

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

<b>Number of pages:</b>	25	<b>Date of Report:</b>	2021-Jun-04
<b>Testing company:</b>	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	<b>Applicant:</b>	SICK AG
<b>Product:</b>	UWB Tag		
<b>Model:</b>	LOCU101-0110		
<b>FCC ID:</b>	WRMLOCU1	<b>IC:</b>	10066A-LOCU1
<b>Testing has been carried out in accordance with:</b>	<b>Title 47 CFR, Chapter I</b> <b>FCC Regulations, Subchapter A</b> §15.250  <b>ISED-Regulations</b> 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".		

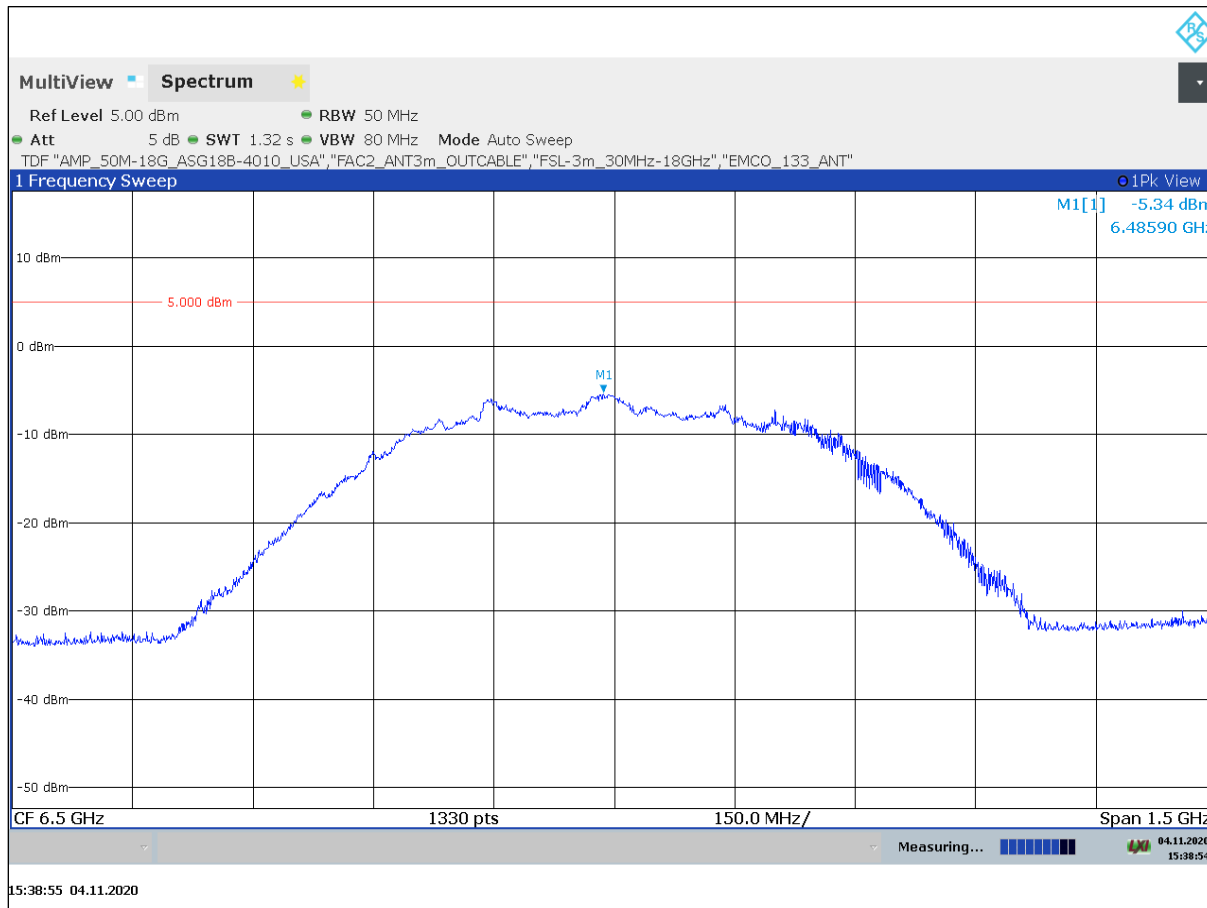
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# 1 Measurement diagrams

## 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

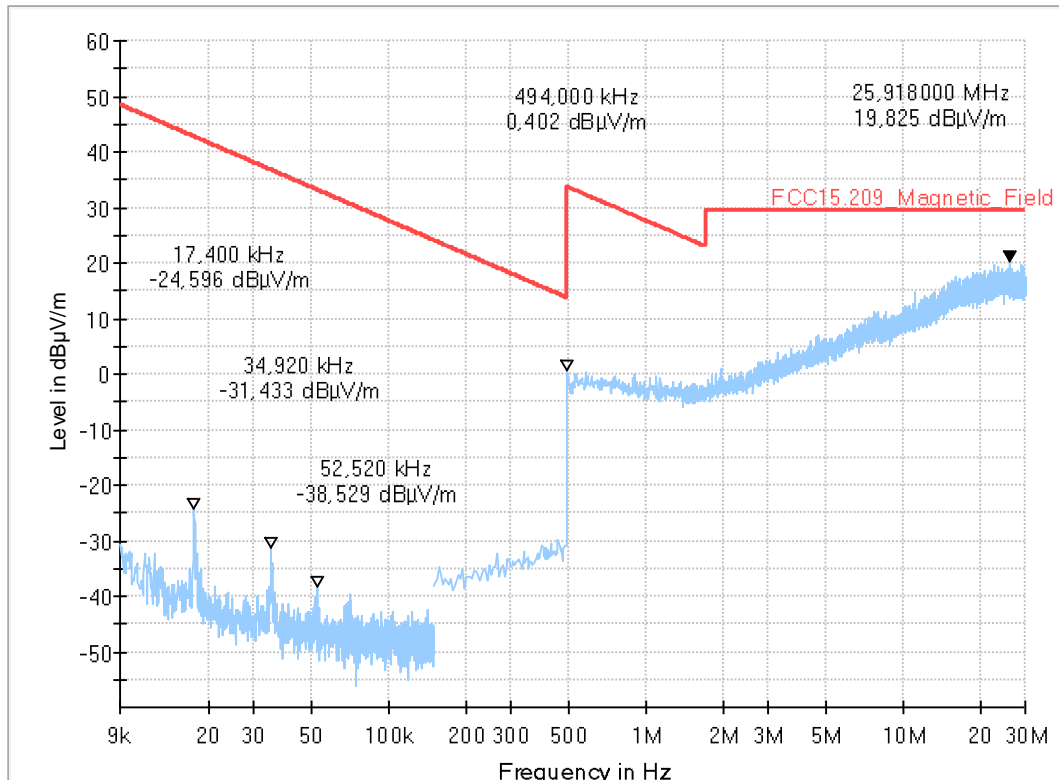
#### Common Information

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

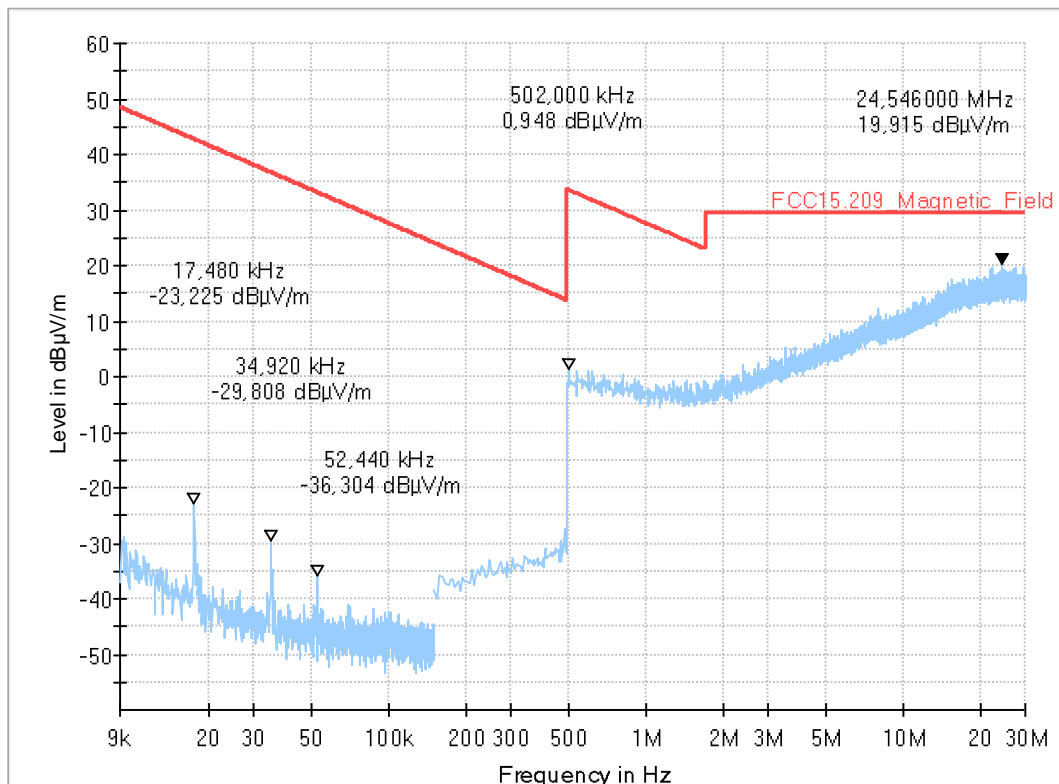
### Common Information

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

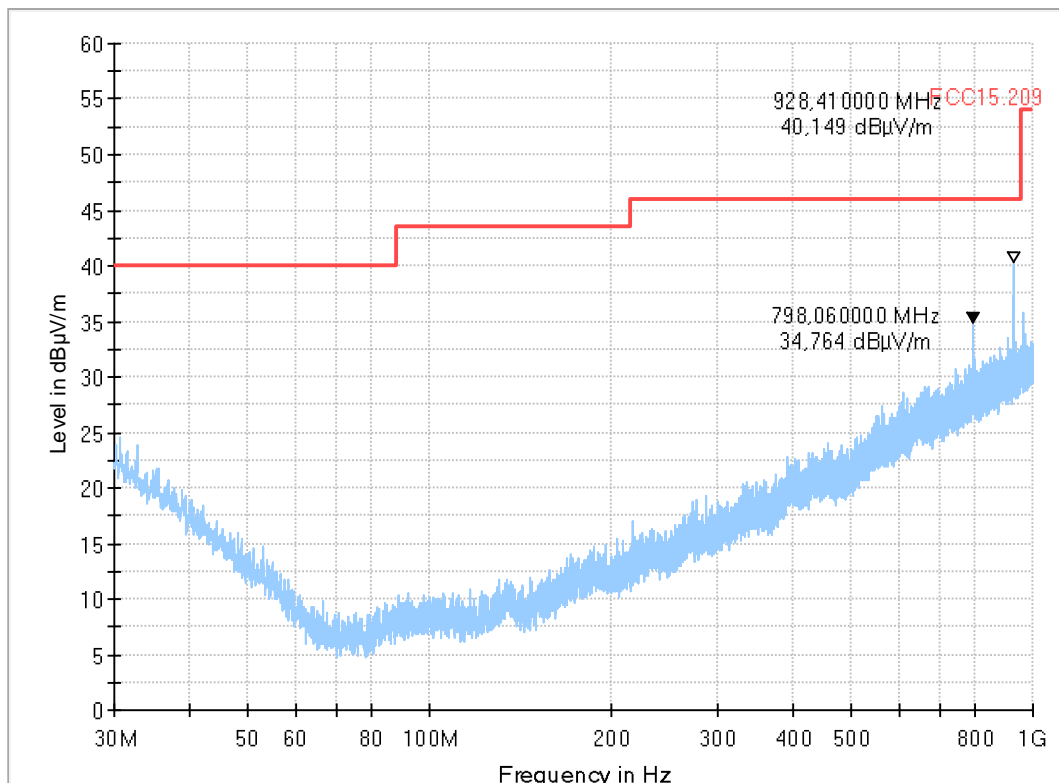
#### Common Information

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

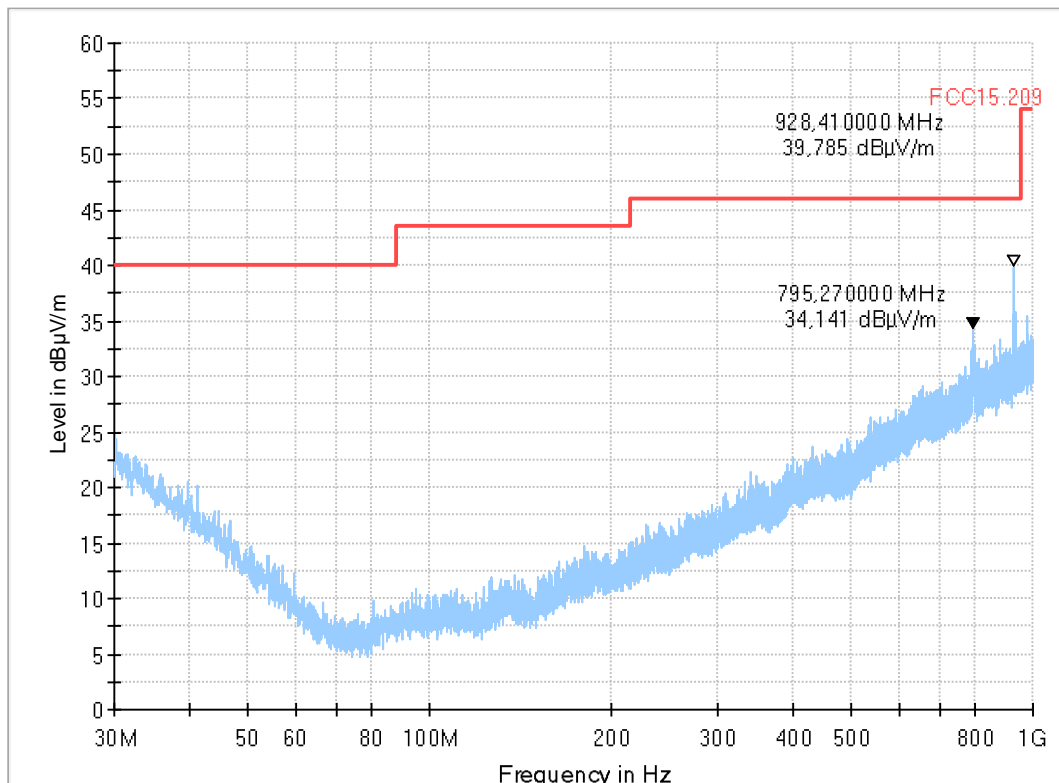
### Common Information

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

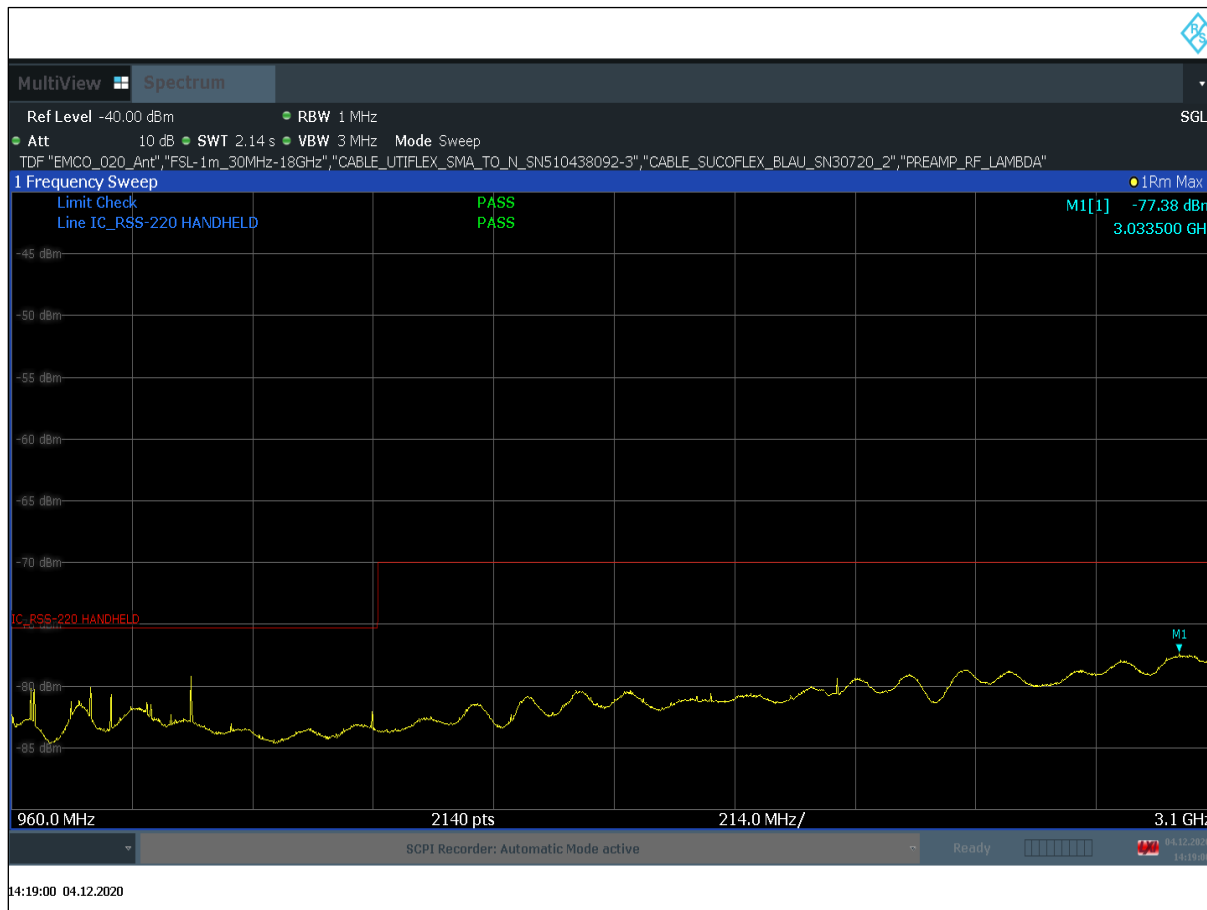


**Remark:**

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

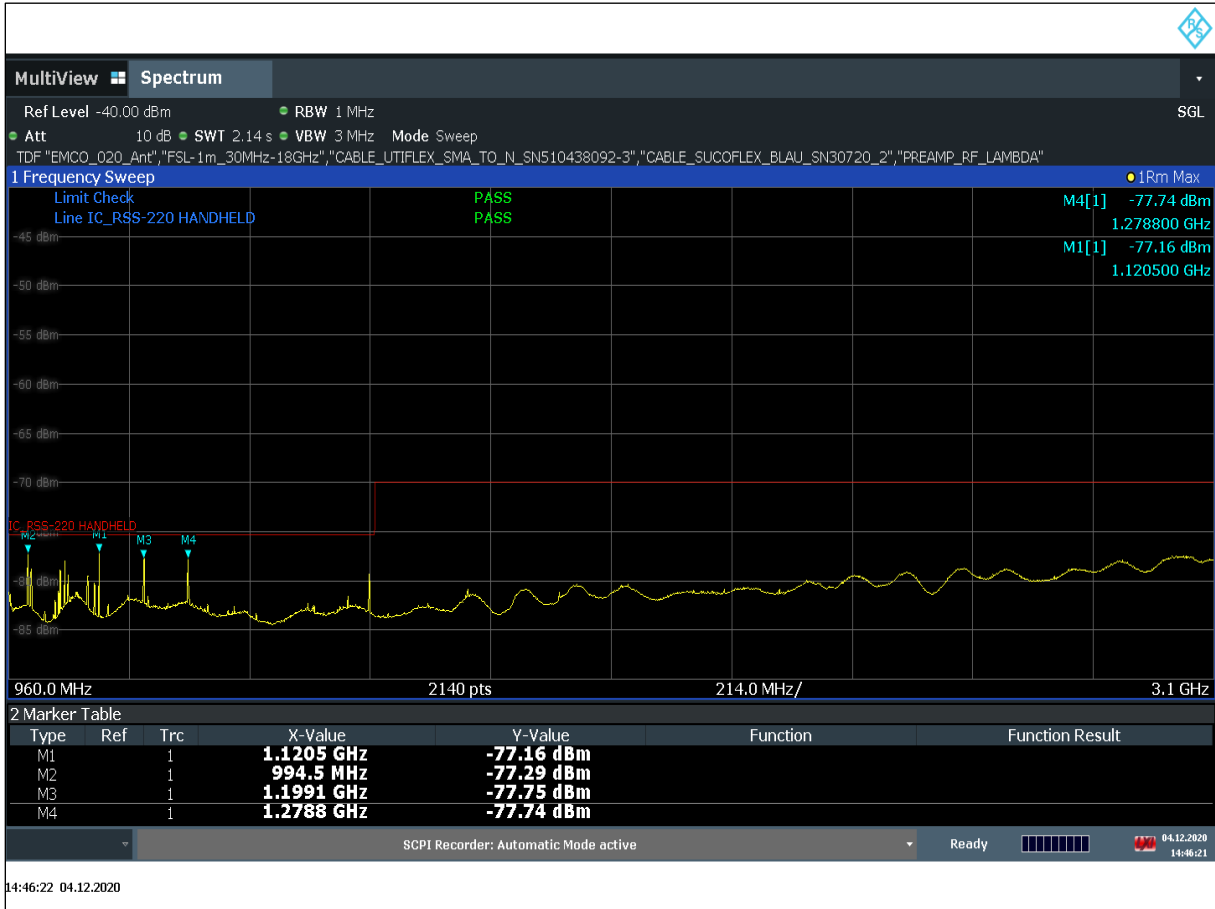
#### 4.01\_RSE\_S06\_960MHZ\_3.1GHz\_AntH



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.



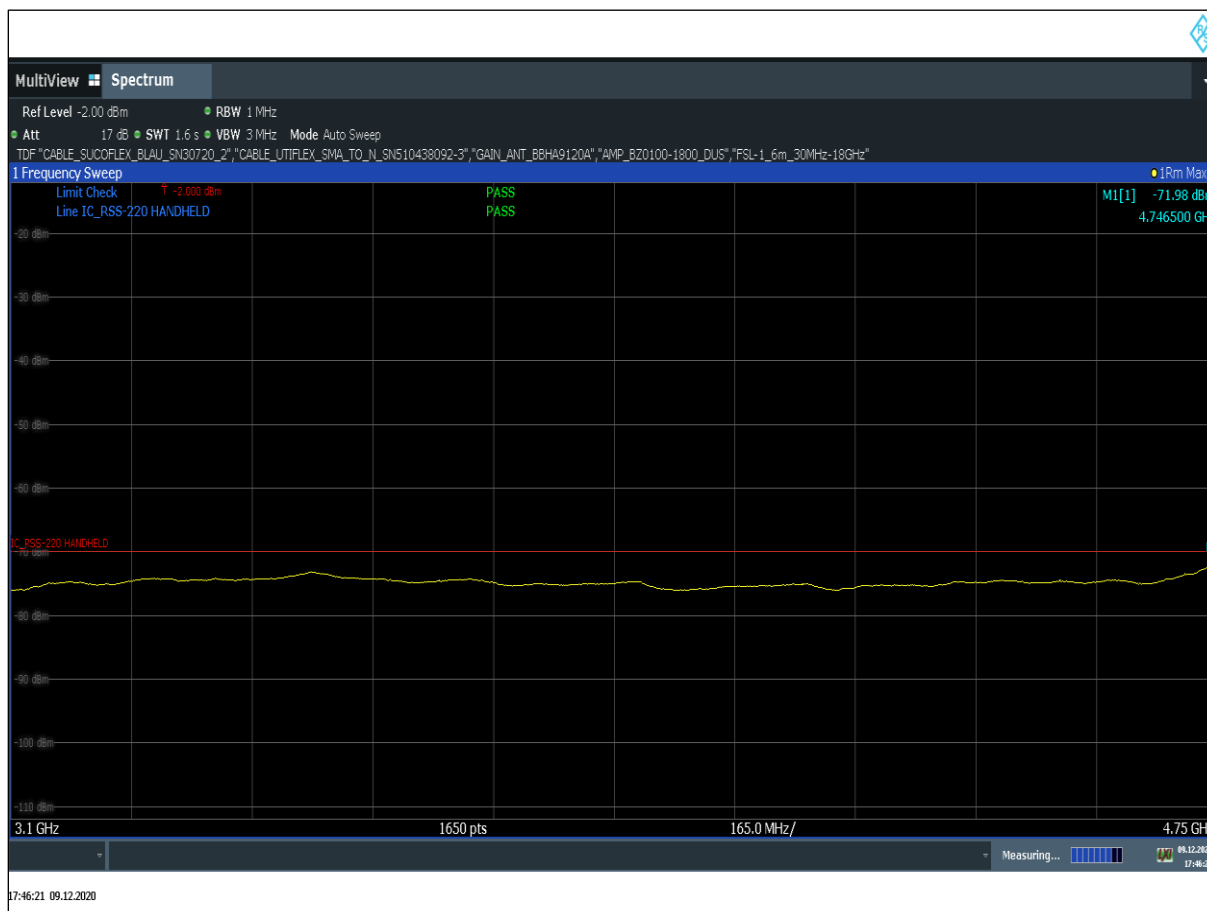
4.02\_RSE\_S06\_960MHZ\_3.1GHz\_AntV



Limit according to RSS 220 shown in this diagram.

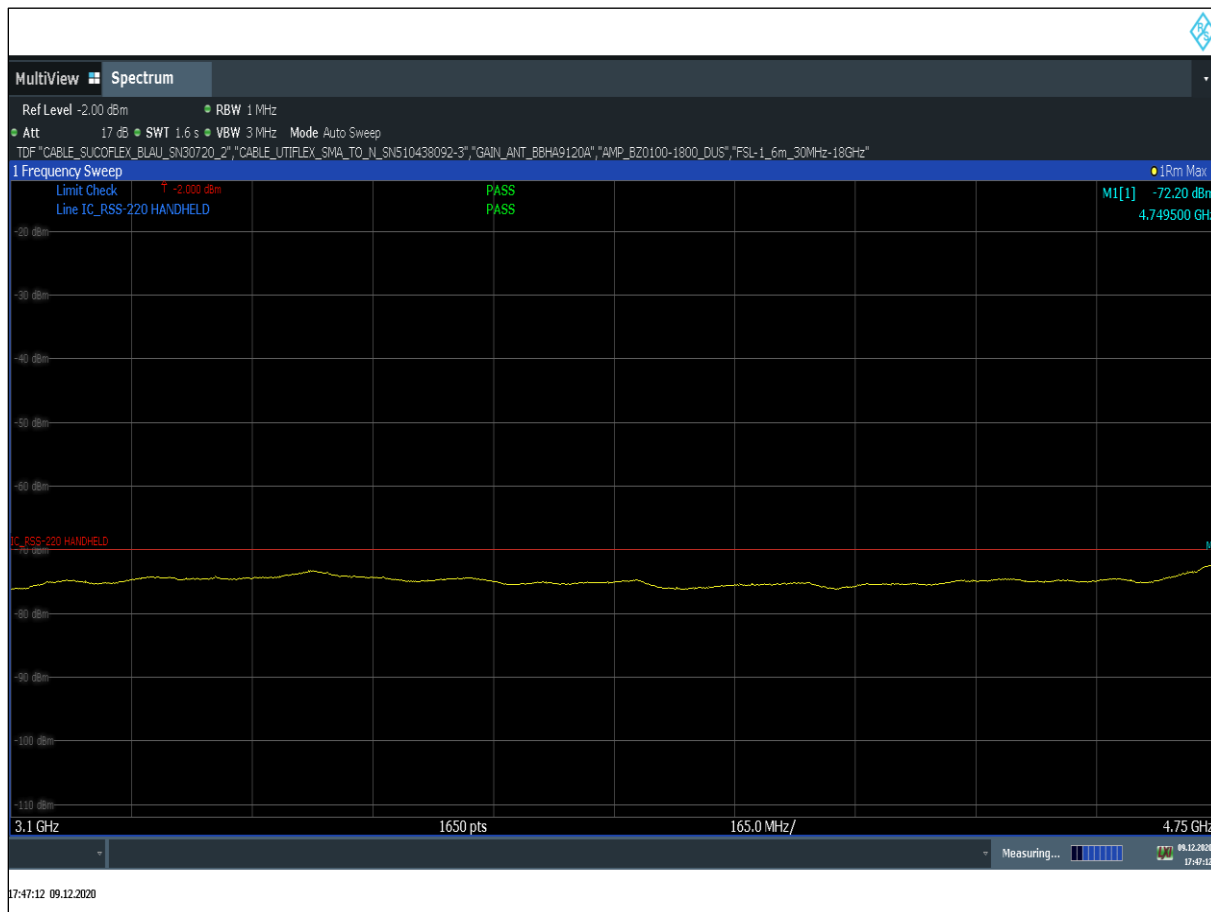
FCC 15.250 Limits are -63.3 dBm in the Freq Range: 1610-1990 MHz and -60.3 dBm 1990 to 3100 MHz.

### 4.03\_RSE\_S06+3.1GHz\_4.75GHz\_AntHV\_EUT0



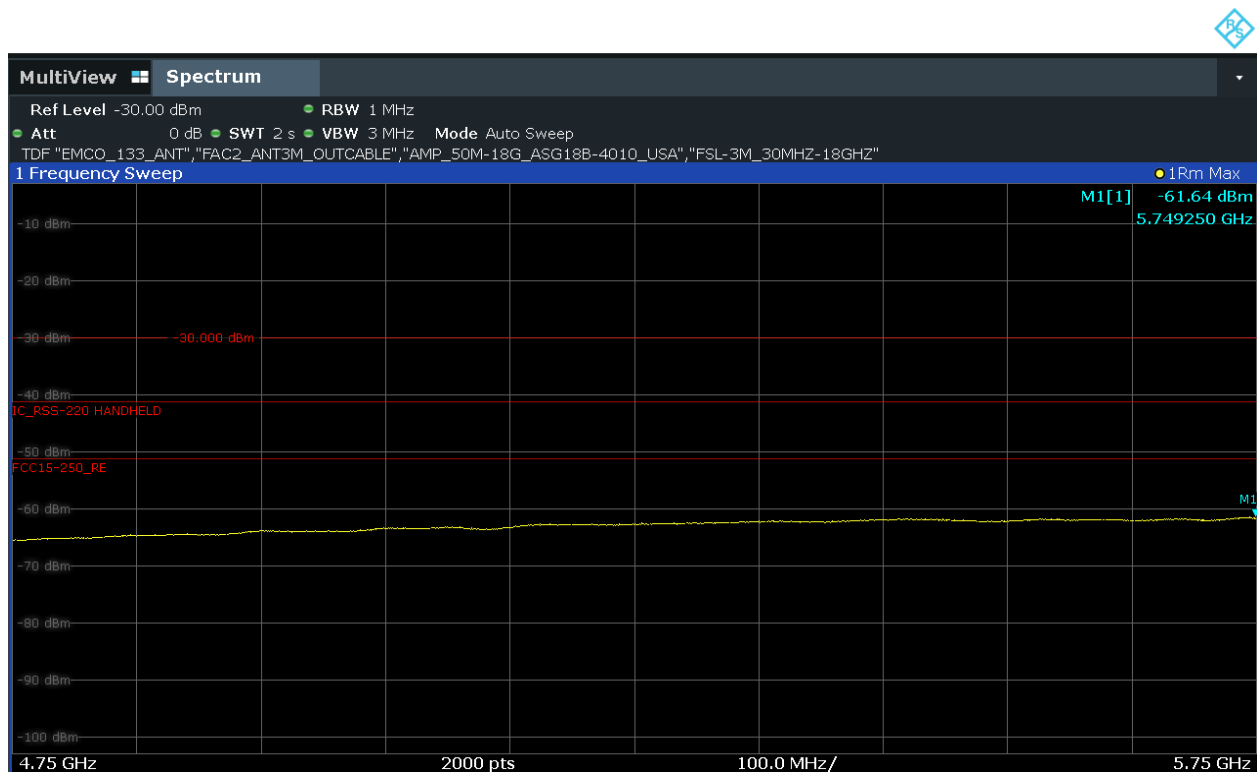
Limit Shown is RSS-220 Limit.

### 4.04\_RSE\_S06+3.1GHz\_4.75GHz\_AntHV\_EUT90

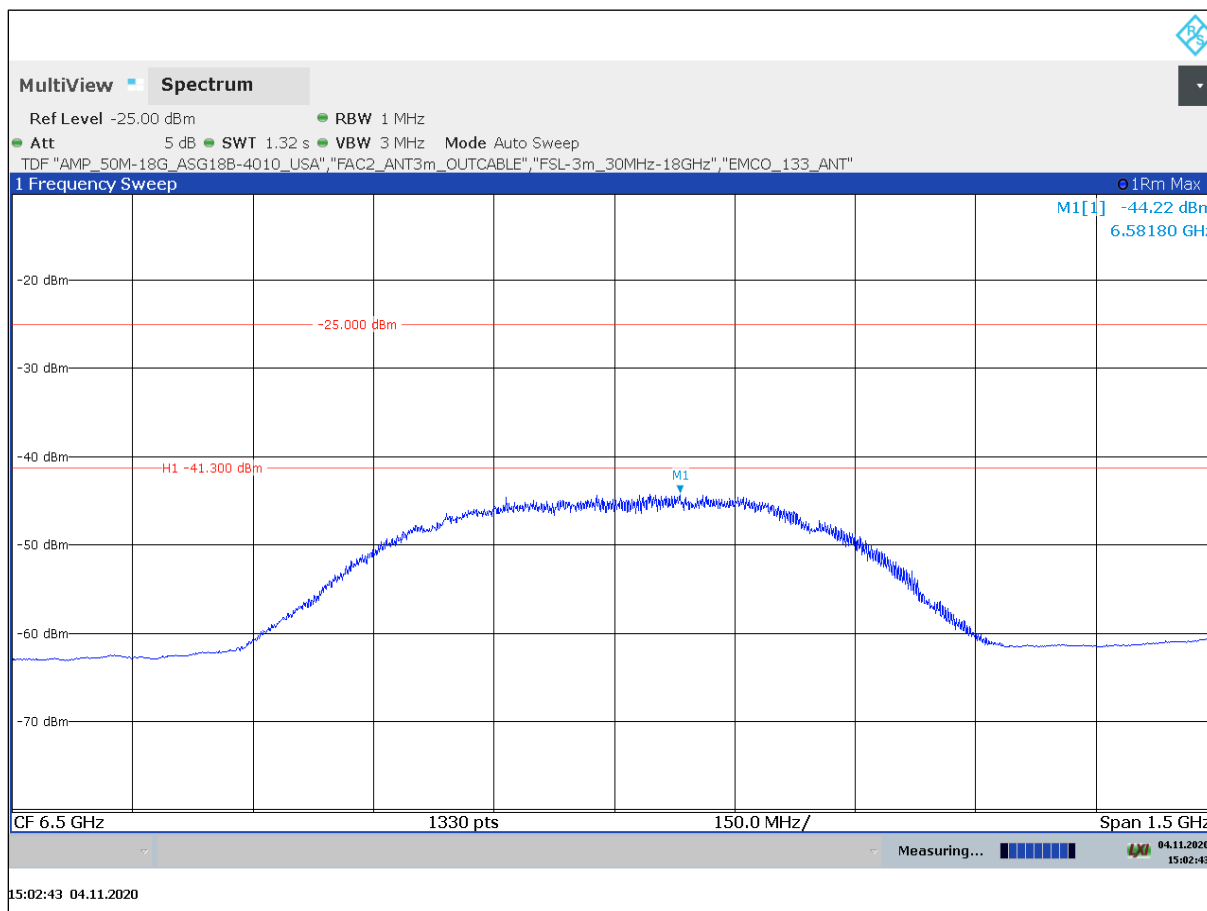


Limit Shown is RSS-220 Limit

### 4.05\_RSE\_3.1G\_5.75G



### 4.06\_RSE\_5.75G\_7.25G

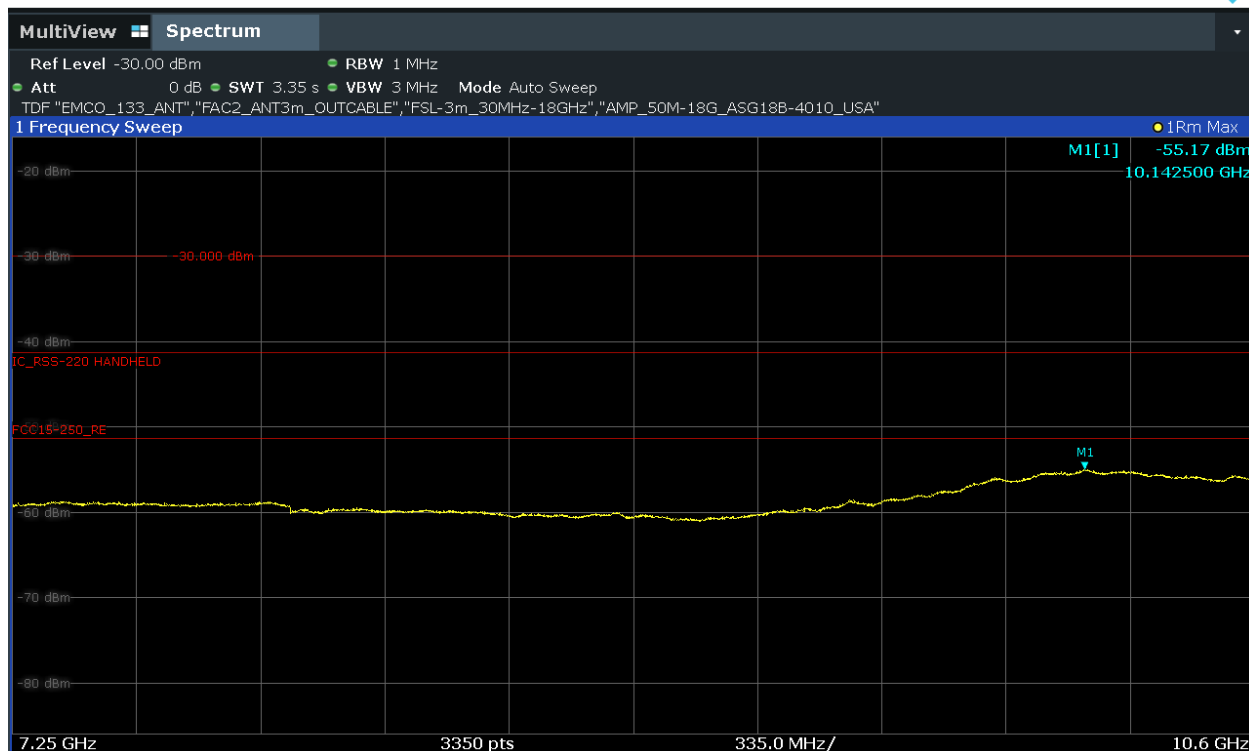


#### Applicable Limits

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

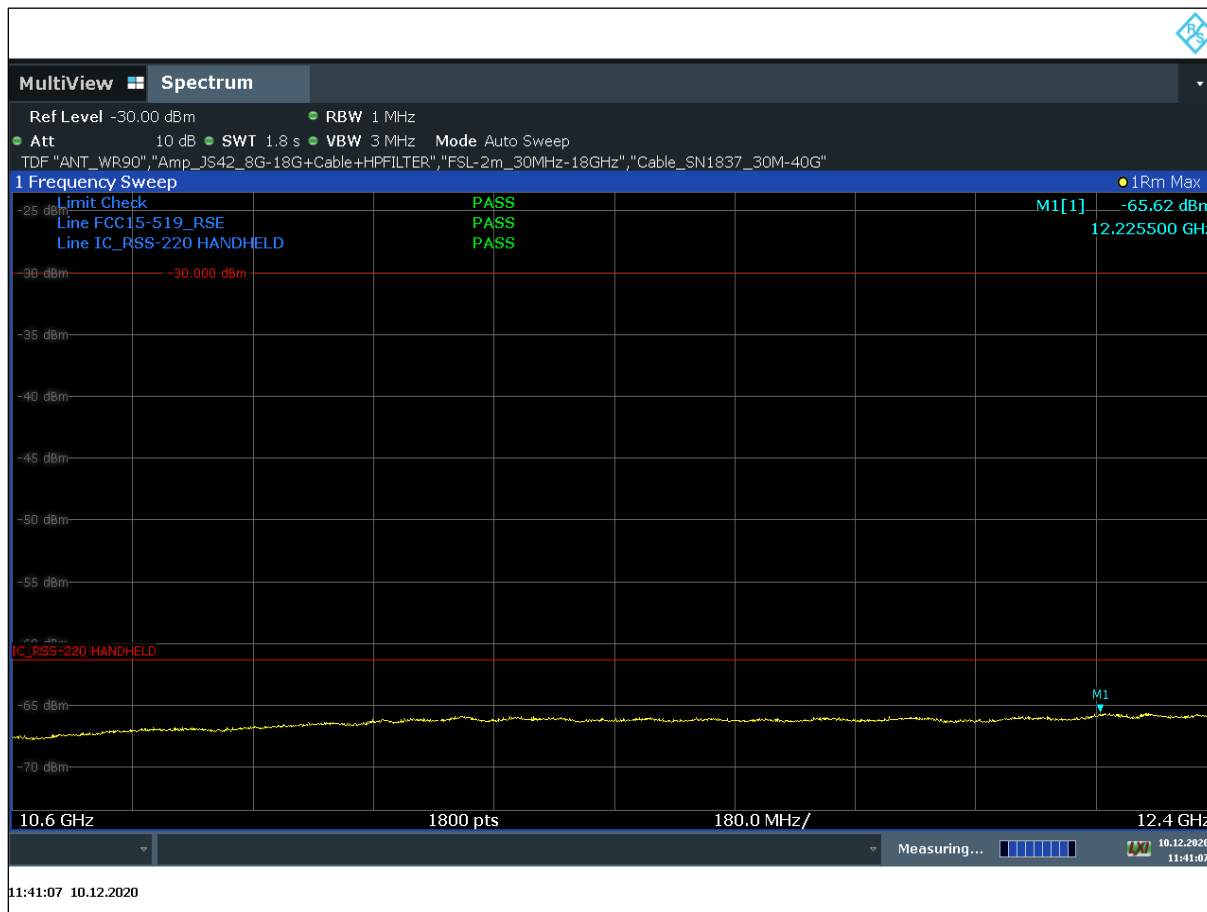


#### Applicable Limits

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

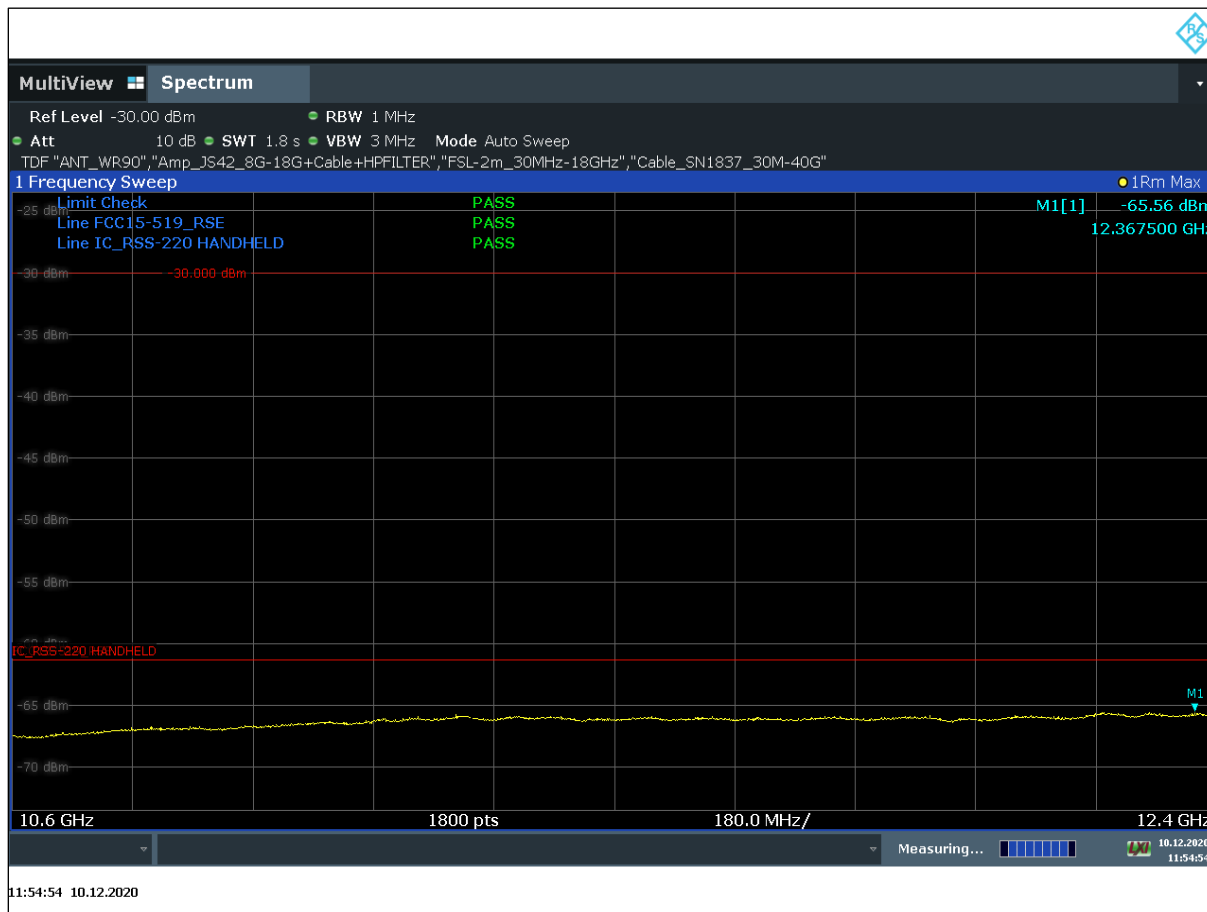
### 4.08\_T01\_UWB\_ANTH\_EUTO\_90\_10.6G\_12.4G



**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\_EUTO\_90\_10.6G\_12.4G



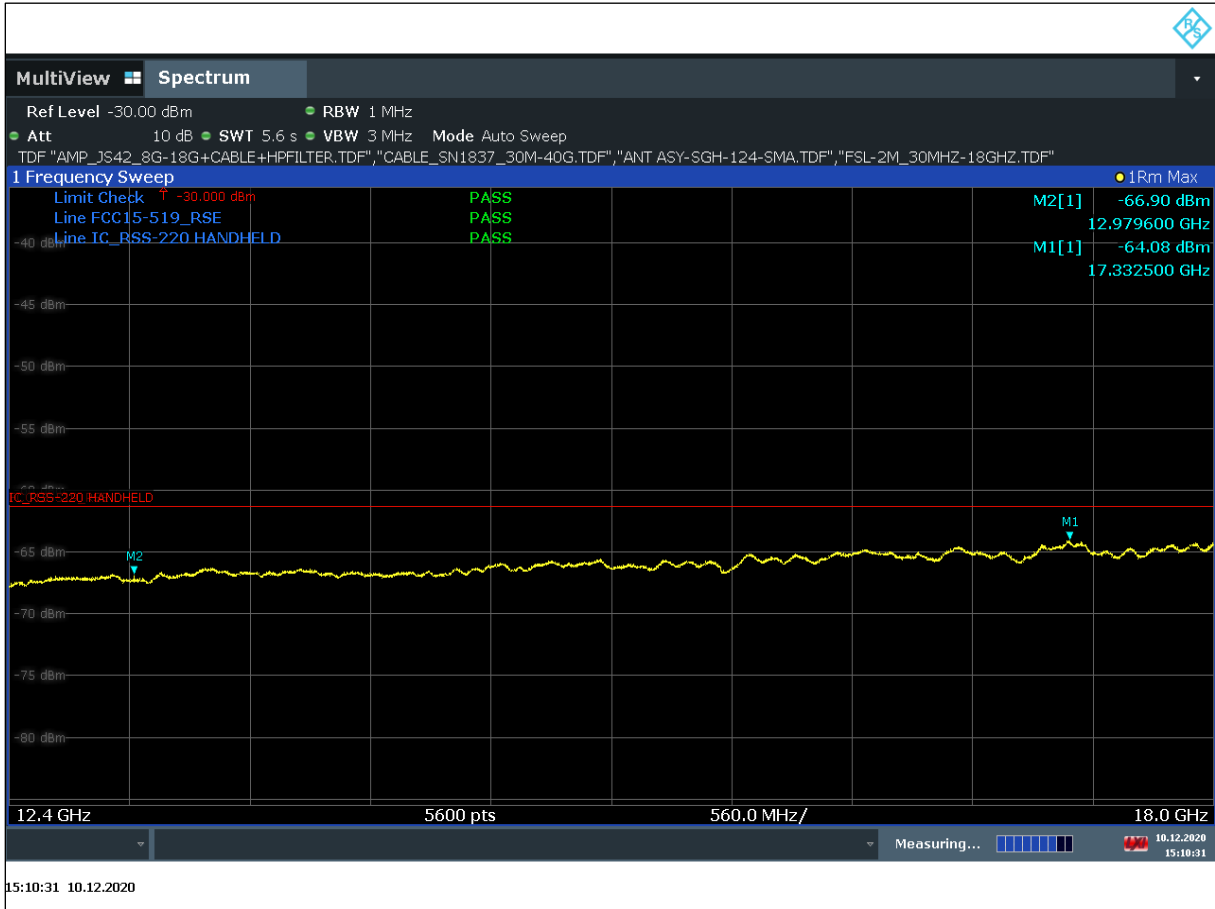
Applicable Limits

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\_EUTO\_90\_12.4G\_18G

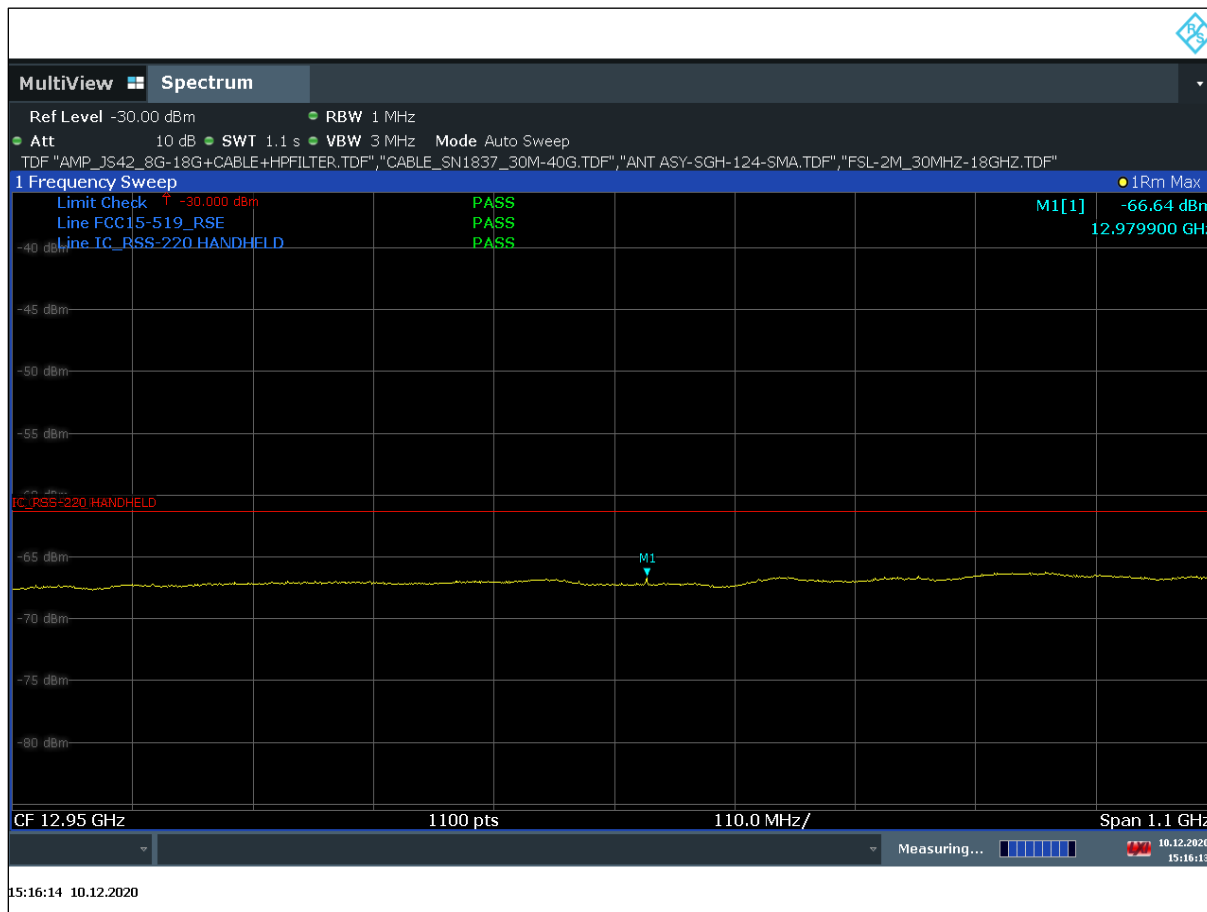


Applicable Limits

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

for FCC 15.250 above 10.6GHz is -61.3 dBm

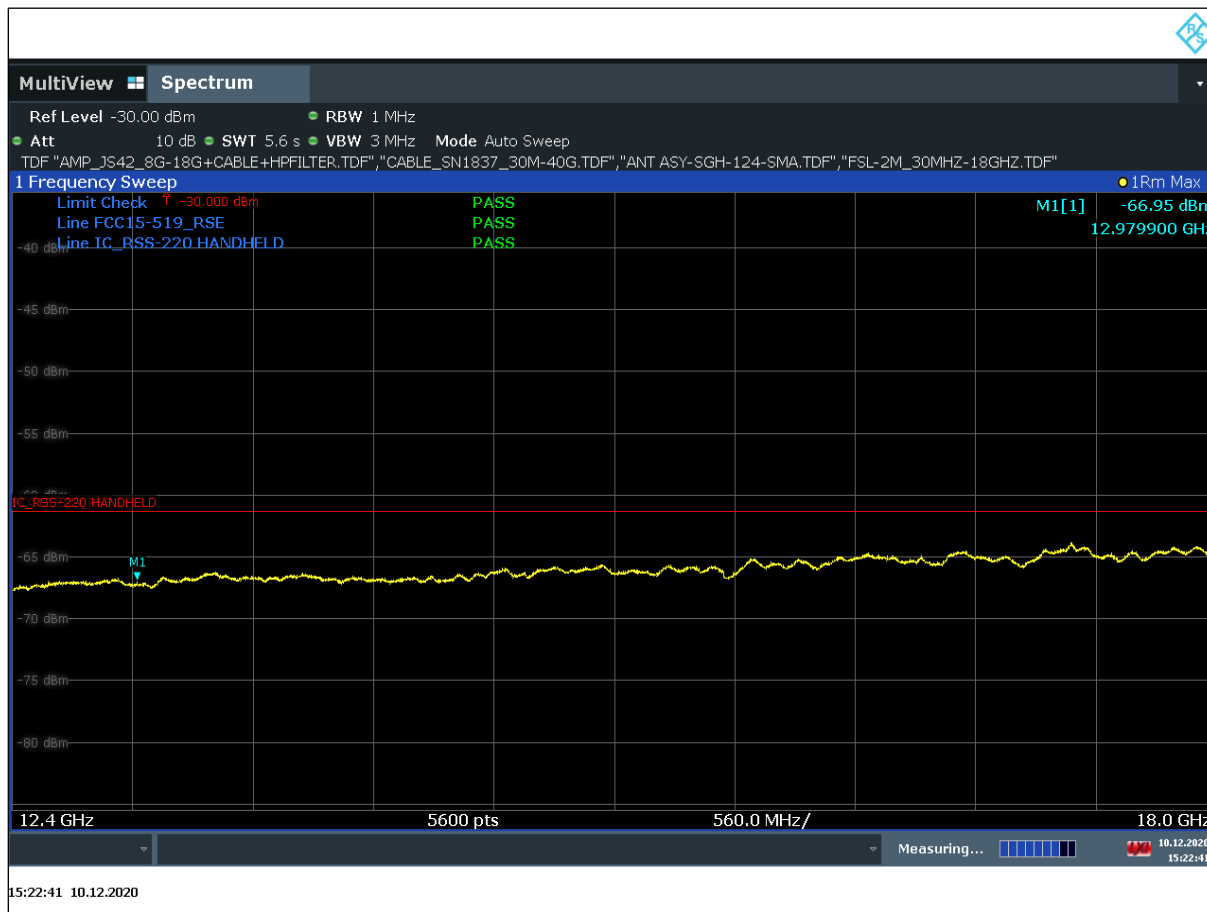
### 4.11\_T01\_UWB\_ANTV\_EUT0\_90\_12.4G\_18G\_zoom



**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

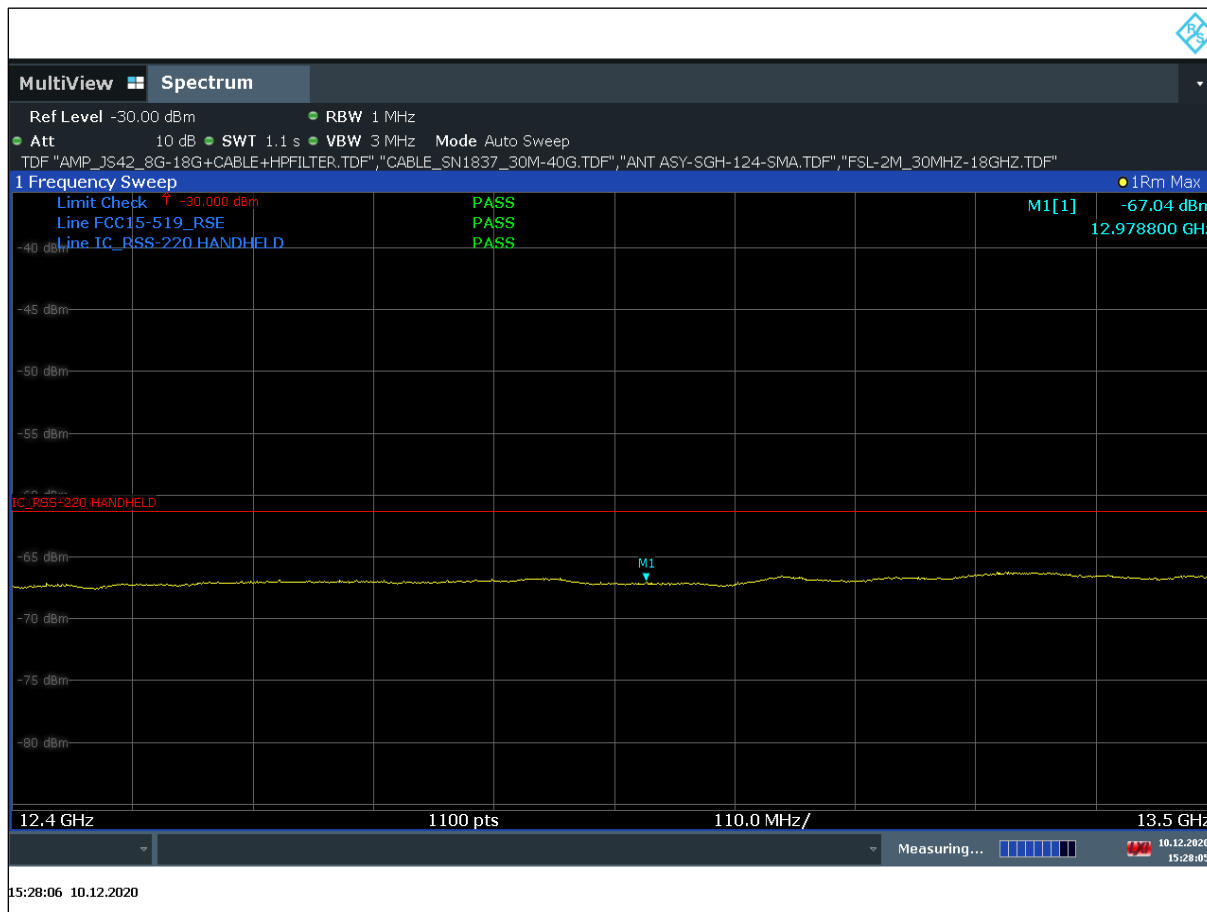


#### Applicable Limits

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

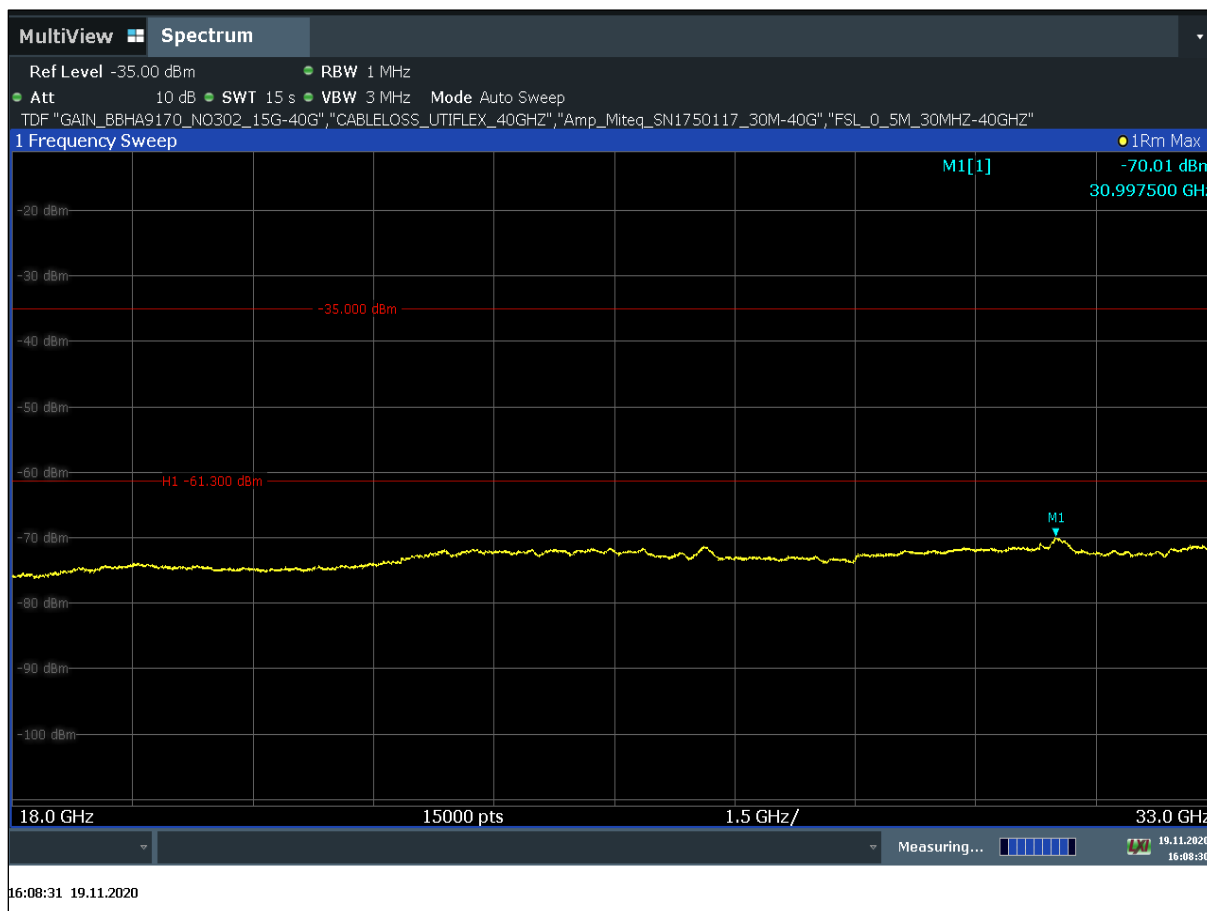


#### Applicable Limits

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

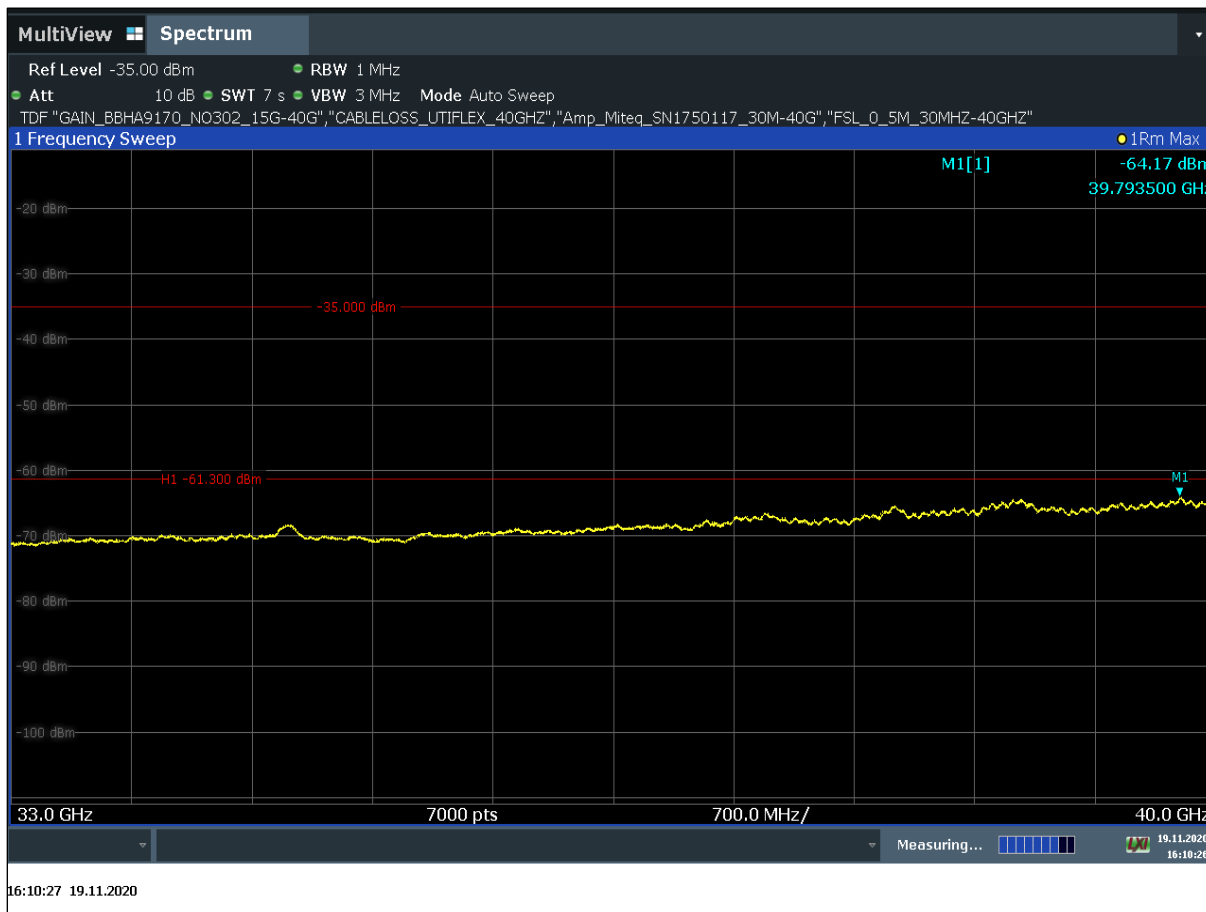
for FCC 15.250 above 10.6GHz is -61.3 dBm

### 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



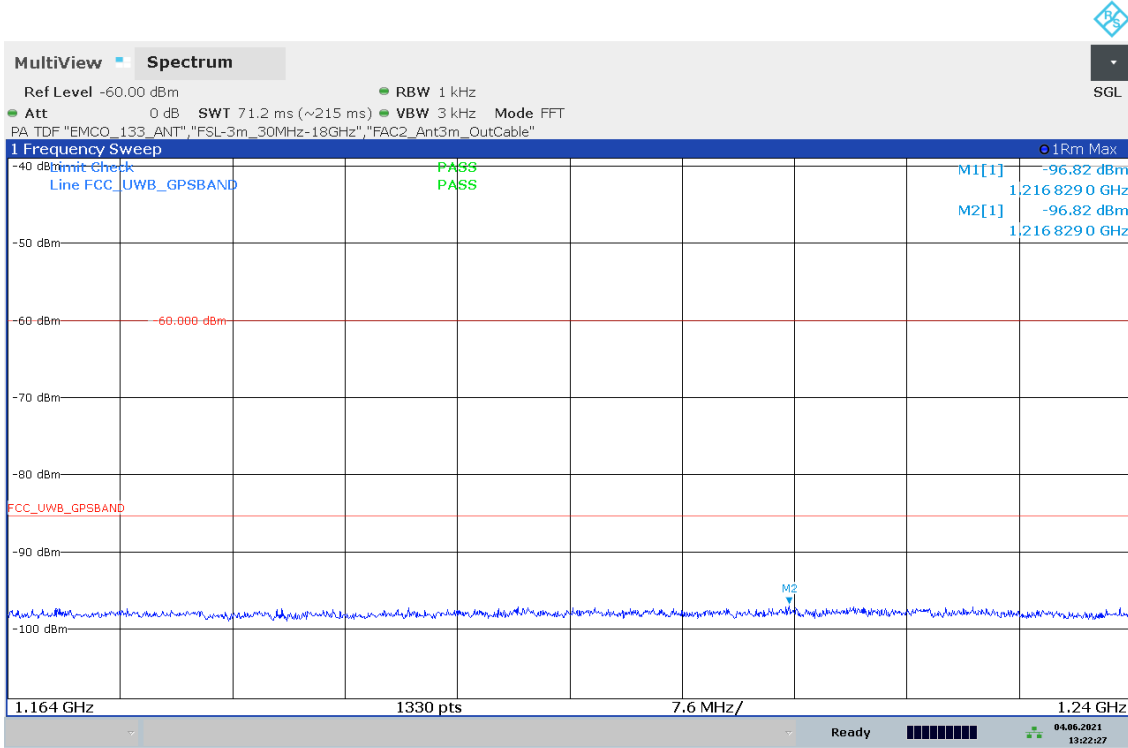
#### Applicable Limits

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

for FCC 15.250 above 10.6GHz is -61.3 dBm

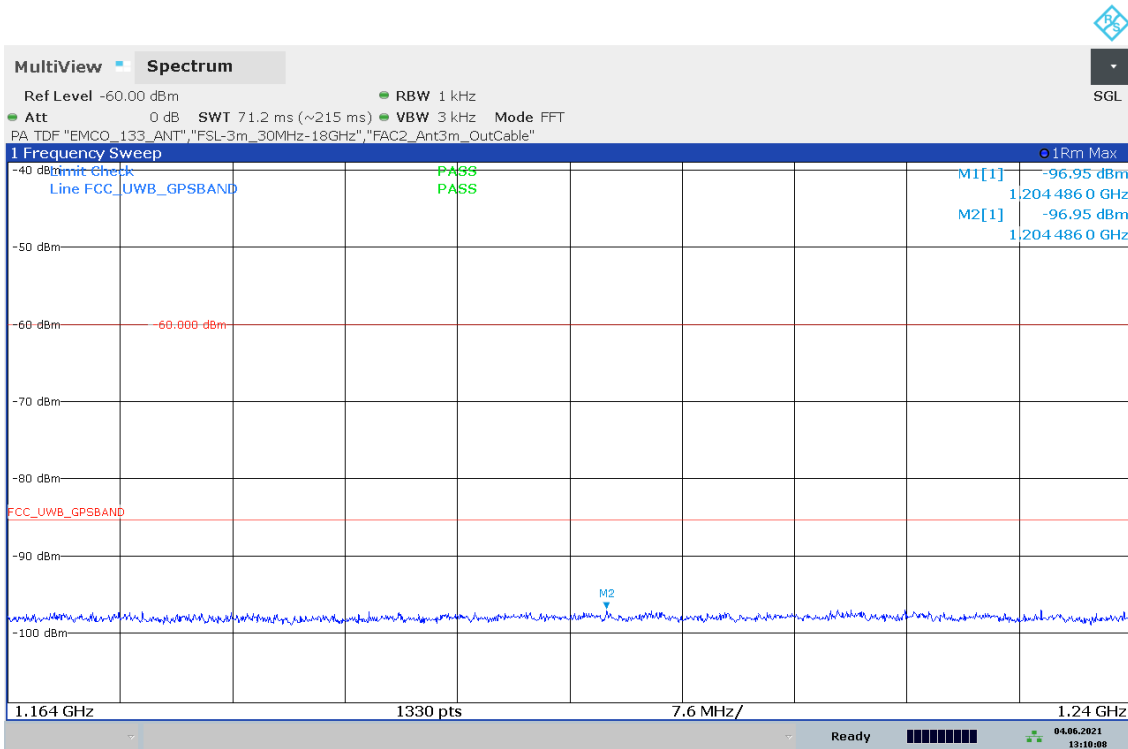
### 1.5 Emissions in Band 1164 MHz – 1240 MHz and 1559 MHz – 1610 MHz

#### 4.16\_ANTH



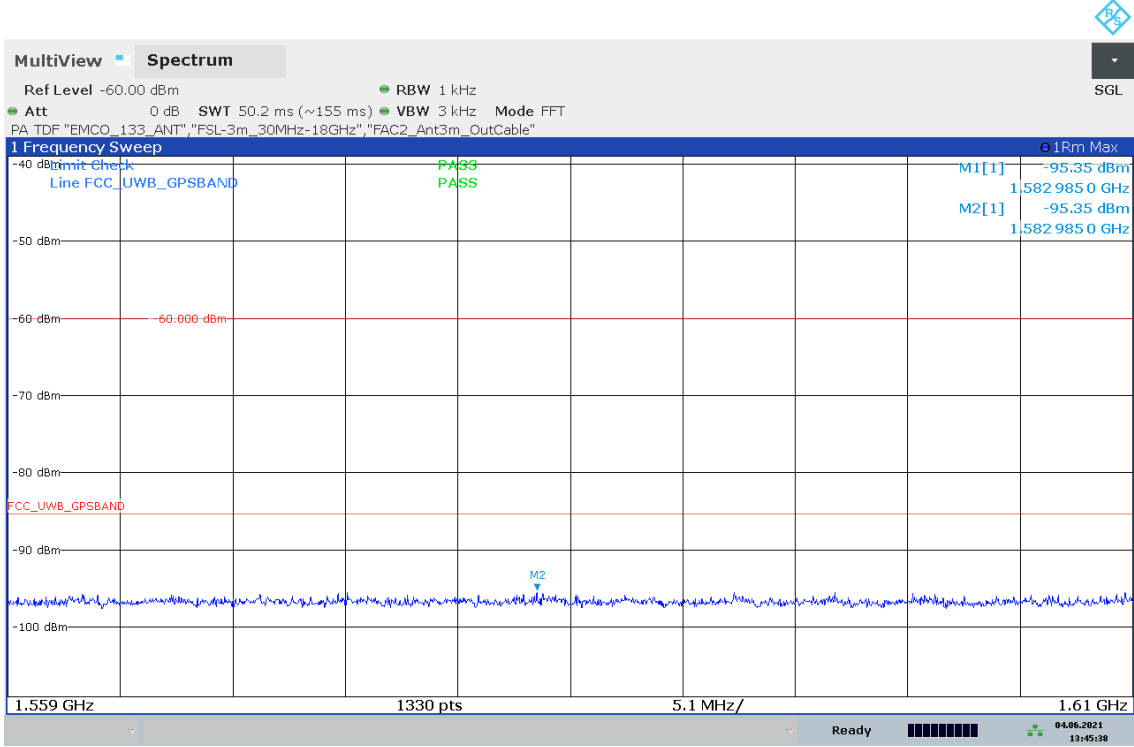
13:22:27 04.06.2021

#### 4.17\_ANTV



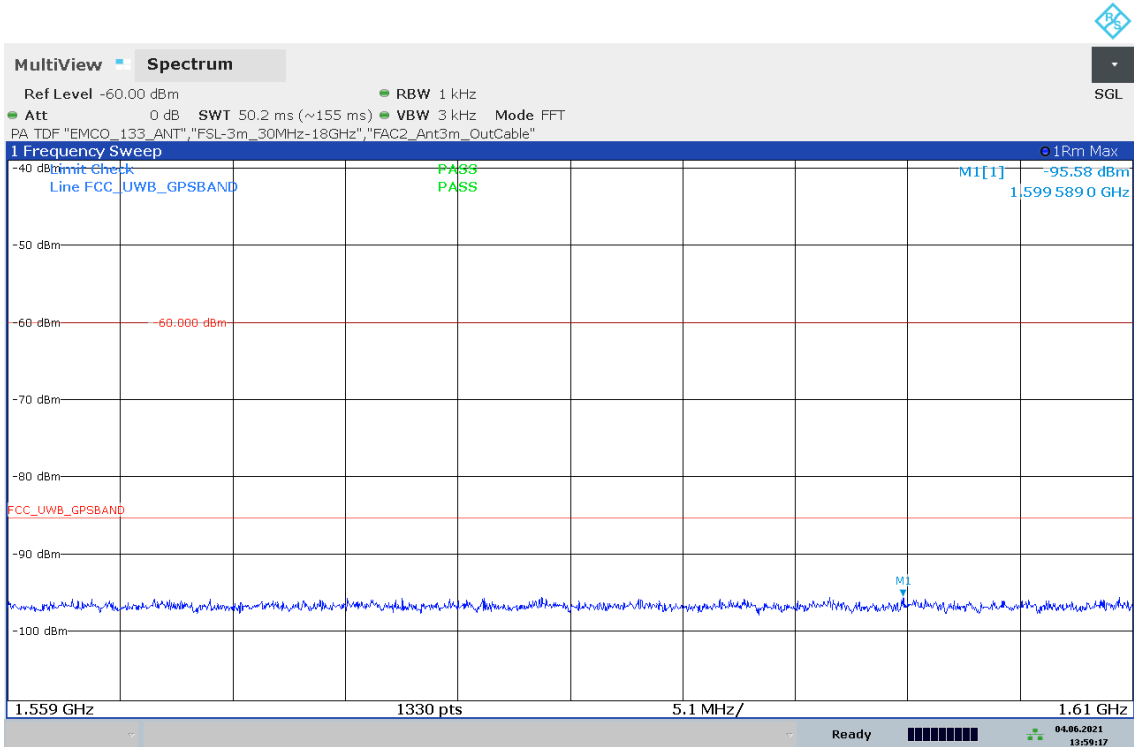
13:10:09 04.06.2021

### 4.18\_ANTH



13:45:38 04.06.2021

### 4.19\_ANTV



13:59:17 04.06.2021



# End of Annex 1