4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	13dB
5.25 – 5.35 GHz	13dB
5.47 – 5.725GHz	13dB
5.725 – 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST SPECTRUM ANALYZER	U3772	160100280	July 26, 2008	July 25, 2009

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

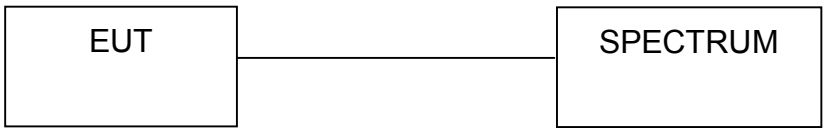
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300KHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

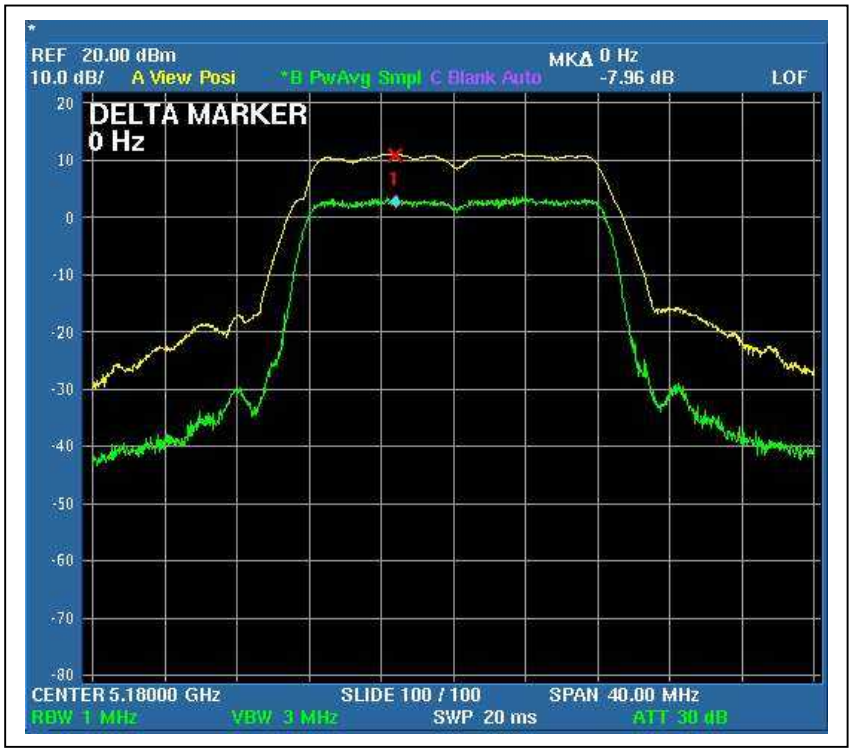
4.4.7 TEST RESULTS

802.11a OFDM modulation

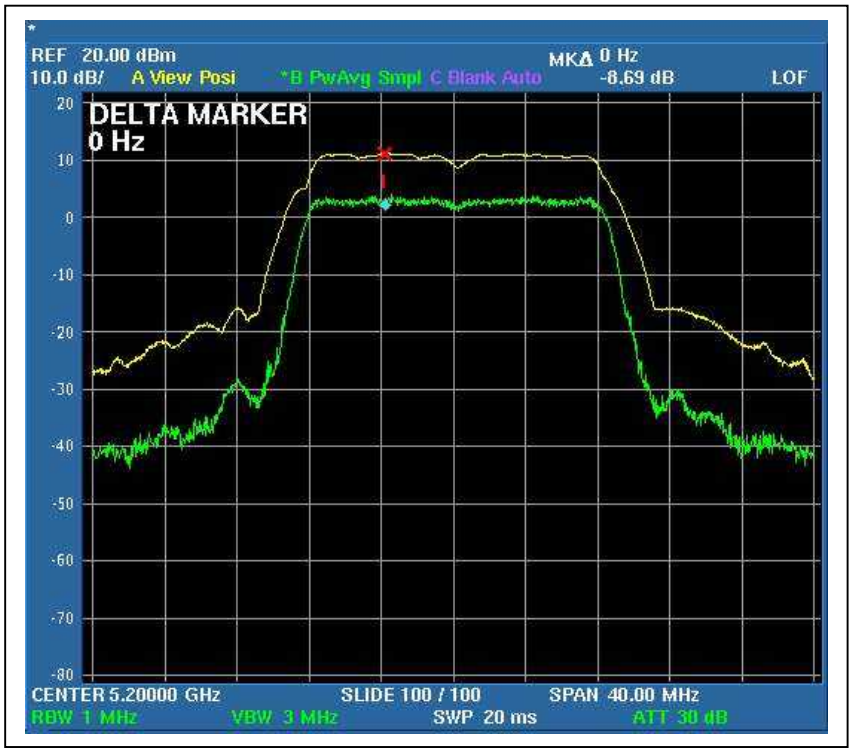
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.96	13	PASS
2	5200	8.69	13	PASS
4	5240	8.42	13	PASS
5	5260	8.31	13	PASS
7	5300	8.82	13	PASS
8	5320	8.29	13	PASS
9	5500	8.24	13	PASS
14	5600	8.23	13	PASS
19	5700	8.46	13	PASS
20	5745	8.35	13	PASS
22	5785	7.98	13	PASS
23	5805	8.25	13	PASS

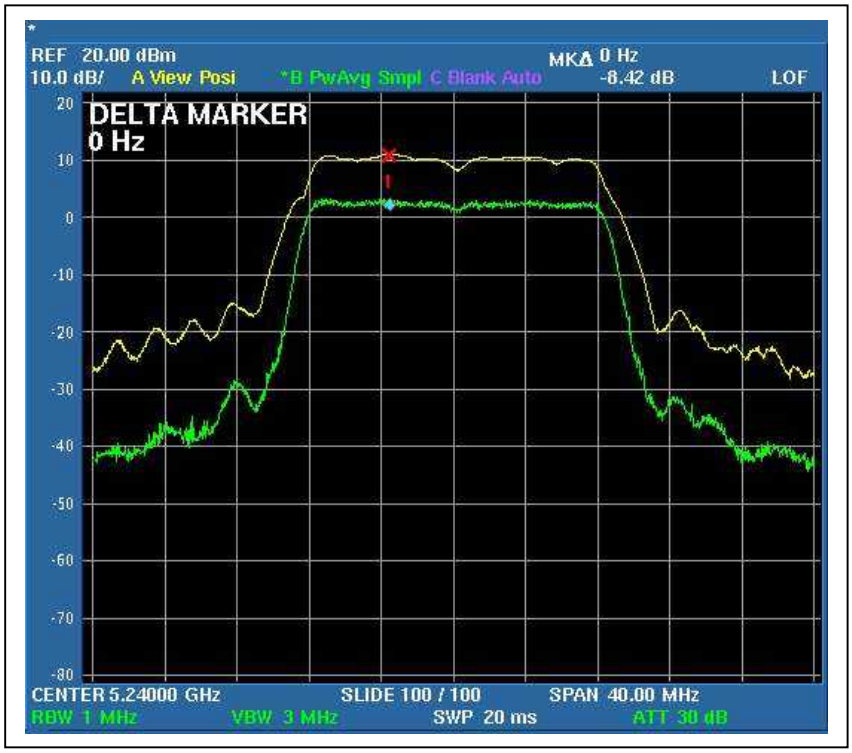
CH1


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -7.96 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.18000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

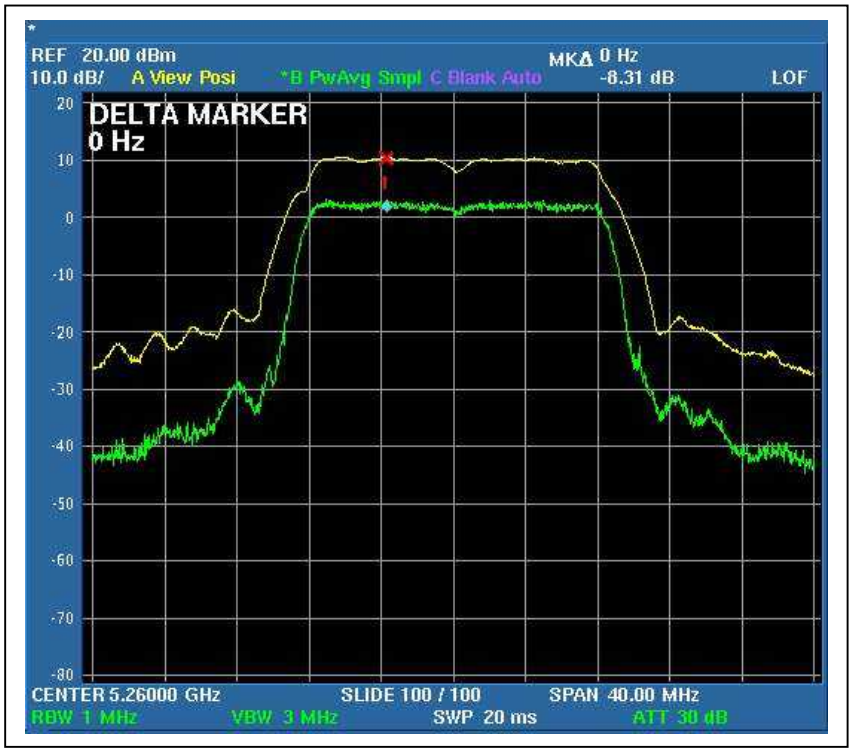
CH2


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.69 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.20000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

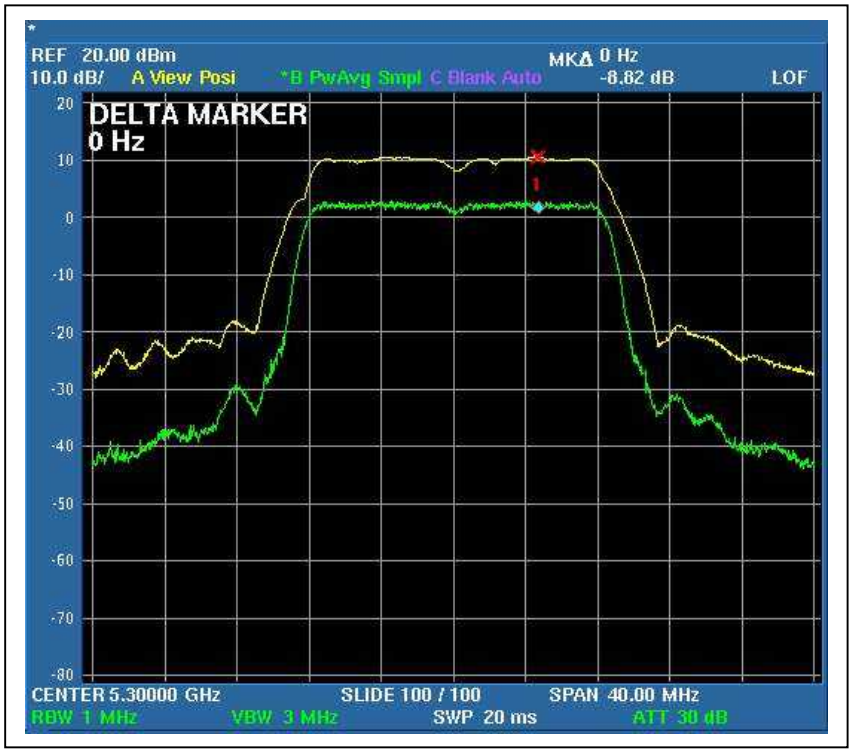
CH4


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.42 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.24000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

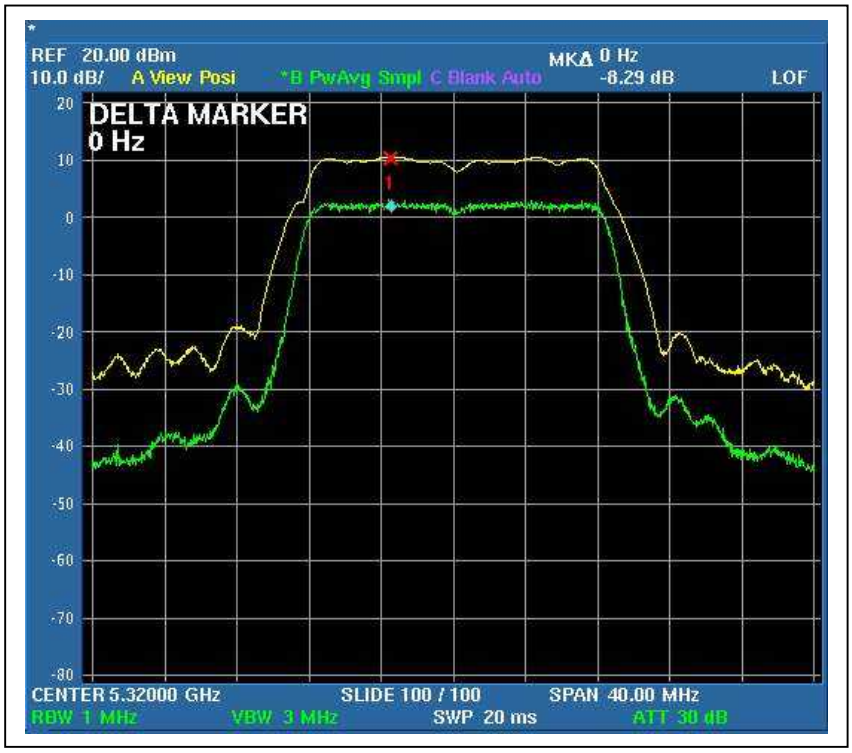
CH5


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.31 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.26000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

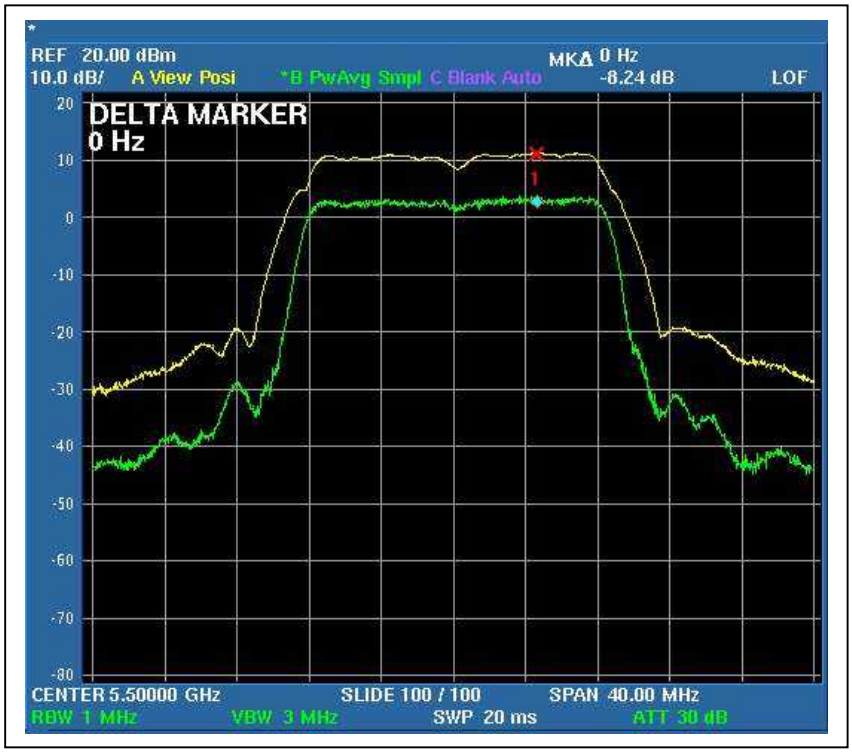
CH7


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.82 dB LOF
DELTA MARKER
0 Hz
CENTER 5.30000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

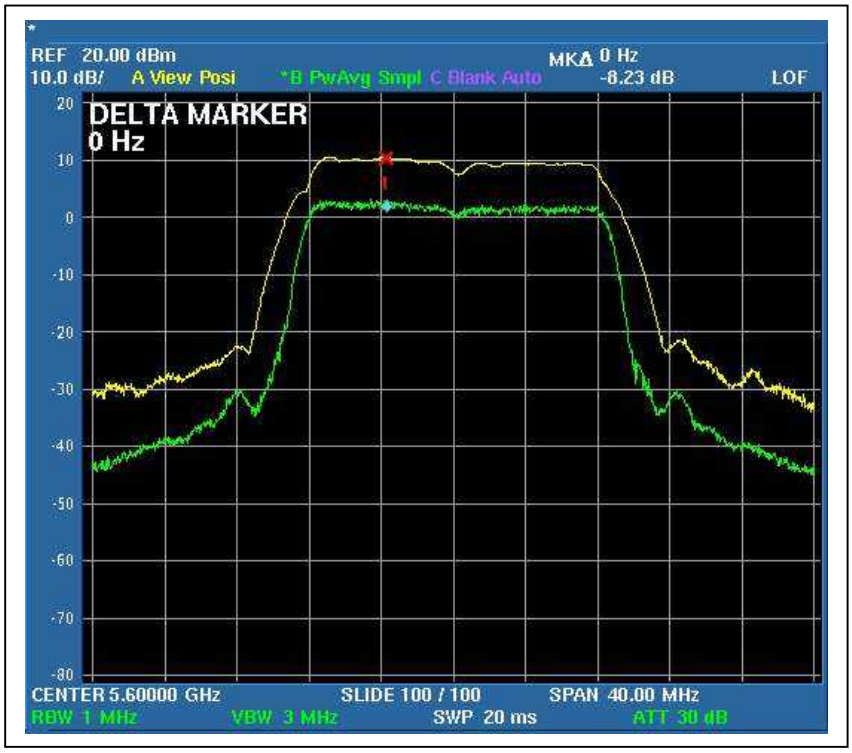
CH8


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.29 dB LOF
DELTA MARKER
0 Hz
CENTER 5.32000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

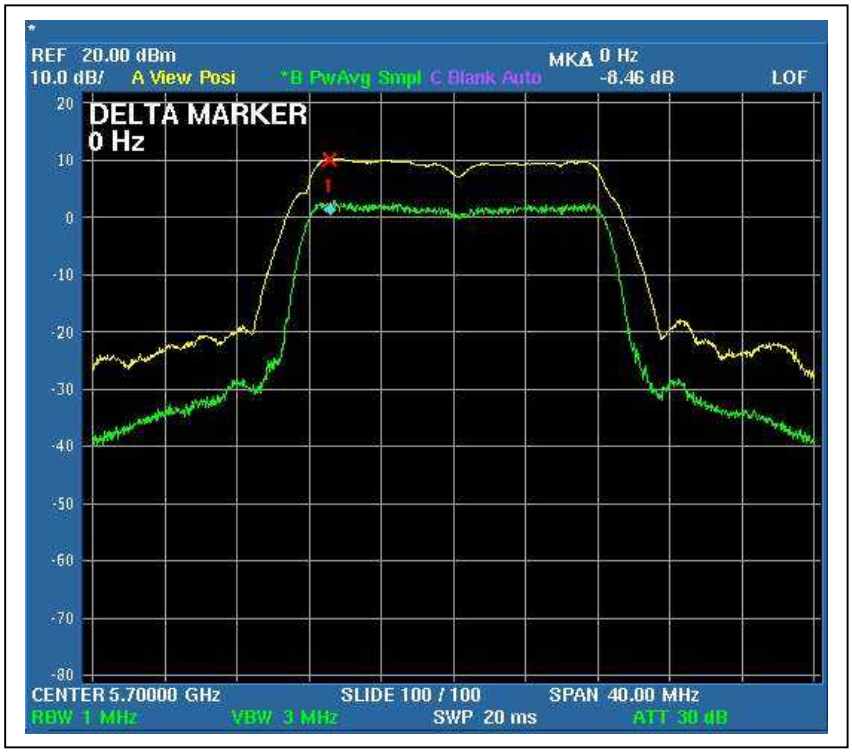
CH9


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.24 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

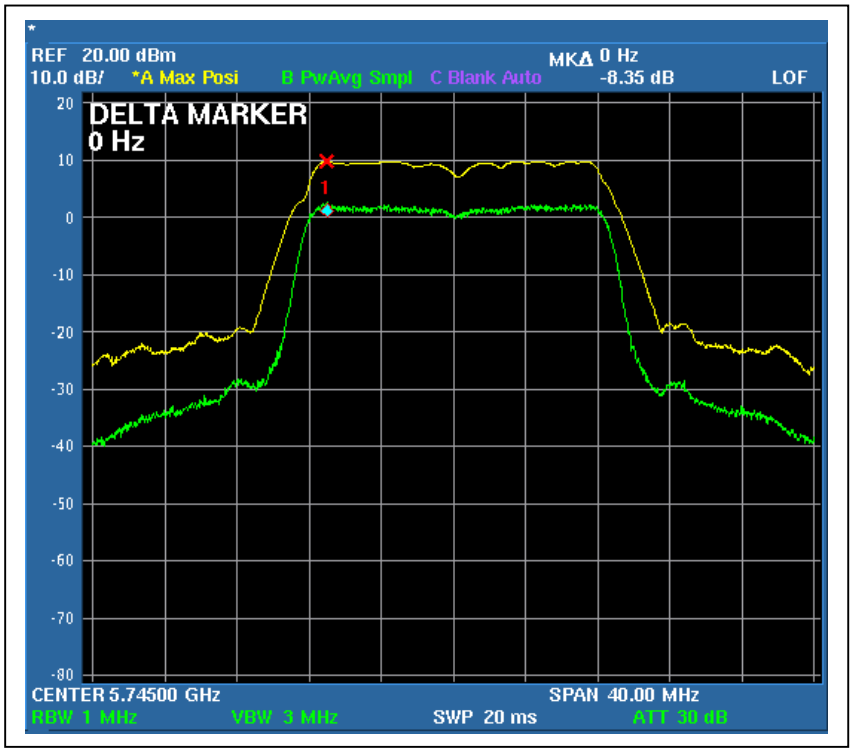
CH14


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.23 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

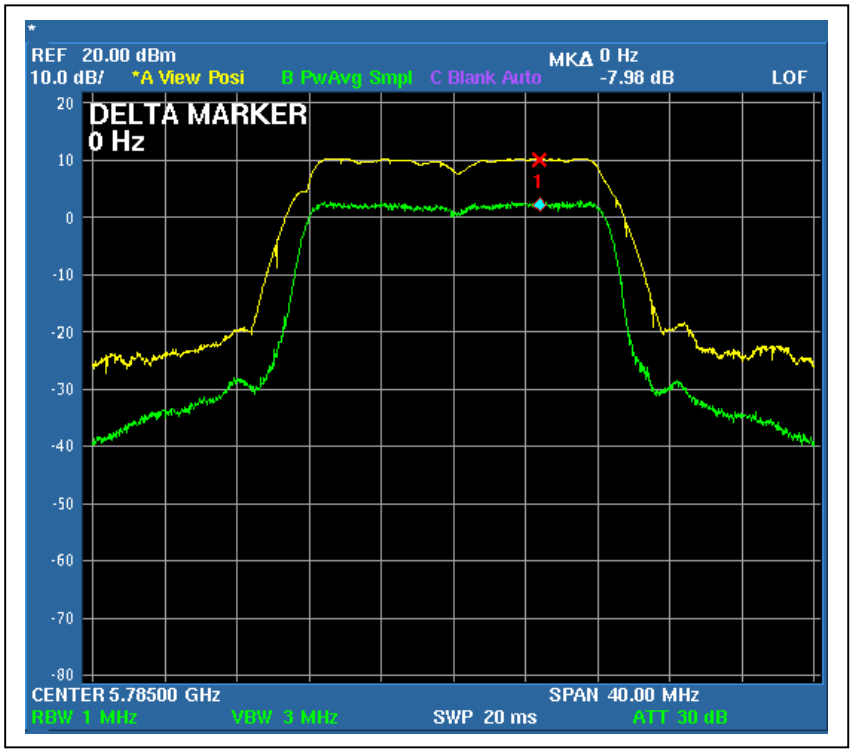
CH19


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.46 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

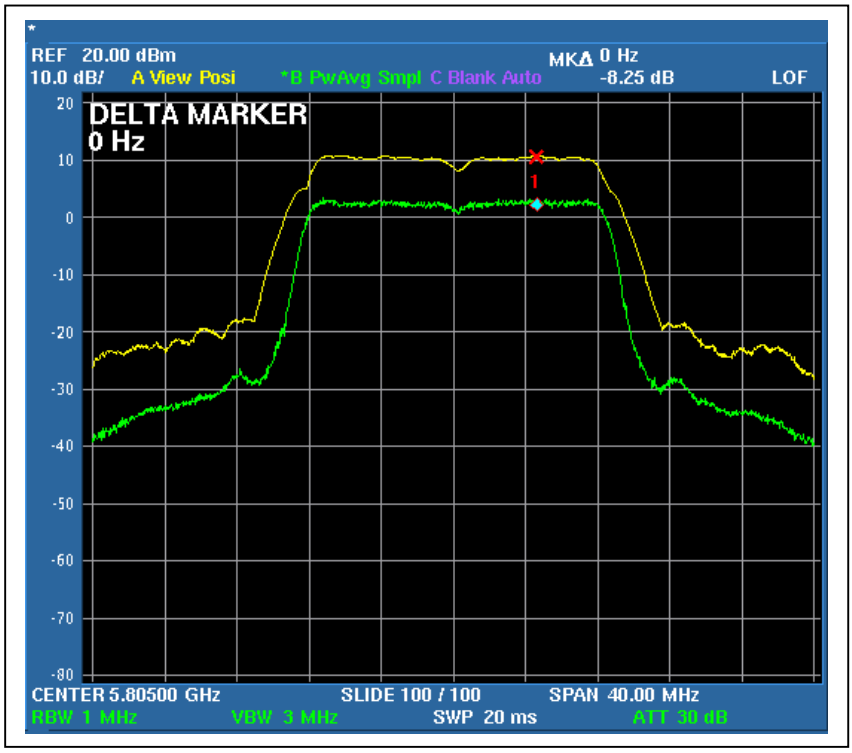
CH20


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -8.35 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.74500 GHz SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH22


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -7.98 dB LOF
DELTA MARKER
0 Hz
CENTER 5.78500 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH23

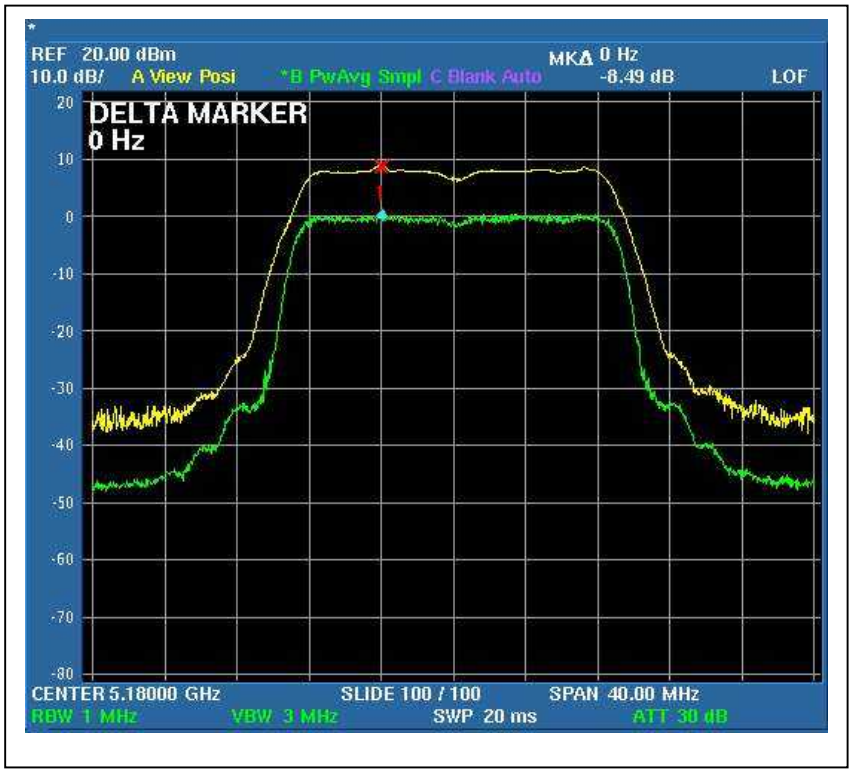

REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.25 dB LOF
DELTA MARKER
0 Hz
CENTER 5.80500 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

DRAFT 802.11n (20MHz) OFDM MODULATION:

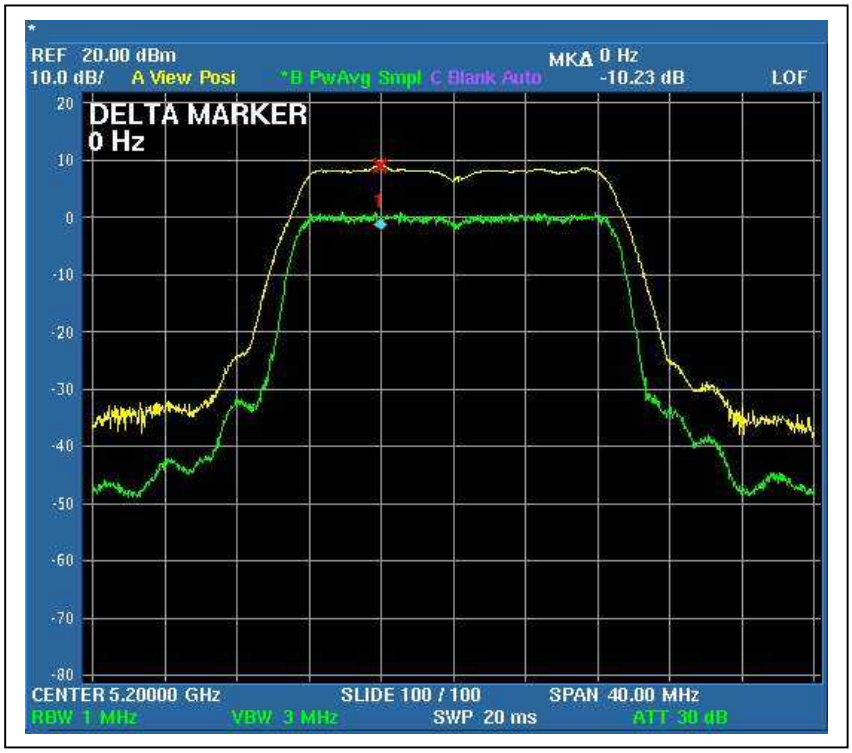
MODULATION TYPE	BPSK	**TRANSFER RATE**	13Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		Chain (0)	Chain(1)		
1	5180	8.49	8.98	13	PASS
2	5200	10.23	9.61	13	PASS
4	5240	9.33	8.73	13	PASS
5	5260	8.71	8.87	13	PASS
7	5300	8.75	9.71	13	PASS
8	5320	9.35	9.23	13	PASS
9	5500	8.27	8.50	13	PASS
14	5600	9.09	8.85	13	PASS
19	5700	9.45	9.51	13	PASS
20	5745	8.69	9.23	13	PASS
22	5785	8.99	9.19	13	PASS
23	5805	9.57	9.25	13	PASS

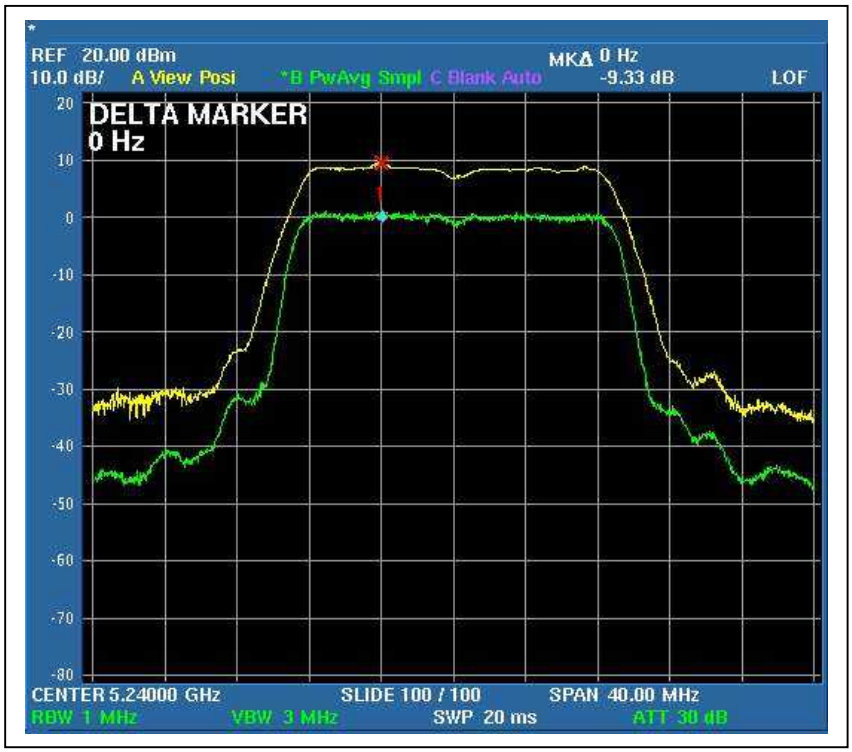
For Chain (0) : CH1



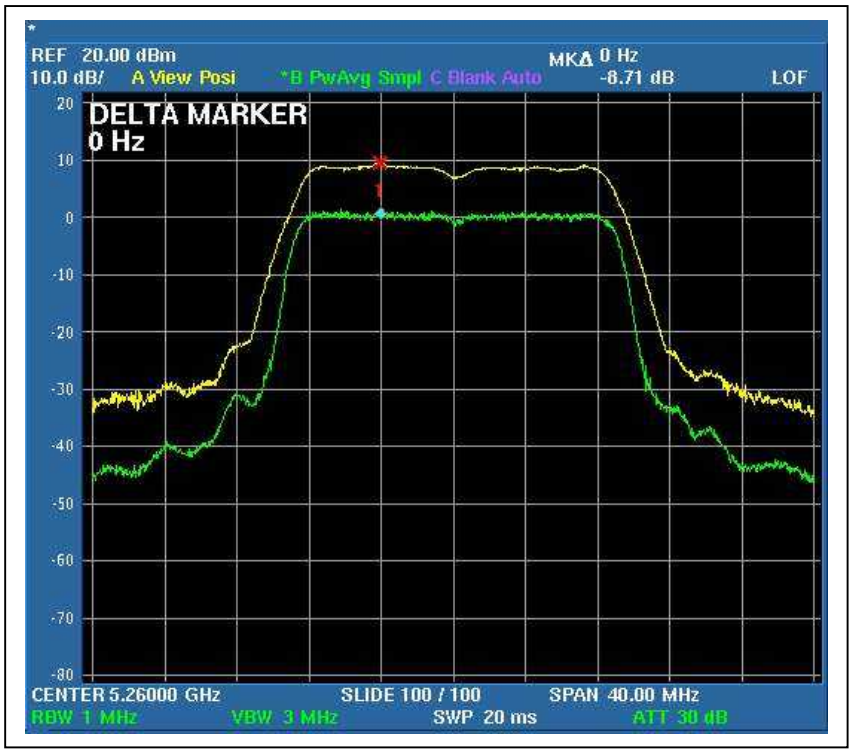
CH2



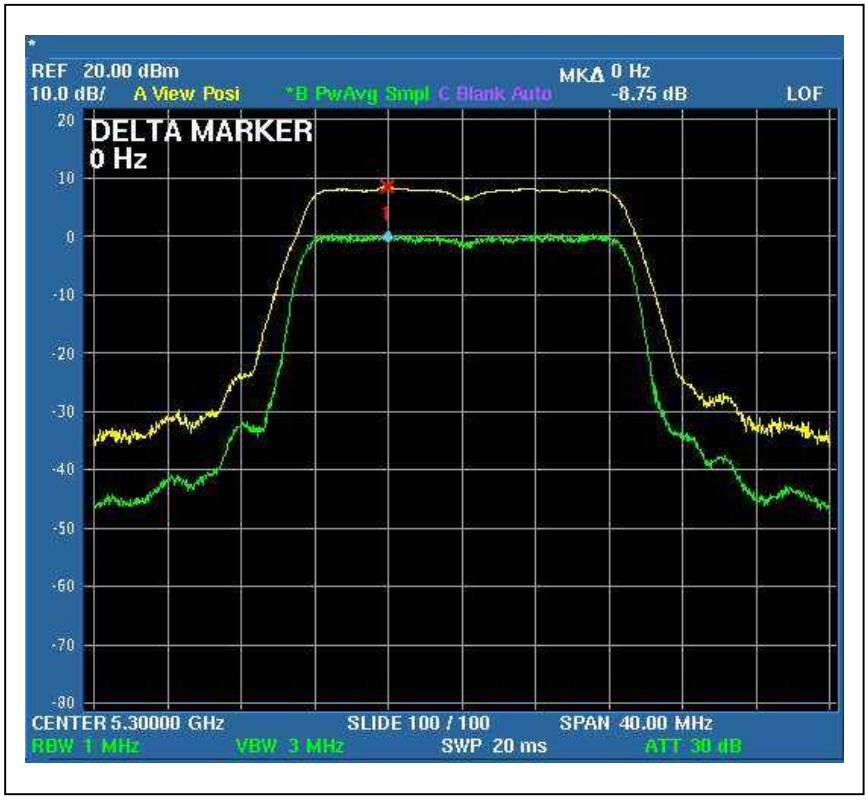
CH4


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -9.33 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.24000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

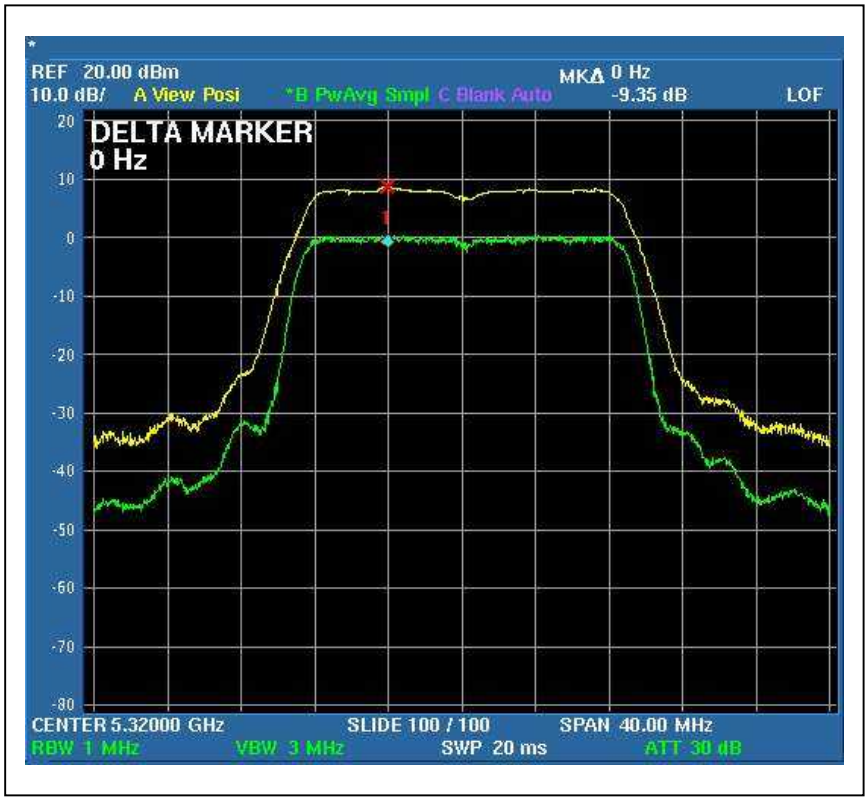
CH5


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.71 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.26000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

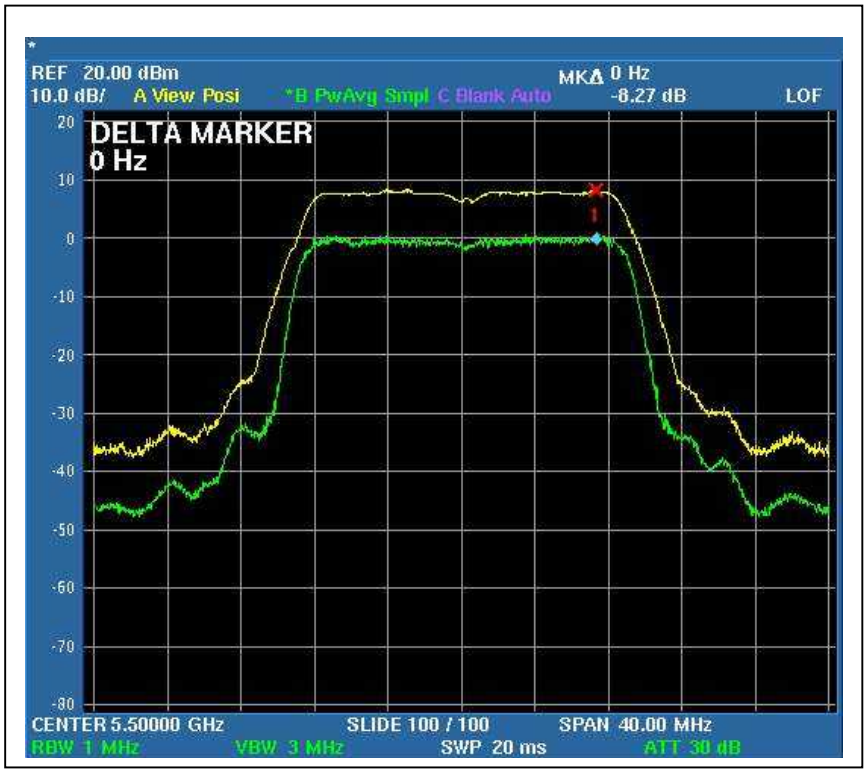
CH7


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.75 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.30000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

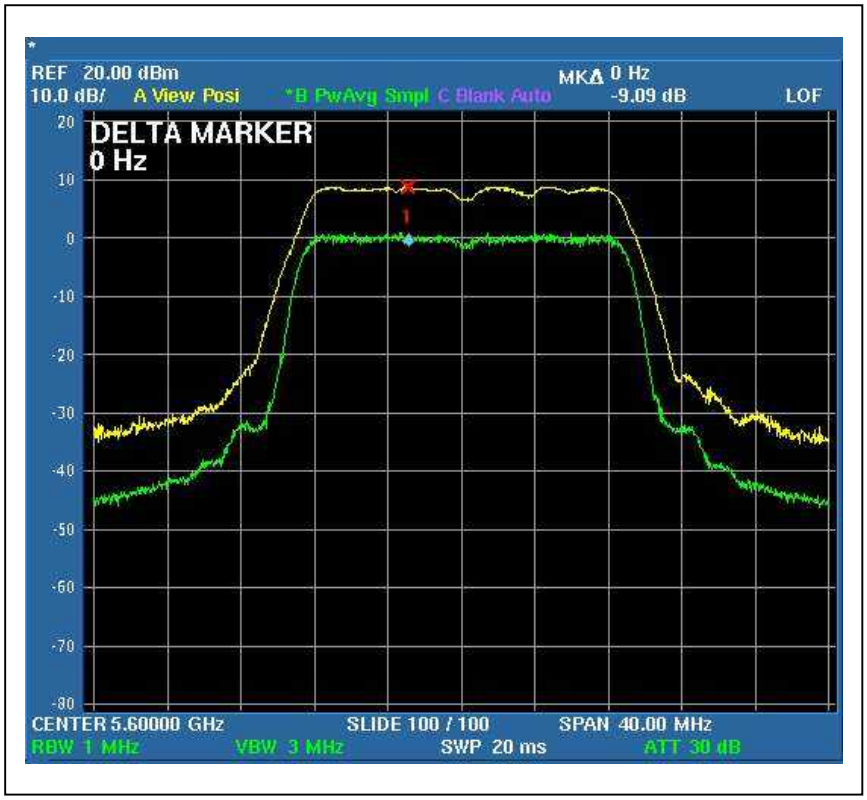
CH8


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -9.35 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.32000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

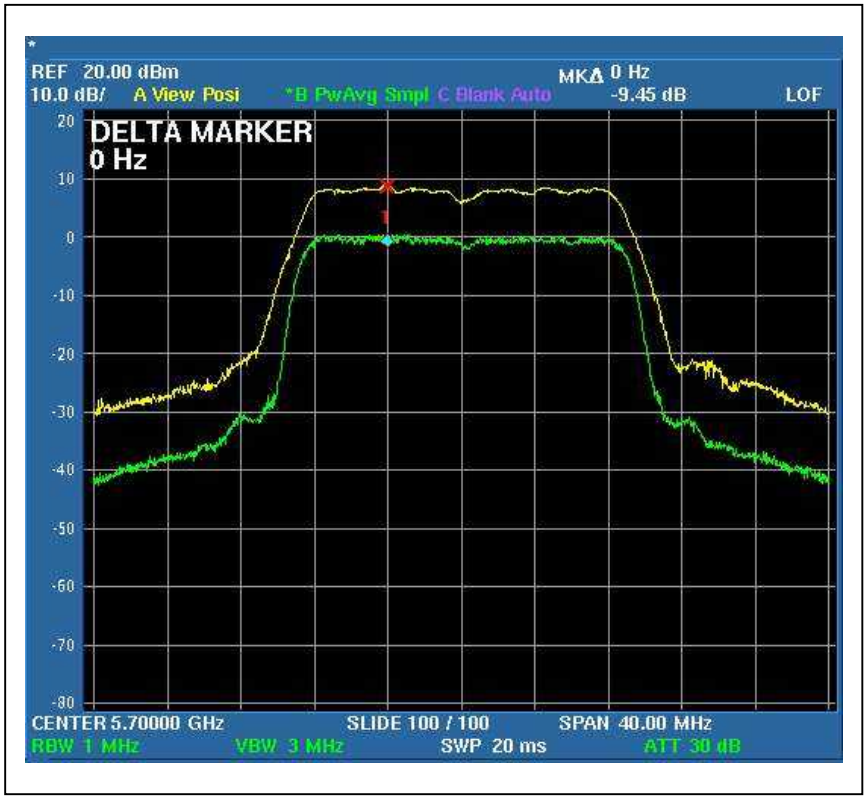
CH9


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -8.27 dB LOF
DELTA MARKER
0 Hz
CENTER 5.50000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

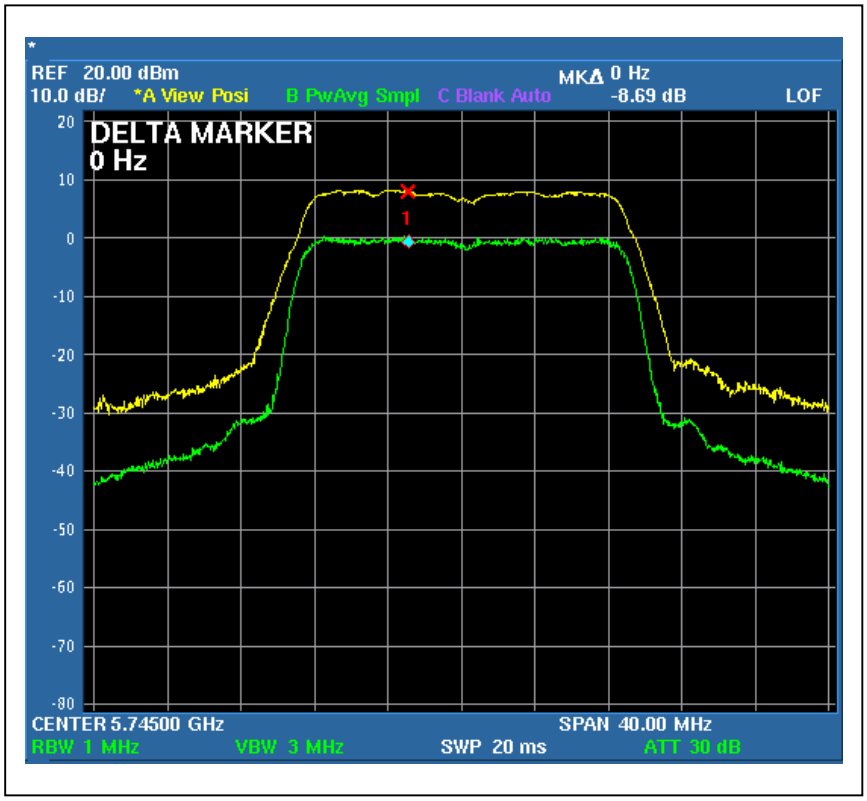
CH14


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -9.09 dB LOF
DELTA MARKER
0 Hz
CENTER 5.60000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

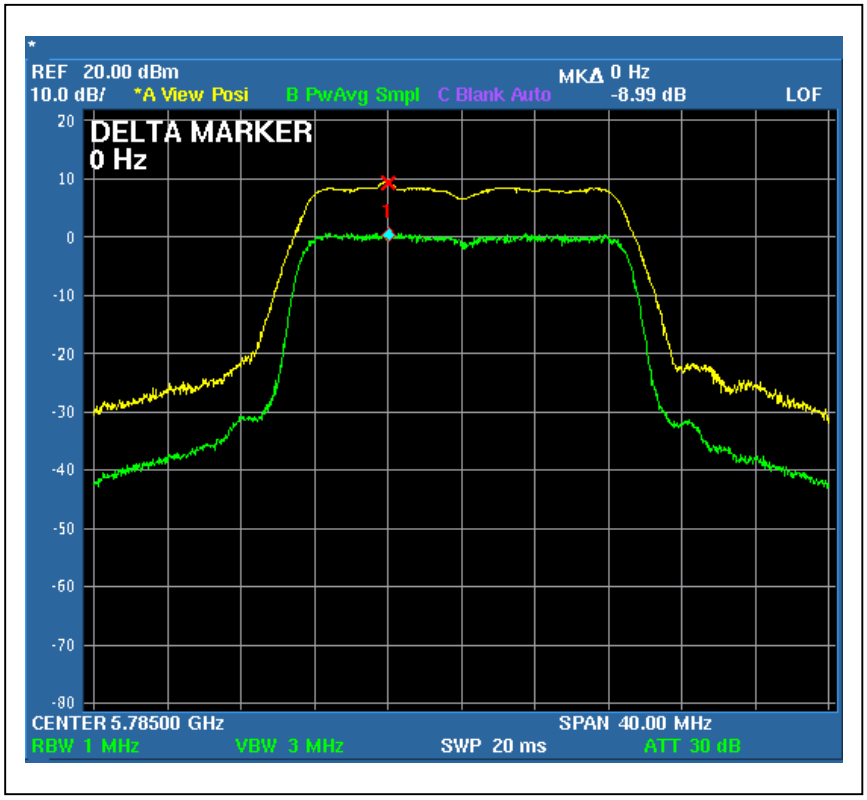
CH19


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A View Posi *B PwAvg Smpl C Blank Auto -9.45 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

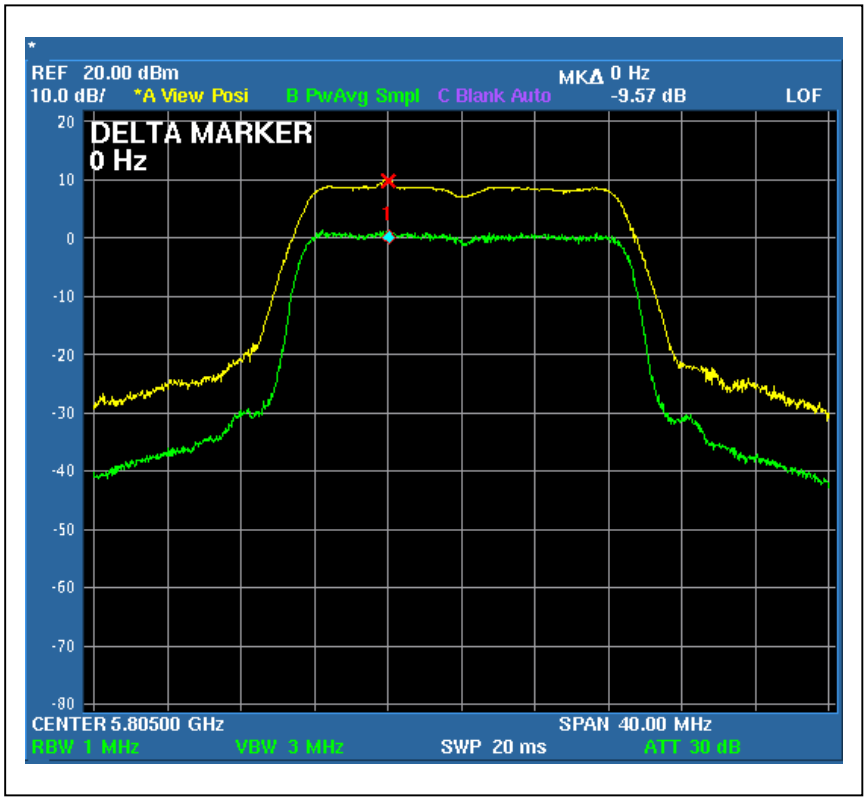
CH20


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -8.69 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.74500 GHz SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

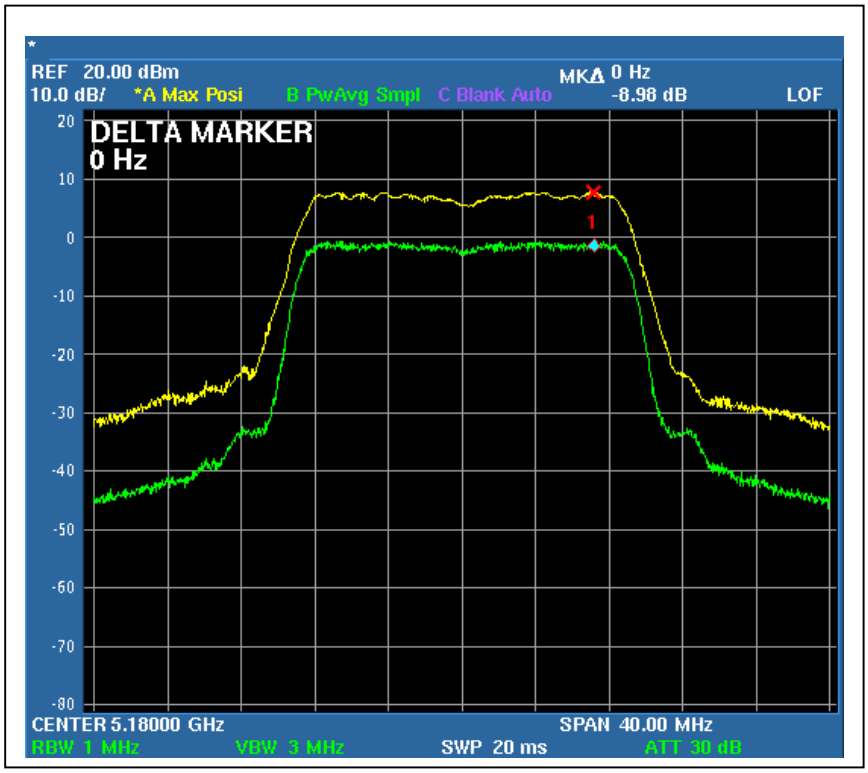
CH22


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -8.99 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.78500 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

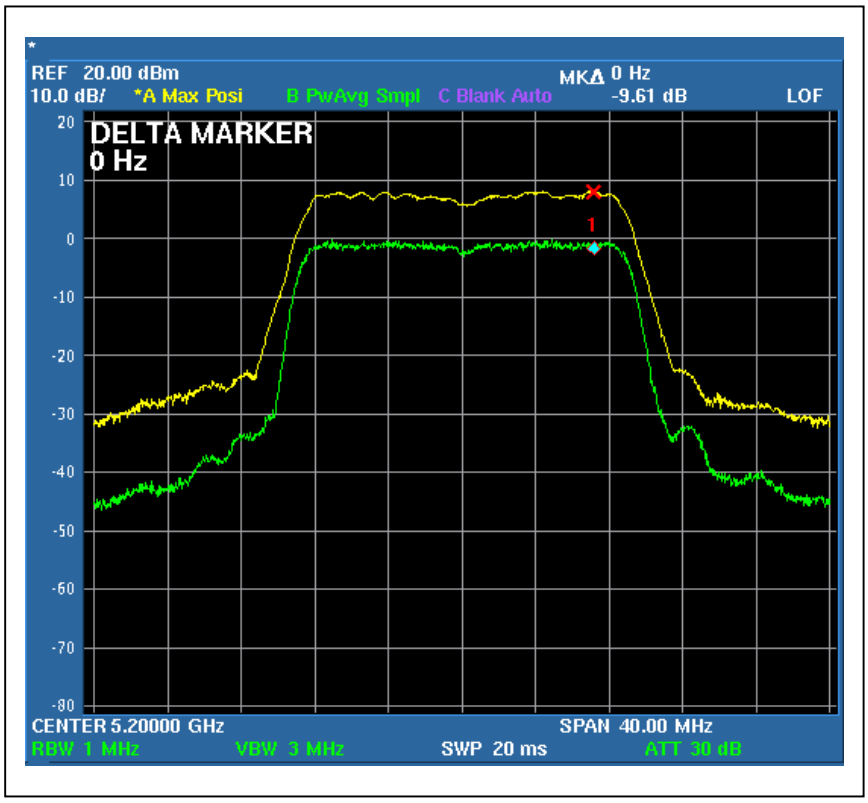
CH23


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -9.57 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.80500 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

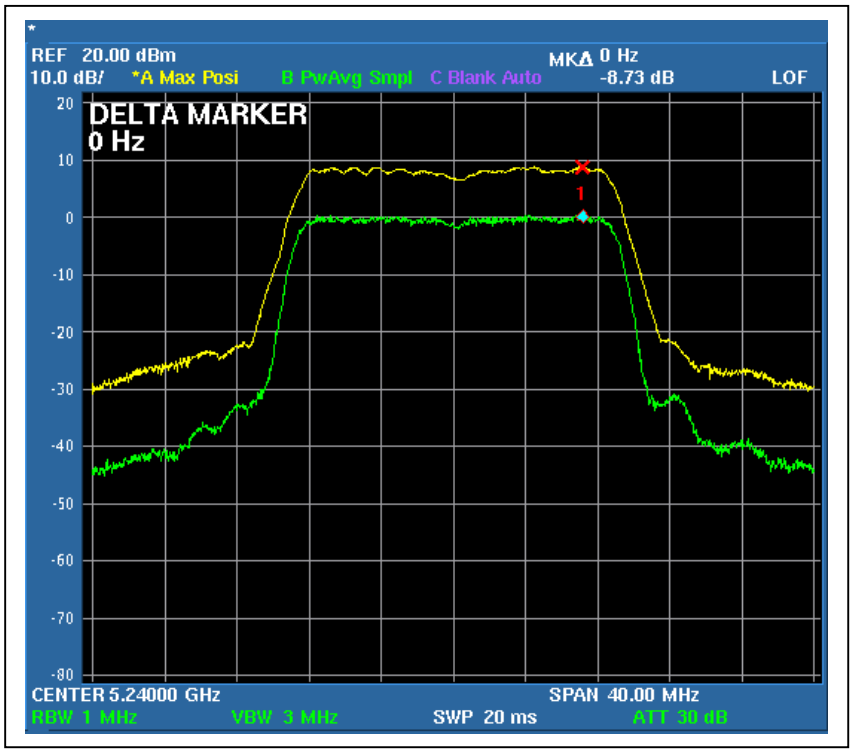
For Chain (1) : CH1



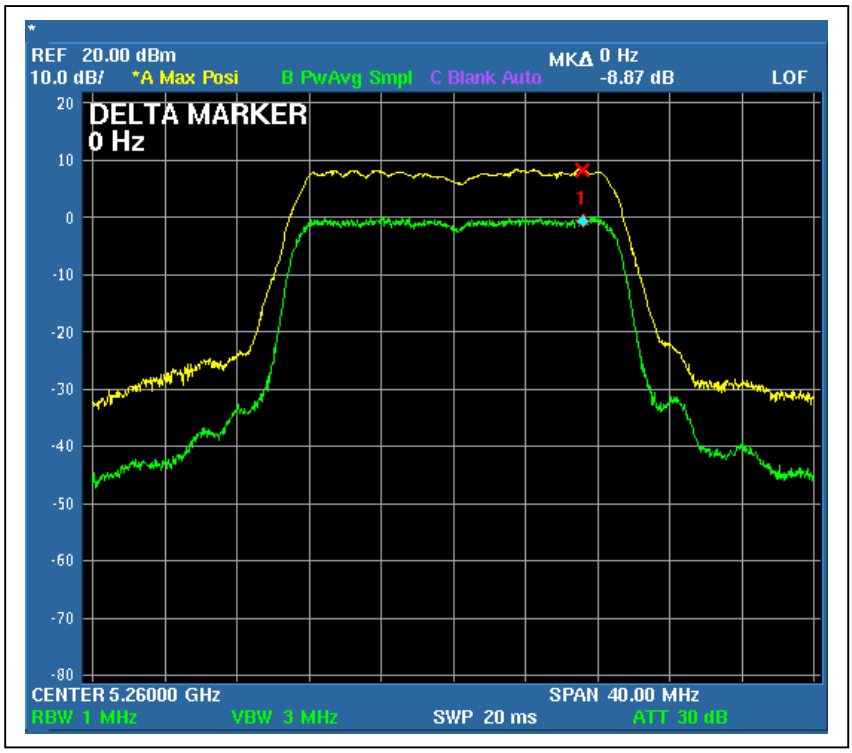
CH2



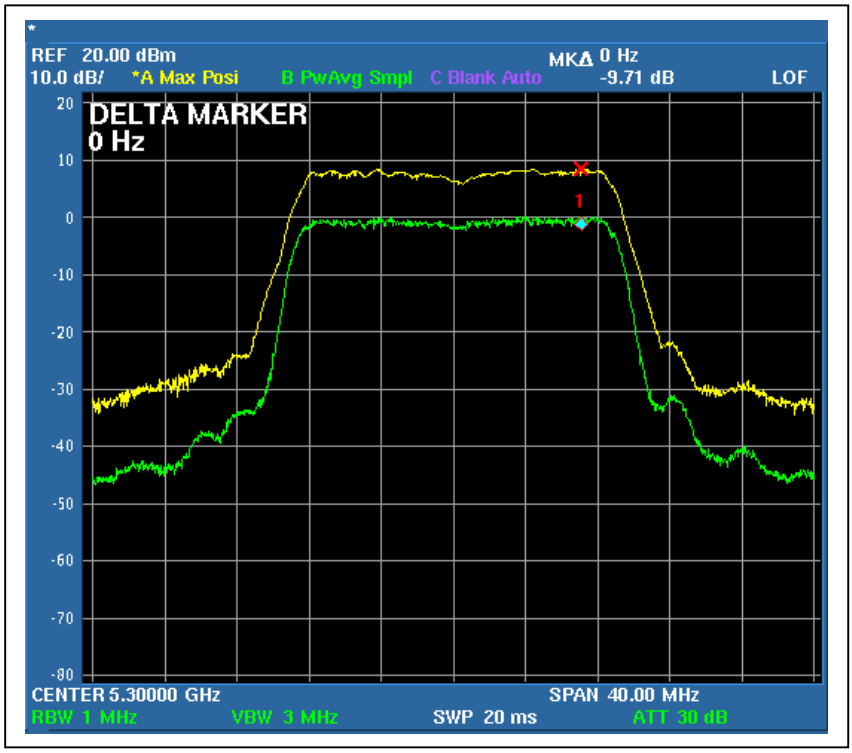
CH4


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -8.73 dB LOF
DELTA MARKER
0 Hz
CENTER 5.24000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

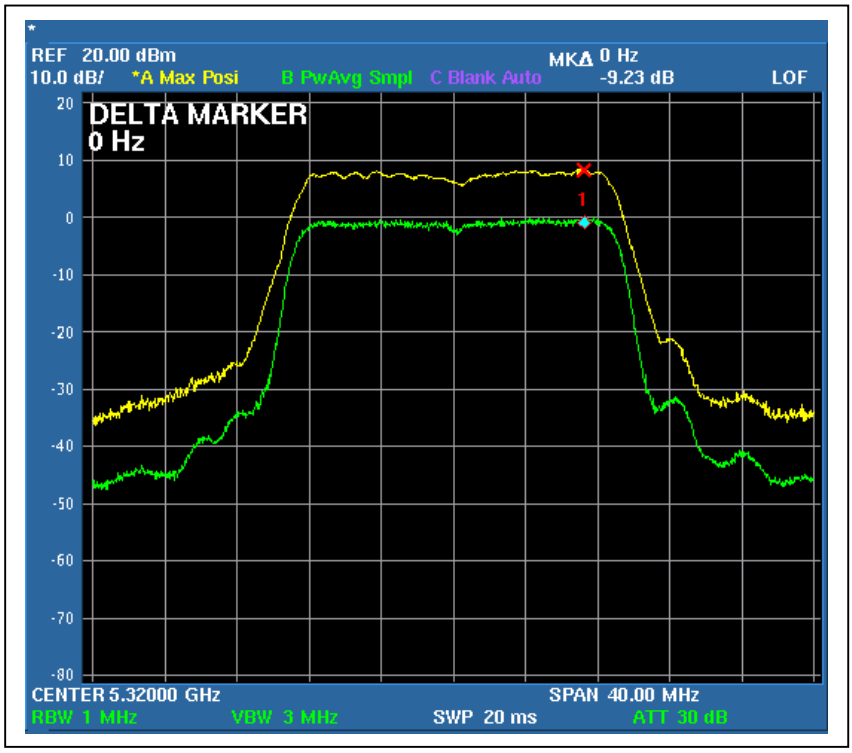
CH5


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -8.87 dB LOF
DELTA MARKER
0 Hz
CENTER 5.26000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

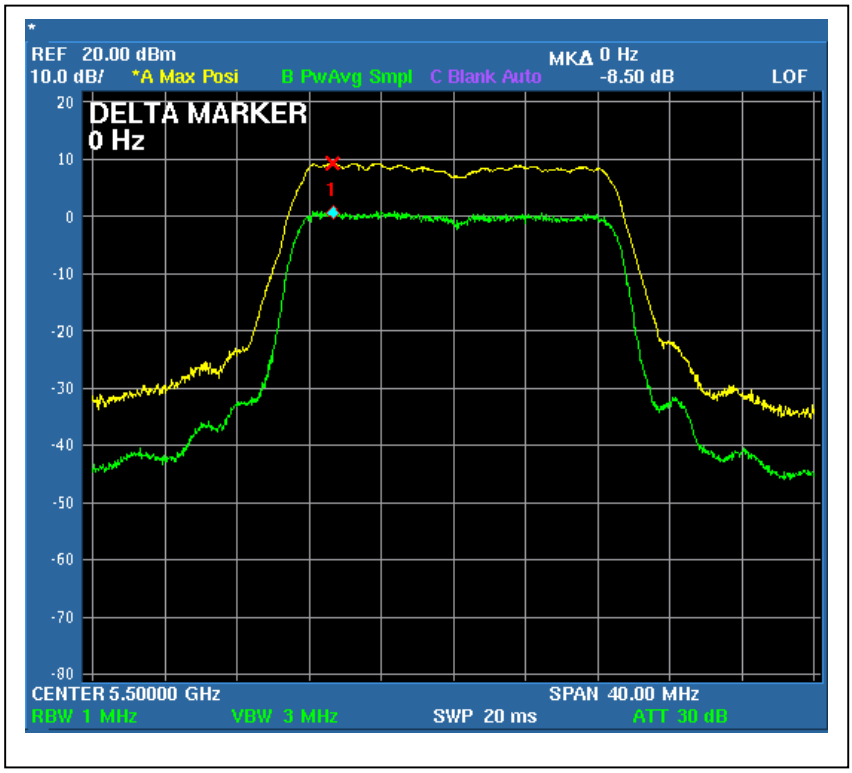
CH7


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -9.71 dB LOF
DELTA MARKER
0 Hz
CENTER 5.30000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

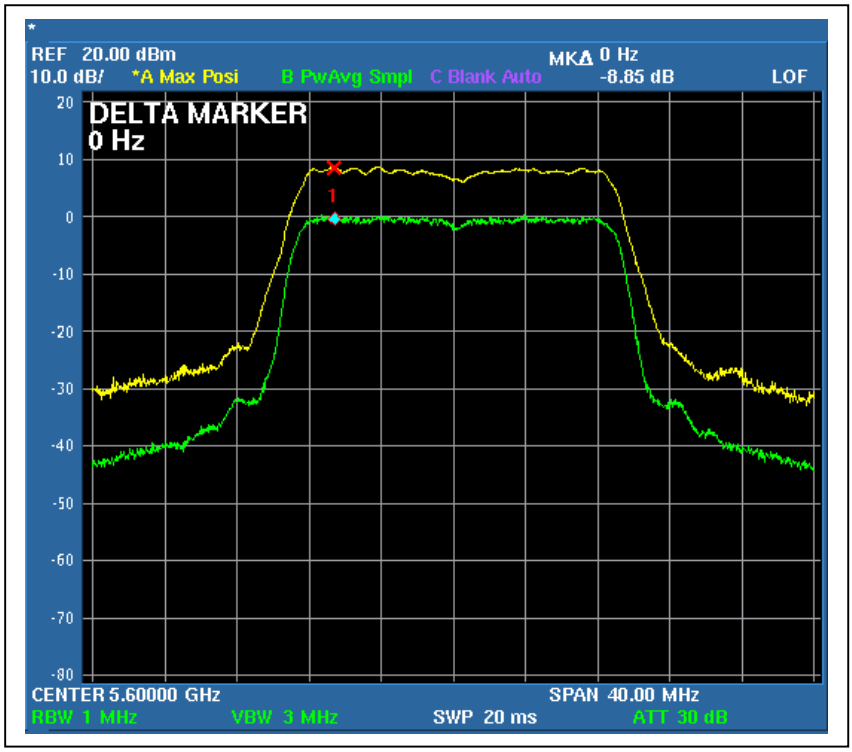
CH8


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -9.23 dB LOF
DELTA MARKER
0 Hz
CENTER 5.32000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

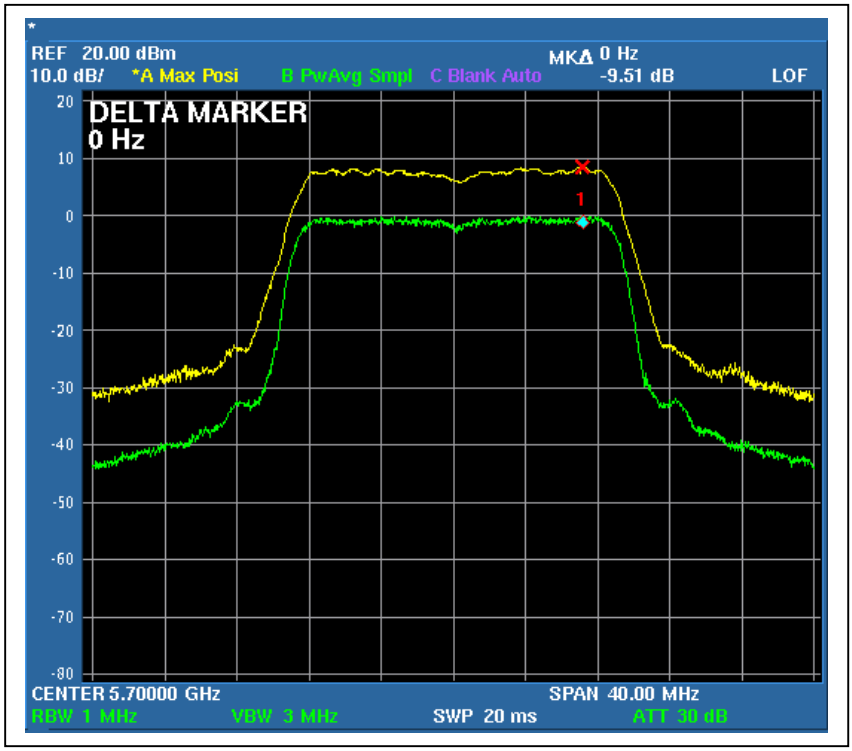
CH9


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -8.50 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

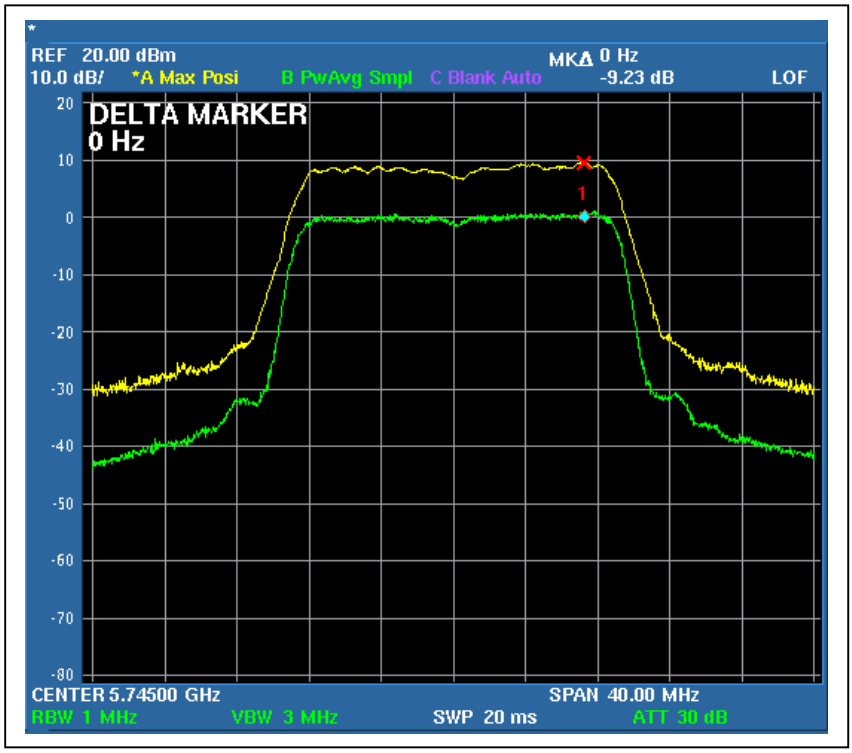
CH14


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -8.85 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

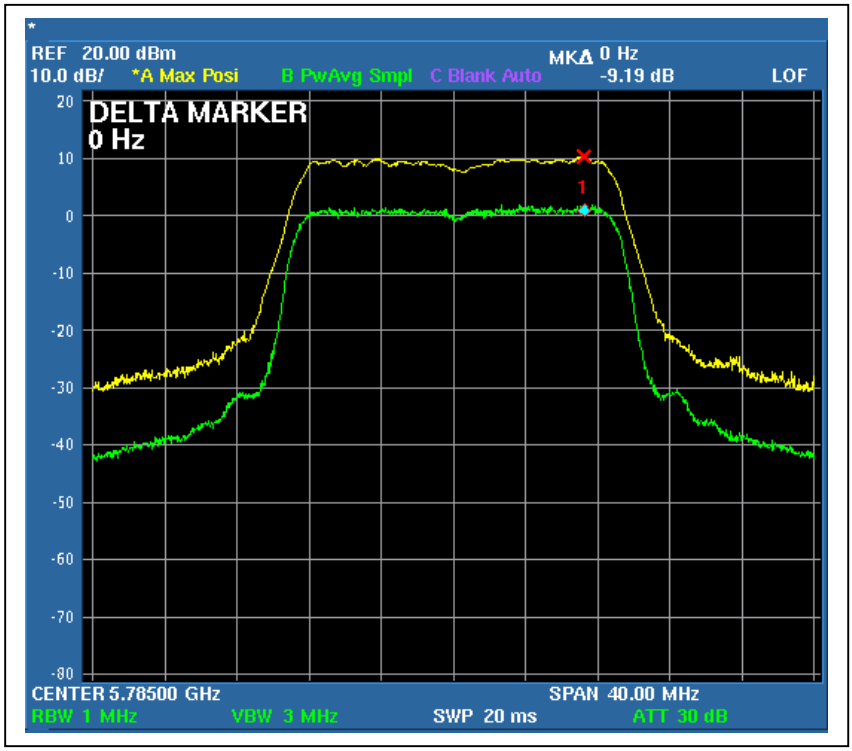
CH19


REF 20.00 dBm
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-9.51 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.70000 GHz
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

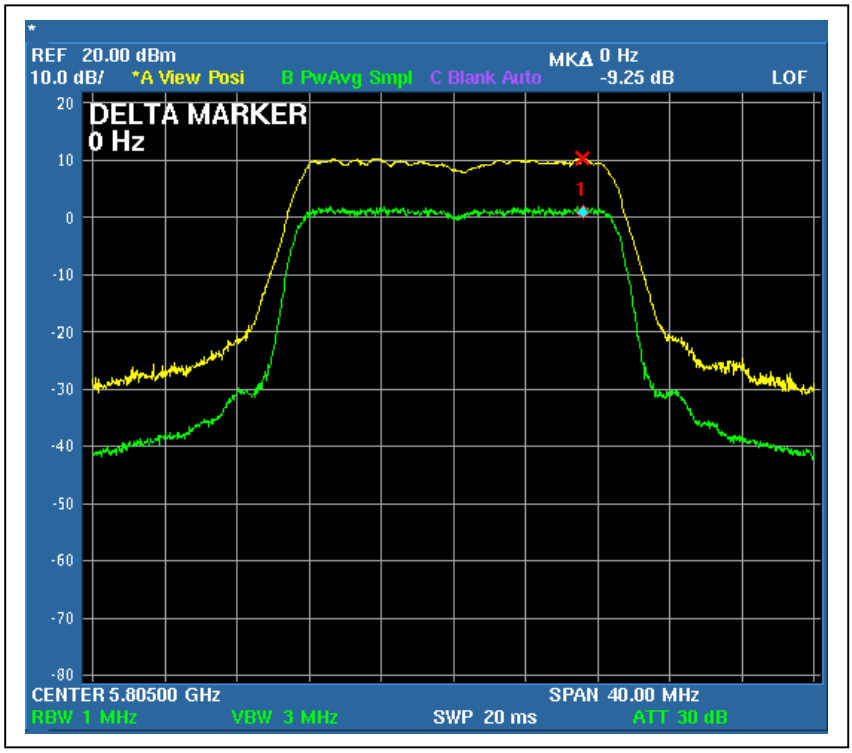
CH20


REF 20.00 dBm
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-9.23 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.74500 GHz
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

CH22


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A Max Posi B PwAvg Smpl C Blank Auto -9.19 dB LOF
DELTA MARKER
0 Hz
CENTER 5.78500 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH23

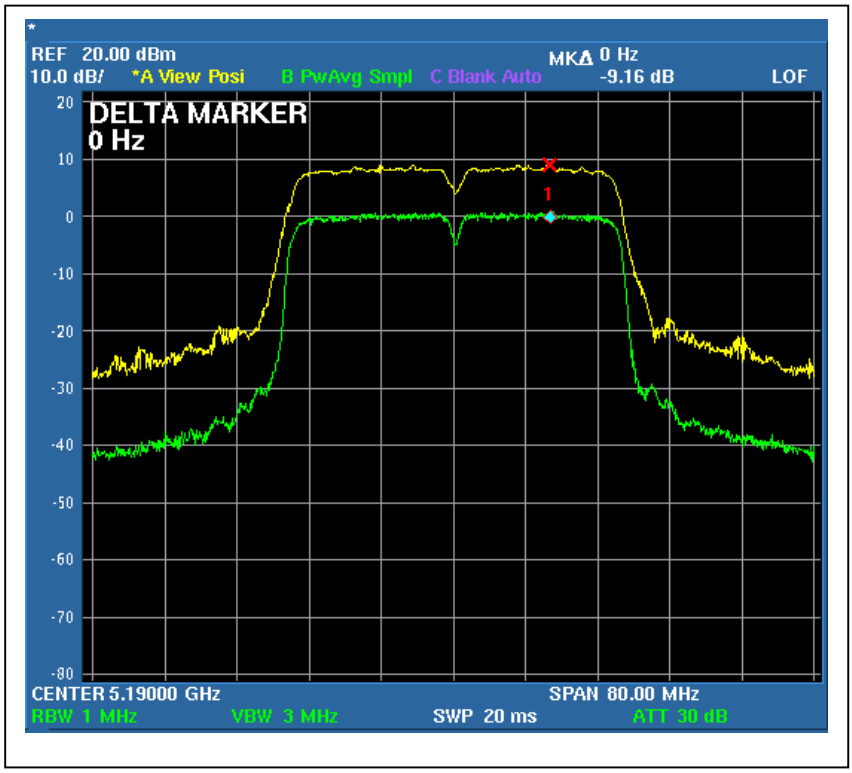

REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -9.25 dB LOF
DELTA MARKER
0 Hz
CENTER 5.80500 GHz
SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

DRAFT 802.11n (40MHz) OFDM MODULATION:

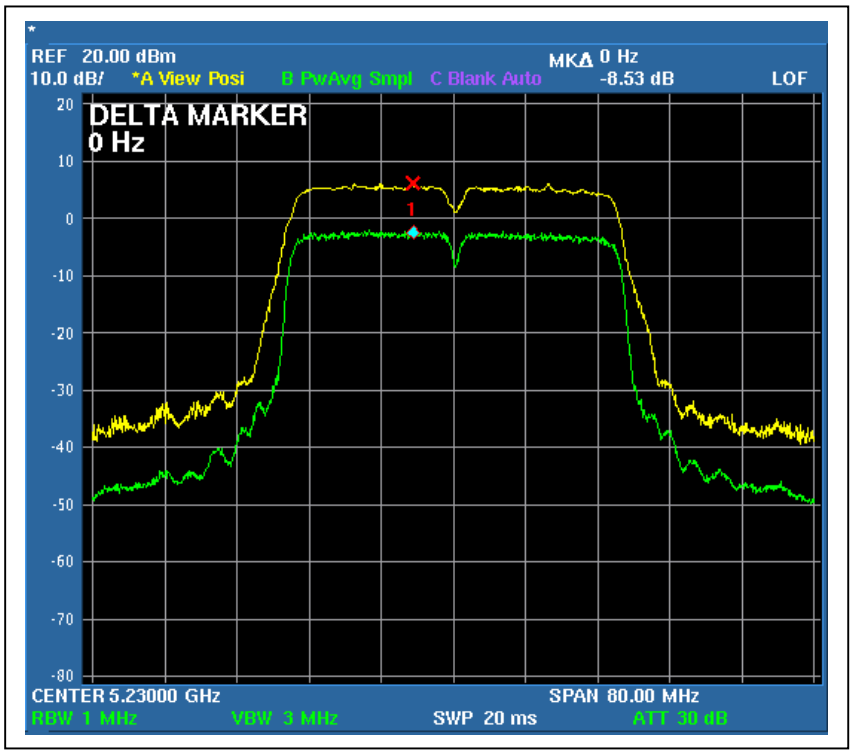
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		Chain (0)	Chain(1)		
1	5190	9.16	9.00	13	PASS
2	5230	8.53	9.81	13	PASS
3	5270	8.87	9.57	13	PASS
4	5310	8.95	9.91	13	PASS
5	5510	9.04	9.35	13	PASS
7	5590	9.17	9.41	13	PASS
9	5670	8.86	9.43	13	PASS
10	5755	8.82	9.84	13	PASS
11	5795	8.84	9.58	13	PASS

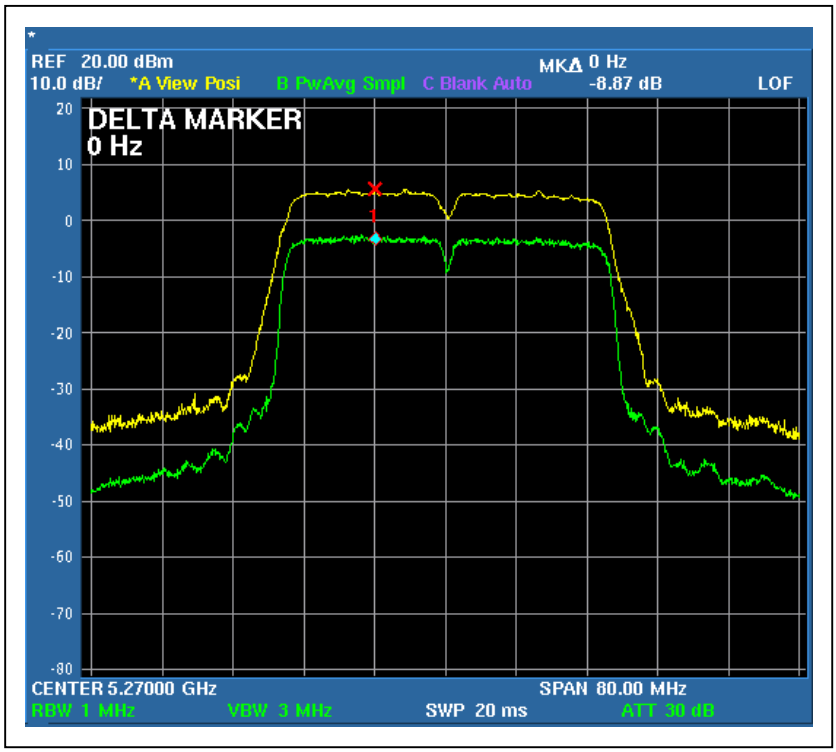
For Chain (0) : CH1



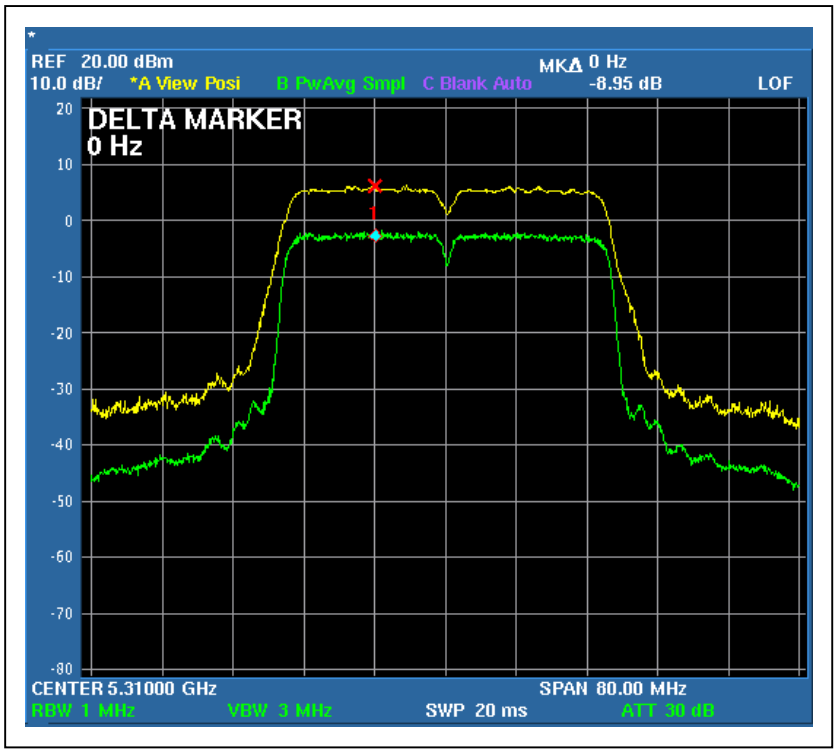
CH2



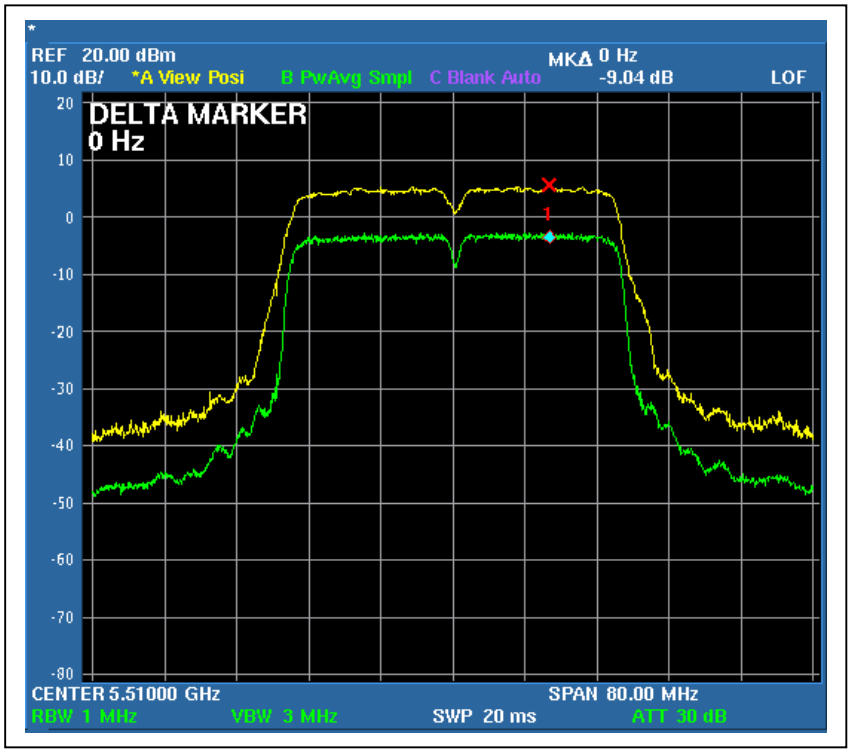
CH3


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -8.87 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.27000 GHz
SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

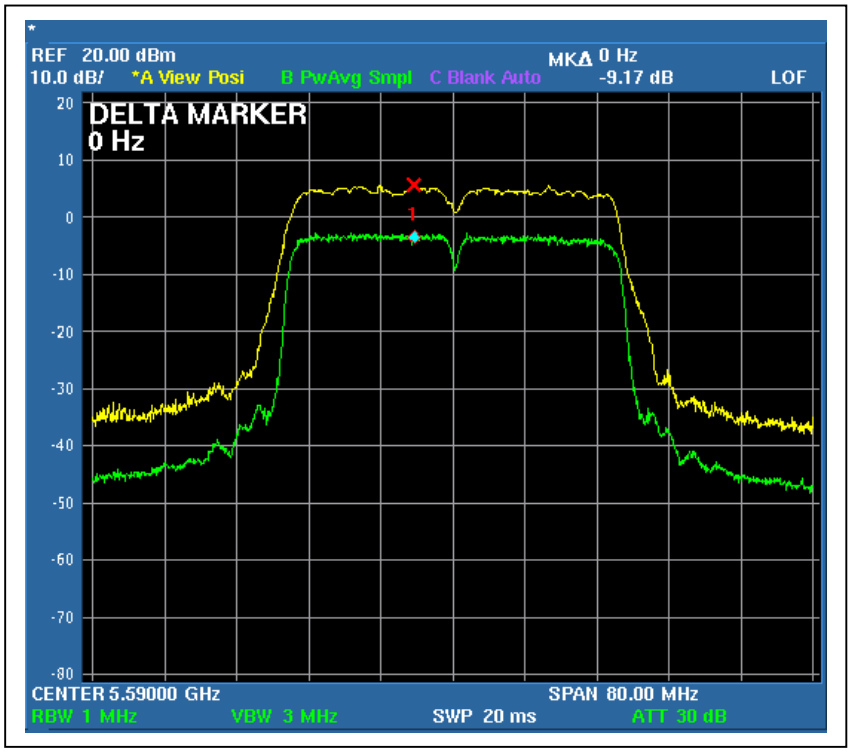
CH4


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -8.95 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.31000 GHz
SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

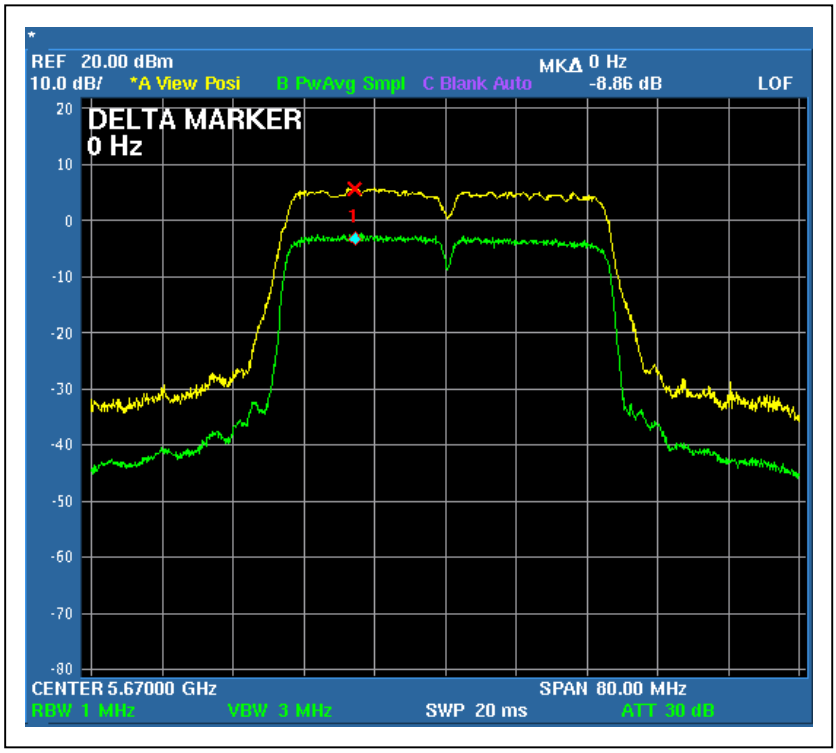
CH5


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -9.04 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.51000 GHz
SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

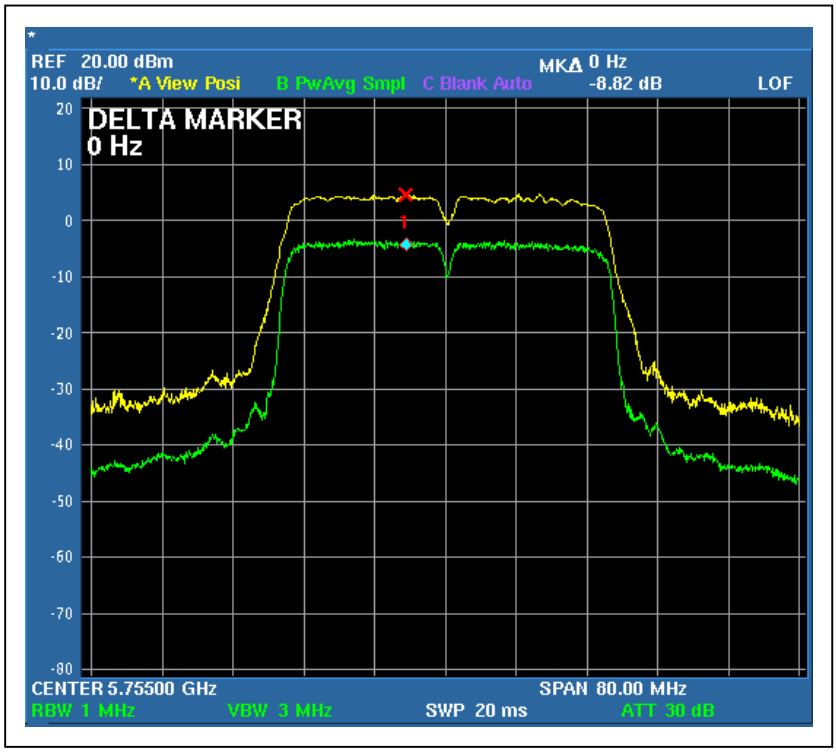
CH7


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -9.17 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.59000 GHz
SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

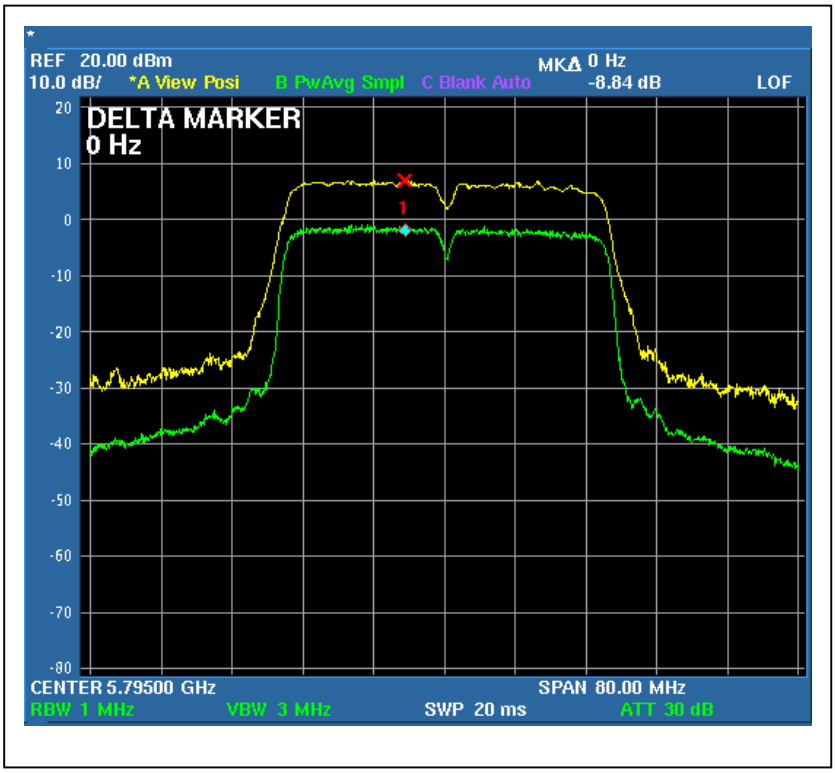
CH9


REF 20.00 dBm
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-8.86 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.67000 GHz
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

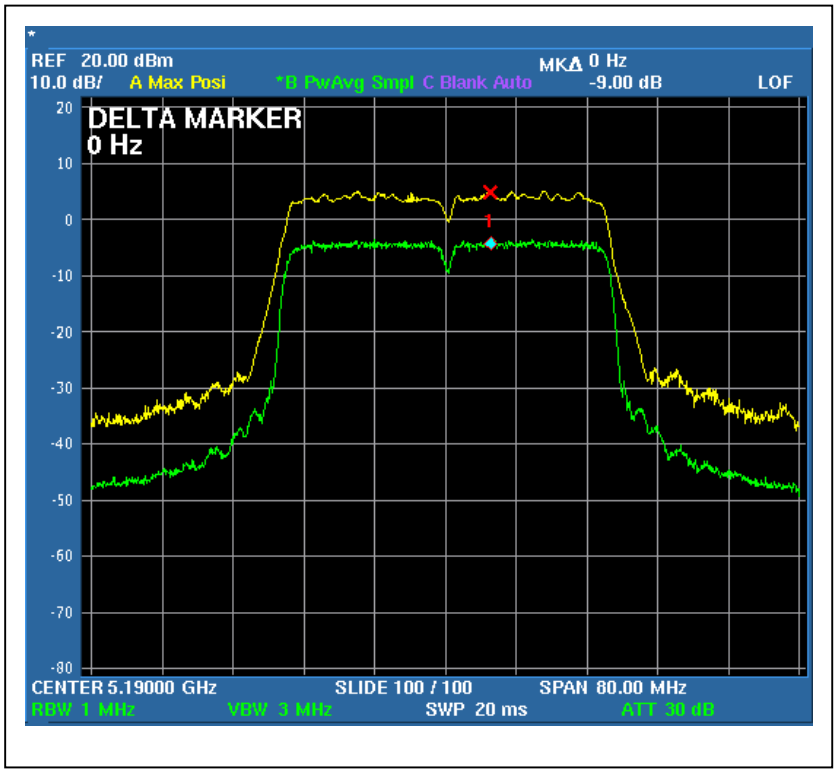
CH10


REF 20.00 dBm
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-8.82 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.75500 GHz
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

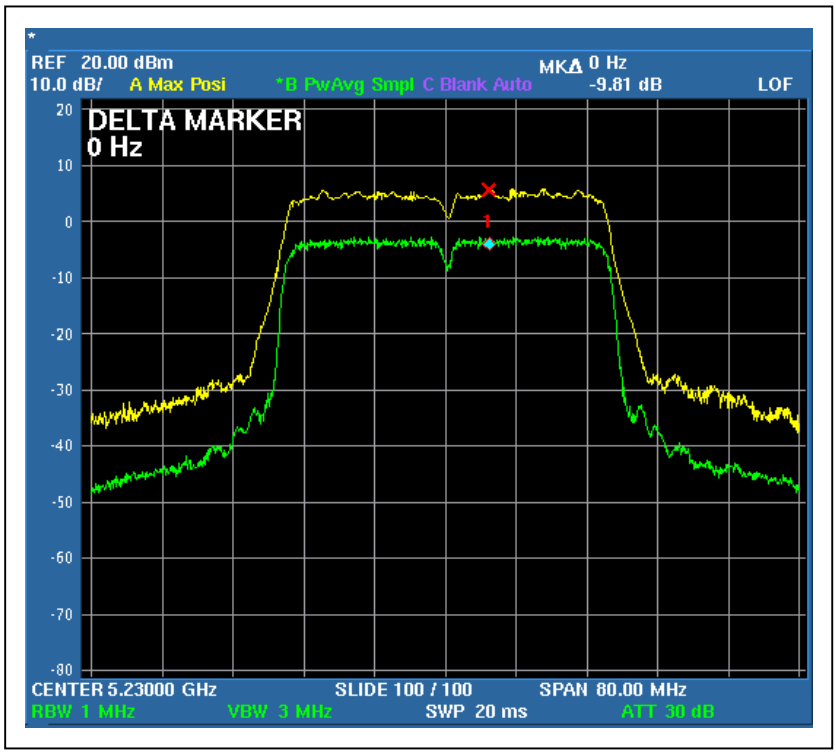
CH11


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ *A View Posi B PwAvg Smpl C Blank Auto -8.84 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
CENTER 5.79500 GHz
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

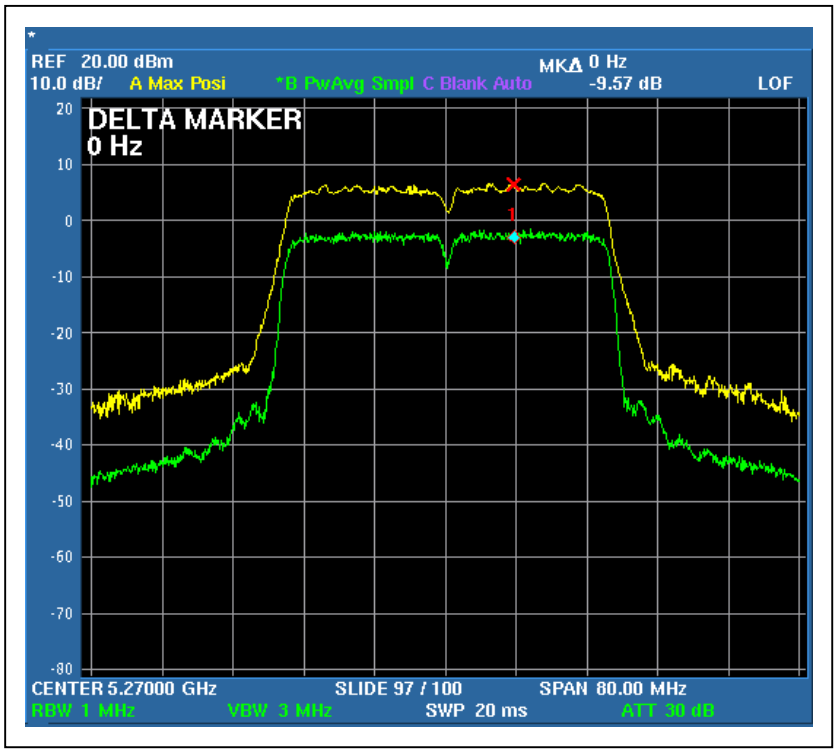
For Chain (1) : CH1



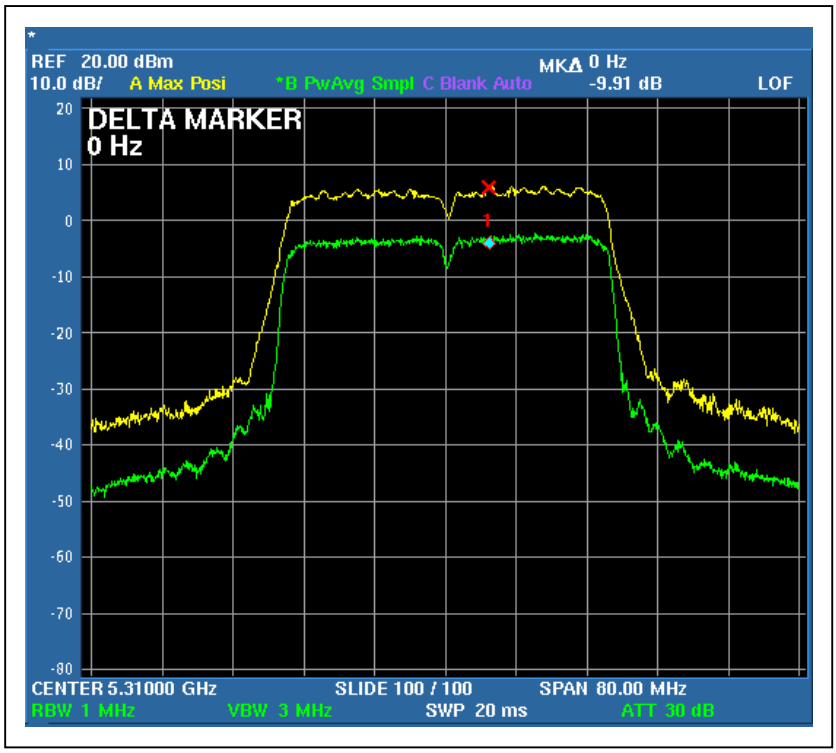
CH2



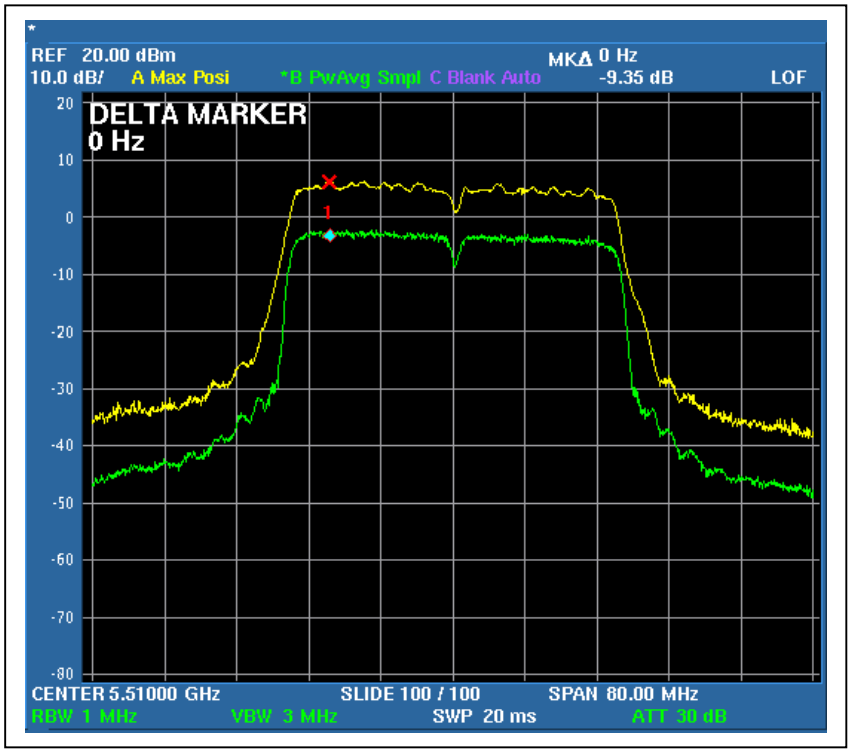
CH3


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A Max Posi *B PwAvg Smpl C Blank Auto -9.57 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.27000 GHz SLIDE 97 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

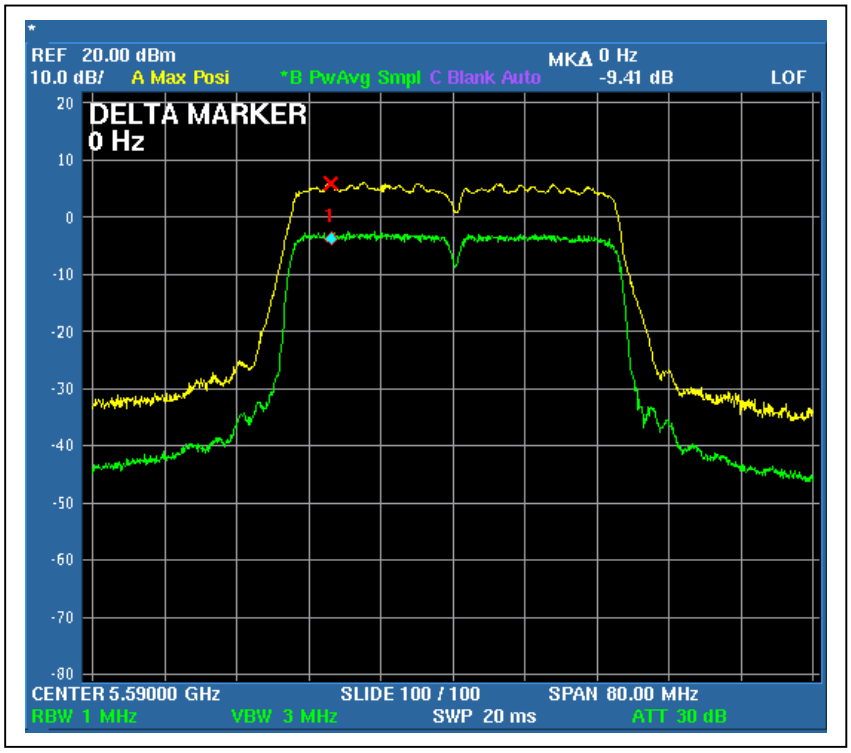
CH4


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A Max Posi *B PwAvg Smpl C Blank Auto -9.91 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.31000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

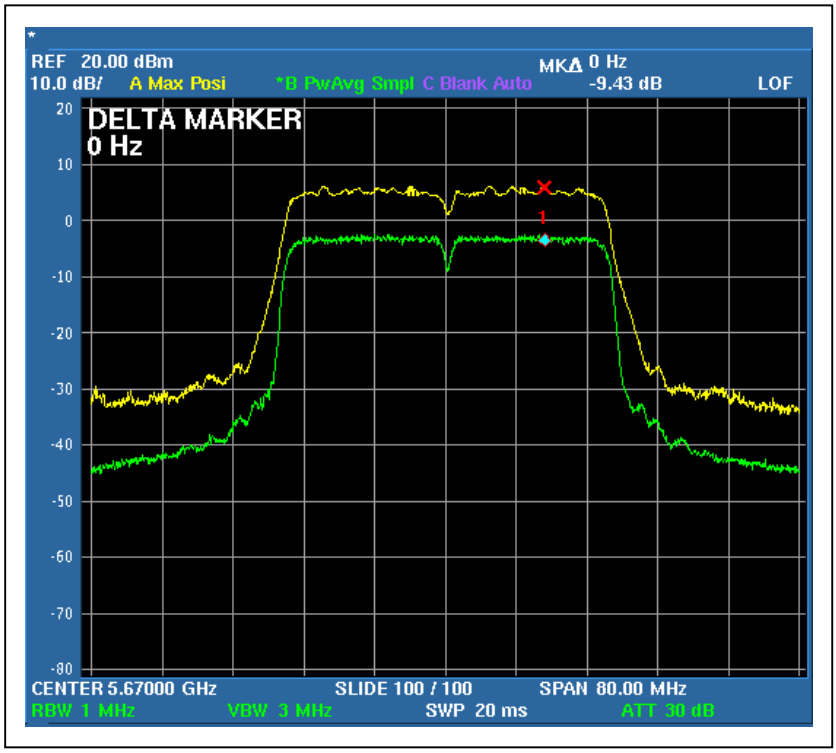
CH5


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A Max Posi *B PwAvg Smpl C Blank Auto -9.35 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.51000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

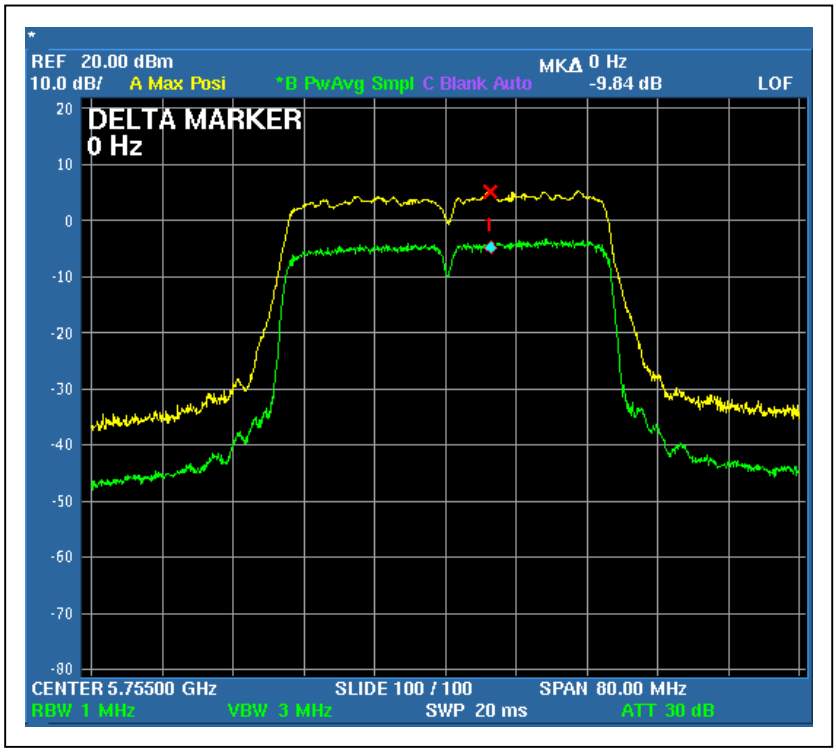
CH7


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A Max Posi *B PwAvg Smpl C Blank Auto -9.41 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.59000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

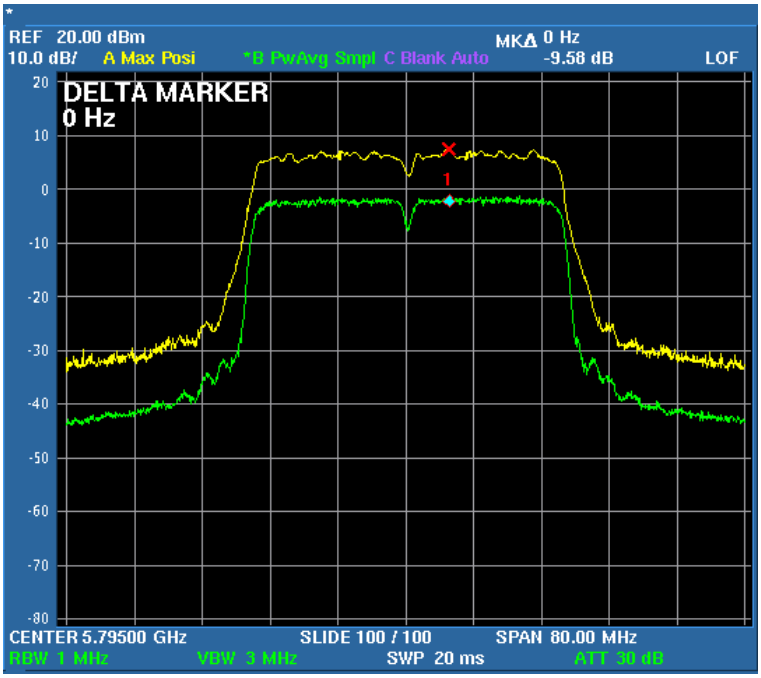
CH9


REF 20.00 dBm
10.0 dB/ A Max Posi
*B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-9.43 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.67000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

CH10


REF 20.00 dBm
10.0 dB/ A Max Posi
*B PwAvg Smpl C Blank Auto
MKΔ 0 Hz
-9.84 dB
LOF
DELTA MARKER
0 Hz
CENTER 5.75500 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

CH11


REF 20.00 dBm
MKΔ 0 Hz
10.0 dB/ A Max Posi *B PwAvg Smpl C Blank Auto -9.58 dB LOF
DELTA MARKER
0 Hz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
CENTER 5.79500 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.47 – 5.725GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST SPECTRUM ANALYZER	U3772	160100280	July 26, 2008	July 25, 2009

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

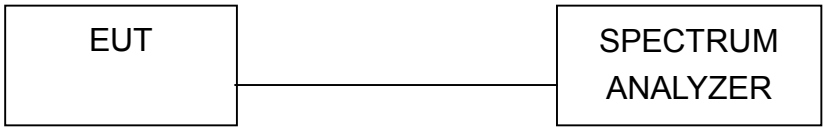
4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

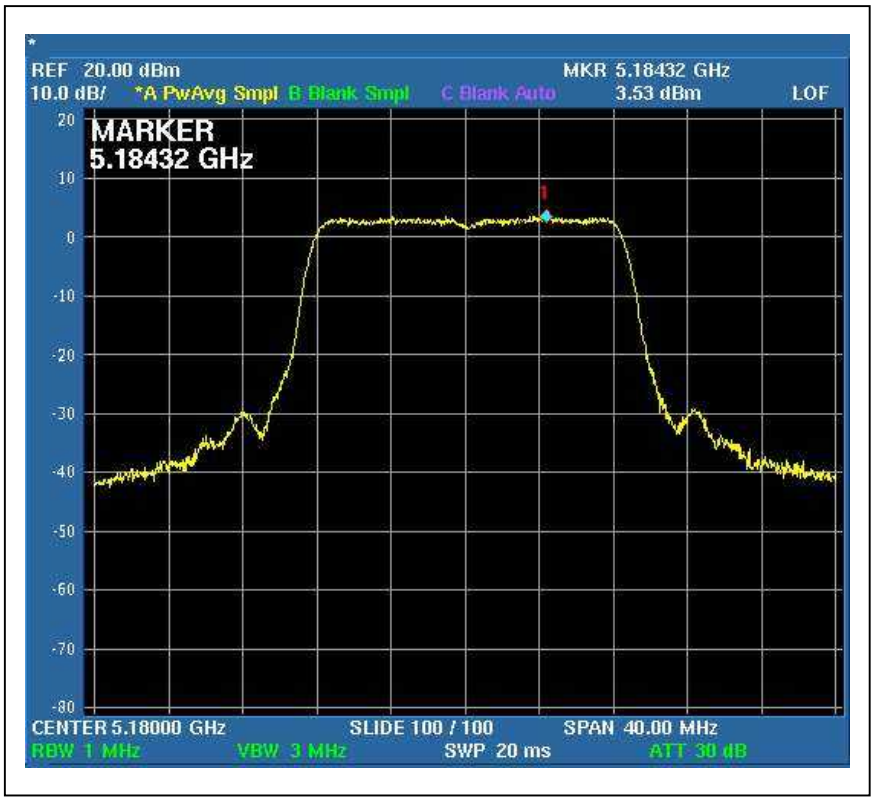
4.5.7 TEST RESULTS

802.11a OFDM modulation

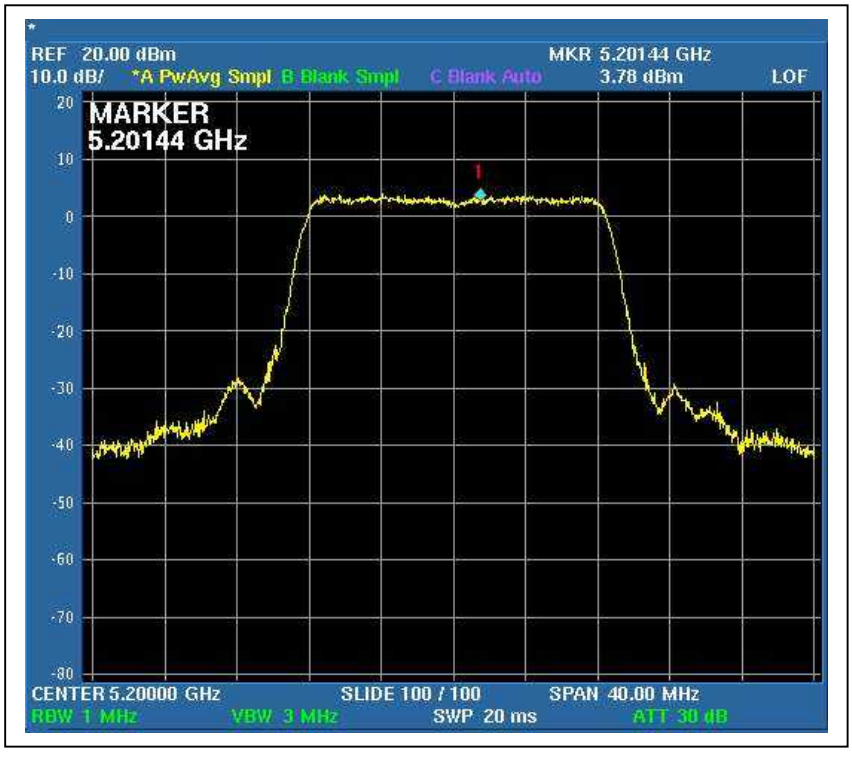
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	3.53	4	PASS
2	5200	3.78	4	PASS
4	5240	3.25	4	PASS
5	5260	2.63	11	PASS
7	5300	2.94	11	PASS
8	5320	3.07	11	PASS
9	5500	3.75	11	PASS
14	5600	3.07	11	PASS
19	5700	2.77	11	PASS
20	5745	2.51	17	PASS
22	5785	3.00	17	PASS
23	5805	3.55	17	PASS

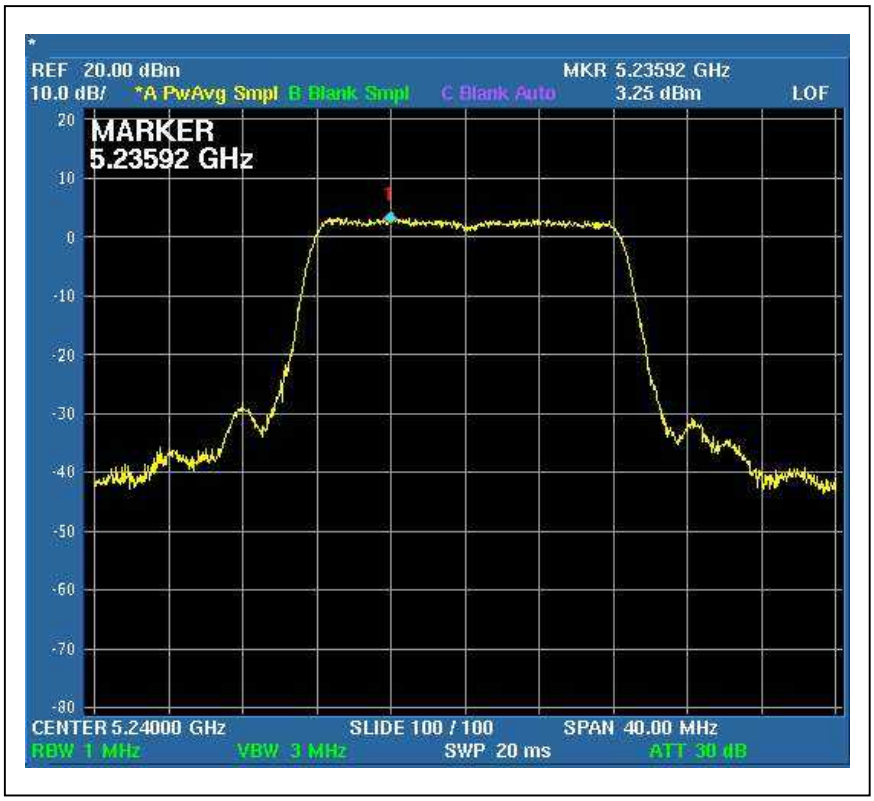
CH1


REF 20.00 dBm
MKR 5.18432 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.53 dBm LOF
MARKER
5.18432 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.18000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

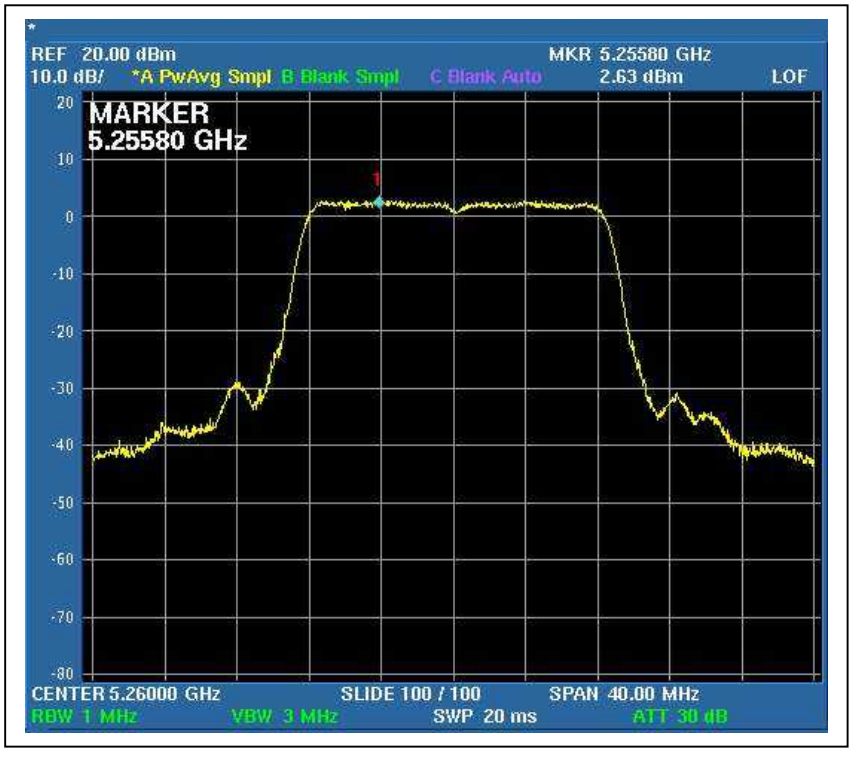
CH2


REF 20.00 dBm
MKR 5.20144 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.78 dBm LOF
MARKER
5.20144 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.20000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

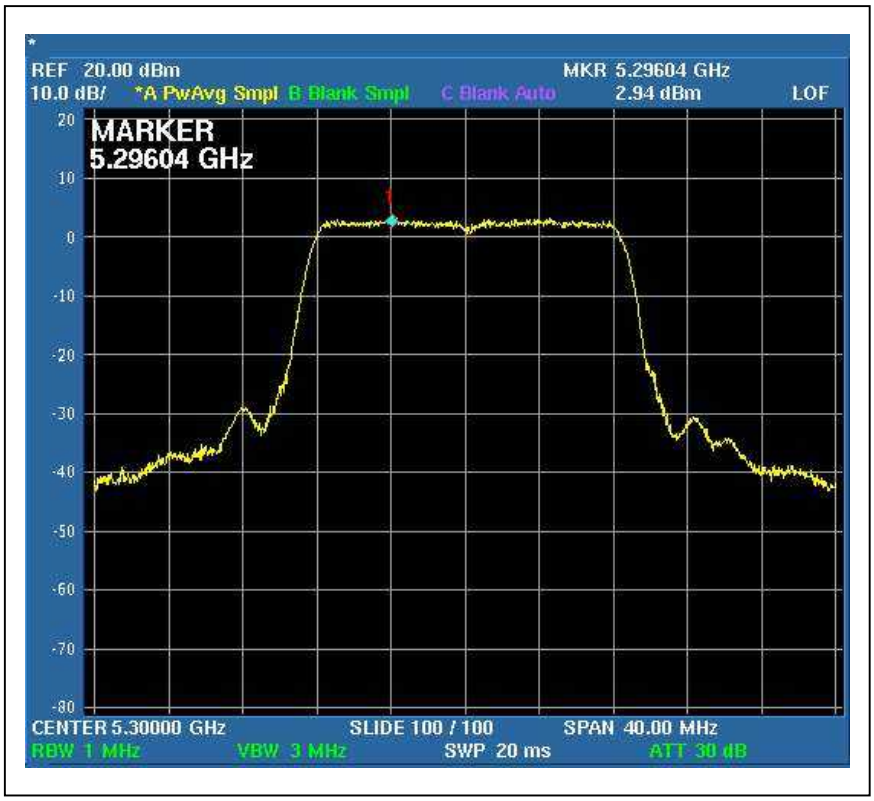
CH4


REF 20.00 dBm
MKR 5.23592 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.25 dBm LOF
MARKER
5.23592 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.24000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

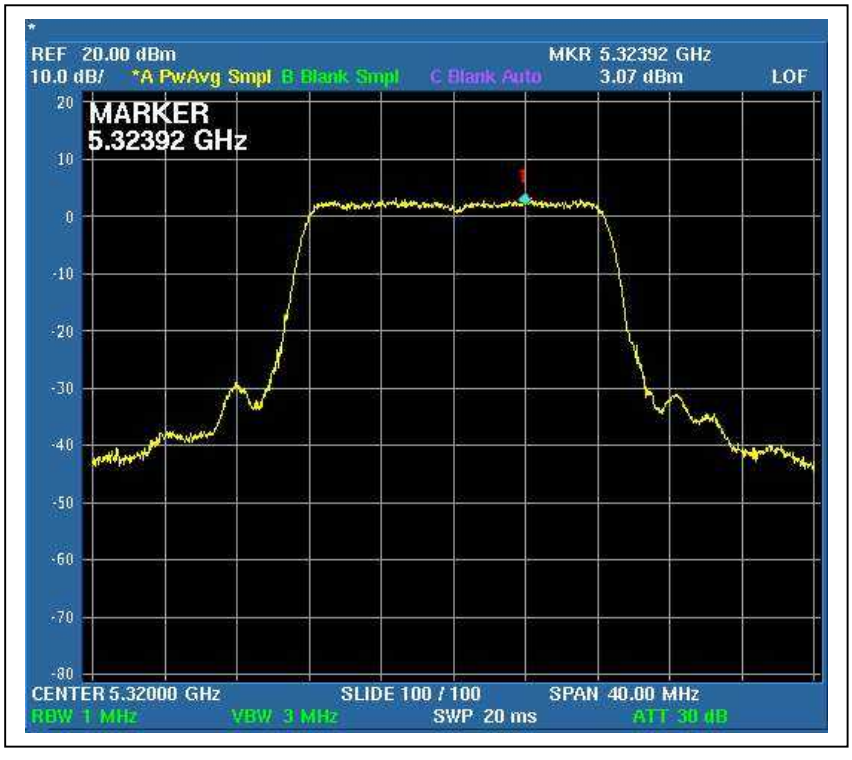
CH5


REF 20.00 dBm
MKR 5.25580 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 2.63 dBm LOF
MARKER
5.25580 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.26000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

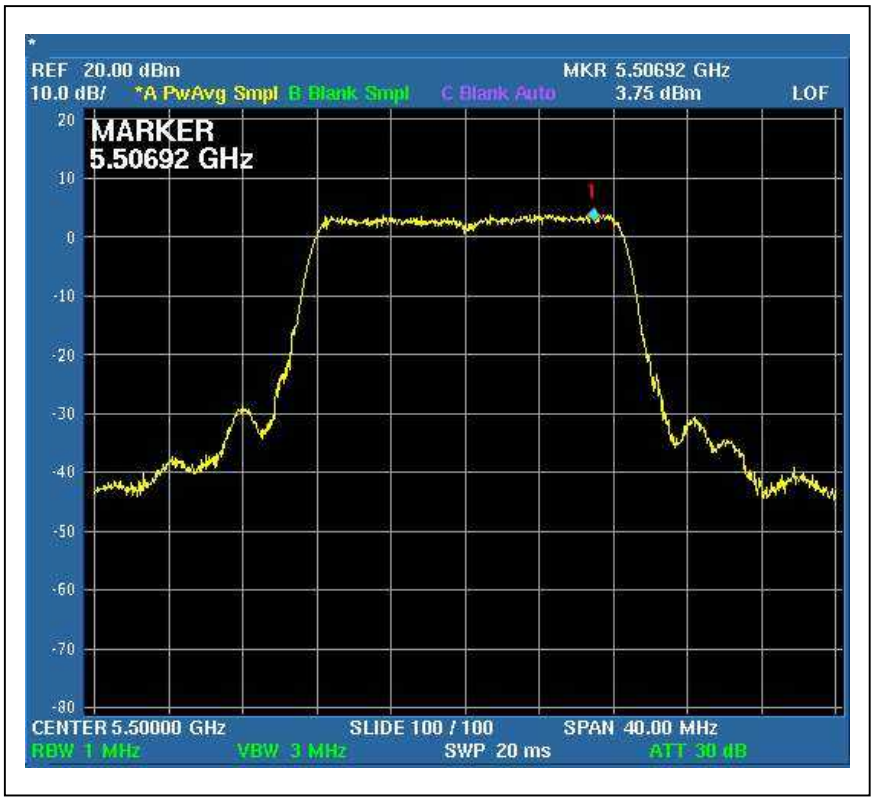
CH7


REF 20.00 dBm
MKR 5.29604 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 2.94 dBm LOF
MARKER
5.29604 GHz
CENTER 5.30000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

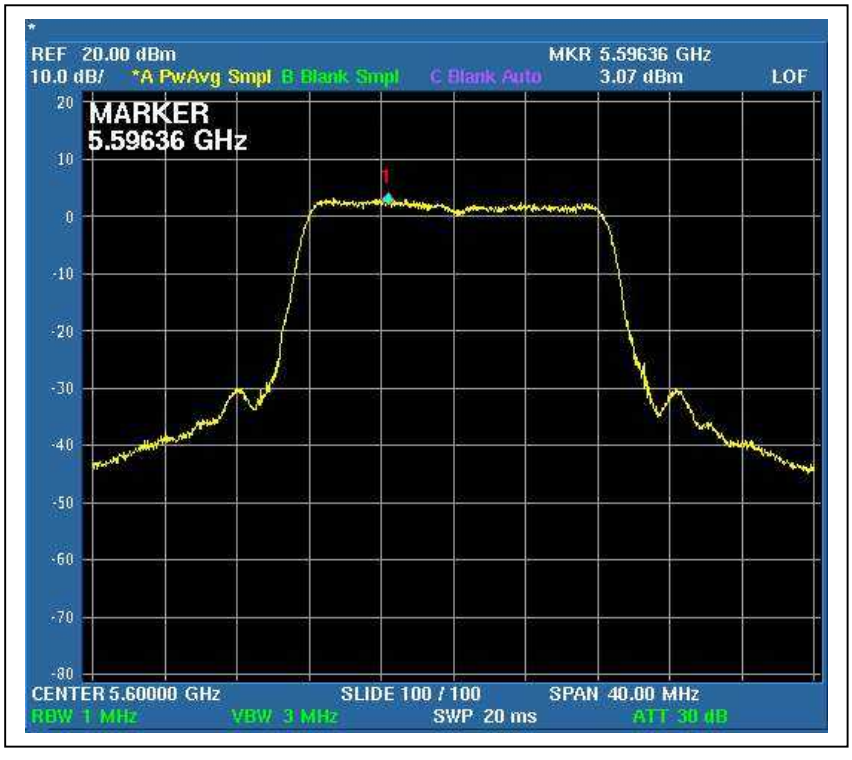
CH8


REF 20.00 dBm
MKR 5.32392 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.07 dBm LOF
MARKER
5.32392 GHz
CENTER 5.32000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

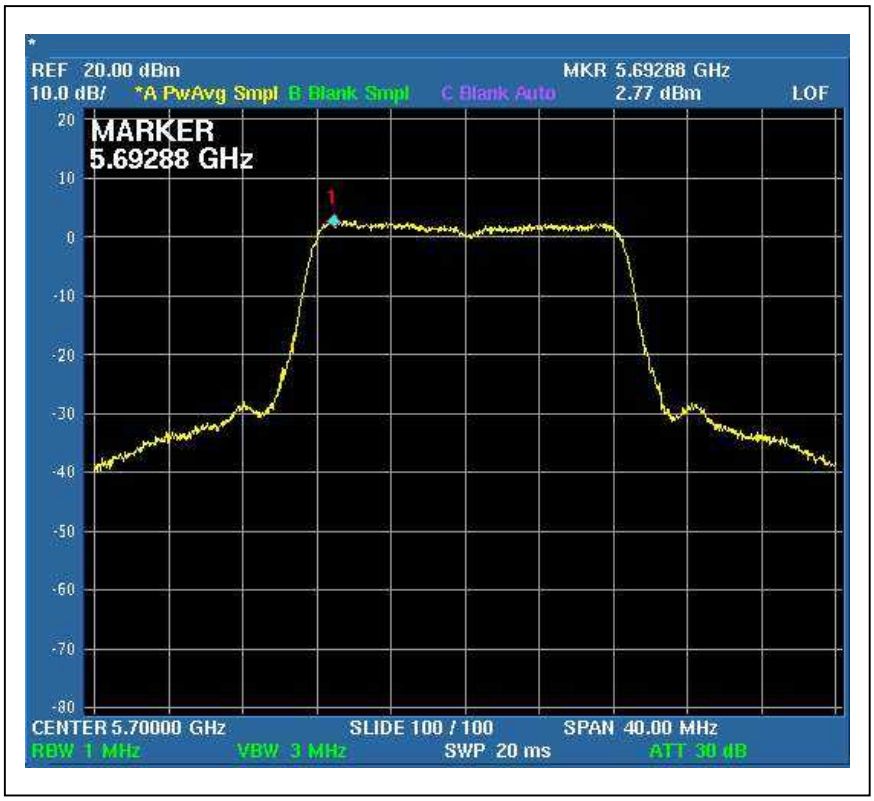
CH9


REF 20.00 dBm
MKR 5.50692 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.75 dBm LOF
MARKER
5.50692 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

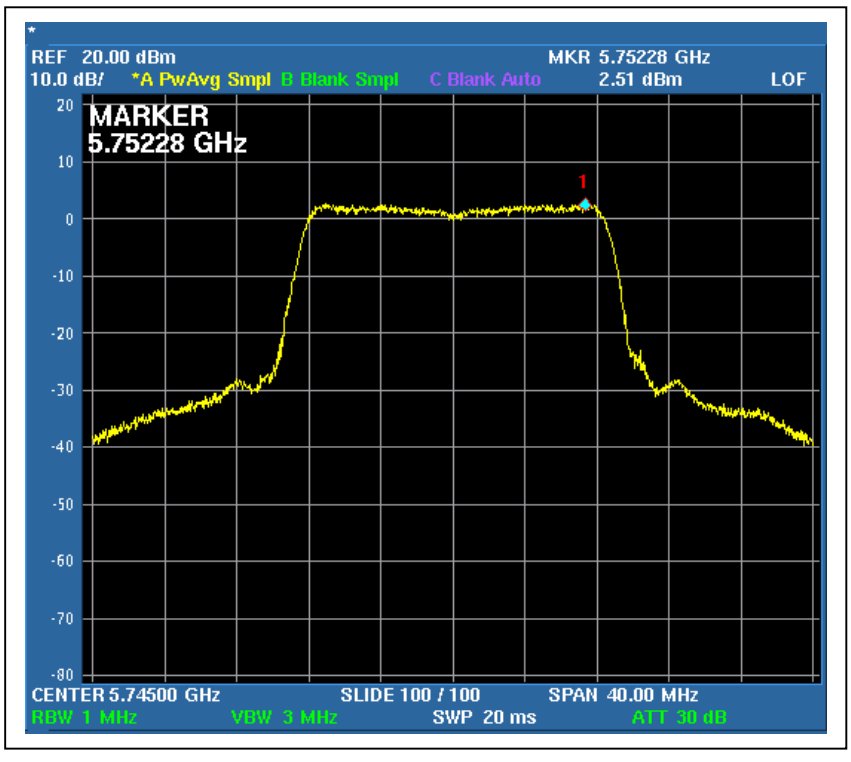
CH14


REF 20.00 dBm
MKR 5.59636 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.07 dBm LOF
MARKER
5.59636 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

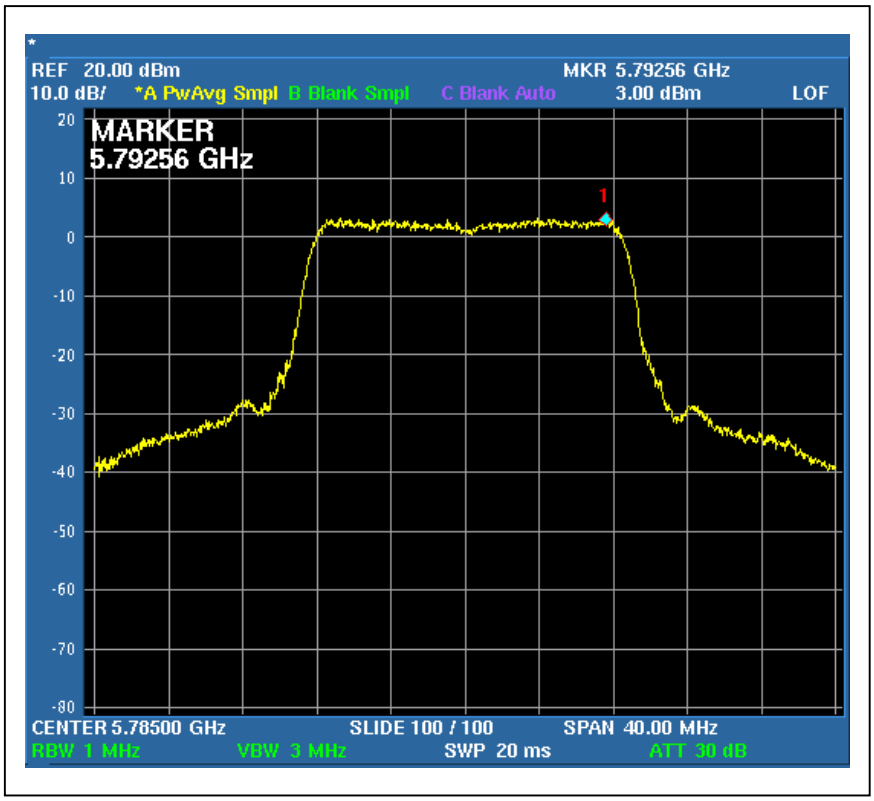
CH19


REF 20.00 dBm
MKR 5.69288 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 2.77 dBm LOF
MARKER
5.69288 GHz
CENTER 5.70000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

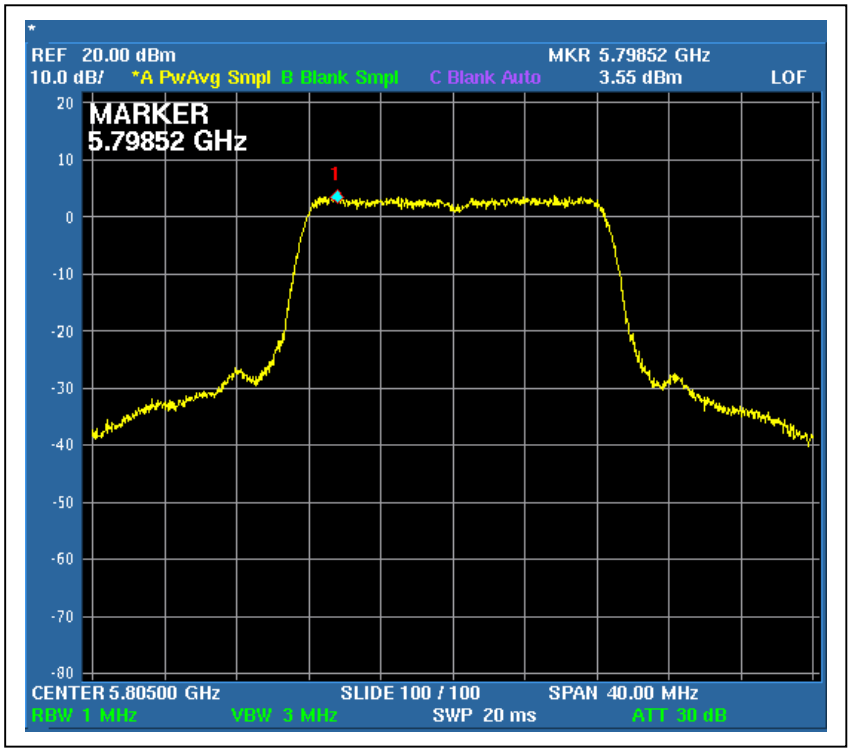
CH20


REF 20.00 dBm
MKR 5.75228 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 2.51 dBm LOF
MARKER
5.75228 GHz
CENTER 5.74500 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

CH22


REF 20.00 dBm
MKR 5.79256 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.00 dBm LOF
MARKER
5.79256 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.78500 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH23

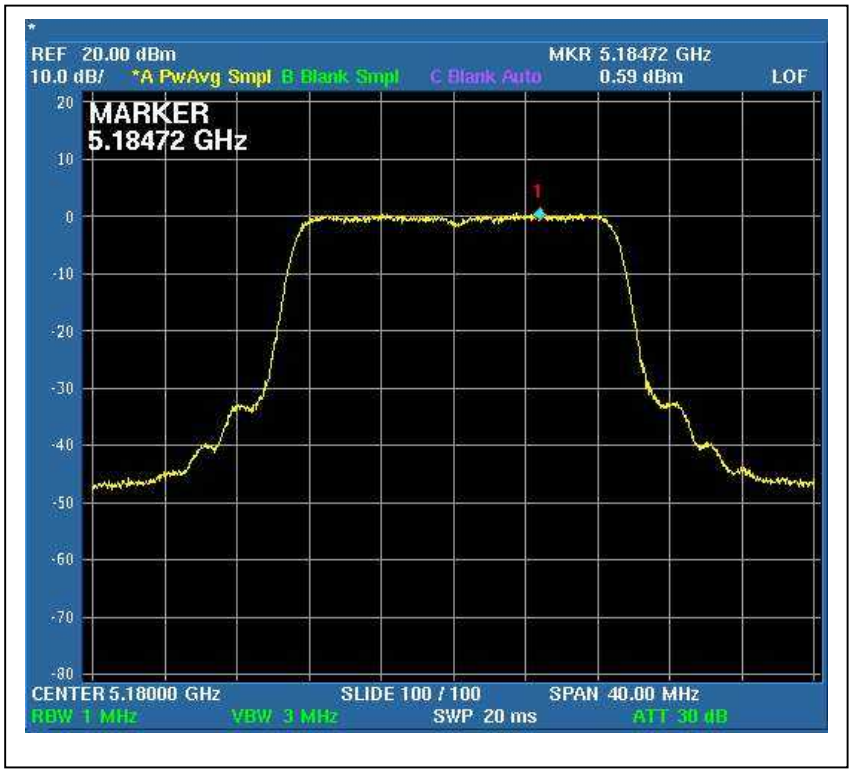

REF 20.00 dBm
MKR 5.79852 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 3.55 dBm LOF
MARKER
5.79852 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.80500 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

DRAFT 802.11n (20MHz) OFDM MODULATION:

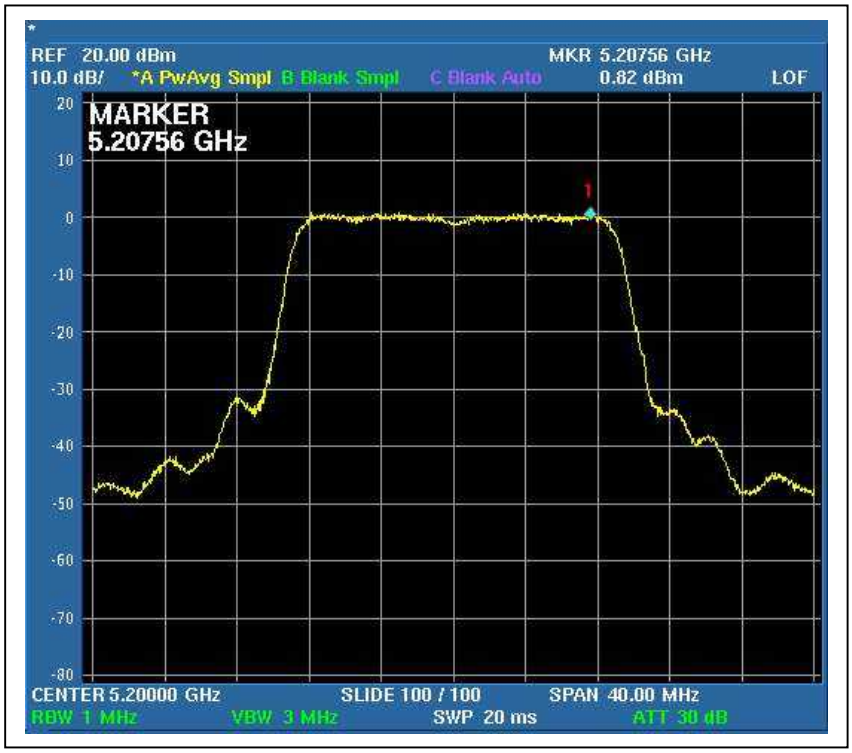
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)			
1	5180	0.59	-0.10	3.27	4	PASS
2	5200	0.82	-0.22	3.34	4	PASS
4	5240	0.92	0.81	3.88	4	PASS
5	5260	1.37	0.15	3.81	11	PASS
7	5300	0.39	0.34	3.37	11	PASS
8	5320	0.45	0.25	3.36	11	PASS
9	5500	0.31	1.32	3.85	11	PASS
14	5600	0.87	0.81	3.85	11	PASS
19	5700	0.97	0.08	3.56	11	PASS
20	5745	0.20	0.91	3.58	17	PASS
22	5785	0.89	1.85	4.41	17	PASS
23	5805	1.19	2.21	4.74	17	PASS

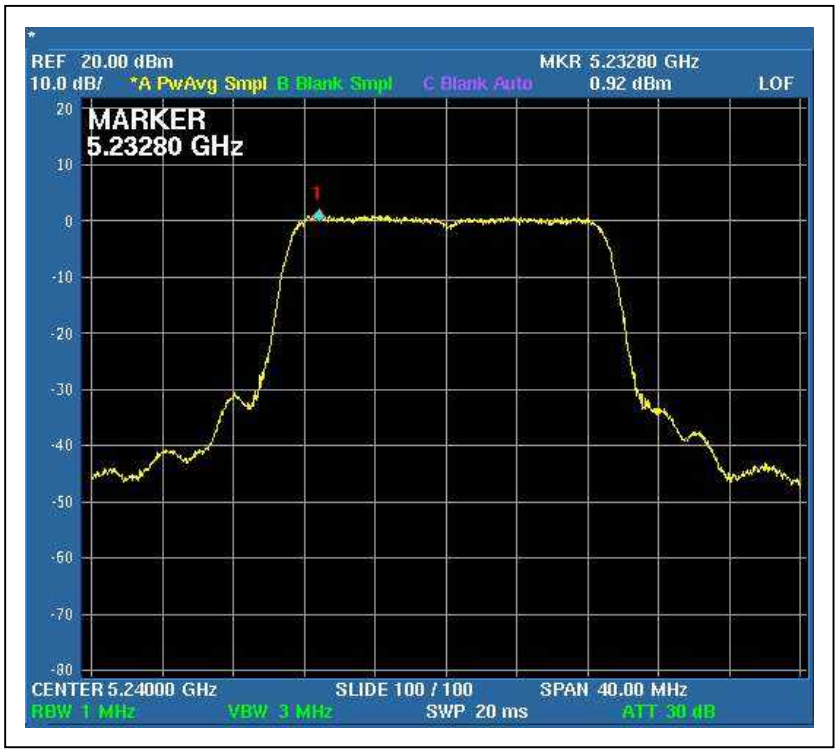
For Chain (0) : CH1



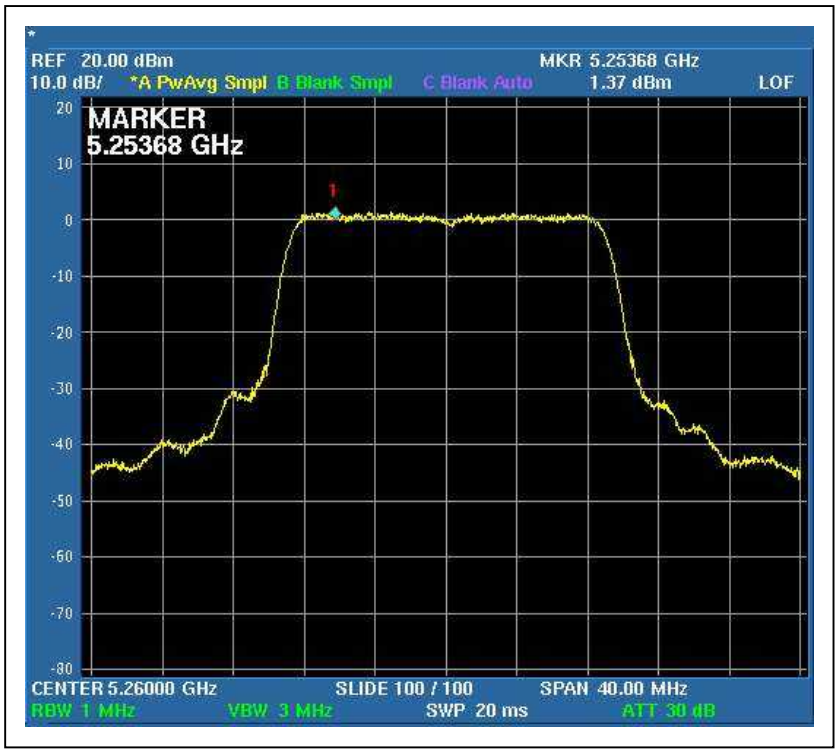
CH2



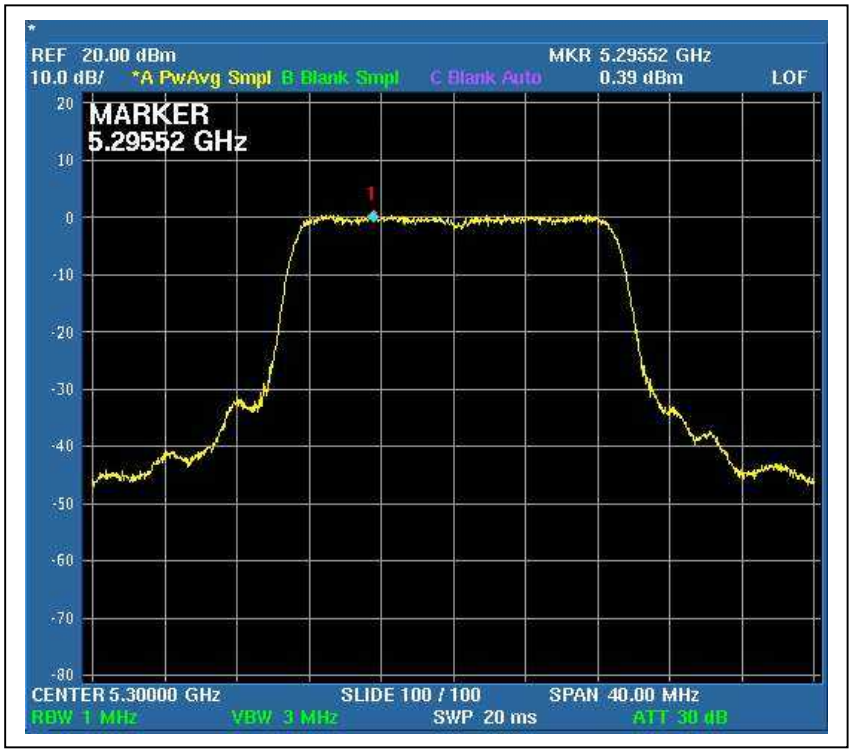
CH4


REF 20.00 dBm
MKR 5.23280 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.92 dBm LOF
MARKER
5.23280 GHz
CENTER 5.24000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

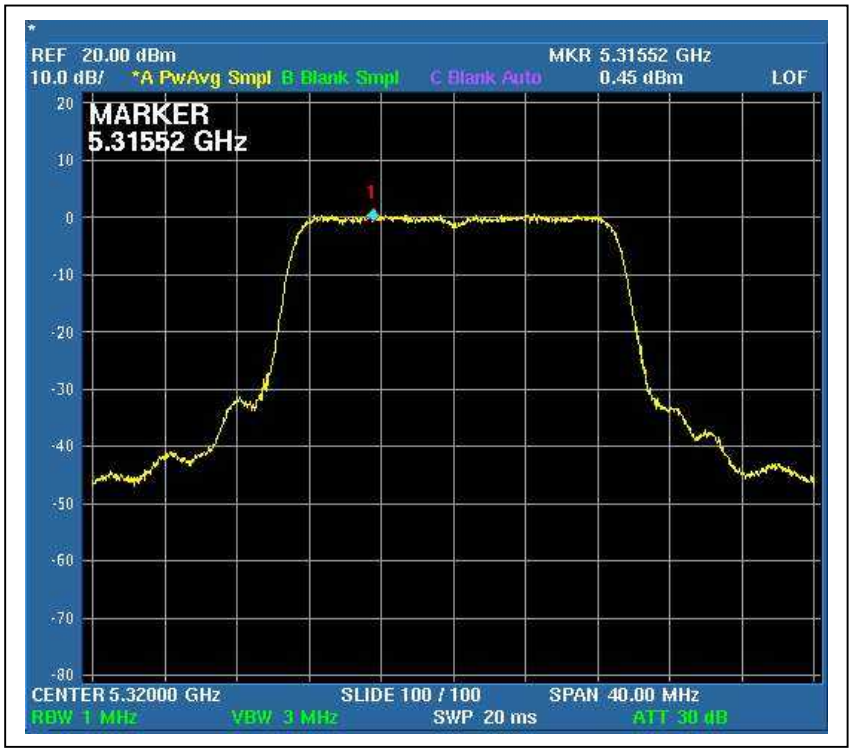
CH5


REF 20.00 dBm
MKR 5.25368 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 1.37 dBm LOF
MARKER
5.25368 GHz
CENTER 5.26000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

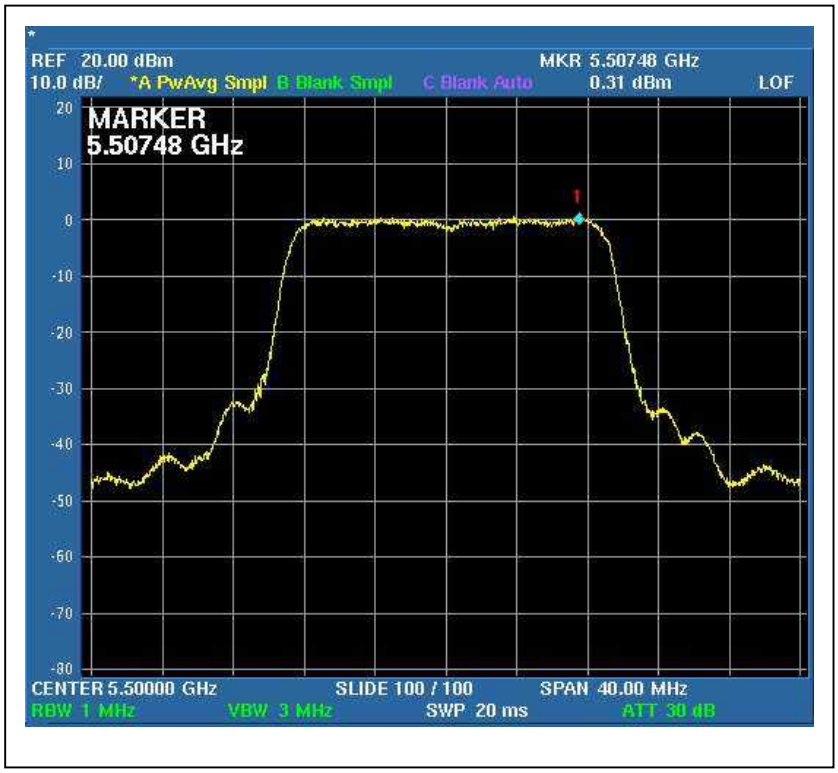
CH7


REF 20.00 dBm
MKR 5.29552 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto
0.39 dBm
LOF
MARKER
5.29552 GHz
CENTER 5.30000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

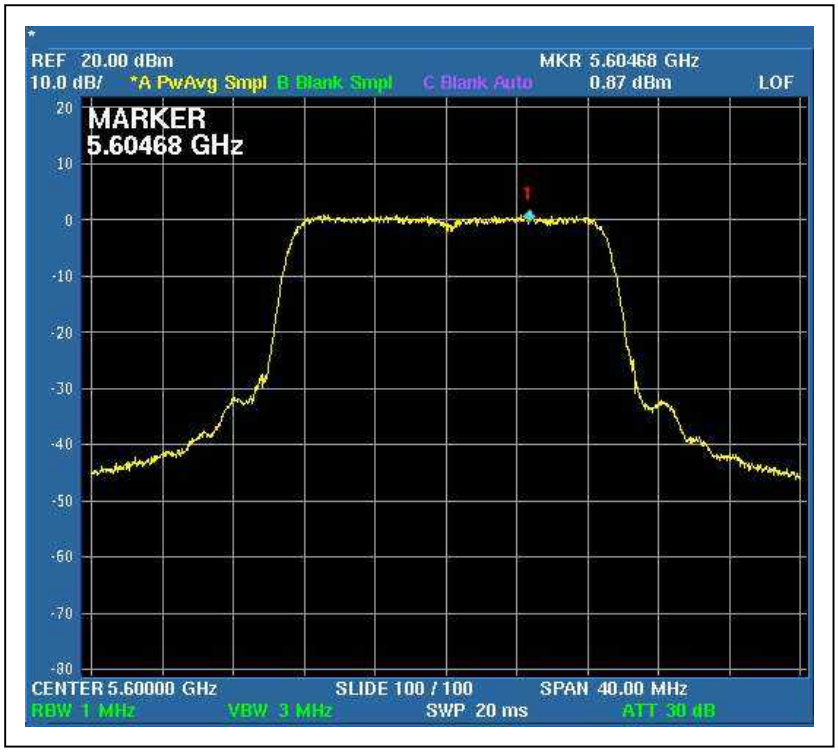
CH8


REF 20.00 dBm
MKR 5.31552 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto
0.45 dBm
LOF
MARKER
5.31552 GHz
CENTER 5.32000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

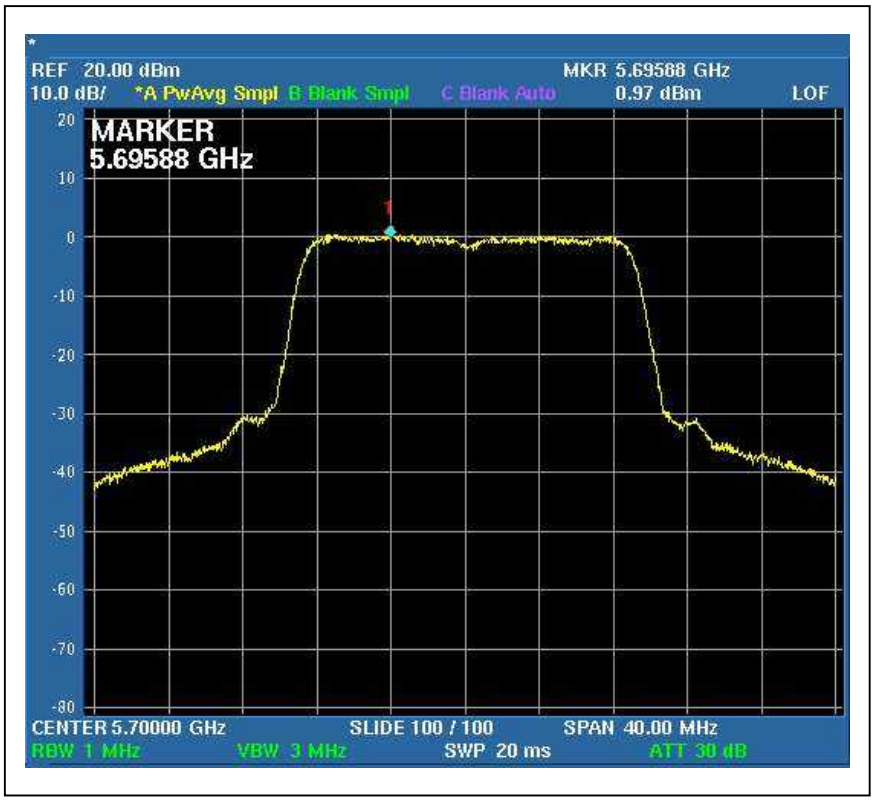
CH9


REF 20.00 dBm
MKR 5.50748 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.31 dBm LOF
MARKER
5.50748 GHz
CENTER 5.50000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

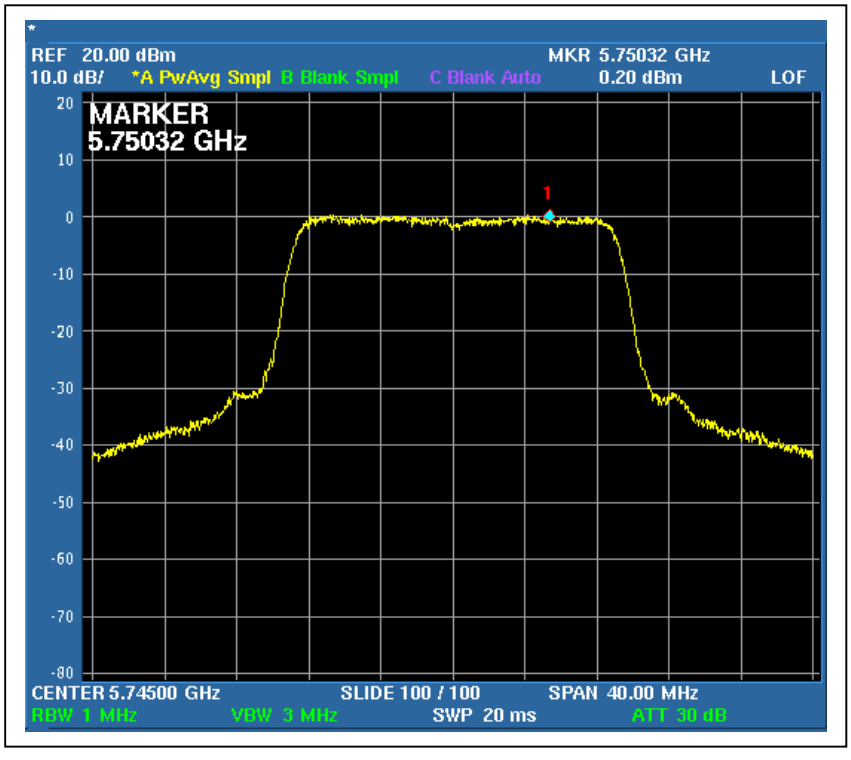
CH14


REF 20.00 dBm
MKR 5.60468 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.87 dBm LOF
MARKER
5.60468 GHz
CENTER 5.60000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

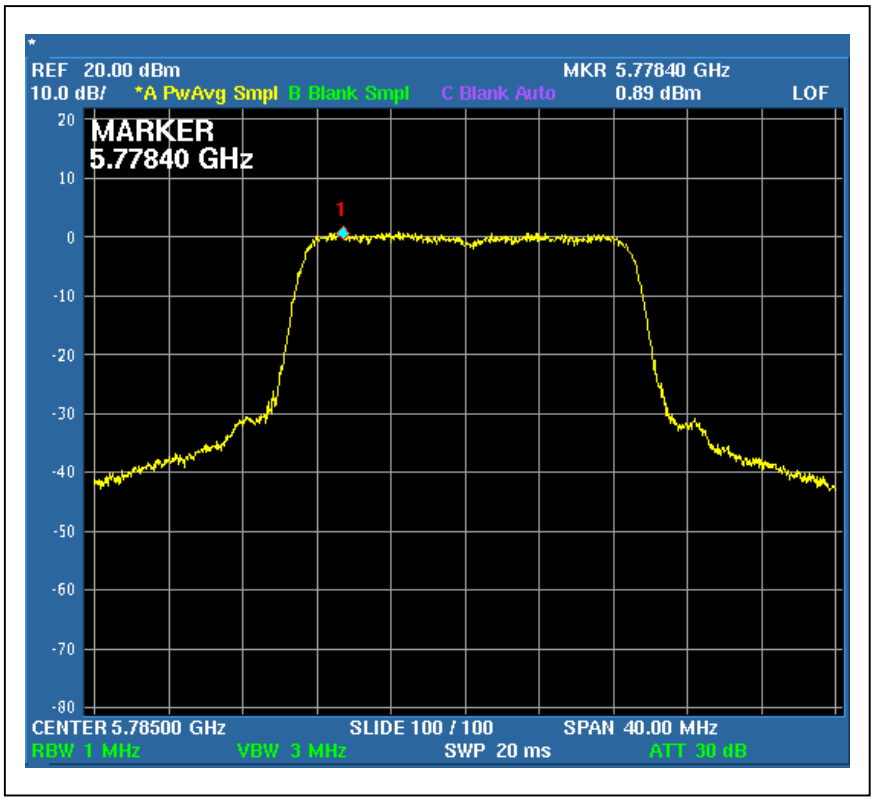
CH19


REF 20.00 dBm
MKR 5.69588 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.97 dBm LOF
MARKER
5.69588 GHz
CENTER 5.70000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

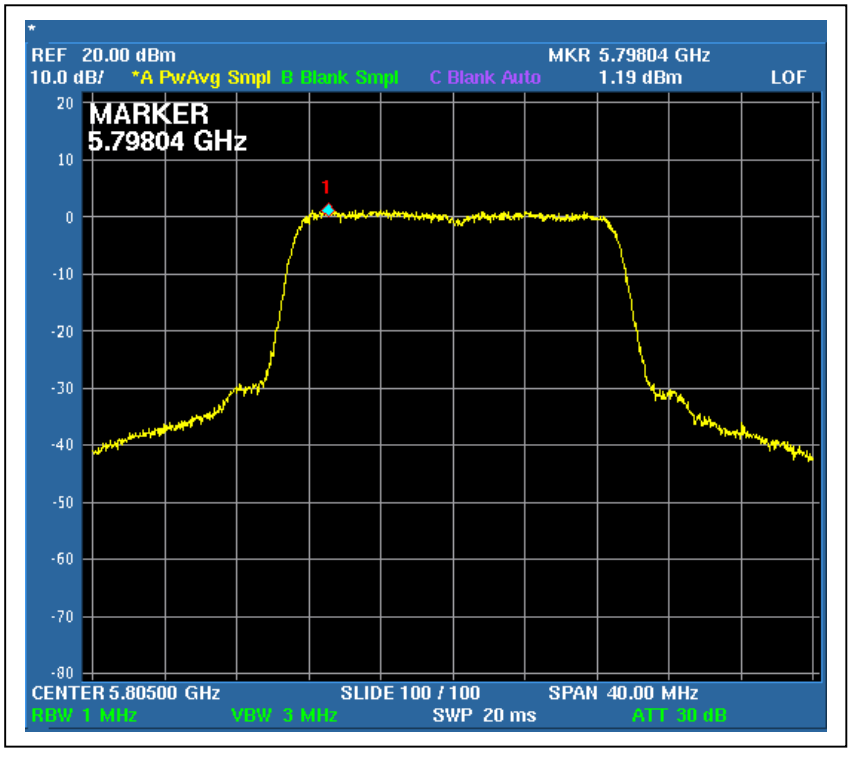
CH20


REF 20.00 dBm
MKR 5.75032 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.20 dBm LOF
MARKER
5.75032 GHz
CENTER 5.74500 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

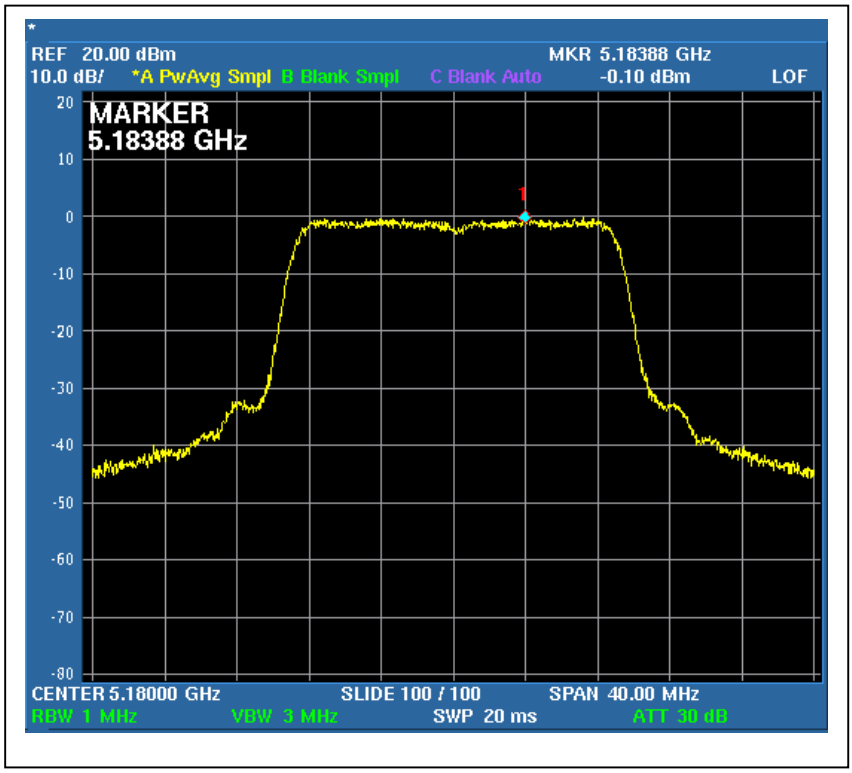
CH22


REF 20.00 dBm
MKR 5.77840 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.89 dBm LOF
MARKER
5.77840 GHz
CENTER 5.78500 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

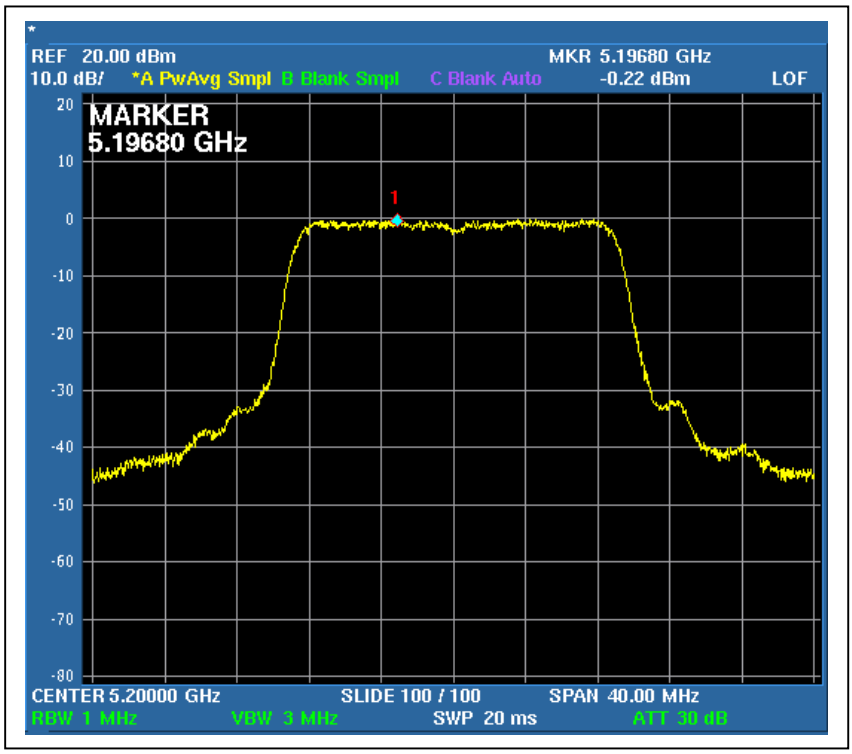
CH23


REF 20.00 dBm
MKR 5.79804 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 1.19 dBm LOF
MARKER
5.79804 GHz
CENTER 5.80500 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

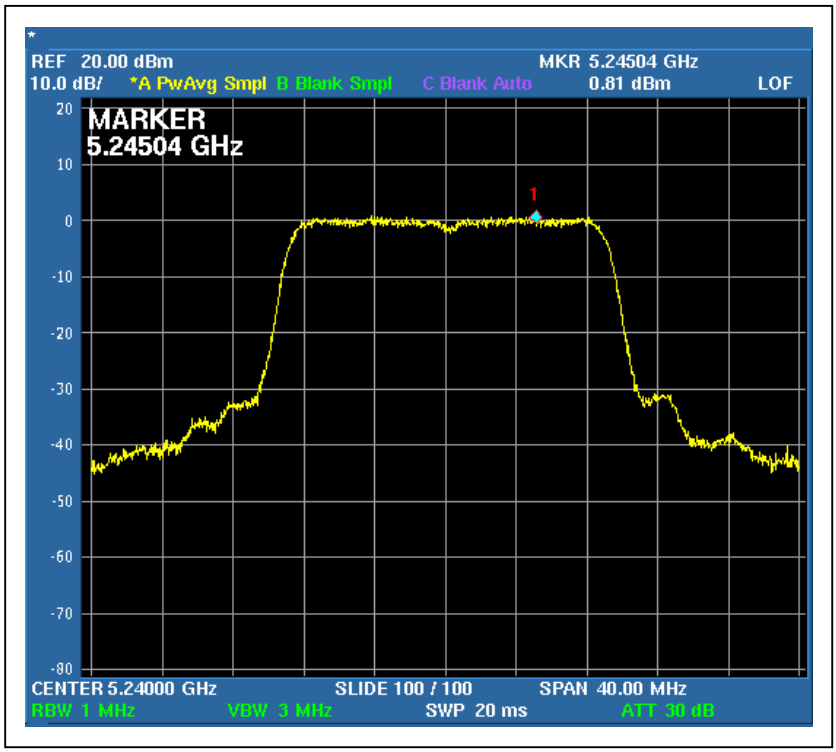
For Chain (1) : CH1



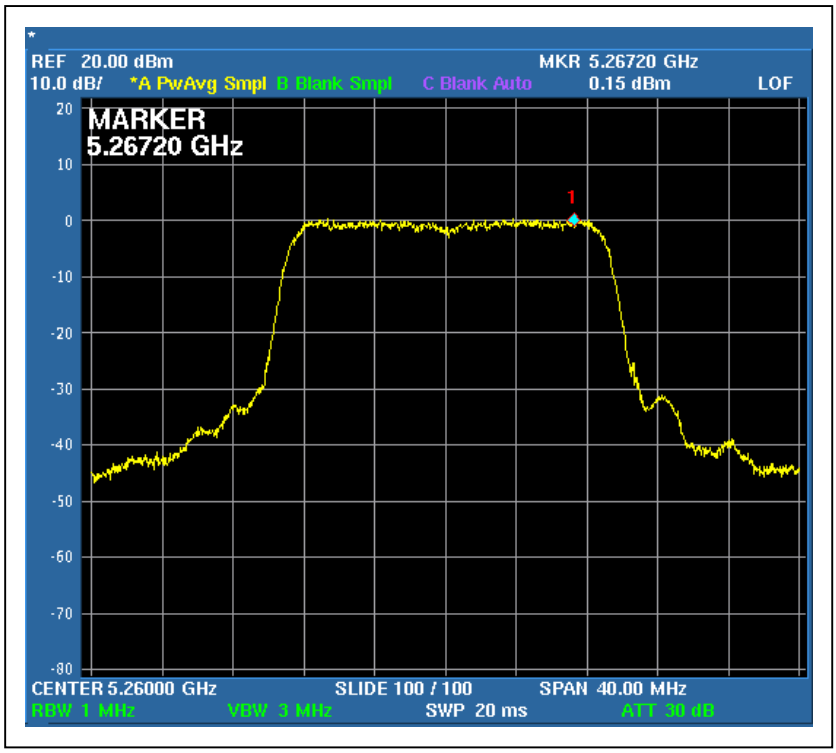
CH2



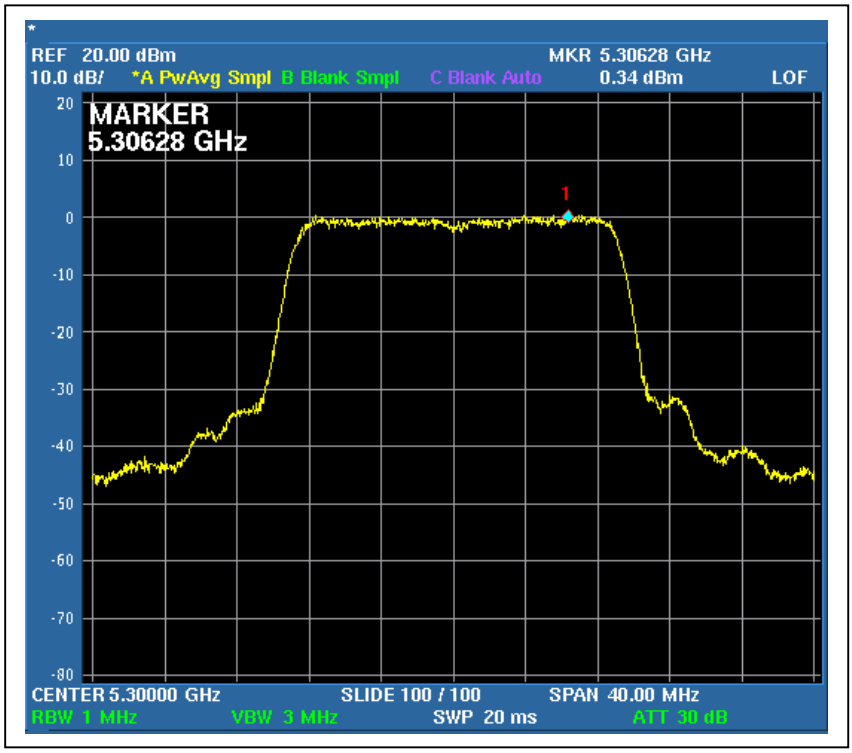
CH4


REF 20.00 dBm
MKR 5.24504 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.81 dBm LOF
MARKER
5.24504 GHz
CENTER 5.24000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

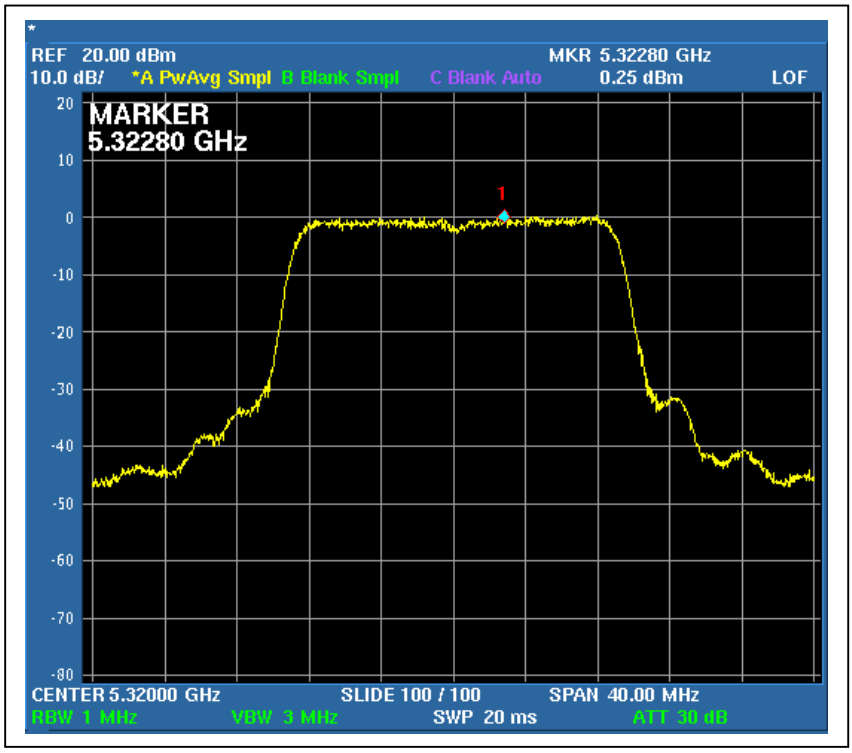
CH5


REF 20.00 dBm
MKR 5.26720 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.15 dBm LOF
MARKER
5.26720 GHz
CENTER 5.26000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

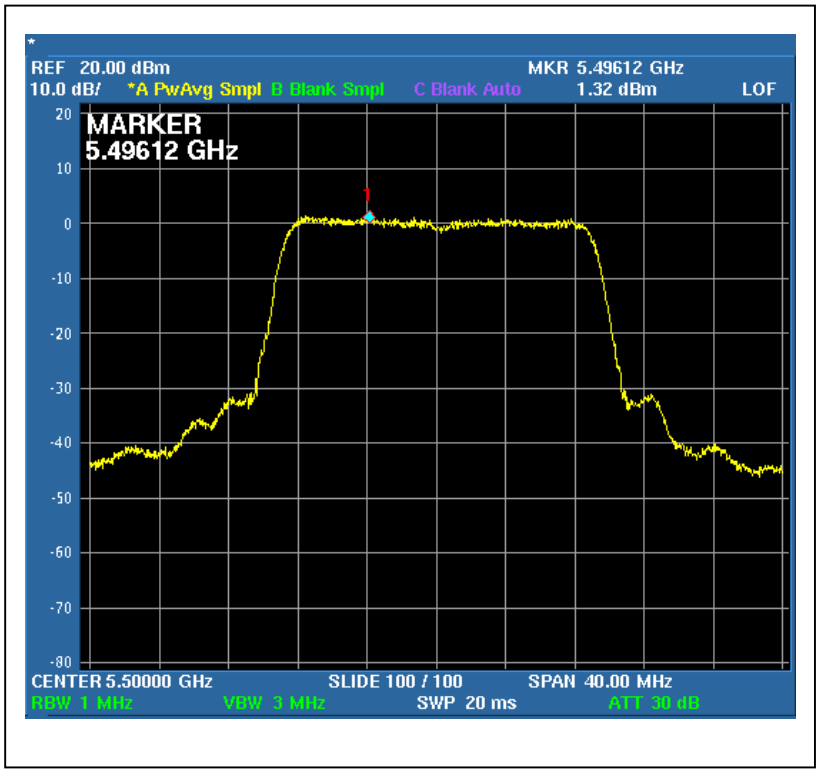
CH7


REF 20.00 dBm
MKR 5.30628 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto
0.34 dBm
LOF
MARKER
5.30628 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.30000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

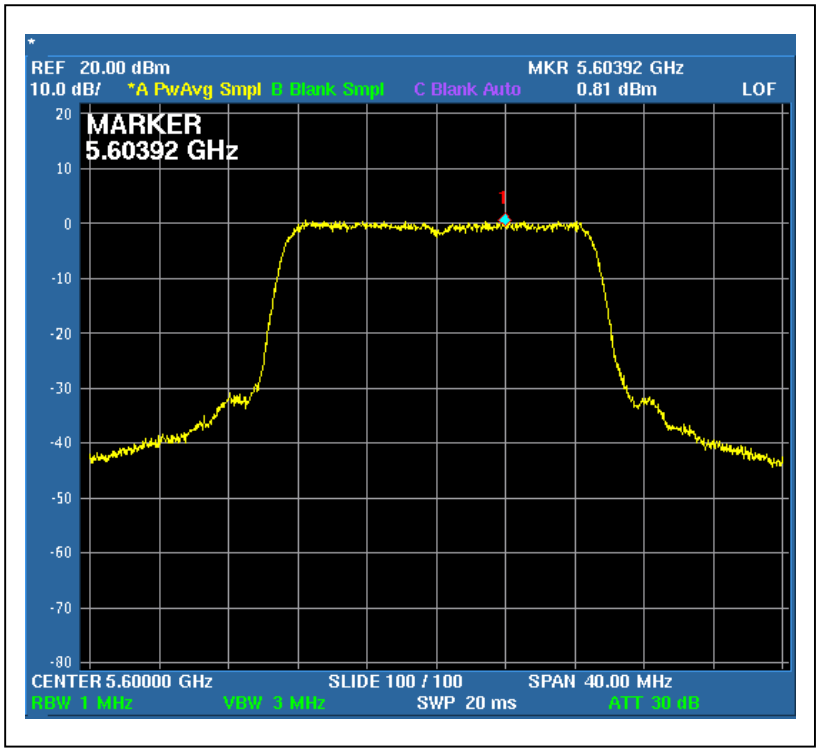
CH8


REF 20.00 dBm
MKR 5.32280 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto
0.25 dBm
LOF
MARKER
5.32280 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.32000 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

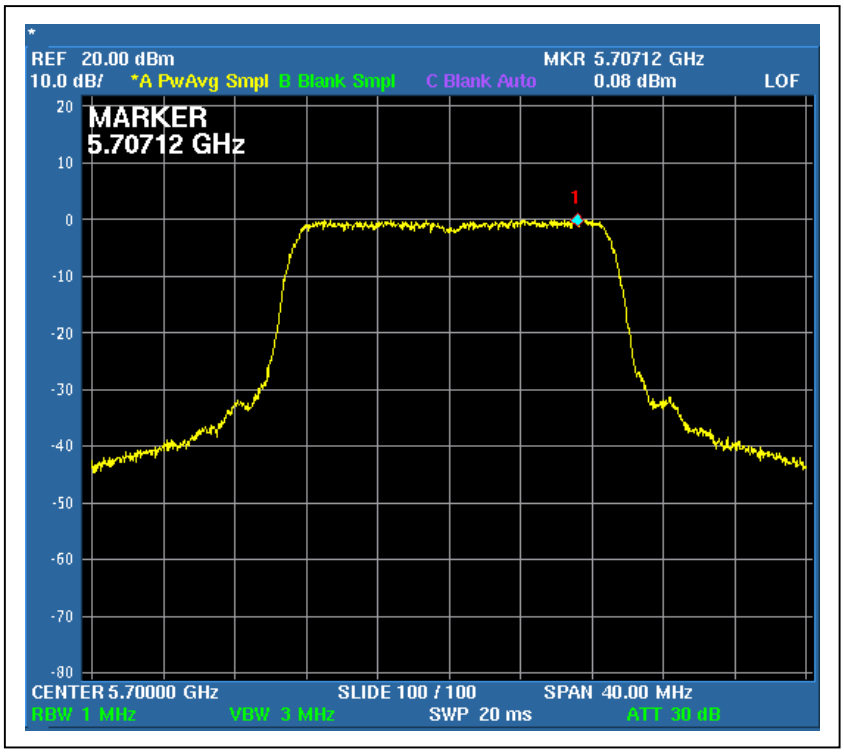
CH9


REF 20.00 dBm
MKR 5.49612 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 1.32 dBm LOF
MARKER
5.49612 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

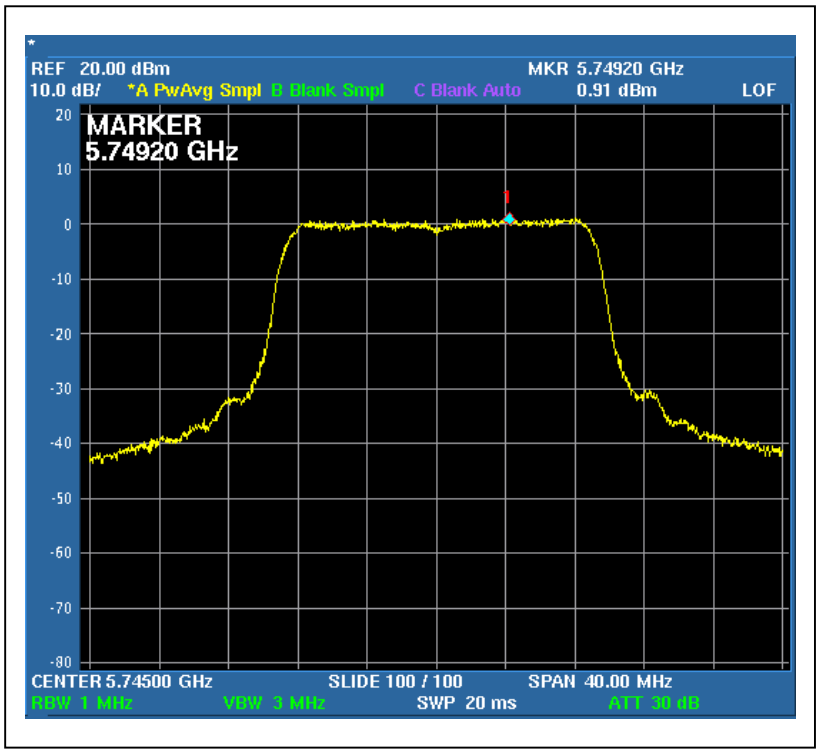
CH14


REF 20.00 dBm
MKR 5.60392 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.81 dBm LOF
MARKER
5.60392 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

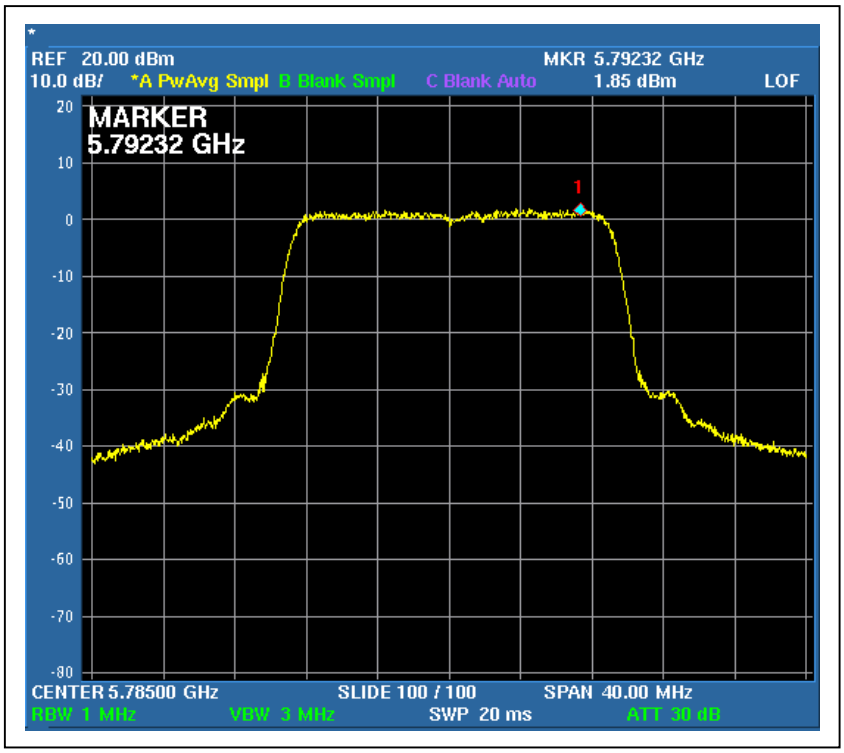
CH19


REF 20.00 dBm
MKR 5.70712 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.08 dBm LOF
MARKER
5.70712 GHz
CENTER 5.70000 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

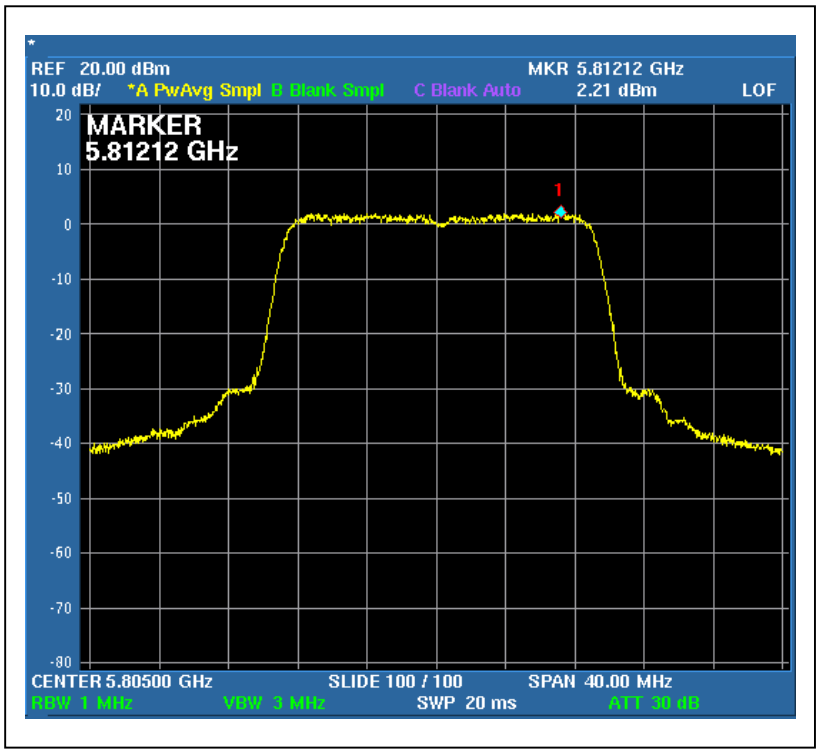
CH20


REF 20.00 dBm
MKR 5.74920 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 0.91 dBm LOF
MARKER
5.74920 GHz
CENTER 5.74500 GHz SLIDE 100 / 100 SPAN 40.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH22


REF 20.00 dBm
MKR 5.79232 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 1.85 dBm LOF
MARKER
5.79232 GHz
CENTER 5.78500 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

CH23

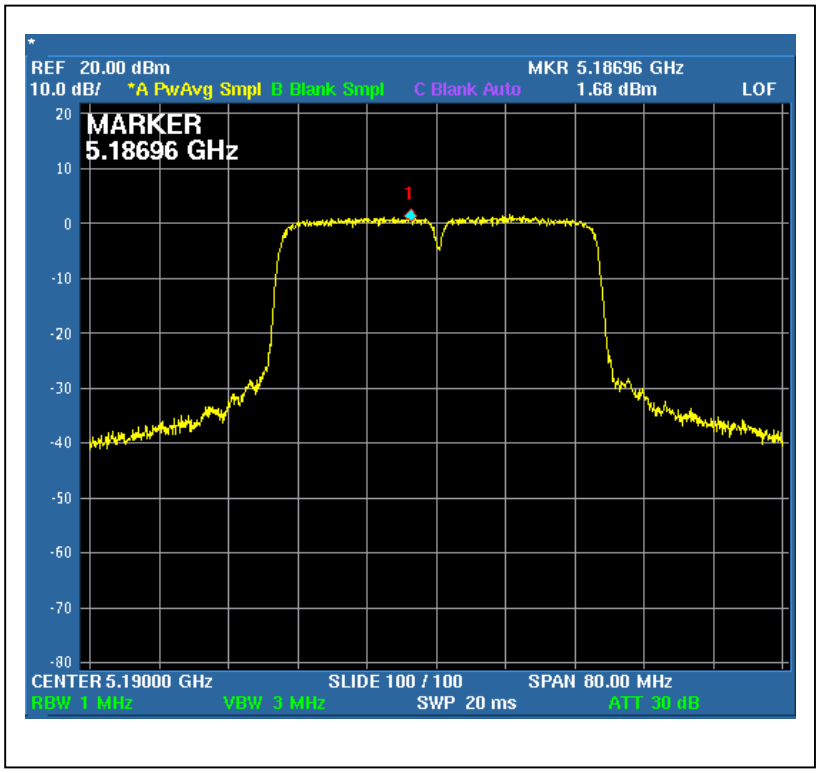

REF 20.00 dBm
MKR 5.81212 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto 2.21 dBm LOF
MARKER
5.81212 GHz
CENTER 5.80500 GHz
SLIDE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

DRAFT 802.11n (40MHz) OFDM MODULATION:

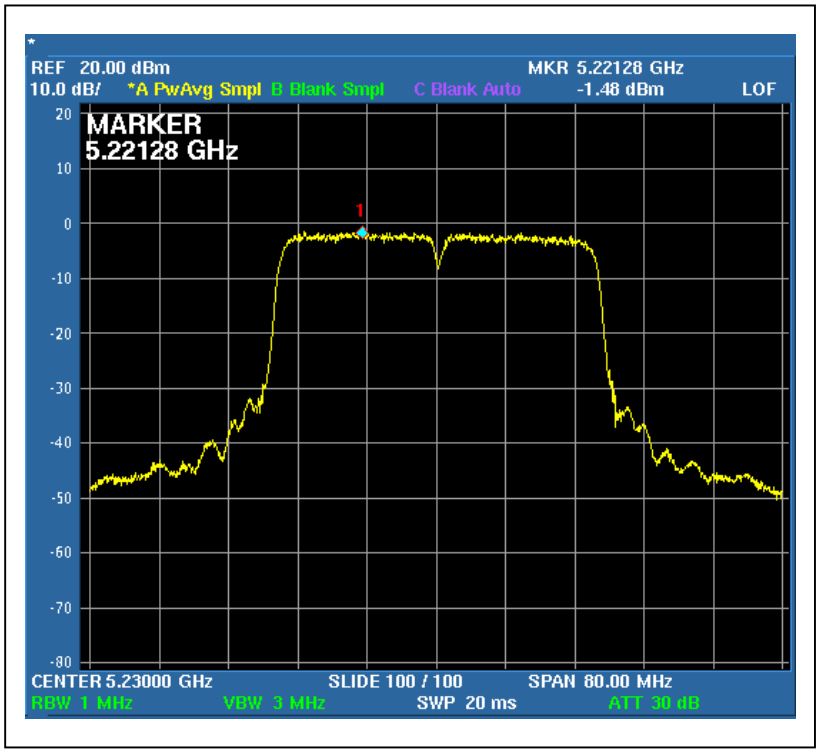
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)			
1	5190	1.68	-3.41	2.85	4	PASS
2	5230	-1.48	-2.64	0.99	4	PASS
3	5270	-2.20	-2.07	0.88	11	PASS
4	5310	-1.65	-2.39	1.01	11	PASS
5	5510	-2.16	-2.12	0.83	11	PASS
7	5590	-2.44	-2.51	0.53	11	PASS
9	5670	-2.17	-2.60	0.63	11	PASS
10	5755	-2.94	-3.54	-0.22	17	PASS
11	5795	-0.94	-1.28	1.90	17	PASS

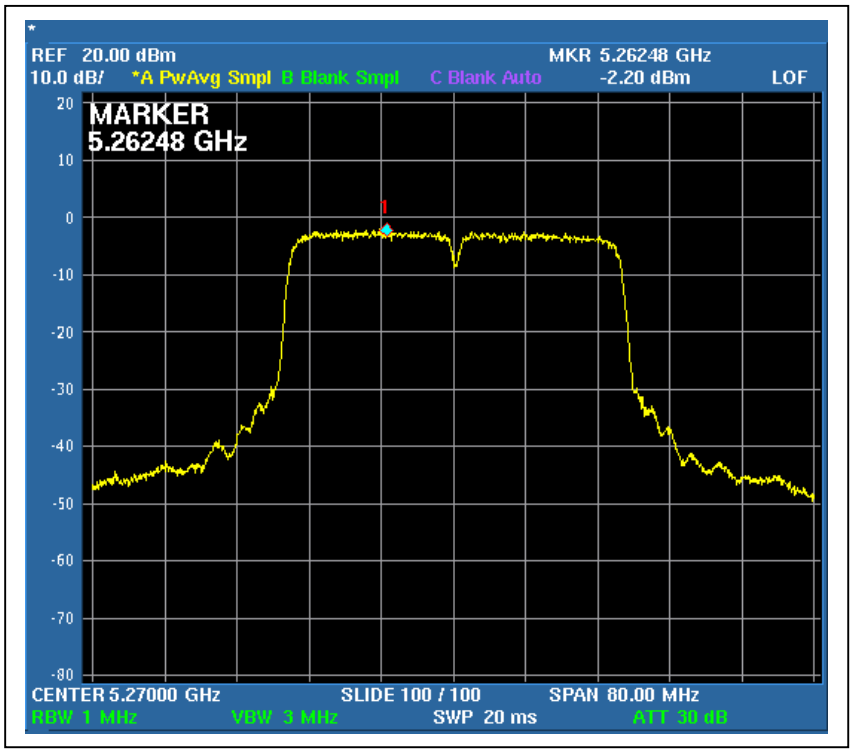
For Chain (0) : CH1



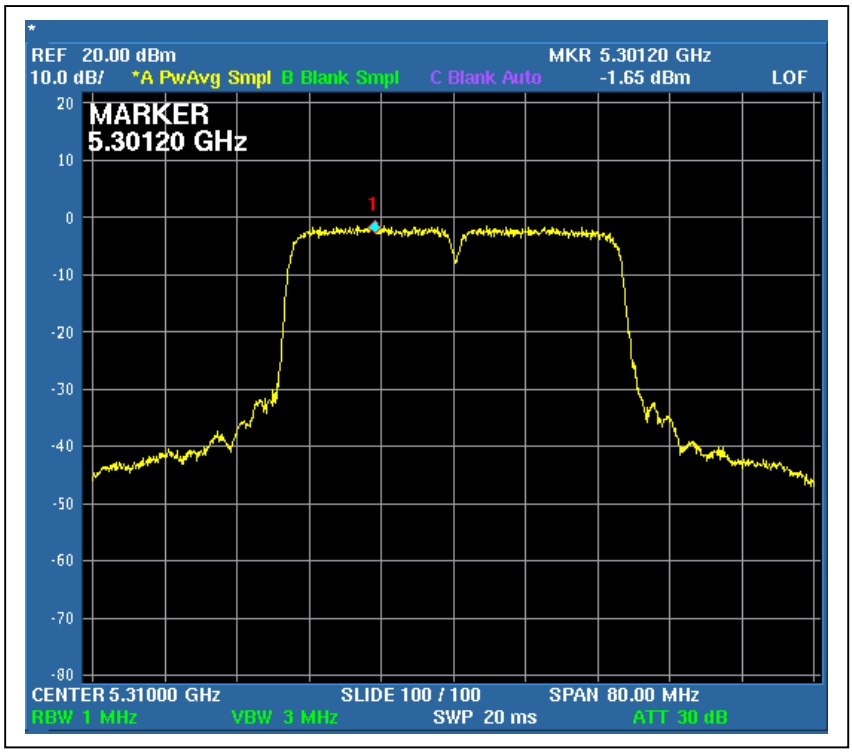
CH2



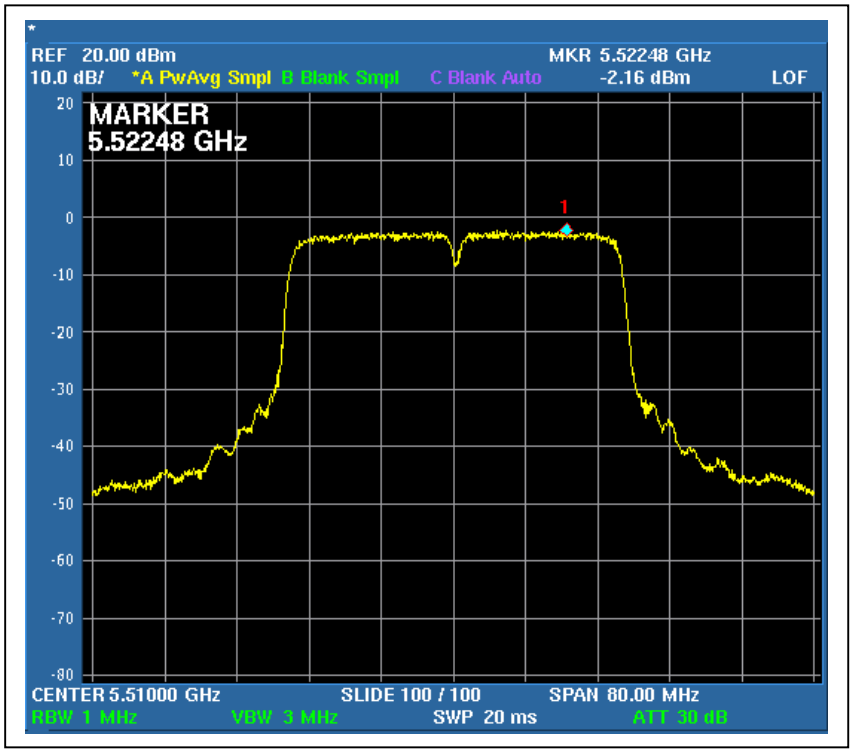
CH3


REF 20.00 dBm
MKR 5.26248 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.20 dBm LOF
MARKER
5.26248 GHz
CENTER 5.27000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

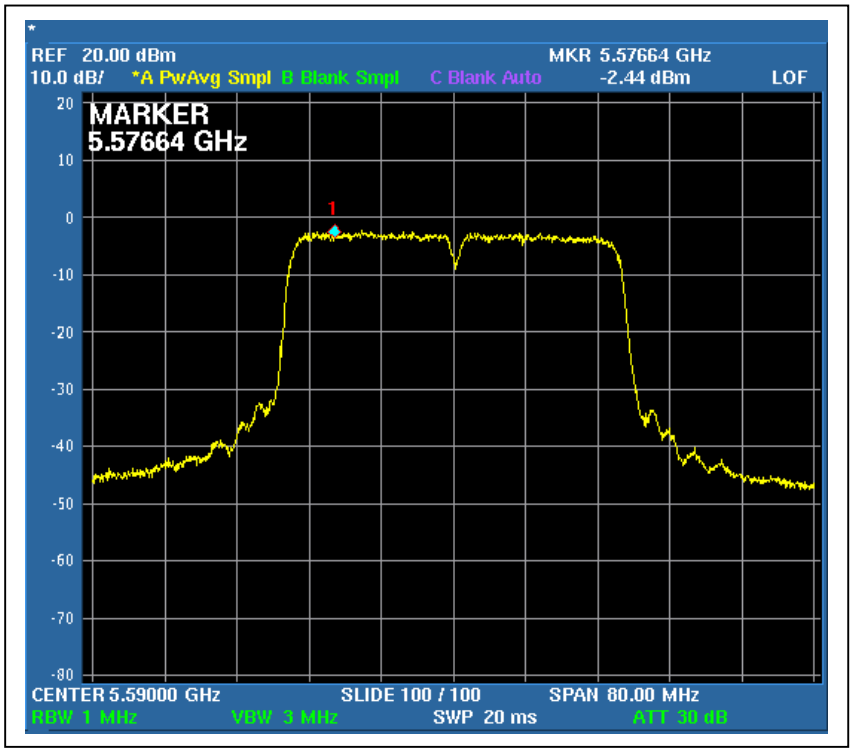
CH4


REF 20.00 dBm
MKR 5.30120 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -1.65 dBm LOF
MARKER
5.30120 GHz
CENTER 5.31000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

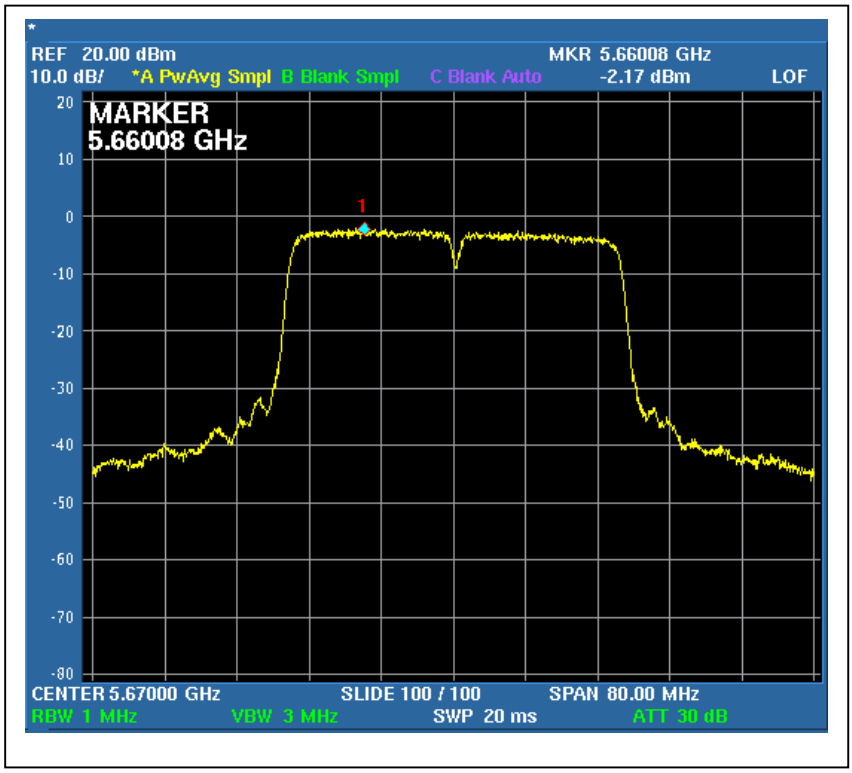
CH5


REF 20.00 dBm
MKR 5.52248 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.16 dBm LOF
MARKER
5.52248 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.51000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

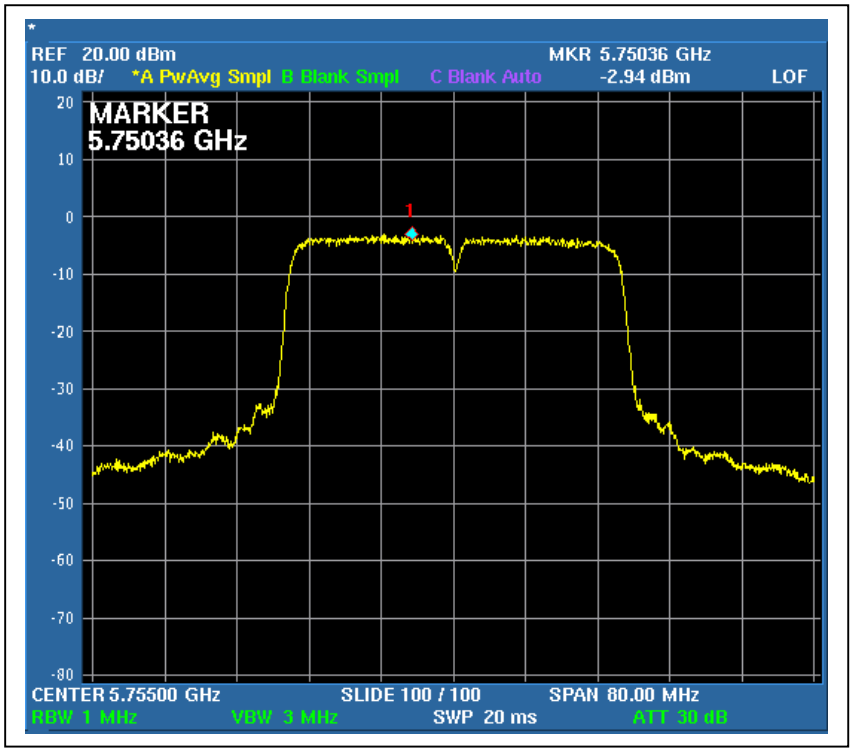
CH7


REF 20.00 dBm
MKR 5.57664 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.44 dBm LOF
MARKER
5.57664 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.59000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

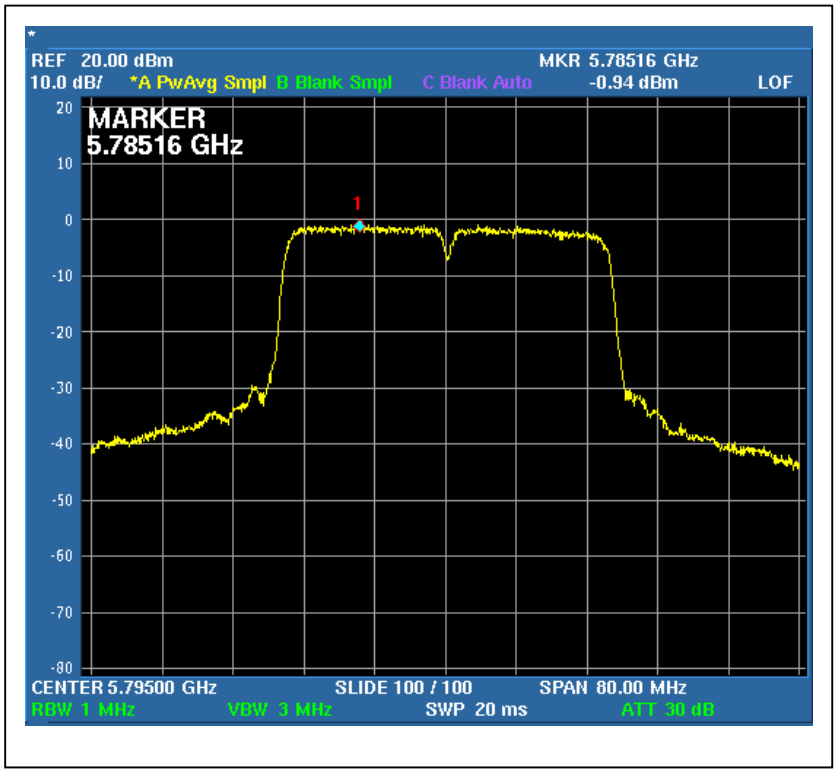
CH9


REF 20.00 dBm
MKR 5.66008 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.17 dBm LOF
MARKER
5.66008 GHz
CENTER 5.67000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

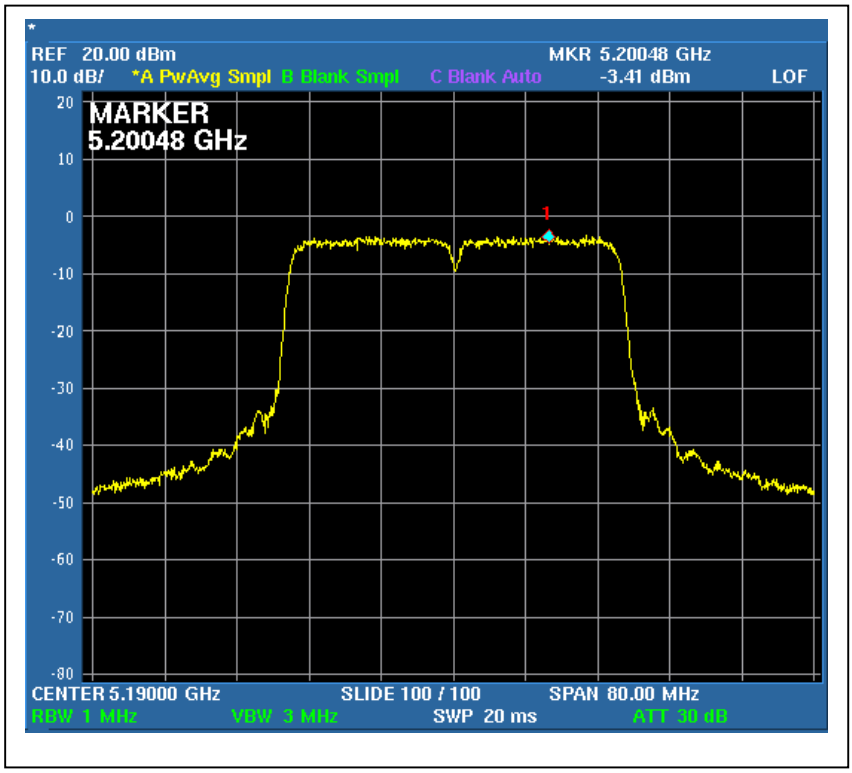
CH10


REF 20.00 dBm
MKR 5.75036 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.94 dBm LOF
MARKER
5.75036 GHz
CENTER 5.75500 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

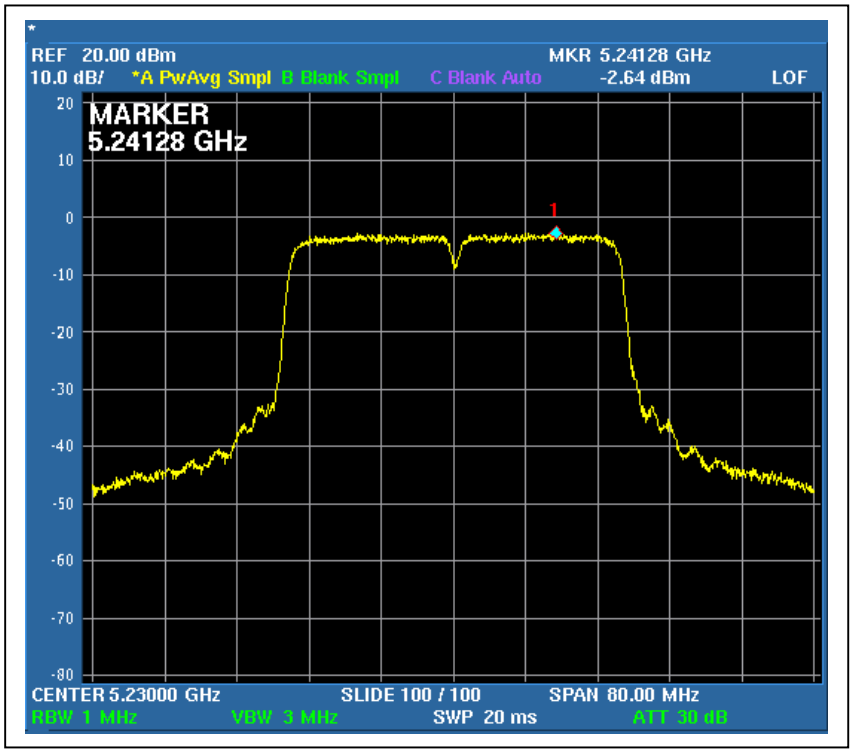
CH11


REF 20.00 dBm
MKR 5.78516 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -0.94 dBm LOF
MARKER
5.78516 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
CENTER 5.79500 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

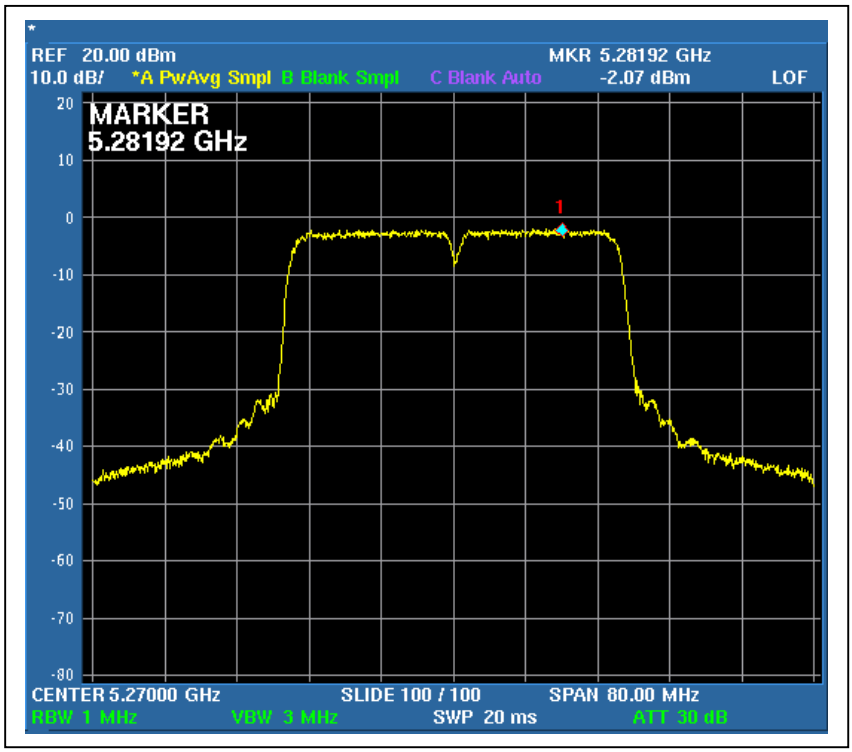
For Chain (1) : CH1



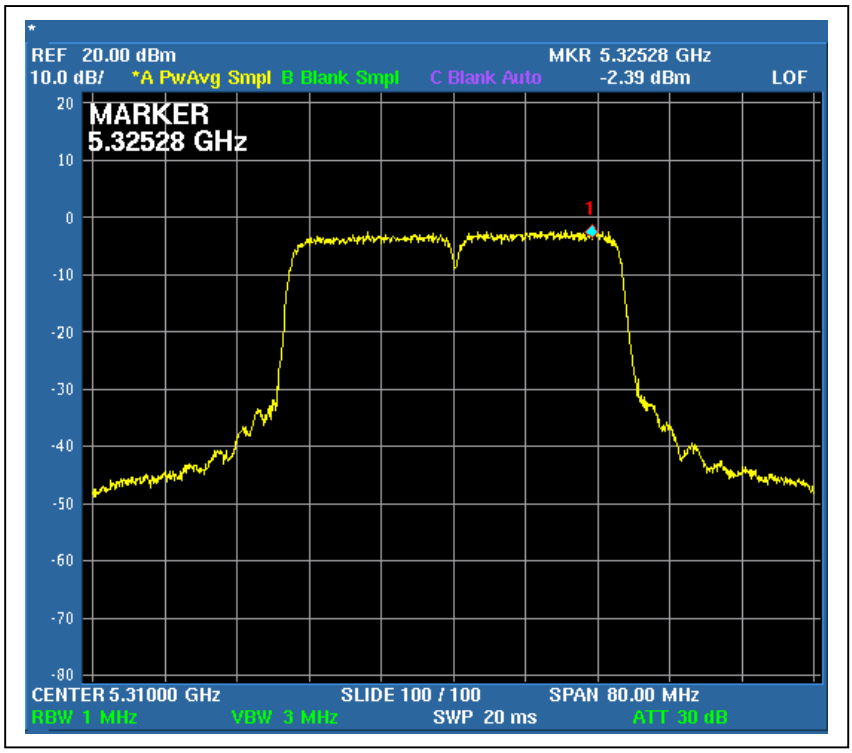
CH2



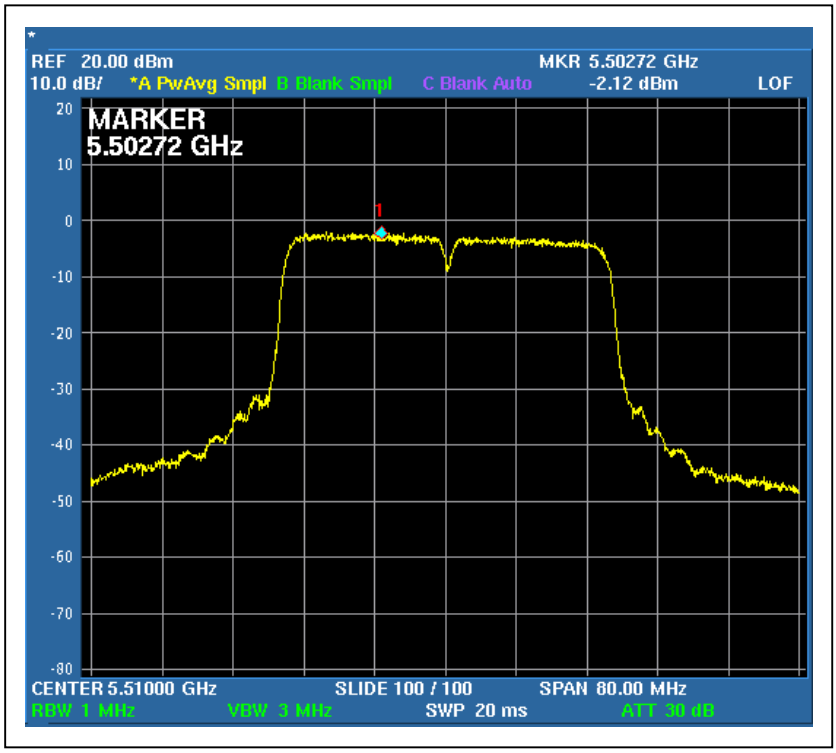
CH3


REF 20.00 dBm
MKR 5.28192 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.07 dBm LOF
MARKER
5.28192 GHz
CENTER 5.27000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

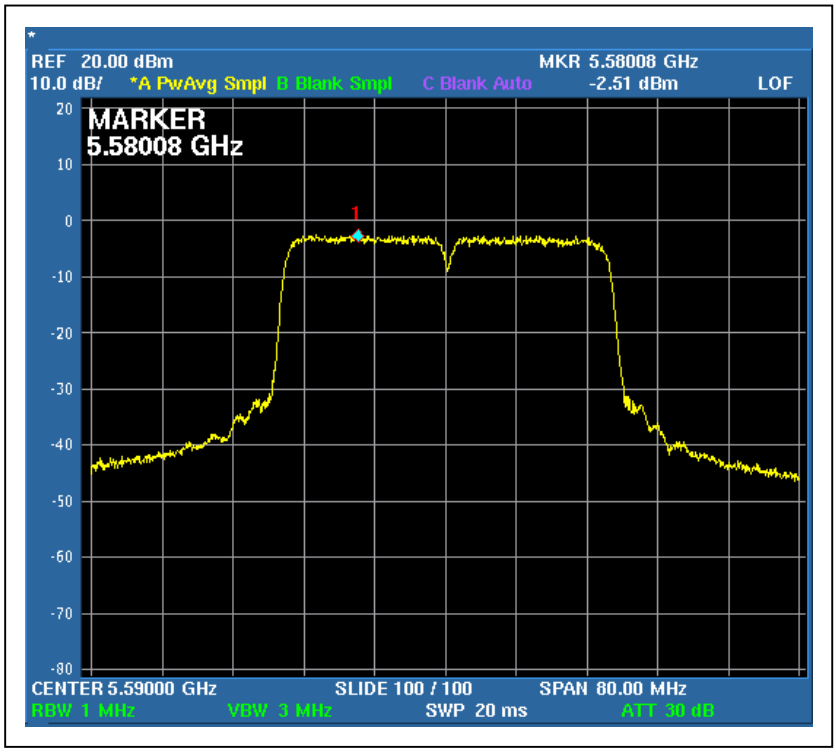
CH4


REF 20.00 dBm
MKR 5.32528 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.39 dBm LOF
MARKER
5.32528 GHz
CENTER 5.31000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

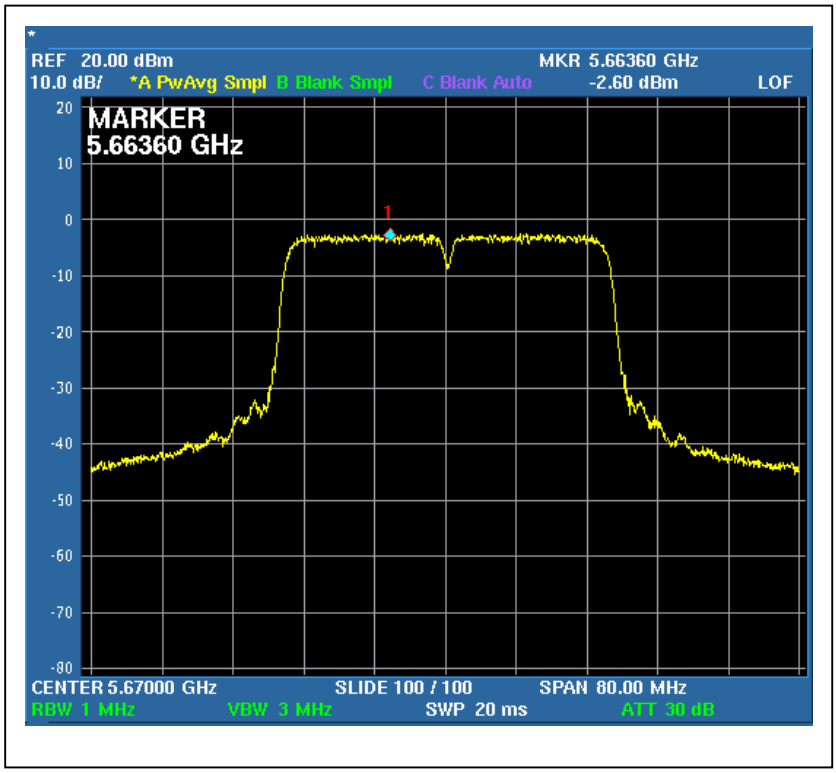
CH5


REF 20.00 dBm
MKR 5.50272 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.12 dBm LOF
MARKER
5.50272 GHz
CENTER 5.51000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

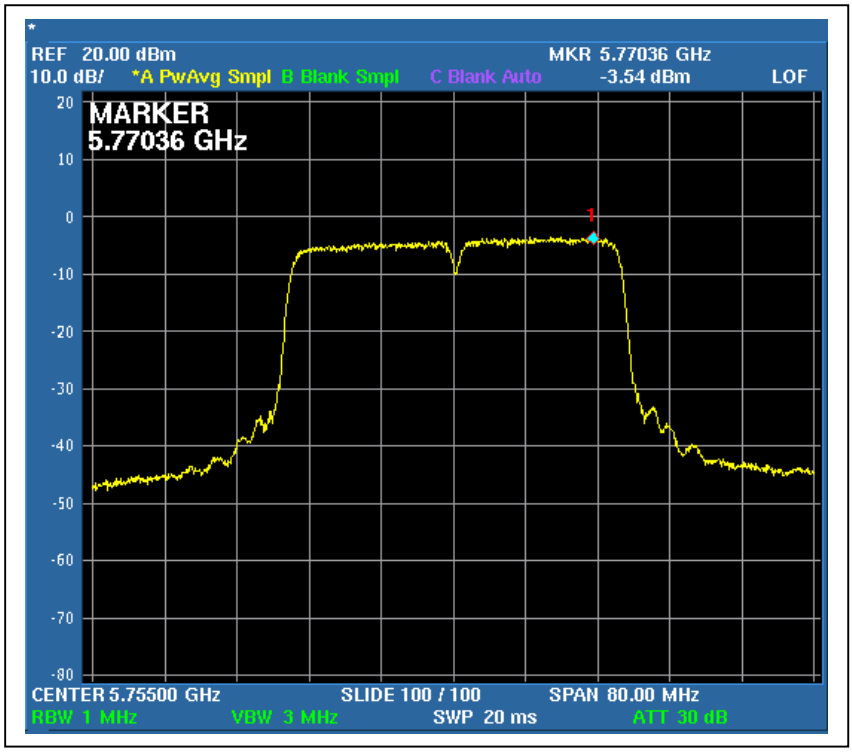
CH7


REF 20.00 dBm
MKR 5.58008 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.51 dBm LOF
MARKER
5.58008 GHz
CENTER 5.59000 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

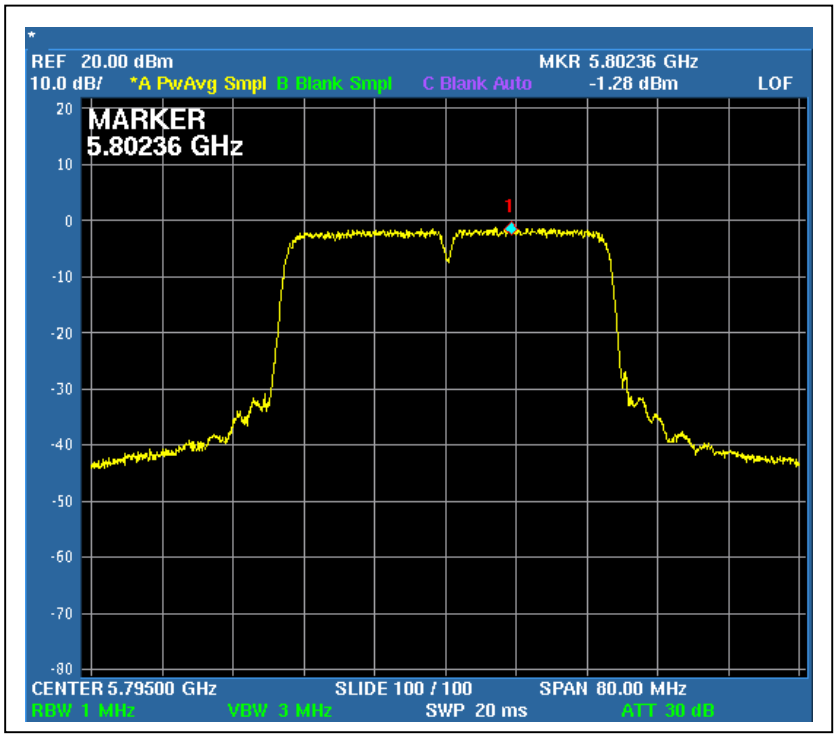
CH9


REF 20.00 dBm
MKR 5.66360 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -2.60 dBm LOF
MARKER
5.66360 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.67000 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH10


REF 20.00 dBm
MKR 5.77036 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -3.54 dBm LOF
MARKER
5.77036 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.75500 GHz SLIDE 100 / 100 SPAN 80.00 MHz
RBW 1 MHz VBW 3 MHz SWP 20 ms ATT 30 dB

CH11


REF 20.00 dBm
MKR 5.80236 GHz
10.0 dB/ *A PwAvg Smpl B Blank Smpl C Blank Auto -1.28 dBm LOF
MARKER
5.80236 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
CENTER 5.79500 GHz
SLIDE 100 / 100
SPAN 80.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	July 26, 2008	July 25, 2009

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

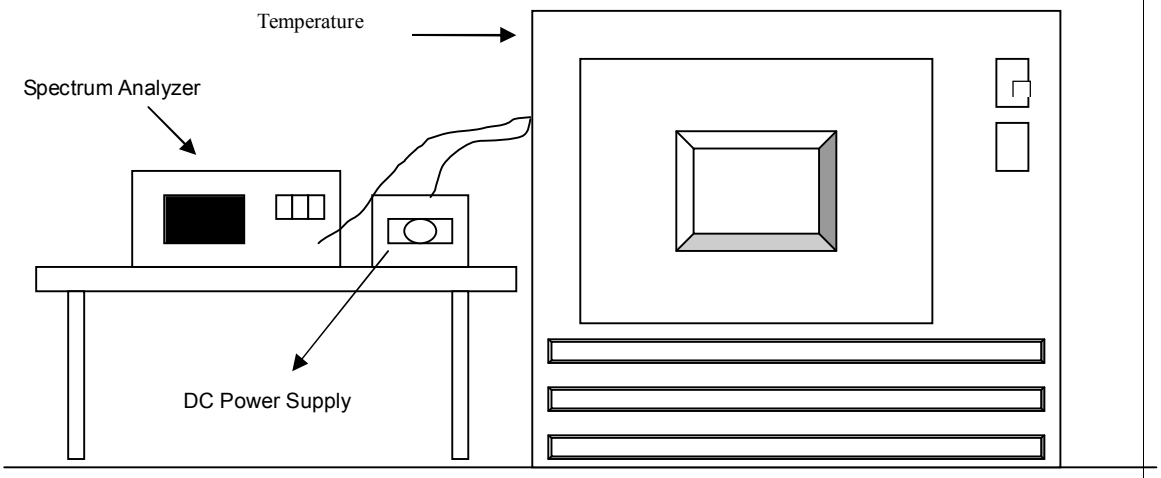
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.6.7 TEST RESULTS

Operating frequency: 5320MHz				Limit : ± 0.02%			
Temp. (℃)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5320.028	0.000526	5320.0264	0.000496	5320.0244	0.000459
	110	5320.0278	0.000523	5320.0284	0.000534	5320.0264	0.000496
	93.5	5320.0278	0.000523	5320.0254	0.000477	5320.0244	0.000459
40	126.5	5320.0338	0.000635	5320.0341	0.000641	5320.0342	0.000643
	110	5320.0338	0.000635	5320.034	0.000639	5320.0342	0.000643
	93.5	5320.034	0.000639	5320.0338	0.000635	5320.0342	0.000643
30	126.5	5320.009	0.000169	5320.0085	0.000160	5320.0082	0.000154
	110	5320.009	0.000169	5320.0087	0.000164	5320.0085	0.000160
	93.5	5320.009	0.000169	5320.0085	0.000160	5320.0082	0.000154
20	126.5	5319.9896	0.000195	5319.9893	0.000201	5319.9891	0.000205
	110	5319.9896	0.000195	5319.9895	0.000197	5319.9892	0.000203
	93.5	5319.9896	0.000195	5319.9893	0.000201	5319.9890	0.000207
10	126.5	5320.0274	0.000515	5320.0224	0.000421	5320.0184	0.000346
	110	5320.0274	0.000515	5320.0254	0.000477	5320.0214	0.000402
	93.5	5320.0274	0.000515	5320.0214	0.000402	5320.0194	0.000365
0	126.5	5320.0098	0.000184	5320.0096	0.000180	5320.0093	0.000175
	110	5320.0098	0.000184	5320.0096	0.000180	5320.0095	0.000179
	93.5	5320.0098	0.000184	5320.0095	0.000179	5320.0092	0.000173
-10	126.5	5320.0045	0.000085	5320.0042	0.000079	5320.0039	0.000073
	110	5320.0046	0.000086	5320.0046	0.000086	5320.0043	0.000081
	93.5	5320.0045	0.000085	5320.0042	0.000079	5320.0039	0.000073
-20	126.5	5320.0204	0.000383	5320.0154	0.000289	5320.0154	0.000289
	110	5320.0204	0.000383	5320.0184	0.000346	5320.0164	0.000308
	93.5	5320.0184	0.000346	5320.0154	0.000289	5320.0154	0.000289
-30	126.5	5319.9855	0.000273	5319.995	0.000094	5319.9947	0.000100
	110	5319.9856	0.000271	5319.995	0.000094	5319.9949	0.000096
	93.5	5319.9955	0.000085	5319.9953	0.000088	5319.9946	0.000102

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	July 26, 2008	July 25, 2009

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set RBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

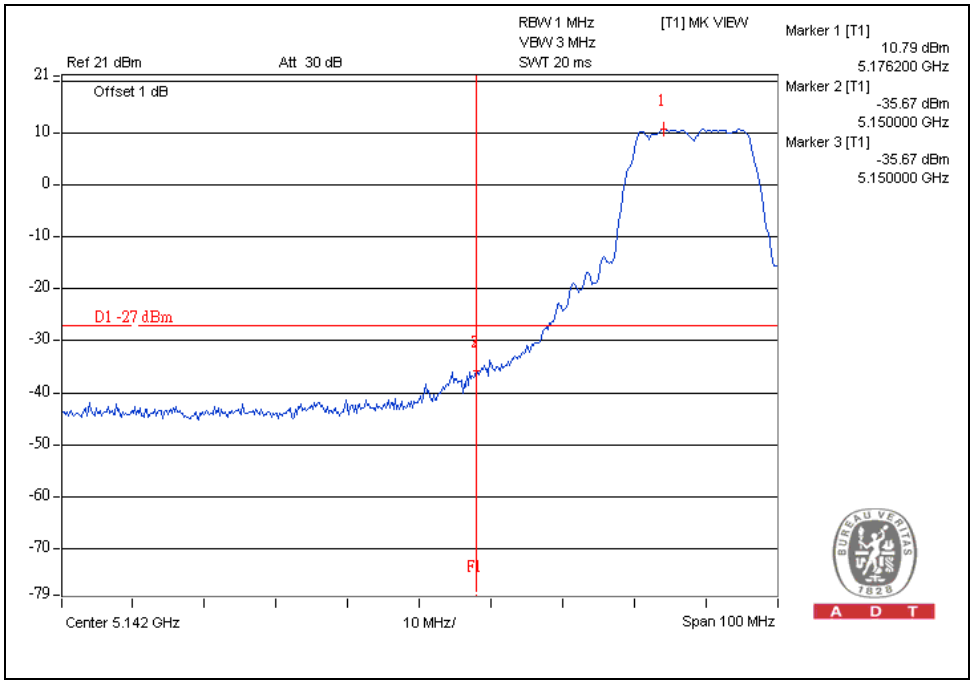
4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:

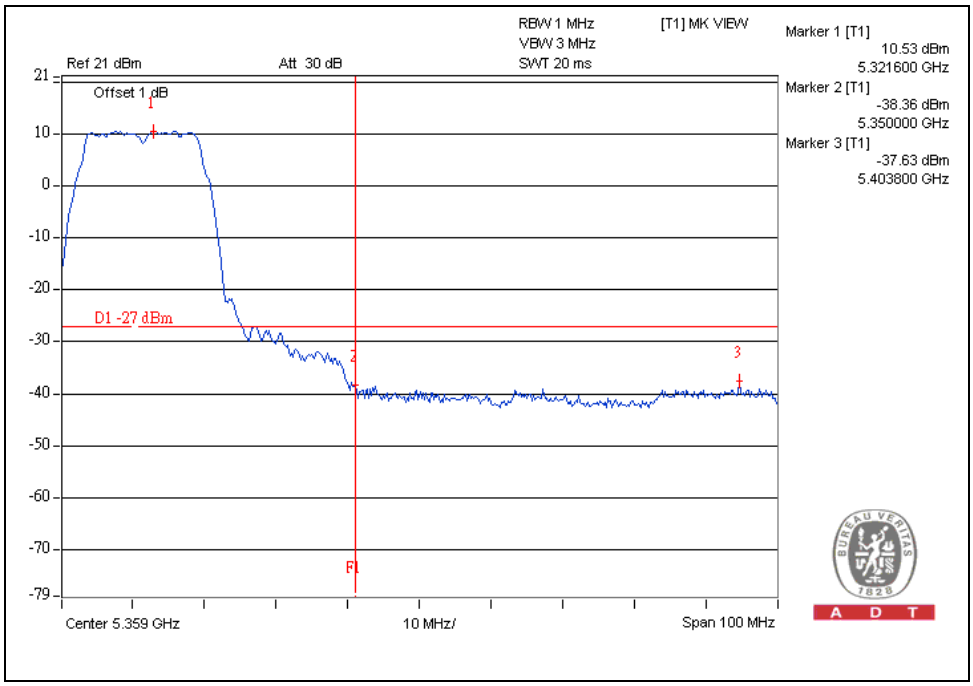
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

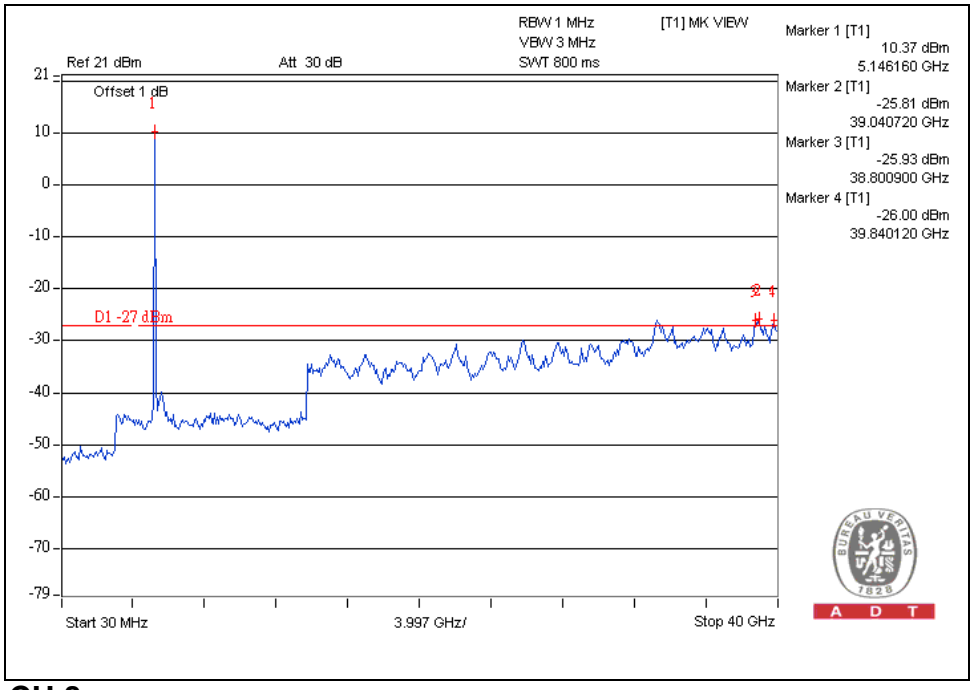
CH 1



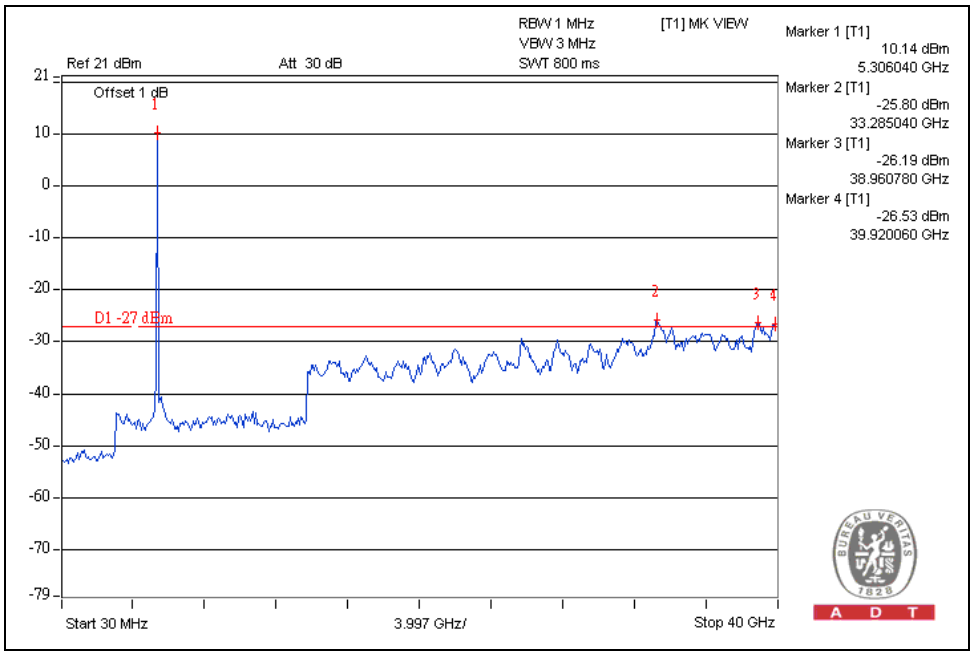
CH 8



CH 1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
10.37 dBm
5.146160 GHz
Marker 2 [T1]
-25.81 dBm
39.040720 GHz
Marker 3 [T1]
-25.93 dBm
38.800900 GHz
Marker 4 [T1]
-26.00 dBm
39.840120 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

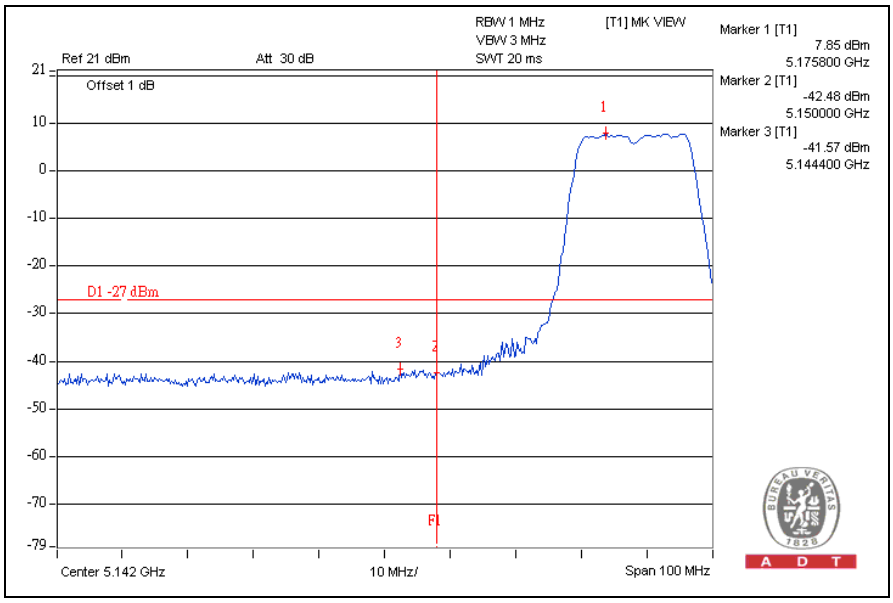
CH 8


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
10.14 dBm
5.306040 GHz
Marker 2 [T1]
-25.80 dBm
33.285040 GHz
Marker 3 [T1]
-26.19 dBm
38.960780 GHz
Marker 4 [T1]
-26.53 dBm
39.920060 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

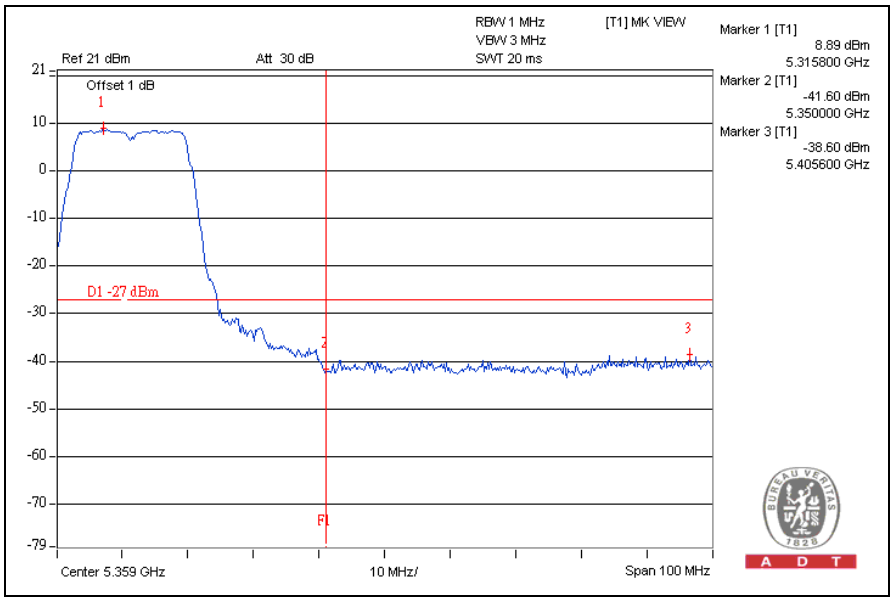
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH1

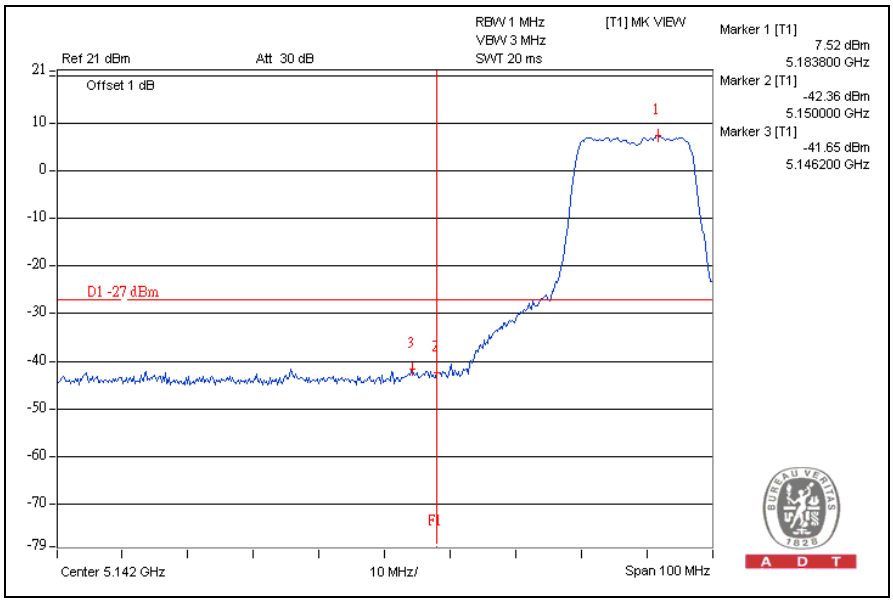


CH8

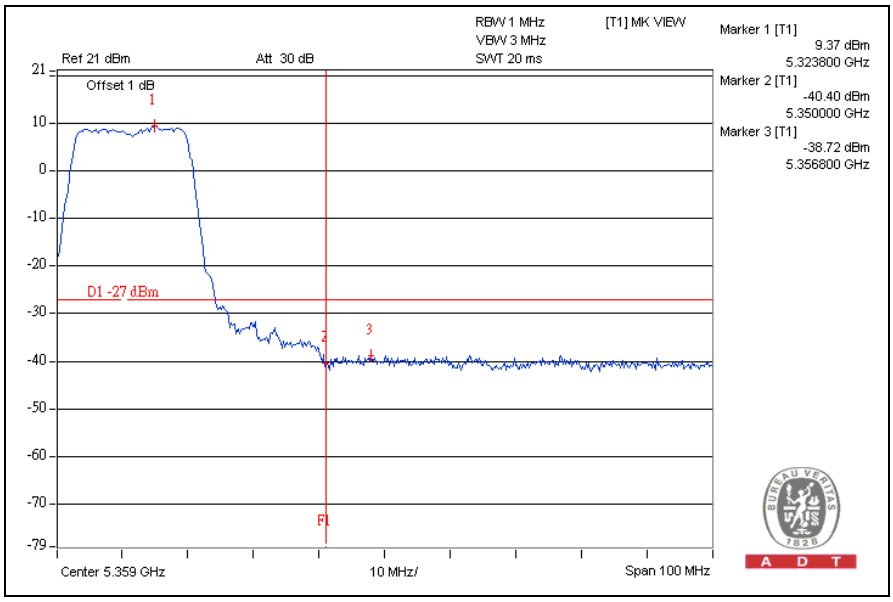


For chain (1):

CH1

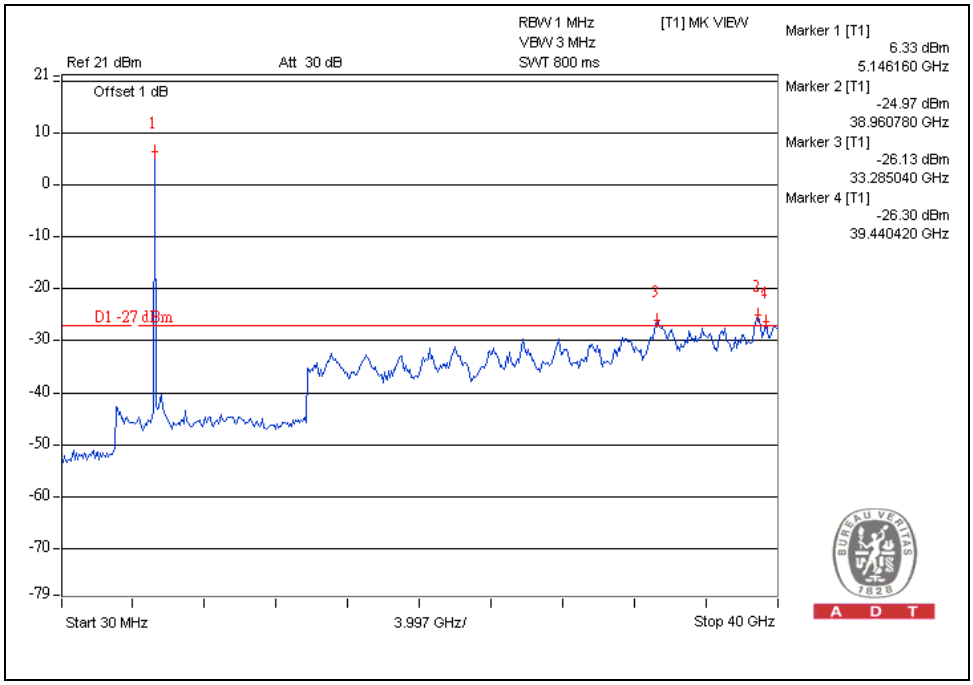


CH8

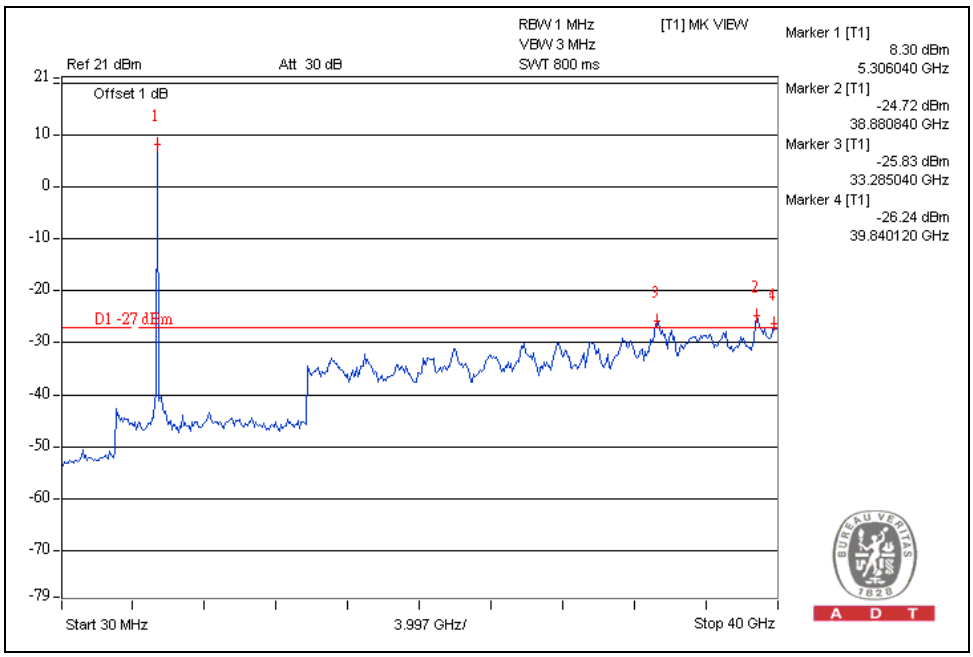


For chain (0):

CH1

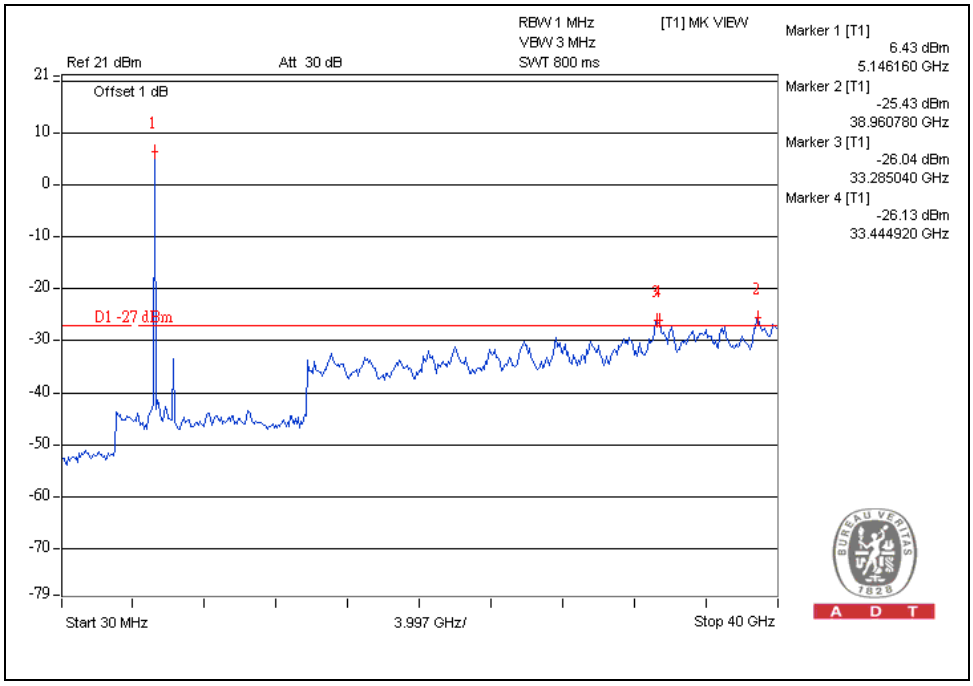


CH8

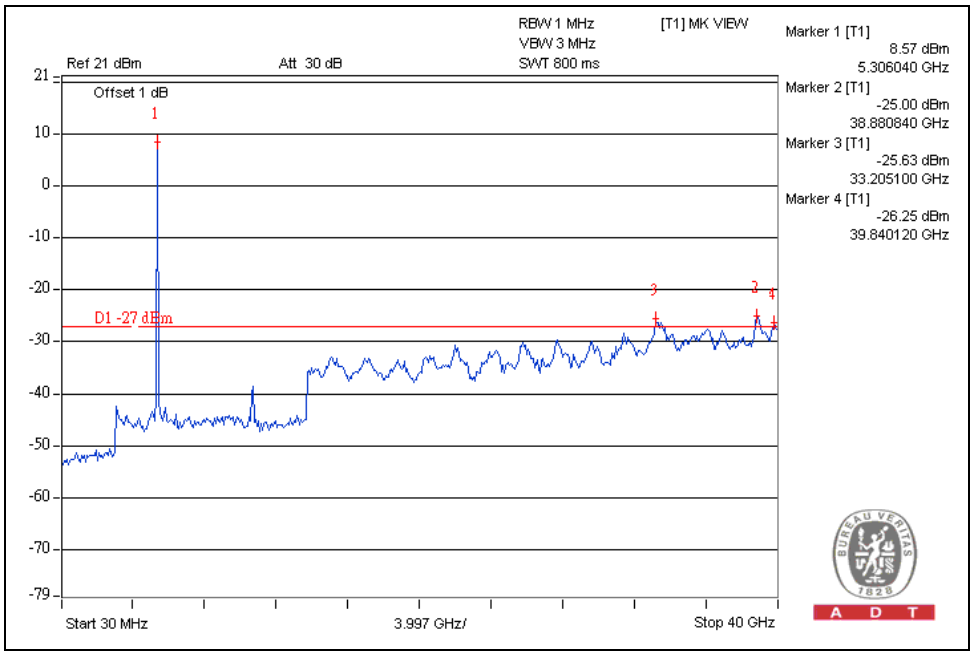


For chain (1):

CH1



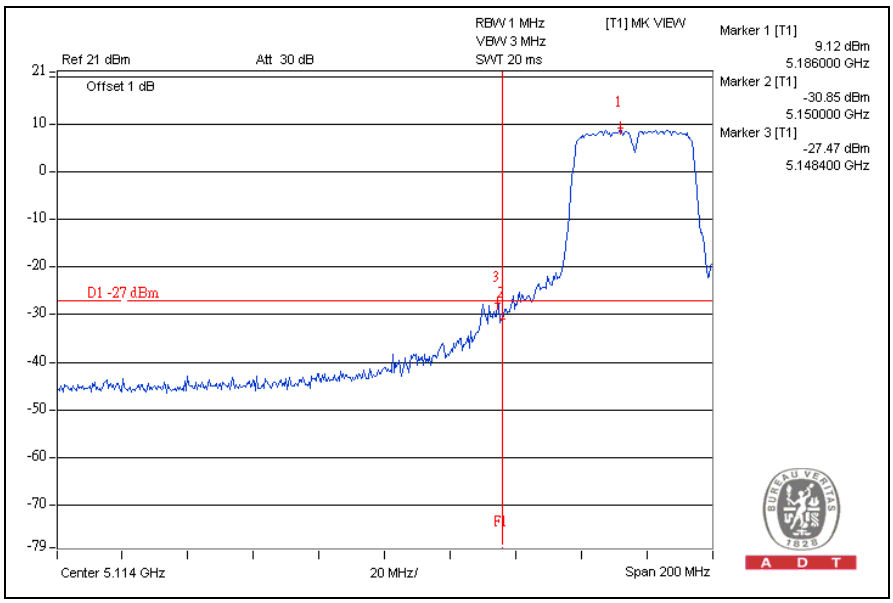
CH8



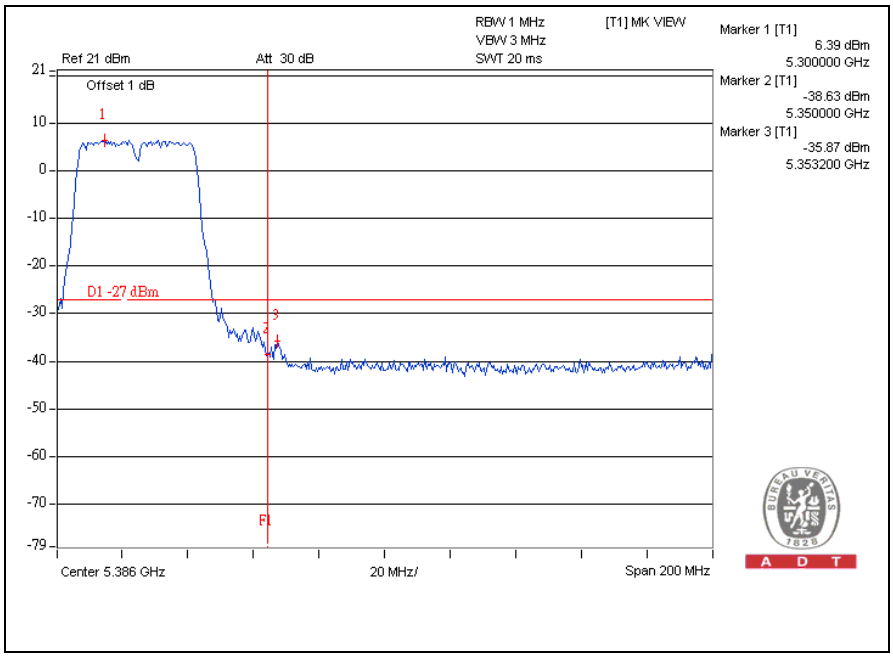
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH1

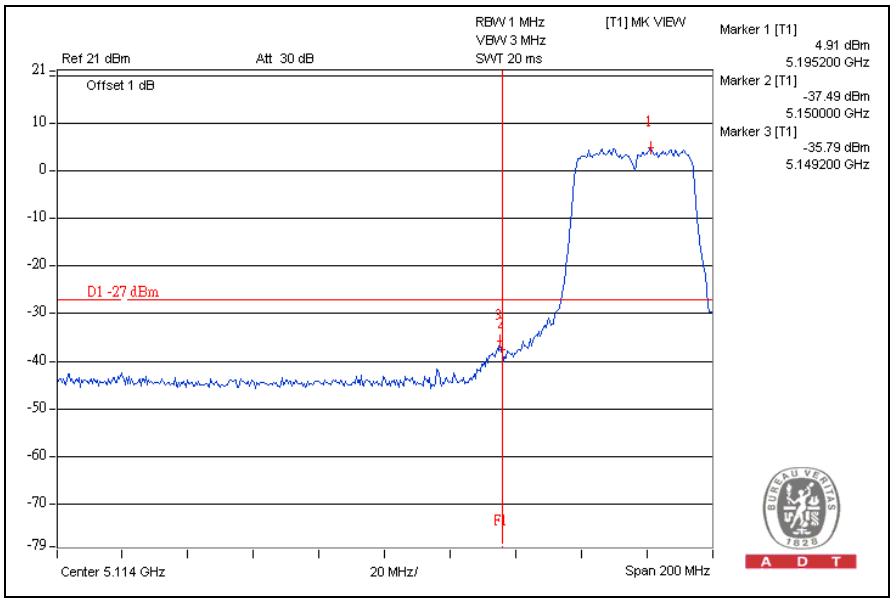


CH4

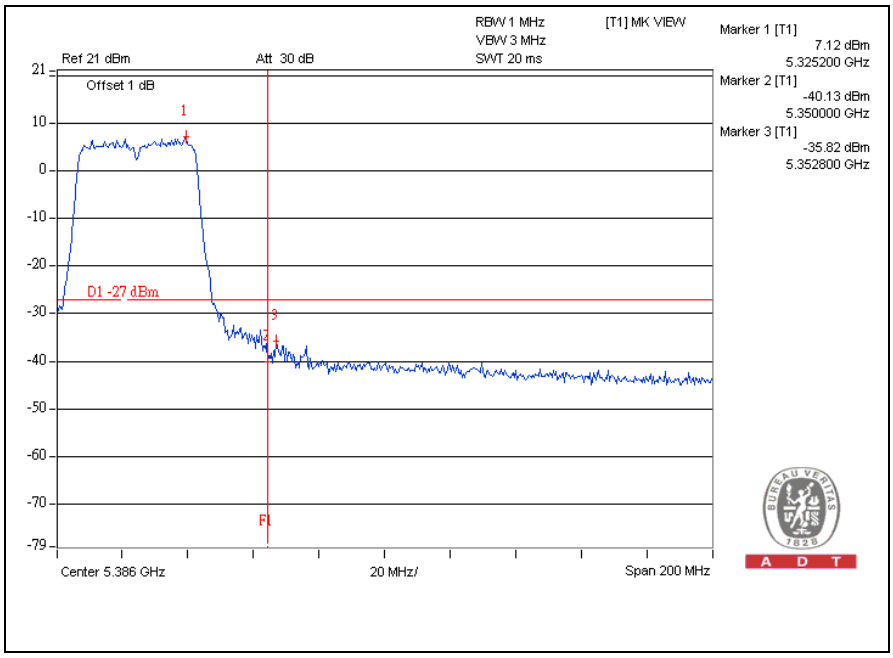


For chain (1):

CH1

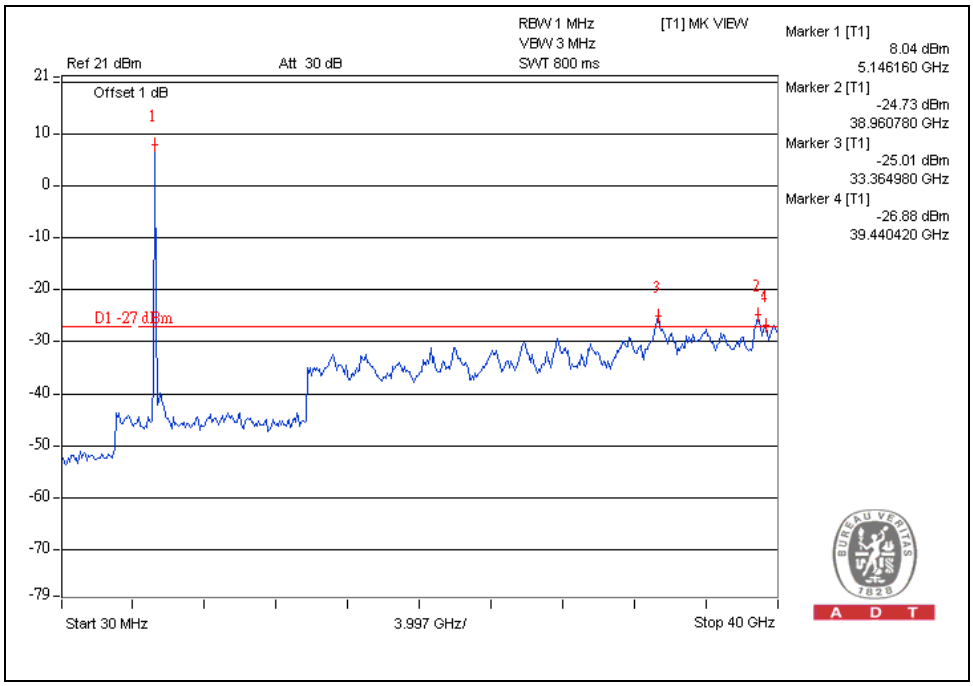


CH4

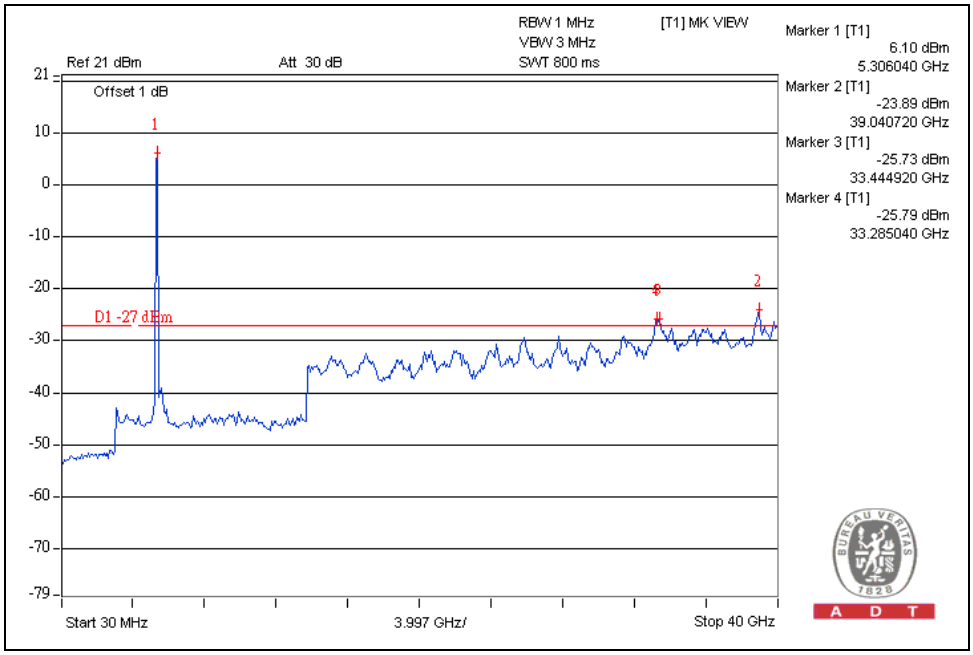


For chain (0):

CH1

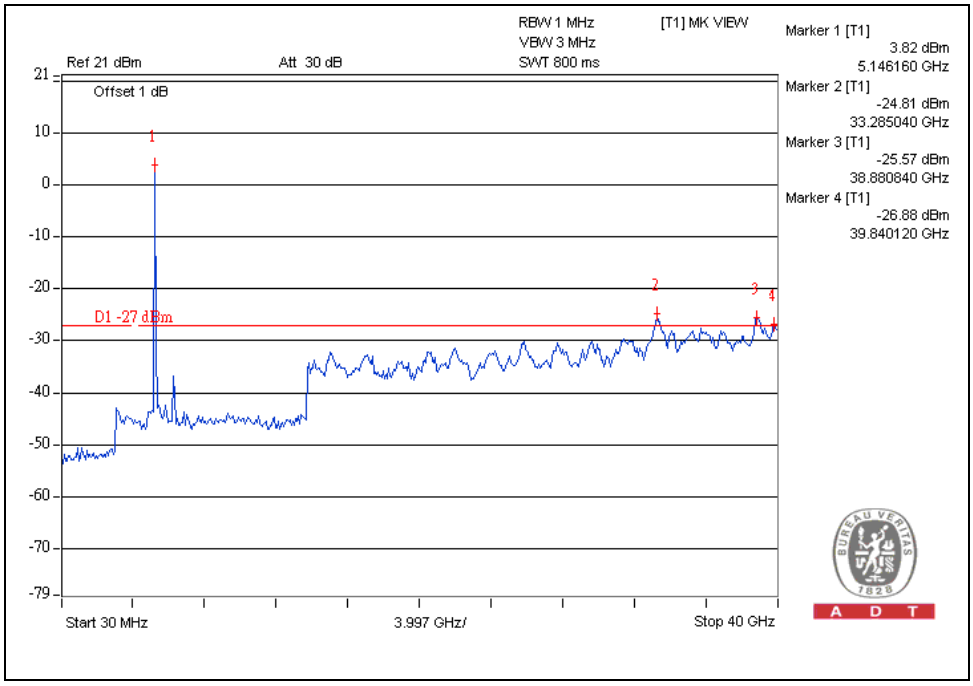


CH4

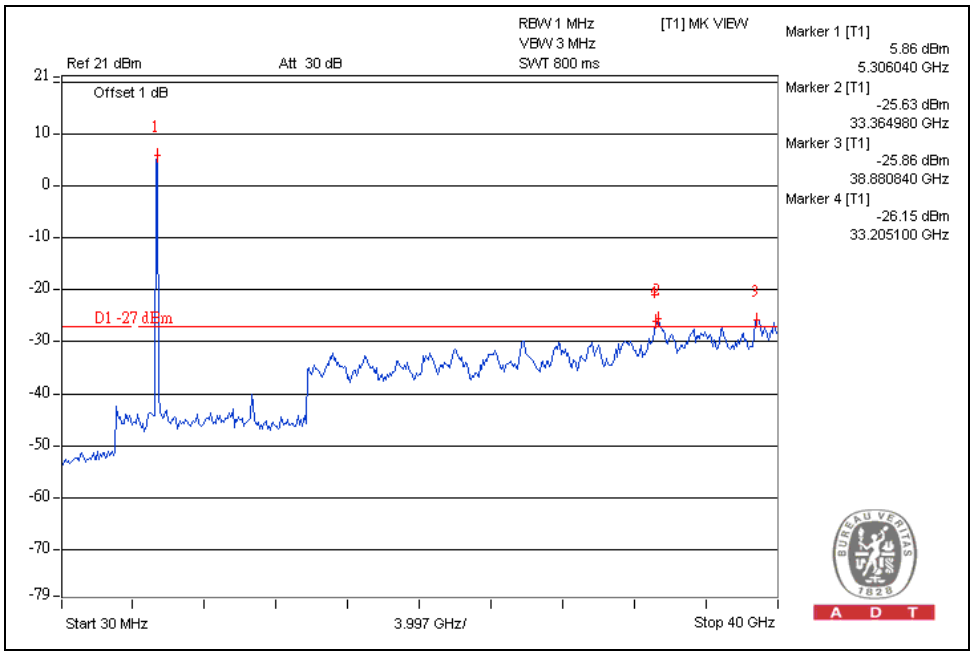


For chain (1):

CH1



CH4

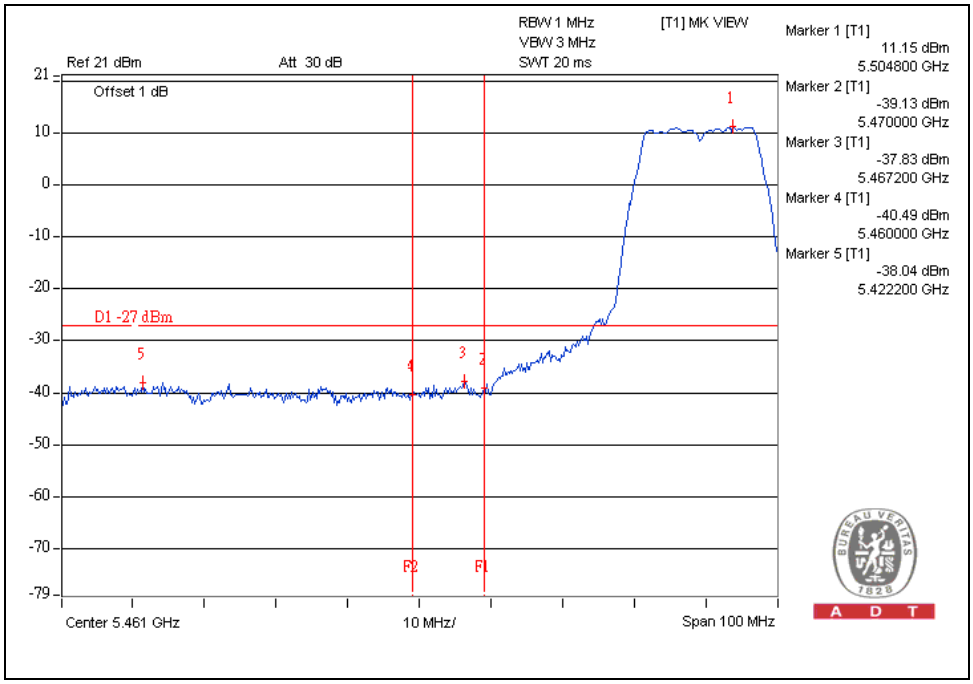


For 5.47 to 5.725GHz band:

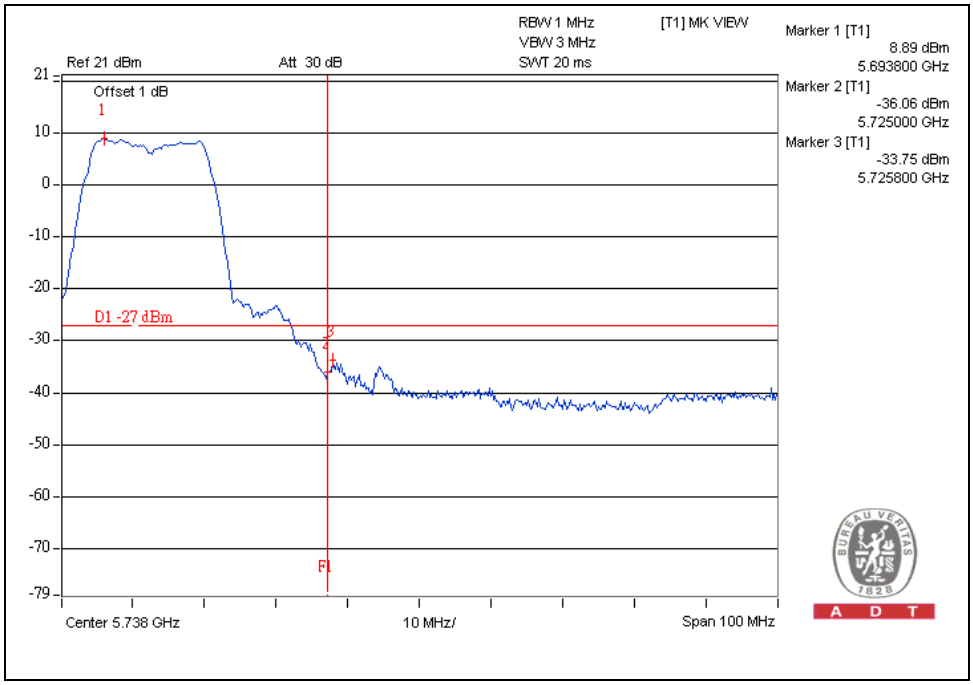
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

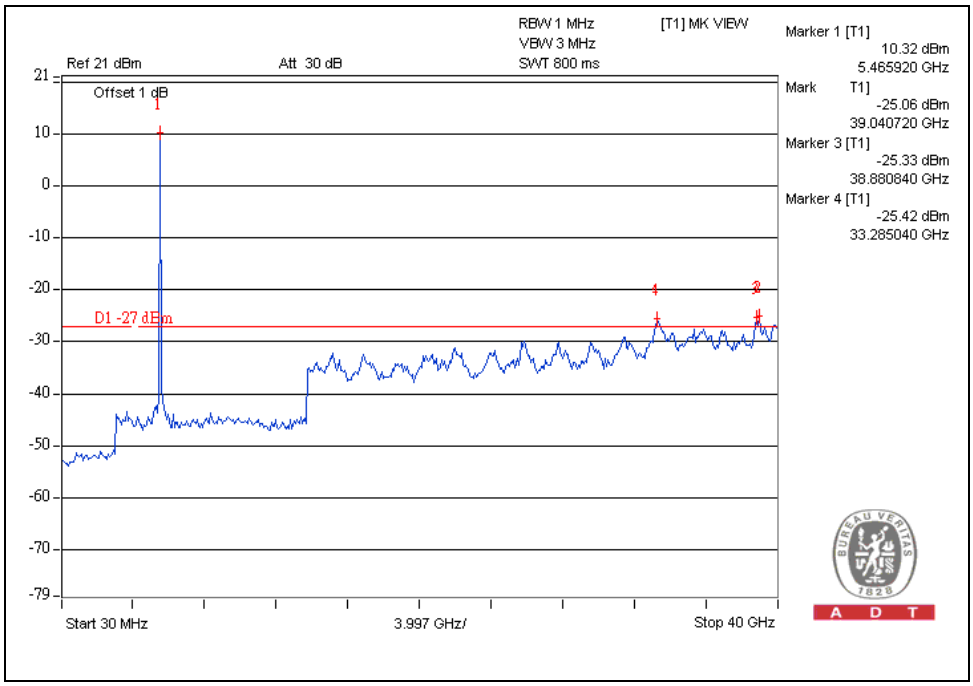
CH 9



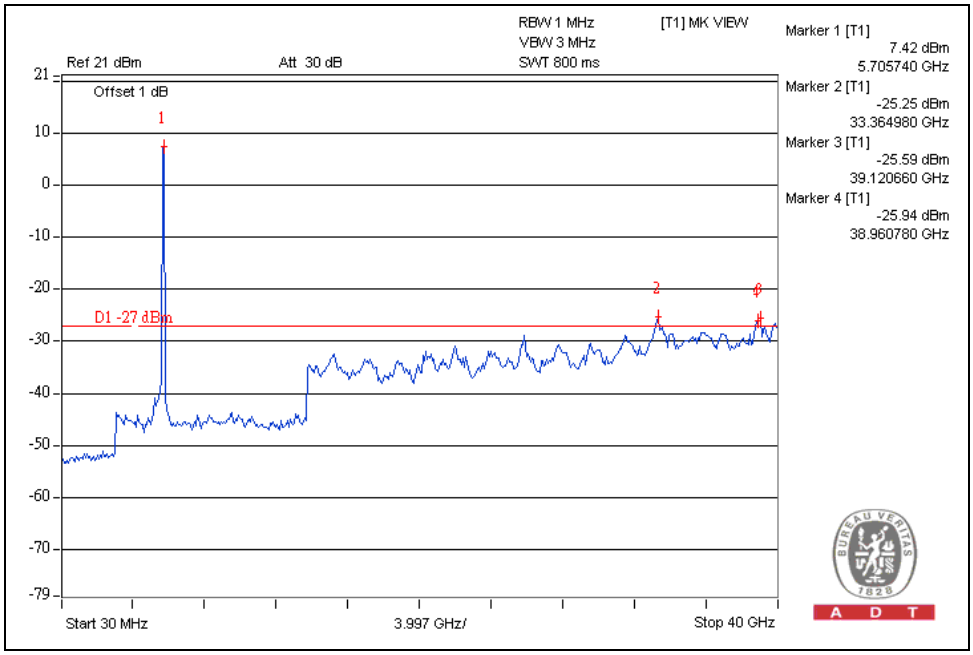
CH 19



CH 9


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
10.32 dBm
5.465920 GHz
Mark T1]
-25.06 dBm
39.040720 GHz
Marker 3 [T1]
-25.33 dBm
38.880840 GHz
Marker 4 [T1]
-25.42 dBm
33.285040 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

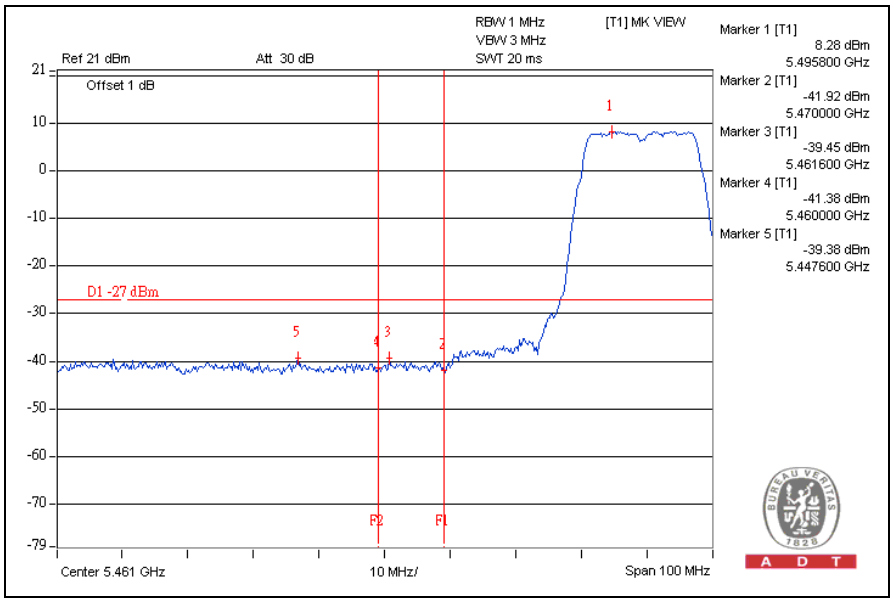
CH 19


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.42 dBm
5.705740 GHz
Marker 2 [T1]
-25.25 dBm
33.364980 GHz
Marker 3 [T1]
-25.59 dBm
39.120660 GHz
Marker 4 [T1]
-25.94 dBm
38.960780 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

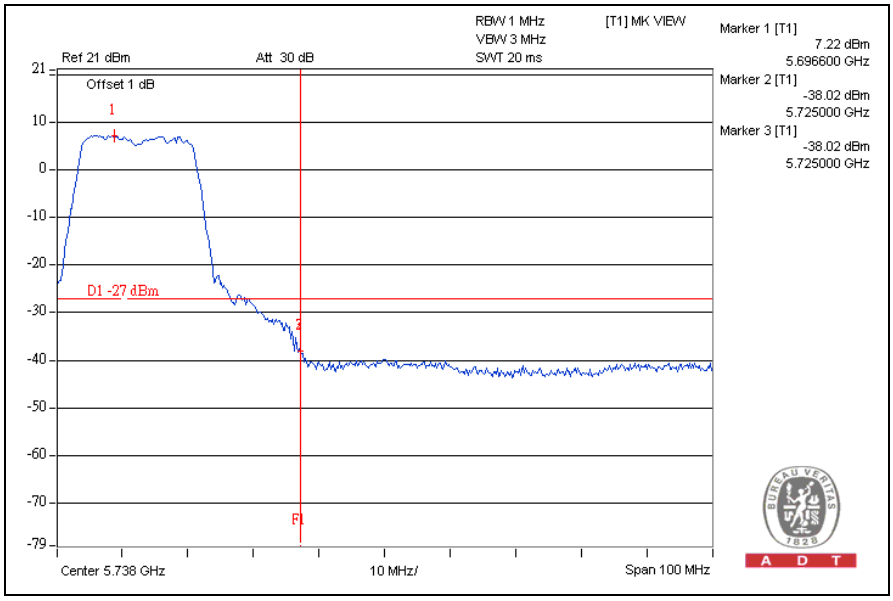
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH9

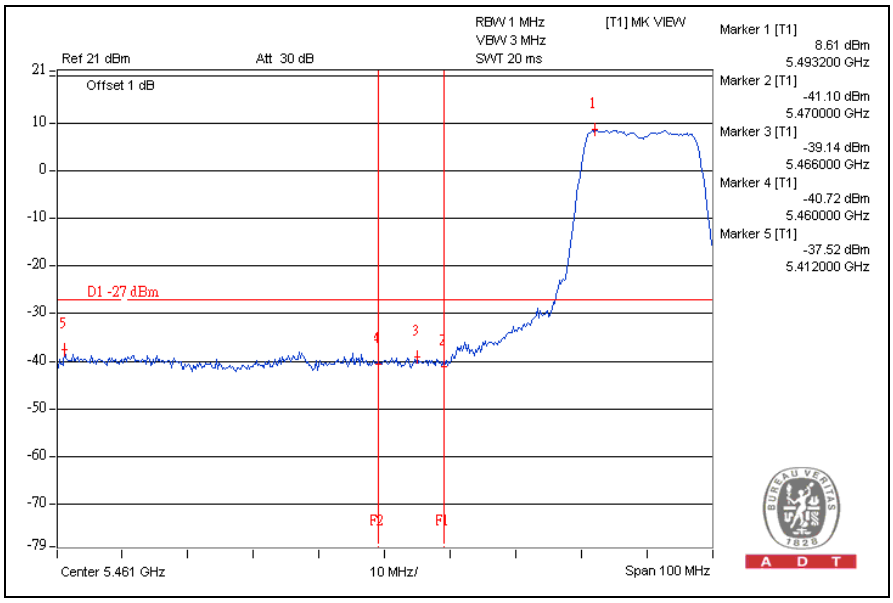


CH19

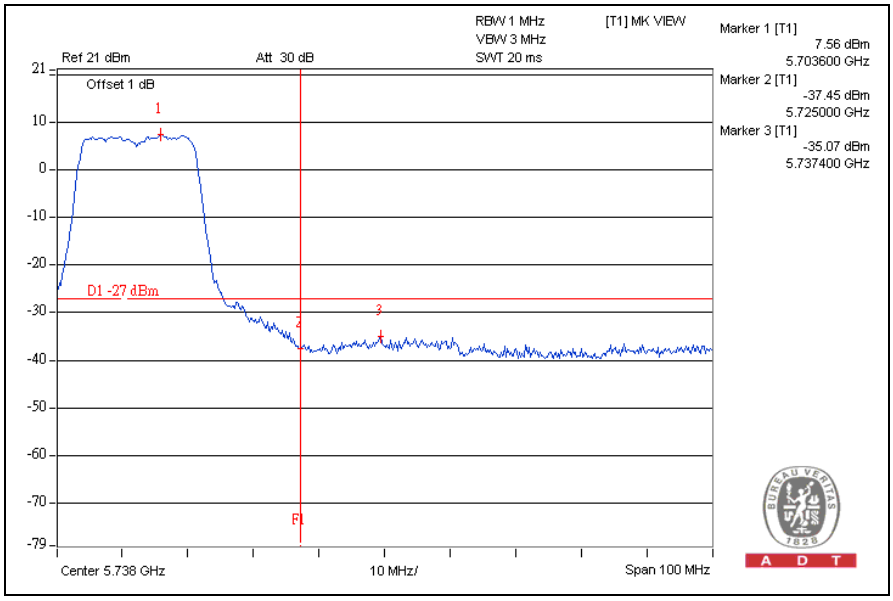


For chain (1):

CH9

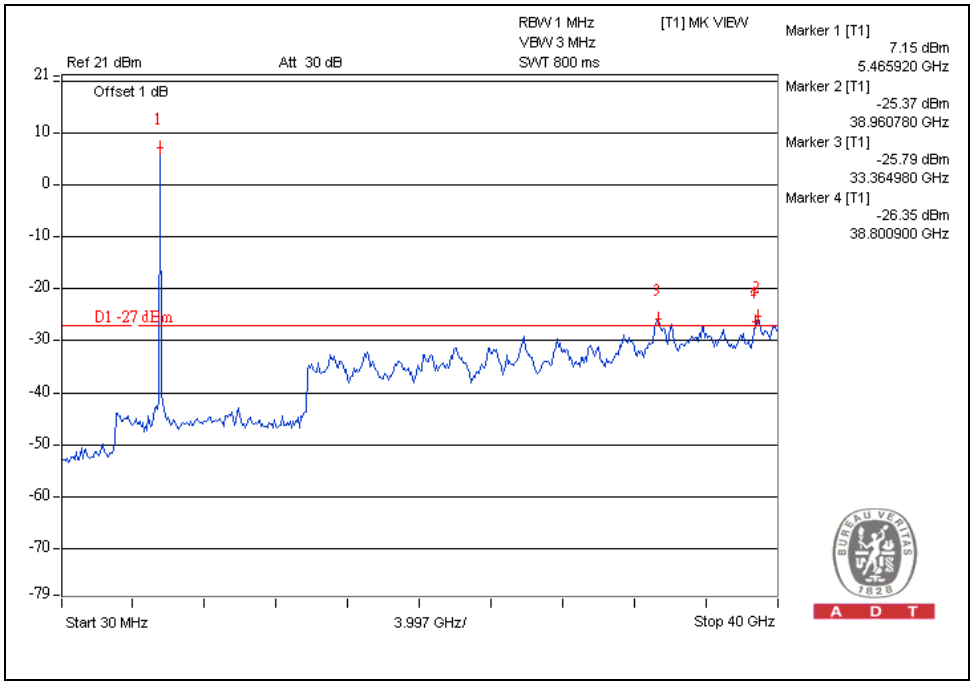


CH19

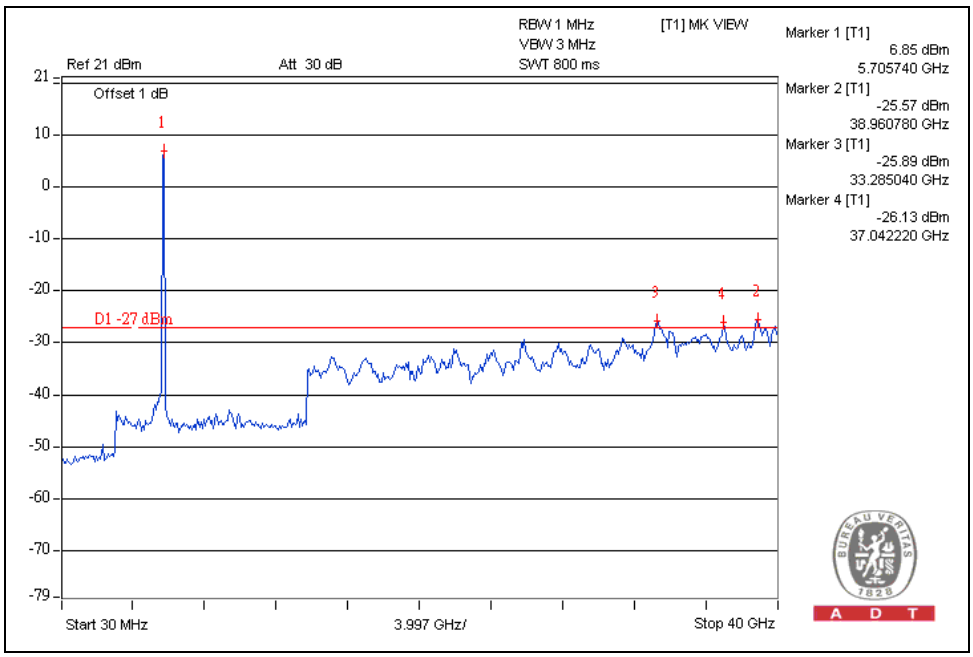


For chain (0):

CH9

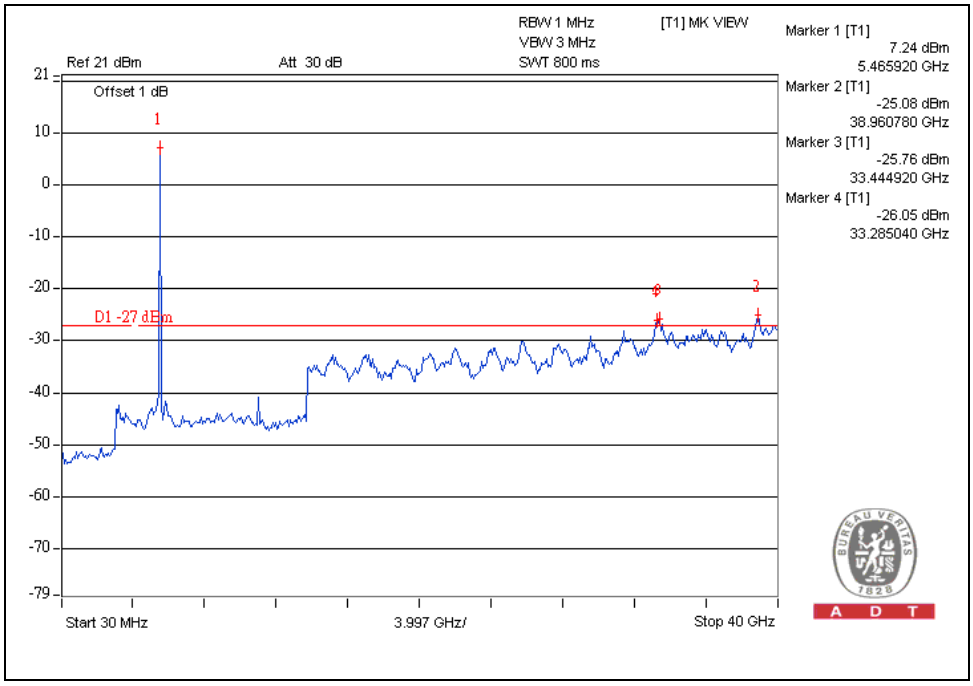


CH19

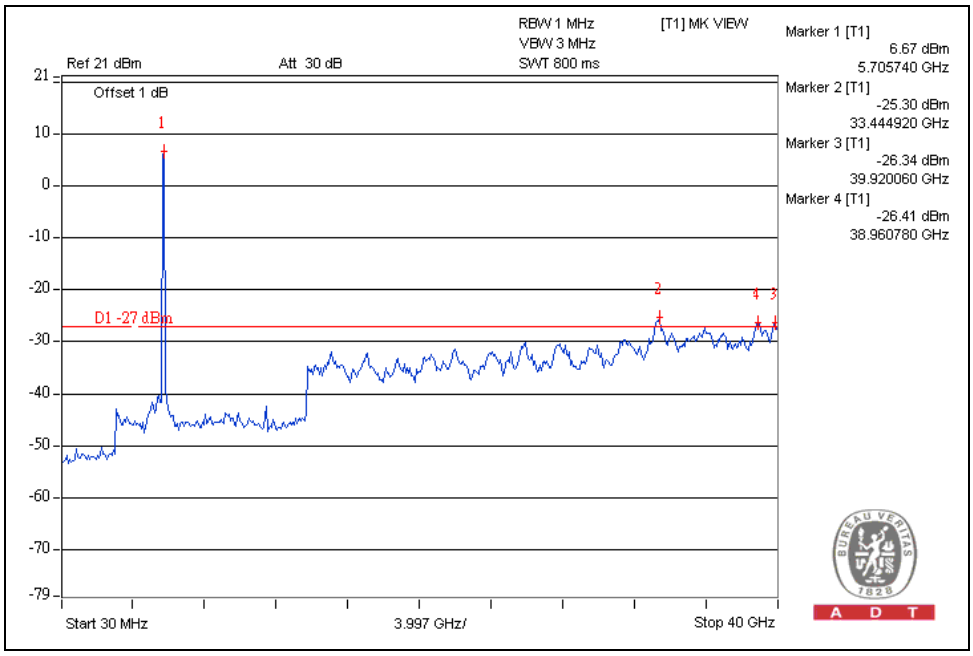


For chain (1):

CH9



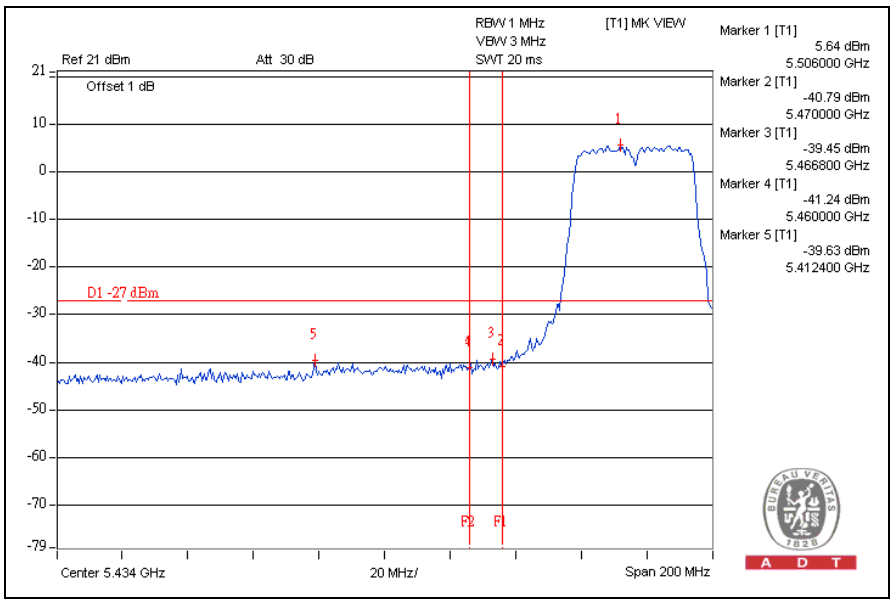
CH19



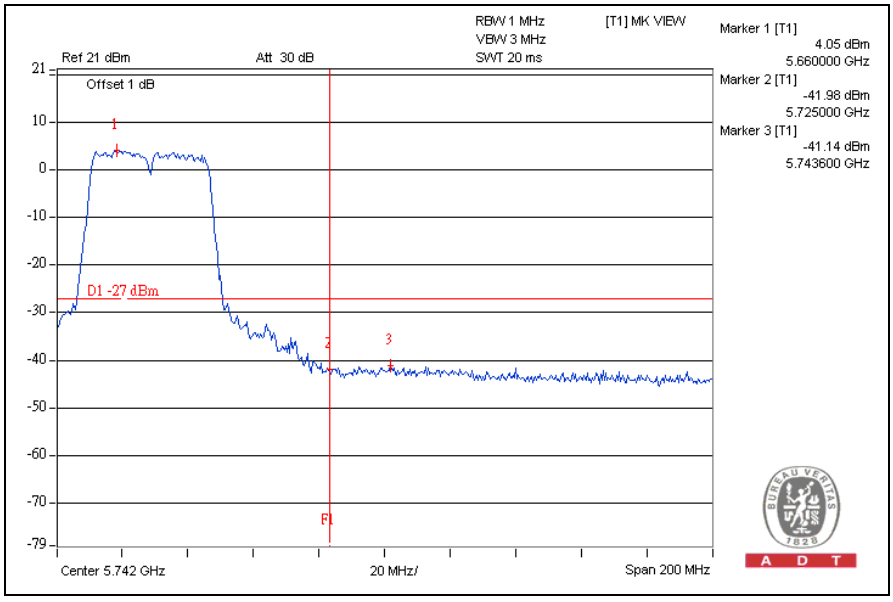
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH5

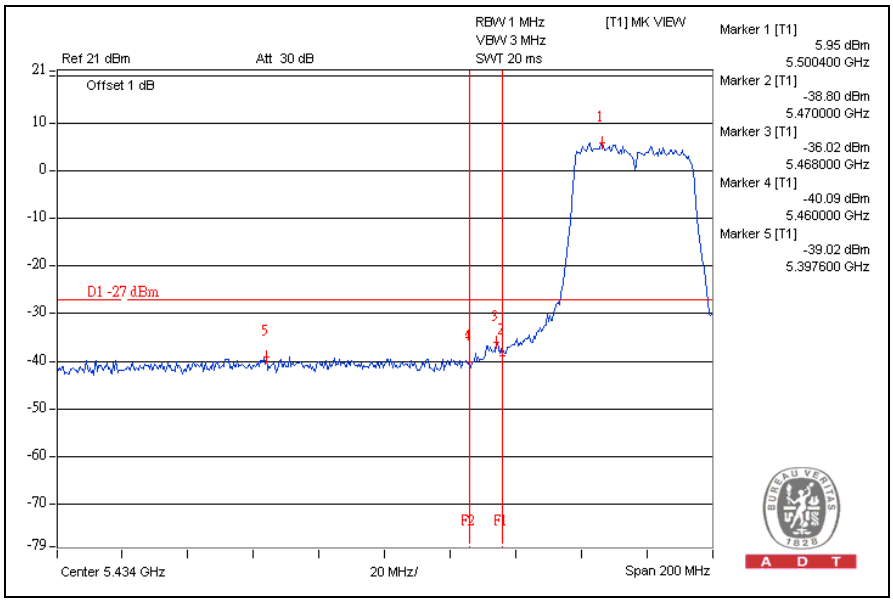


CH9

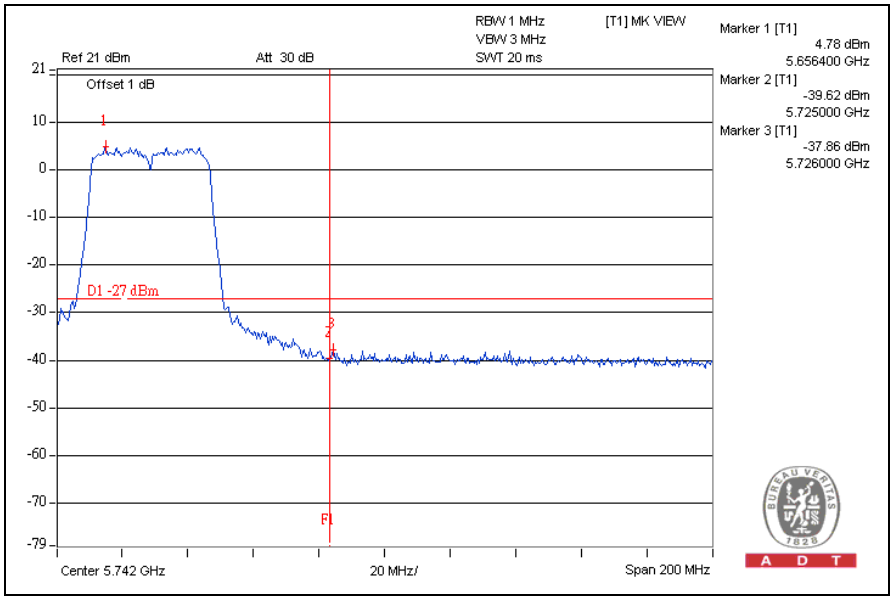


For chain (1):

CH5

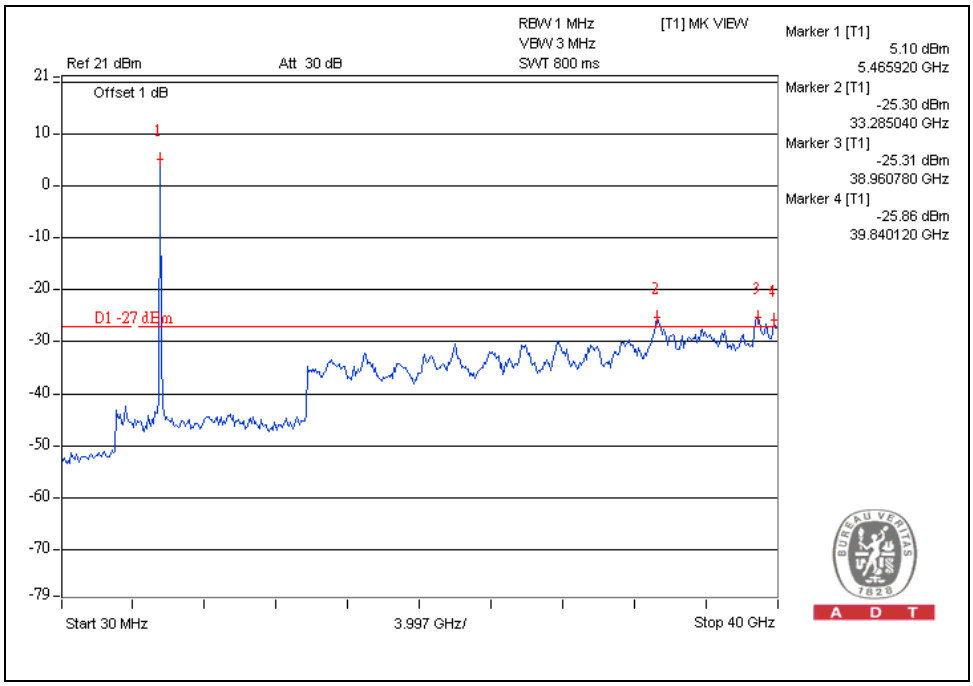


CH9

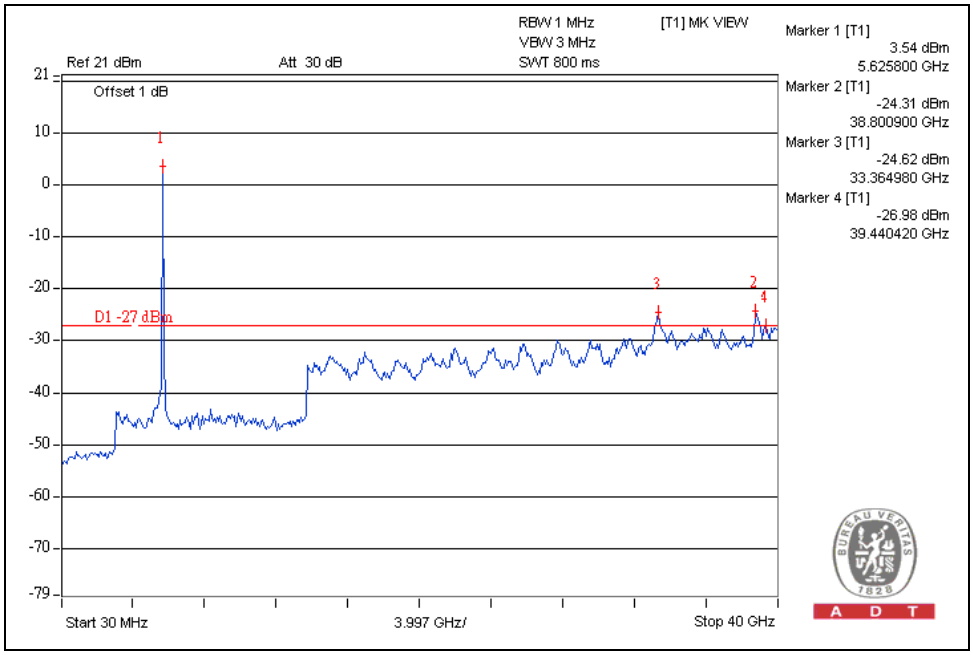


For chain (0):

CH5

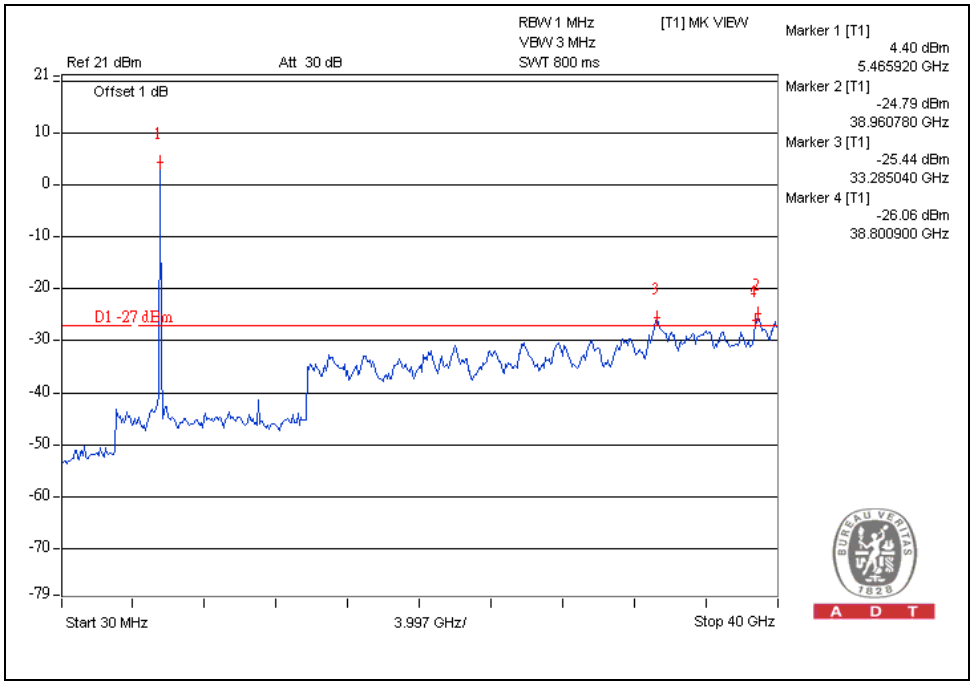


CH9

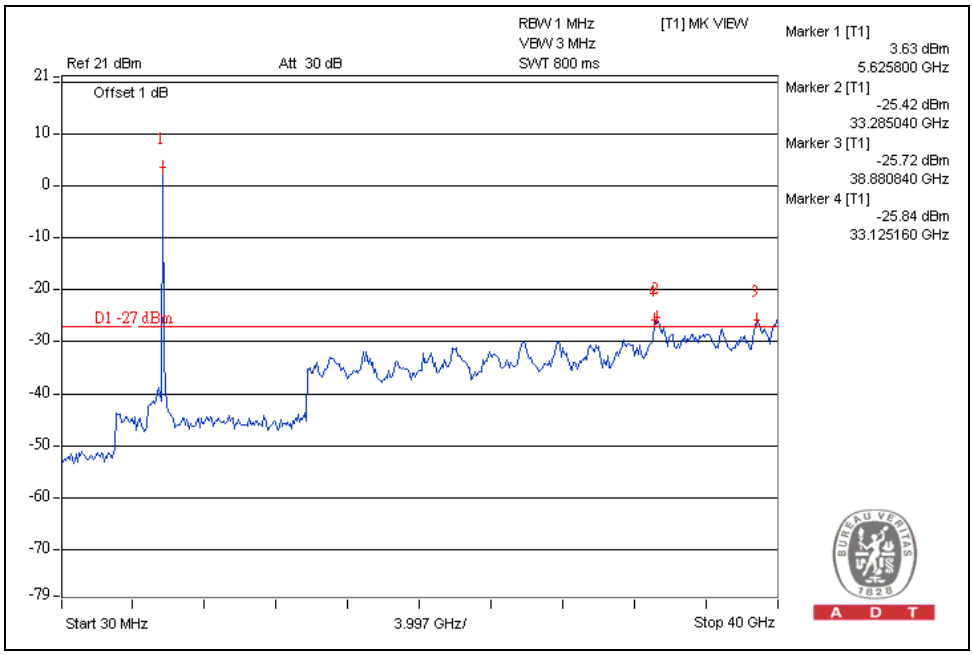


For chain (1):

CH5



CH9

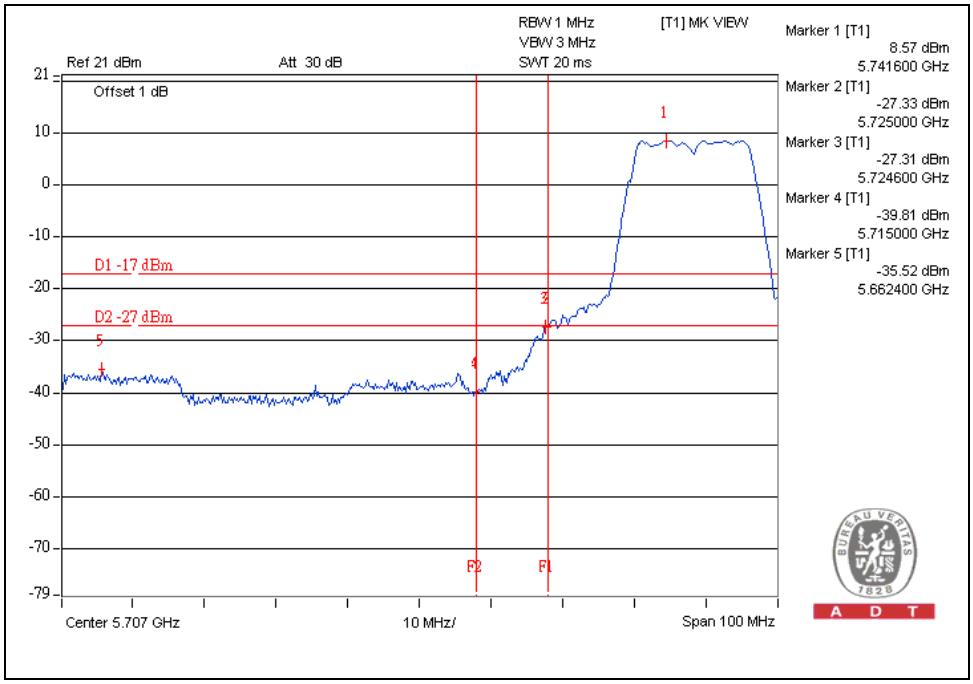


For 5.725 to 5.825GHz band:

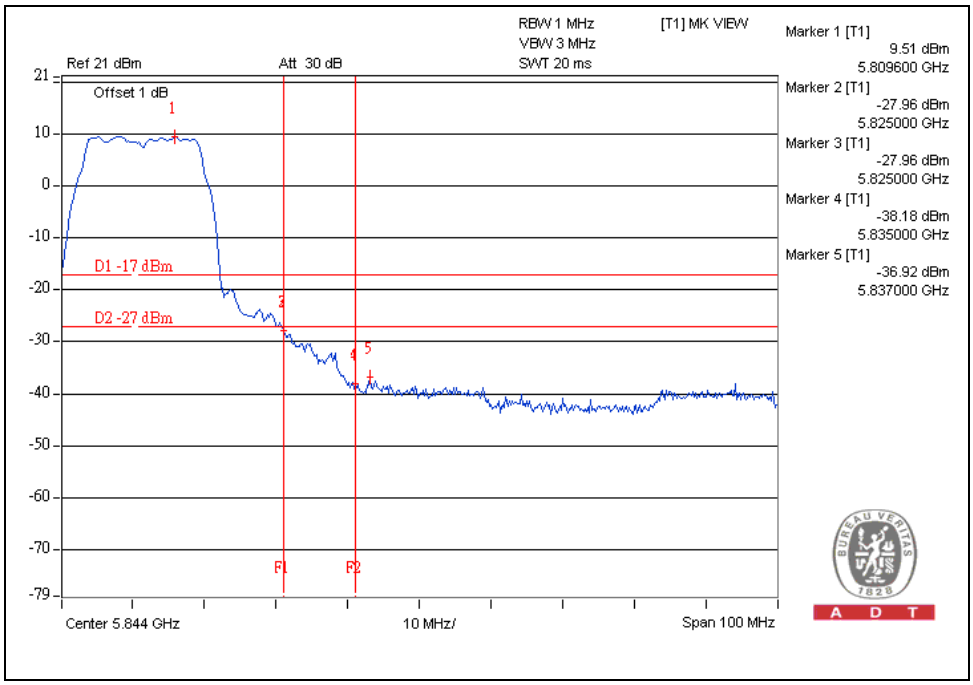
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

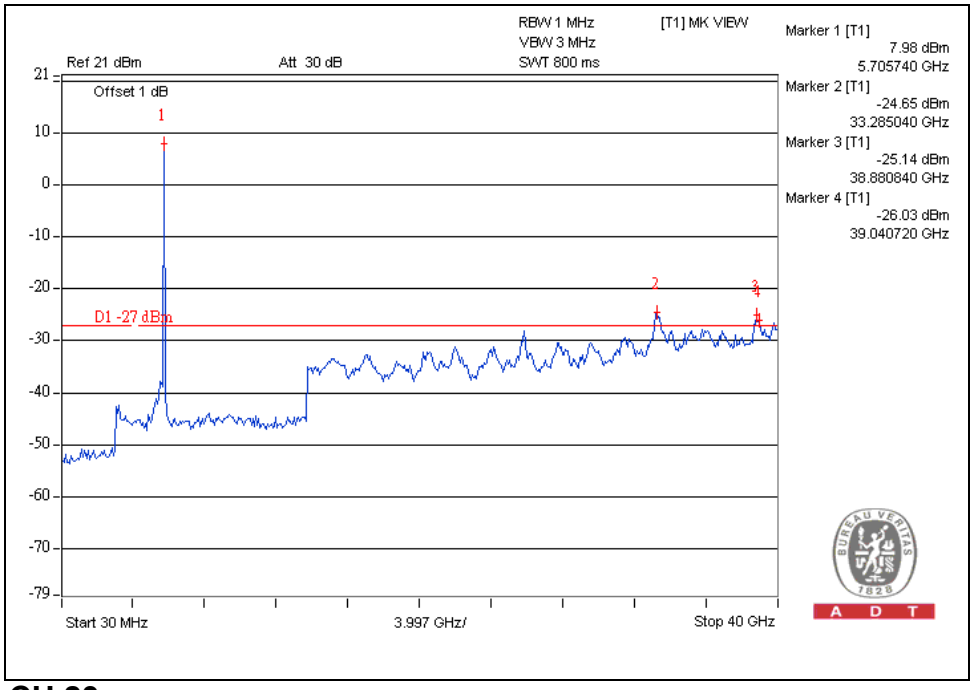
CH 20



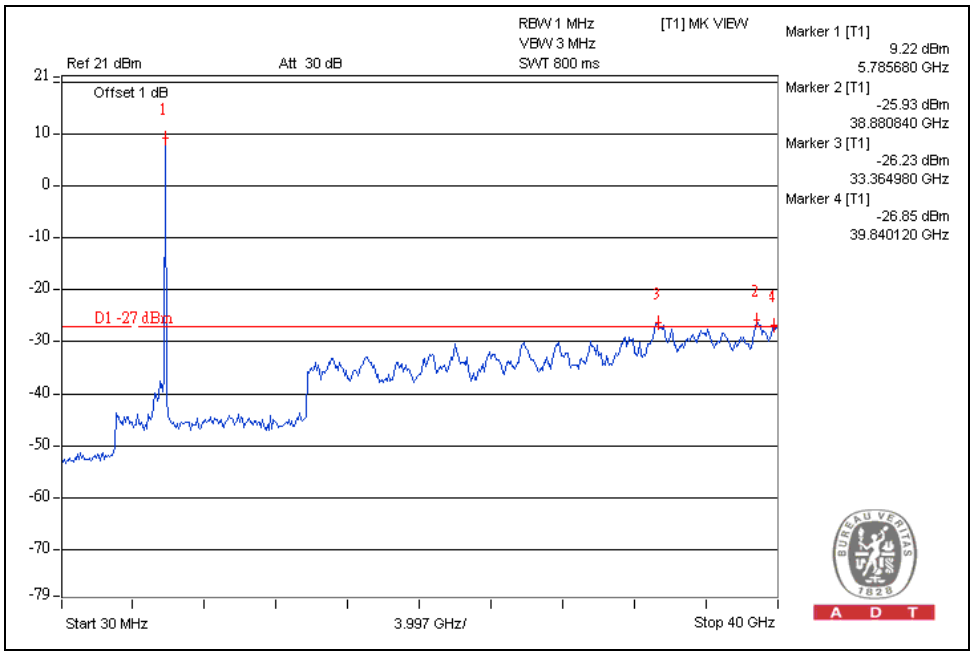
CH 23



CH 20


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.98 dBm
5.705740 GHz
Marker 2 [T1]
-24.65 dBm
33.285040 GHz
Marker 3 [T1]
-25.14 dBm
38.880840 GHz
Marker 4 [T1]
-26.03 dBm
39.040720 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

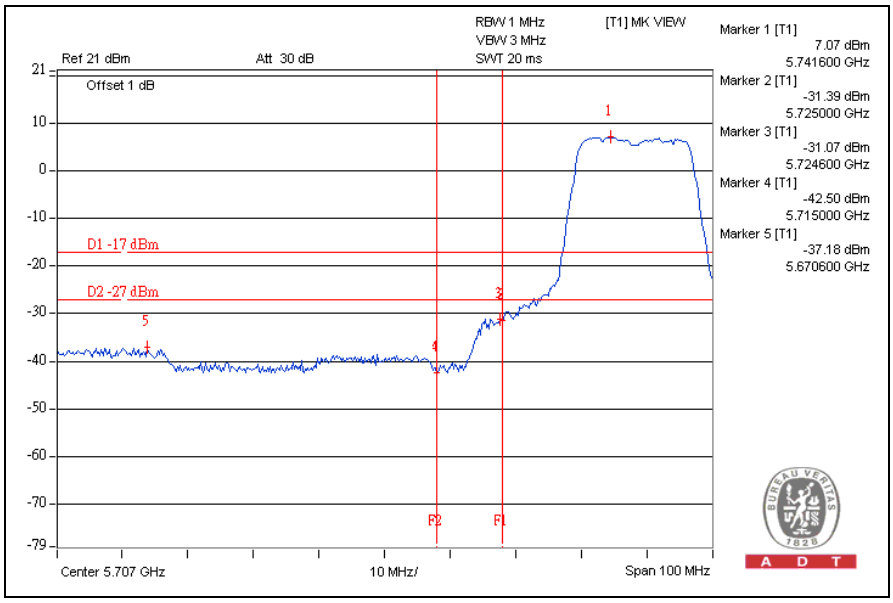
CH 23


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
9.22 dBm
5.785680 GHz
Marker 2 [T1]
-25.93 dBm
38.880840 GHz
Marker 3 [T1]
-26.23 dBm
33.364980 GHz
Marker 4 [T1]
-26.85 dBm
39.840120 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

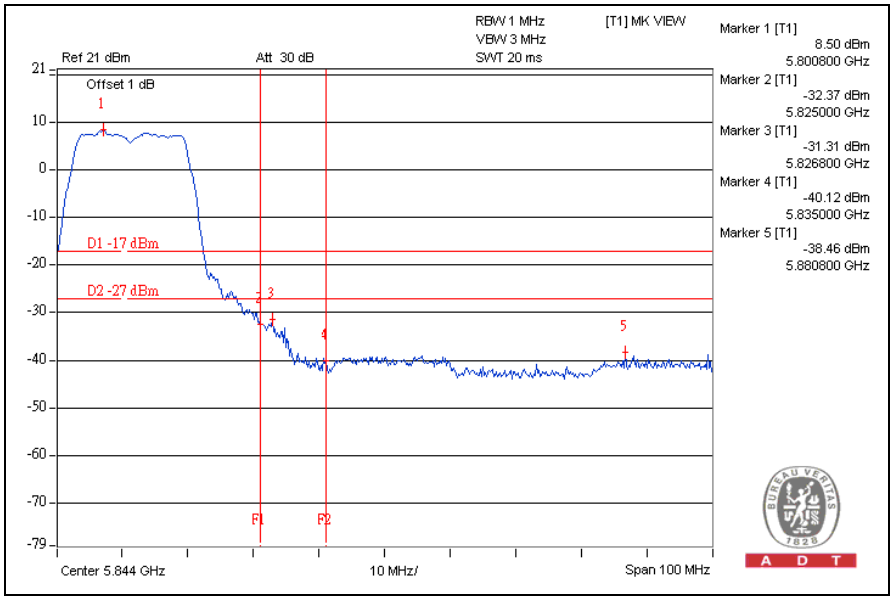
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH20

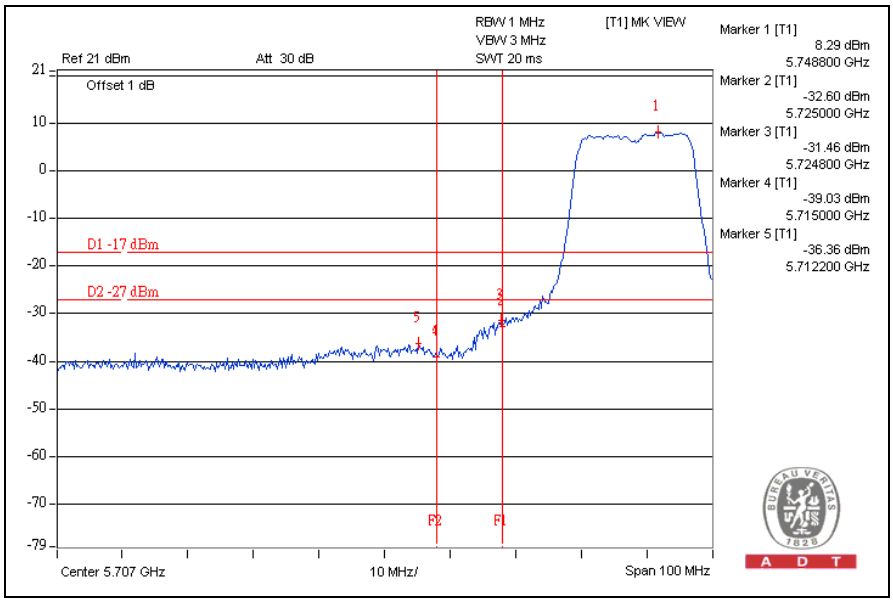


CH23

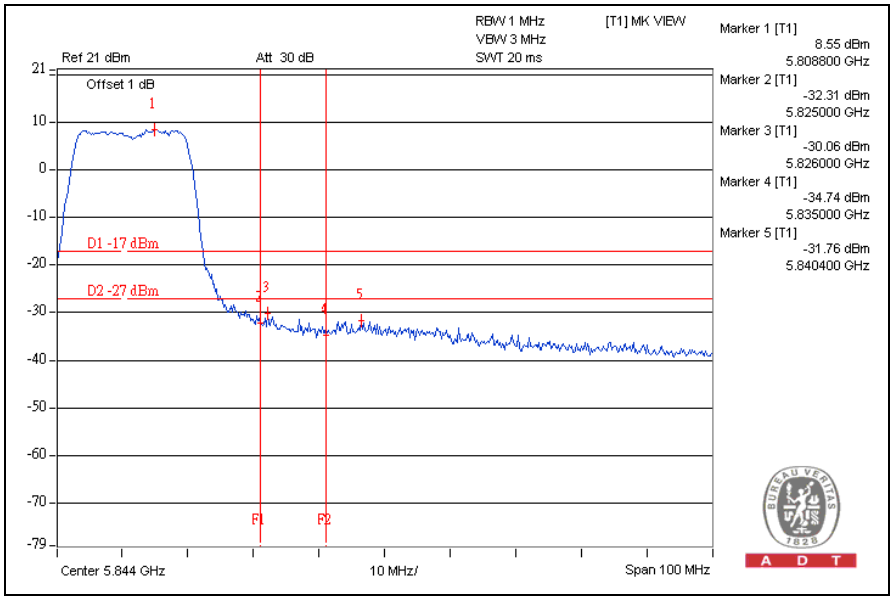


For chain (1):

CH20

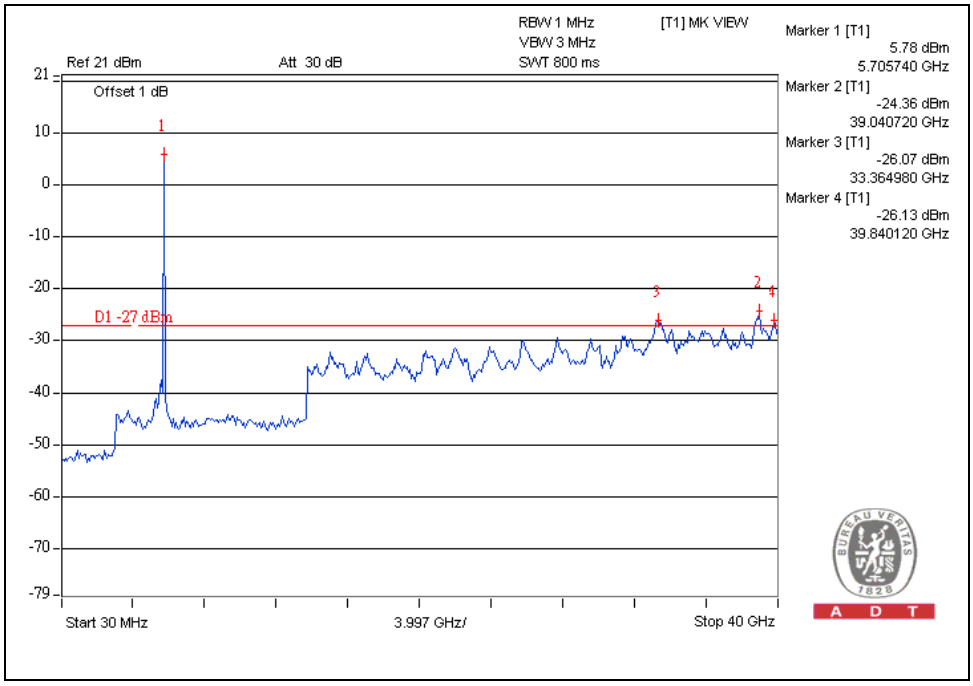


CH23

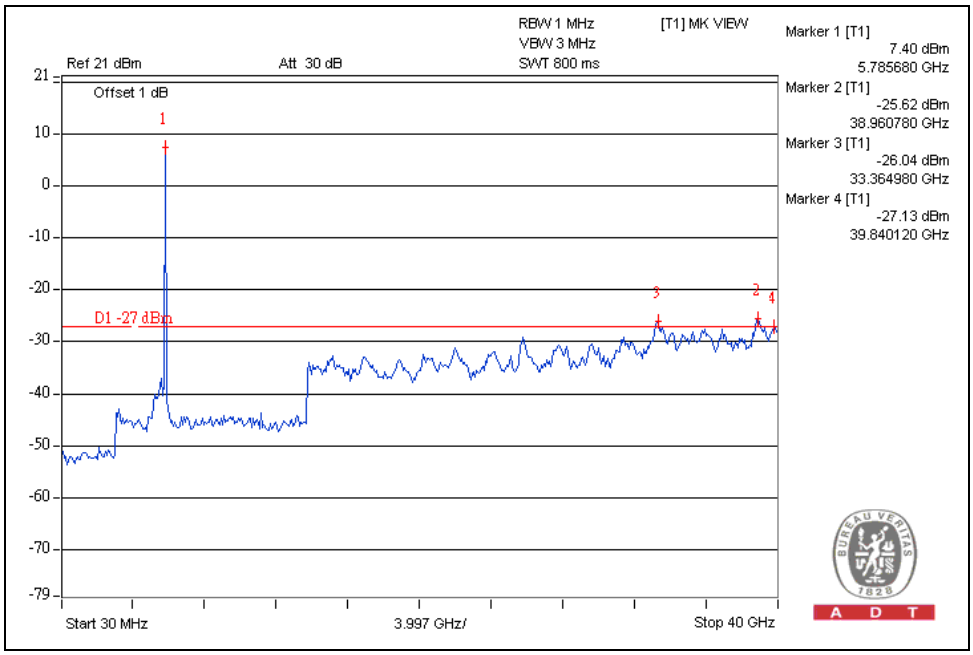


For chain (0):

CH20

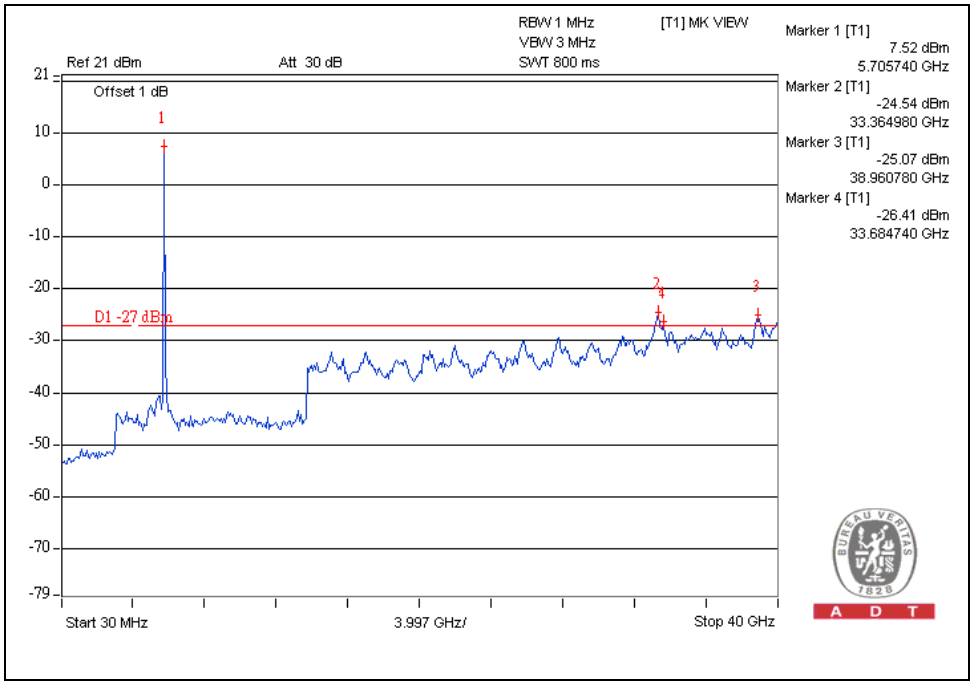


CH23

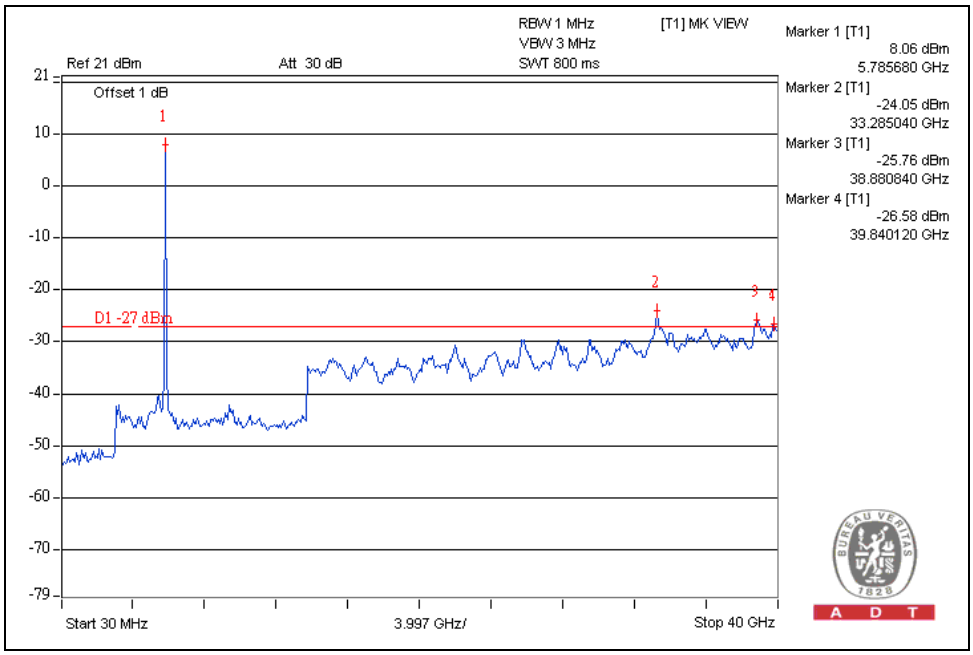


For chain (1):

CH20



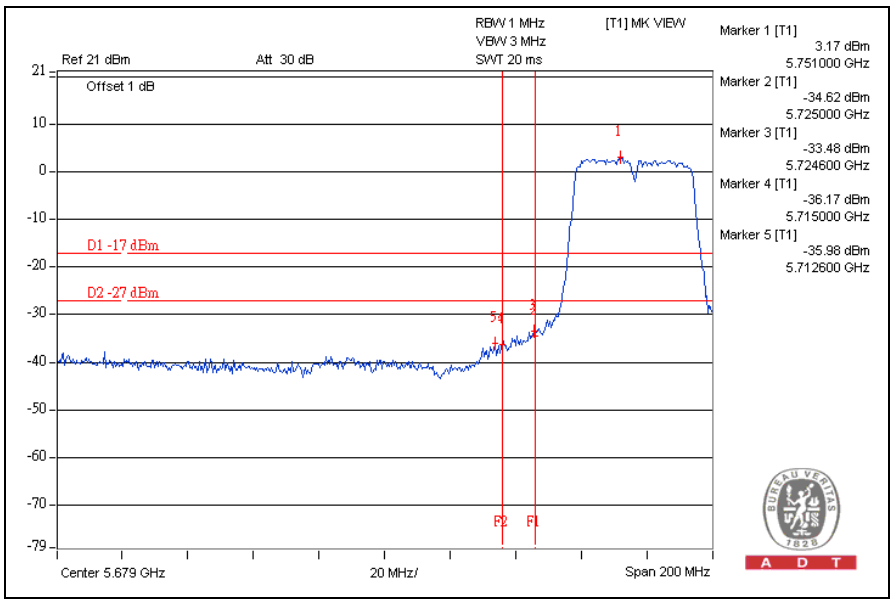
CH23



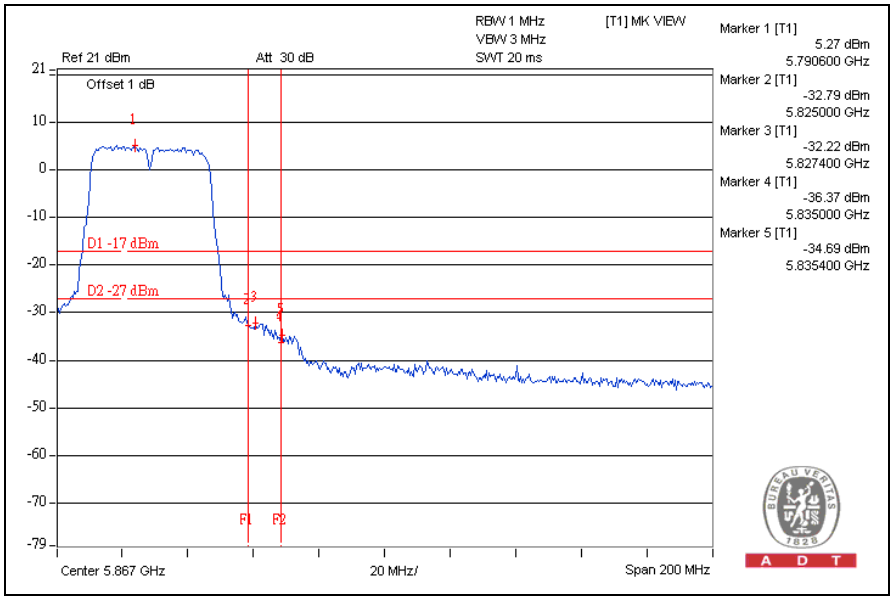
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH10

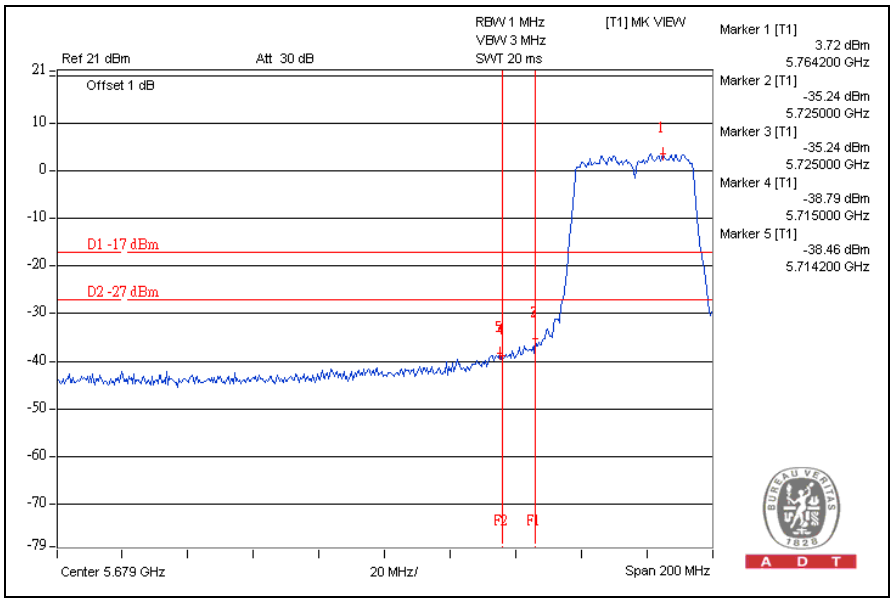


CH11

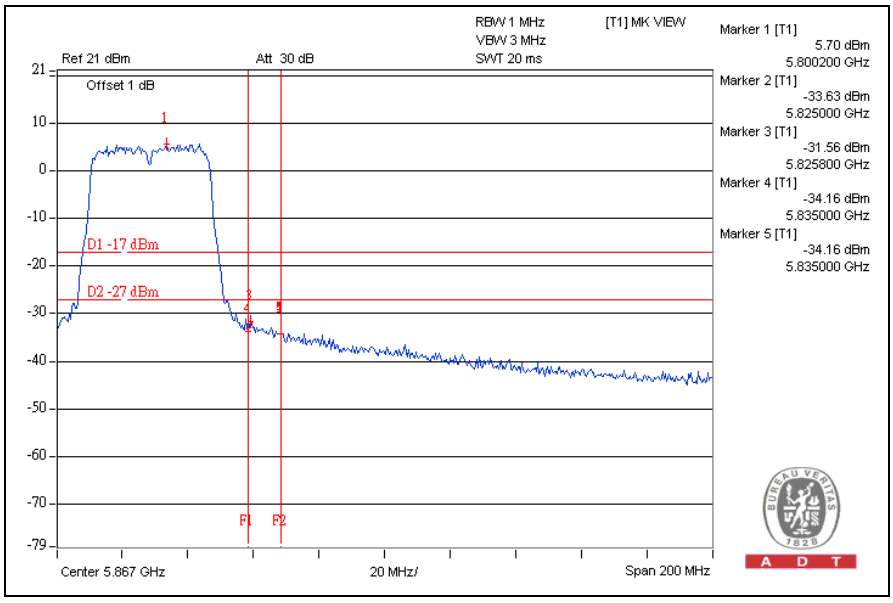


For chain (1):

CH10

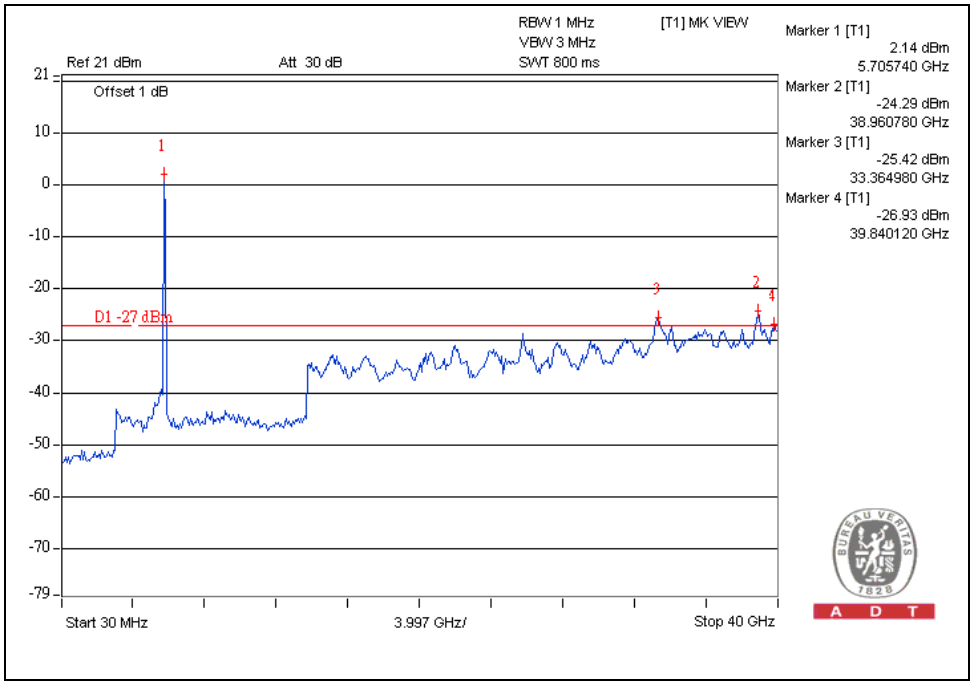


CH11

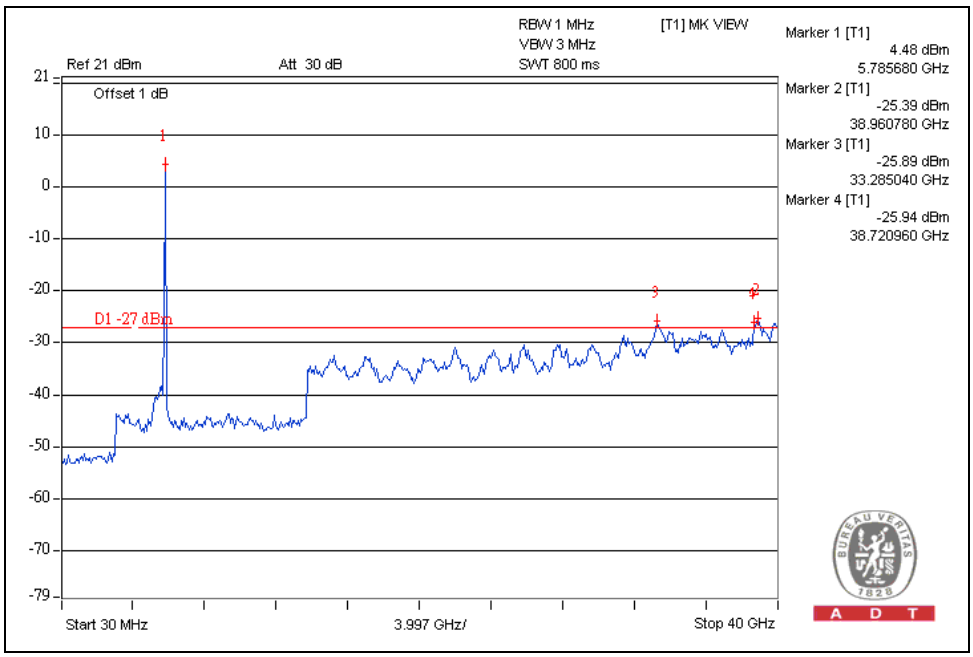


For chain (0):

CH10

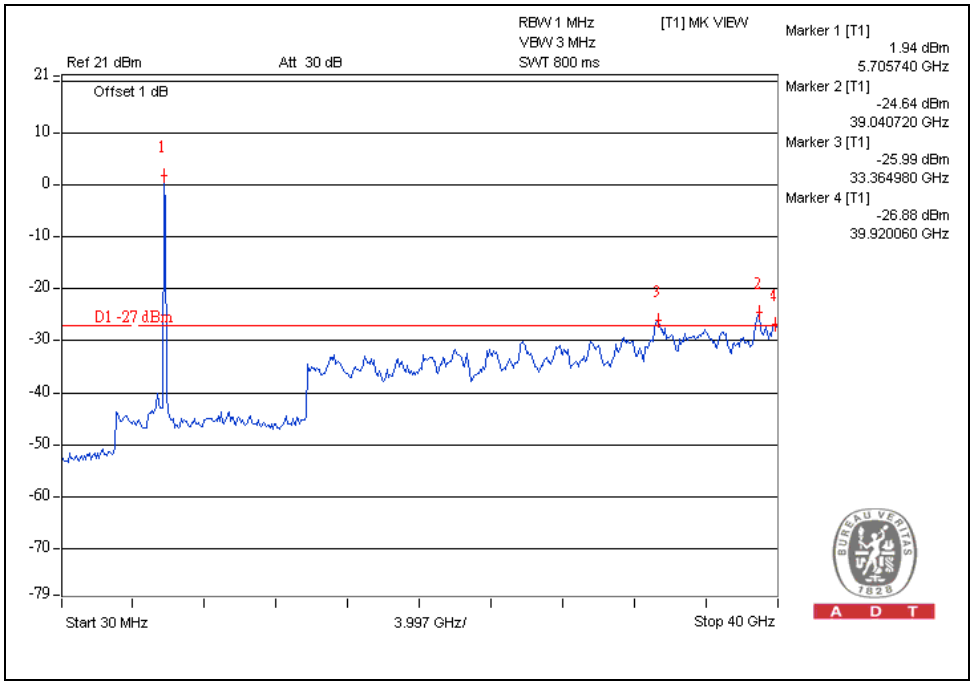


CH11

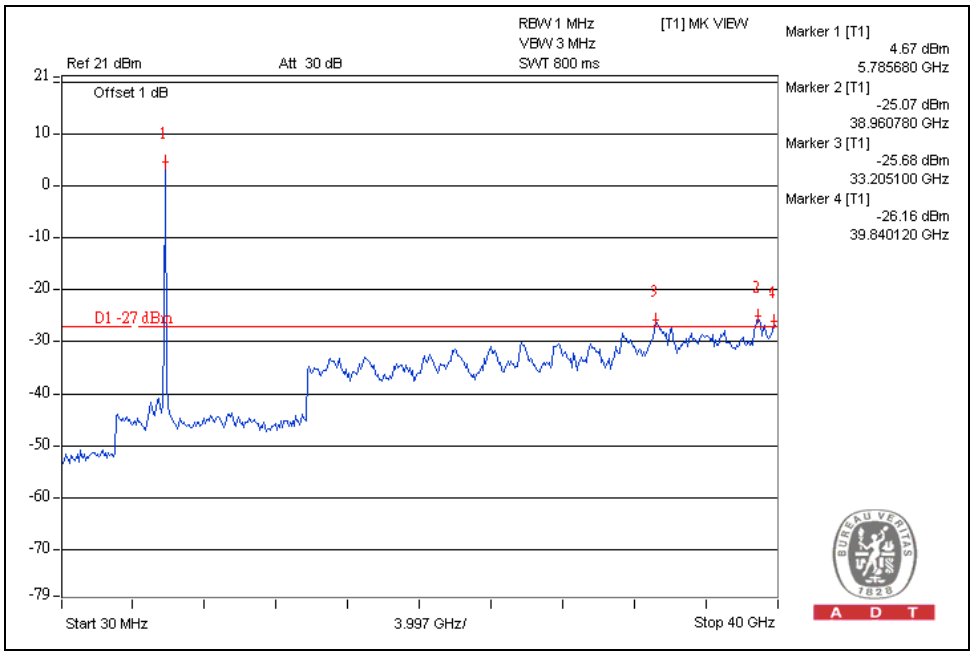


For chain (1):

CH10



CH11



4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

There are two antennas provided to this EUT, please refer to the following table:

No.	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector
CHAIN(0)	Dipole	3	3	UFL-style
CHAIN(1)	Dipole	2.5	3.5(5250-5350MHz) 3.75(5470-5725MHz) 3.75(5725-5825MHz)	UFL-style

5. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also

6.APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---