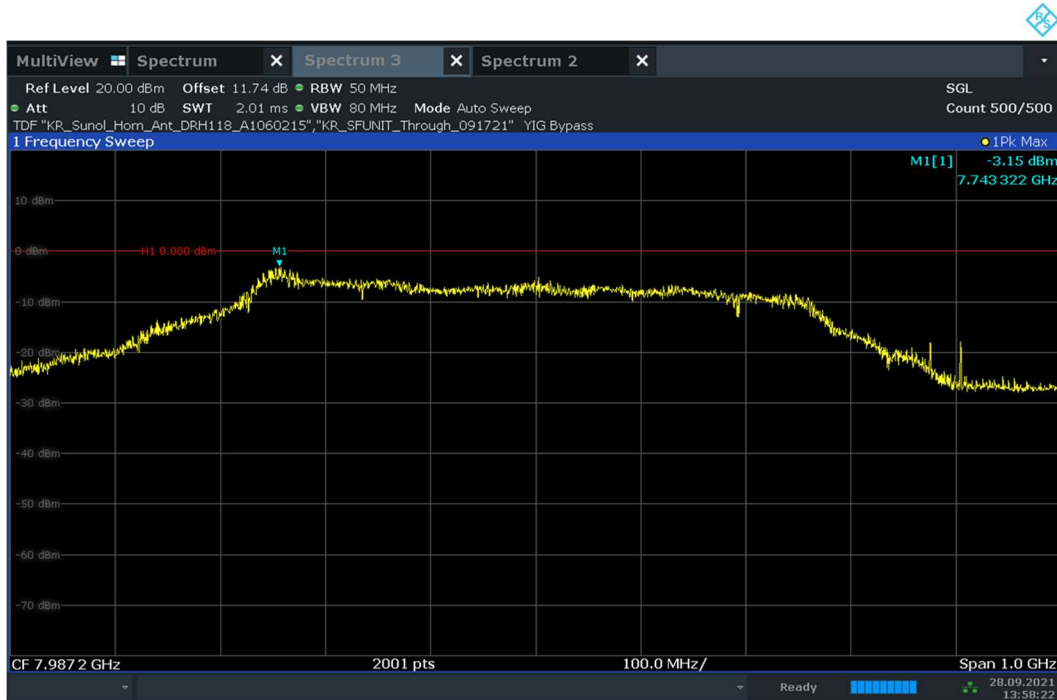
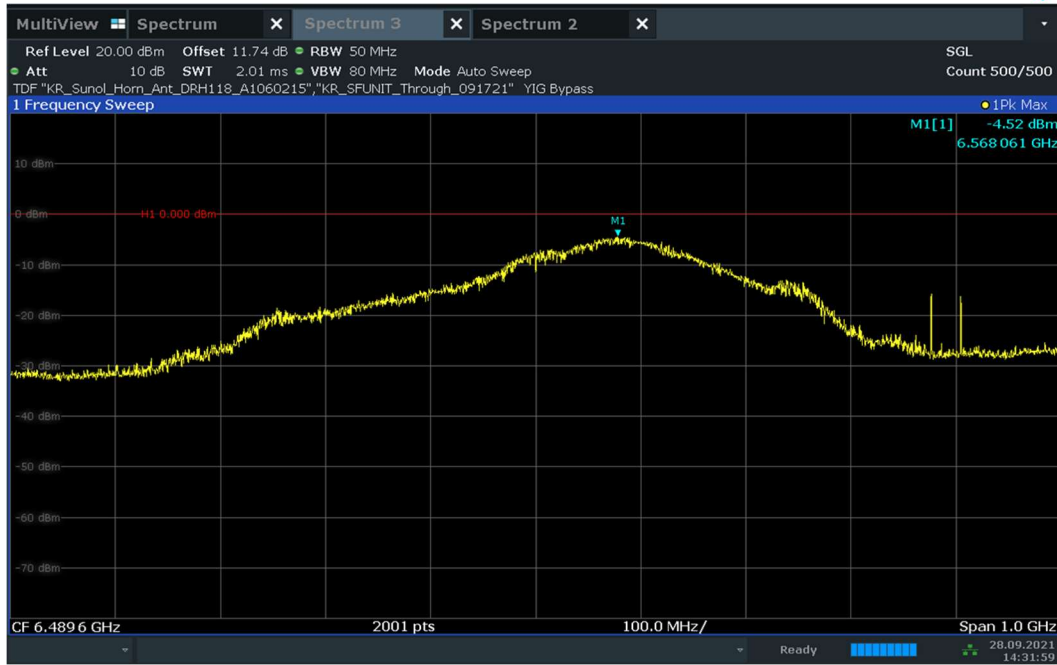


**Plot 7-62. UWB Peak Power Measurement - ANT 1 - CH.5 – BPRF**



**Plot 7-63. UWB Peak Power Measurement - ANT 1 - CH.9 – BPRF**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 48 of 86

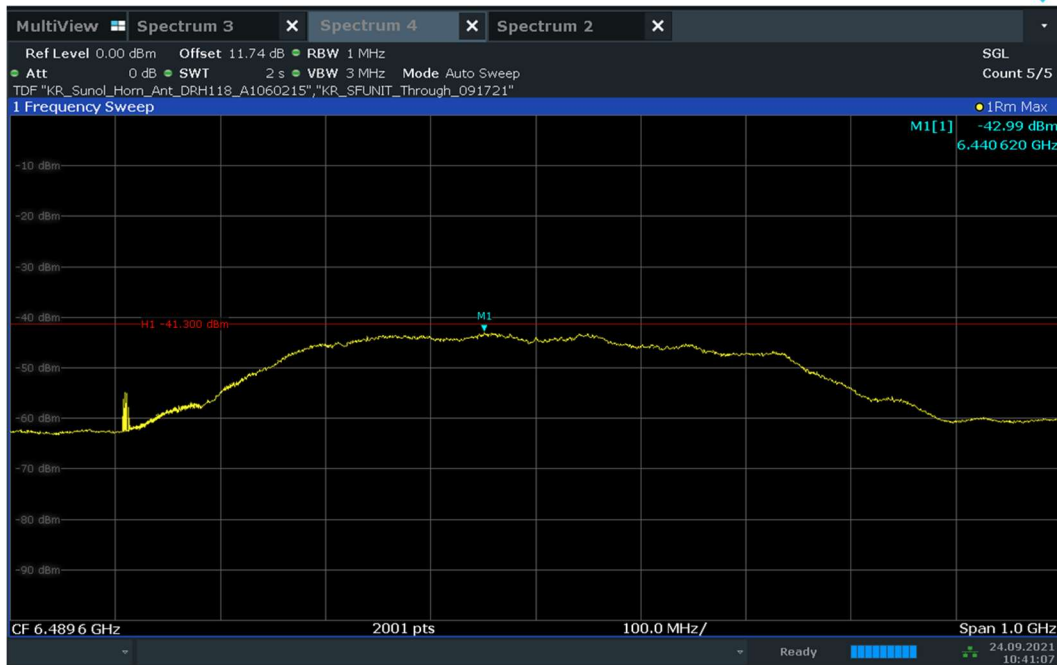


**Plot 7-64. UWB Peak Power Measurement - ANT 2 - CH.5 – BPRF**

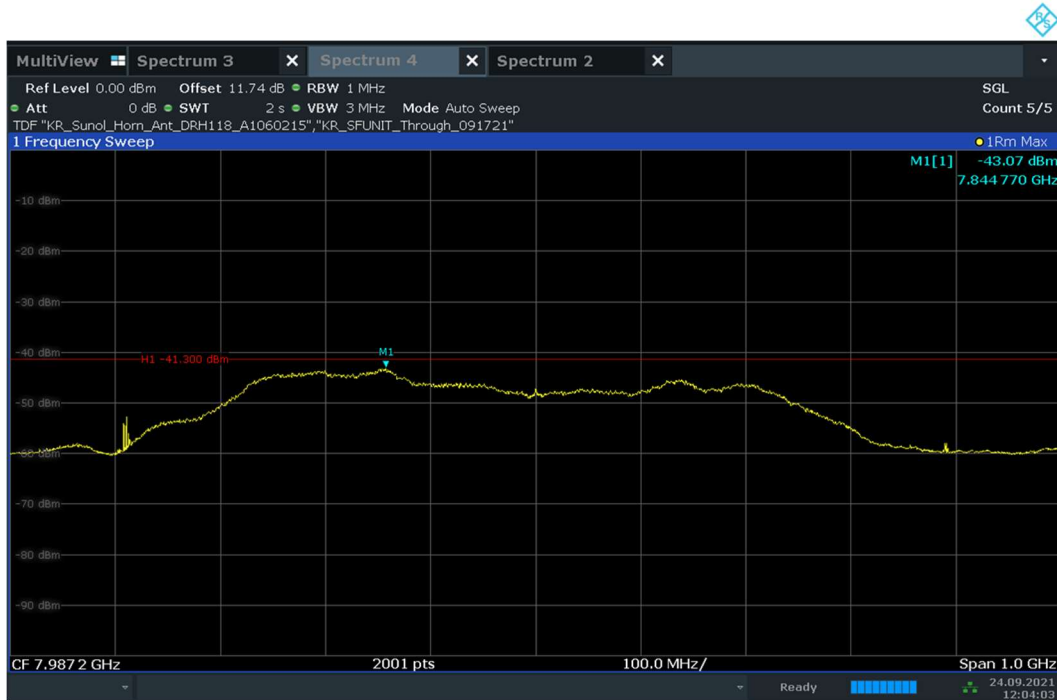


**Plot 7-65. UWB Peak Power Measurement - ANT 2 - CH.9 – BPRF**

FCC ID: A3LSMS906E		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2110010116-17.A3L	<b>Test Dates:</b> 9/27 – 10/10/2021		<b>EUT Type:</b> Portable Handset	

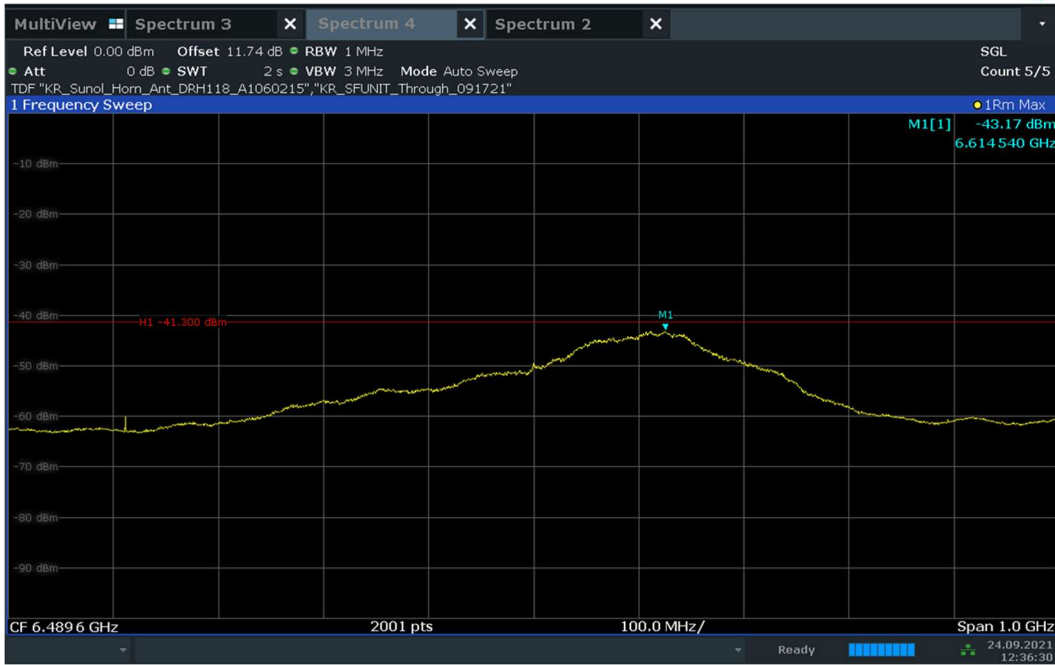


**Plot 7-66. UWB Average Power Measurement - ANT 1 - CH.5 – BPRF**

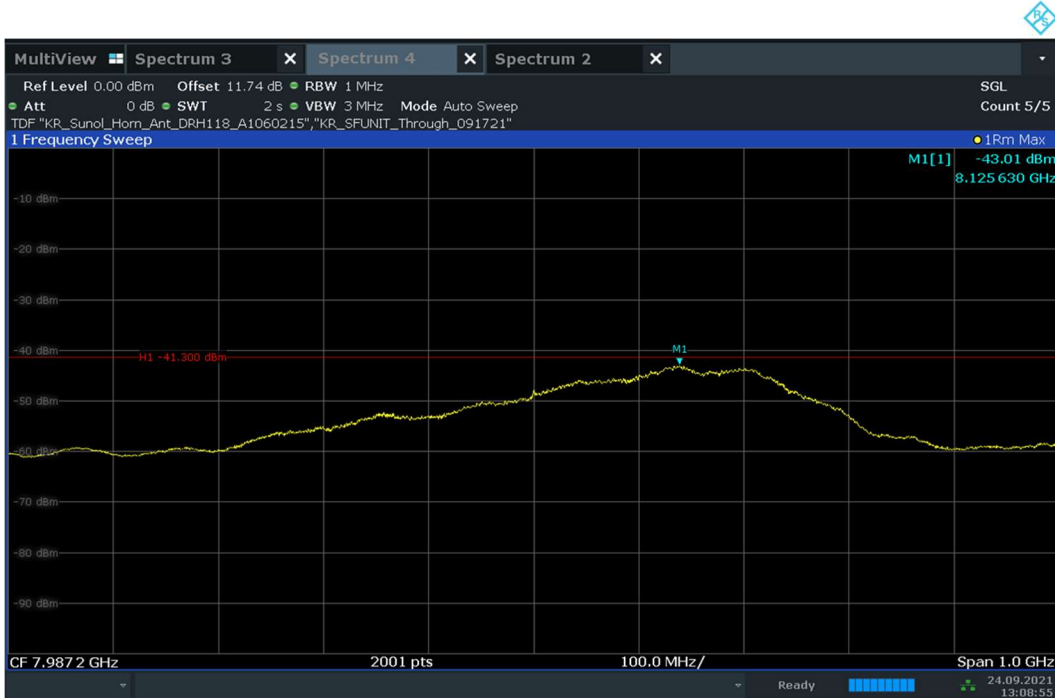


**Plot 7-67. UWB Average Power Measurement - ANT 1 - CH.9 – BPRF**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 50 of 86



Plot 7-68. UWB Average Power Measurement - ANT 2 - CH.5 - BPRF



Plot 7-69. UWB Average Power Measurement - ANT 2 - CH.9 - BPRF

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 - 10/10/2021	EUT Type: Portable Handset		Page 51 of 86

## RESULTS – HPRF

ANT	CH	MODE	Preamble	Meas. Ant.	FM[GHz]	Peak Power (dBm/50MHz)	Peak Limit (dBm/50MHz)	Margin [dB]
1	5	SP0	27	V	6.3647	-6.59	0	-6.59
	9	SP0	27	V	7.8673	-7.71	0	-7.71
2	5	SP0	27	V	6.6125	-8.24	0	-8.24
	9	SP0	27	V	8.1136	-6.43	0	-6.43

**Table 7-7. HPRF Highest Peak Power Results**

ANT	CH	MODE	Preamble	Meas. Ant.	FM[GHz]	Average Power (dBm)	Average Limit (dBm)	Margin [dB]
1	5	SP3	27	V	6.4541	-43.18	-41.3	-1.88
	9	SP3	27	V	7.7828	-43.48	-41.3	-2.18
2	5	SP3	27	V	6.6145	-43.19	-41.3	-1.89
	9	SP3	27	V	8.1246	-43.35	-41.3	-2.05

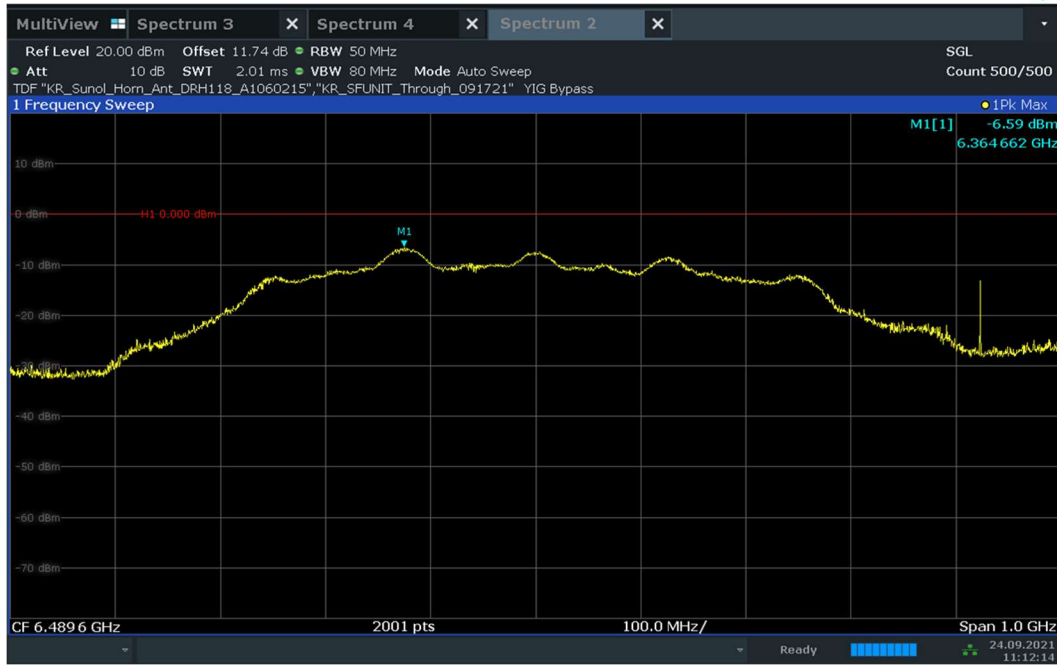
**Table 7-8. HPRF Highest Average Power Results**

## Sample Calculation

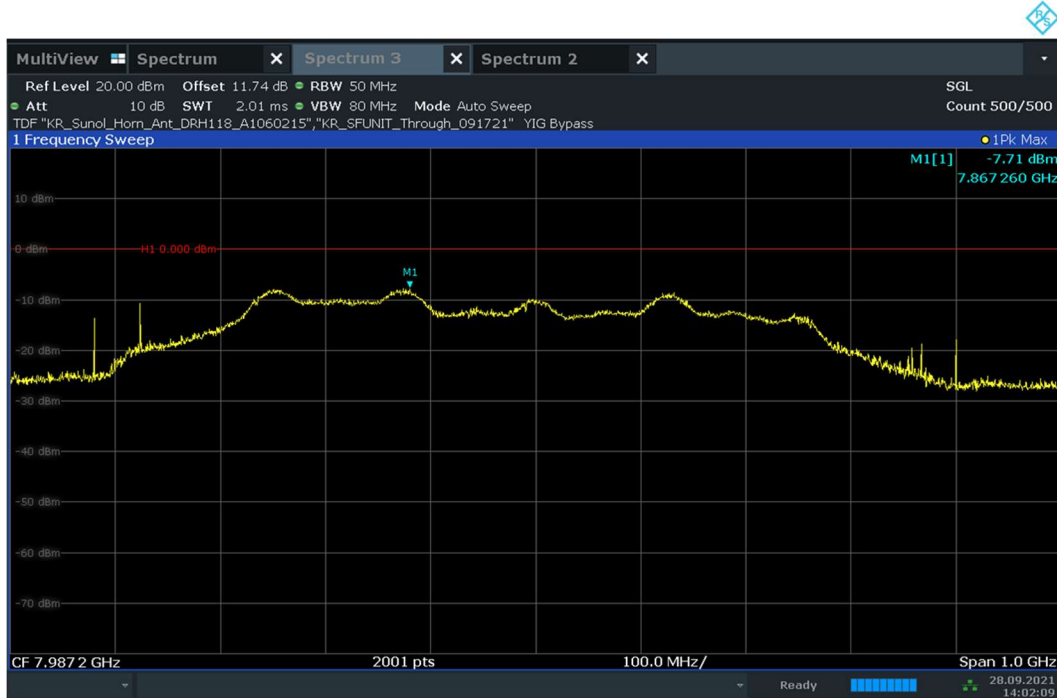
The raw radiated spurious level is converted to field strength in dBuV/m. Then, the EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 52 of 86

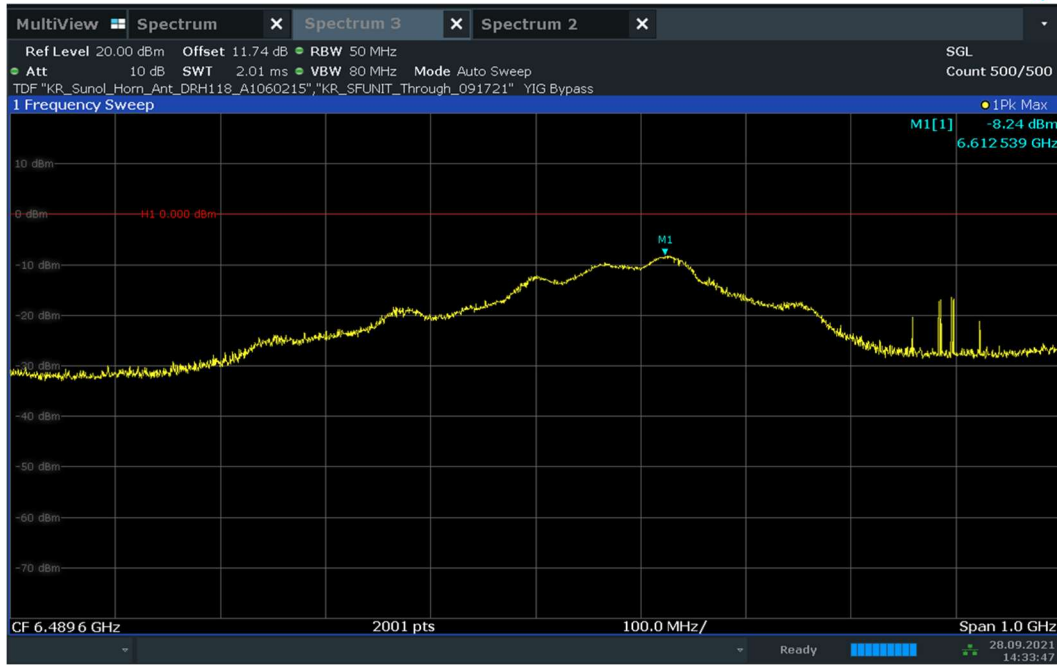


**Plot 7-70. UWB Peak Power Measurement - ANT 1 - CH.5 – HPRF**

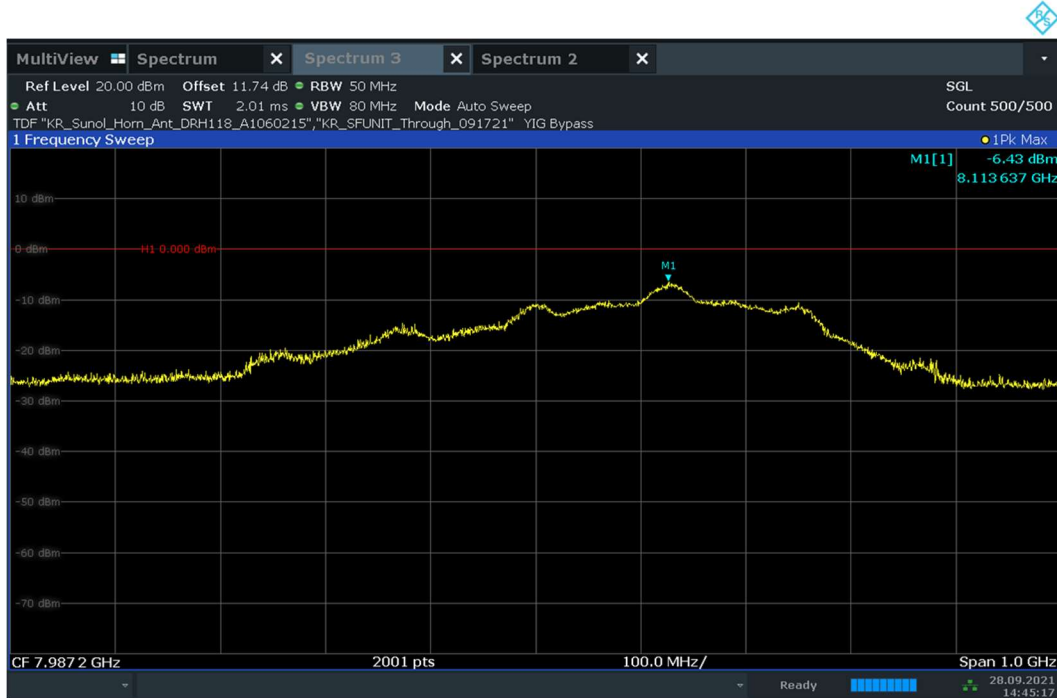


**Plot 7-71. UWB Peak Power Measurement - ANT 1 - CH.9 – HPRF**

FCC ID: A3LSMS906E	 Proud to be part of 	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 53 of 86	

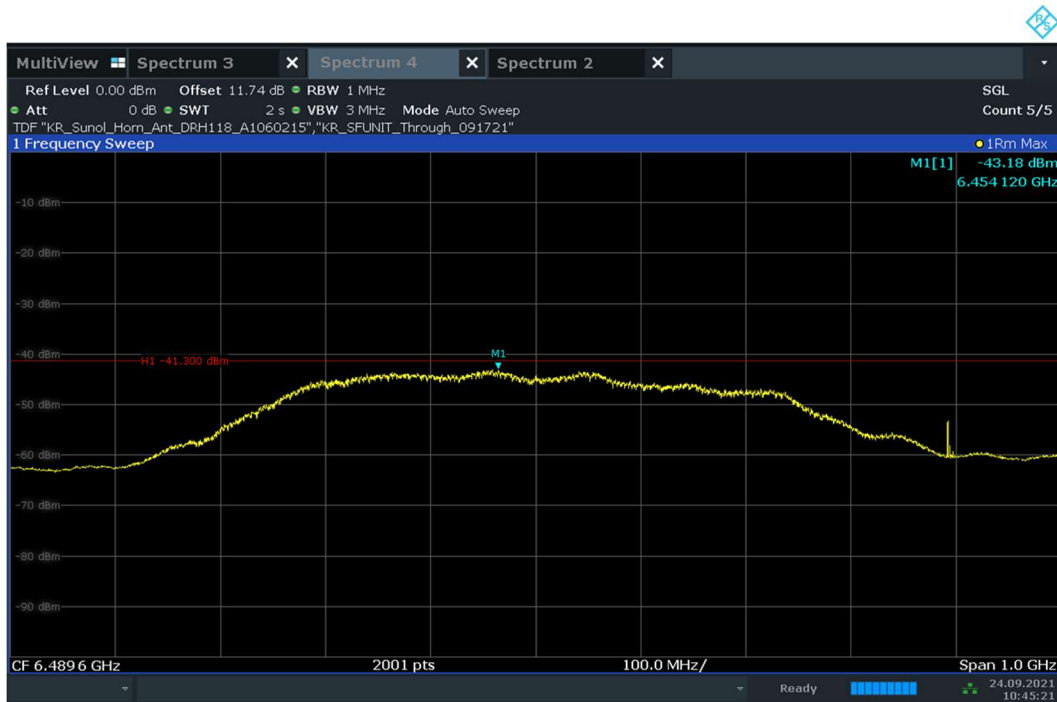


**Plot 7-72. UWB Peak Power Measurement - ANT 2 - CH.5 – HPRF**

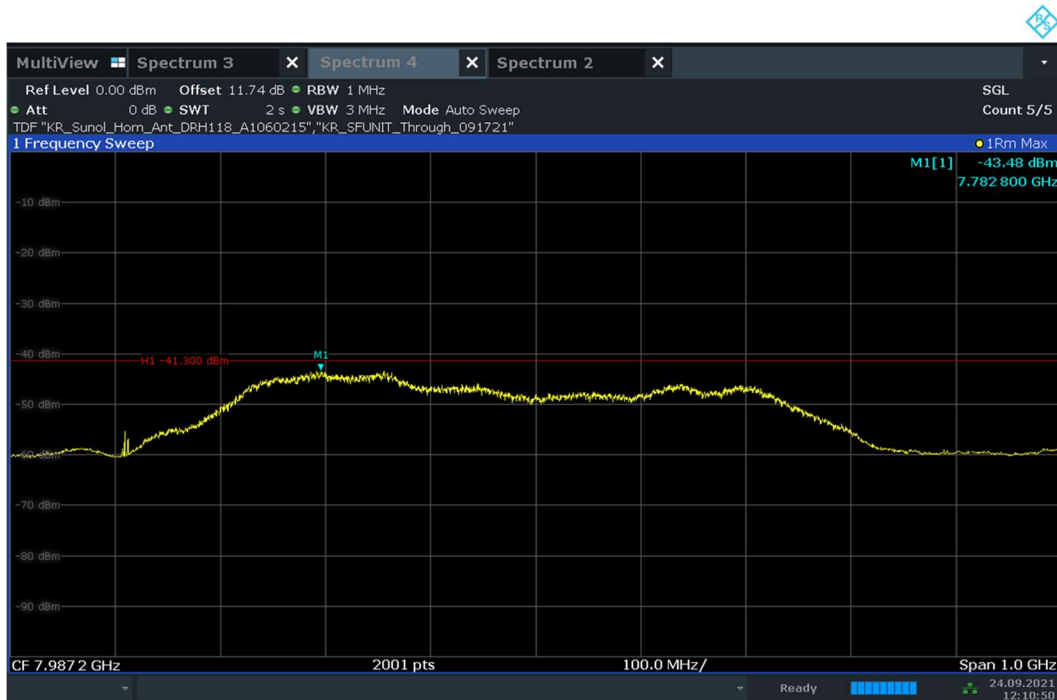


**Plot 7-73. UWB Peak Power Measurement - ANT 2 - CH.9 – HPRF**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 54 of 86



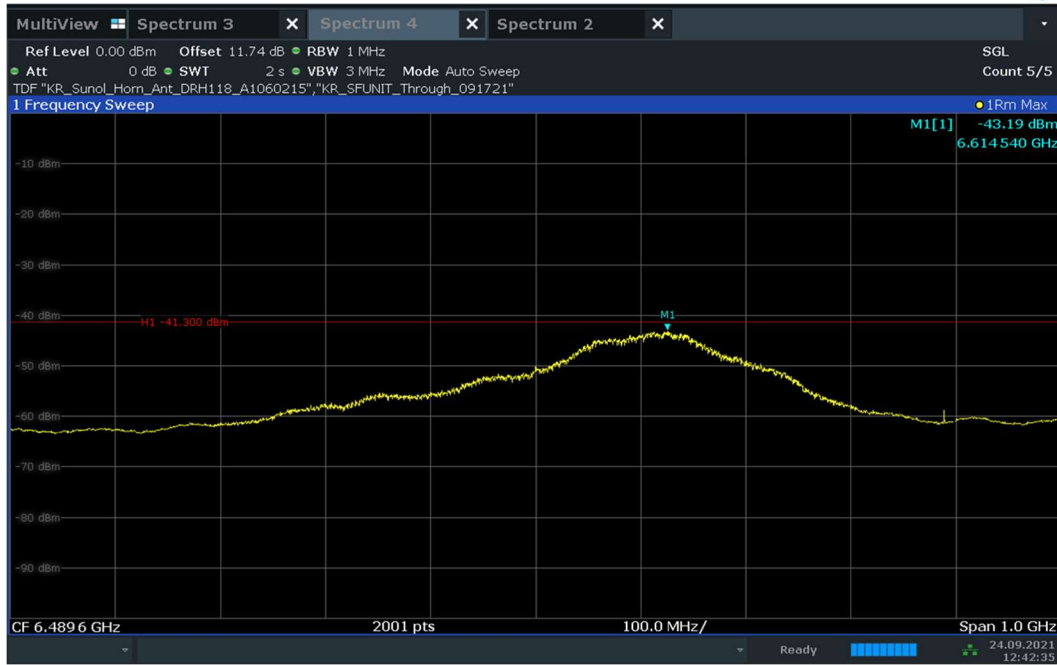
Plot 7-74. UWB Average Power Measurement - ANT 1 - CH.5 – HPRF



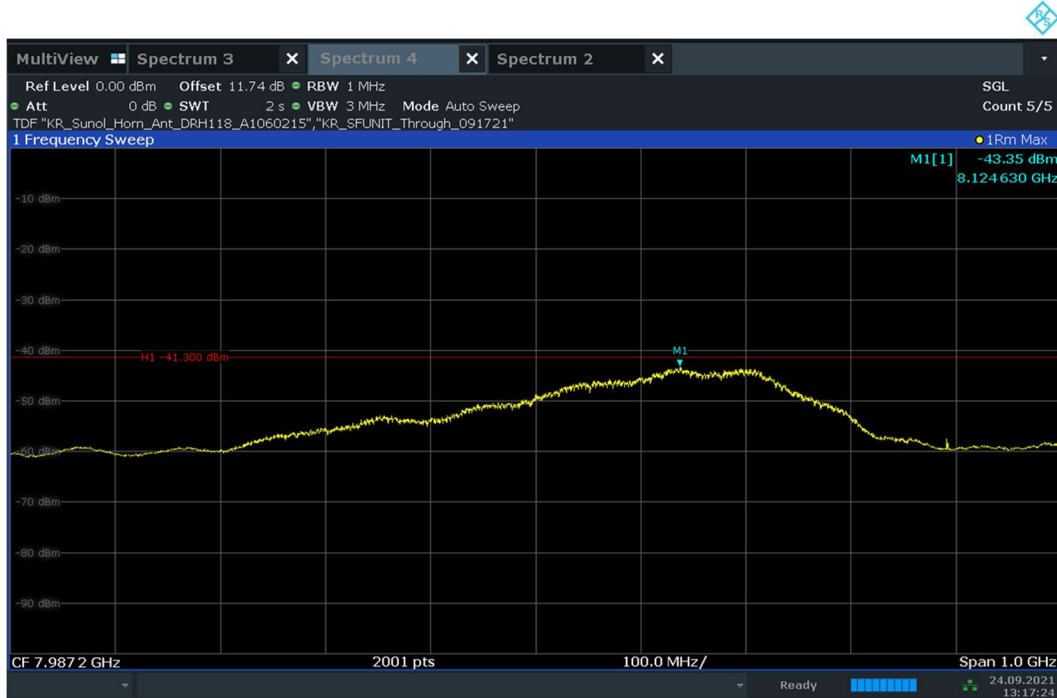
Plot 7-75. UWB Average Power Measurement - ANT 1 - CH.9 – HPRF

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 55 of 86





**Plot 7-76. UWB Average Power Measurement - ANT 2 - CH.5 – HPRF**



**Plot 7-77. UWB Average Power Measurement - ANT 2 - CH.9 – HPRF**

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 56 of 86

## 7.5 Radiated Measurement Data above 960MHz

§15.519 (c), §15.519(d), §15.209(a)

### Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

§15.519(c)

Frequency in MHz	EIRP in dBm
960-1610	-75.3
1610-1990	-63.3
1990-3100	-61.3
3100-10600	-41.3
Above 10600	-61.3

Table 7-9. Above 960MHz Average Limits

§15.519(d)

Frequency in MHz	EIRP in dBm
1164-1240	-85.3
1559-1610	-85.3

Table 7-10. Above 960MHz Average Limits

### Test Procedures Used

ANSI C63.10-2013

### Test Settings

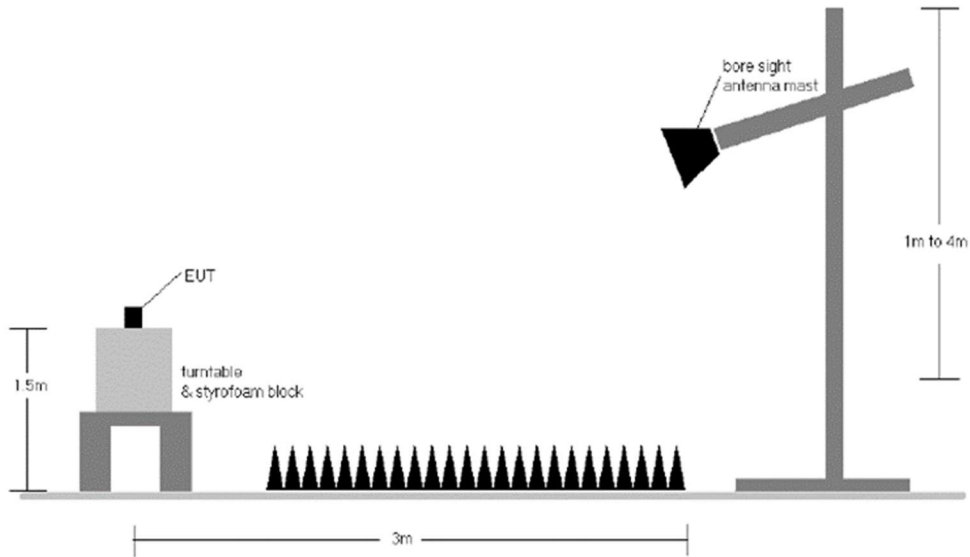
#### Average EIRP Measurements

1. Analyzer frequency set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz (30kHz for emissions in the GPS bands)
3. VBW = 3MHz (100kHz for the emissions in the GPS bands)
4. Detector = RMS
5. Sweep time = No more than 1ms integration period over each measurement bin
6. Trace mode = Max hold
7. Trace was allowed to stabilize

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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### Test Setup

The EUT and measurement equipment were set up as shown test setup photos provided.



**Figure 7-3. Radiated Test Setup > 1GHz**

### Test Notes

1. All modes of operation and settings (Preamble, Packet Type, etc) were investigated and the worst-case emissions are reported.
2. The RBW for measurements in the GPS Bands were reduced to 30kHz in order to prove compliance.
3. 1000 ~ 18000 MHz and above 18000 MHz pre-scan plots were conducted at 0.7 and 0.6 meter respectively. The plots are only for the purpose of spurious emission identification.
4. All final measurements were made at 0.7 meters.
5. All readings are calibrated by a signal generator with accuracy traceable to the National Institute of Standards and Technology (NIST).
6. AFCL (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

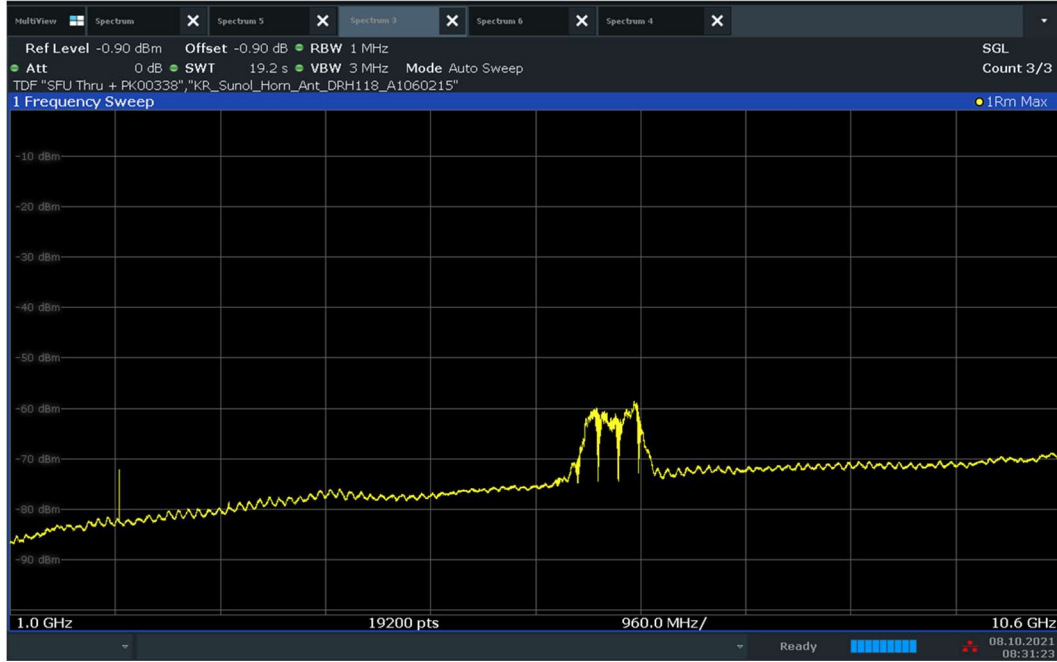
### Sample Calculation

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the EIRP RSE level is calculated by applying the additional factors shown below for a test distance of 3 meter

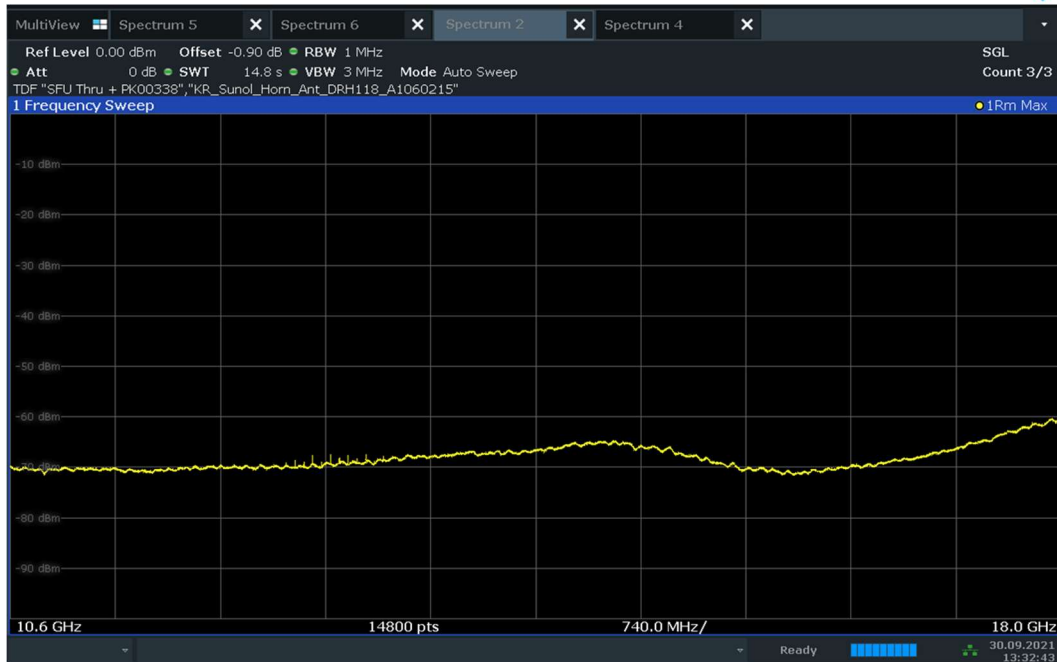
$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 58 of 86

**Channel 5 ANTENNA 1:**

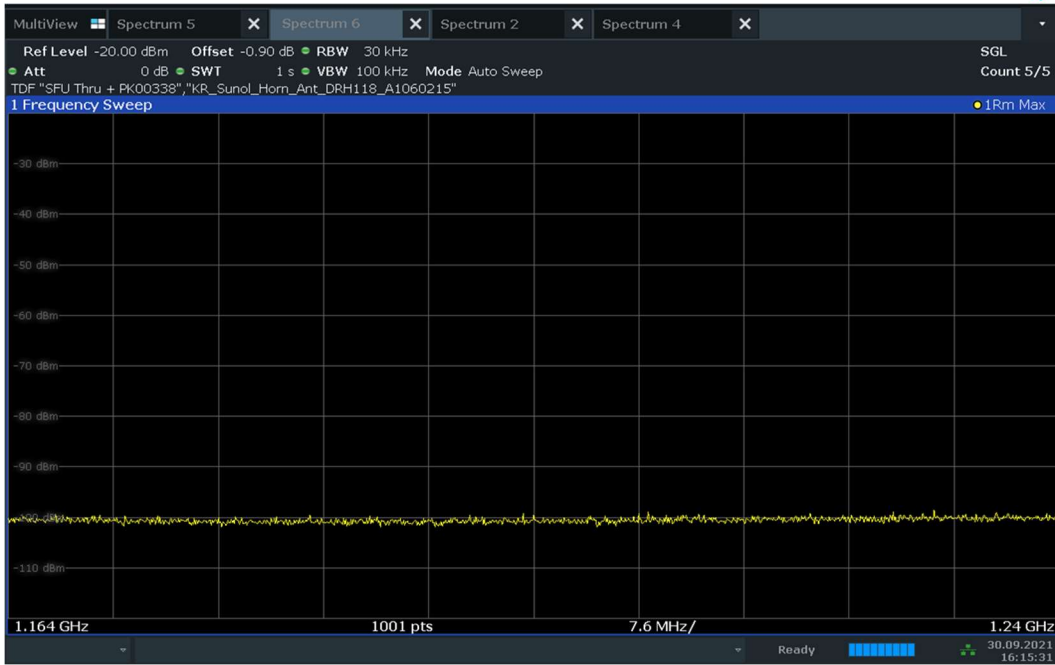


**Plot 7-78. Radiated Spurious Pre-Scan 1000 - 10600 MHz - CH.5 - ANT 1**

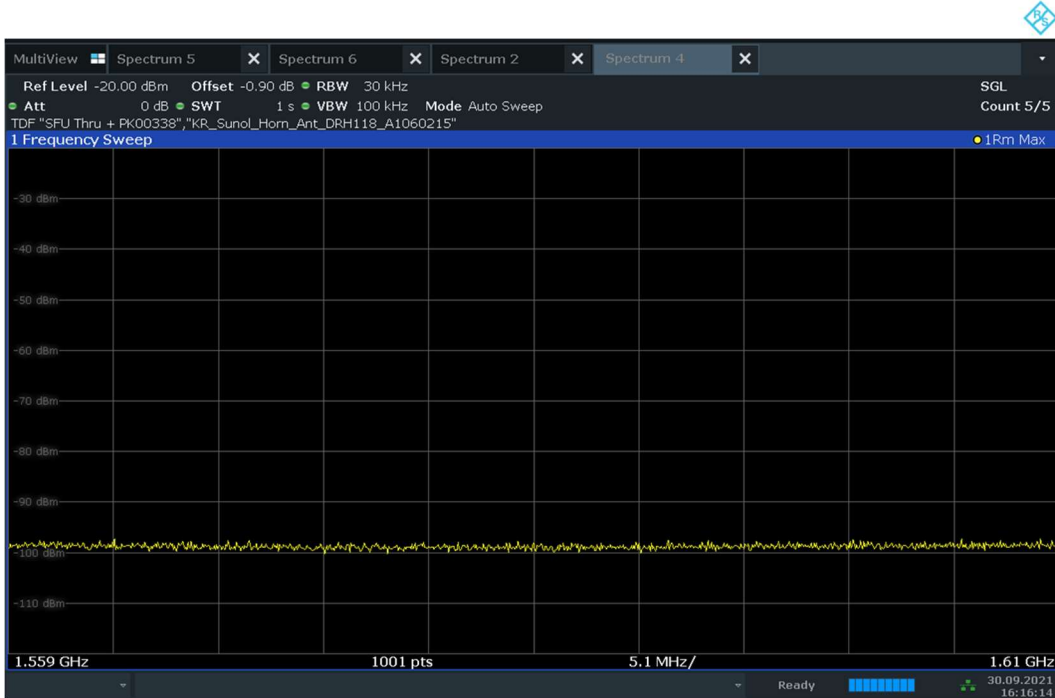


**Plot 7-79. Radiated Spurious Pre-Scan 10600 - 18000 MHz - CH.5 - ANT 1**

FCC ID: A3LSMS906E	 Proud to be part of element	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2110010116-17.A3L	<b>Test Dates:</b> 9/27 – 10/10/2021	<b>EUT Type:</b> Portable Handset	Page 59 of 86	

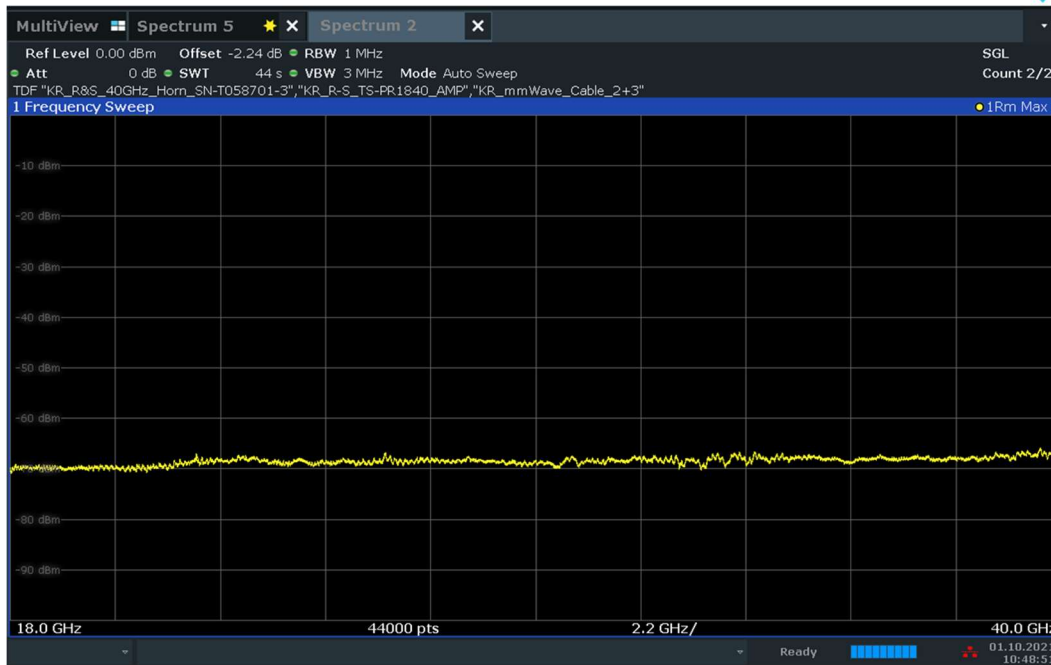


**Plot 7-80. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.5 - ANT 1 – GPS band**



**Plot 7-81. Radiated Spurious Pre-Scan 1559 - 1610 MHz - CH.5 - ANT 1 – GPS band**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 60 of 86	



Plot 7-82. Radiated Spurious Pre-Scan 18 – 40 GHz - CH.5 - ANT 1

Channel:	5
Frequency (MHz):	6489.6
Preamble ID	11
Config	SP1

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level[dBm]	Limit [dBm]	Margin [dB]
1428	RMS	H	-	-	-72.44	-9.71	-12.64	-83.05	-75.30	-7.75
1996	RMS	H	150	273.2	-62.83	-8.38	-12.64	-72.11	-61.30	-10.81
10526	RMS	H	-	-	-75.22	7.32	-12.64	-68.80	-41.30	-27.50
13104	RMS	V	150	352	-75.28	8.73	-12.64	-67.45	-61.30	-6.15
13824	RMS	V	150	352	-76.48	10.52	-12.64	-66.86	-61.30	-5.56
14845	RMS	V	-	-	-76.18	12.38	-12.64	-64.70	-61.30	-3.40

Table 7-11. Radiated Spurious Emissions CH. 5 – ANT1

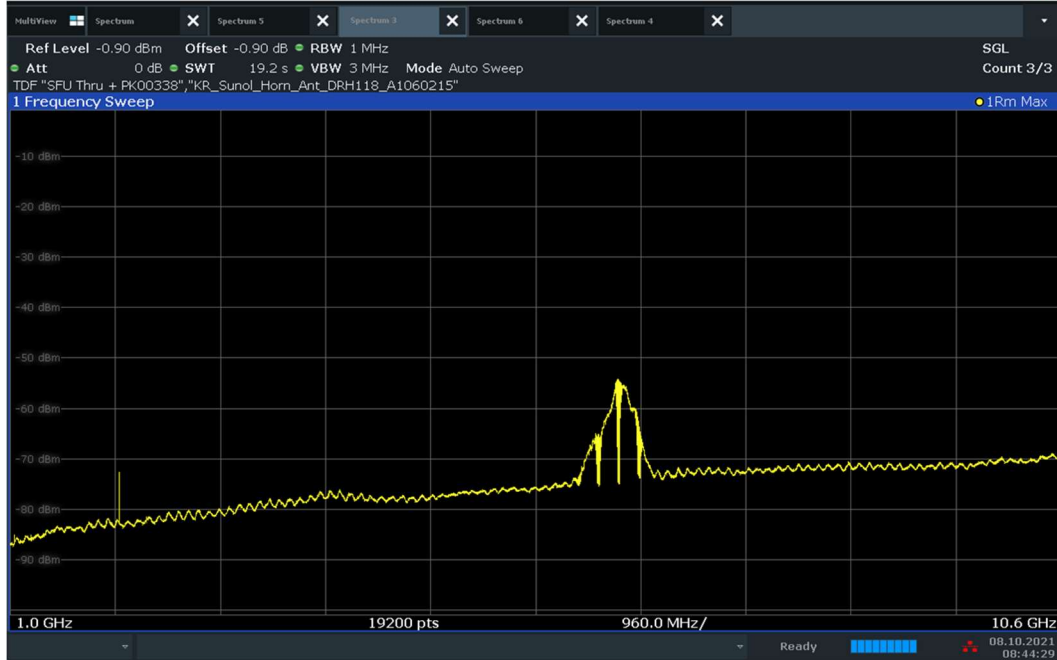
Channel:	5
Frequency (MHz):	6489.6
Preamble ID	11
Config	SP1

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level[dBm]	Limit [dBm]	Margin [dB]
1210	RMS	H	-	-	-86.52	-11.53	-12.64	-98.95	-85.30	-13.65
1230	RMS	H	-	-	-86.31	-11.43	-12.64	-98.64	-85.30	-13.34
1235	RMS	H	-	-	-86.75	-11.41	-12.64	-99.06	-85.30	-13.76
1564	RMS	H	-	-	-87.05	-9.28	-12.64	-97.23	-85.30	-11.93
1600	RMS	H	-	-	-87.14	-9.43	-12.64	-97.47	-85.30	-12.17
1609	RMS	H	-	-	-86.95	-9.49	-12.64	-97.34	-85.30	-12.04

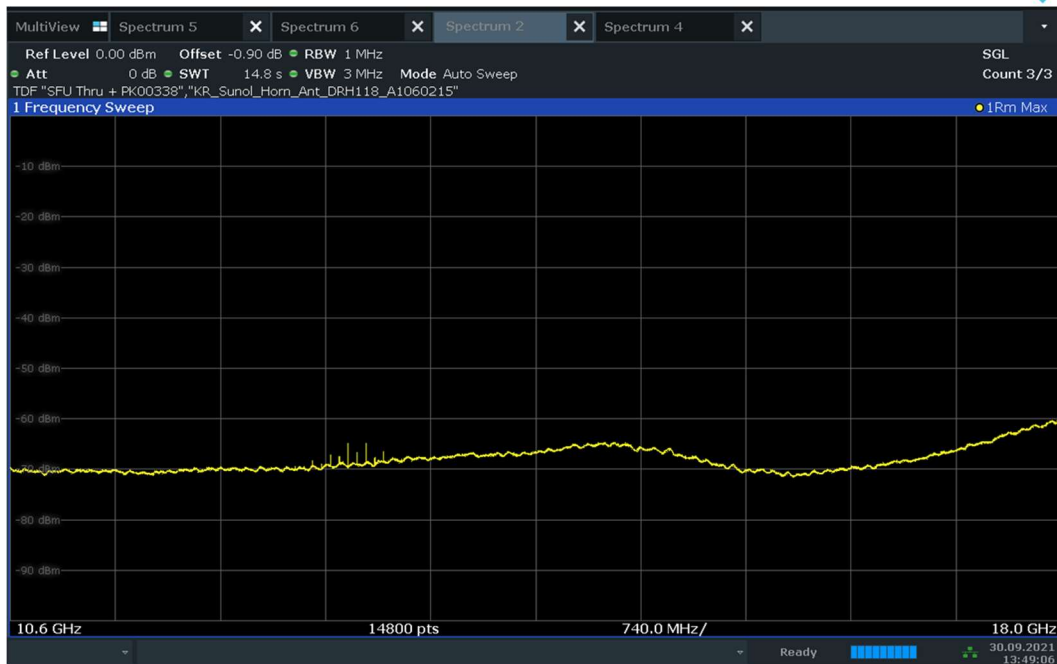
Table 7-12. Radiated Spurious Emissions CH. 5 – ANT1 – GPS BANDS

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 61 of 86

**Channel 5 ANTENNA 2:**

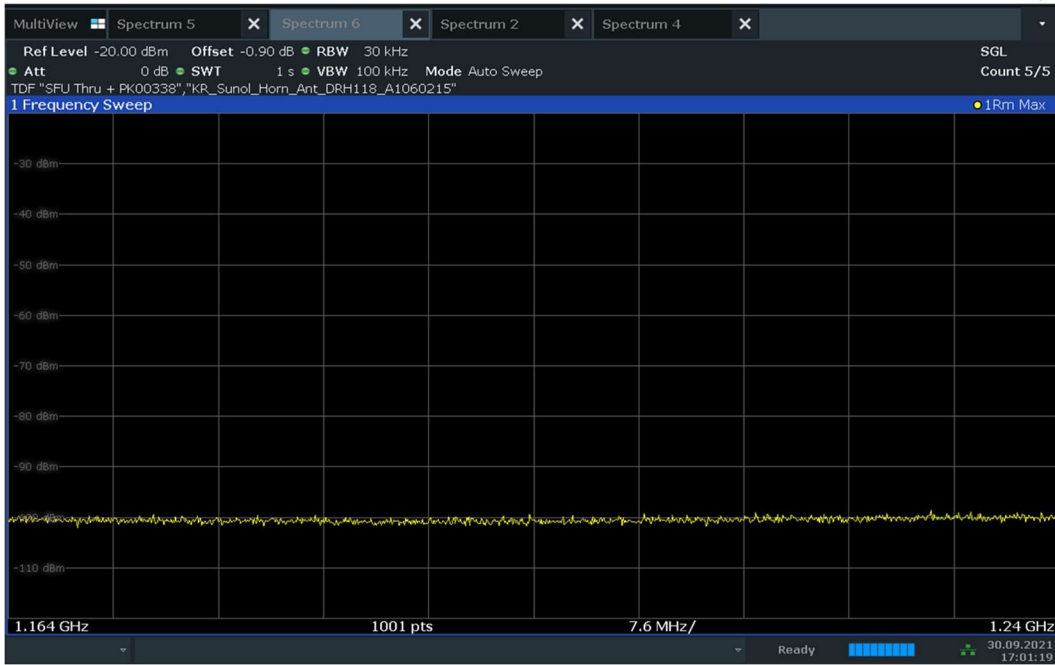


**Plot 7-83. Radiated Spurious Pre-Scan 1000 - 10600 MHz - CH.5 - ANT 2**

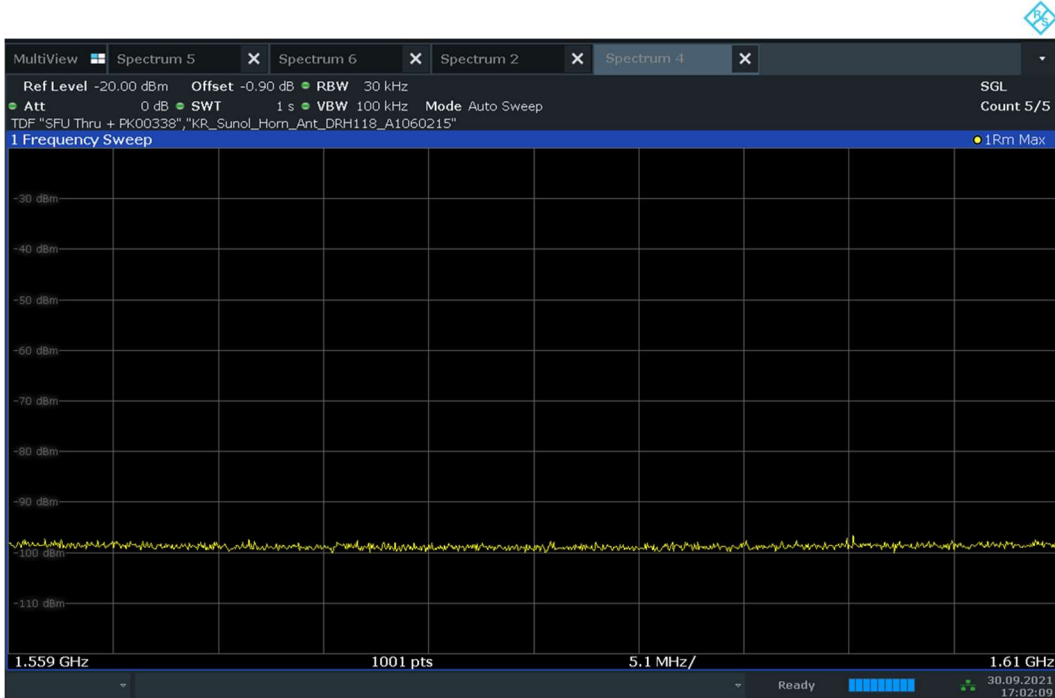


**Plot 7-84. Radiated Spurious Pre-Scan 10600 - 18000 MHz - CH.5 - ANT 2**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 62 of 86	



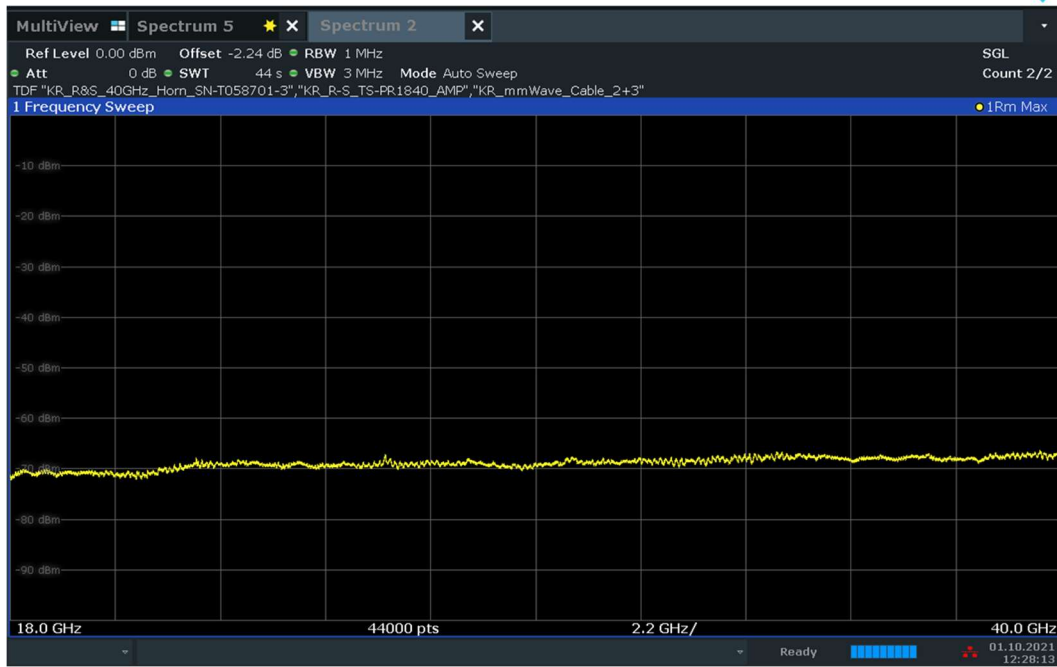
Plot 7-85. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.5 - ANT 2 – GPS band



Plot 7-86. Radiated Spurious Pre-Scan 1559 - 1610 MHz - CH.5 - ANT 2 – GPS band

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 63 of 86	





**Plot 7-87. Radiated Spurious Pre-Scan 18 – 40 GHz - CH.5 - ANT 2**

Channel:	5
Frequency (MHz):	6489.6
Preamble ID	9
Config	SP3

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1427	RMS	H	-	-	-72.61	-9.72	-12.64	-83.23	-75.30	-7.93
1891	RMS	H	-	-	-54.75	-26.13	-12.64	-81.78	-63.30	-18.48
1996	RMS	H	150	31	-63.07	-8.59	-12.64	-72.56	-61.30	-11.26
12979	RMS	V	150	275	-72.58	8.67	-12.64	-64.81	-61.30	-3.51
13103	RMS	V	150	275	-72.71	8.73	-12.64	-64.88	-61.30	-3.58
14857	RMS	V	-	-	-76.22	12.43	-12.64	-64.69	-61.30	-3.39

**Table 7-13. Radiated Spurious Emissions CH. 5 – ANT2**

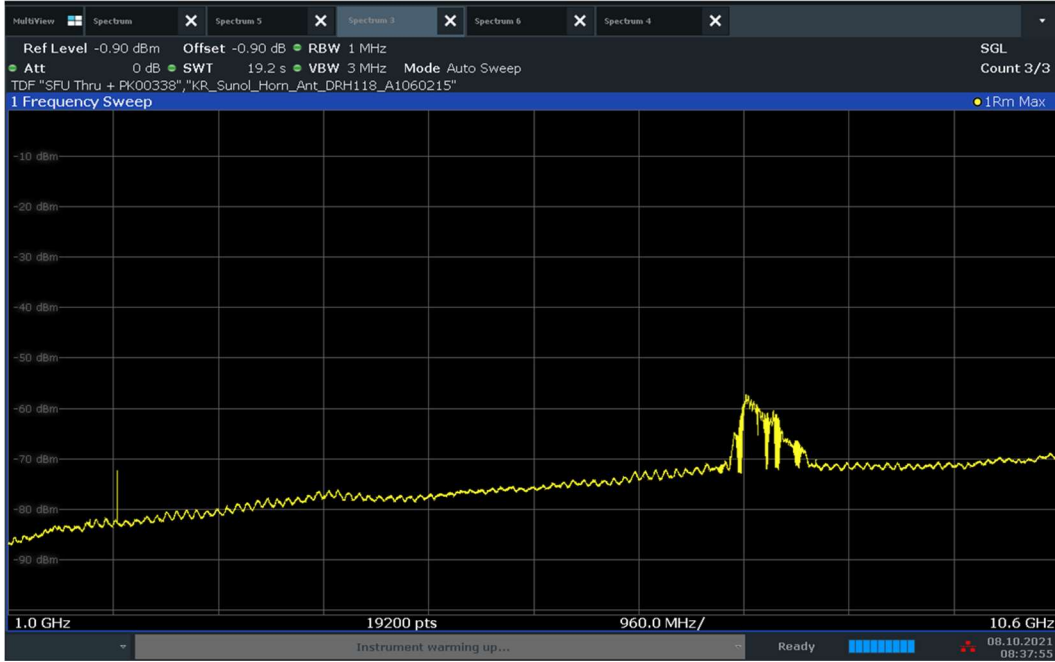
Channel:	5
Frequency (MHz):	6489.6
Preamble ID	9
Config	SP3

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1218	RMS	H	-	-	-86.77	-11.49	-12.64	-99.17	-85.30	-13.87
1233	RMS	H	-	-	-86.57	-11.42	-12.64	-98.89	-85.30	-13.59
1238	RMS	H	-	-	-86.82	-11.39	-12.64	-99.11	-85.30	-13.81
1559	RMS	H	-	-	-87.36	-9.27	-12.64	-97.53	-85.30	-12.23
1570	RMS	H	-	-	-87.29	-9.29	-12.64	-97.48	-85.30	-12.18
1600	RMS	H	-	-	-86.35	-9.43	-12.64	-96.68	-85.30	-11.38

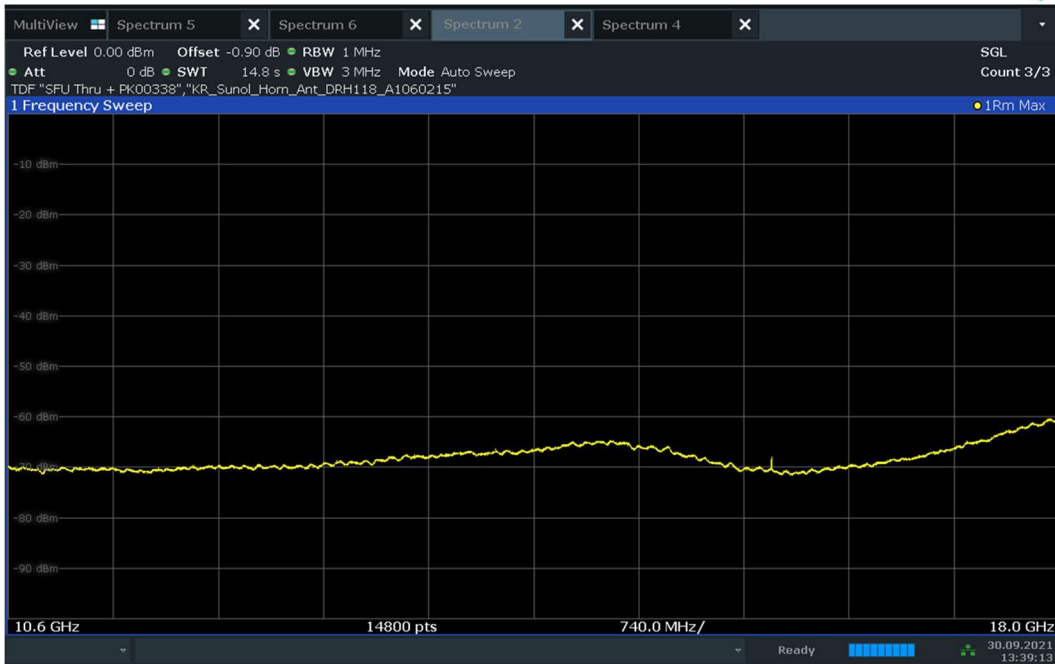
**Table 7-14. Radiated Spurious Emissions CH. 5 – ANT2 – GPS BANDS**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 64 of 86

**Channel 9 ANTENNA 1:**

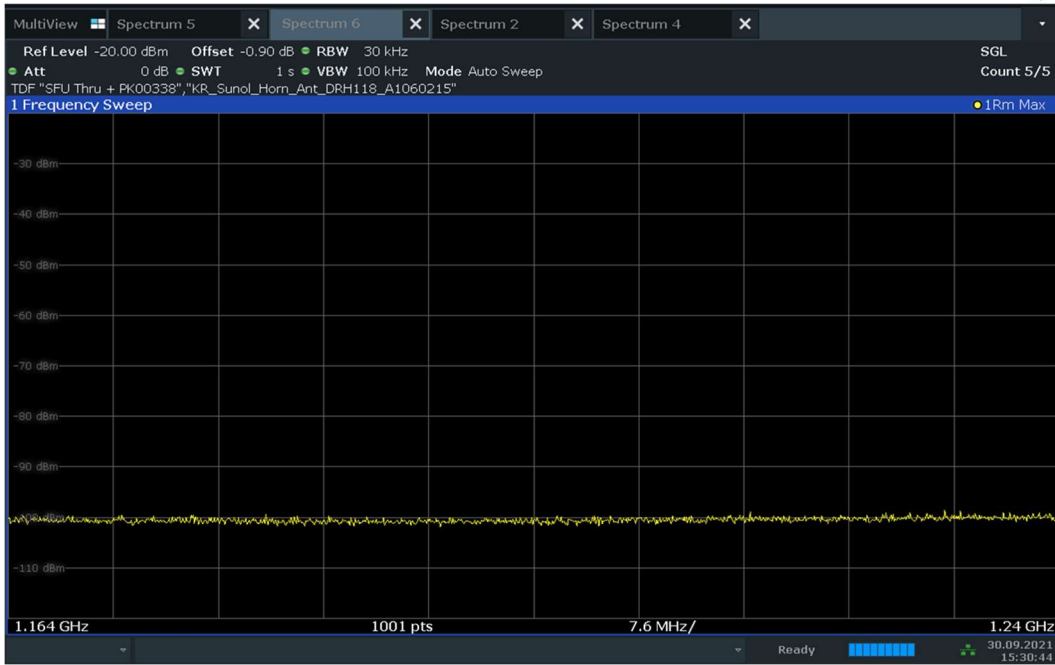


**Plot 7-88. Radiated Spurious Pre-Scan 1000 - 10600 MHz - CH.9 - ANT 1**

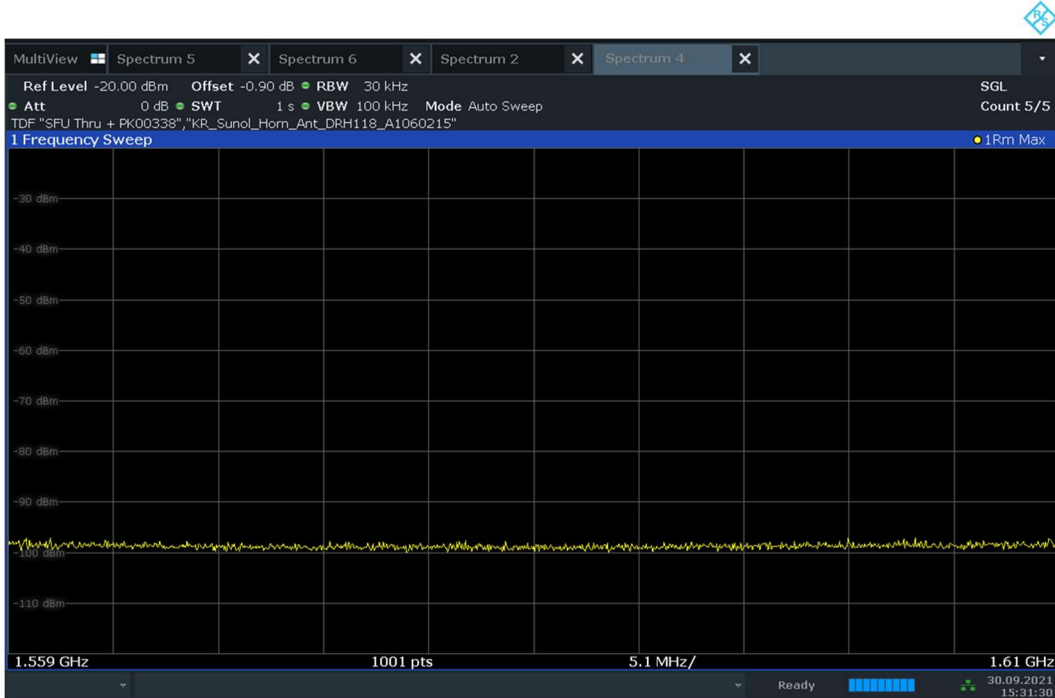


**Plot 7-89. Radiated Spurious Pre-Scan 10600 - 18000 MHz - CH.9 - ANT 1**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 65 of 86	

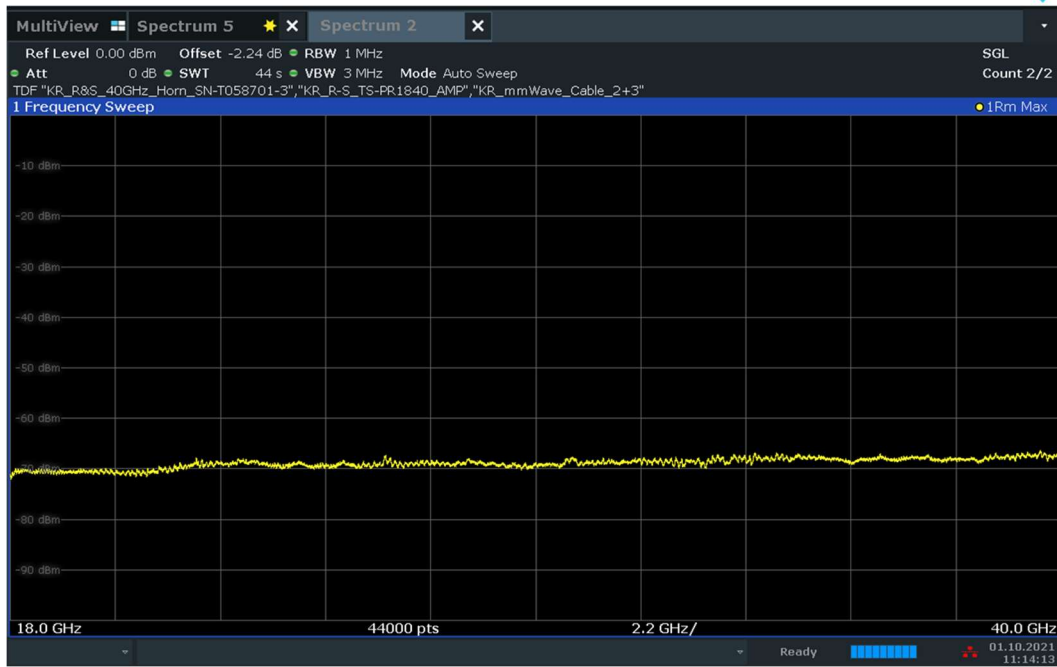


**Plot 7-90. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.9 - ANT 1 – GPS band**



**Plot 7-91. Radiated Spurious Pre-Scan 1559 - 1610 MHz - CH.9 - ANT 1 – GPS band**

FCC ID: A3LSMS906E	 Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 66 of 86	



Plot 7-92. Radiated Spurious Pre-Scan 18 – 40 GHz - CH.9 - ANT 1

Channel:	9
Frequency (MHz):	7987.2
Preamble ID	9
Config	SP3

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1426	RMS	H	-	-	-72.61	-9.71	-12.64	-83.22	-75.30	-7.92
1611	RMS	H	150	44	-73.08	-9.50	-12.64	-83.47	-63.30	-20.17
1745	RMS	H	150	44	-73.92	-8.42	-12.64	-83.23	-63.30	-19.93
12937	RMS	V	-	-	-76.47	8.68	-12.64	-68.69	-61.30	-7.39
14860	RMS	V	-	-	-74.02	10.26	-12.64	-64.66	-61.30	-3.36
15974	RMS	V	150	124	-73.85	6.74	-12.64	-68.01	-61.30	-6.71

Table 7-15. Radiated Spurious Emissions CH. 9 – ANT1

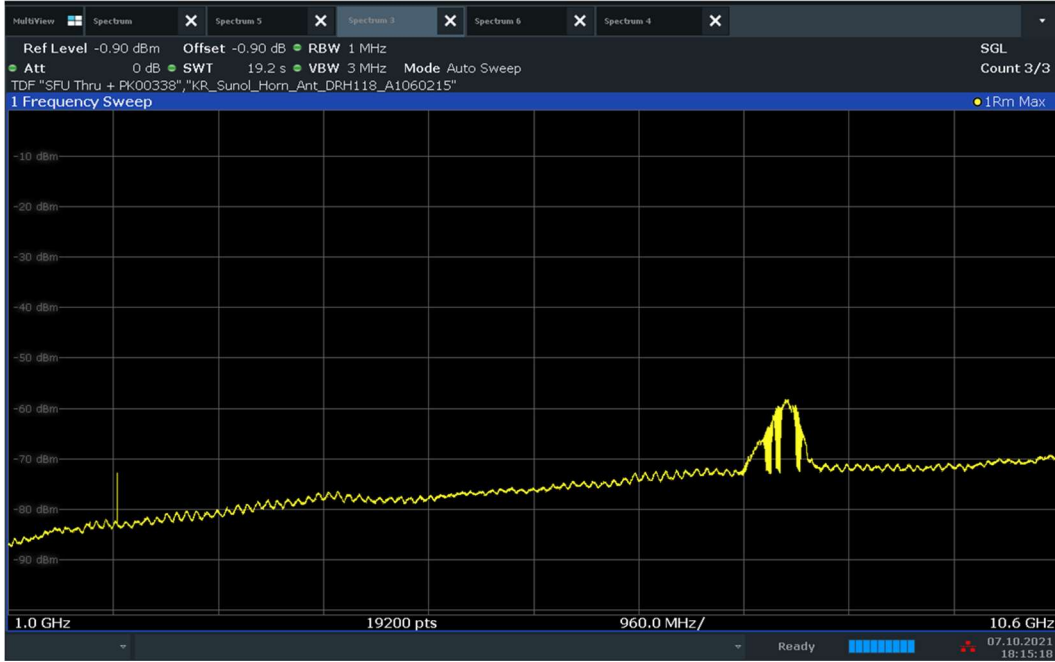
Channel:	9
Frequency (MHz):	7987.2
Preamble ID	9
Config	SP3

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Dist. Corr. Factor [dB]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1217	RMS	V	-	-	-86.52	-11.50	-12.64	-98.92	-85.30	-13.62
1231	RMS	V	-	-	-86.20	-11.43	-12.64	-98.53	-85.30	-13.23
1238	RMS	V	-	-	-86.79	-11.39	-12.64	-99.09	-85.30	-13.79
1578	RMS	V	-	-	-89.64	-9.31	-12.64	-99.85	-85.30	-14.55
1584	RMS	V	-	-	-89.57	-9.34	-12.64	-99.81	-85.30	-14.51
1588	RMS	V	-	-	-89.58	-9.36	-12.64	-99.85	-85.30	-14.55

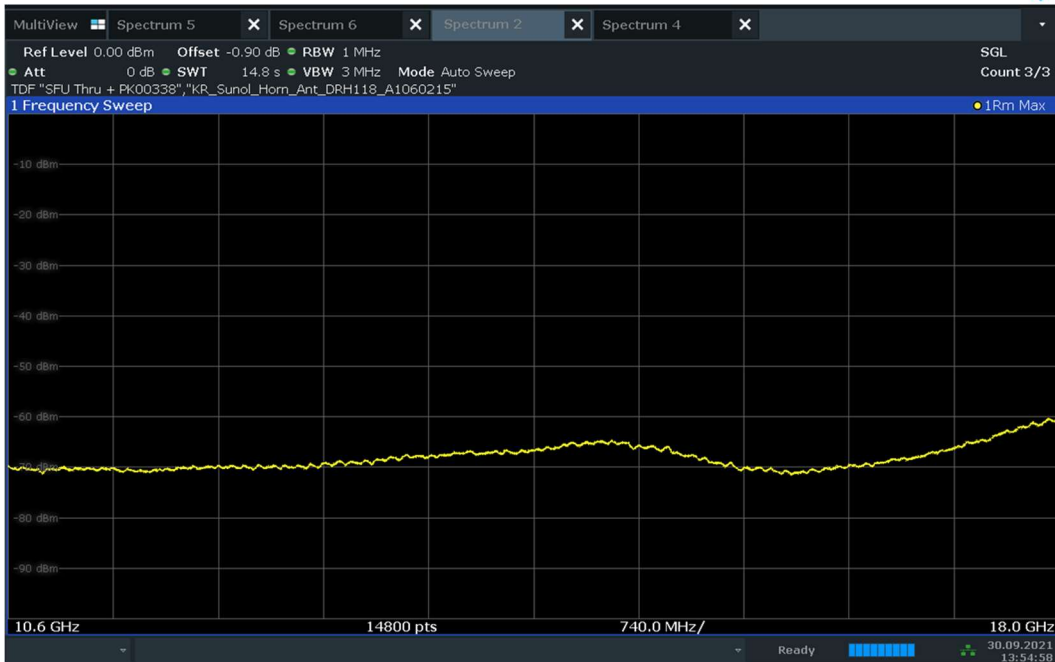
Table 7-16. Radiated Spurious Emissions CH. 9 – ANT1 – GPS BANDS

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 67 of 86

**Channel 9 ANTENNA 2:**

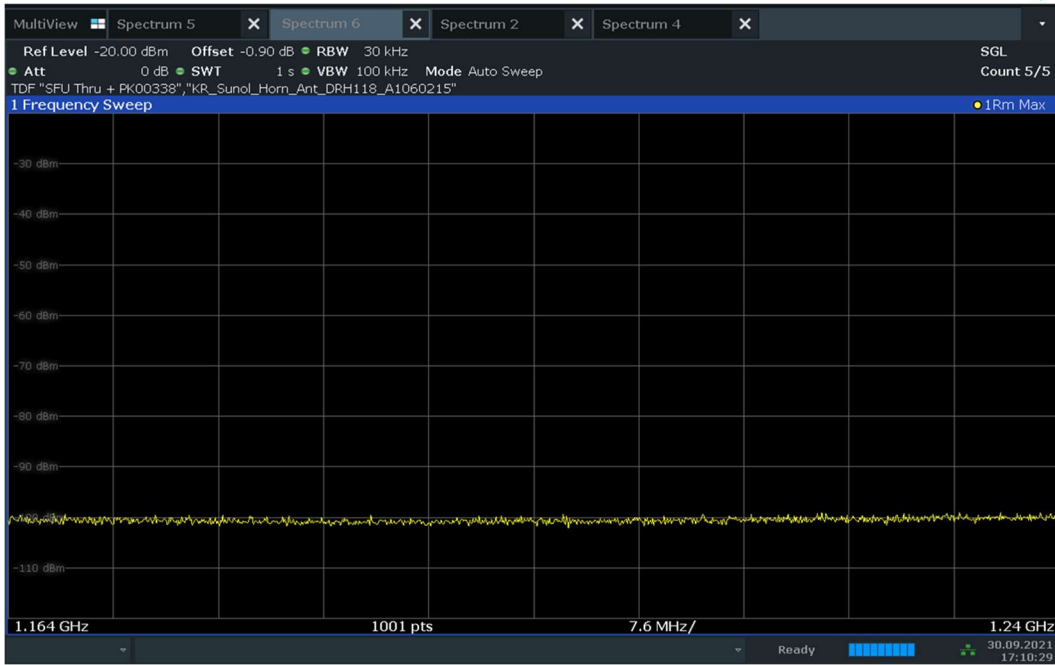


**Plot 7-93. Radiated Spurious Pre-Scan 1000 - 10600 MHz - CH.9 - ANT 2**

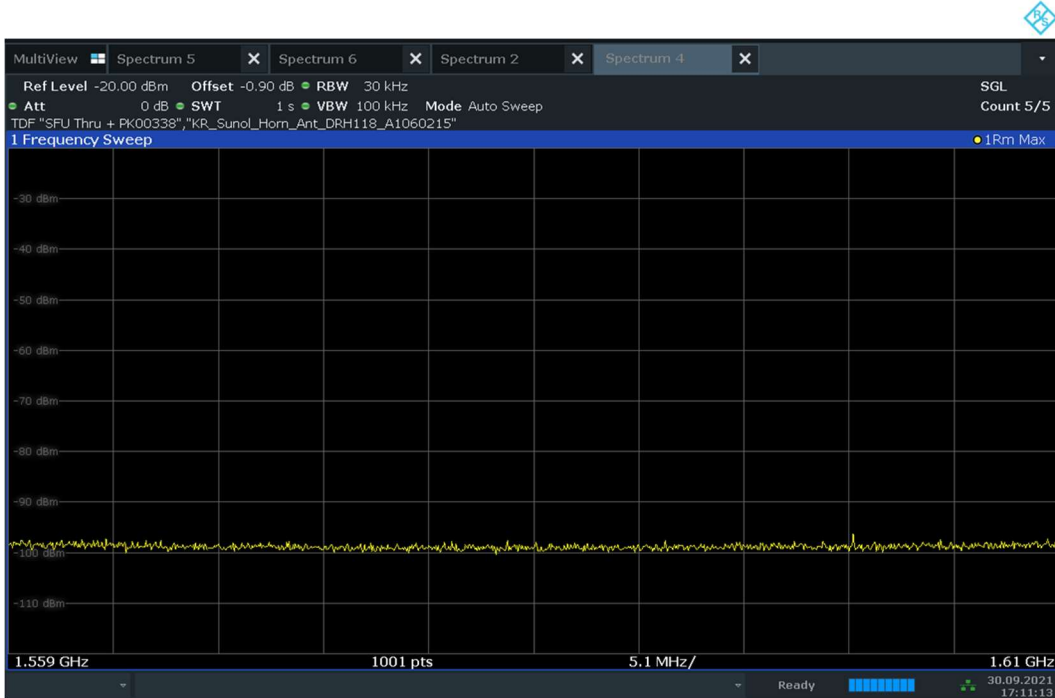


**Plot 7-94. Radiated Spurious Pre-Scan 10600 - 18000 MHz - CH.9 - ANT 2**

FCC ID: A3LSMS906E		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2110010116-17.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset	Page 68 of 86	



**Plot 7-95. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.9 - ANT 2 – GPS band**



**Plot 7-96. Radiated Spurious Pre-Scan 1559 - 1610 MHz – CH 9 - ANT 2 – GPS band**

FCC ID: A3LSMS906E	 Proud to be part of 	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2110010116-17.A3L	<b>Test Dates:</b> 9/27 – 10/10/2021	<b>EUT Type:</b> Portable Handset	Page 69 of 86	