

7.8 Test data for 802.11ac_HT40 RLAN Mode

7.8.1 Test data for Antenna 0

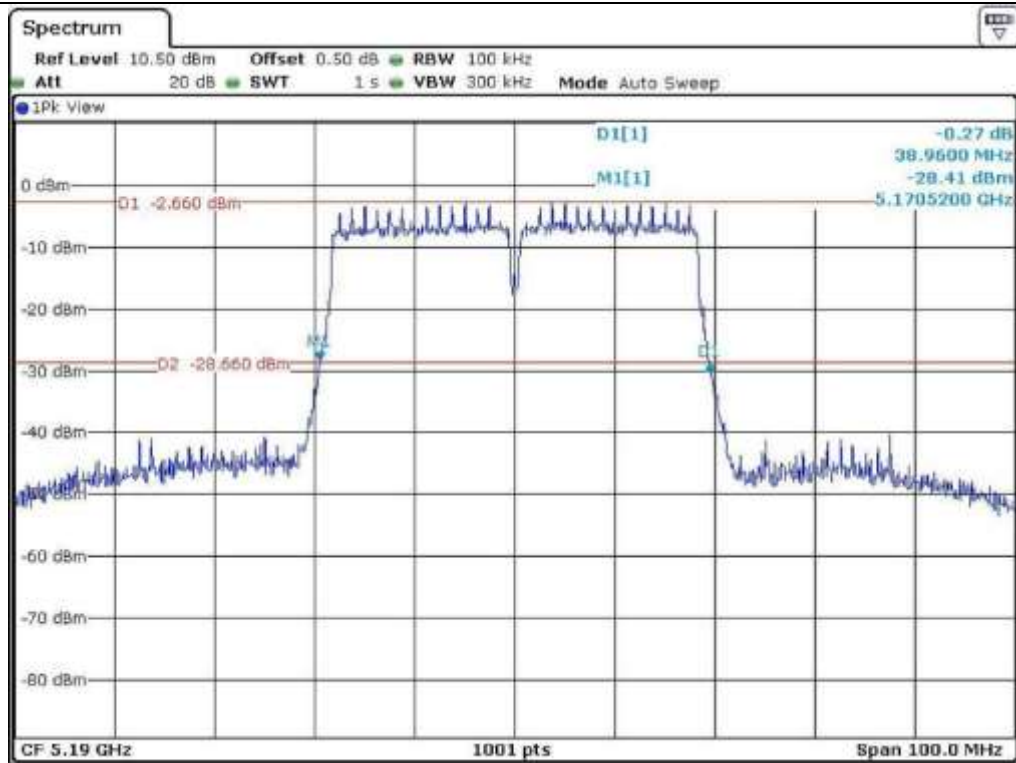
-. Test Date : June 17, 2015

-. Test Result : Pass

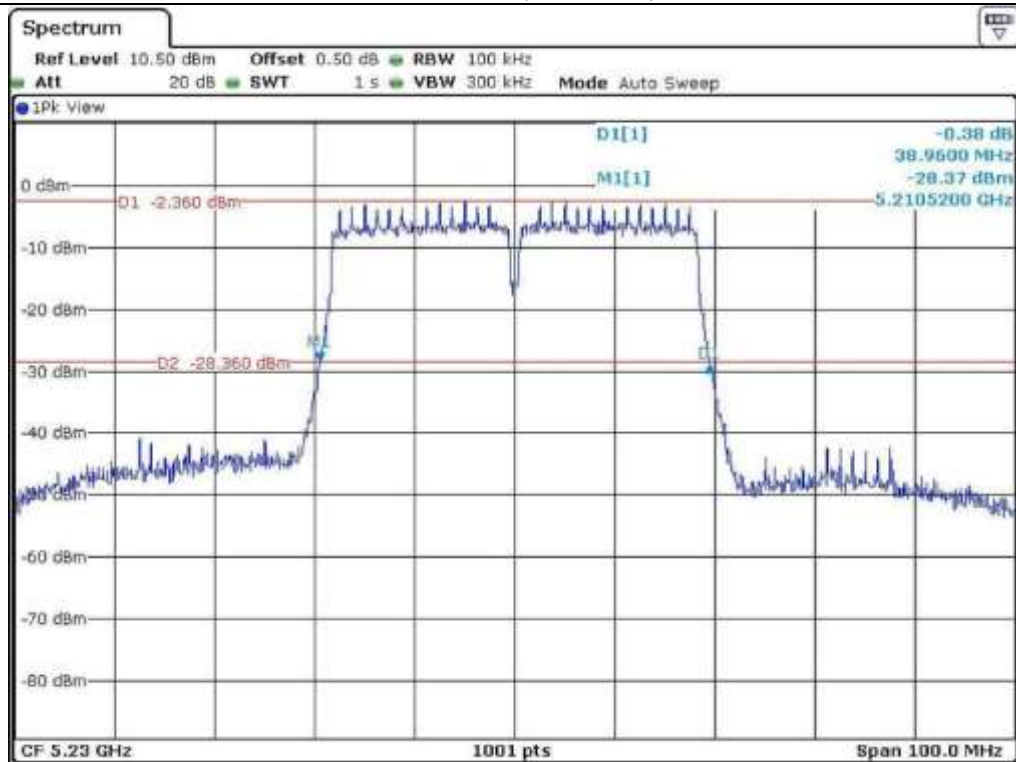
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 190	38.96	36.16
	High	5 230	38.96	36.16
5 250 ~ 5 350	Low	5 270	38.86	36.16
	High	5 310	38.86	36.16
5 470 ~ 5 725	Low	5 510	38.86	36.26
	Middle	5 590	38.86	36.26
	High	5 670	38.86	36.26
5 725 ~ 5 850	Low	5 755	38.96	36.16
	High	5 795	38.96	36.16



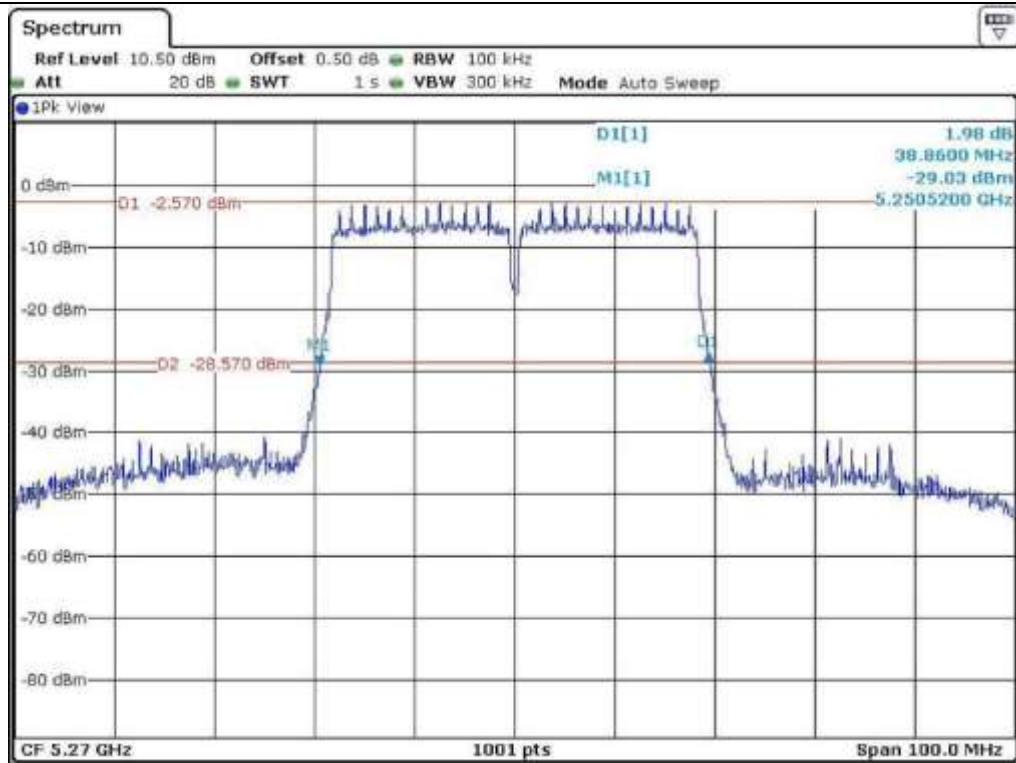
Tested by: Tae-Ho, Kim / Senior Engineer



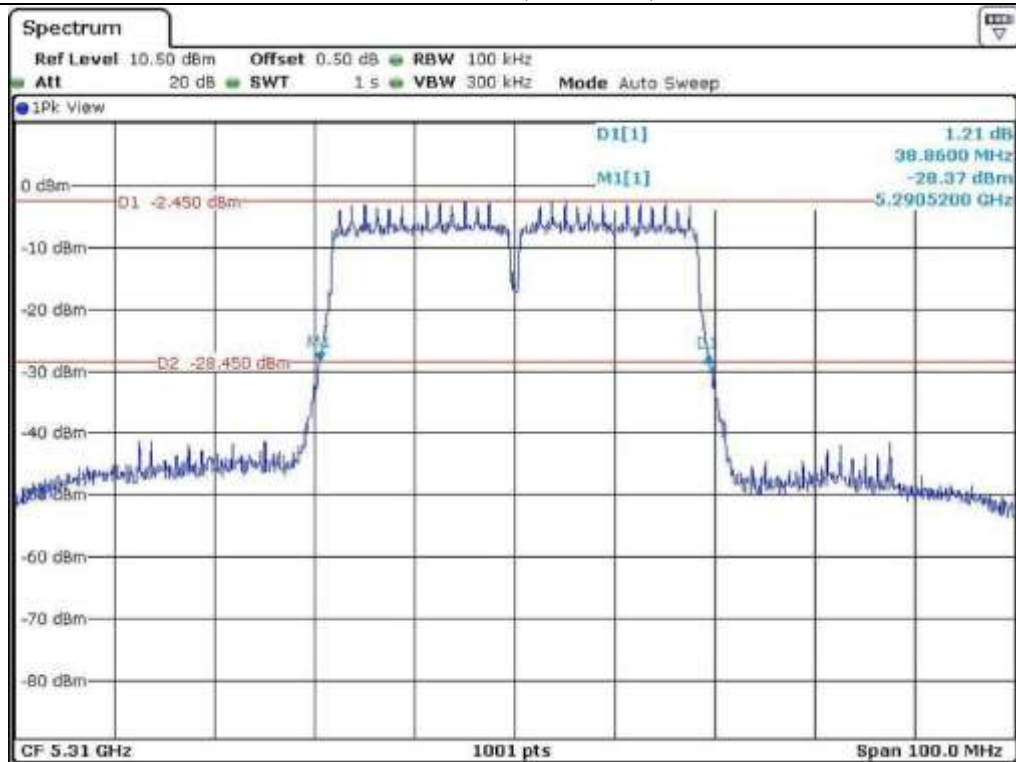
Low Channel (5 190 MHz)



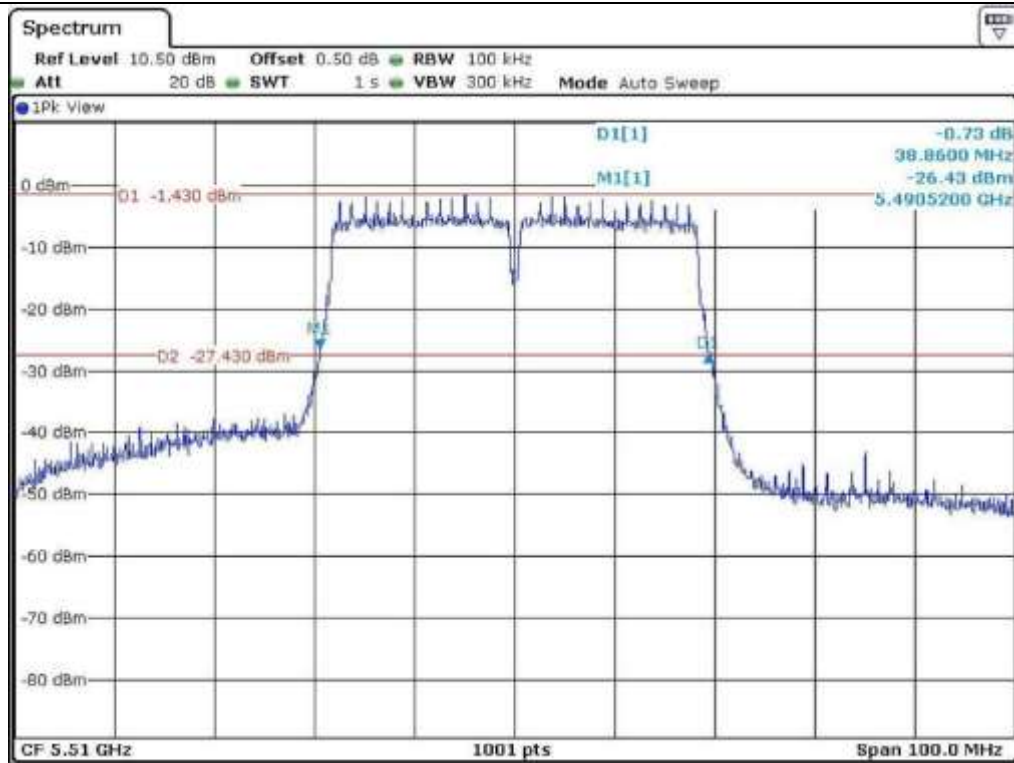
High Channel (5 230 MHz)



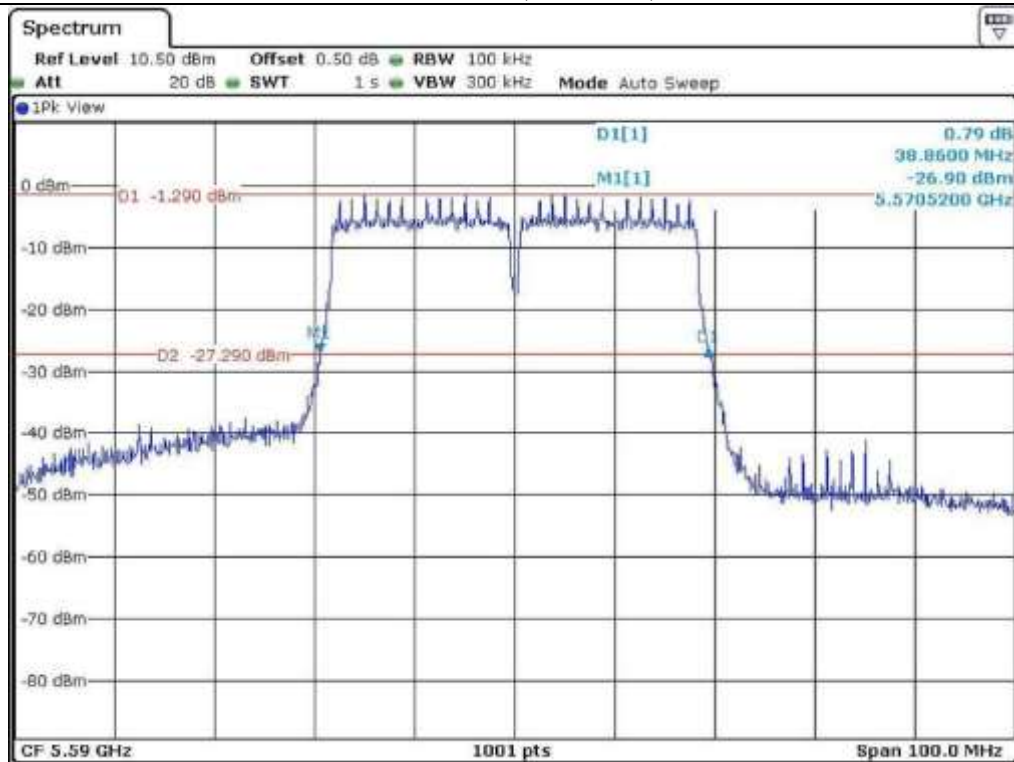
Low Channel (5 270 MHz)



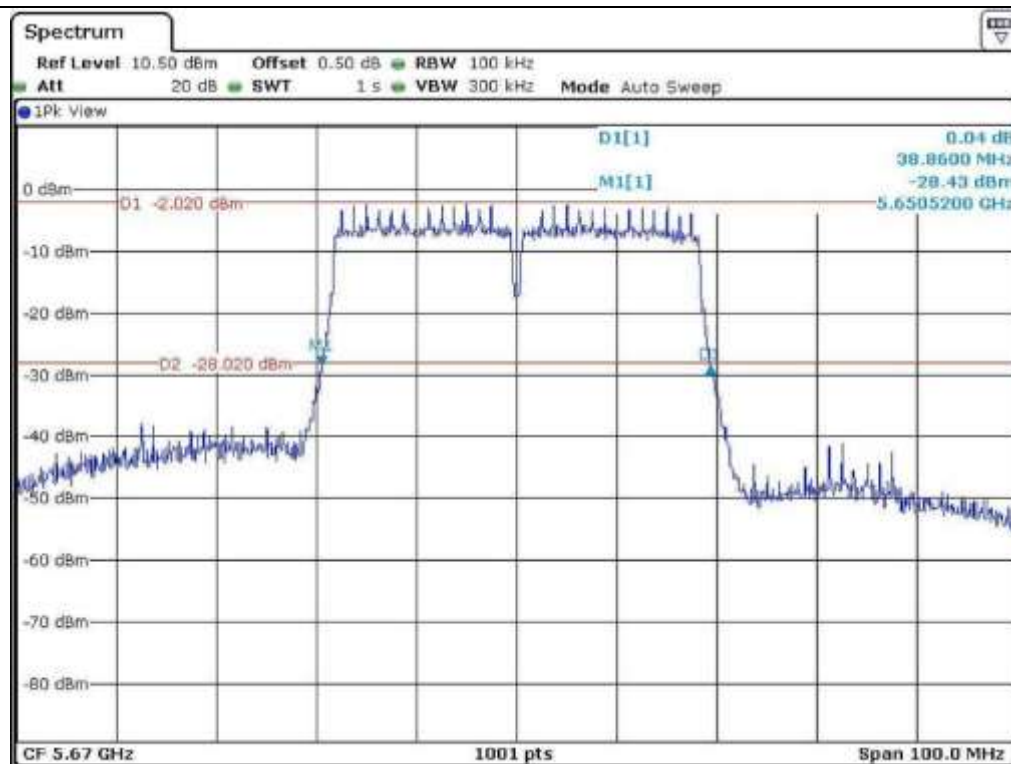
High Channel (5 310 MHz)



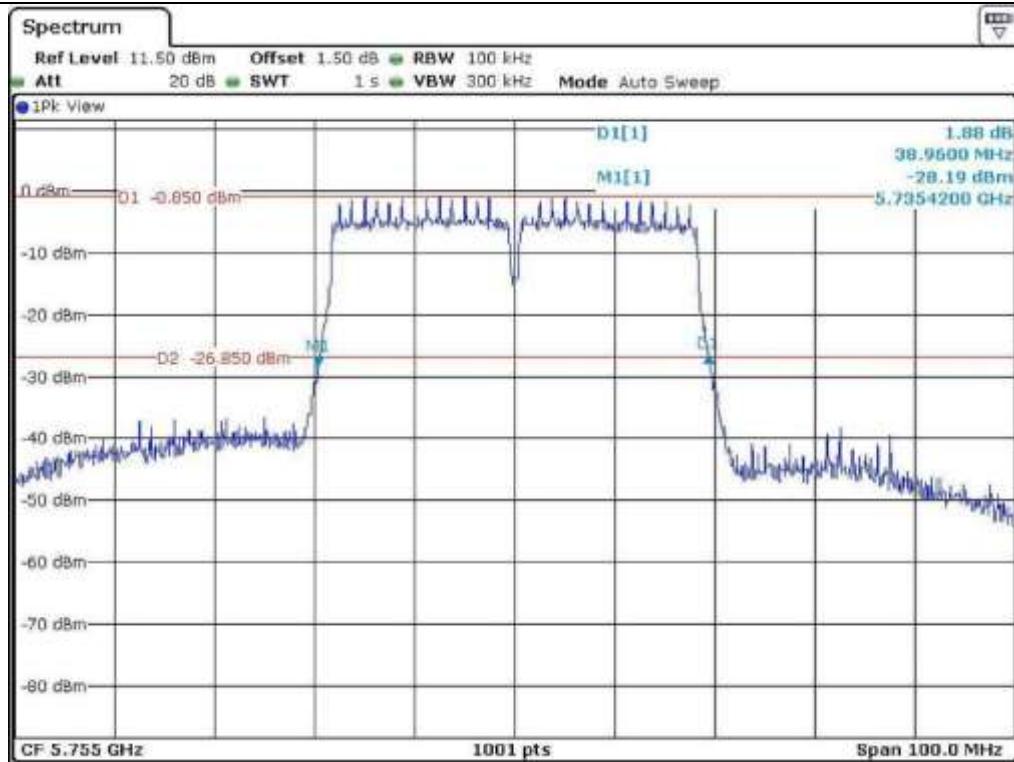
Low Channel (5 510 MHz)



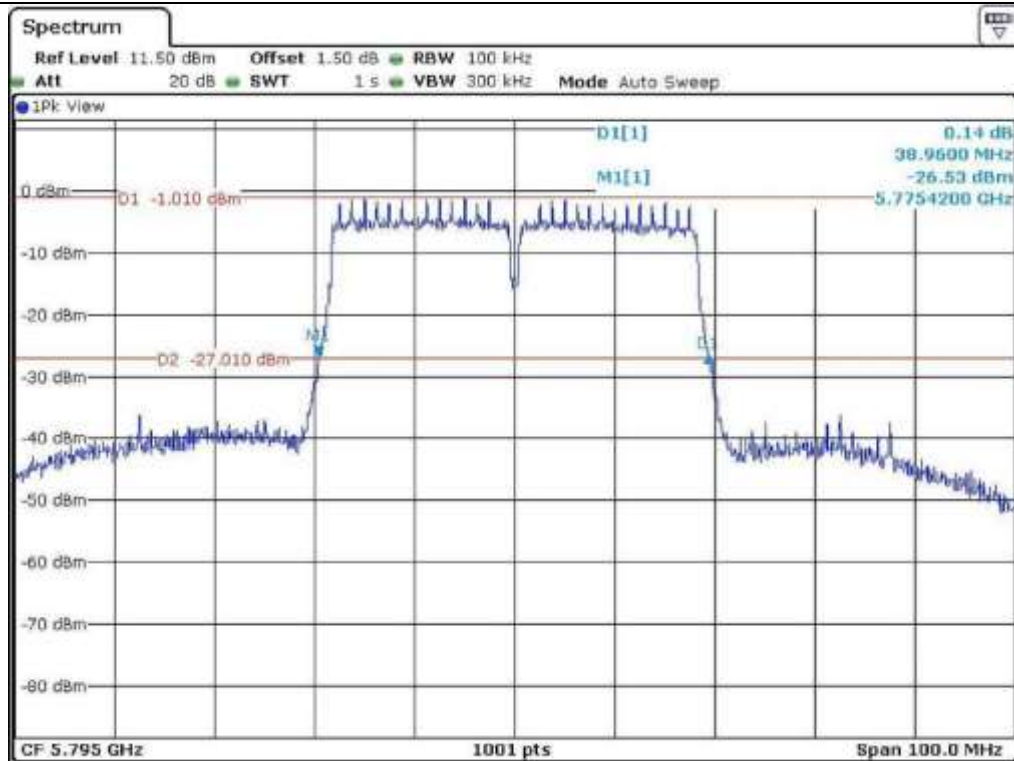
Middle Channel (5 590 MHz)



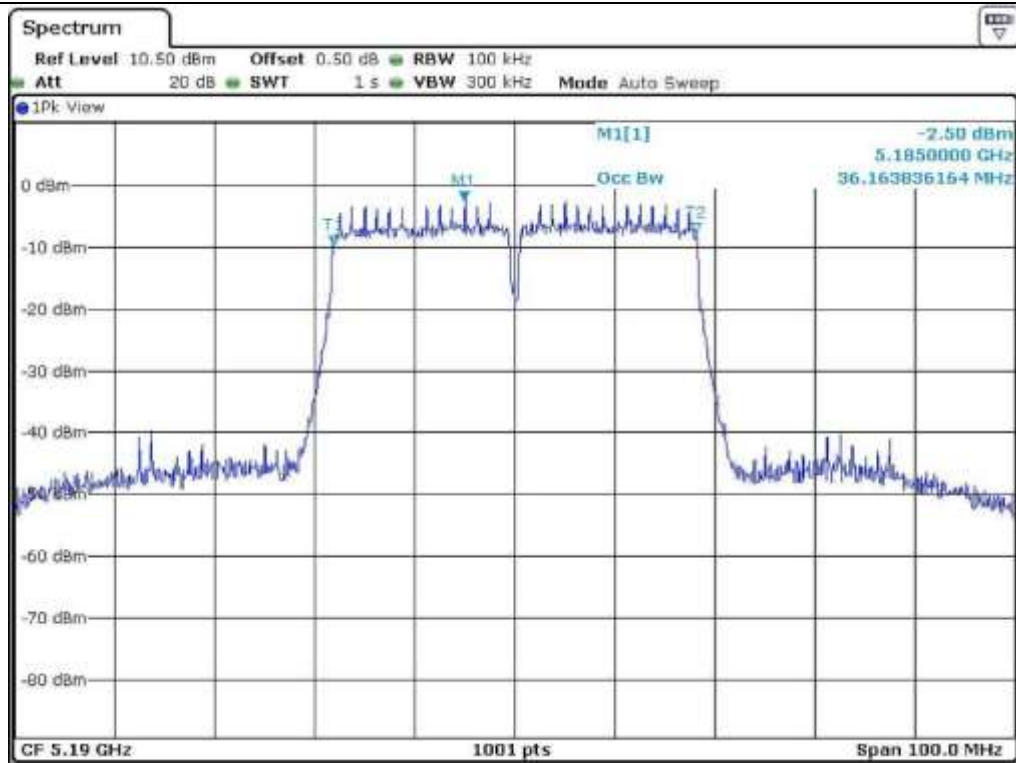
High Channel (5 670 MHz)



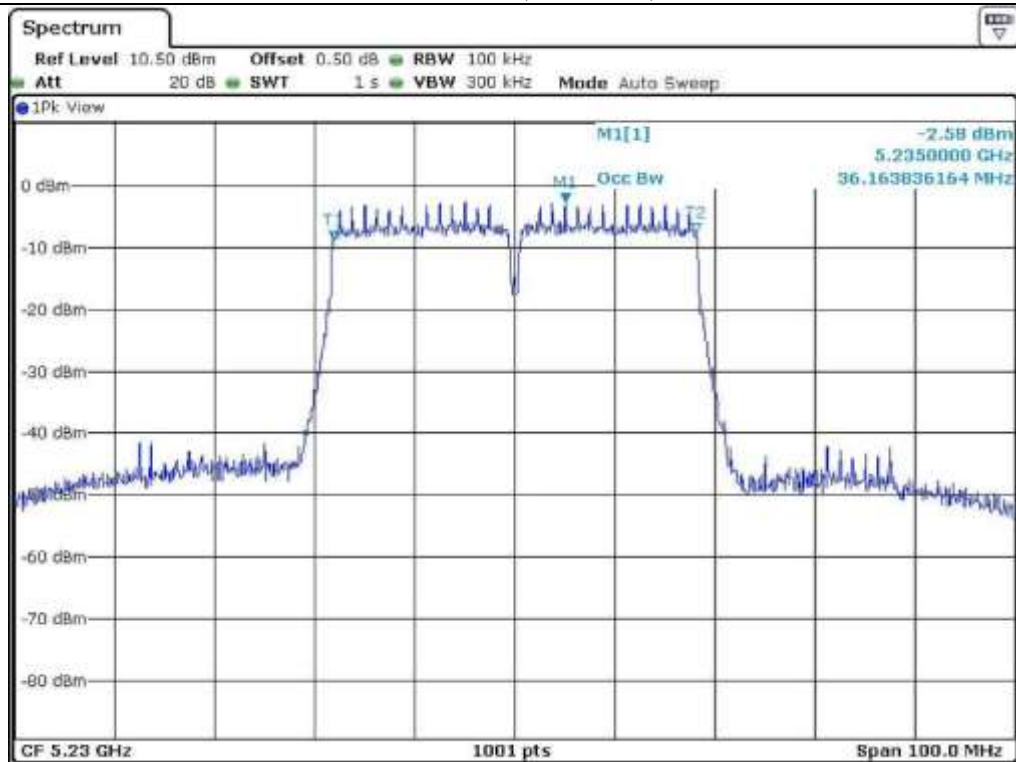
Low Channel (5 755 MHz)



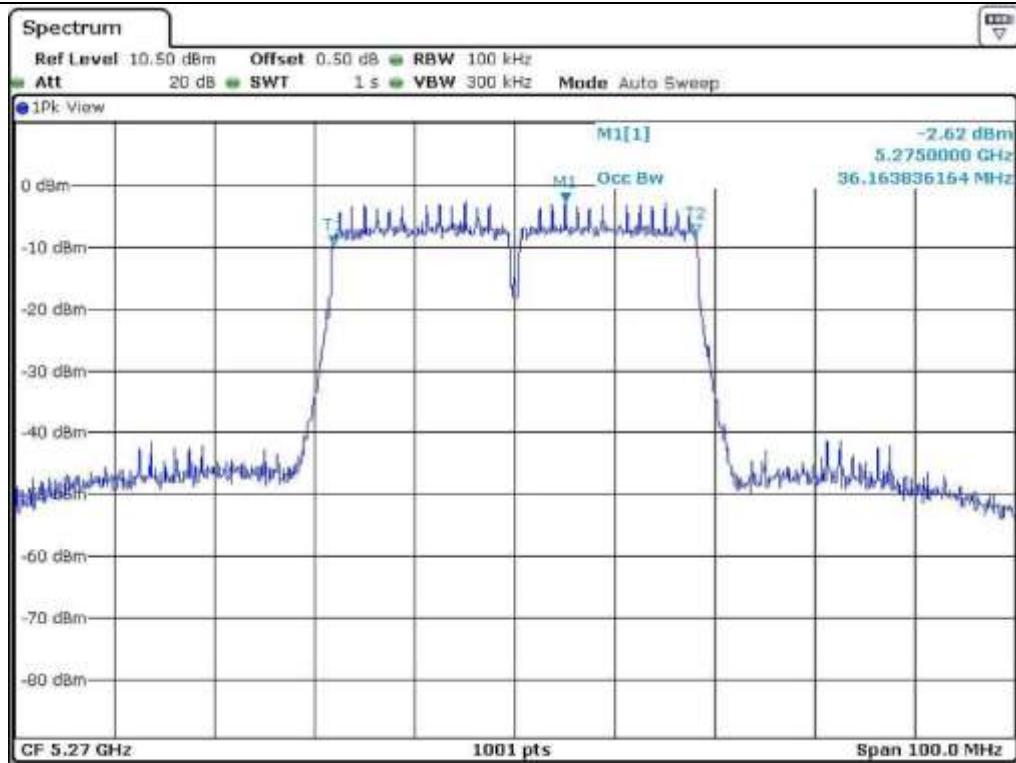
High Channel (5 795 MHz)



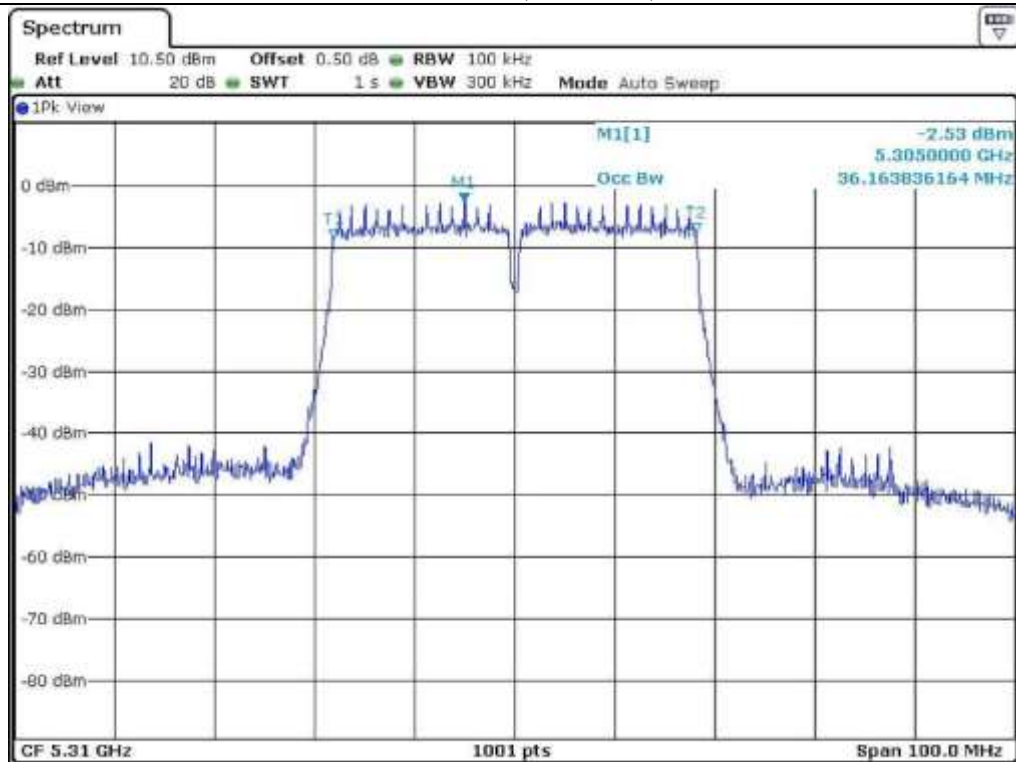
Low Channel (5 190 MHz)



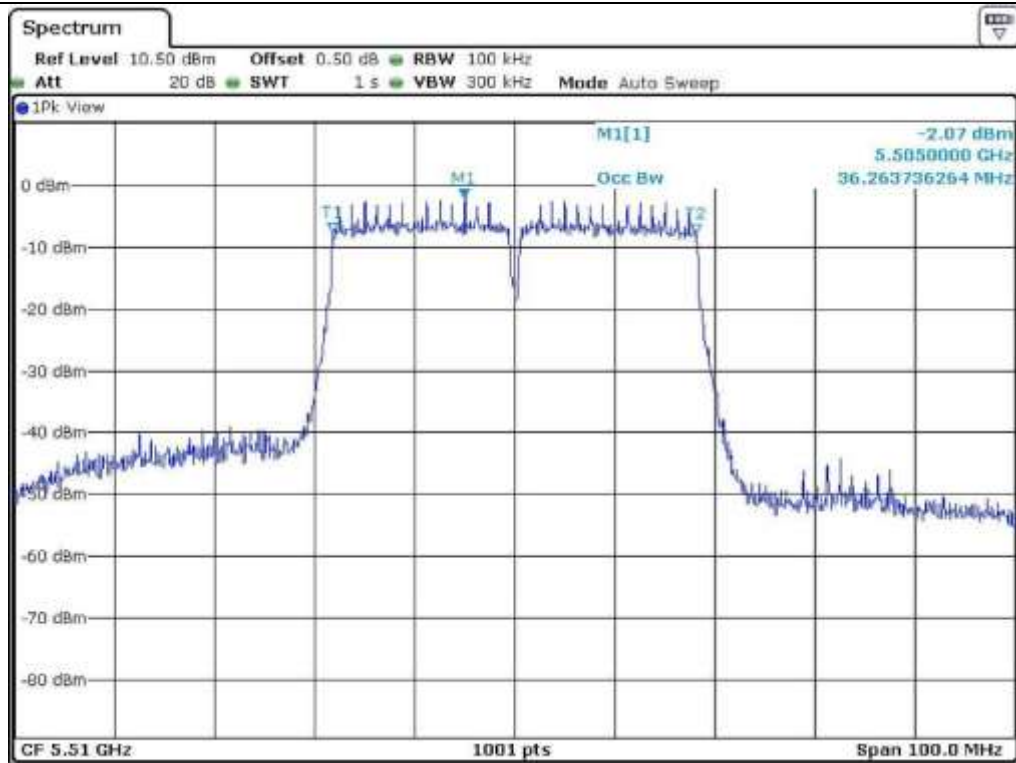
High Channel (5 230 MHz)



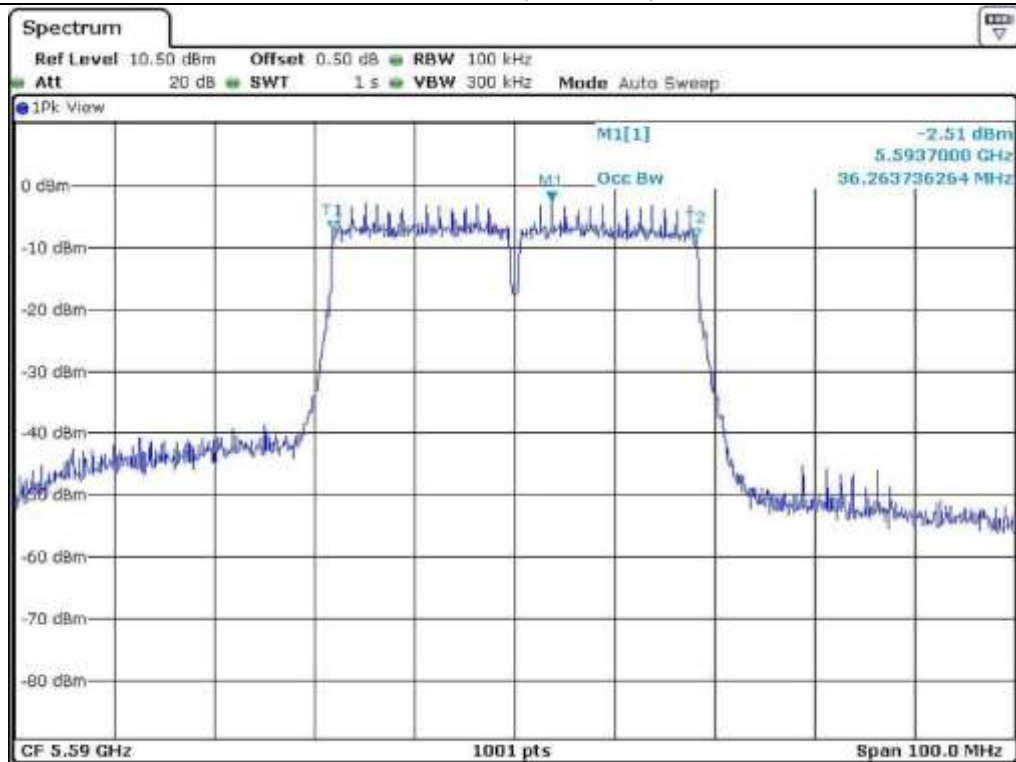
Low Channel (5 270 MHz)



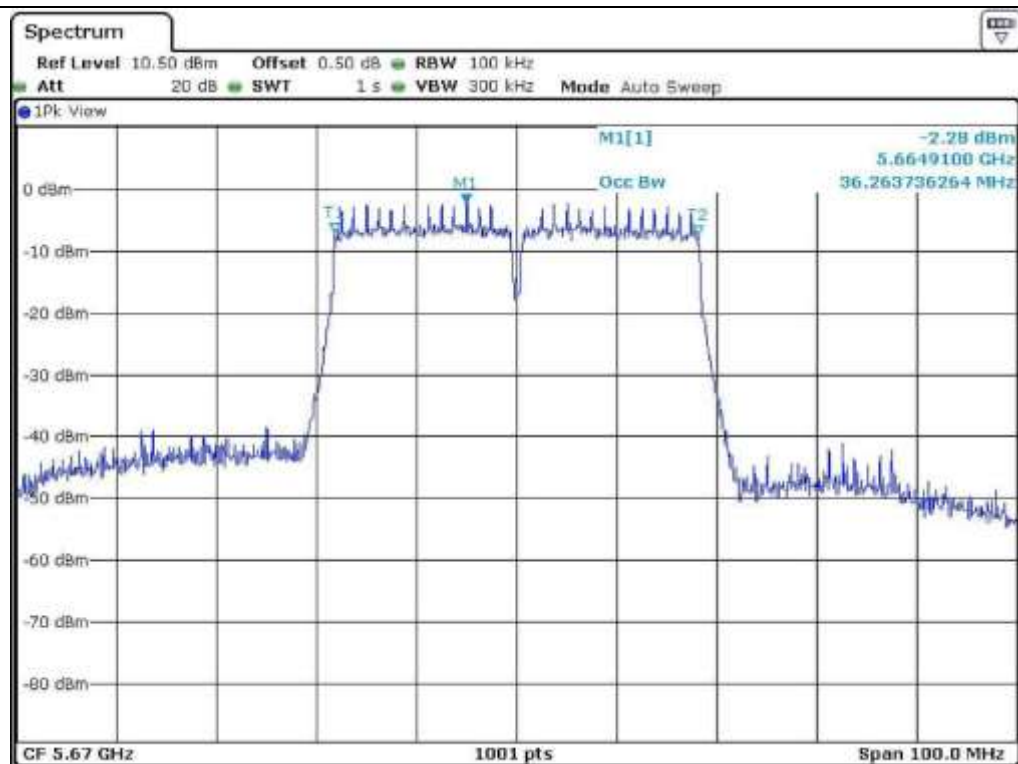
High Channel (5 310 MHz)



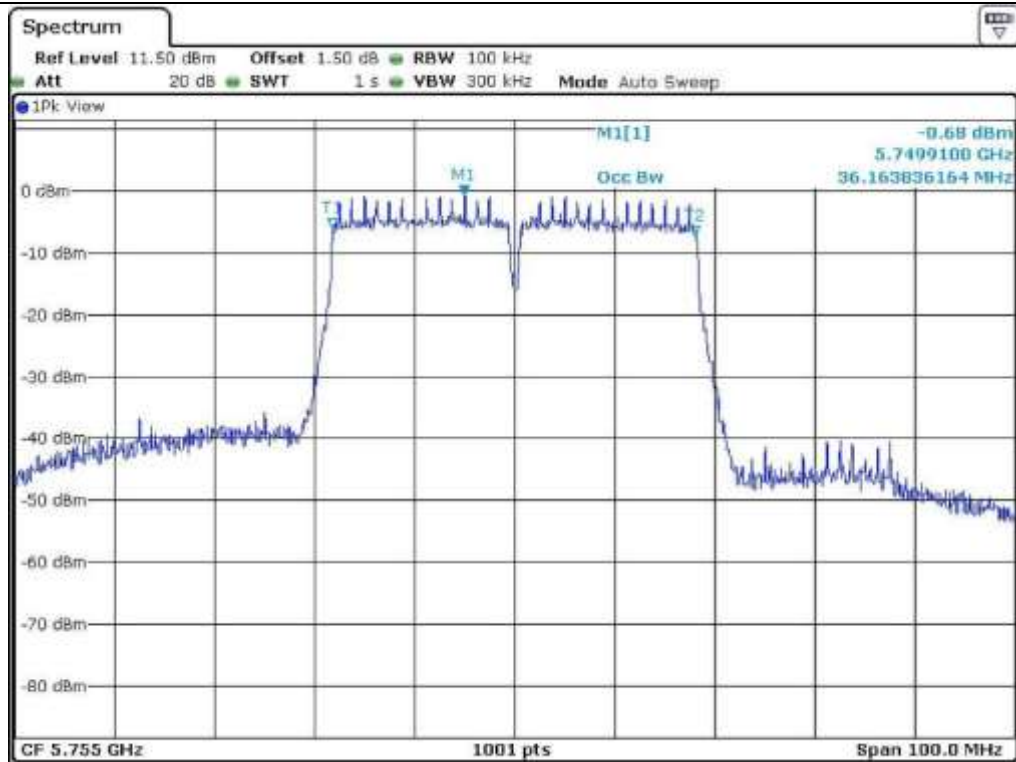
Low Channel (5 510 MHz)



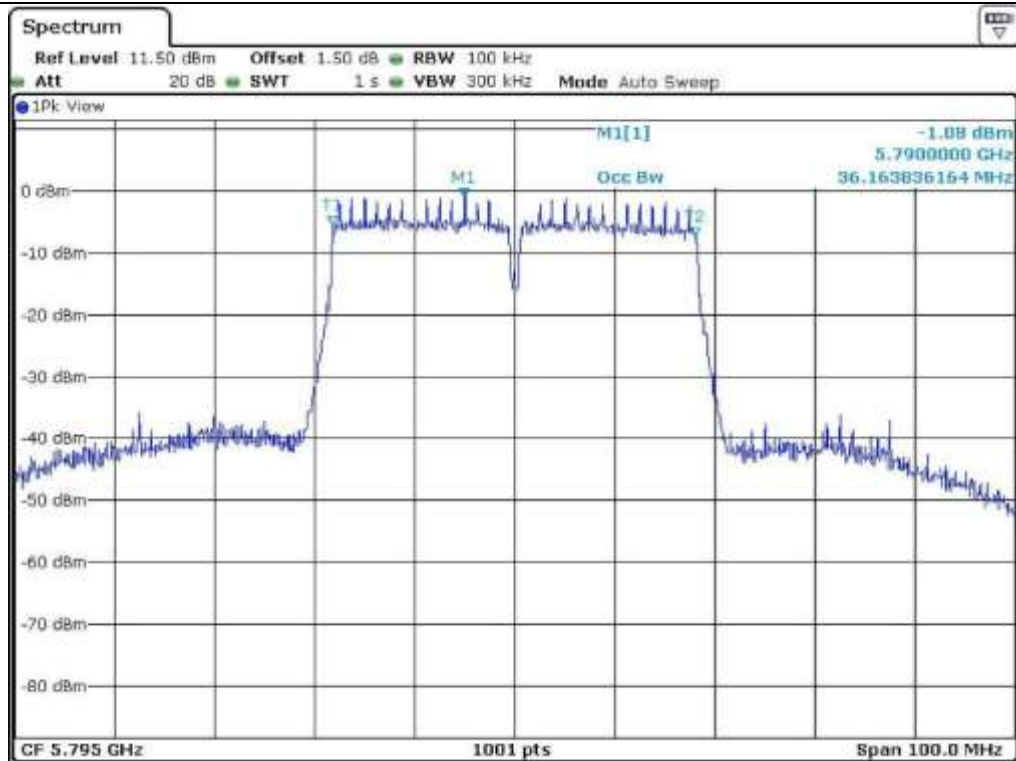
Middle Channel (5 590 MHz)



High Channel (5 670 MHz)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

7.8.2 Test data for Antenna 1

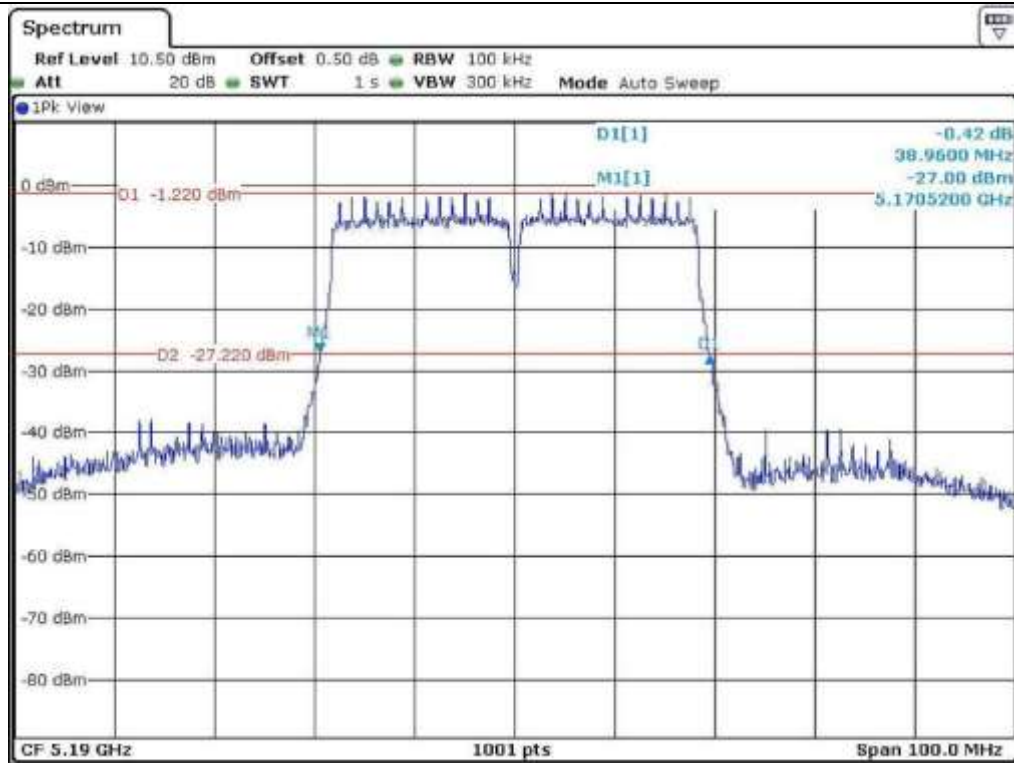
-. Test Date : June 17, 2015

-. Test Result : Pass

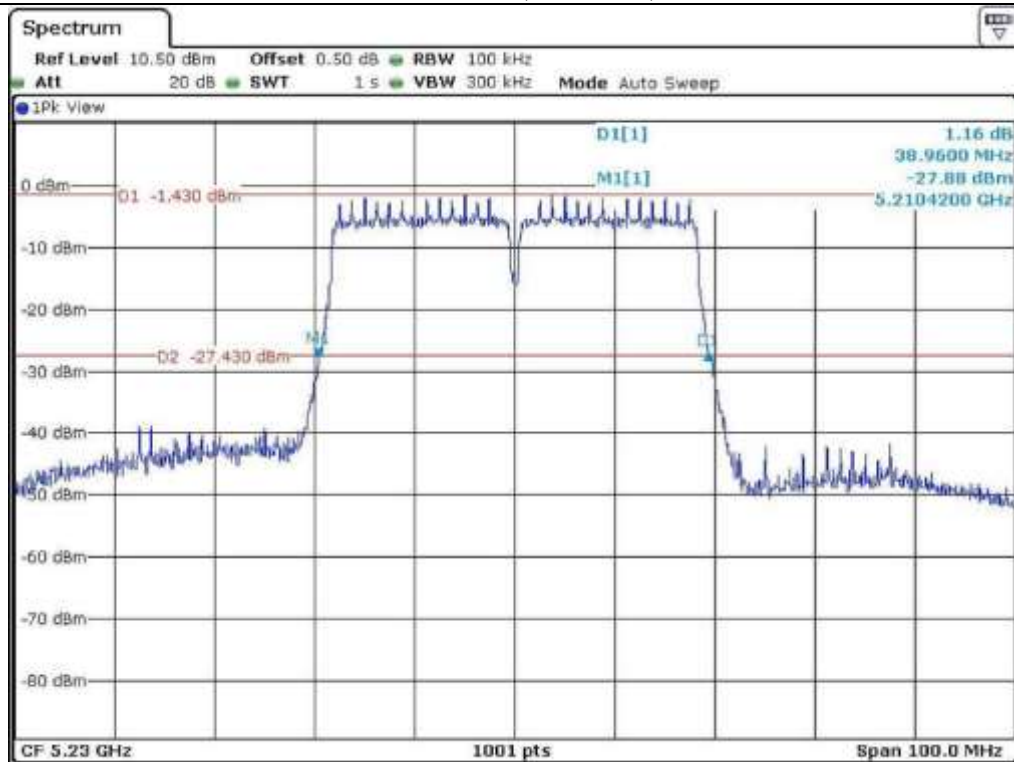
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Low	5 190	38.96	36.16
	High	5 230	38.96	36.16
5 250 ~ 5 350	Low	5 270	38.86	36.16
	High	5 310	38.86	36.16
5 470 ~ 5 725	Low	5 510	38.86	36.26
	Middle	5 590	38.86	36.26
	High	5 670	38.86	36.26
5 725 ~ 5 850	Low	5 755	38.96	36.16
	High	5 795	38.96	36.16



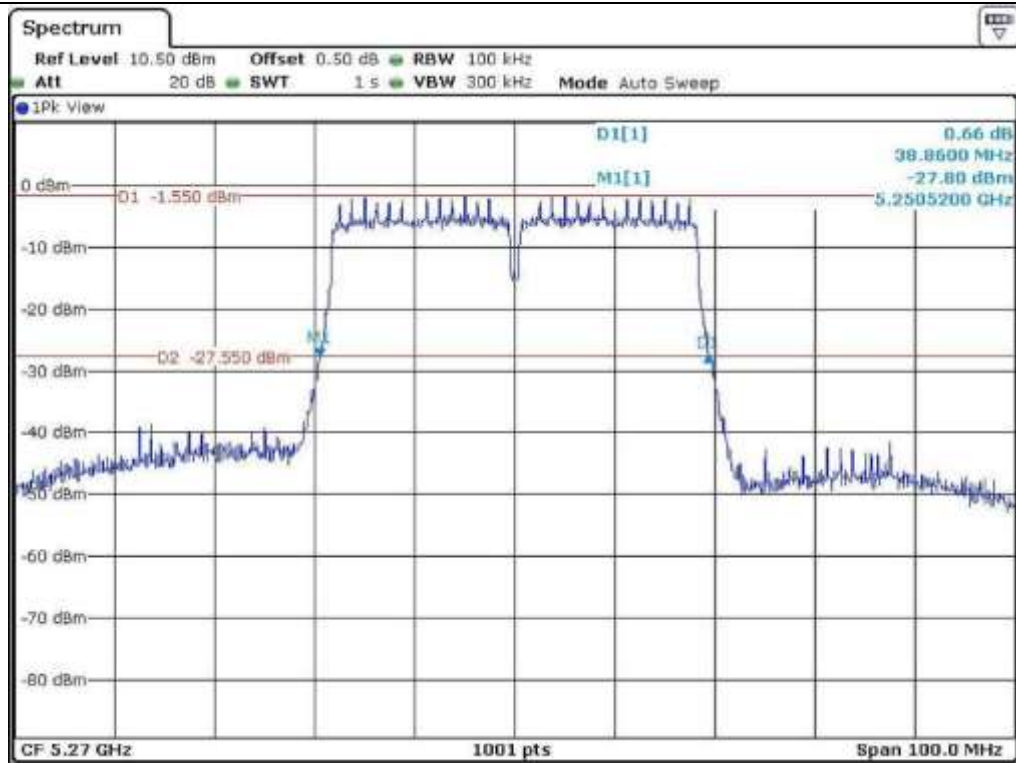
Tested by: Tae-Ho, Kim / Senior Engineer



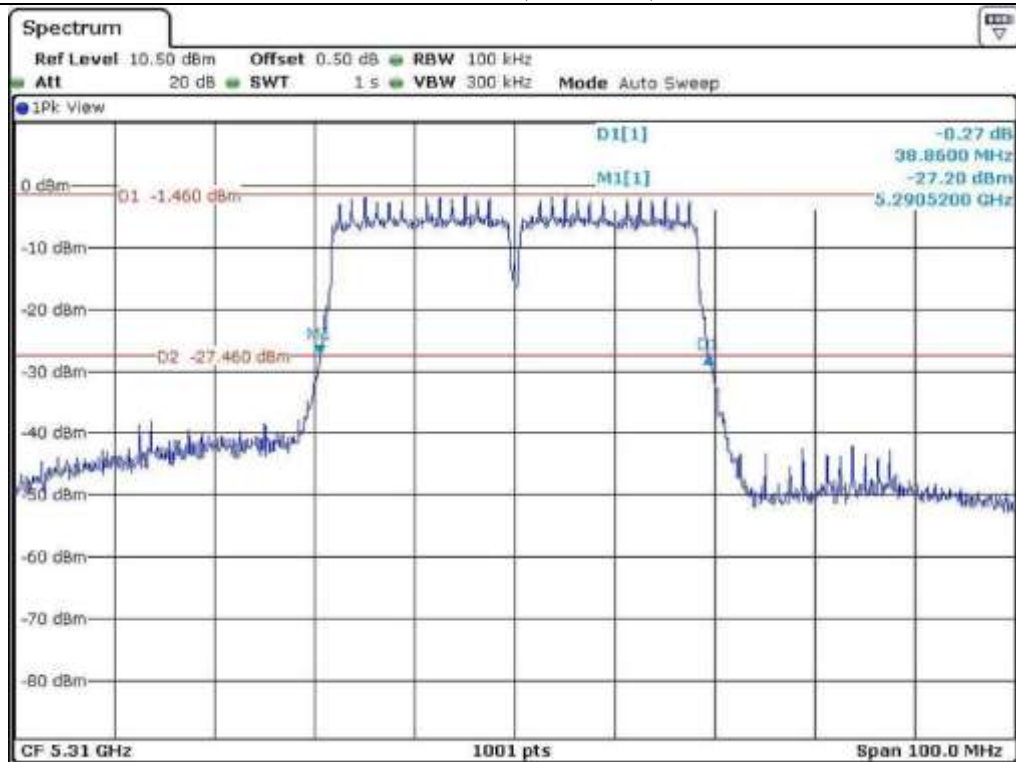
Low Channel (5 190 MHz)



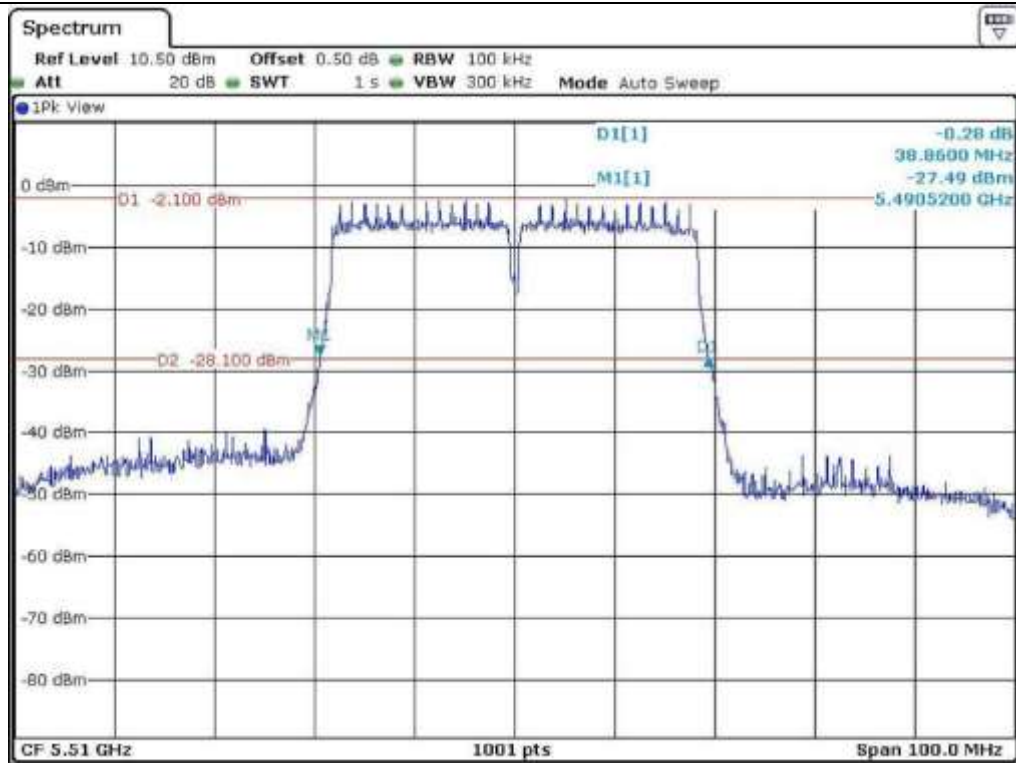
High Channel (5 230 MHz)



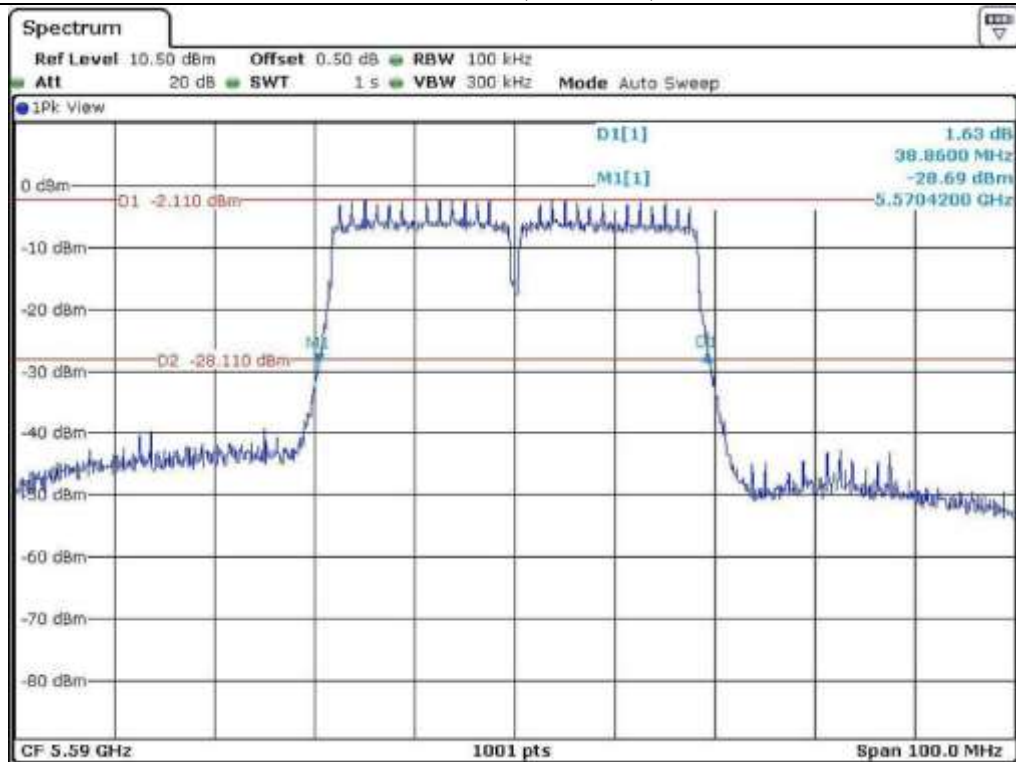
Low Channel (5 270 MHz)



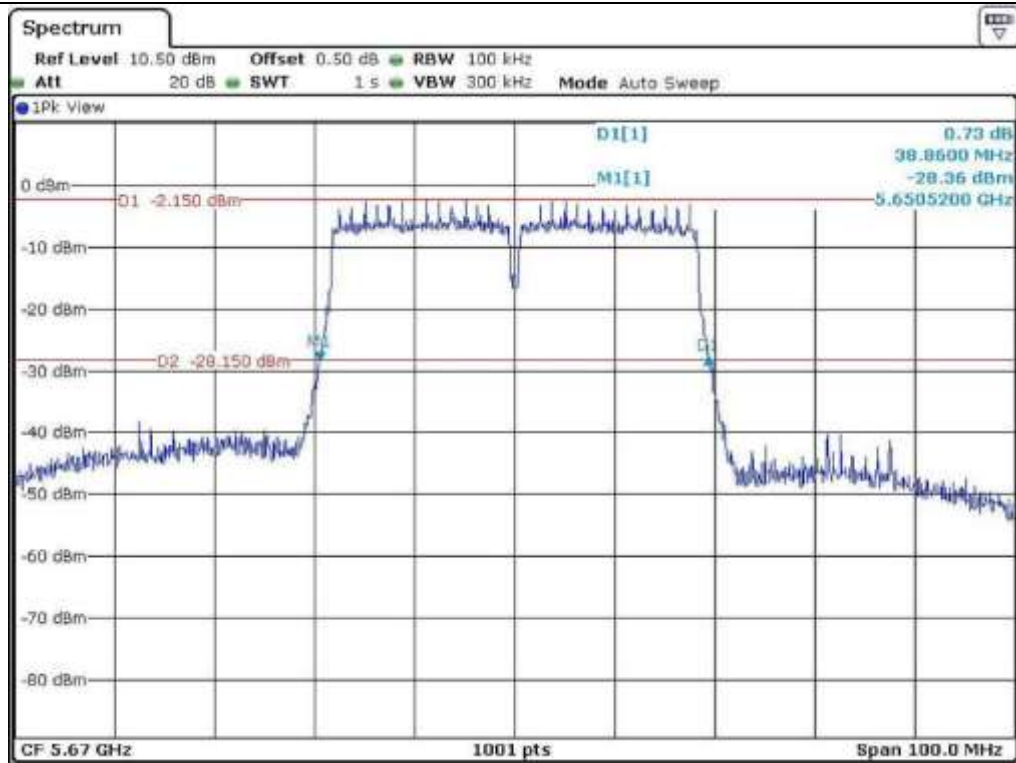
High Channel (5 310 MHz)



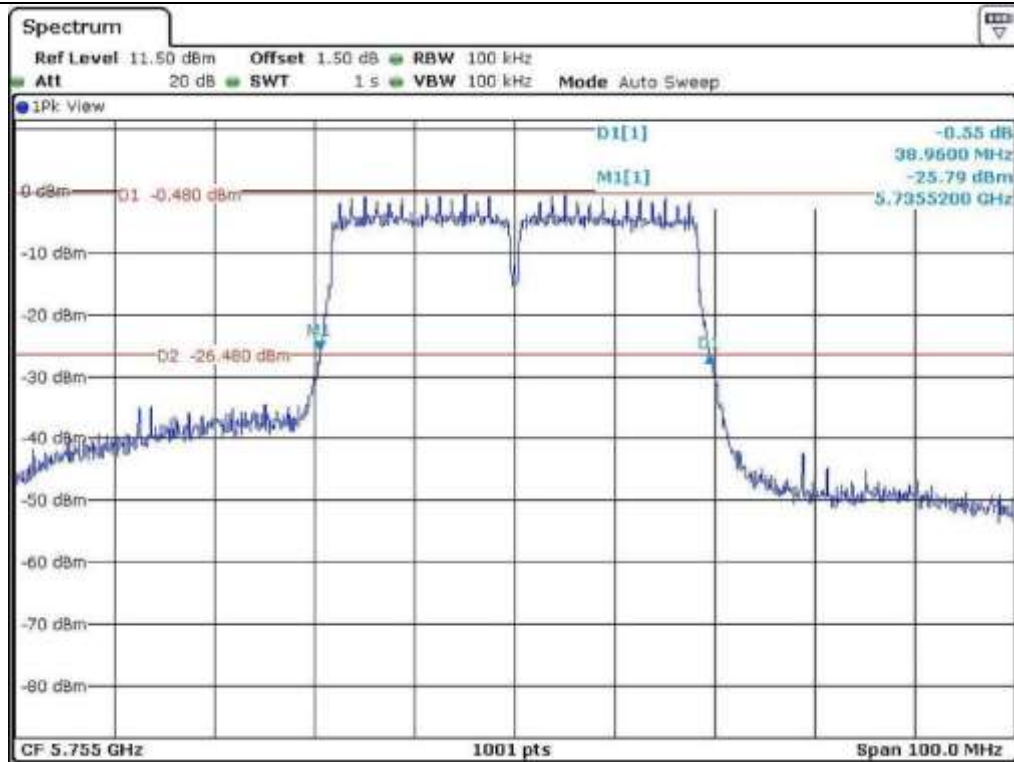
Low Channel (5 510 MHz)



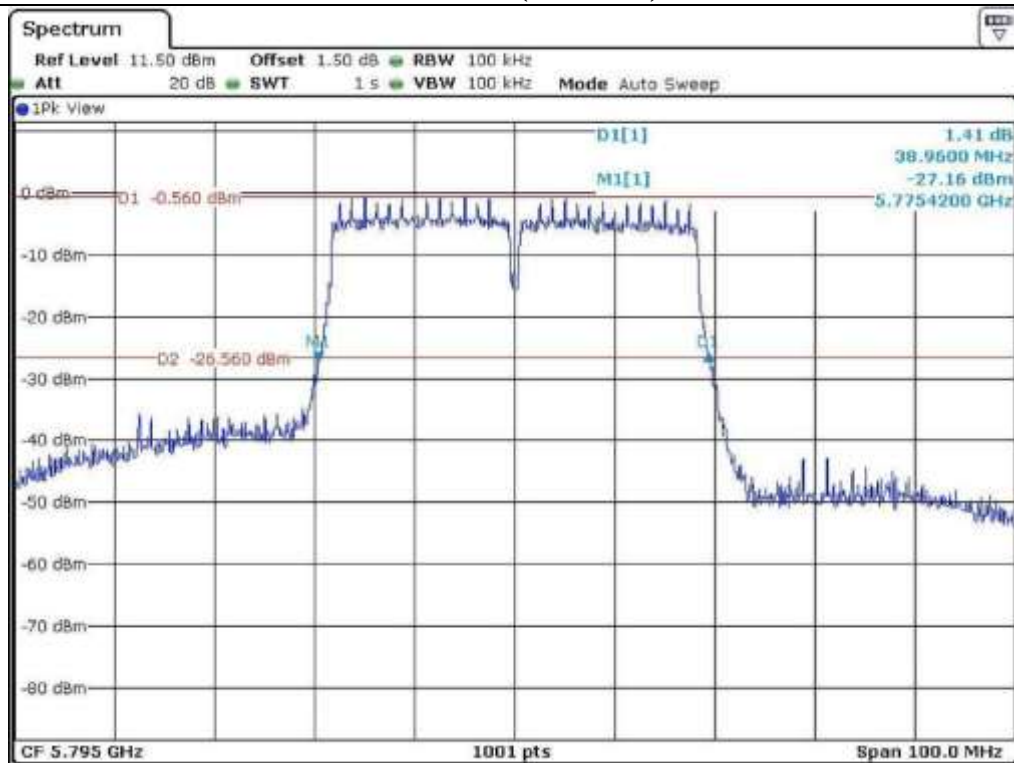
Middle Channel (5 590 MHz)



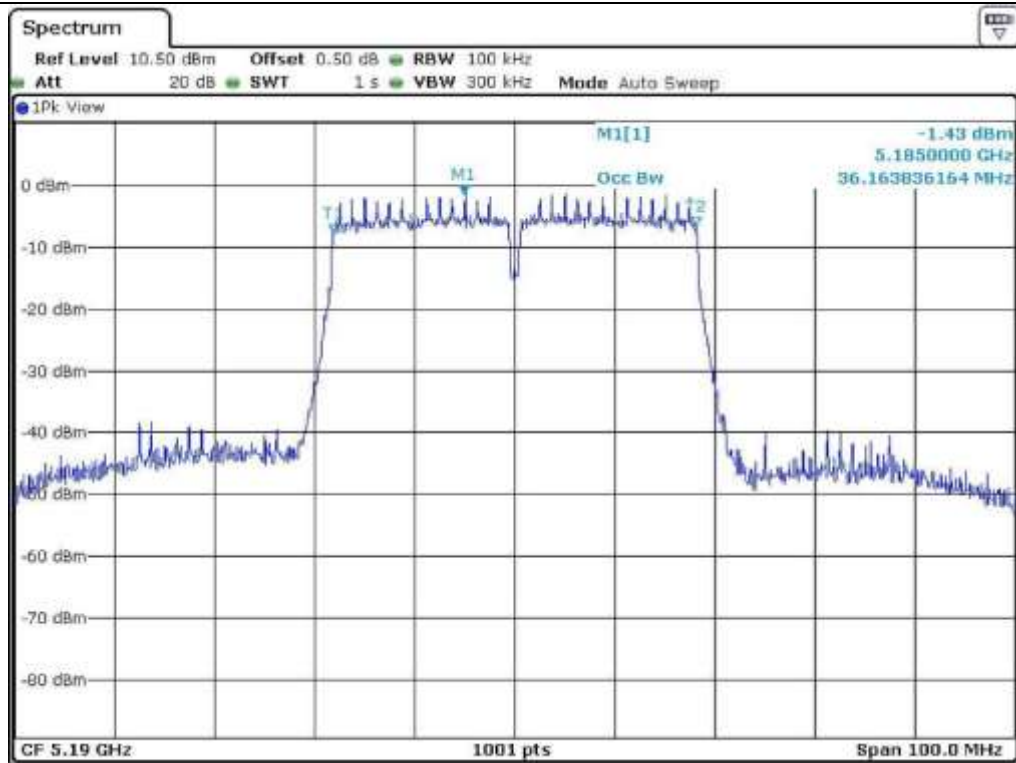
High Channel (5 670 MHz)



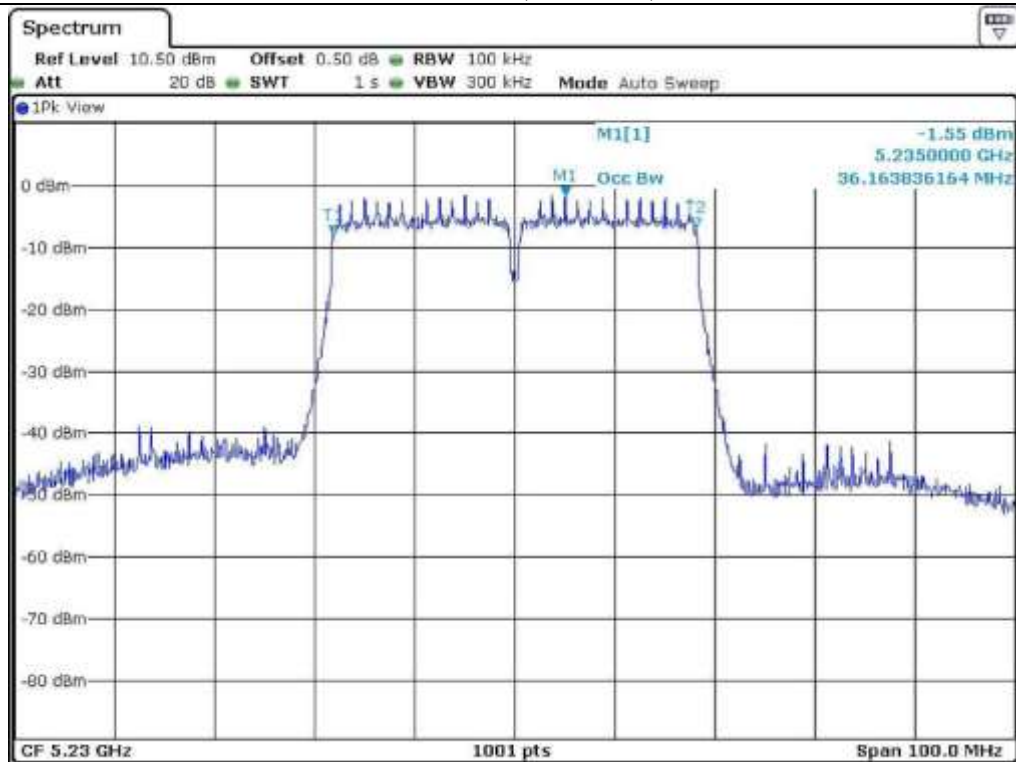
Low Channel (5 755 MHz)



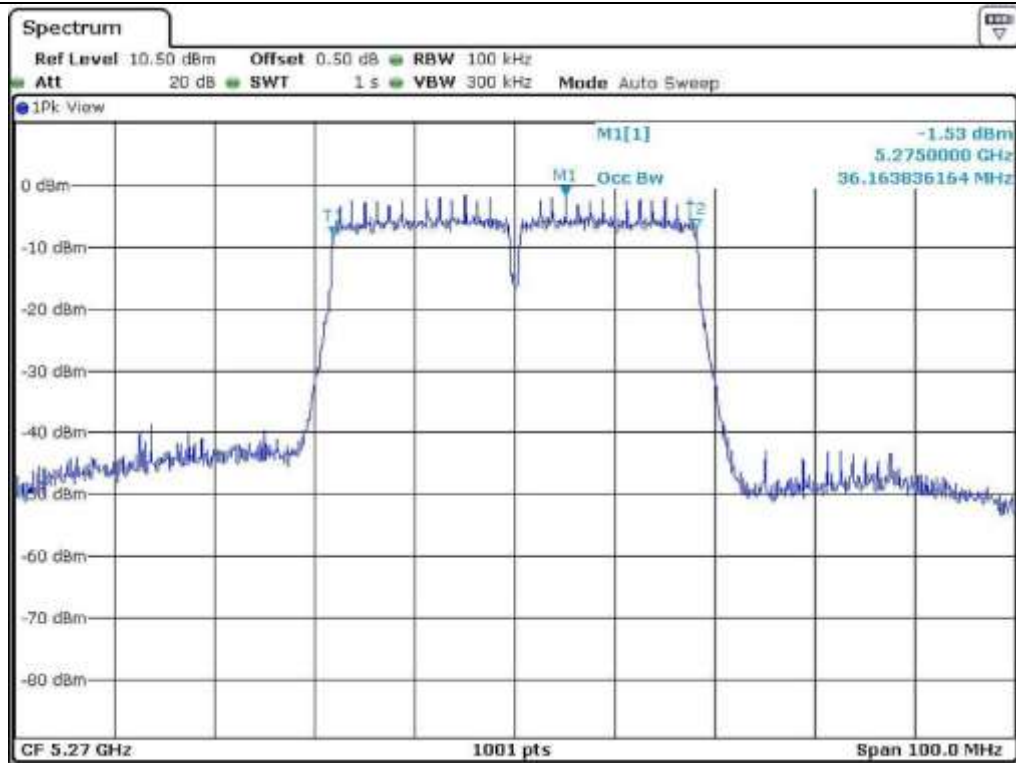
High Channel (5 795 MHz)



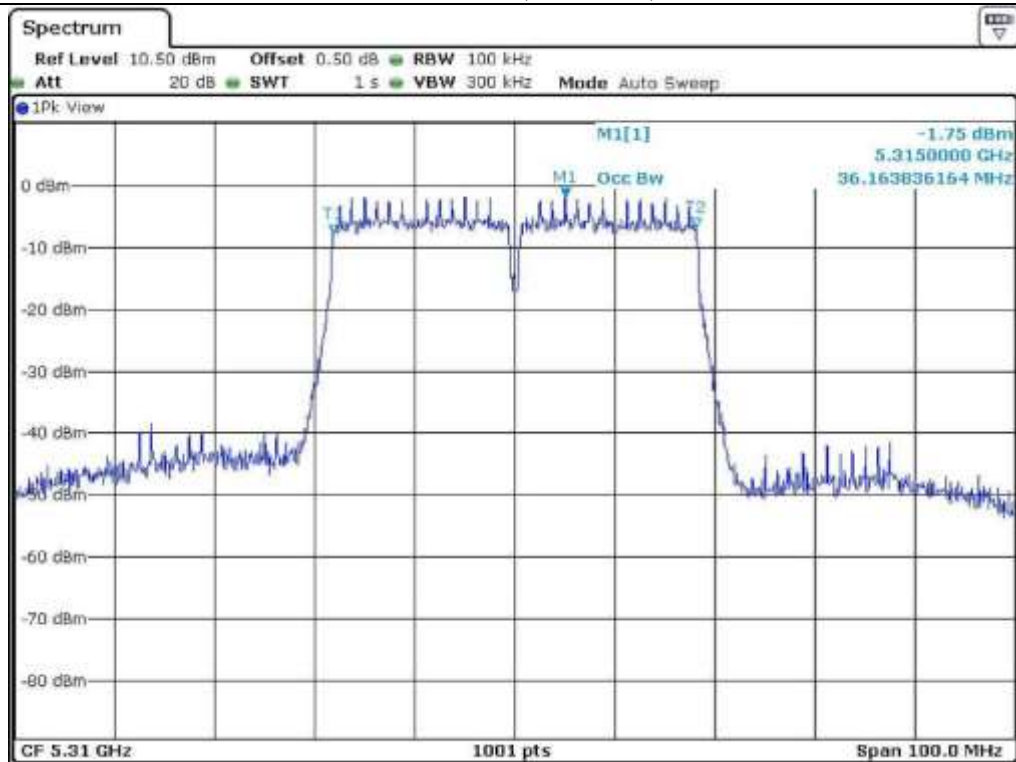
Low Channel (5 190 MHz)



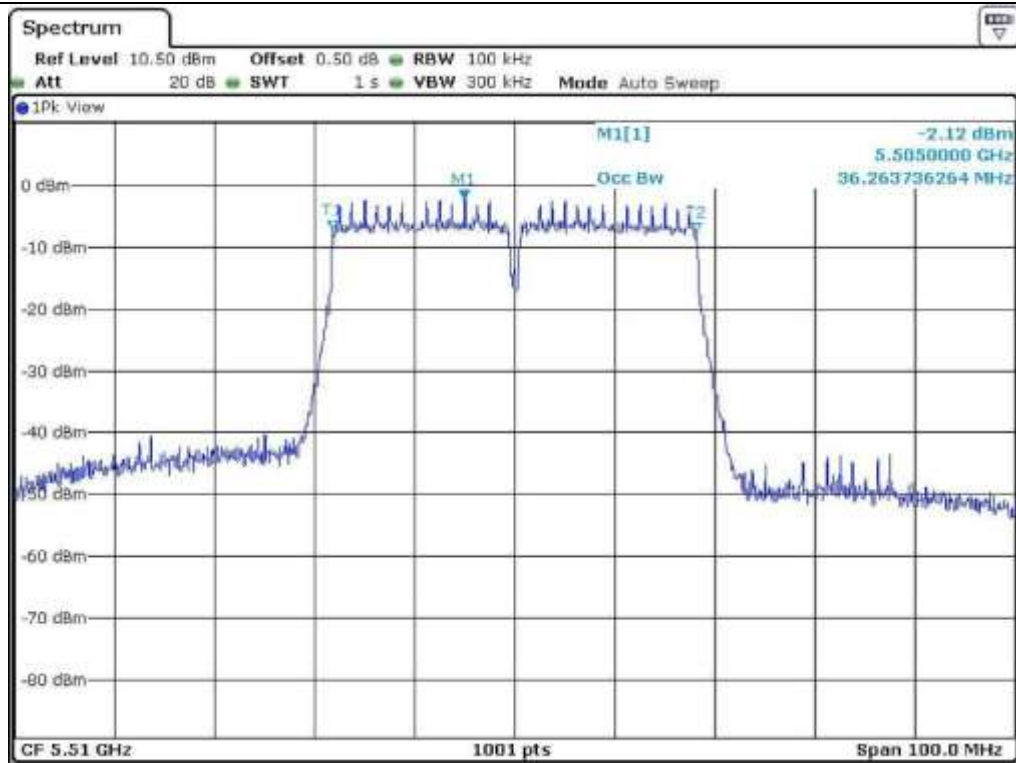
High Channel (5 230 MHz)



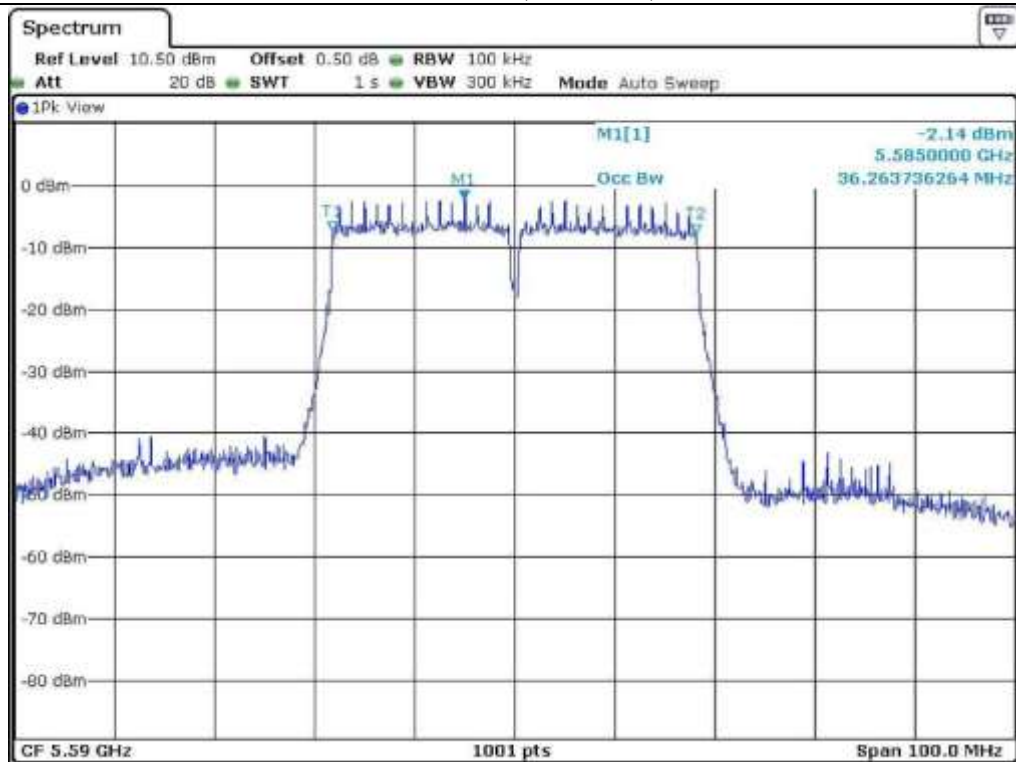
Low Channel (5 270 MHz)



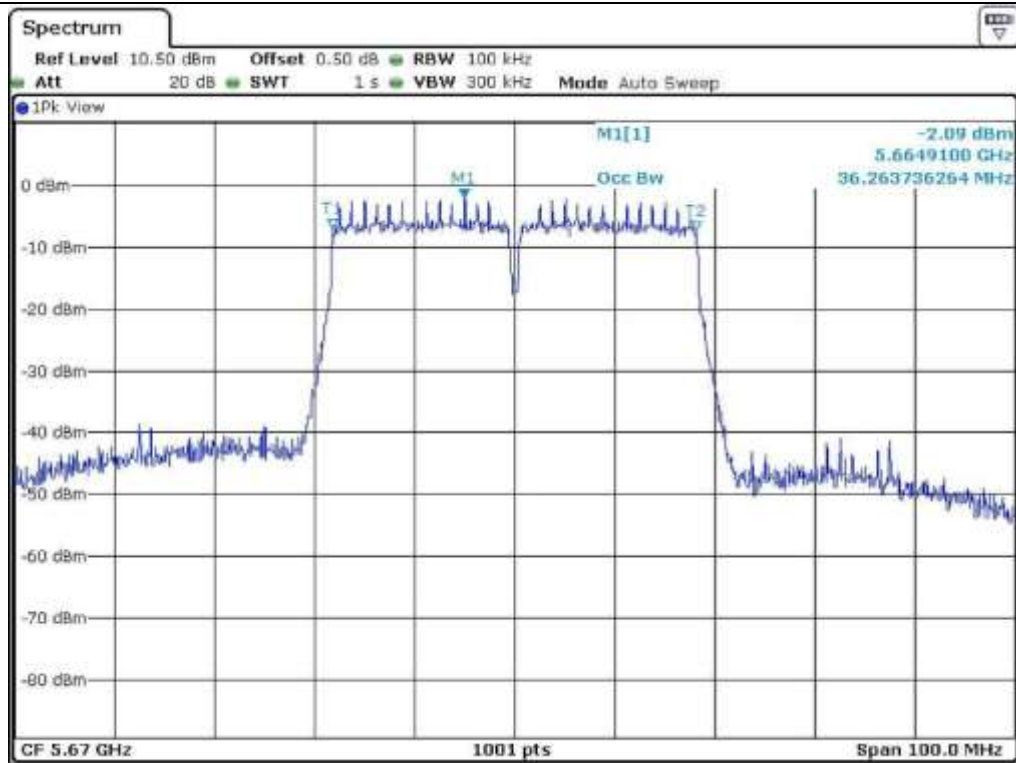
High Channel (5 310 MHz)



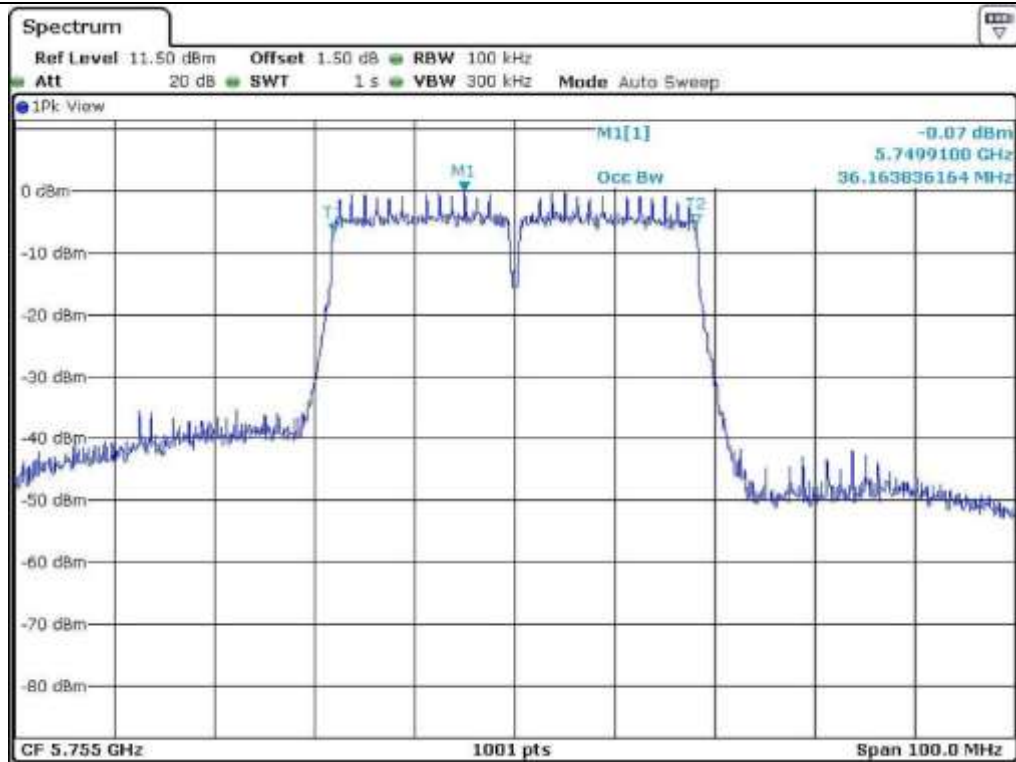
Low Channel (5 510 MHz)



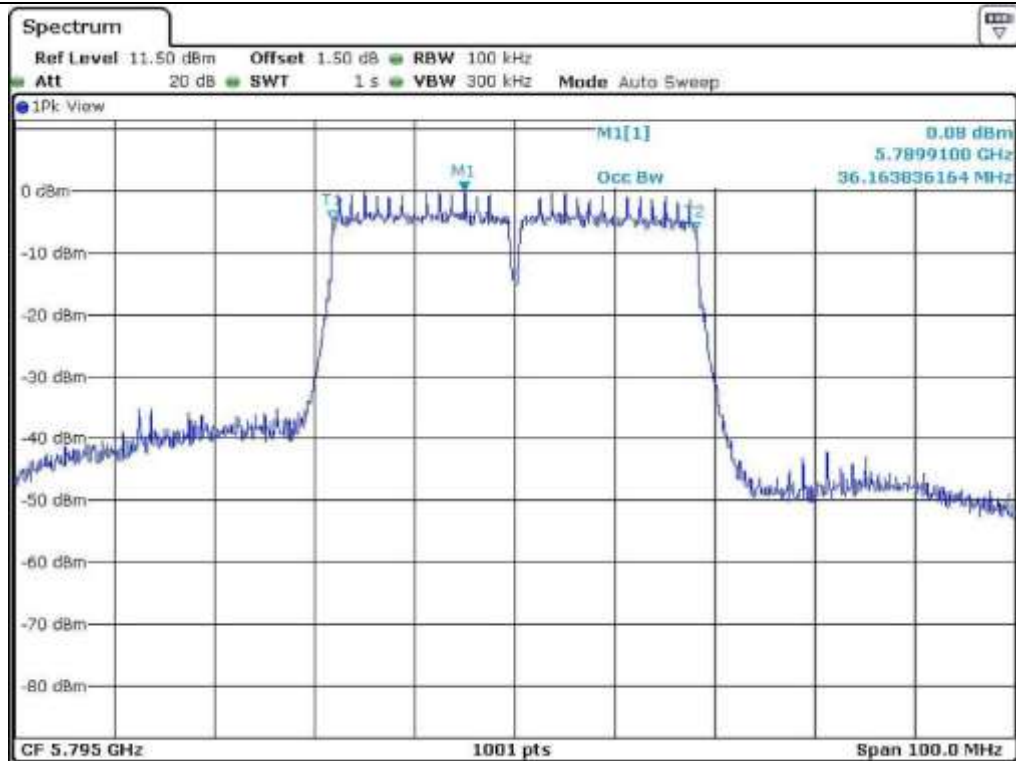
Middle Channel (5 590 MHz)



High Channel (5 670 MHz)



Low Channel (5 755 MHz)



High Channel (5 795 MHz)

7.9 Test data for 802.11ac_HT80 RLAN Mode

7.9.1 Test data for Antenna 0

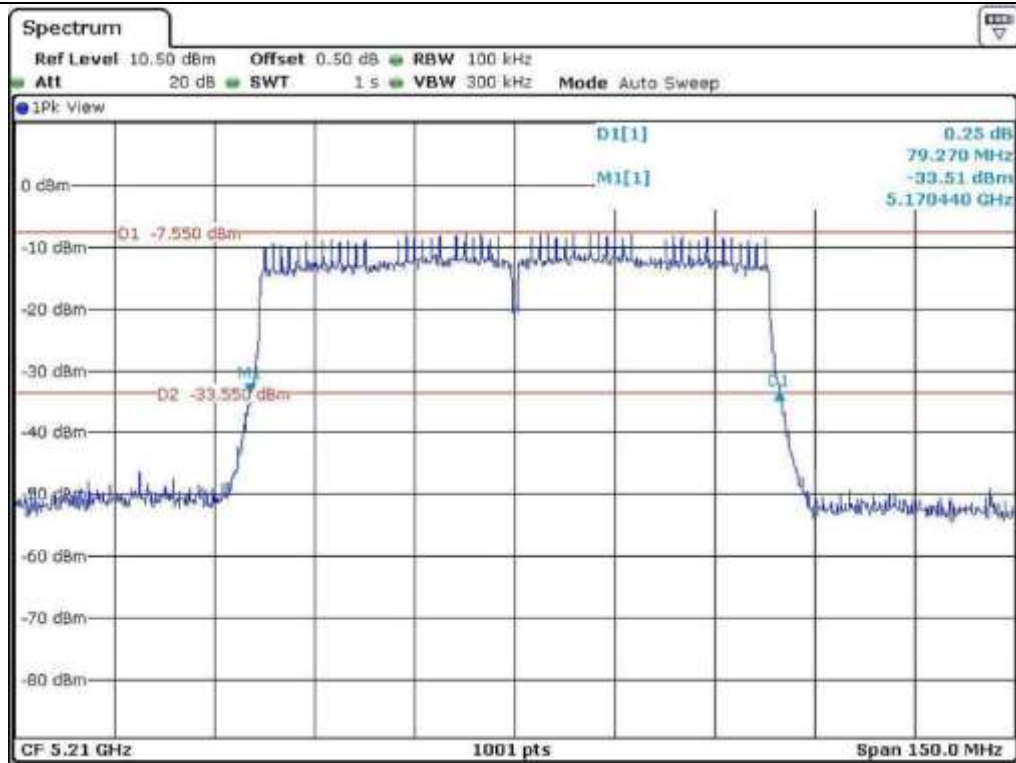
-. Test Date : June 18, 2015

-. Test Result : Pass

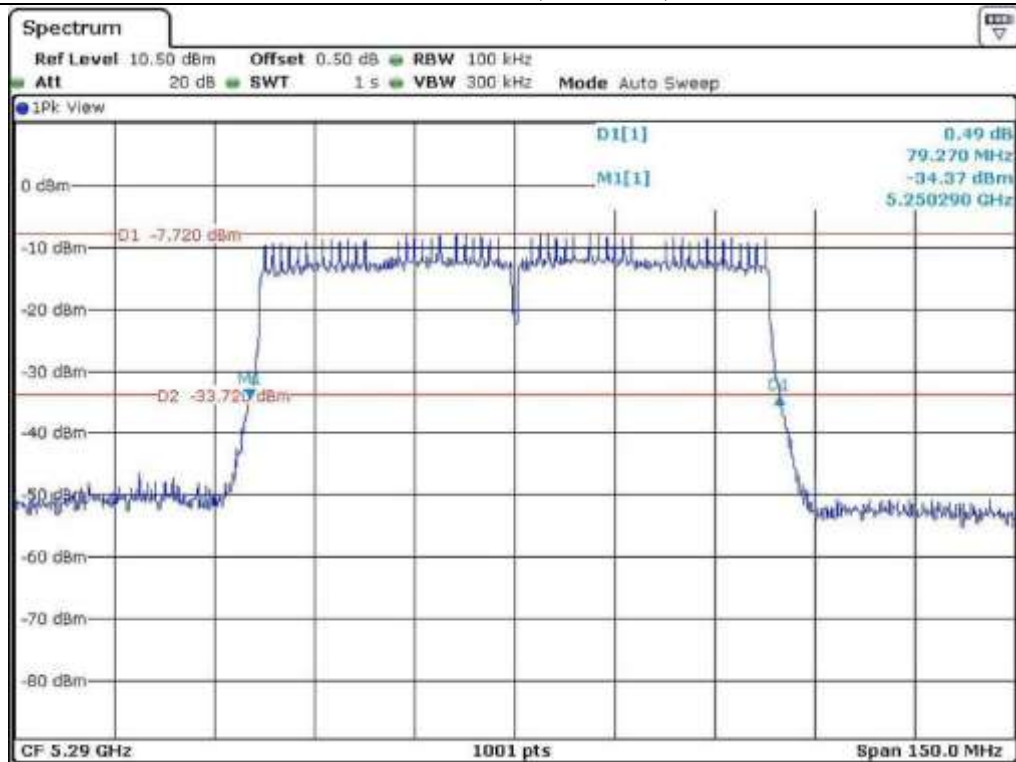
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Middle	5 210	79.27	75.52
5 250 ~ 5 350	Middle	5 290	79.27	75.52
5 470 ~ 5 725	Middle	5 530	79.72	75.37
5 725 ~ 5 850	Middle	5 775	79.42	75.52



Tested by: Tae-Ho, Kim / Senior Engineer



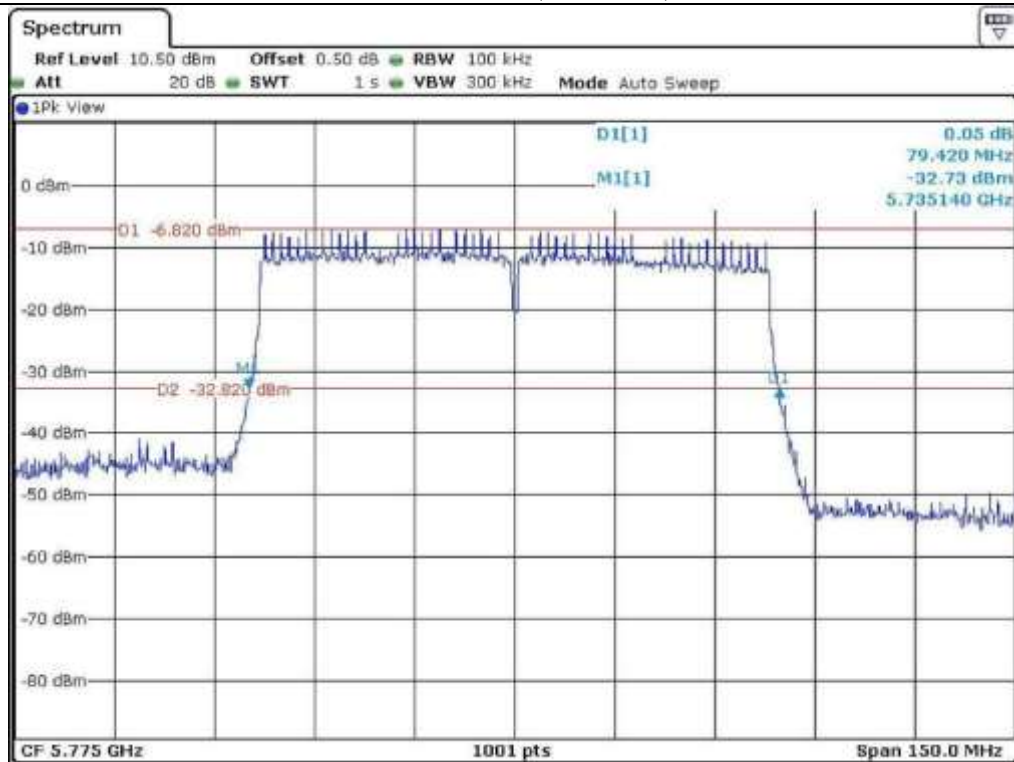
Middle Channel (5 210 MHz)



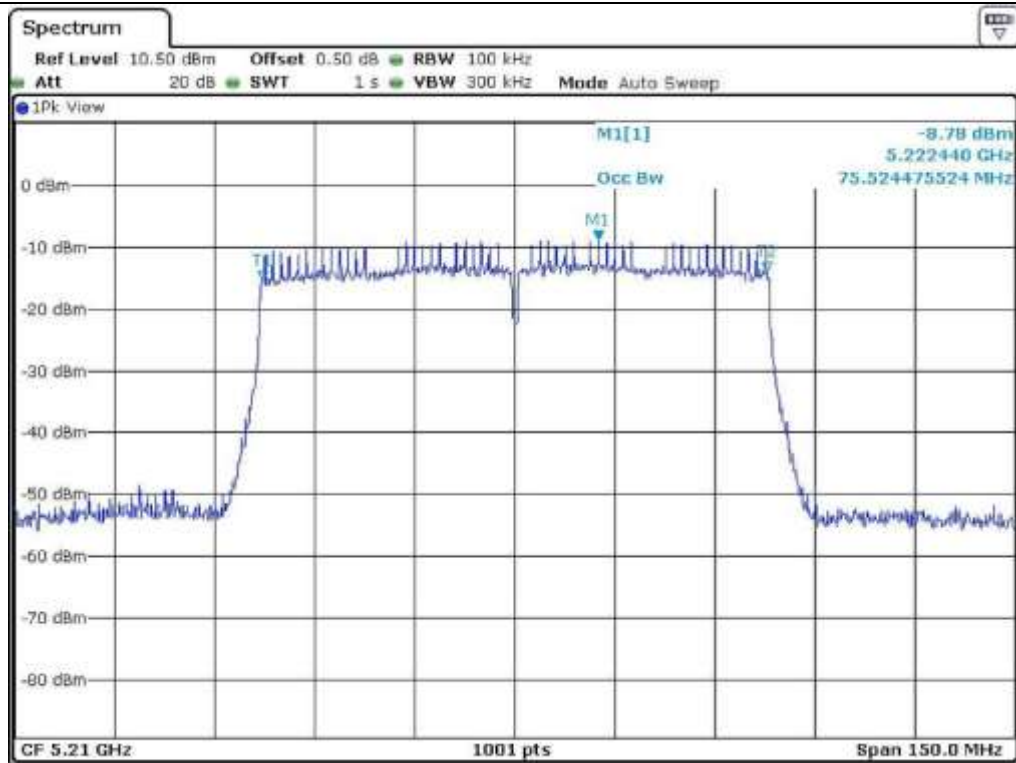
Middle Channel (5 290 MHz)



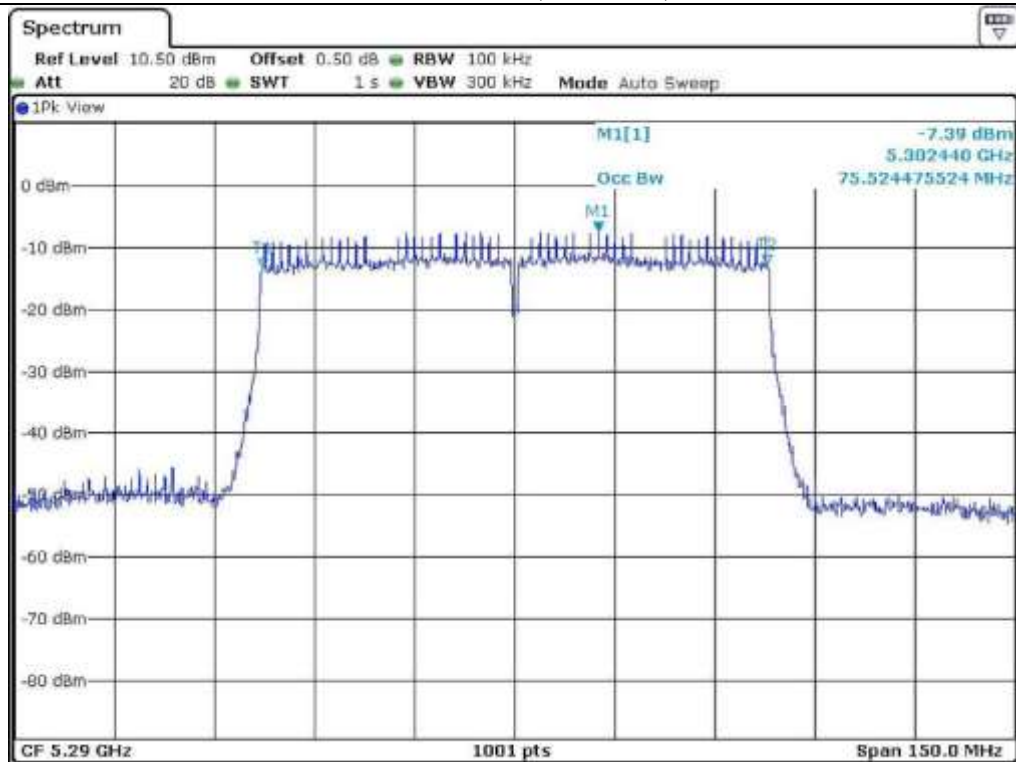
Middle Channel (5 530 MHz)



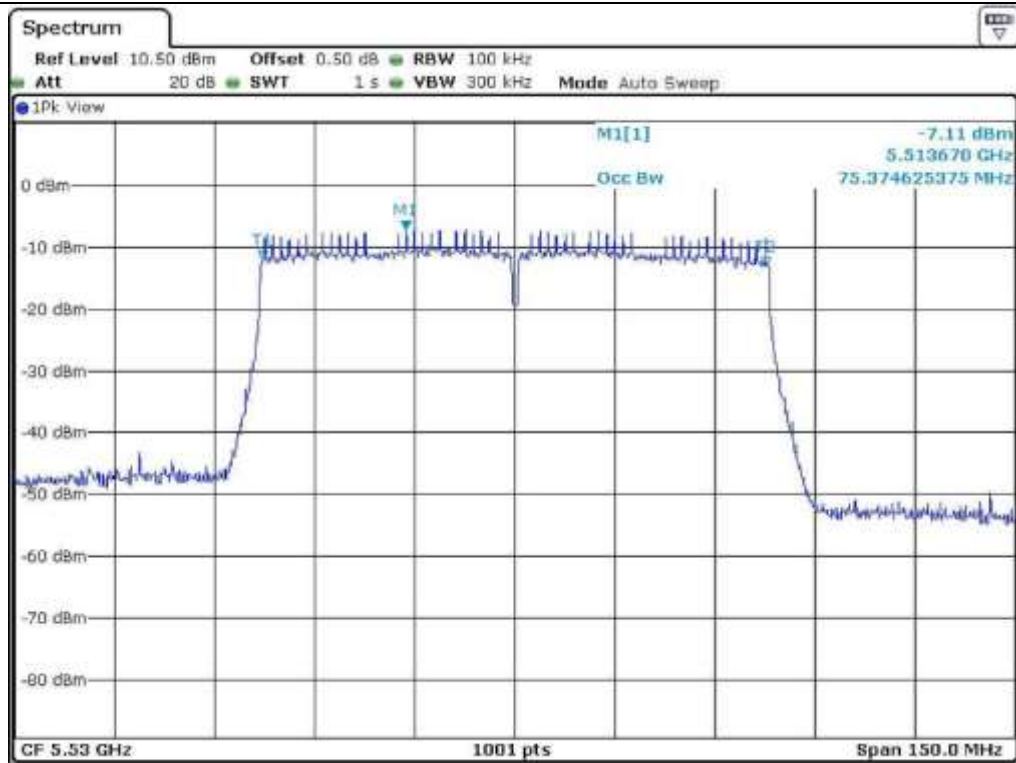
Middle Channel (5 775 MHz)



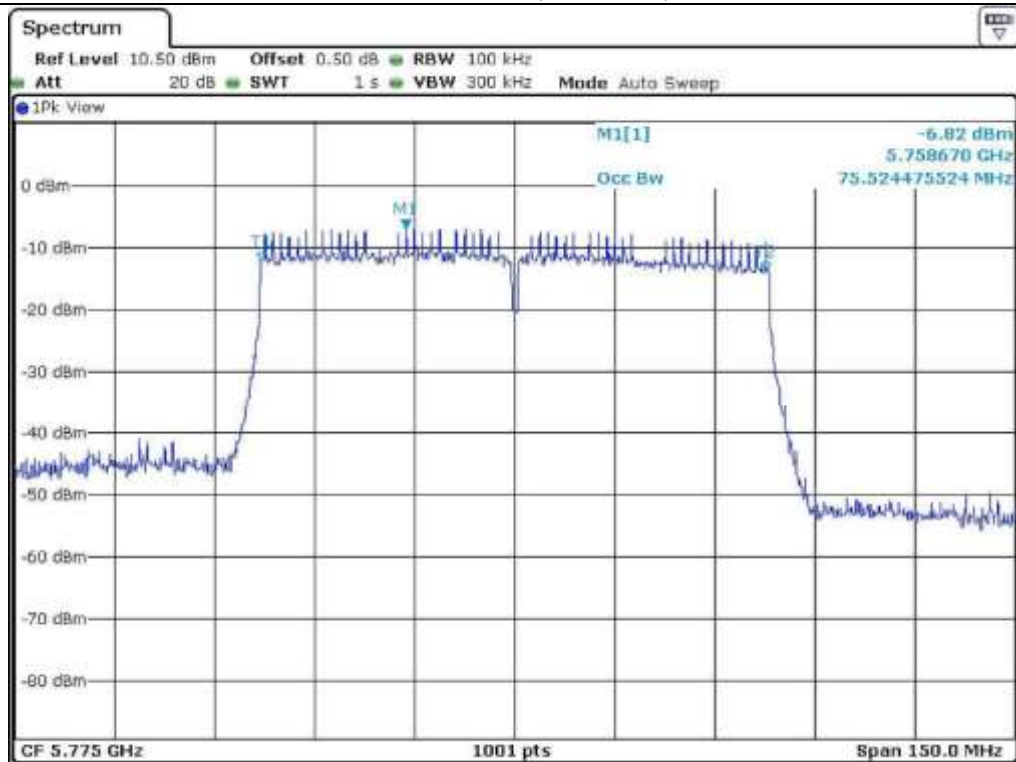
Middle Channel (5 210 MHz)



Middle Channel (5 290 MHz)



Middle Channel (5 530 MHz)



Middle Channel (5 775 MHz)

7.9.2 Test data for Antenna 1

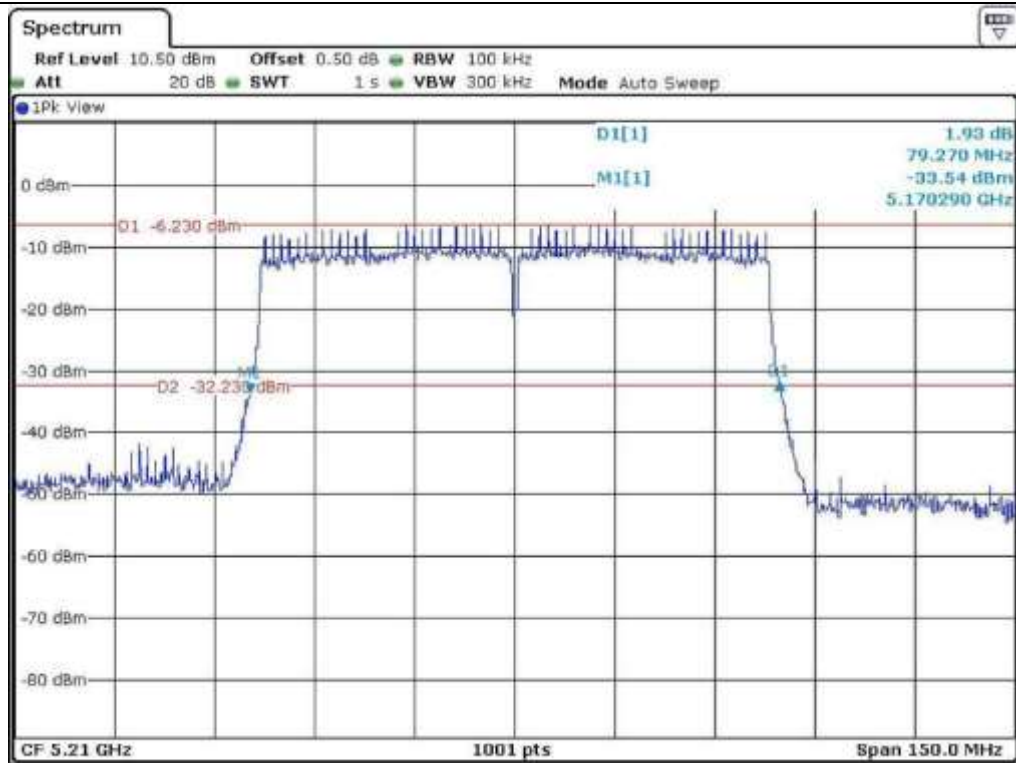
-. Test Date : June 18, 2015

-. Test Result : Pass

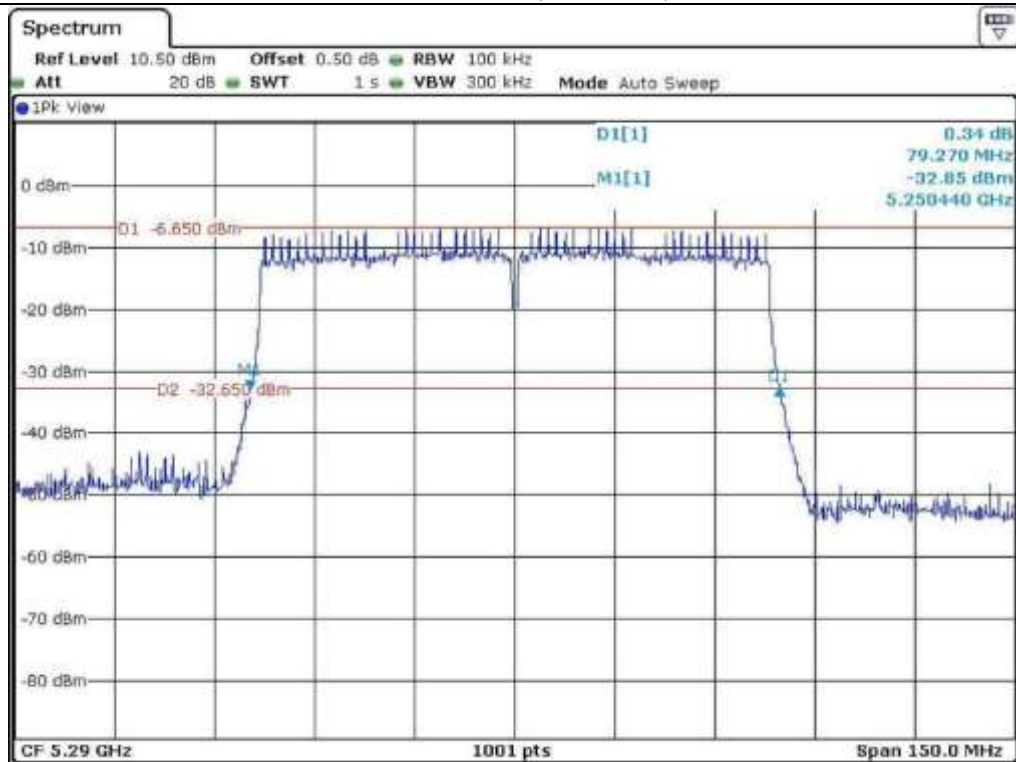
FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5 150 ~ 5 250	Middle	5 210	79.27	75.52
5 250 ~ 5 350	Middle	5 290	79.27	75.52
5 470 ~ 5 725	Middle	5 530	79.72	75.37
5 725 ~ 5 850	Middle	5 775	79.27	75.52



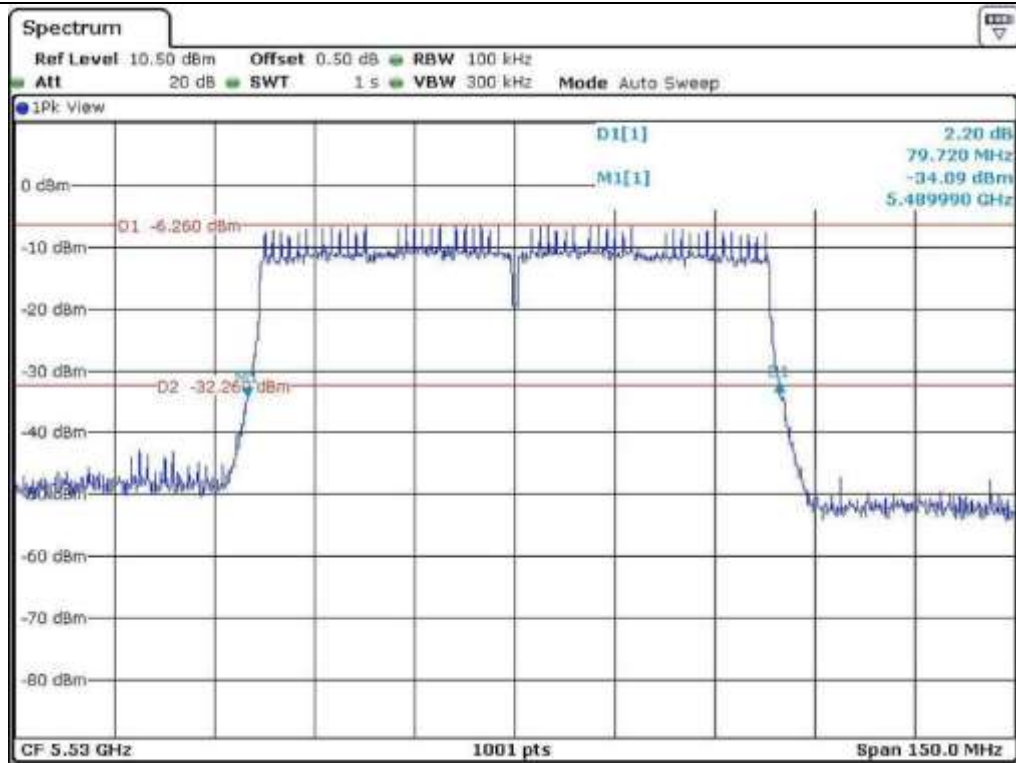
Tested by: Tae-Ho, Kim / Senior Engineer



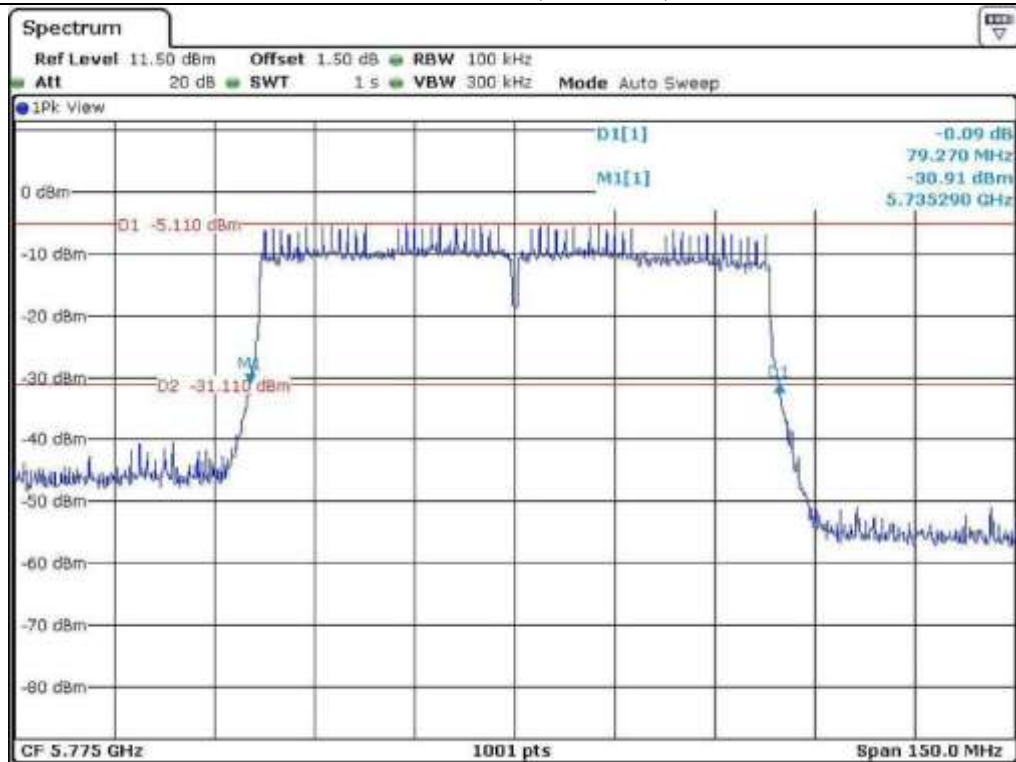
Middle Channel (5 210 MHz)



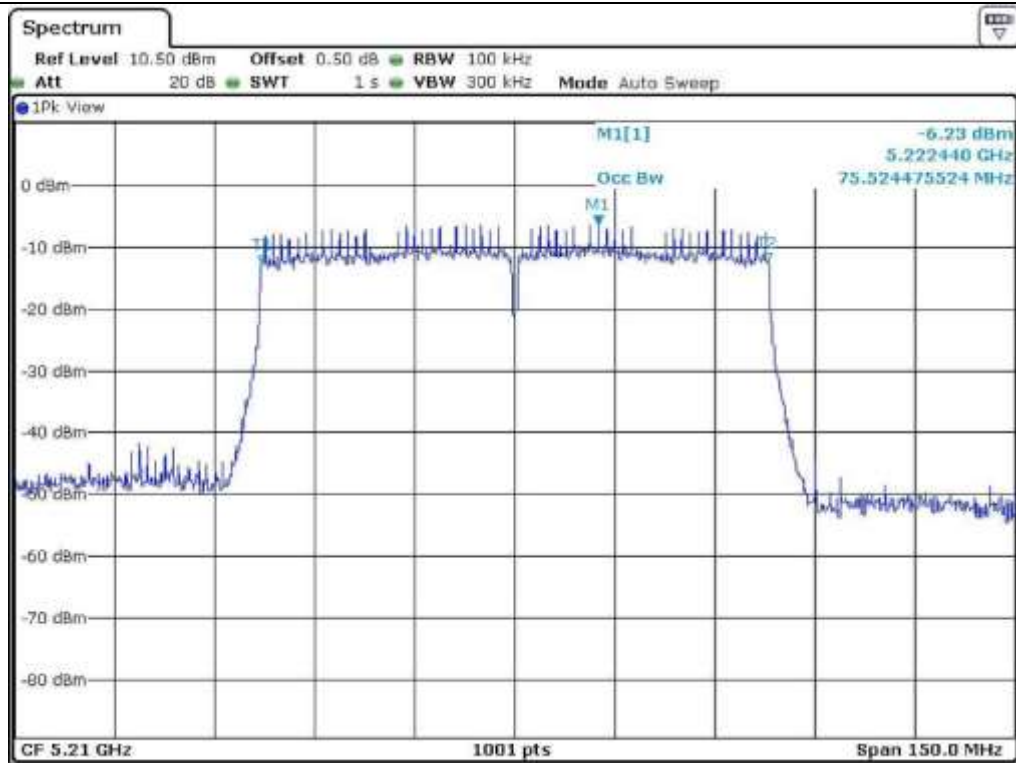
Middle Channel (5 290 MHz)



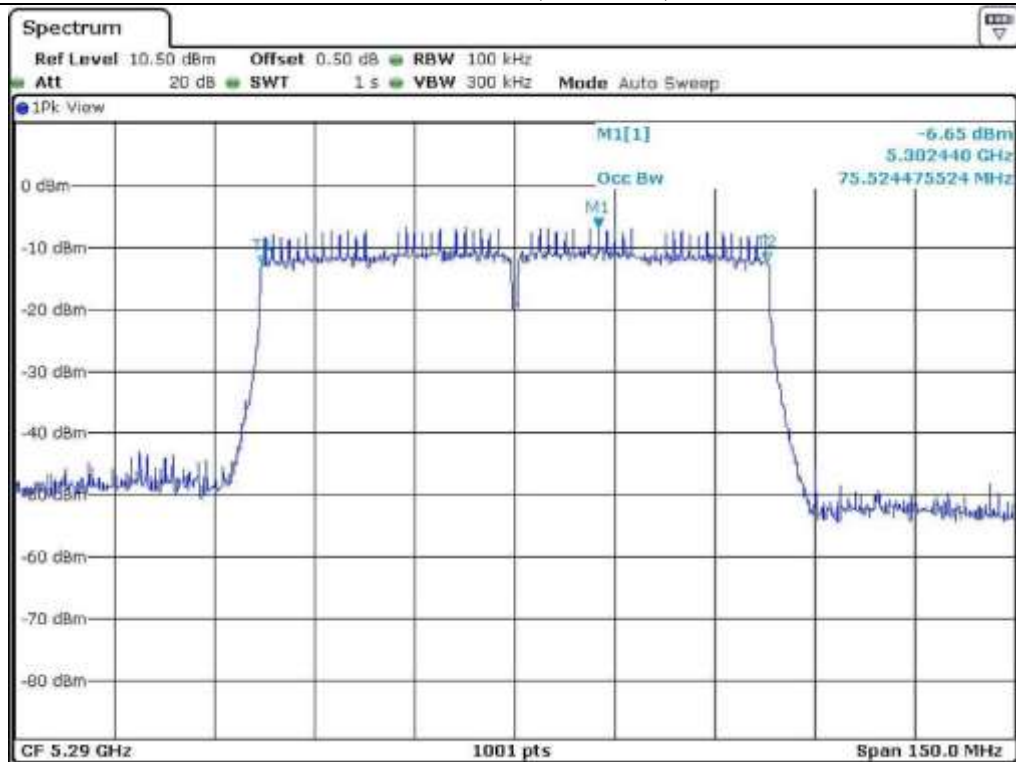
Middle Channel (5 530 MHz)



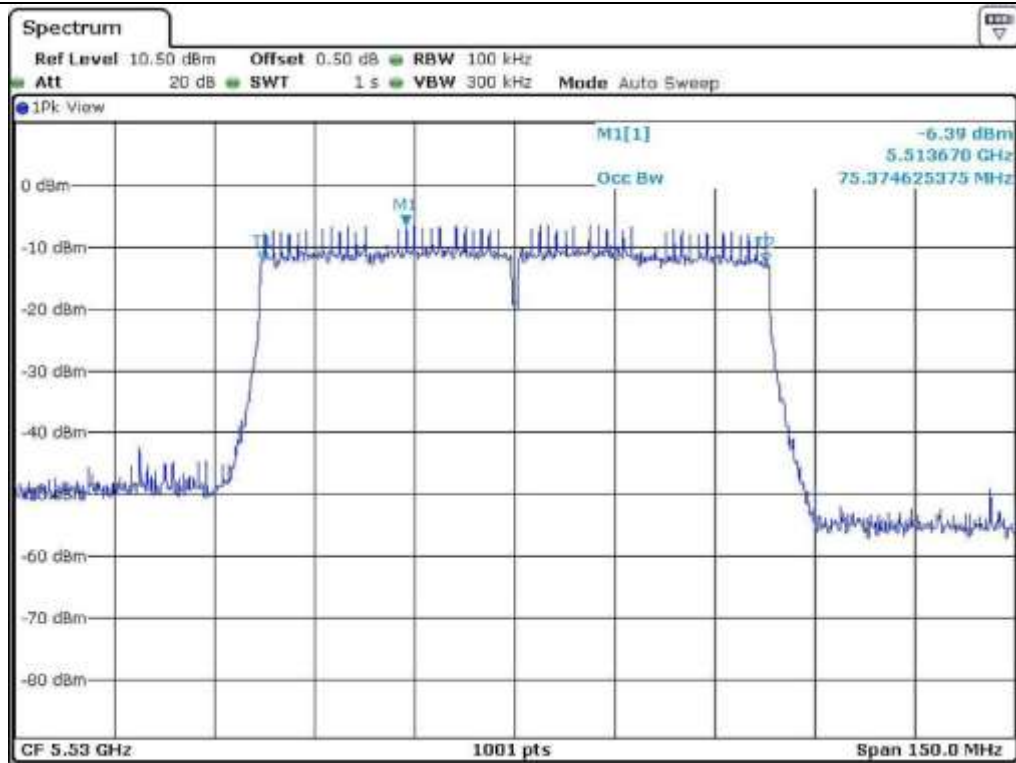
Middle Channel (5 775 MHz)



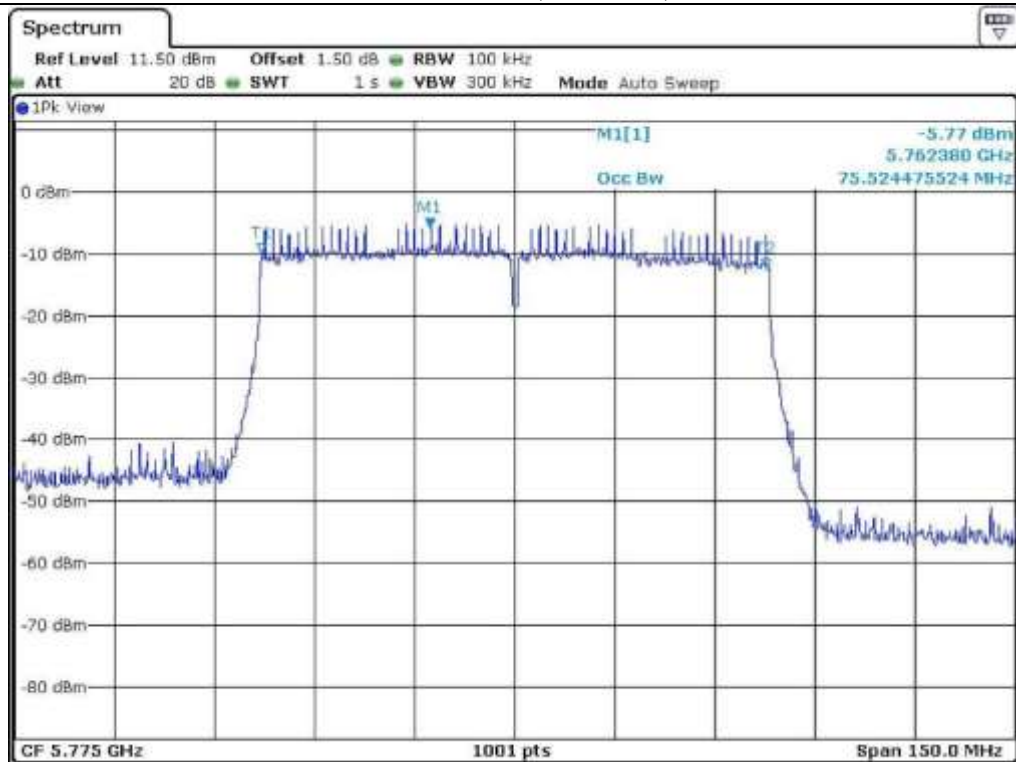
Middle Channel (5 210 MHz)



Middle Channel (5 290 MHz)



Middle Channel (5 530 MHz)



Middle Channel (5 775 MHz)

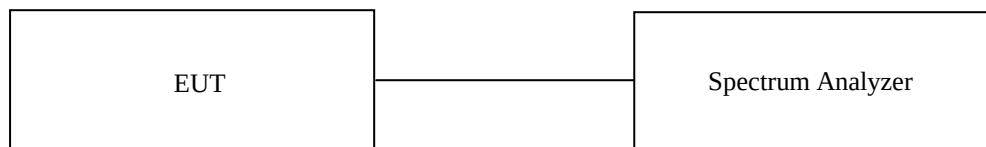
8. MAXIMUM PEAK OUTPUT POWER

8.1 Operating environment

Temperature : 24°C
Relative humidity : 48 % R.H.

8.2 Test set-up

The maximum peak output power was measured with the spectrum analyzer connected to the antenna output of the EUT. The spectrum analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99 % bandwidth. The EUT was operating in transmit mode at the appropriate center frequency.



8.3 Test equipment used

Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ - FSV40	Rohde & Schwarz	Signal Analyzer	101009	Jul. 30, 2014 (1Y)

All test equipment used is calibrated on a regular basis.

8.4 Test data for 802.11a RLAN Mode

8.4.1 Test data for Antenna 0

-. Test Date : June 16, 2015

-. Test Result : Pass

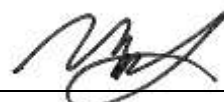
-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	21.28	12.05	23.98	11.93
	Middle	5 200	21.28	11.99	23.98	11.99
	High	5 240	21.28	12.09	23.98	11.89
5 250 ~ 5 350	Low	5 260	21.23	13.44	23.98	10.54
	Middle	5 300	21.23	12.88	23.98	11.10
	High	5 320	21.23	12.48	23.98	11.50
5 470 ~ 5 725	Low	5 500	20.98	13.68	23.98	10.32
	Middle	5 600	20.98	13.94	23.98	10.06
	High	5 700	20.98	13.50	23.98	10.50
5 725 ~ 5 850	Low	5 745	20.78	12.90	30.00	17.10
	Middle	5 785	20.78	12.66	30.00	17.34
	High	5 825	20.78	12.20	30.00	17.80

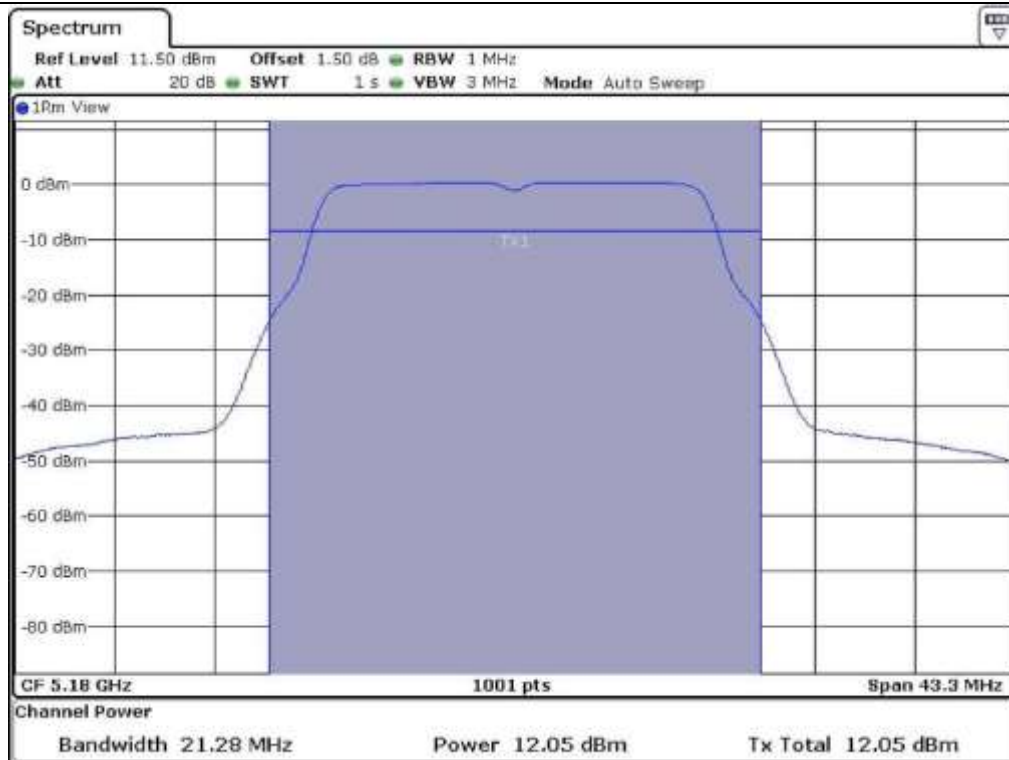
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	2.90	16.53	11.75	23.00	8.35	14.65
	Middle	5 200		16.53	12.10	23.00	8.00	15.00
	High	5 240		16.53	12.02	23.00	8.08	14.92
5 250 ~ 5 350	Low	5 260		16.53	13.09	30.00	14.01	15.99
	Middle	5 300		16.53	12.61	30.00	14.49	15.51
	High	5 320		16.53	12.38	30.00	14.72	15.28
5 470 ~ 5 725	Low	5 500		16.58	13.56	30.00	13.54	16.46
	Middle	5 600		16.58	13.85	30.00	13.25	16.75
	High	5 700		16.58	13.38	30.00	13.72	16.28
5 725 ~ 5 825	Low	5 745		16.58	12.88	36.00	20.22	15.78
	Middle	5 785		16.58	12.53	36.00	20.57	15.43
	High	5 805		16.58	12.06	36.00	21.04	14.96

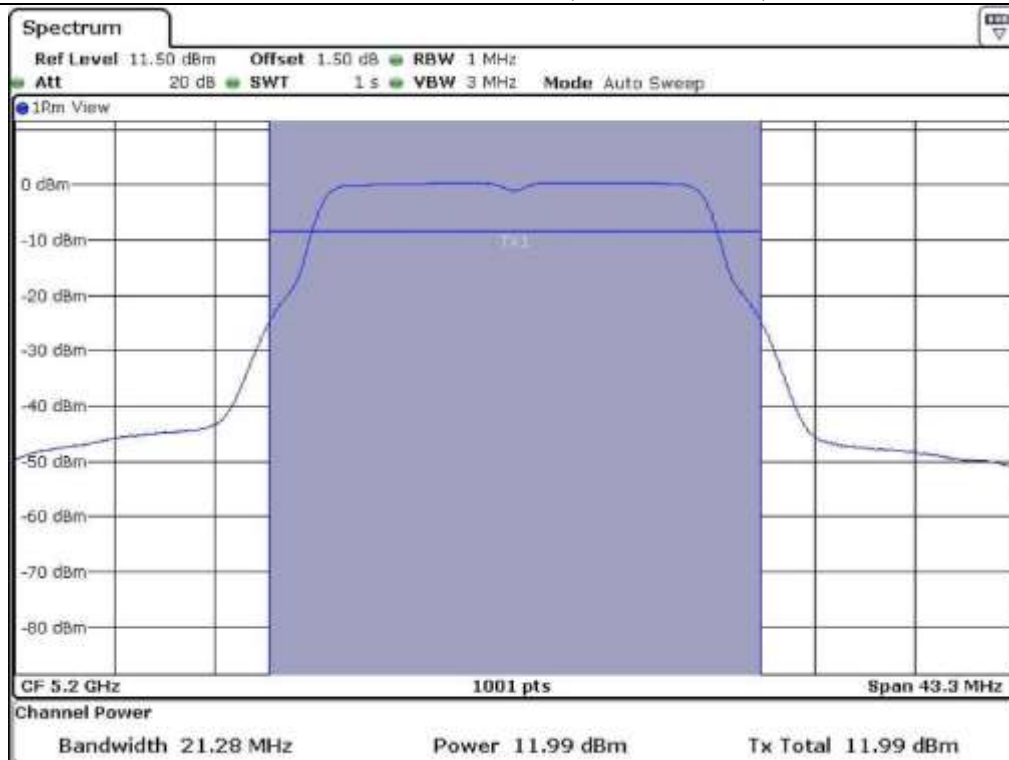
Remark: See next page for measurement data.



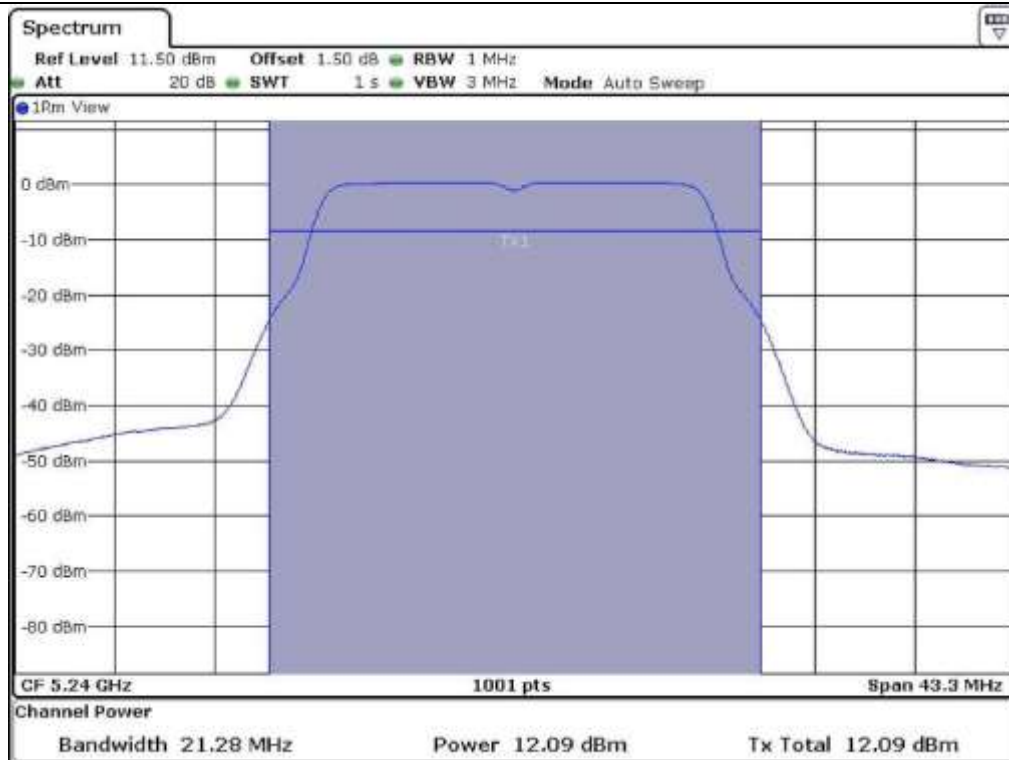
Tested by: Tae-Ho, Kim / Senior Engineer



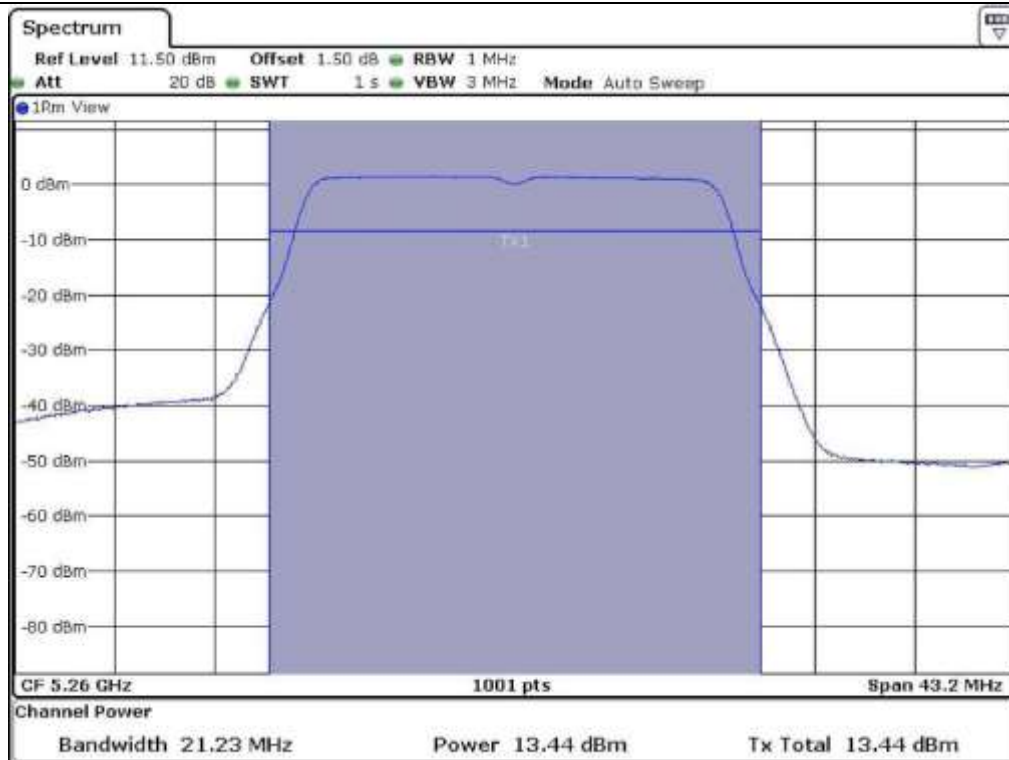
Low Channel @ 5 180 MHz (26 dB Bandwidth)



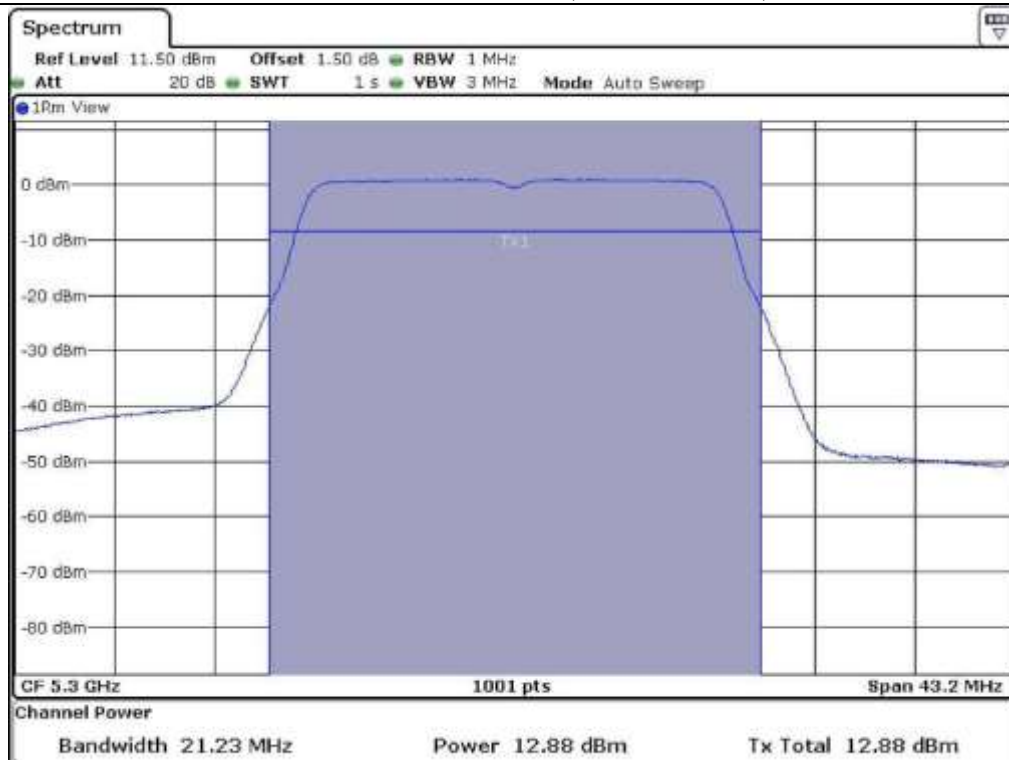
Middle Channel @ 5 200 MHz (26 dB Bandwidth)



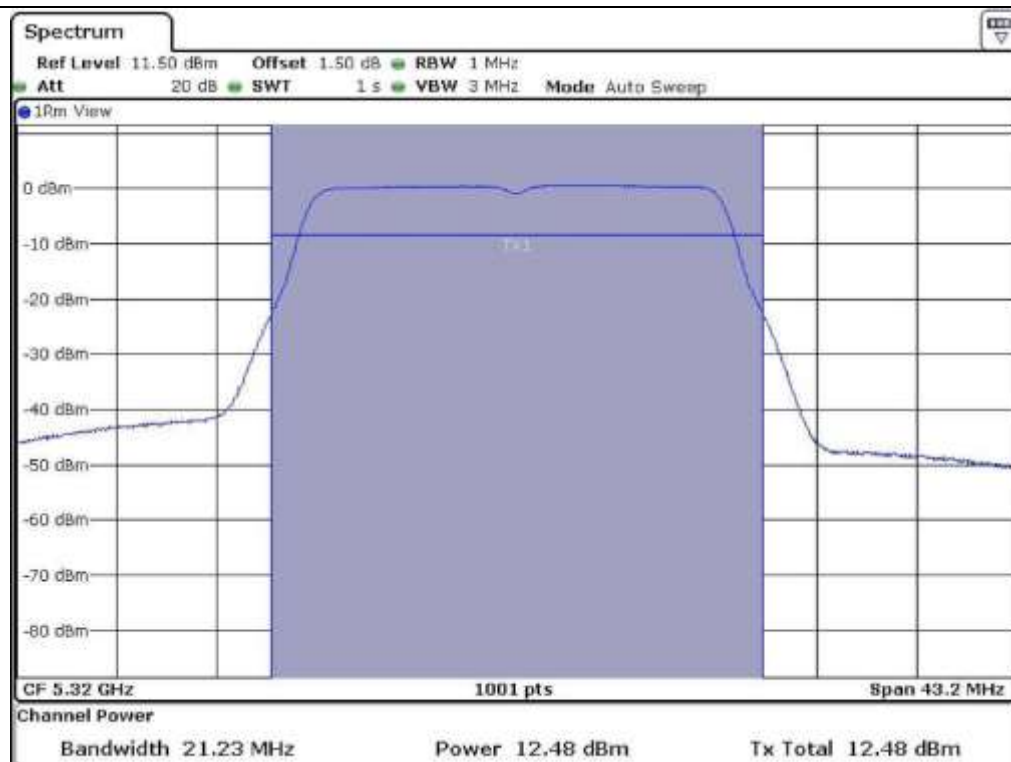
High Channel @ 5 240 MHz (26 dB Bandwidth)



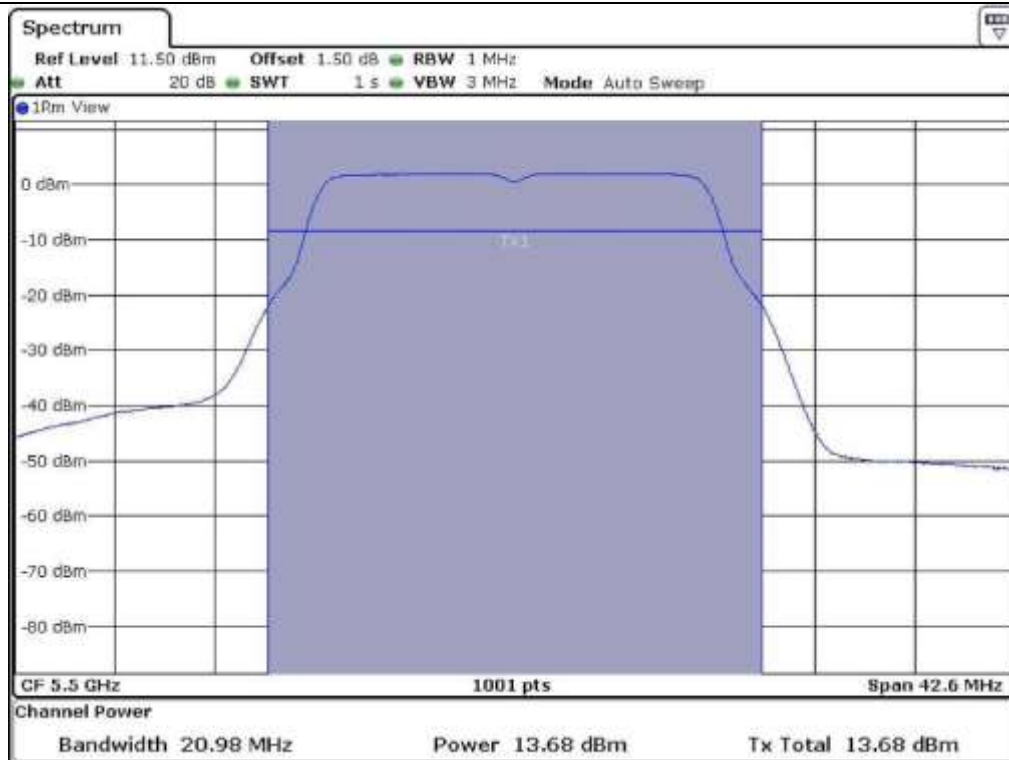
Low Channel @ 5 260 MHz (26 dB Bandwidth)



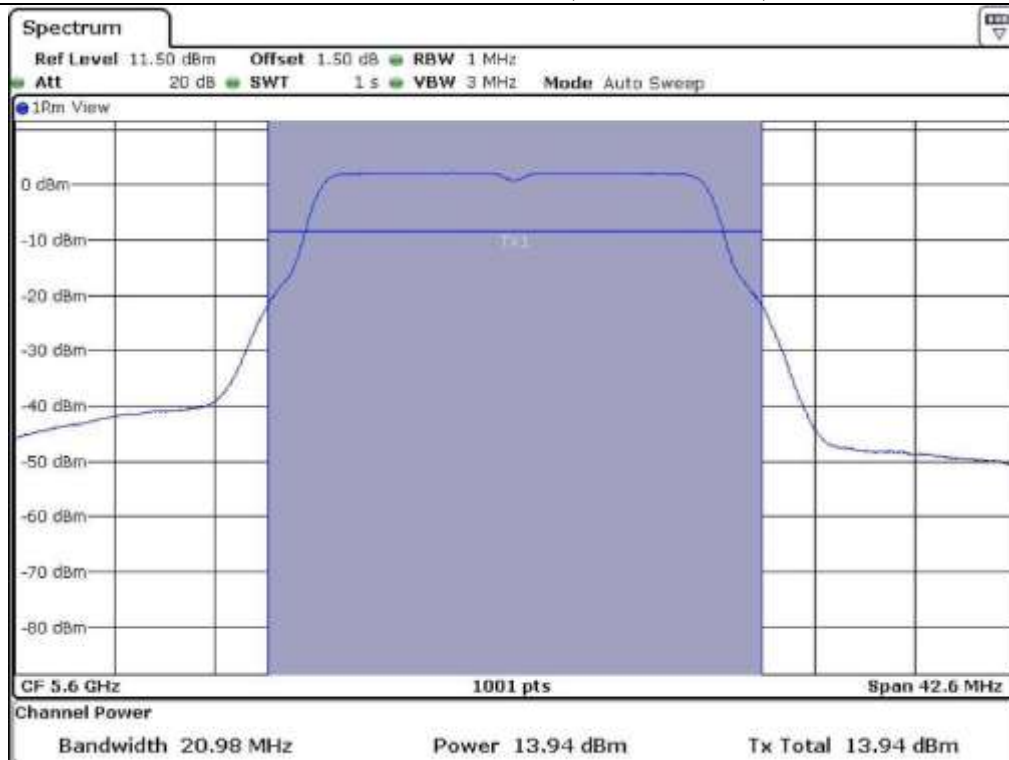
Middle Channel @ 5 300 MHz (26 dB Bandwidth)



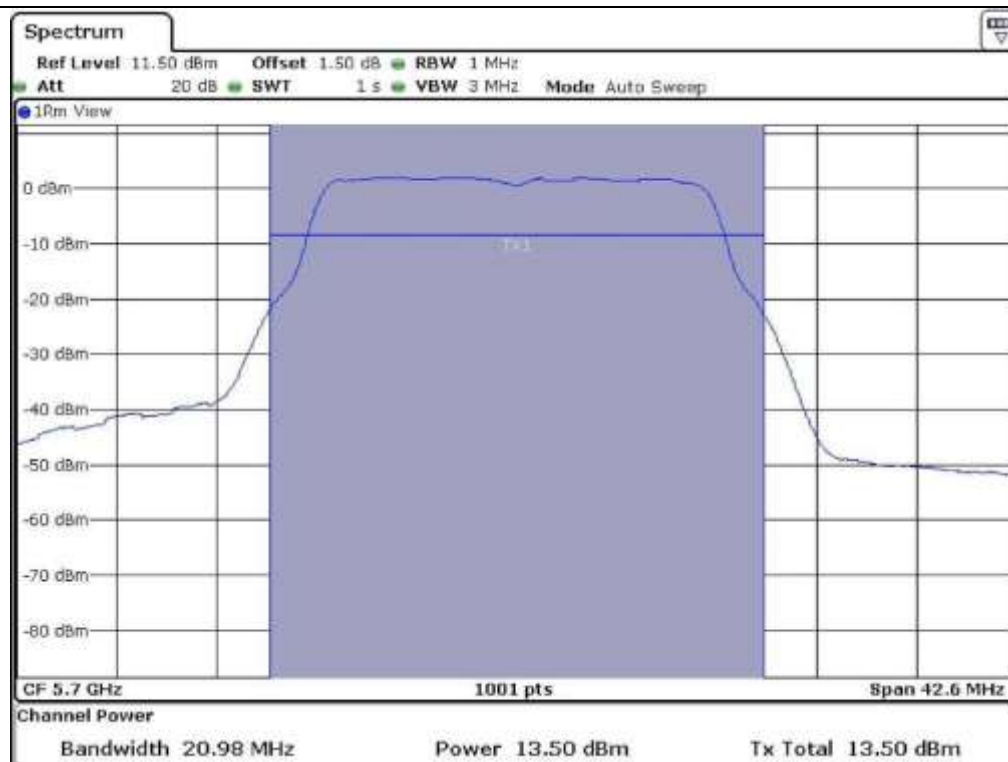
High Channel @ 5 320 MHz (26 dB Bandwidth)



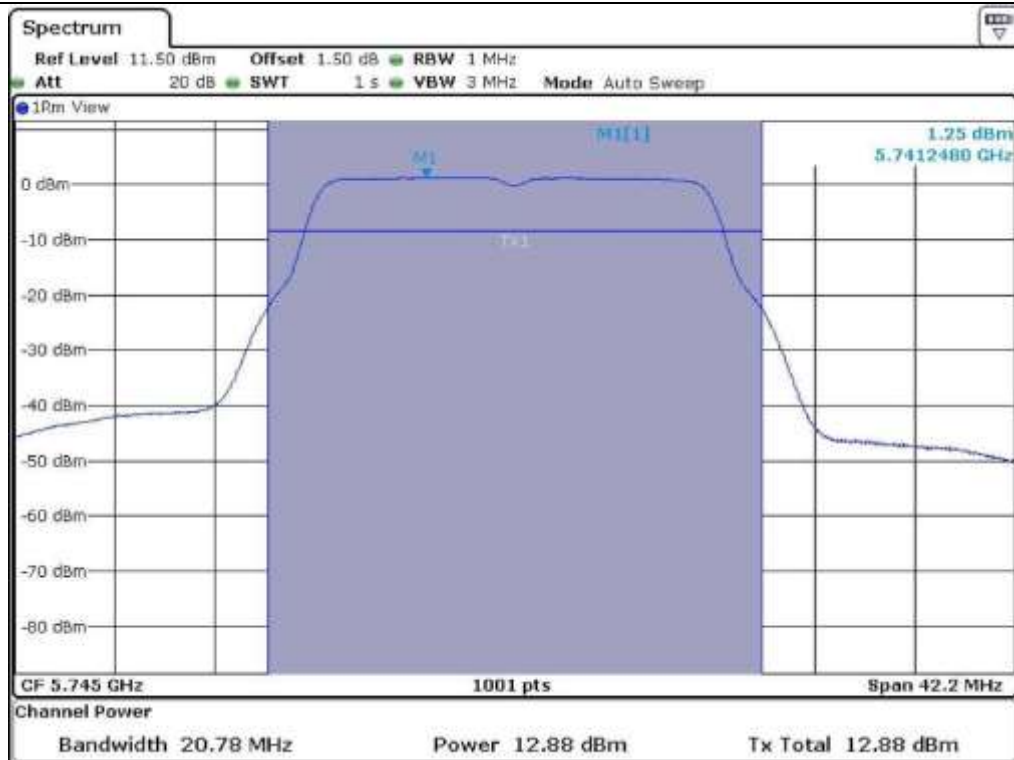
Low Channel @ 5 500 MHz (26 dB Bandwidth)



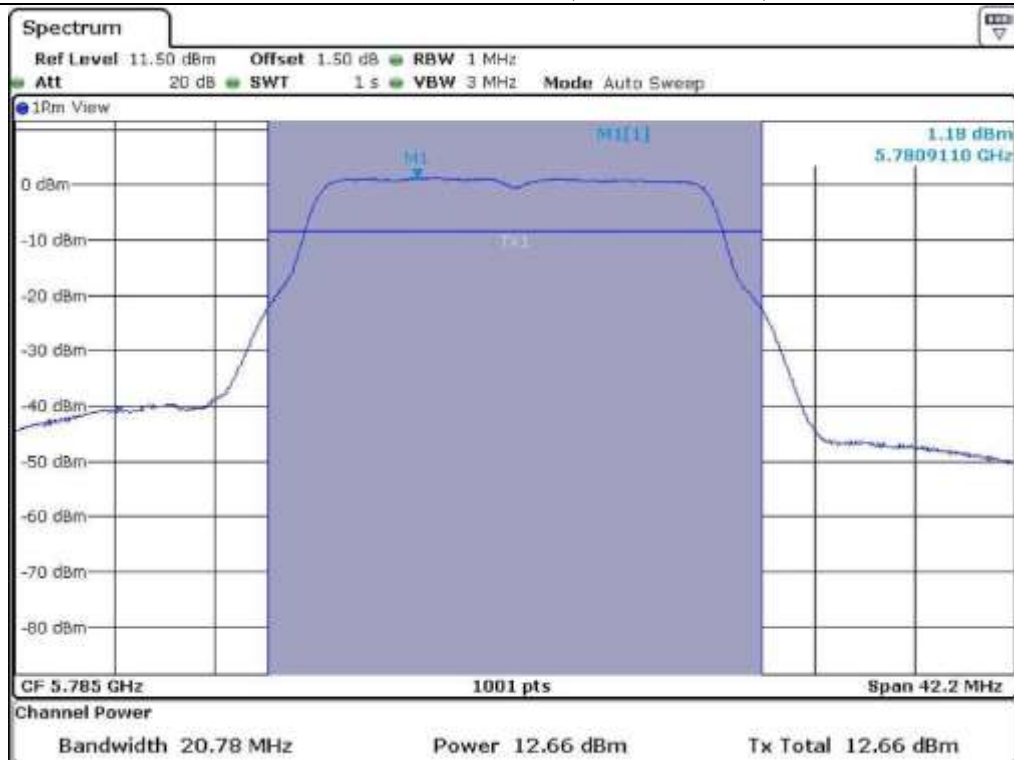
Middle Channel @ 5 600 MHz (26 dB Bandwidth)



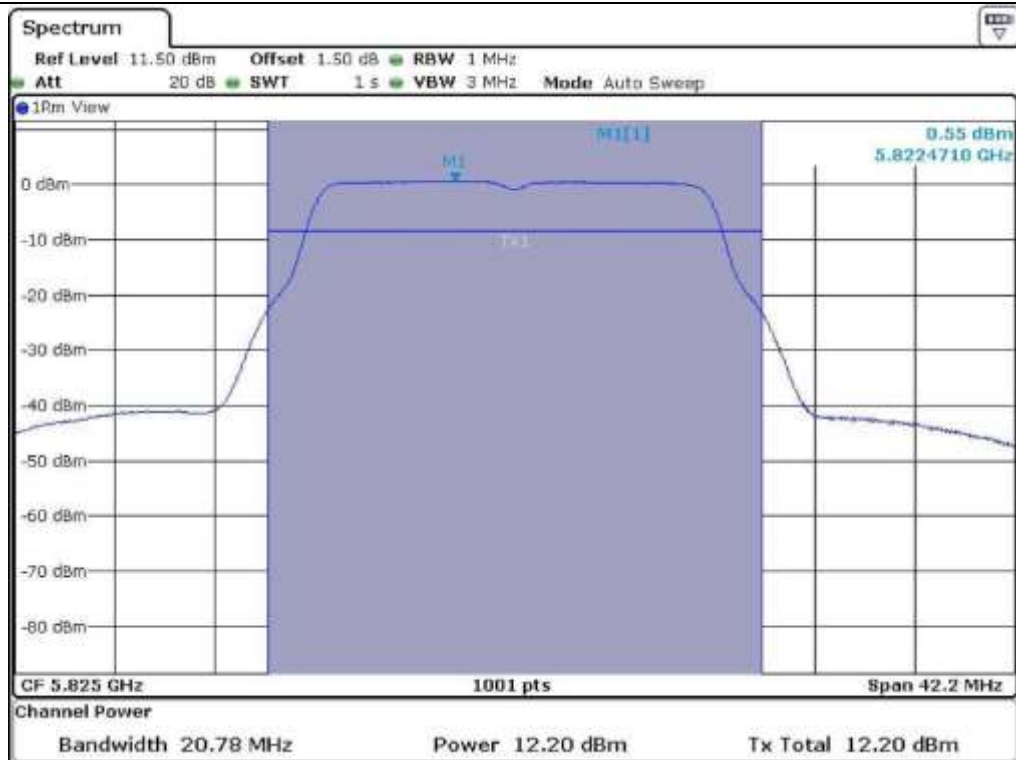
High Channel @ 5 700 MHz (26 dB Bandwidth)



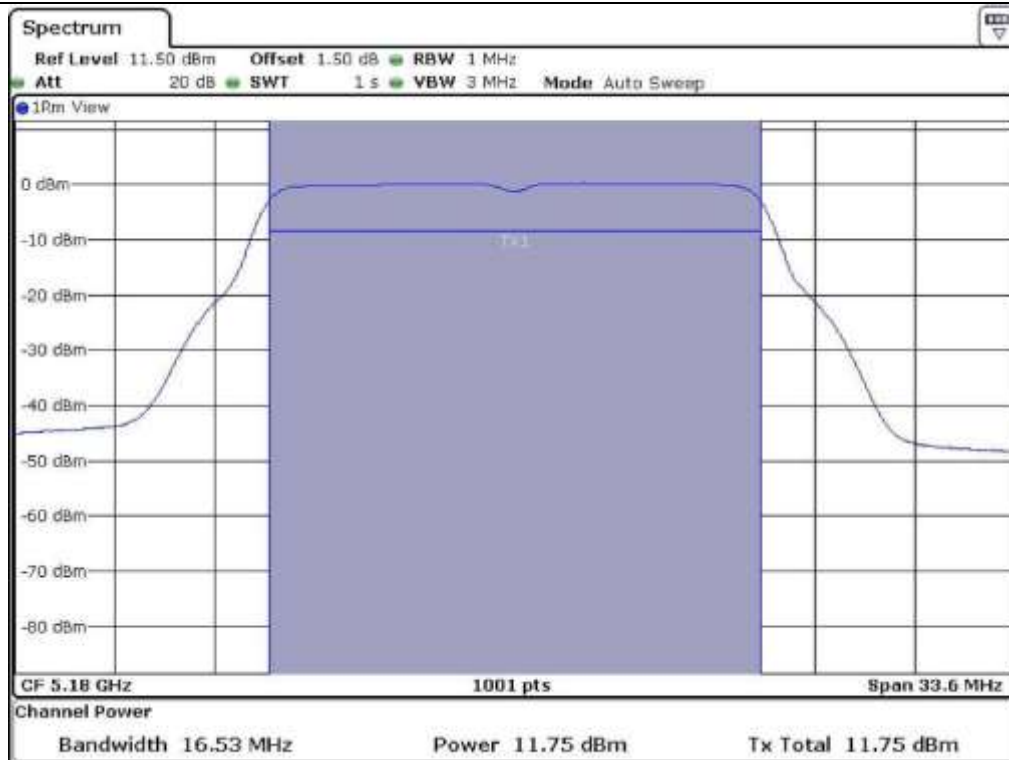
Low Channel @ 5.745 MHz (26 dB Bandwidth)



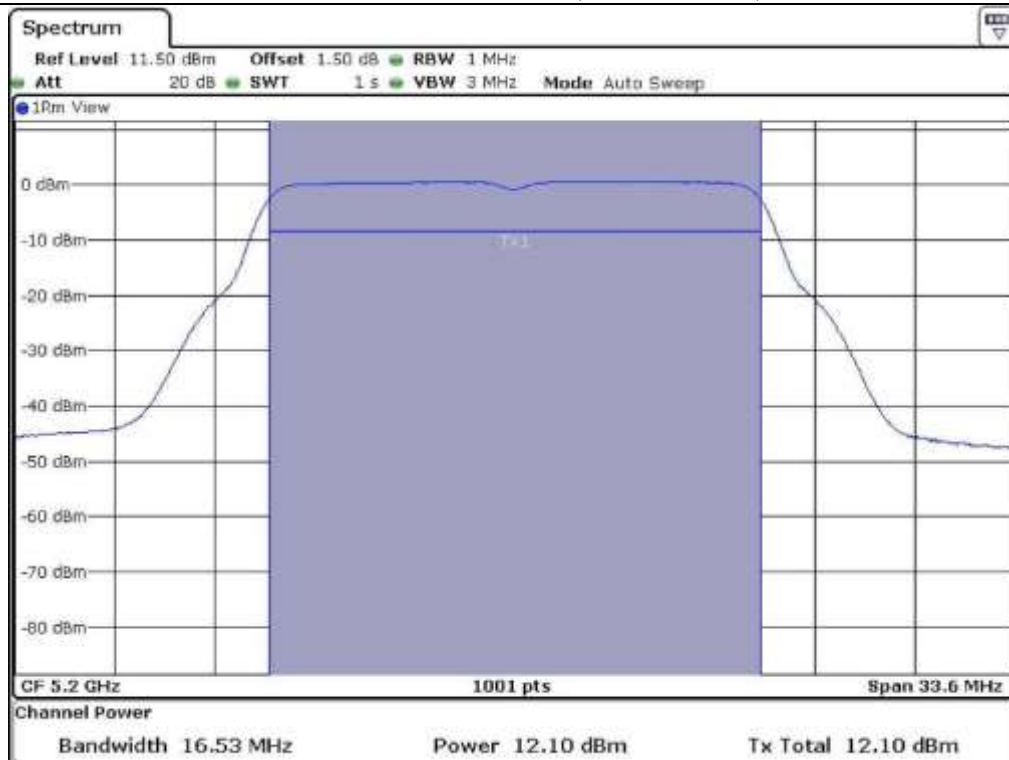
Middle Channel @ 5.785 MHz (26 dB Bandwidth)



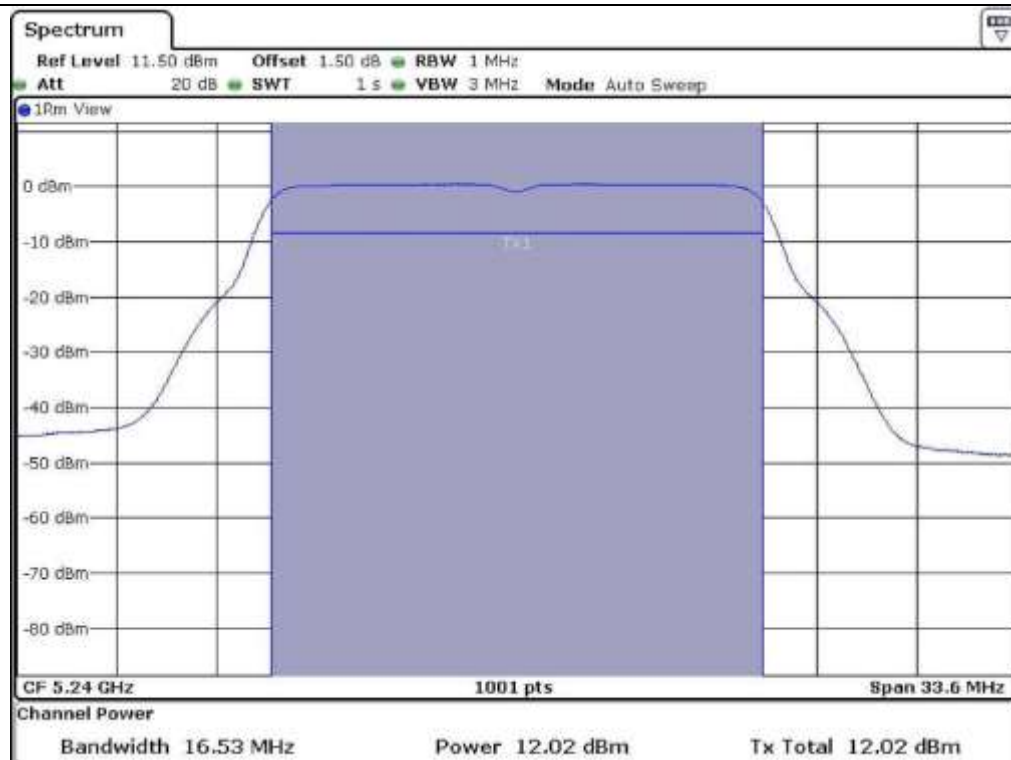
High Channel @ 5 825 MHz (26 dB Bandwidth)



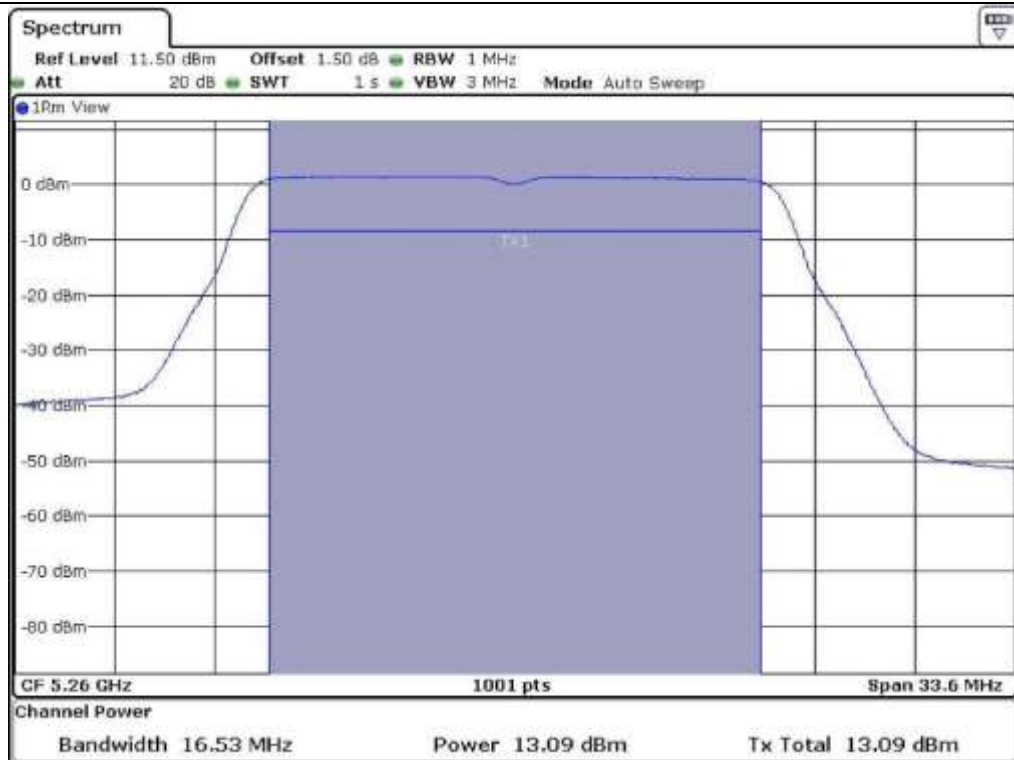
Low Channel @ 5 180 MHz (99 % bandwidth)



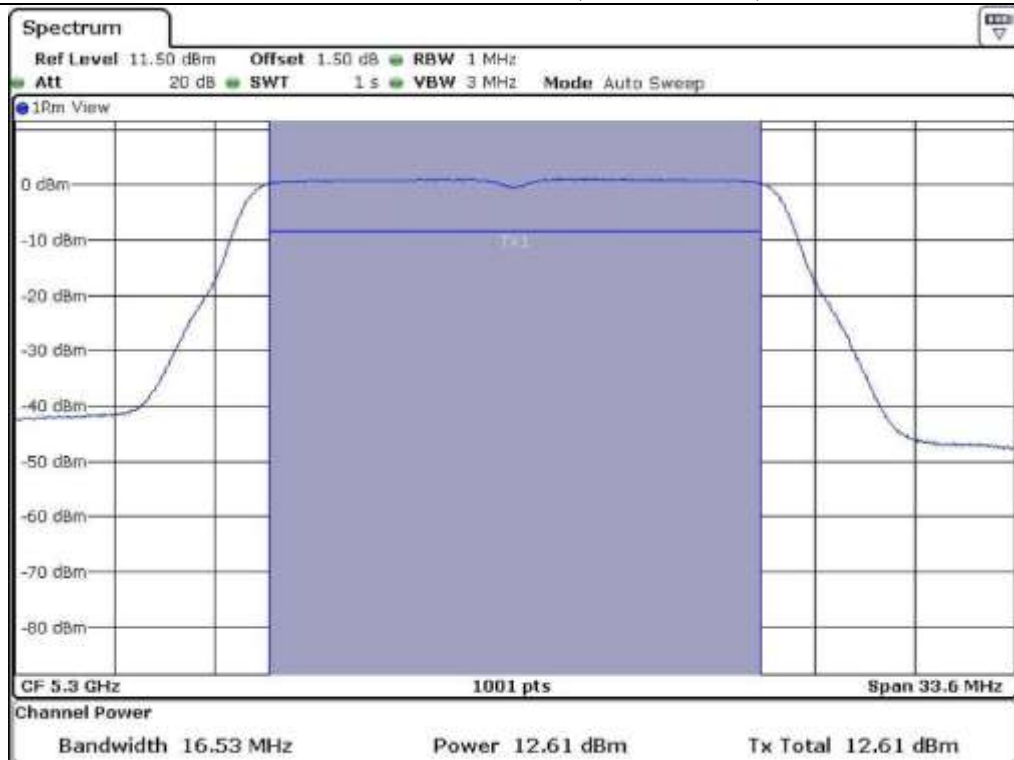
Middle Channel @ 5 200 MHz (99 % bandwidth)



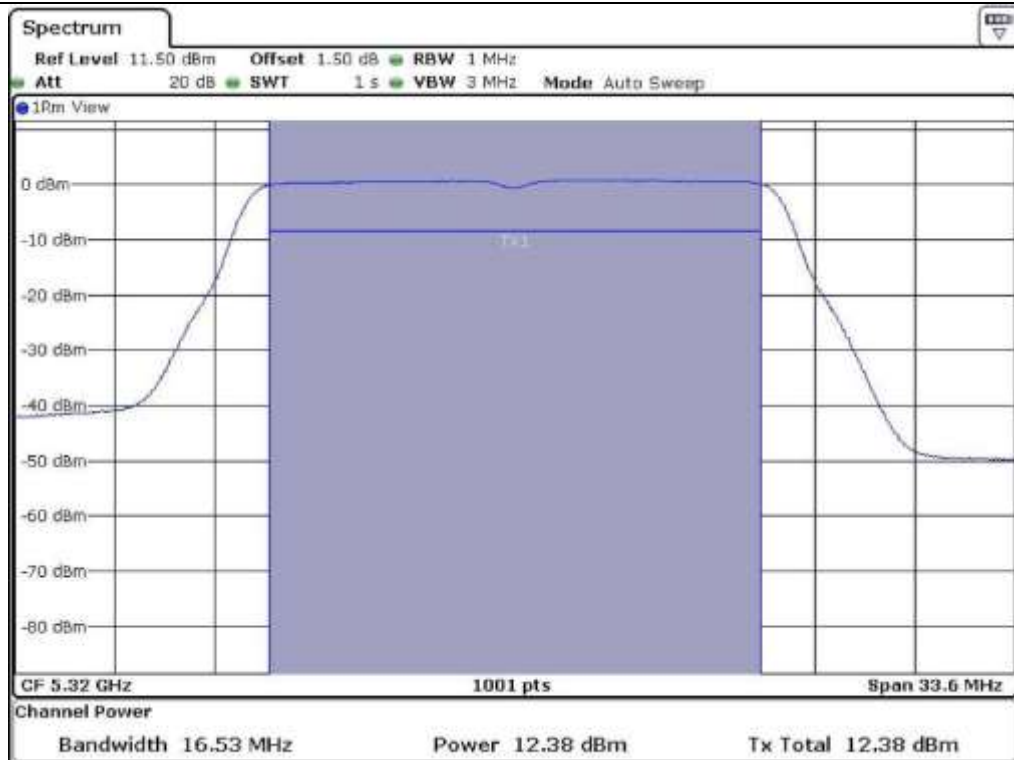
High Channel @ 5 240 MHz (99 % bandwidth)



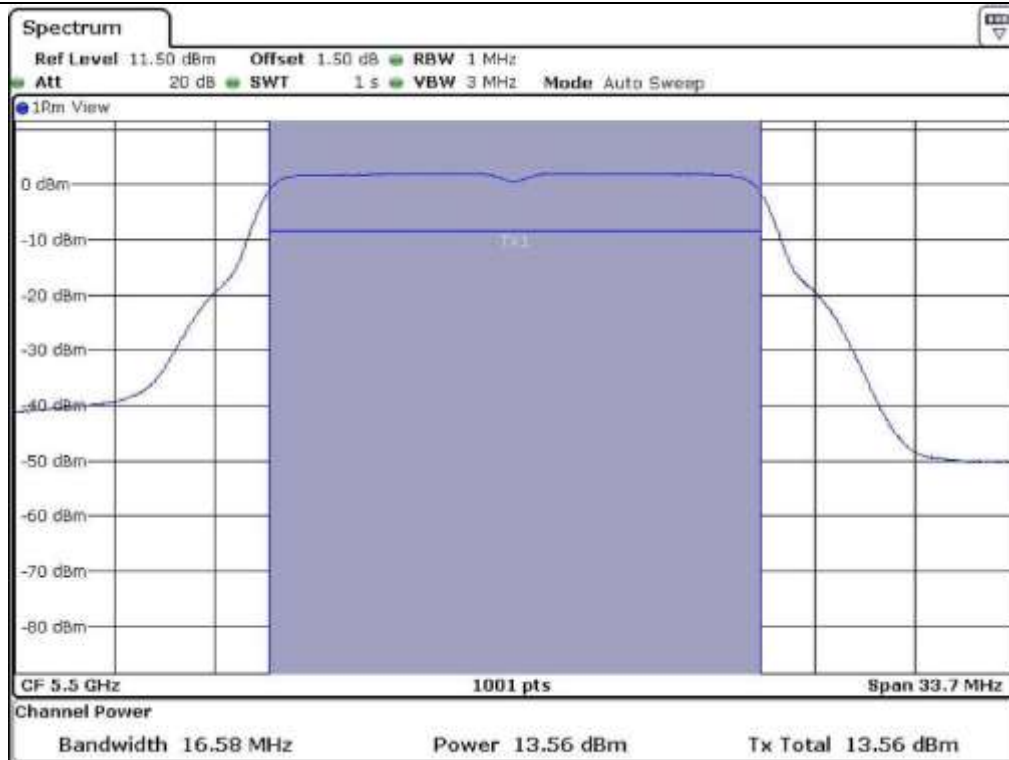
Low Channel @ 5 260 MHz (99 % bandwidth)



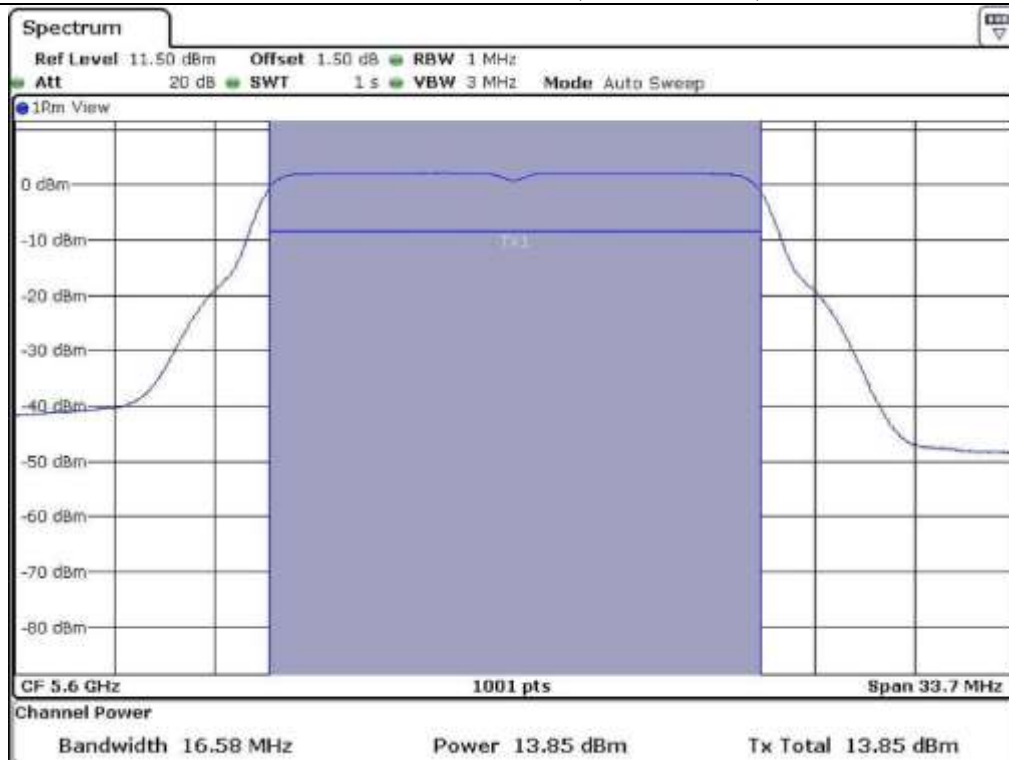
Middle Channel @ 5 300 MHz (99 % bandwidth)



High Channel @ 5 320 MHz (99 % bandwidth)

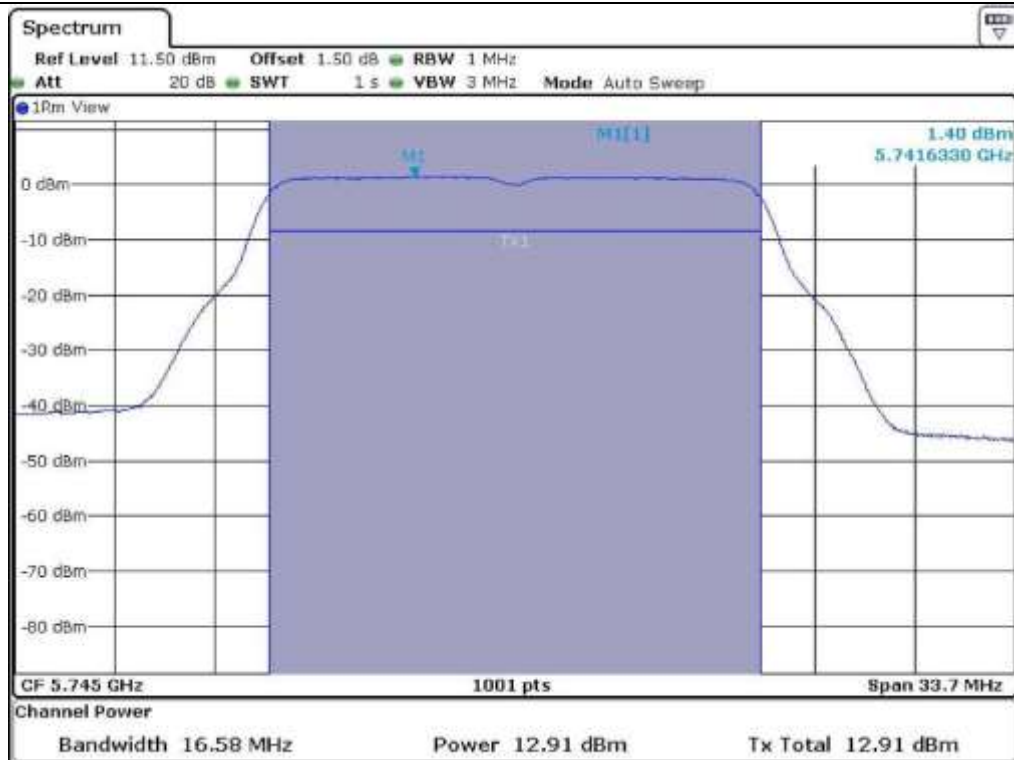


Low Channel @ 5 500 MHz (99 % bandwidth)

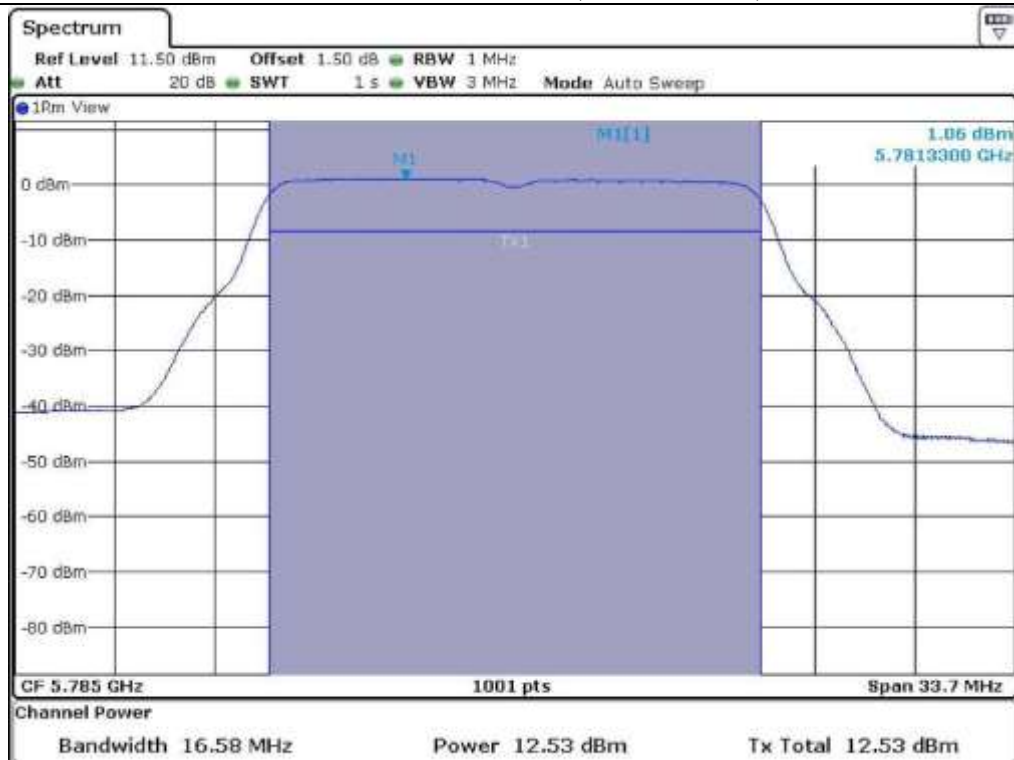


Middle Channel @ 5 600 MHz (99 % bandwidth)

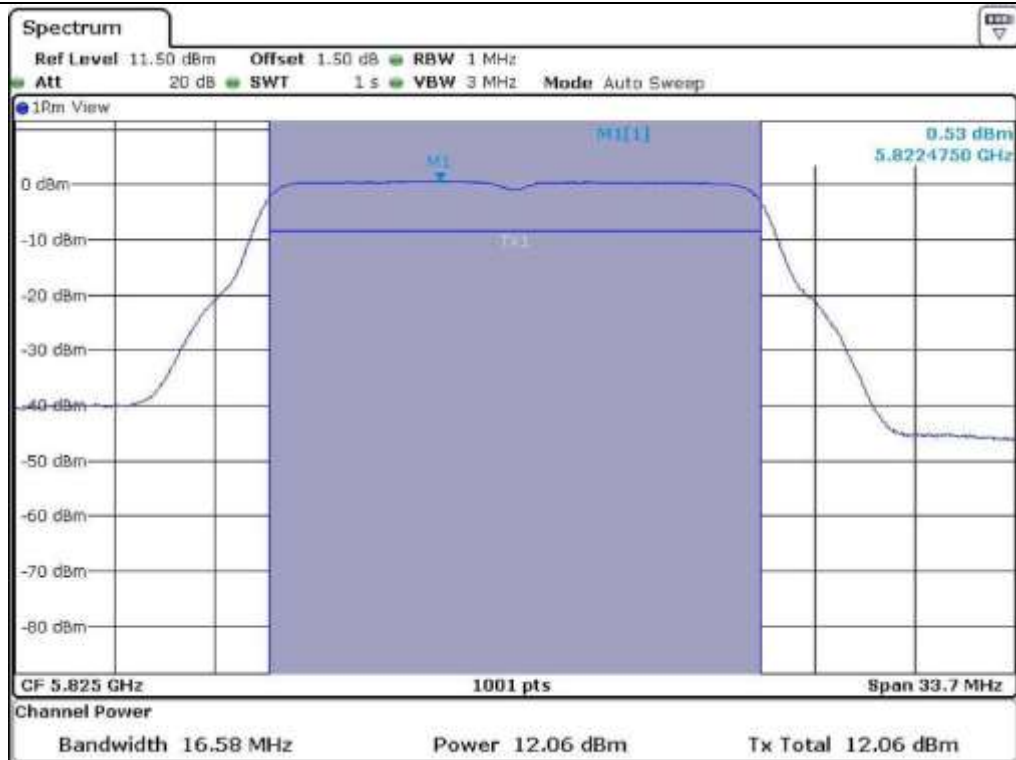
EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)



Low Channel @ 5 745 MHz (99 % bandwidth)



Middle Channel @ 5 785 MHz (99 % bandwidth)



High Channel @ 5 825 MHz (99 % bandwidth)

8.4.2 Test data for Antenna 1

-. Test Date : June 16, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	21.28	13.09	23.98	10.89
	Middle	5 200	21.28	13.15	23.98	10.83
	High	5 240	21.28	13.10	23.98	10.88
5 250 ~ 5 350	Low	5 260	21.23	12.07	23.98	11.91
	Middle	5 300	21.23	11.69	23.98	12.29
	High	5 320	21.23	11.93	23.98	12.05
5 470 ~ 5 725	Low	5 500	20.98	12.81	23.98	11.19
	Middle	5 600	20.98	13.60	23.98	10.40
	High	5 700	20.98	12.62	23.98	11.38
5 725 ~ 5 850	Low	5 745	20.78	13.72	30.00	16.28
	Middle	5 785	20.78	13.51	30.00	16.49
	High	5 825	20.78	13.55	30.00	16.45

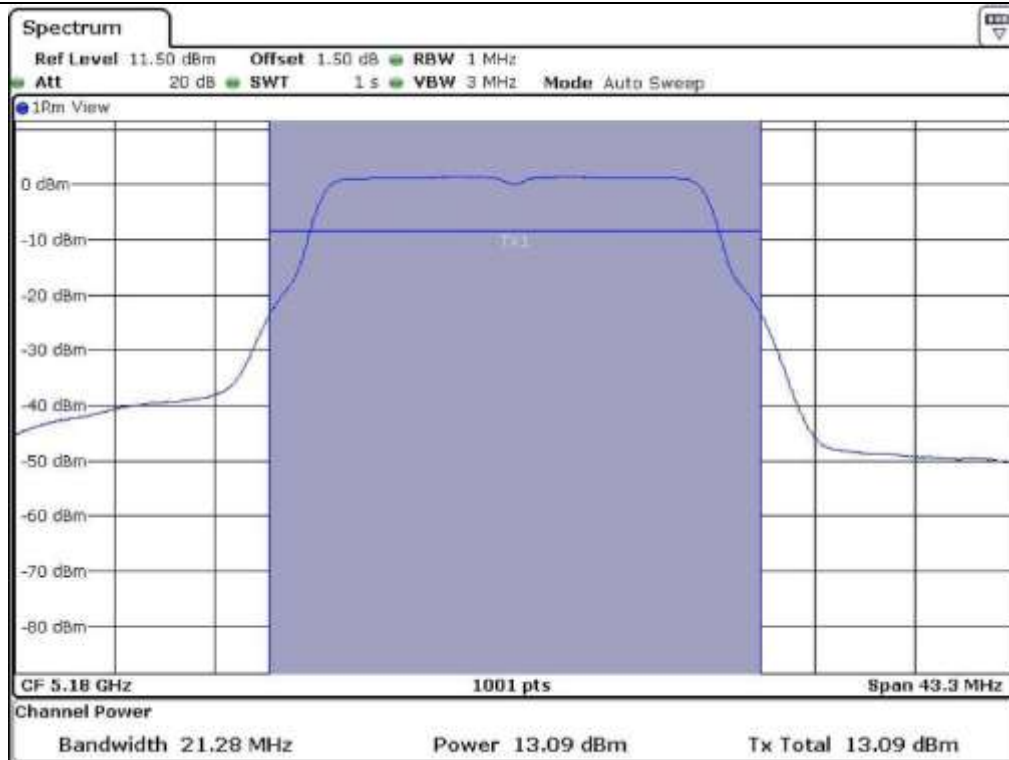
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	2.90	16.53	12.95	23.00	7.15	15.85
	Middle	5 200		16.53	13.00	23.00	7.10	15.90
	High	5 240		16.53	13.09	23.00	7.01	15.99
5 250 ~ 5 350	Low	5 260		16.53	11.76	30.00	15.34	14.66
	Middle	5 300		16.53	11.48	30.00	15.62	14.38
	High	5 320		16.53	11.75	30.00	15.35	14.65
5 470 ~ 5 725	Low	5 500		16.58	12.66	30.00	14.44	15.56
	Middle	5 600		16.58	13.40	30.00	13.70	16.30
	High	5 700		16.58	12.43	30.00	14.67	15.33
5 725 ~ 5 825	Low	5 745		16.58	13.61	36.00	19.49	16.51
	Middle	5 785		16.58	13.48	36.00	19.62	16.38
	High	5 805		16.58	13.48	36.00	19.62	16.38

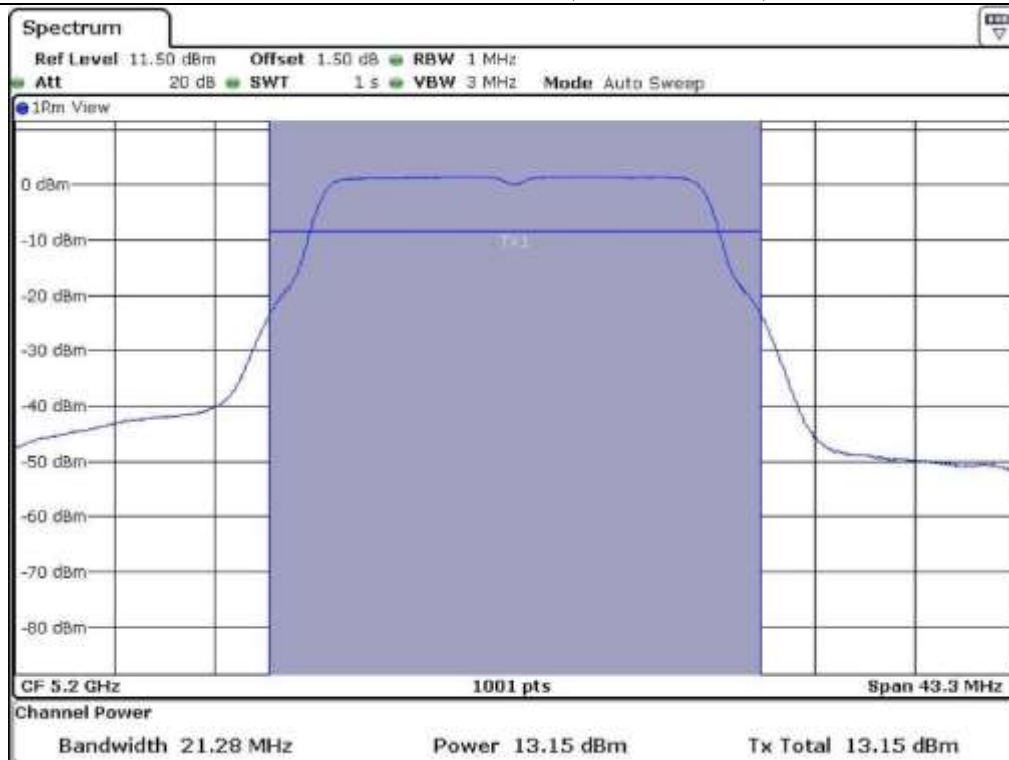
Remark: See next page for measurement data.



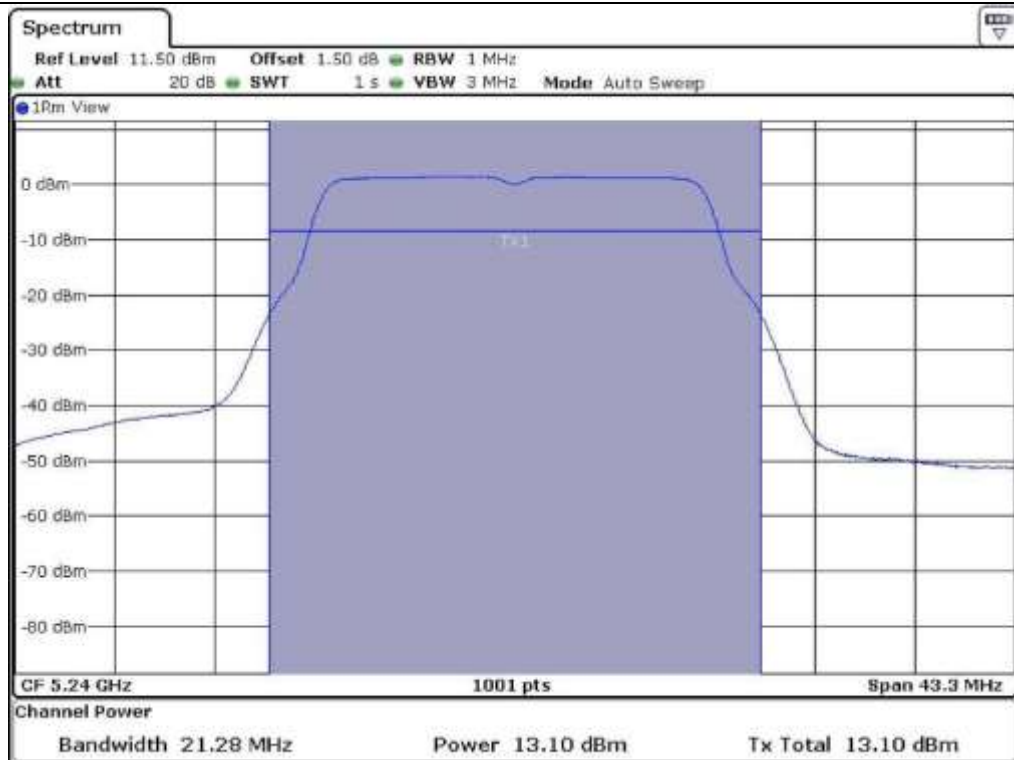
Tested by: Tae-Ho, Kim / Senior Engineer



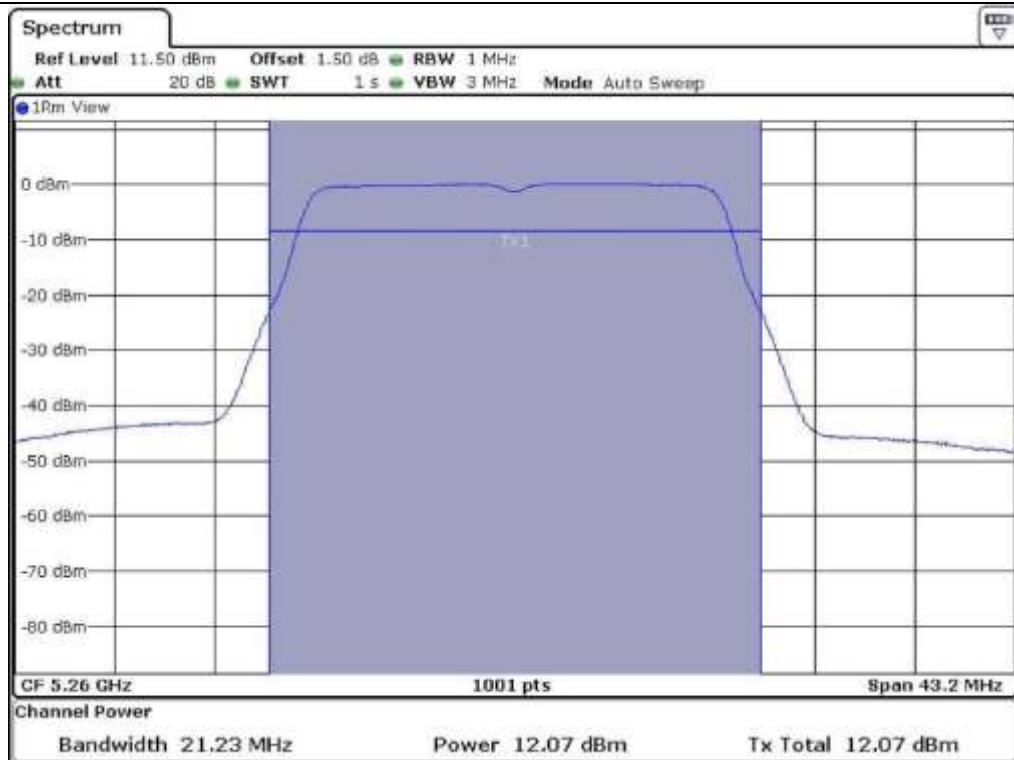
Low Channel @ 5 180 MHz (26 dB Bandwidth)



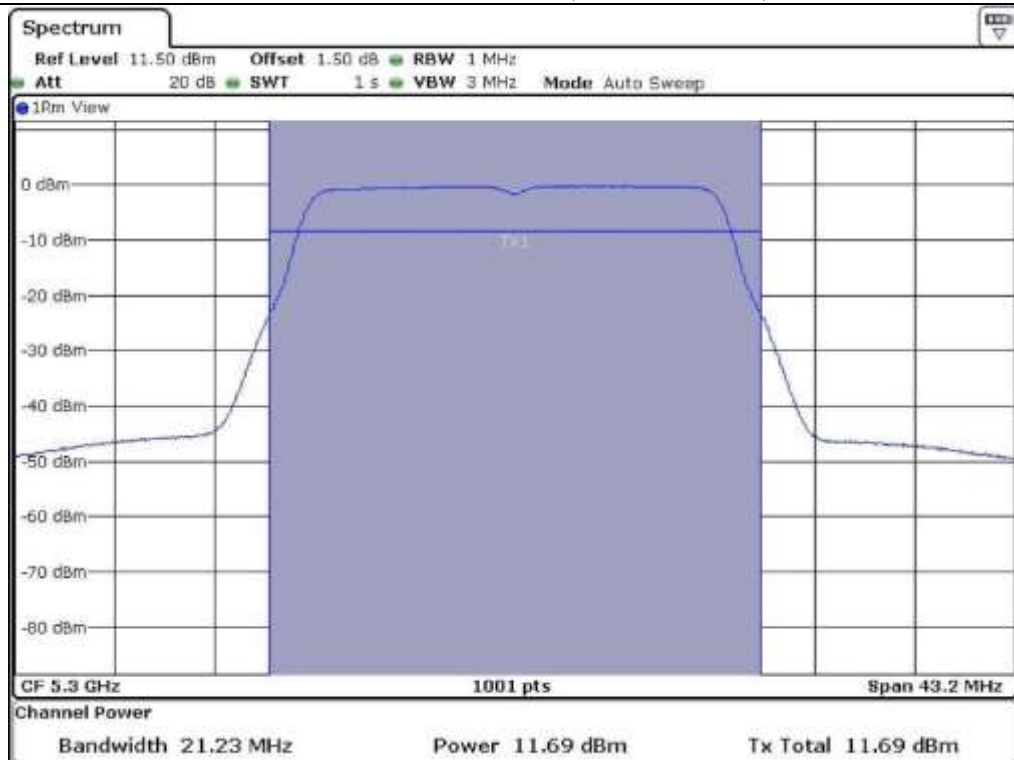
Middle Channel @ 5 200 MHz (26 dB Bandwidth)



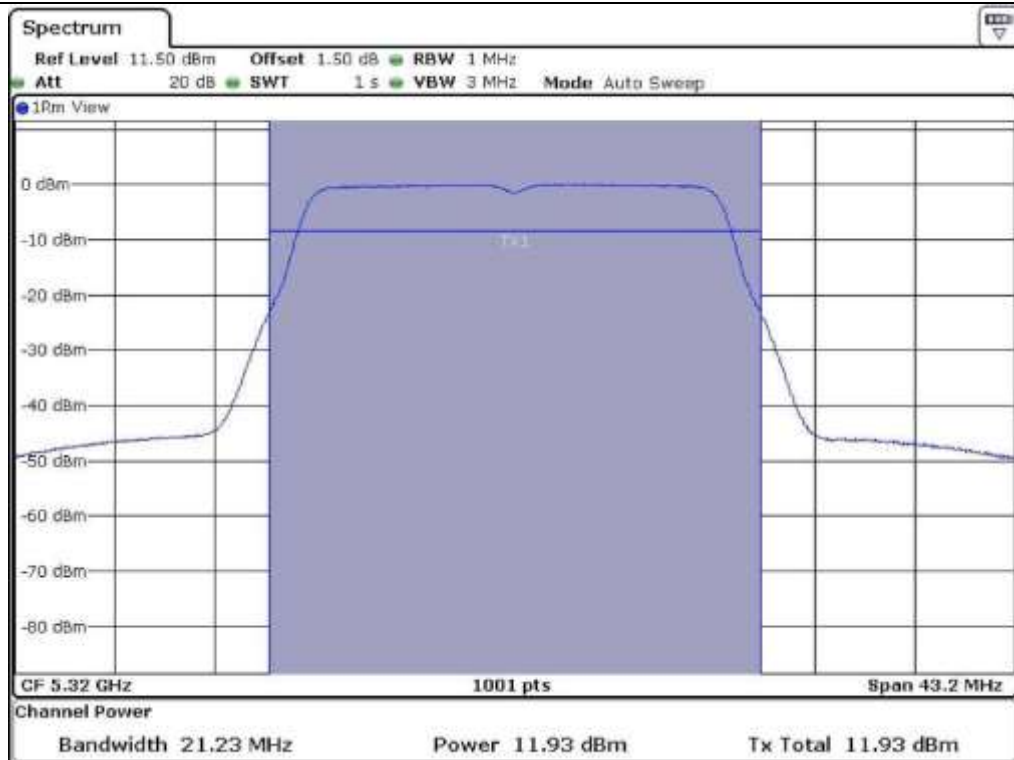
High Channel @ 5 240 MHz (26 dB Bandwidth)



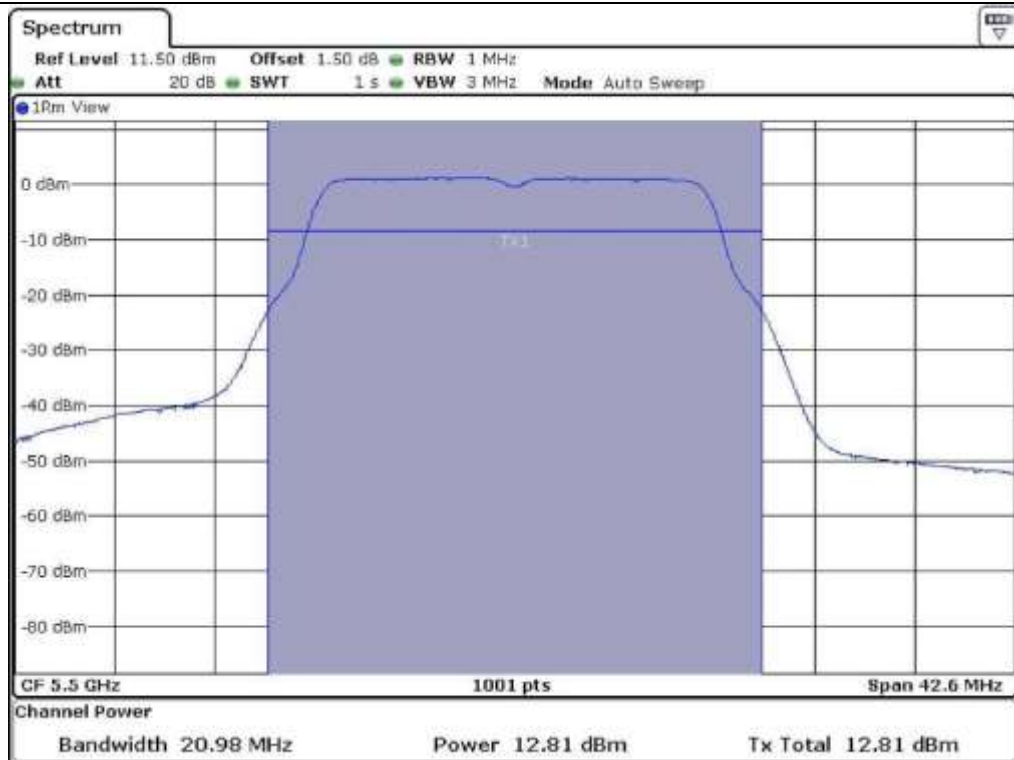
Low Channel @ 5 260 MHz (26 dB Bandwidth)



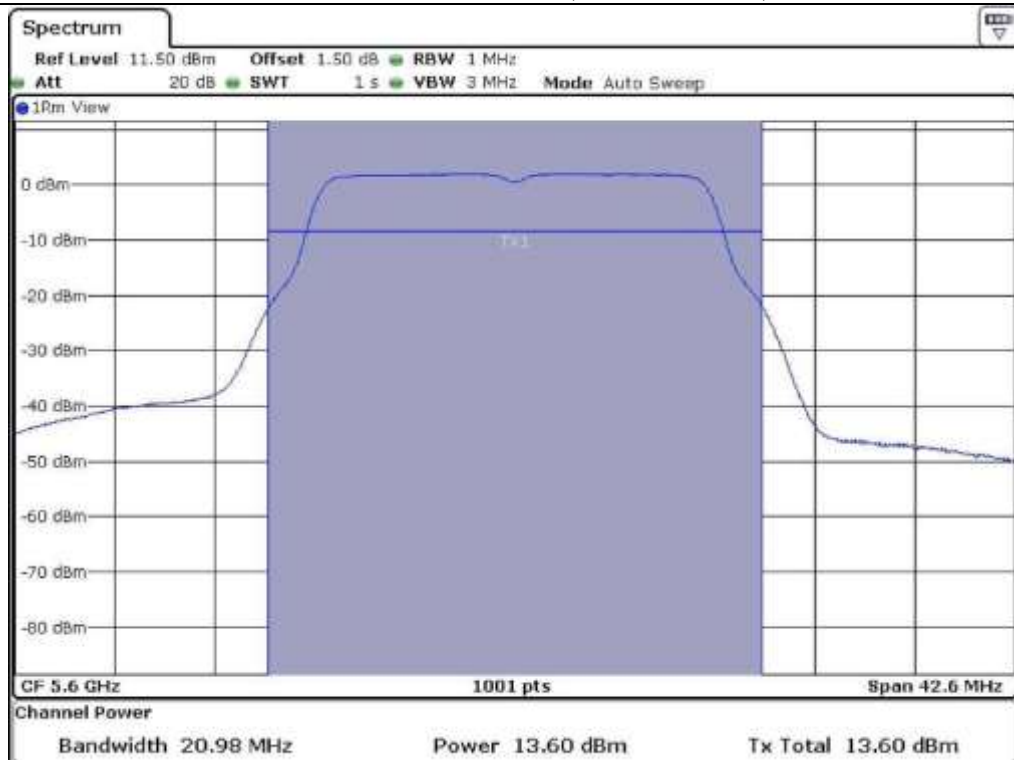
Middle Channel @ 5 300 MHz (26 dB Bandwidth)



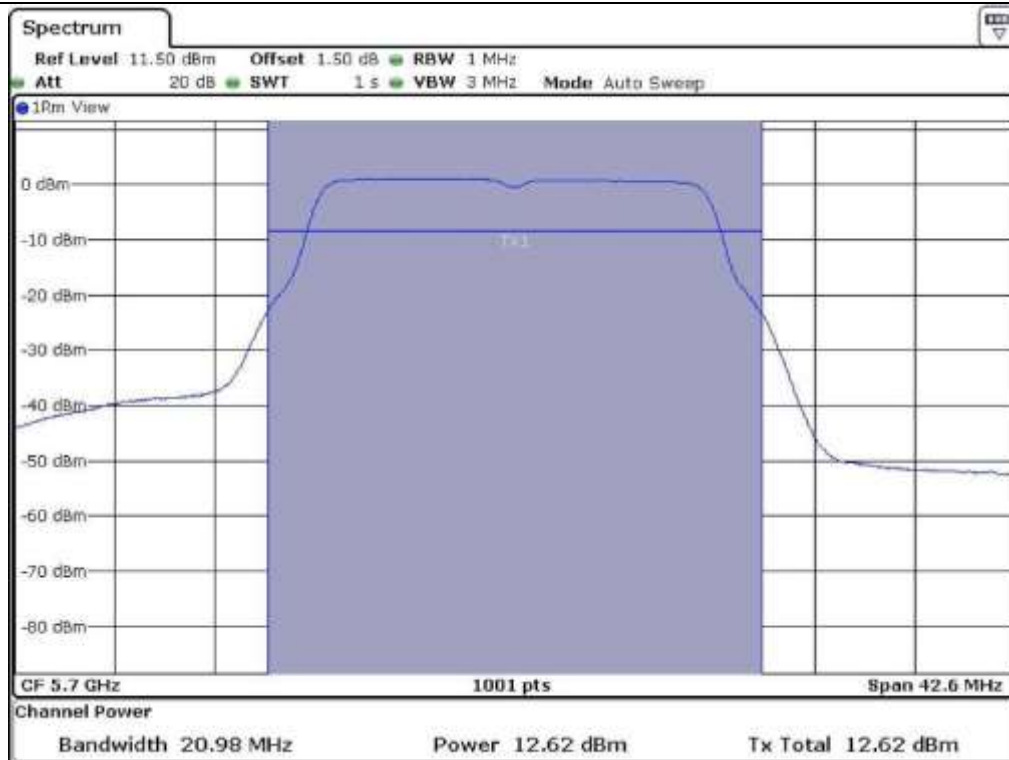
High Channel @ 5 320 MHz (26 dB Bandwidth)



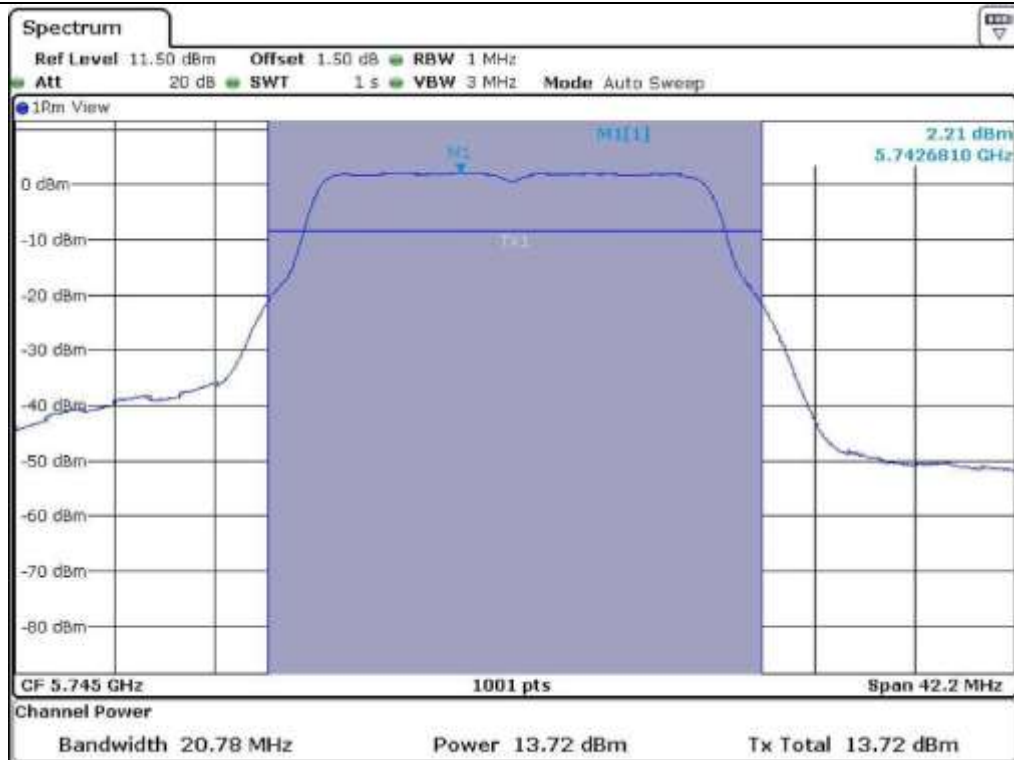
Low Channel @ 5 500 MHz (26 dB Bandwidth)



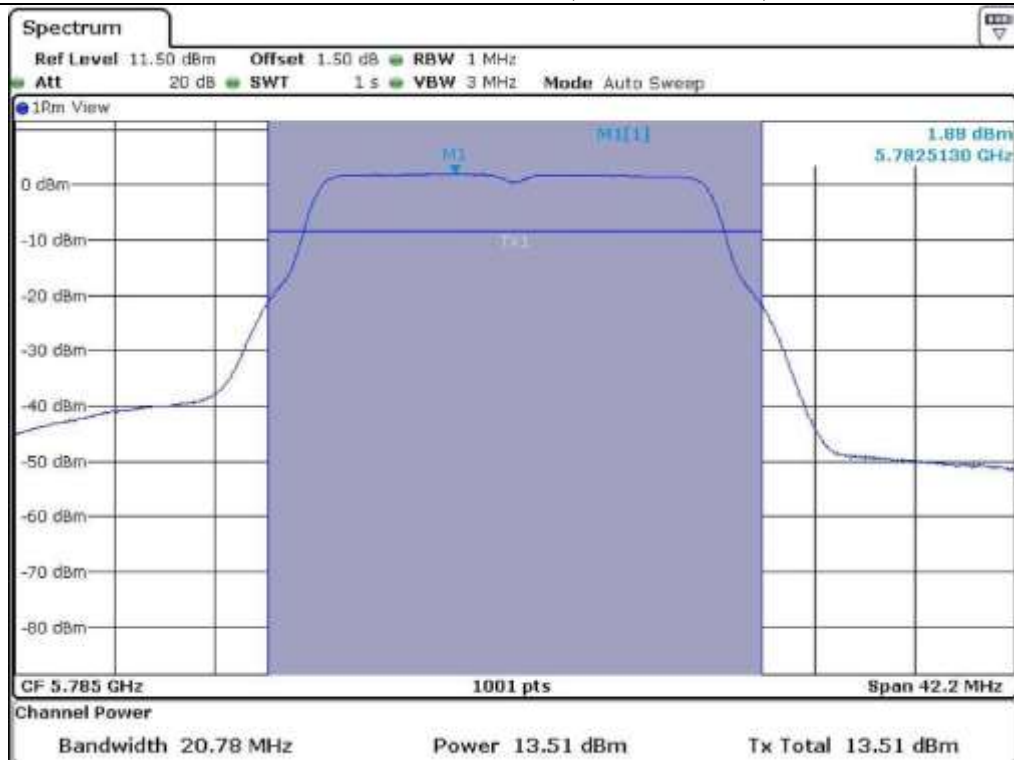
Middle Channel @ 5 600 MHz (26 dB Bandwidth)



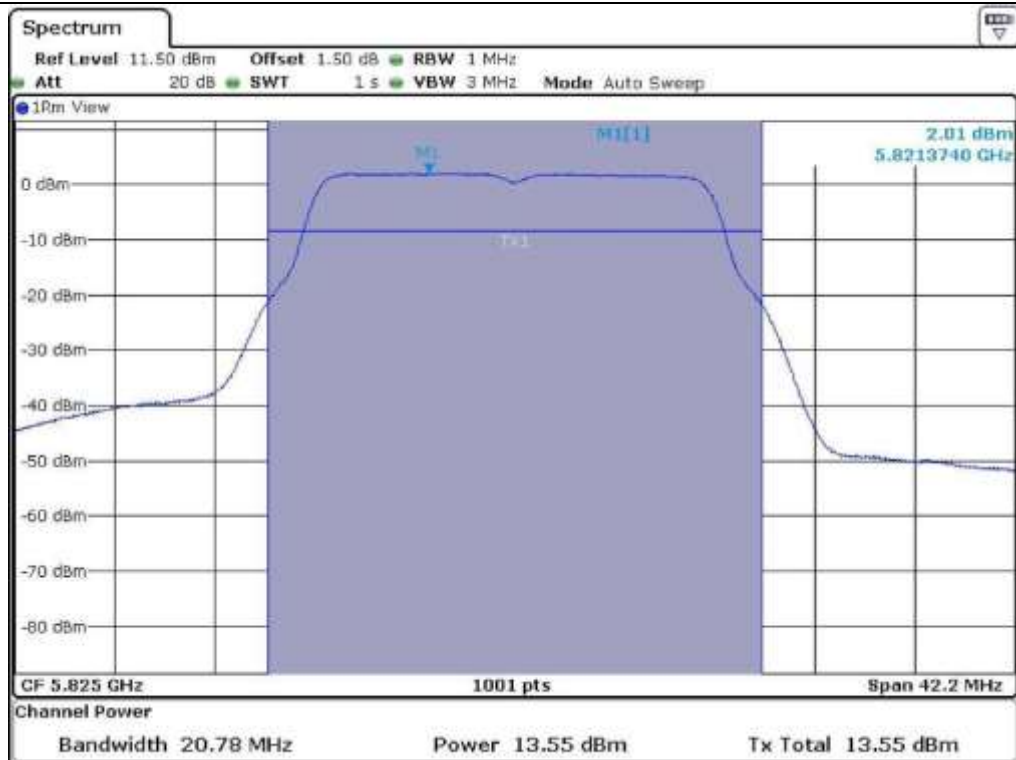
High Channel @ 5 700 MHz (26 dB Bandwidth)



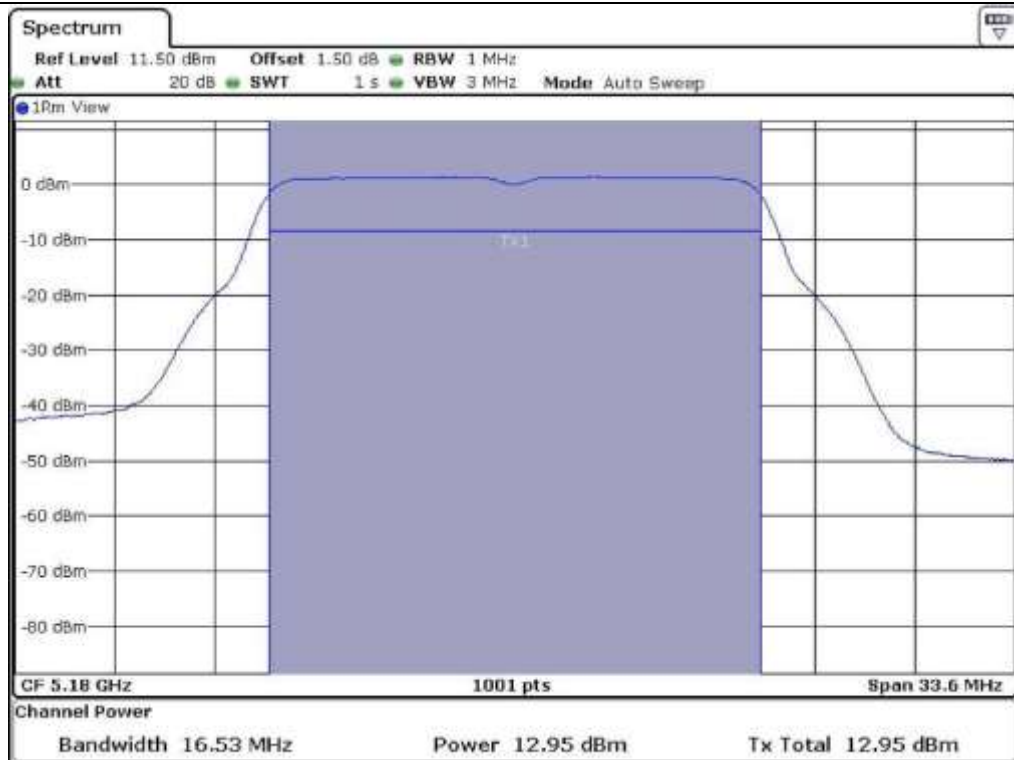
Low Channel @ 5.745 MHz (26 dB Bandwidth)



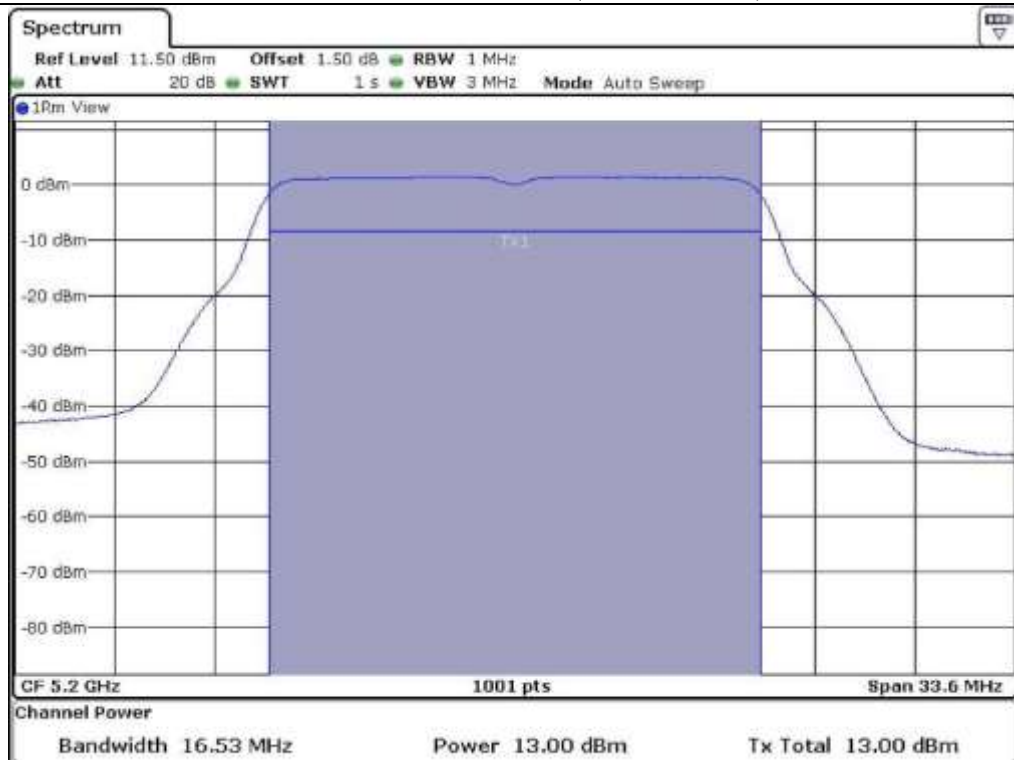
Middle Channel @ 5.785 MHz (26 dB Bandwidth)



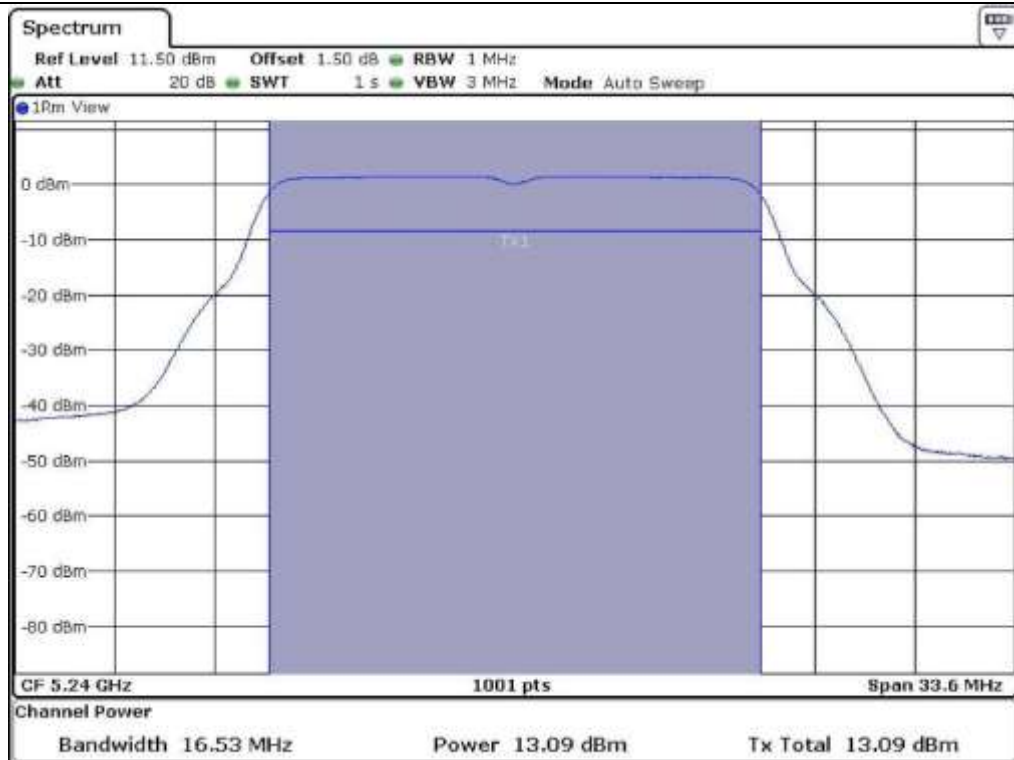
High Channel @ 5 825 MHz (26 dB Bandwidth)



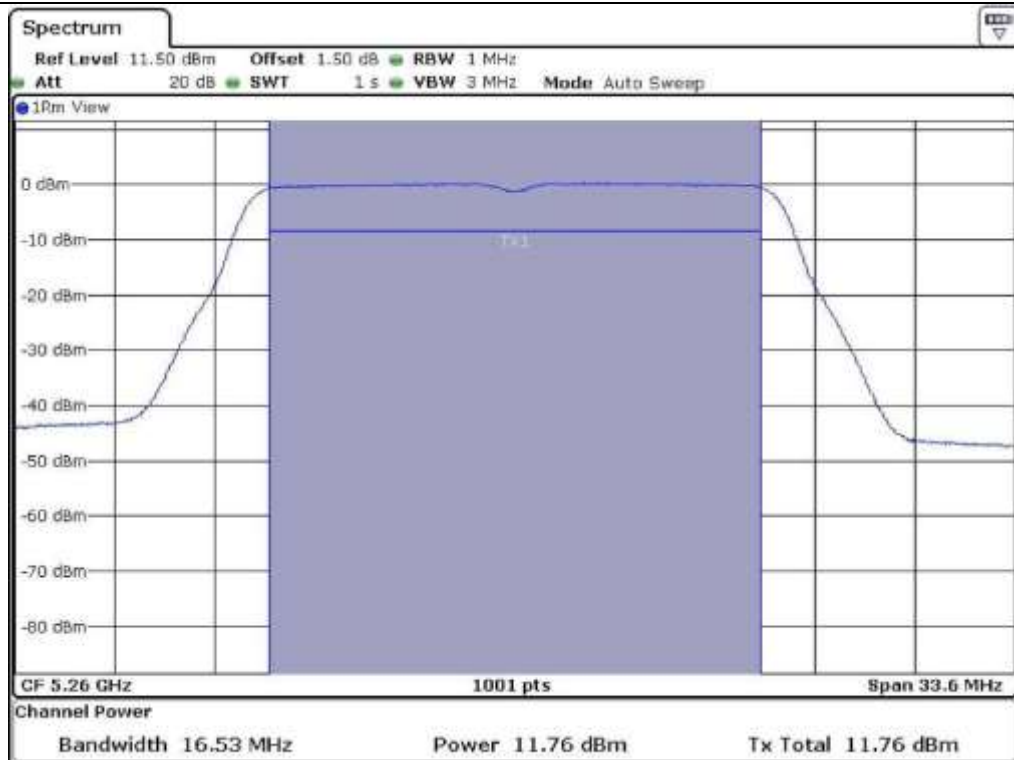
Low Channel @ 5 180 MHz (99 % bandwidth)



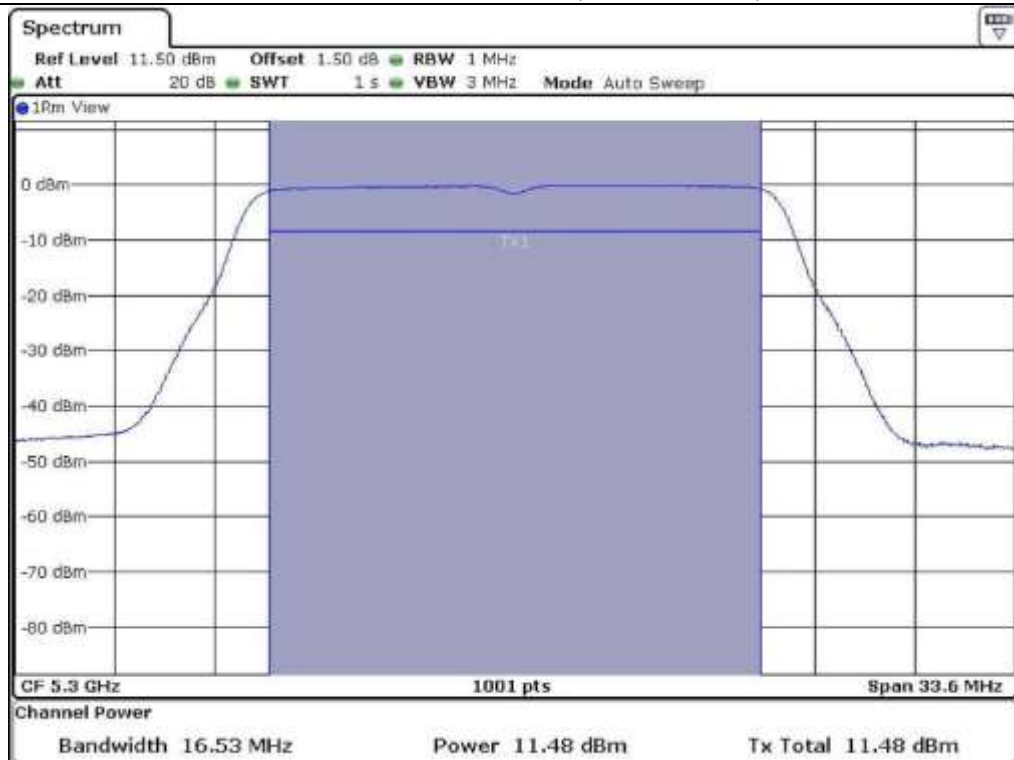
Middle Channel @ 5 200 MHz (99 % bandwidth)



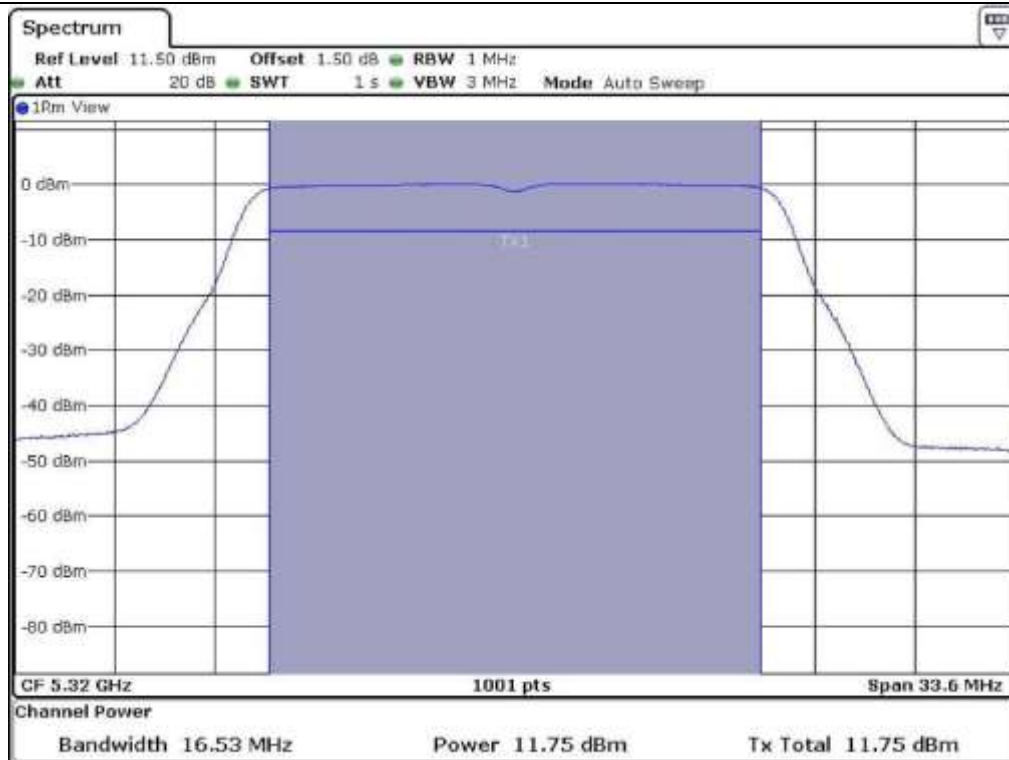
High Channel @ 5 240 MHz (99 % bandwidth)



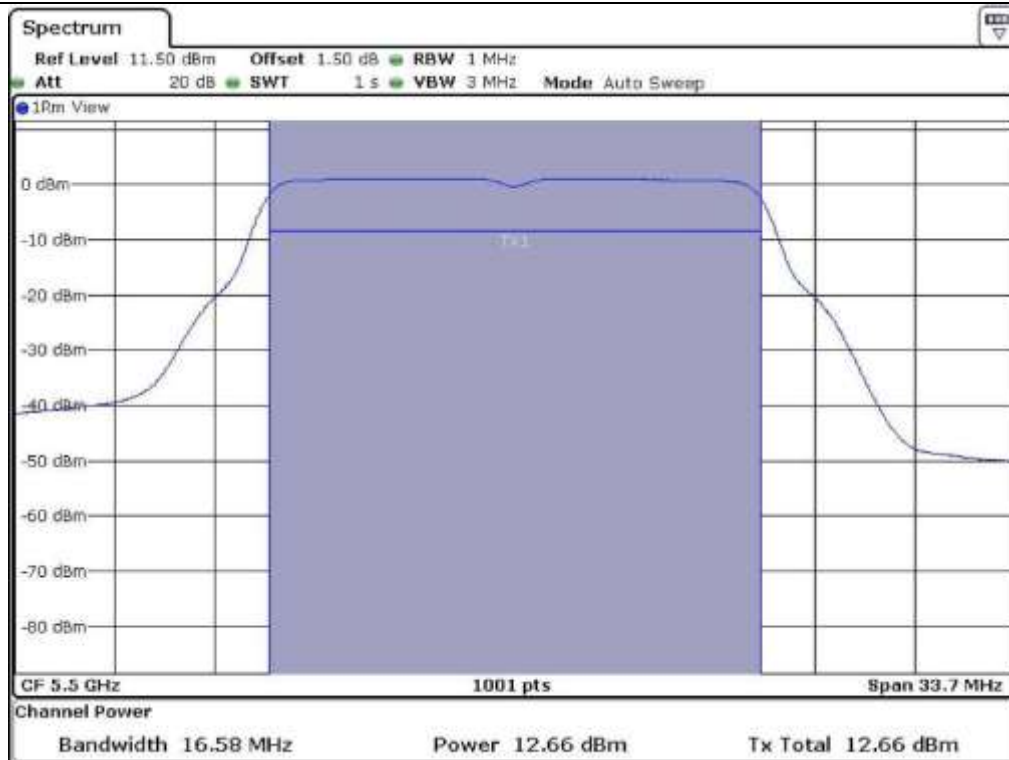
Low Channel @ 5 260 MHz (99 % bandwidth)



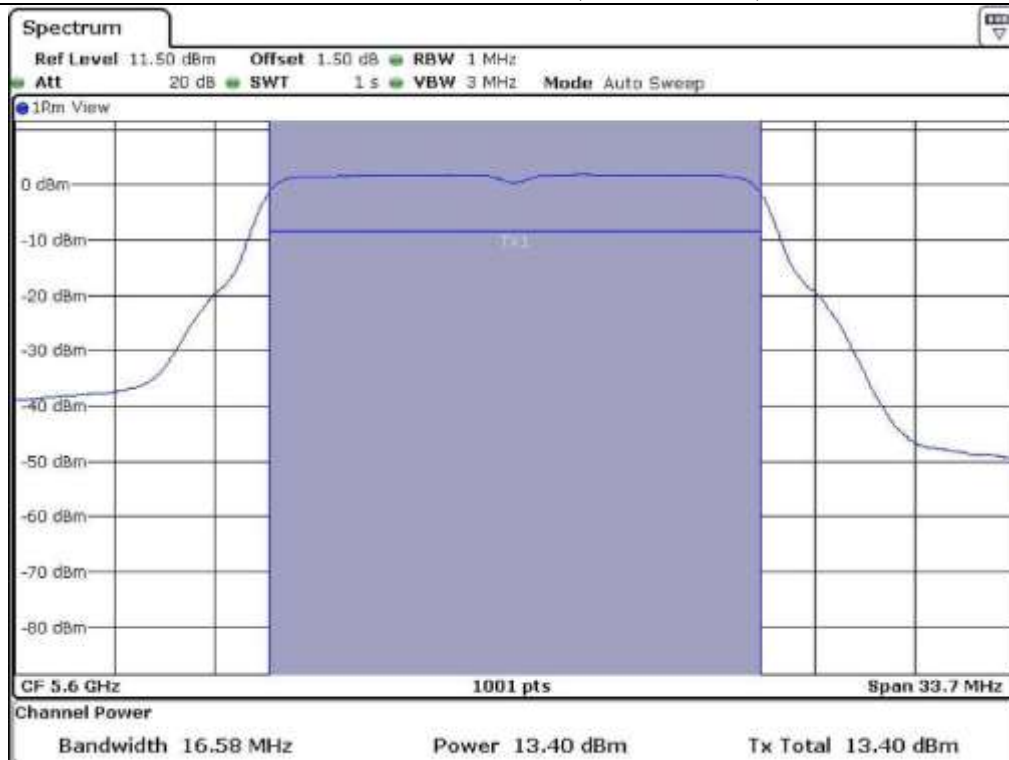
Middle Channel @ 5 300 MHz (99 % bandwidth)



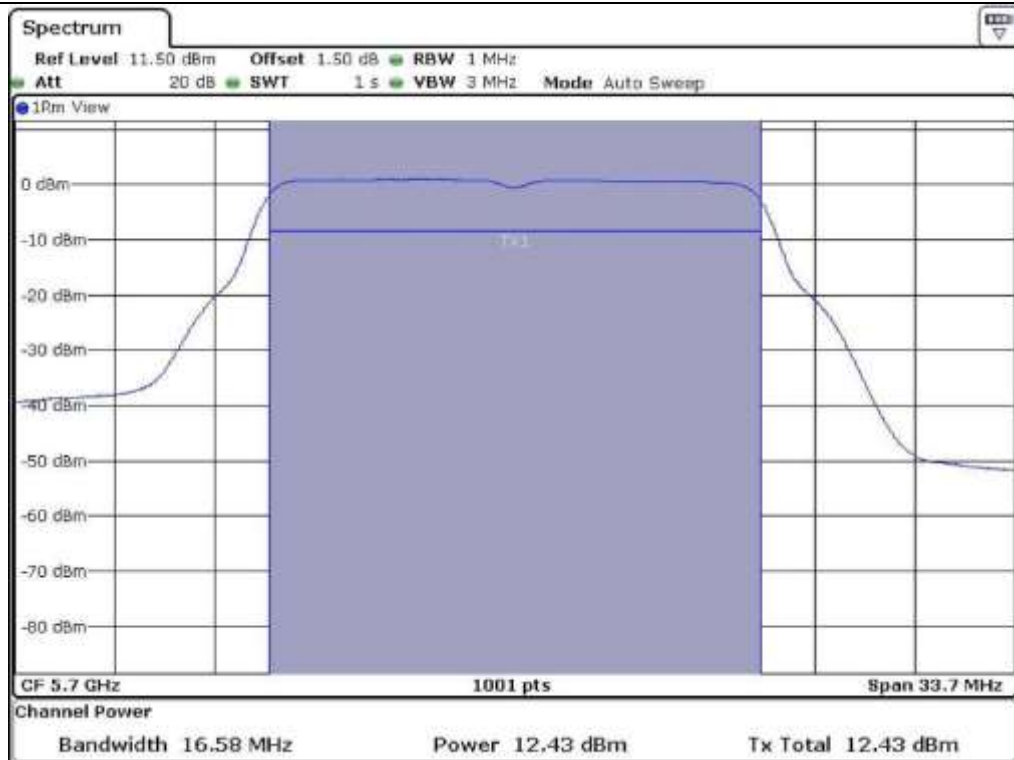
High Channel @ 5 320 MHz (99 % bandwidth)



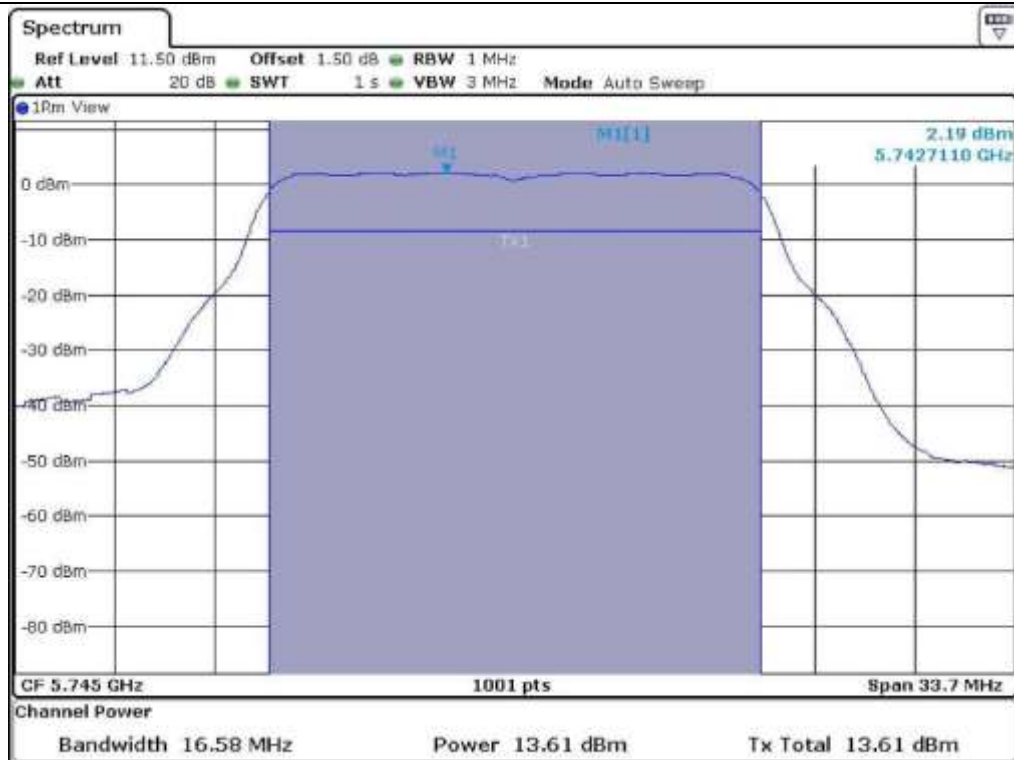
Low Channel @ 5 500 MHz (99 % bandwidth)



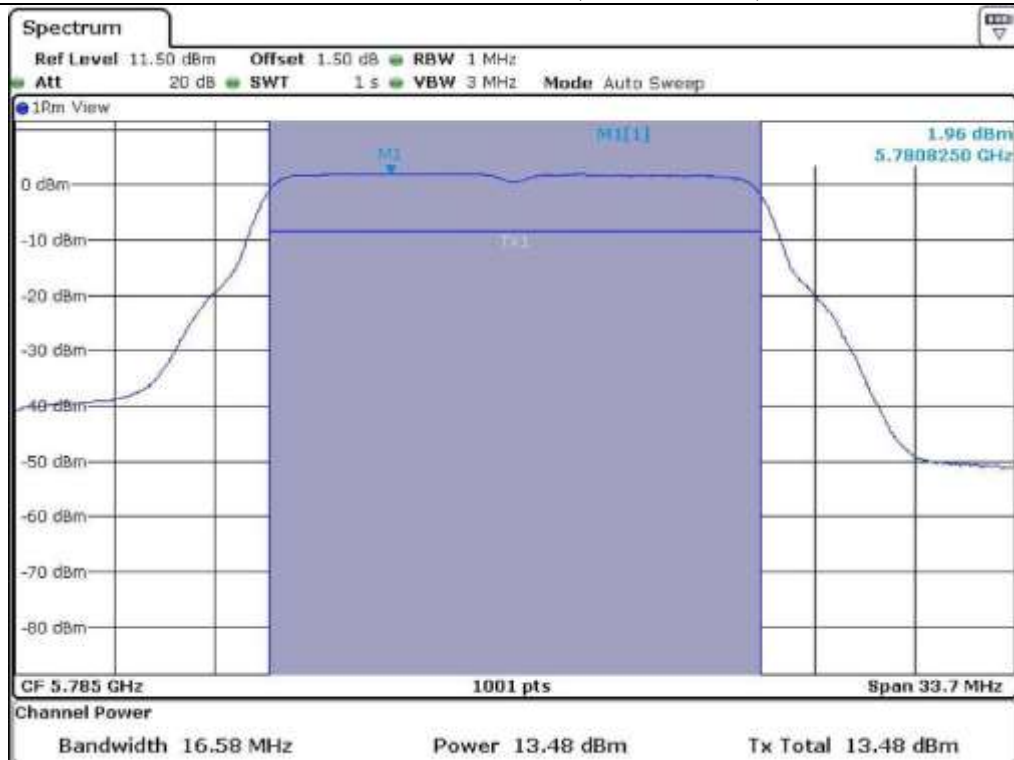
Middle Channel @ 5 600 MHz (99 % bandwidth)



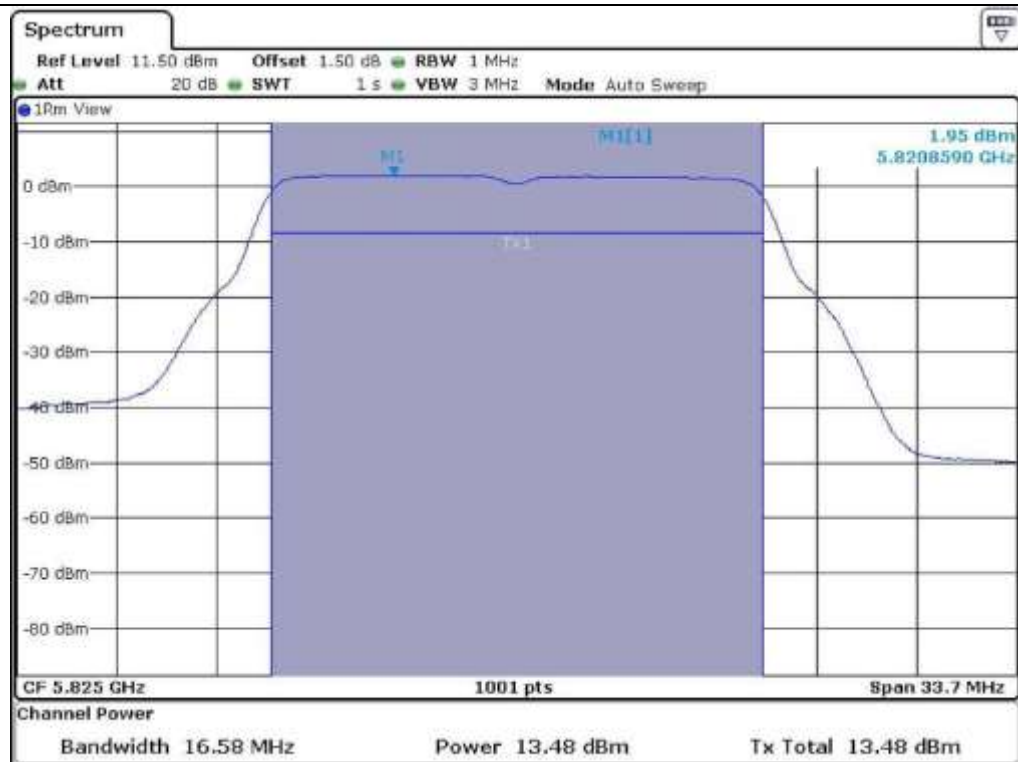
High Channel @ 5 700 MHz (99 % bandwidth)



Low Channel @ 5 745 MHz (99 % bandwidth)



Middle Channel @ 5 785 MHz (99 % bandwidth)



High Channel @ 5 825 MHz (99 % bandwidth)

8.4.3 Test data for Multiple Transmit

-. Test Date : June 16, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	15.61	23.98	8.37
	Middle	5 200	15.62	23.98	8.36
	High	5 240	15.63	23.98	8.35
5 250 ~ 5 350	Low	5 260	15.82	23.98	8.16
	Middle	5 300	15.34	23.98	8.64
	High	5 320	15.22	23.98	8.76
5 470 ~ 5 725	Low	5 500	16.28	23.98	7.72
	Middle	5 600	16.78	23.98	7.22
	High	5 700	16.09	23.98	7.91
5 725 ~ 5 850	Low	5 745	16.34	30.00	13.66
	Middle	5 785	16.12	30.00	13.88
	High	5 825	15.94	30.00	14.06

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 :Calculated Output Power= $10\log(10^{(\text{Antenna1 Output Power}/10)}+10^{(\text{Antenna2 Output Power}/10)})$

-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	5.91	15.40	23.00	1.69	21.31
	Middle	5 200		15.58	23.00	1.51	21.49
	High	5 240		15.60	23.00	1.49	21.51
5 250 ~ 5 350	Low	5 260		15.49	30.00	8.60	21.40
	Middle	5 300		15.09	30.00	9.00	21.00
	High	5 320		15.09	30.00	9.00	21.00
5 470 ~ 5 725	Low	5 500		16.14	30.00	7.95	22.05
	Middle	5 600		16.64	30.00	7.45	22.55
	High	5 700		15.94	30.00	8.15	21.85
5 725 ~ 5 825	Low	5 745		16.27	36.00	13.82	22.18
	Middle	5 785		16.04	36.00	14.05	21.95
	High	5 805		15.84	36.00	14.25	21.75

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 :Calculated Output Power= $10\log(10^{(\text{Antenna1 Output Power}/10)} + 10^{(\text{Antenna2 Output Power}/10)})$



Tested by: Tae-Ho, Kim / Senior Engineer

8.5 Test data for 802.11n_HT20 RLAN Mode

8.5.1 Test data for Antenna 0

-. Test Date : June 19, 2015

-. Test Result : Pass

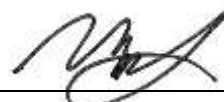
-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	21.28	11.96	23.98	12.02
	Middle	5 200	21.28	12.11	23.98	11.87
	High	5 240	21.28	11.90	23.98	12.08
5 250 ~ 5 350	Low	5 260	21.28	13.66	23.98	10.32
	Middle	5 300	21.28	13.18	23.98	10.80
	High	5 320	21.28	12.91	23.98	11.07
5 470 ~ 5 725	Low	5 500	21.38	13.53	23.98	10.45
	Middle	5 600	21.38	13.73	23.98	10.25
	High	5 700	21.38	13.26	23.98	10.72
5 725 ~ 5 850	Low	5 745	21.28	12.69	30.00	17.31
	Middle	5 785	21.28	12.57	30.00	17.43
	High	5 825	21.28	12.12	30.00	17.88

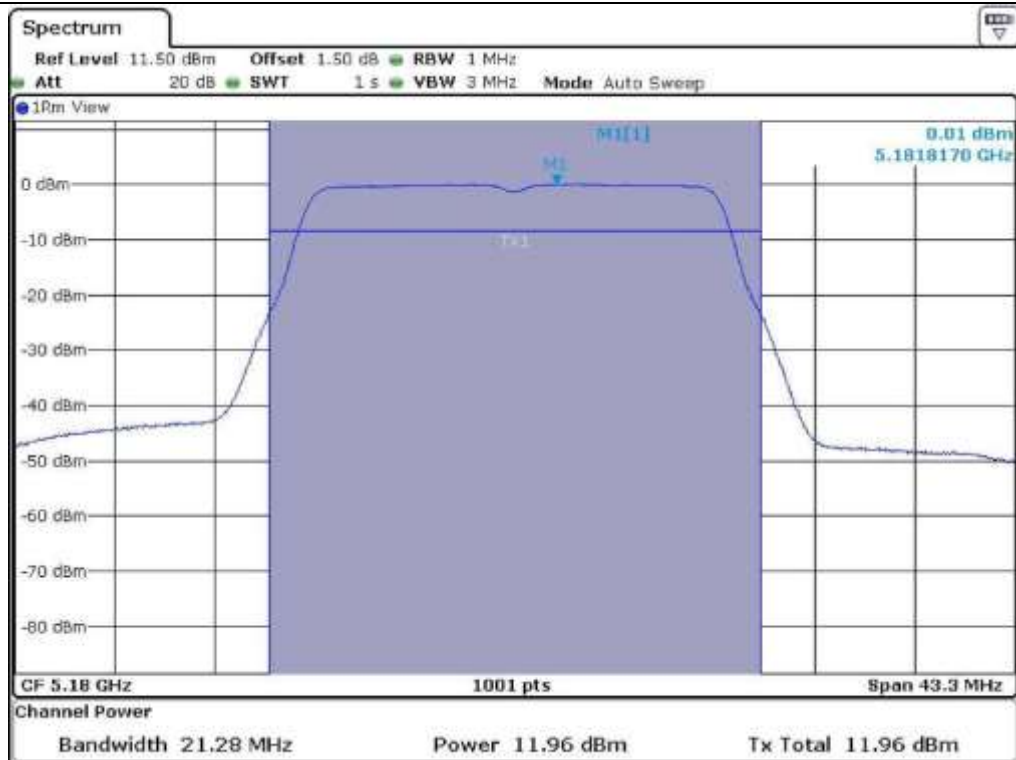
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	2.90	17.73	11.95	23.00	8.15	14.85
	Middle	5 200		17.73	11.97	23.00	8.13	14.87
	High	5 240		17.73	11.99	23.00	8.11	14.89
5 250 ~ 5 350	Low	5 260		17.73	13.46	30.00	13.64	16.36
	Middle	5 300		17.73	12.93	30.00	14.17	15.83
	High	5 320		17.73	12.61	30.00	14.49	15.51
5 470 ~ 5 725	Low	5 500		17.78	13.34	30.00	13.76	16.24
	Middle	5 600		17.78	13.88	30.00	13.22	16.78
	High	5 700		17.78	13.36	30.00	13.74	16.26
5 725 ~ 5 825	Low	5 745		17.78	12.74	36.00	20.36	15.64
	Middle	5 785		17.78	12.48	36.00	20.62	15.38
	High	5 805		17.78	12.00	36.00	21.10	14.90

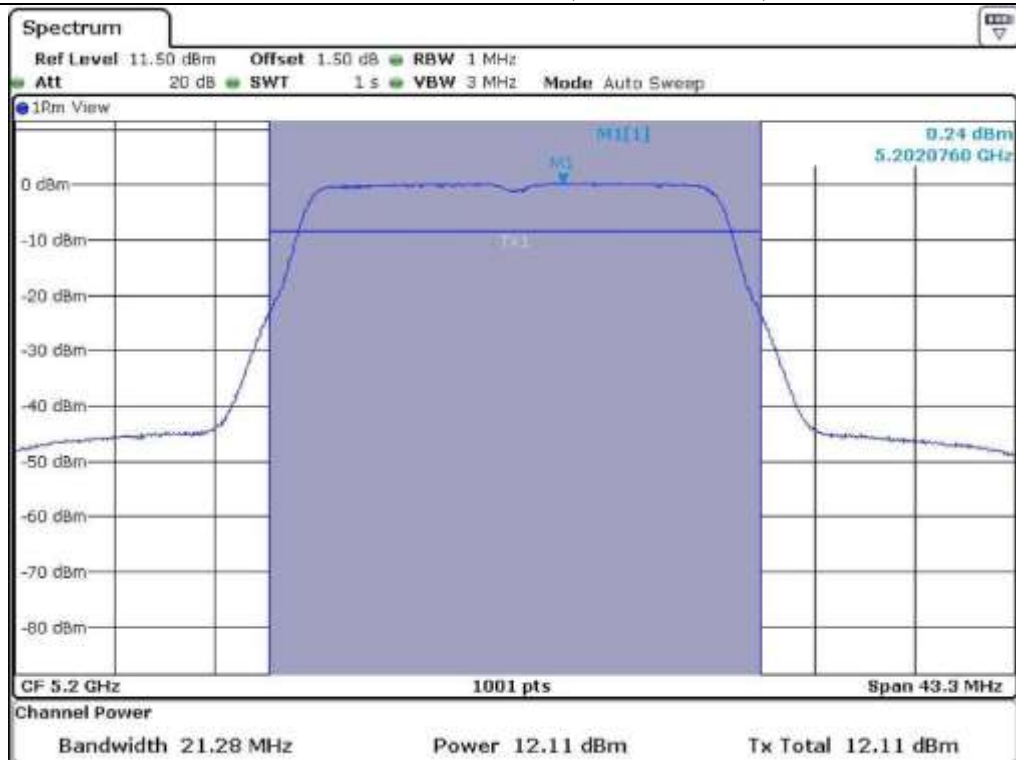
Remark: See next page for measurement data.



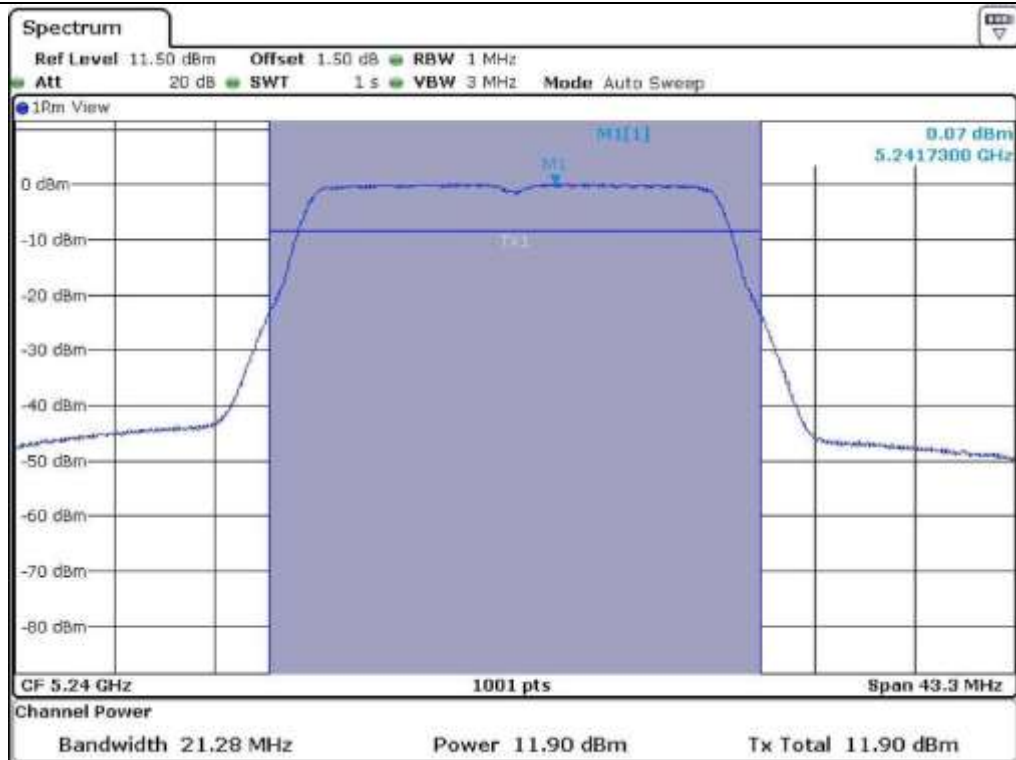
Tested by: Tae-Ho, Kim / Senior Engineer



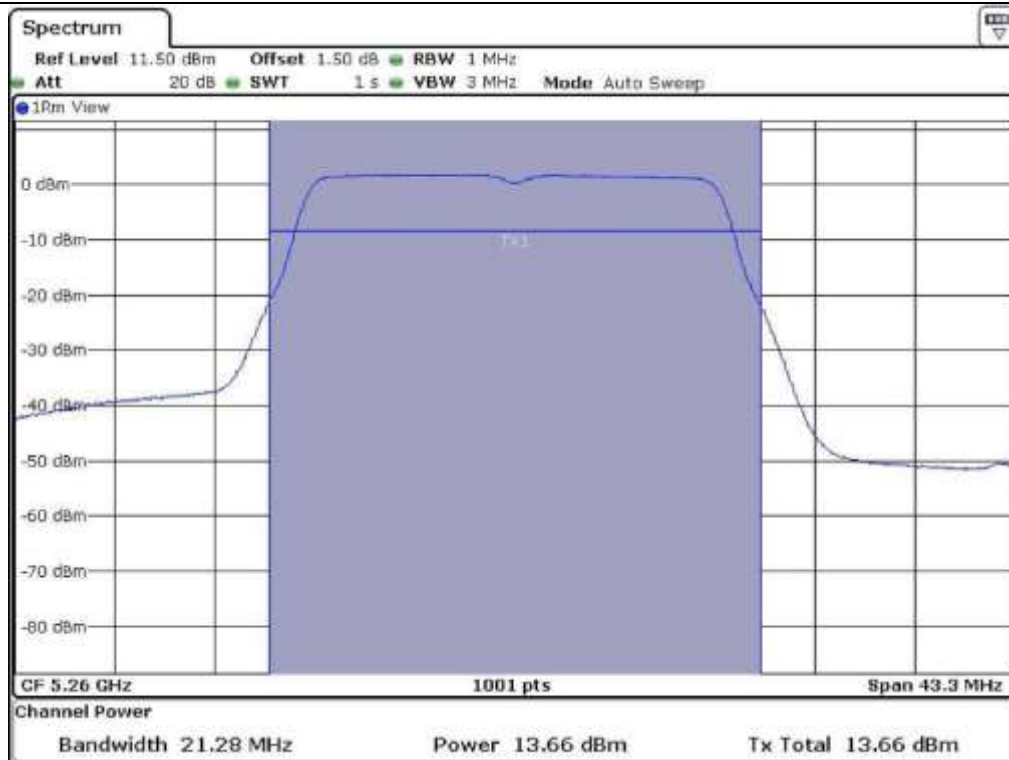
Low Channel @ 5 180 MHz (26 dB Bandwidth)



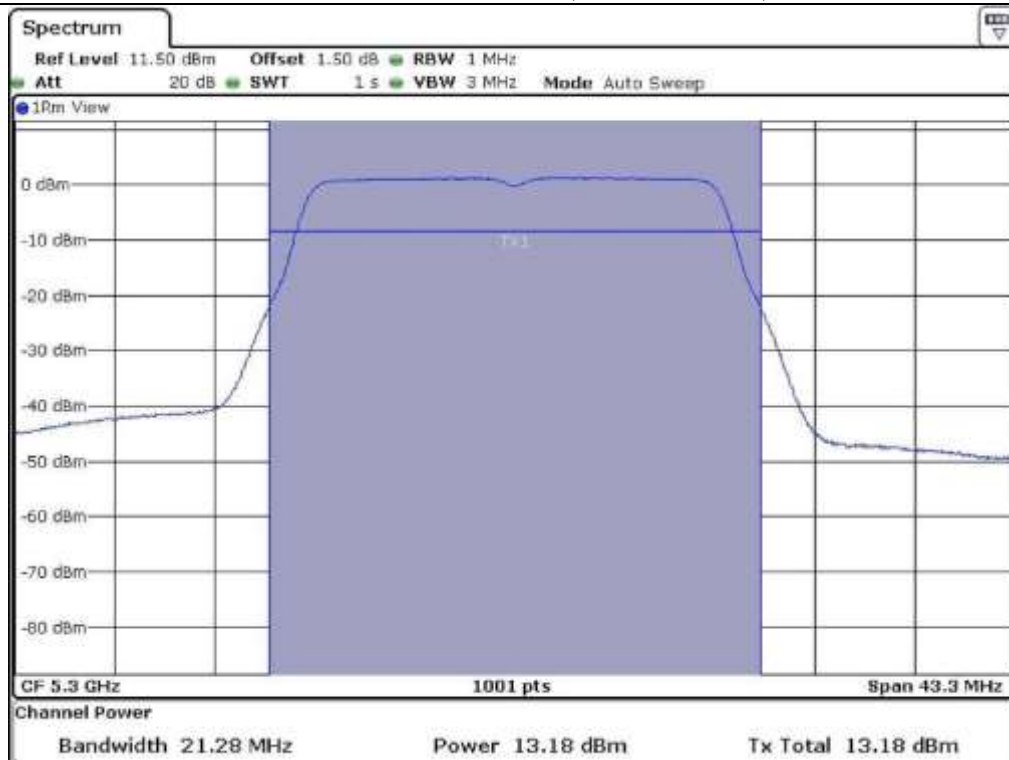
Middle Channel @ 5 200 MHz (26 dB Bandwidth)



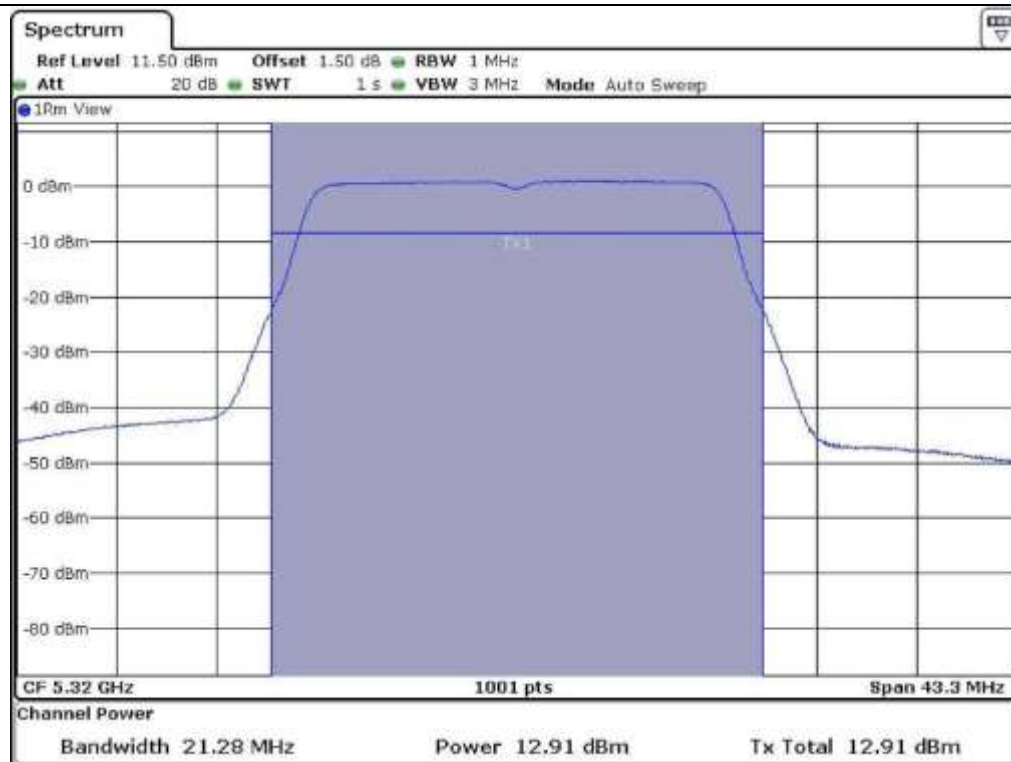
High Channel @ 5 240 MHz (26 dB Bandwidth)



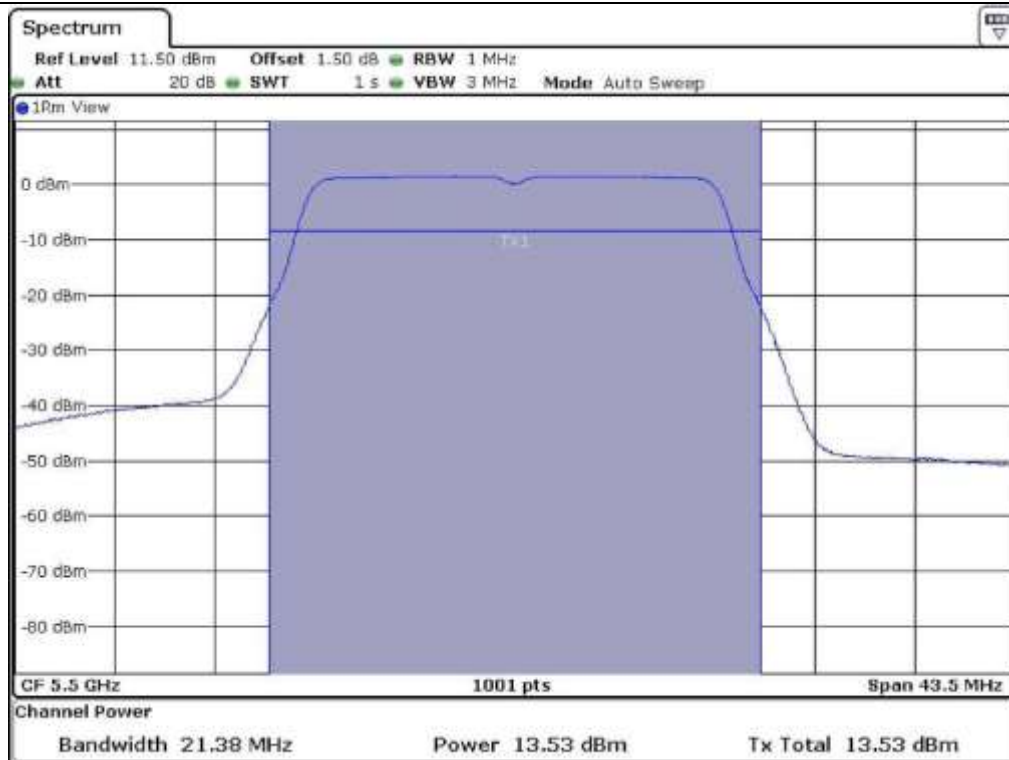
Low Channel @ 5 260 MHz (26 dB Bandwidth)



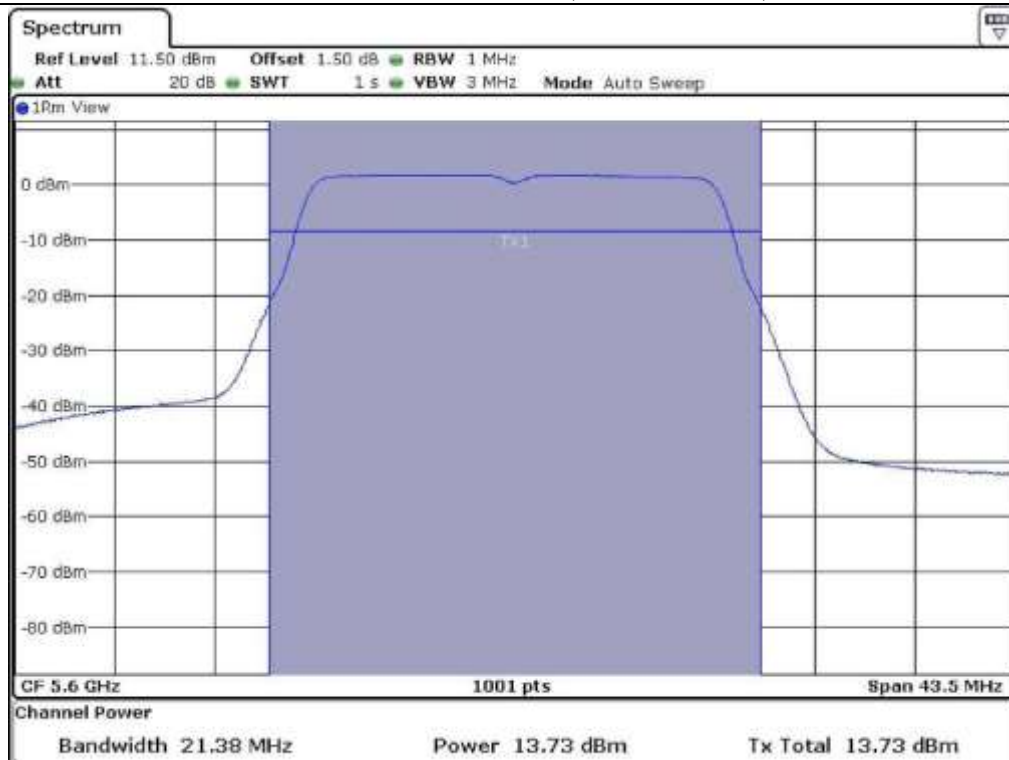
Middle Channel @ 5 300 MHz (26 dB Bandwidth)



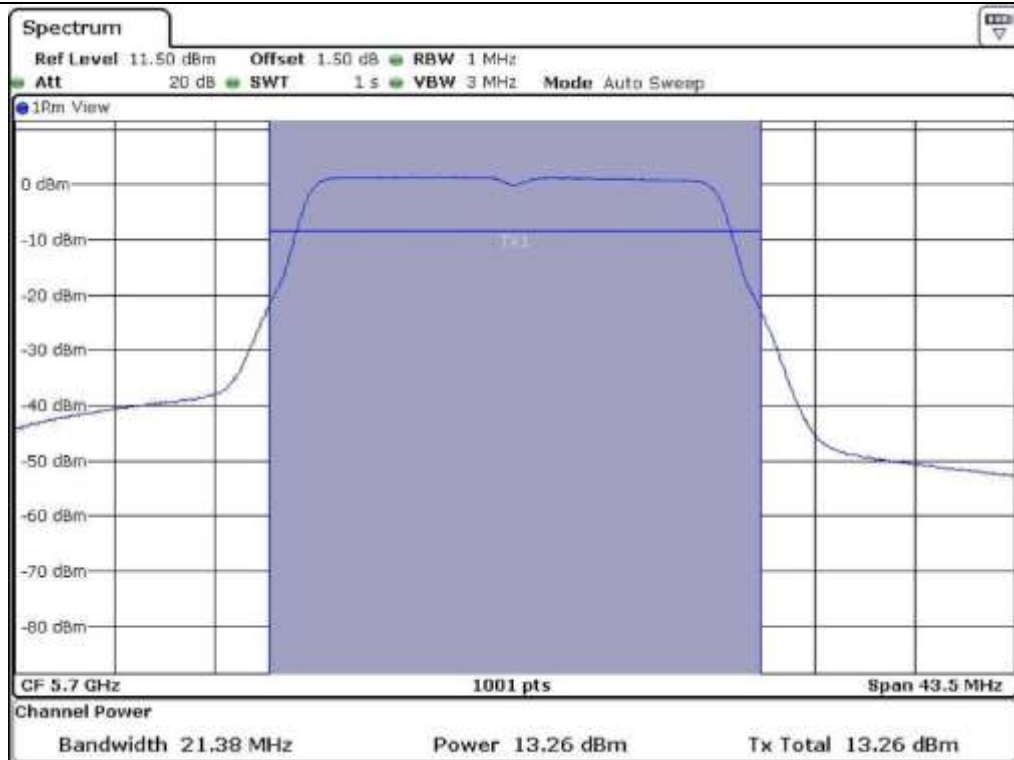
High Channel @ 5 320 MHz (26 dB Bandwidth)



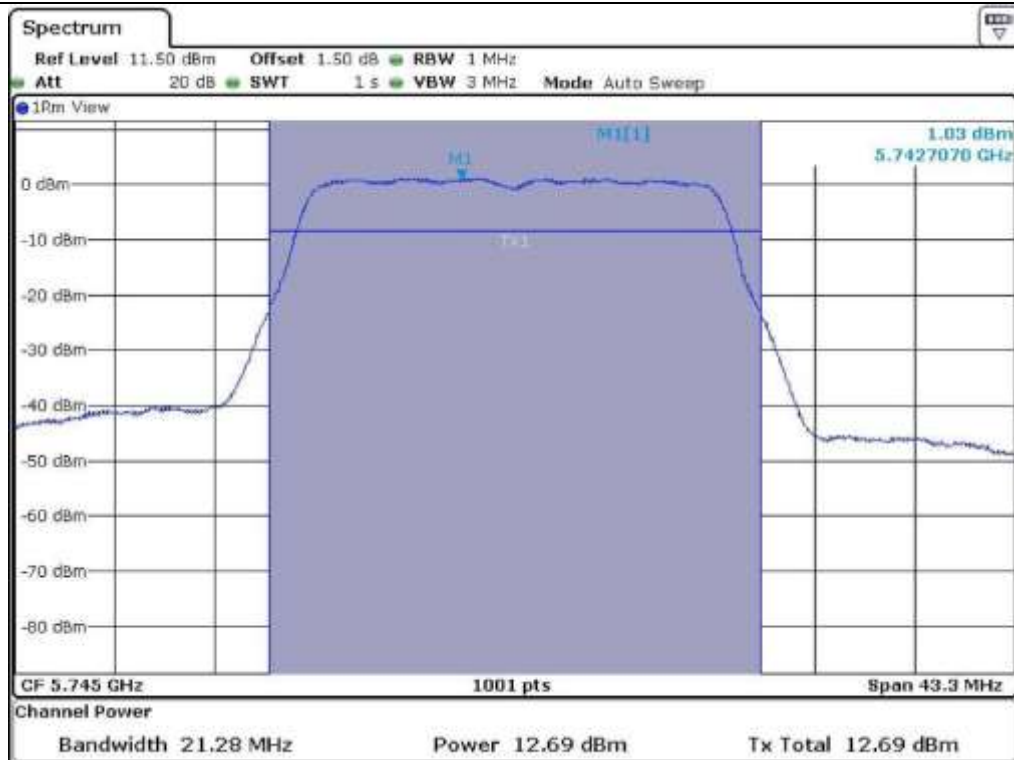
Low Channel @ 5 500 MHz (26 dB Bandwidth)



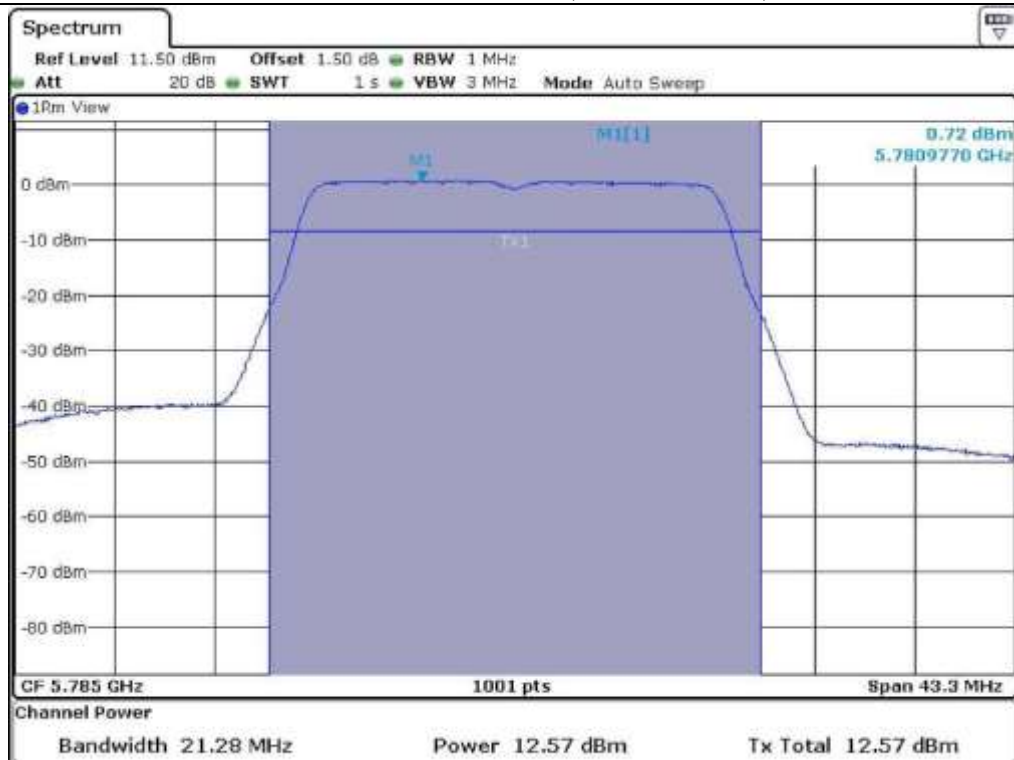
Middle Channel @ 5 600 MHz (26 dB Bandwidth)



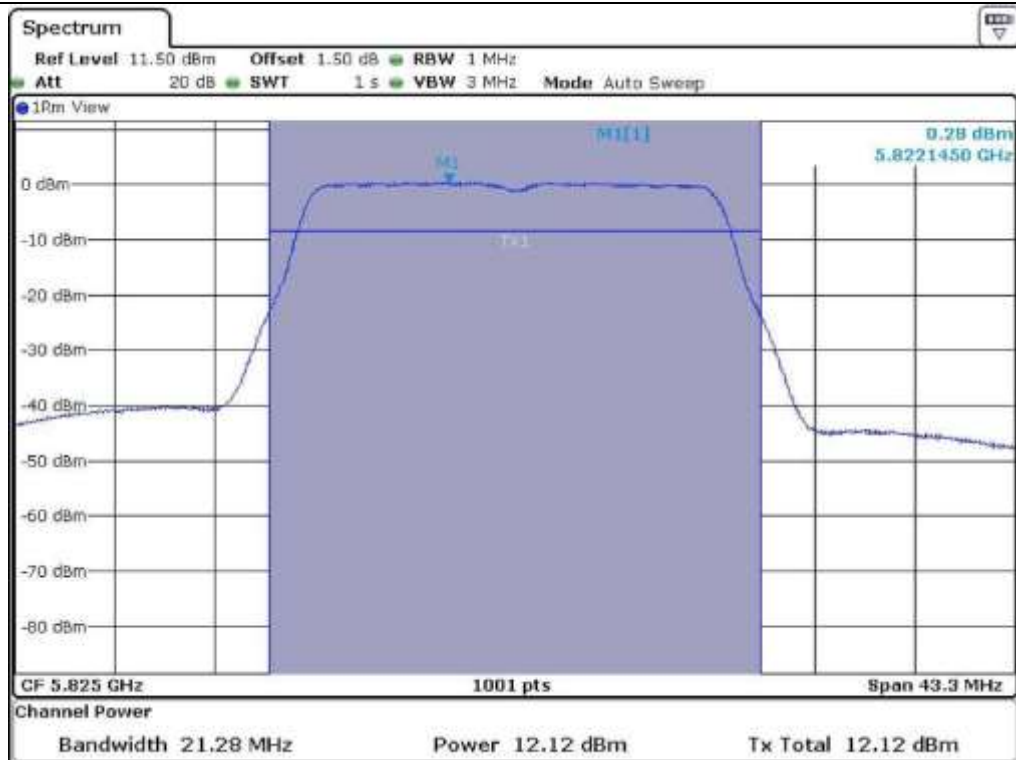
High Channel @ 5 700 MHz (26 dB Bandwidth)



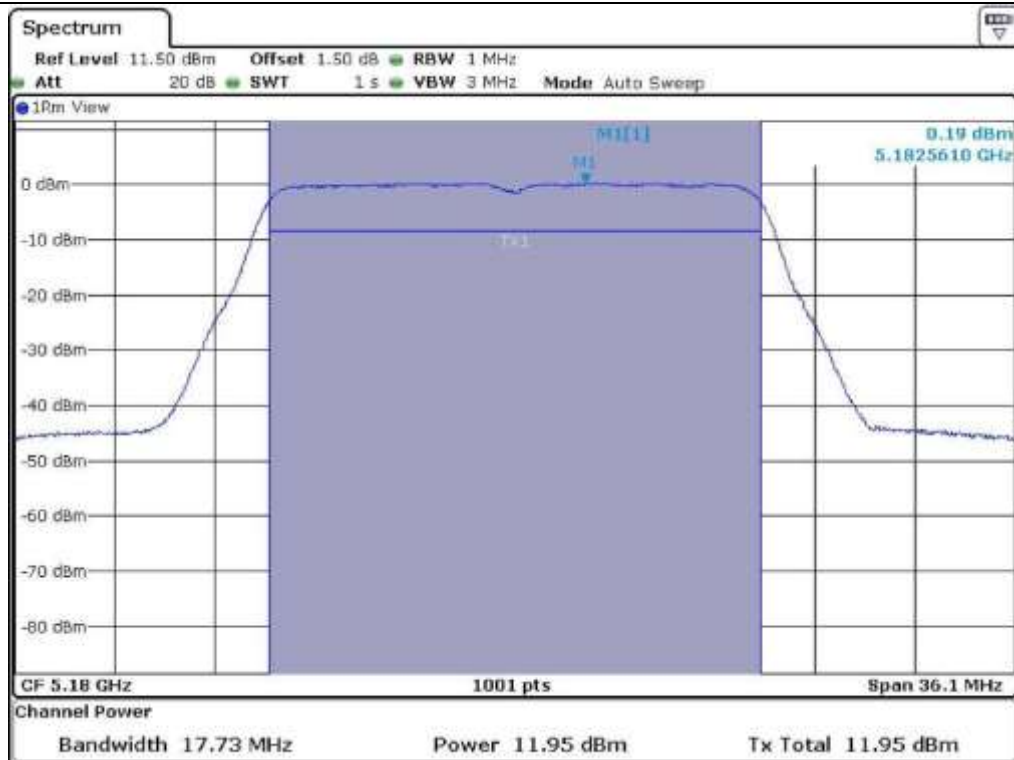
Low Channel @ 5 745 MHz (26 dB Bandwidth)



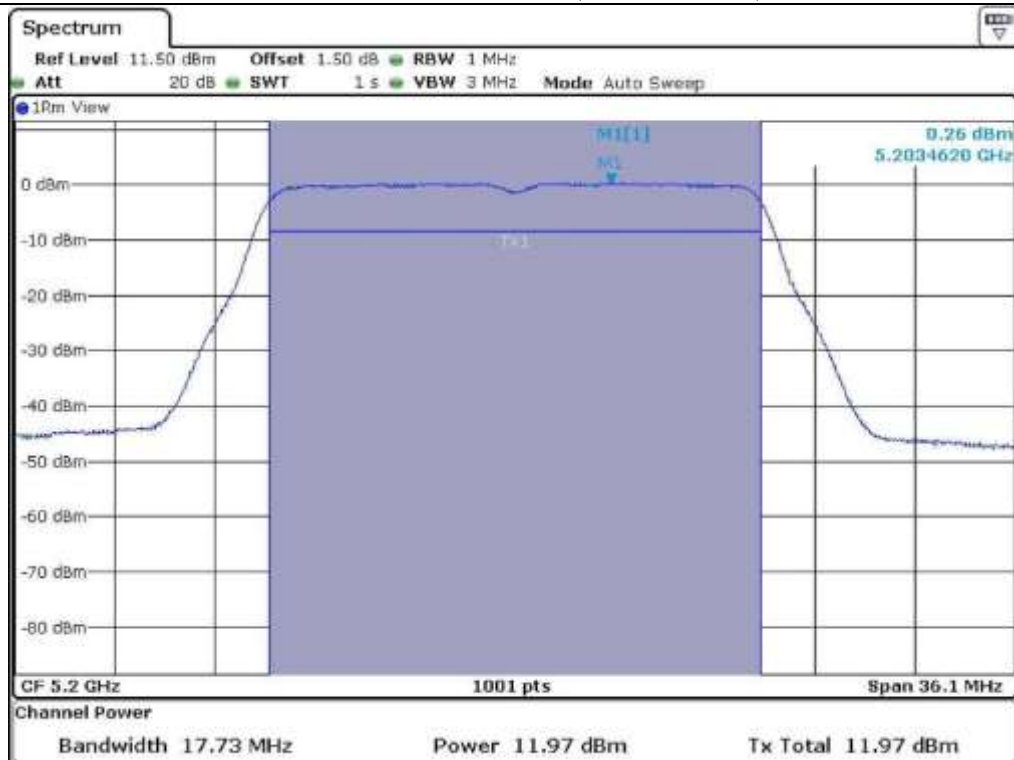
Middle Channel @ 5 785 MHz (26 dB Bandwidth)



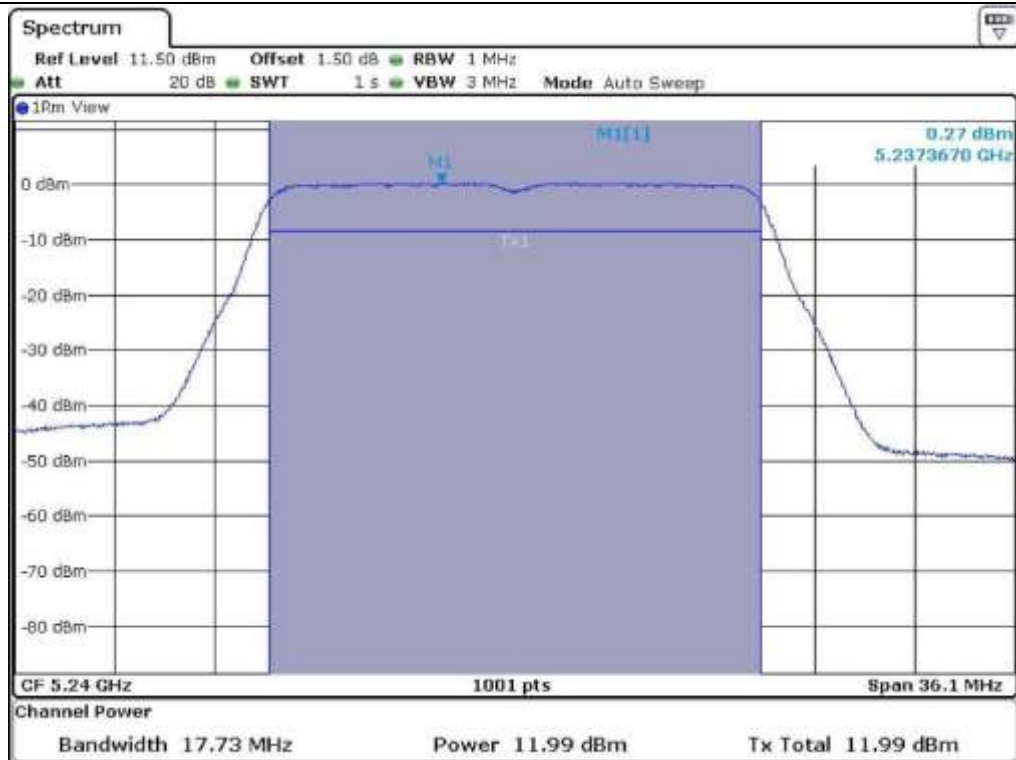
High Channel @ 5 825 MHz (26 dB Bandwidth)



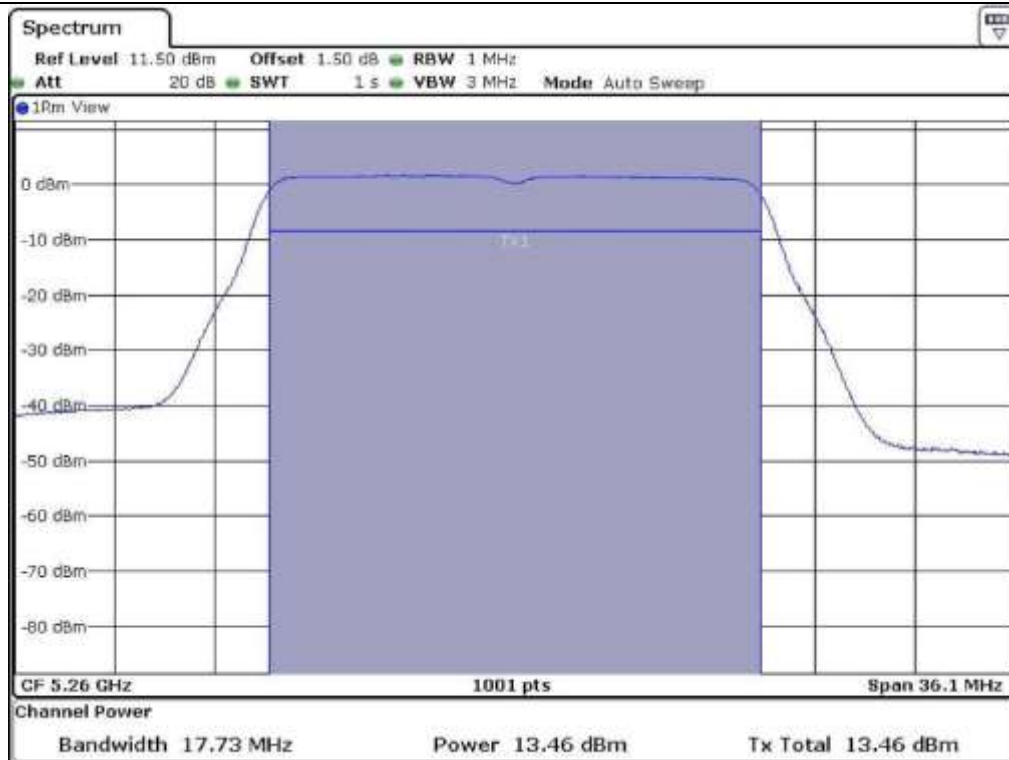
Low Channel @ 5 180 MHz (99 % bandwidth)



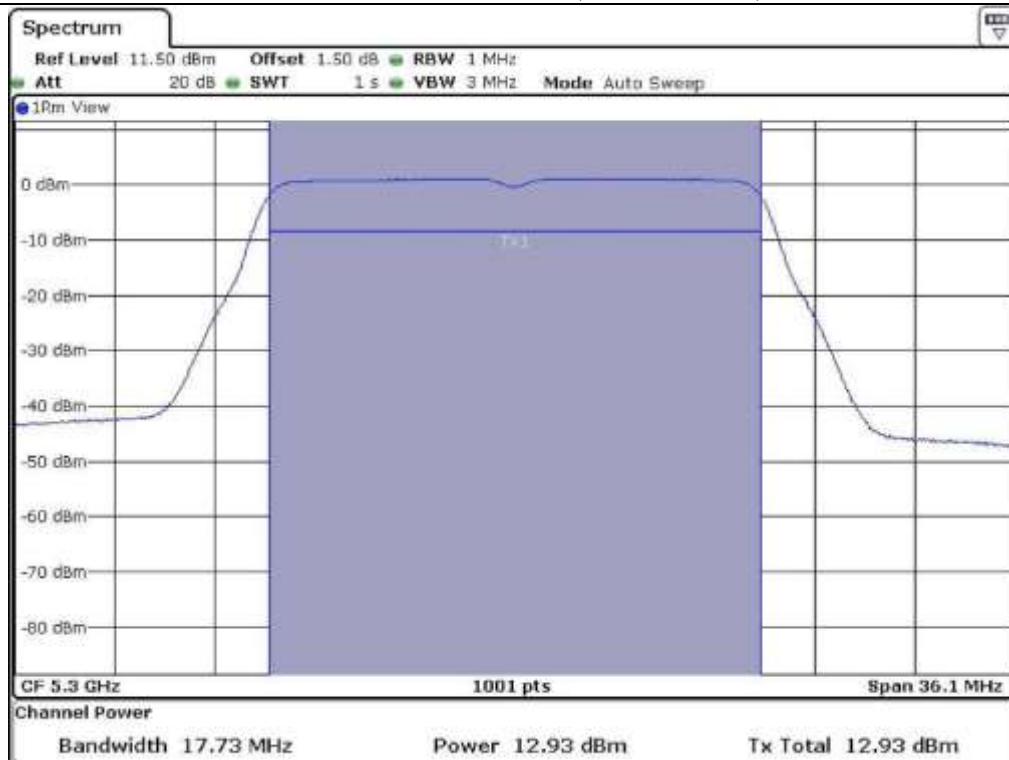
Middle Channel @ 5 200 MHz (99 % bandwidth)



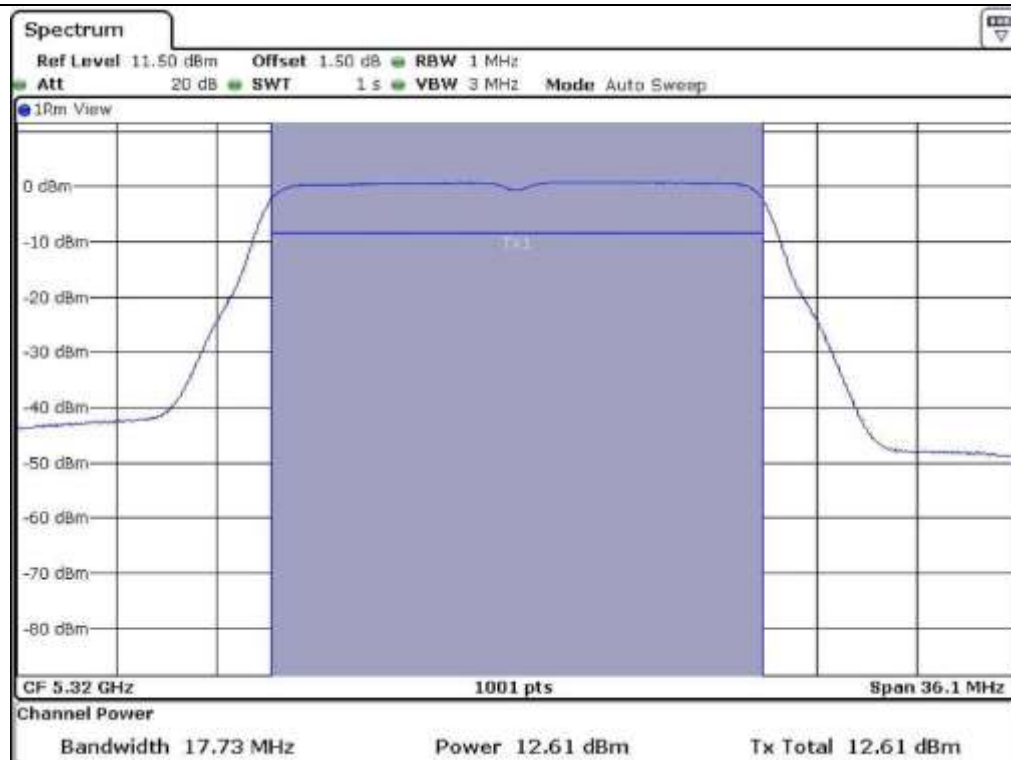
High Channel @ 5 240 MHz (99 % bandwidth)



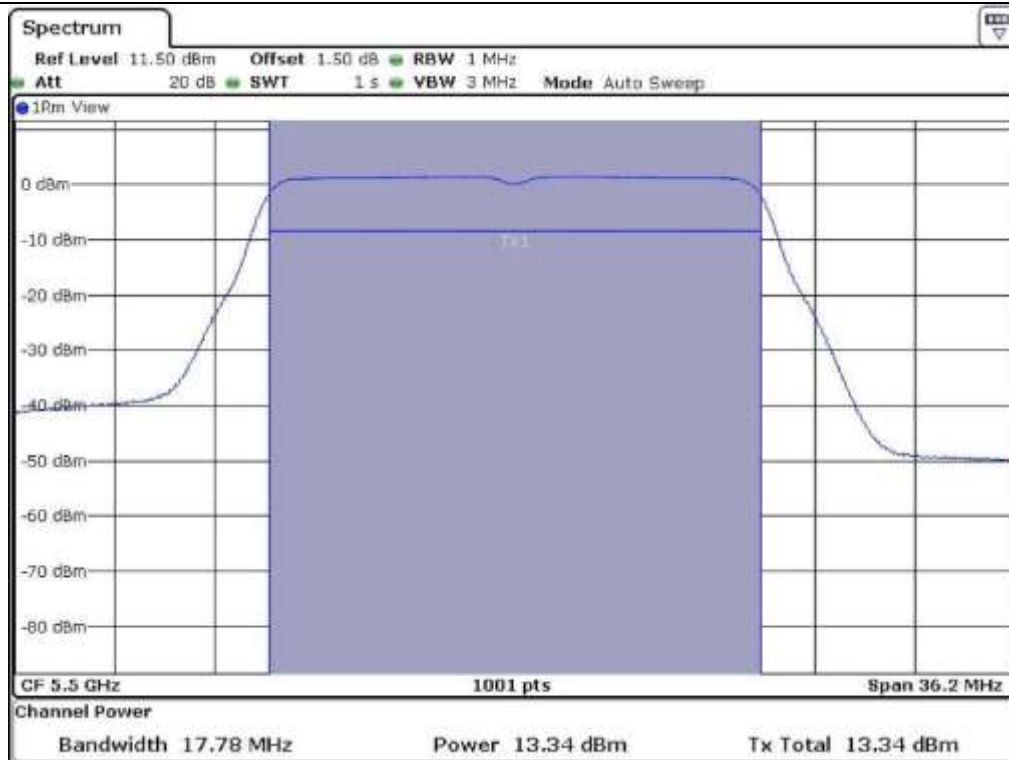
Low Channel @ 5 260 MHz (99 % bandwidth)



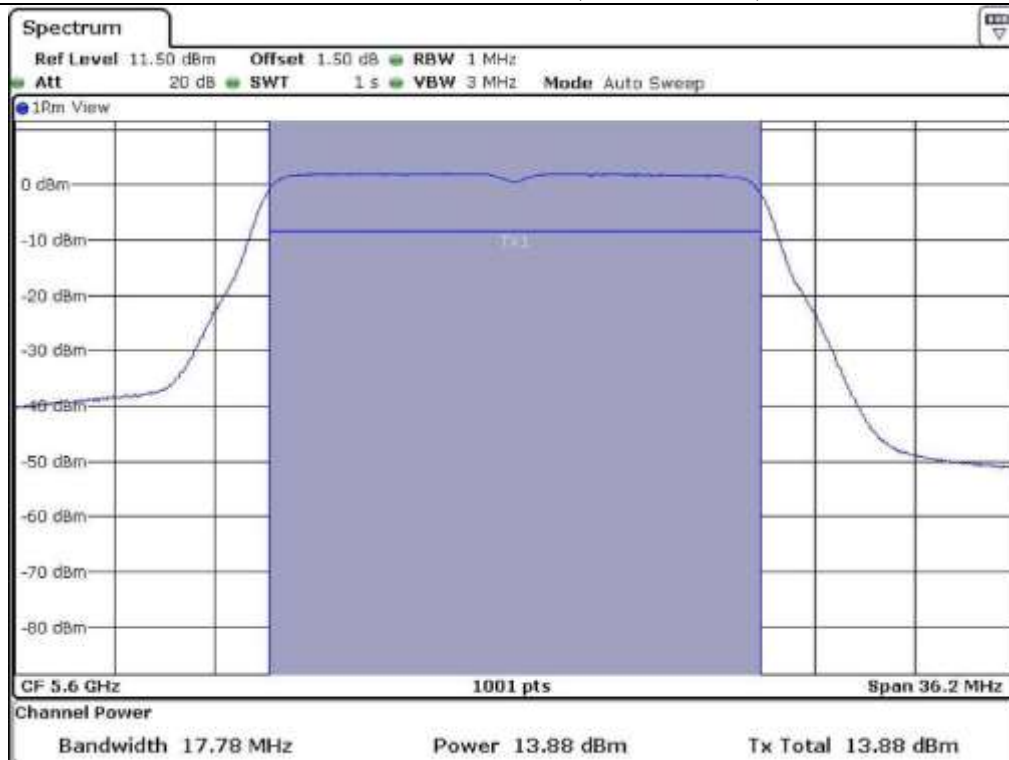
Middle Channel @ 5 300 MHz (99 % bandwidth)



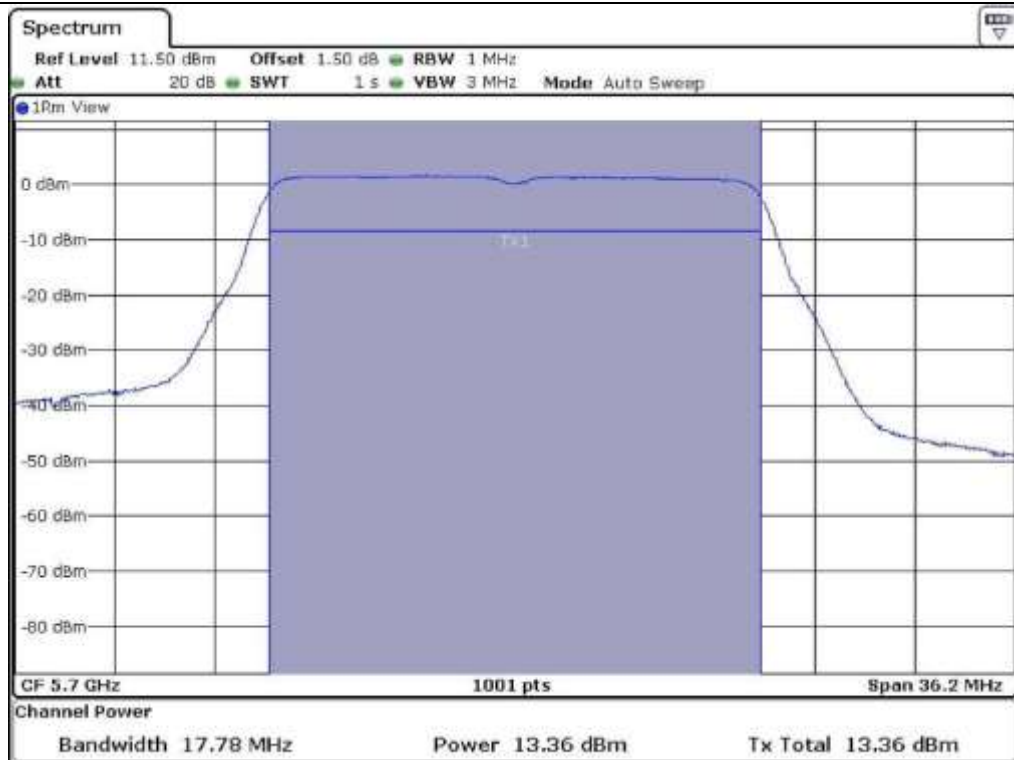
High Channel @ 5 320 MHz (99 % bandwidth)



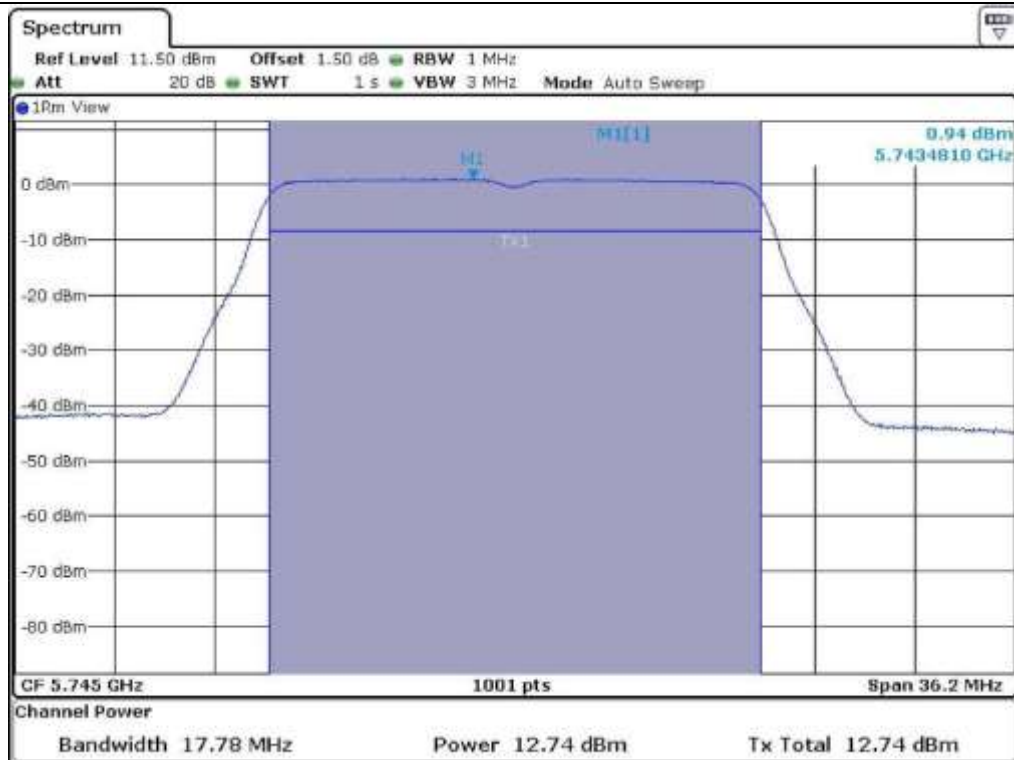
Low Channel @ 5 500 MHz (99 % bandwidth)



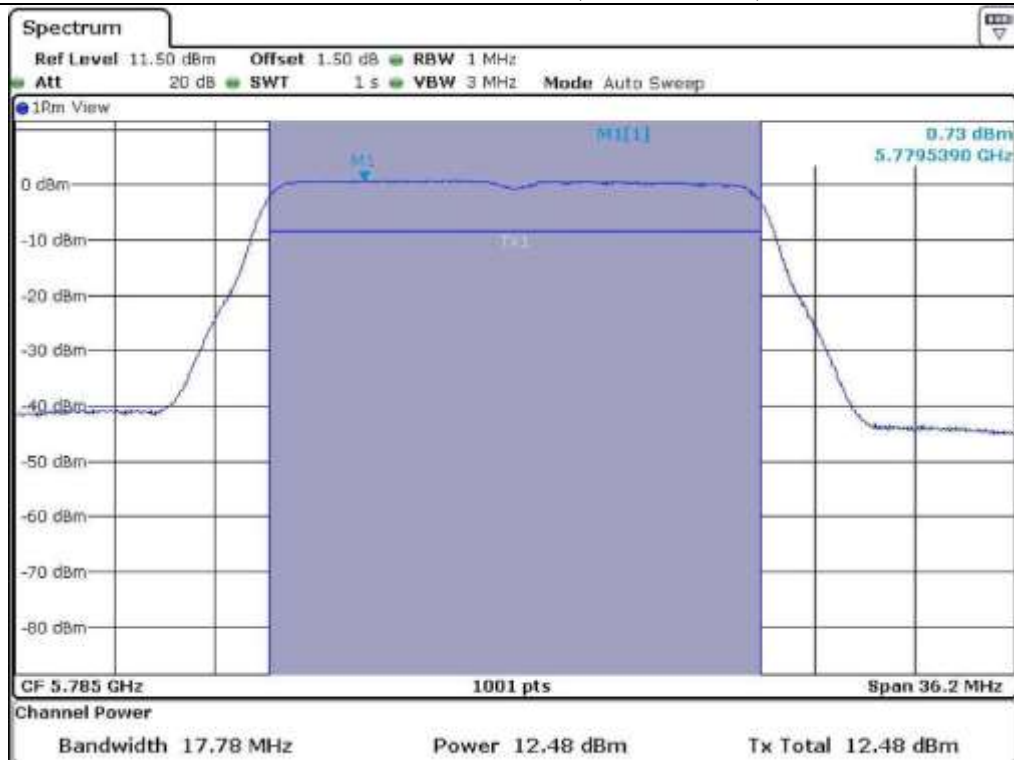
Middle Channel @ 5 600 MHz (99 % bandwidth)



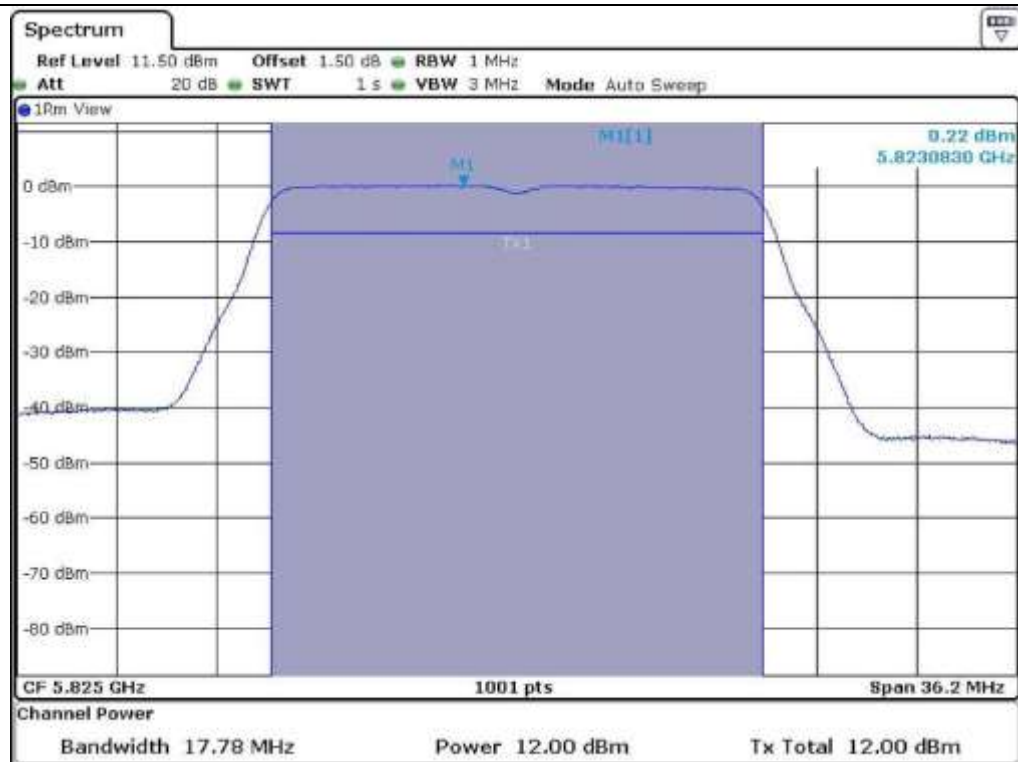
High Channel @ 5 700 MHz (99 % bandwidth)



Low Channel @ 5 745 MHz (99 % bandwidth)



Middle Channel @ 5 785 MHz (99 % bandwidth)



High Channel @ 5 825 MHz (99 % bandwidth)

8.5.2 Test data for Antenna 1

-. Test Date : June 19, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	21.28	12.98	23.98	11.00
	Middle	5 200	21.28	12.88	23.98	11.10
	High	5 240	21.28	12.74	23.98	11.24
5 250 ~ 5 350	Low	5 260	21.28	12.42	23.98	11.56
	Middle	5 300	21.28	11.79	23.98	12.19
	High	5 320	21.28	11.80	23.98	12.18
5 470 ~ 5 725	Low	5 500	21.38	12.63	23.98	11.35
	Middle	5 600	21.38	13.22	23.98	10.76
	High	5 700	21.38	12.51	23.98	11.47
5 725 ~ 5 850	Low	5 745	21.28	13.56	30.00	16.44
	Middle	5 785	21.28	13.36	30.00	16.64
	High	5 825	21.28	13.39	30.00	16.61

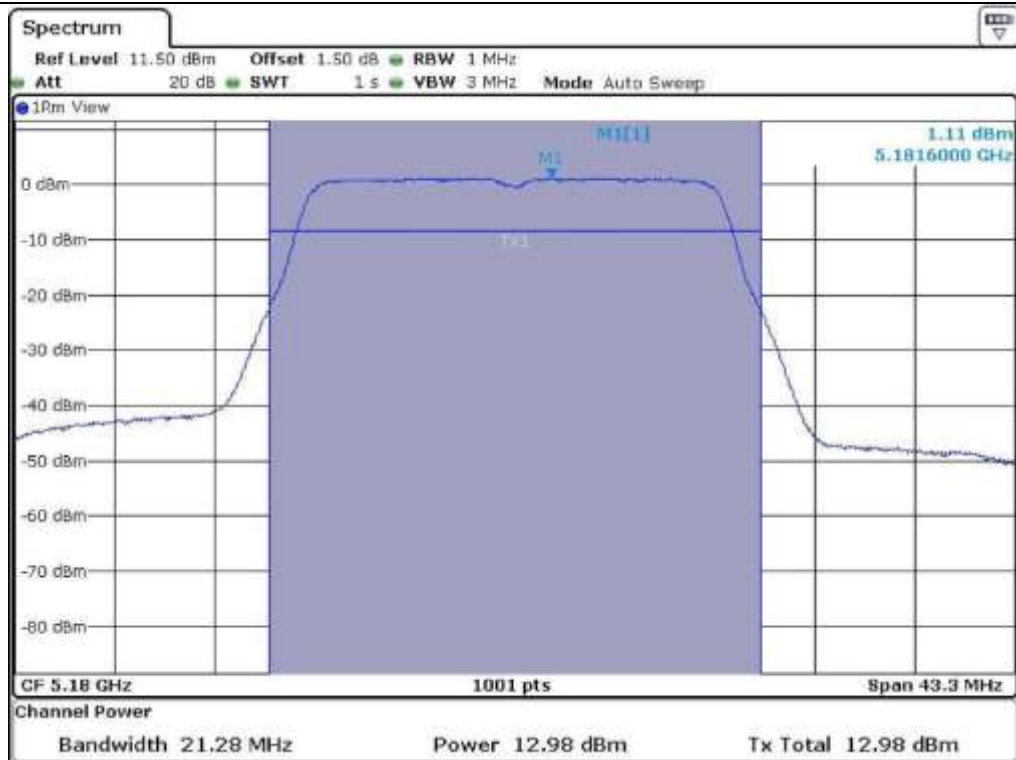
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	2.90	17.73	12.77	23.00	7.33	15.67
	Middle	5 200		17.73	12.76	23.00	7.34	15.66
	High	5 240		17.73	12.77	23.00	7.33	15.67
5 250 ~ 5 350	Low	5 260		17.73	12.29	30.00	14.81	15.19
	Middle	5 300		17.73	11.58	30.00	15.52	14.48
	High	5 320		17.73	11.70	30.00	15.40	14.60
5 470 ~ 5 725	Low	5 500		17.78	12.39	30.00	14.71	15.29
	Middle	5 600		17.78	13.09	30.00	14.01	15.99
	High	5 700		17.78	12.38	30.00	14.72	15.28
5 725 ~ 5 825	Low	5 745		17.78	13.38	36.00	19.72	16.28
	Middle	5 785		17.78	13.34	36.00	19.76	16.24
	High	5 805		17.78	13.16	36.00	19.94	16.06

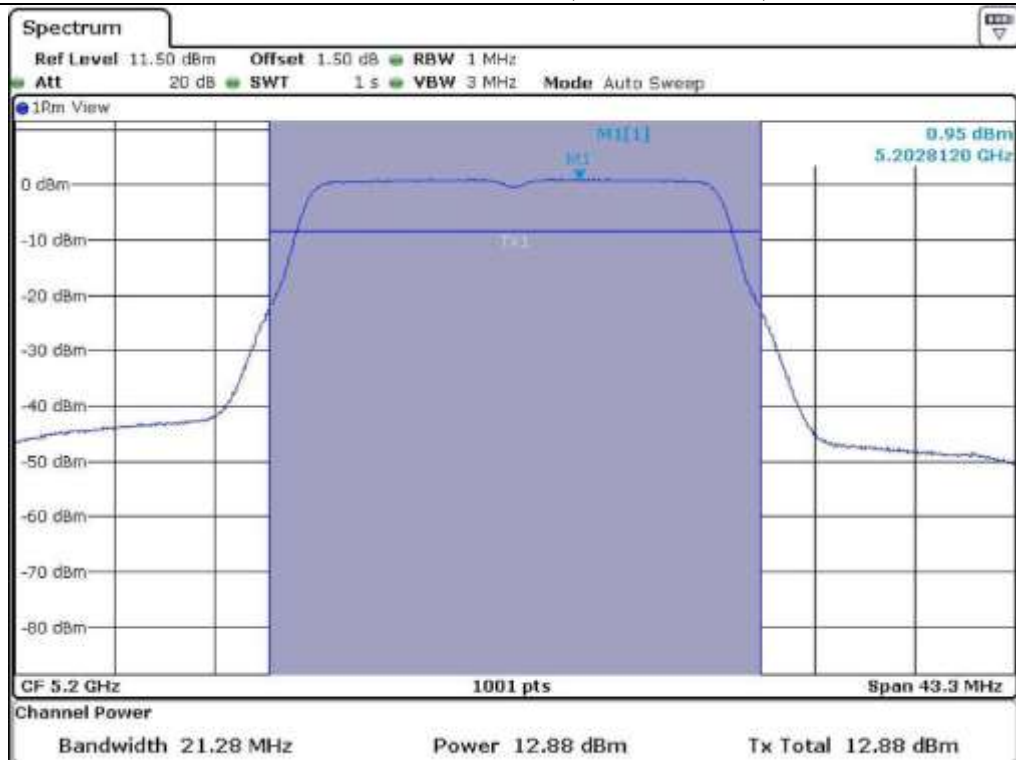
Remark: See next page for measurement data.



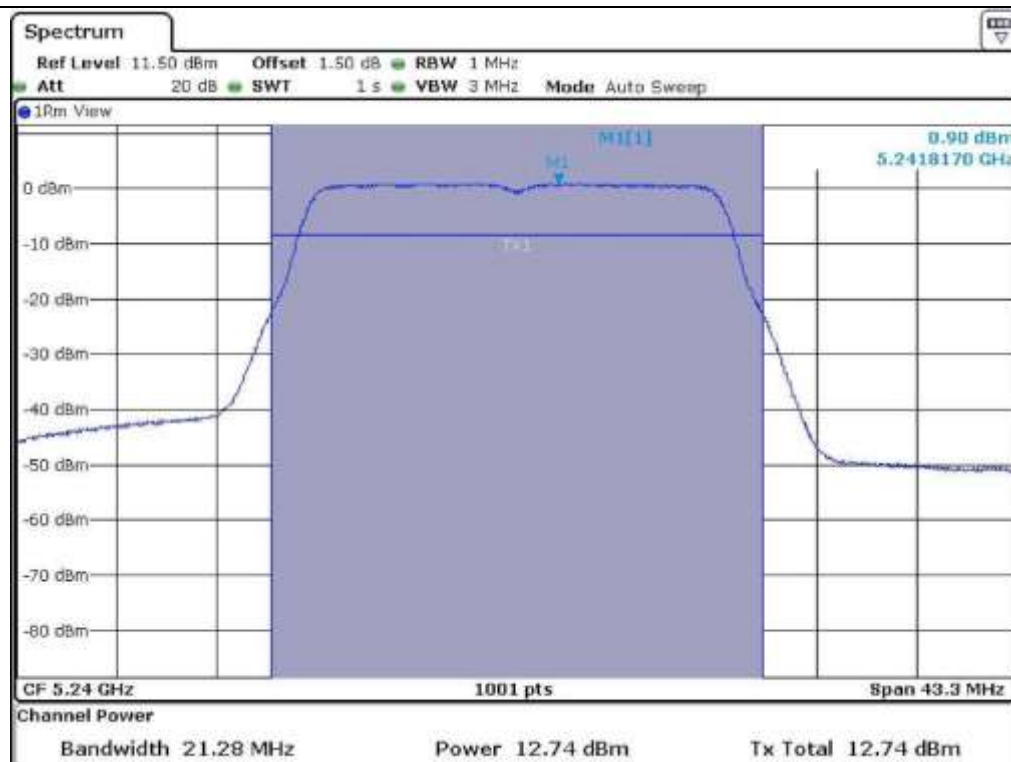
Tested by: Tae-Ho, Kim / Senior Engineer



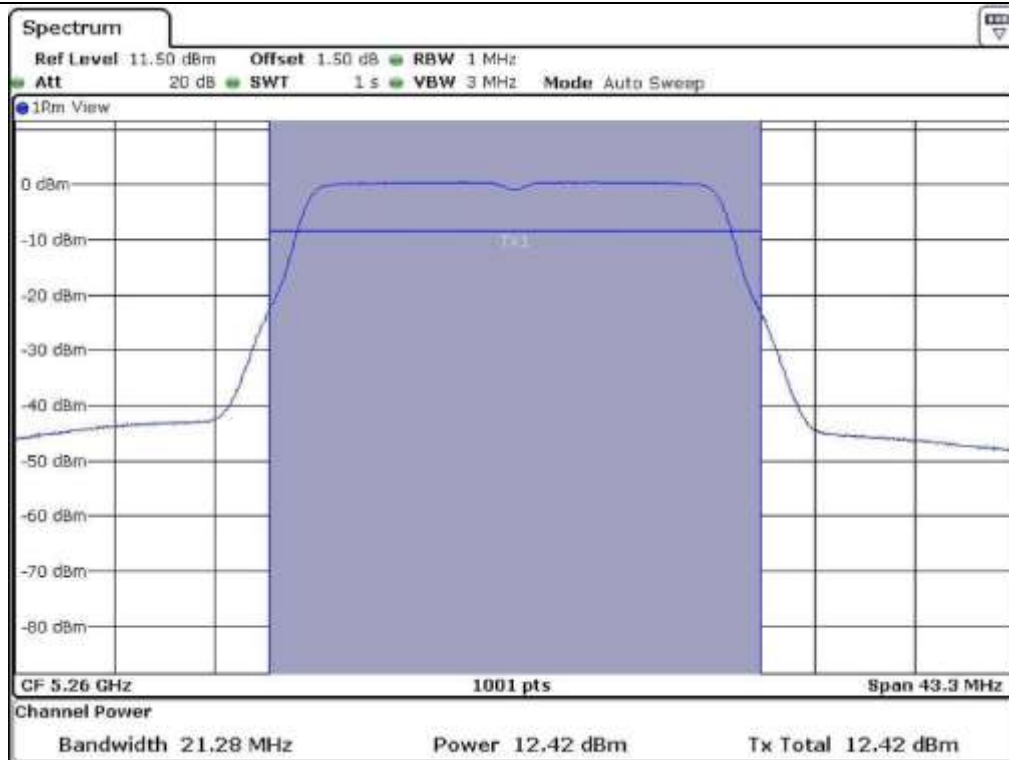
Low Channel @ 5 180 MHz (26 dB Bandwidth)



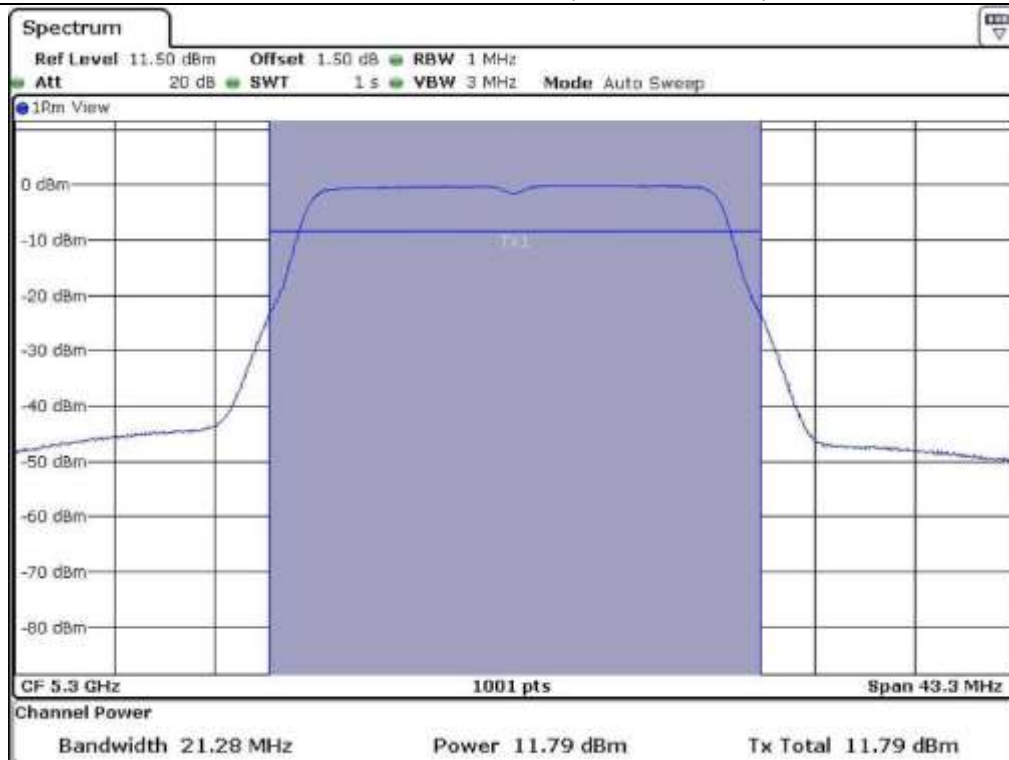
Middle Channel @ 5 200 MHz (26 dB Bandwidth)



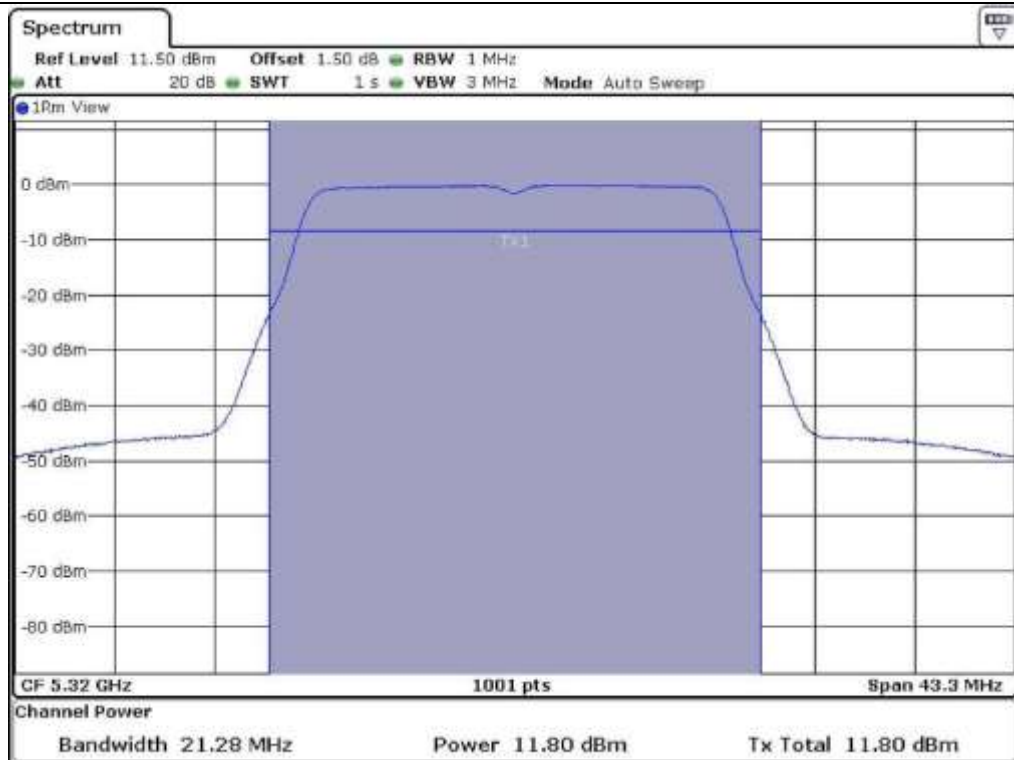
High Channel @ 5 240 MHz (26 dB Bandwidth)



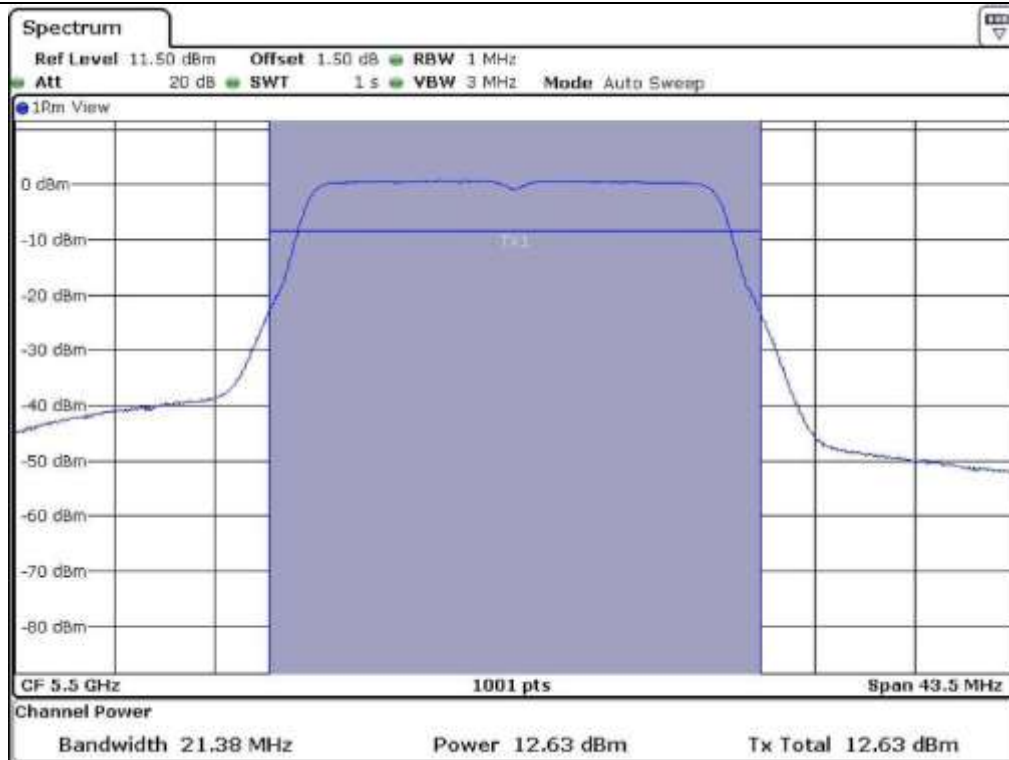
Low Channel @ 5 260 MHz (26 dB Bandwidth)



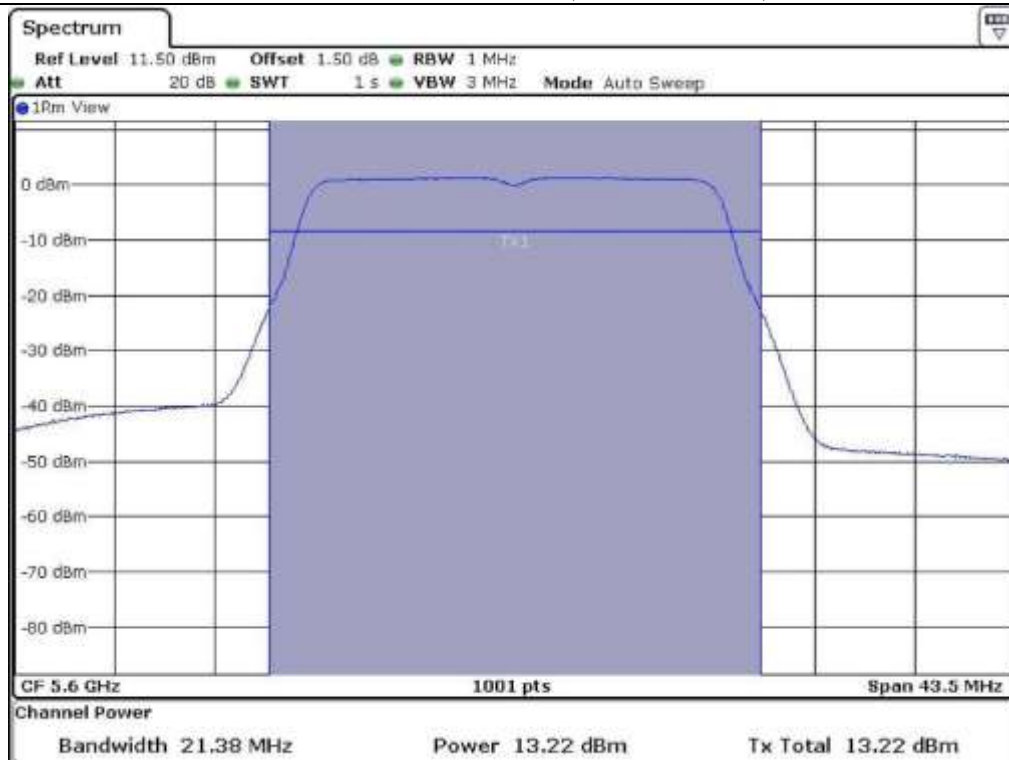
Middle Channel @ 5 300 MHz (26 dB Bandwidth)



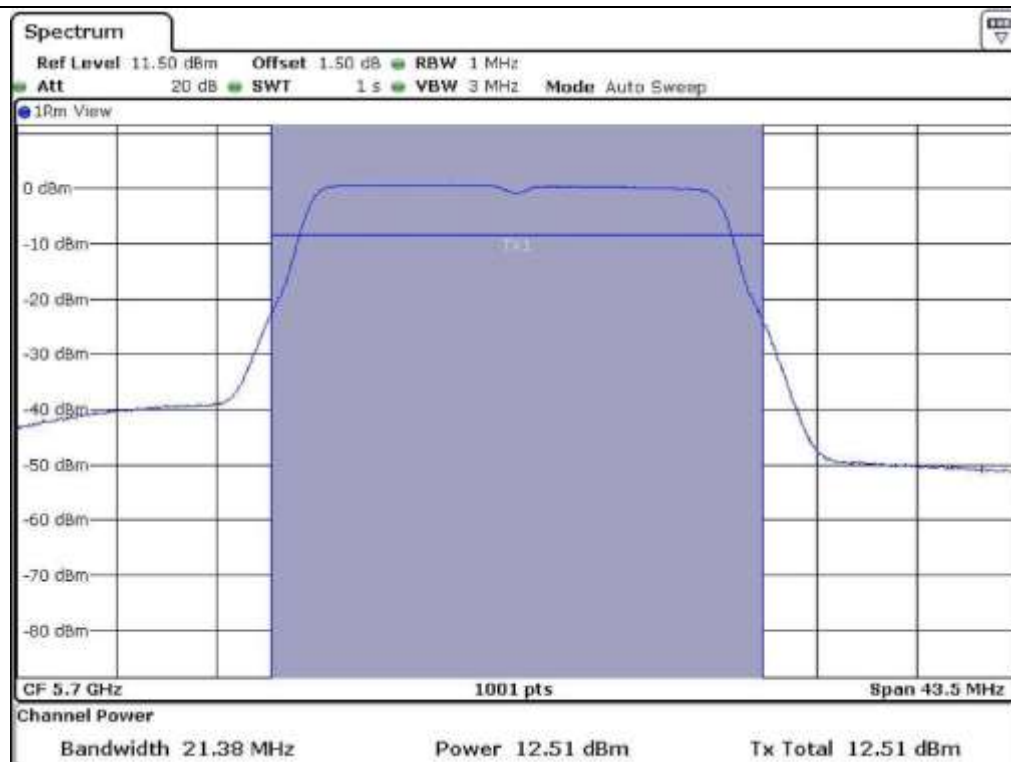
High Channel @ 5 320 MHz (26 dB Bandwidth)



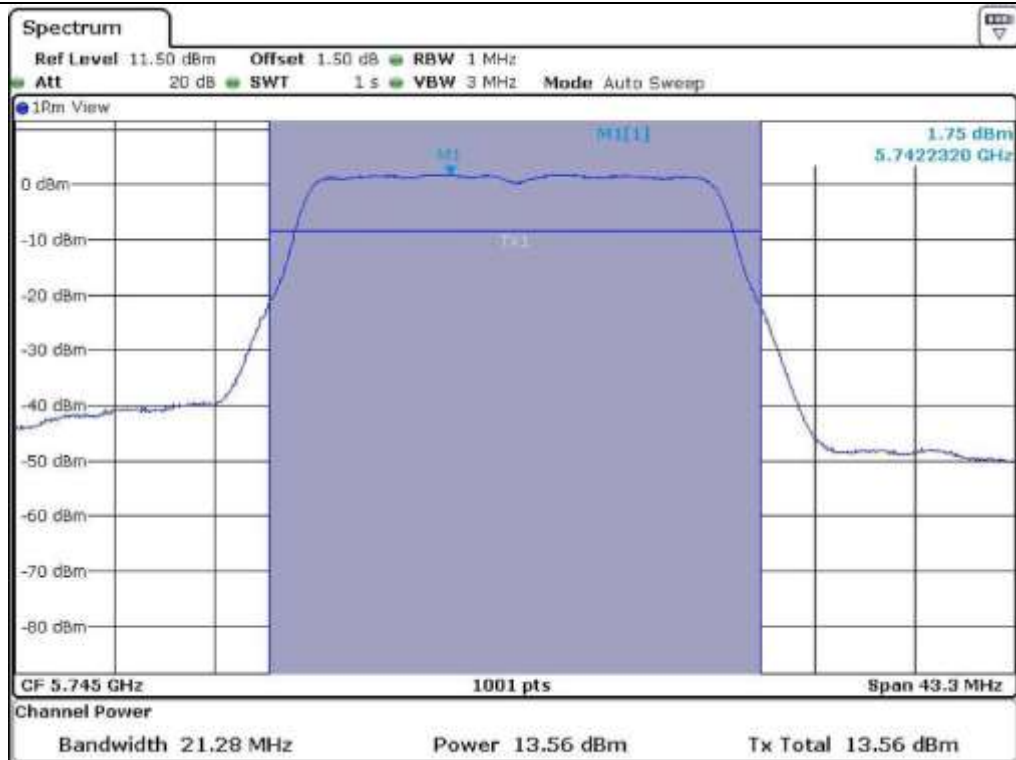
Low Channel @ 5 500 MHz (26 dB Bandwidth)



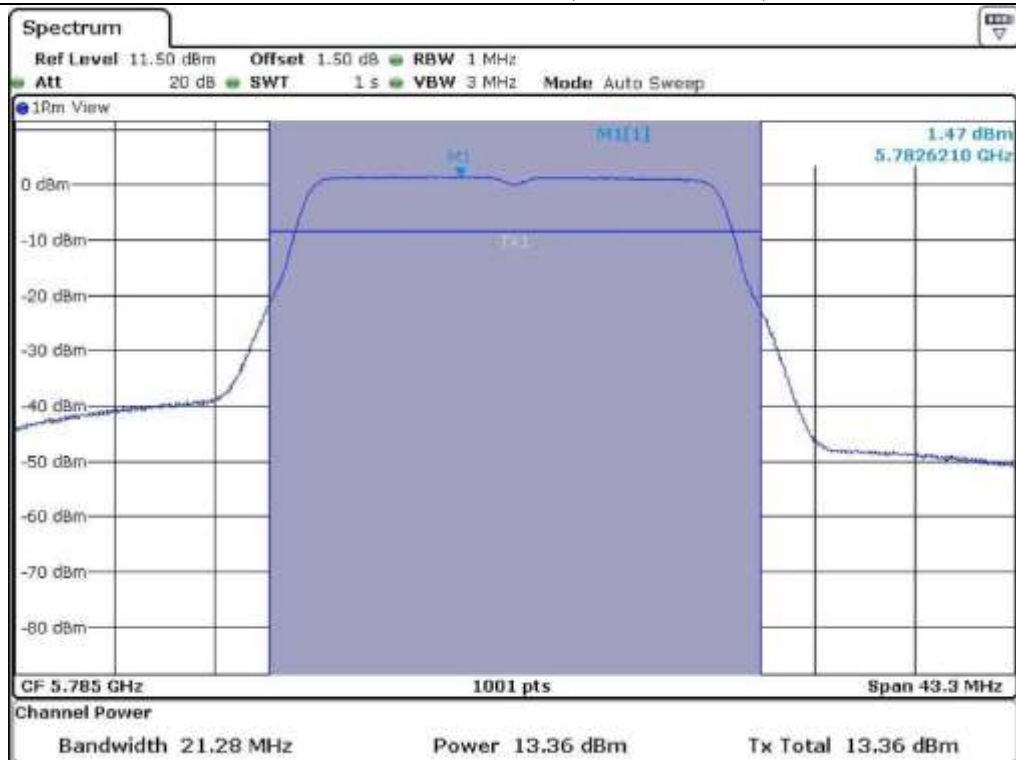
Middle Channel @ 5 600 MHz (26 dB Bandwidth)



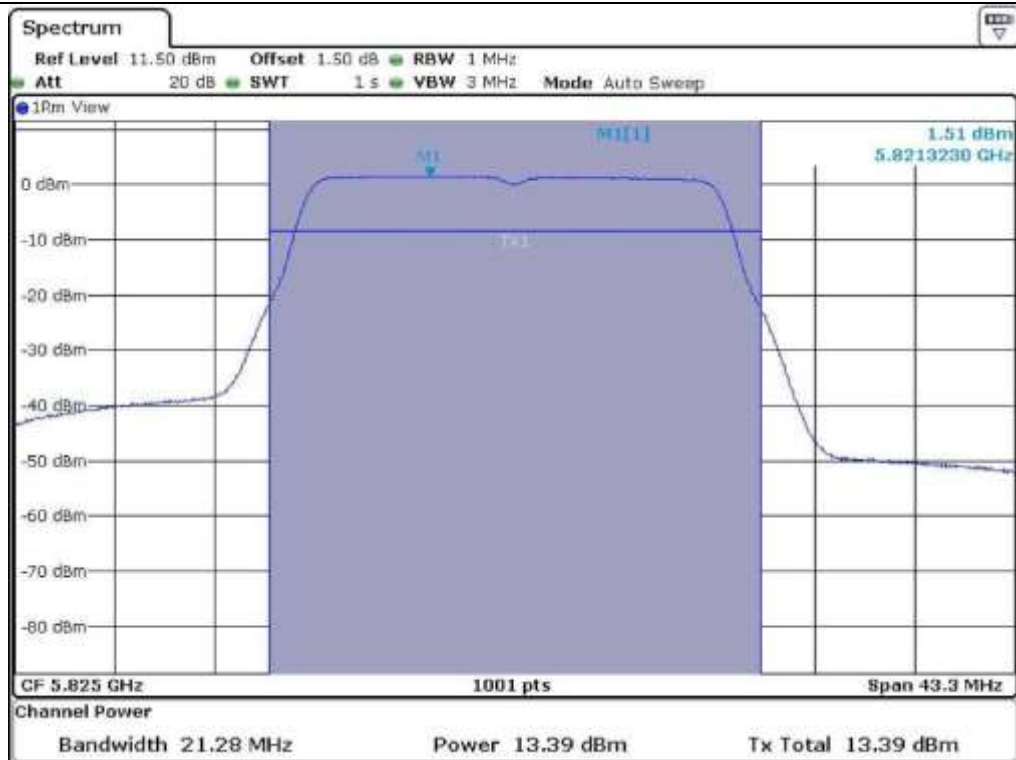
High Channel @ 5 700 MHz (26 dB Bandwidth)



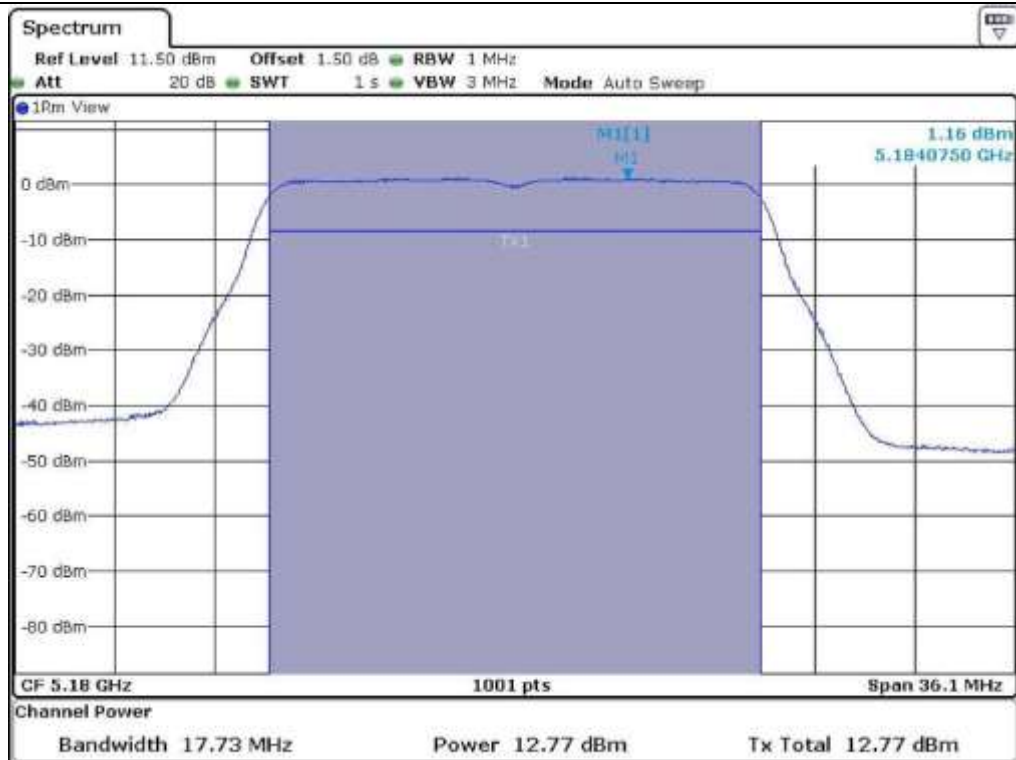
Low Channel @ 5.745 MHz (26 dB Bandwidth)



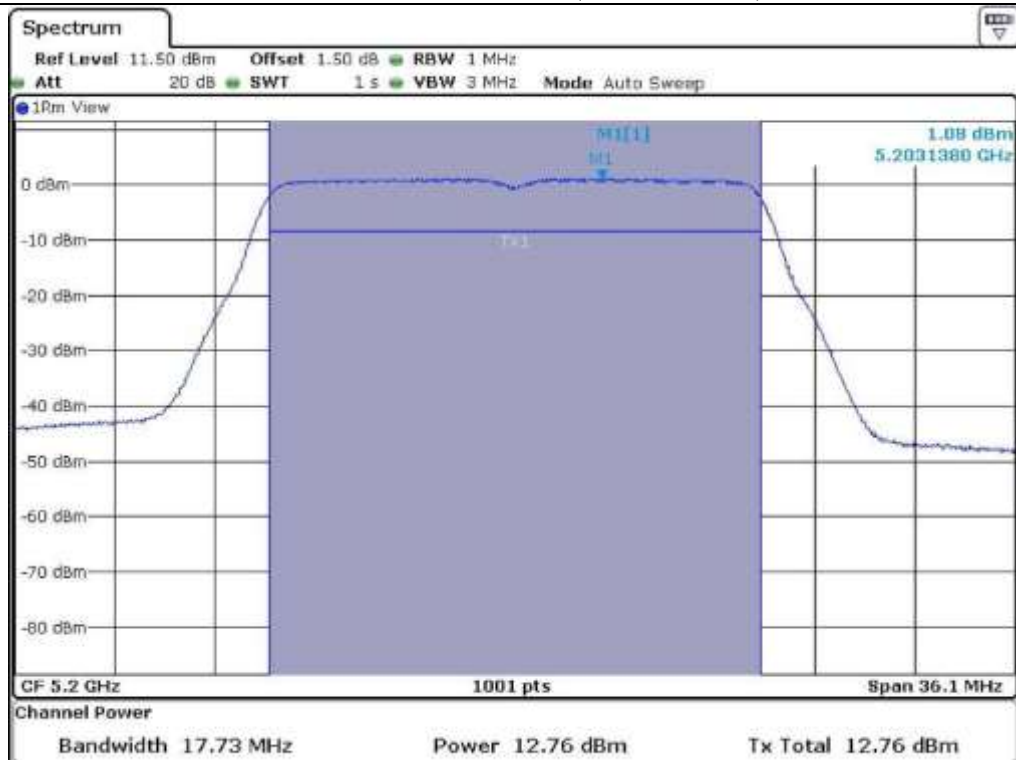
Middle Channel @ 5.785 MHz (26 dB Bandwidth)



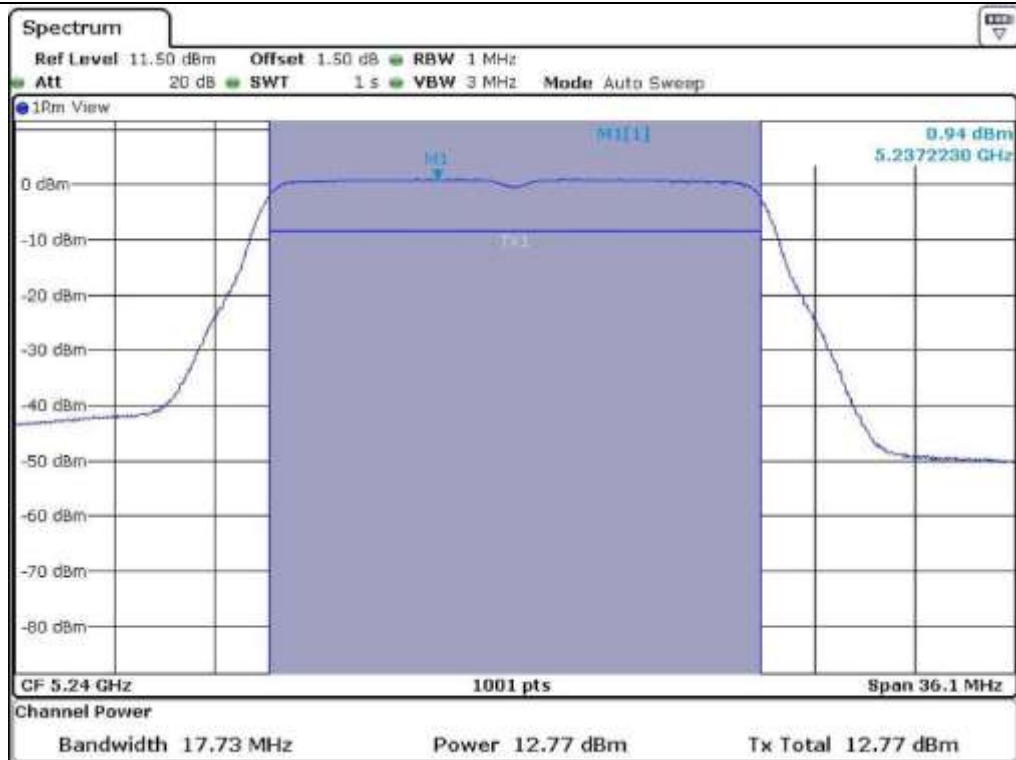
High Channel @ 5 825 MHz (26 dB Bandwidth)



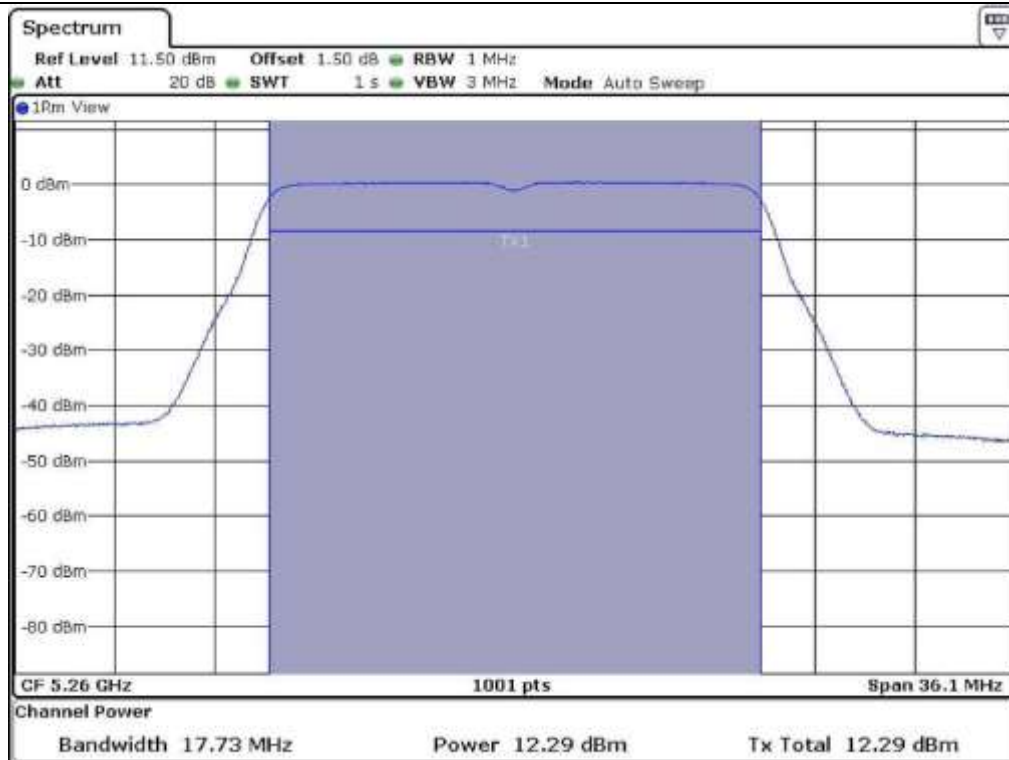
Low Channel @ 5 180 MHz (99 % bandwidth)



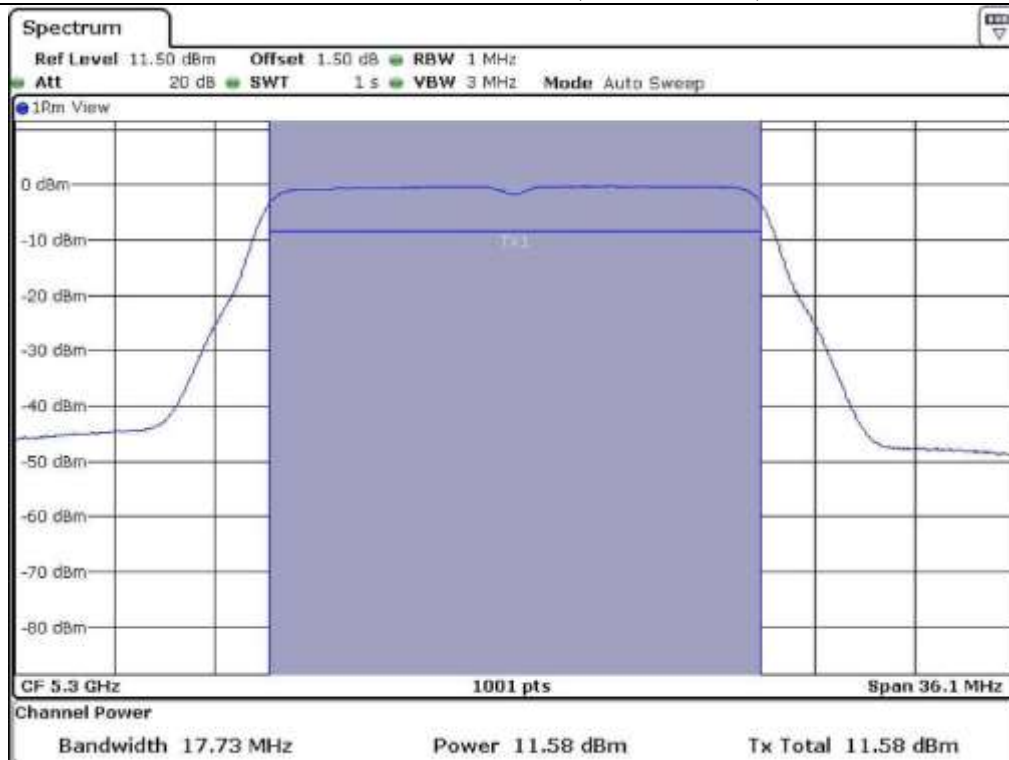
Middle Channel @ 5 200 MHz (99 % bandwidth)



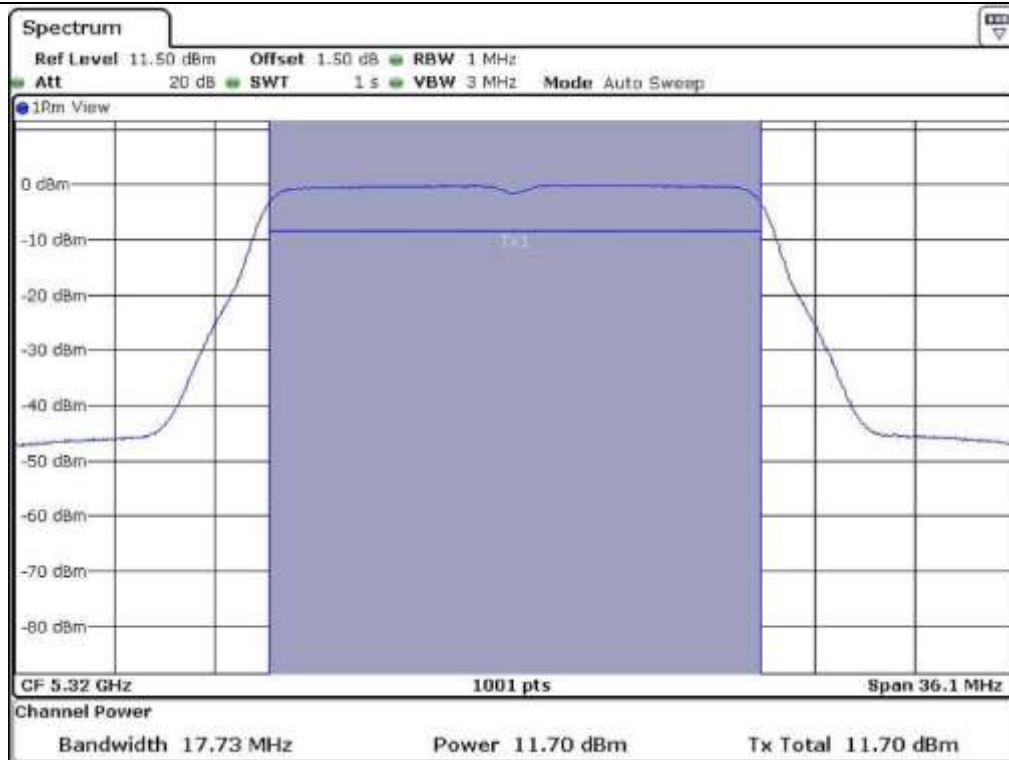
High Channel @ 5 240 MHz (99 % bandwidth)



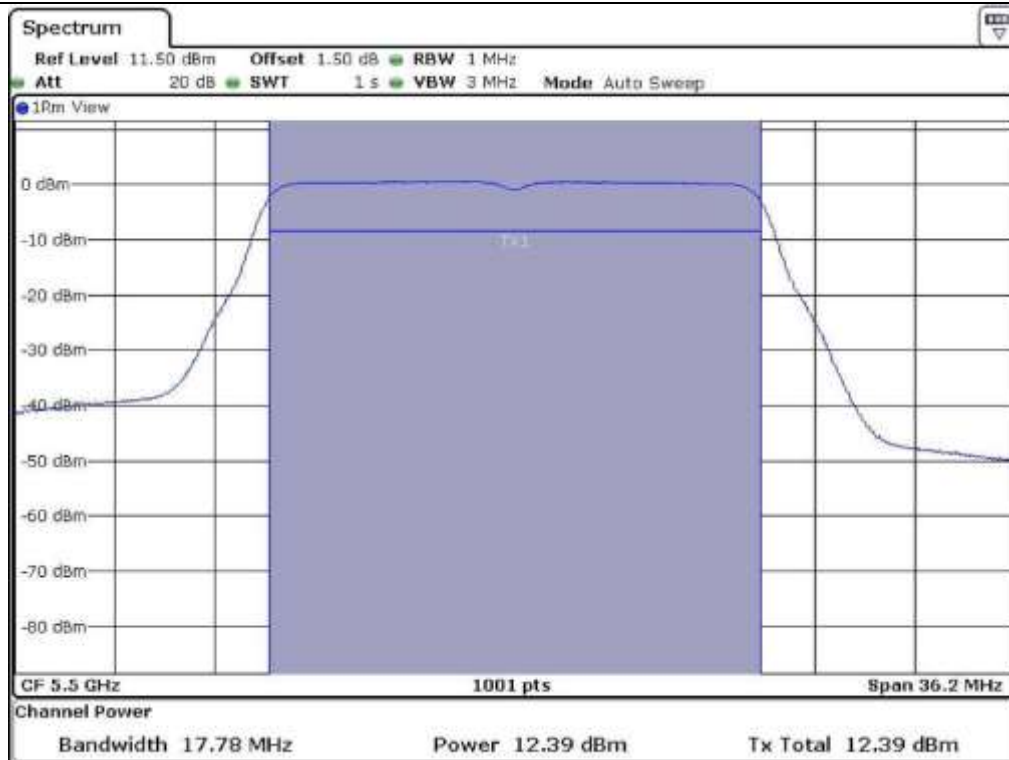
Low Channel @ 5 260 MHz (99 % bandwidth)



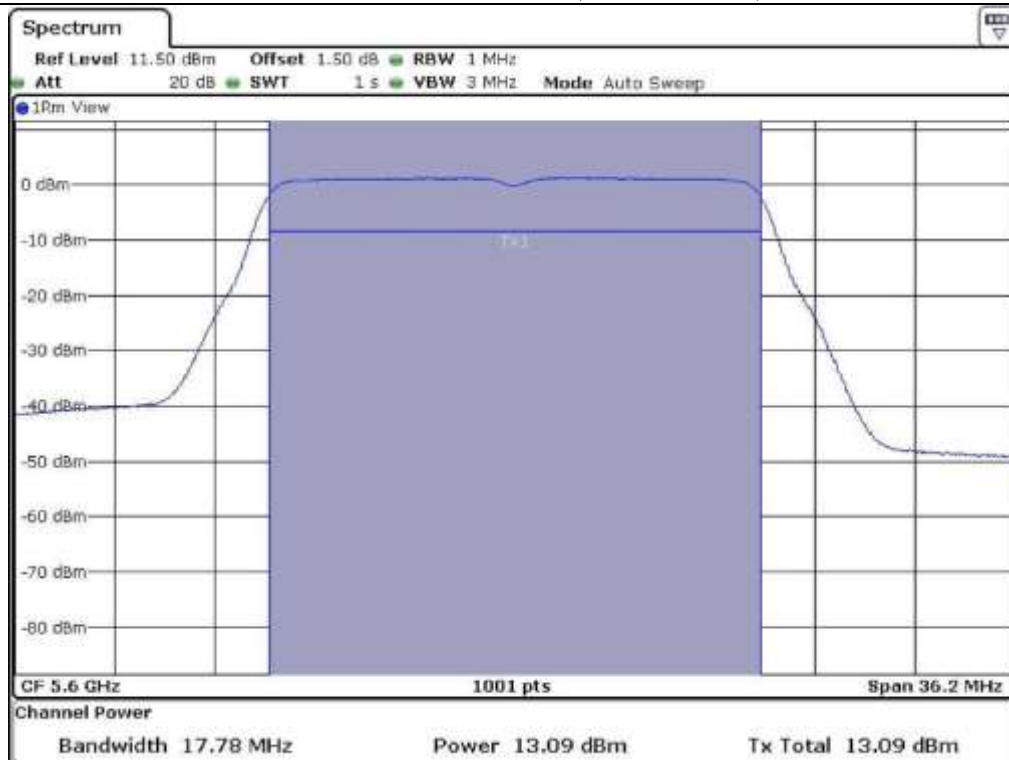
Middle Channel @ 5 300 MHz (99 % bandwidth)



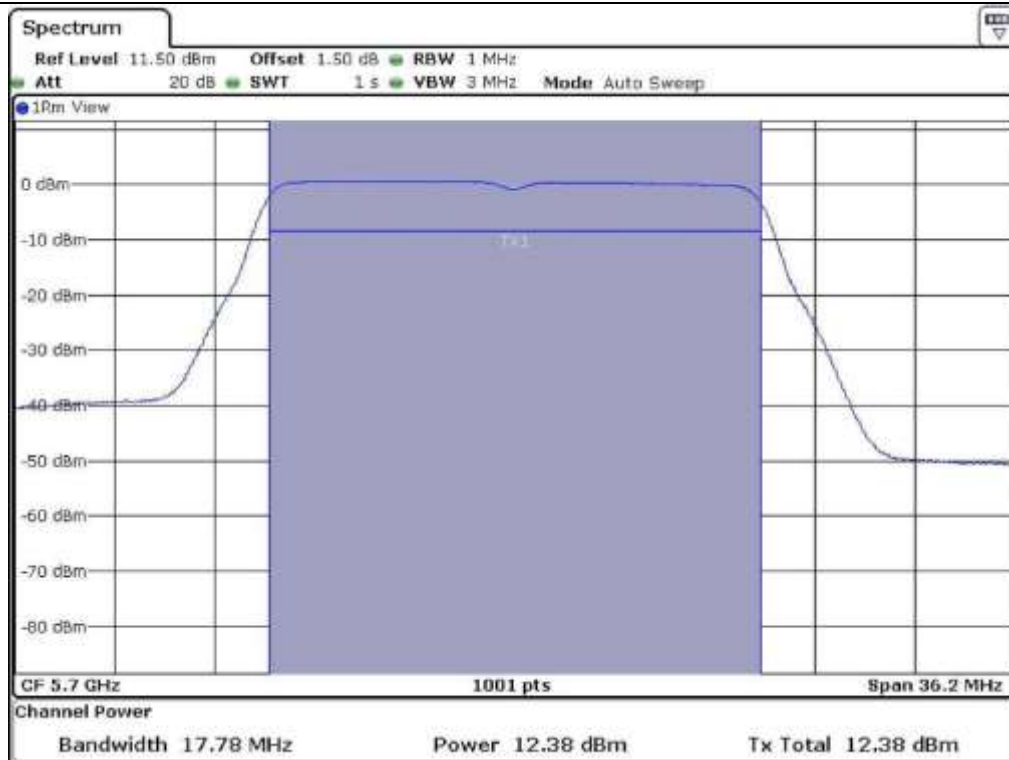
High Channel @ 5 320 MHz (99 % bandwidth)



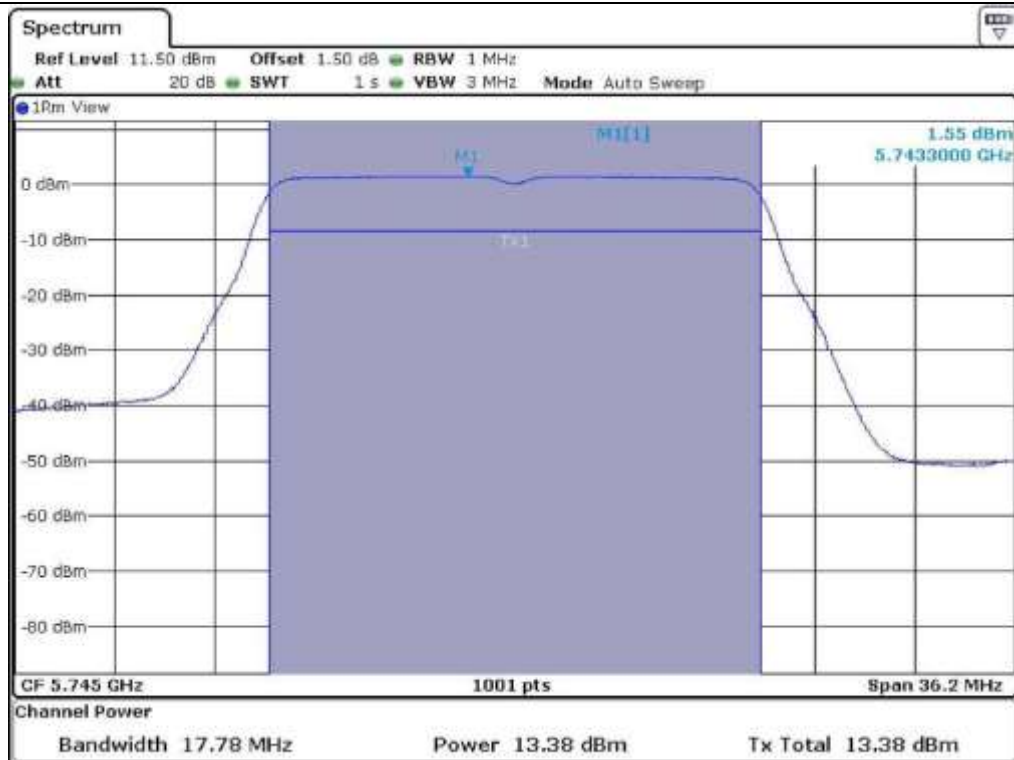
Low Channel @ 5 500 MHz (99 % bandwidth)



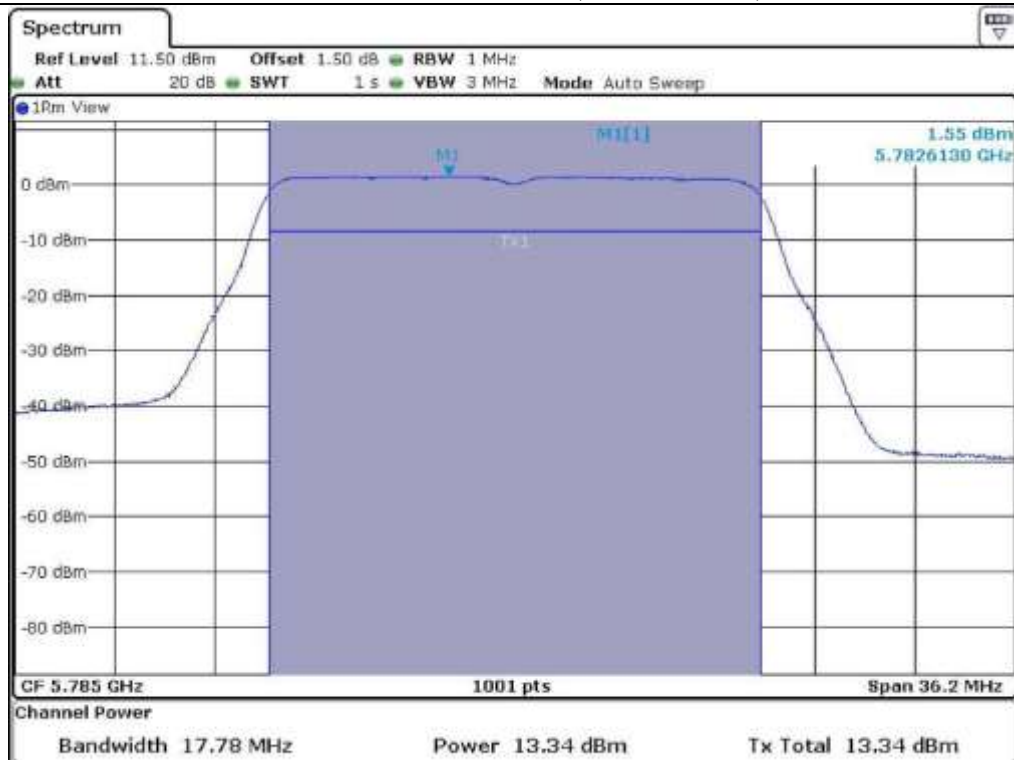
Middle Channel @ 5 600 MHz (99 % bandwidth)



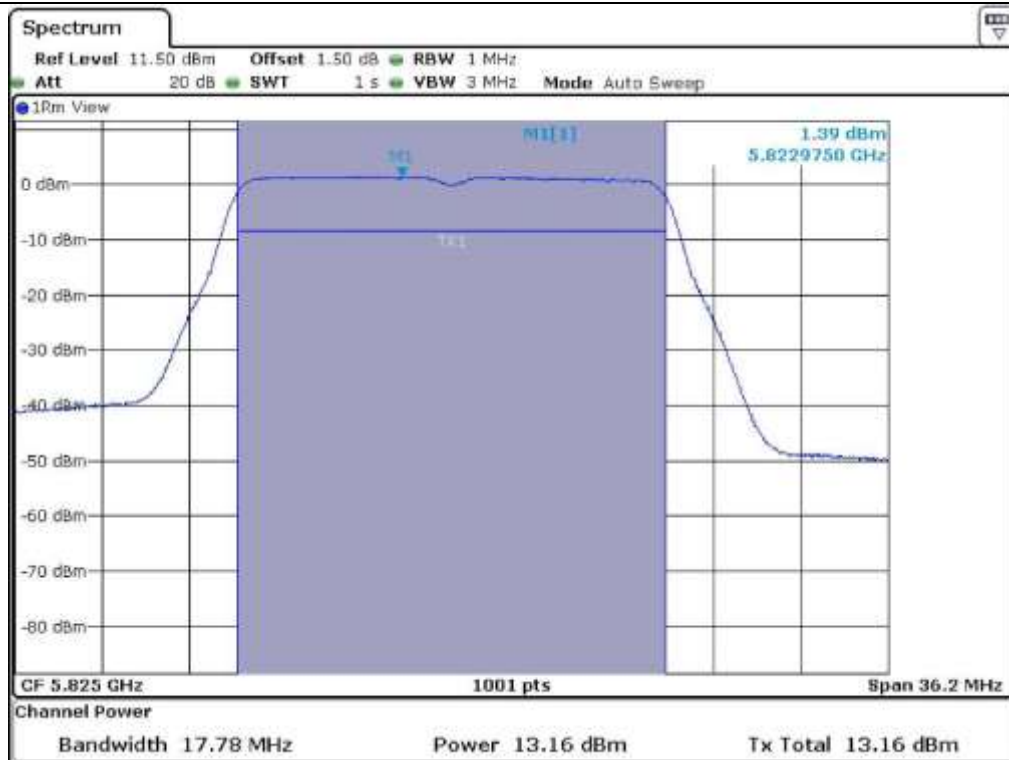
High Channel @ 5 700 MHz (99 % bandwidth)



Low Channel @ 5 745 MHz (99 % bandwidth)



Middle Channel @ 5 785 MHz (99 % bandwidth)



High Channel @ 5 825 MHz (99 % bandwidth)

8.5.3 Test data for Multiple transmit

-. Test Date : June 19, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 180	15.51	23.98	8.47
	Middle	5 200	15.52	23.98	8.46
	High	5 240	15.35	23.98	8.63
5 250 ~ 5 350	Low	5 260	16.09	23.98	7.89
	Middle	5 300	15.55	23.98	8.43
	High	5 320	15.40	23.98	8.58
5 470 ~ 5 725	Low	5 500	16.11	23.98	7.87
	Middle	5 600	16.49	23.98	7.49
	High	5 700	15.91	23.98	8.07
5 725 ~ 5 850	Low	5 745	16.16	30.00	13.84
	Middle	5 785	15.99	30.00	14.01
	High	5 825	15.81	30.00	14.19

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 : Calculated Output Power= $10\log(10^{(\text{Antenna1 Output Power}/10)} + 10^{(\text{Antenna2 Output Power}/10)})$

-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 180	5.91	15.39	23.00	1.70	21.30
	Middle	5 200		15.39	23.00	1.70	21.30
	High	5 240		15.41	23.00	1.68	21.32
5 250 ~ 5 350	Low	5 260		15.92	30.00	8.17	21.83
	Middle	5 300		15.32	30.00	8.77	21.23
	High	5 320		15.19	30.00	8.90	21.10
5 470 ~ 5 725	Low	5 500		15.90	30.00	8.19	21.81
	Middle	5 600		16.51	30.00	7.58	22.42
	High	5 700		15.91	30.00	8.18	21.82
5 725 ~ 5 825	Low	5 745		16.08	36.00	14.01	21.99
	Middle	5 785		15.94	36.00	14.15	21.85
	High	5 805		15.63	36.00	14.46	21.54

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 :Calculated Output Power= $10\log (10^{(\text{Antenna1 Output Power}/10)}+10^{(\text{Antenna2 Output Power}/10)})$



Tested by: Tae-Ho, Kim / Senior Engineer

8.6 Test data for 802.11n_HT40 RLAN Mode

8.6.1 Test data for Antenna 0

-. Test Date : June 20, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190	38.96	12.14	23.98	11.84
	High	5 230	38.96	12.31	23.98	11.67
5 250 ~ 5 350	Low	5 270	38.86	13.50	23.98	10.48
	High	5 310	38.86	13.28	23.98	10.70
5 470 ~ 5 725	Low	5 510	38.86	13.94	23.98	10.04
	Middle	5 590	38.86	14.06	23.98	9.92
	High	5 670	38.86	13.78	23.98	10.20
5 725 ~ 5 850	Low	5 755	38.92	13.09	30.00	16.91
	High	5 795	38.92	12.57	30.00	17.43

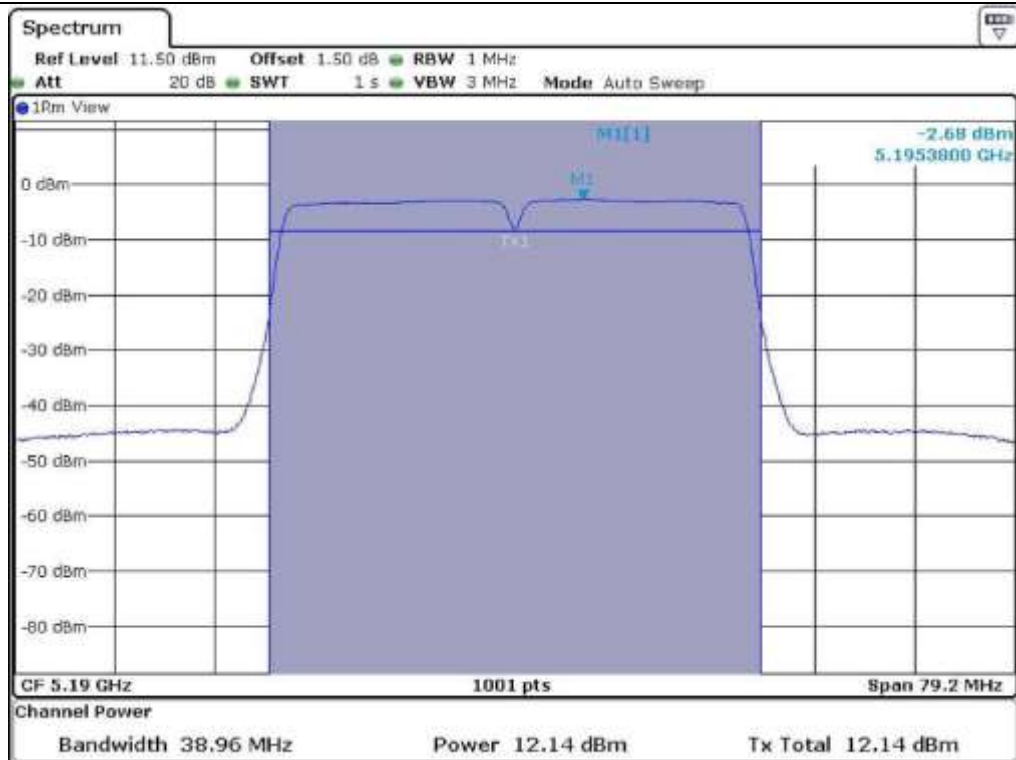
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 190	2.90	36.16	12.18	23.00	7.92	15.08
	High	5 230		36.16	12.17	23.00	7.93	15.07
5 250 ~ 5 350	Low	5 270		36.16	13.30	30.00	13.80	16.20
	High	5 310		36.16	13.08	30.00	14.02	15.98
5 470 ~ 5 725	Low	5 510		36.26	13.78	30.00	13.32	16.68
	Middle	5 590		36.26	13.96	30.00	13.14	16.86
	High	5 670		36.26	13.70	30.00	13.40	16.60
5 725 ~ 5 825	Low	5 755		36.16	12.95	36.00	20.15	15.85
	High	5 795		36.16	12.72	36.00	20.38	15.62

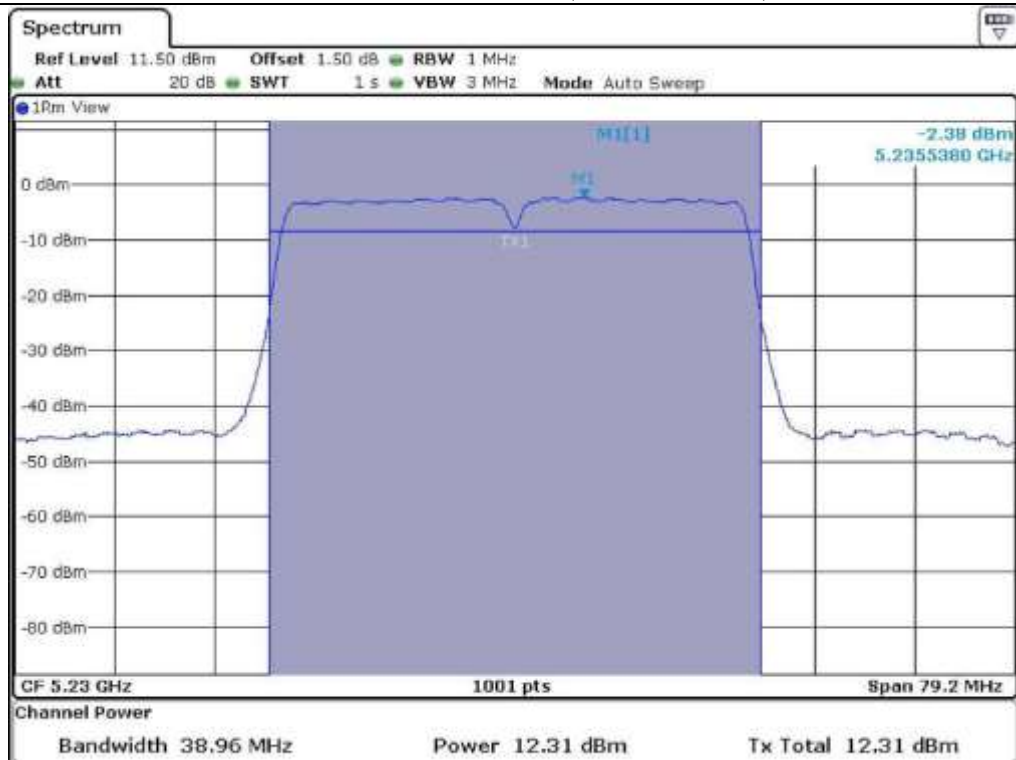
Remark: See next page for measurement data.



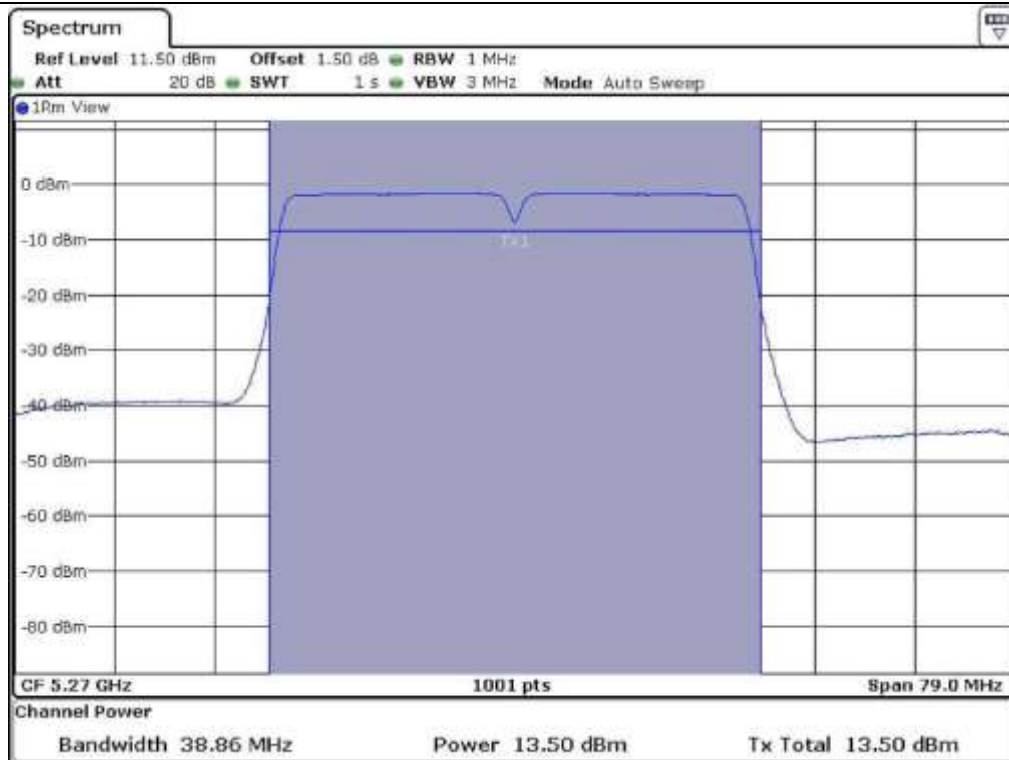
Tested by: Tae-Ho, Kim / Senior Engineer



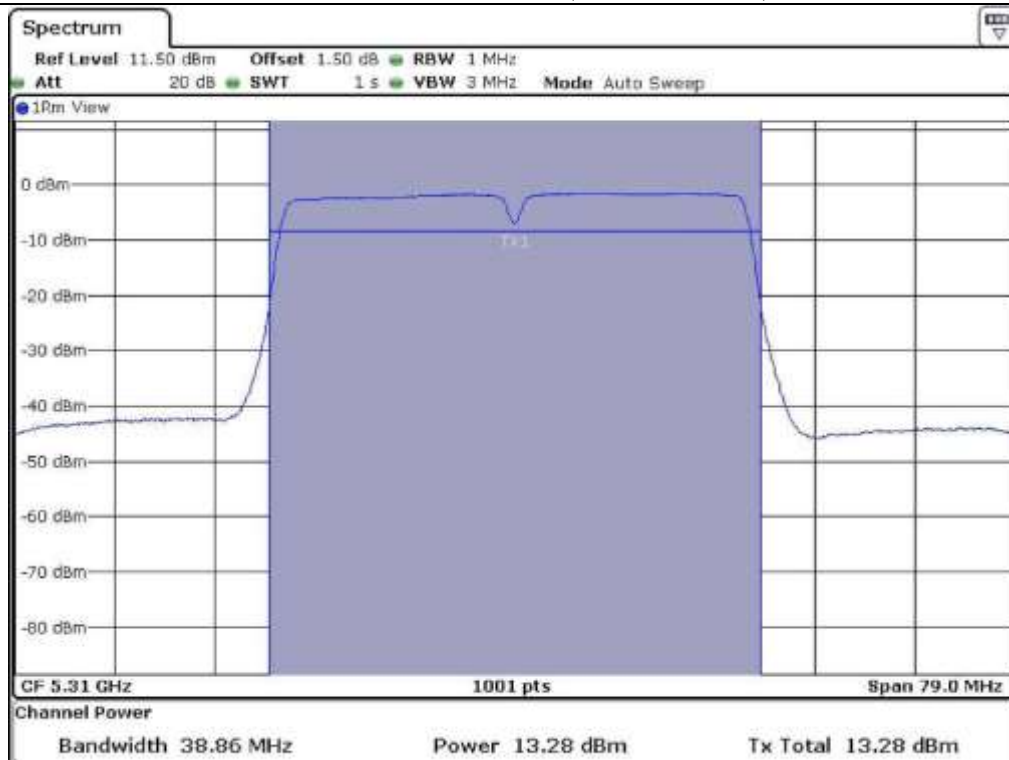
Low Channel @ 5 190 MHz (26 dB Bandwidth)



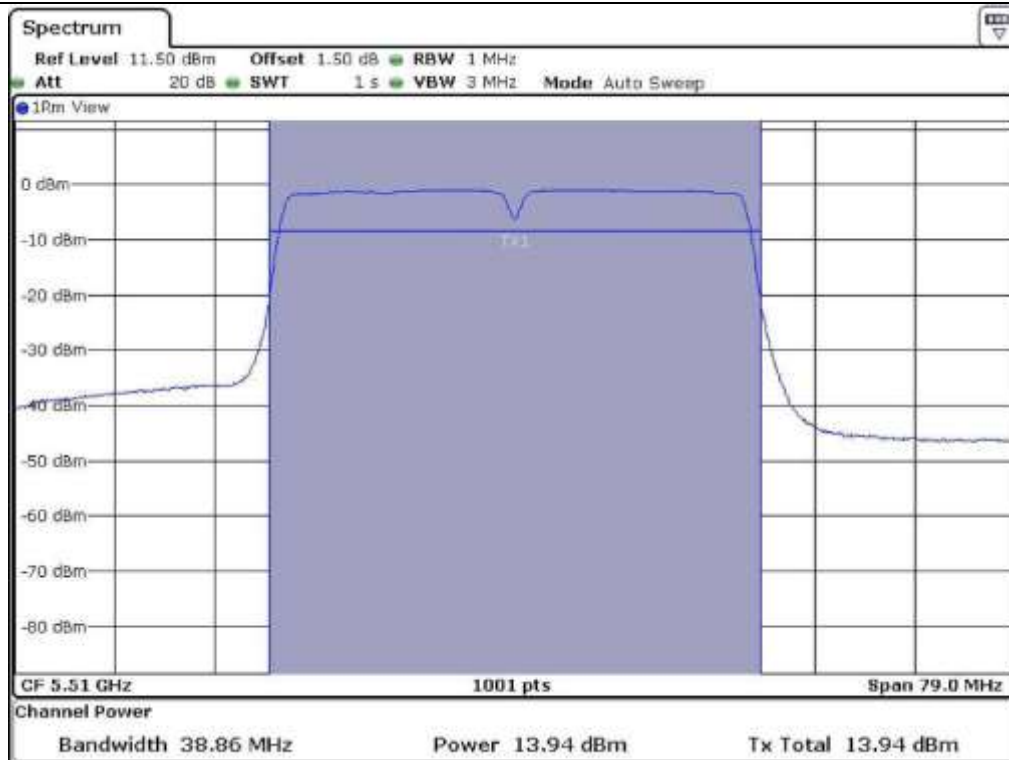
High Channel @ 5 230 MHz (26 dB Bandwidth)



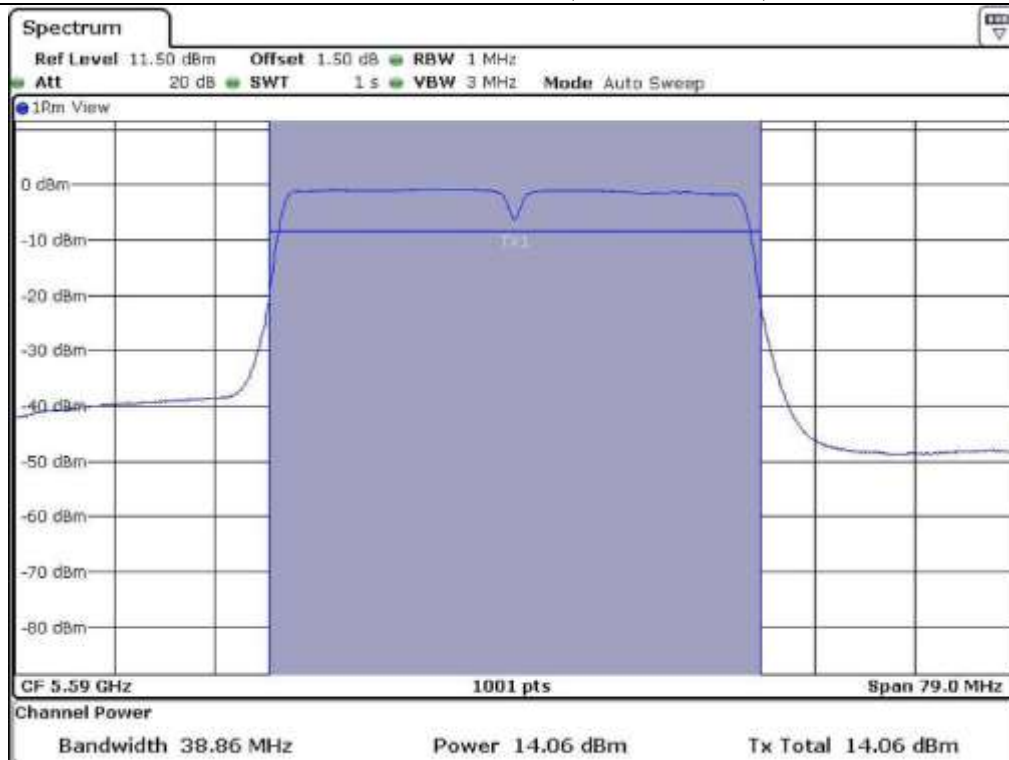
Low Channel @ 5 270 MHz (26 dB Bandwidth)



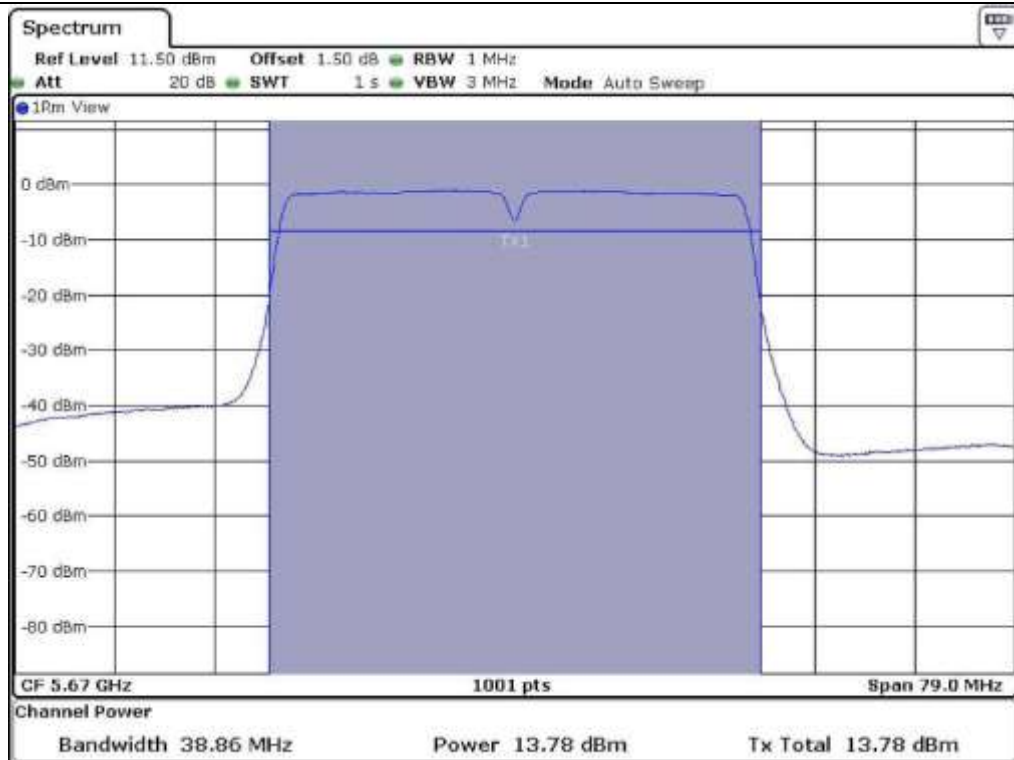
High Channel @ 5 310 MHz (26 dB Bandwidth)



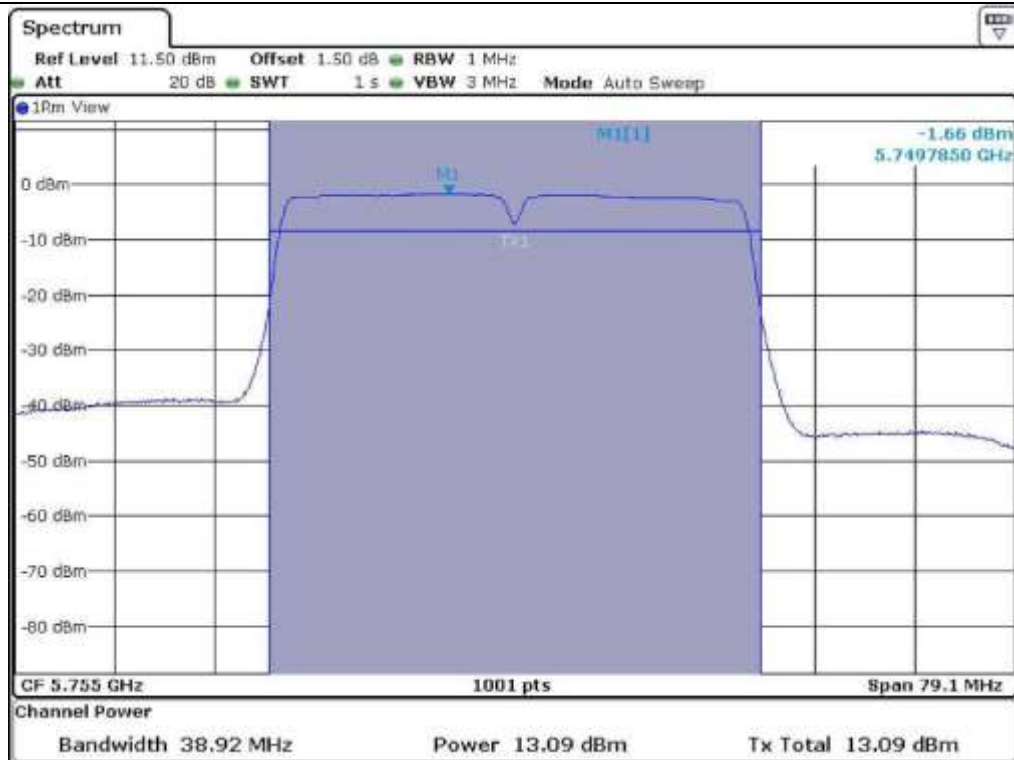
Low Channel @ 5.510 MHz (26 dB Bandwidth)



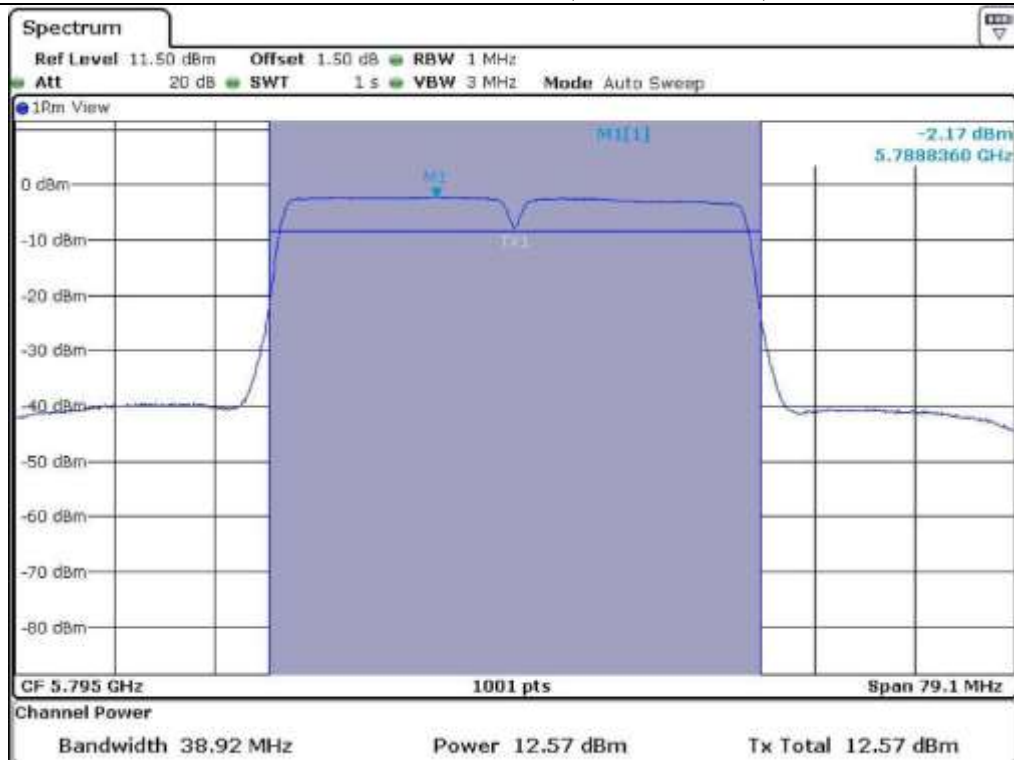
Middle Channel @ 5.590 MHz (26 dB Bandwidth)



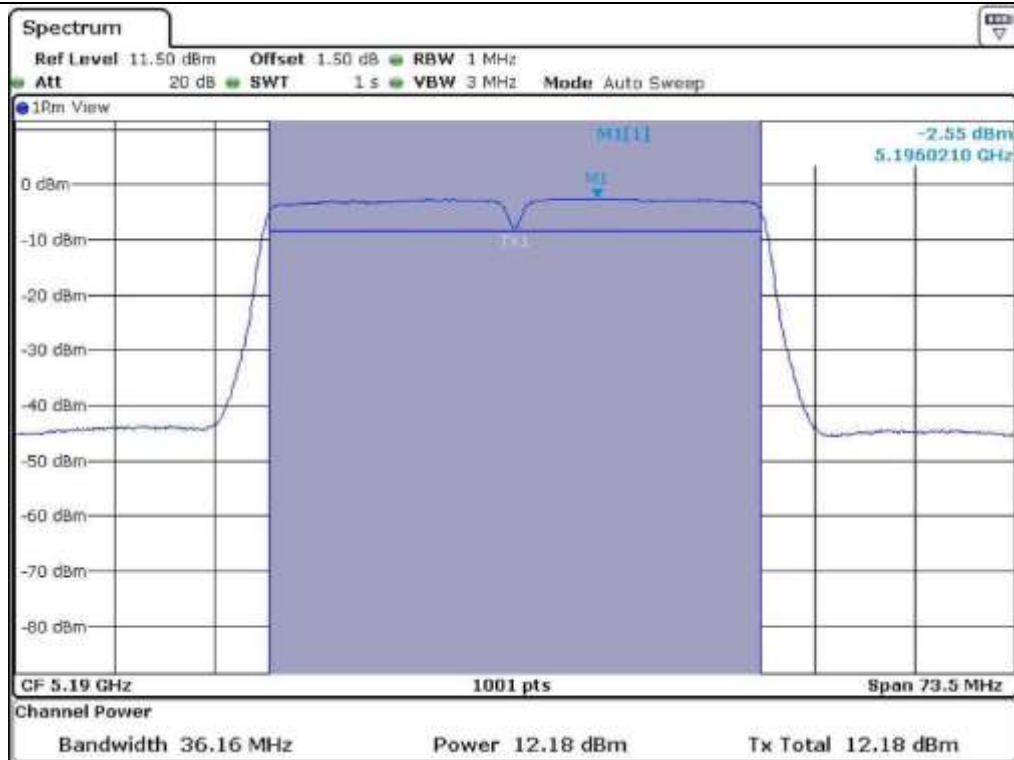
High Channel @ 5 670 MHz (26 dB Bandwidth)



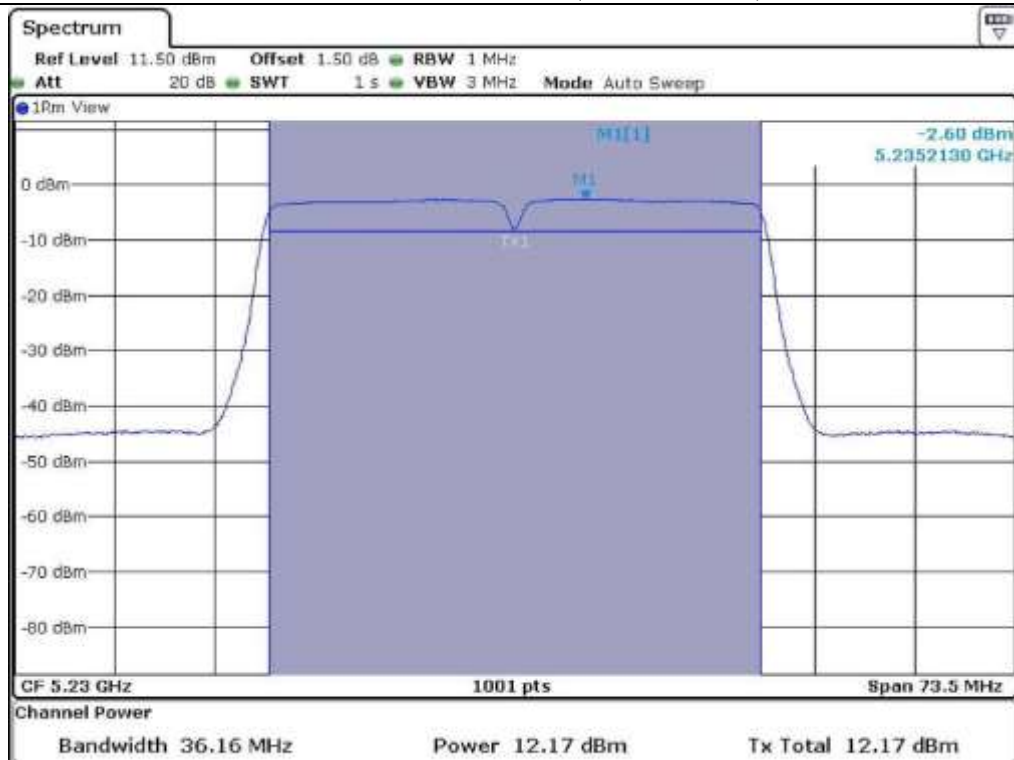
Low Channel @ 5.755 MHz (26 dB Bandwidth)



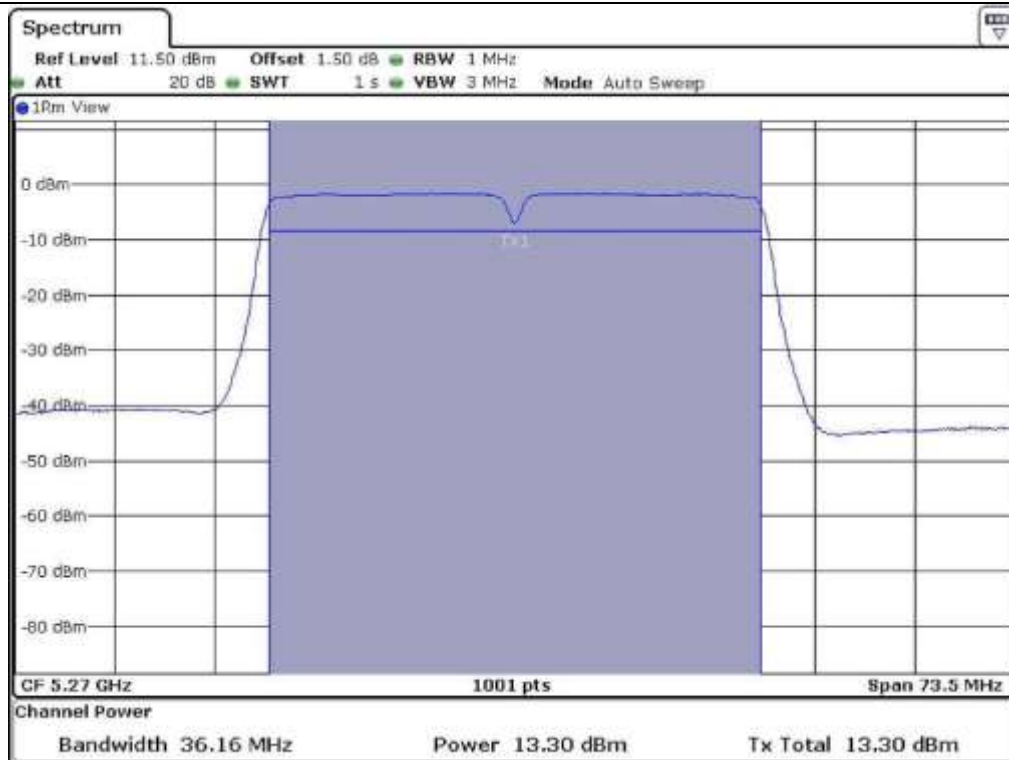
High Channel @ 5.795 MHz (26 dB Bandwidth)



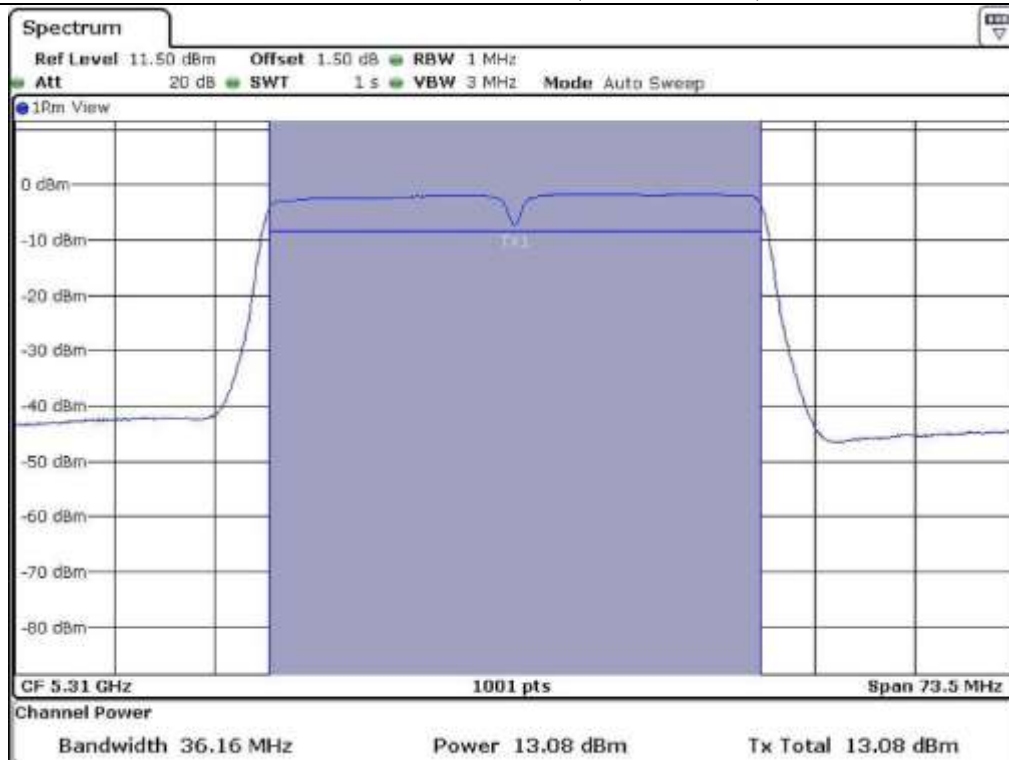
Low Channel @ 5 190 MHz (99 % bandwidth)



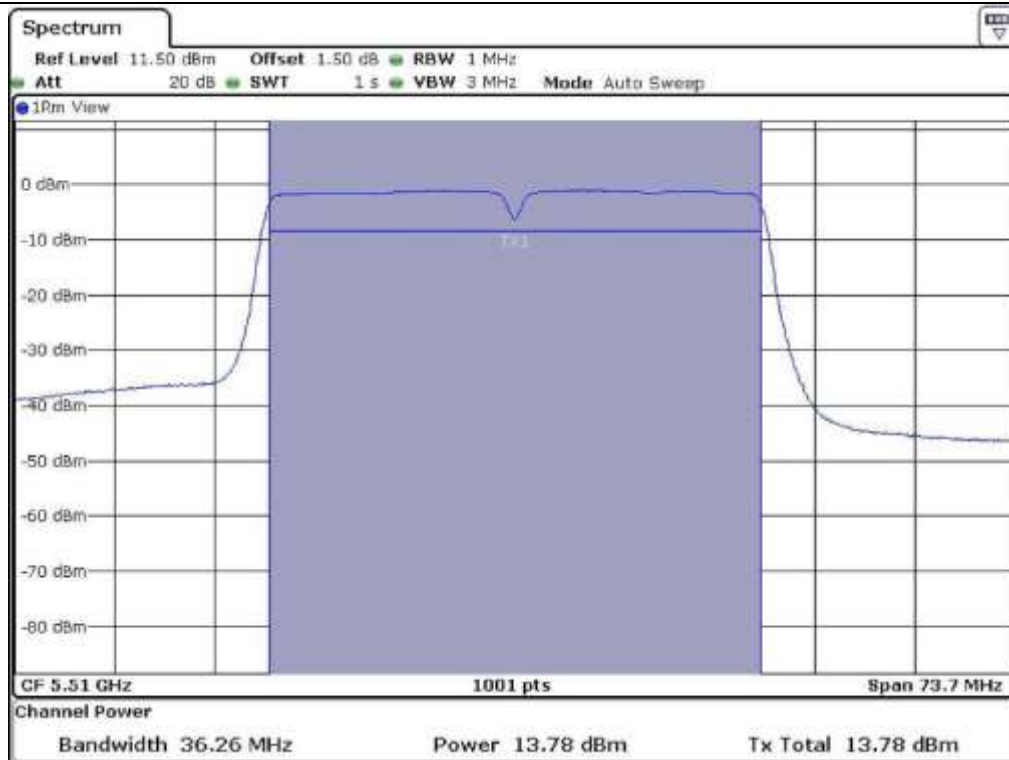
High Channel @ 5 230 MHz (99 % bandwidth)



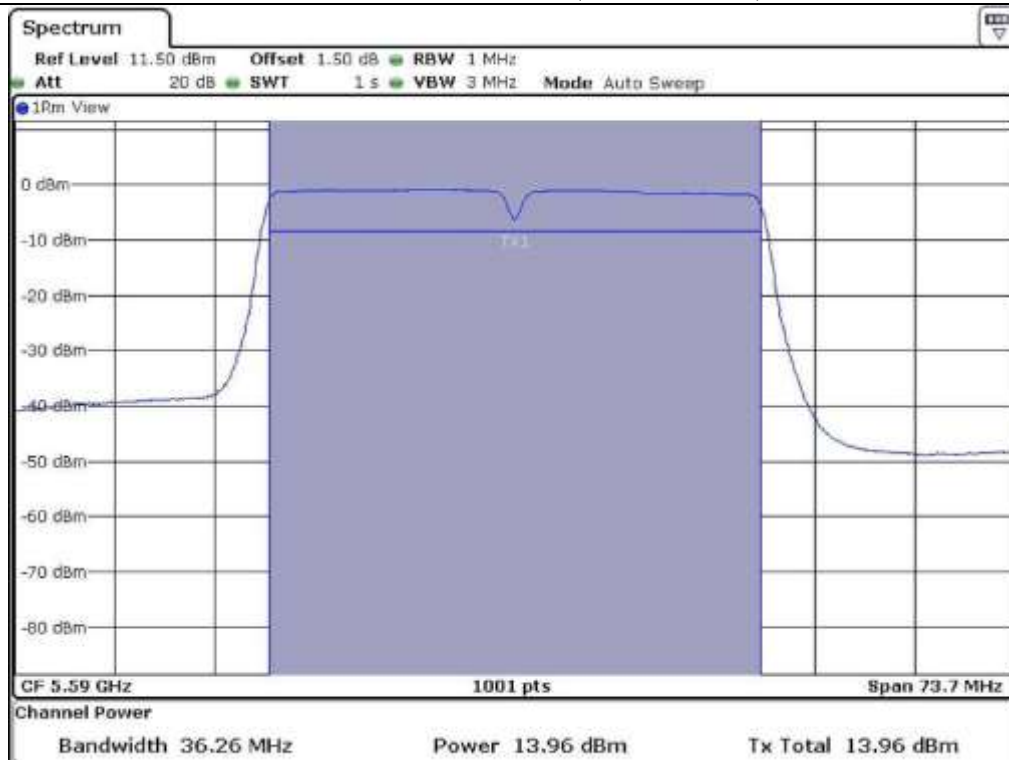
Low Channel @ 5 270 MHz (99 % bandwidth)



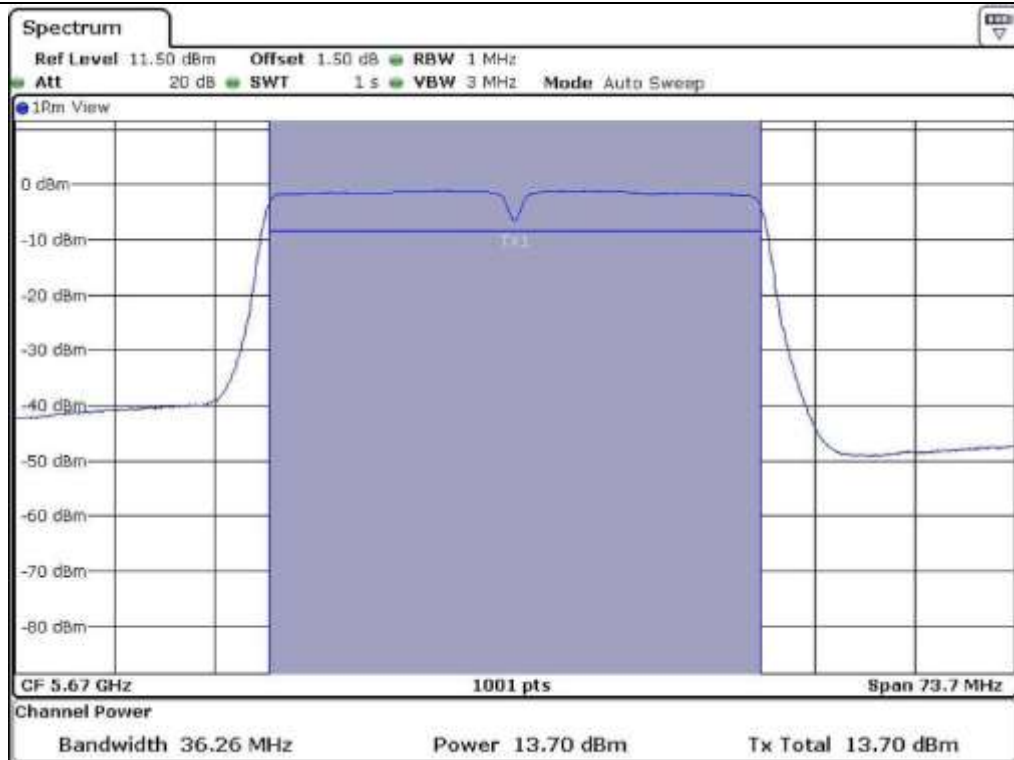
High Channel @ 5 310 MHz (99 % bandwidth)



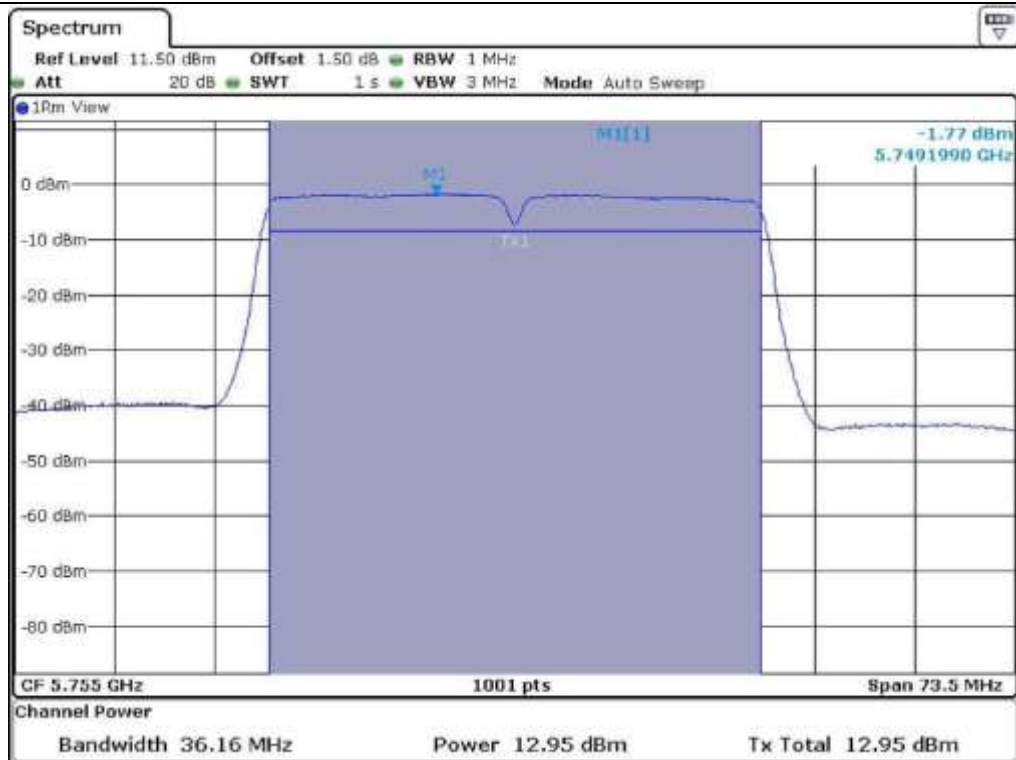
Low Channel @ 5 510 MHz (99 % bandwidth)



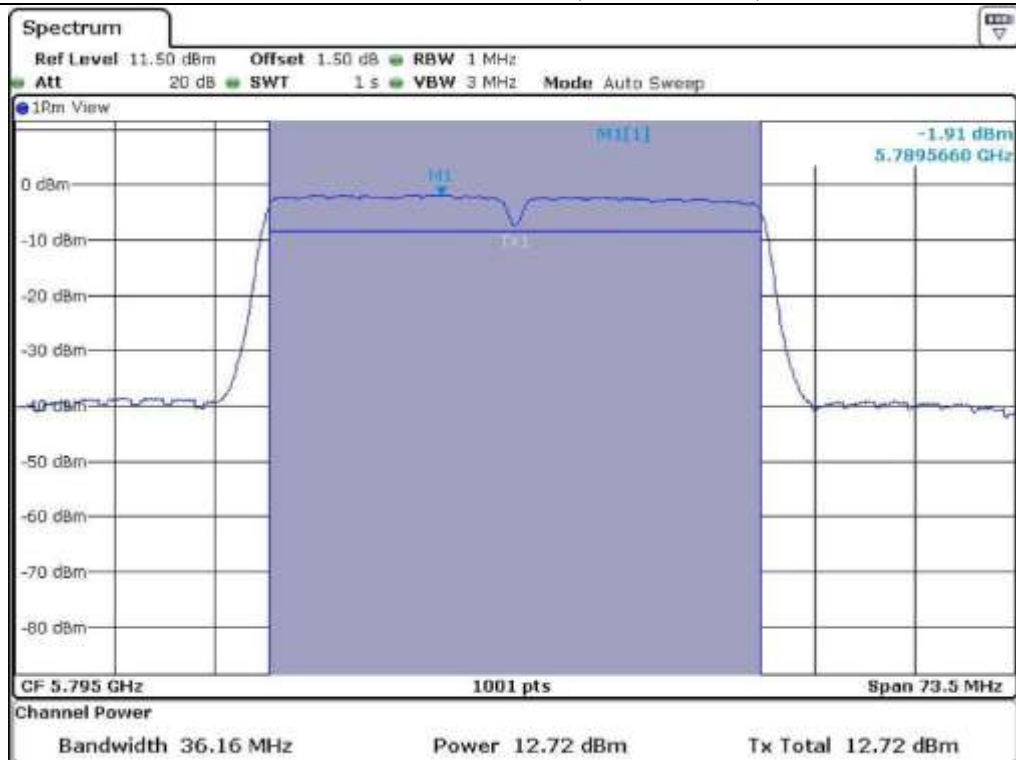
Middle Channel @ 5 590 MHz (99 % bandwidth)



High Channel @ 5 670 MHz (99 % bandwidth)



Low Channel @ 5 755 MHz (99 % bandwidth)



High Channel @ 5 795 MHz (99 % bandwidth)

8.6.2 Test data for Antenna 1

-. Test Date : June 20, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	26 dB Bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190	38.96	13.08	23.98	10.90
	High	5 230	38.96	13.01	23.98	10.97
5 250 ~ 5 350	Low	5 270	38.86	12.26	23.98	11.72
	High	5 310	38.86	11.82	23.98	12.16
5 470 ~ 5 725	Low	5 510	38.86	12.67	23.98	11.31
	Middle	5 590	38.86	13.44	23.98	10.54
	High	5 670	38.86	13.05	23.98	10.93
5 725 ~ 5 850	Low	5 755	38.86	13.69	30.00	16.31
	High	5 795	38.86	13.58	30.00	16.42

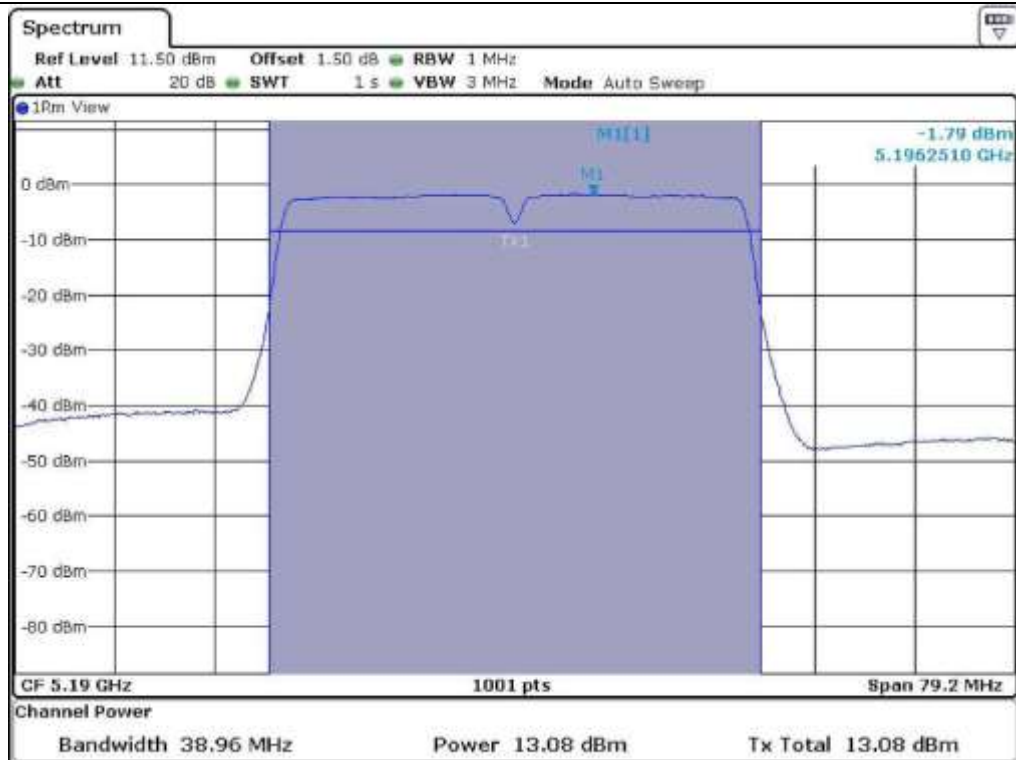
-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	99 % bandwidth (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 190	2.90	36.16	13.07	23.00	7.03	15.97
	High	5 230		36.16	13.01	23.00	7.09	15.91
5 250 ~ 5 350	Low	5 270		36.16	12.10	30.00	15.00	15.00
	High	5 310		36.16	12.00	30.00	15.10	14.90
5 470 ~ 5 725	Low	5 510		36.26	12.60	30.00	14.50	15.50
	Middle	5 590		36.26	13.32	30.00	13.78	16.22
	High	5 670		36.26	12.96	30.00	14.14	15.86
5 725 ~ 5 825	Low	5 755		36.16	13.64	36.00	19.46	16.54
	High	5 795		36.16	13.47	36.00	19.63	16.37

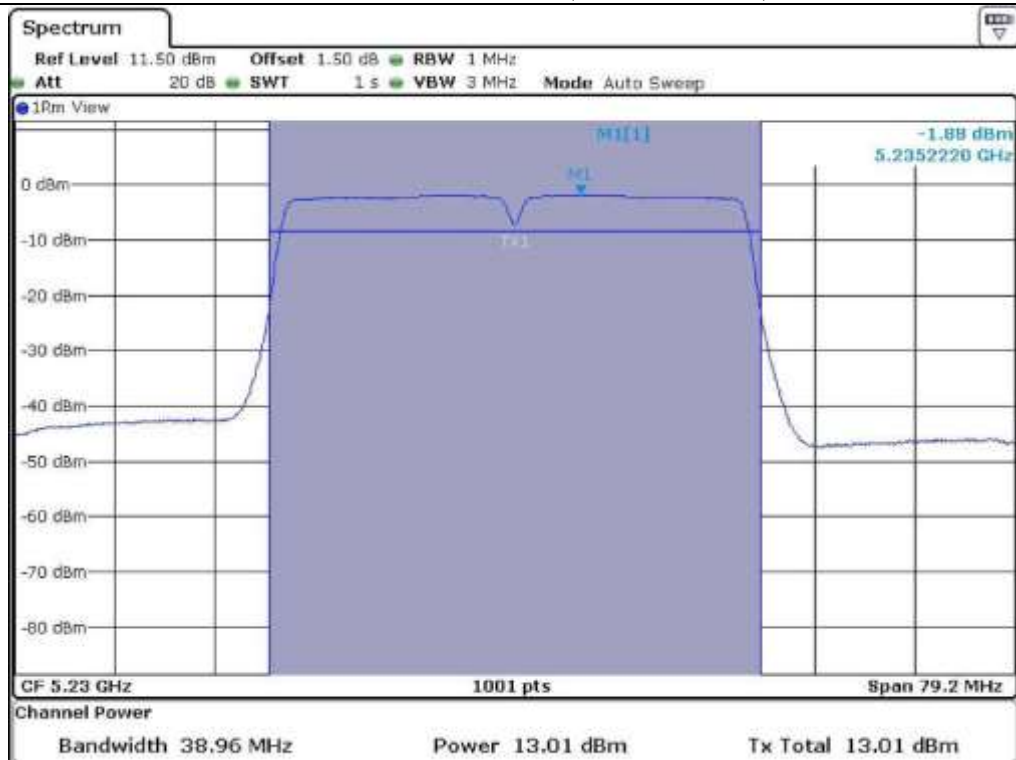
Remark: See next page for measurement data.



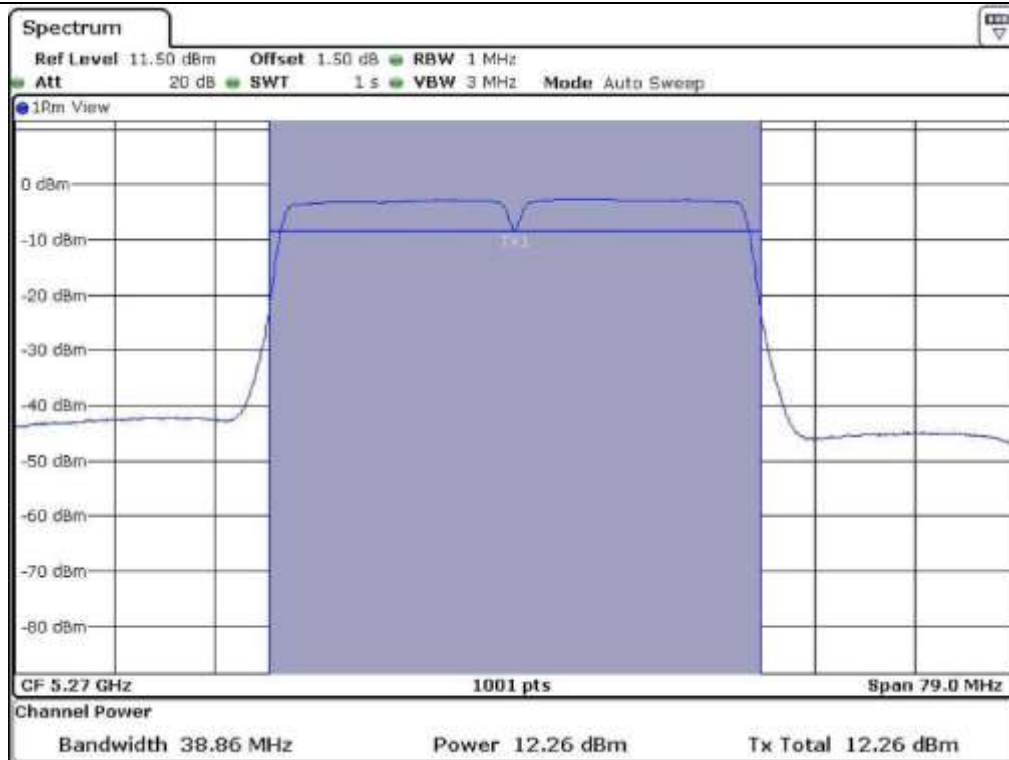
Tested by: Tae-Ho, Kim / Senior Engineer



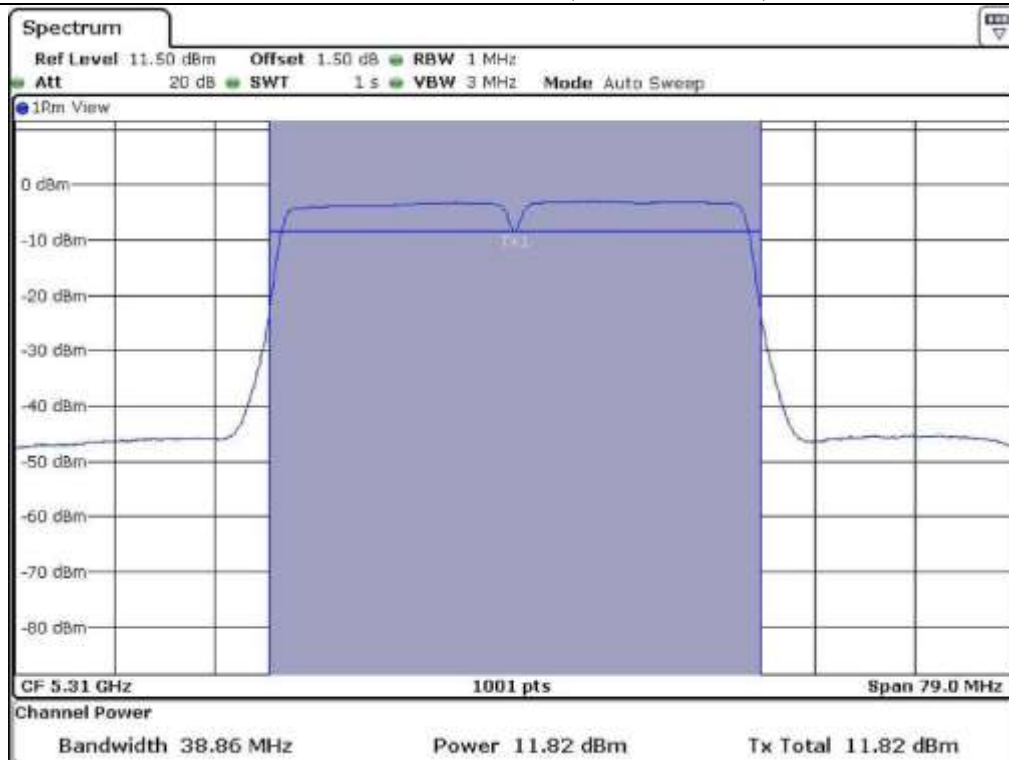
Low Channel @ 5 190 MHz (26 dB Bandwidth)



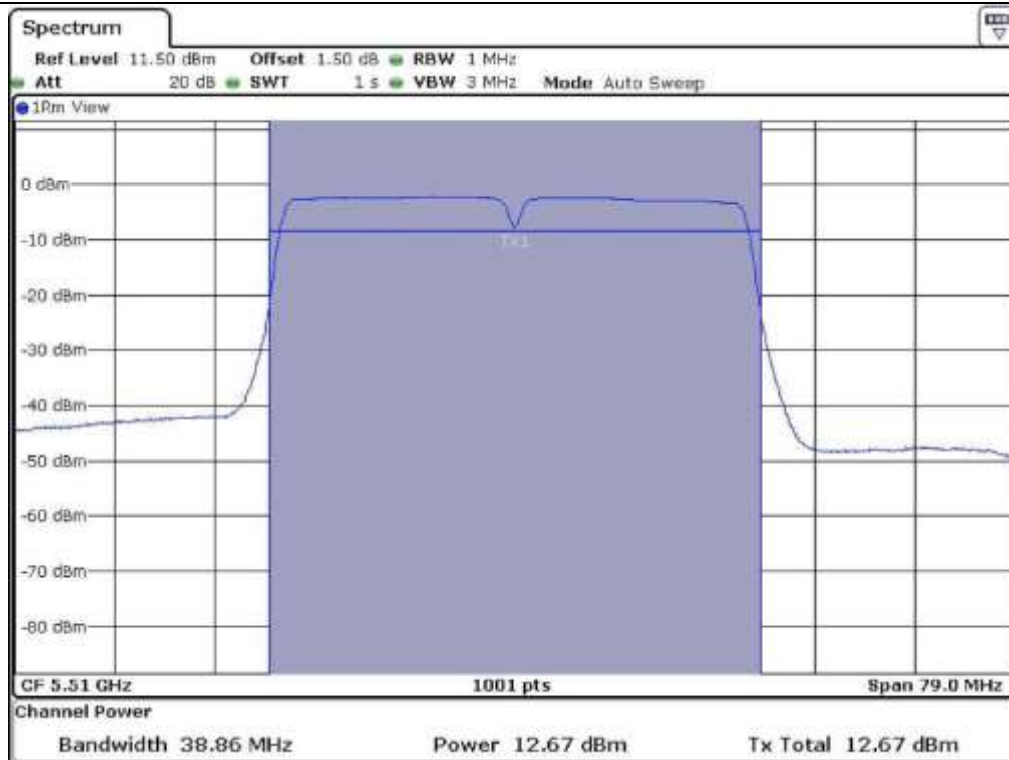
High Channel @ 5 230 MHz (26 dB Bandwidth)



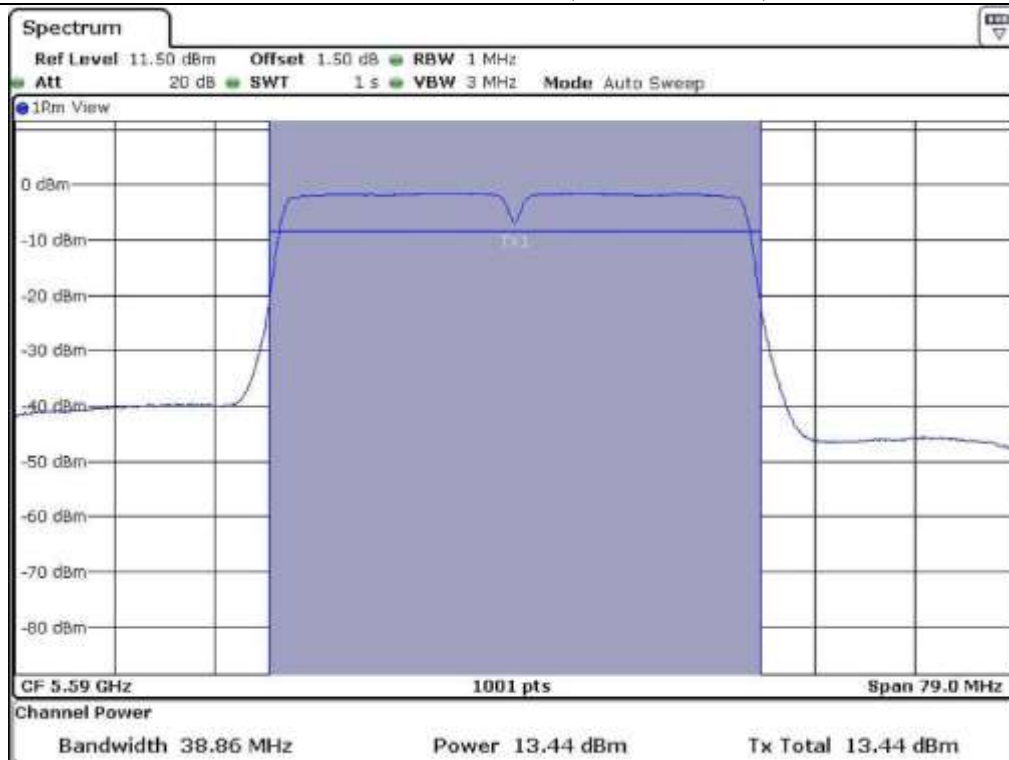
Low Channel @ 5 270 MHz (26 dB Bandwidth)



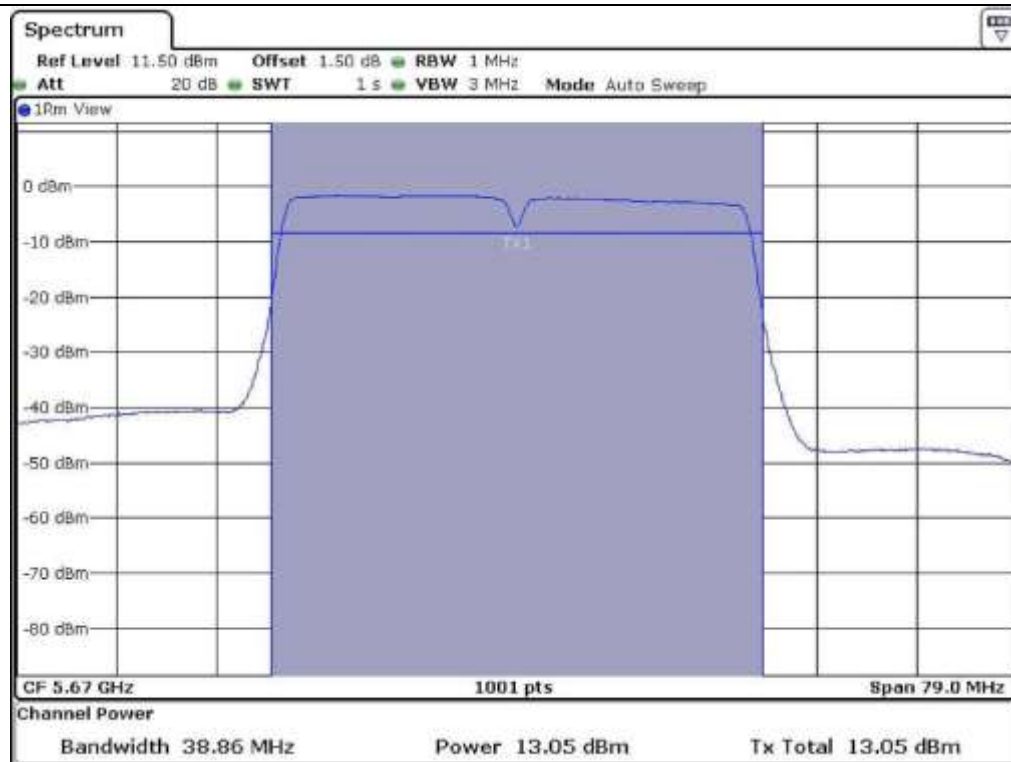
High Channel @ 5 310 MHz (26 dB Bandwidth)



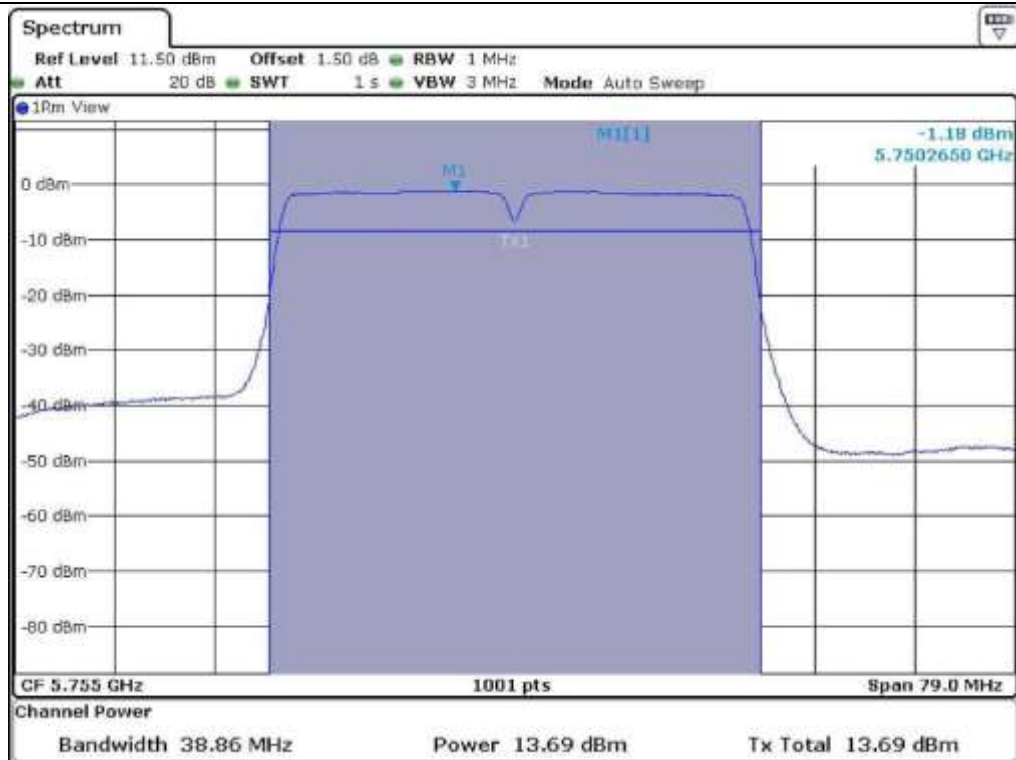
Low Channel @ 5.510 MHz (26 dB Bandwidth)



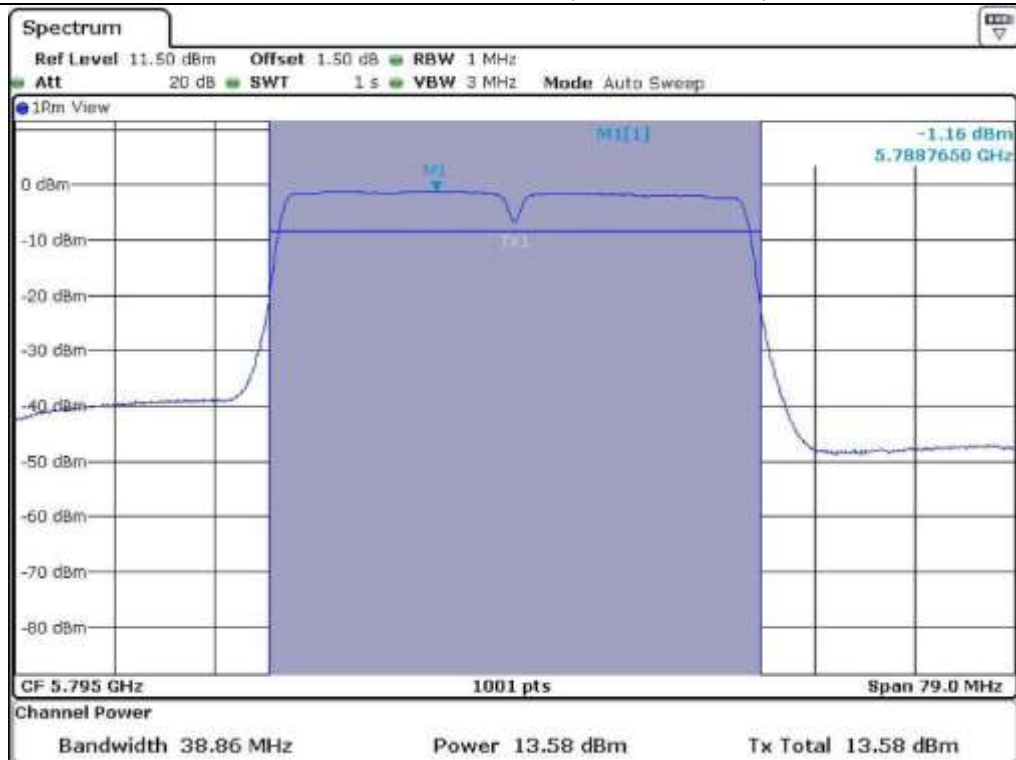
Middle Channel @ 5.590 MHz (26 dB Bandwidth)



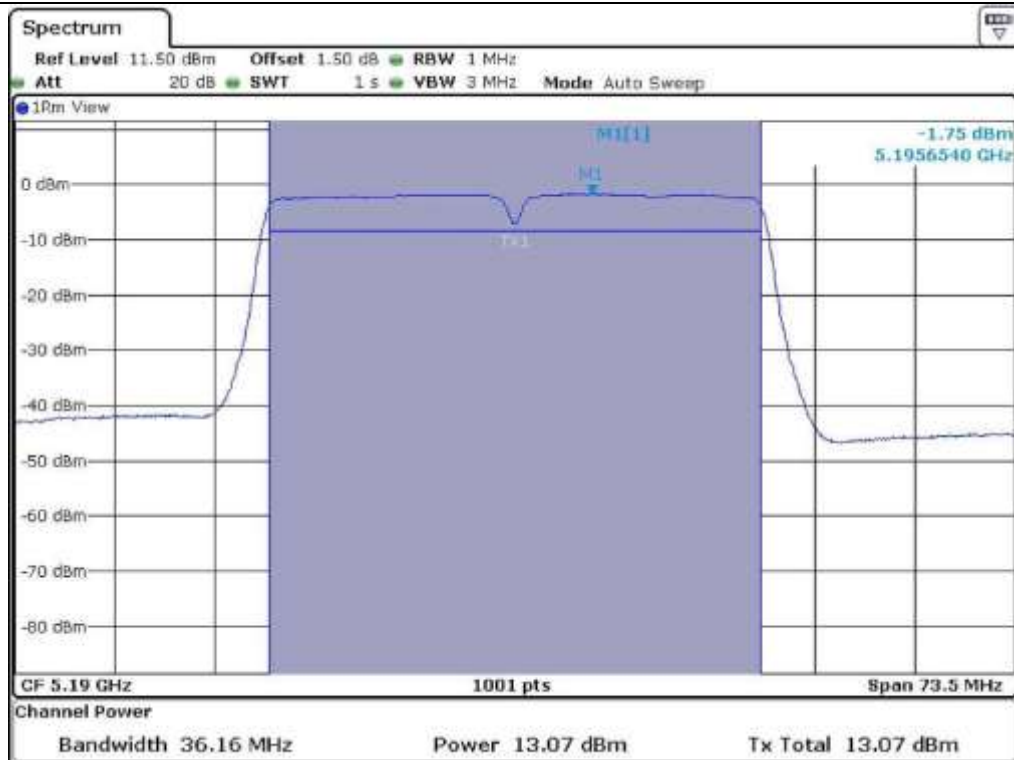
High Channel @ 5 670 MHz (26 dB Bandwidth)



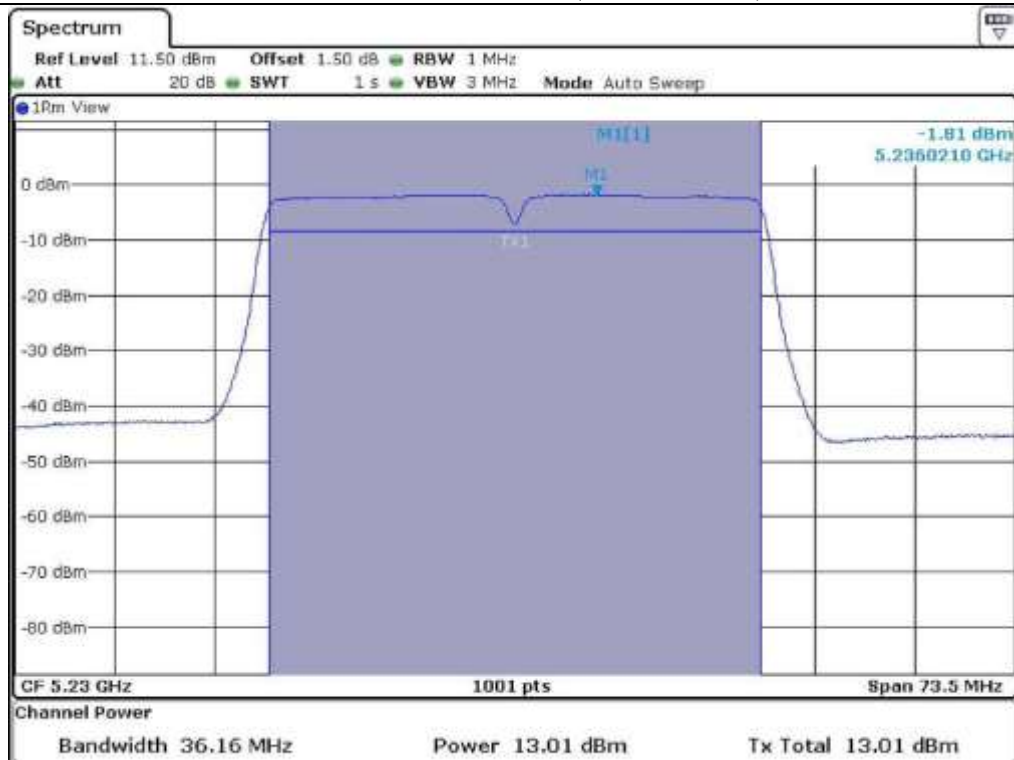
Low Channel @ 5.755 MHz (26 dB Bandwidth)



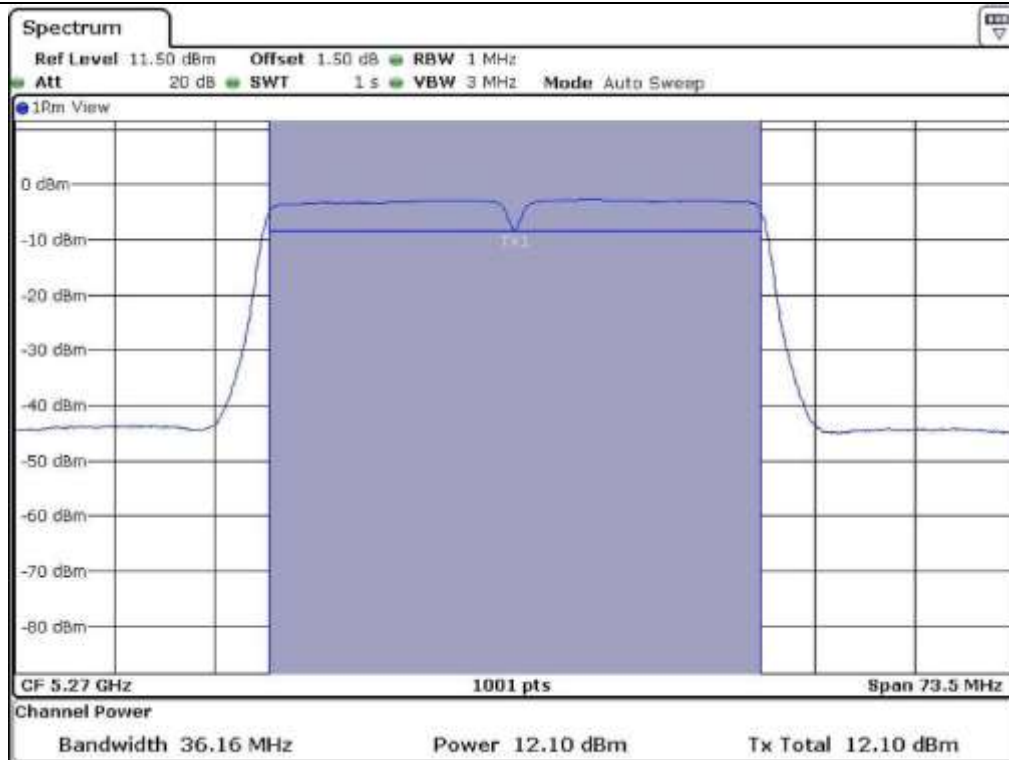
High Channel @ 5.795 MHz (26 dB Bandwidth)



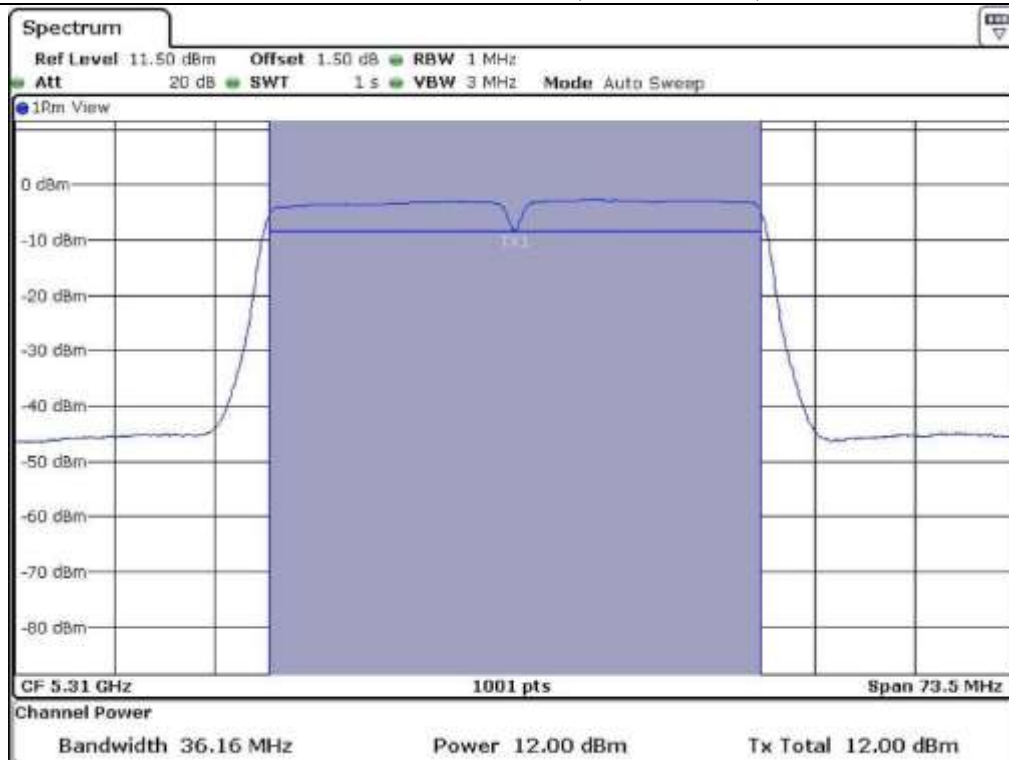
Low Channel @ 5 190 MHz (99 % bandwidth)



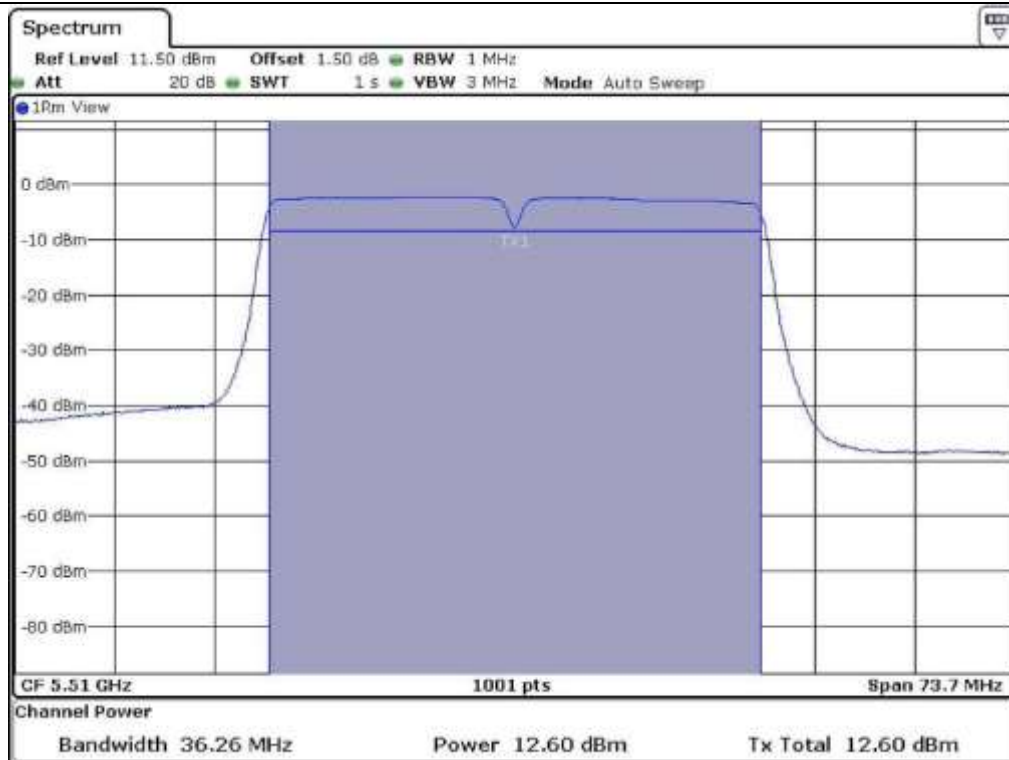
High Channel @ 5 230 MHz (99 % bandwidth)



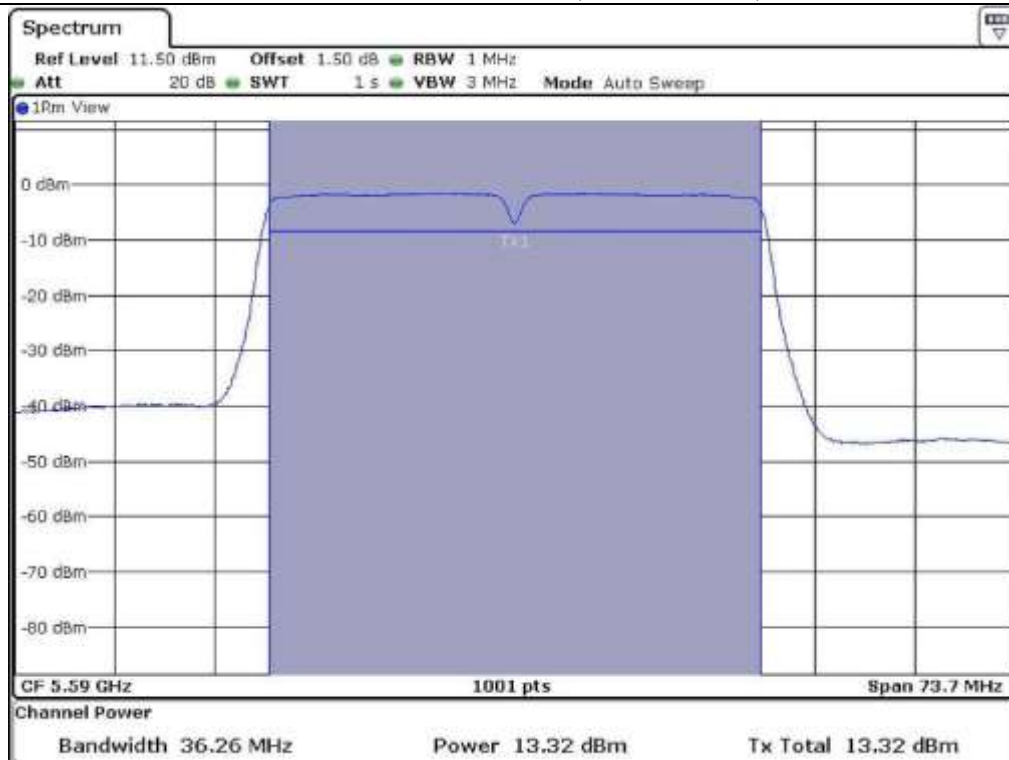
Low Channel @ 5 270 MHz (99 % bandwidth)



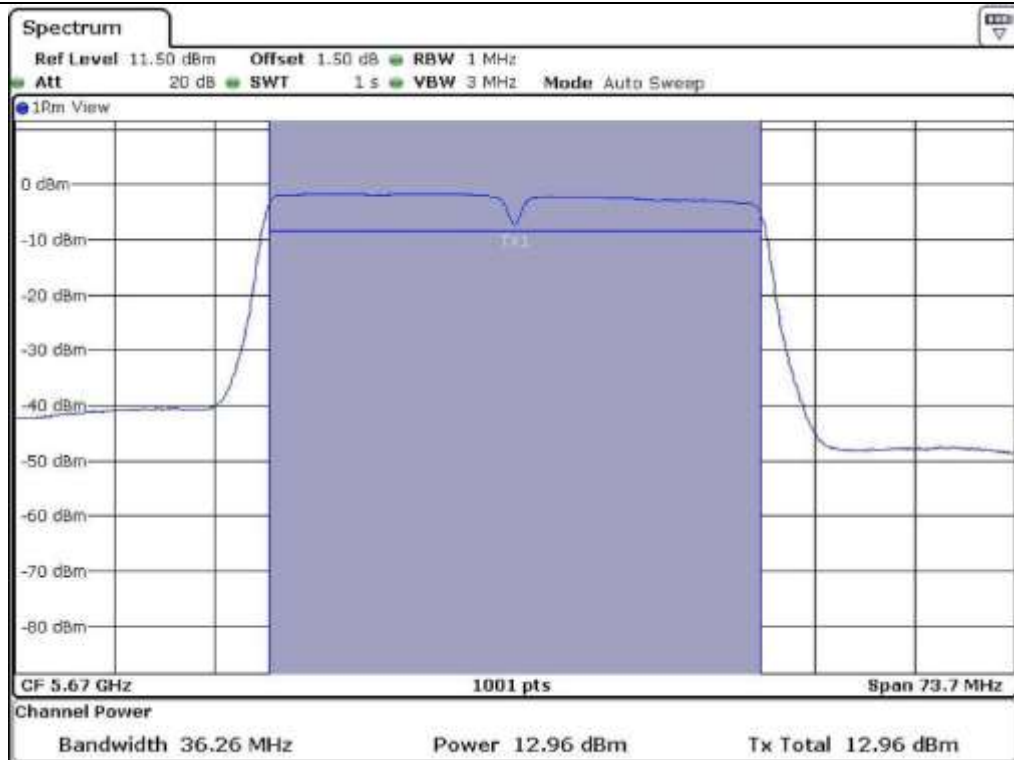
High Channel @ 5 310 MHz (99 % bandwidth)



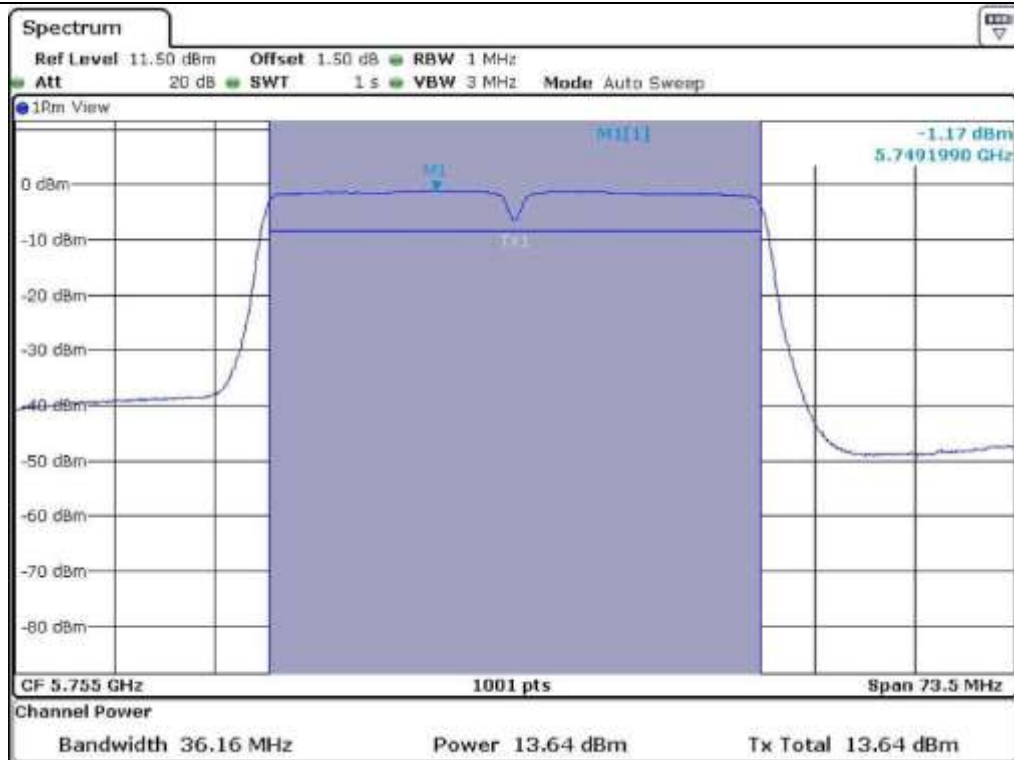
Low Channel @ 5 510 MHz (99 % bandwidth)



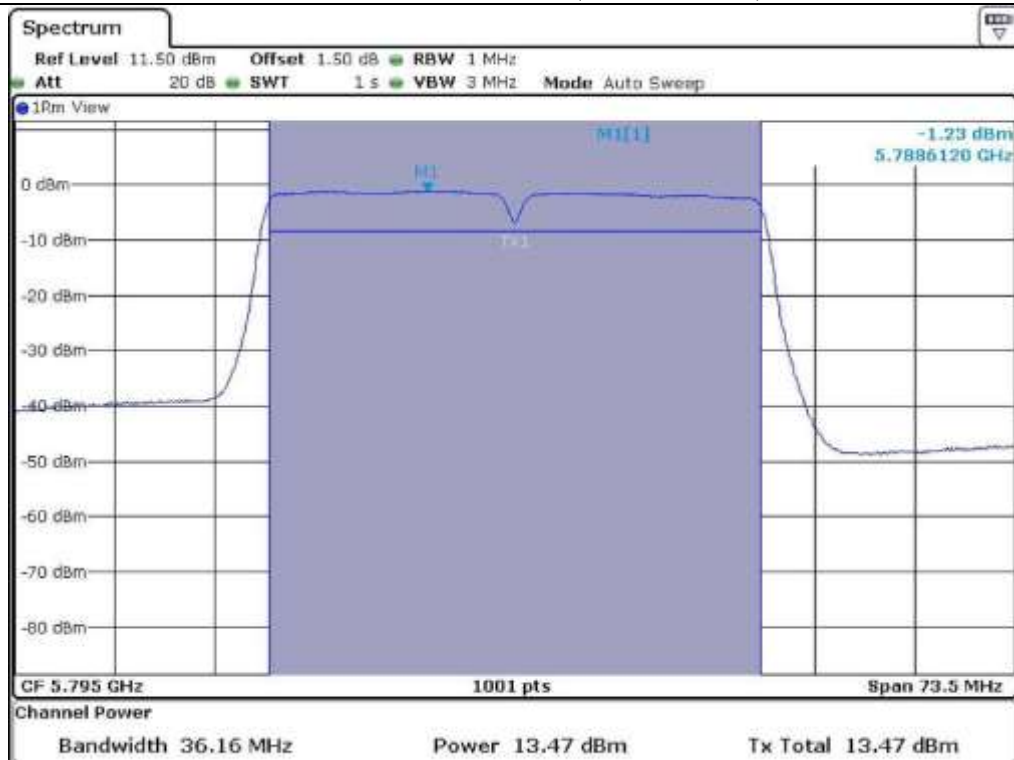
Middle Channel @ 5 590 MHz (99 % bandwidth)



High Channel @ 5 670 MHz (99 % bandwidth)



Low Channel @ 5 755 MHz (99 % bandwidth)



High Channel @ 5 795 MHz (99 % bandwidth)

8.6.3 Test data for Multiple transmit

-. Test Date : June 20, 2015

-. Test Result : Pass

-. FCC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
5 150 ~ 5 250	Low	5 190	15.65	23.98	8.33
	High	5 230	15.68	23.98	8.30
5 250 ~ 5 350	Low	5 270	15.93	23.98	8.05
	High	5 310	15.62	23.98	8.36
5 470 ~ 5 725	Low	5 510	16.36	23.98	7.62
	Middle	5 590	16.77	23.98	7.21
	High	5 670	16.44	23.98	7.54
5 725 ~ 5 850	Low	5 755	16.41	30.00	13.59
	High	5 795	16.11	30.00	13.89

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 :Calculated Output Power= $10\log (10^{(\text{Antenna1 Output Power}/10)} + 10^{(\text{Antenna2 Output Power}/10)})$

-. IC Test data

FREQUENCY RANGE (MHz)	CHANNEL	FREQUENCY (MHz)	Antenna Gain	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)	EIRP (dBm)
5 150 ~ 5 250	Low	5 190	5.91	15.66	23.00	1.43	21.57
	High	5 230		15.62	23.00	1.47	21.53
5 250 ~ 5 350	Low	5 270		15.75	30.00	8.34	21.66
	High	5 310		15.58	30.00	8.51	21.49
5 470 ~ 5 725	Low	5 510		16.24	30.00	7.85	22.15
	Middle	5 590		16.66	30.00	7.43	22.57
	High	5 670		16.36	30.00	7.73	22.27
5 725 ~ 5 825	Low	5 755		16.32	36.00	13.77	22.23
	High	5 795		16.12	36.00	13.97	22.03

Remark 1 : Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

Remark 2 : Calculated Output Power= $10\log(10^{(\text{Antenna1 Output Power}/10)} + 10^{(\text{Antenna2 Output Power}/10)})$



Tested by: Tae-Ho, Kim / Senior Engineer