

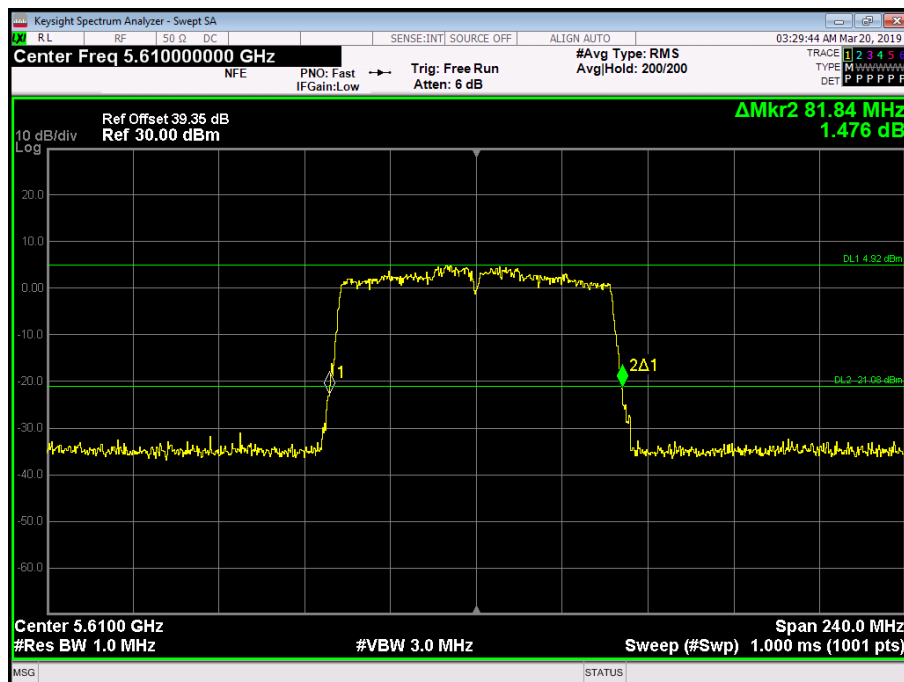


Figure 253 - 5610 MHz - 26 dB Emission Bandwidth

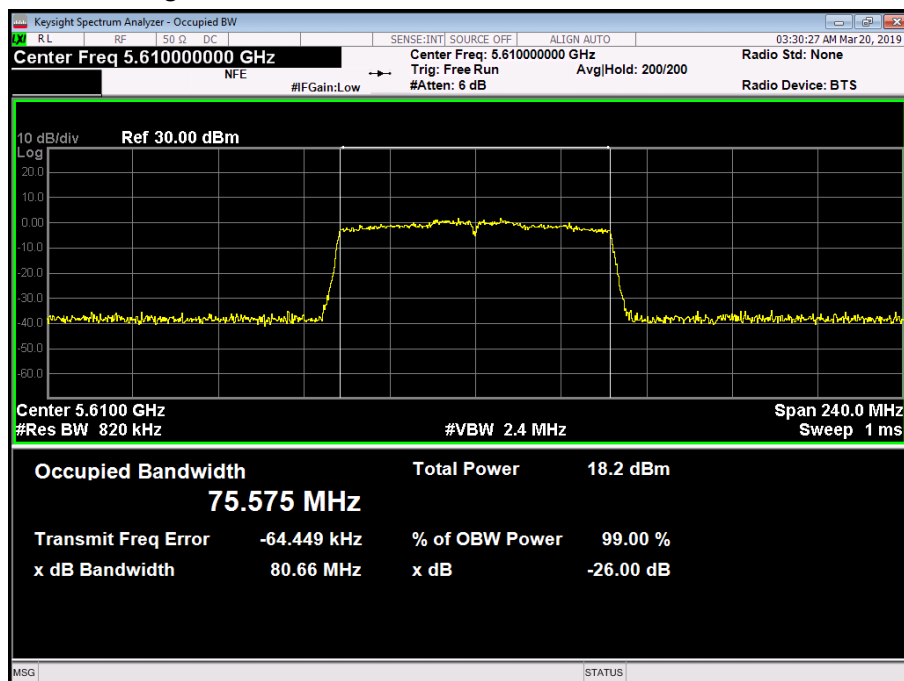


Figure 254 - 5610 MHz - 99% Occupied Bandwidth

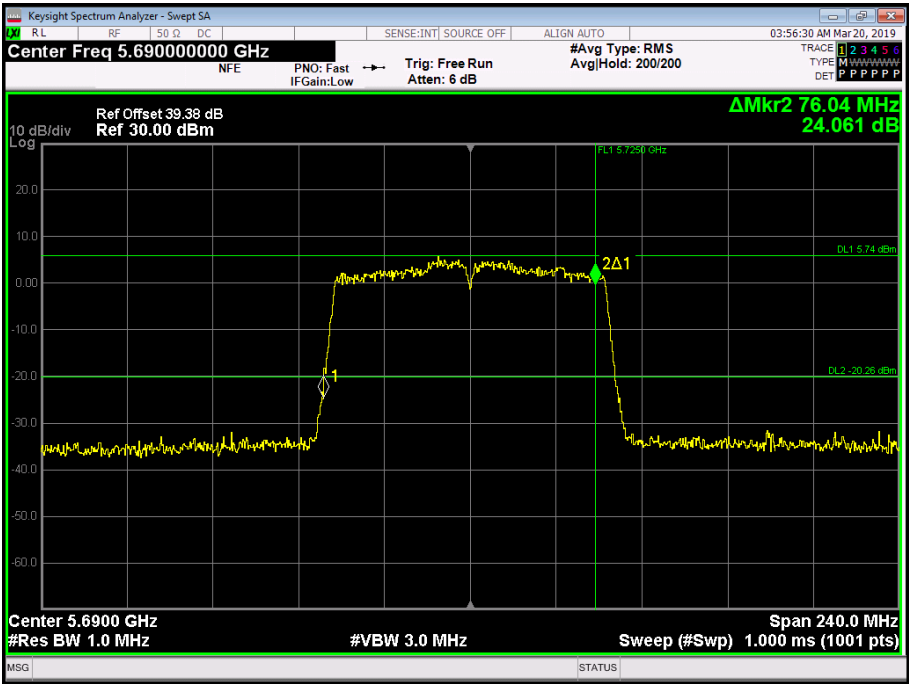


Figure 255 - 5690 MHz - 26 dB Emission Bandwidth

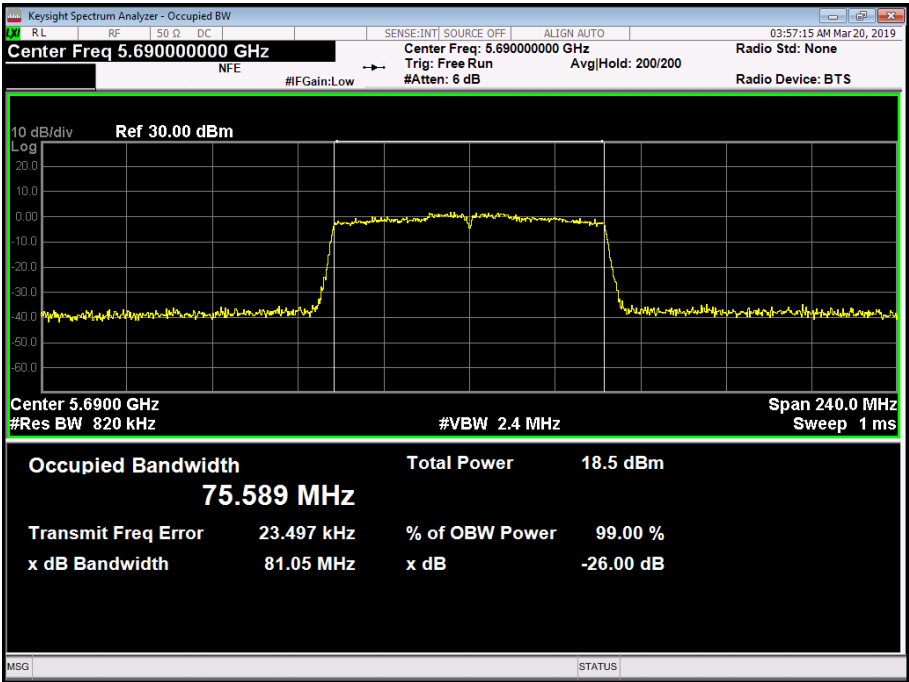


Figure 256 - 5690 MHz - 99% Occupied Bandwidth



802.11ac / VHT80 MCS0x1 / MIMO TxBF / Cores 0+1

Channel	Top	Straddle
Frequency (MHz)	5610	5690
26 dB Bandwidth (MHz)	81.360	76.040
99% Bandwidth (MHz)	75.588	75.607

Table 197

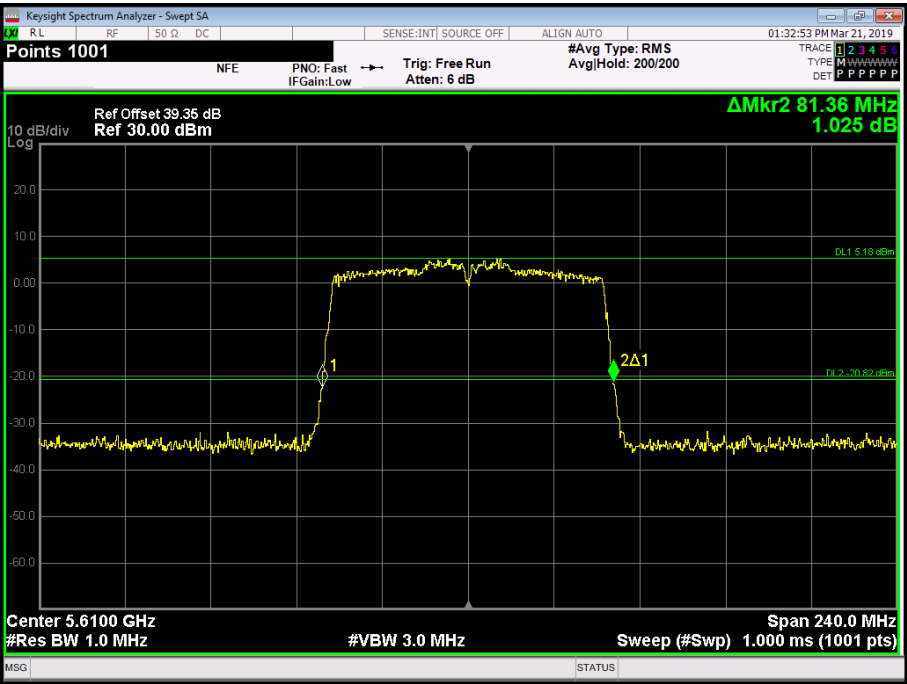


Figure 257 - 5610 MHz - 26 dB Emission Bandwidth

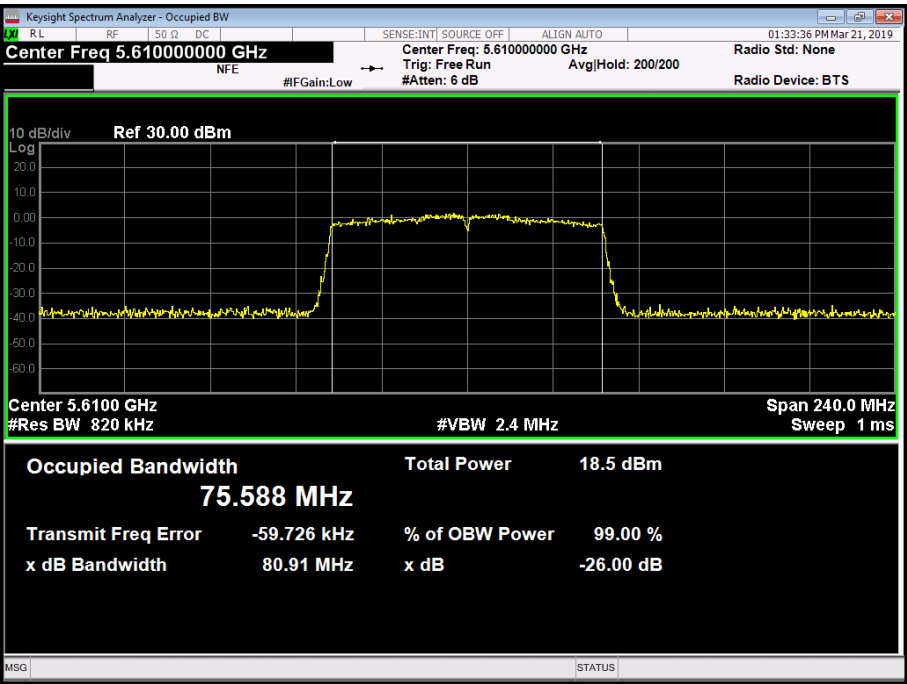


Figure 258 - 5610 MHz - 99% Occupied Bandwidth

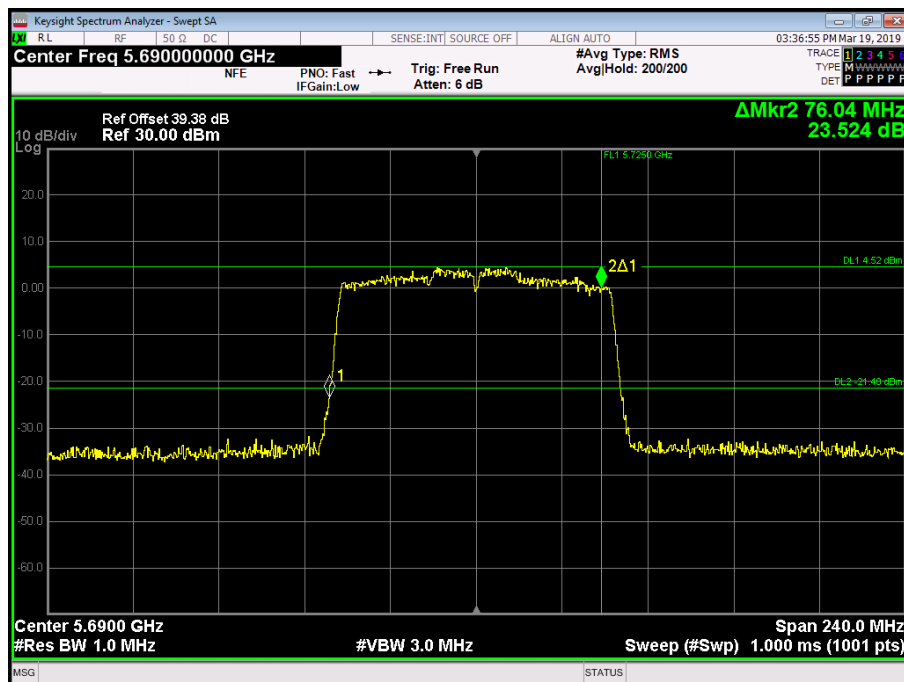


Figure 259 - 5690 MHz - 26 dB Emission Bandwidth

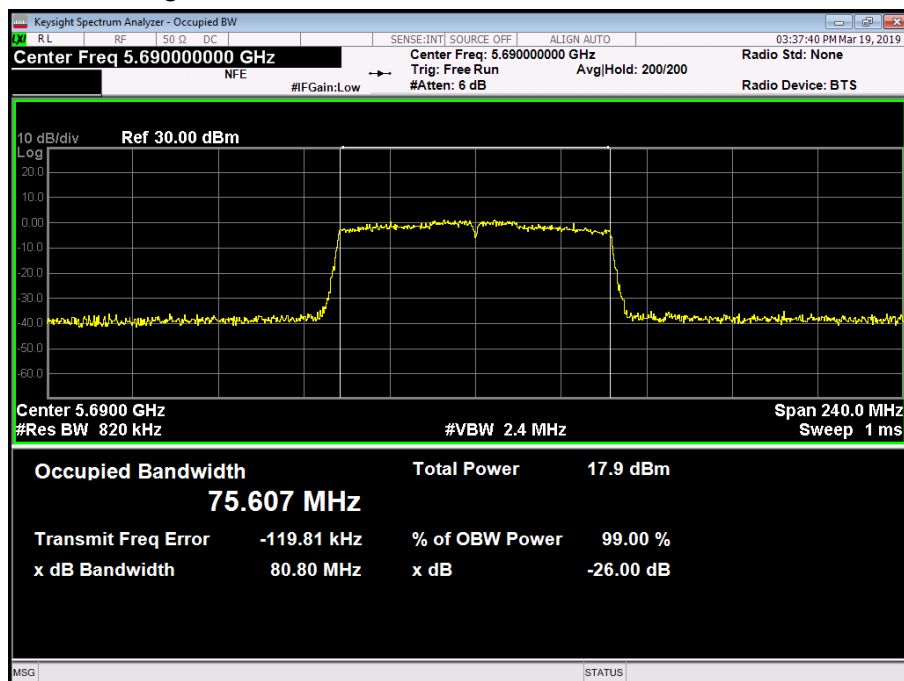


Figure 260 - 5690 MHz - 99% Occupied Bandwidth



2.3.9 Test Results: U-NII-3

802.11a / 6 Mbps / SISO / Core 0

Channel	Straddle	Bottom	Middle	Top
Frequency (MHz)	5720	5745	5785	5825
6 dB Bandwidth (MHz)	3.220	16.440	16.440	16.440
26 dB Bandwidth (MHz)	5.920	21.360	21.660	21.660
99% Bandwidth (MHz)	16.599	16.578	16.546	16.543

Table 198

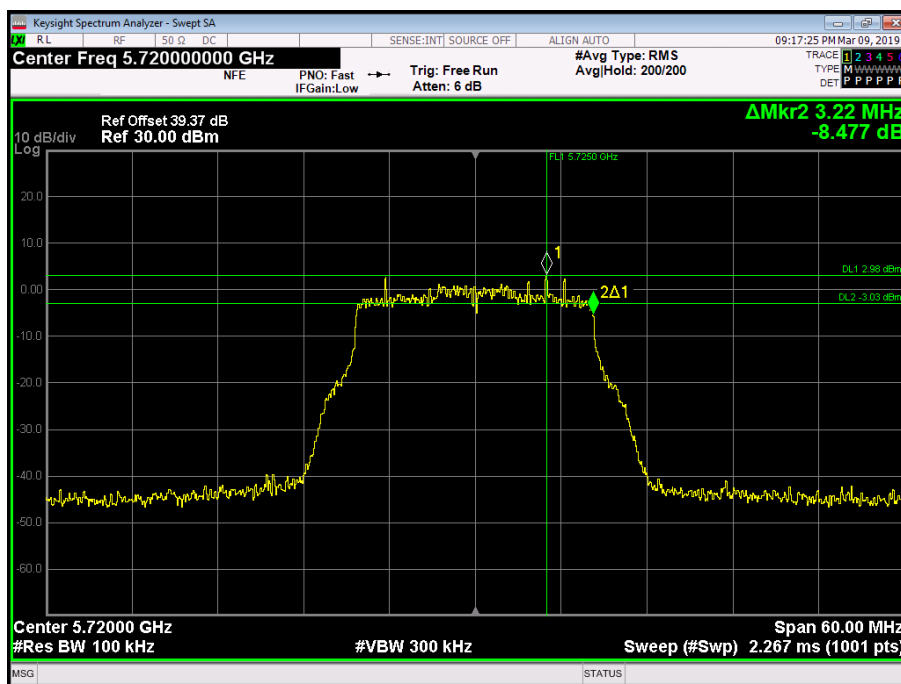


Figure 261 - 5720 MHz - 6 dB DTS Bandwidth

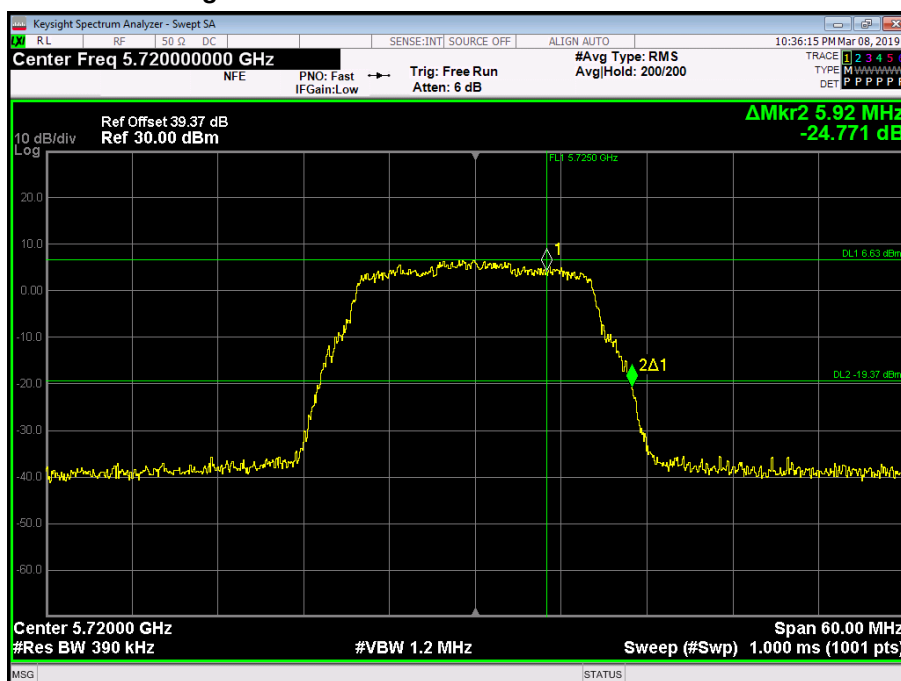




Figure 262 - 5720 MHz - 26 dB Emission Bandwidth

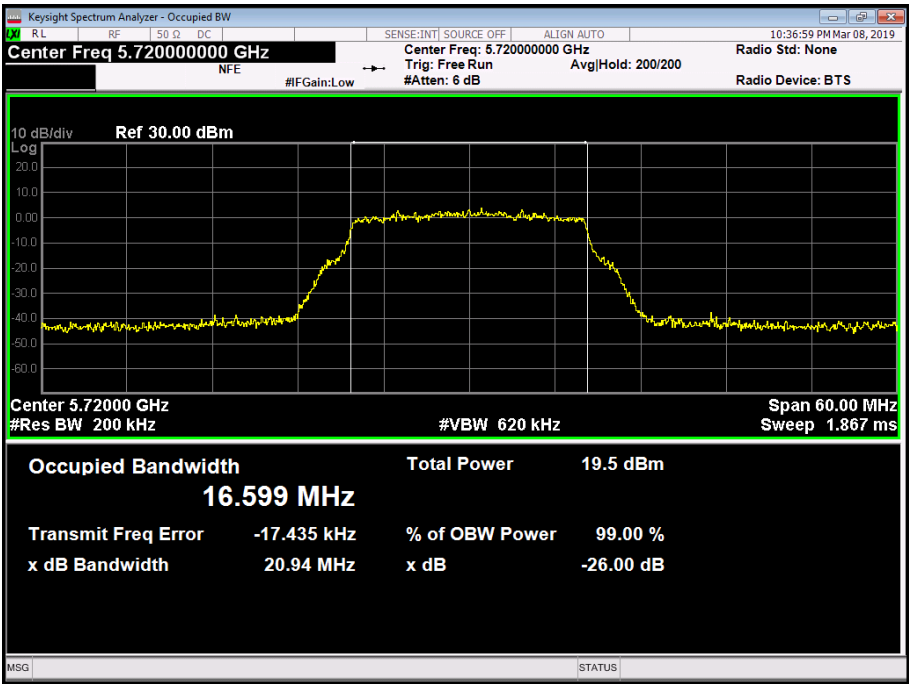


Figure 263 - 5720 MHz - 99% Occupied Bandwidth

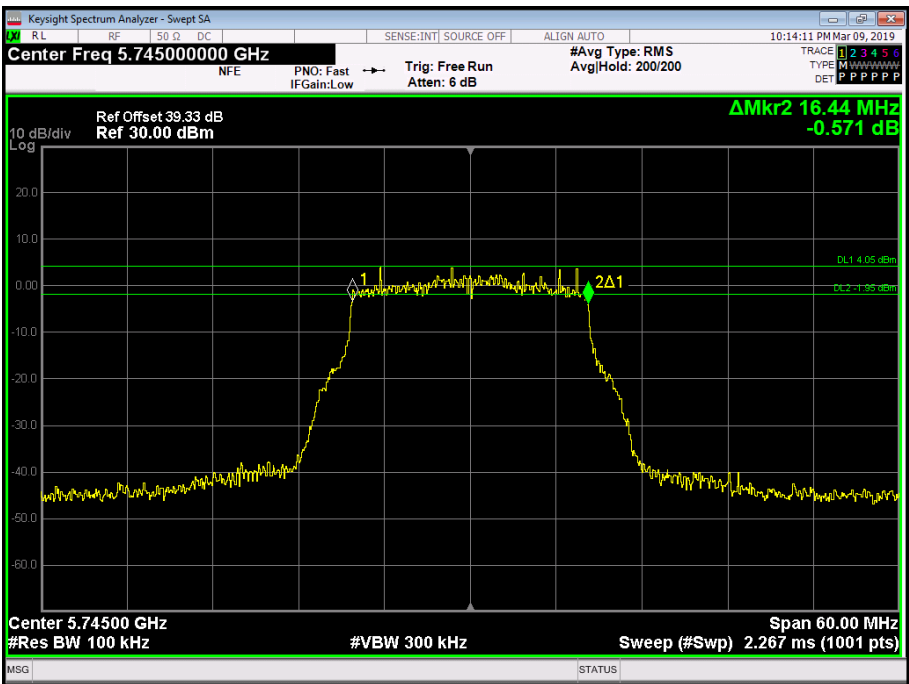


Figure 264 - 5745 MHz - 6 dB DTS Bandwidth

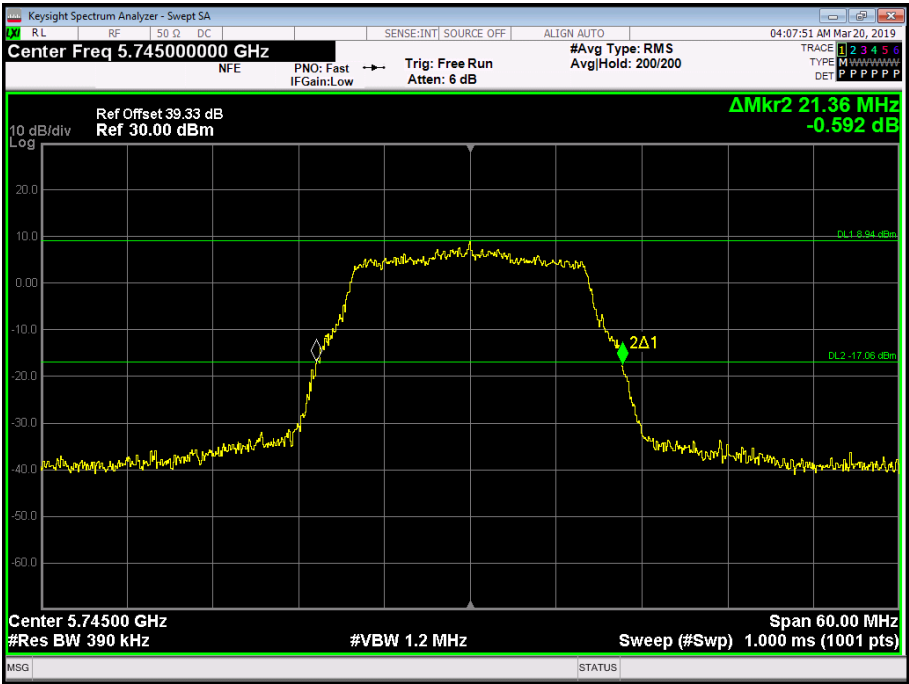


Figure 265 - 5745 MHz - 26 dB Emission Bandwidth

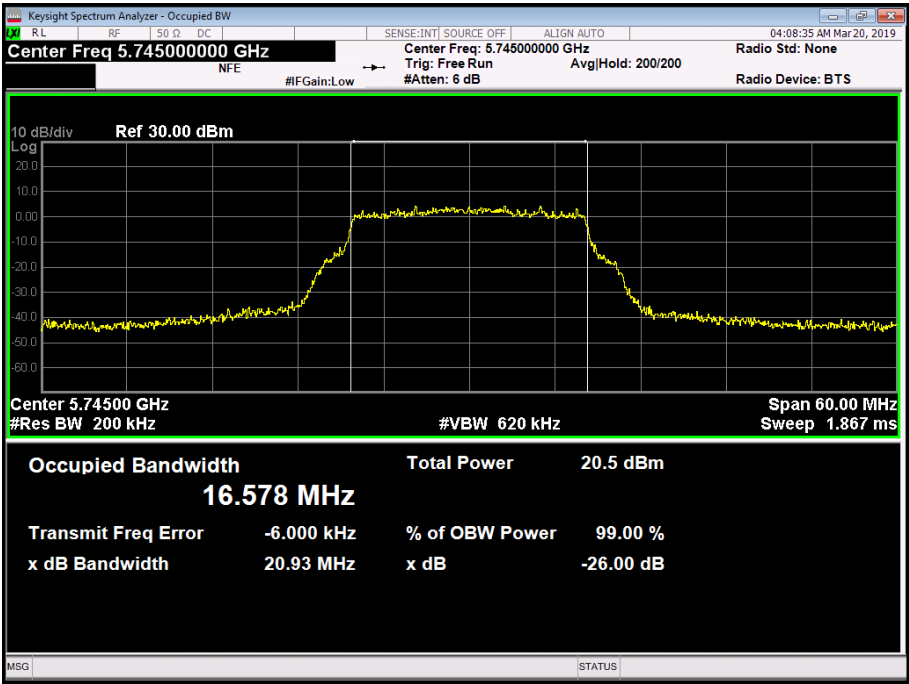


Figure 266 - 5745 MHz - 99% Occupied Bandwidth

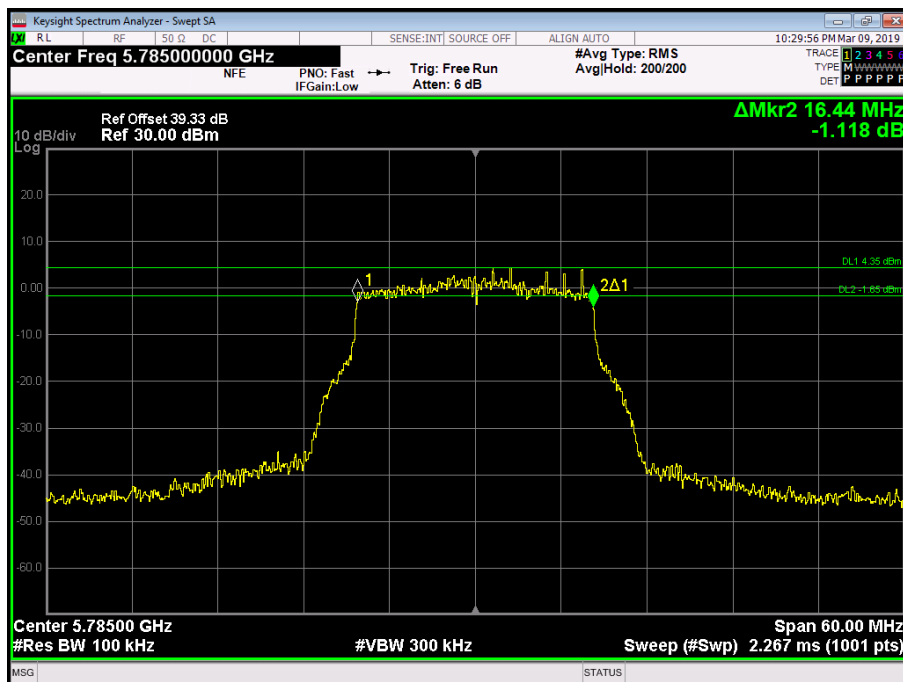


Figure 267 - 5785 MHz - 6 dB DTS Bandwidth



Figure 268 - 5785 MHz - 26 dB Emission Bandwidth

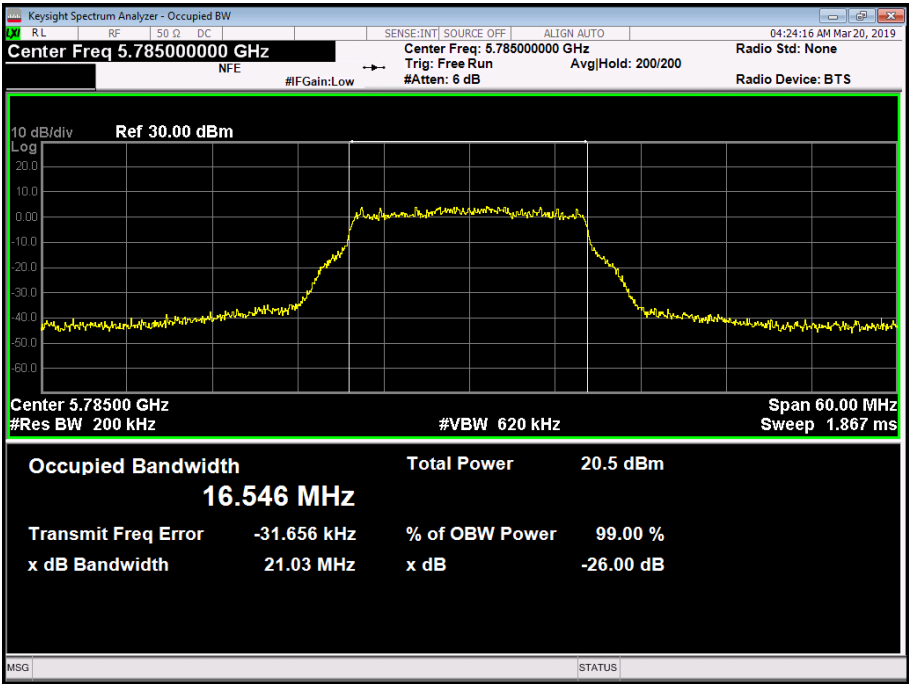


Figure 269 - 5785 MHz - 99% Occupied Bandwidth

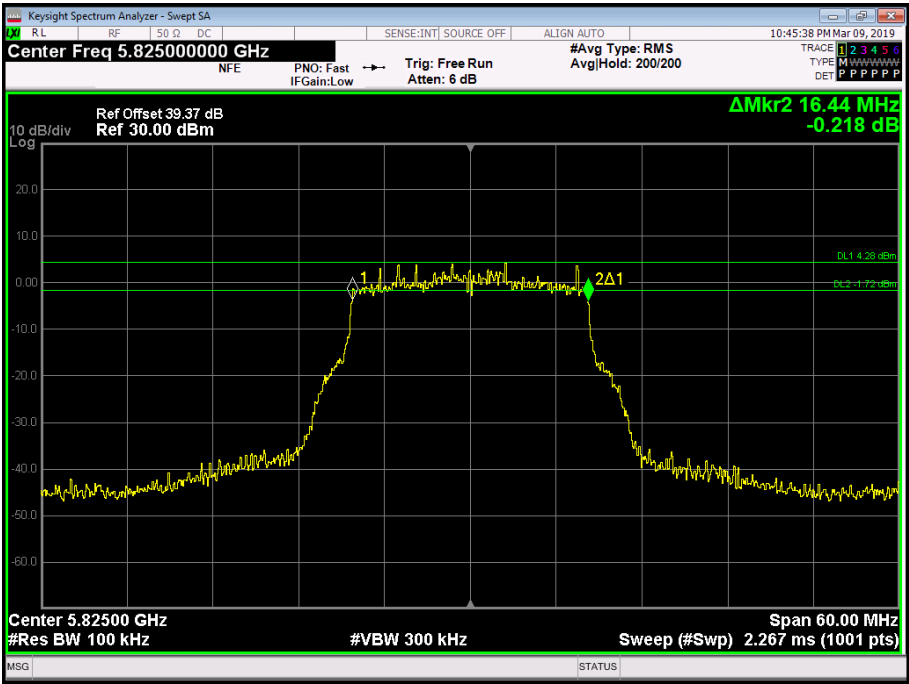


Figure 270 - 5825 MHz - 6 dB DTS Bandwidth

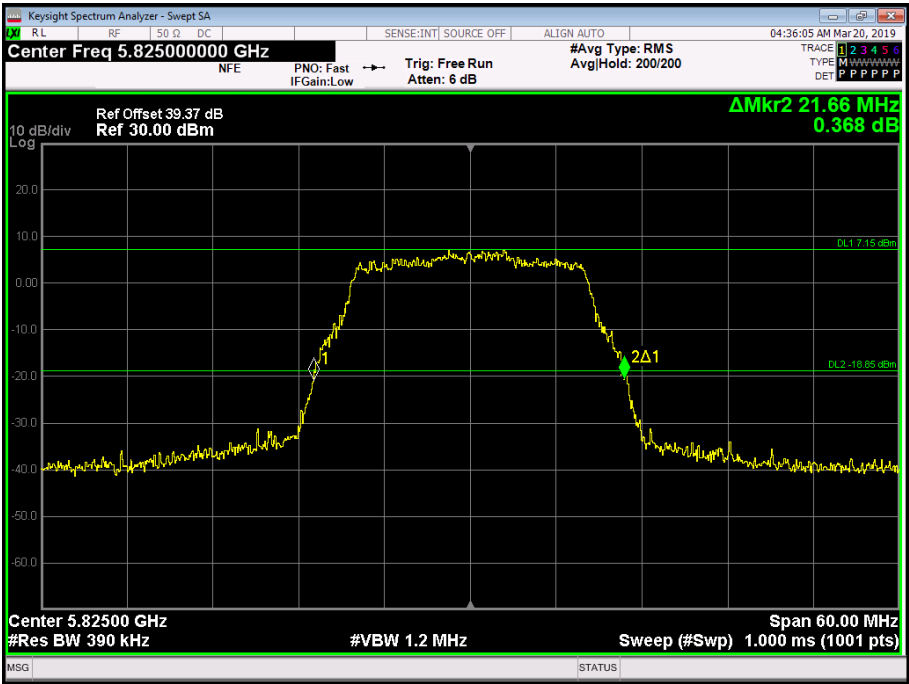


Figure 271 - 5825 MHz - 26 dB Emission Bandwidth

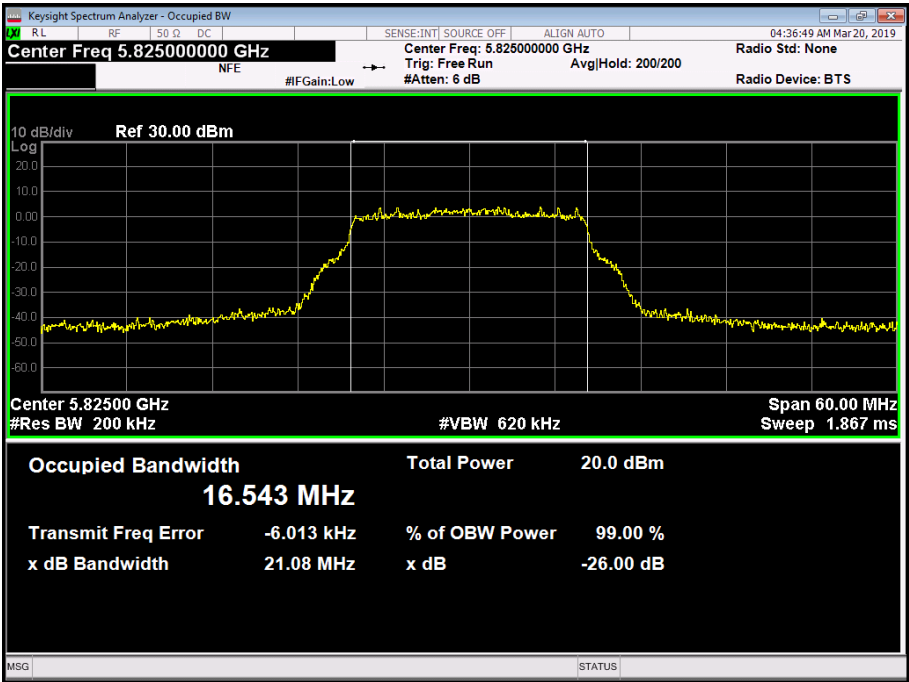


Figure 272 - 5825 MHz - 99% Occupied Bandwidth



802.11n / HT20 MCS0 / SISO / Core 0

Channel	Straddle	Bottom	Middle	Top
Frequency (MHz)	5720	5745	5785	5825
6 dB Bandwidth (MHz)	3.820	17.640	17.400	17.040
26 dB Bandwidth (MHz)	5.920	22.020	21.540	22.020
99% Bandwidth (MHz)	17.729	17.827	17.742	17.769

Table 199

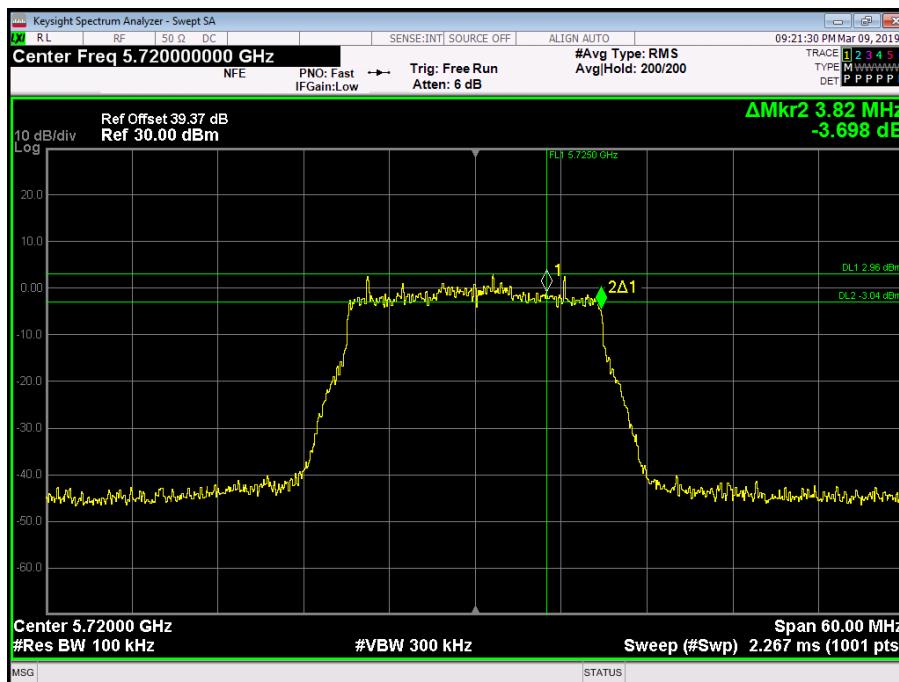


Figure 273 - 5720 MHz - 6 dB DTS Bandwidth

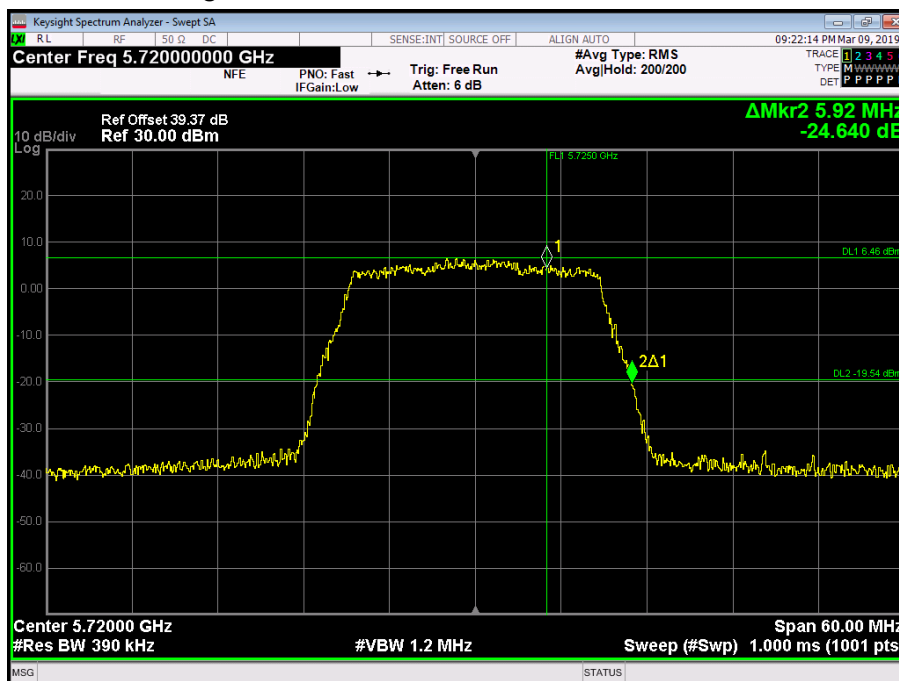


Figure 274 - 5720 MHz - 26 dB Emission Bandwidth

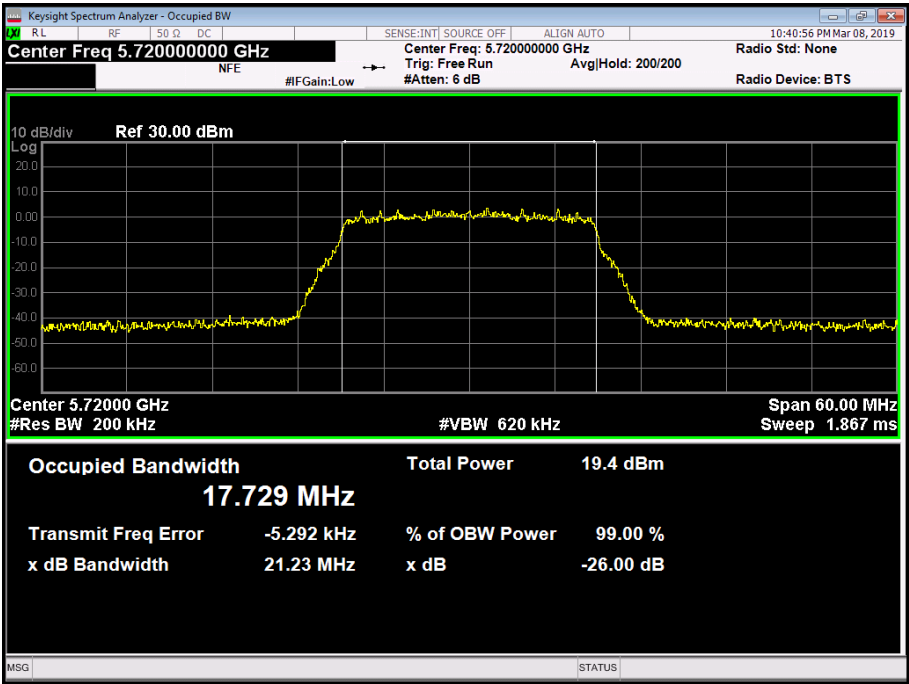


Figure 275 - 5720 MHz - 99% Occupied Bandwidth

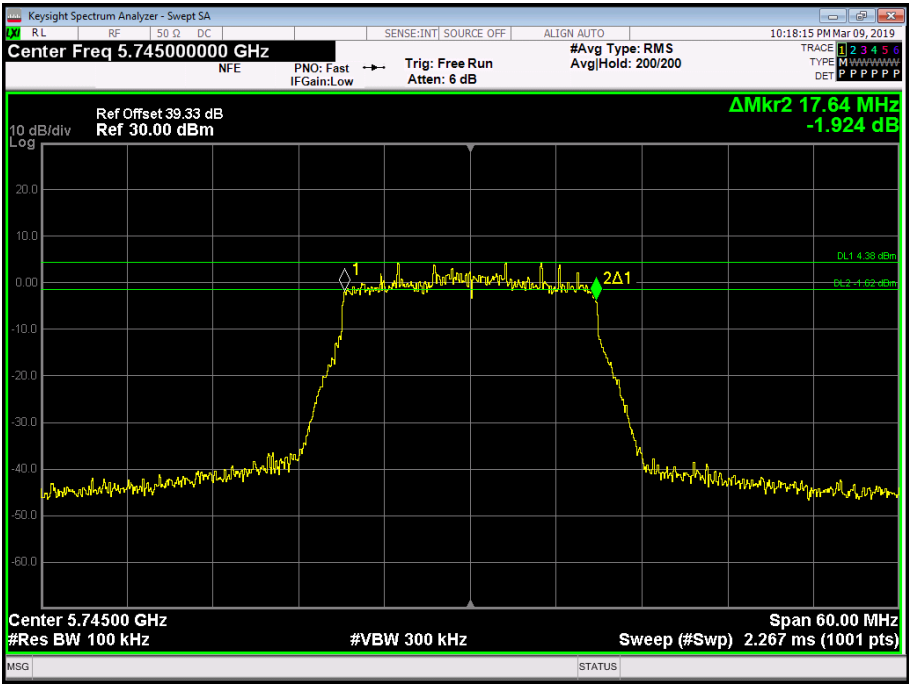


Figure 276 - 5745 MHz - 6 dB DTS Bandwidth

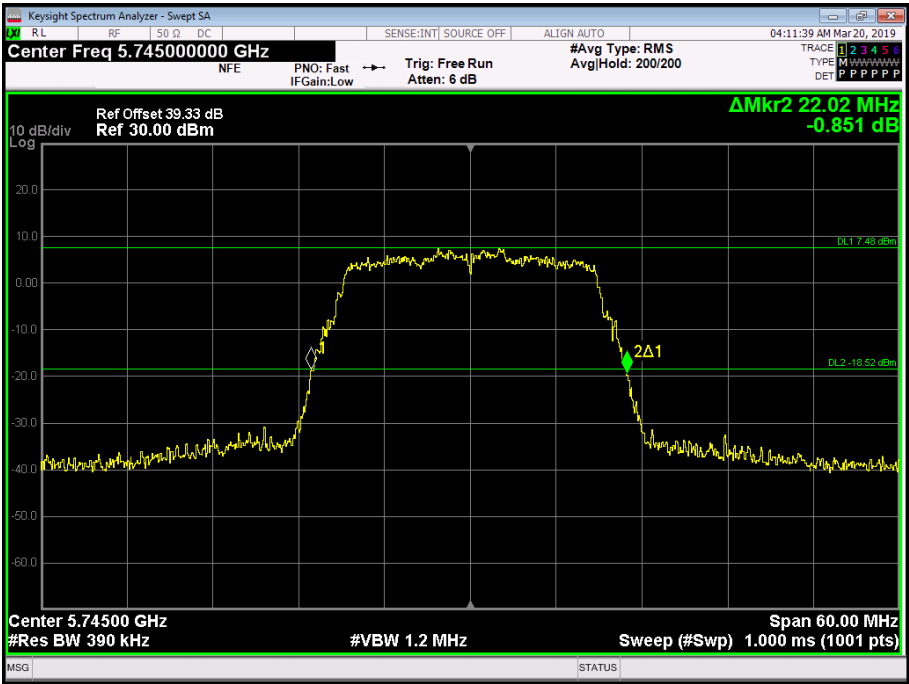


Figure 277 - 5745 MHz - 26 dB Emission Bandwidth

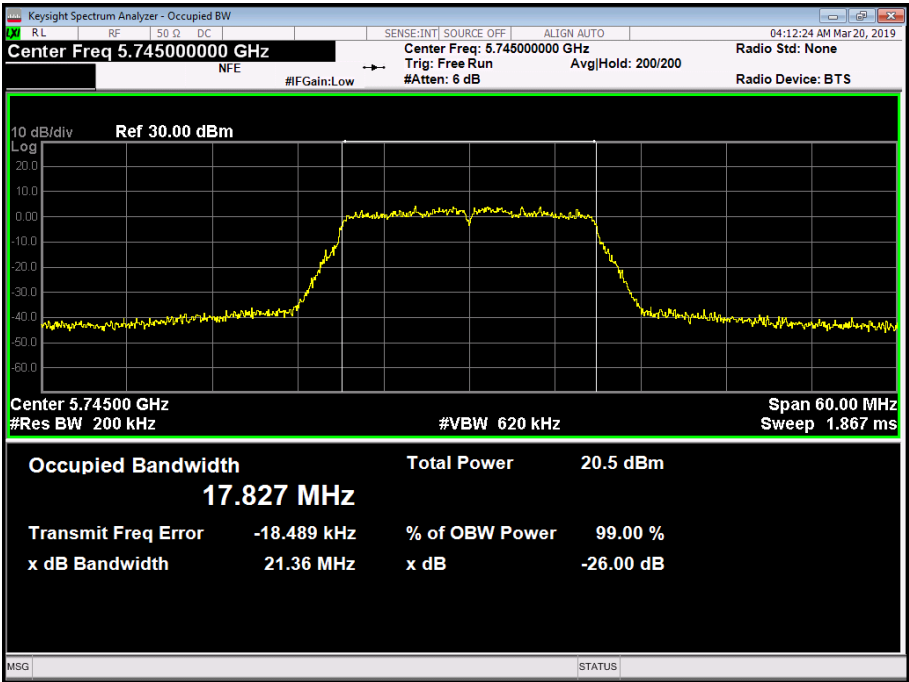


Figure 278 - 5745 MHz - 99% Occupied Bandwidth

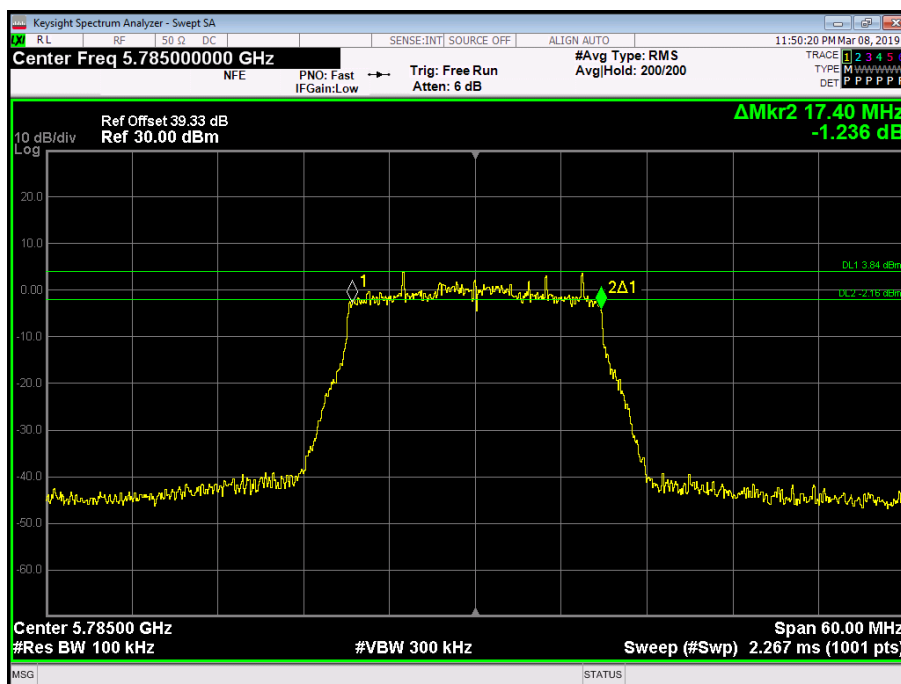


Figure 279 - 5785 MHz - 6 dB DTS Bandwidth

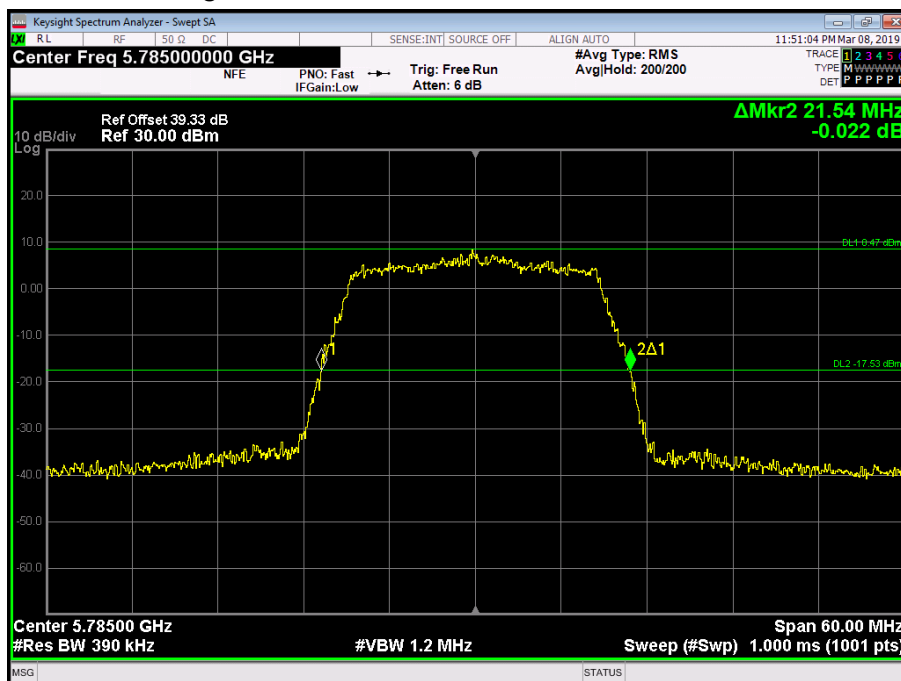


Figure 280 - 5785 MHz - 26 dB Emission Bandwidth

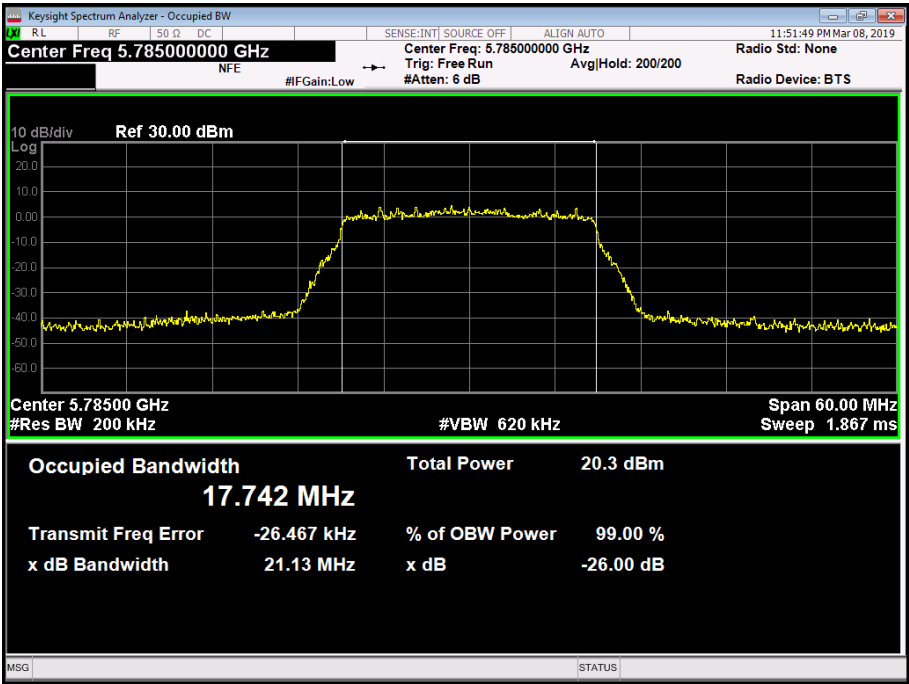


Figure 281 - 5785 MHz - 99% Occupied Bandwidth

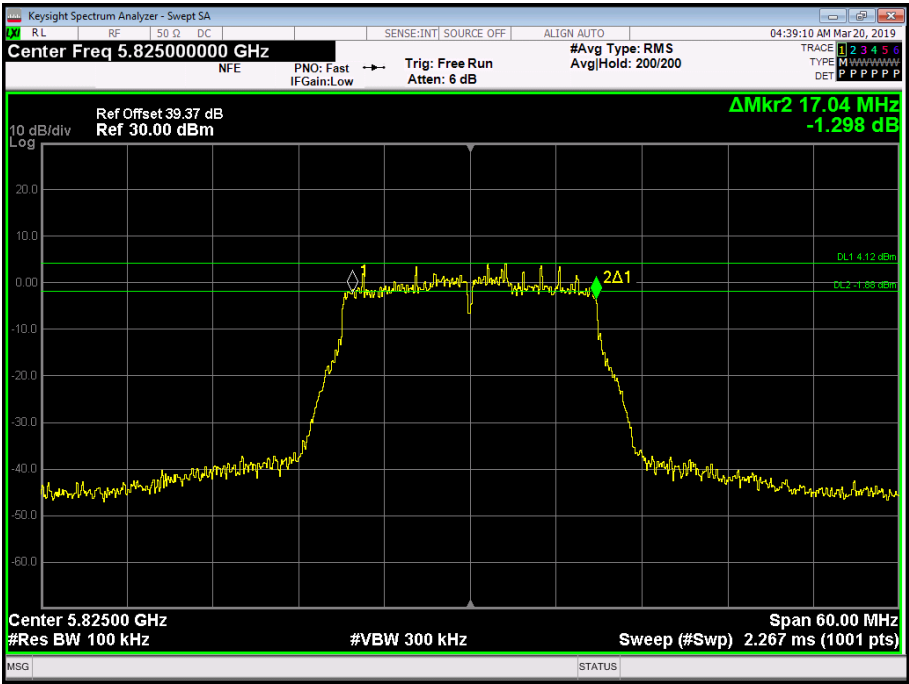


Figure 282 - 5825 MHz - 6 dB DTS Bandwidth

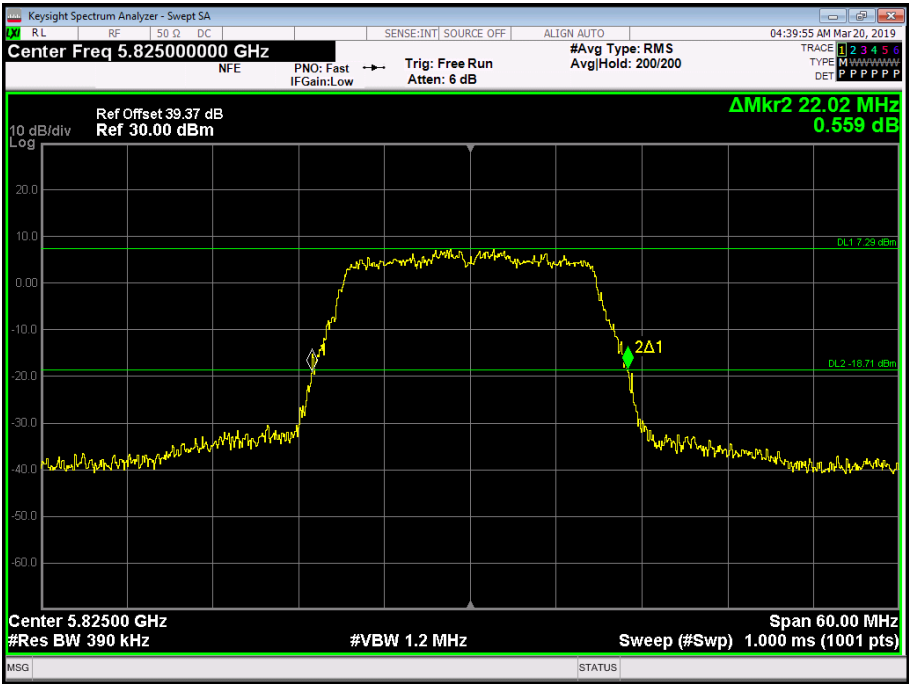


Figure 283 - 5825 MHz - 26 dB Emission Bandwidth

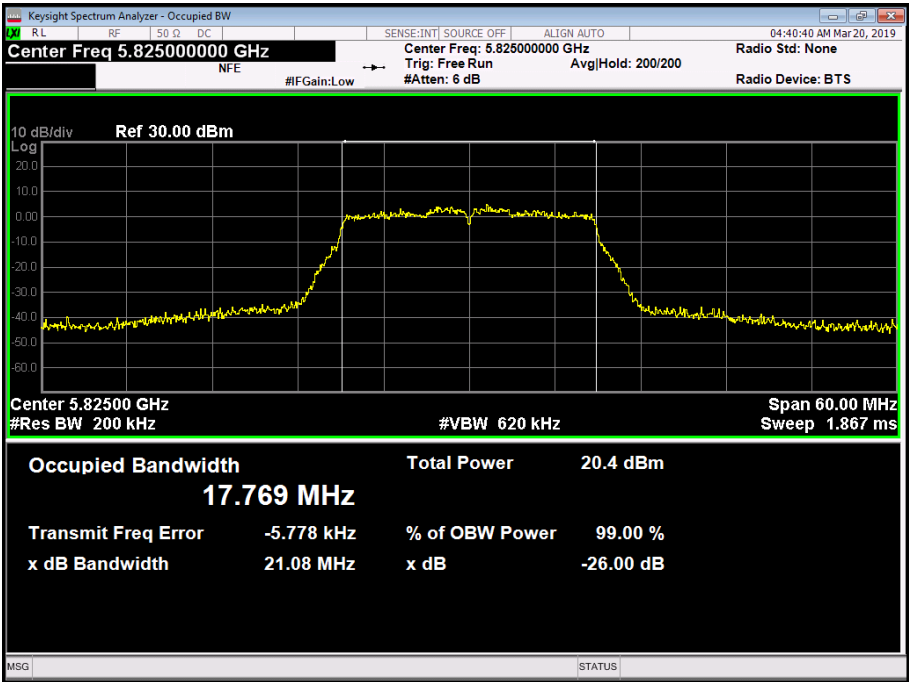


Figure 284 - 5825 MHz - 99% Occupied Bandwidth



802.11n / HT20 MCS0 / MIMO CDD / Cores 0+1

Channel	Straddle	Bottom	Middle	Top
Frequency (MHz)	5720	5745	5785	5825
6 dB Bandwidth (MHz)	3.820	17.640	17.640	17.640
26 dB Bandwidth (MHz)	5.860	21.720	21.780	21.720
99% Bandwidth (MHz)	17.731	17.757	17.722	17.785

Table 200



Figure 285 - 5720 MHz - 6 dB DTS Bandwidth

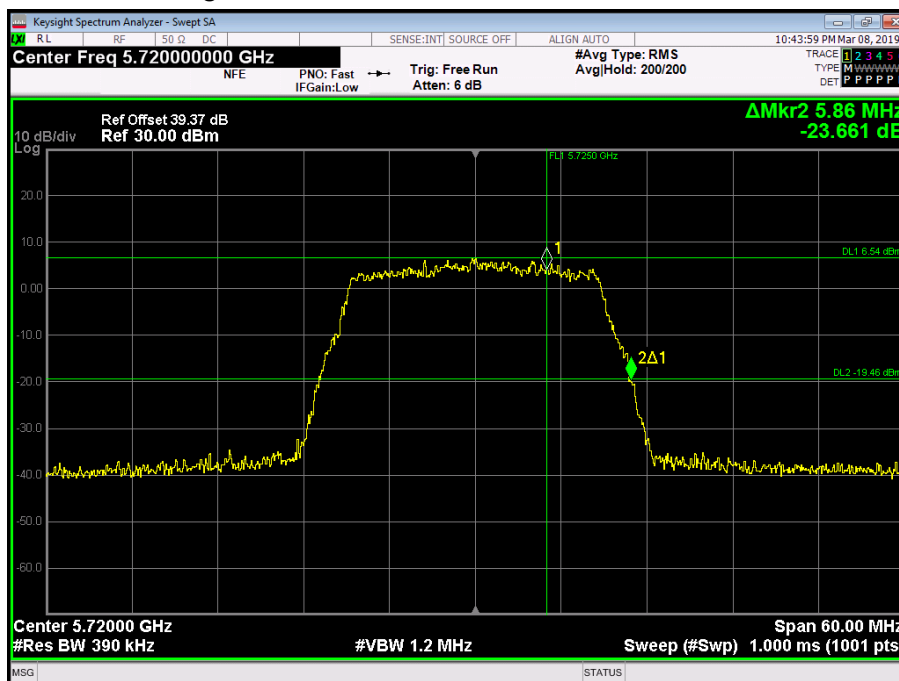


Figure 286 - 5720 MHz - 26 dB Emission Bandwidth

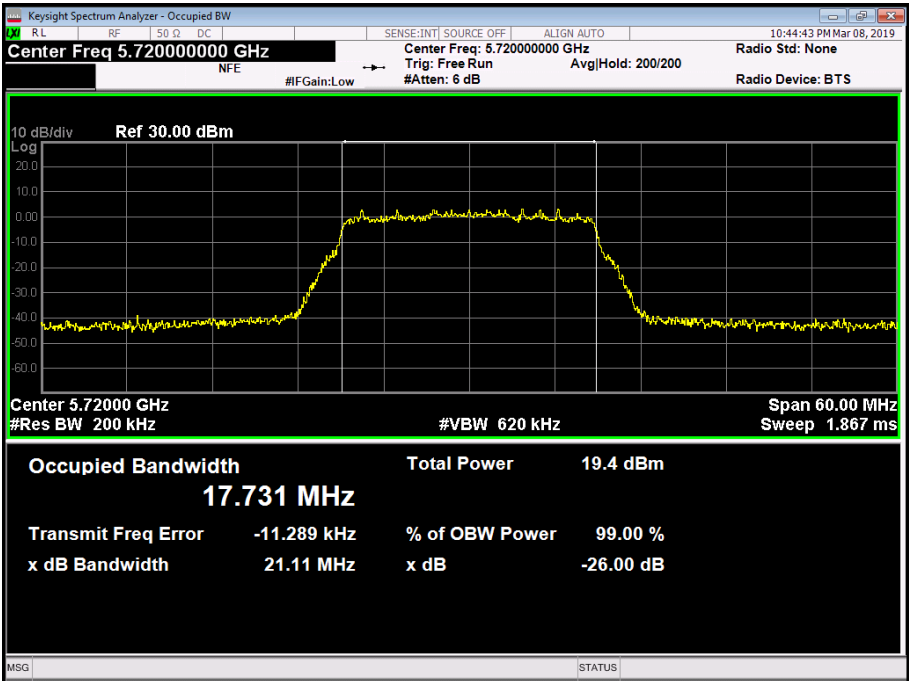


Figure 287 - 5720 MHz - 99% Occupied Bandwidth

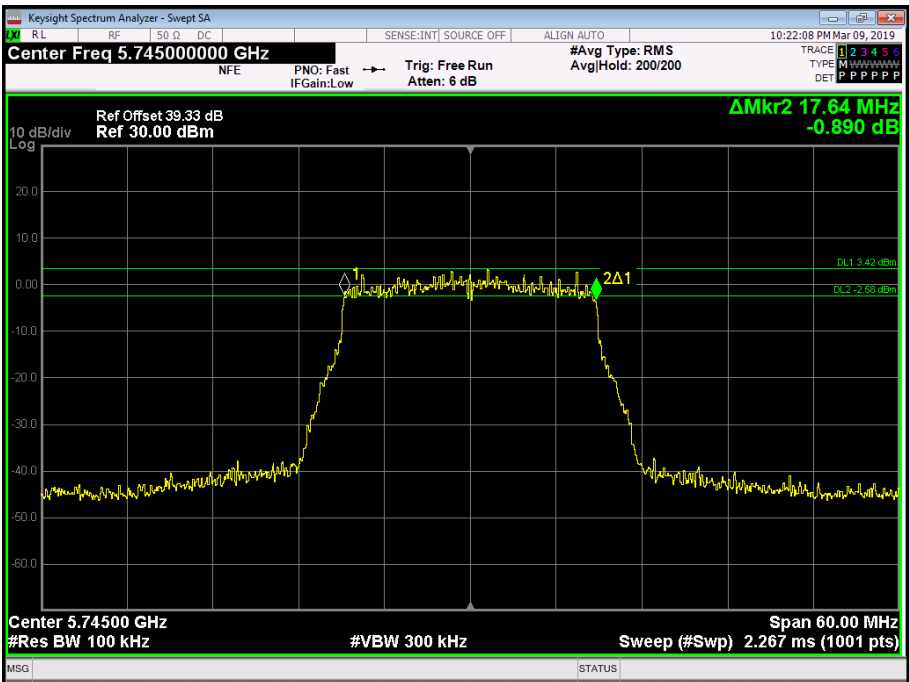


Figure 288 - 5745 MHz - 6 dB DTS Bandwidth

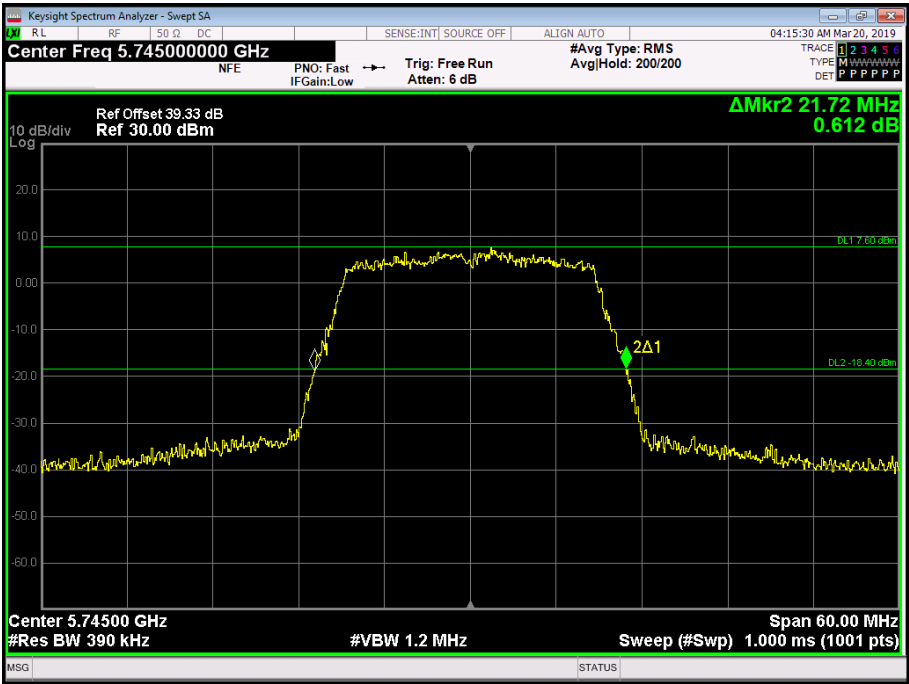


Figure 289 - 5745 MHz - 26 dB Emission Bandwidth

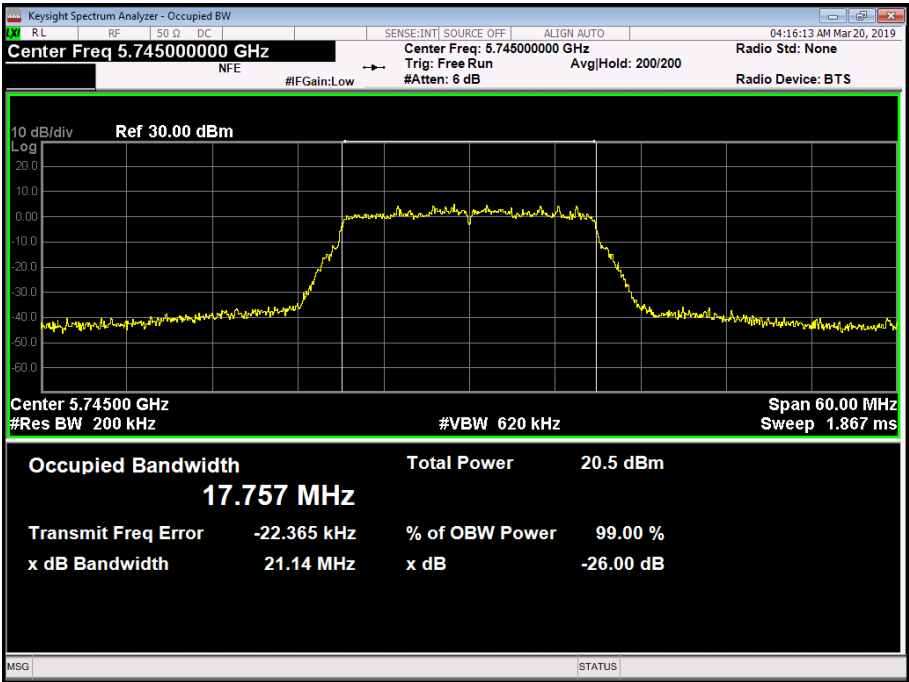


Figure 290 - 5745 MHz - 99% Occupied Bandwidth

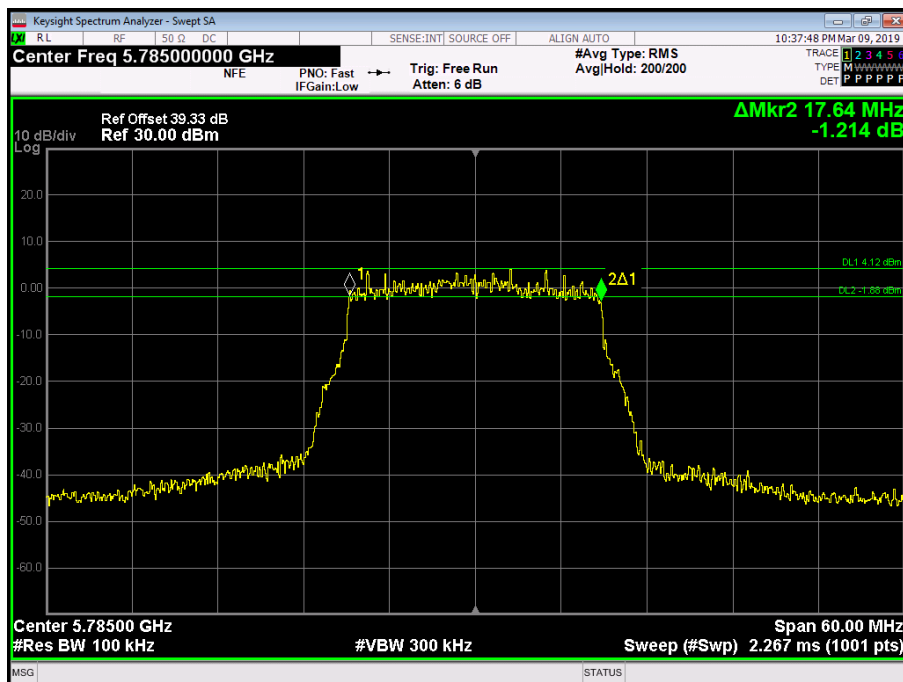


Figure 291 - 5785 MHz - 6 dB DTS Bandwidth

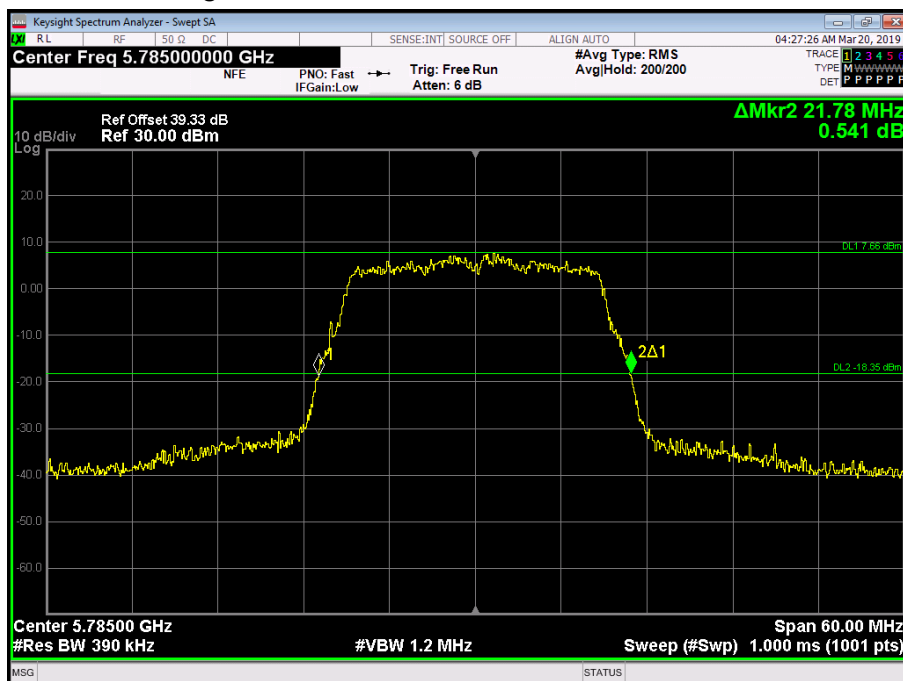


Figure 292 - 5785 MHz - 26 dB Emission Bandwidth

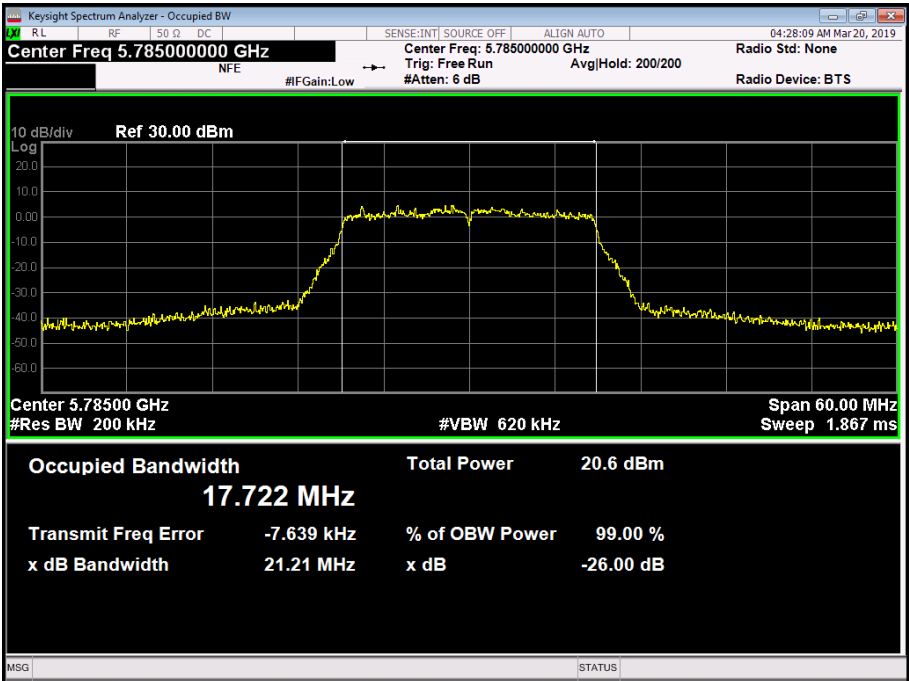


Figure 293 - 5785 MHz - 99% Occupied Bandwidth

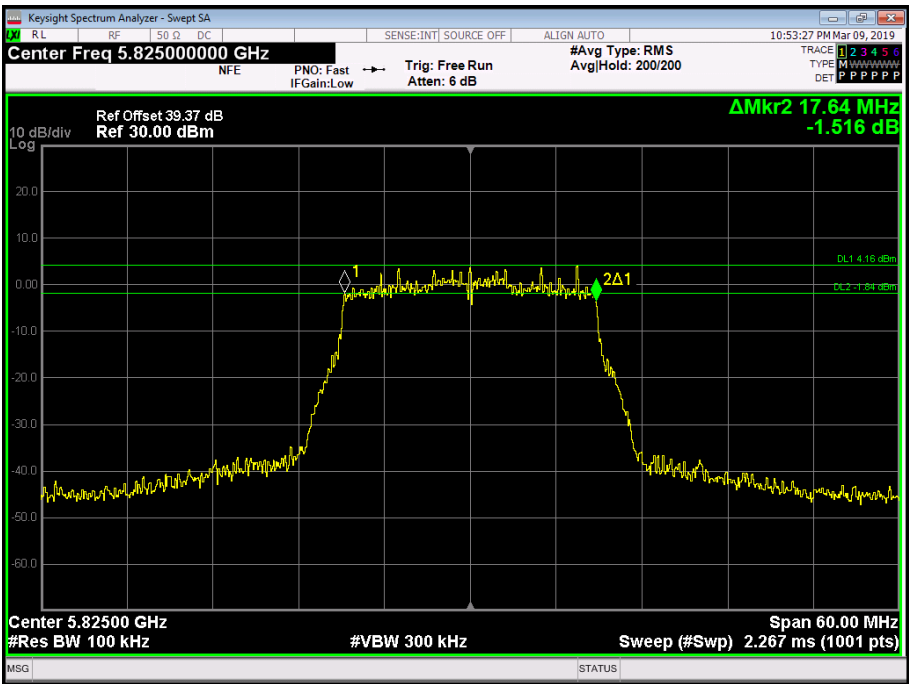


Figure 294 - 5825 MHz - 6 dB DTS Bandwidth

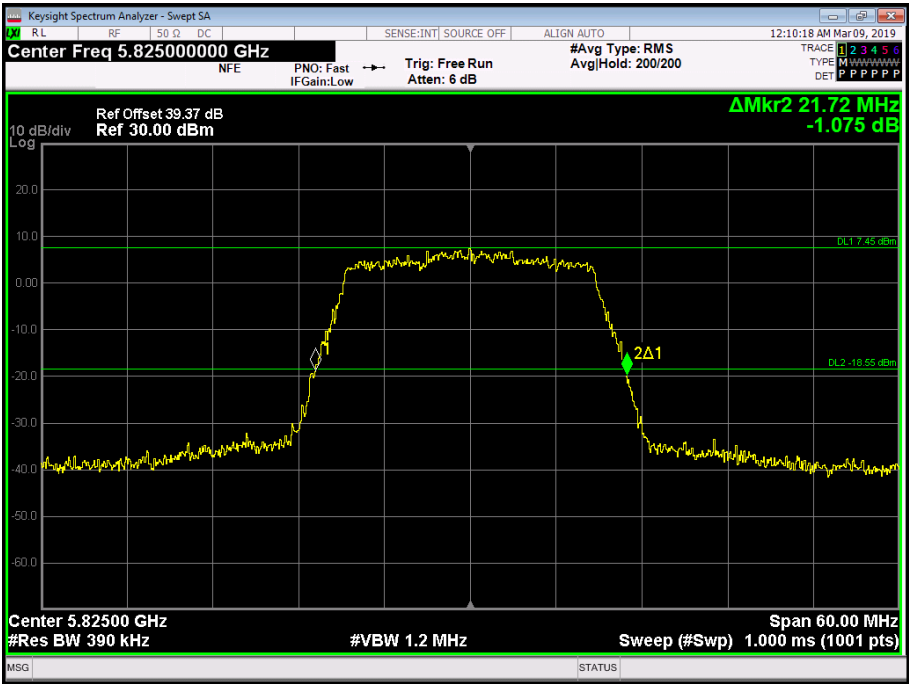


Figure 295 - 5825 MHz - 26 dB Emission Bandwidth

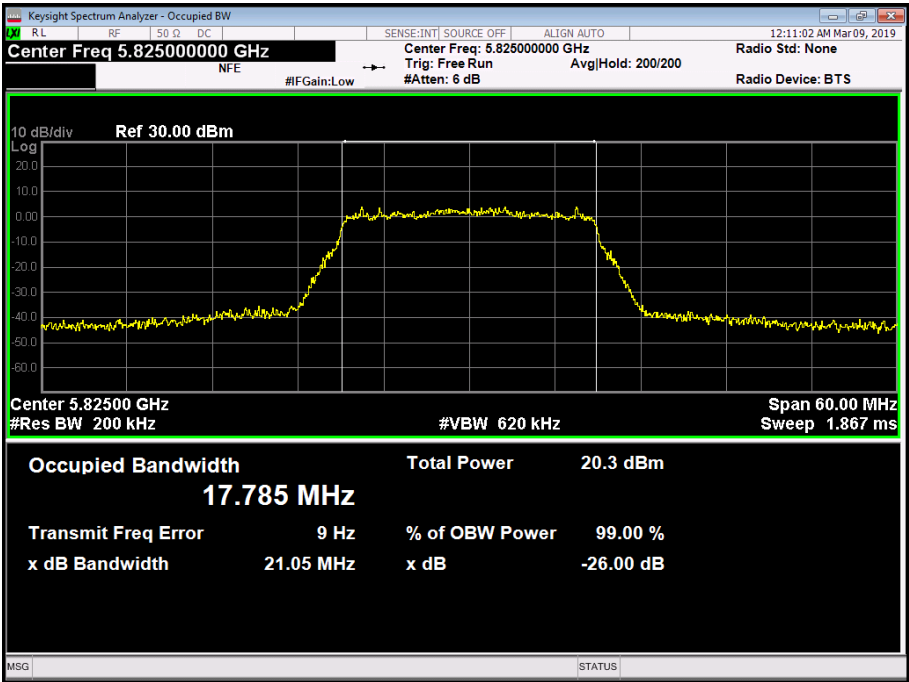


Figure 296 - 5825 MHz - 99% Occupied Bandwidth



802.11n / HT20 MCS8 / MIMO SDM / Cores 0+1

Channel	Straddle	Bottom	Middle	Top
Frequency (MHz)	5720	5745	5785	5825
6 dB Bandwidth (MHz)	3.820	17.640	17.400	17.280
26 dB Bandwidth (MHz)	5.920	22.080	21.900	21.900
99% Bandwidth (MHz)	17.750	17.745	17.702	17.723

Table 201

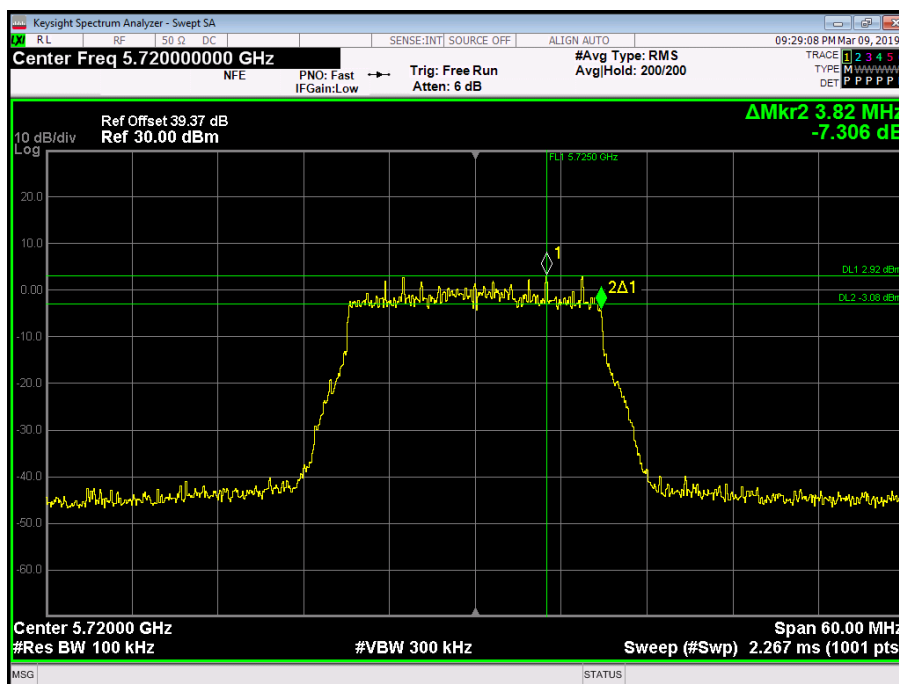


Figure 297 - 5720 MHz - 6 dB DTS Bandwidth

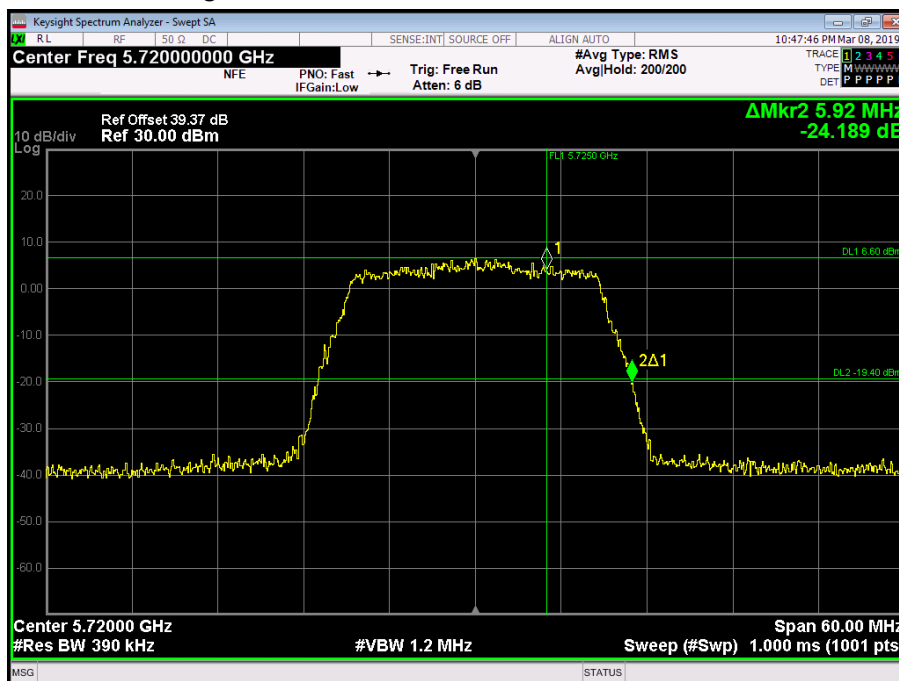


Figure 298 - 5720 MHz - 26 dB Emission Bandwidth

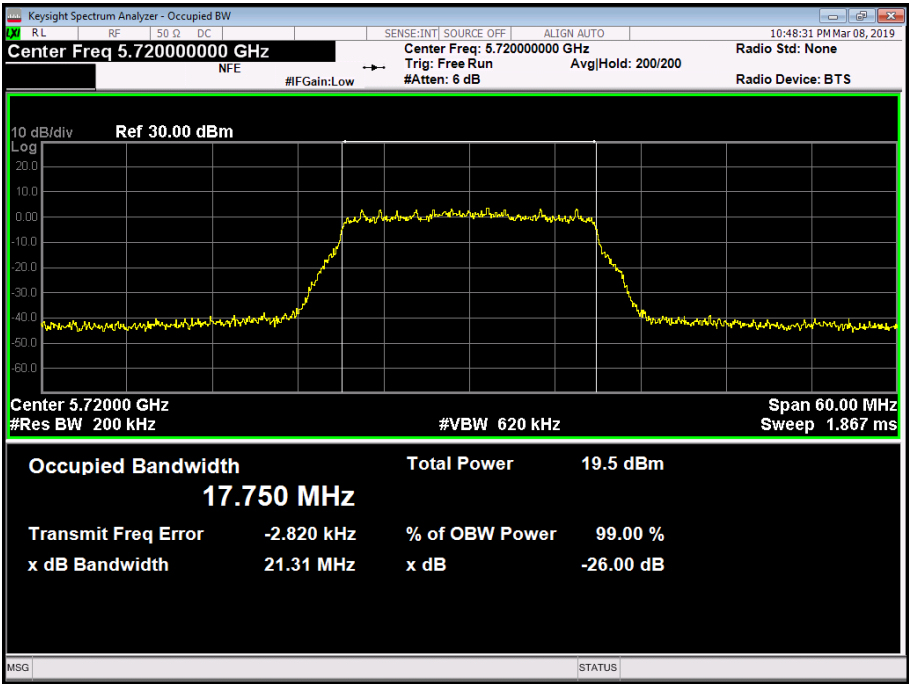


Figure 299 - 5720 MHz - 99% Occupied Bandwidth

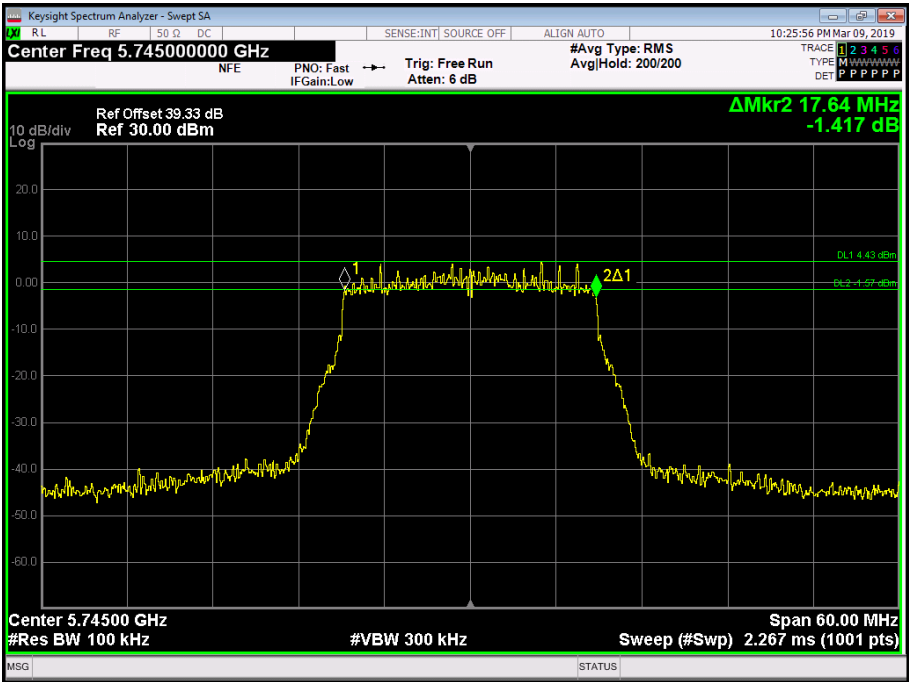


Figure 300 - 5745 MHz - 6 dB DTS Bandwidth

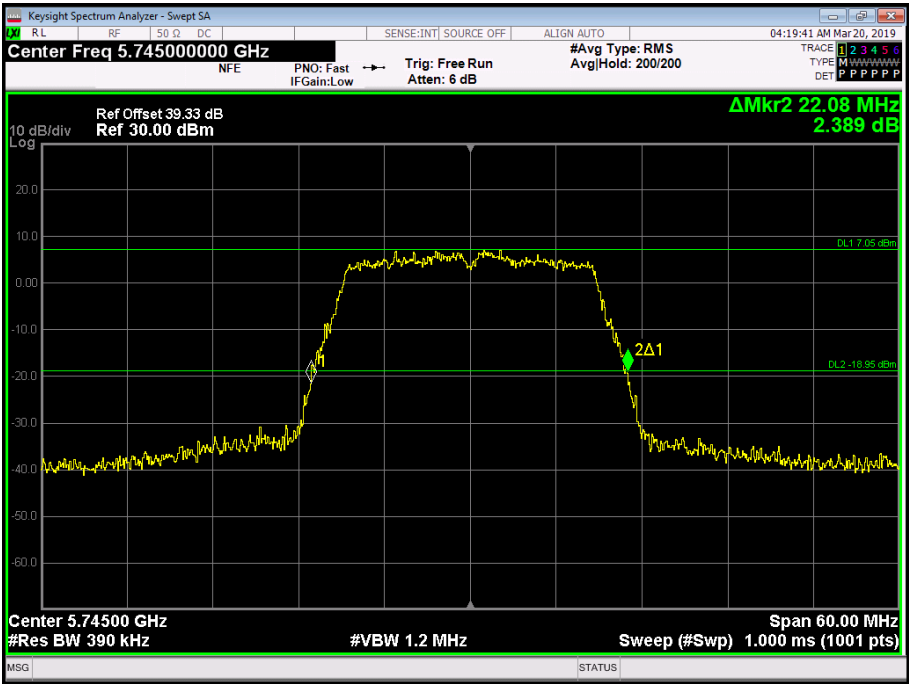


Figure 301 - 5745 MHz - 26 dB Emission Bandwidth

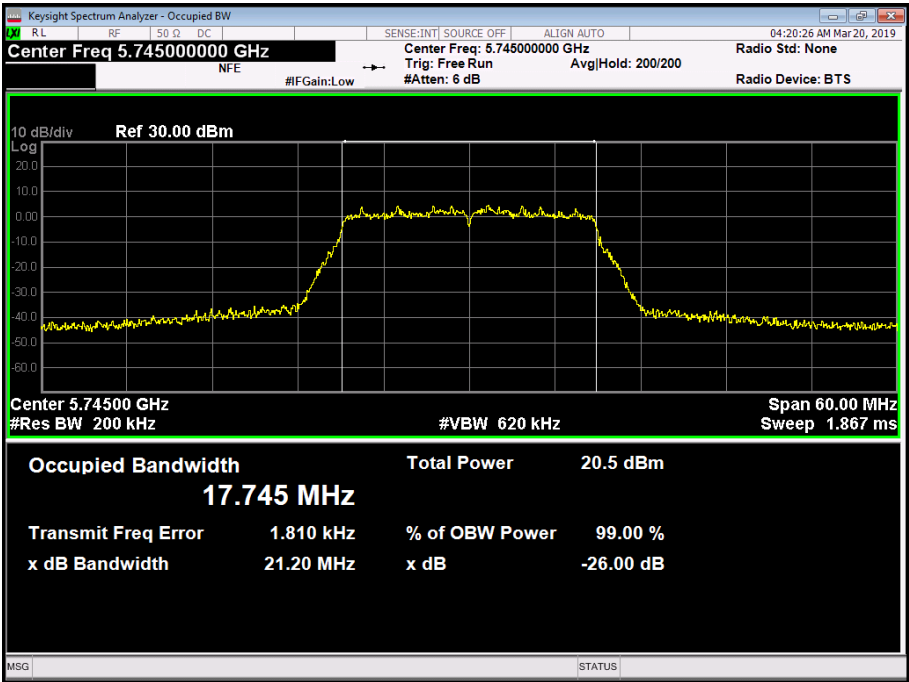


Figure 302 - 5745 MHz - 99% Occupied Bandwidth

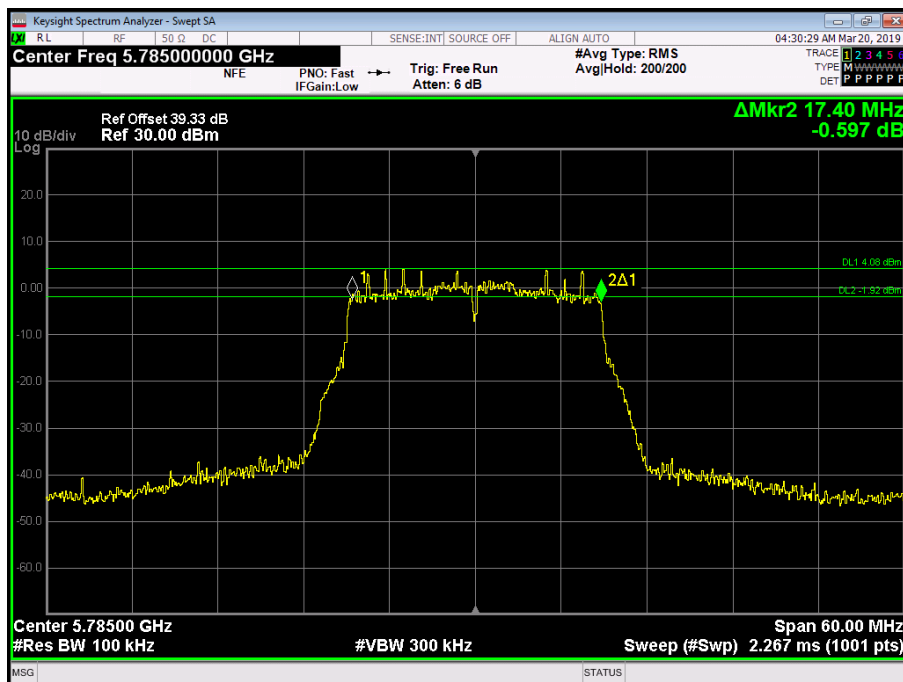


Figure 303 - 5785 MHz - 6 dB DTS Bandwidth



Figure 304 - 5785 MHz - 26 dB Emission Bandwidth

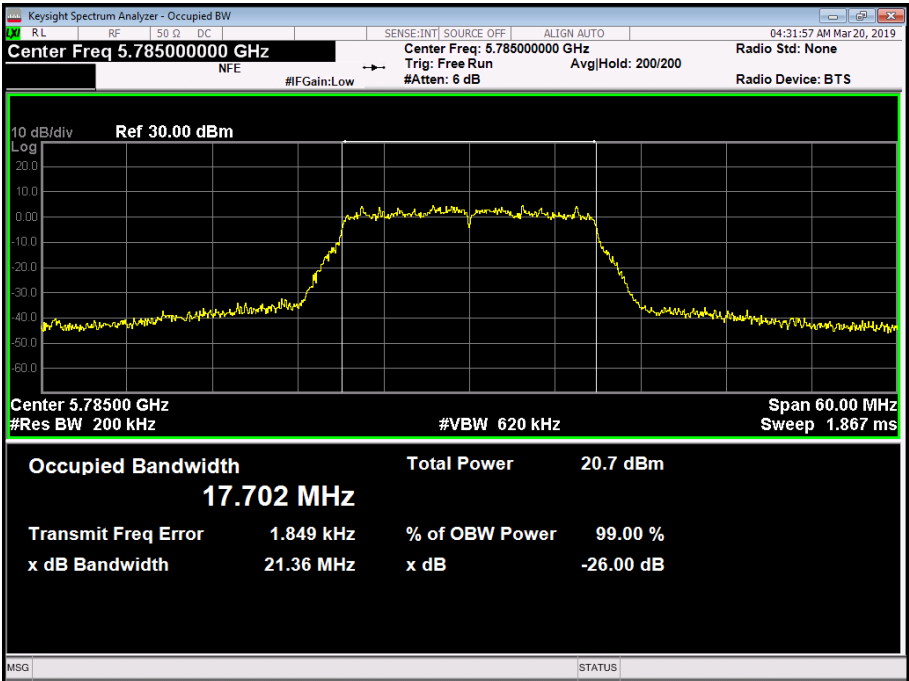


Figure 305 - 5785 MHz - 99% Occupied Bandwidth

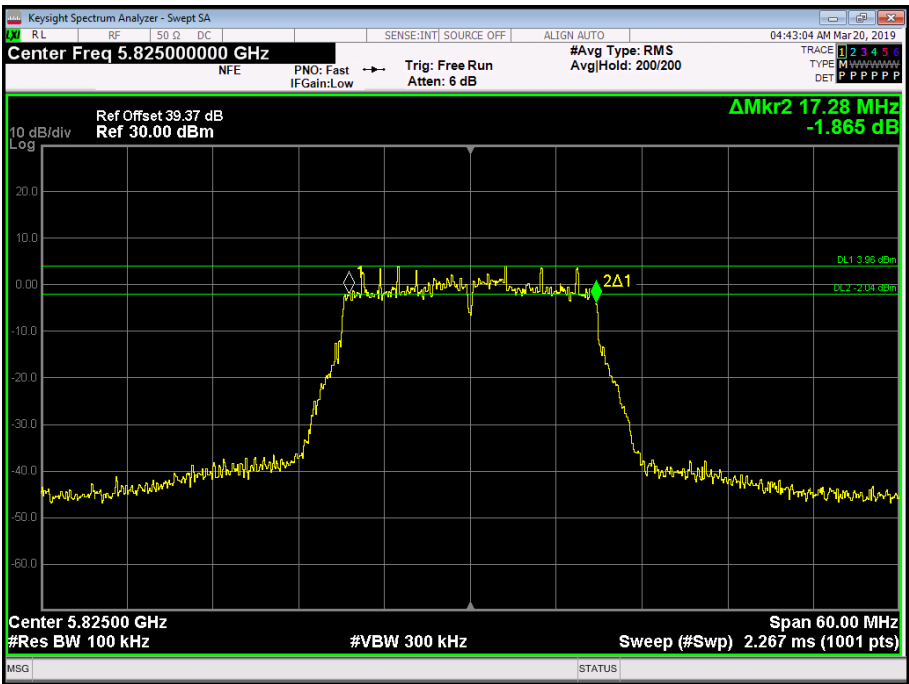


Figure 306 - 5825 MHz - 6 dB DTS Bandwidth

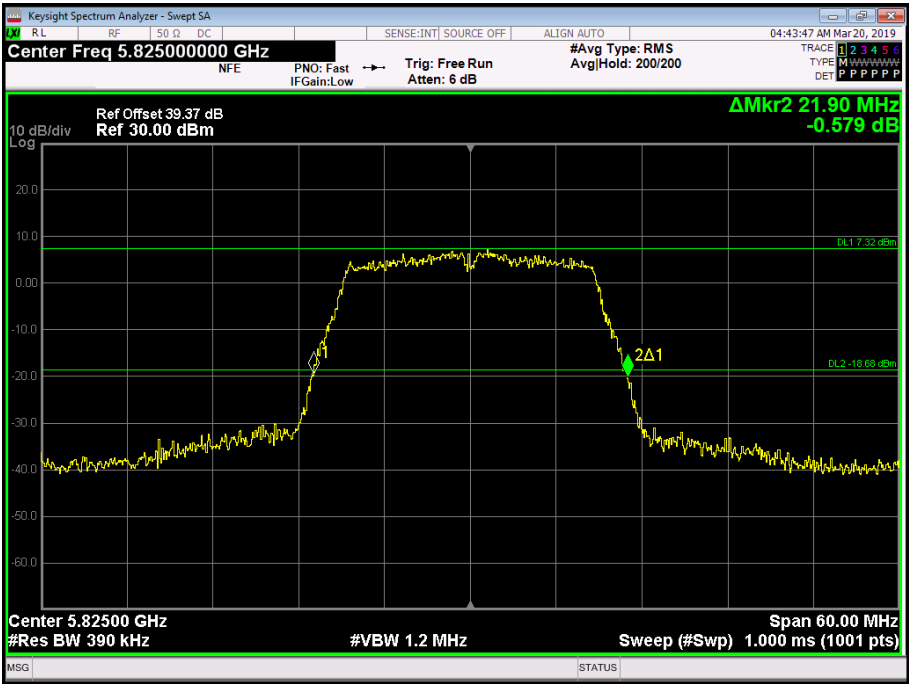


Figure 307 - 5825 MHz - 26 dB Emission Bandwidth

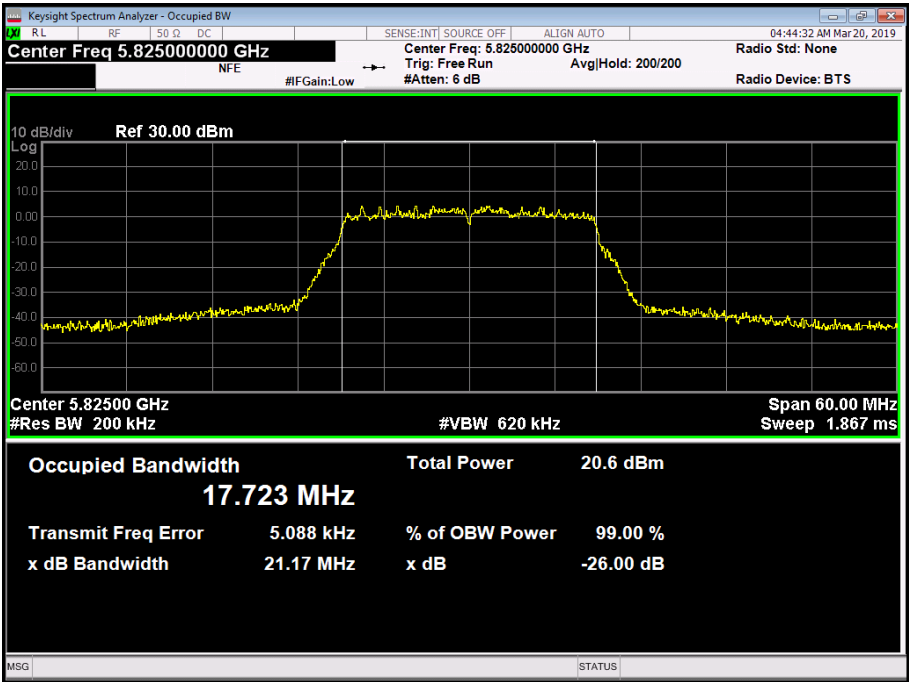


Figure 308 - 5825 MHz - 99% Occupied Bandwidth



802.11n / HT20 MCS0 / MIMO TxBF / Cores 0+1

Channel	Straddle	Bottom	Middle	Top
Frequency (MHz)	5720	5745	5785	5825
6 dB Bandwidth (MHz)	3.820	17.520	16.920	16.620
26 dB Bandwidth (MHz)	5.980	22.020	21.960	22.020
99% Bandwidth (MHz)	17.781	17.771	17.735	17.737

Table 202

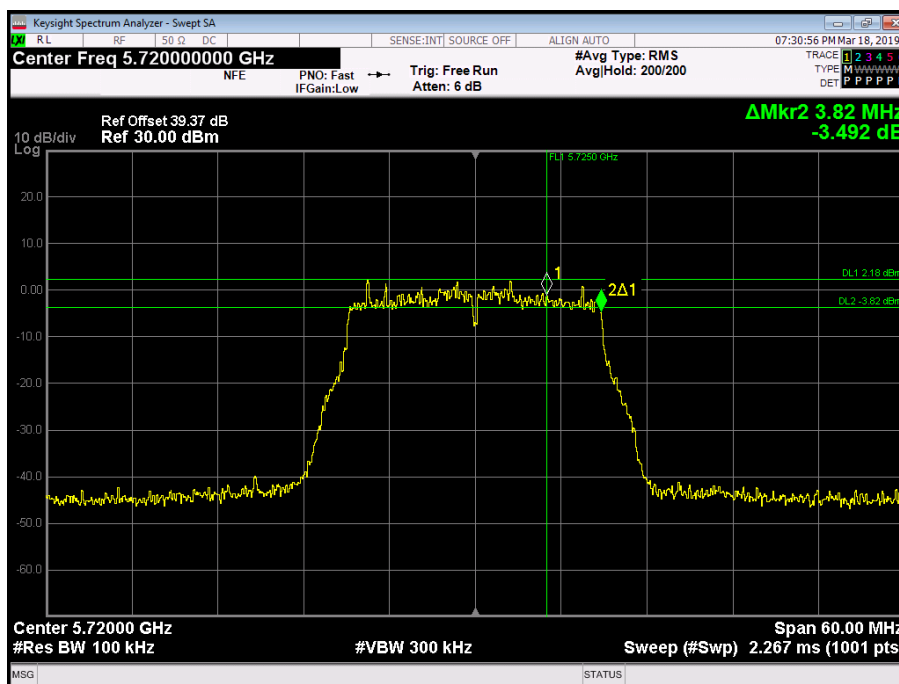


Figure 309 - 5720 MHz - 6 dB DTS Bandwidth

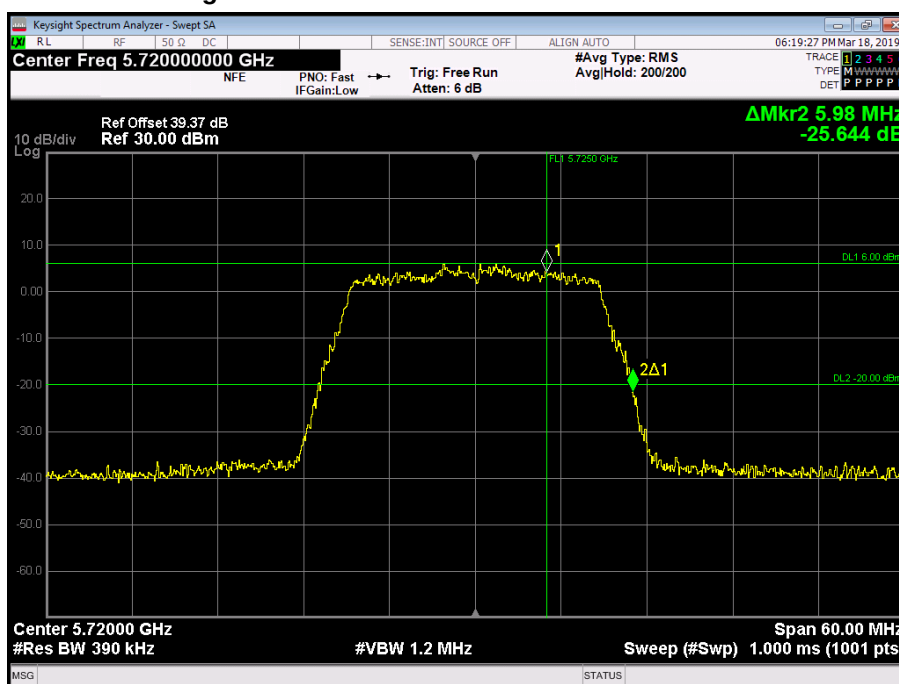


Figure 310 - 5720 MHz - 26 dB Emission Bandwidth

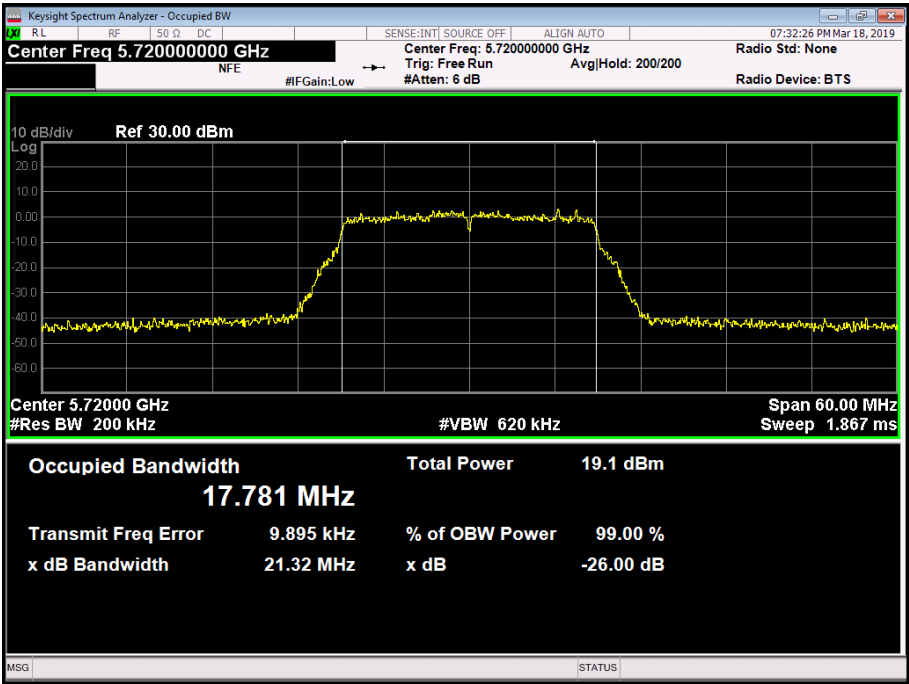


Figure 311 - 5720 MHz - 99% Occupied Bandwidth

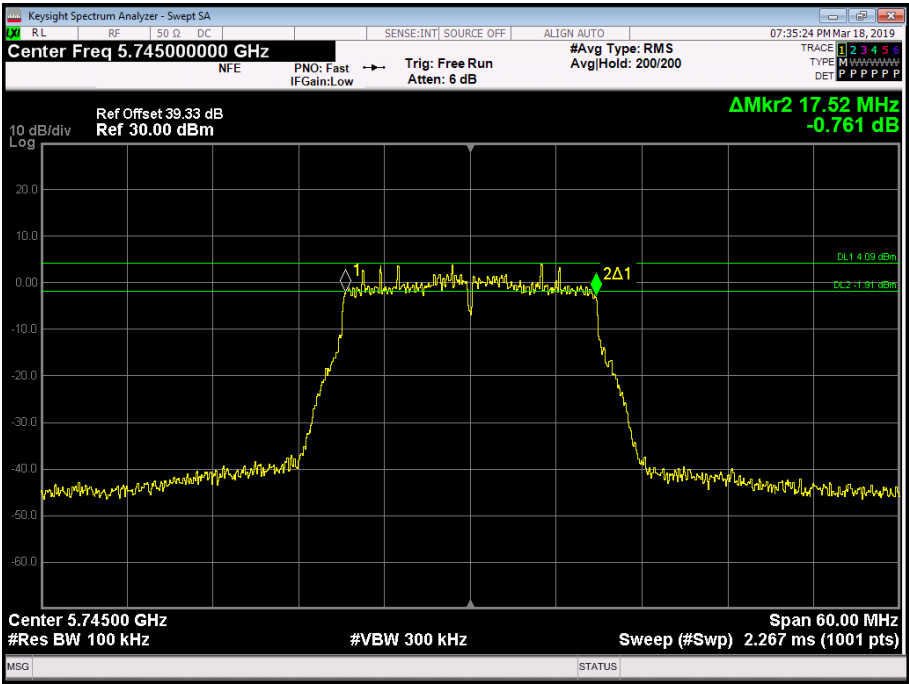


Figure 312 - 5745 MHz - 6 dB DTS Bandwidth

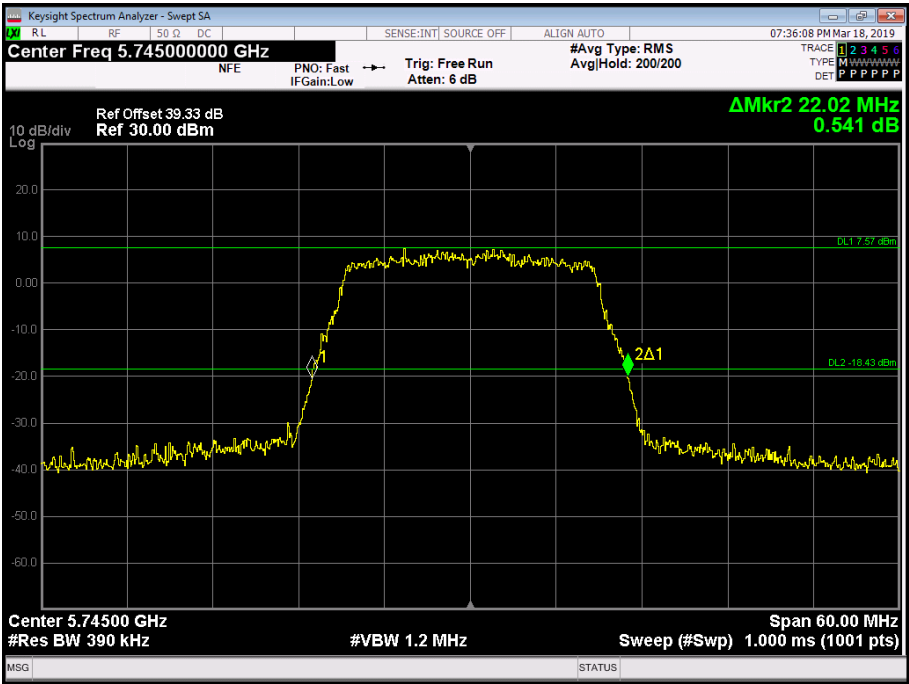


Figure 313 - 5745 MHz - 26 dB Emission Bandwidth

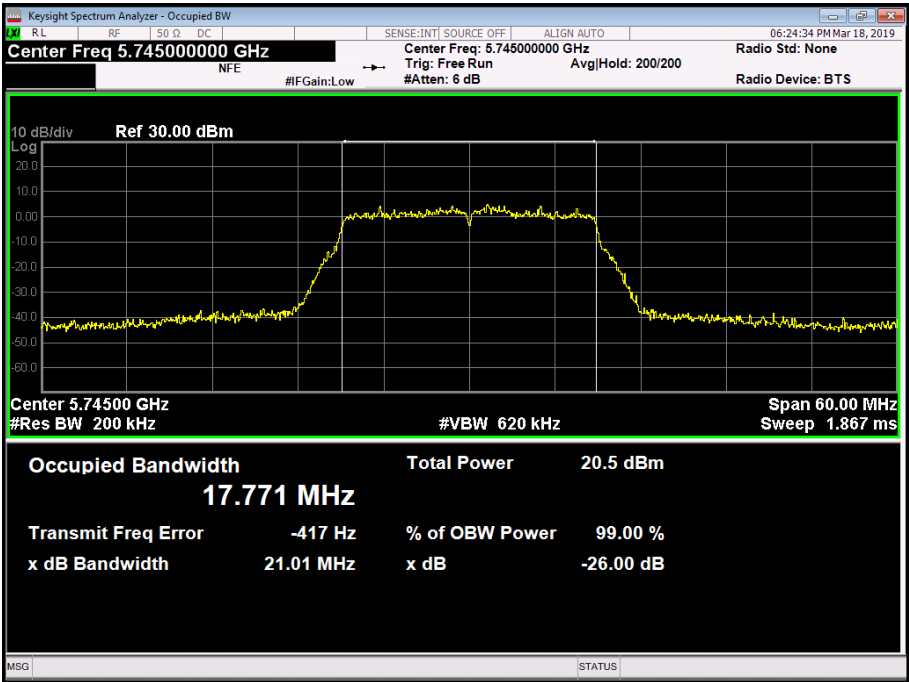


Figure 314 - 5745 MHz - 99% Occupied Bandwidth

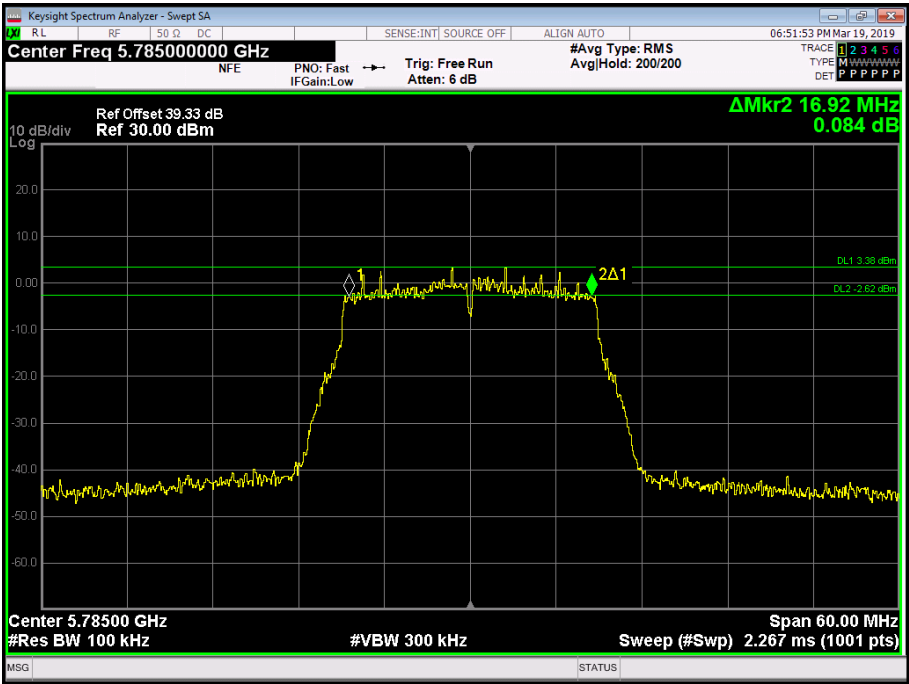


Figure 315 - 5785 MHz - 6 dB DTS Bandwidth

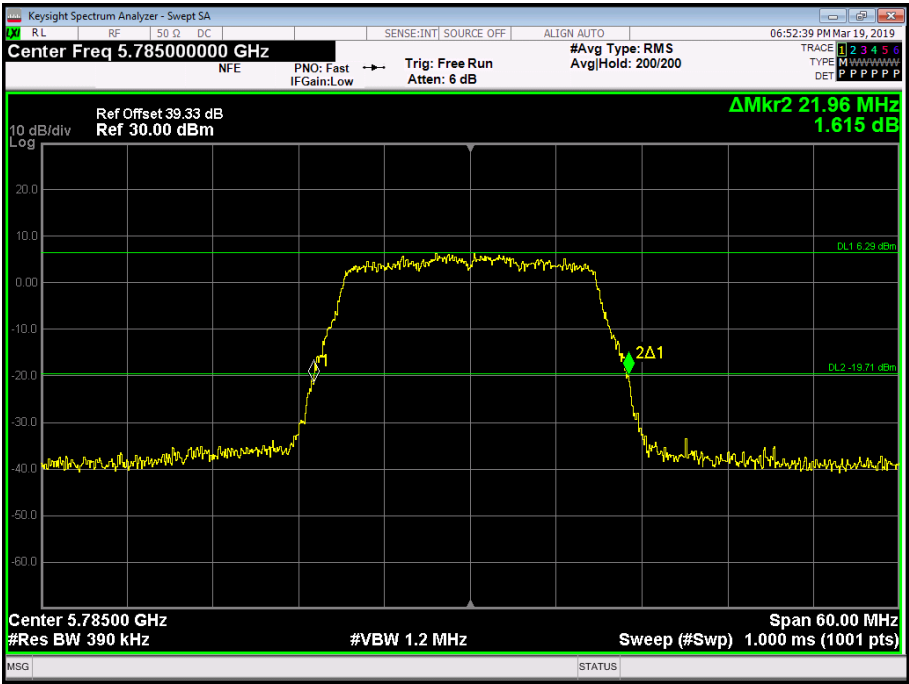


Figure 316 - 5785 MHz - 26 dB Emission Bandwidth

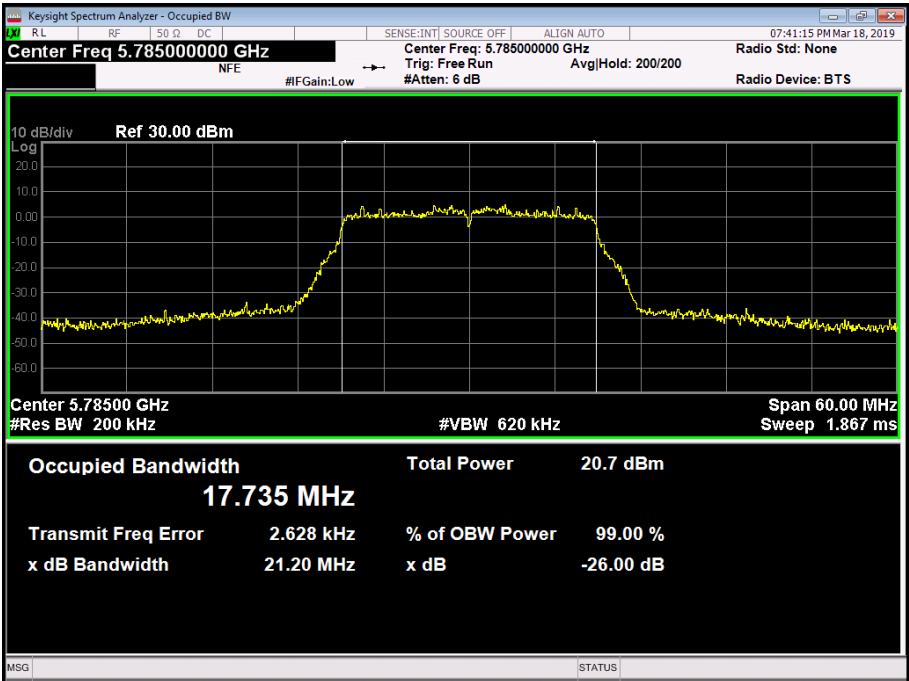


Figure 317 - 5785 MHz - 99% Occupied Bandwidth

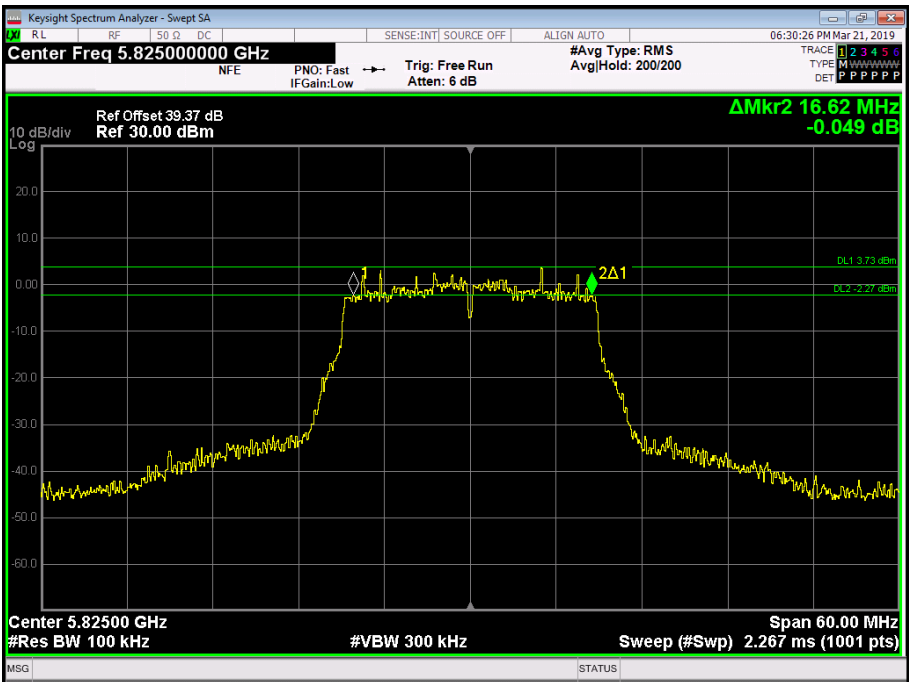


Figure 318 - 5825 MHz - 6 dB DTS Bandwidth

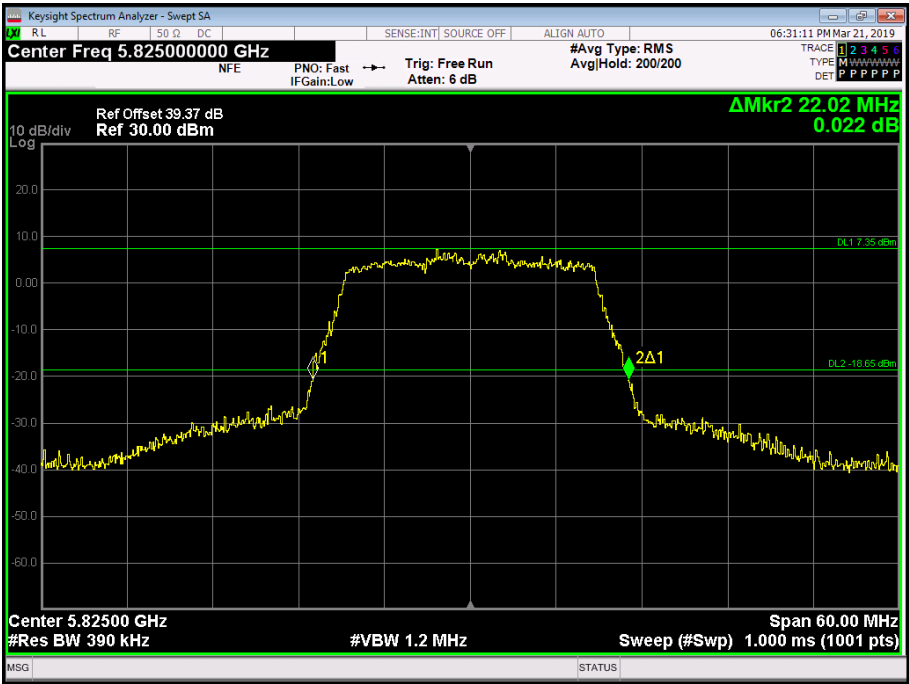


Figure 319 - 5825 MHz - 26 dB Emission Bandwidth

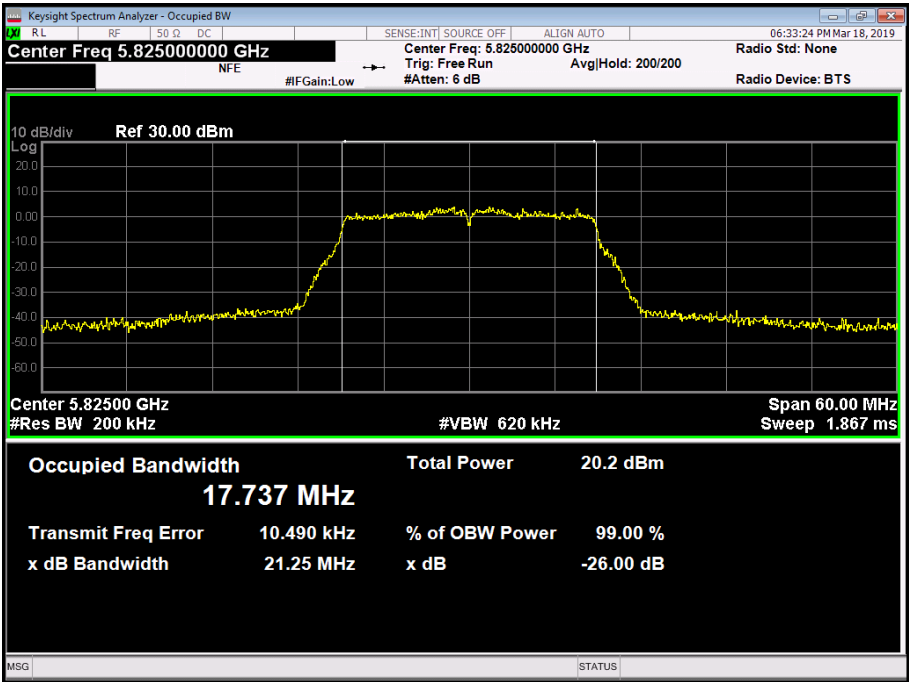


Figure 320 - 5825 MHz - 99% Occupied Bandwidth

Channel	Straddle	Bottom	Top
Frequency (MHz)	5710	5755	5795
6 dB Bandwidth (MHz)	2.880	35.760	35.280
26 dB Bandwidth (MHz)	5.280	40.440	40.200
99% Bandwidth (MHz)	36.137	36.080	36.050

Keysight Spectrum Analyzer - Swept SA

Center Freq 5.71000000 GHz

Ref Offset 39.35 dB
Ref 30.00 dBm

ΔMkr2 2.88 MHz
-5.750 dB

Center 5.71000 GHz
#Res BW 100 kHz
#VBW 300 kHz

Span 120.0 MHz
Sweep (#Swp) 4.467 ms (1001 pts)

FL1 5.7250 GHz

2Δ1

DL1 -0.30 dBm
DL2 -6.30 dBm

Keysight Spectrum Analyzer - Swept SA

RL 50 Ω DC SENSE:INT SOURCE OFF ALIGN AUTO 01:43:31 PM Mar 19, 2019

Center Freq 5.71000000 GHz #Avg Type: RMS AvgHold: 200/200

NFE PNO: Fast IFGain: Low Trig: Free Run Atten: 6 dB

TRACE 1 2 3 4 5 TYPE M W W W W W DET P P P P P P

Ref Offset 39.36 dB Ref 30.00 dBm

Δ Mkr2 5.28 MHz -24.188 dB

10 dB/div Log

FL1: 5.7250 GHz

DL1 6.33 dBm

DL2 -19.68 dBm

Center 5.71000 GHz Span 120.0 MHz

#Res BW 820 kHz #VBW 2.4 MHz Sweep (#Swp) 1.000 ms (1001 pts)

MSG STATUS

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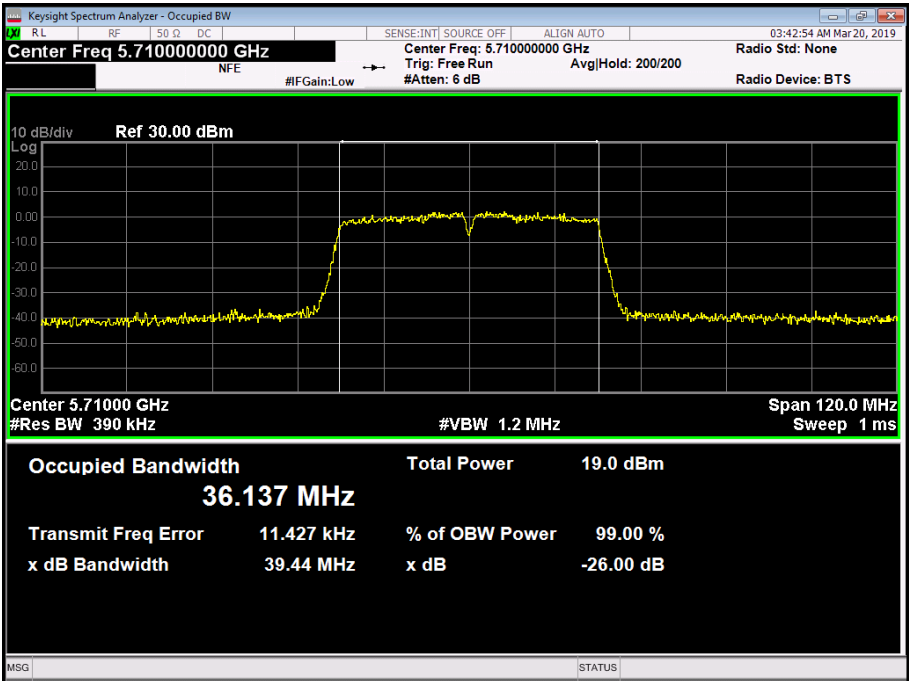


Figure 323 - 5710 MHz - 99% Occupied Bandwidth

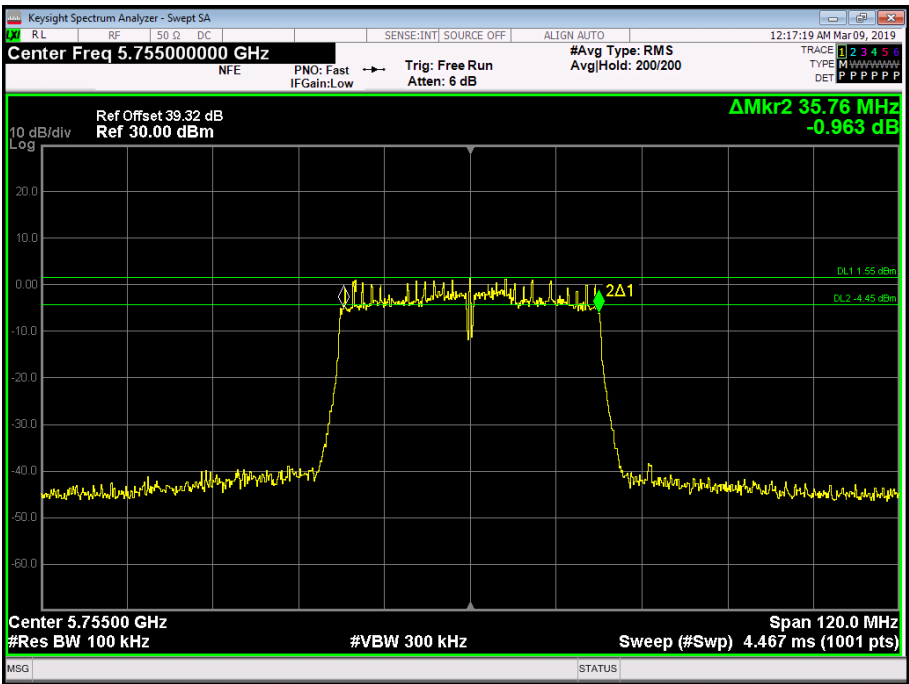


Figure 324 - 5755 MHz - 6 dB DTS Bandwidth

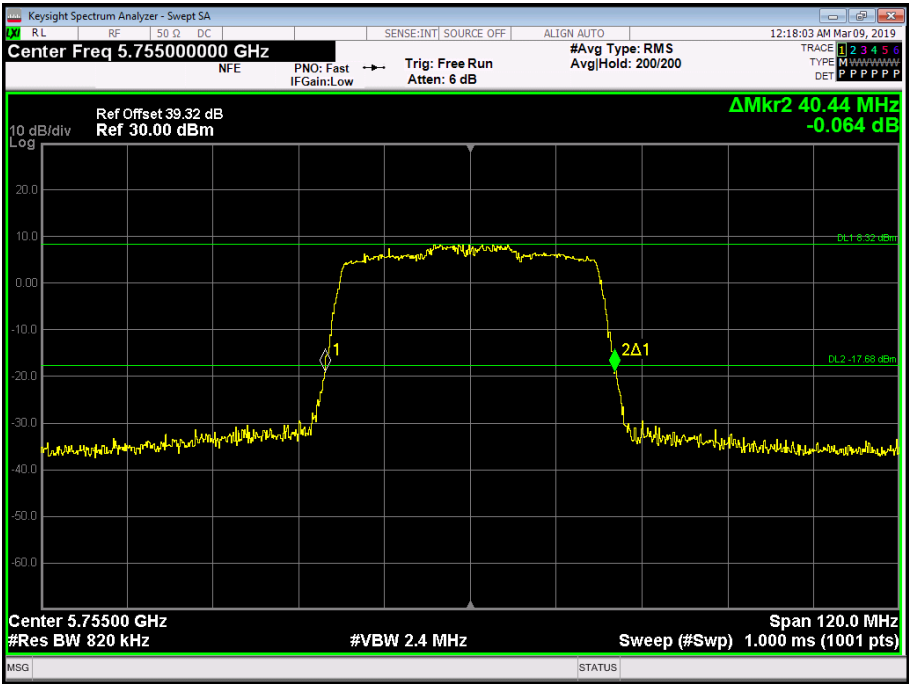


Figure 325 - 5755 MHz - 26 dB Emission Bandwidth

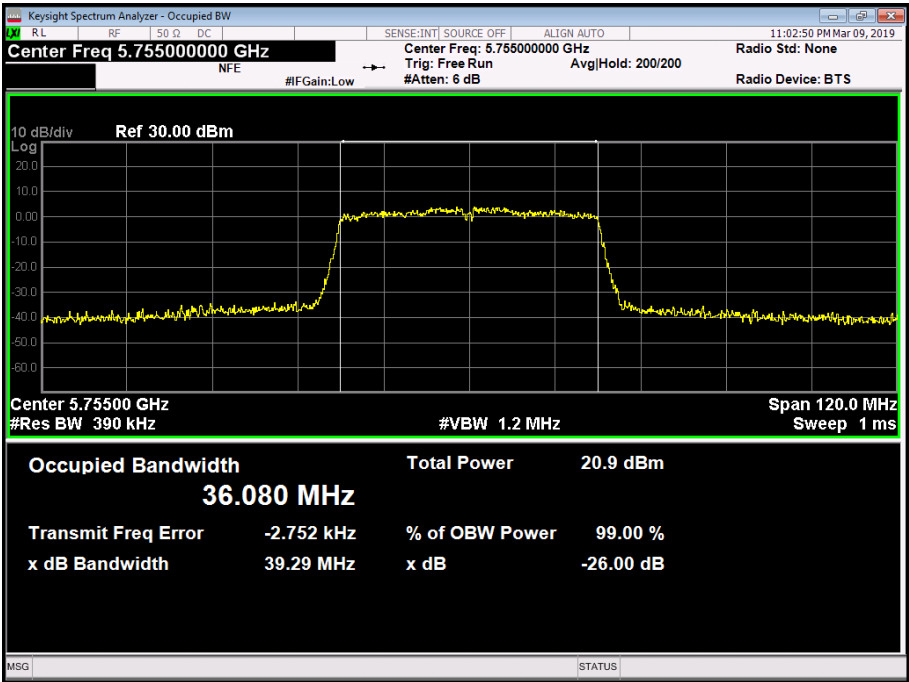


Figure 326 - 5755 MHz - 99% Occupied Bandwidth

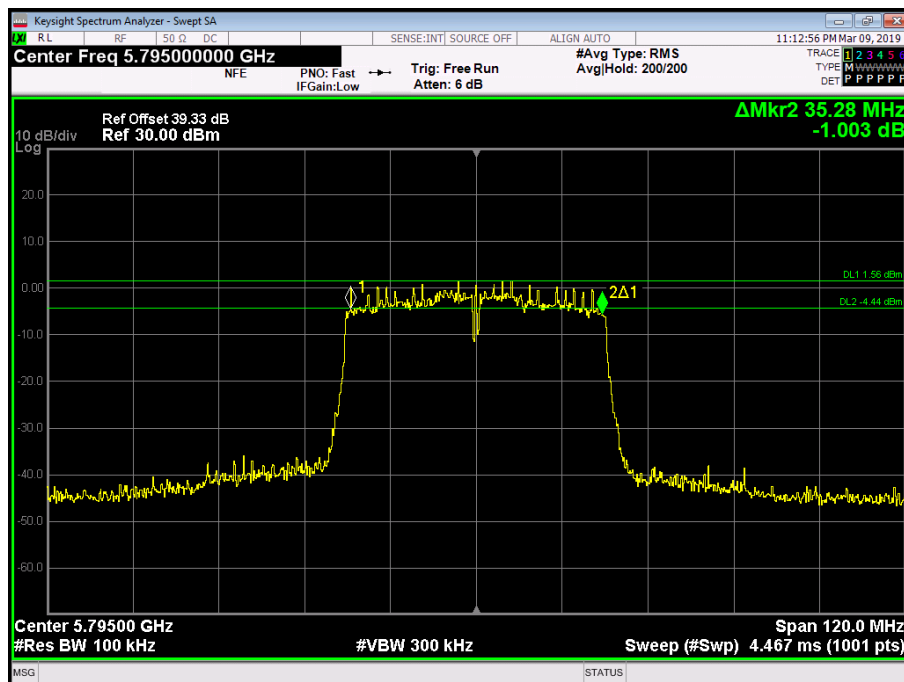


Figure 327 - 5795 MHz - 6 dB DTS Bandwidth



Figure 328 - 5795 MHz - 26 dB Emission Bandwidth

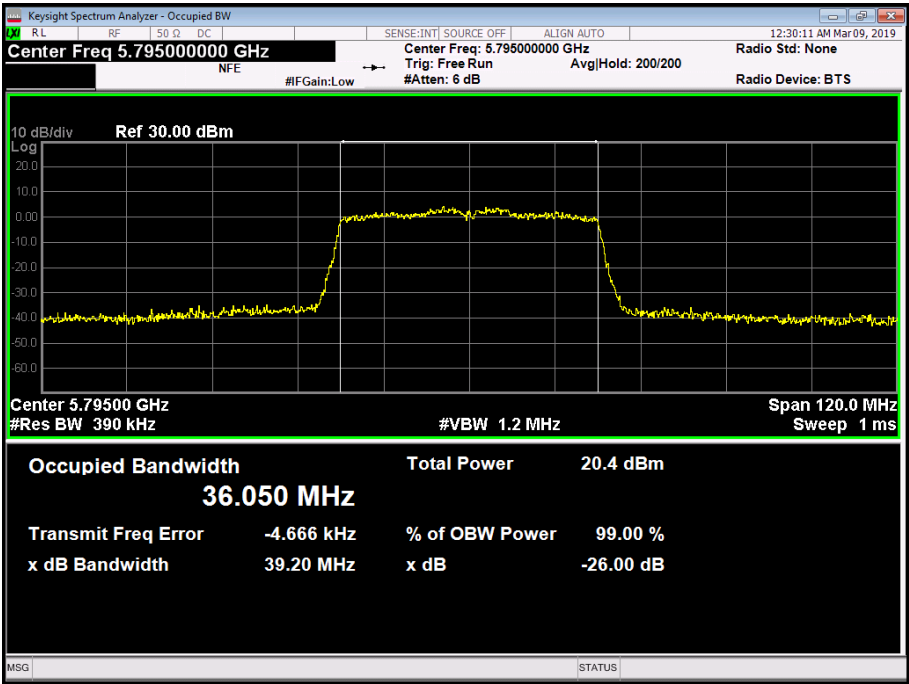


Figure 329 - 5795 MHz - 99% Occupied Bandwidth



802.11n / HT40 MCS0 / MIMO CDD / Cores 0+1

Channel	Straddle	Bottom	Top
Frequency (MHz)	5710	5755	5795
6 dB Bandwidth (MHz)	2.640	35.400	35.280
26 dB Bandwidth (MHz)	5.280	40.200	40.320
99% Bandwidth (MHz)	36.166	36.122	36.074

Table 204

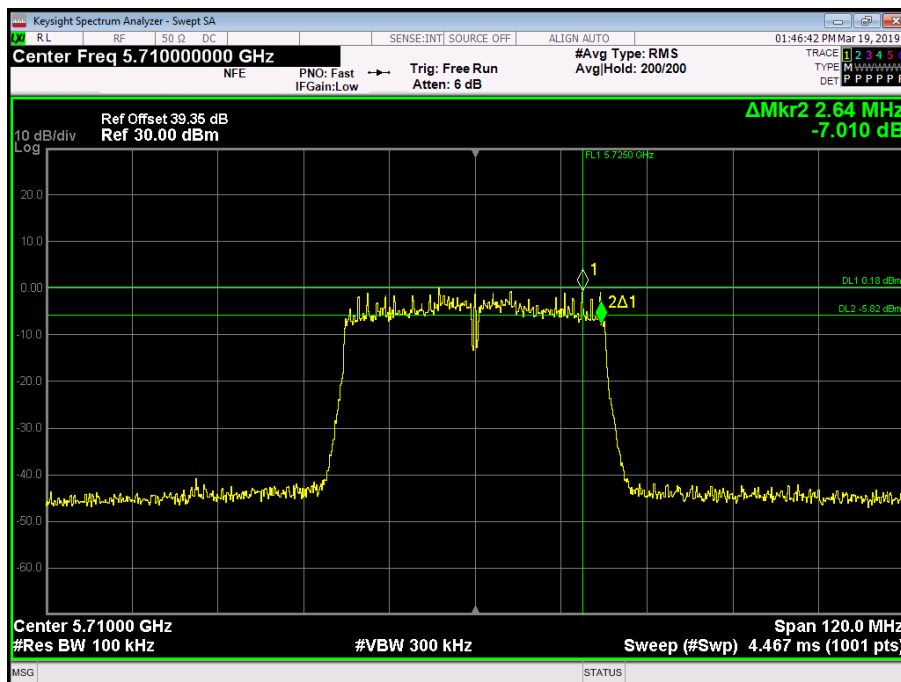


Figure 330 - 5710 MHz - 6 dB DTS Bandwidth

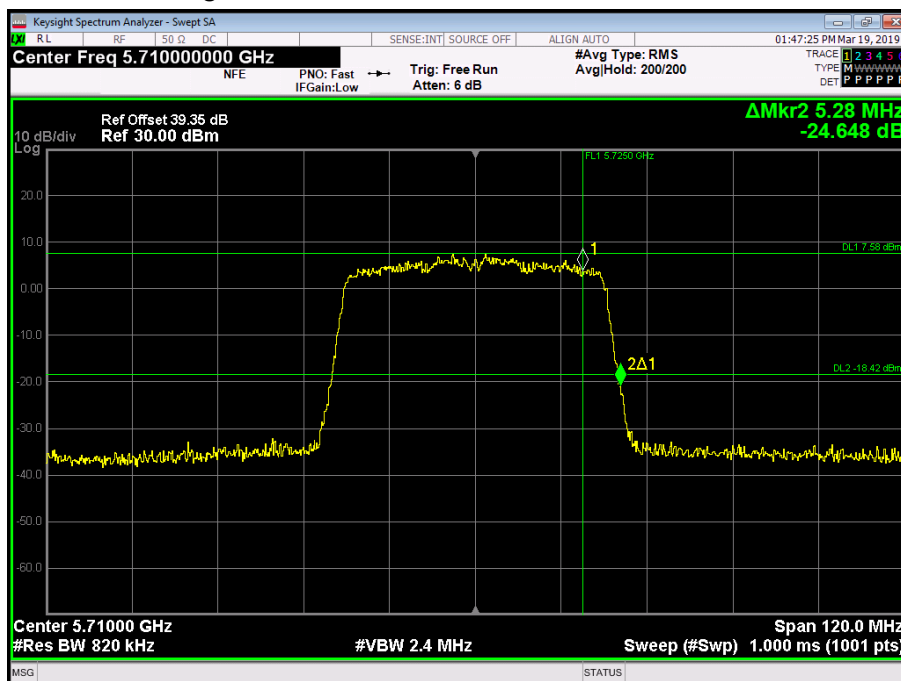


Figure 331 - 5710 MHz - 26 dB Emission Bandwidth

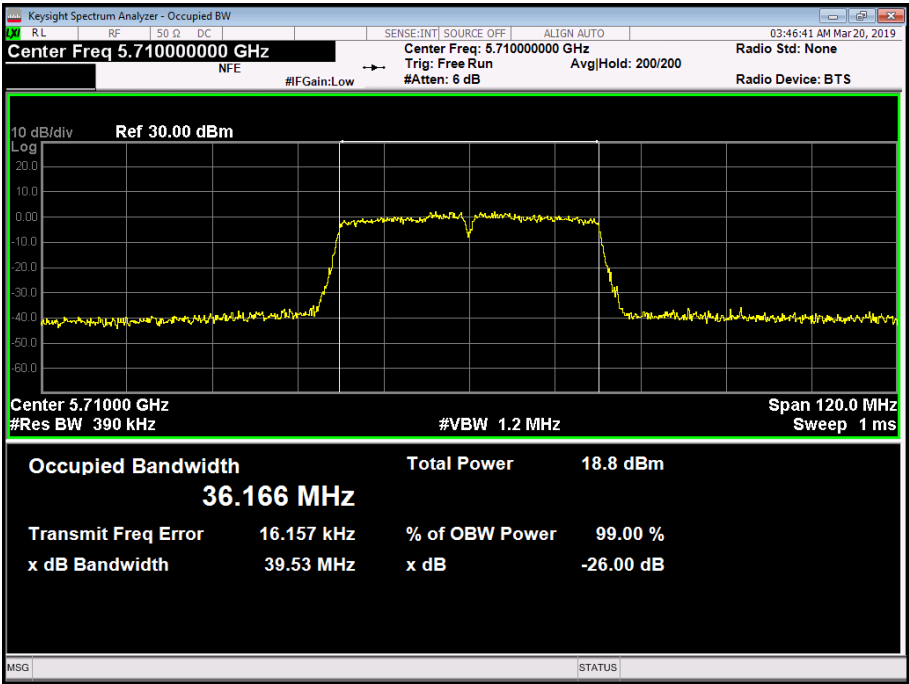


Figure 332 - 5710 MHz - 99% Occupied Bandwidth

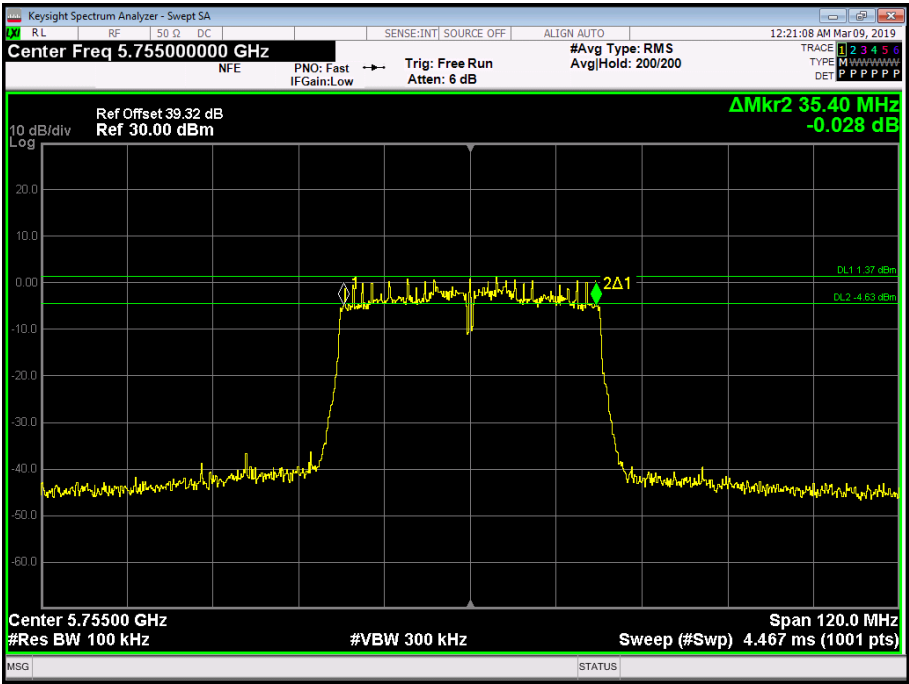
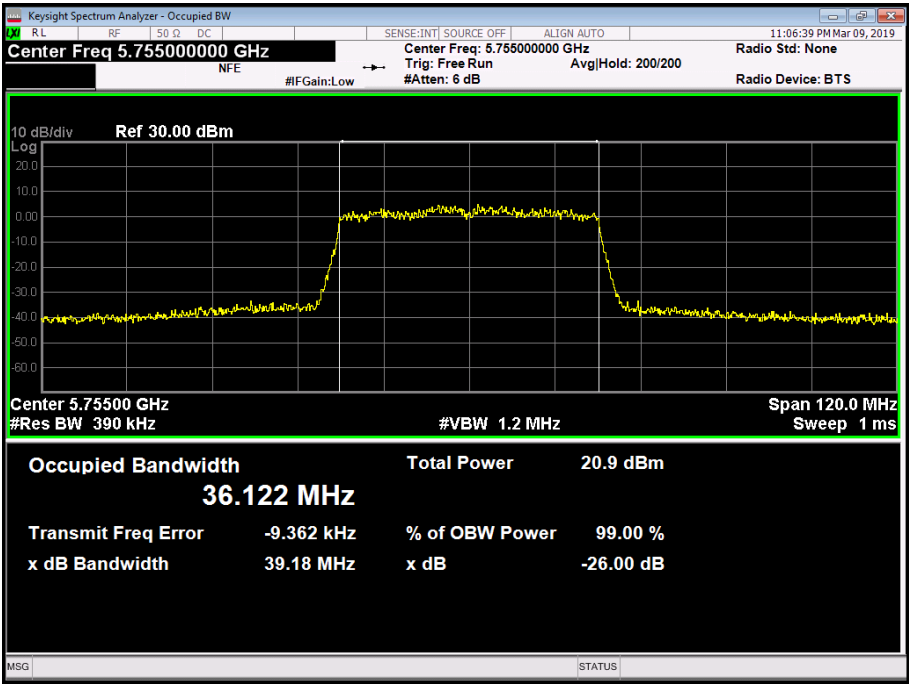
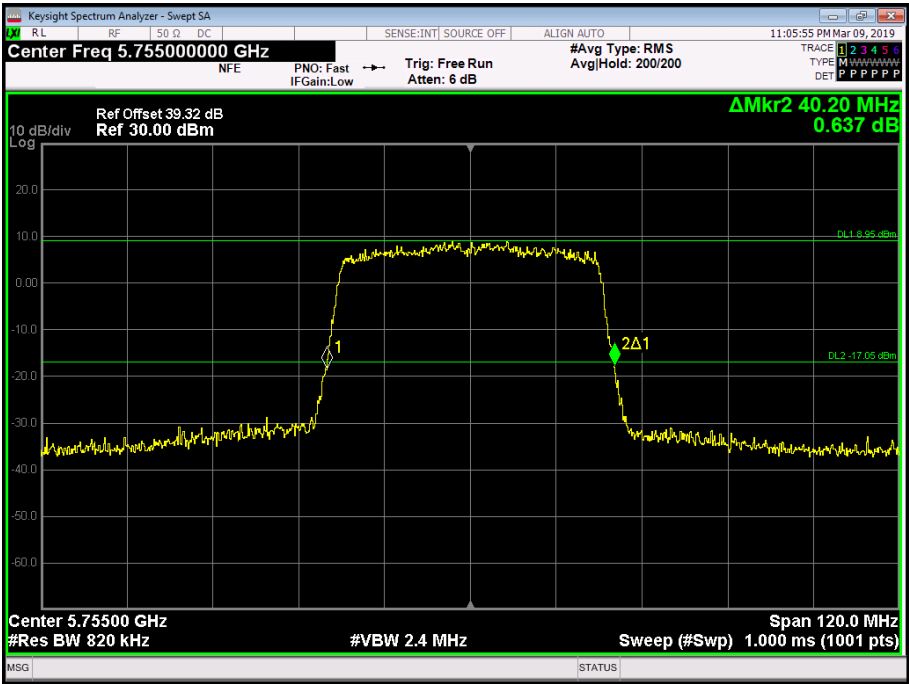


Figure 333 - 5755 MHz - 6 dB DTS Bandwidth



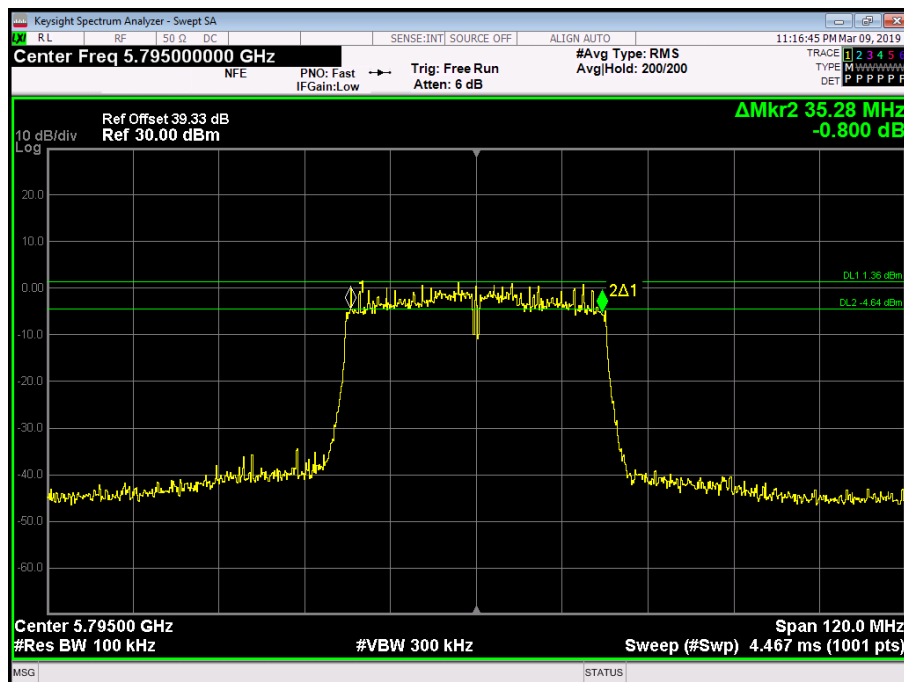


Figure 336 - 5795 MHz - 6 dB DTS Bandwidth



Figure 337 - 5795 MHz - 26 dB Emission Bandwidth

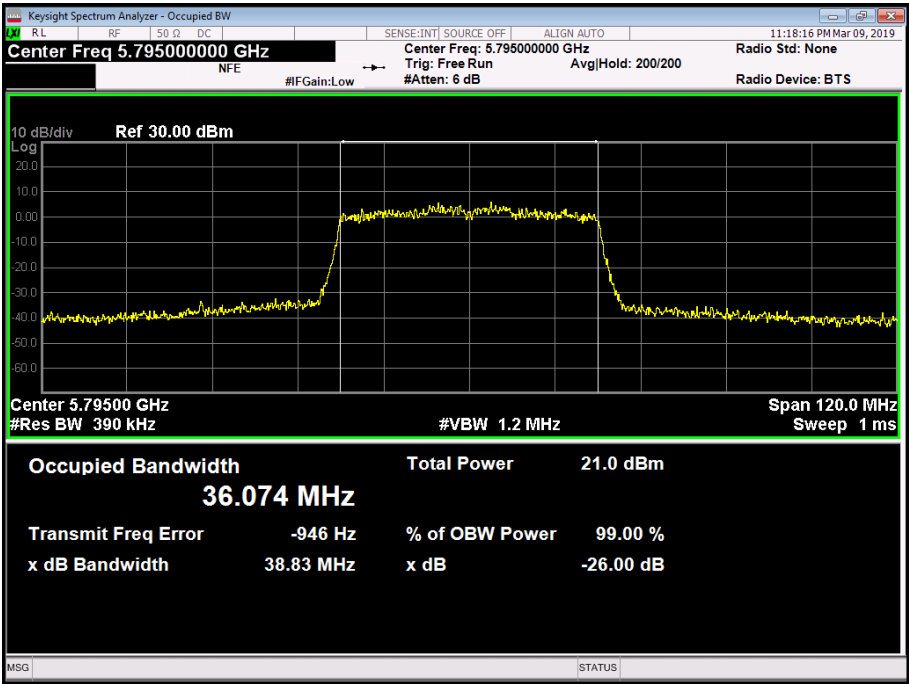


Figure 338 - 5795 MHz - 99% Occupied Bandwidth



802.11n / HT40 MCS8 / MIMO SDM / Cores 0+1

Channel	Straddle	Bottom	Top
Frequency (MHz)	5710	5755	5795
6 dB Bandwidth (MHz)	2.640	35.400	35.280
26 dB Bandwidth (MHz)	5.400	40.800	40.680
99% Bandwidth (MHz)	36.144	36.140	36.087

Table 205

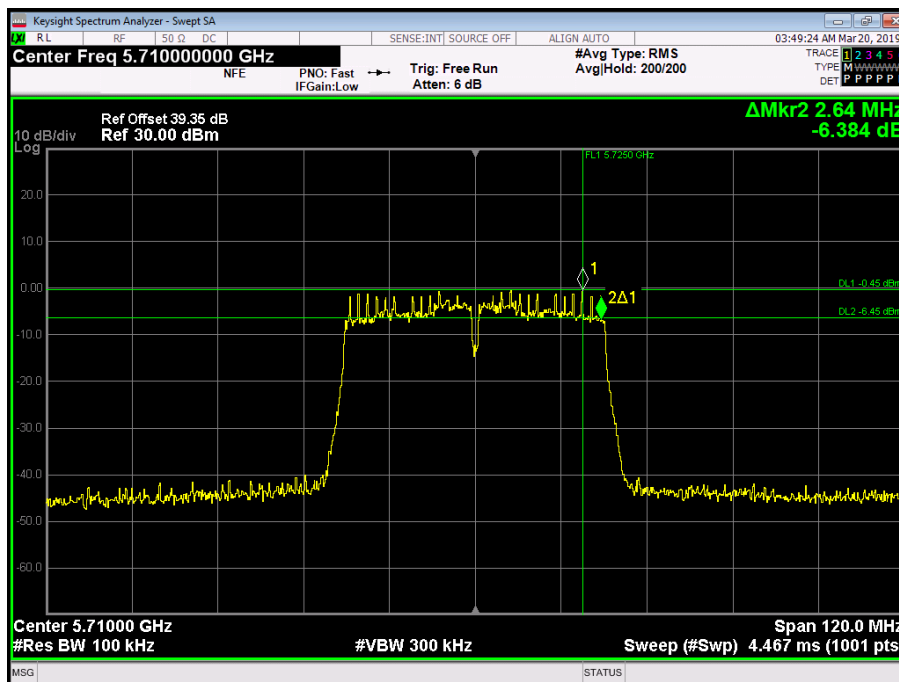


Figure 339 - 5710 MHz - 6 dB DTS Bandwidth

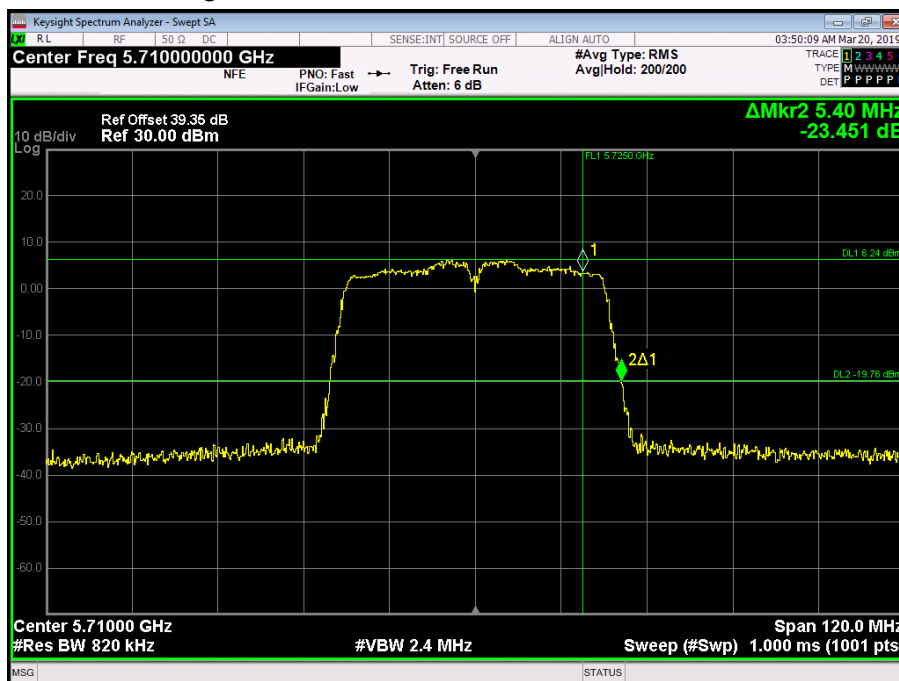


Figure 340 - 5710 MHz - 26 dB Emission Bandwidth

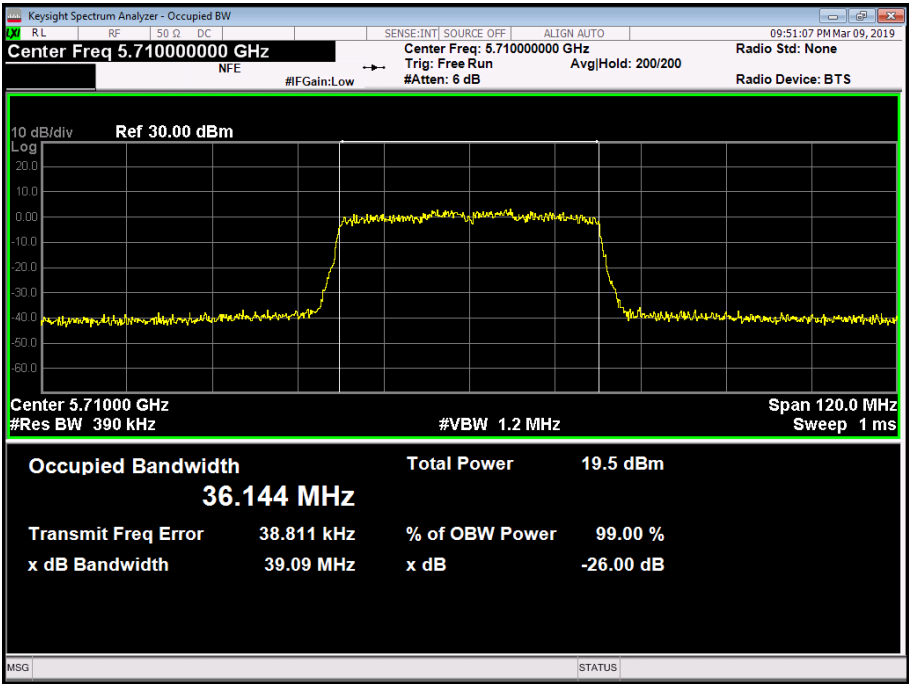


Figure 341 - 5710 MHz - 99% Occupied Bandwidth

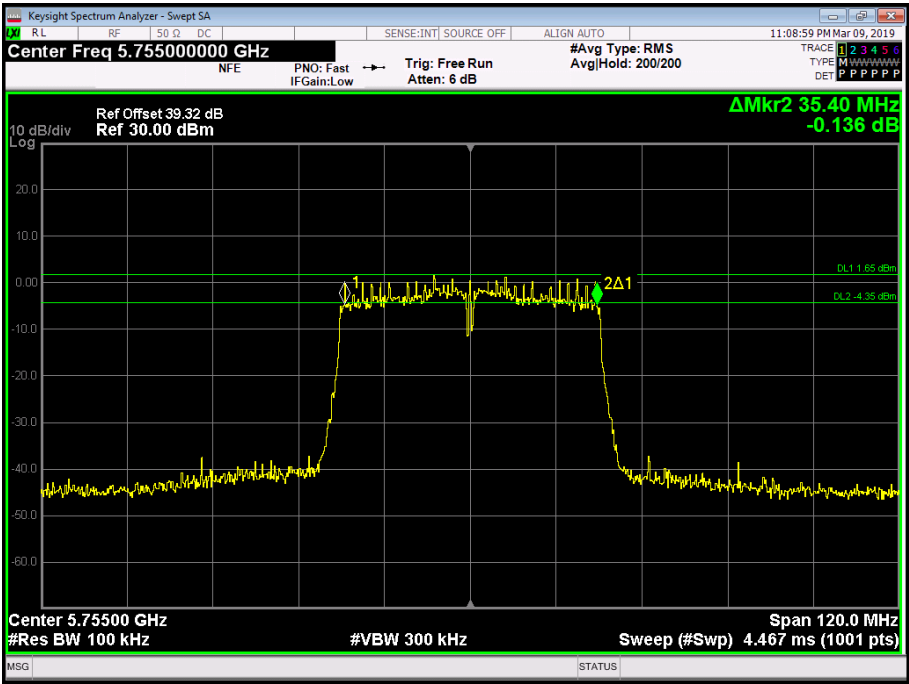


Figure 342 - 5755 MHz - 6 dB DTS Bandwidth



Figure 343 - 5755 MHz - 26 dB Emission Bandwidth

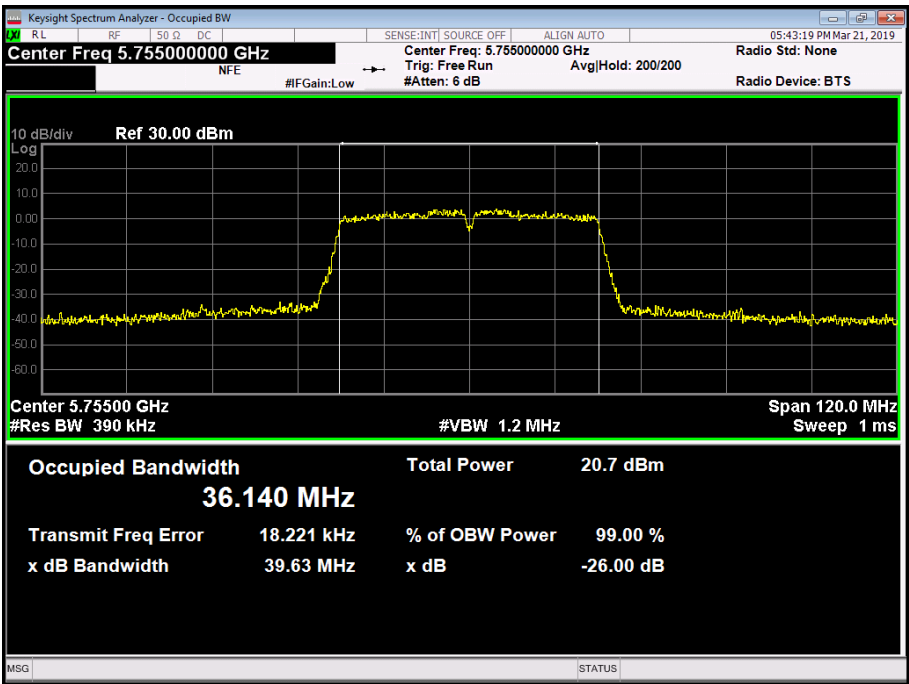


Figure 344 - 5755 MHz - 99% Occupied Bandwidth

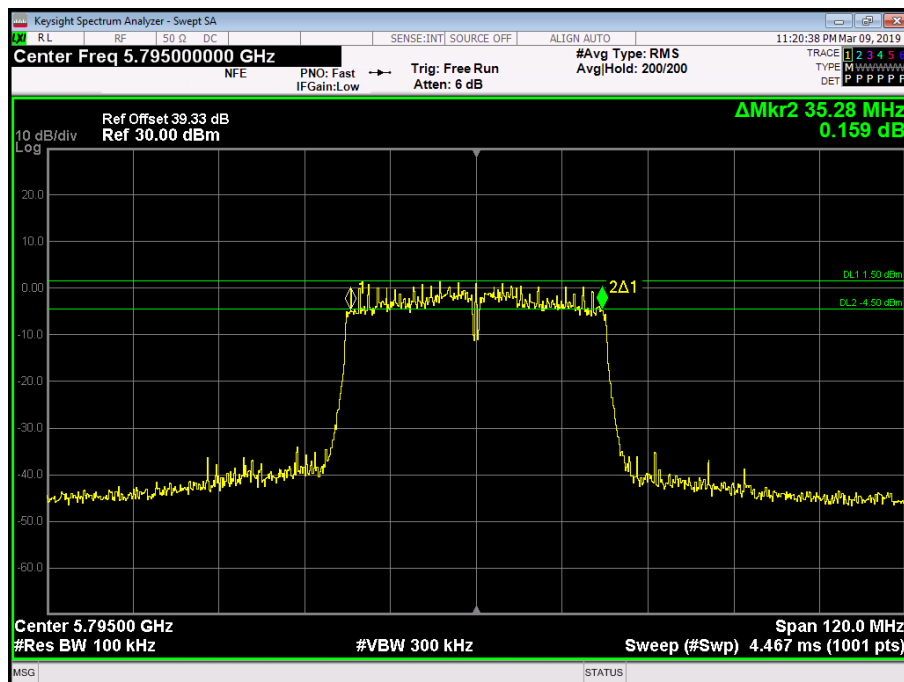


Figure 345 - 5795 MHz - 6 dB DTS Bandwidth



Figure 346 - 5795 MHz - 26 dB Emission Bandwidth

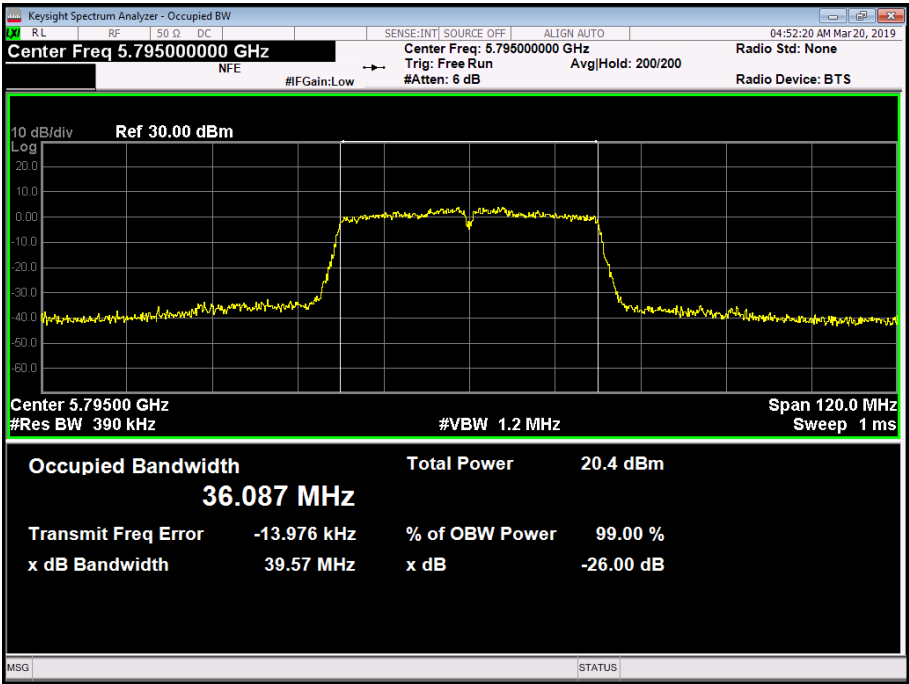


Figure 347 - 5795 MHz - 99% Occupied Bandwidth



802.11n / HT40 MCS0 / MIMO TxBF / Cores 0+1

Channel	Straddle	Bottom	Top
Frequency (MHz)	5710	5755	5795
6 dB Bandwidth (MHz)	2.640	35.640	35.280
26 dB Bandwidth (MHz)	5.160	40.560	40.320
99% Bandwidth (MHz)	36.150	36.113	36.098

Table 206

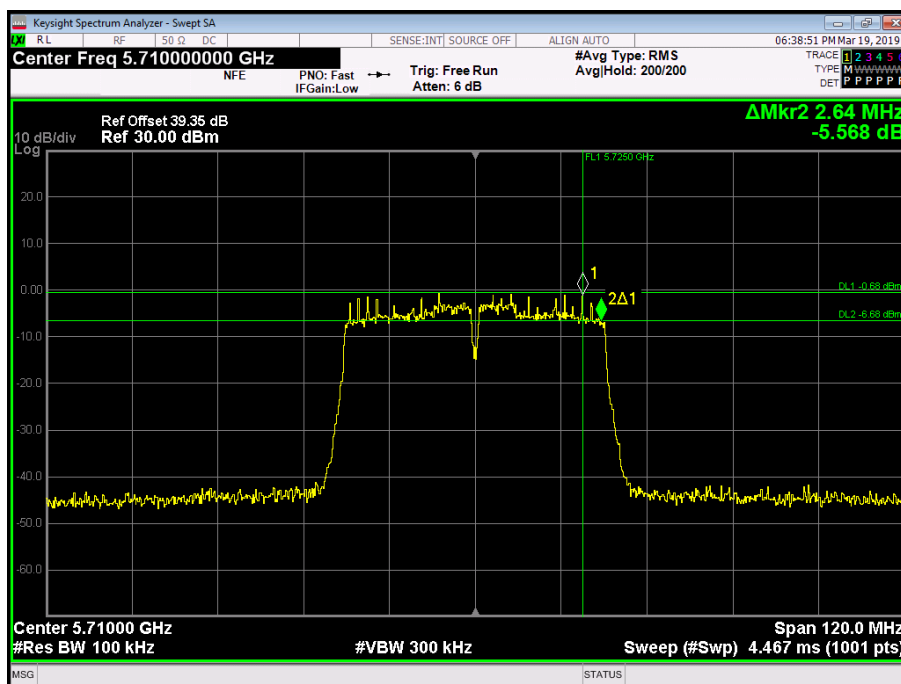


Figure 348 - 5710 MHz - 6 dB DTS Bandwidth



Figure 349 - 5710 MHz - 26 dB Emission Bandwidth

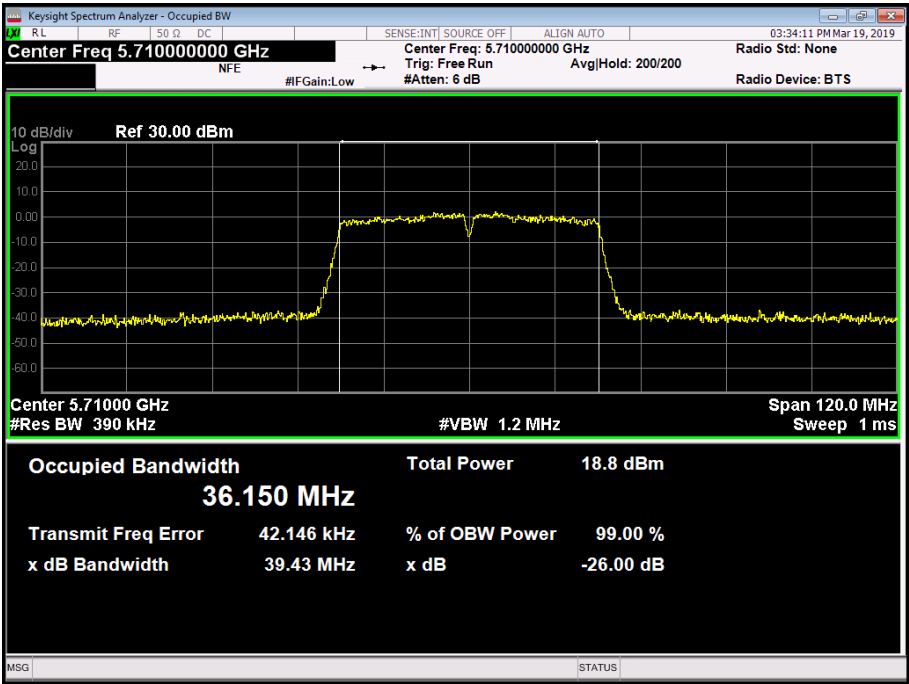


Figure 350 - 5710 MHz - 99% Occupied Bandwidth

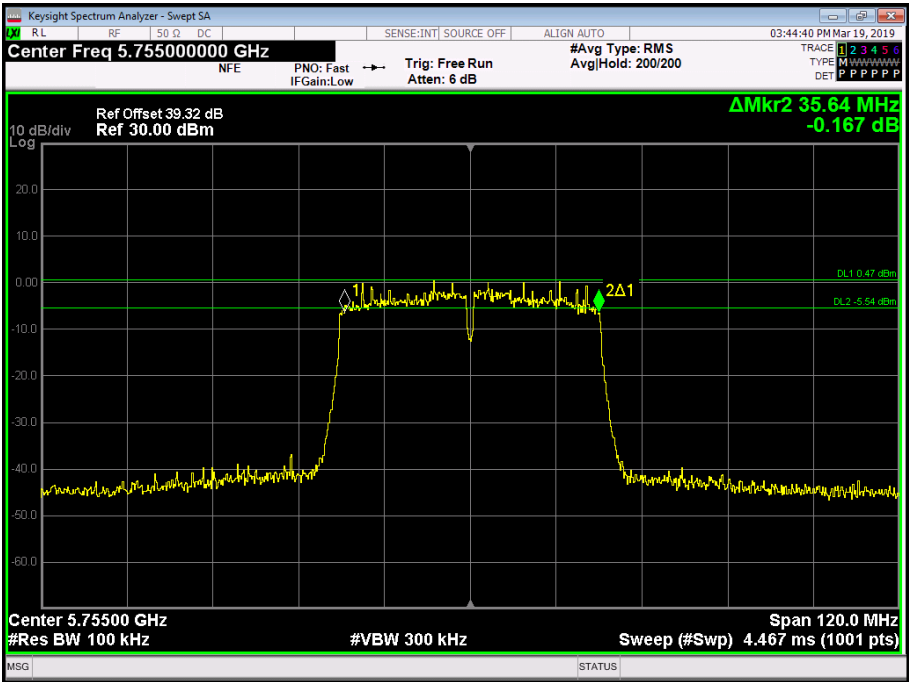


Figure 351 - 5755 MHz - 6 dB DTS Bandwidth

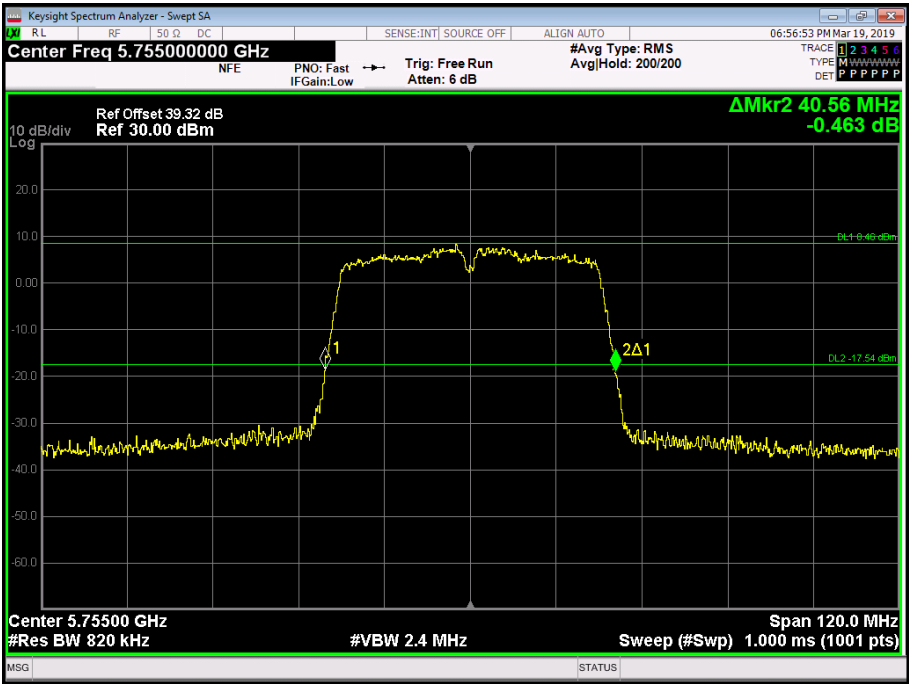


Figure 352 - 5755 MHz - 26 dB Emission Bandwidth

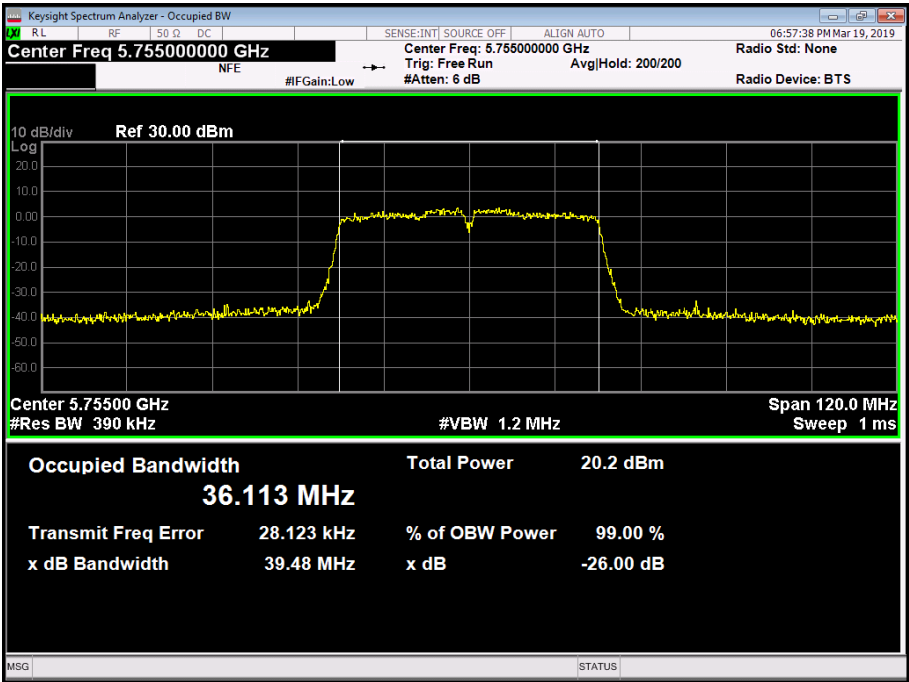


Figure 353 - 5755 MHz - 99% Occupied Bandwidth

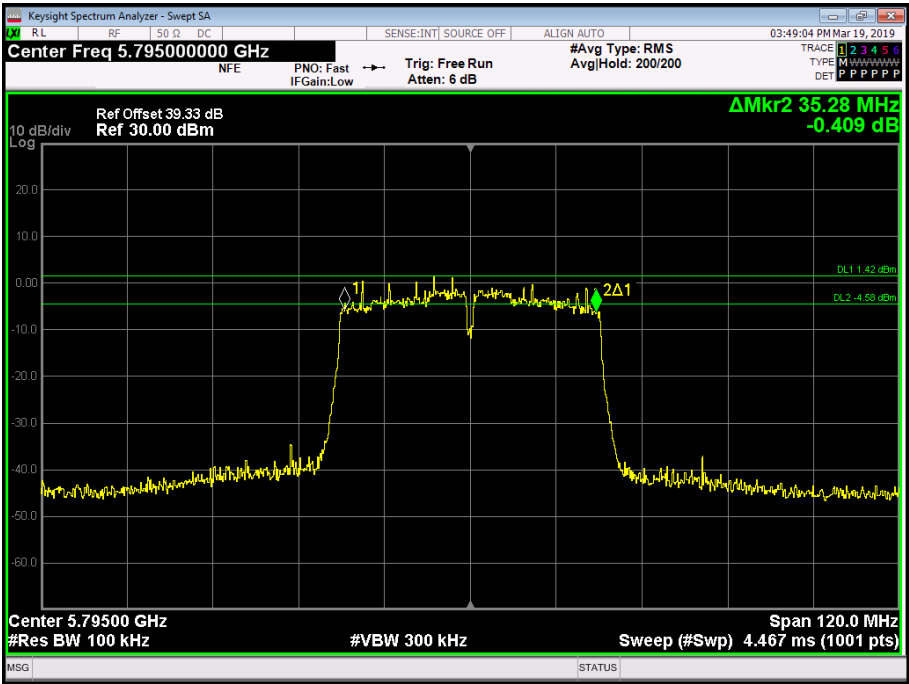


Figure 354 - 5795 MHz - 6 dB DTS Bandwidth

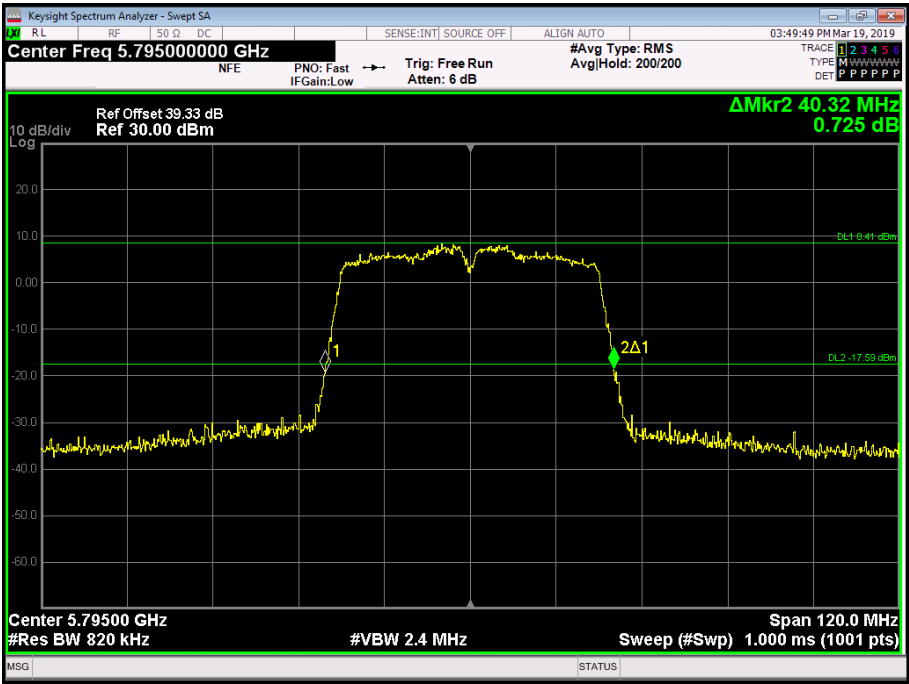


Figure 355 - 5795 MHz - 26 dB Emission Bandwidth

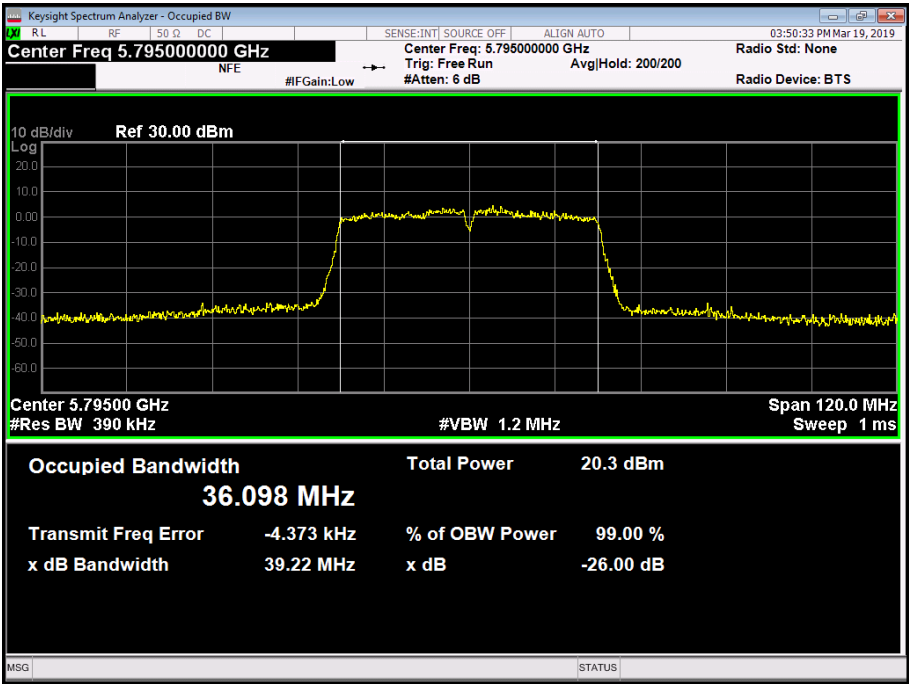


Figure 356 - 5795 MHz - 99% Occupied Bandwidth



802.11ac / VHT80 MCS0x1 / SISO / Core 0

Channel	Straddle	Middle
Frequency (MHz)	5690	5775
6 dB Bandwidth (MHz)	2.680	75.840
26 dB Bandwidth (MHz)	6.040	81.600
99% Bandwidth (MHz)	75.520	75.513

Table 207

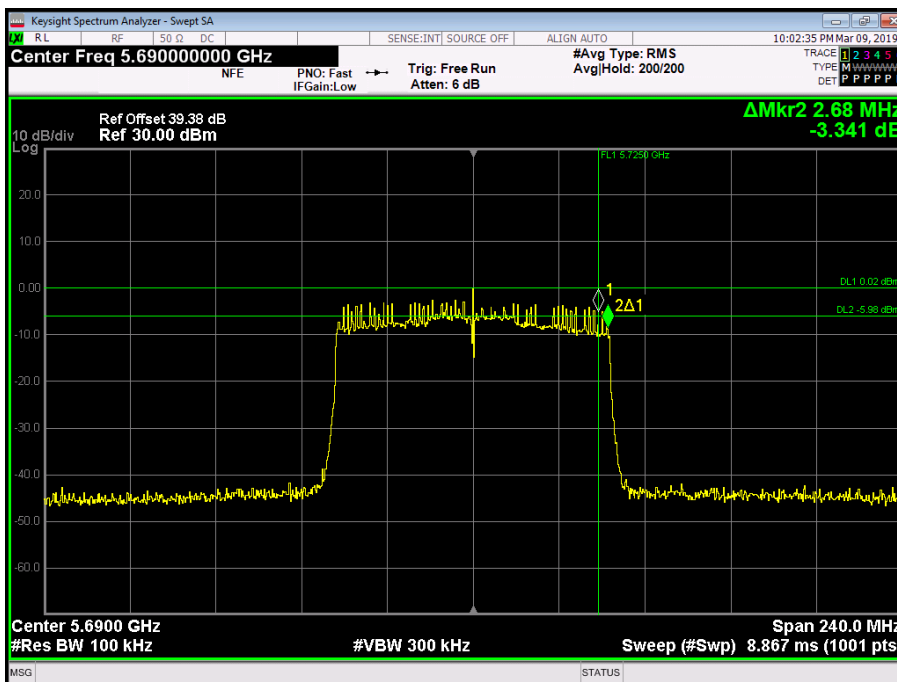


Figure 357 - 5690 MHz - 6 dB DTS Bandwidth

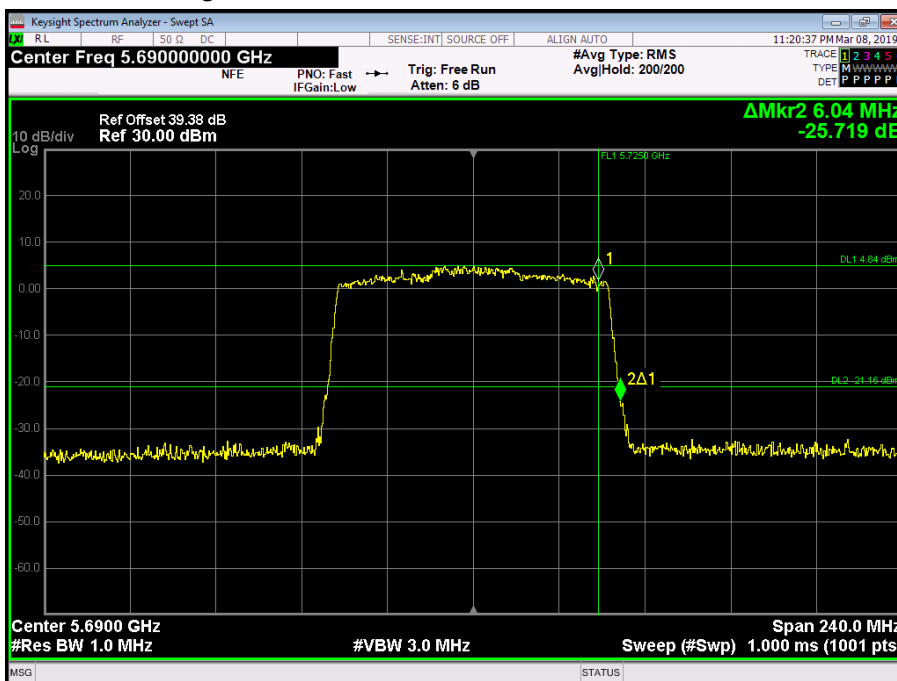


Figure 358 - 5690 MHz - 26 dB Emission Bandwidth

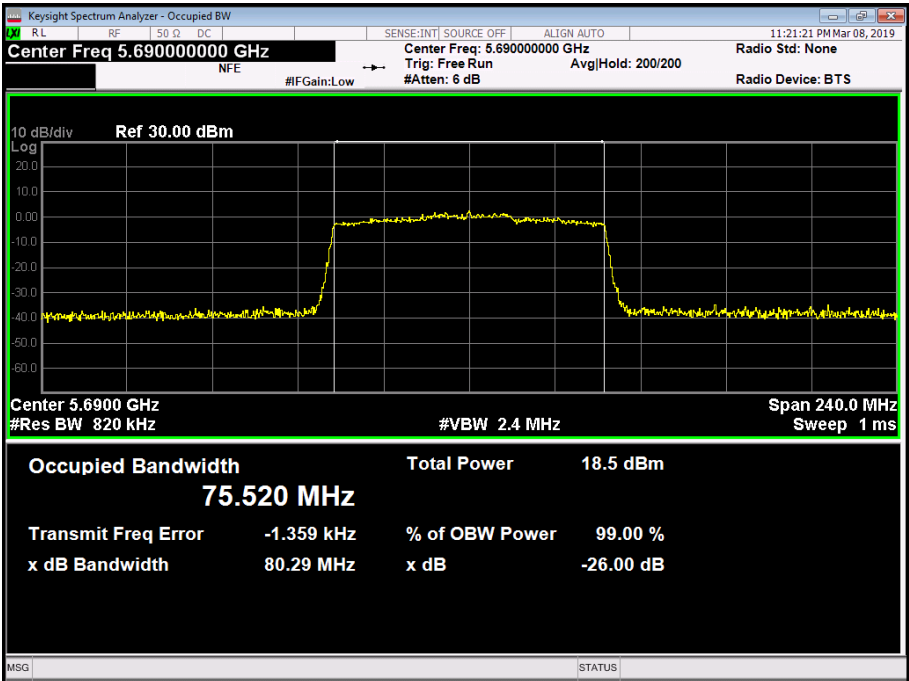


Figure 359 - 5690 MHz - 99% Occupied Bandwidth

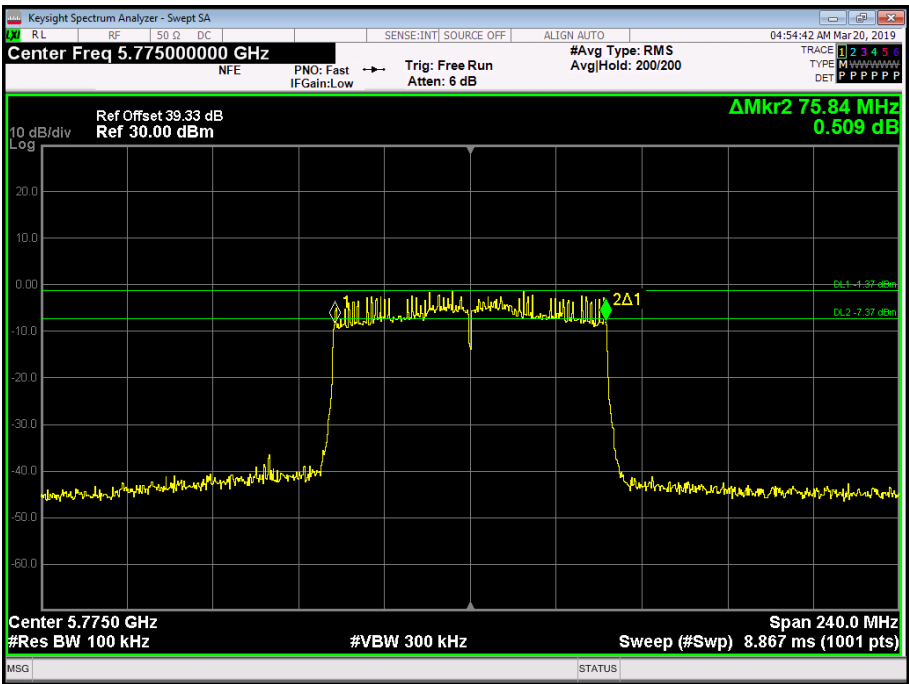


Figure 360 - 5775 MHz - 6 dB DTS Bandwidth

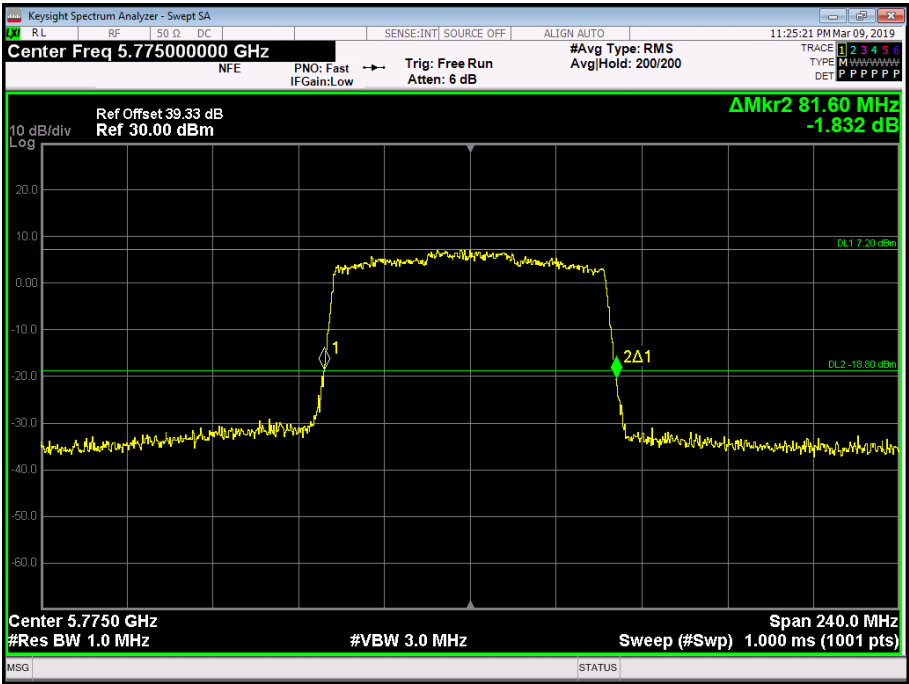


Figure 361 - 5775 MHz - 26 dB Emission Bandwidth

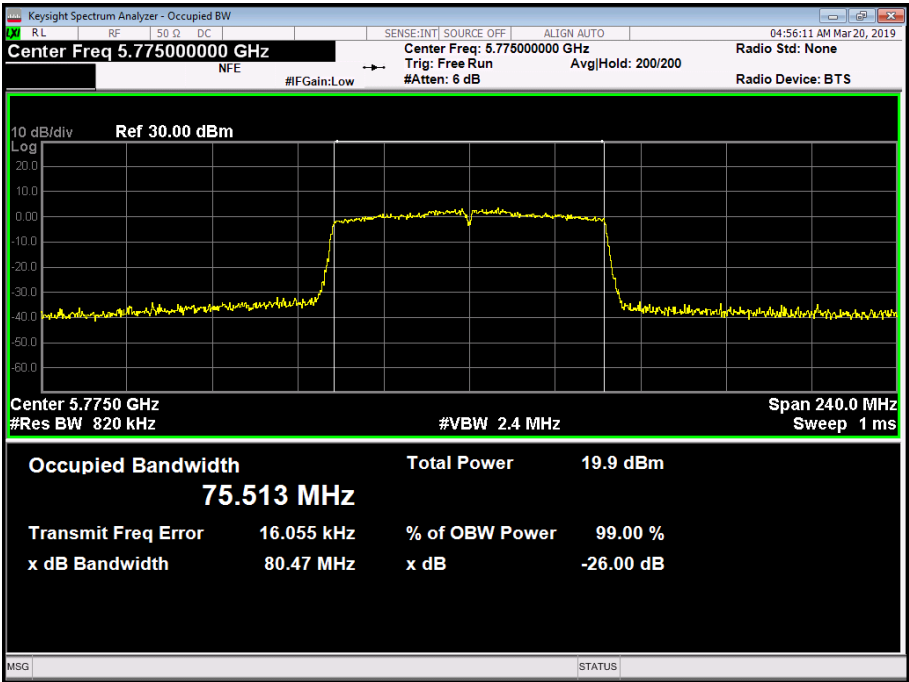


Figure 362 - 5775 MHz - 99% Occupied Bandwidth



802.11ac / VHT80 MCS0x1 / MIMO CDD / Cores 0+1

Channel	Straddle	Middle
Frequency (MHz)	5690	5775
6 dB Bandwidth (MHz)	2.680	75.360
26 dB Bandwidth (MHz)	6.040	81.600
99% Bandwidth (MHz)	75.685	75.520

Table 208

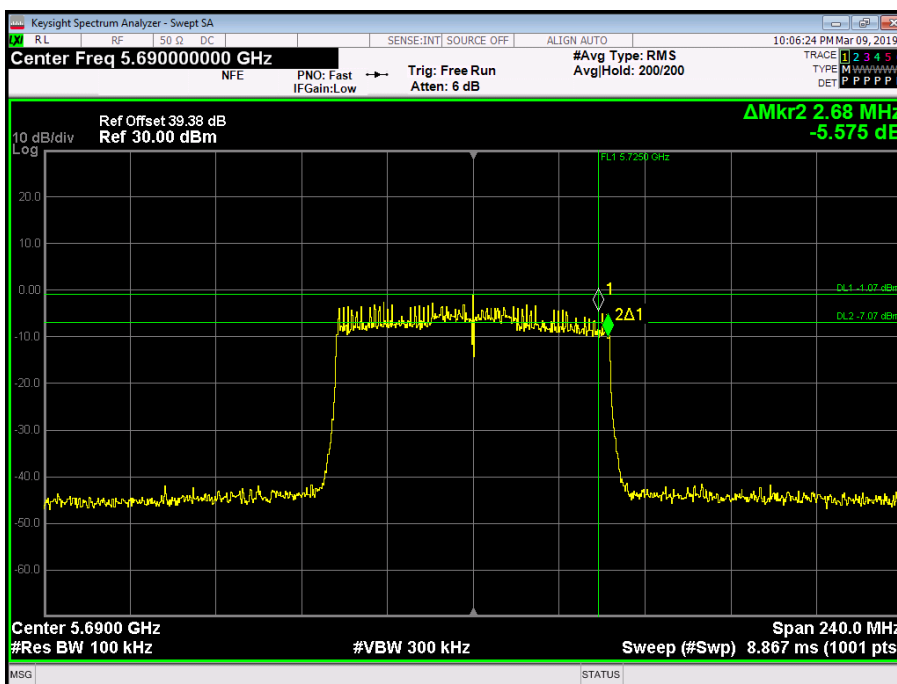


Figure 363 - 5690 MHz - 6 dB DTS Bandwidth

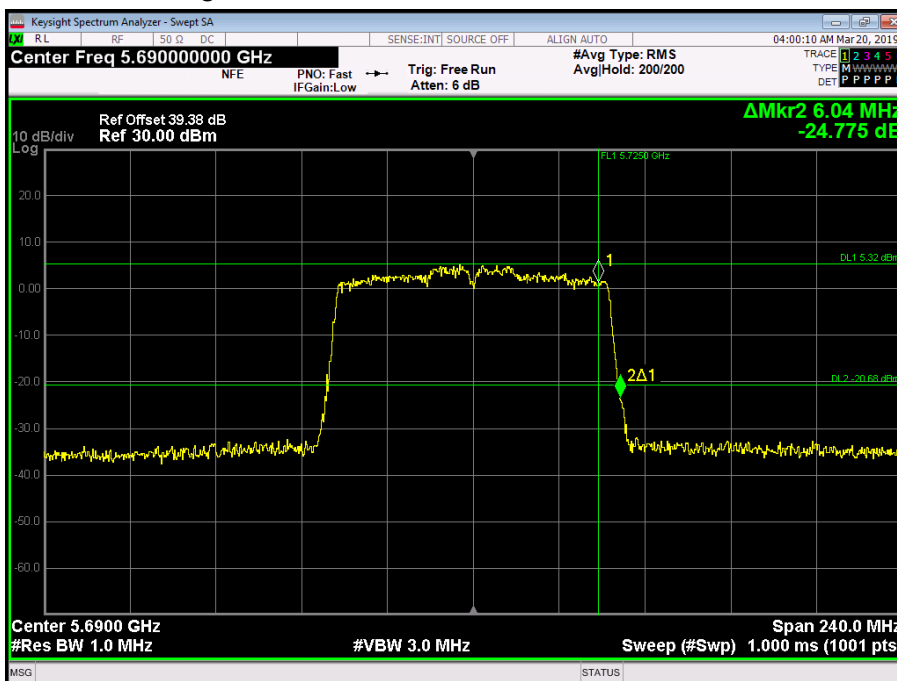


Figure 364 - 5690 MHz - 26 dB Emission Bandwidth

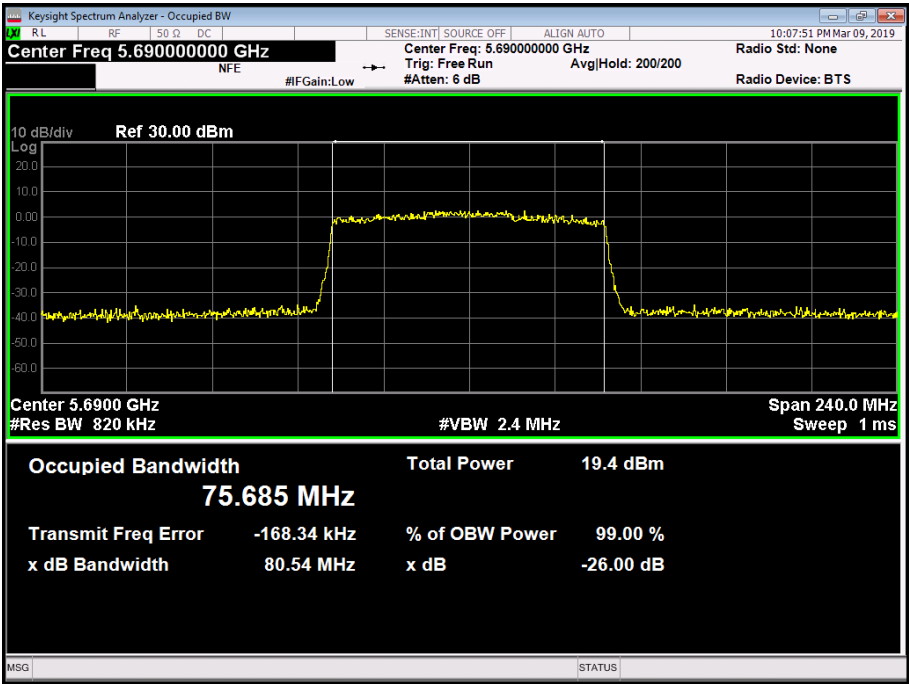


Figure 365 - 5690 MHz - 99% Occupied Bandwidth

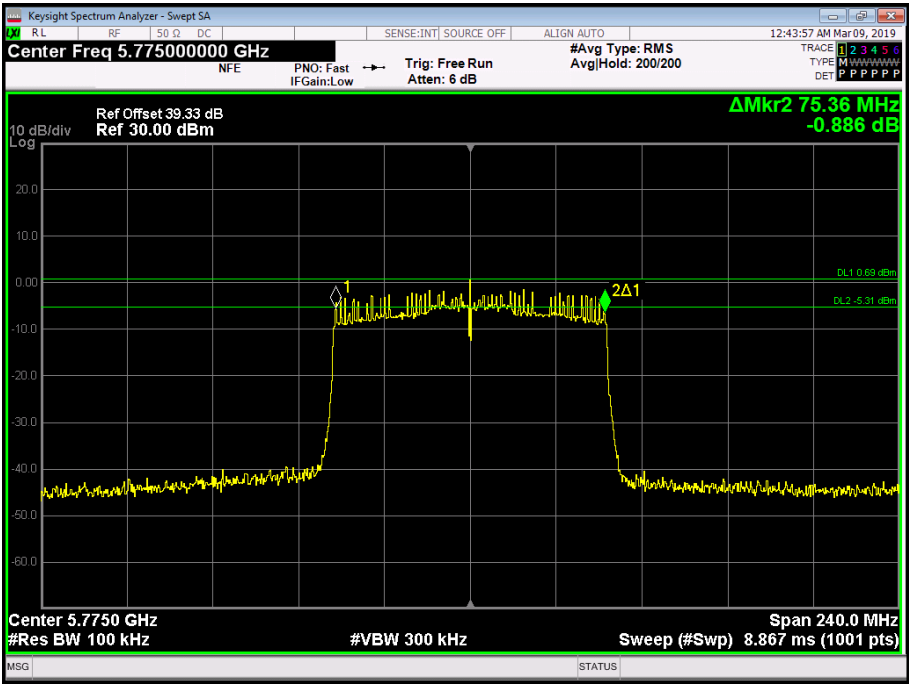


Figure 366 - 5775 MHz - 6 dB DTS Bandwidth

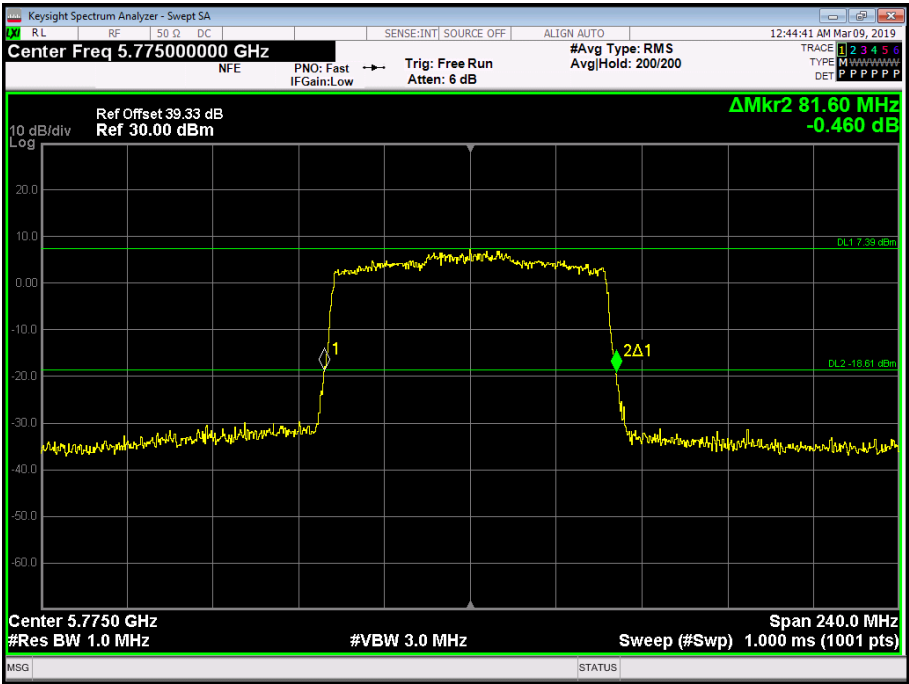


Figure 367 - 5775 MHz - 26 dB Emission Bandwidth

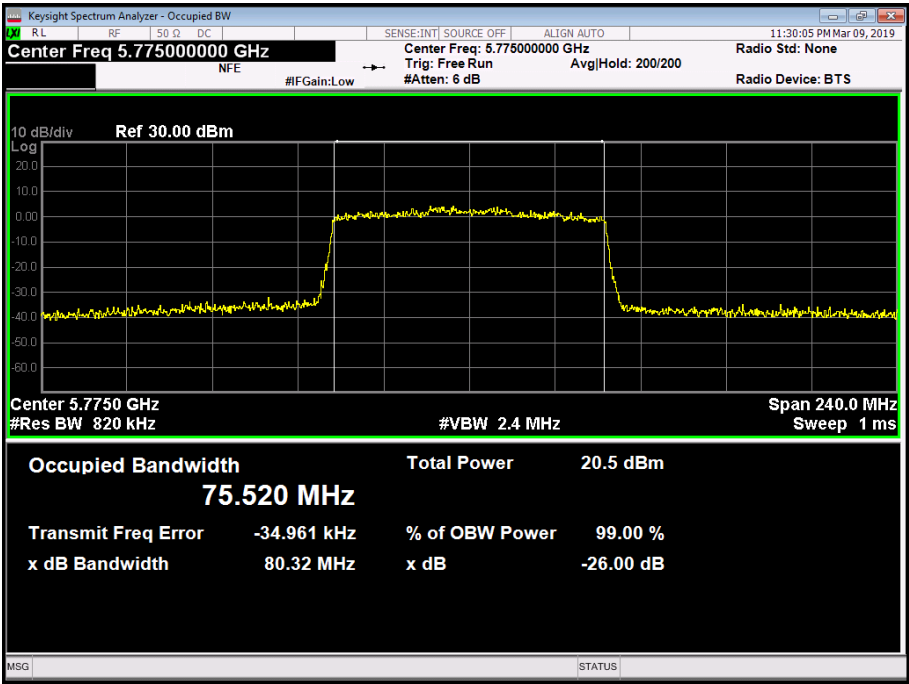


Figure 368 - 5775 MHz - 99% Occupied Bandwidth



802.11ac / VHT80 MCS0x2 / MIMO SDM / Cores 0+1

Channel	Straddle	Middle
Frequency (MHz)	5690	5775
6 dB Bandwidth (MHz)	2.680	75.360
26 dB Bandwidth (MHz)	6.040	81.120
99% Bandwidth (MHz)	75.643	75.567

Table 209

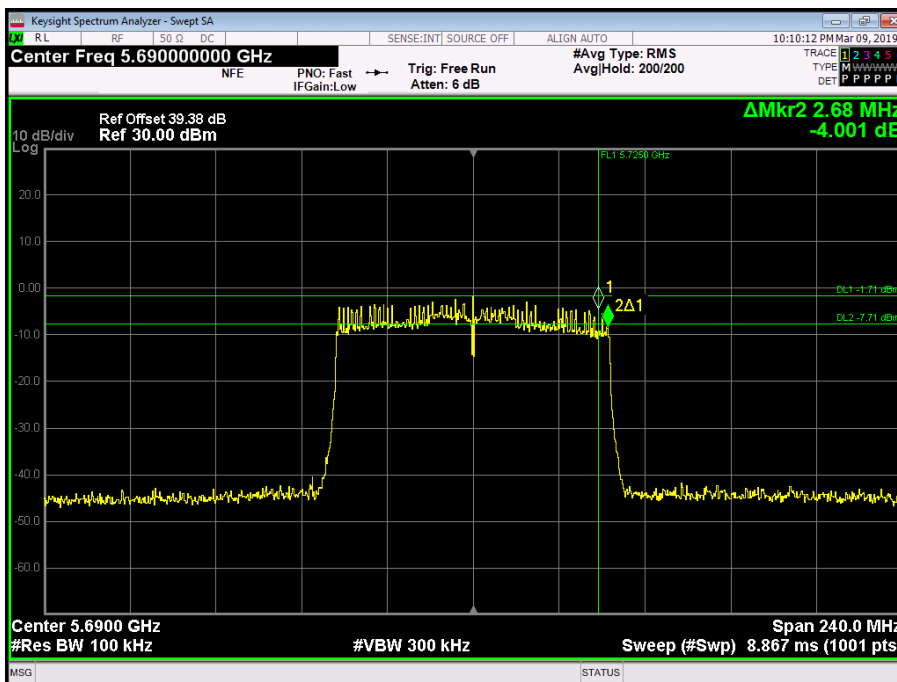


Figure 369 - 5690 MHz - 6 dB DTS Bandwidth

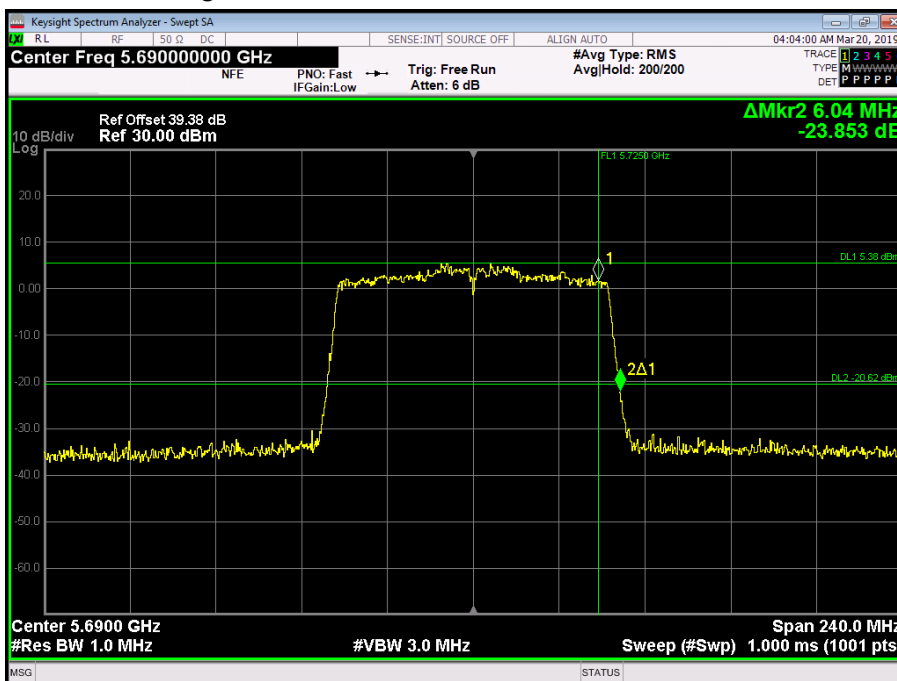


Figure 370 - 5690 MHz - 26 dB Emission Bandwidth

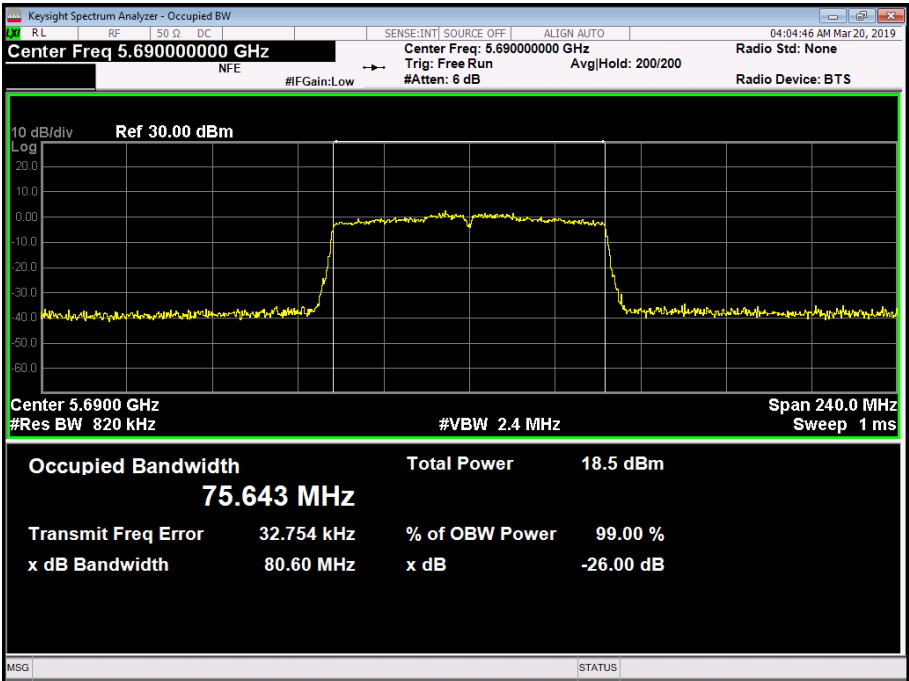


Figure 371 - 5690 MHz - 99% Occupied Bandwidth

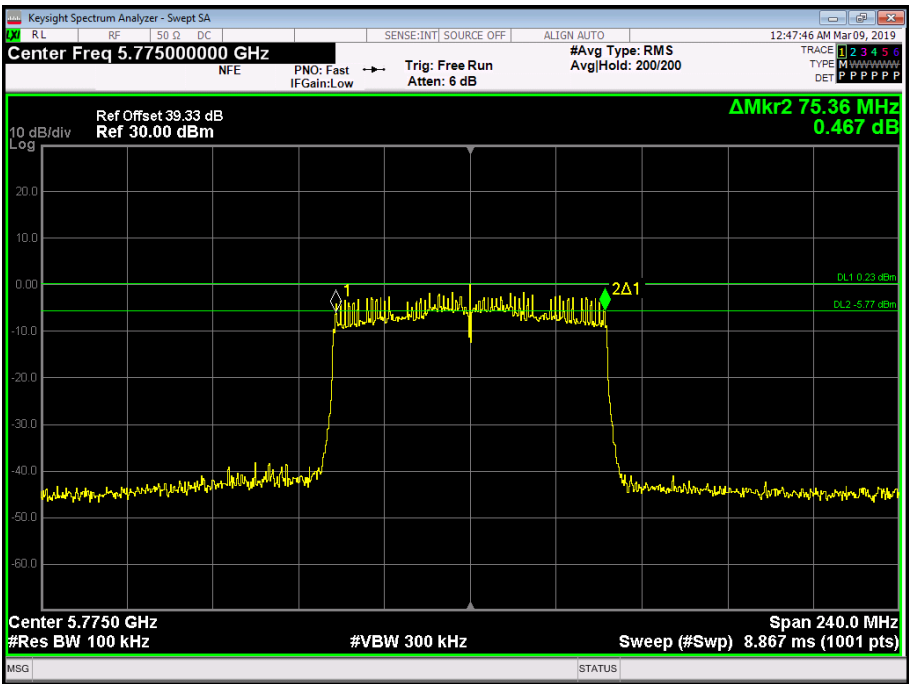


Figure 372 - 5775 MHz - 6 dB DTS Bandwidth

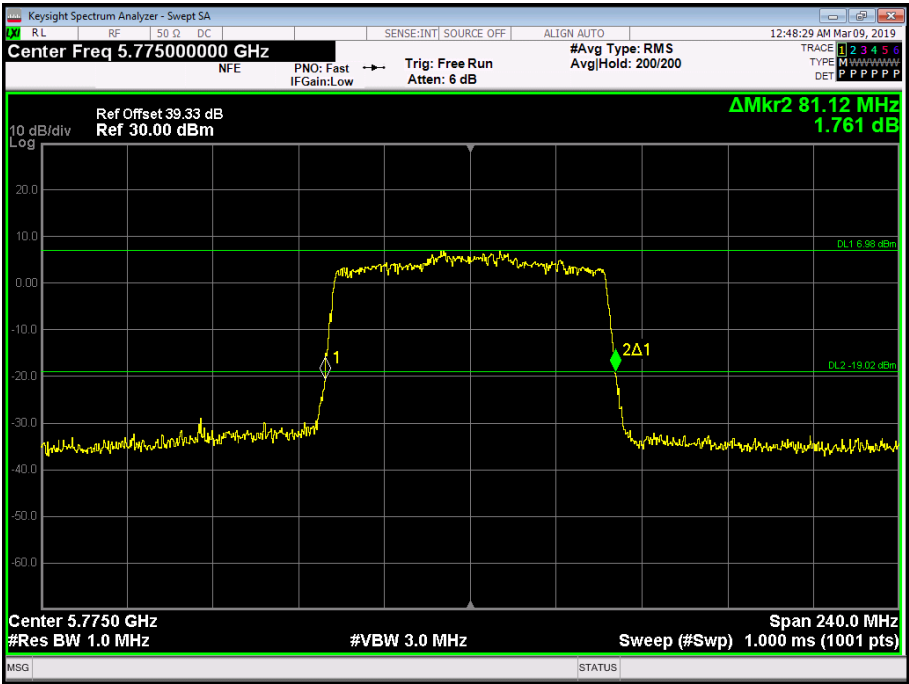


Figure 373 - 5775 MHz - 26 dB Emission Bandwidth

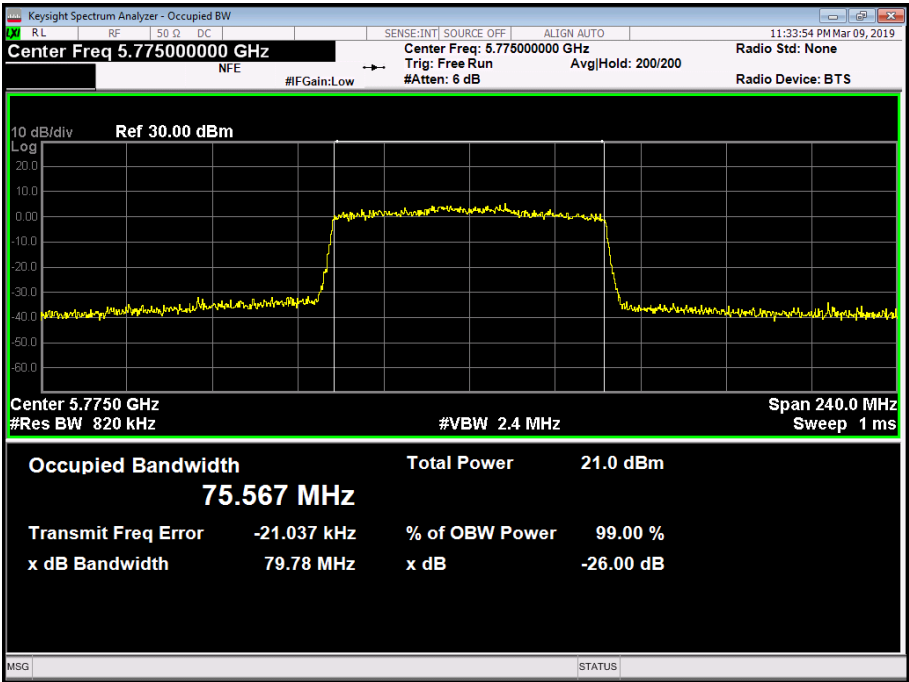


Figure 374 - 5775 MHz - 99% Occupied Bandwidth



802.11ac / VHT80 MCS0x1 / MIMO TxBF / Cores 0+1

Channel	Straddle	Middle
Frequency (MHz)	5690	5775
6 dB Bandwidth (MHz)	2.680	73.200
26 dB Bandwidth (MHz)	5.560	82.080
99% Bandwidth (MHz)	75.629	75.436

Table 210

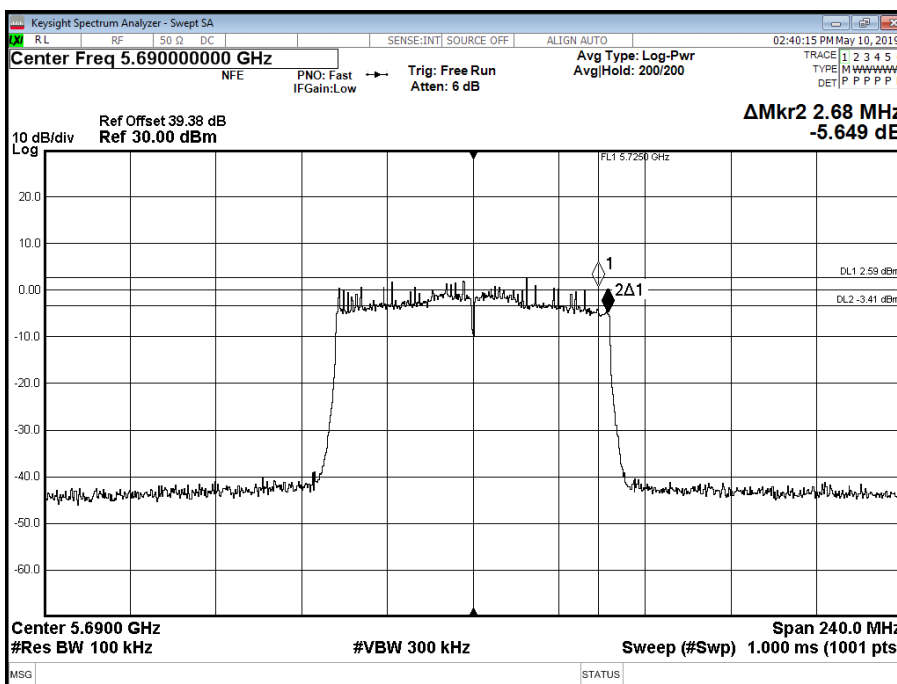


Figure 375 - 5690 MHz - 6 dB DTS Bandwidth

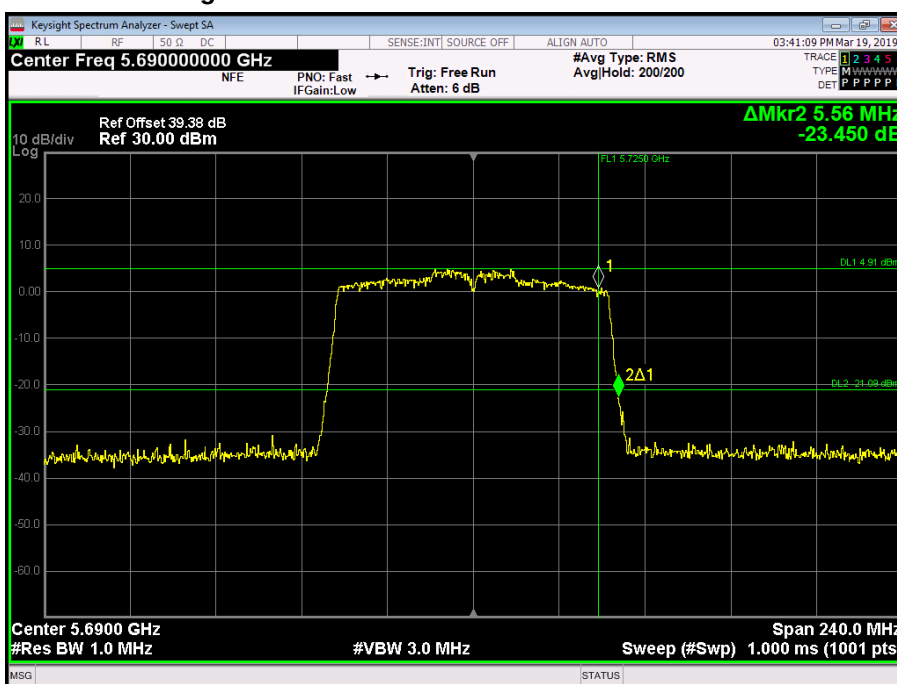


Figure 376 - 5690 MHz - 26 dB Emission Bandwidth

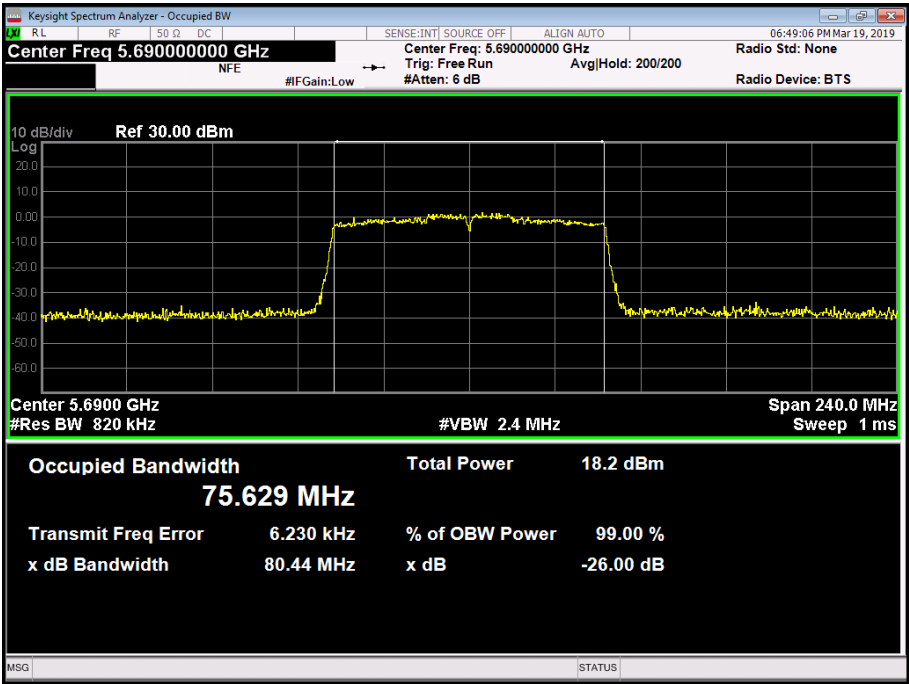


Figure 377 - 5690 MHz - 99% Occupied Bandwidth

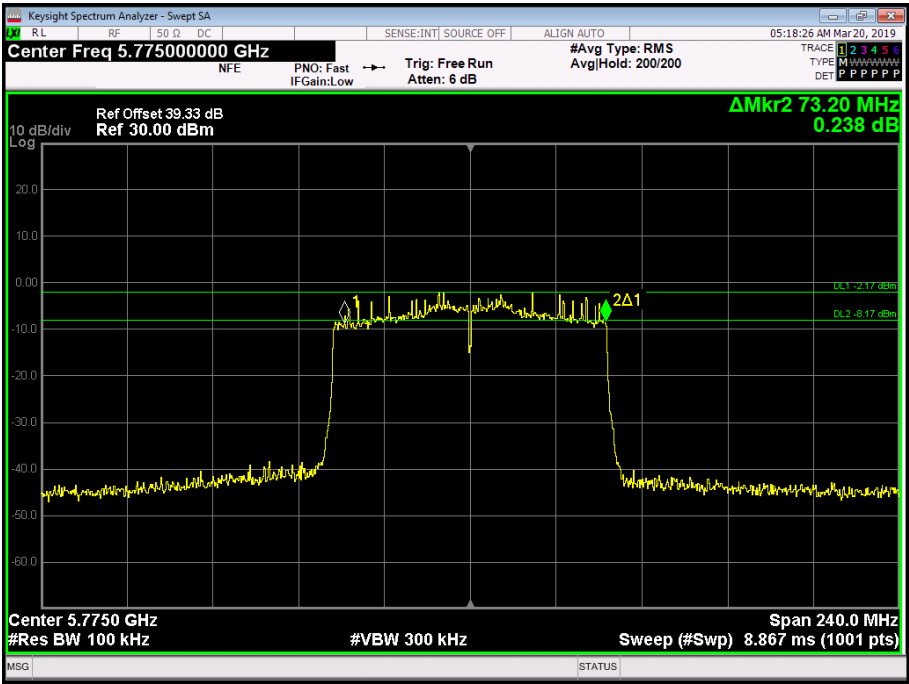


Figure 378 - 5775 MHz - 6 dB DTS Bandwidth

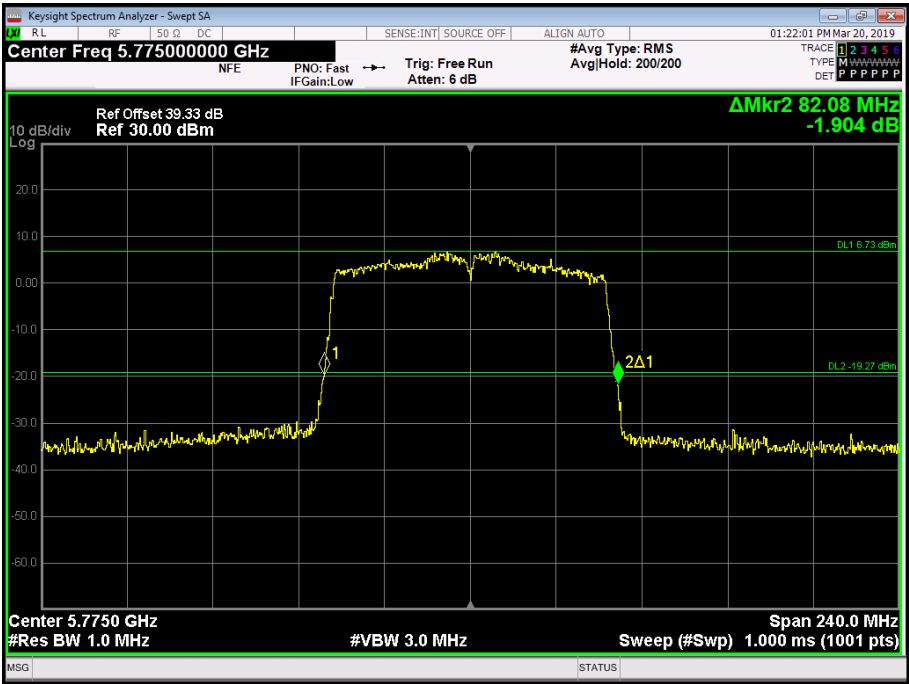


Figure 379 - 5775 MHz - 26 dB Emission Bandwidth

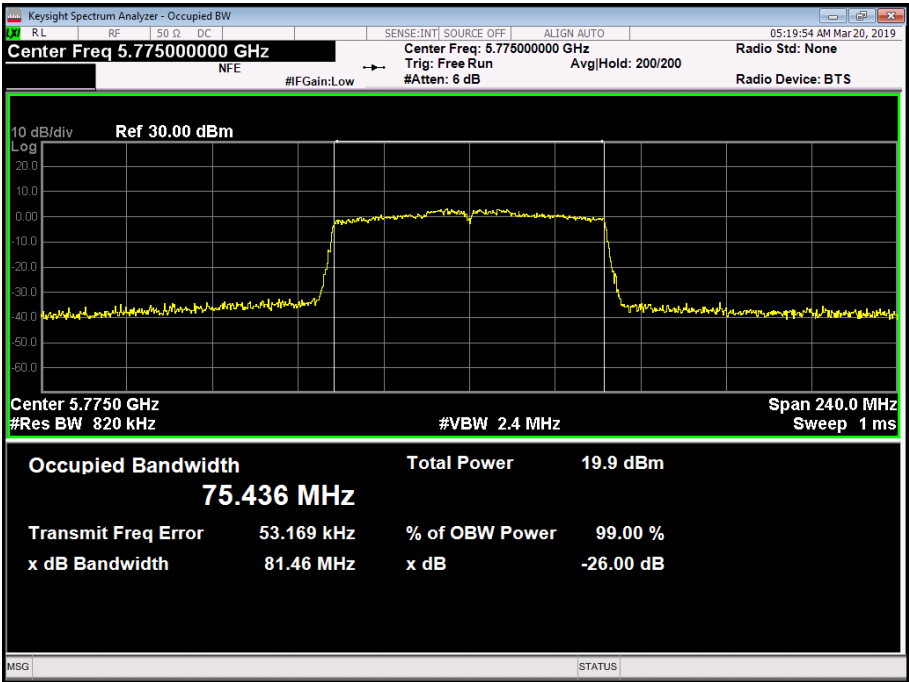


Figure 380 - 5775 MHz - 99% Occupied Bandwidth



2.3.10 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 3.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Attenuator 10dB 10W	Weinschel	47-10-34	398	12	18-Jul-2019
Multimeter	Iso-tech	IDM101	2424	12	12-Dec-2019
Hygrometer	Rotronic	I-1000	2891	12	18-Sep-/2019
ZVA40 Network Analyser	Rohde & Schwarz	100127	3548	12	17-Oct-2019
ZV-Z54 Calibration Unit	Rohde & Schwarz	1000001	4368	12	22-Oct-2019
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	06-Feb-2020
Power splitter - 2 port	Mini-Circuits	ZN2PD-63-S+	4742	12	19-Sep-2019
Power splitter - 2 port	Mini-Circuits	ZN2PD-63-S+	4743	12	19-Sep-2019
USB Power Sensor	Boonton	RTP5006	5187	12	12-Dec-2019
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
Power Splitter, 4 way	Mini-Circuits	ZN4PD1-63-S+	5235	0	O/P Mon
Attenuator 10dB 2W	Telegartner	J01156A0031	N/A	N/A	Not serialised.
Attenuator 10dB 2W	Telegartner	J01156A0031	N/A	N/A	Not serialised.
Attenuator 10dB 2W	Telegartner	J01156A0031	N/A	N/A	Not serialised.

Table 211



2.4 Authorised Band Edges

2.4.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (b)
Industry Canada RSS-247, Clause 6.2

2.4.2 Equipment Under Test and Modification State

C02Y4006L59F, S/N: TBC - Modification State 0

2.4.3 Date of Test

06-February-2019 to 12-March-2019

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.6.

For U-NII-2C channels, the limit line on the following plots equated to -27dBm/MHz. EIRP was converted to field strength at 3m using the following formula:

Field Strength (dBμV/m at 3m) = EIRP (dBm) + 95.2 dB

Authorised band edge measurements were performed, with the device operating in SISO, MIMO and TxBF, across the various modes, and radio cores (Core 0, Core 1) supported by the device.

The measurements displayed within this report, have been limited to those modes and cores, which have been shown to be worst case.

Further measurements are held on file by TÜV SÜD and are available if required.

2.4.5 Environmental Conditions

Ambient Temperature 21.7 - 29.4 °C
Relative Humidity 22.5 – 45.0 %

2.4.6 Test Results

20 MHz Bandwidth

Measurement Configuration	Mode	Transmitter Channel	Band Edge Frequency (MHz)	Peak Level (dBuV/m)
SISO	802.11a	100	5470.0	60.86
SISO	802.11a	140	5725.0	63.45
SISO	802.11a	144	5850.0	58.60
SISO	802.11a	149	5725.0	63.67
SISO	802.11a	165	5850.0	62.24

Table 212 - Authorised Band Edge Results

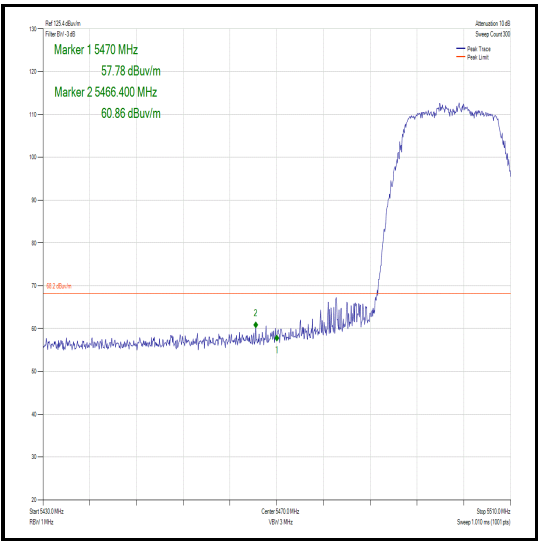


Figure 381 – Channel 100 - Authorised Band Edge

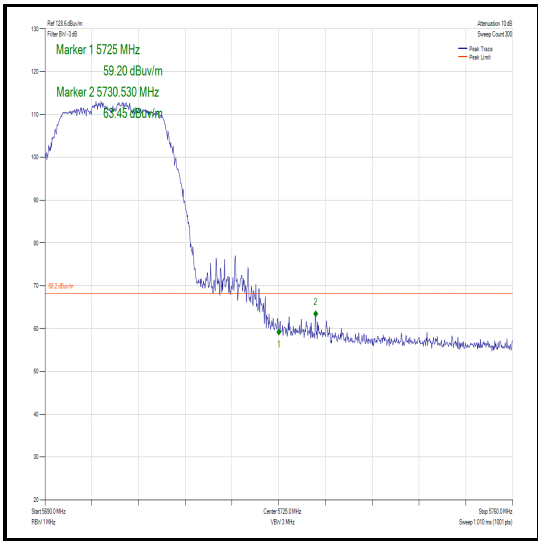


Figure 382 – Channel 140 - Authorised Band Edge

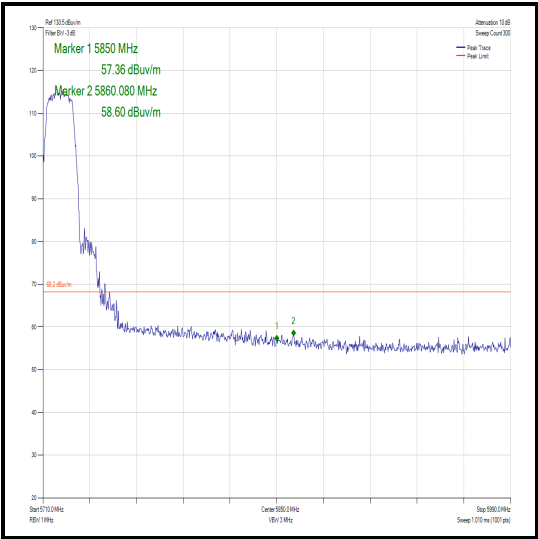


Figure 383 – Channel 144 - Authorised Band Edge

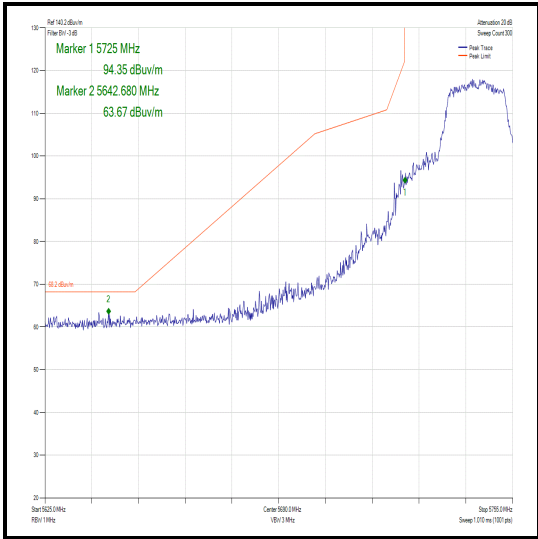


Figure 384 – Channel 149 - Authorised Band Edge

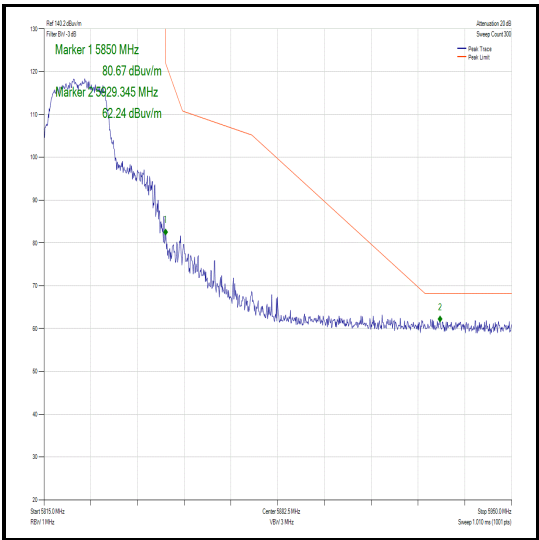


Figure 385 – Channel 165 - Authorised Band Edge