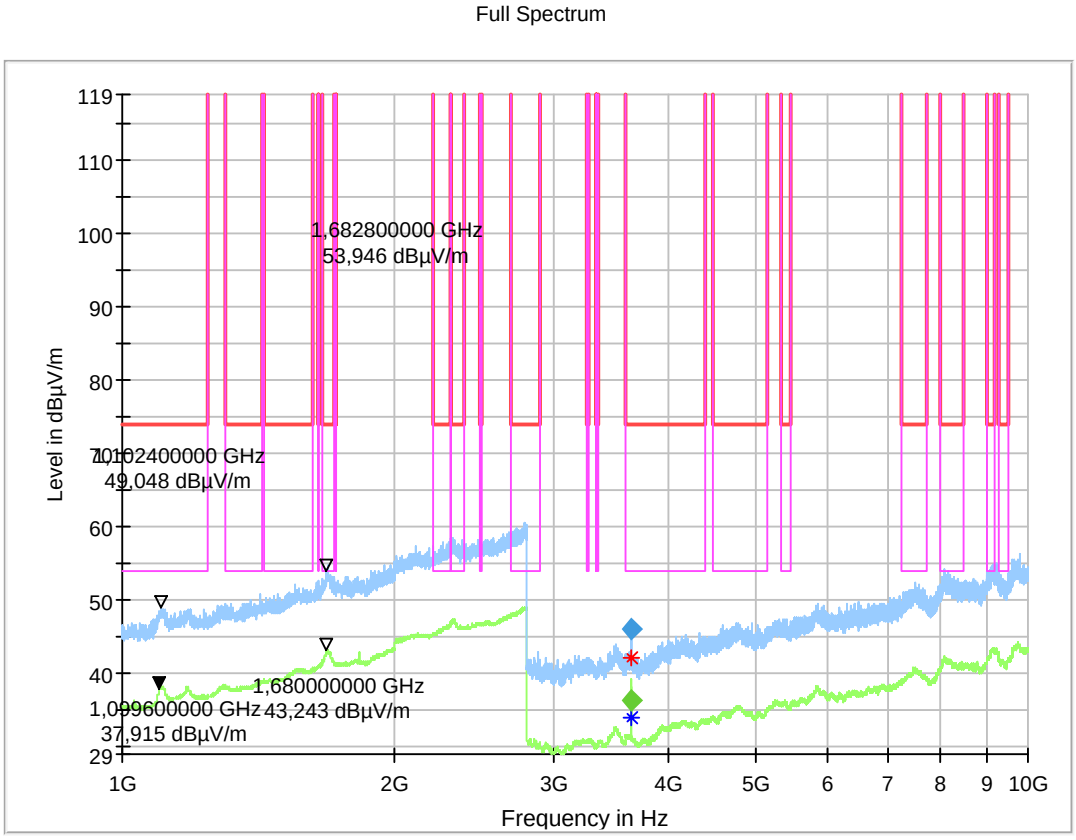
Remark: the wanted signal at 913 MHz is cut out in order to avoid overload.

1.7 Radiated field trength emissions above 1 GHz

Diagram 8.01_RSE_TX_F1

Common Information

Test Description:	Radiated Emissions Emissions in 3 m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC15.247: 3 m meas. distance in the anechoic room
Antenna polarisation:	horizontal/vertical
EUT:	S100
Operating Mode:	TX Ch1
Operator:	MSouissi
Verdict:	Passed



Final_Result

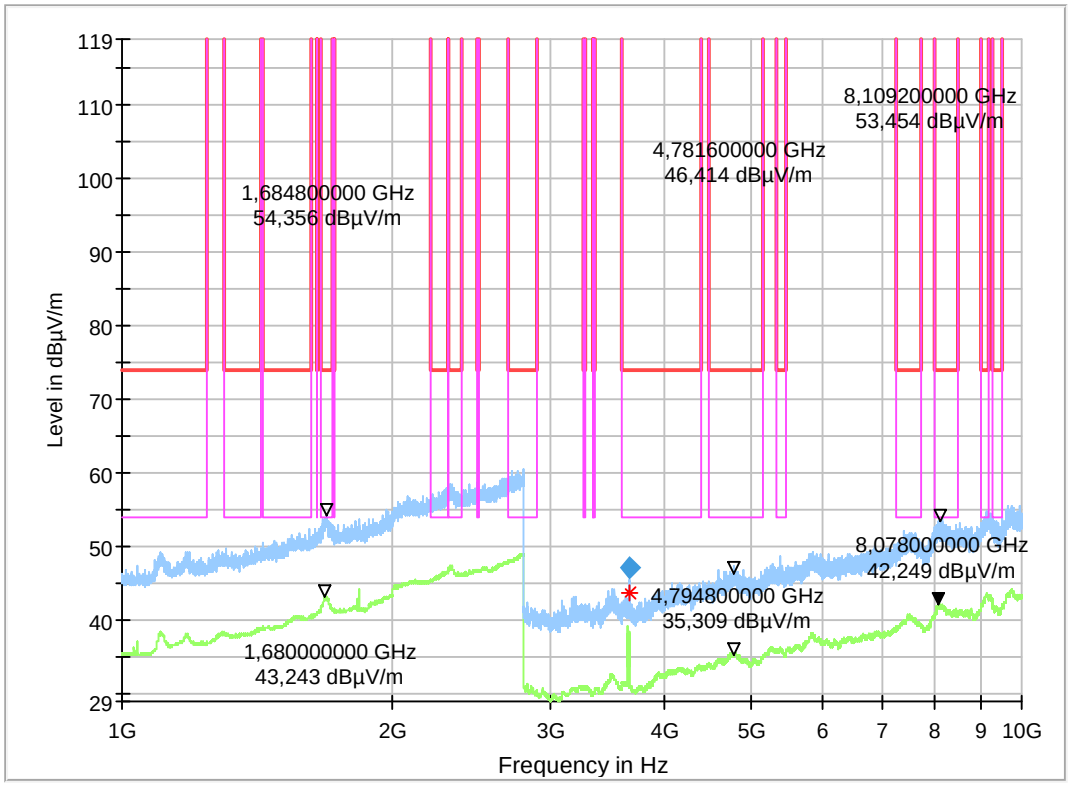
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
3652.73000	46.03	---	74.00	27.97	100.0	1000.000	155.0	H	302.0	90.0
3652.73000	---	36.49	54.00	17.51	100.0	1000.000	155.0	H	302.0	90.0

Diagram 8.02_RSE_TX_F5

Common Information

Test Description:	Radiated Emissions Emissions in 3 m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC15.247: 3 m meas. distance in the anechoic room
Antenna polarisation:	horizontal/vertical
EUT:	S100
Operating Mode:	TX Ch1
Operator:	MSouissi
Verdict:	Passed

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
3653.17000	---	28.29	54.00	25.71	100.0	1000.000	155.0	H	258.0	90.0
3667.29000	47.19	---	74.00	26.81	100.0	1000.000	155.0	V	273.0	90.0

End of Annex 1