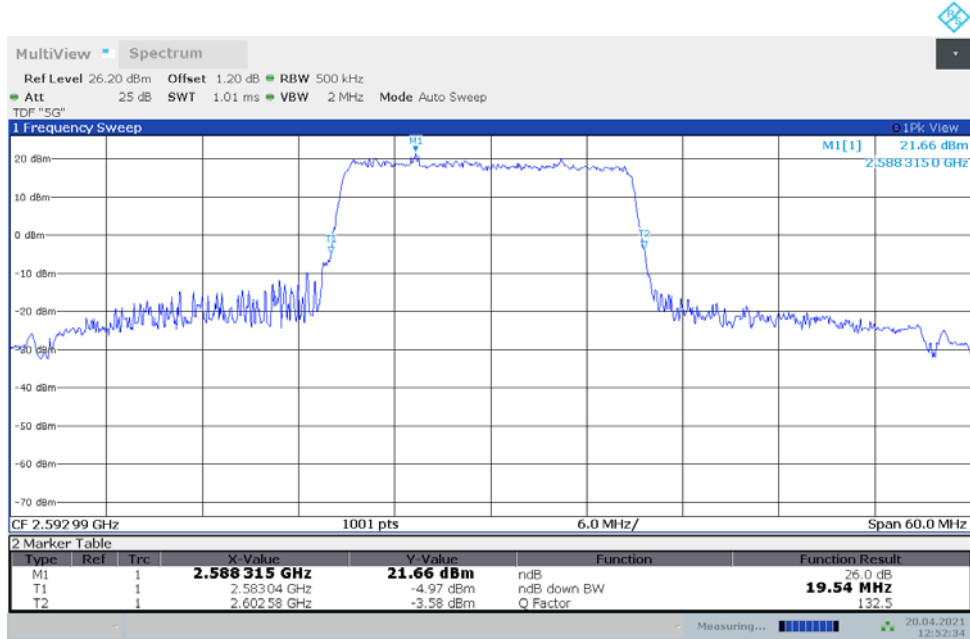


### n41,20MHz(-26dBc)

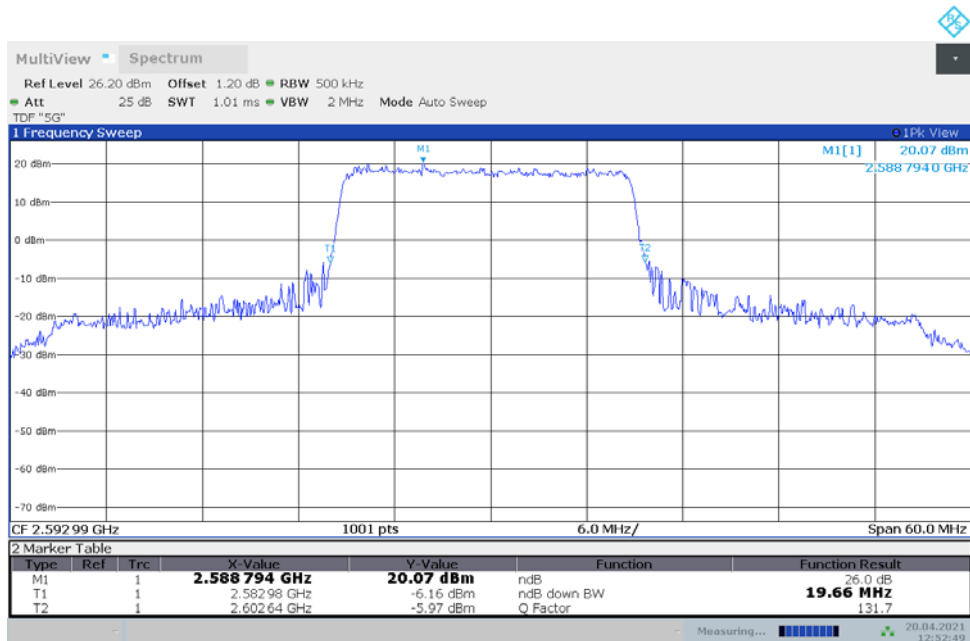
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	19.540	19.660

### n41,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



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### n41,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

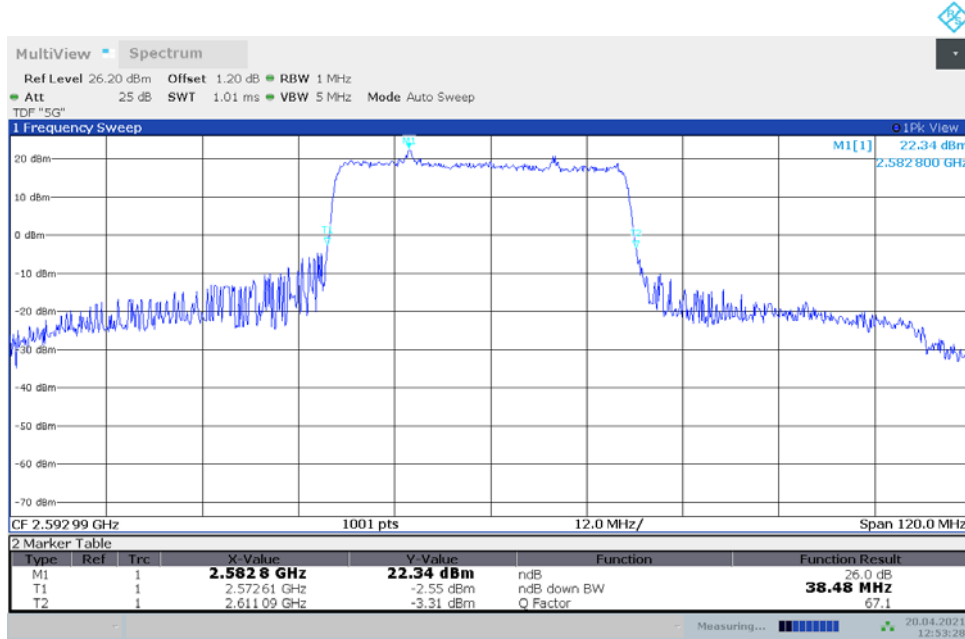


Date: 20.APR.2021 12:52:50

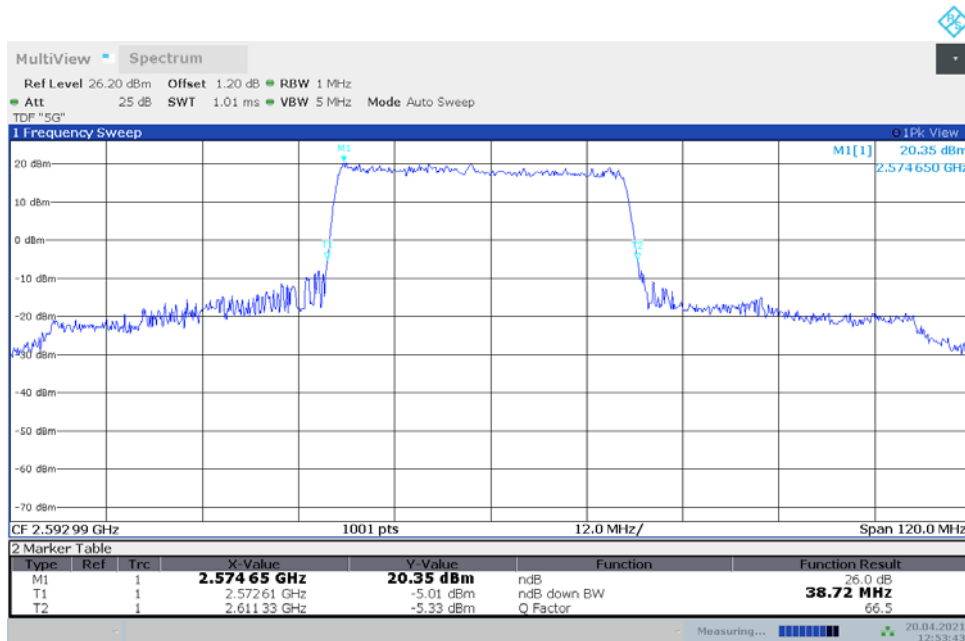
### n41,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	38.480	38.720

### n41,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



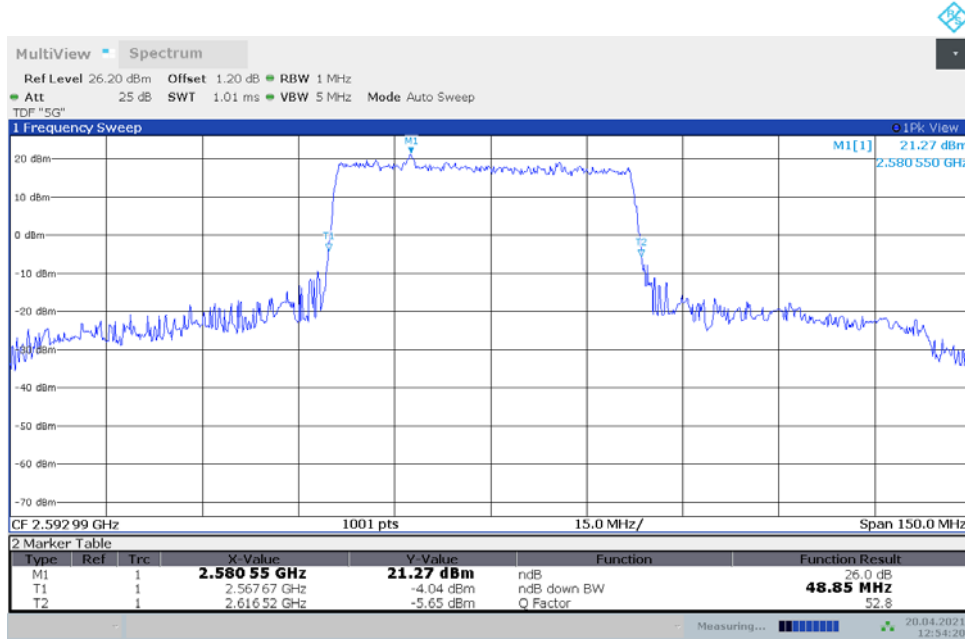
### n41,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



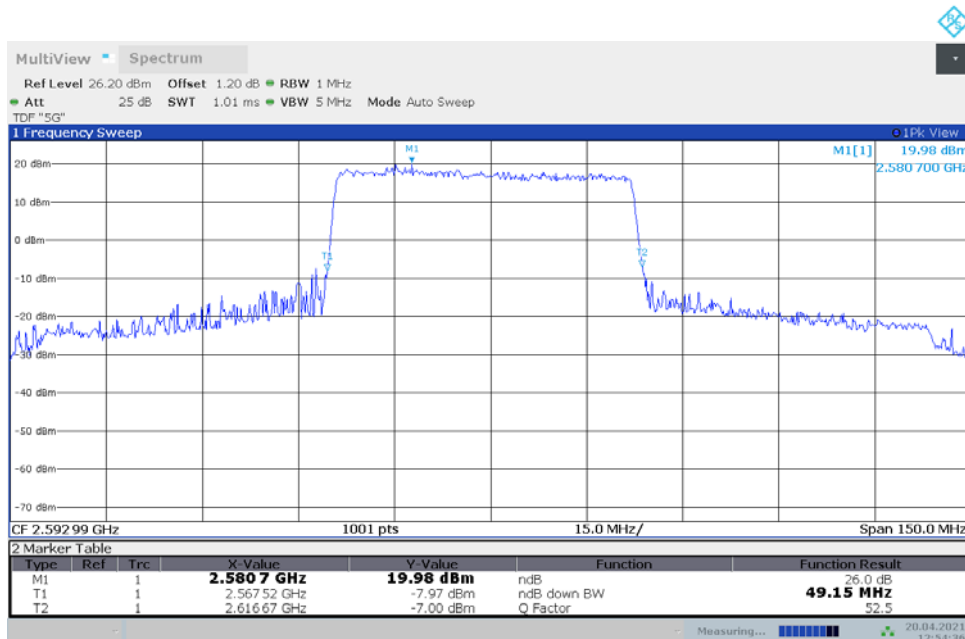
### n41,50MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	48.850	49.150

### n41,50MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



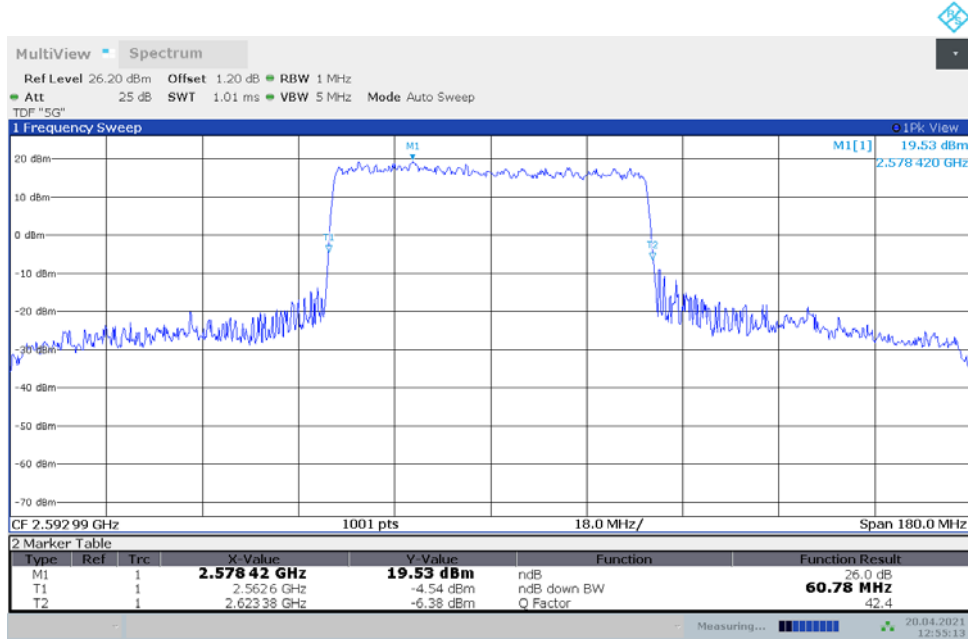
### n41,50MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



### n41,60MHz(-26dBc)

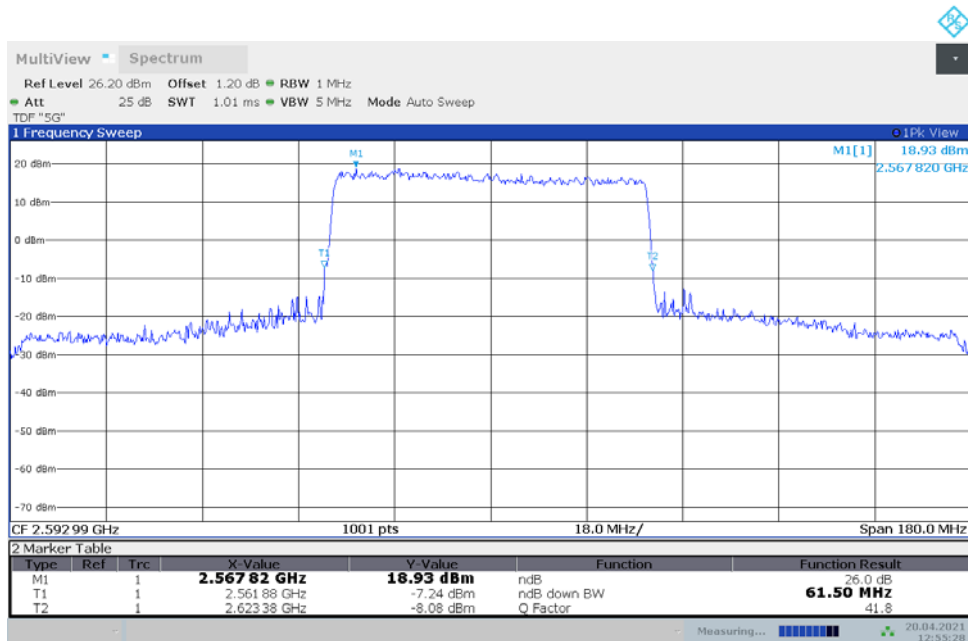
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	60.780	61.500

### n41,60MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



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### n41,60MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

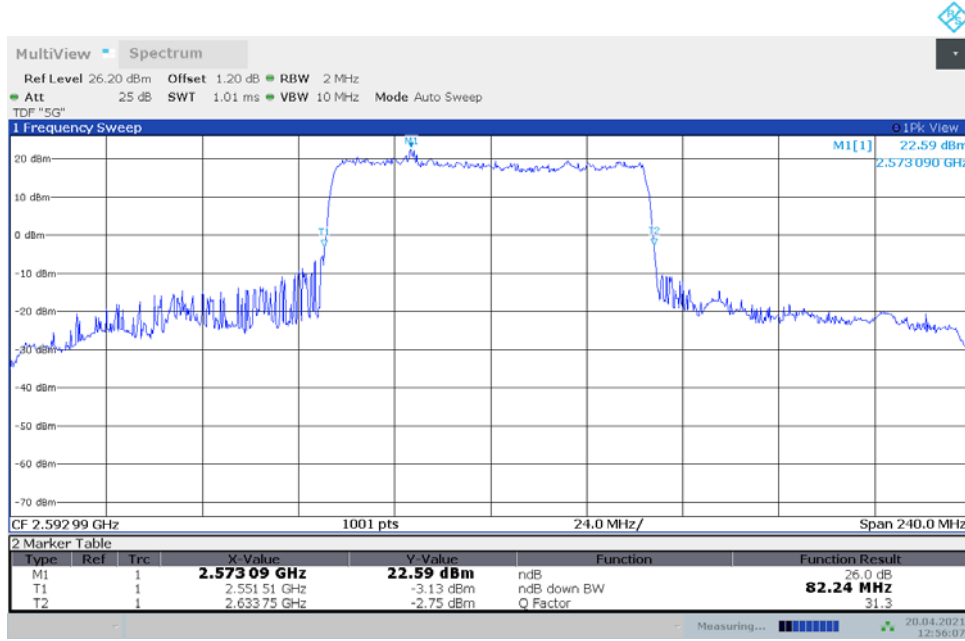


Date: 20.APR.2021 12:55:29

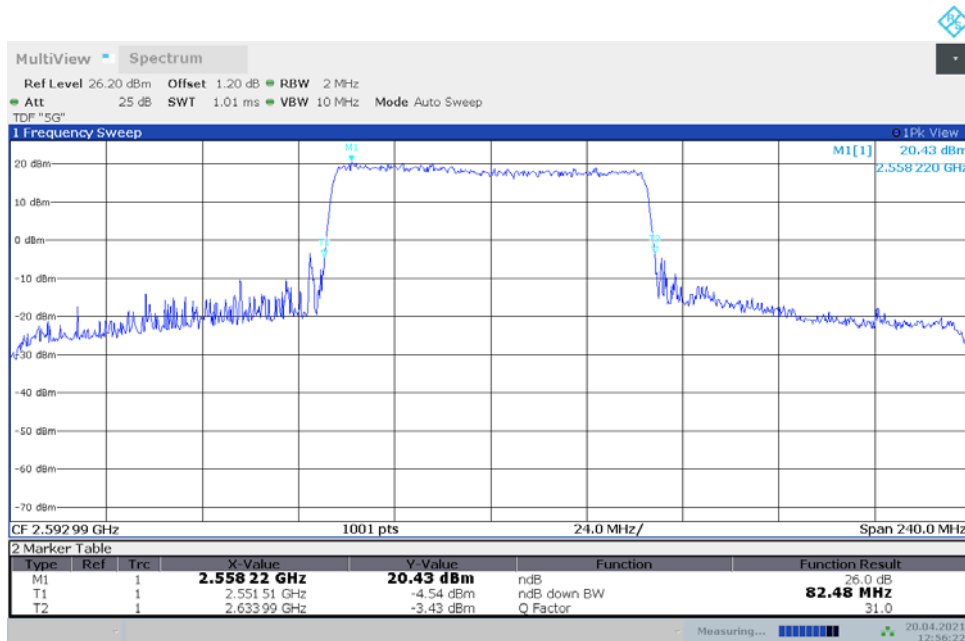
### n41,80MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	82.240	82.480

### n41,80MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



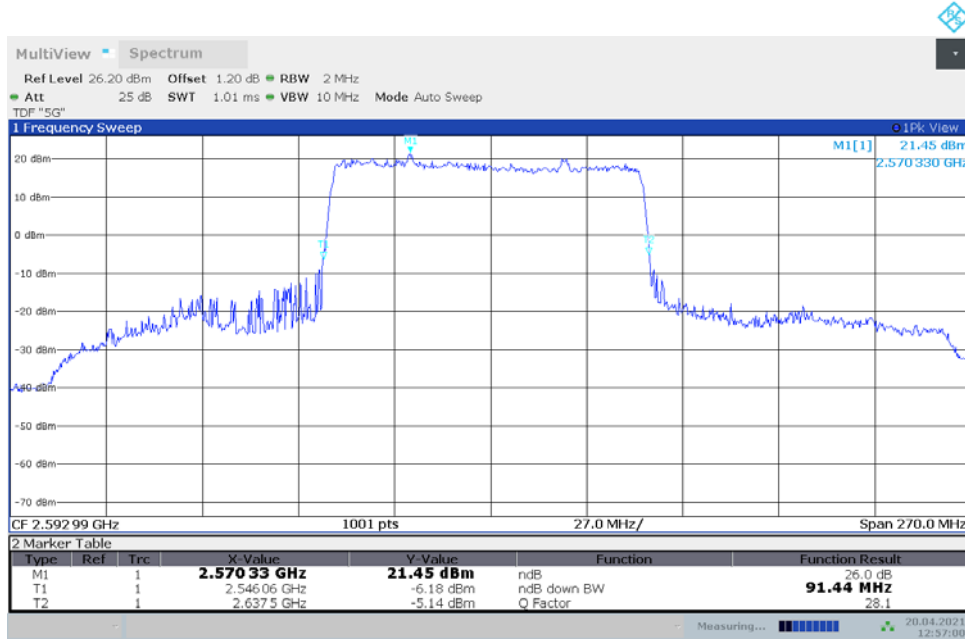
### n41,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



### n41,90MHz(-26dBc)

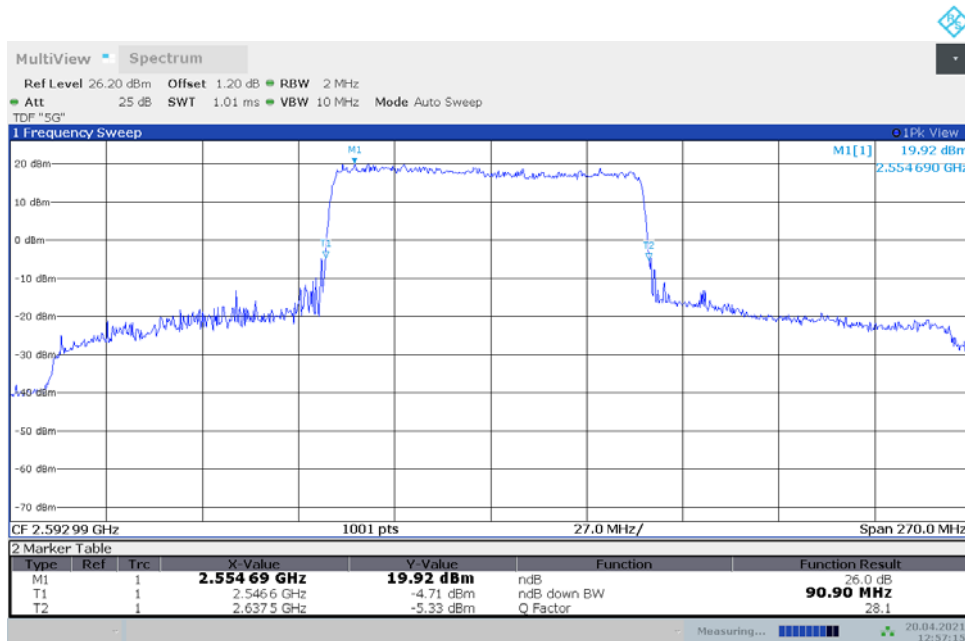
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	91.440	90.900

### n41,90MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



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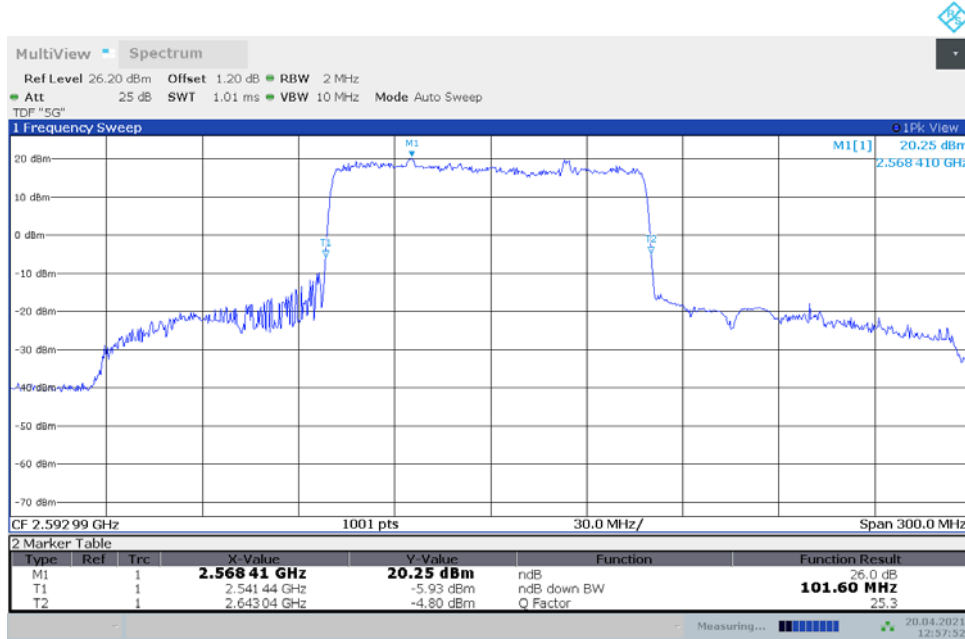
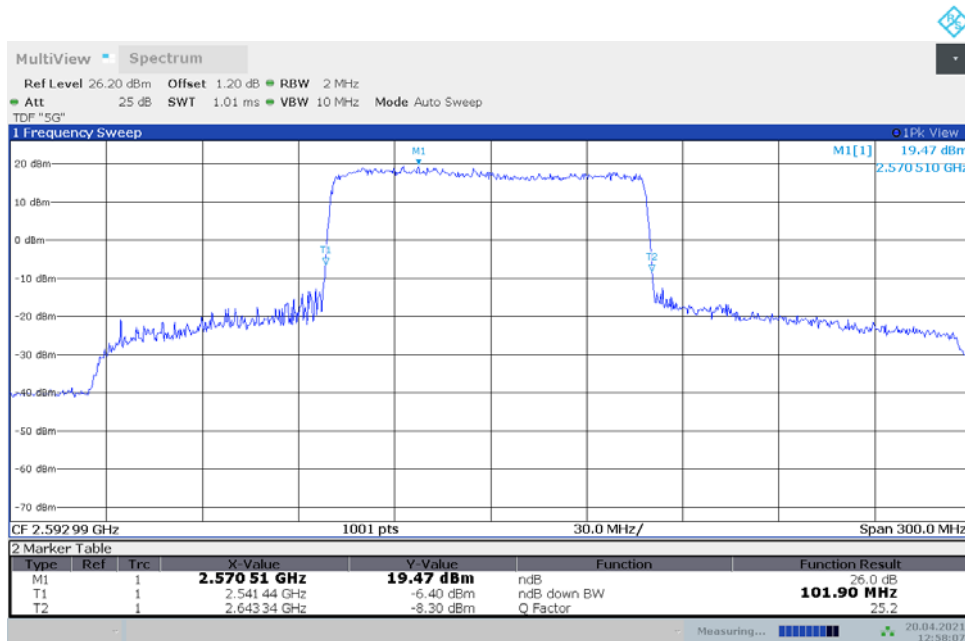
### n41,90MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



Date: 20.APR.2021 12:57:15

**n41,100MHz(-26dBc)**

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
2592.99	101.600	101.900

**n41,100MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**

**n41,100MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**


**LTE Band 12+NR n66**  
**n66,5MHz(-26dBc)**

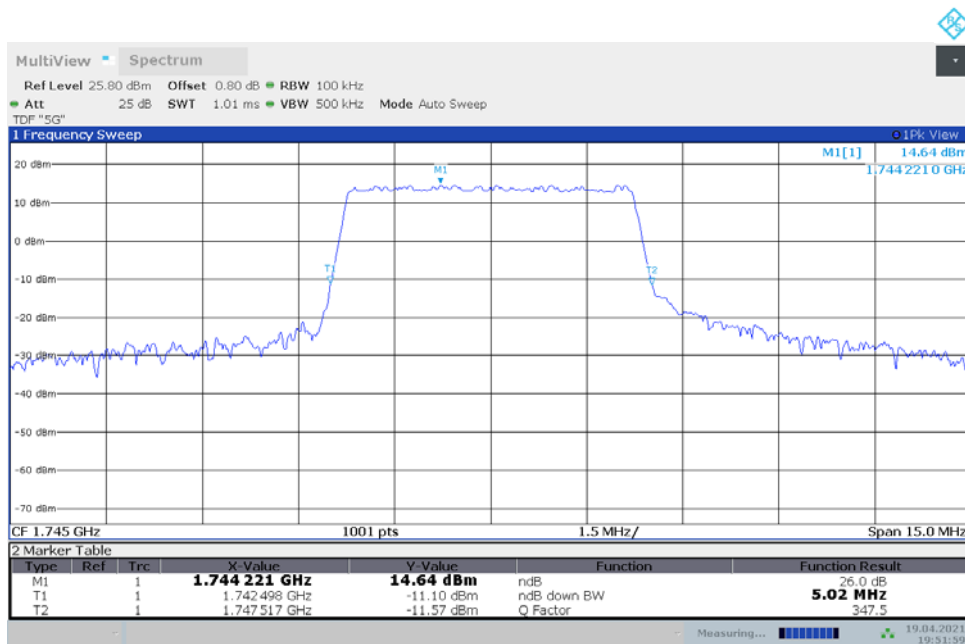
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
1745	4.900	5.020

**n66,5MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



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**n66,5MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**



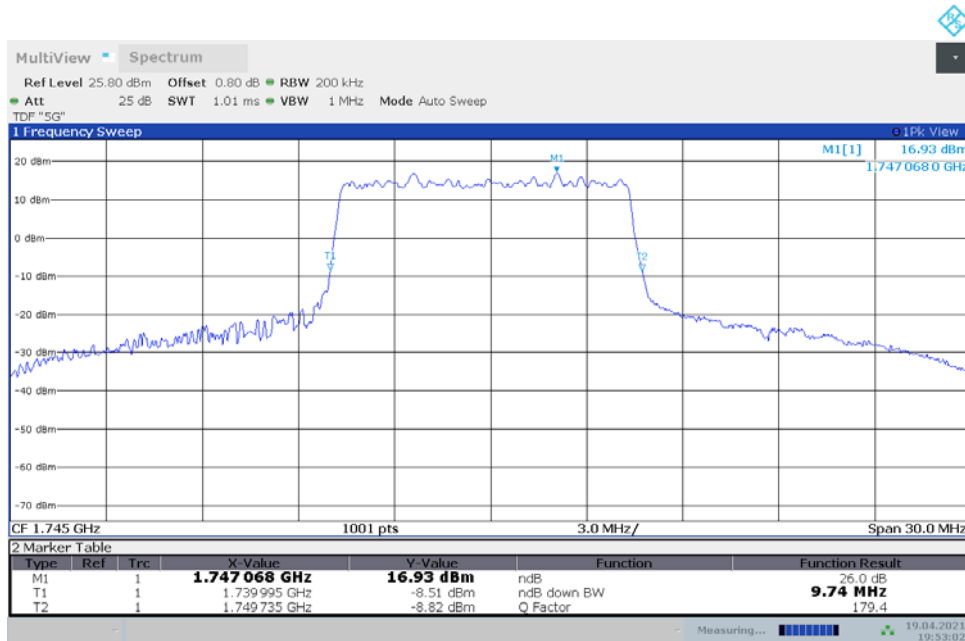
Date:19 APR.2021 19:52:00



**LTE Band 12+NR n66**  
**n66,10MHz(-26dBc)**

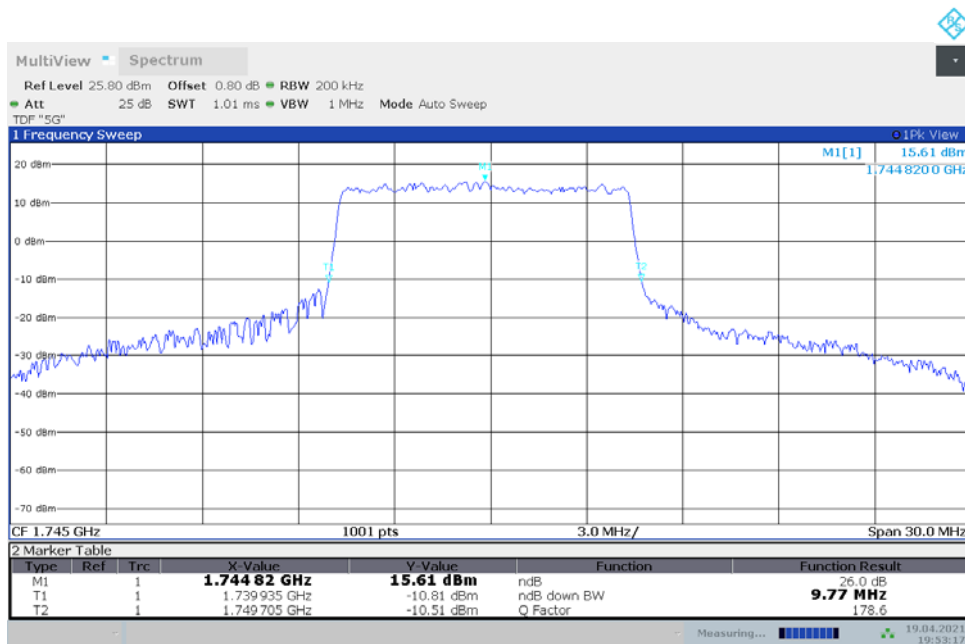
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
1745	9.740	9.770

**n66,10MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



Date:19 APR.2021 19:53:02

**n66,10MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**

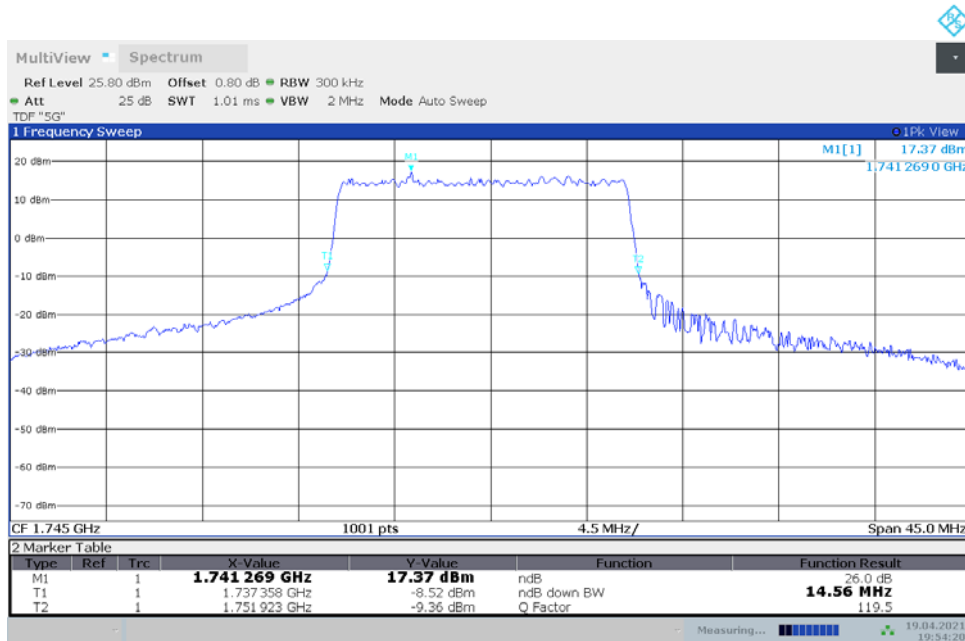


Date:19 APR.2021 19:53:17

**LTE Band 12+NR n66**  
**n66,15MHz(-26dBc)**

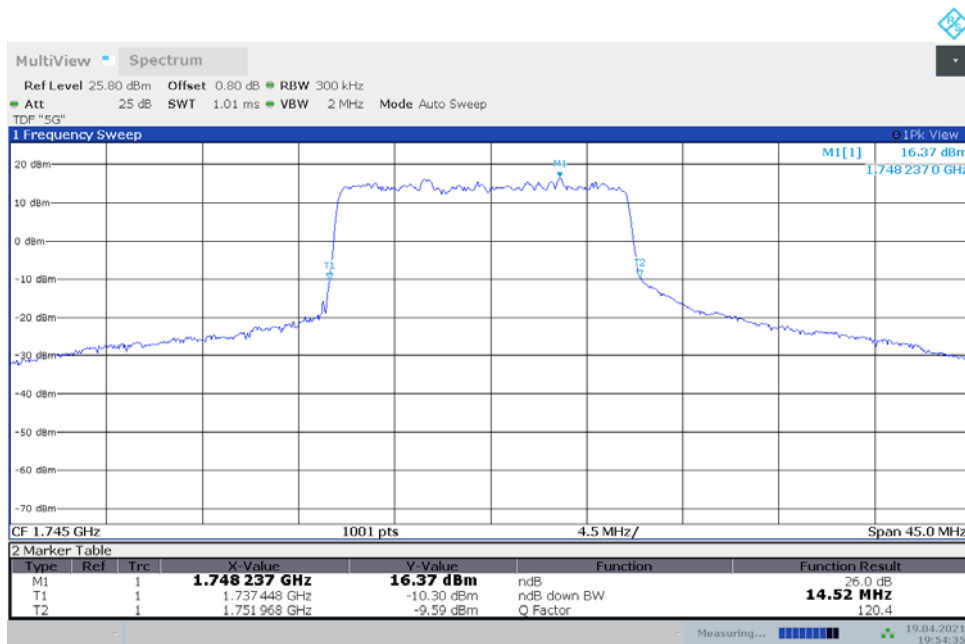
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
1745	14.565	14.520

**n66,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



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**n66,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**

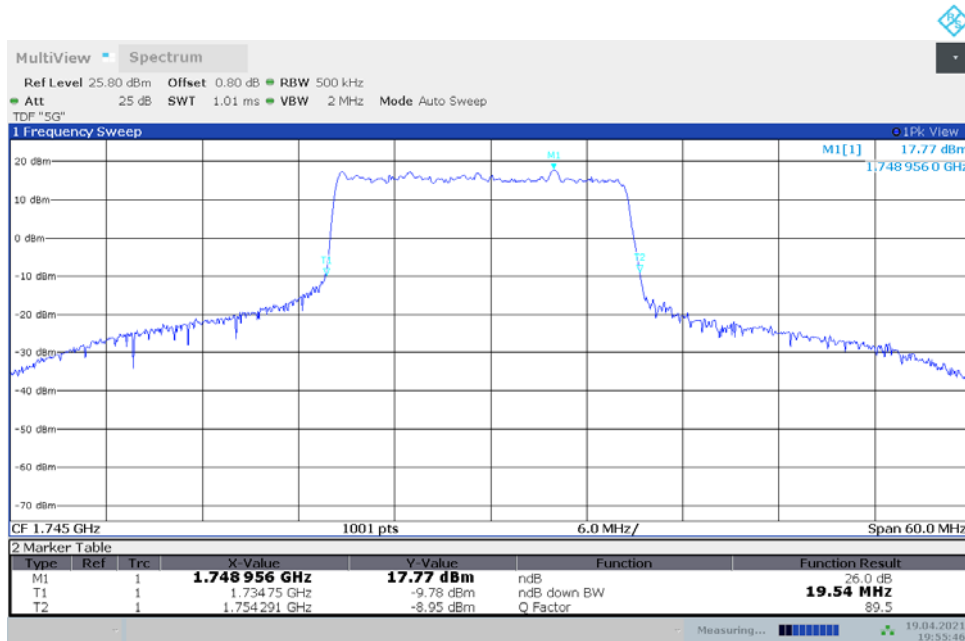


Date:19 APR.2021 19:54:36

**LTE Band 12+NR n66**  
**n66,20MHz(-26dBc)**

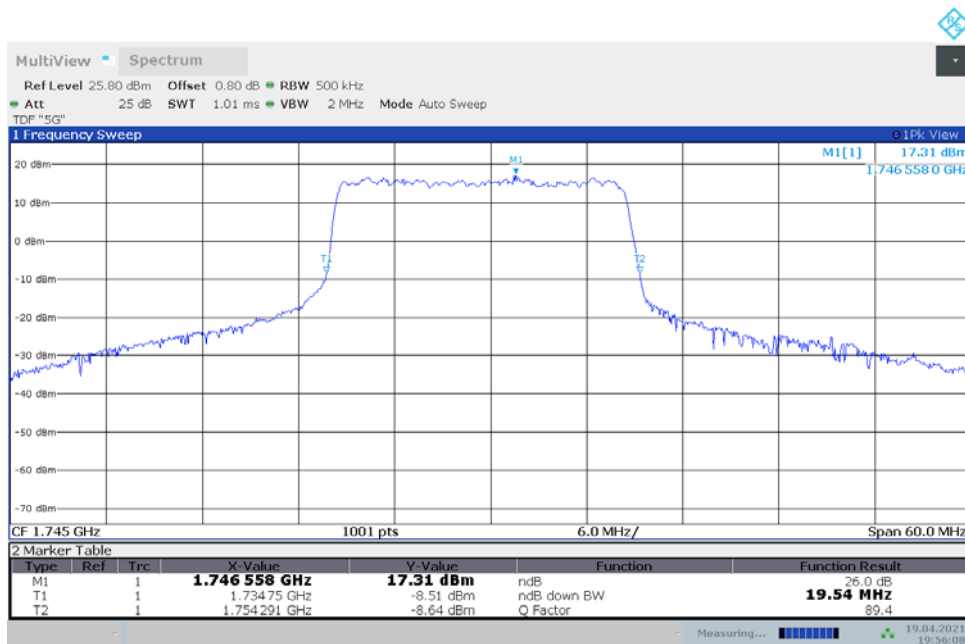
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
1745	19.540	19.540

**n66,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



Date:19 APR.2021 19:55:46

**n66,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**

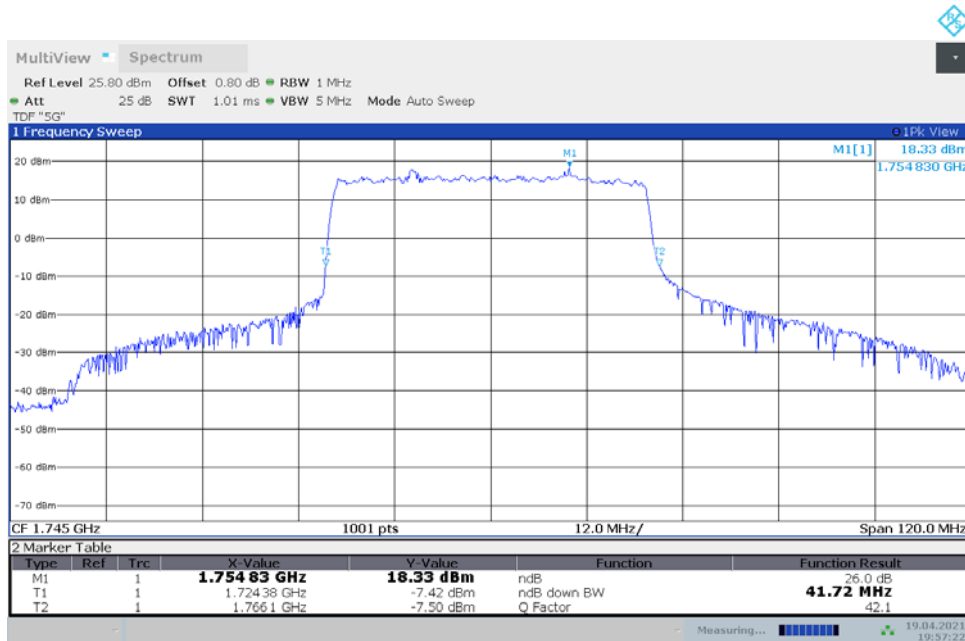


Date:19 APR.2021 19:56:09

**LTE Band 12+NR n66**  
**n66,40MHz(-26dBc)**

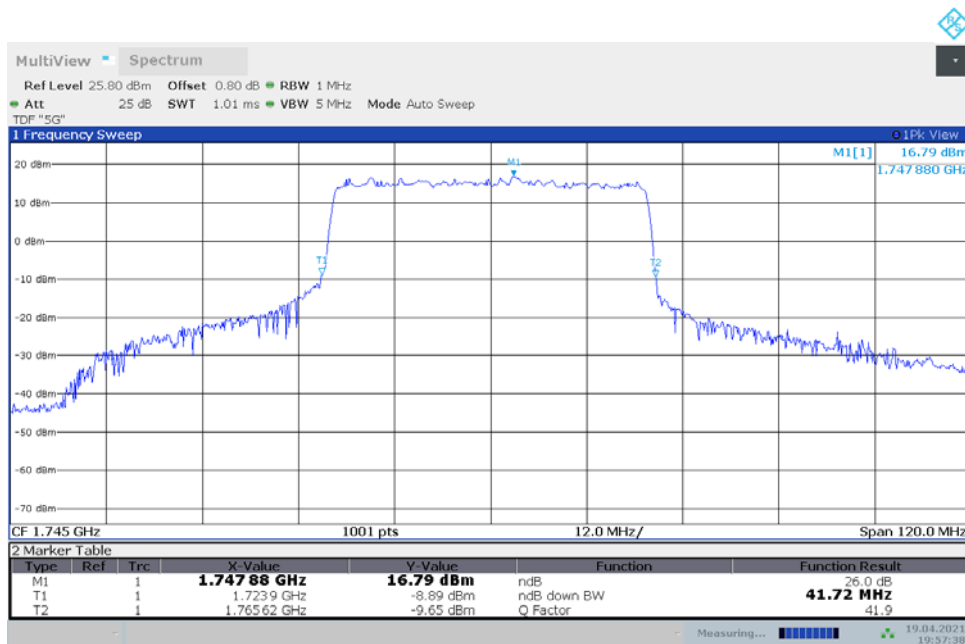
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
1745	41.720	41.720

**n66,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



Date:19 APR.2021 19:57:22

**n66,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**

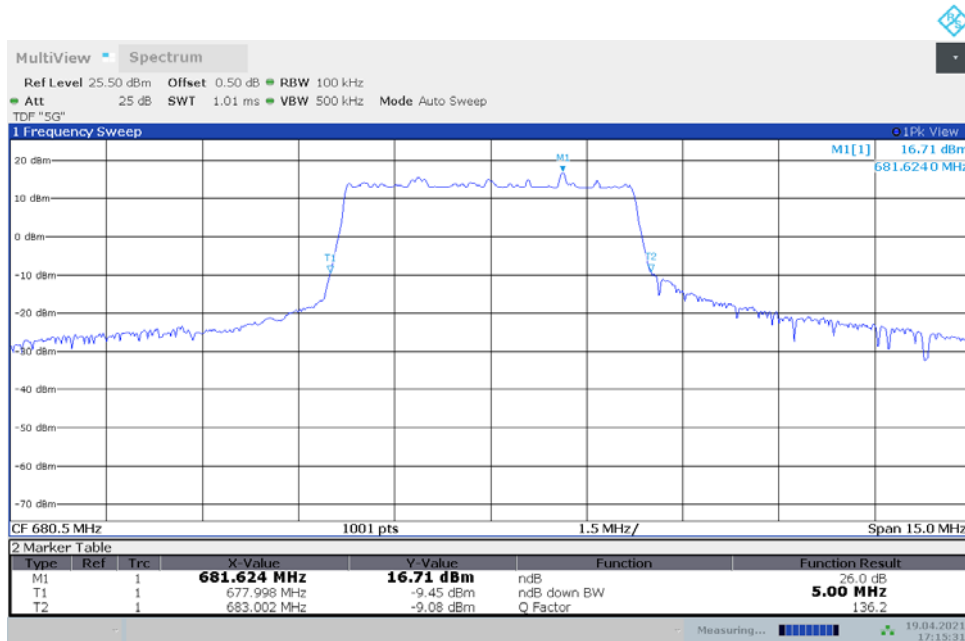


Date:19 APR.2021 19:57:38

**LTE Band 66+NR n71**  
**n71,5MHz(-26dBc)**

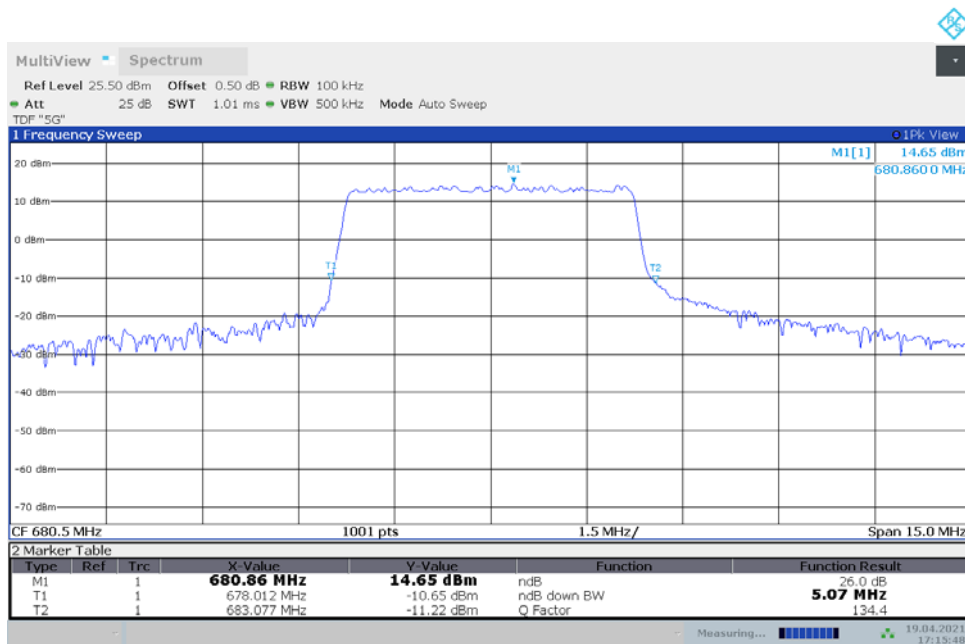
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
680.5	5.005	5.065

**n71,5MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



Date:19 APR.2021 17:15:32

**n71,5MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**

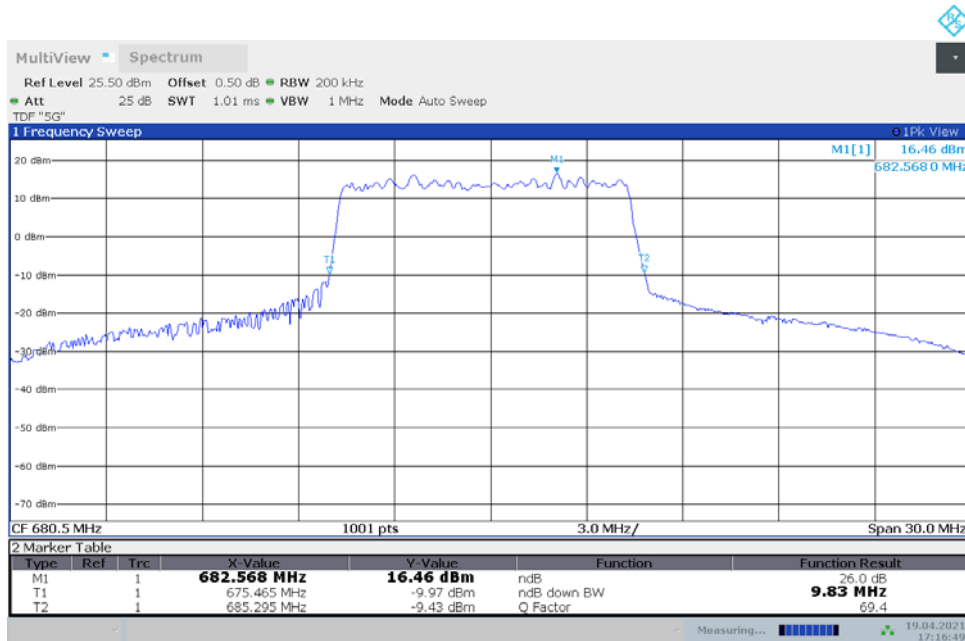


Date:19 APR.2021 17:15:48

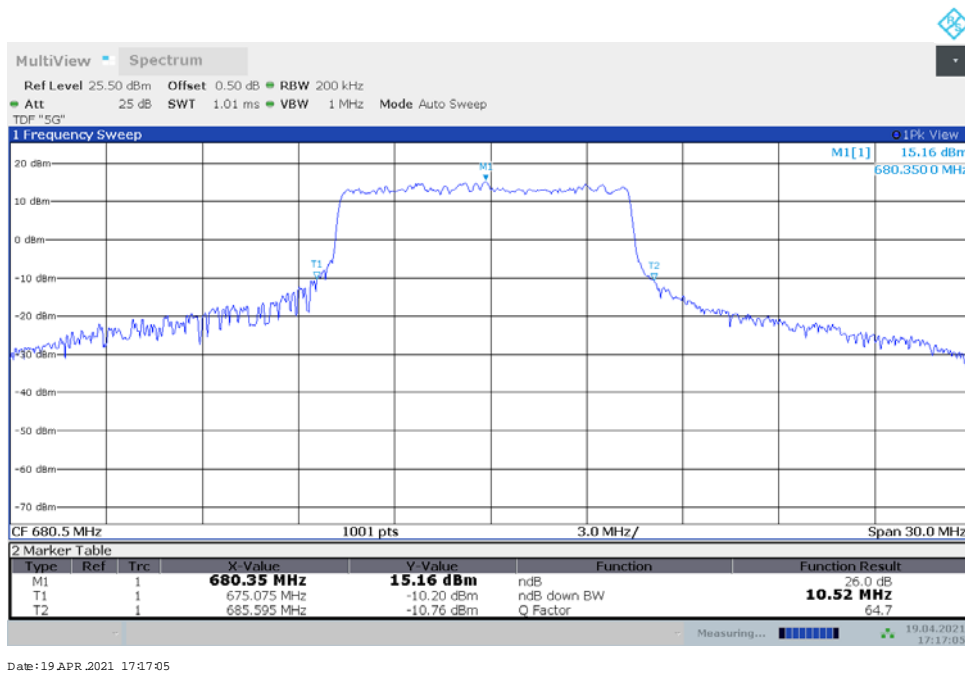
**LTE Band 66+NR n71**  
**n71,10MHz(-26dBc)**

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
680.5	9.830	10.519

**n71,10MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



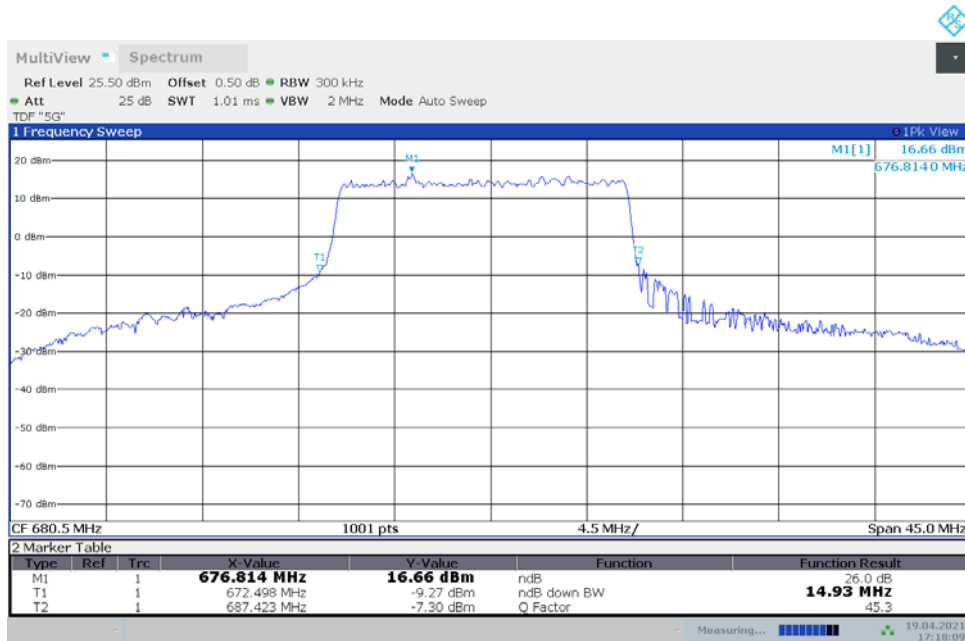
**n71,10MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**



**LTE Band 66+NR n71**  
**n71,15MHz(-26dBc)**

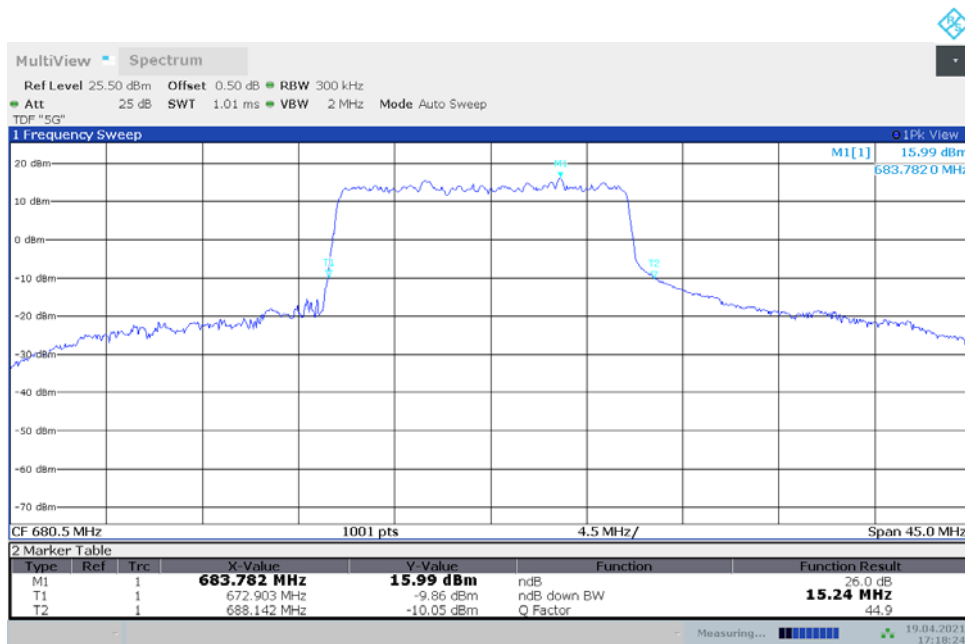
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
680.5	14.925	15.240

**n71,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)**



Date:19 APR.2021 17:18:08

**n71,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**



Date:19 APR.2021 17:18:24

### LTE Band 66+NR n71 n71,20MHz(-26dBc)

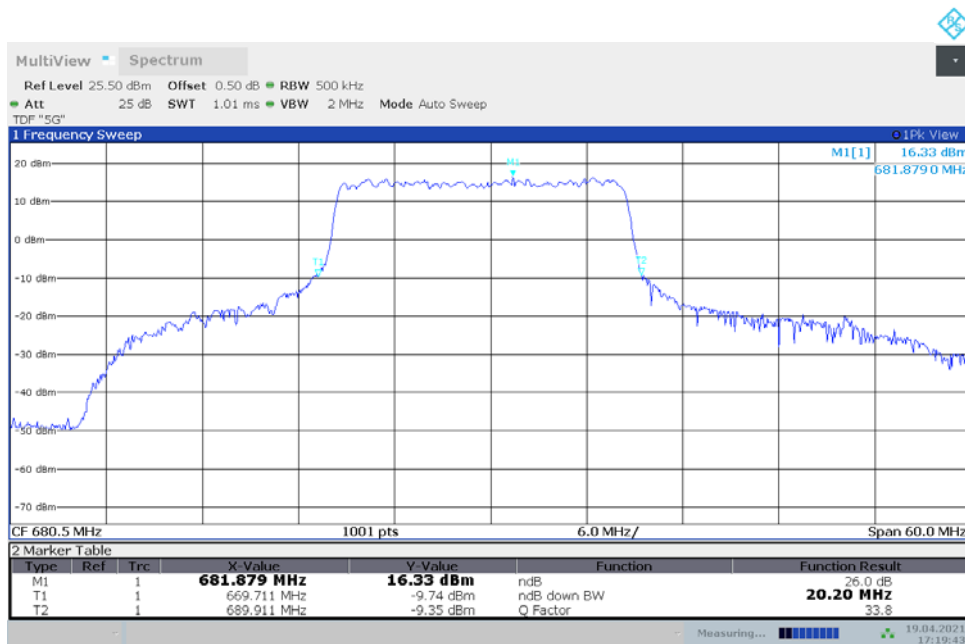
Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
680.5	19.481	20.200

### n71,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



Date:19 APR.2021 17:19:28

### n71,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



Date:19 APR.2021 17:19:43



## **A.6 Band Edge Compliance**

### **A.6.1 Measurement limit**

Part 22.917, Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

Part 27.53(m) specifies for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

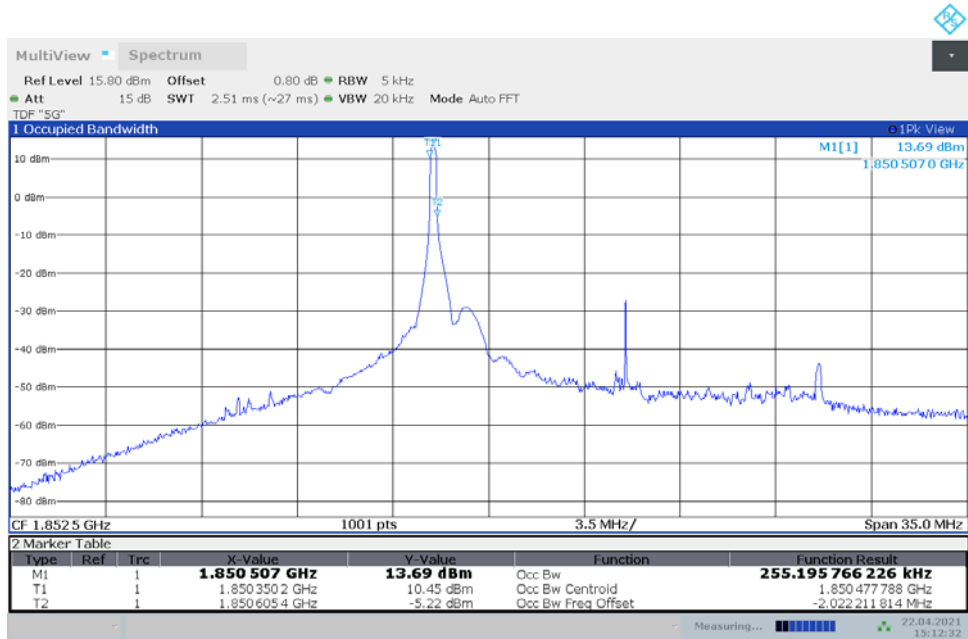
Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

The spectrum analyzer readings are corrected by  $[10 \log(1/\text{duty cycle})]$  for the non-continuous transmitting scenario.

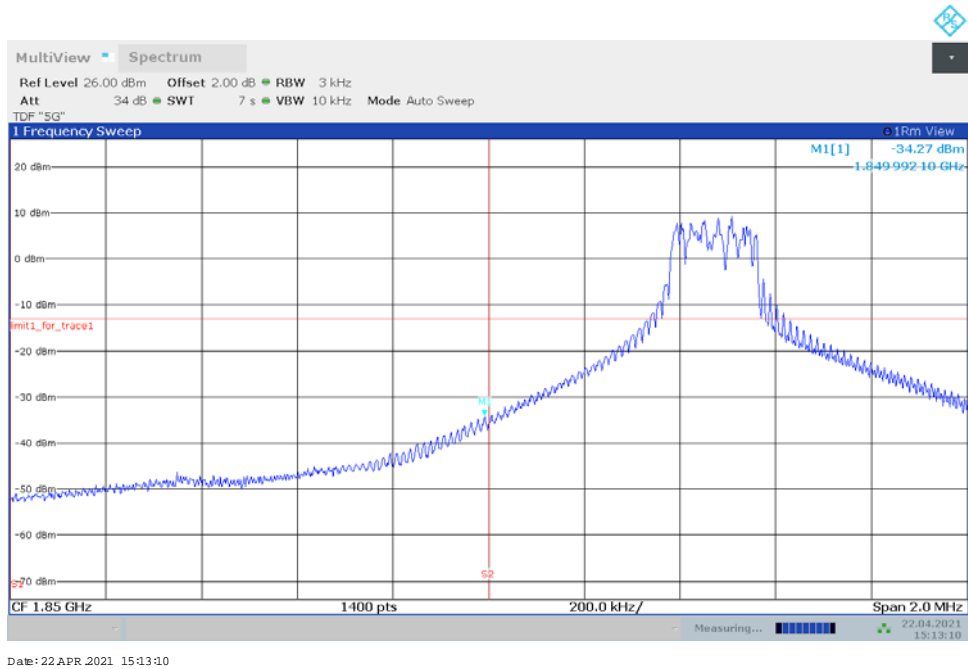
### A.6.2 Measurement result

#### LTE Band 12+NR n25

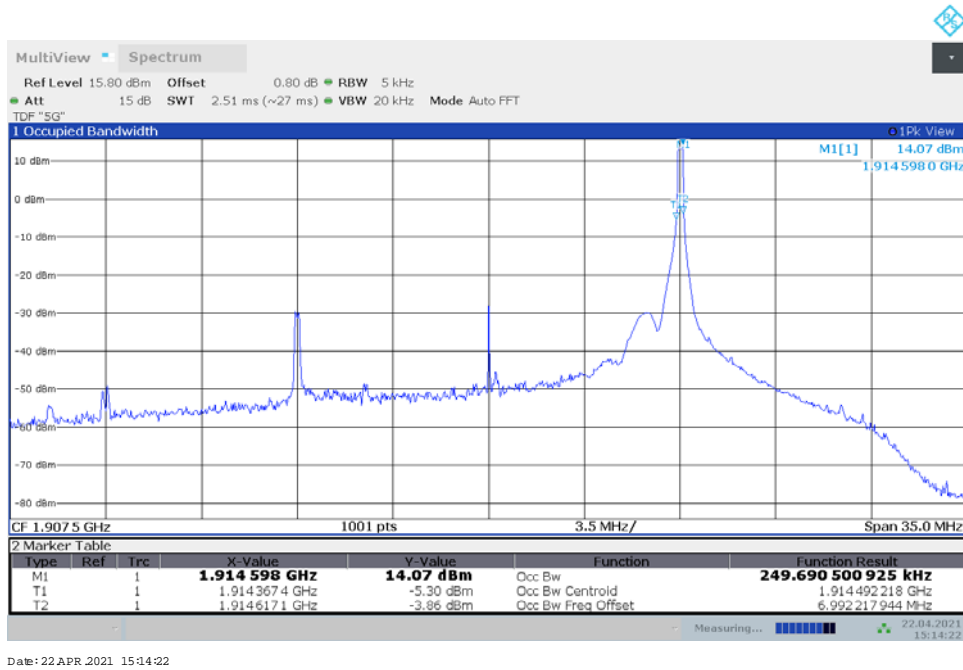
#### OBW: 1RB-low\_offset



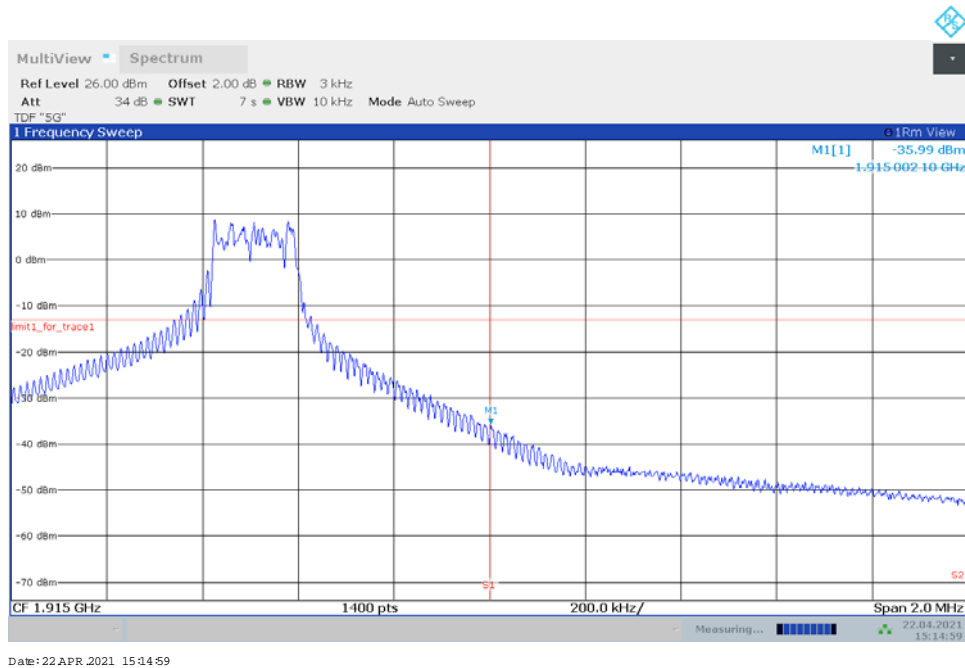
#### LOW BAND EDGE BLOCK-1RB-low\_offset



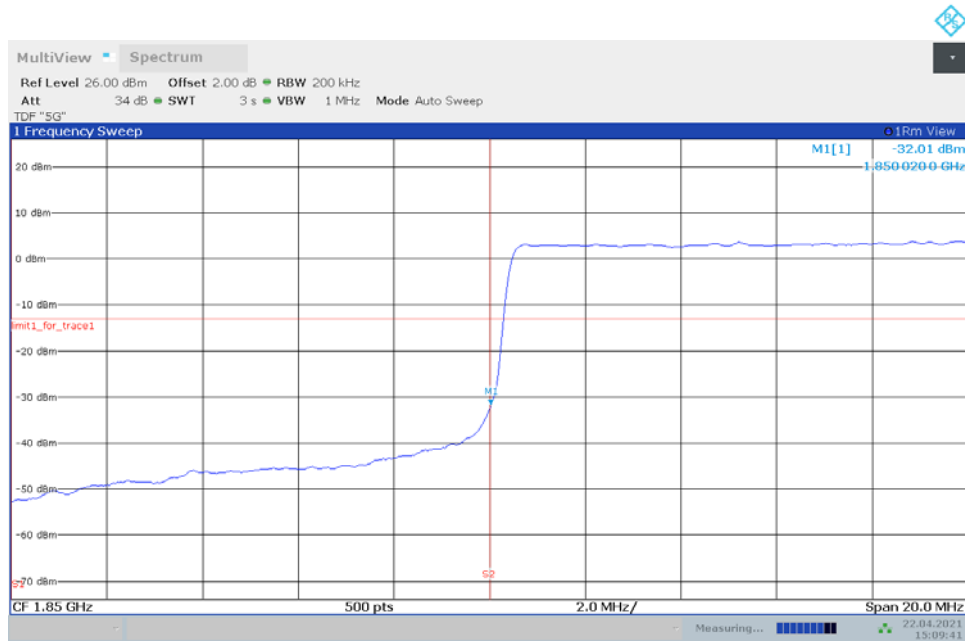
### OBW: 1RB-high\_offset



### HIGH BAND EDGE BLOCK-1RB-high\_offset

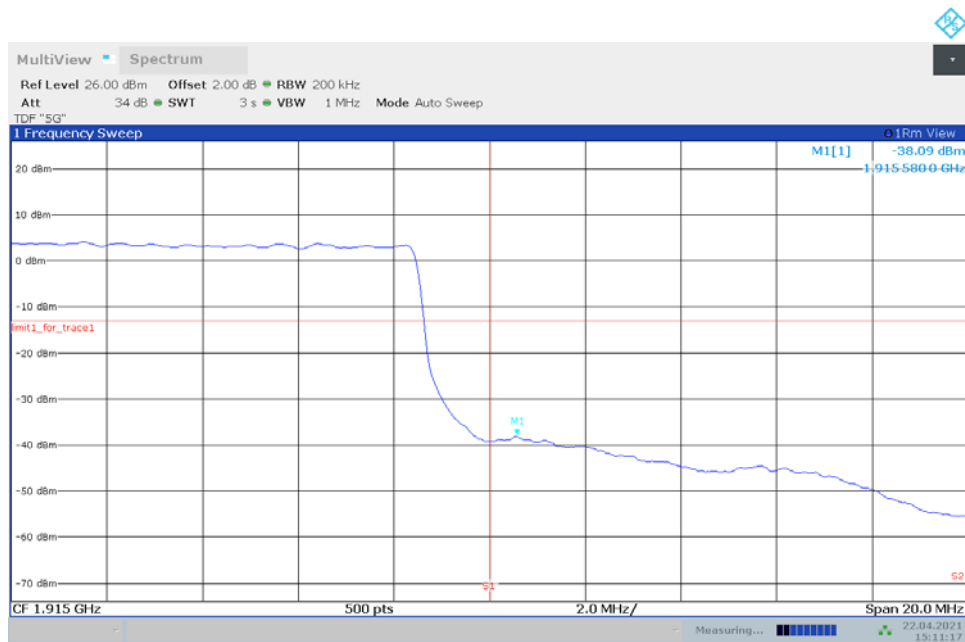


### LOW BAND EDGE BLOCK-20MHz-100%RB



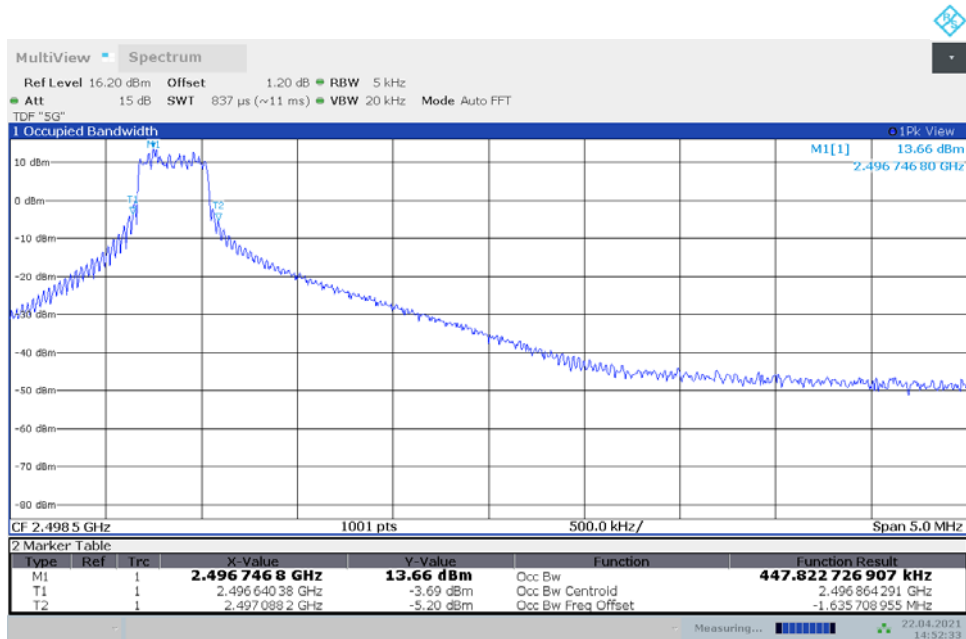
Date:22.APR.2021 15:09:41

### HIGH BAND EDGE BLOCK-20MHz-100%RB



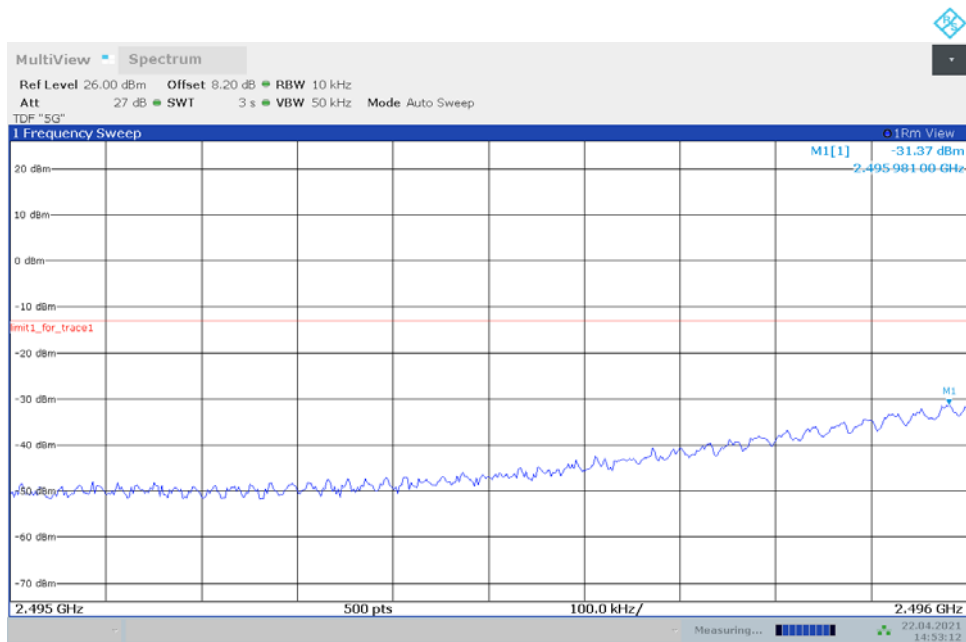
Date:22.APR.2021 15:11:17

NR n41  
OBW: 1RB-low\_offset

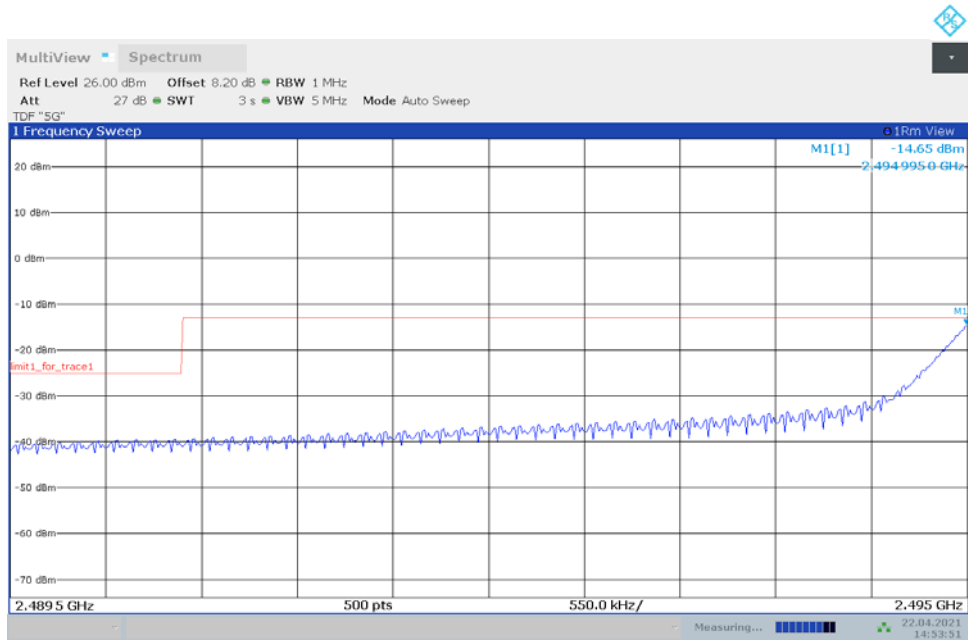


Date: 22 APR 2021 14:52:33

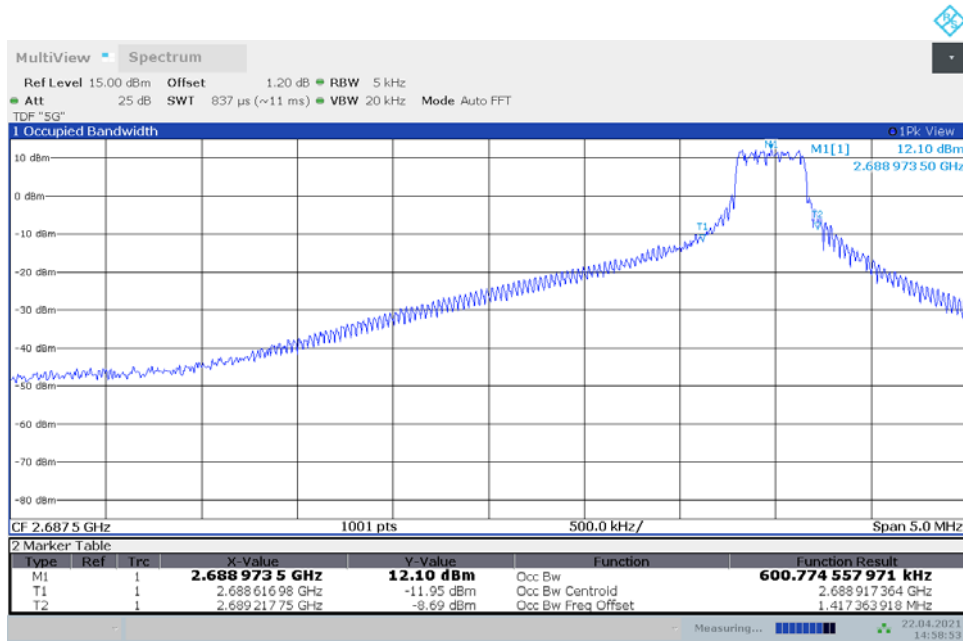
LOW BAND EDGE BLOCK-1RB-low\_offset



Date: 22 APR 2021 14:53:12

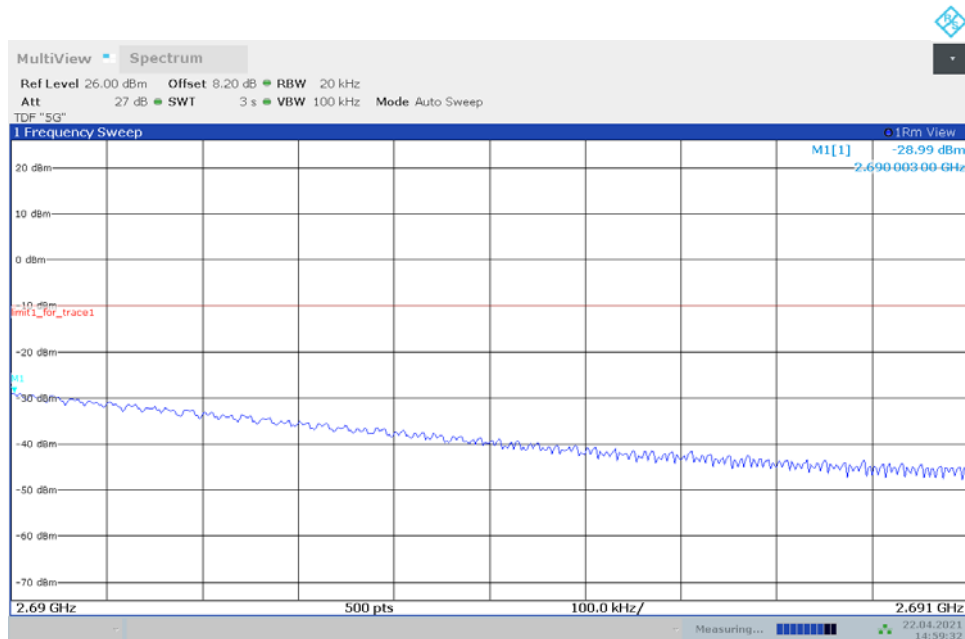


### OBW: 1RB-high\_offset

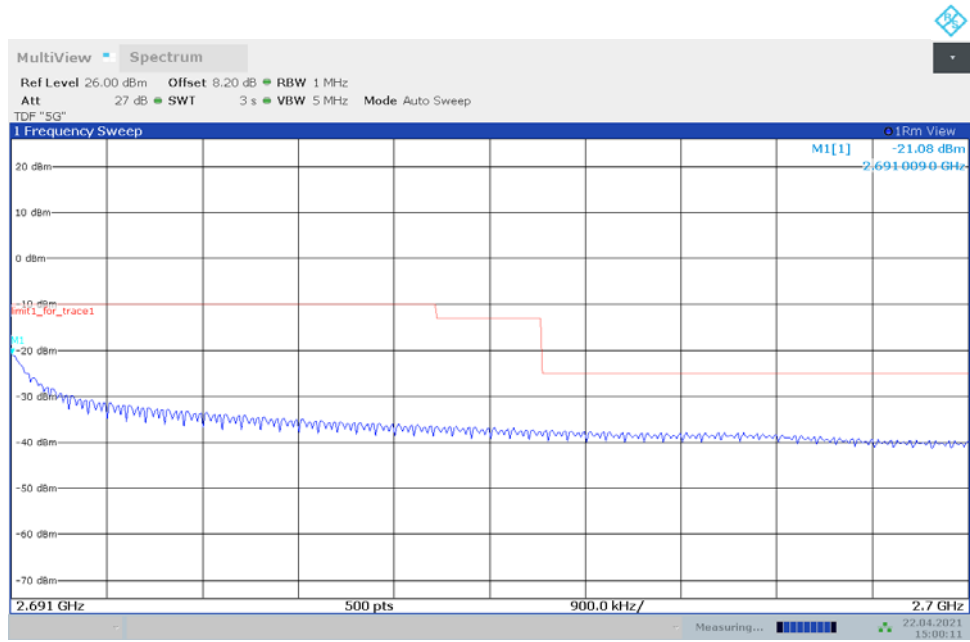


Date: 22 APR 2021 14:58:53

### HIGH BAND EDGE BLOCK-1RB-high\_offset



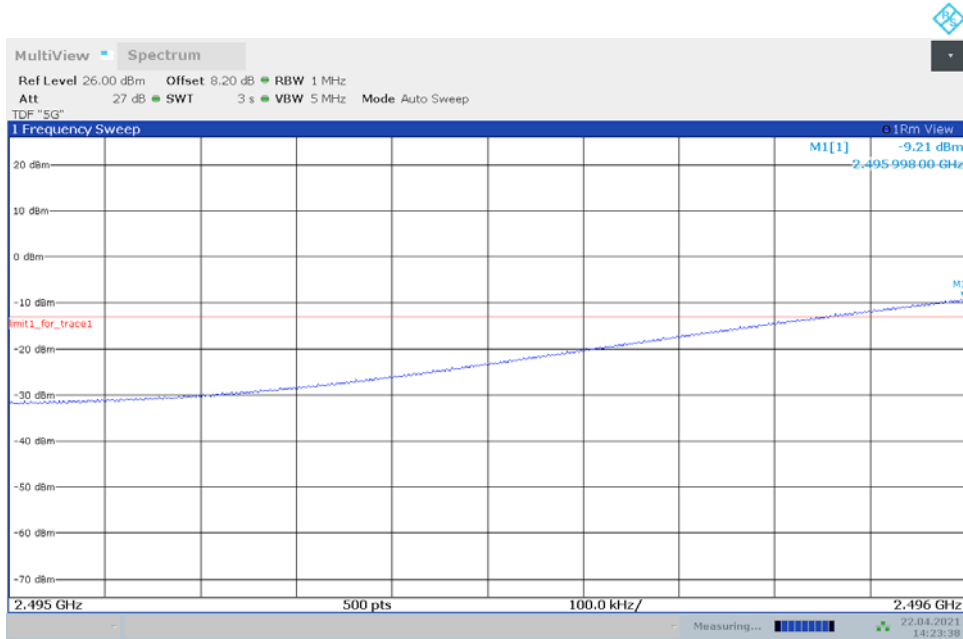
Date: 22 APR 2021 14:59:32



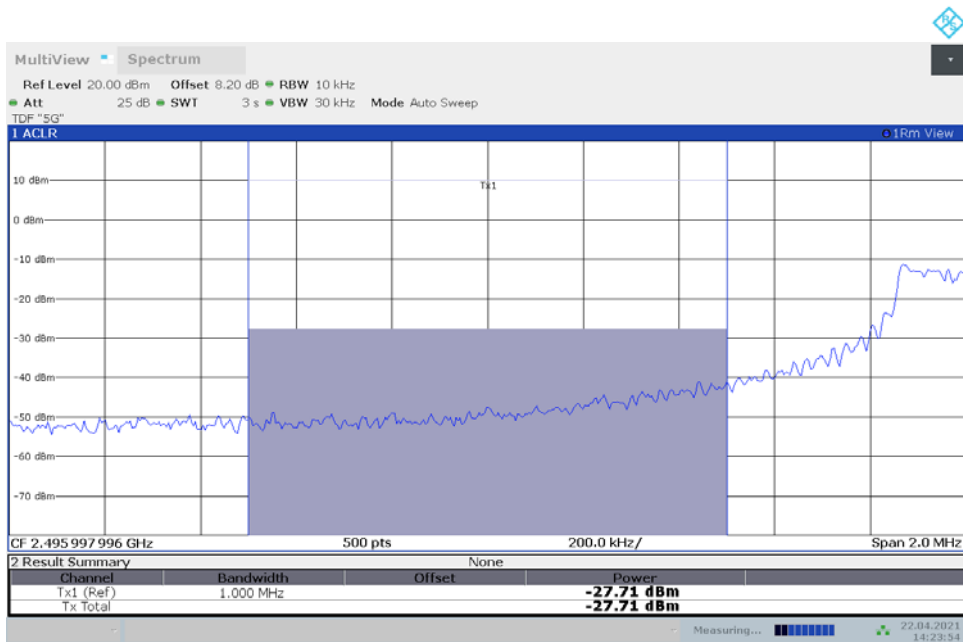
Date: 22 APR 2021 15:00:11



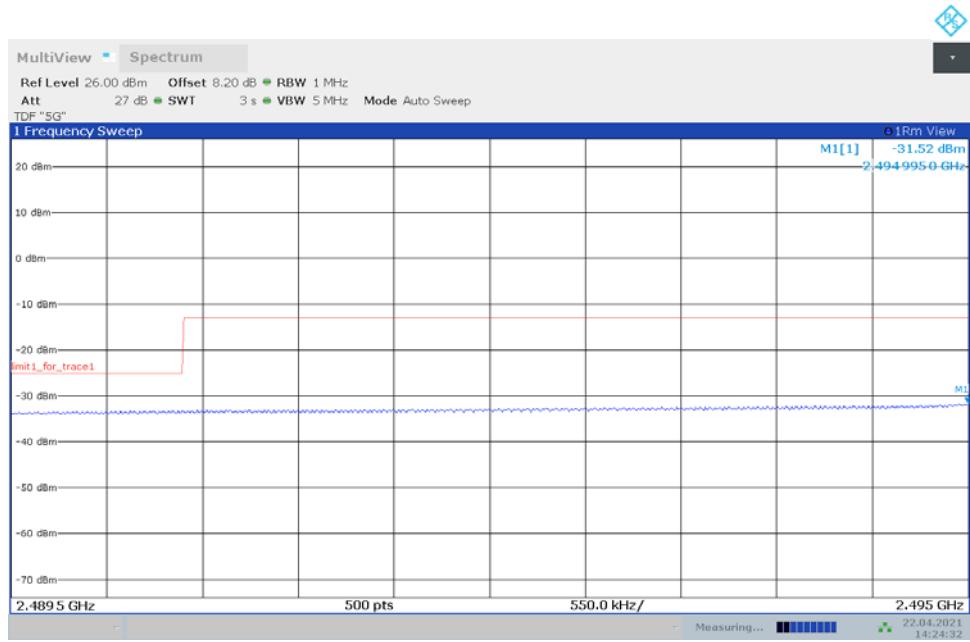
### LOW BAND EDGE BLOCK-100MHz-100%RB



Date: 22 APR 2021 14:23:38

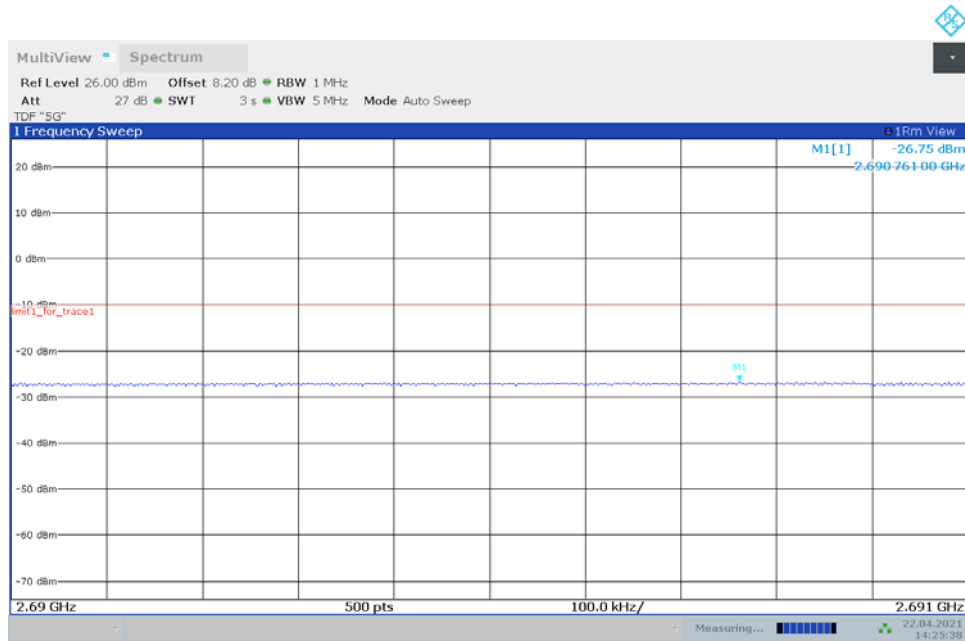


Date: 22 APR 2021 14:23:54

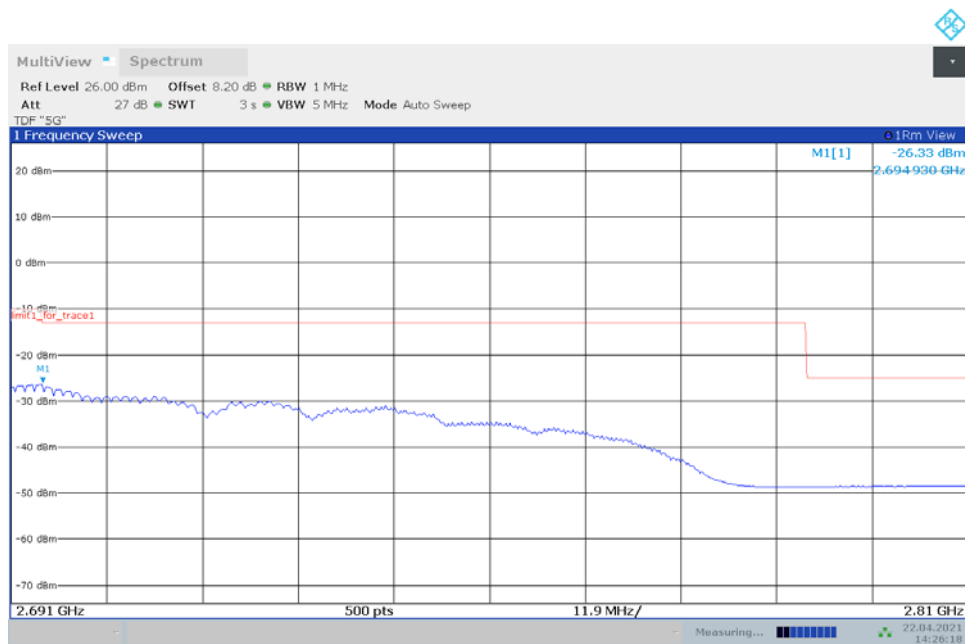


Date: 22 APR 2021 14:24:33

### HIGH BAND EDGE BLOCK-100MHz-100%RB



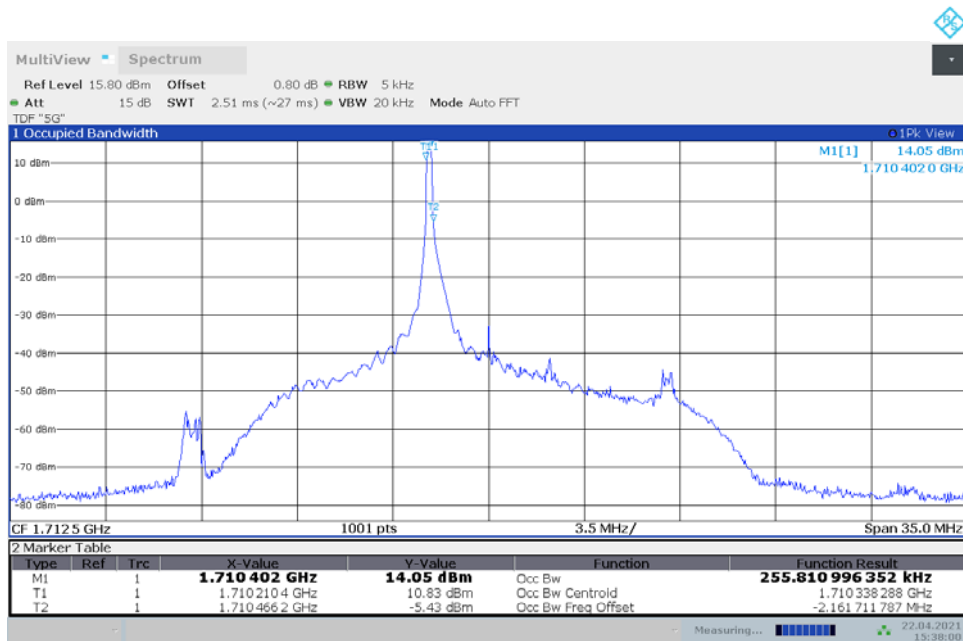
Date: 22 APR 2021 14:25:39



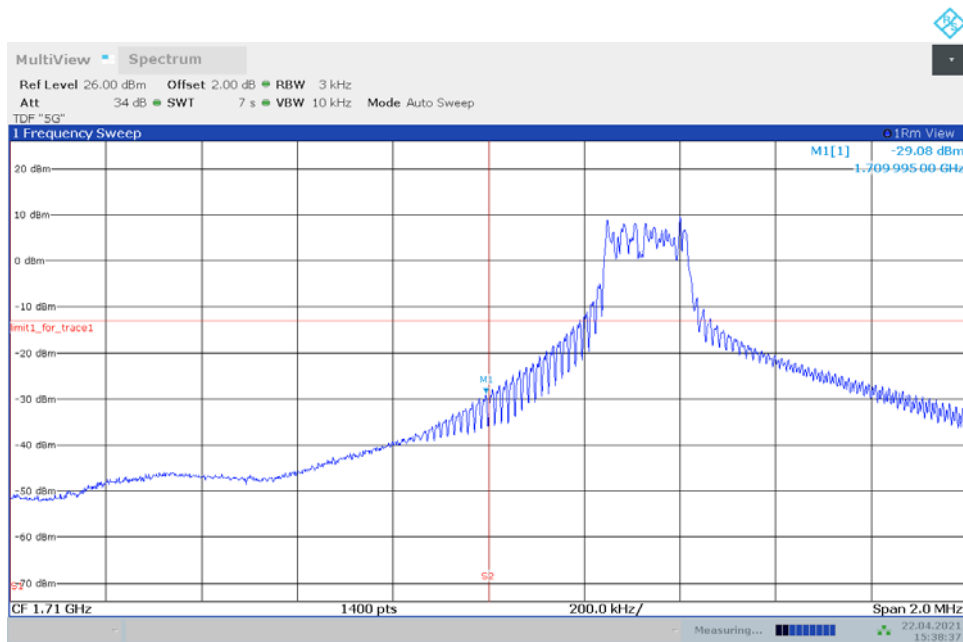
Date: 22 APR 2021 14:26:18

### LTE Band 12+NR n66

#### OBW: 1RB-low\_offset



### LOW BAND EDGE BLOCK-1RB-low\_offset

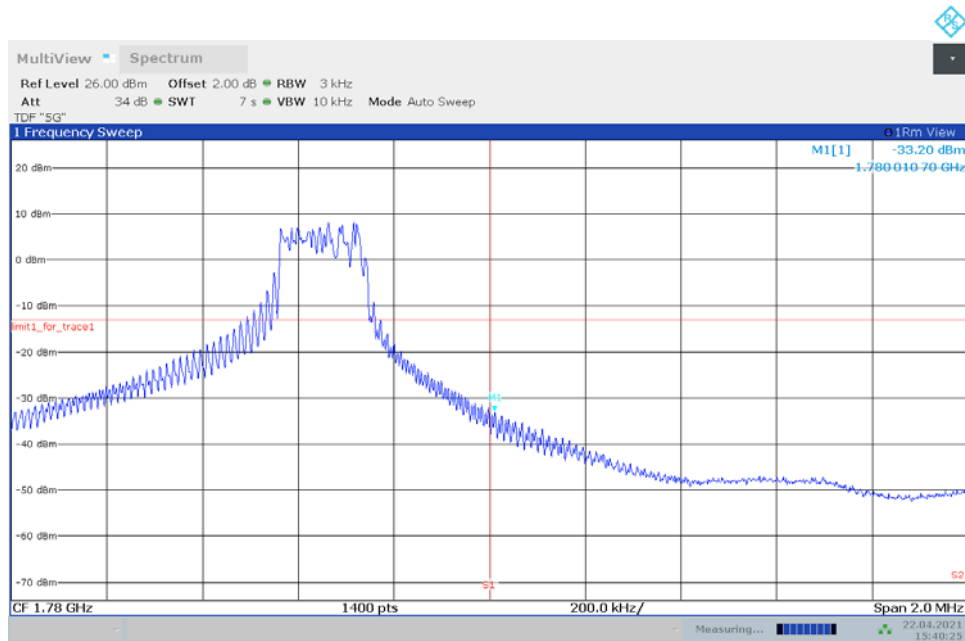


### OBW: 1RB-high\_offset



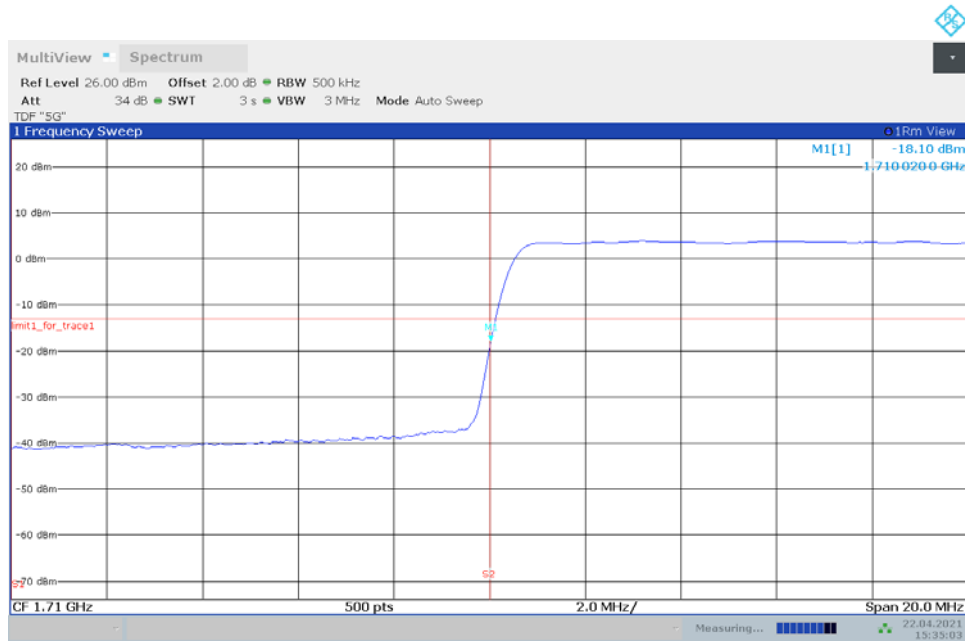
Date: 22 APR 2021 15:39:49

### HIGH BAND EDGE BLOCK-1RB-high\_offset



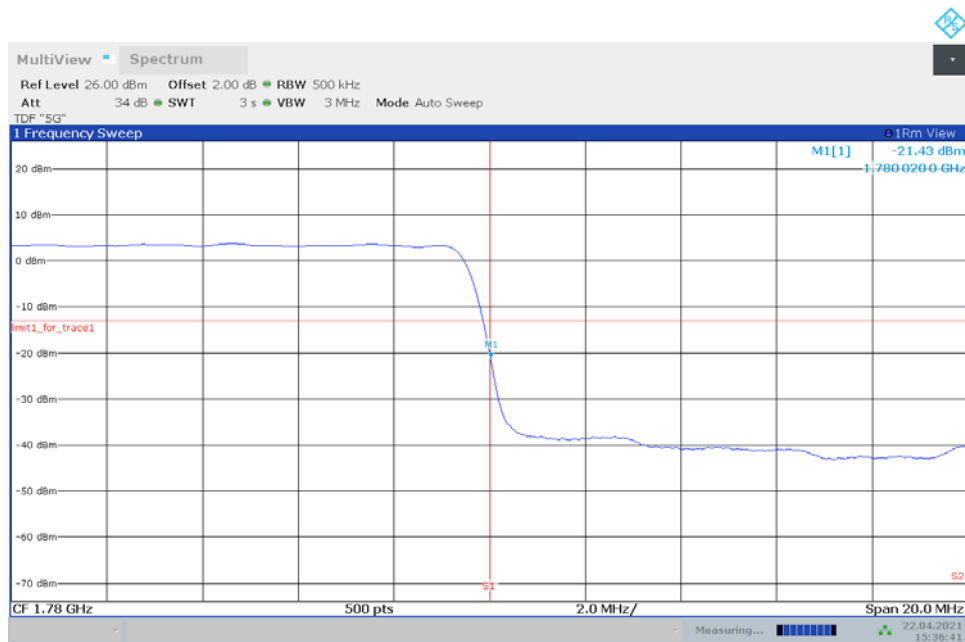
Date: 22 APR 2021 15:40:26

### LOW BAND EDGE BLOCK-40MHz-100%RB



Date:22.APR.2021 15:35:04

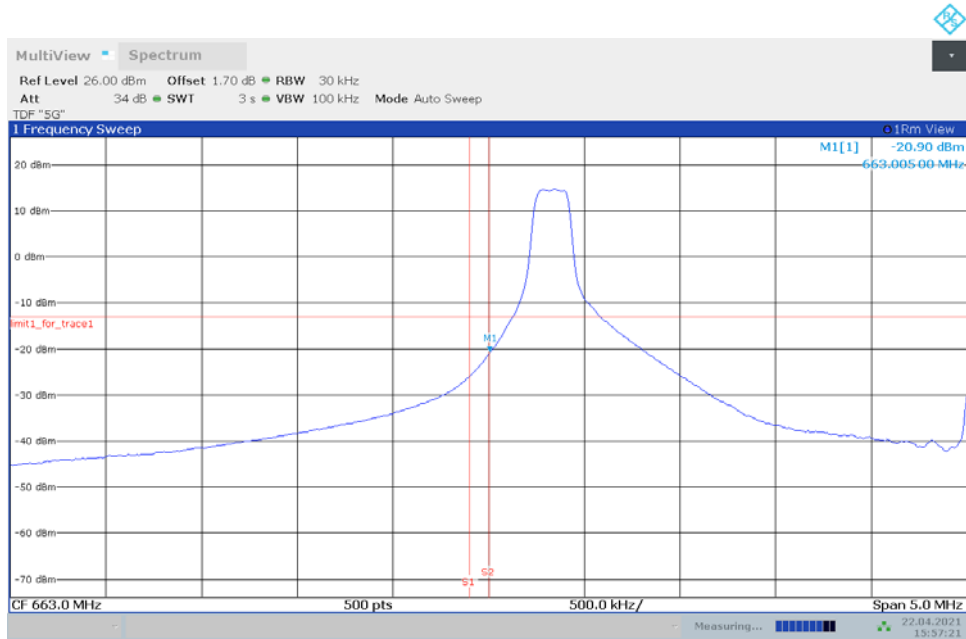
### HIGH BAND EDGE BLOCK-40MHz-100%RB



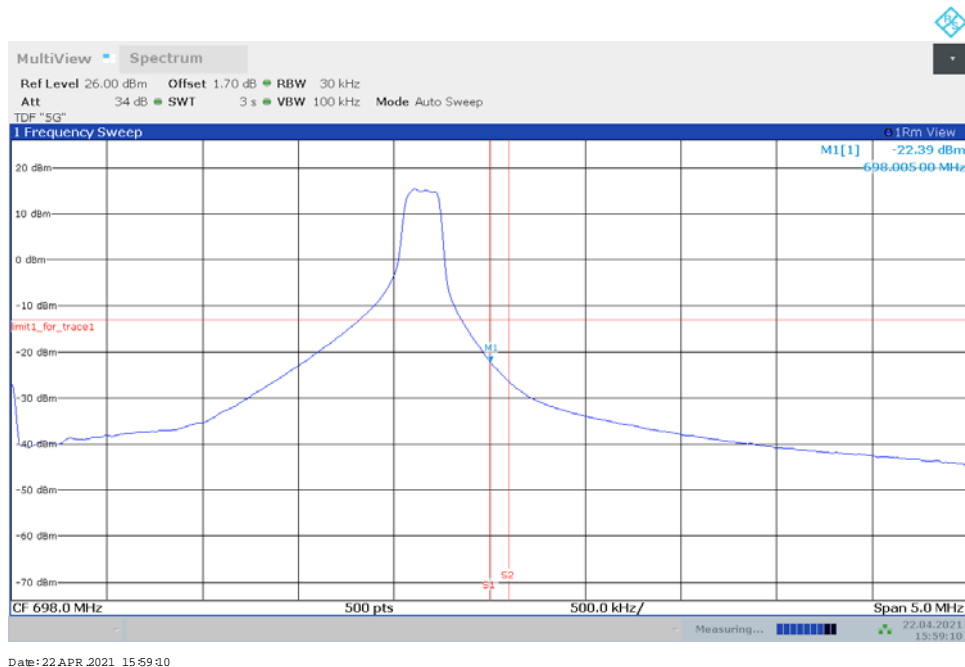
Date:22.APR.2021 15:36:42

### LTE Band 66+NR n71

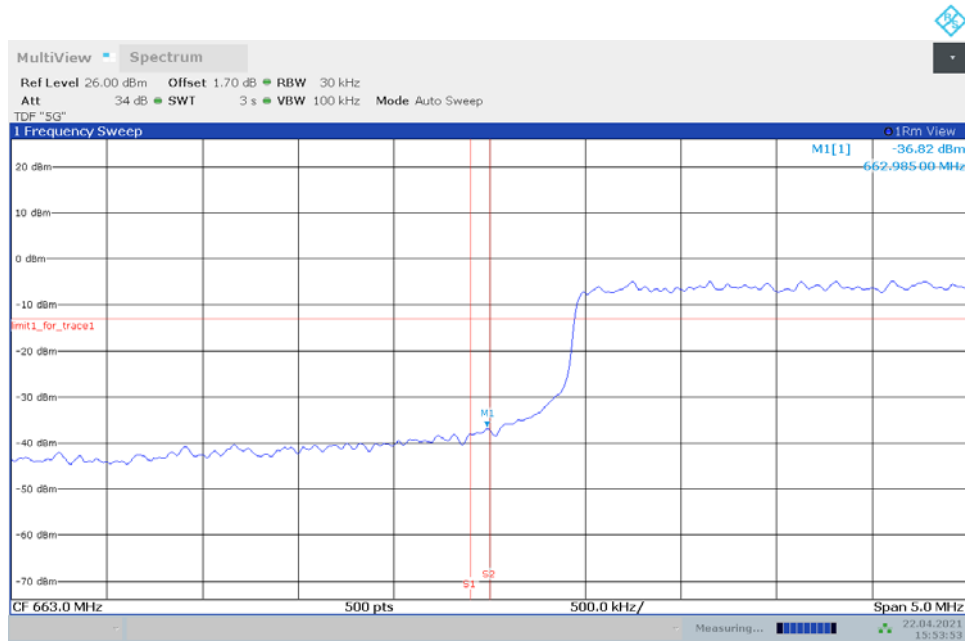
#### LOW BAND EDGE BLOCK-1RB-low\_offset



#### HIGH BAND EDGE BLOCK-1RB-high\_offset

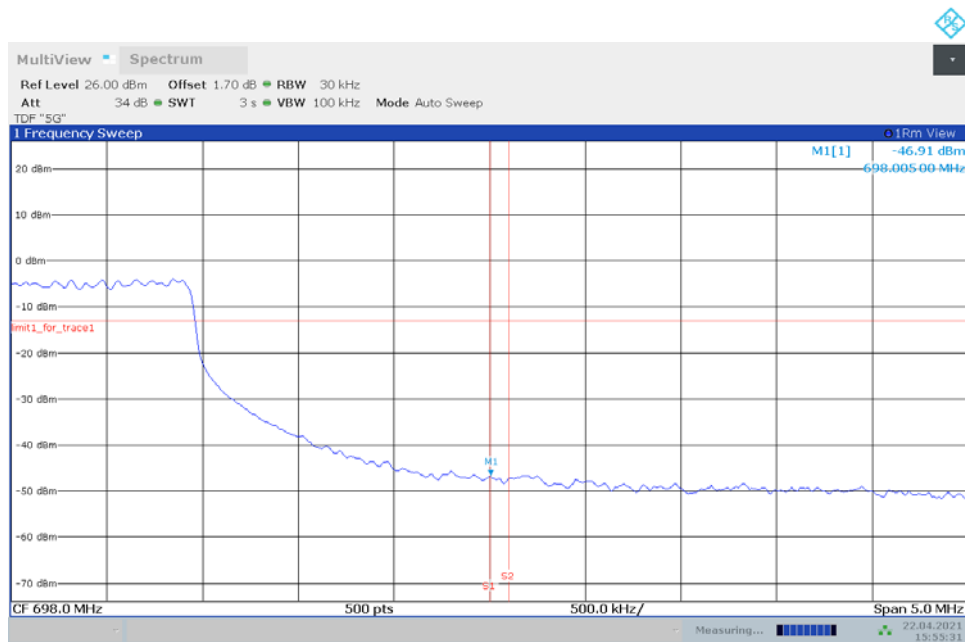


### LOW BAND EDGE BLOCK-20MHz-100%RB



Date:22.APR.2021 15:53:54

### HIGH BAND EDGE BLOCK-20MHz-100%RB



Date:22.APR.2021 15:55:31



## **A.7 Conducted Spurious Emission**

### **A.7.1 Measurement Method**

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
  - (a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
  - (b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is greater than  $2 \times \text{span/RBW}$ .

### **A. 7.2 Measurement Limit**

Part 22.917, Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

Part 27.53(m) specifies for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

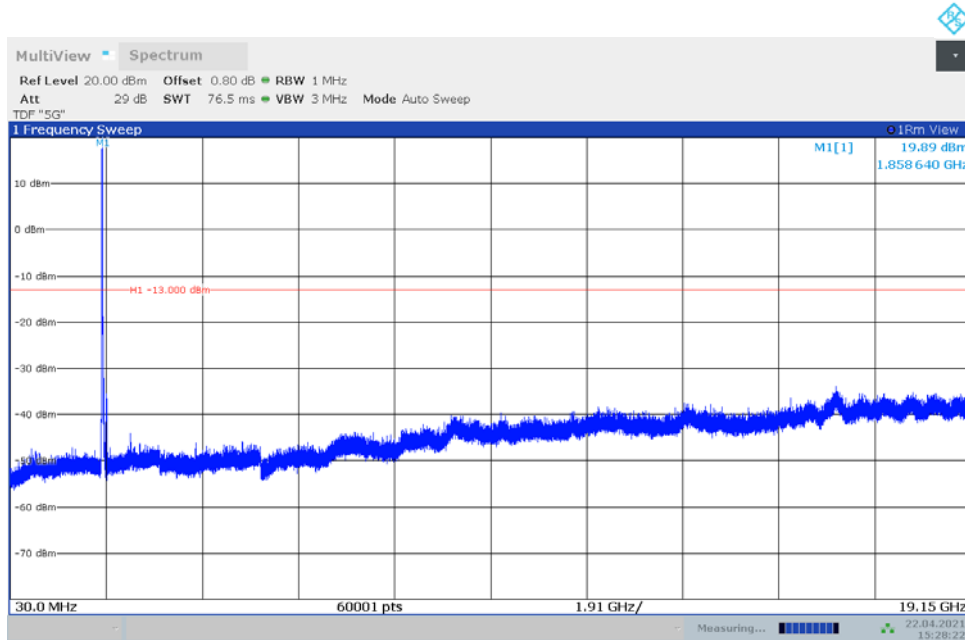
Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

### A. 7.3 Measurement result

#### LTE Band 12+NR n25

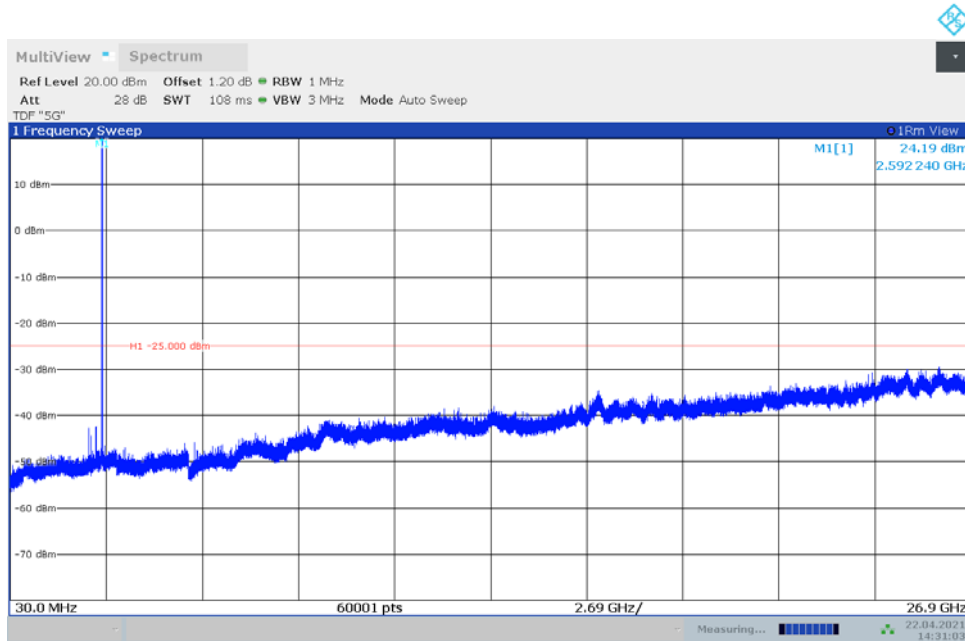
n25

NOTE: peak above the limit line is the carrier frequency.



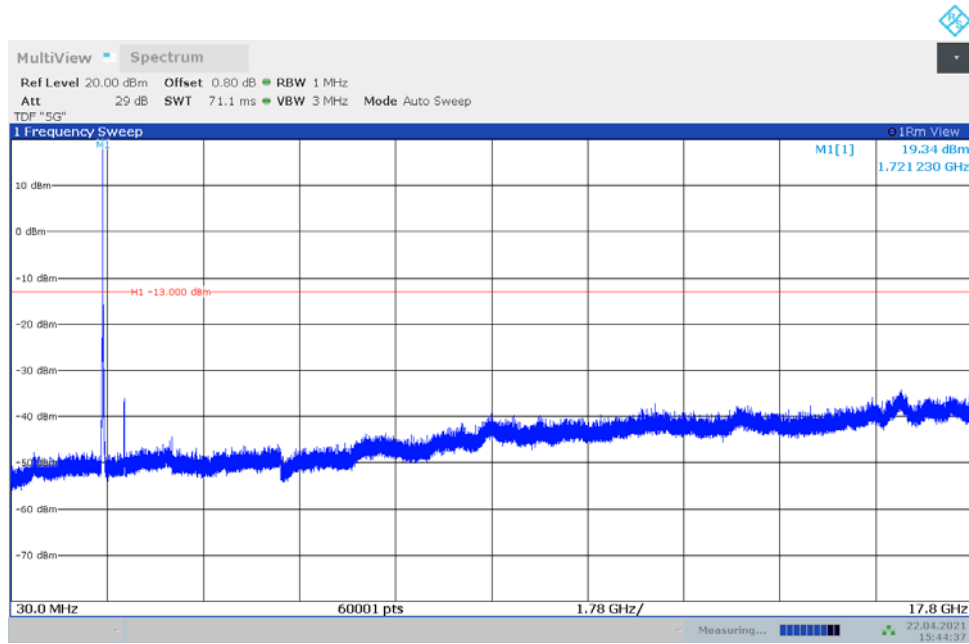
#### NR n41

NOTE: peak above the limit line is the carrier frequency.



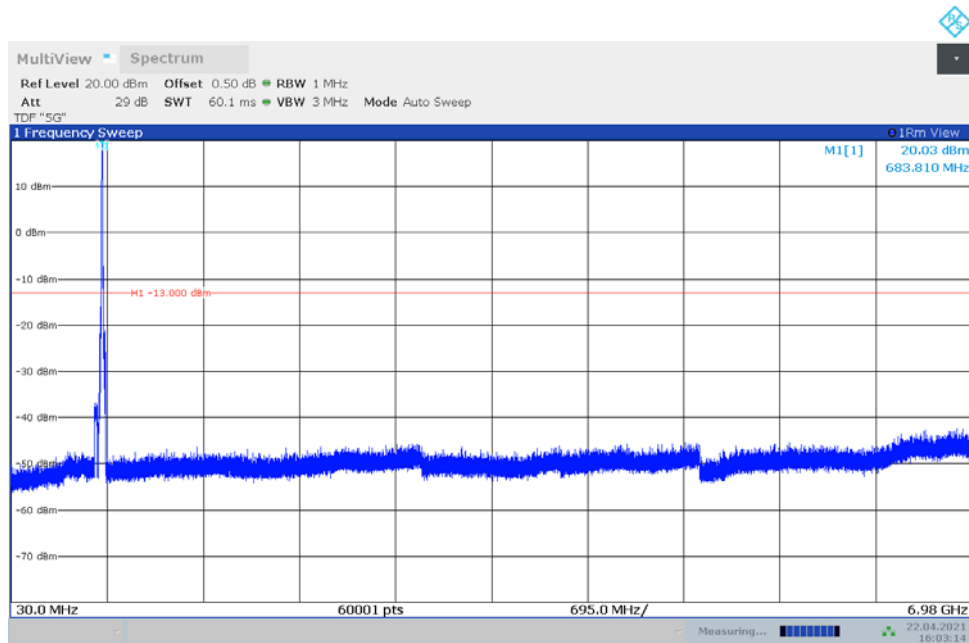
**LTE Band 12+NR n66**  
**n66**

**NOTE: peak above the limit line is the carrier frequency.**



**LTE Band 66+NR n71**  
**n71**

**NOTE: peak above the limit line is the carrier frequency.**



## **A.8 Peak-to-Average Power Ratio**

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Record the maximum PAPR level associated with a probability of 0.1%.

### **Measurement results**

#### **LTE Band 12+NR n25 n25,20MHz**

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
1882.5	7.34	8.56	8.90	8.28	8.38	9.42	9.54	9.18	9.04

#### **NR n41, 100MHz**

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
2592.99	4.64	5.49	6.24	6.37	6.68	7.98	7.97	8.05	8.53

#### **LTE Band 12+NR n66 n66,40MHz**

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
1745	8.04	8.52	9.04	8.84	9.36	9.12	9.20	9.36	8.98

#### **LTE Band 66+NR n71 n71,20MHz**

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
680.5	7.26	8.64	8.84	8.54	8.40	9.16	9.66	9.36	9.18

## Annex B: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> <p><b>NVLAP</b>® </p> <hr/> <p><b>Certificate of Accreditation to ISO/IEC 17025:2017</b></p> <hr/> <p>NVLAP LAB CODE: 600118-0</p> <p><b>Telecommunication Technology Labs, CAICT</b> Beijing China</p> <p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p> <p><b>Electromagnetic Compatibility &amp; Telecommunications</b></p> <p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i></p> <hr/> <p>2020-09-29 through 2021-09-30 Effective Dates</p> <p>  For the National Voluntary Laboratory Accreditation Program</p>	
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