

Annex 1: Measurement diagrams 20-1-0017102T01a-C01-A1

Number of pages:	25	Date of Report:	2021-Jun-04
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:	SICK AG
Product:	UWB Tag		
Model:	LOCU101-0110		
FCC ID:	WRMLOCU1	IC:	10066A-LOCU1
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter A §15.250 ISED-Regulations RSS-Gen, Issue 5 RSS-220, Issue 1, Amendment 1 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



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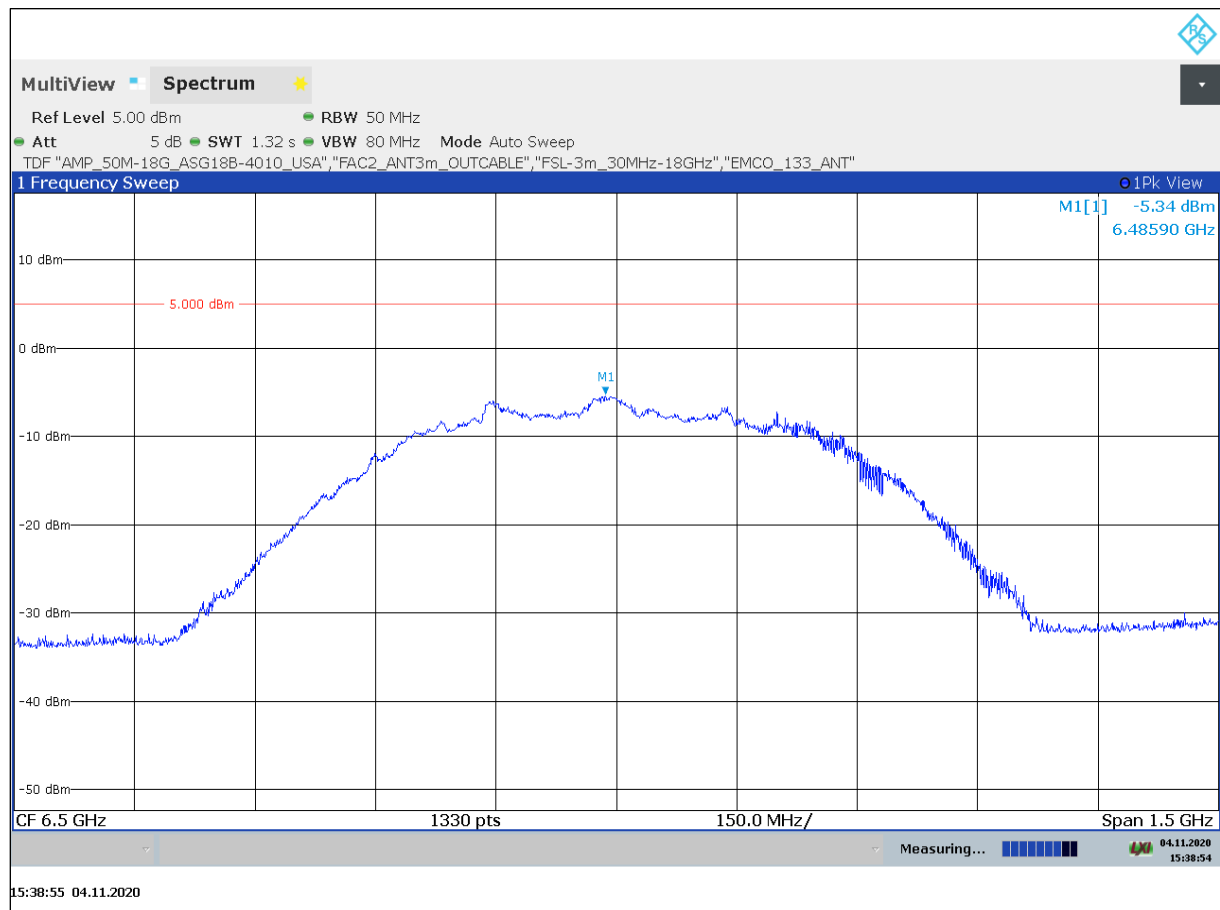
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1 Measurement diagrams

1.1 Fundamental emission peak power

7.01_Peak_PWR



5 dBm is the Reference Level, Limit is 0 dBm E.I.R.P

1.2 Radiated field strength emissions below 30 MHz

2.01

Common Information

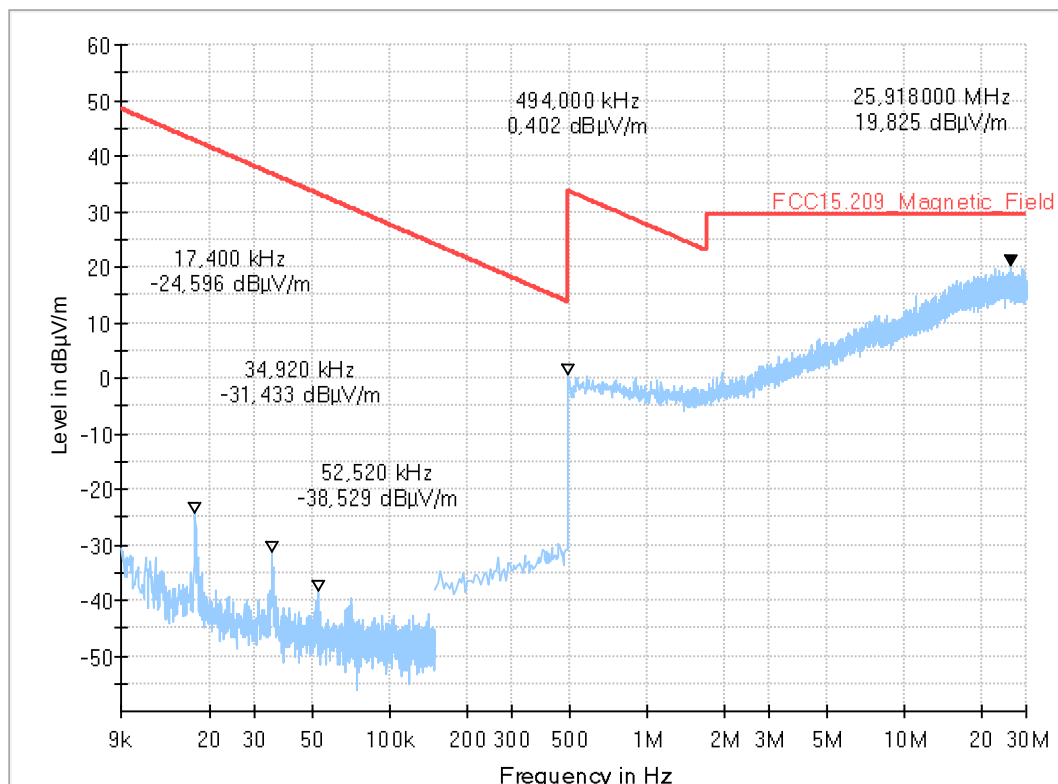
Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see 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:	Mah
Operating Mode:	Channel 5 - RF 5 - 6.5GHz
Environmental Conditions:	Humidity : 52% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00171S04_C01
Manufacturer:	SICK AG

Full Spectrum



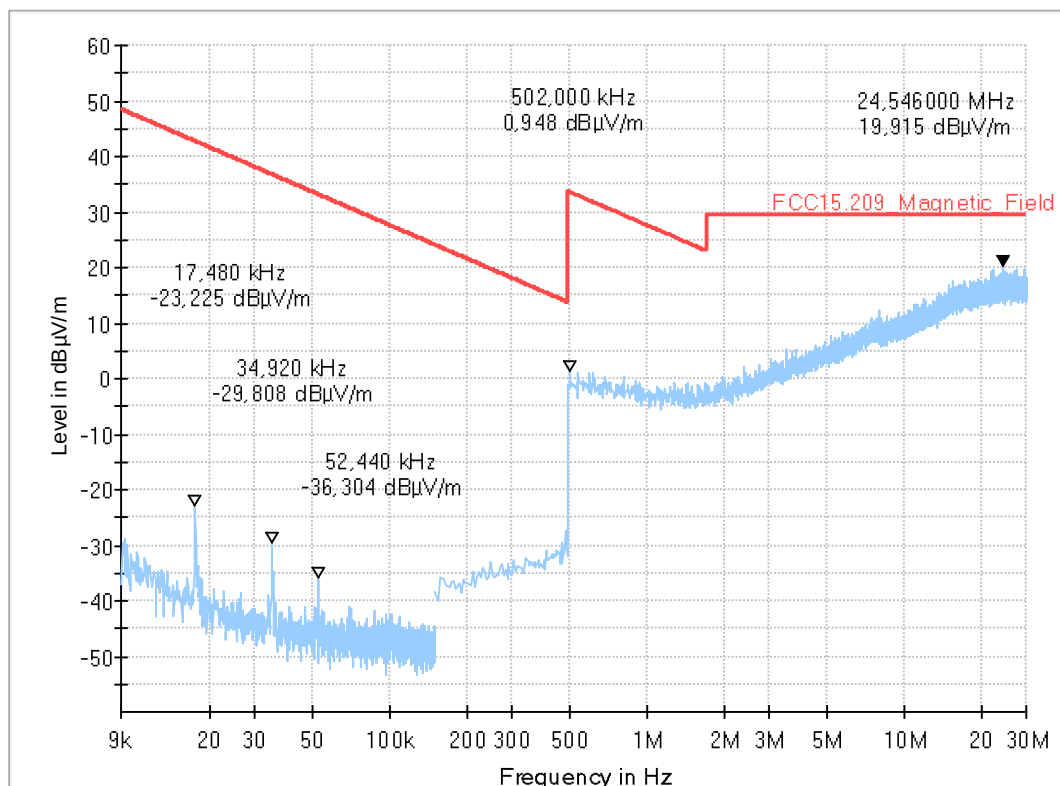
2.02

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:	Mah
Operating Mode:	Channel 5 - RF 5 - 6.5GHz
Environmental Conditions:	Humidity : 52% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00171S04_C01
Manufacturer:	SICK AG
	Full Spectrum



1.3 Radiated field strength emissions 30 MHz – 960 MHz

3.01

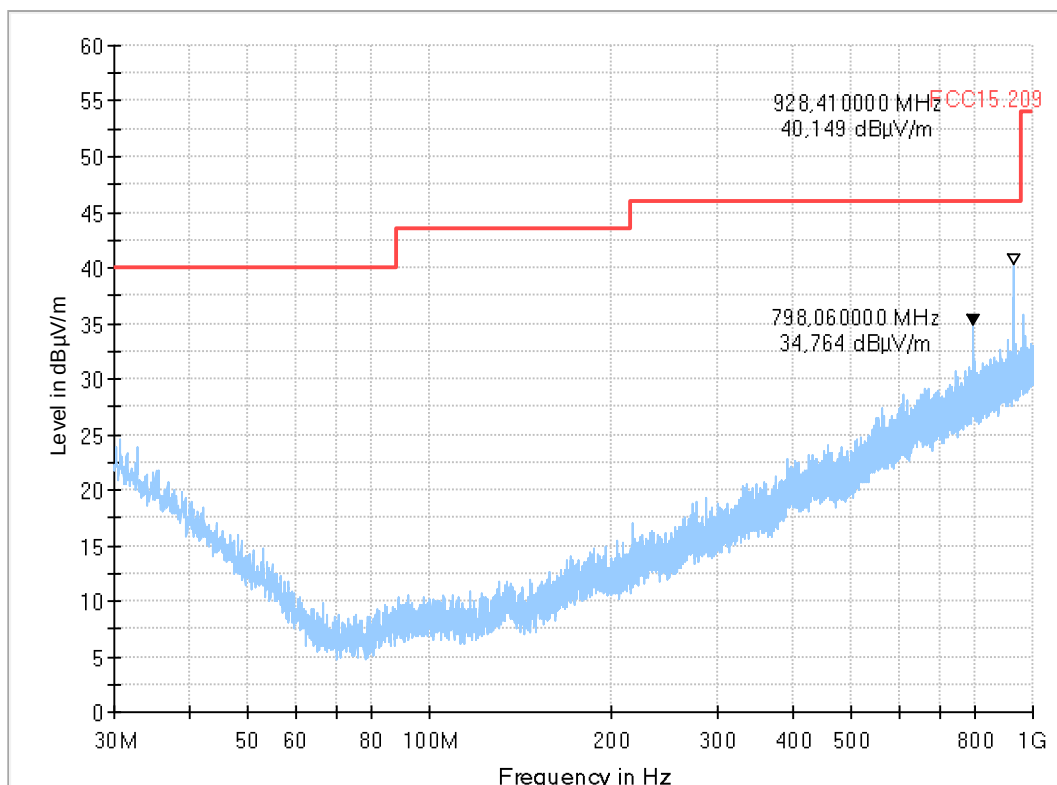
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 RSS Gen Issue 5 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Environmental Conditions::	Humidity : 52% rH; Temperature: 20 °C
Operator:	Mah
Operating Mode:	Channel 5 - RF 5 - 6.5GHz
Environmental Conditions::	Humidity : 52% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00171S04_C01
Manufacturer:	SICK AG

Full Spectrum



Remark:

Peaks at 798.06 MHz and 928.41 MHz are known external Interferer and do not come from the EUT.

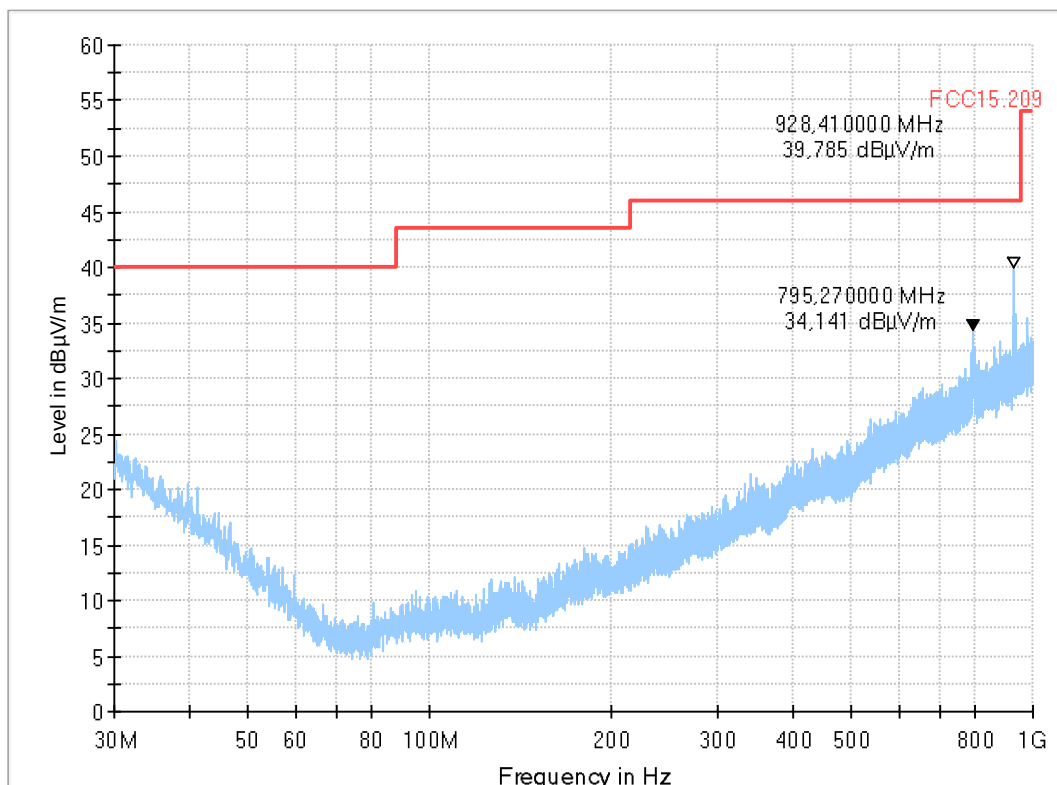
3.02

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 RSS Gen Issue 5 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 52% rH; Temperature: 20 °C
Operator:	Mah
Operating Mode:	Channel 5 - RF 5 - 6.5GHz
Environmental Conditions:	Humidity : 52% rH; Temperature: 20 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00171S04_C01
Manufacturer:	SICK AG
	Full Spectrum

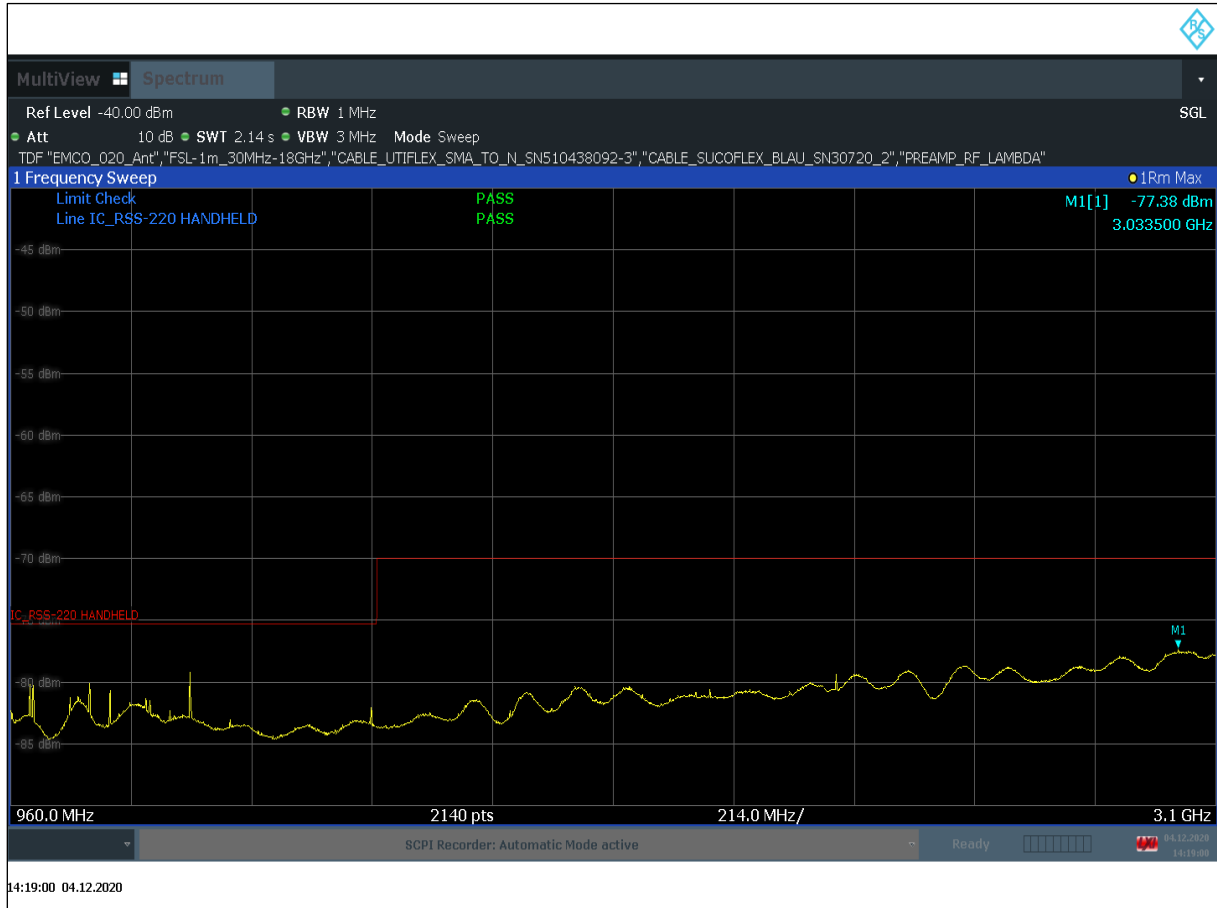


Remark:

Peaks at 795.27 MHz and 928.41 MHz are known external Interferer and do not come from the EUT.

1.4 Radiated field strength emissions above 960 MHz

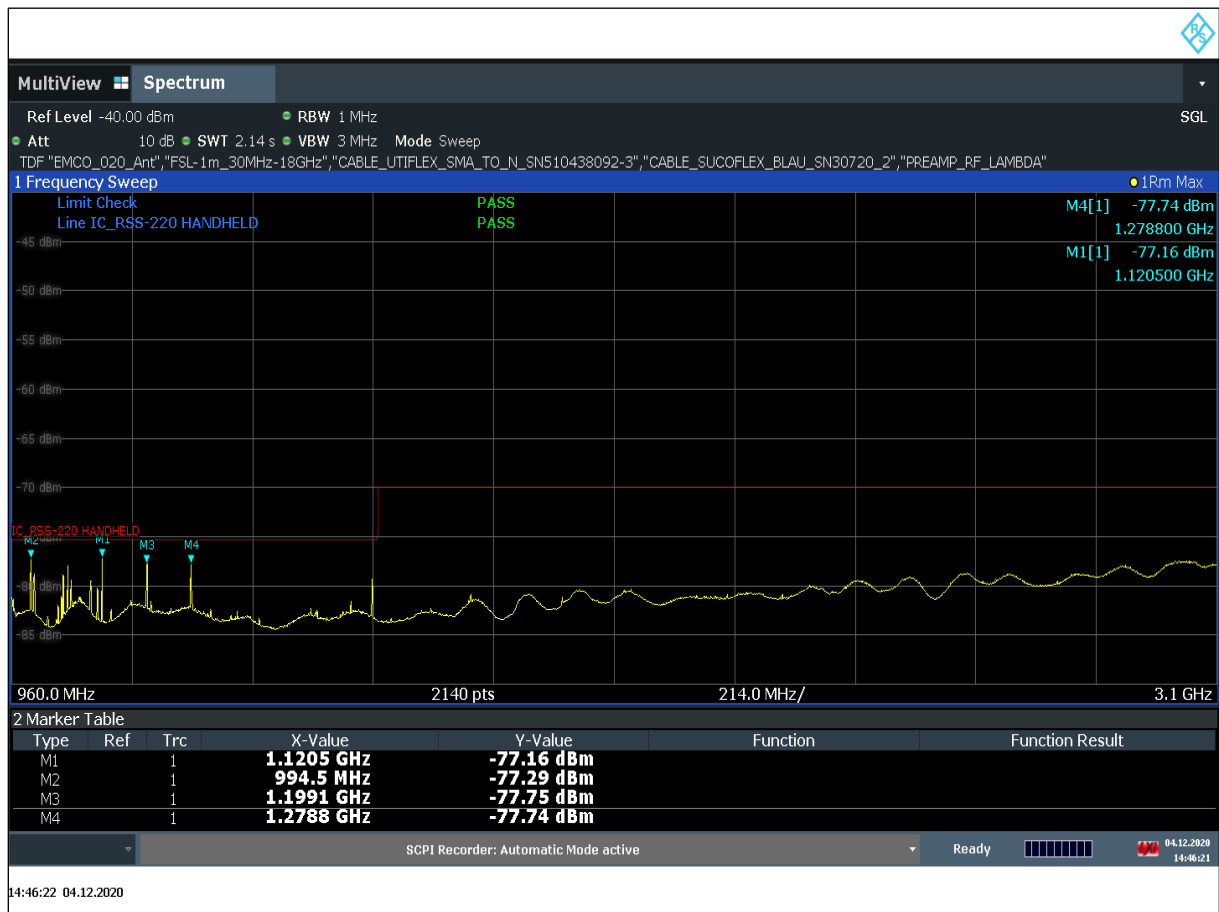
4.01_RSE_S06_960MHZ_3.1GHz_AntH



Remark: Limit according to RSS 220 shown in this diagram.

FCC 15.250 Limits are -63.3 dBm in the Freq Range: 1610-1990 MHz
and -60.3 dBm 1990 to 3100 MHz.

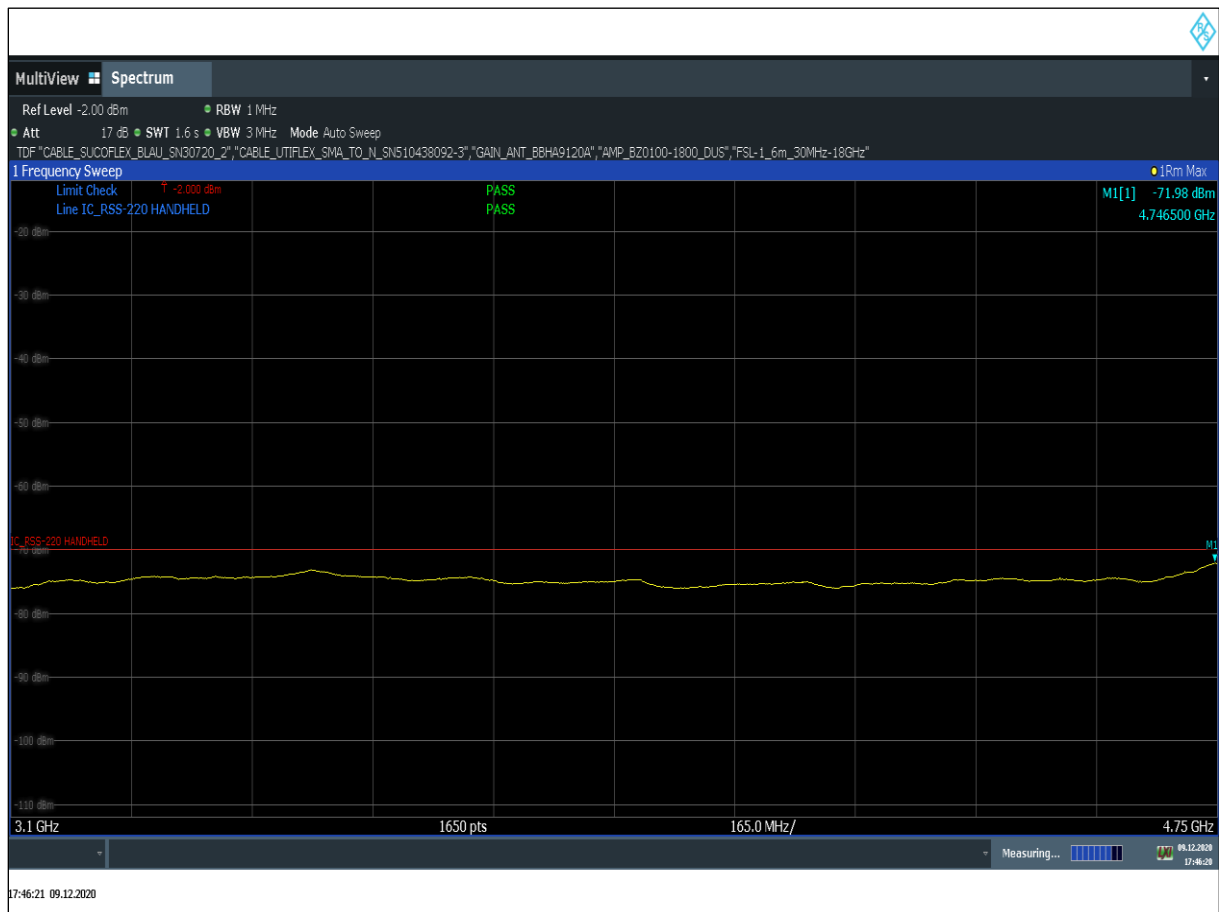
4.02_RSE_S06_960MHZ_3.1GHz_AntV



Limit according to RSS 220 shown in this diagram.

FCC 15.250 Limits are -63.3 dBm in the Freq Range: 1610-1990 MHz and -60.3 dBm 1990 to 3100 MHz.

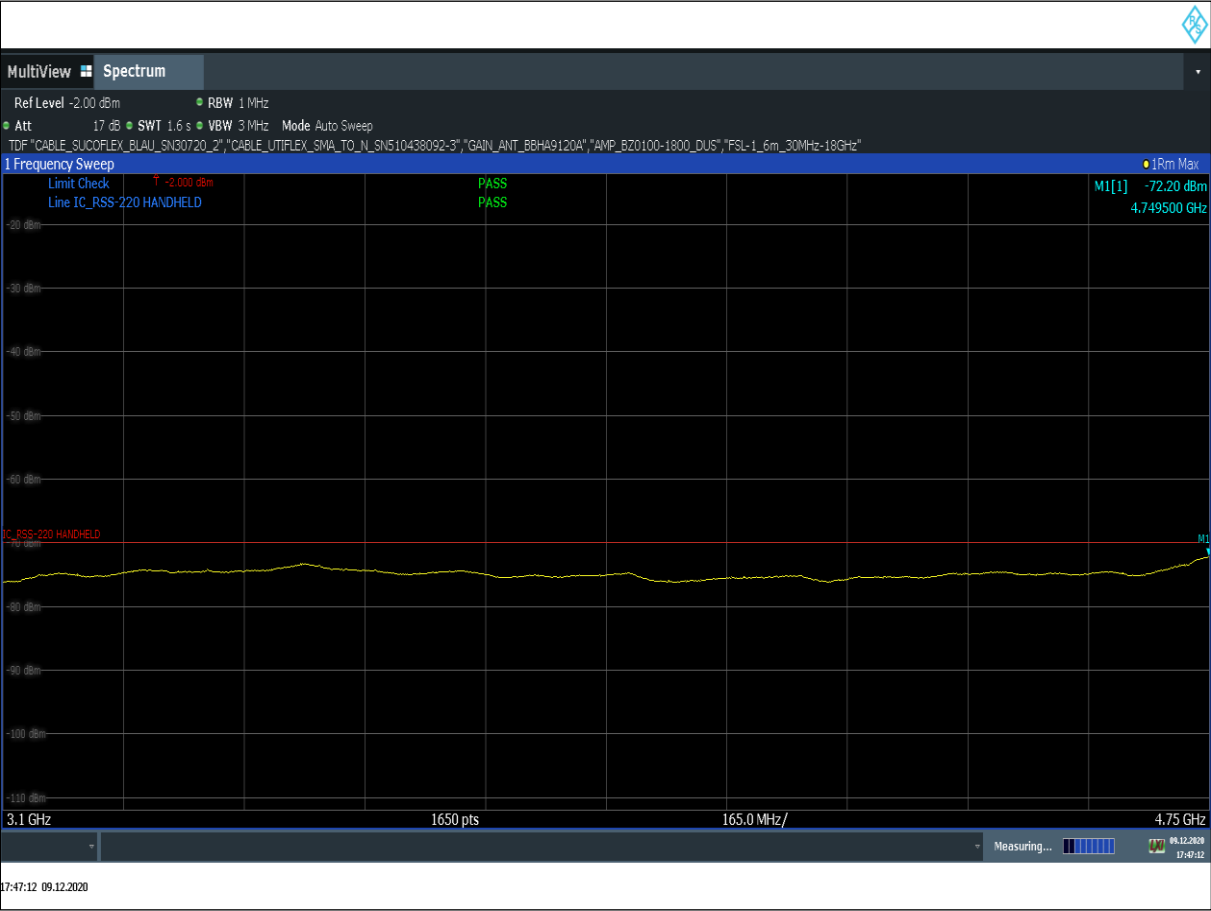
4.03_RSE_S06+3.1GHz_4.75GGHz_AntHV_EUT0



Limit Shown is RSS-220 Limit.



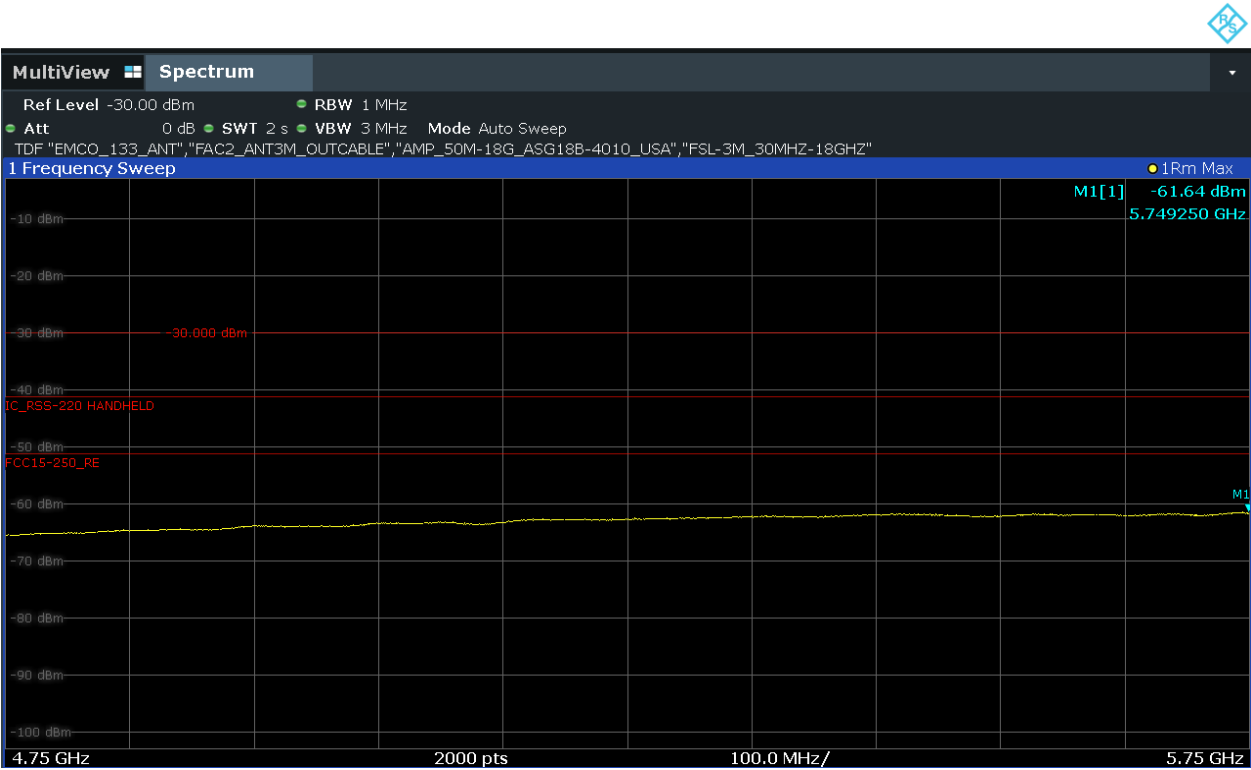
4.04_RSE_S06+3.1GHz_4.75GGHz_AntHV_EUT90



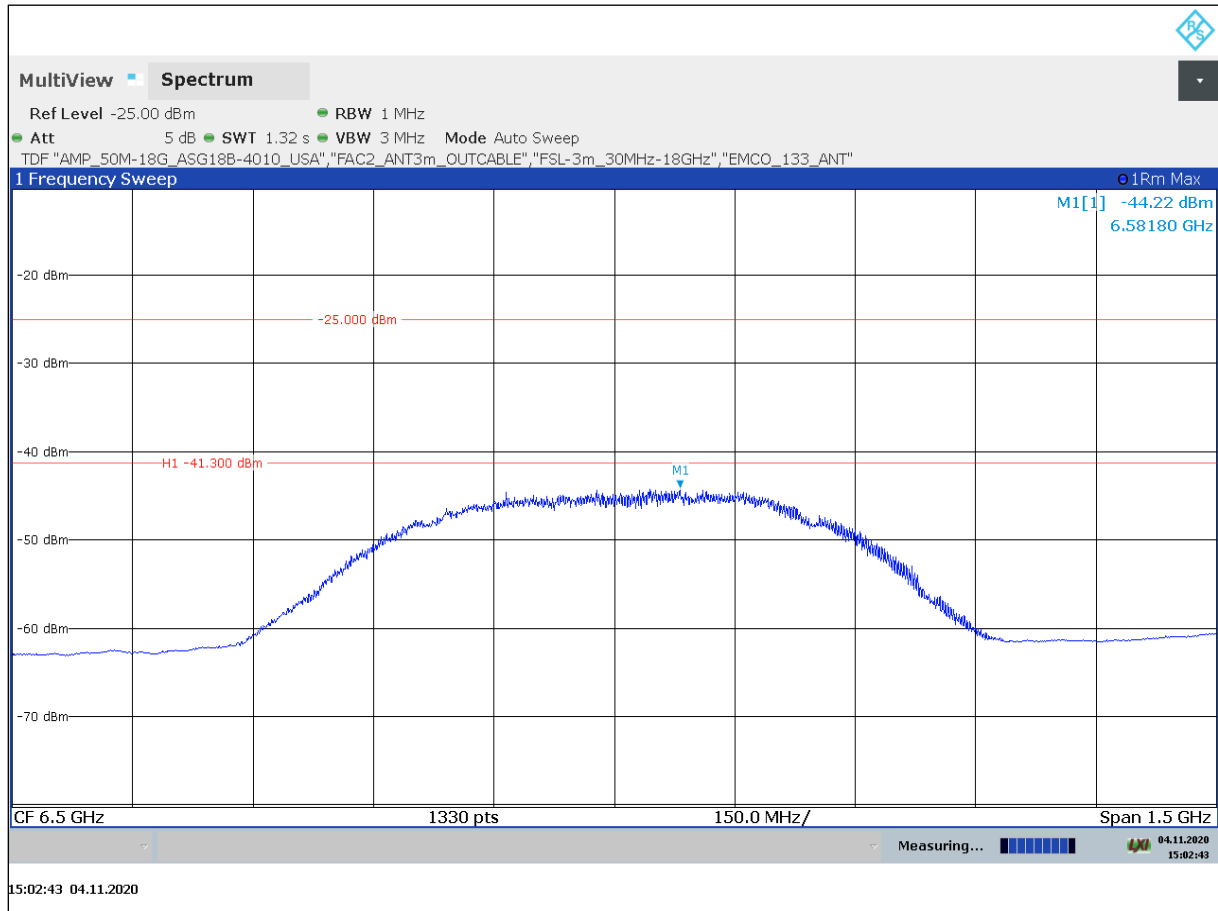
Limit Shown is RSS-220 Limit



4.05_RSE_3.1G_5.75G



4.06_RSE_5.75G_7.25G

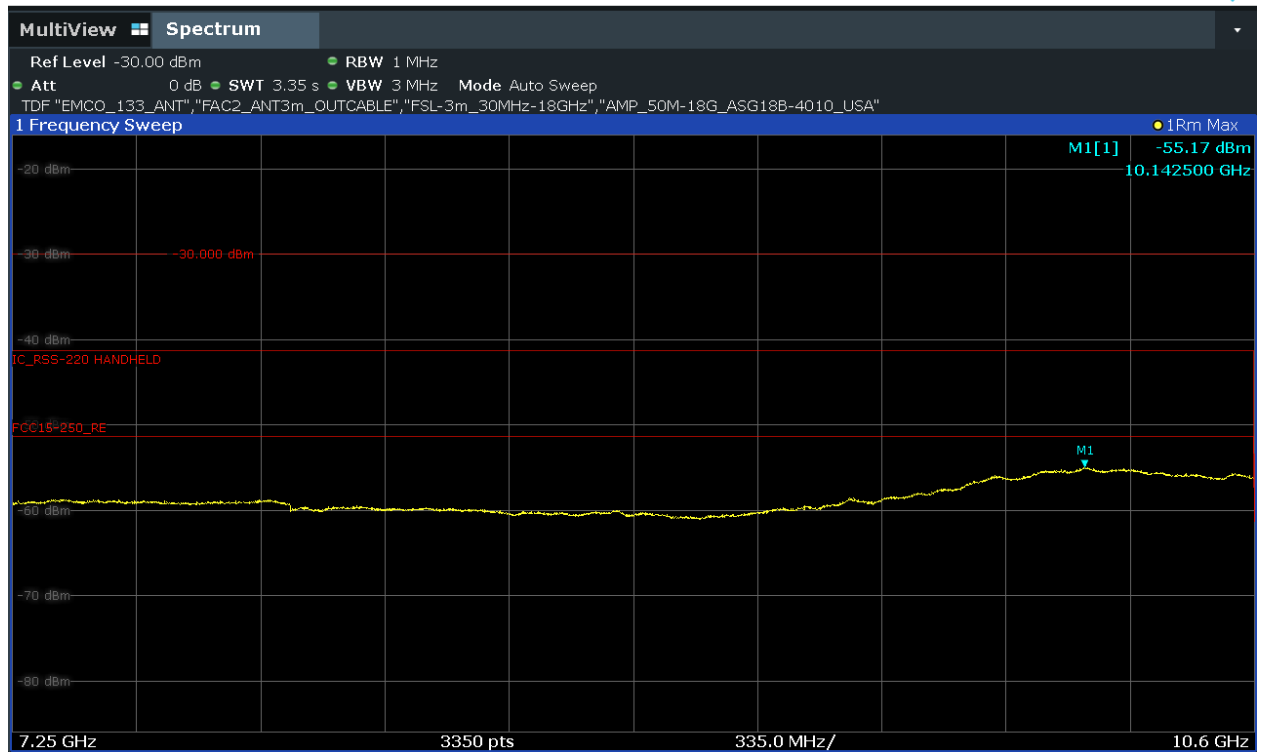


Applicable Limits

for RSS-220 from 4.75 GHz to 10.6 GHz is -41.3 dBm

for FCC 15.250 from 3.1 GHz to 5.925 GHz -51.3 and from 5.925 GHz to 7.25GHz is Limit -41.3 dBm

4.07_RSE_7.25G_10.6G

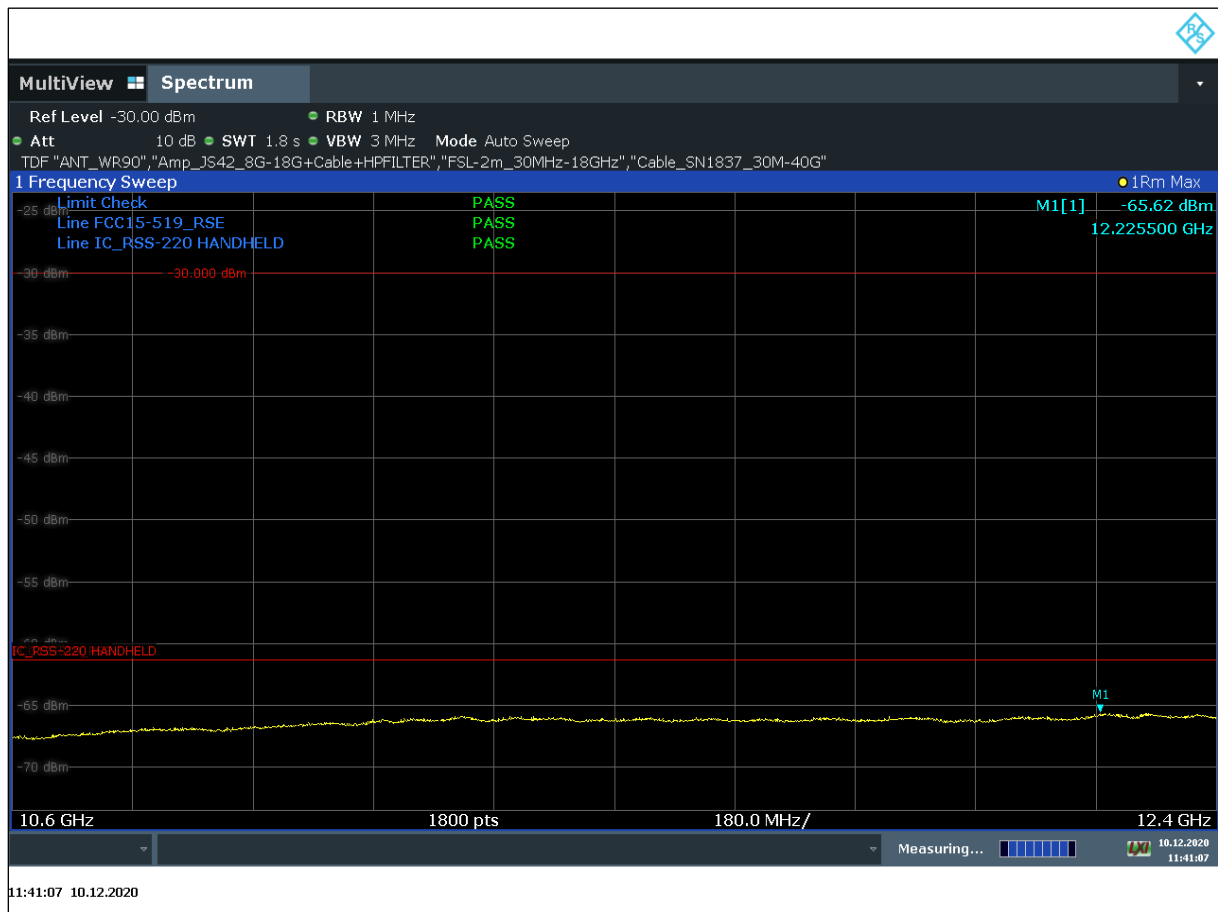


Applicable Limits

for RSS-220 from 4.75 GHz to 10.6 GHz is -41.3 dBm

for FCC 15.250 7.25 GHz to 10.6GHz is -51.3 dBm

4.08_T01_UWB_ANTH_EUT0_90_10.6G_12.4G

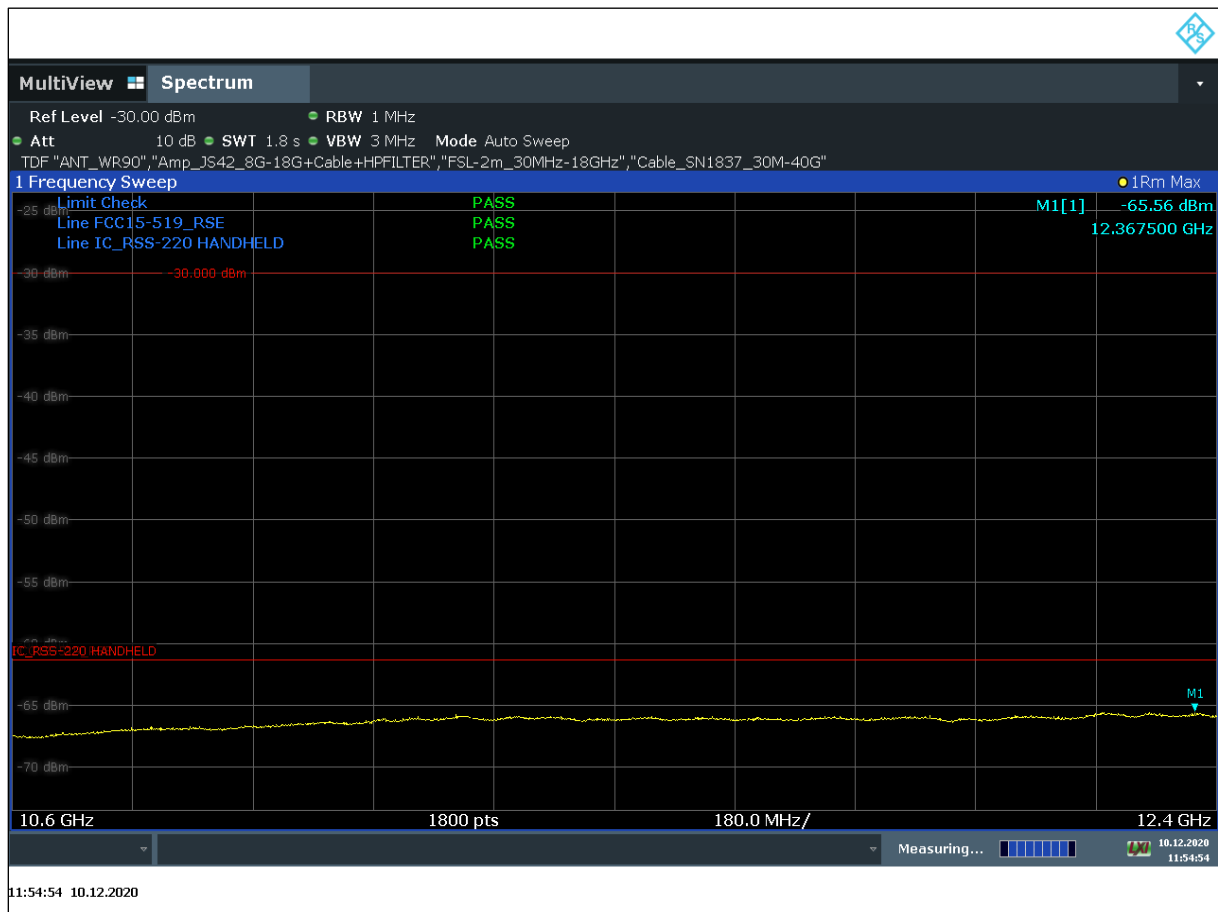


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.09_T01_UWB_ANTV_EUT0_90_10.6G_12.4G

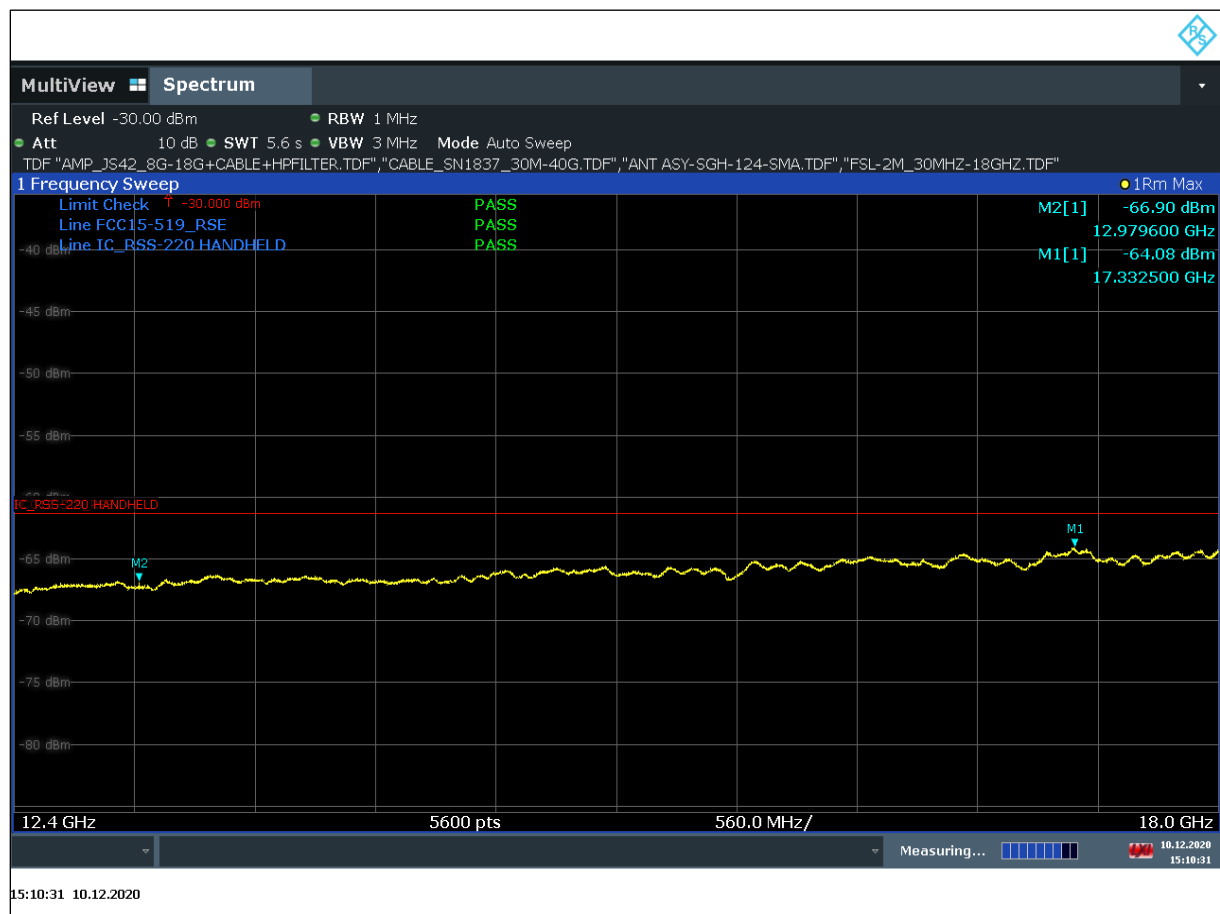


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.10_T01_UWB_ANTV_EUT0_90_12.4G_18G

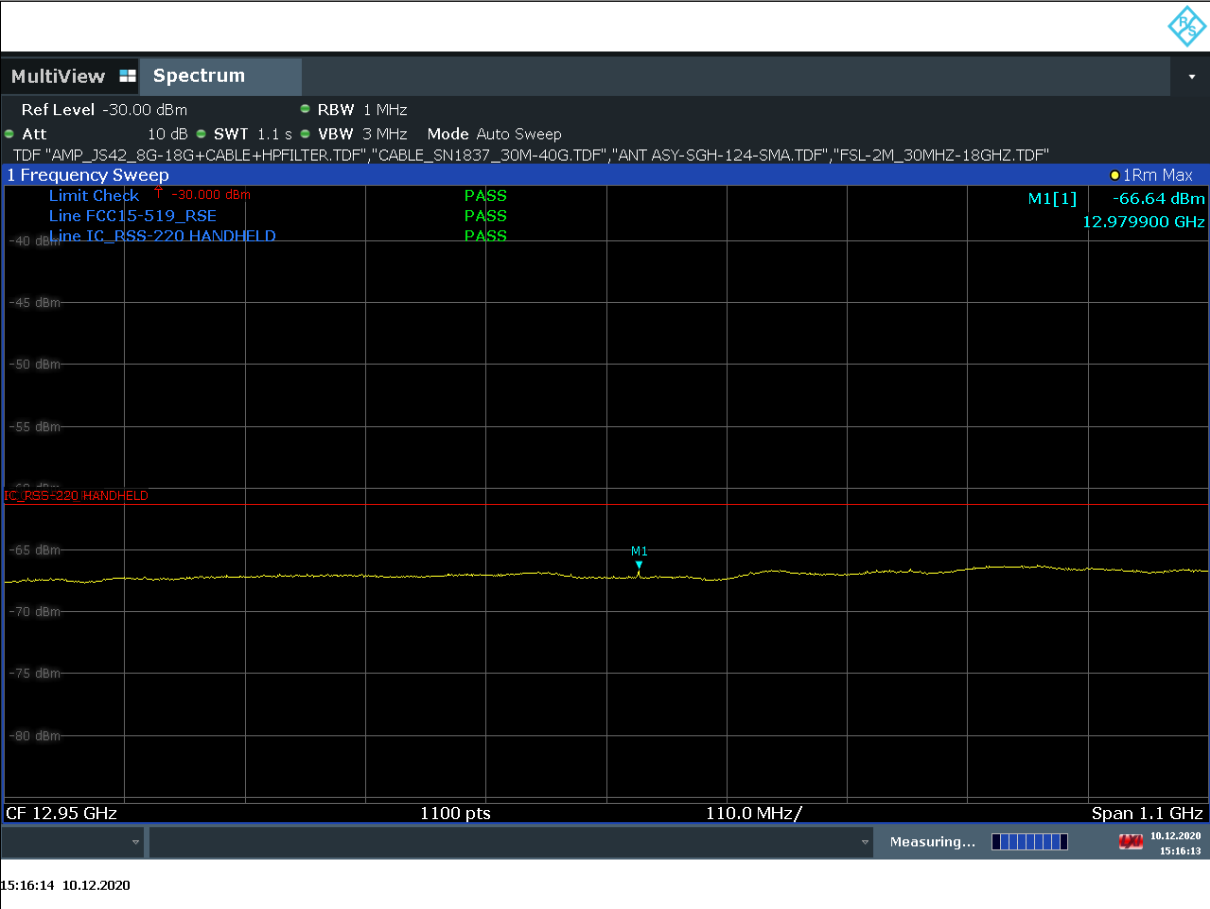


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.11_T01_UWB_ANTV_EUT0_90_12.4G_18G_zoom

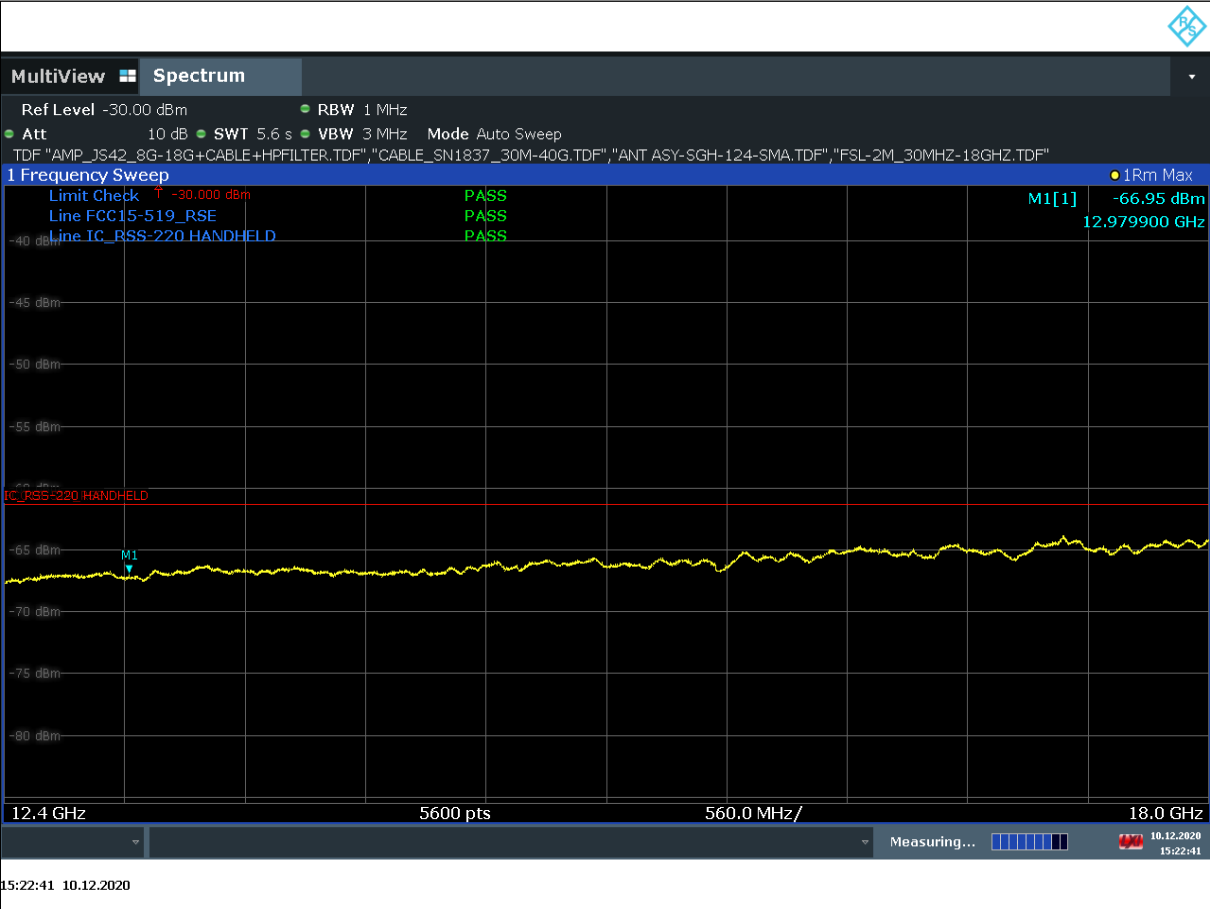


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.12_T01_UWB_ANTH_EUT0_90_12.4G_18G

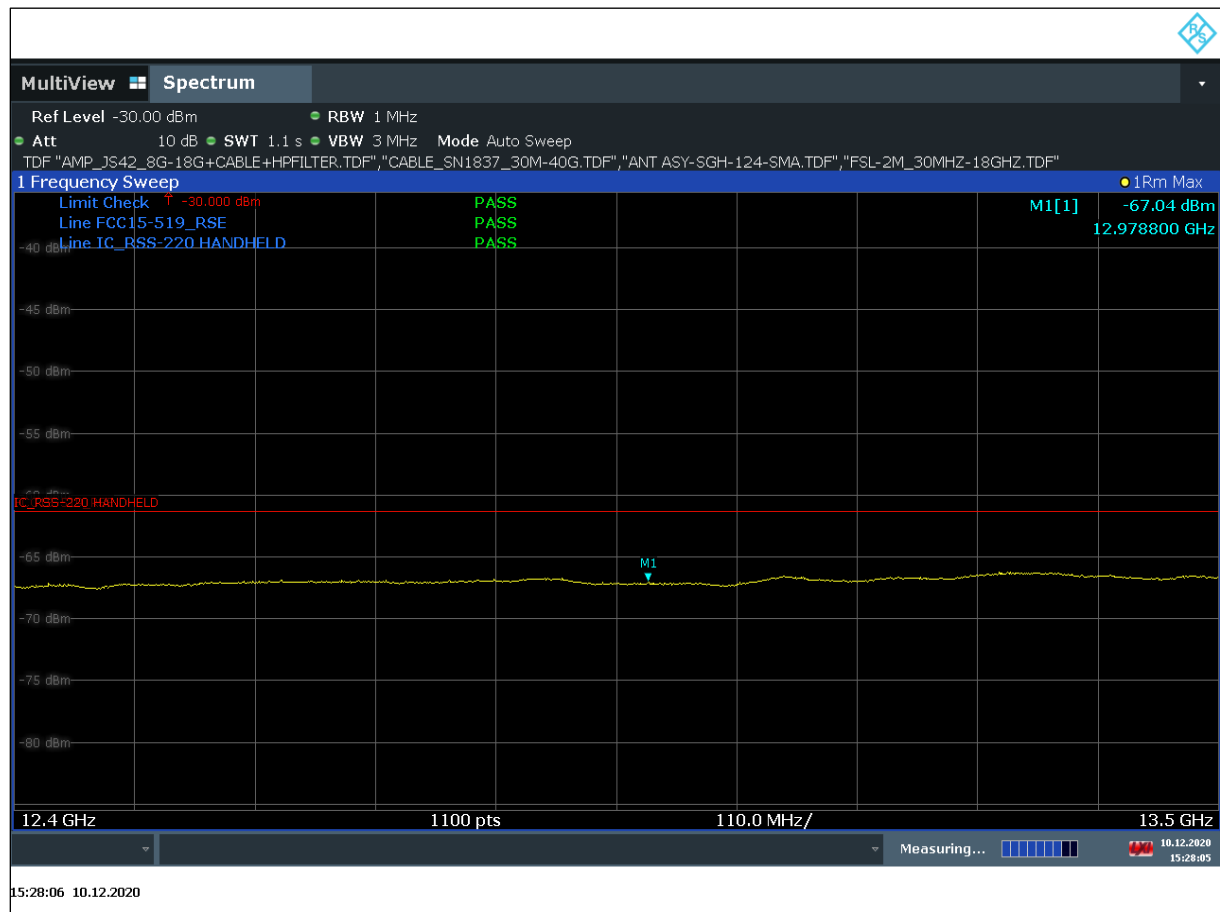


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.13_T01_UWB_ANTH_EUT0_90_12.4G_18G_zoom

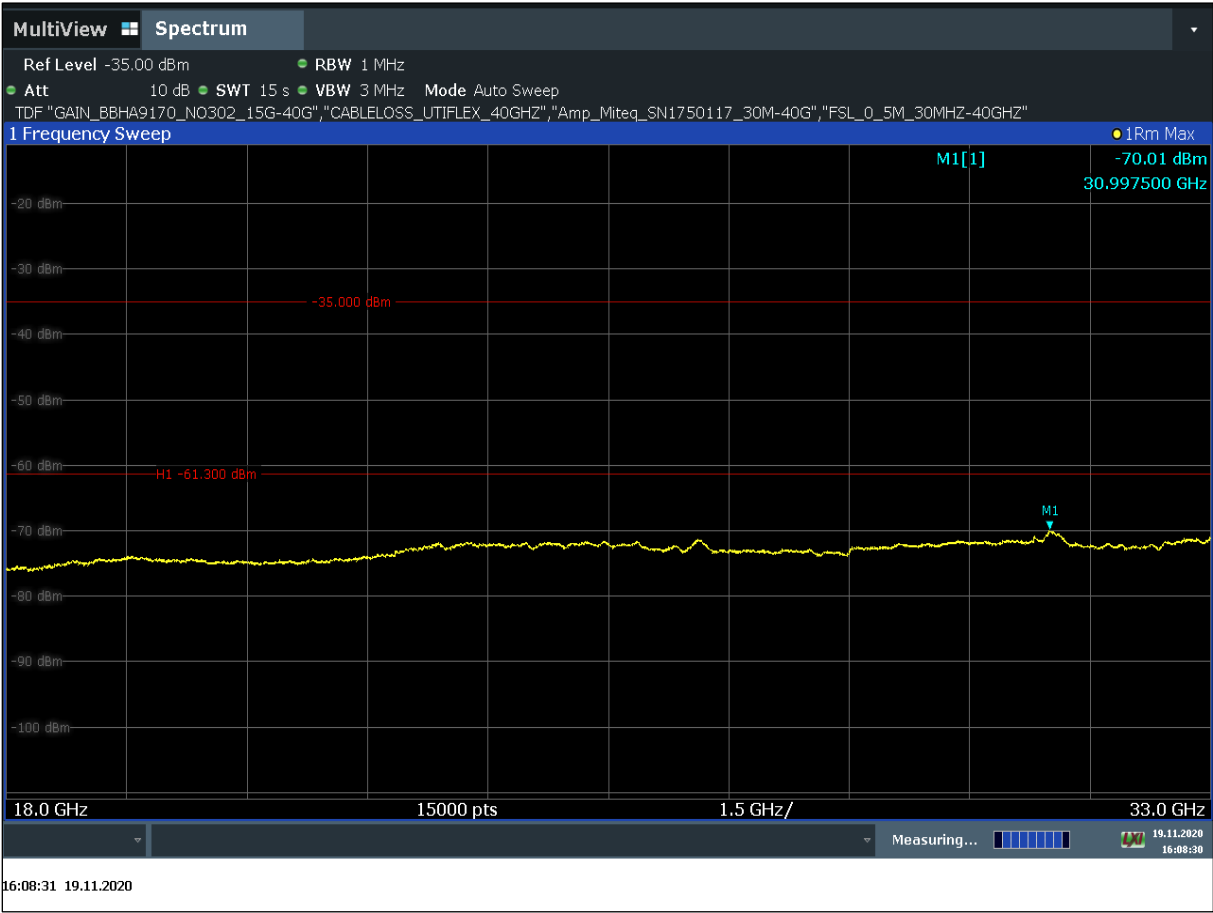


Applicable Limits

for RSS-220 from above 10.6 GHz is -61.3 dBm

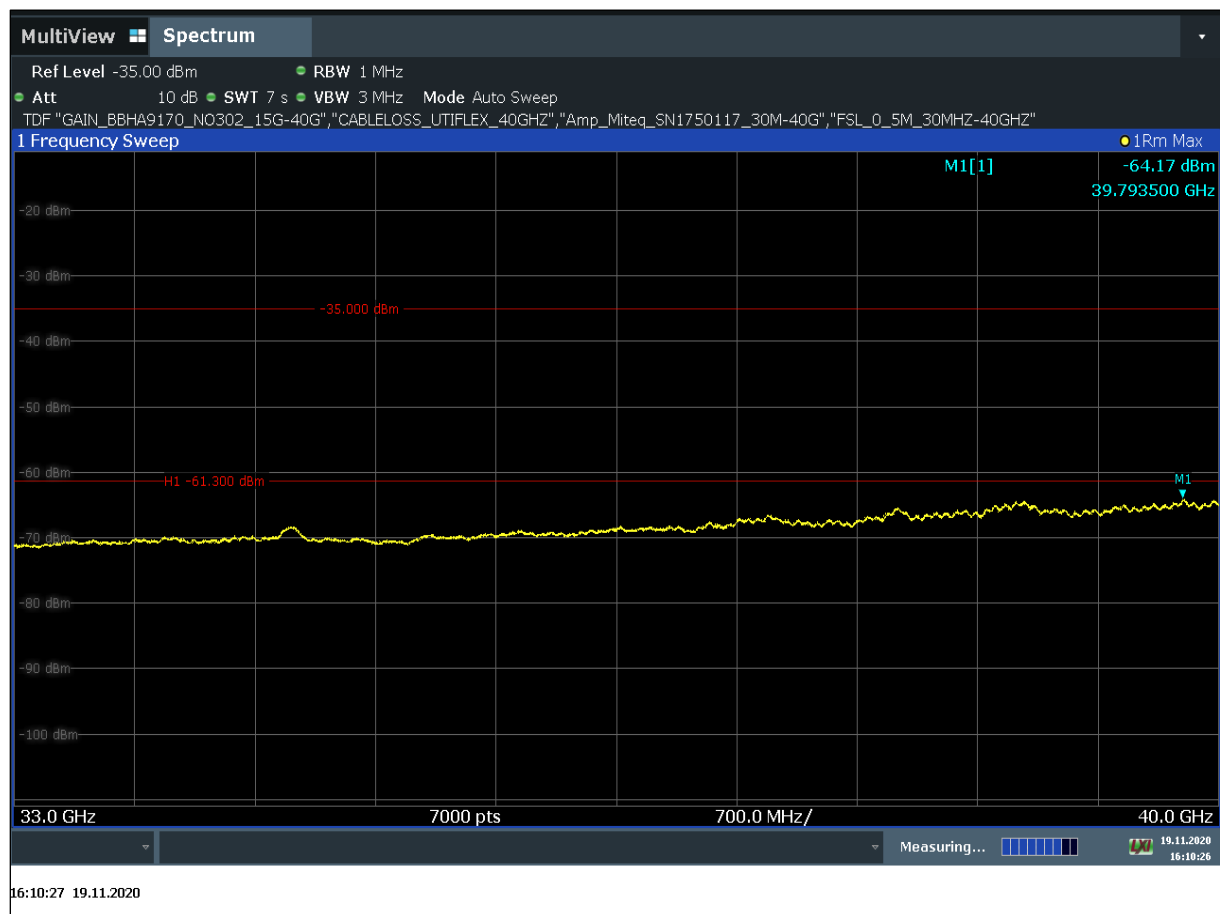
for FCC 15.250 above 10.6GHz is -61.3 dBm

4.14_RSE_18G_33G



Applicable Limits
for RSS-220 from above 10.6 GHz is -61.3 dBm
for FCC 15.250 above 10.6GHz is -61.3 dBm

4.15_RSE_33G_40G

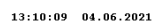
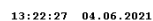


Applicable Limits

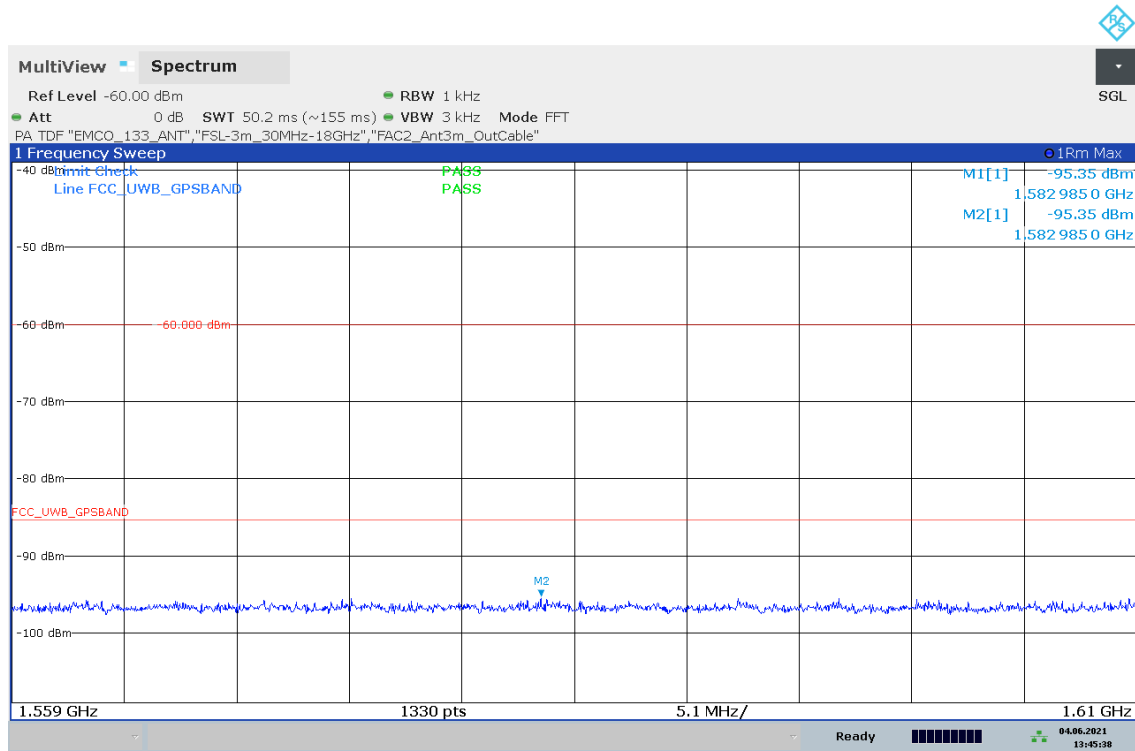
for RSS-220 from above 10.6 GHz is -61.3 dBm

for FCC 15.250 above 10.6GHz is -61.3 dBm

4.16_ ANTH

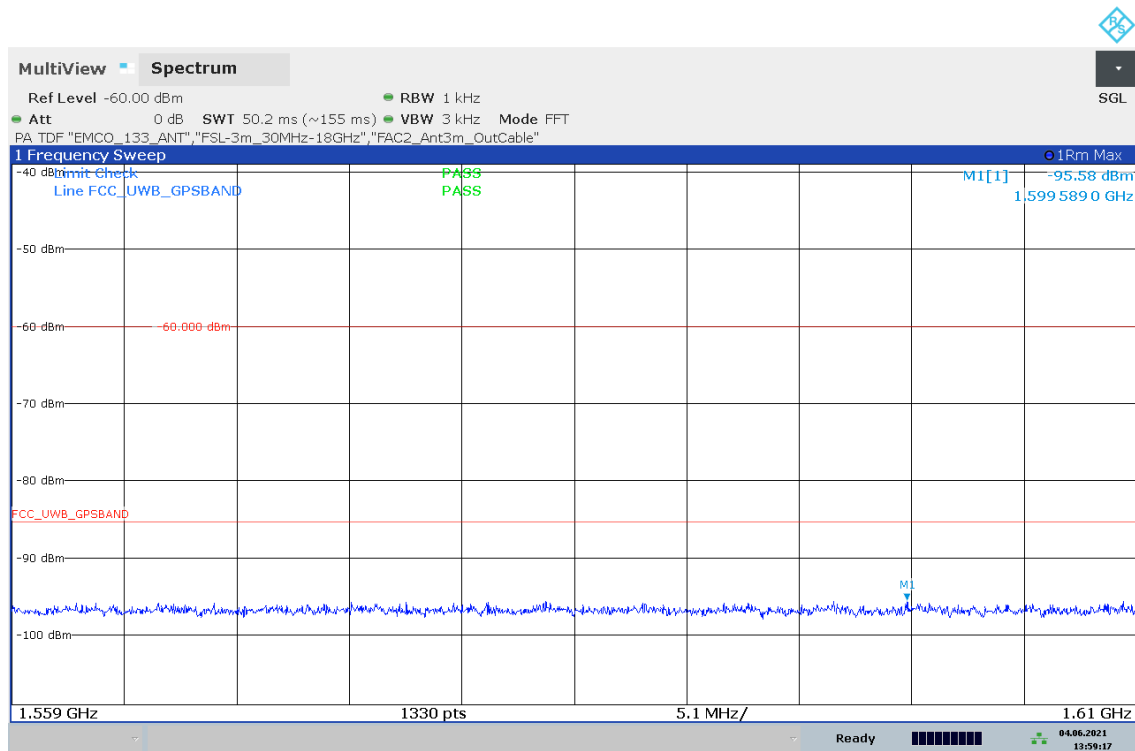


4.18_ANTH



13:45:38 04.06.2021

4.19_ANTV



13:59:17 04.06.2021

End of Annex 1