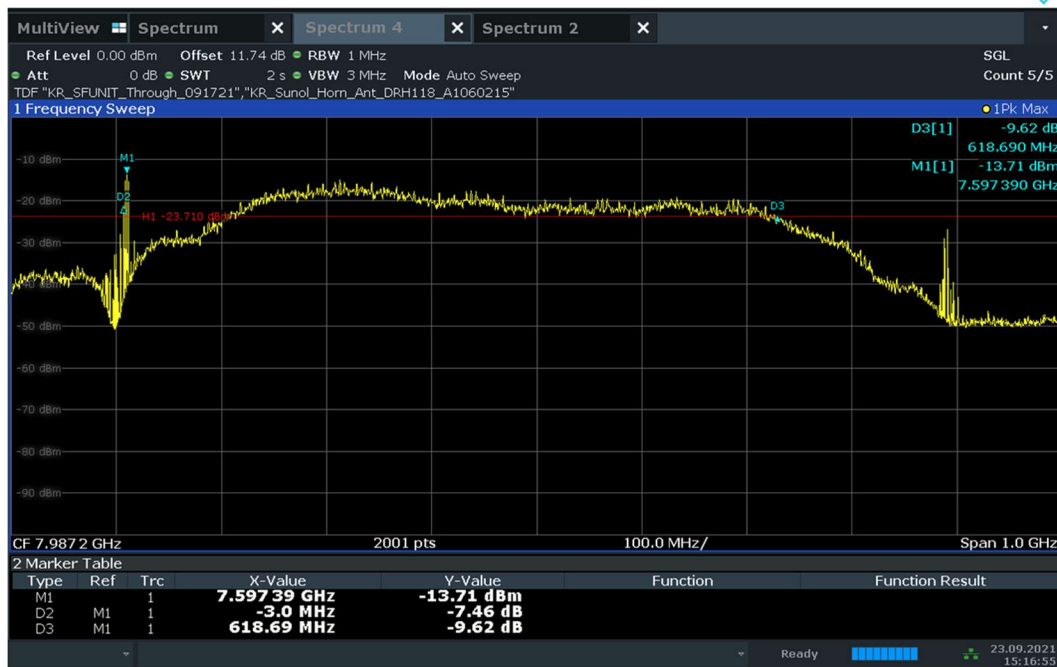




Plot 7-29. 10dBc Bandwidth – CH.9 – SP1 – Preamble 27



Plot 7-30. 10dBc Bandwidth – CH.9 – SP3 – Preamble 27

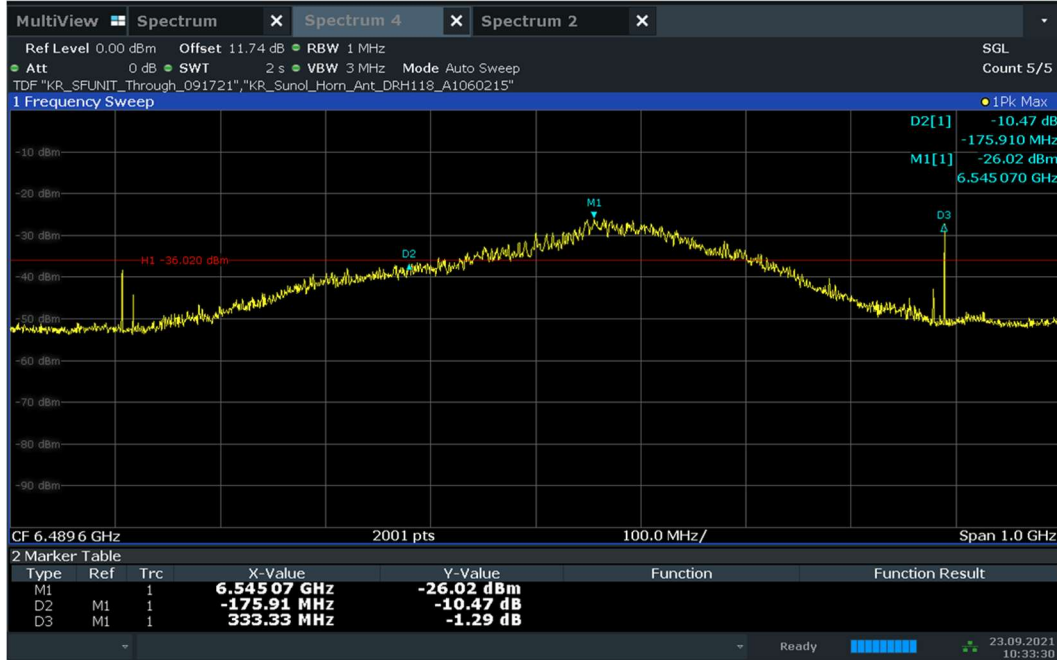
FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 27 of 86

Frequency [GHz]	Channel	Preamble Id	Config	Mode	F _M [GHz]	F _L [GHz]	F _H [GHz]	F _c [GHz]	Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
6.5	5	9	SP0	BPRF	6.545	6.369	6.878	6.624	509	500	Pass
		9	SP1	BPRF	6.551	6.100	6.882	6.491	782	500	Pass
		9	SP3	BPRF	6.551	6.100	6.882	6.491	782	500	Pass
		10	SP0	BPRF	6.564	6.096	6.702	6.399	607	500	Pass
		10	SP1	BPRF	6.564	6.099	6.881	6.490	782	500	Pass
		10	SP3	BPRF	6.551	6.101	6.721	6.411	620	500	Pass
		11	SP0	BPRF	6.544	6.099	6.881	6.490	782	500	Pass
		11	SP1	BPRF	6.551	6.099	6.881	6.490	782	500	Pass
		11	SP3	BPRF	6.551	6.102	6.727	6.414	625	500	Pass
		12	SP0	BPRF	6.565	6.099	6.881	6.490	782	500	Pass
		12	SP1	BPRF	6.564	6.100	6.882	6.491	782	500	Pass
		12	SP3	BPRF	6.551	6.100	6.882	6.491	782	500	Pass
		27	SP0	HPRF	6.560	6.099	6.881	6.490	782	500	Pass
		27	SP1	HPRF	6.560	6.099	6.881	6.490	782	500	Pass
		27	SP3	HPRF	6.552	6.101	6.707	6.404	607	500	Pass
8.0	9	9	SP0	BPRF	8.121	7.597	8.272	7.934	675	500	Pass
		9	SP1	BPRF	8.114	7.812	8.379	8.095	567	500	Pass
		9	SP3	BPRF	8.124	7.798	8.380	8.089	581	500	Pass
		10	SP0	BPRF	7.998	7.818	8.380	8.099	562	500	Pass
		10	SP1	BPRF	8.124	7.791	8.380	8.085	588	500	Pass
		10	SP3	BPRF	8.124	7.798	8.376	8.087	578	500	Pass
		11	SP0	BPRF	8.126	7.596	8.273	7.934	676	500	Pass
		11	SP1	BPRF	8.124	7.798	8.380	8.089	582	500	Pass
		11	SP3	BPRF	8.124	7.812	8.377	8.094	565	500	Pass
		12	SP0	BPRF	8.120	7.597	8.277	7.937	680	500	Pass
		12	SP1	BPRF	8.113	7.598	8.269	7.933	671	500	Pass
		12	SP3	BPRF	8.124	7.788	8.377	8.082	588	500	Pass
		27	SP0	HPRF	8.151	7.749	8.269	8.009	520	500	Pass
		27	SP1	HPRF	8.120	7.749	8.269	8.009	520	500	Pass
		27	SP3	HPRF	8.120	7.795	8.379	8.087	584	500	Pass

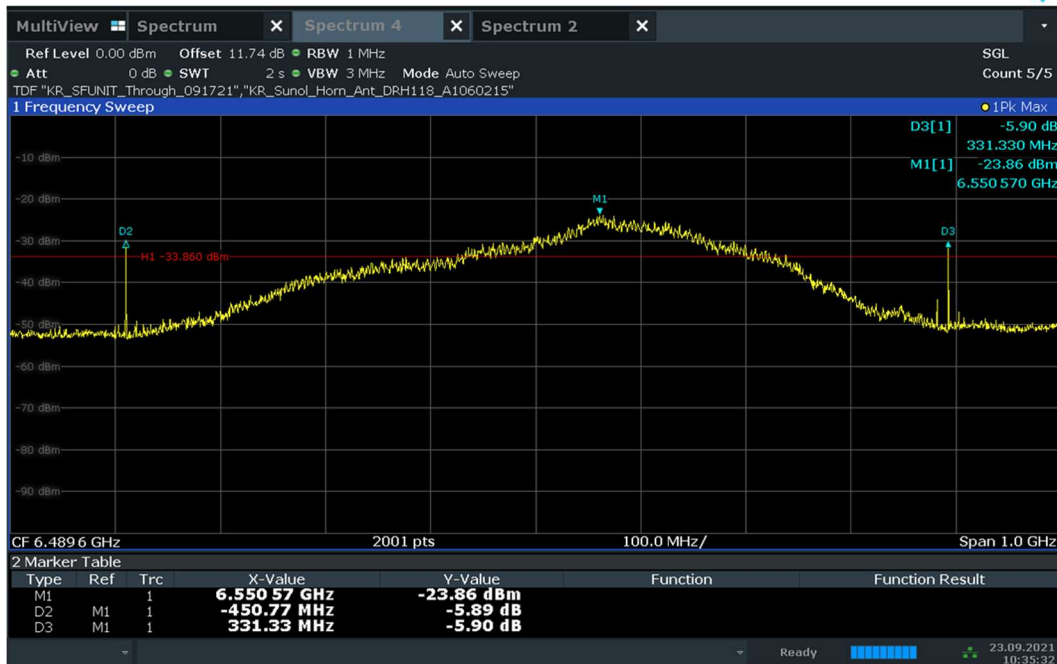
Table 7-3. UWB 10dBc Bandwidth Summary [ANT 2]

FCC ID: A3LSMS906U	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 28 of 86

10dBc Bandwidth Results

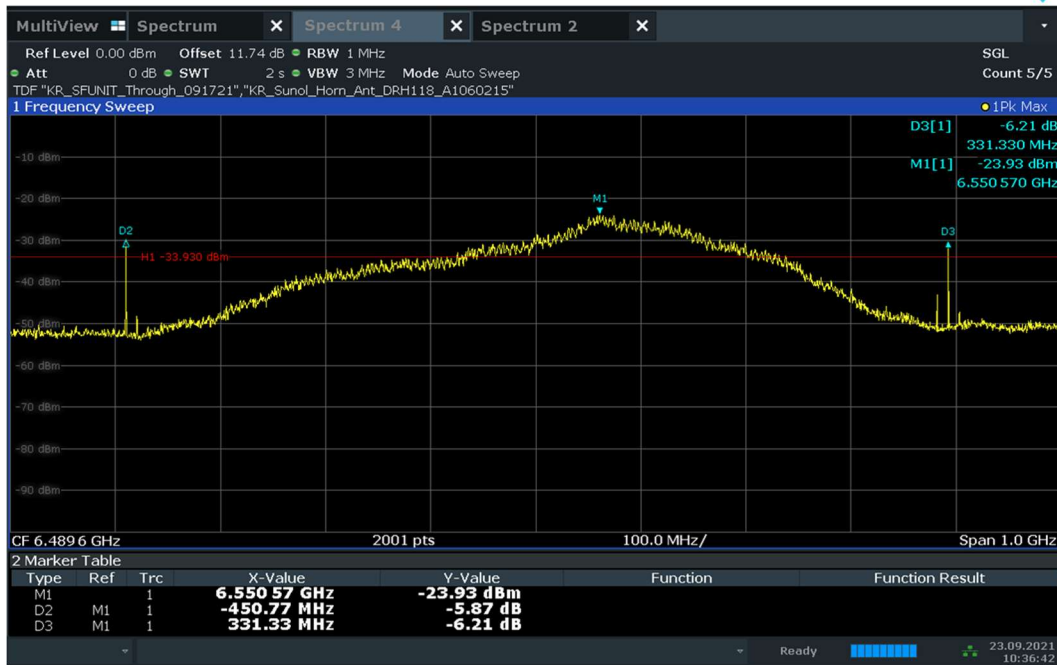


Plot 7-31. 10dBc Bandwidth – CH.5 - SP0 – Preamble 9

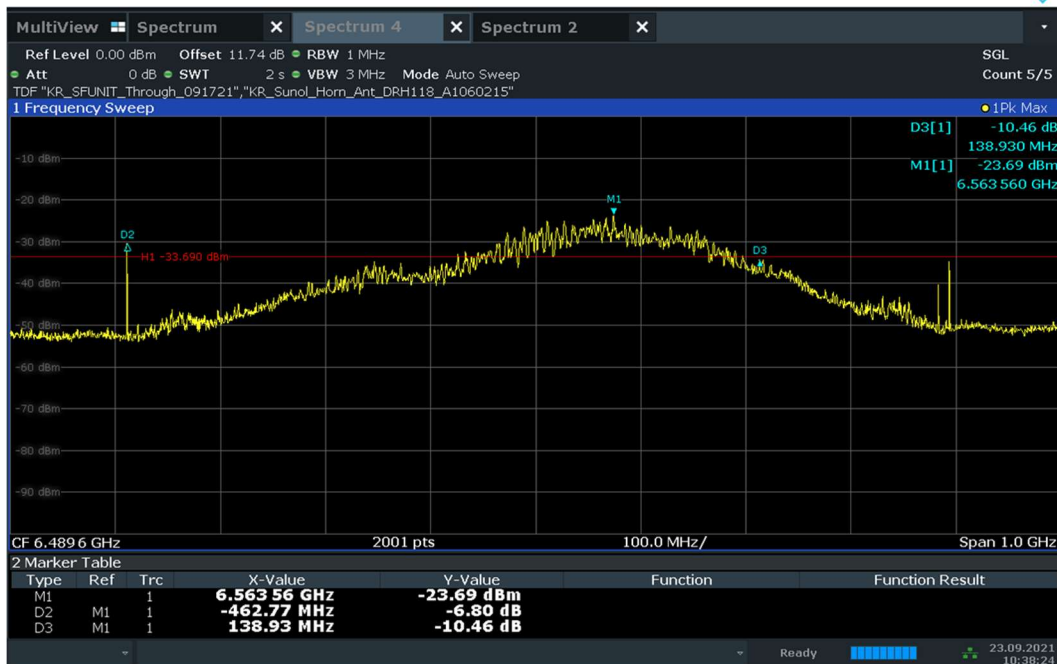


Plot 7-32. 10dBc Bandwidth – CH.5 – SP1 – Preamble 9

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 29 of 86

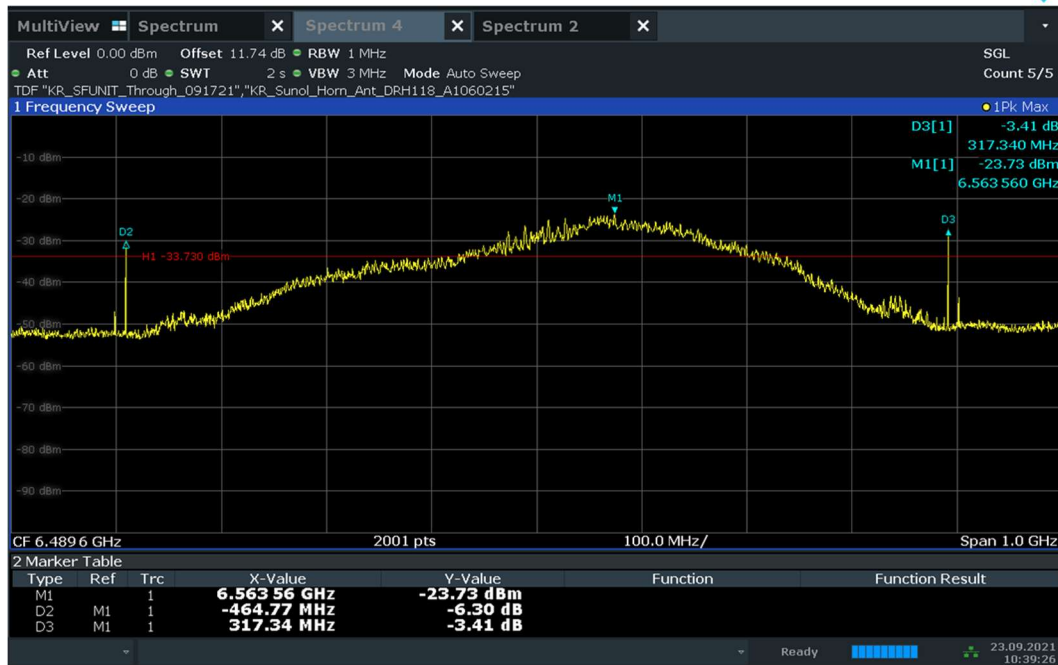


Plot 7-33. 10dBc Bandwidth – CH.5 – SP3 – Preamble 9

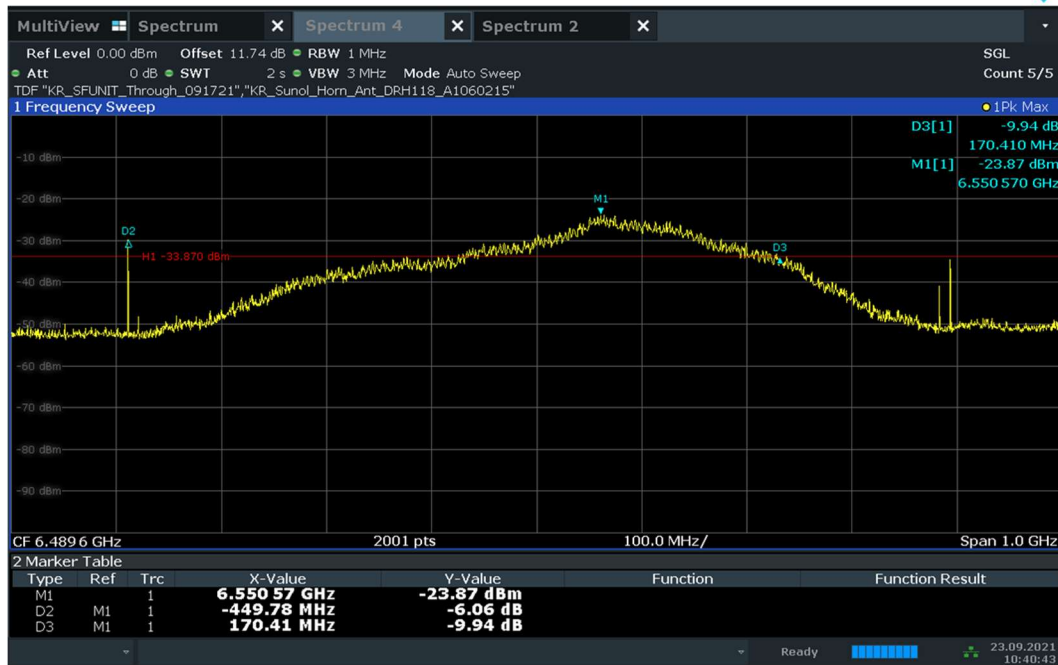


Plot 7-34. 10dBc Bandwidth – CH.5 - SP0 – Preamble 10

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 30 of 86

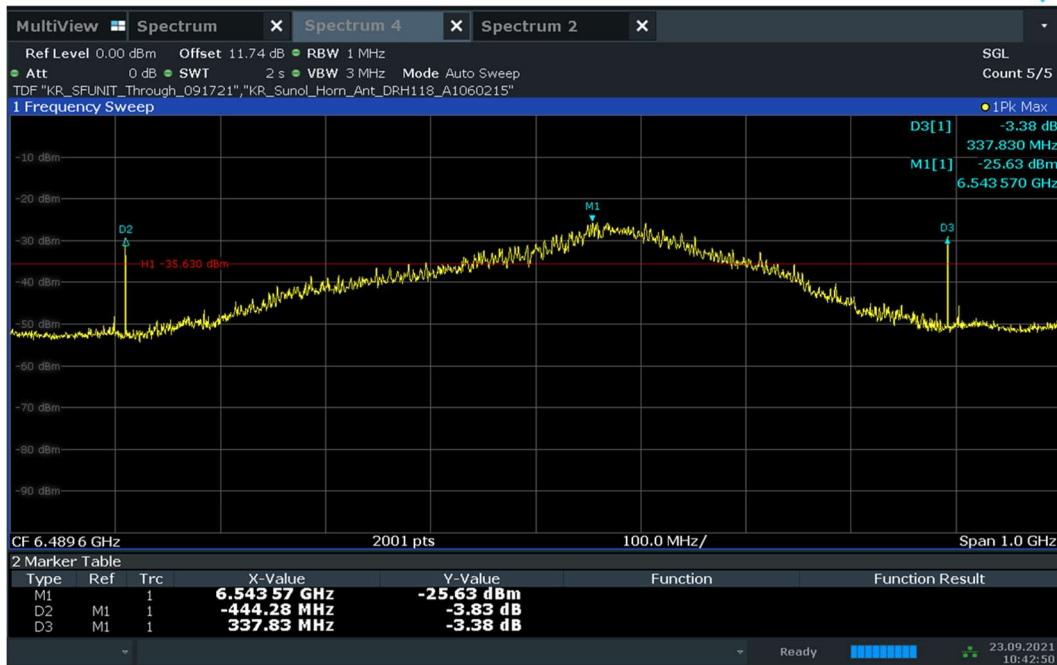


Plot 7-35. 10dBc Bandwidth – CH.5 – SP1 – Preamble 10

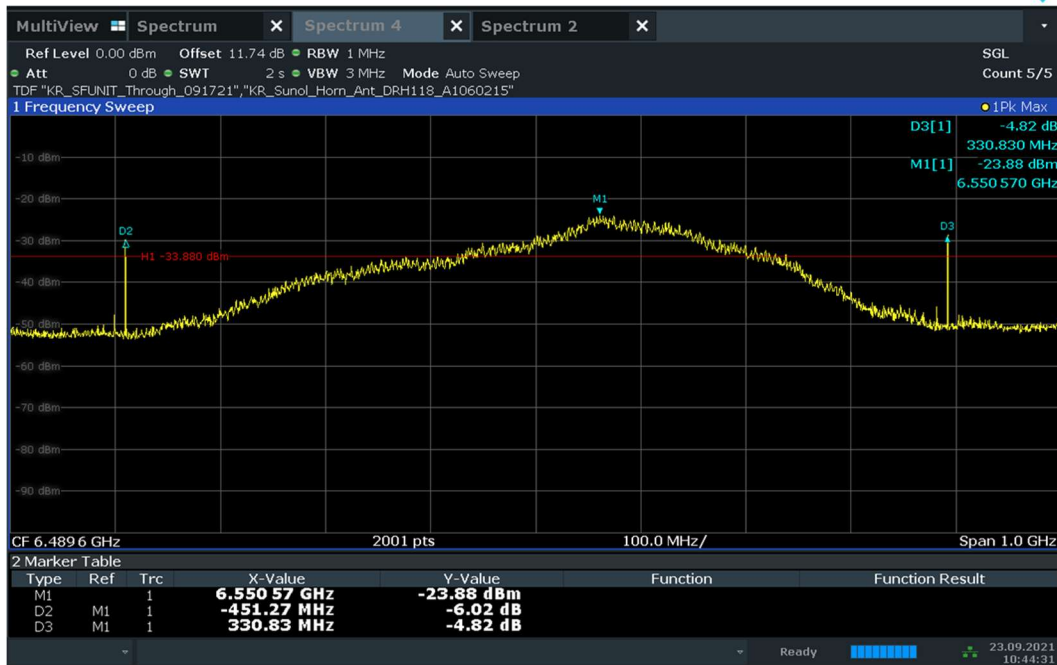


Plot 7-36. 10dBc Bandwidth – CH.5 – SP3 – Preamble 10

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 31 of 86

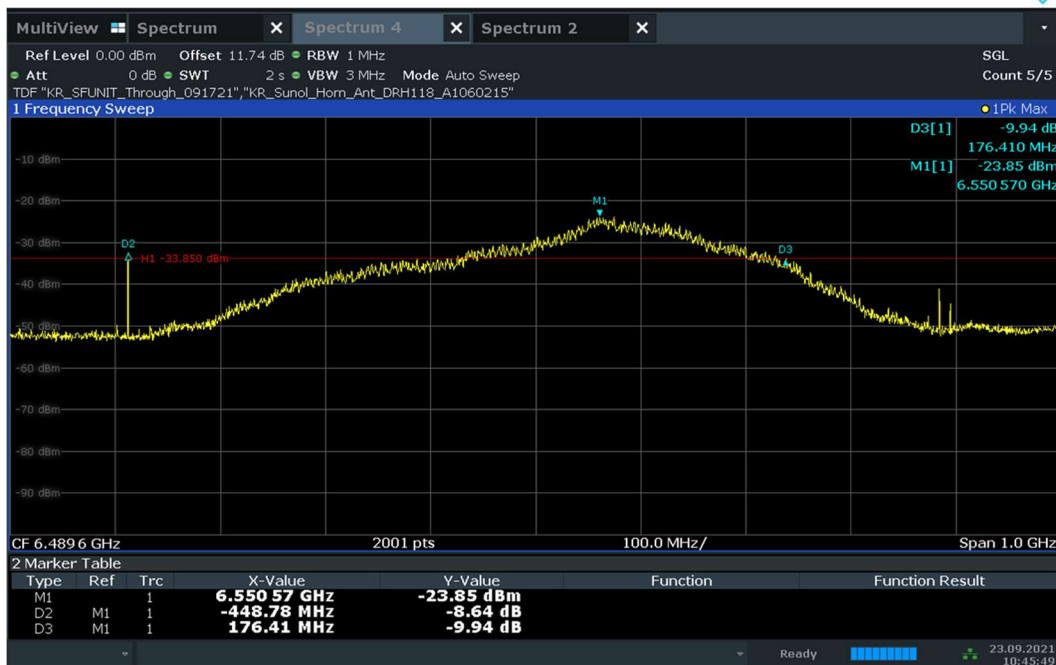


Plot 7-37. 10dBc Bandwidth – CH.5 - SP0 – Preamble 11

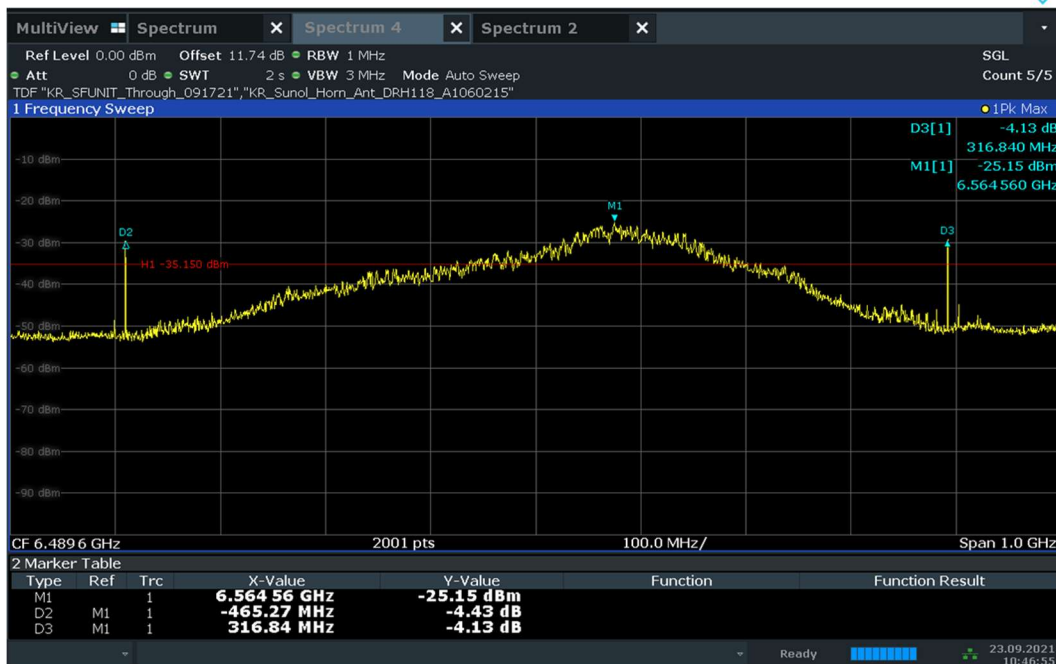


Plot 7-38. 10dBc Bandwidth – CH.5 – SP1 – Preamble 11

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 32 of 86

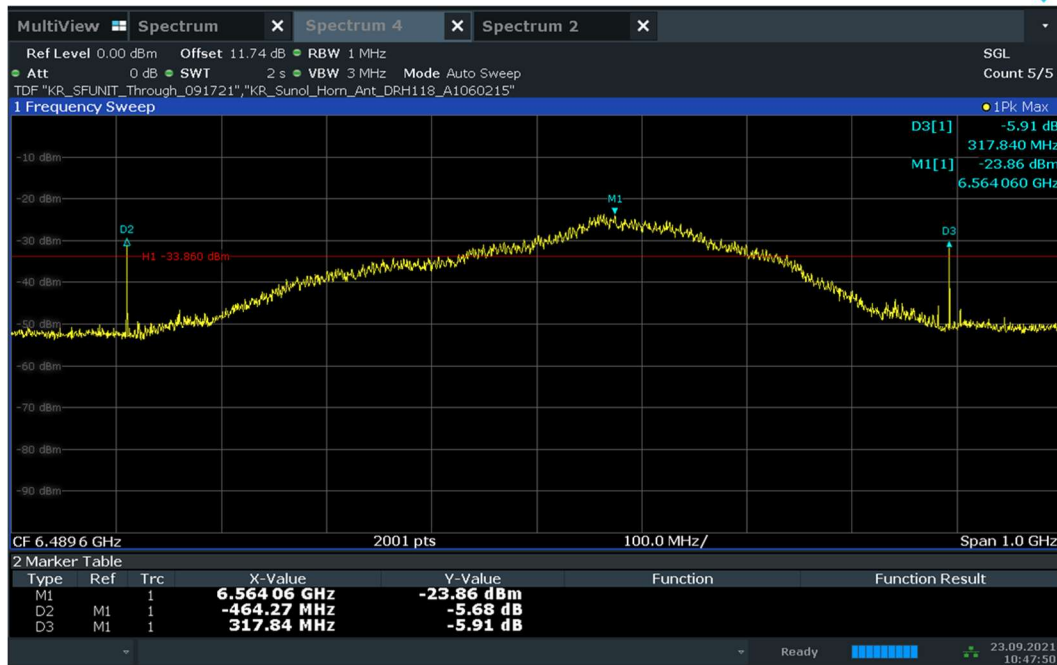


Plot 7-39. 10dBc Bandwidth – CH.5 – SP3 – Preamble 11

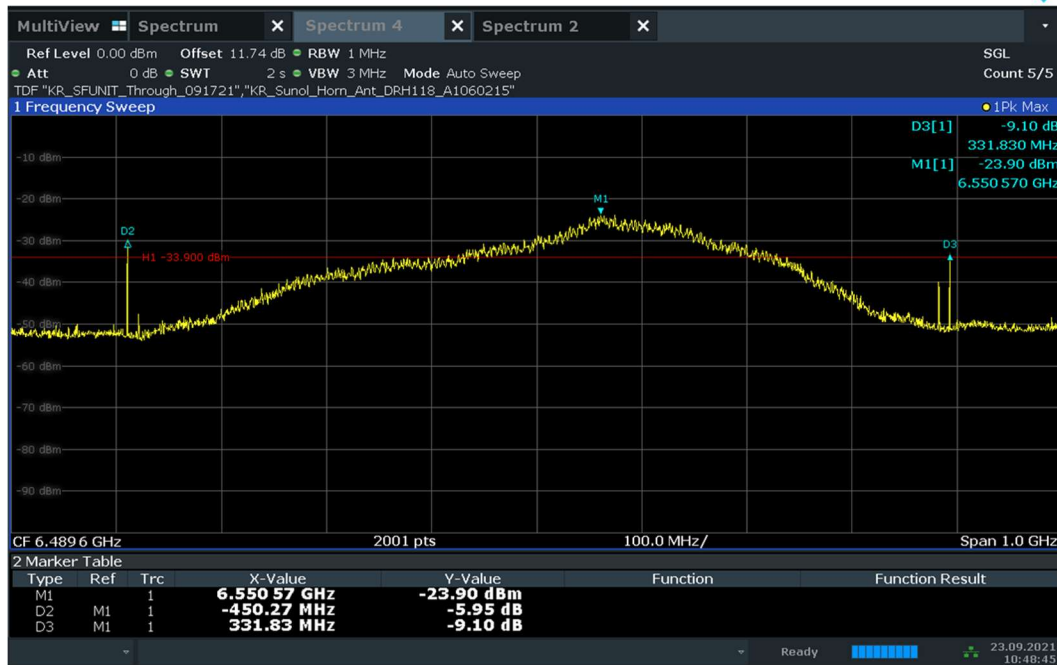


Plot 7-40. 10dBc Bandwidth – CH.5 - SP0 – Preamble 12

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 33 of 86

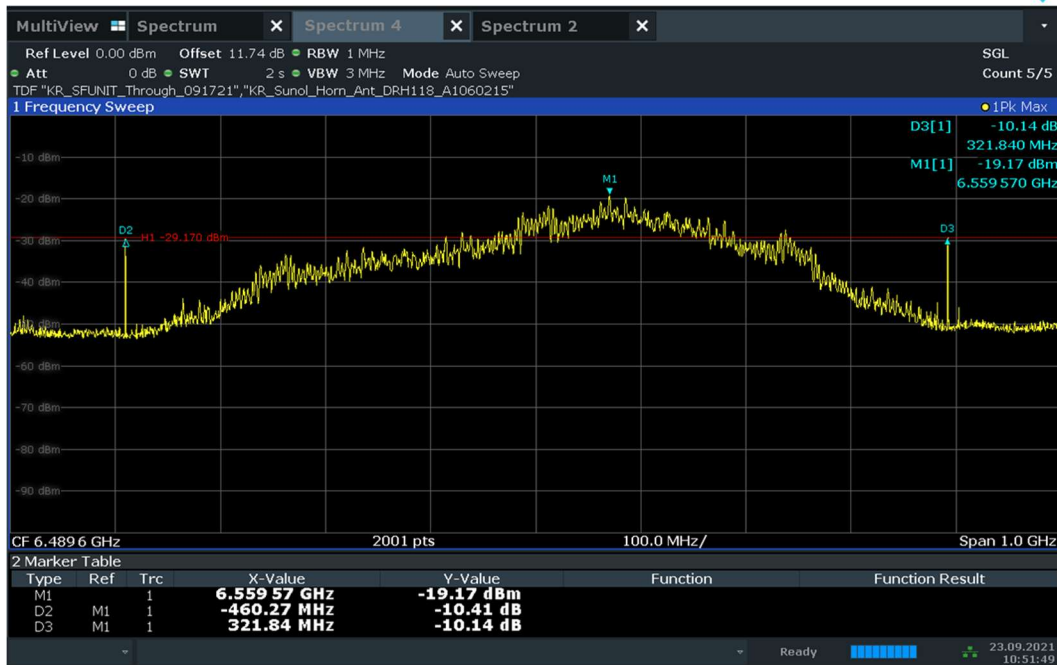


Plot 7-41. 10dBc Bandwidth – CH.5 – SP1 – Preamble 12

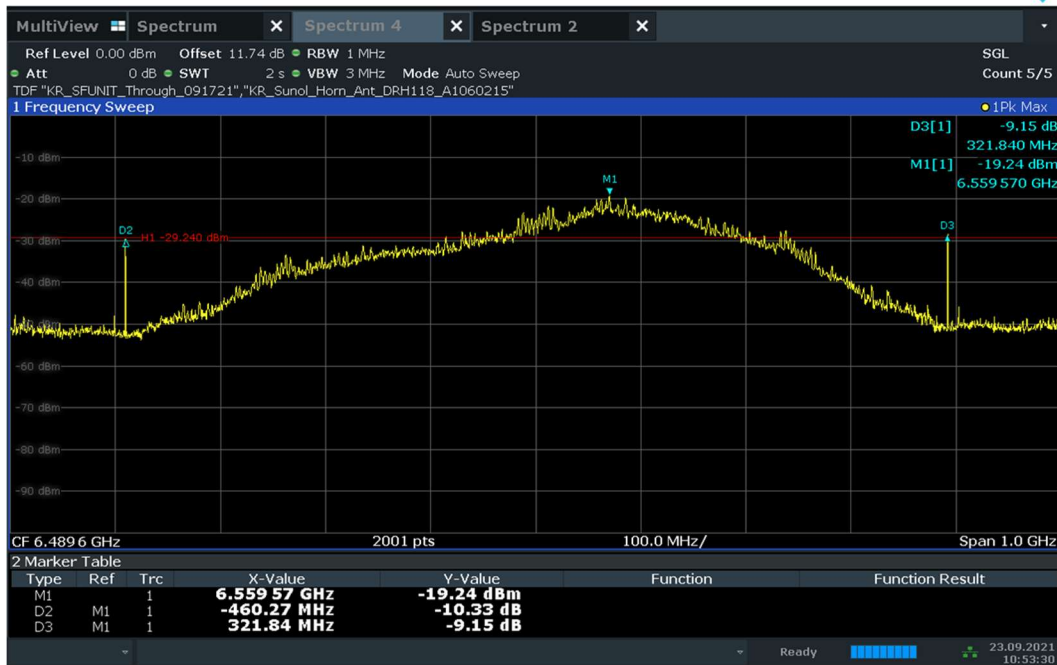


Plot 7-42. 10dBc Bandwidth – CH.5 – SP3 – Preamble 12

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 34 of 86



Plot 7-43. 10dBc Bandwidth – CH.5 - SP0 – Preamble 27

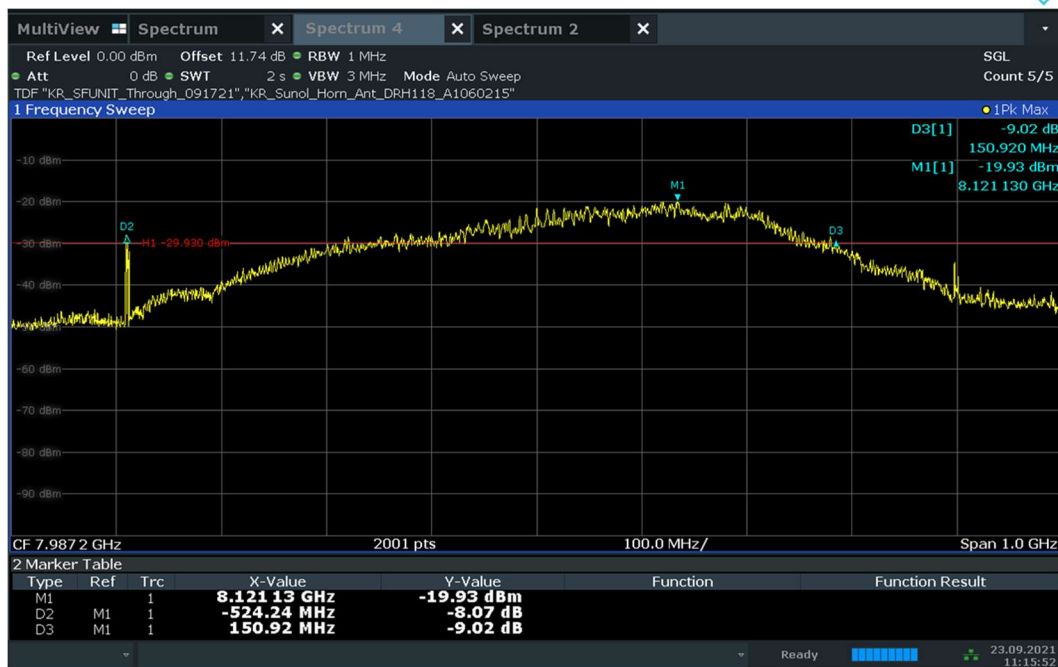


Plot 7-44. 10dBc Bandwidth – CH.5 – SP1 – Preamble 27

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 35 of 86



Plot 7-45. 10dBc Bandwidth – CH.5 – SP3 – Preamble 27

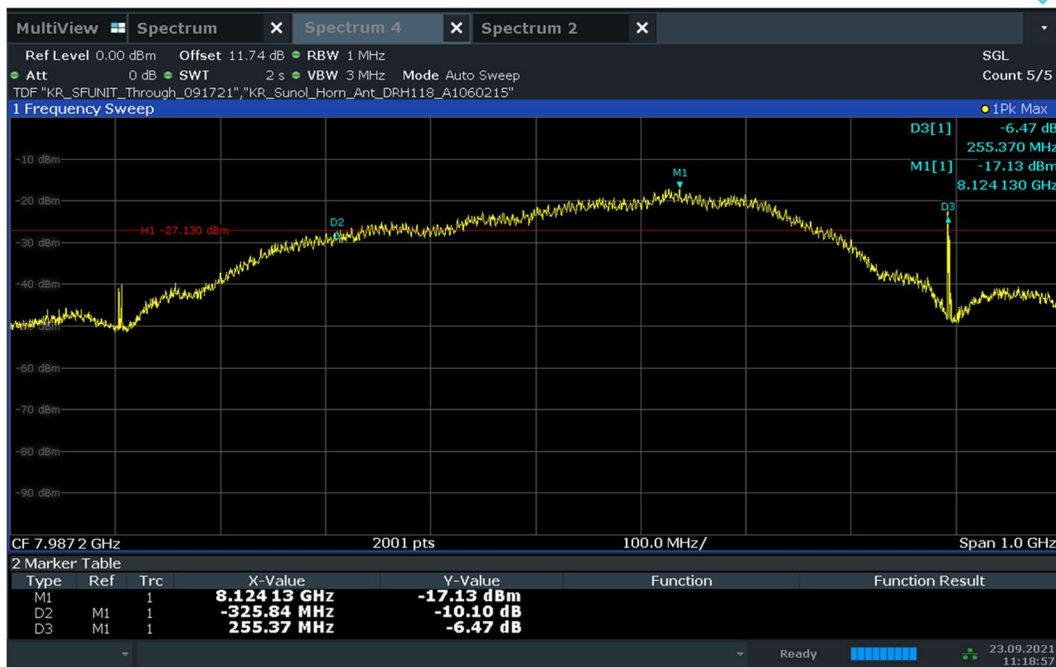


Plot 7-46. 10dBc Bandwidth – CH.9 - SP0 – Preamble 9

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 36 of 86

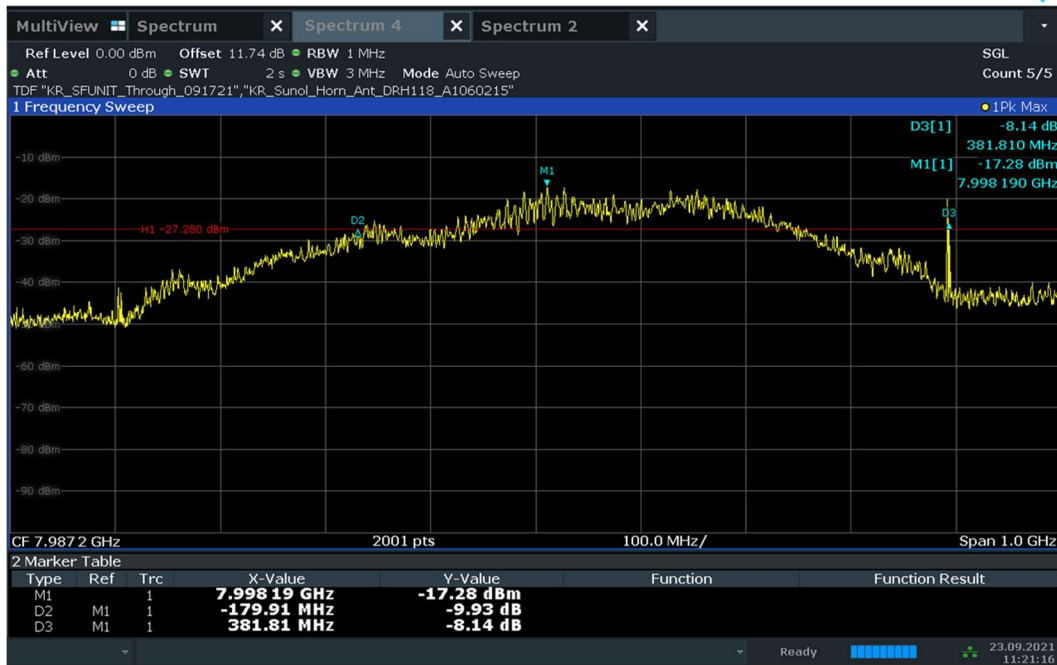


Plot 7-47. 10dBc Bandwidth – CH.9 – SP1 – Preamble 9

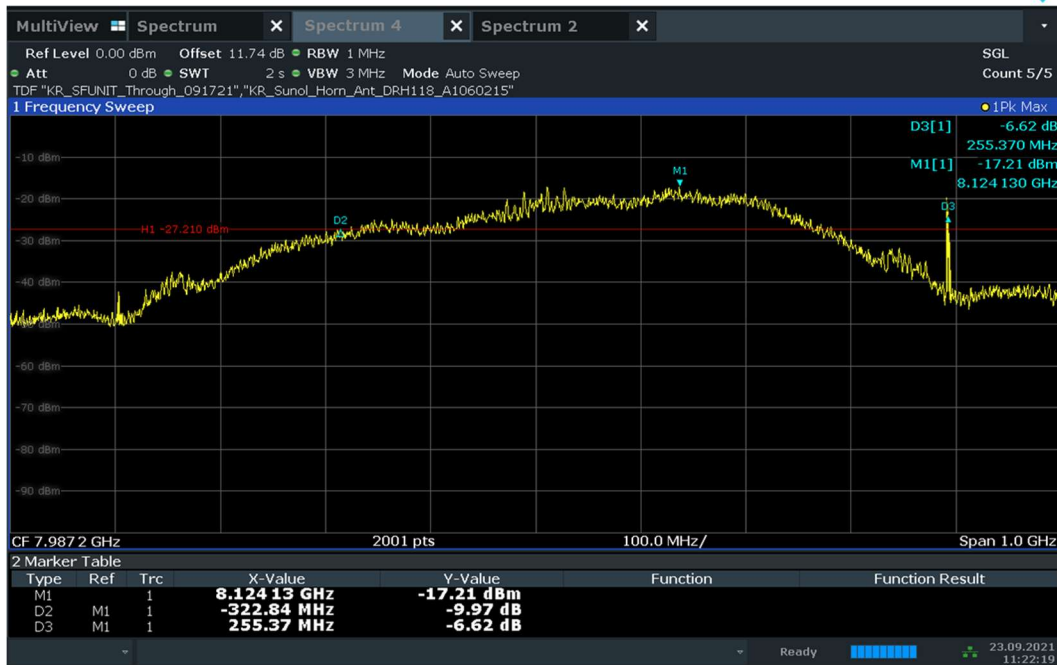


Plot 7-48. 10dBc Bandwidth – CH.9 – SP3 – Preamble 9

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 37 of 86



Plot 7-49. 10dBc Bandwidth – CH.9 - SP0 – Preamble 10

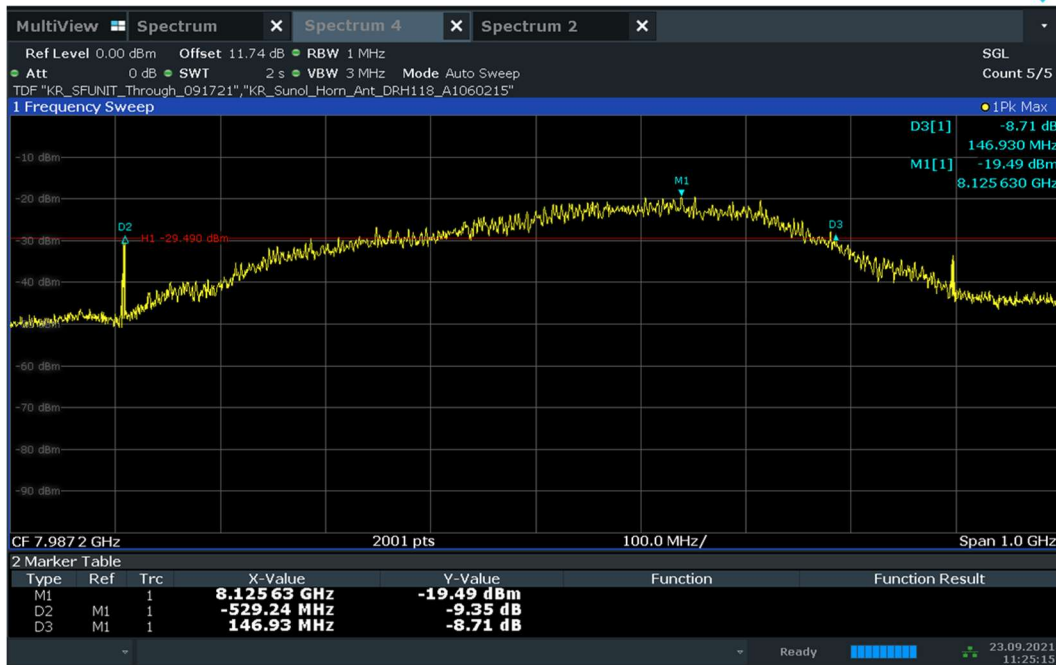


Plot 7-50. 10dBc Bandwidth – CH.9 – SP1 – Preamble 10

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 38 of 86

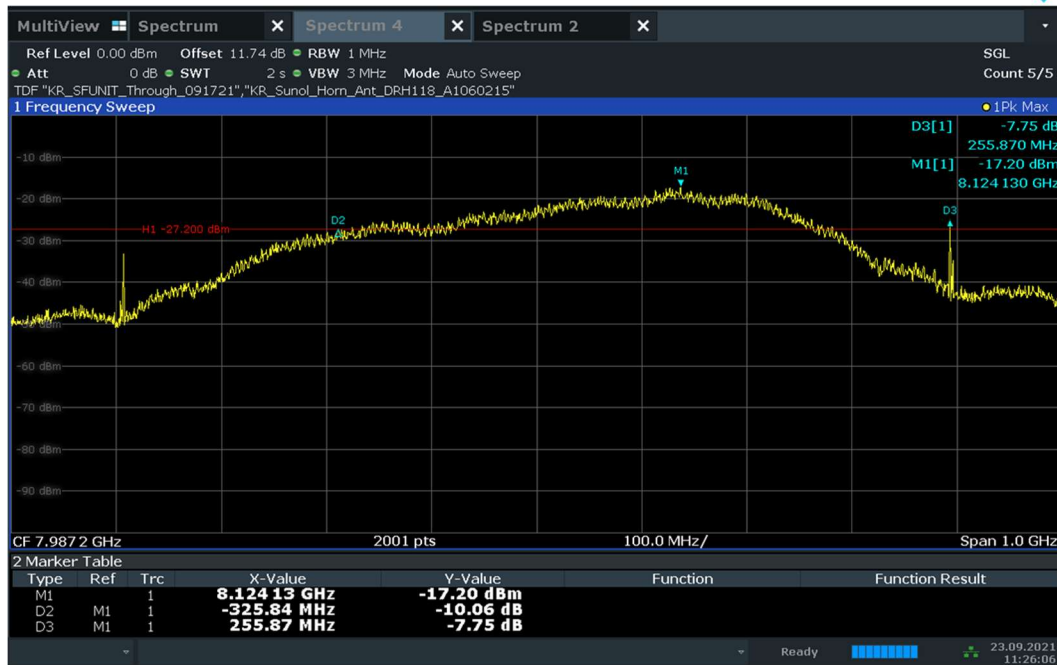


Plot 7-51. 10dBc Bandwidth – CH.9 – SP3 – Preamble 10

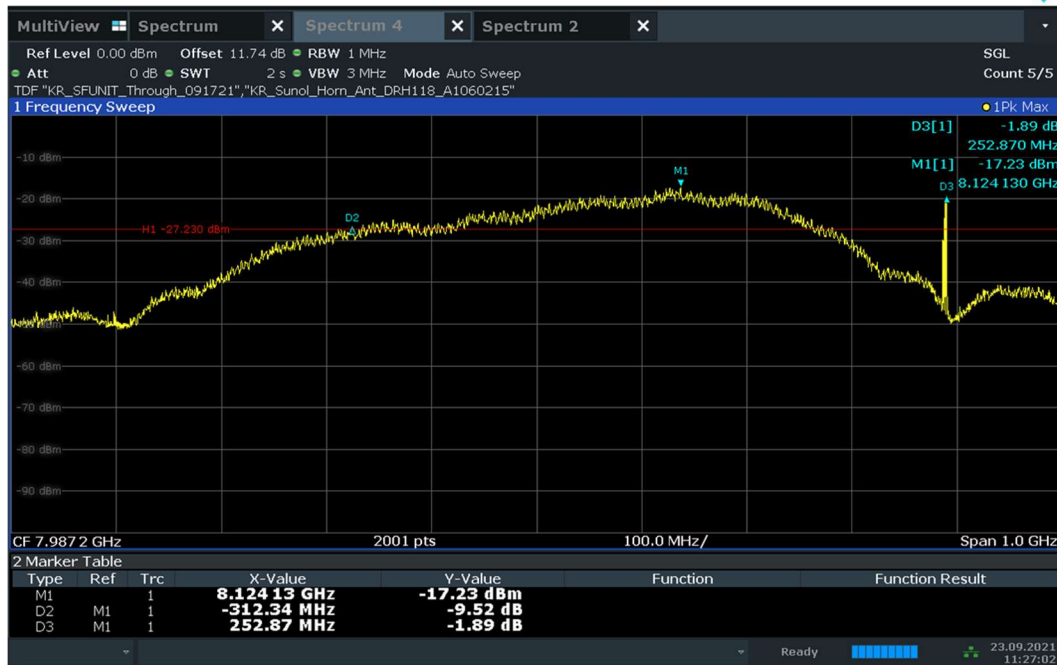


Plot 7-52. 10dBc Bandwidth – CH.9 - SP0 – Preamble 11

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 39 of 86

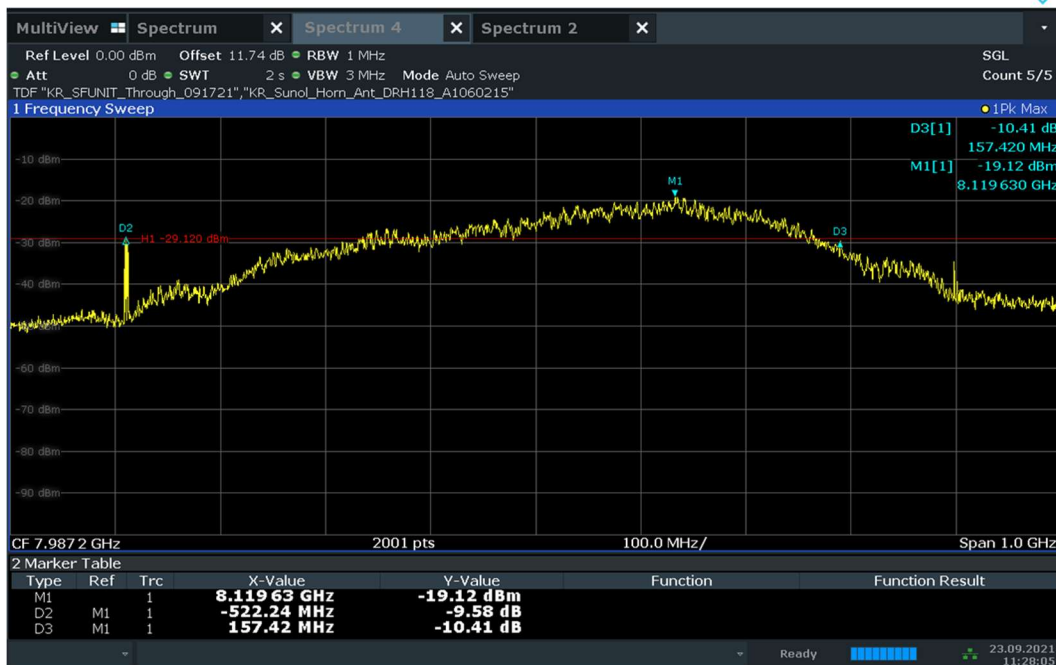


Plot 7-53. 10dBc Bandwidth – CH.9 – SP1 – Preamble 11



Plot 7-54. 10dBc Bandwidth – CH.9 – SP3 – Preamble 11

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 40 of 86

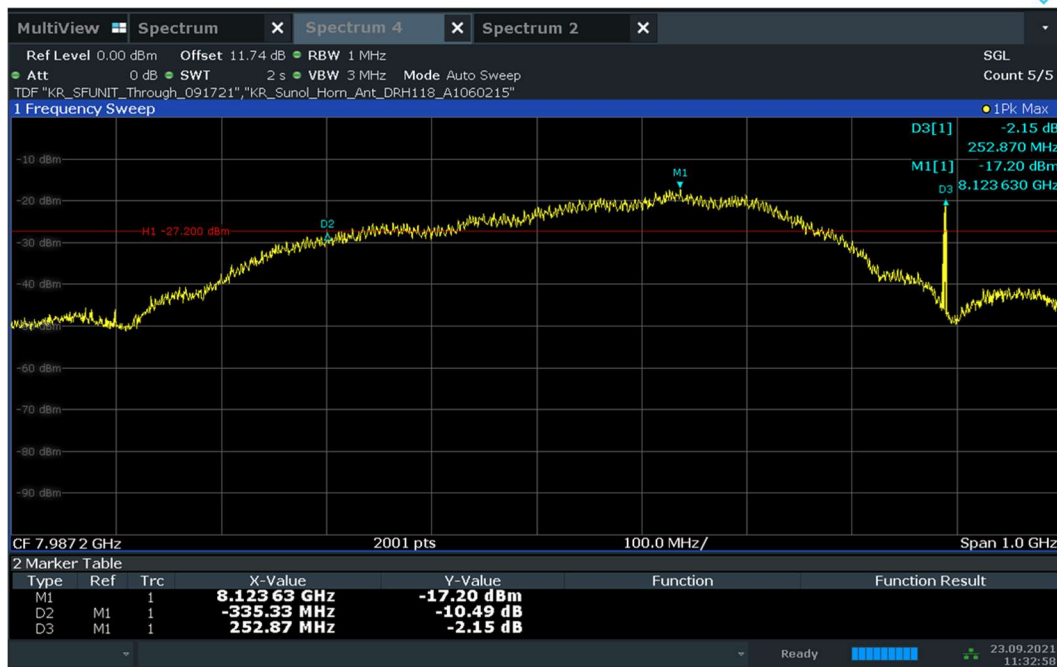


Plot 7-55. 10dBc Bandwidth – CH.9 - SP0 – Preamble 12

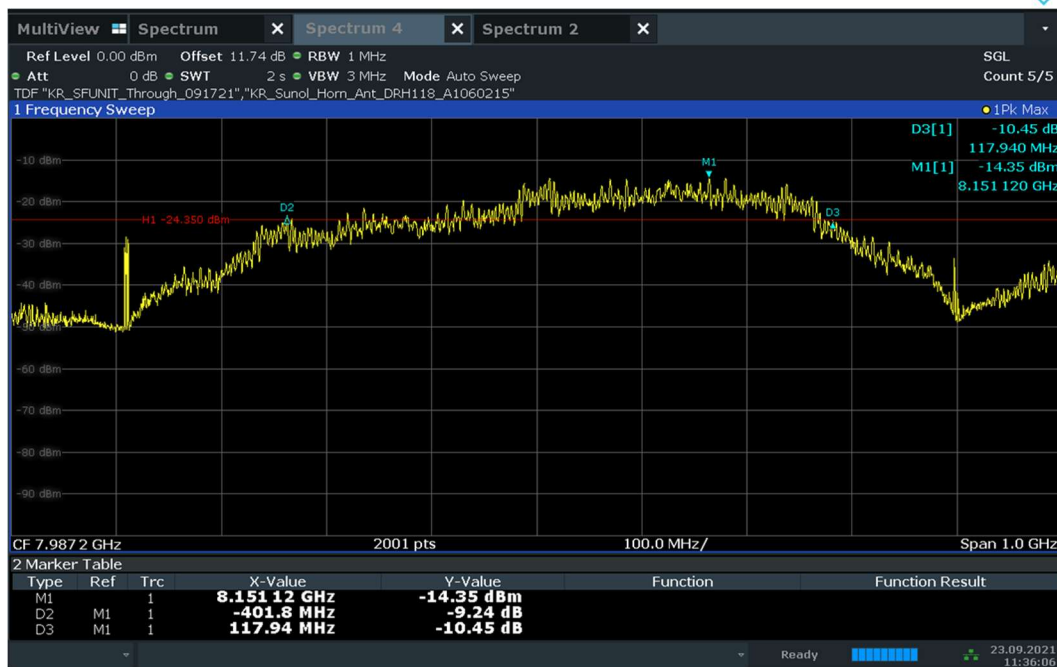


Plot 7-56. 10dBc Bandwidth – CH.9 – SP1 – Preamble 12

FCC ID: A3LSMS906U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 41 of 86

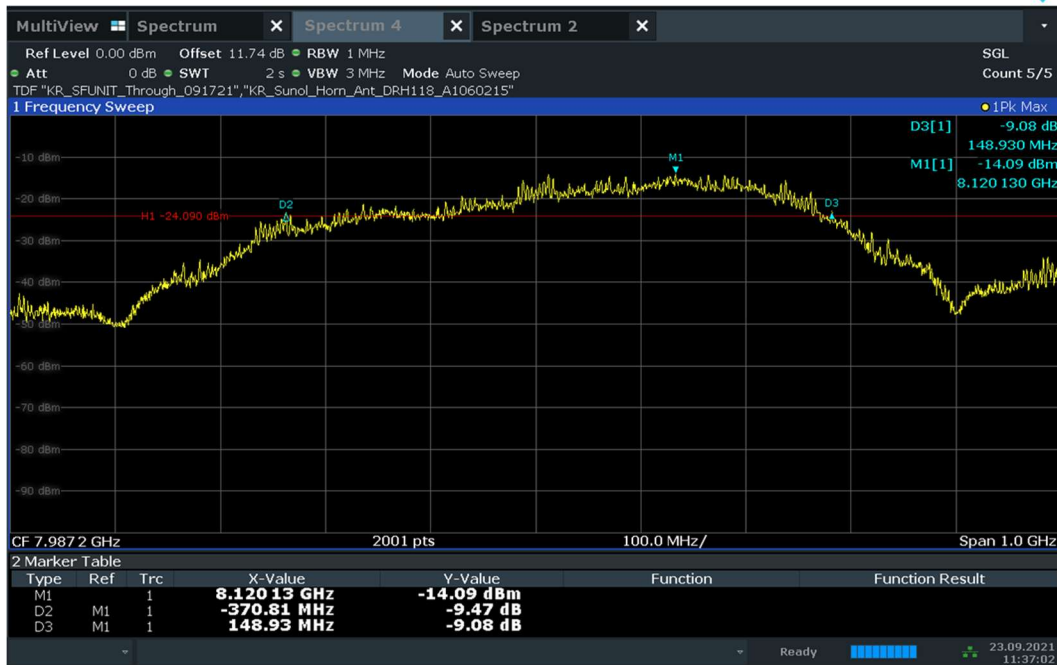


Plot 7-57. 10dBc Bandwidth – CH.9 – SP3 – Preamble 12

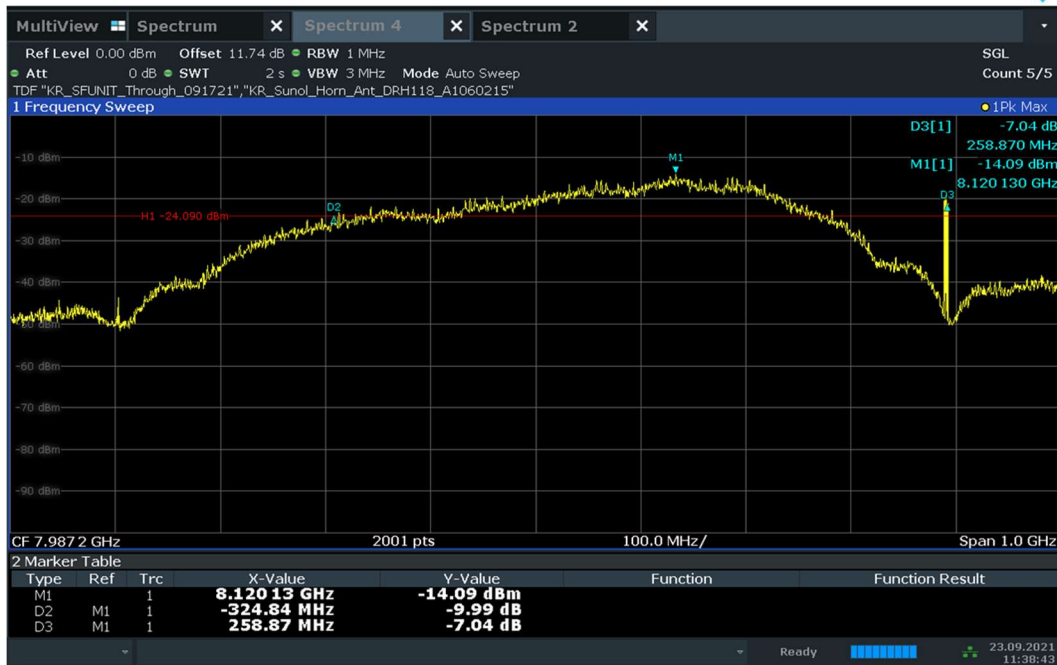


Plot 7-58. 10dBc Bandwidth – CH.9 - SP0 – Preamble 27

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 42 of 86



Plot 7-59. 10dBc Bandwidth – CH.9 – SP1 – Preamble 27



Plot 7-60. 10dBc Bandwidth – CH.9 – SP3 – Preamble 27

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 43 of 86

7.3 Cessation Time

§15.519(a)(1)

Test Overview and Limit

§15.519(a)(1) A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgment from the associated receiver that its transmission is being received an acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

Test Settings

1. RBW = 1MHz
2. VBW = 3MHz
3. Span = 0 Span Mode
4. Sweep time shall be sufficient to demonstrate EUTs compliance with the rule part.
5. Vertical Markers are placed to indicate the point in which the receiver ceases acknowledging the EUT and the point 10s after.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-2. Test Instrument and Measurement Setup

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 44 of 86



Plot 7-61. Cessation Time Plot

FCC ID: A3LSMS906U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 45 of 86

7.4 Peak Power and Maximum Average Emissions

§15.519(e), §15.519(c)

Test Overview and Limit

15.519 (3)(e) There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs, fM. That limit is 0 dBm EIRP.

15.519 (3)(c) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

Frequency in MHz	EIRP in dBm
3100 - 10600	-41.3

Table 7-4. Average EIRP Limit

Test Procedures Used

ANSI C63.10-2013

Test Settings

Peak:

1. Analyzer frequency set to the frequency of the radiated spurious emission of interest
2. RBW = 50MHz, VBW = 80MHz
3. Detector = Peak
4. Sweep time = auto coupled
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average:

1. Analyzer frequency set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz, VBW = 3MHz
3. Detector = Average (RMS)
4. Sweep time = No more than 1ms integration period over each measurement bin
5. Trace mode = max hold
6. Trace was allowed to stabilize

FCC ID: A3LSMS906U	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 46 of 86

Test Note

All combinations of HPRF/BPRF, power mode, and preamble are investigated for average and peak EIRP measurements. Only the worst case combinations are reported for each channel and each antenna.

RESULTS – BPRF

ANT	CH	MODE	Preamble	Meas. Ant.	FM[GHz]	Peak Power (dBm/50MHz)	Peak Limit (dBm/50MHz)	Margin [dB]
1	5	SP0	9	V	6.4886	-1.78	0	-1.78
	9	SP0	11	V	7.7433	-3.15	0	-3.15
2	5	SP0	12	V	6.5681	-4.52	0	-4.52
	9	SP0	12	V	8.1211	-4.35	0	-4.35

Table 7-5. BPRF Highest Peak Power Results

ANT	CH	MODE	Preamble	Meas. Ant.	FM[GHz]	Average Power (dBm)	Average Limit (dBm)	Margin [dB]
1	5	SP1	11	V	6.4406	-42.99	-41.3	-1.69
	9	SP3	9	V	7.8448	-43.07	-41.3	-1.77
2	5	SP3	9	V	6.6145	-43.17	-41.3	-1.87
	9	SP3	9	V	8.1256	-43.01	-41.3	-1.71

Table 7-6. BPRF 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: A3LSMS906U	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2109090103-30.A3L	Test Dates: 9/27 – 10/10/2021	EUT Type: Portable Handset		Page 47 of 86