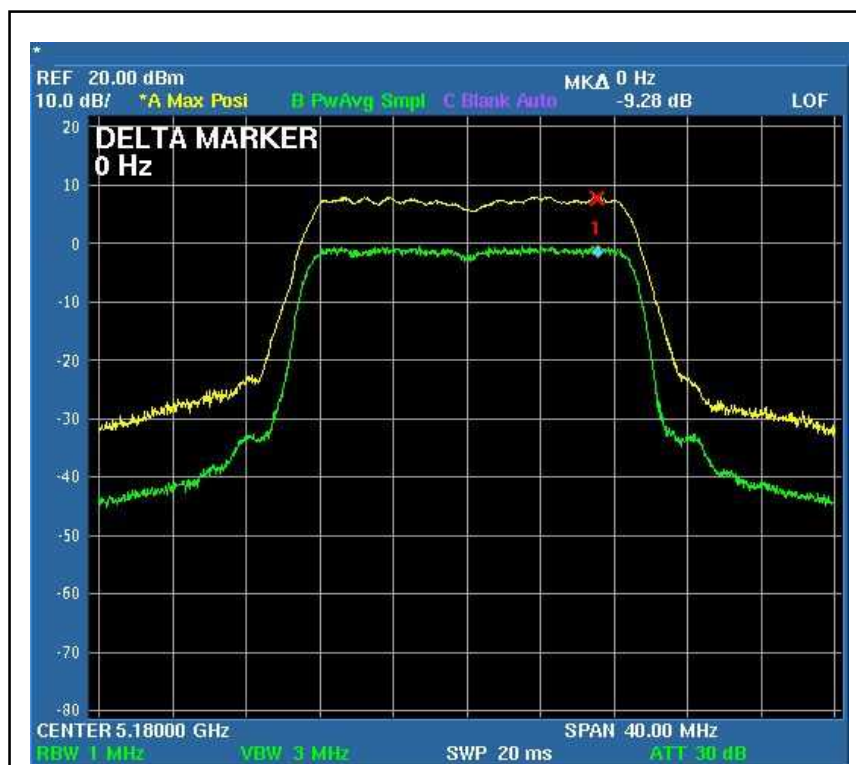
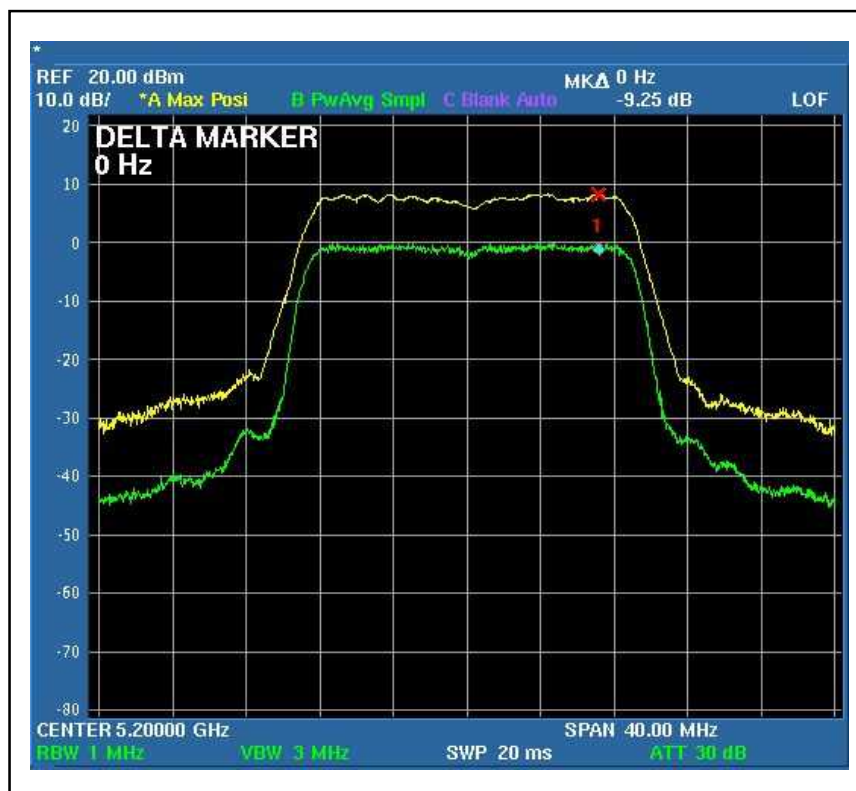


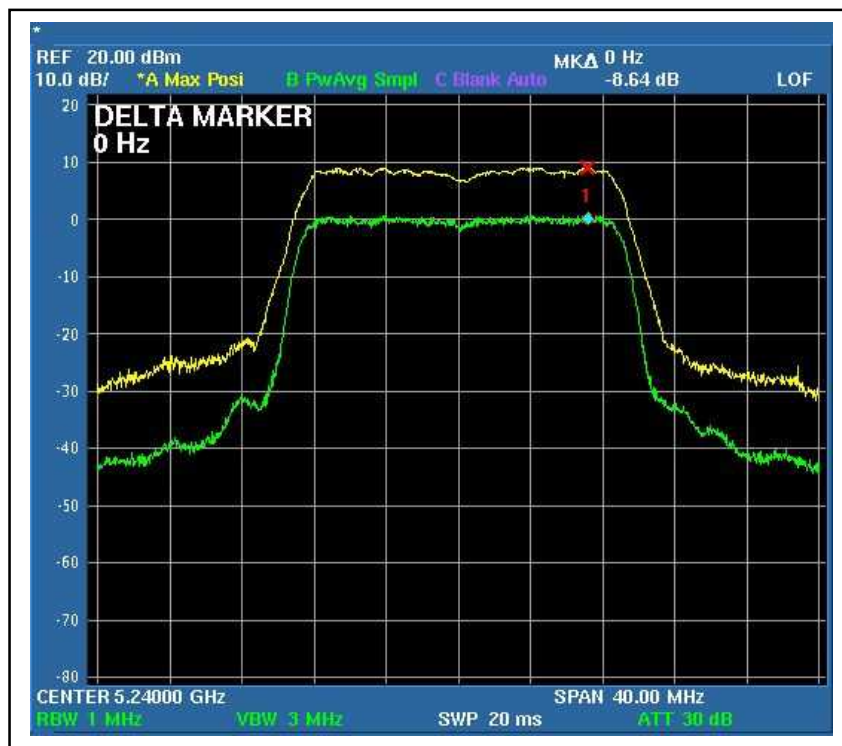
For Chain (1) : CH1



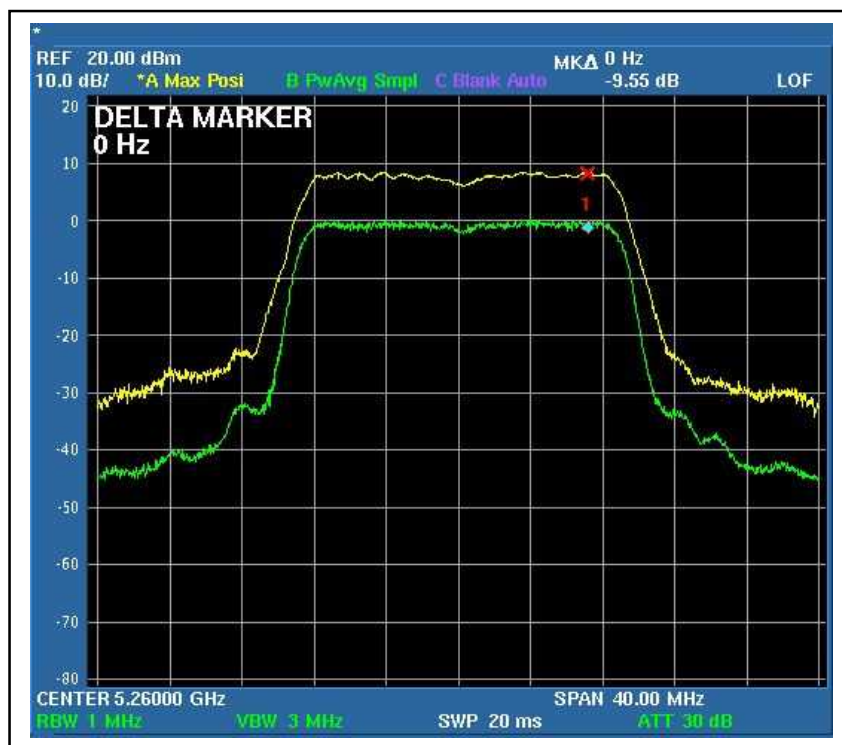
CH2



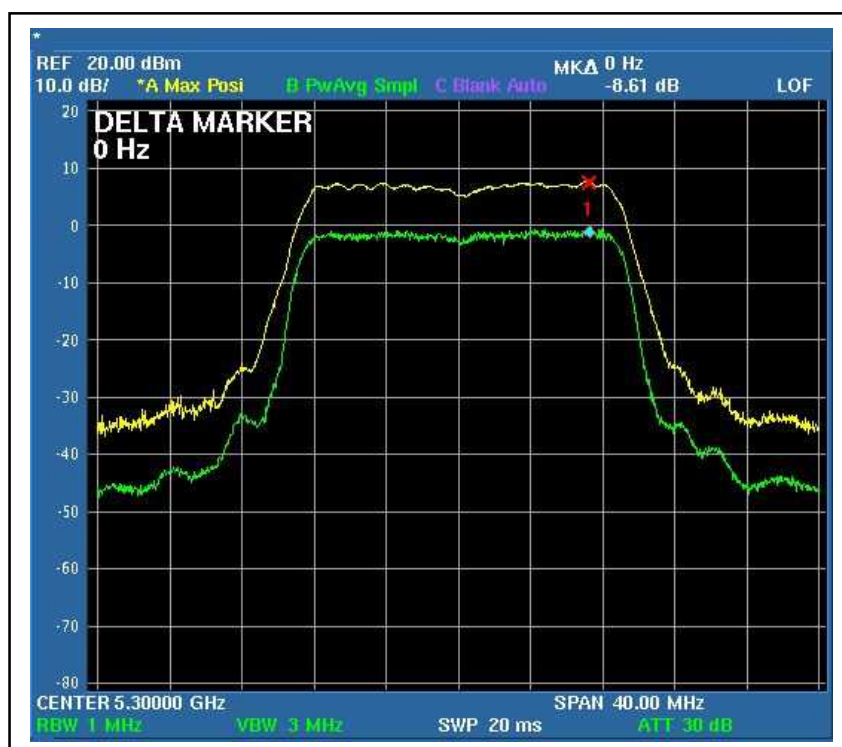
CH4



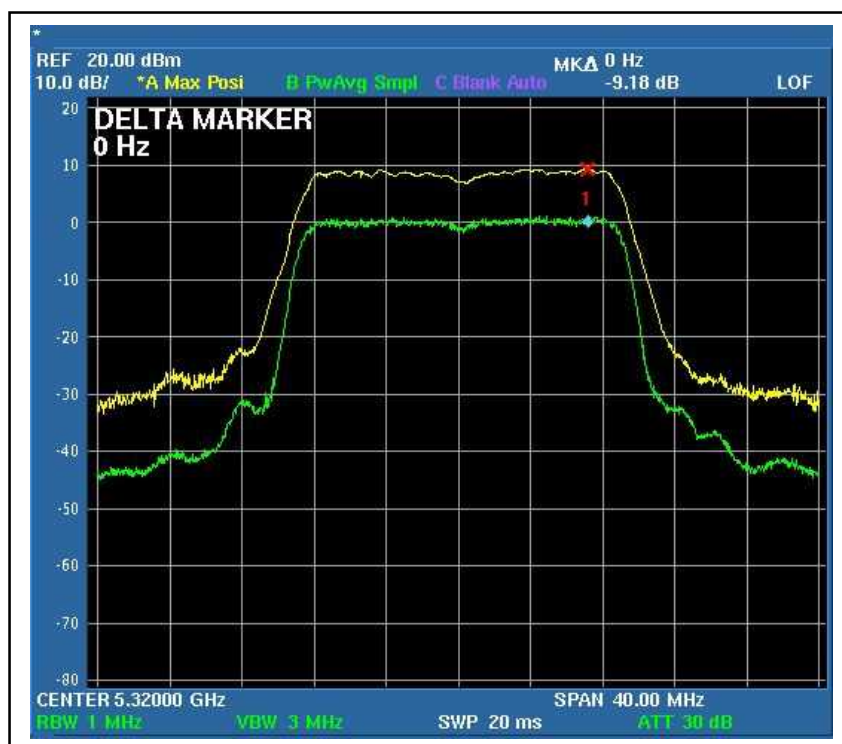
CH5



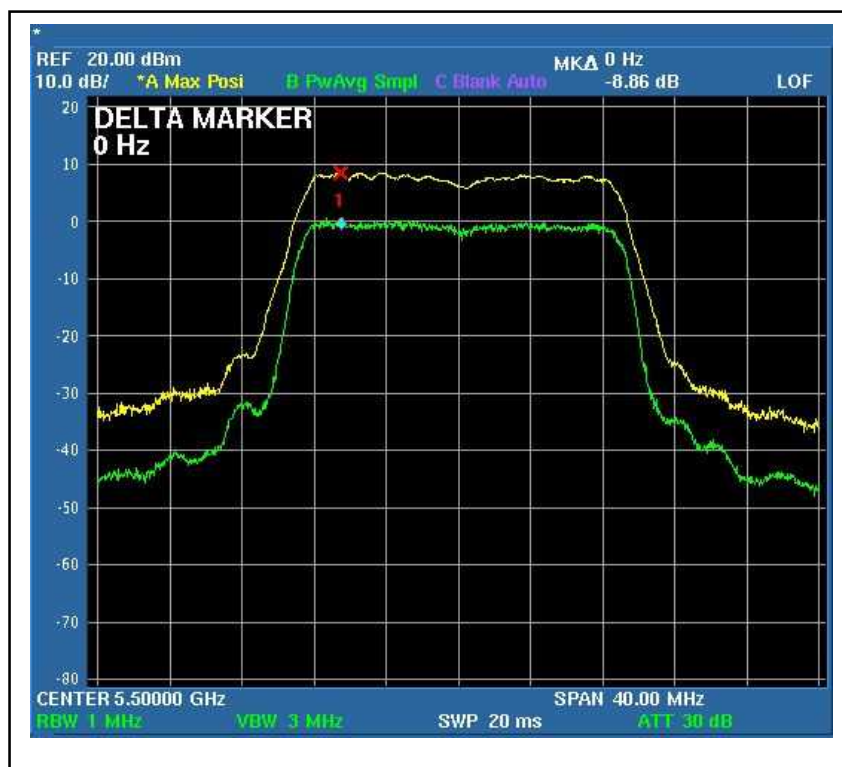
CH7



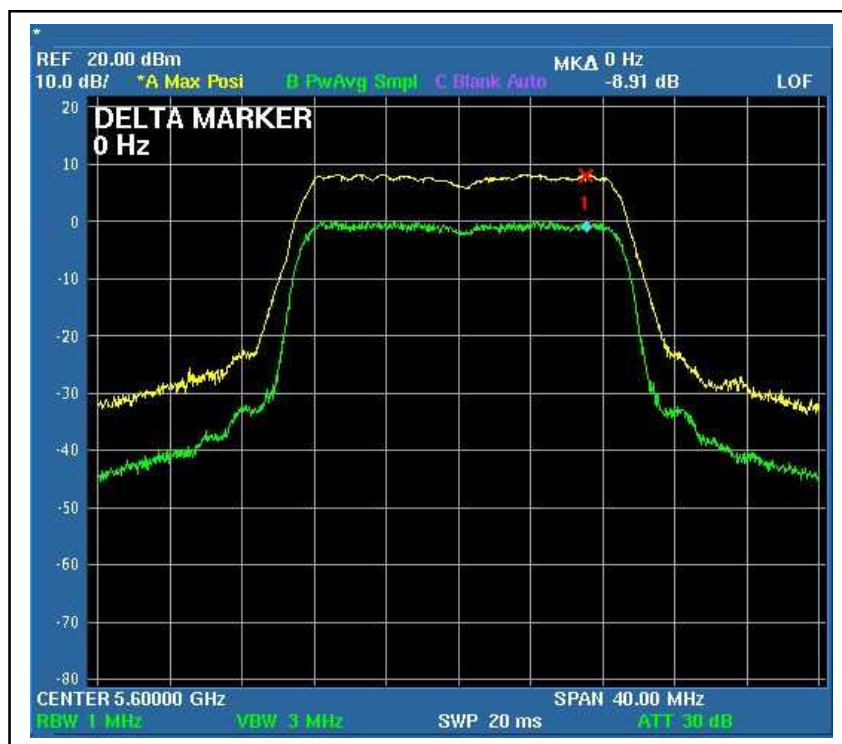
CH8



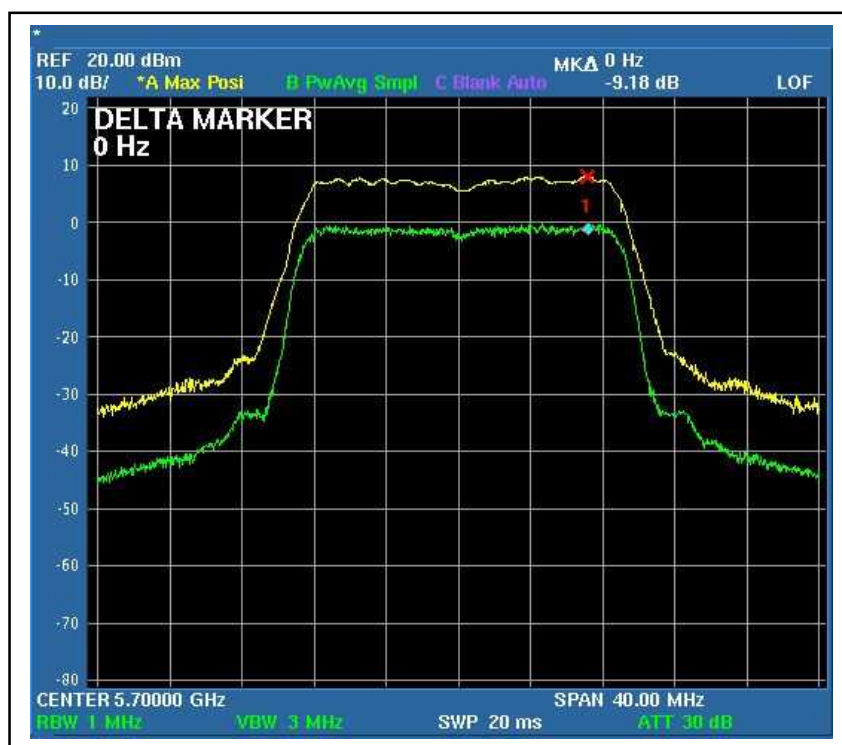
CH9



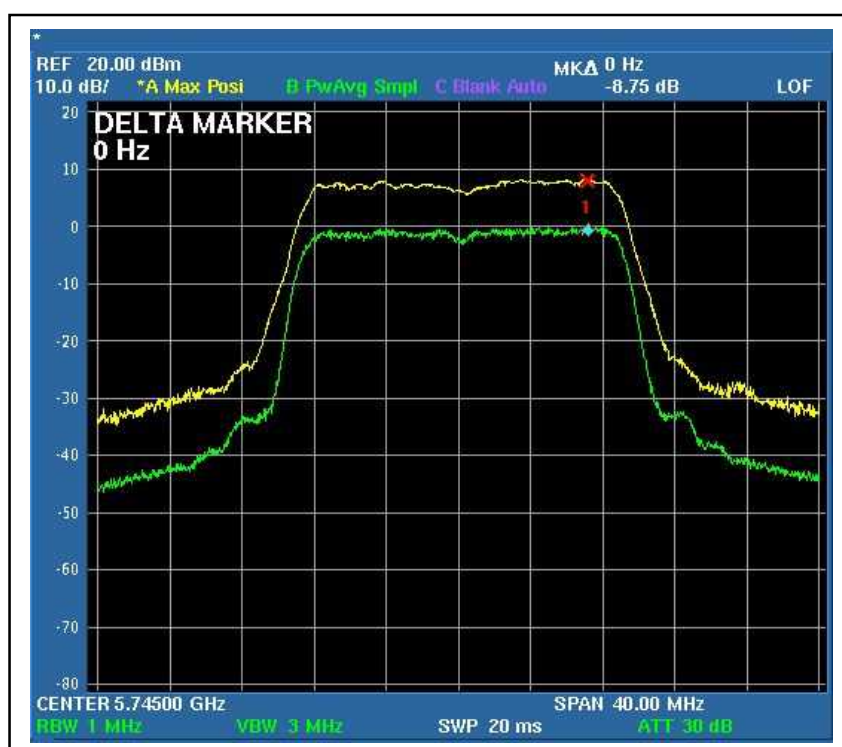
CH14



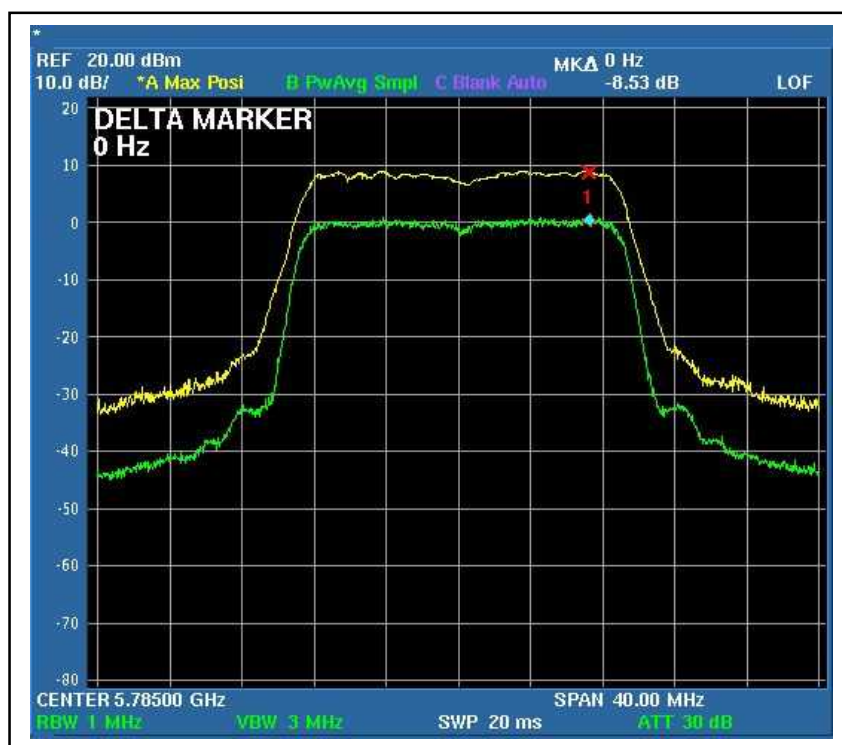
CH19



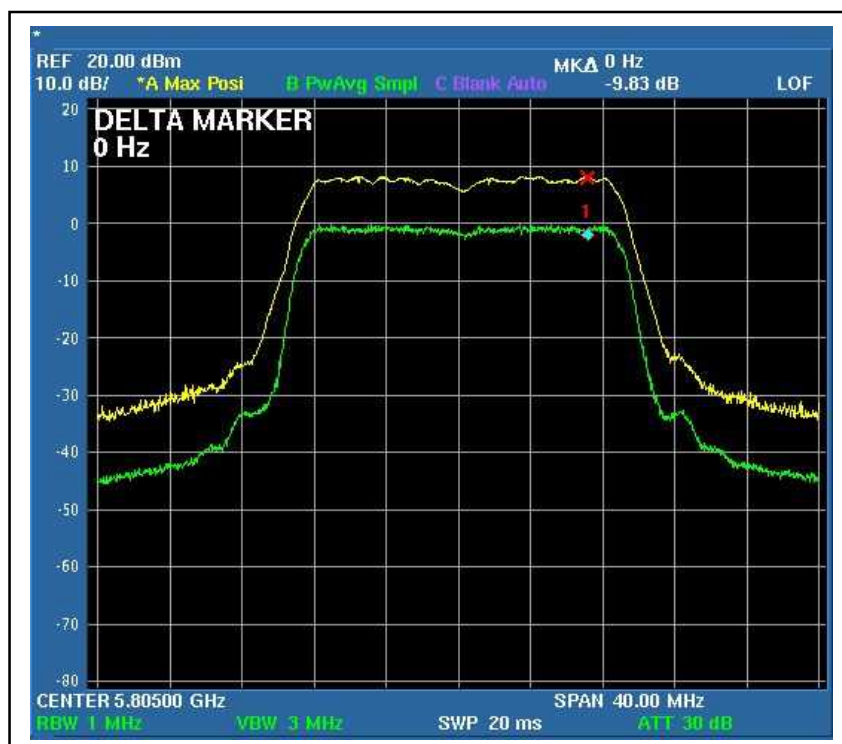
CH20



CH22



CH23





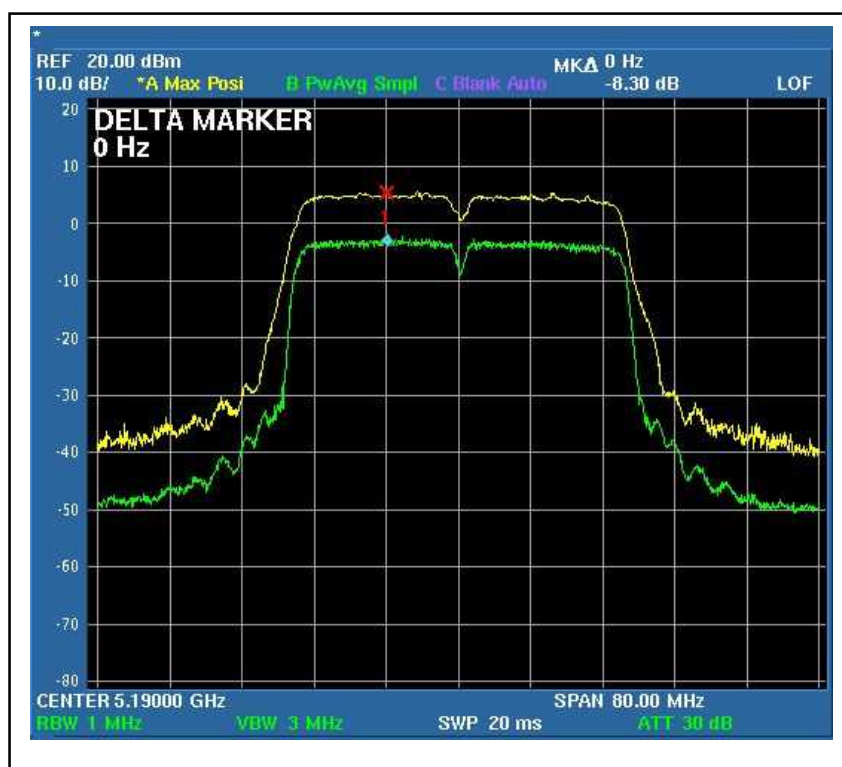
A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

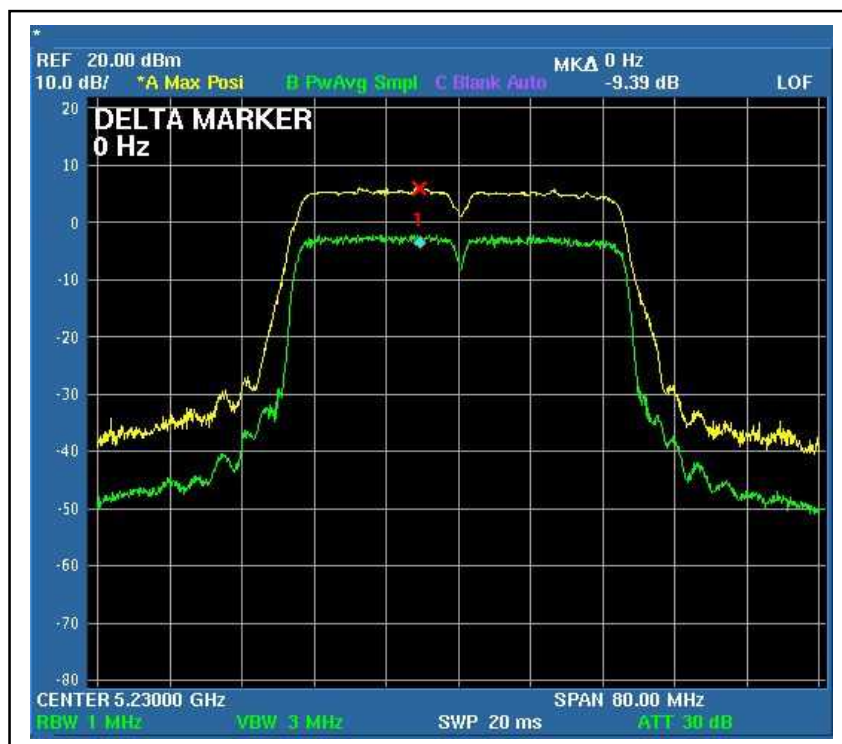
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		Chain (0)	Chain(1)		
1	5190	8.30	9.60	13	PASS
2	5230	9.39	9.74	13	PASS
3	5270	9.40	9.59	13	PASS
4	5310	9.43	9.63	13	PASS
5	5510	8.89	8.97	13	PASS
7	5590	8.87	9.19	13	PASS
9	5670	8.72	9.55	13	PASS
10	5755	9.04	9.81	13	PASS
11	5795	9.49	9.97	13	PASS

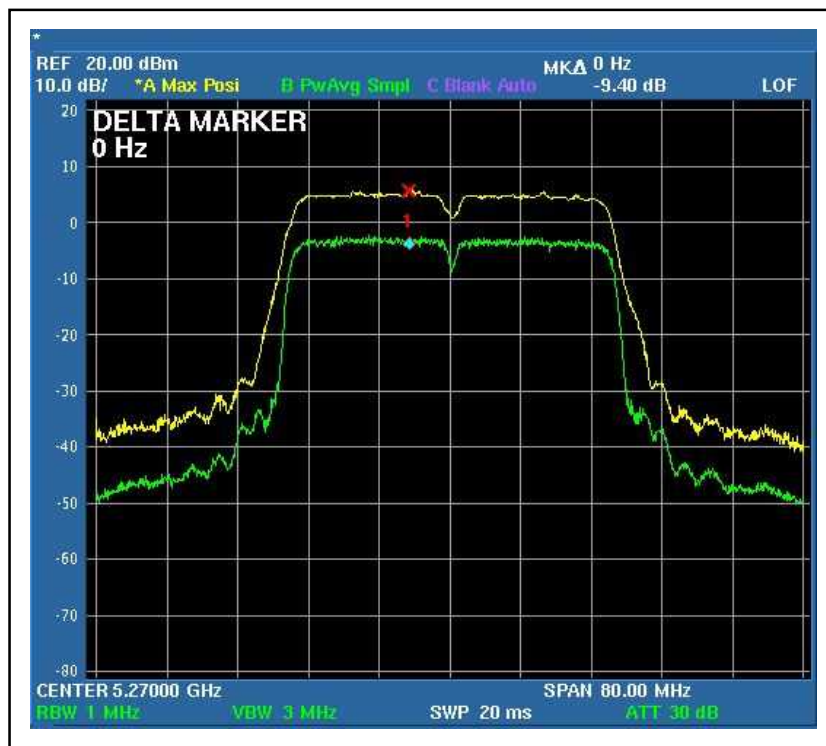
For Chain (0) : CH1



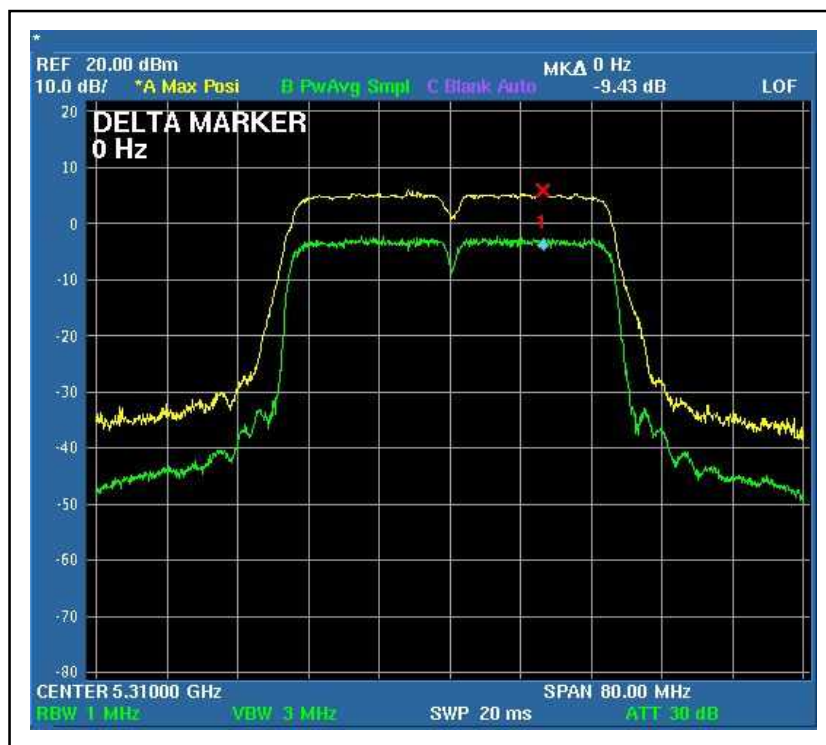
CH2



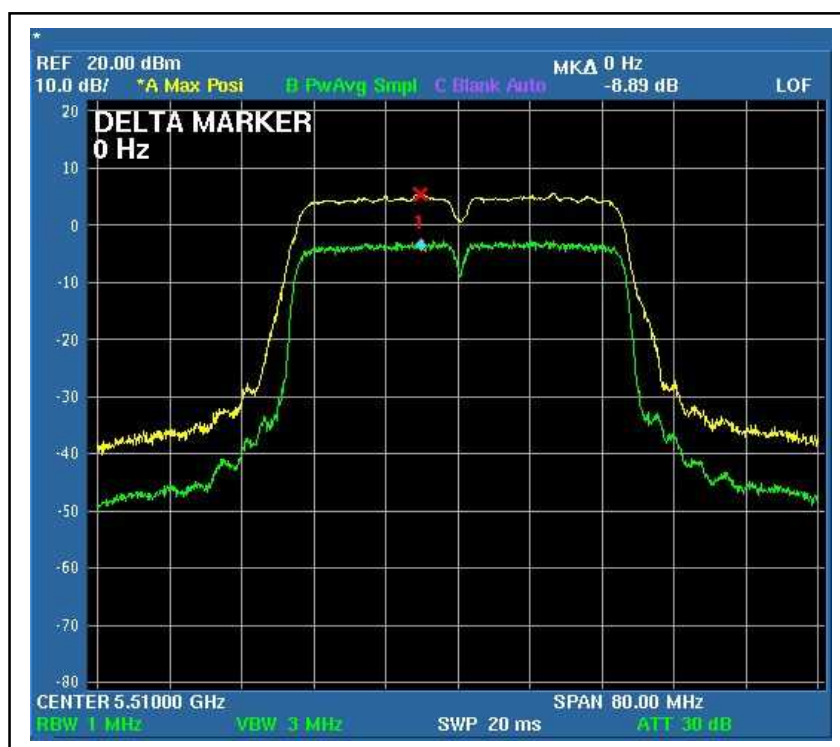
CH3



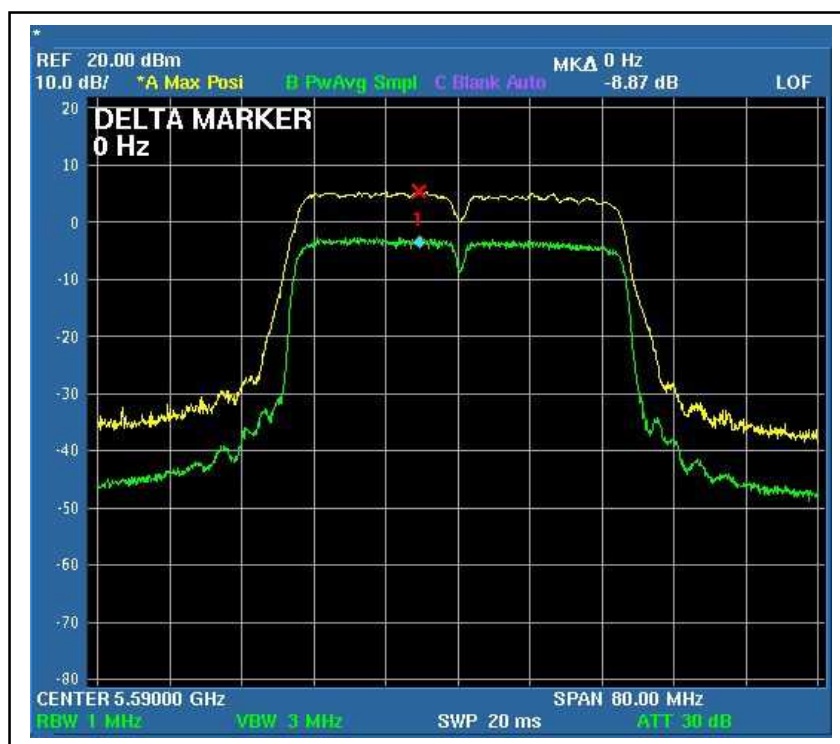
CH4



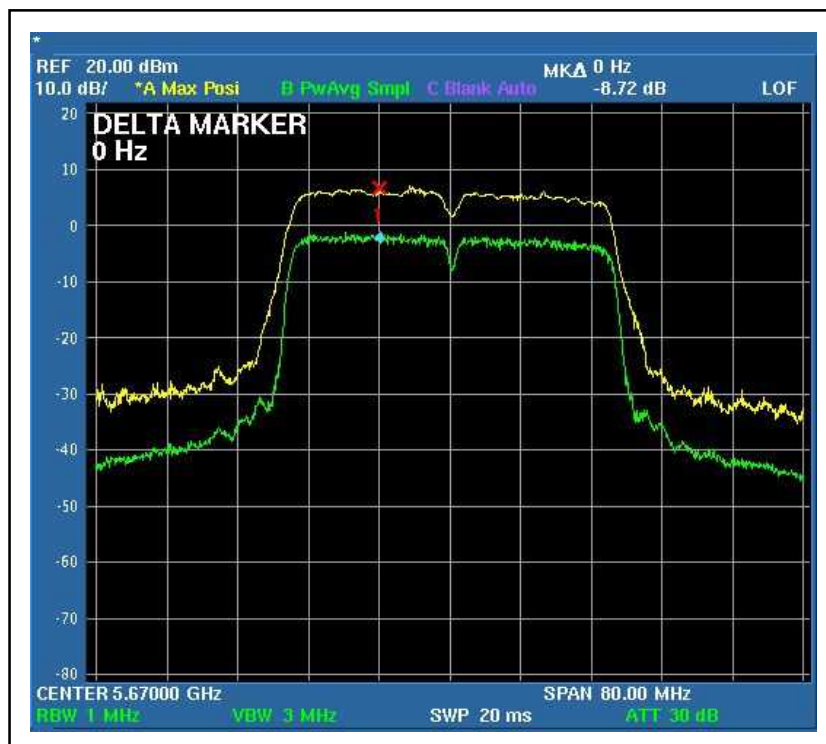
CH5



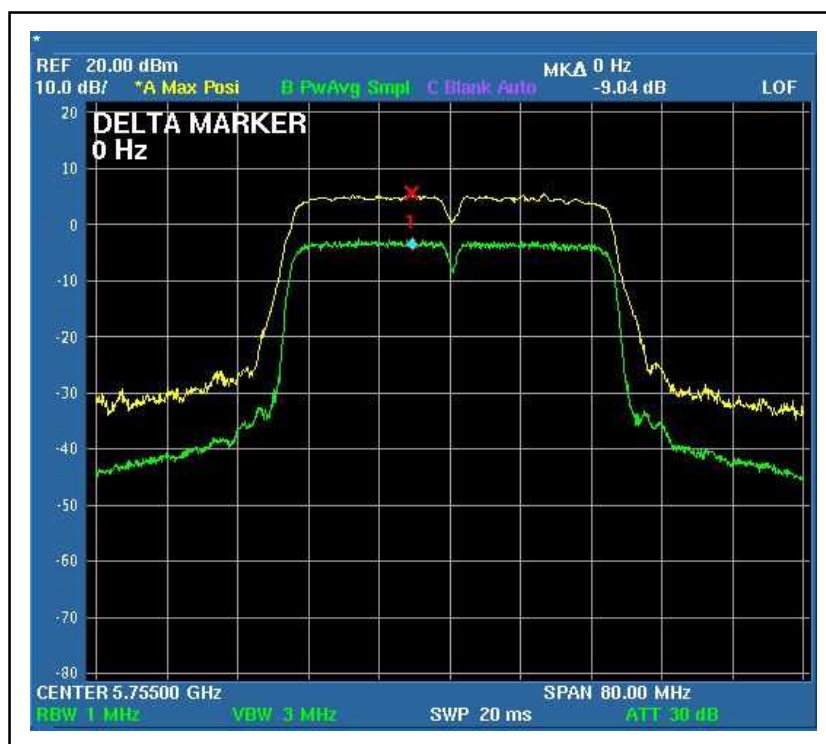
CH7



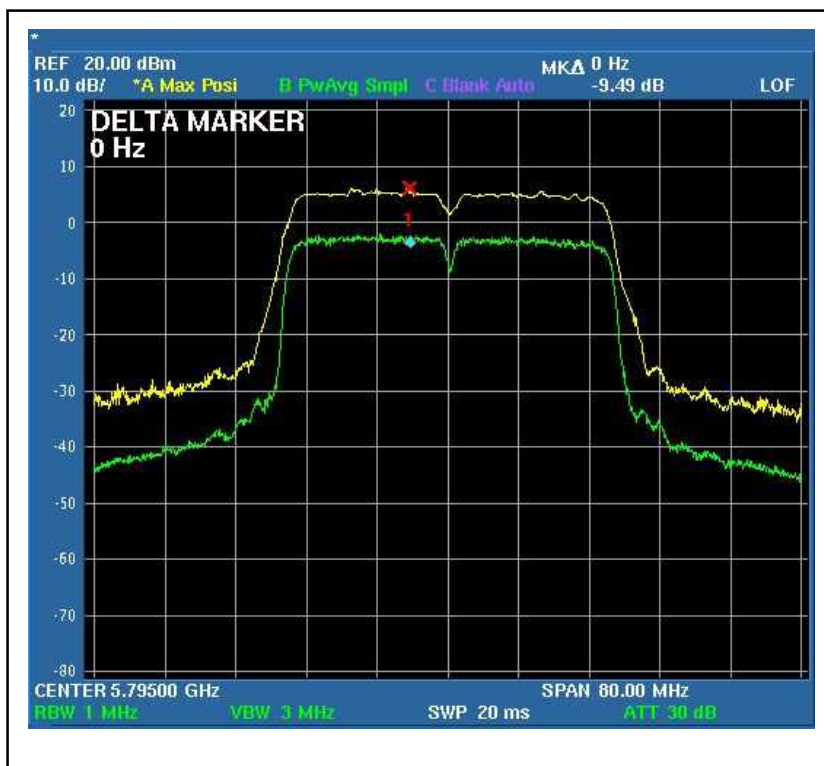
CH9



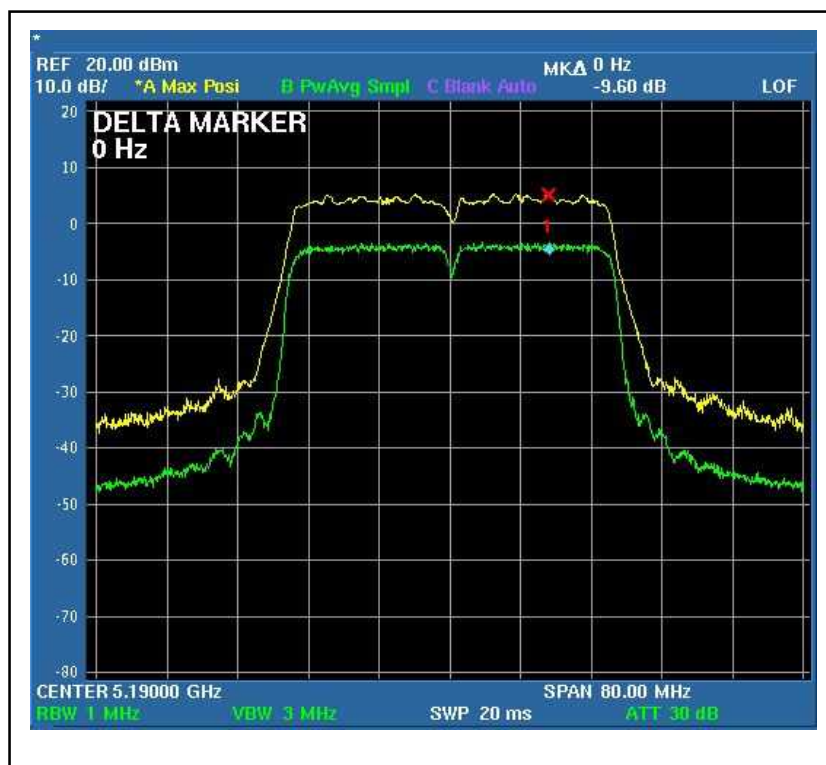
CH10



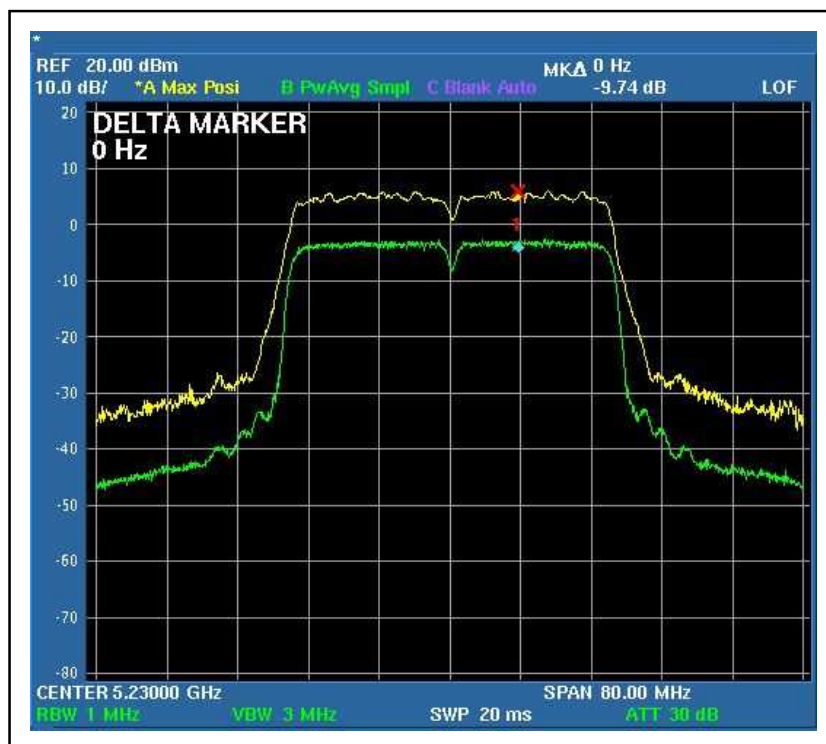
CH11



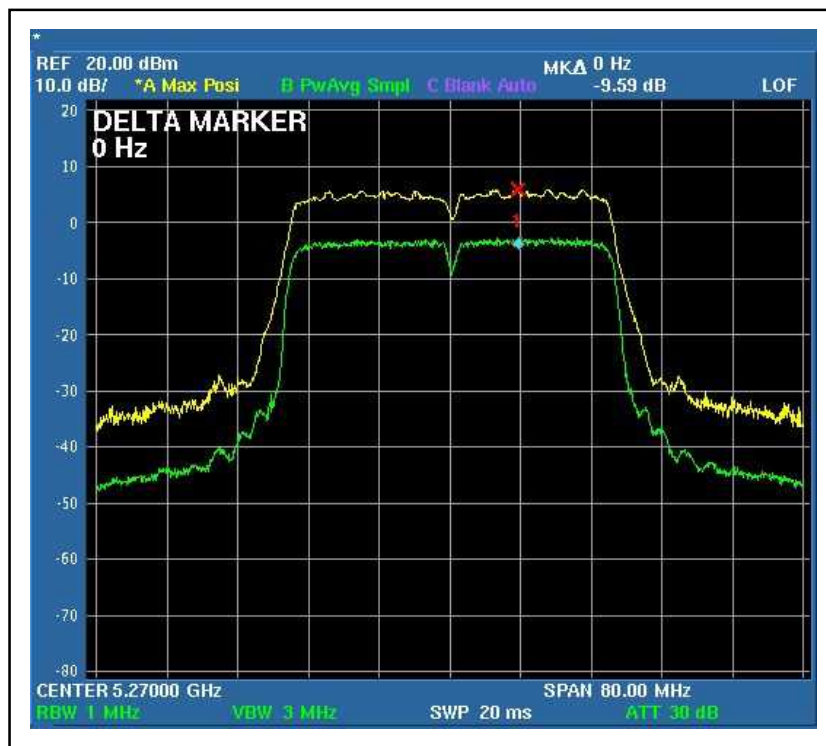
For Chain (1) : CH1



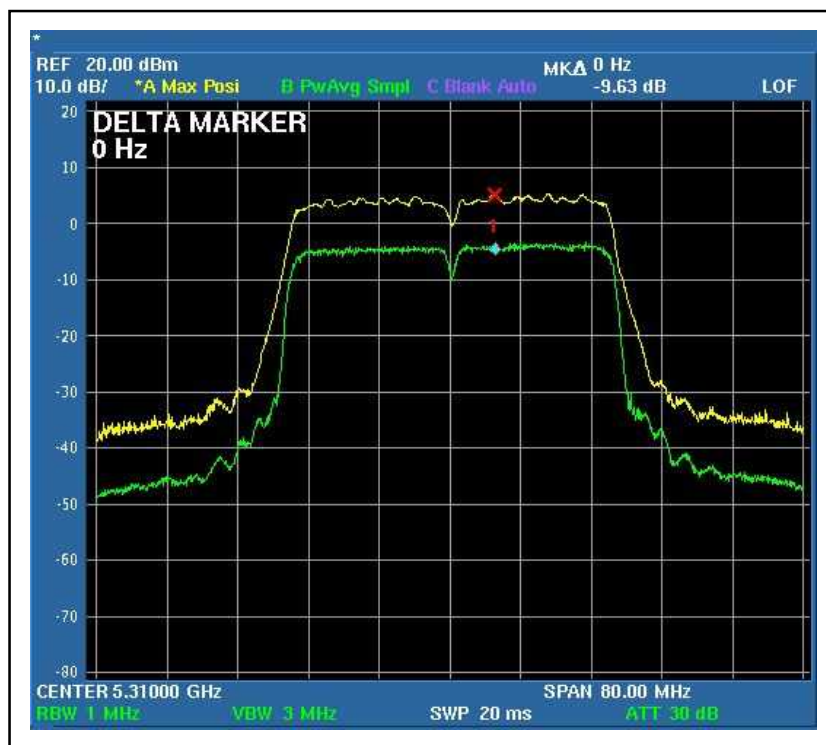
CH2



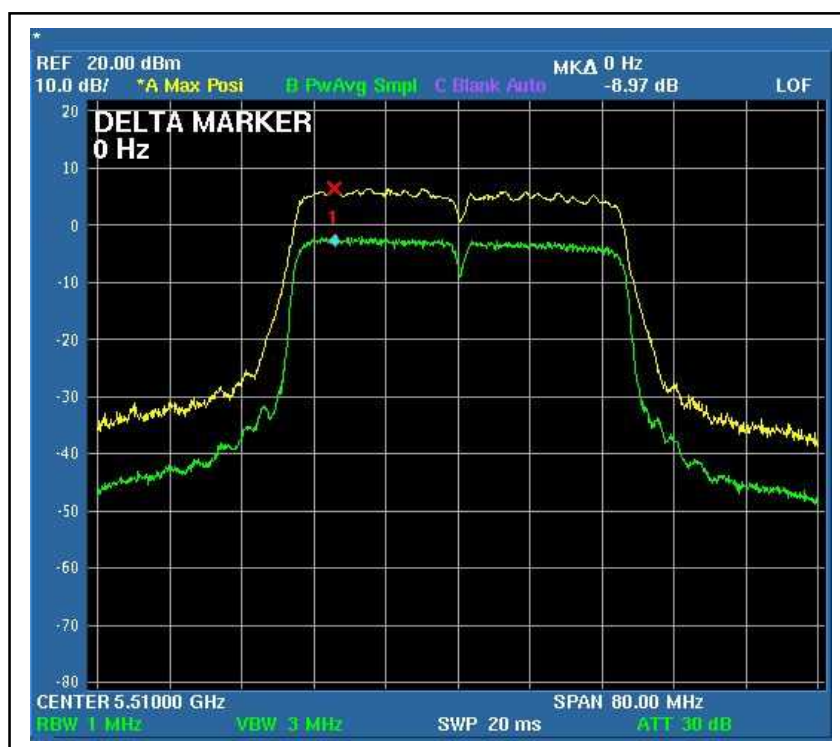
CH3



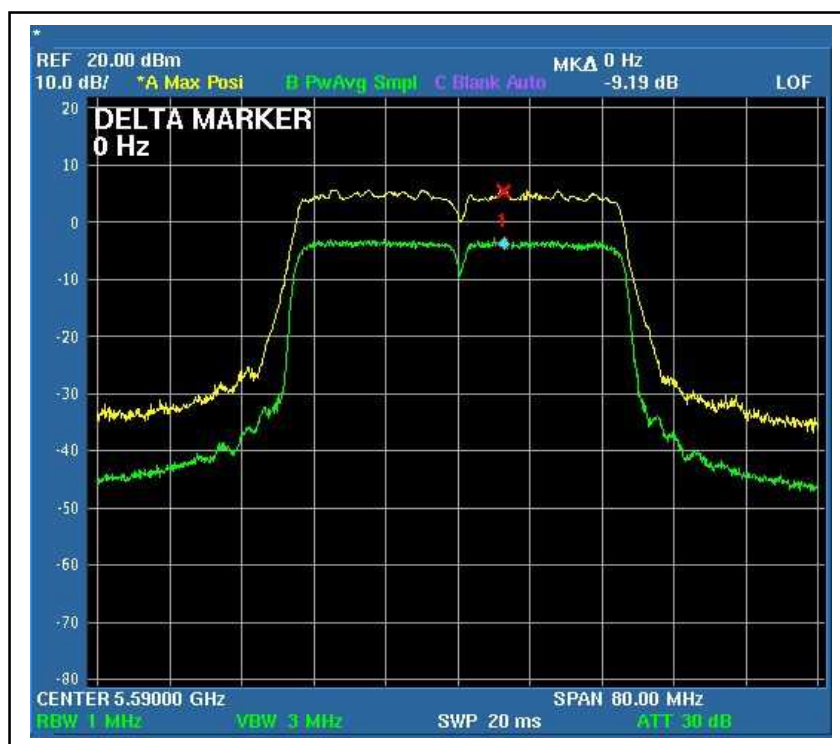
CH4



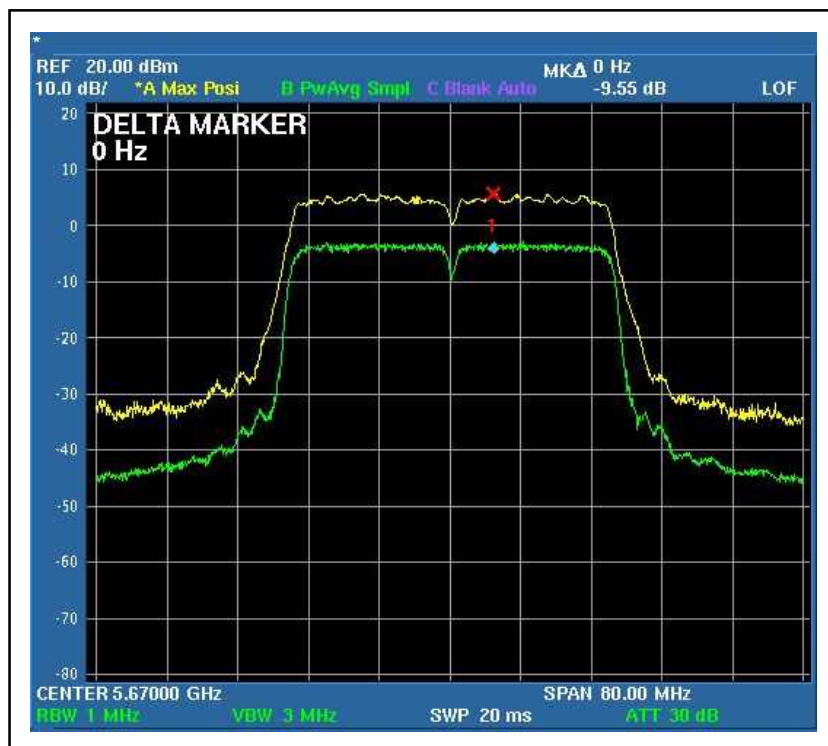
CH5



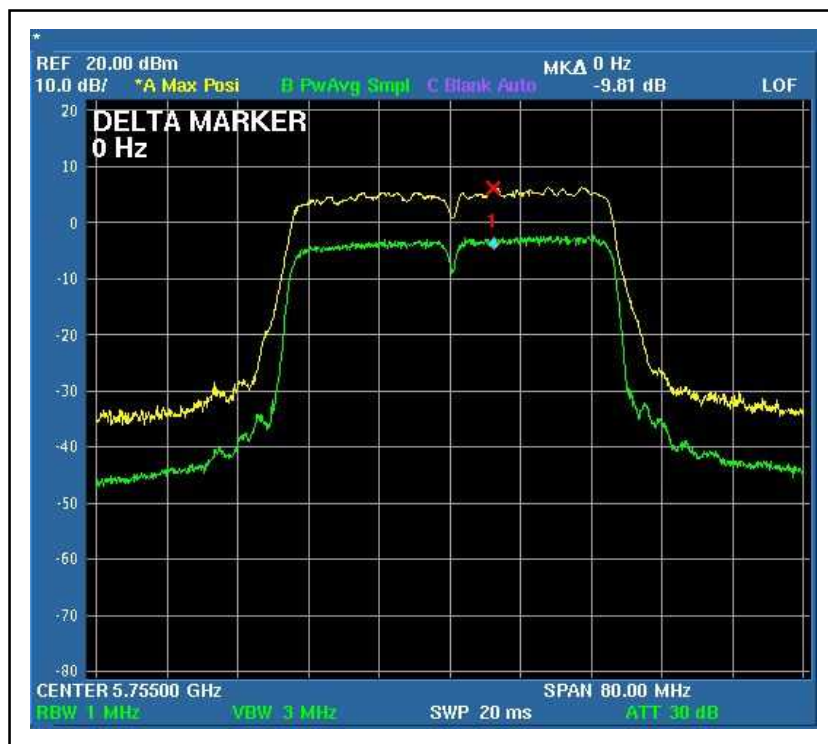
CH7



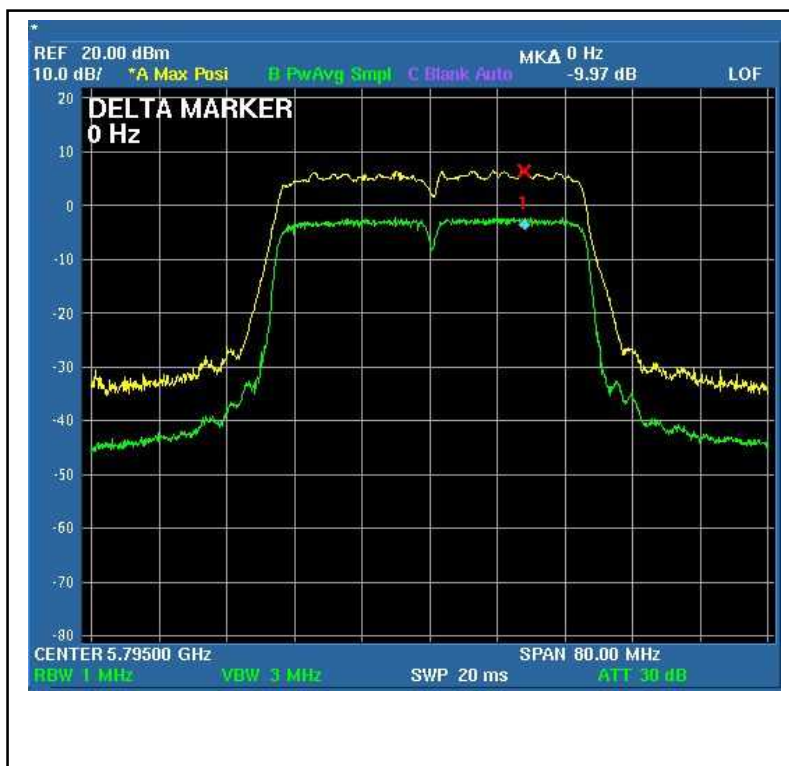
CH9



CH10



CH11





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



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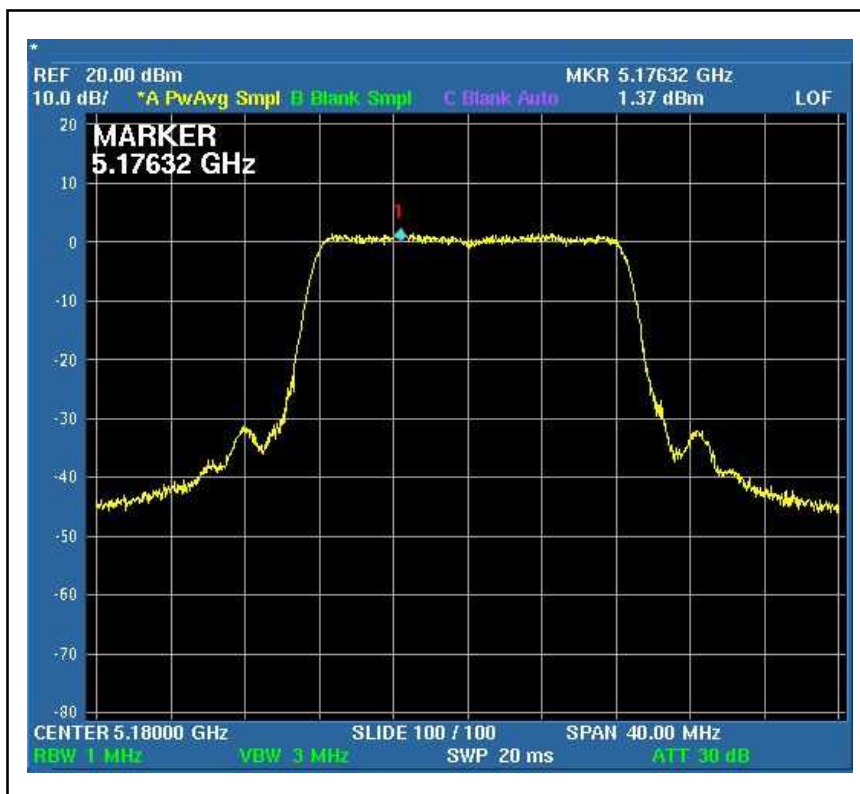
4.5.7 TEST RESULTS

802.11a OFDM modulation

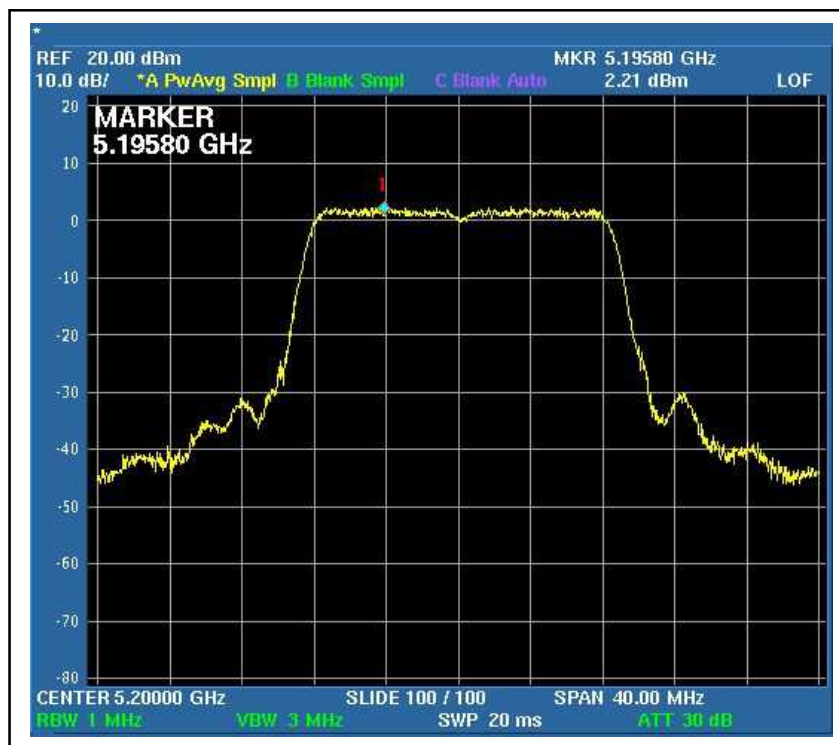
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	1.37	4	PASS
2	5200	2.21	4	PASS
4	5240	1.92	4	PASS
5	5260	1.83	11	PASS
7	5300	1.82	11	PASS
8	5320	2.14	11	PASS
9	5500	2.28	11	PASS
14	5600	2.75	11	PASS
19	5700	2.53	11	PASS
20	5745	2.34	17	PASS
22	5785	3.27	17	PASS
23	5805	3.05	17	PASS

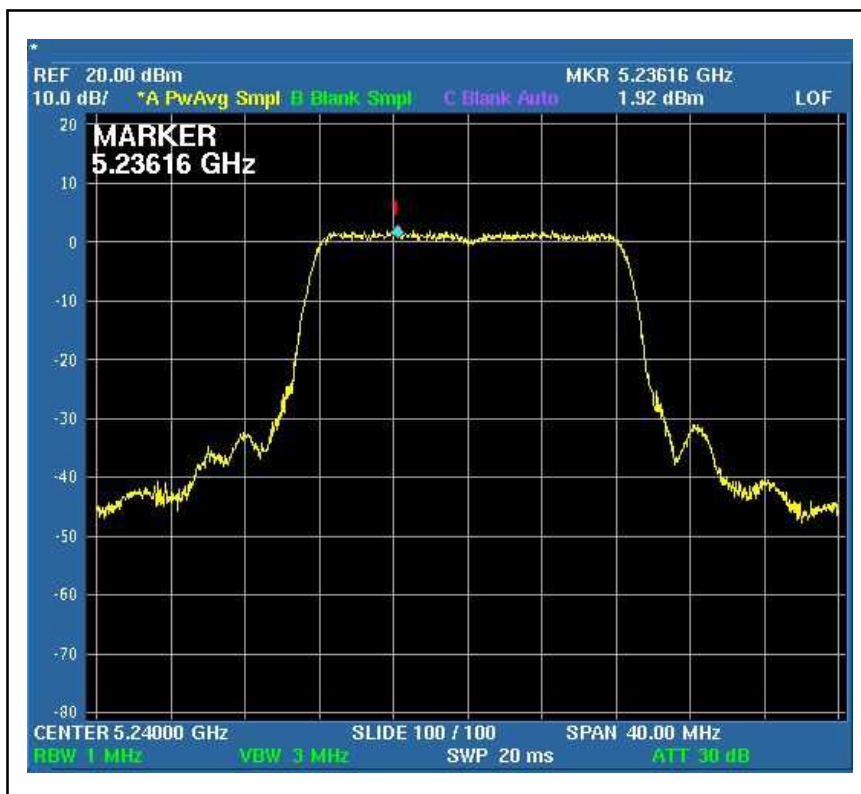
CH1



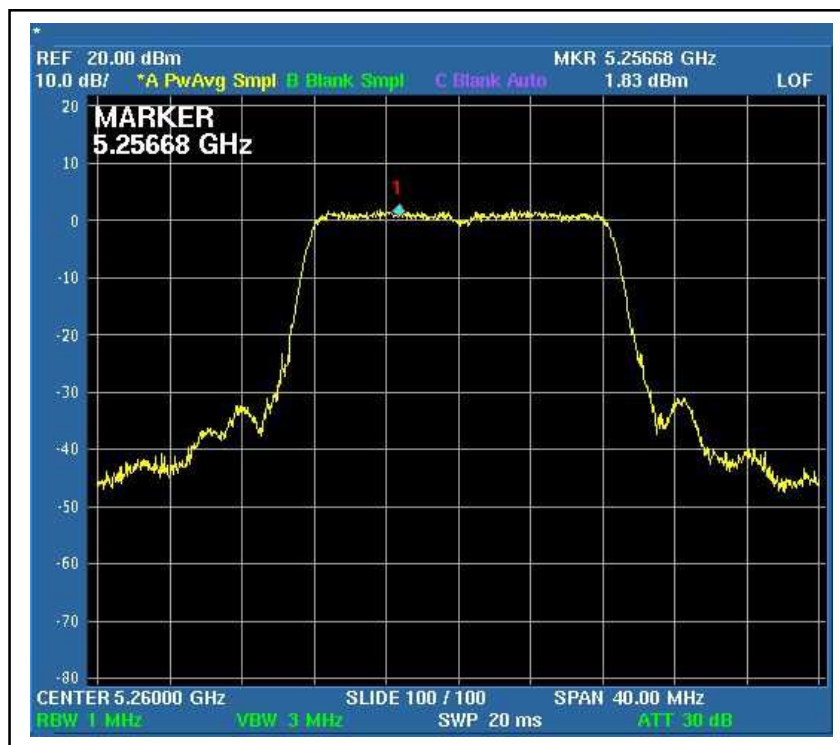
CH2



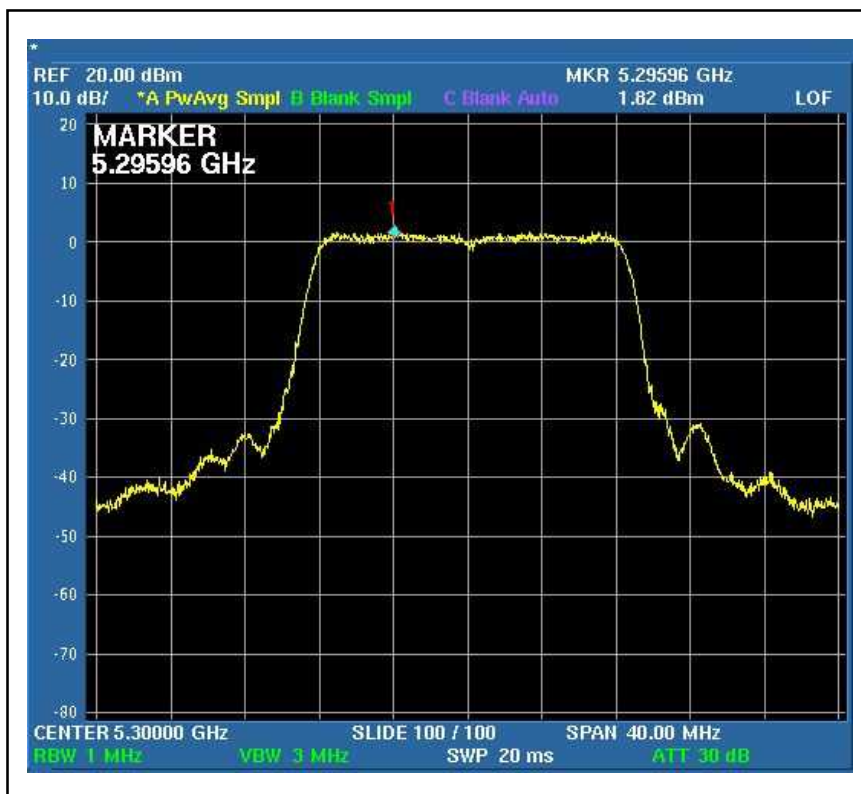
CH4



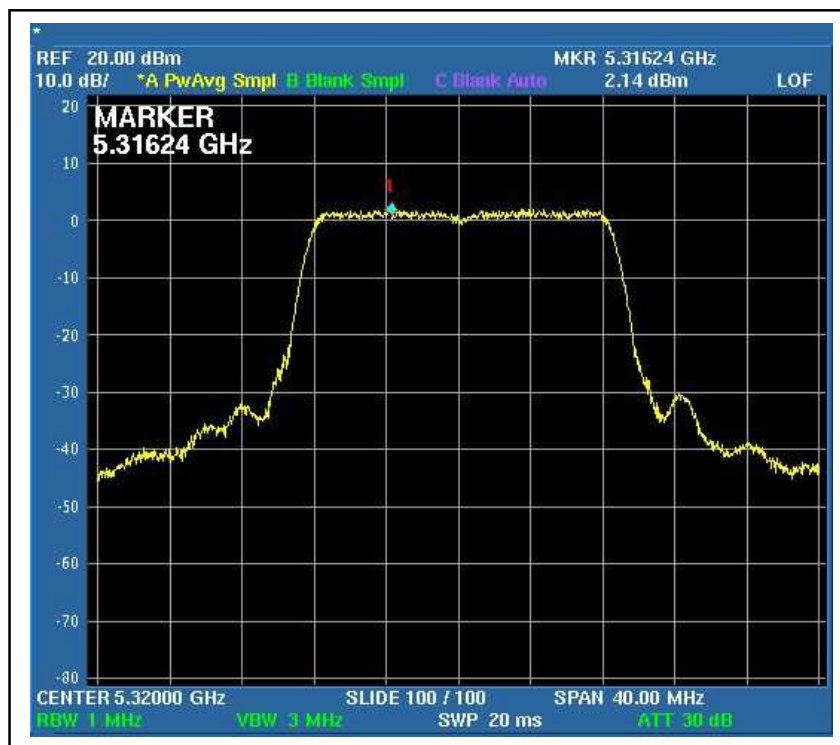
CH5



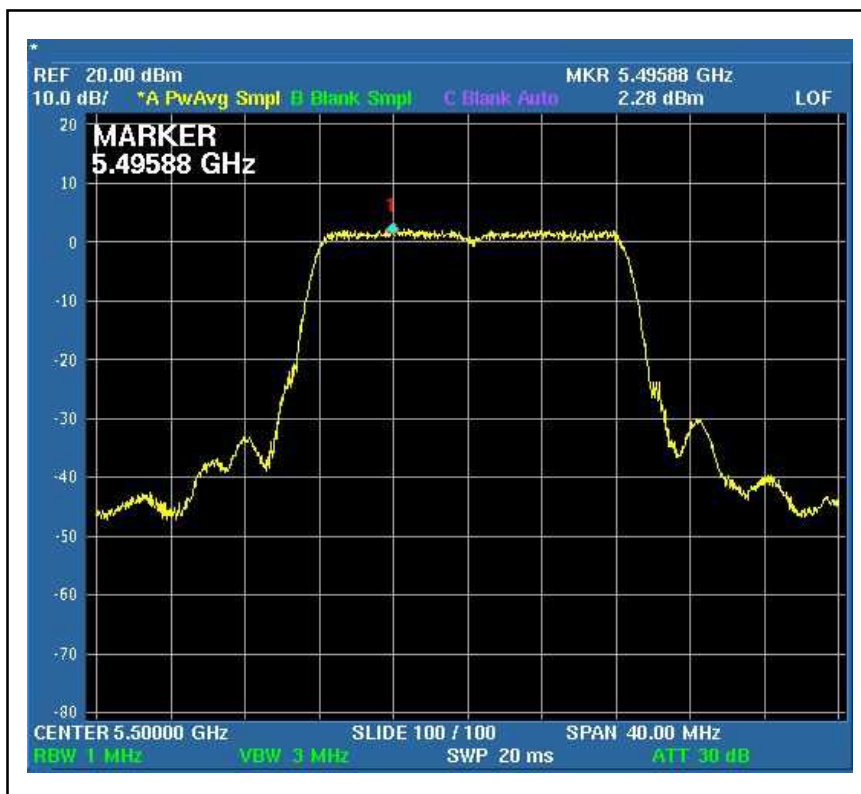
CH7



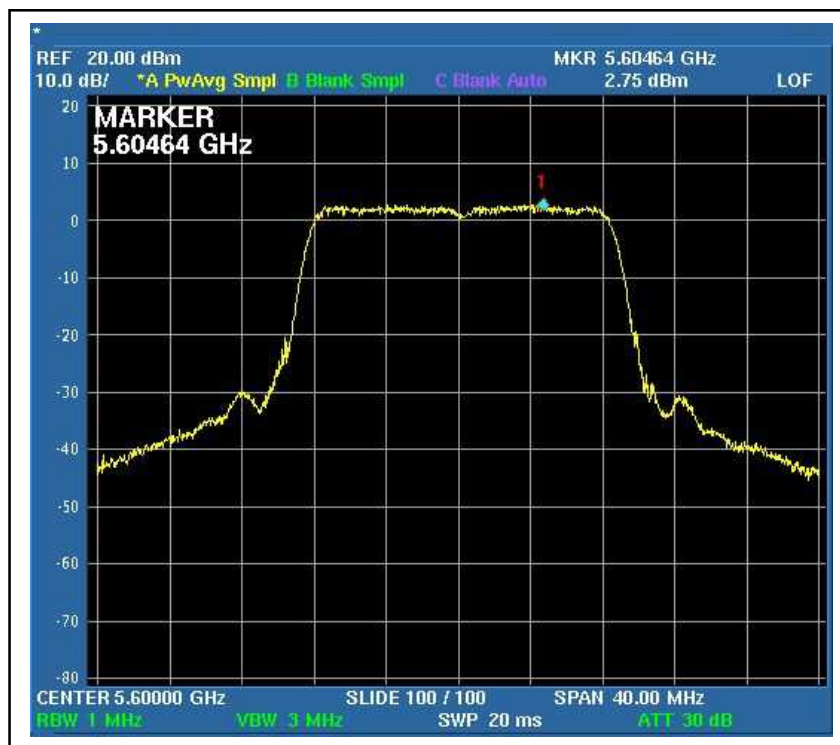
CH8



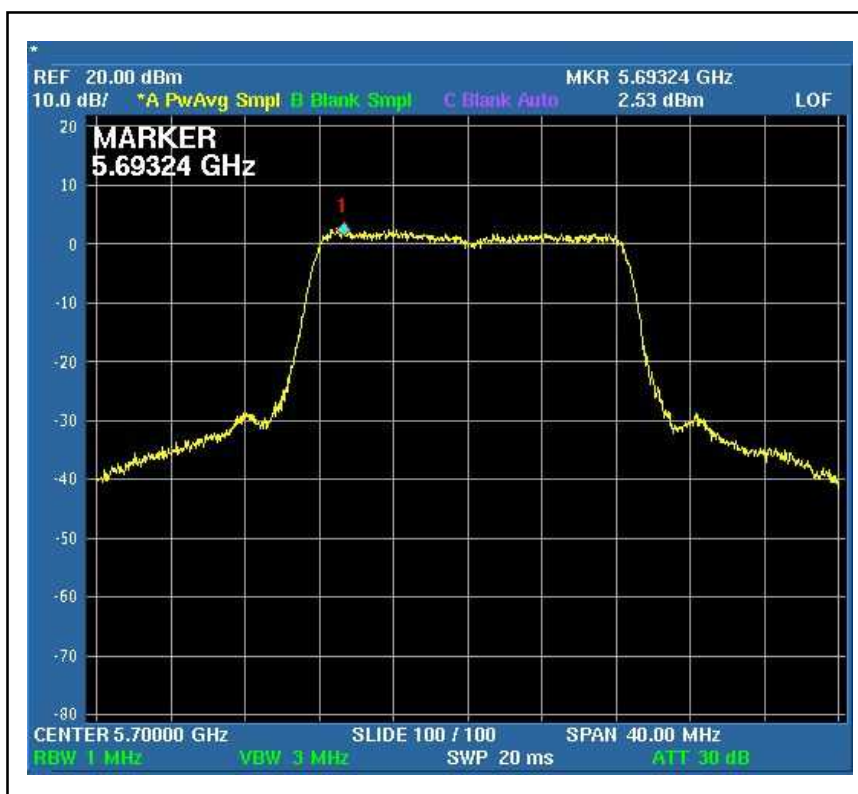
CH9



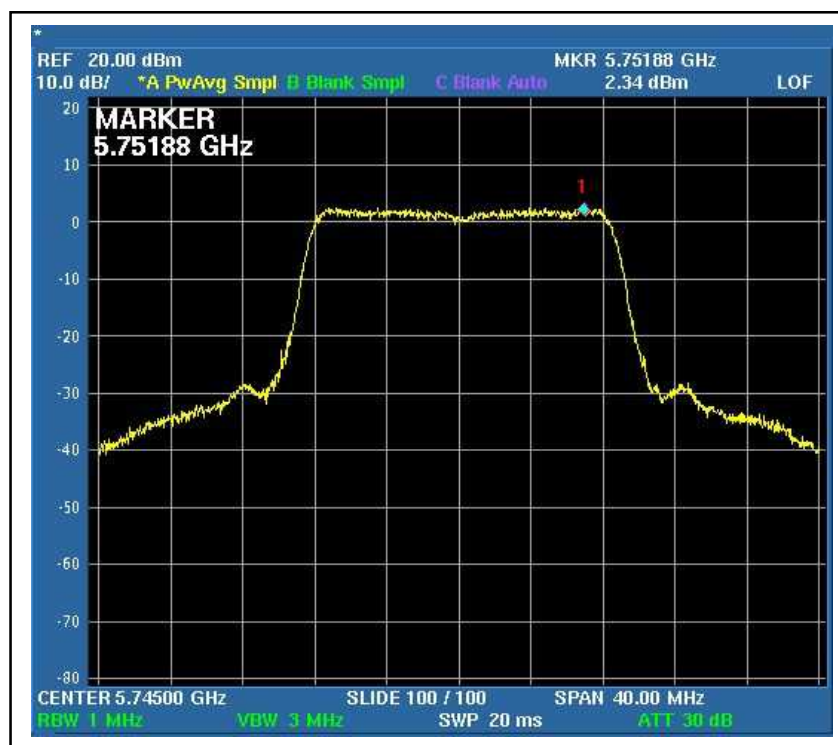
CH14



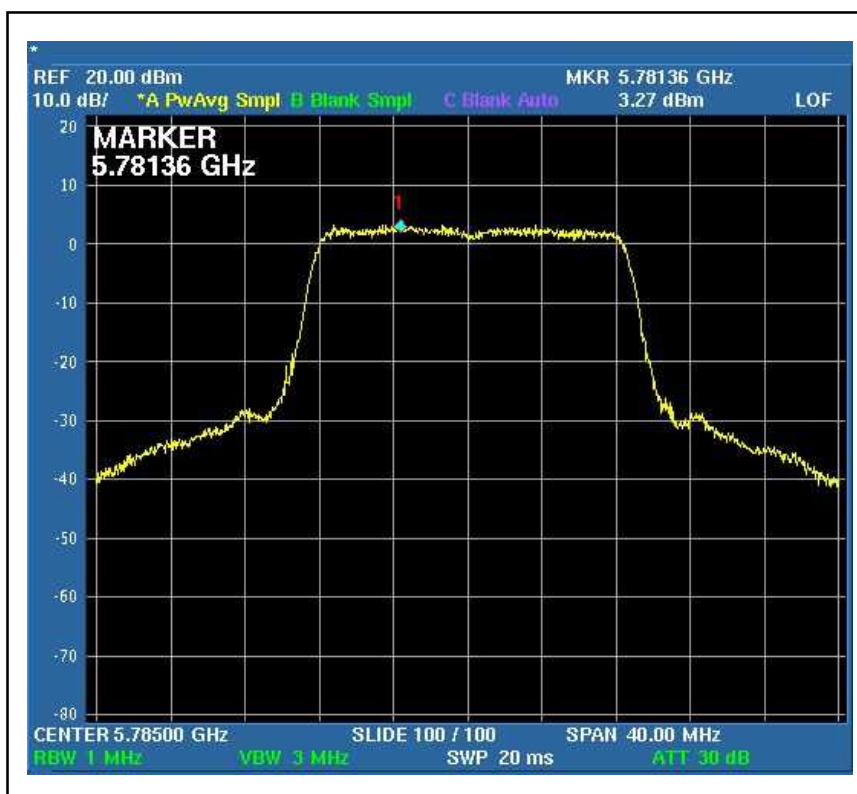
CH19



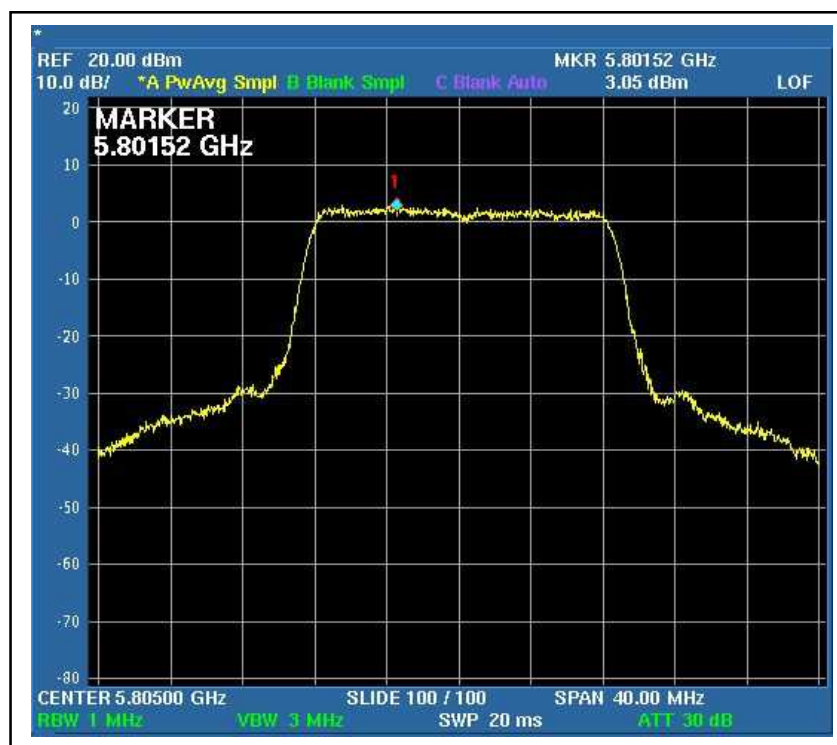
CH20



CH22



CH23





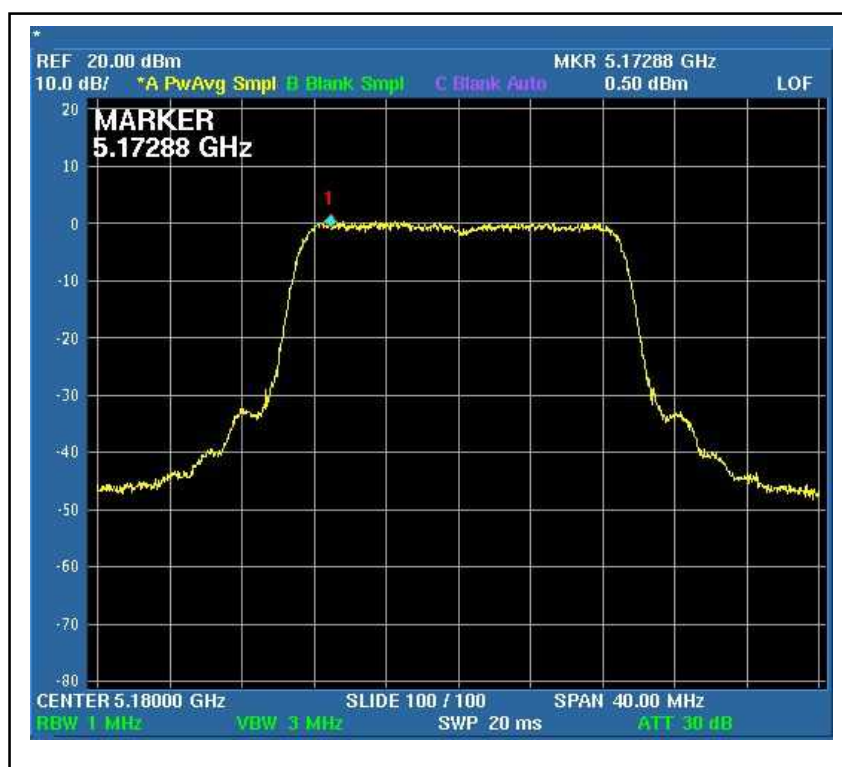
A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

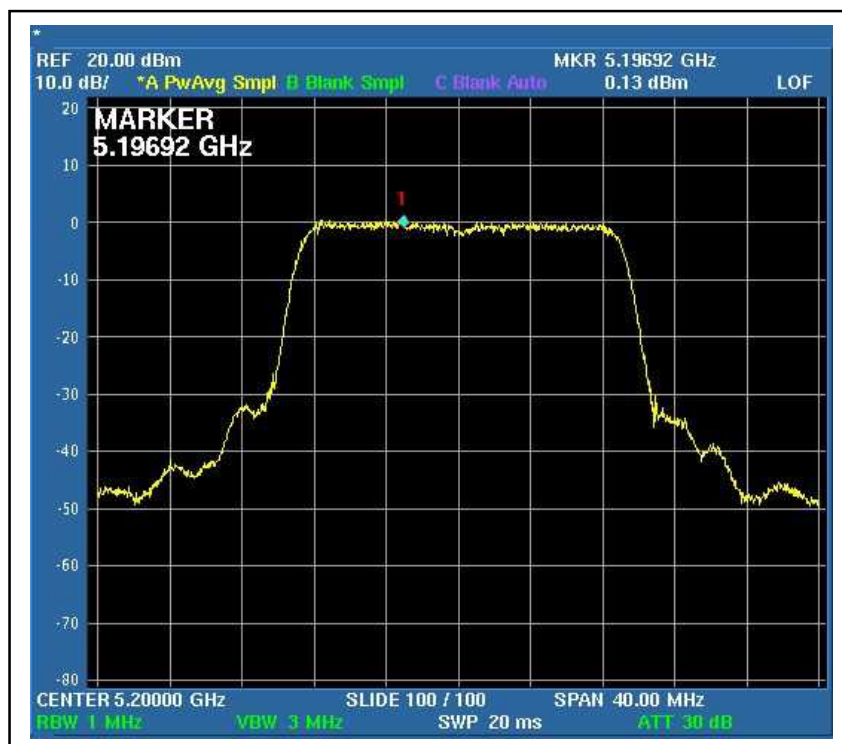
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	0.50	-0.16	3.19	4	PASS
2	5200	0.13	-0.01	3.07	4	PASS
4	5240	-0.17	0.66	3.28	4	PASS
5	5260	-0.41	-0.09	2.76	11	PASS
7	5300	-0.54	-0.91	2.29	11	PASS
8	5320	-0.22	0.20	3.01	11	PASS
9	5500	0.07	0.24	3.17	11	PASS
14	5600	-0.23	-0.03	2.88	11	PASS
19	5700	-0.07	-0.23	2.86	11	PASS
20	5745	0.22	-0.13	3.06	17	PASS
22	5785	-0.27	0.72	3.26	17	PASS
23	5805	0.77	-0.30	3.28	17	PASS

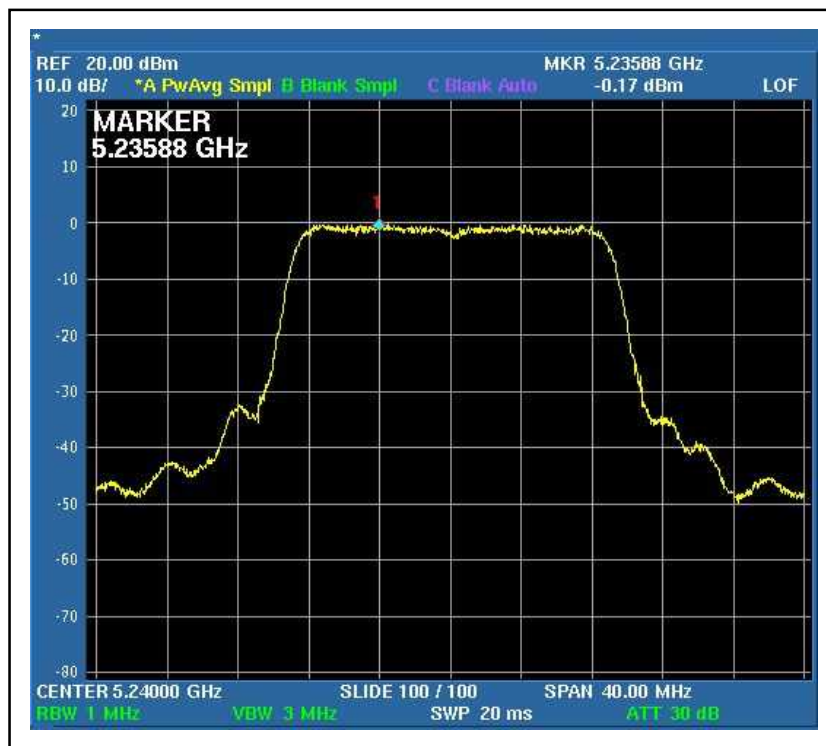
For Chain (0) : CH1



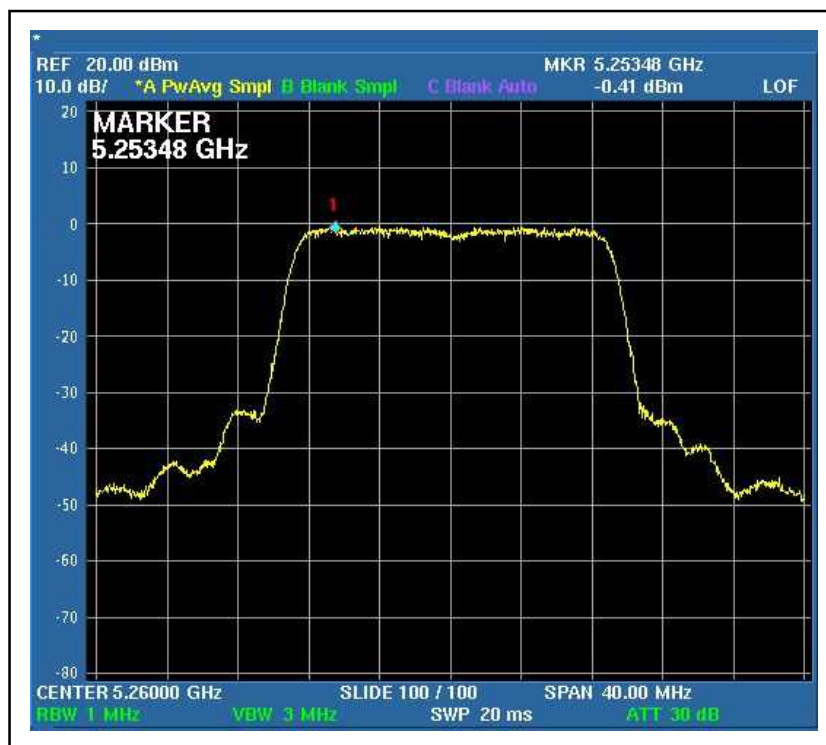
CH2



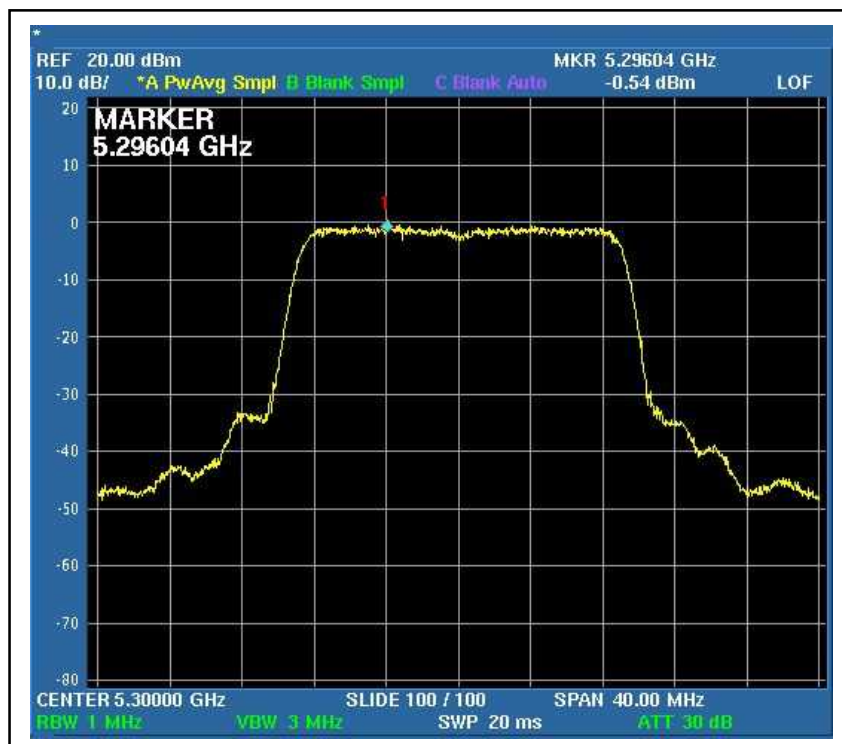
CH4



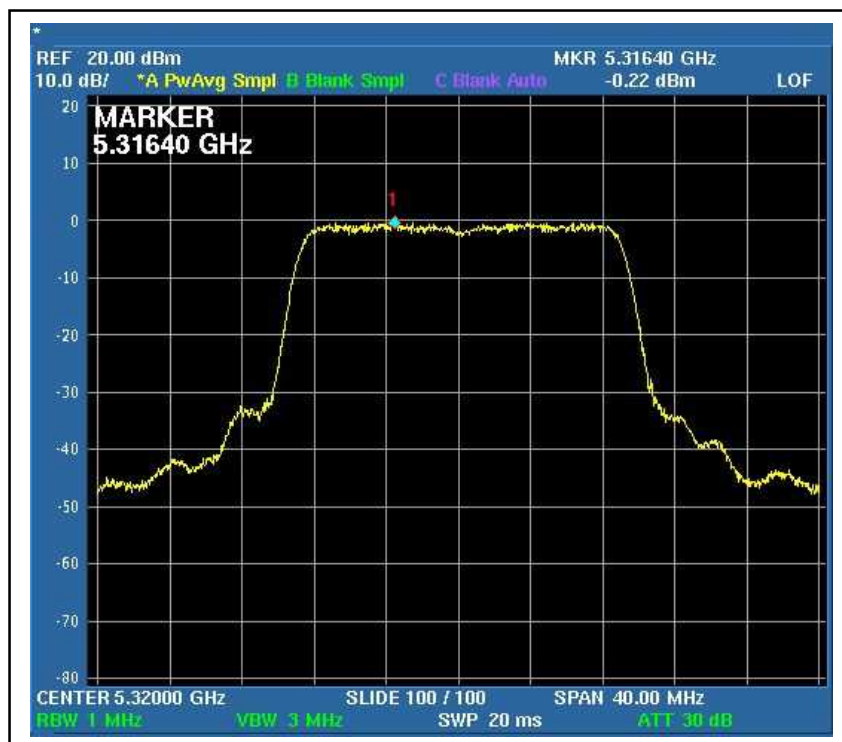
CH5



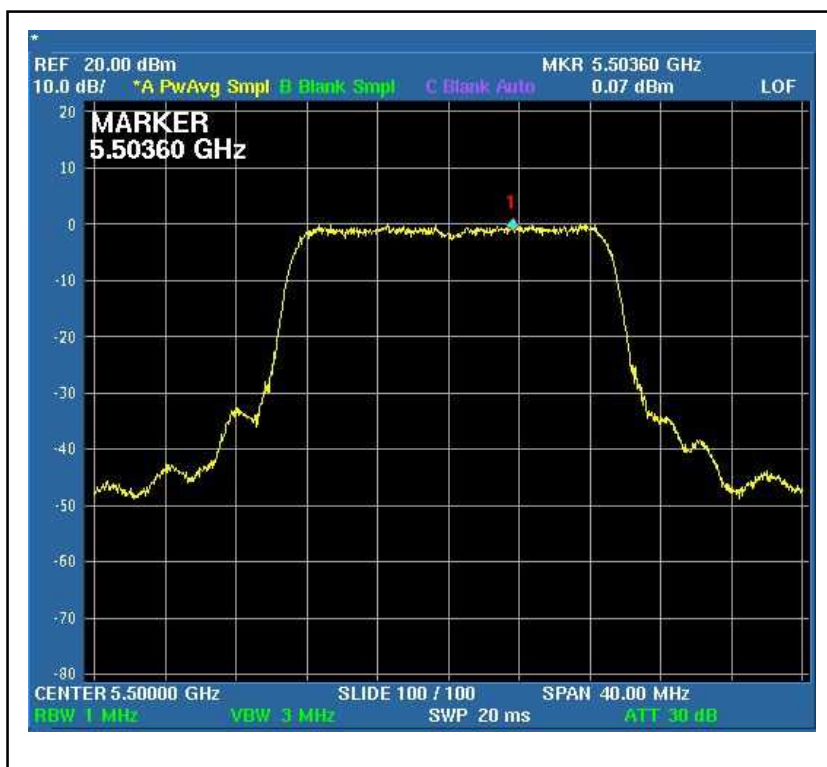
CH7



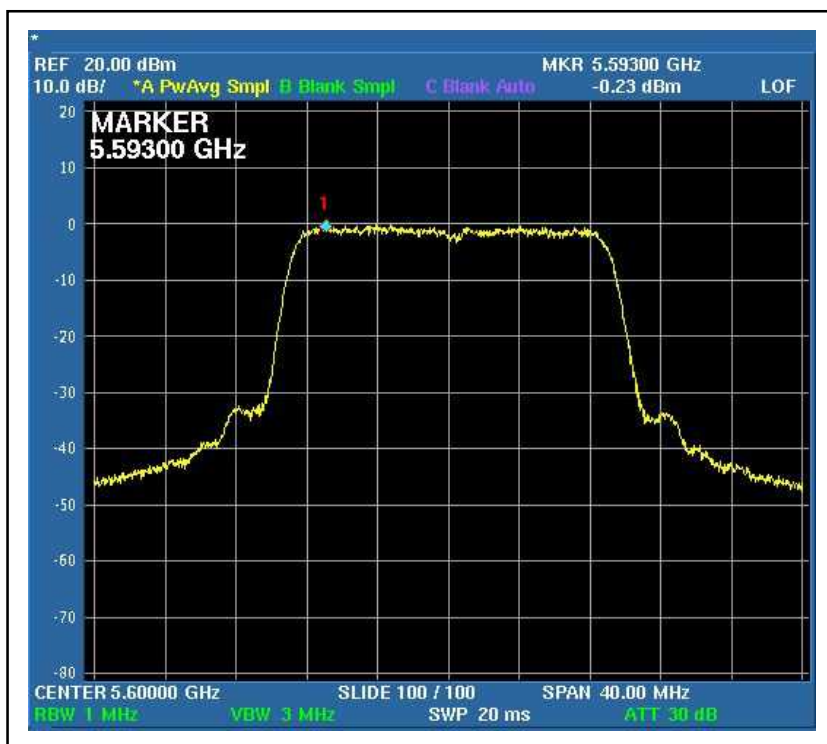
CH8



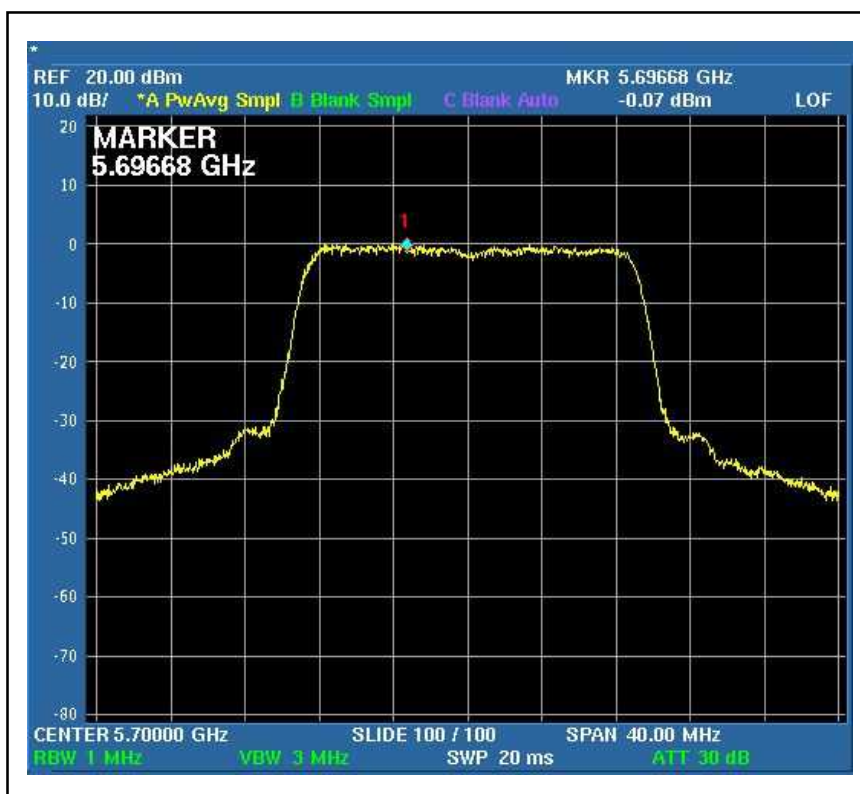
CH9



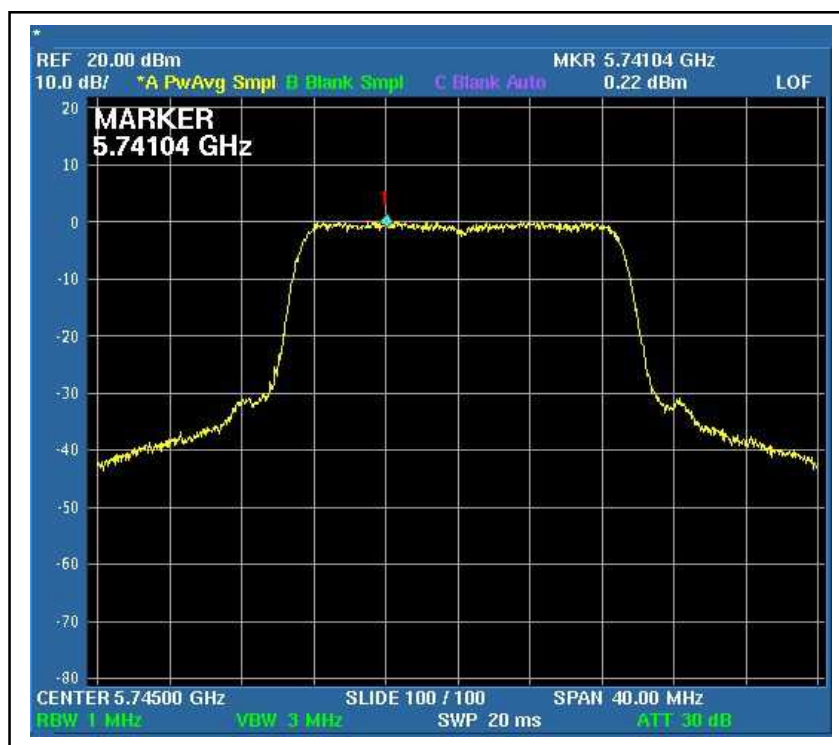
CH14



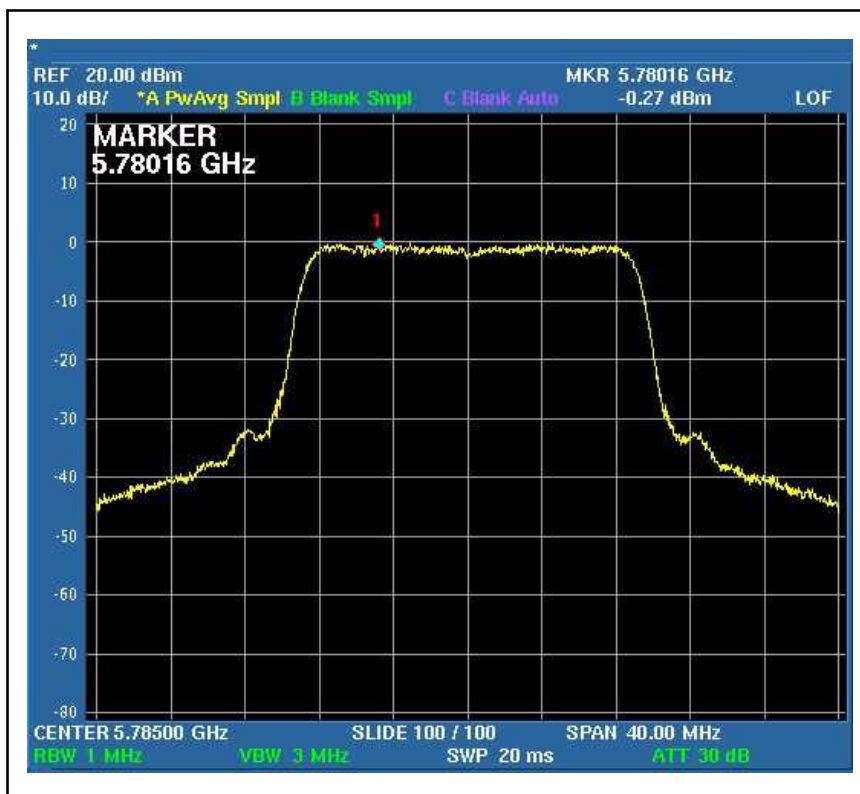
CH19



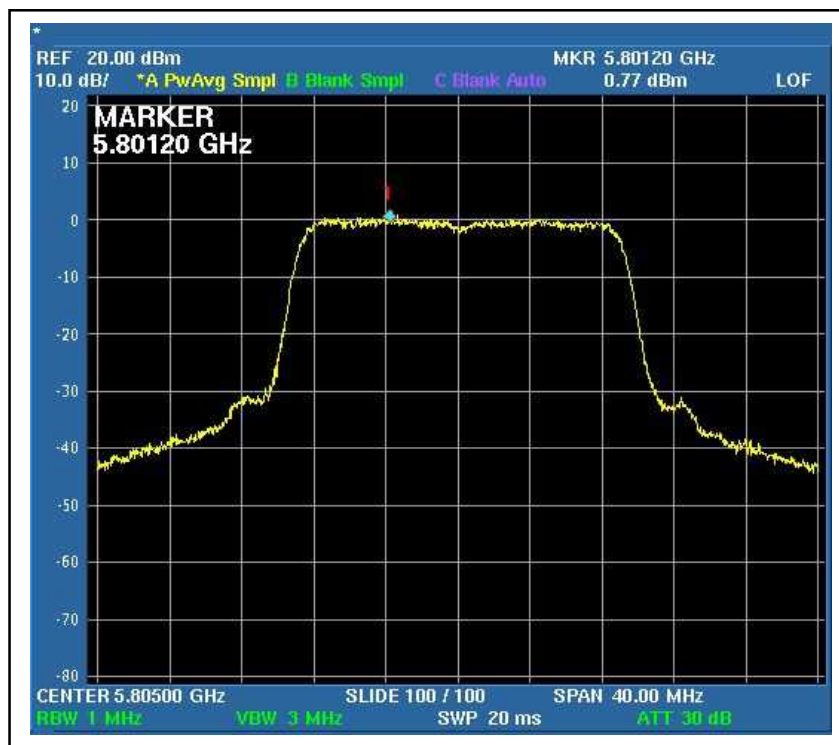
CH20



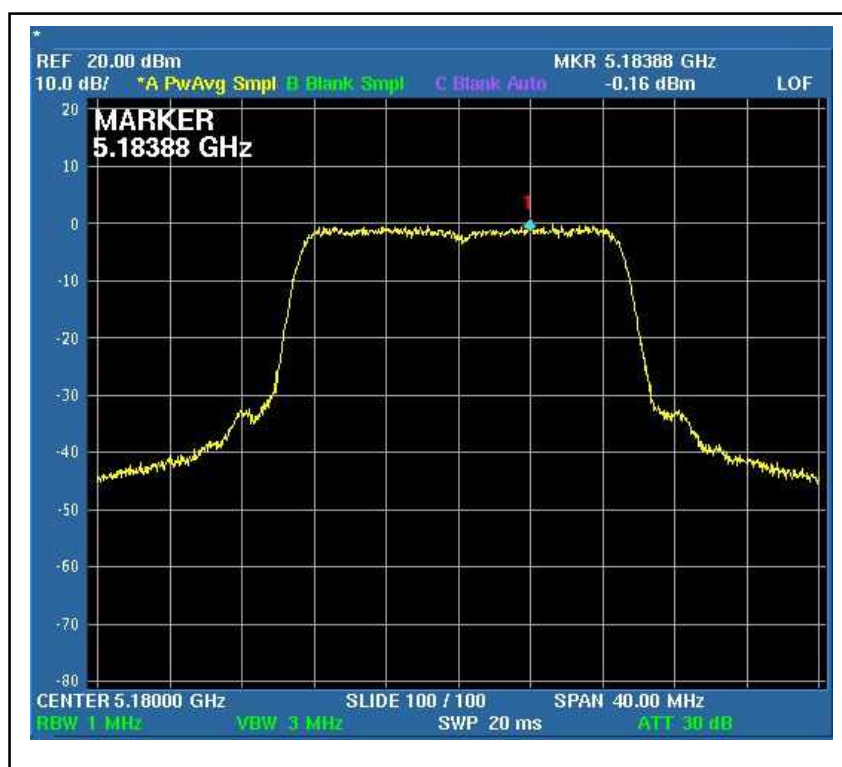
CH22



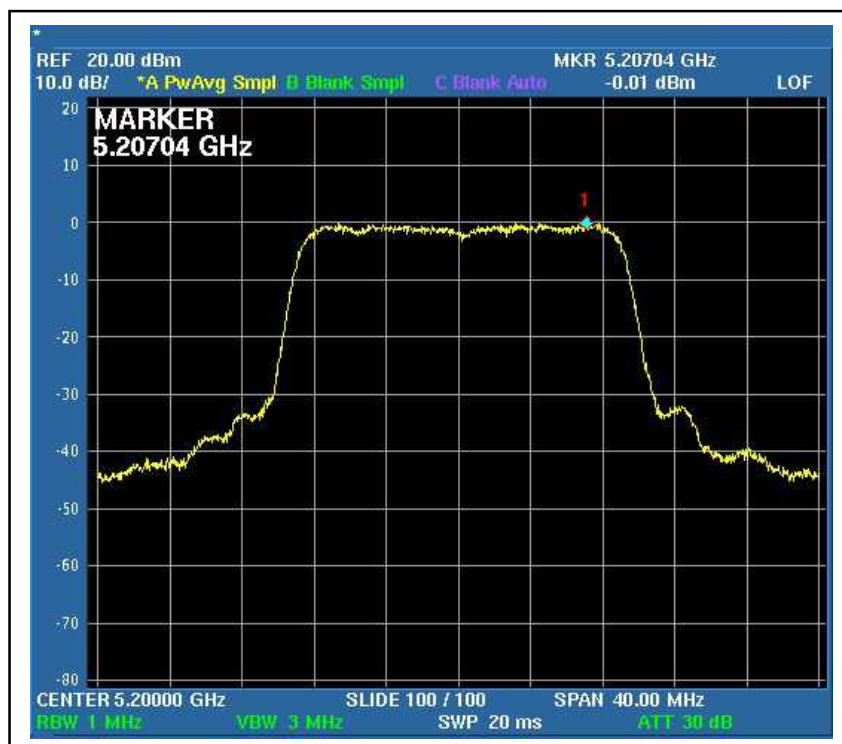
CH23



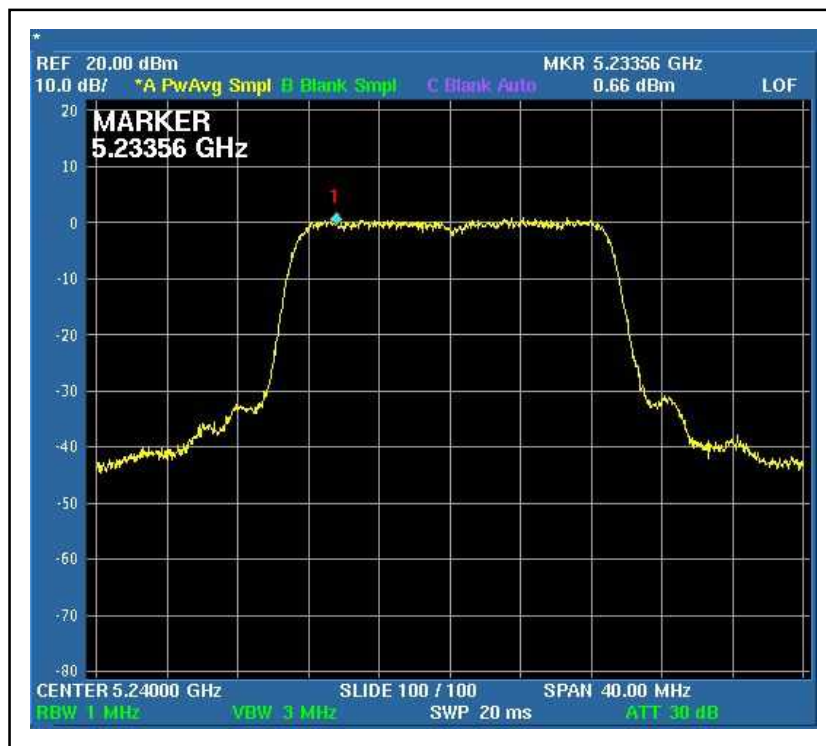
For Chain (1) : CH1



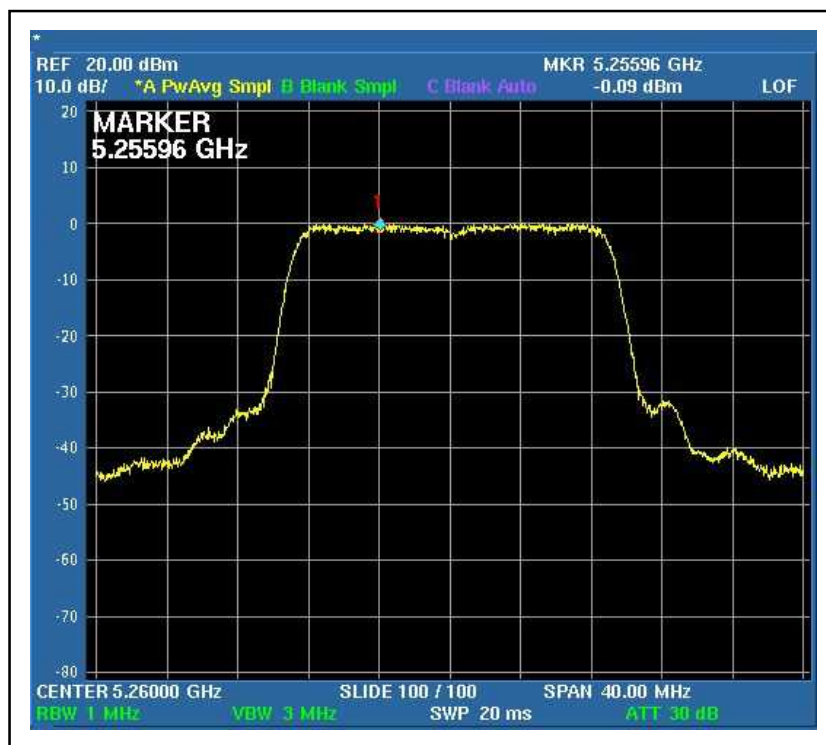
CH2



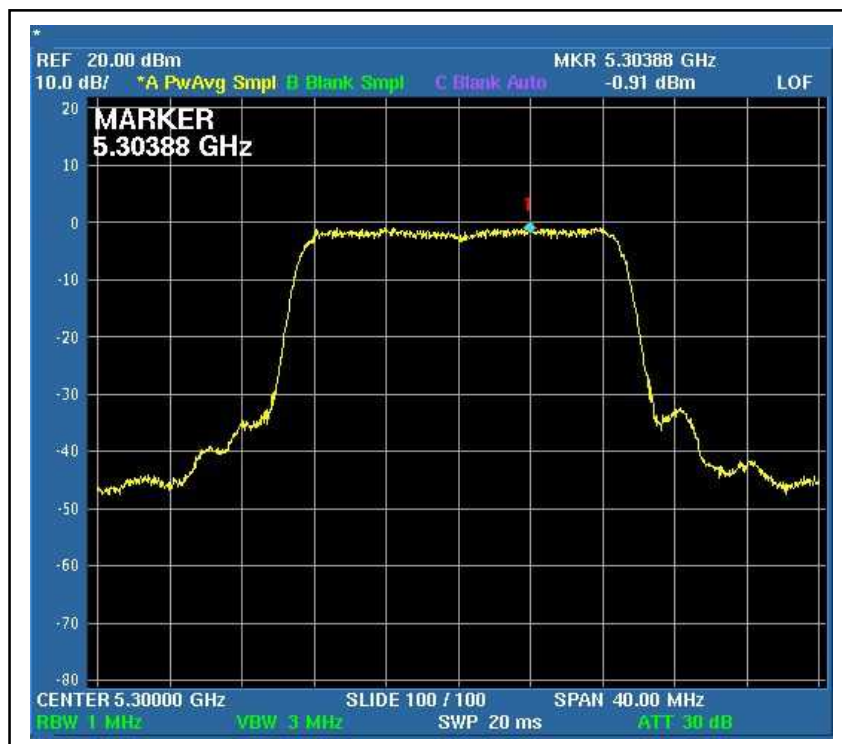
CH4



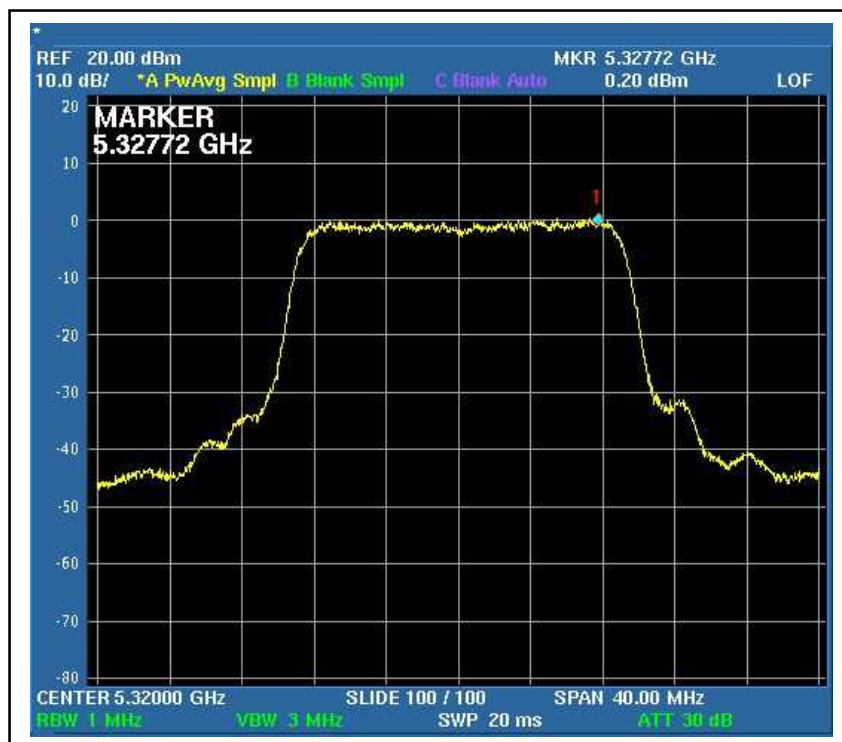
CH5



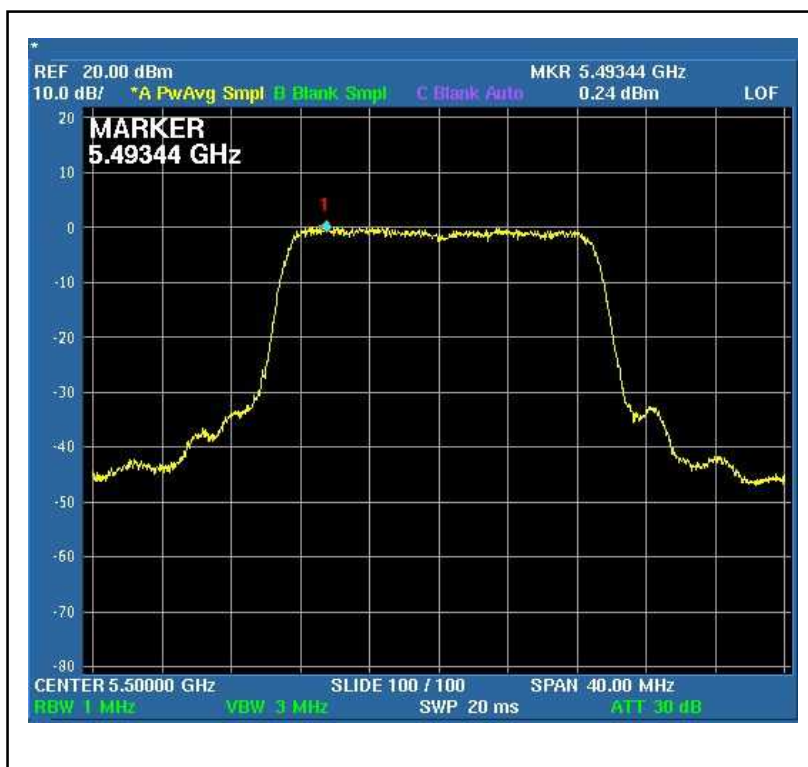
CH7



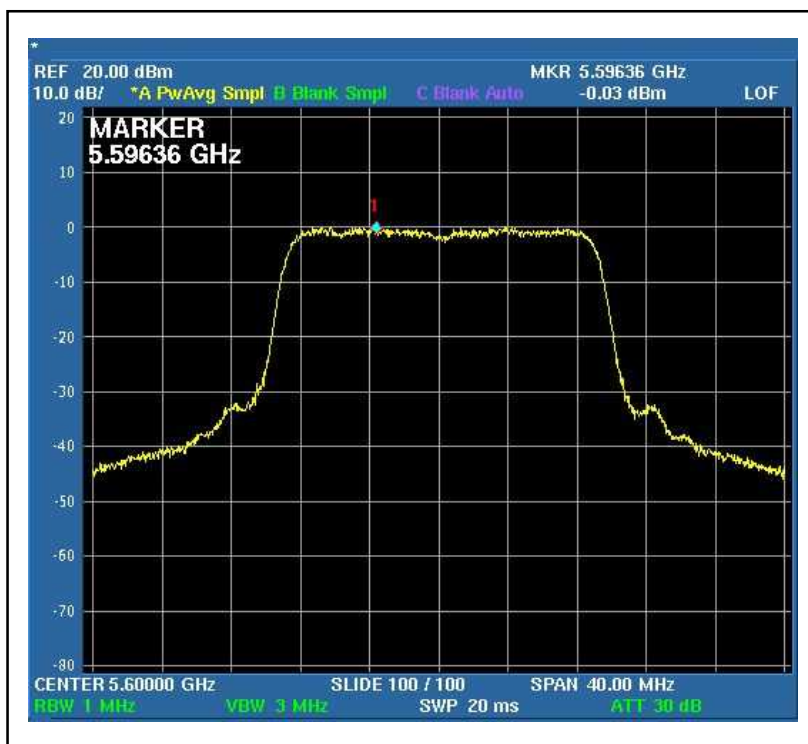
CH8



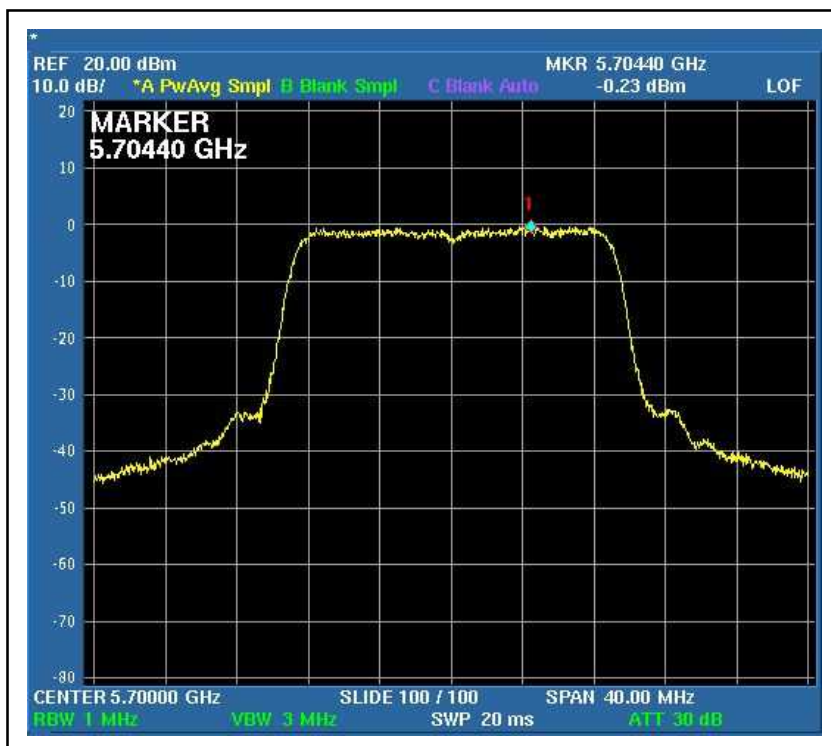
CH9



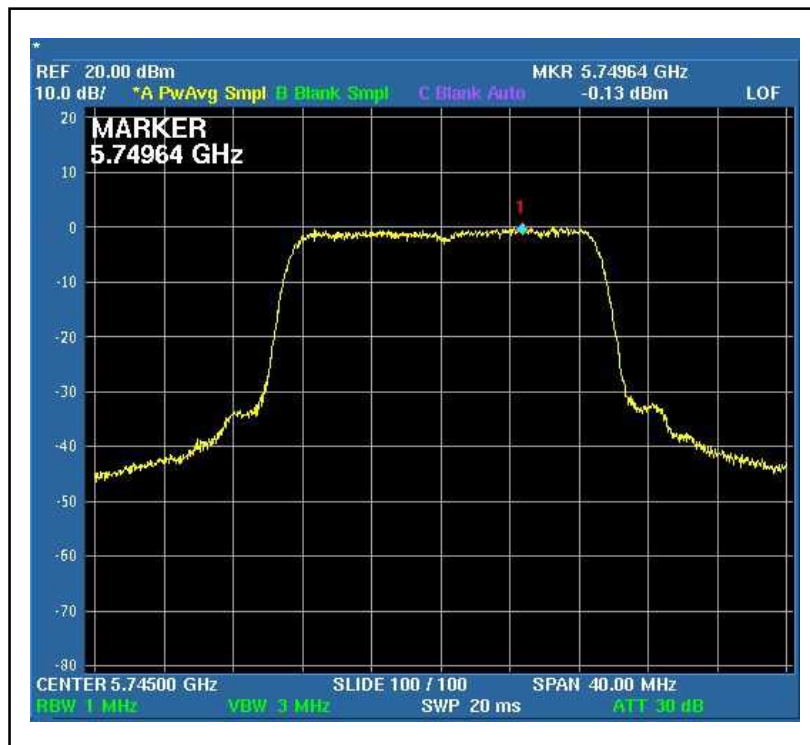
CH14



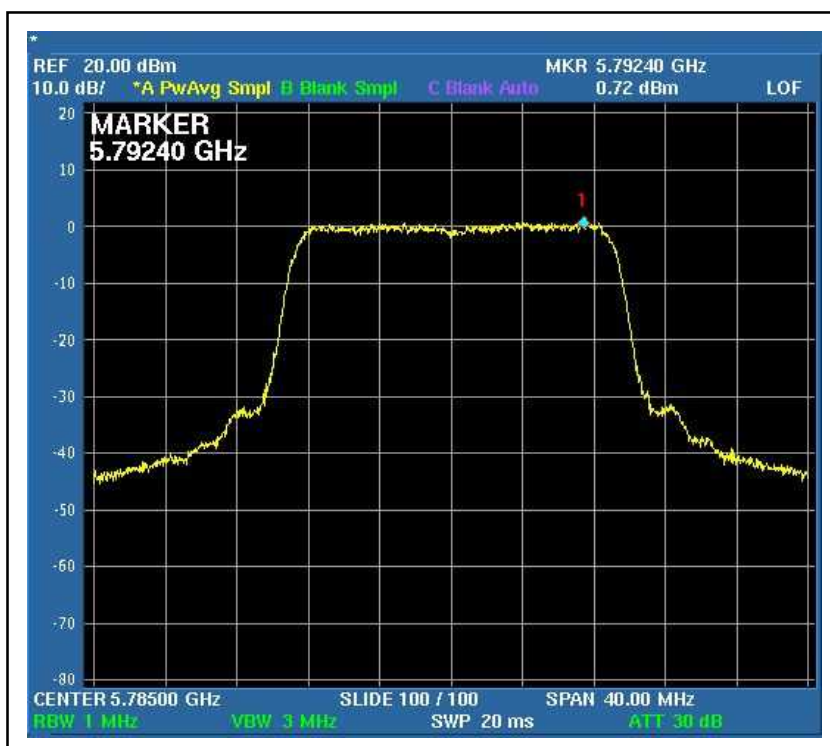
CH19



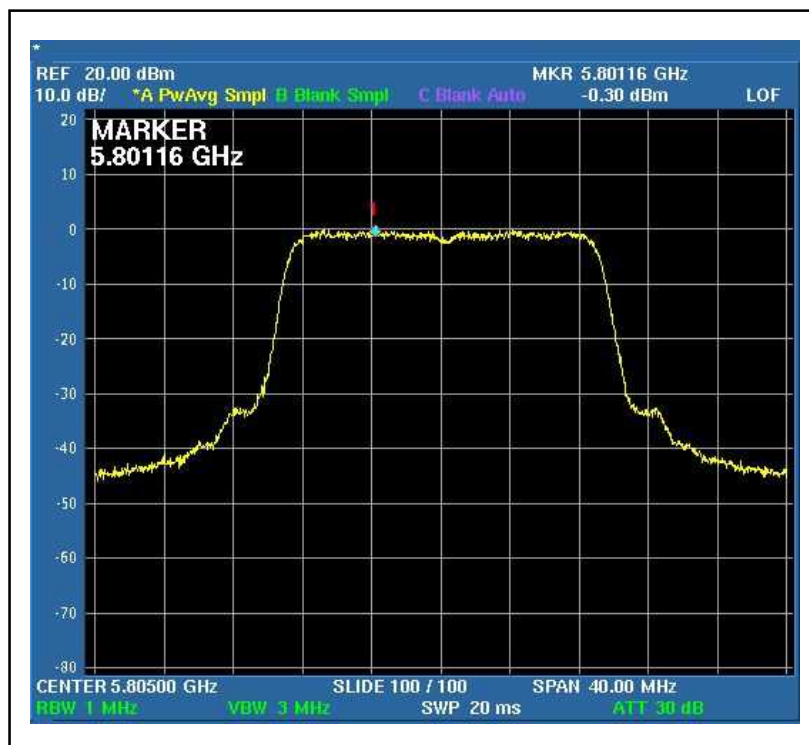
CH20



CH22



CH23





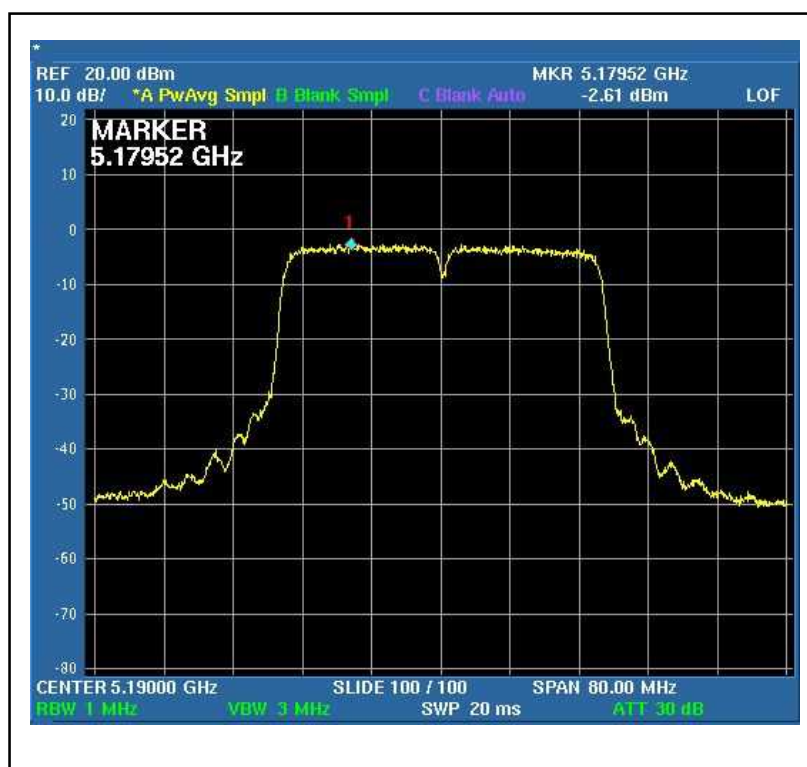
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DRAFT 802.11n (40MHz) OFDM MODULATION:

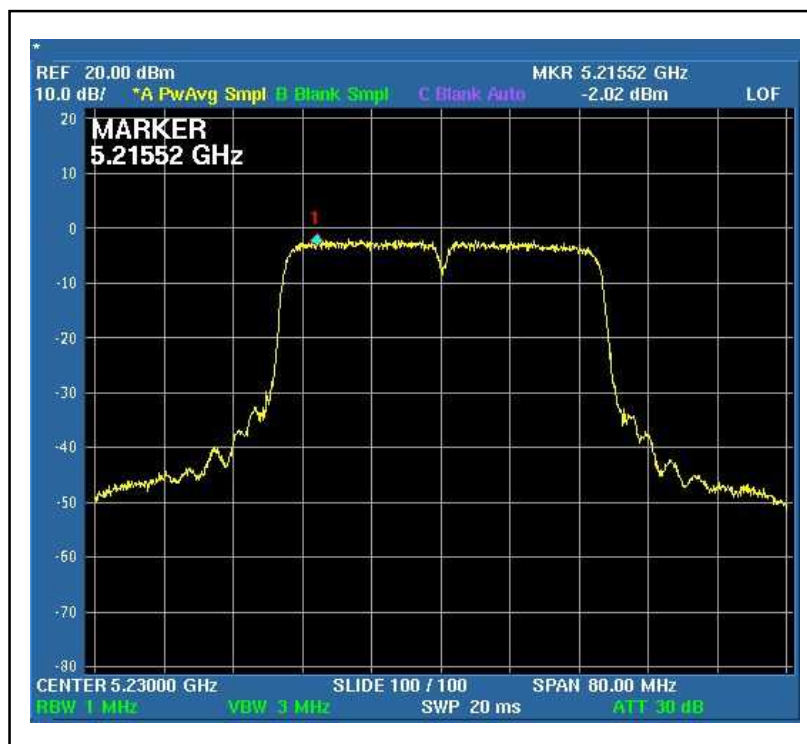
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	-2.61	-3.19	0.12	4	PASS
2	5230	-2.02	-2.52	0.75	4	PASS
3	5270	-2.59	-2.37	0.53	11	PASS
4	5310	-2.42	-3.09	0.27	11	PASS
5	5510	-2.88	-1.68	0.77	11	PASS
7	5590	-2.67	-2.78	0.29	11	PASS
9	5670	-1.77	-3.10	0.63	11	PASS
10	5755	-2.76	-2.53	0.37	17	PASS
11	5795	-2.29	-1.72	1.01	17	PASS

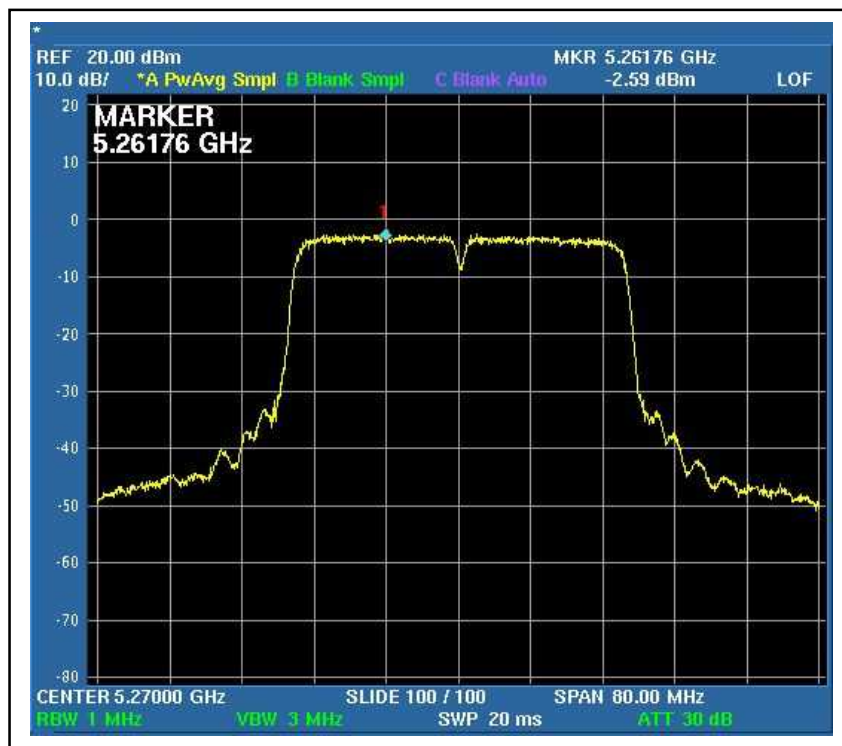
For Chain (0) : CH1



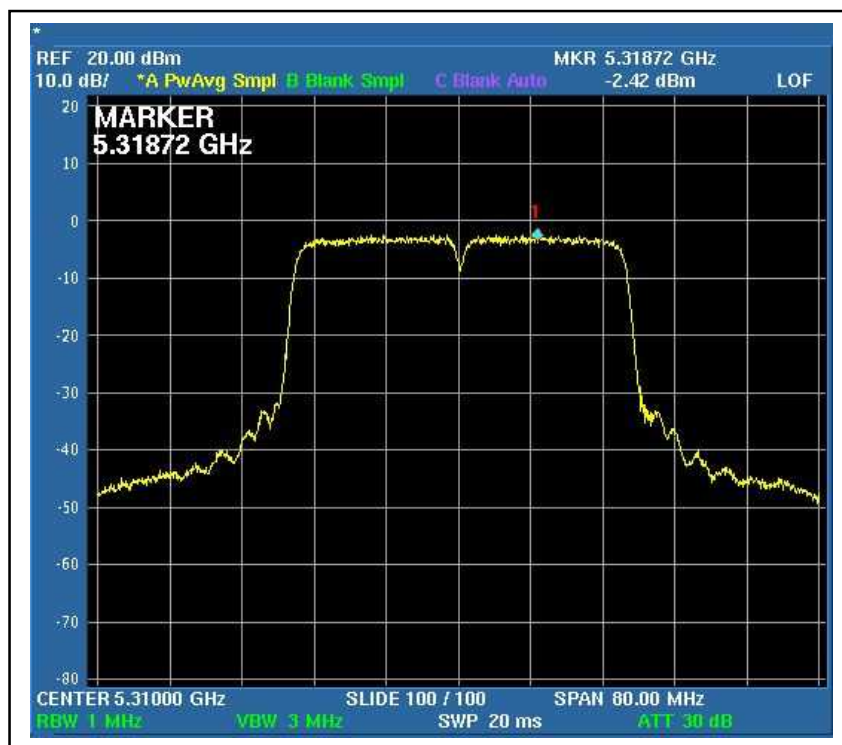
CH2



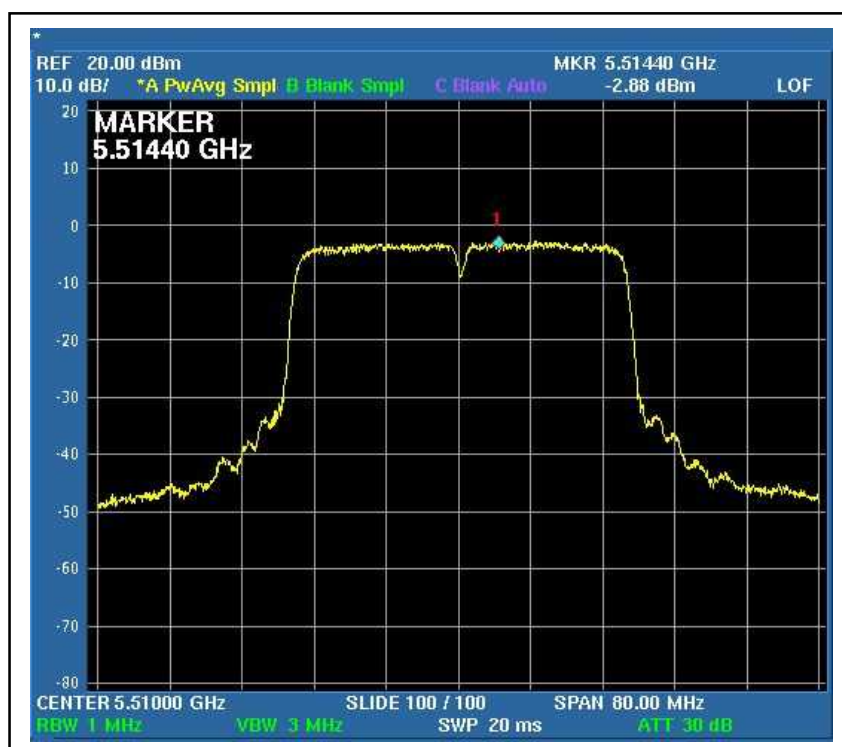
CH3



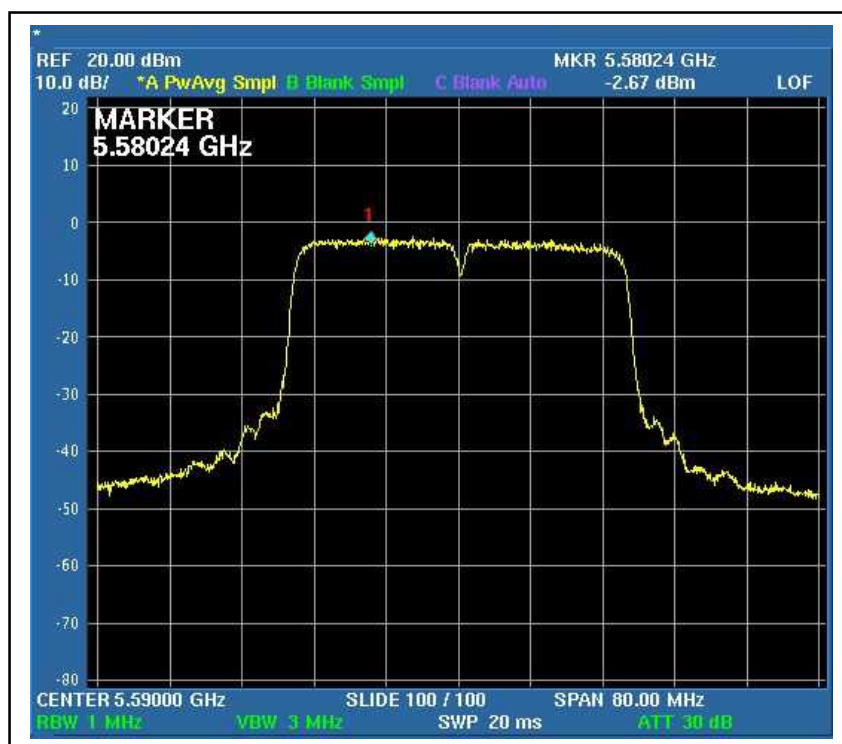
CH4



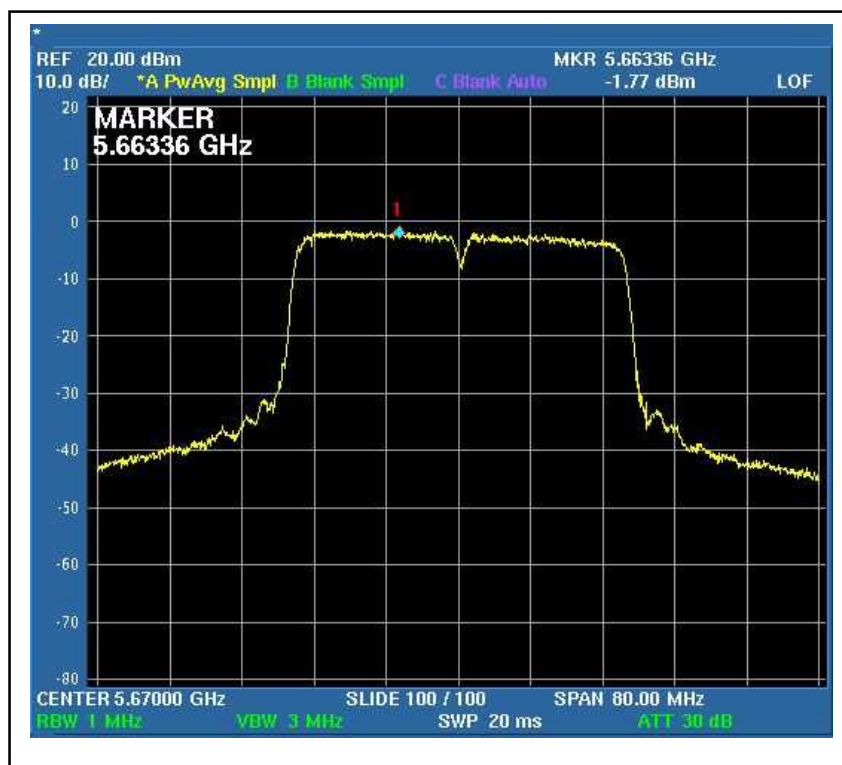
CH5



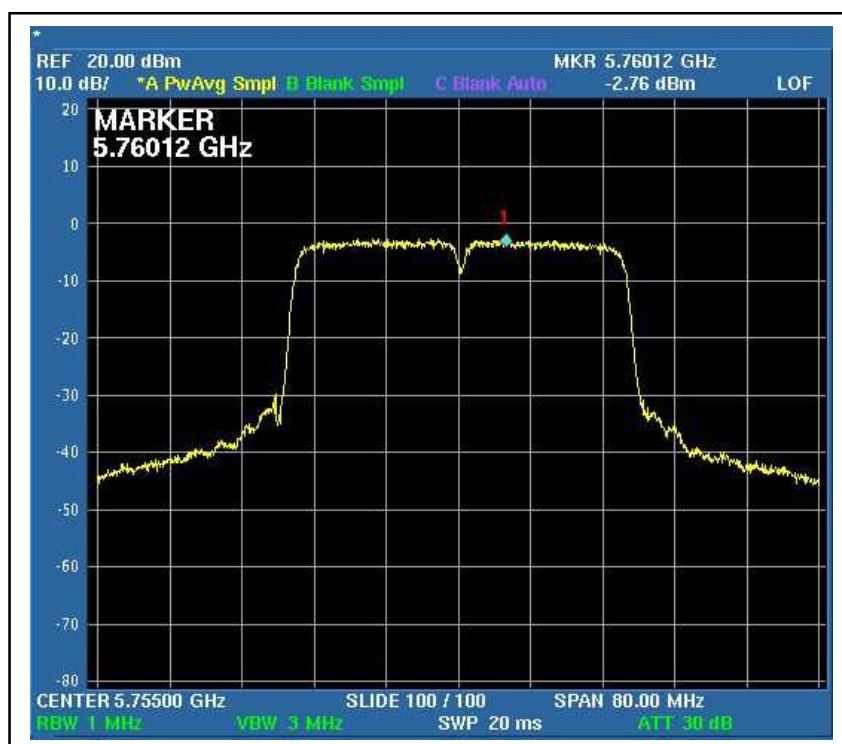
CH7



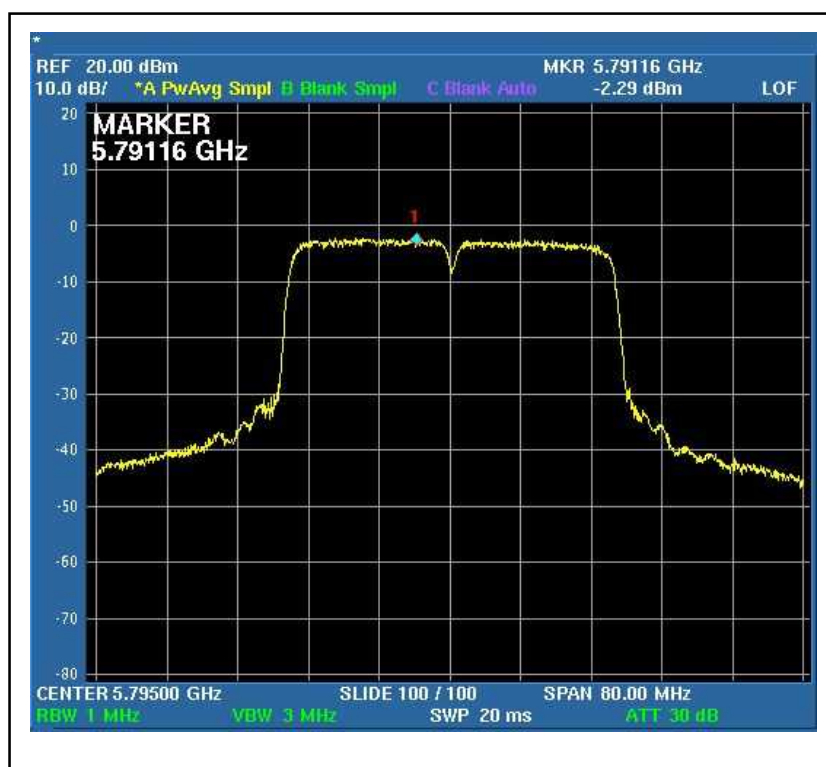
CH9



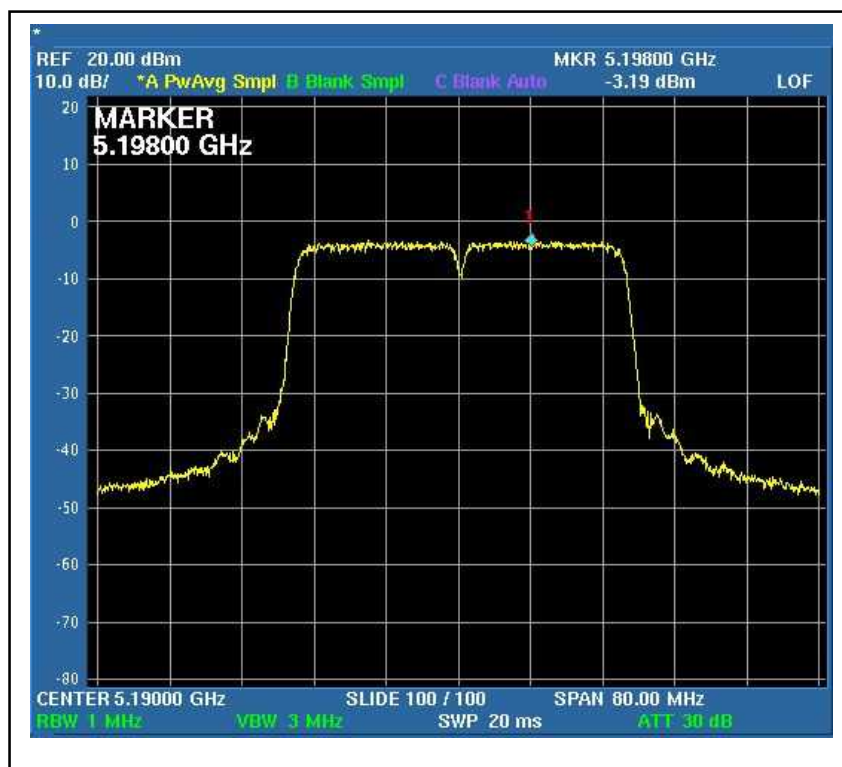
CH10



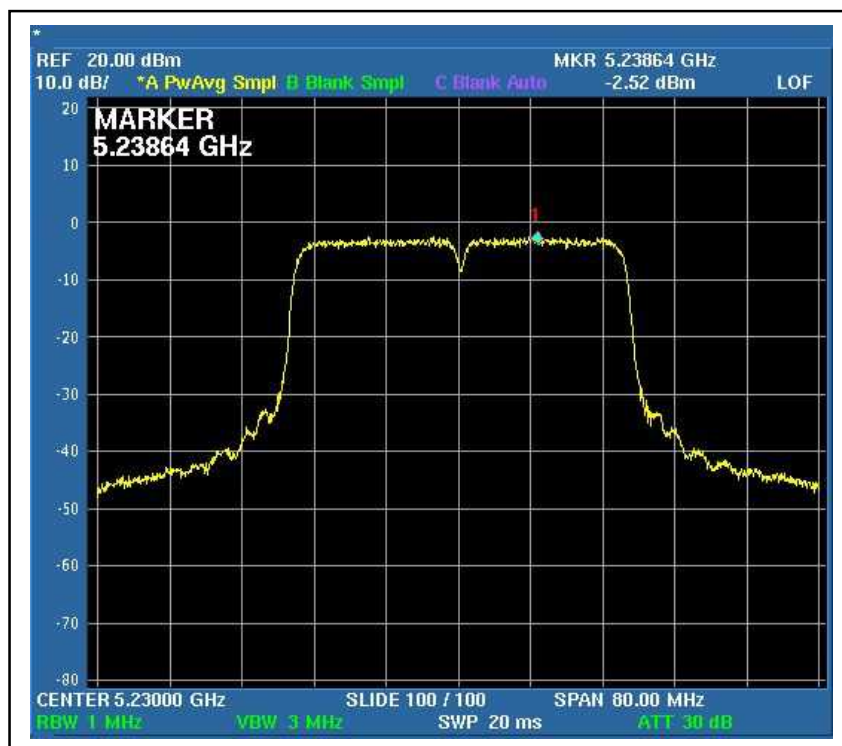
CH11



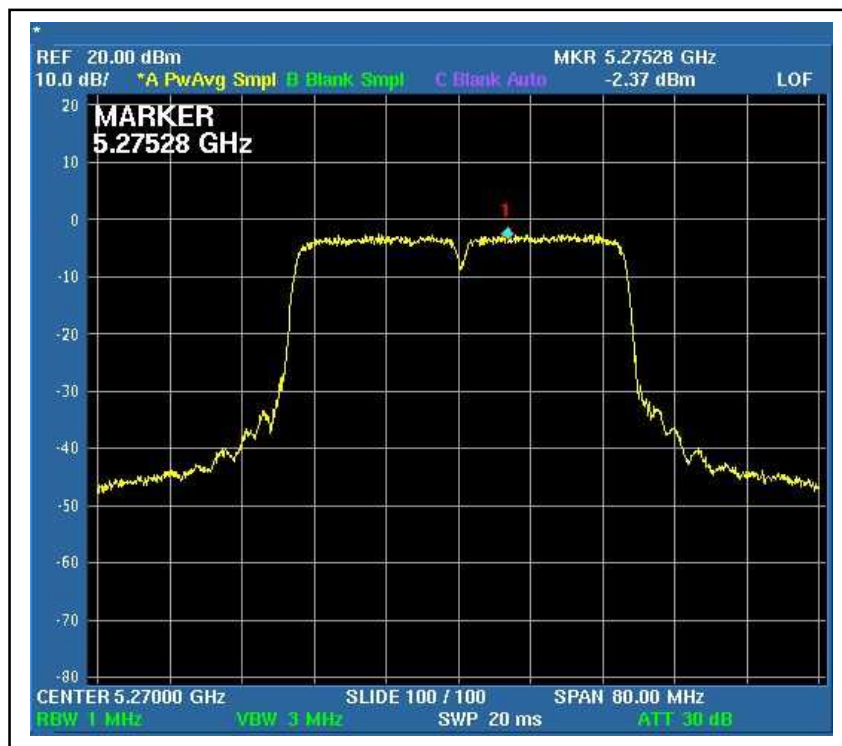
For Chain (1) : CH1



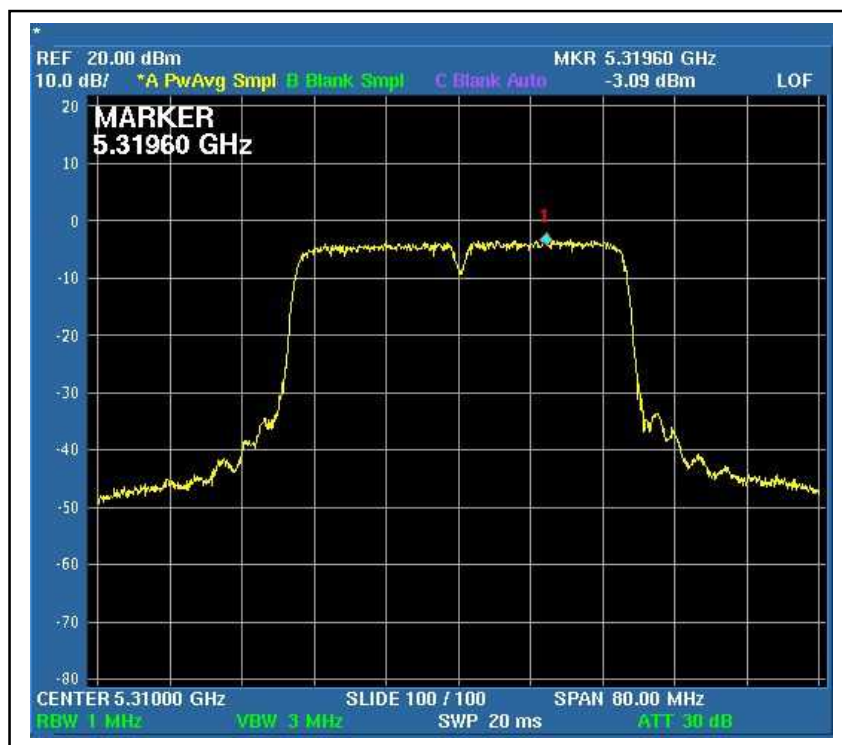
CH2



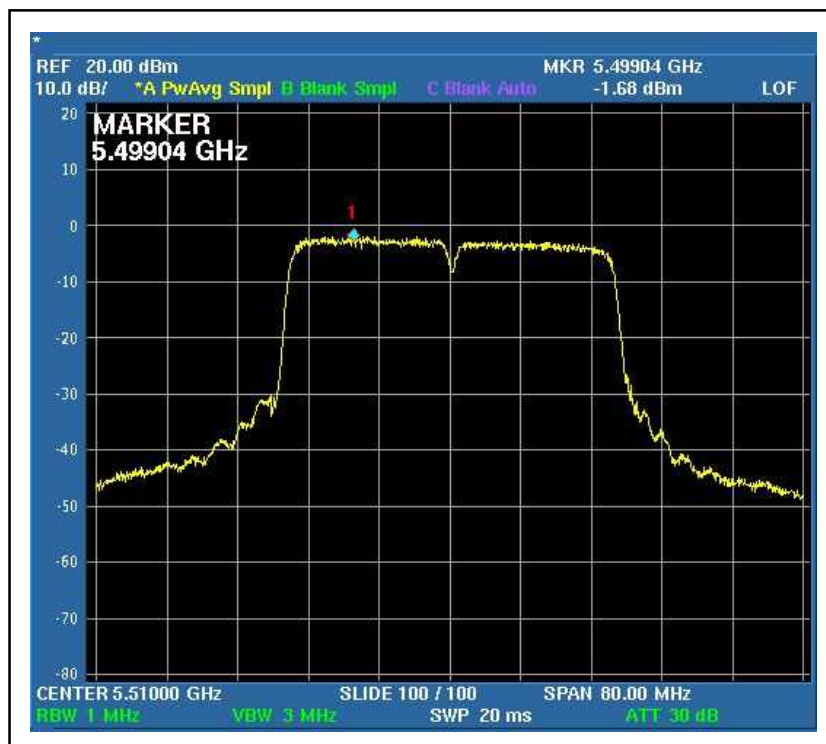
CH3



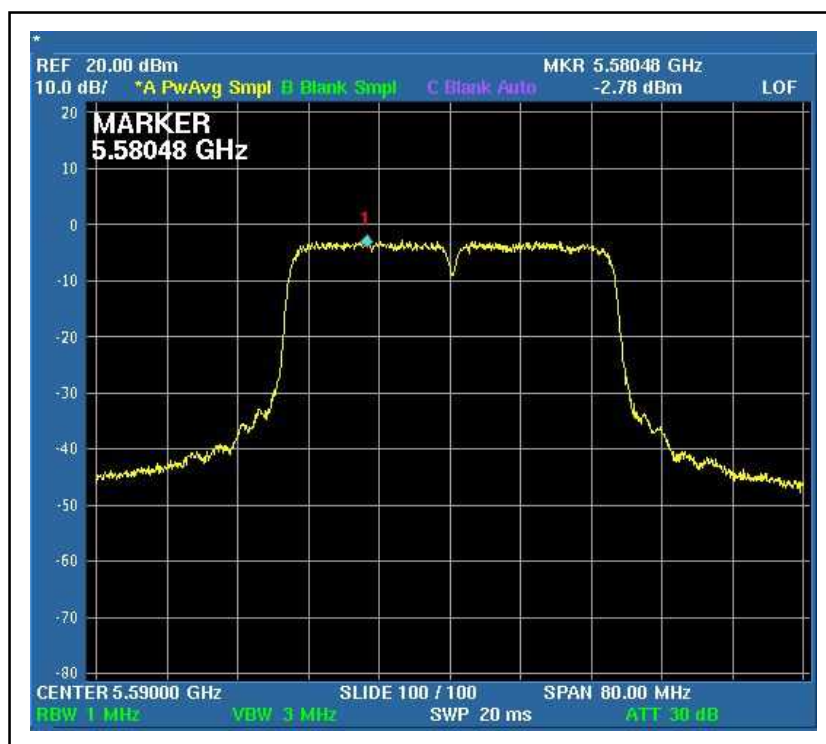
CH4



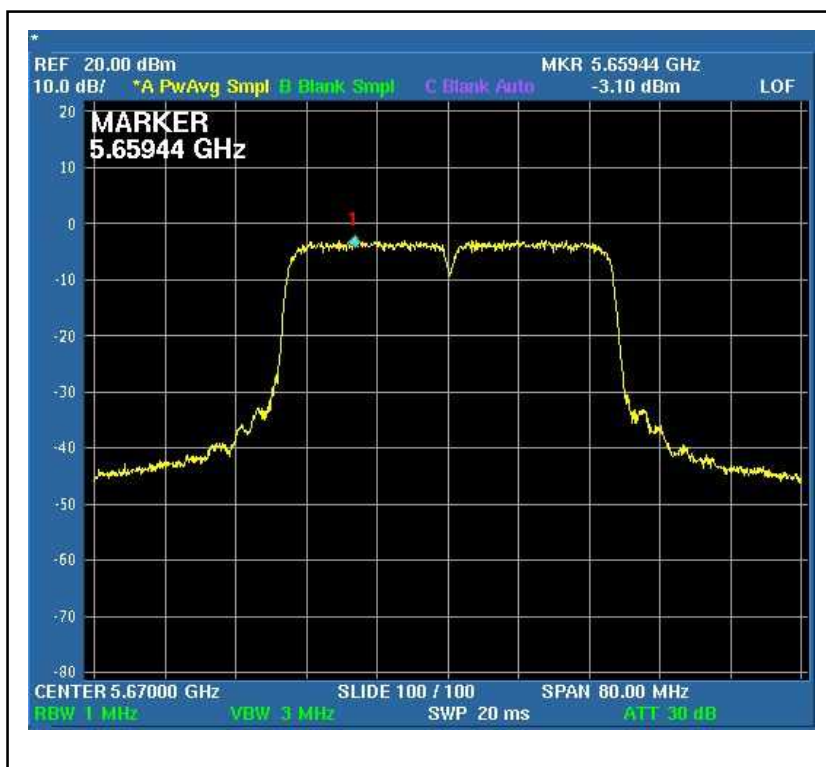
CH5



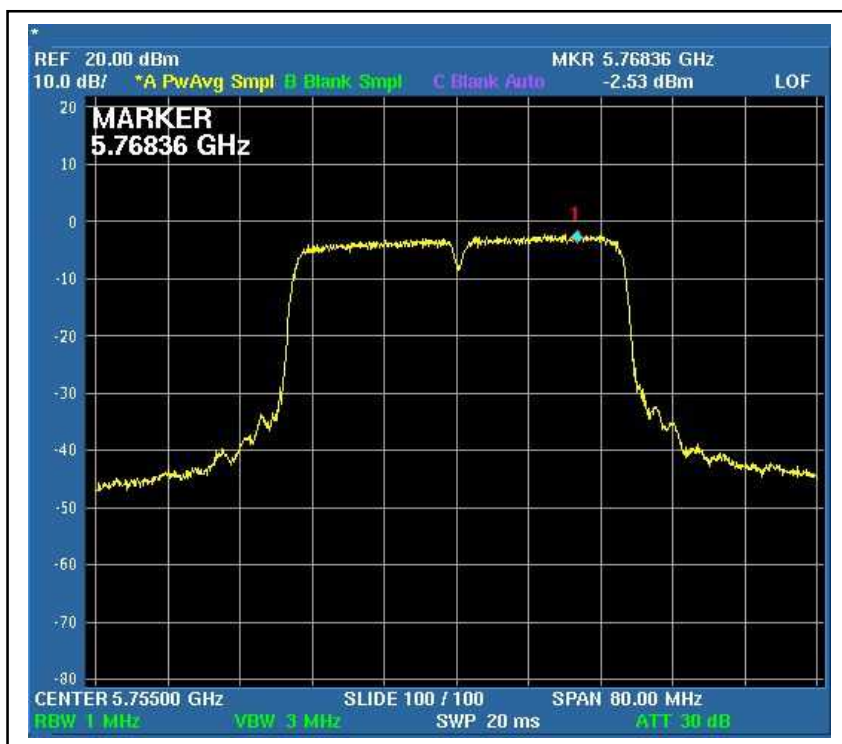
CH7



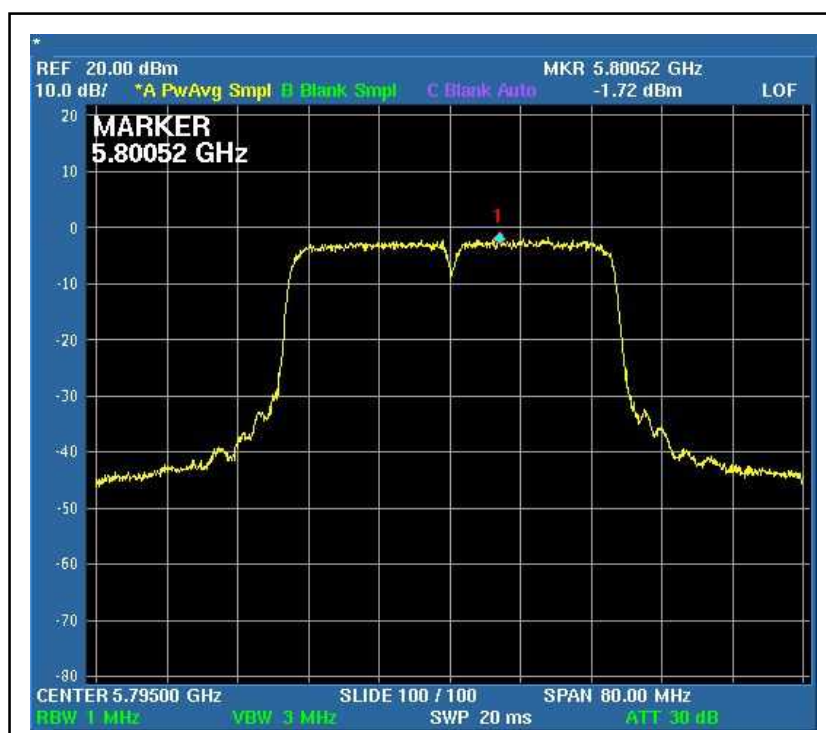
CH9



CH10



CH11



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.02\%$ 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 $\pm 2.6\text{dB}$, 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.

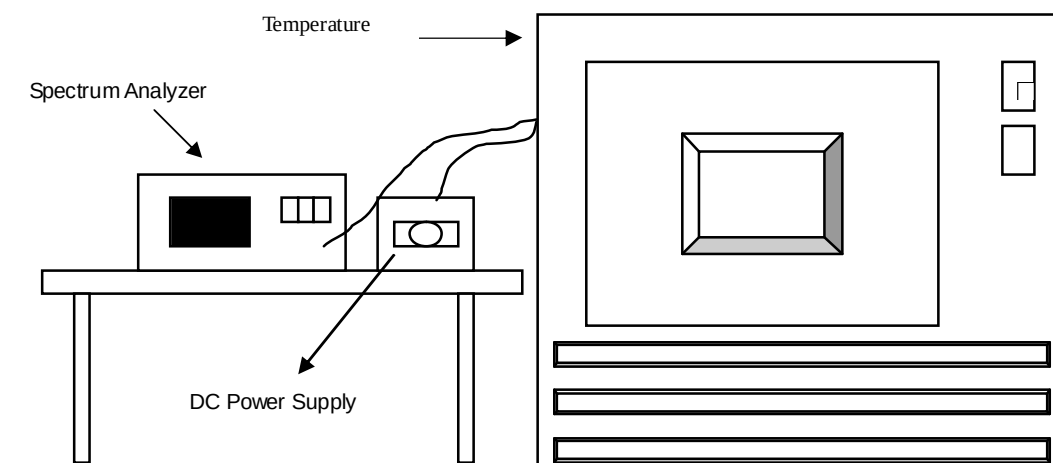
4.6.3 TEST PROCEDURE

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 : $\pm 0.02\%$			
Temp. (°C)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5320.0262	0.000492	5320.0211	0.000397	5320.0170	0.000320
	110	5320.0262	0.000492	5320.0241	0.000453	5320.0200	0.000376
	93.5	5320.0262	0.000492	5320.0201	0.000378	5320.0180	0.000338
40	126.5	5320.0268	0.000504	5320.0251	0.000472	5320.0230	0.000432
	110	5320.0266	0.000500	5320.0271	0.000509	5320.0250	0.000470
	93.5	5320.0266	0.000500	5320.0241	0.000453	5320.0230	0.000432
30	126.5	5320.0086	0.000162	5320.0083	0.000156	5320.0079	0.000148
	110	5320.0086	0.000162	5320.0083	0.000156	5320.0081	0.000152
	93.5	5320.0086	0.000162	5320.0082	0.000154	5320.0078	0.000147
20	126.5	5320.0078	0.000147	5320.0072	0.000135	5320.0068	0.000128
	110	5320.0078	0.000147	5320.0074	0.000139	5320.0071	0.000133
	93.5	5320.0078	0.000147	5320.0072	0.000135	5320.0068	0.000128
10	126.5	5319.9843	0.000295	5319.9937	0.000118	5319.9933	0.000126
	110	5319.9844	0.000293	5319.9937	0.000118	5319.9935	0.000122
	93.5	5319.9943	0.000107	5319.994	0.000113	5319.9932	0.000128
0	126.5	5320.0326	0.000613	5320.0328	0.000617	5320.0328	0.000617
	110	5320.0326	0.000613	5320.0327	0.000615	5320.0328	0.000617
	93.5	5320.0328	0.000617	5320.0325	0.000611	5320.0328	0.000617
-10	126.5	5319.9884	0.000218	5319.988	0.000226	5319.9877	0.000231
	110	5319.9884	0.000218	5319.9882	0.000222	5319.9878	0.000229
	93.5	5319.9884	0.000218	5319.988	0.000226	5319.9876	0.000233
-20	126.5	5320.0033	0.000062	5320.0029	0.000055	5320.0025	0.000047
	110	5320.0034	0.000064	5320.0033	0.000062	5320.0029	0.000055
	93.5	5320.0033	0.000062	5320.0029	0.000055	5320.0025	0.000047
-30	126.5	5320.0192	0.000361	5320.0141	0.000265	5320.0140	0.000263
	110	5320.0192	0.000361	5320.0171	0.000321	5320.0150	0.000282
	93.5	5320.0172	0.000323	5320.0141	0.000265	5320.0140	0.000263

**A D T**

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 loss 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.



A D T

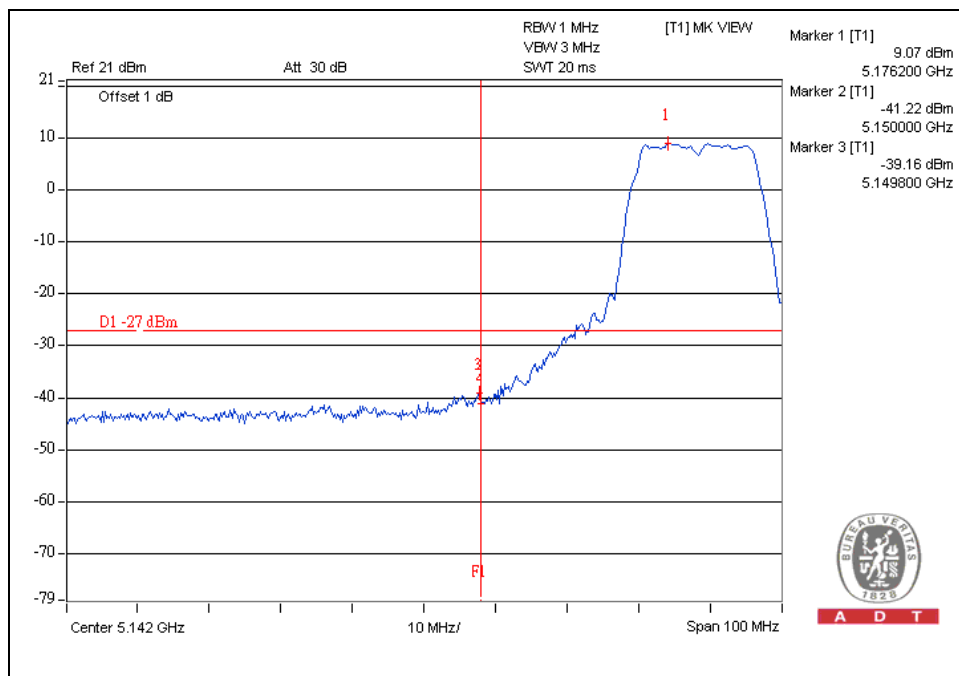
4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:

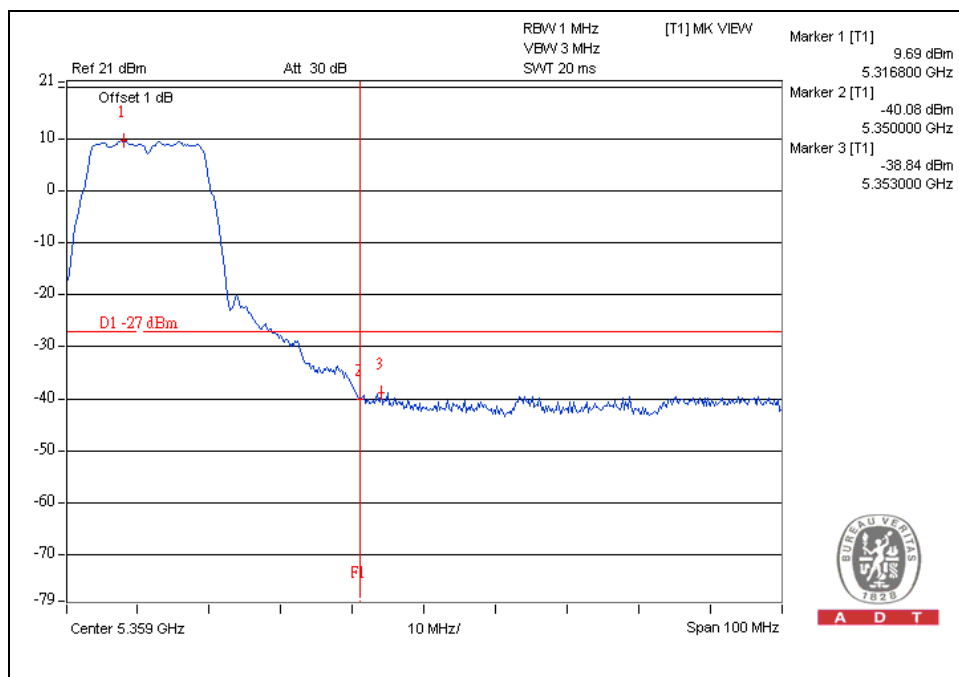
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

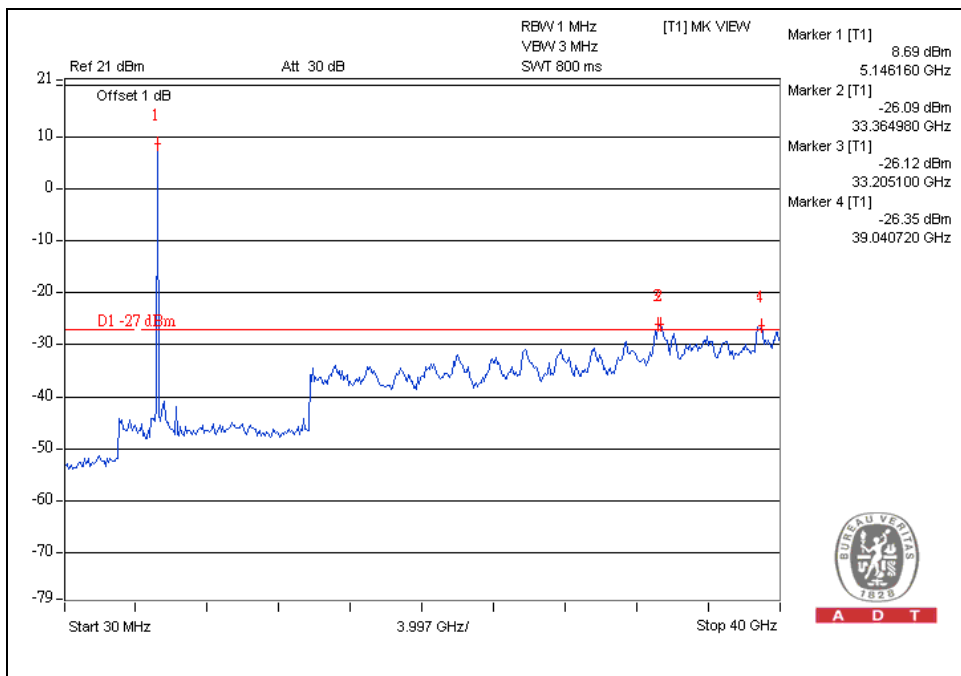
CH 1



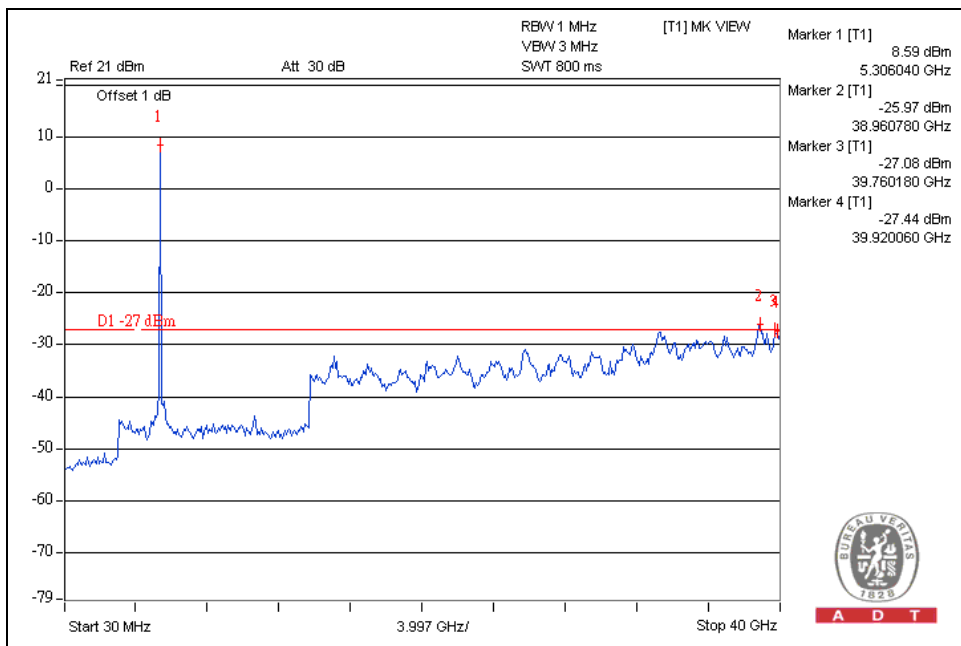
CH 8



CH 1



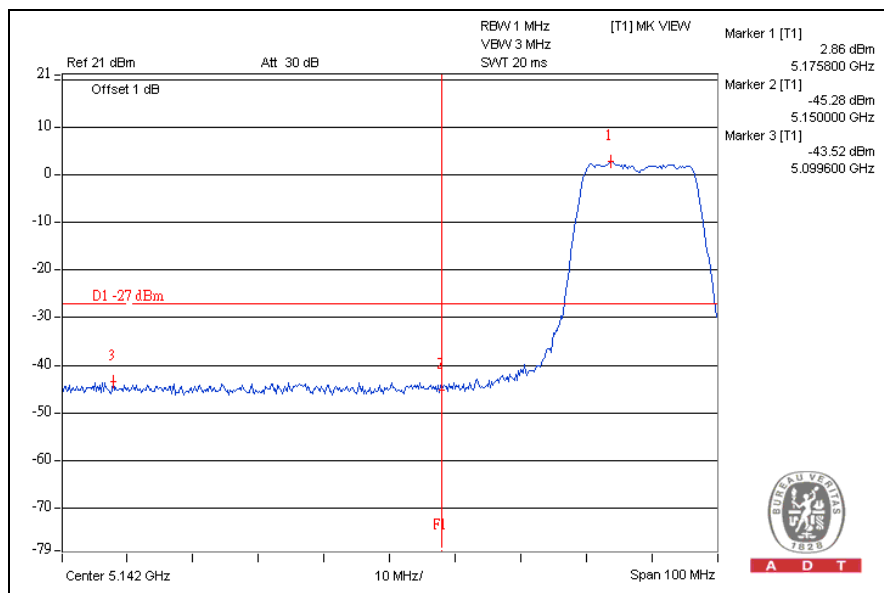
CH 8



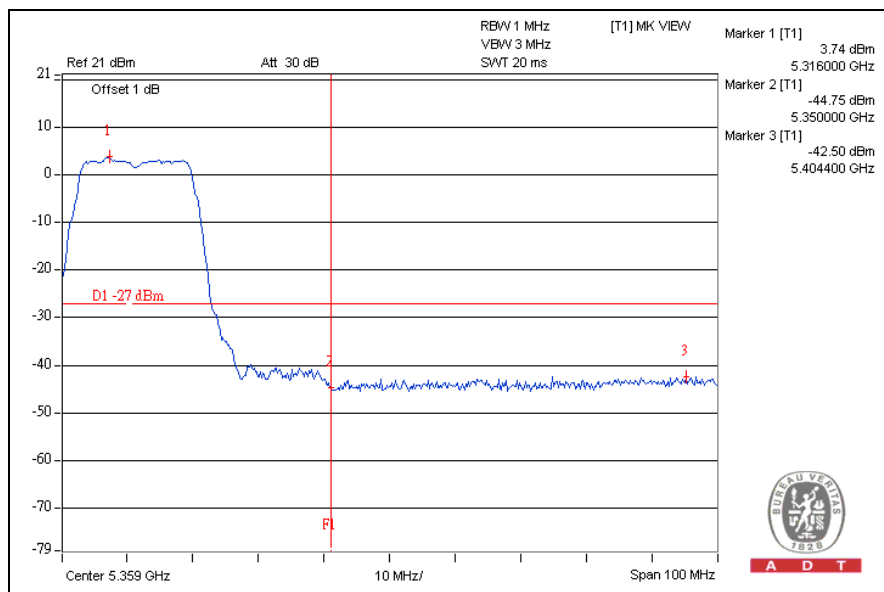
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH1

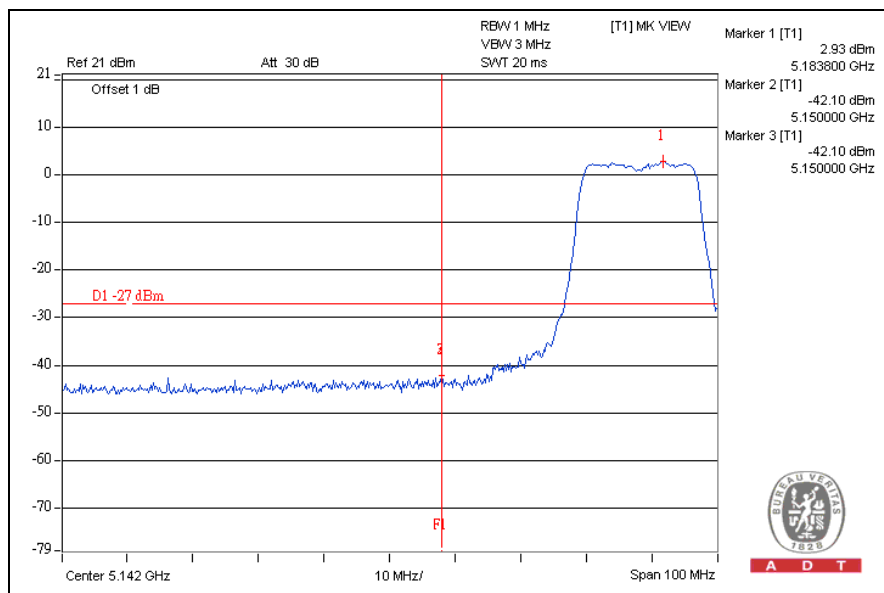


CH8

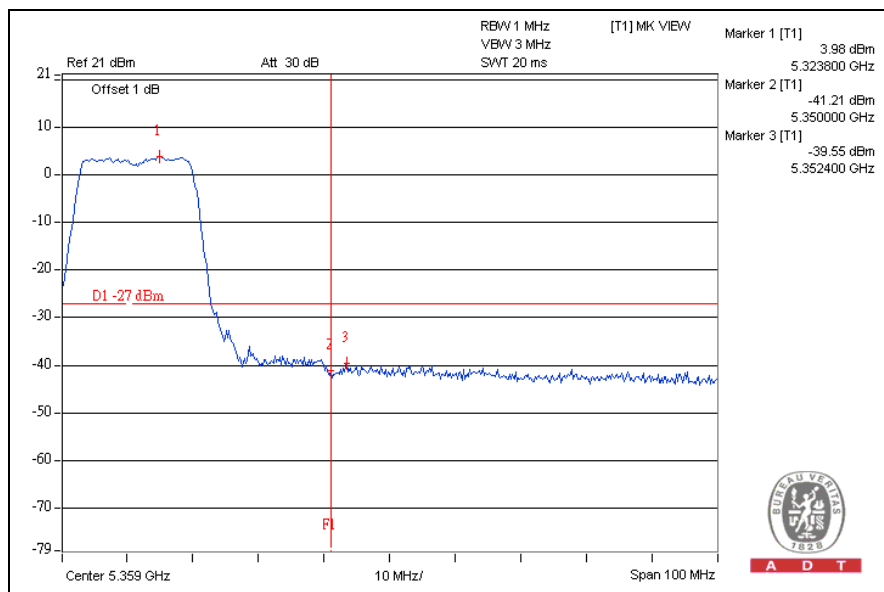


For chain (1):

CH1

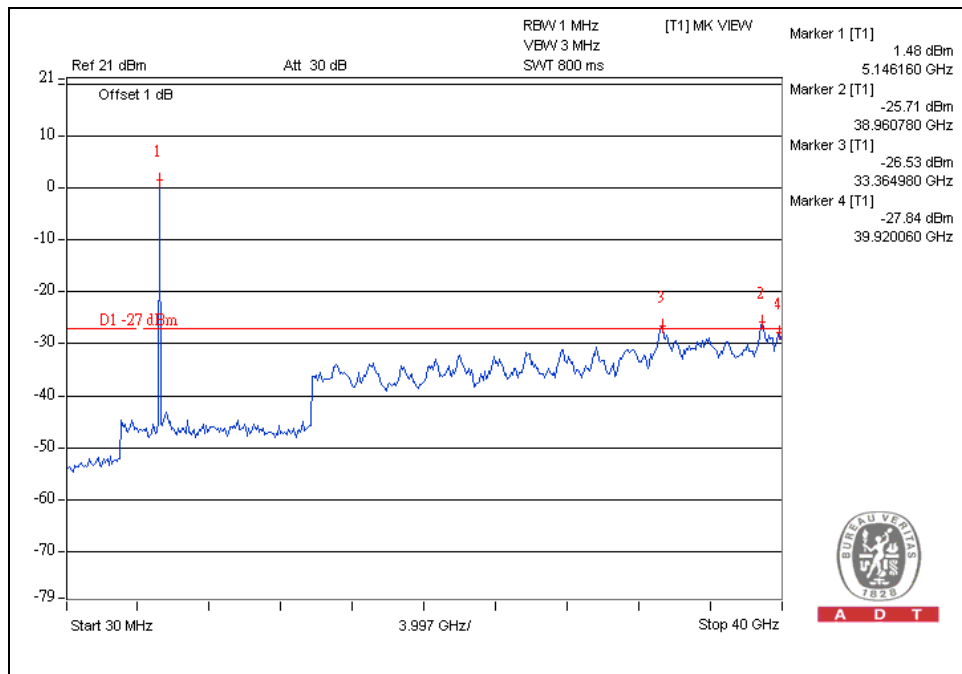


CH8

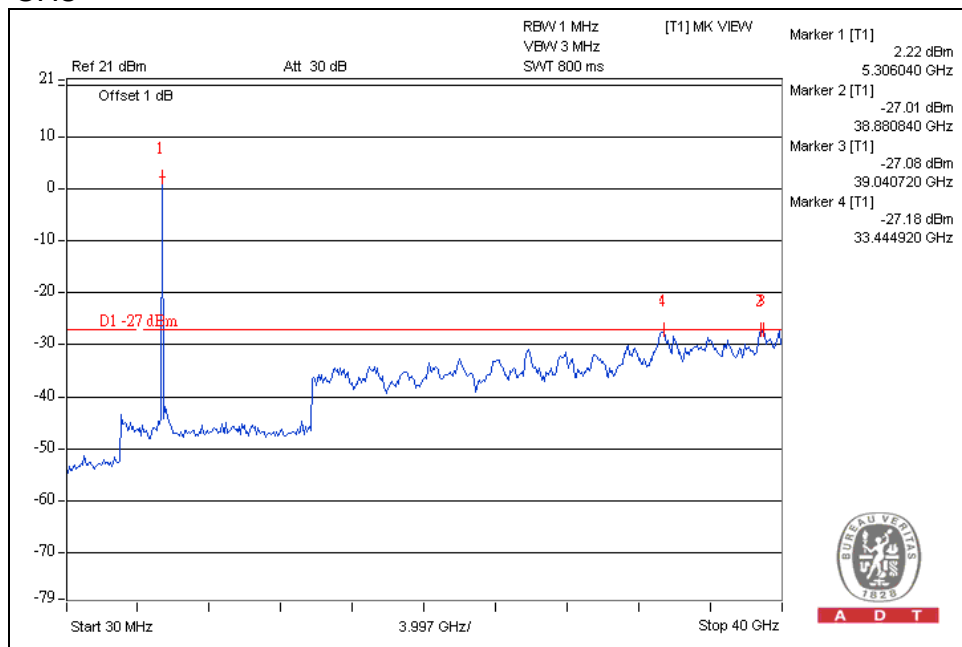


For chain (0):

CH1

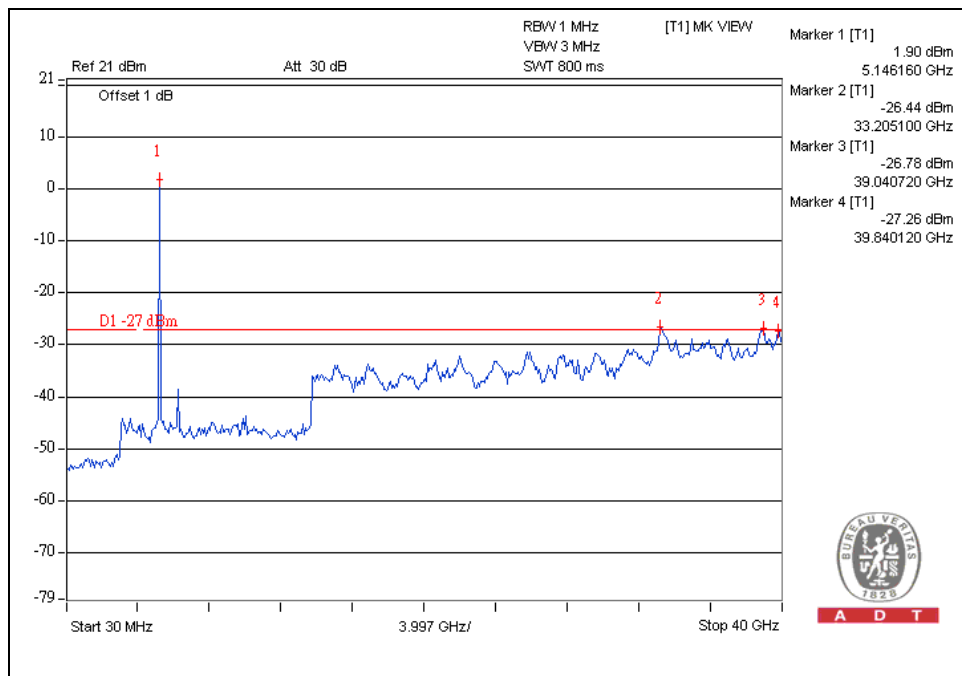


CH8

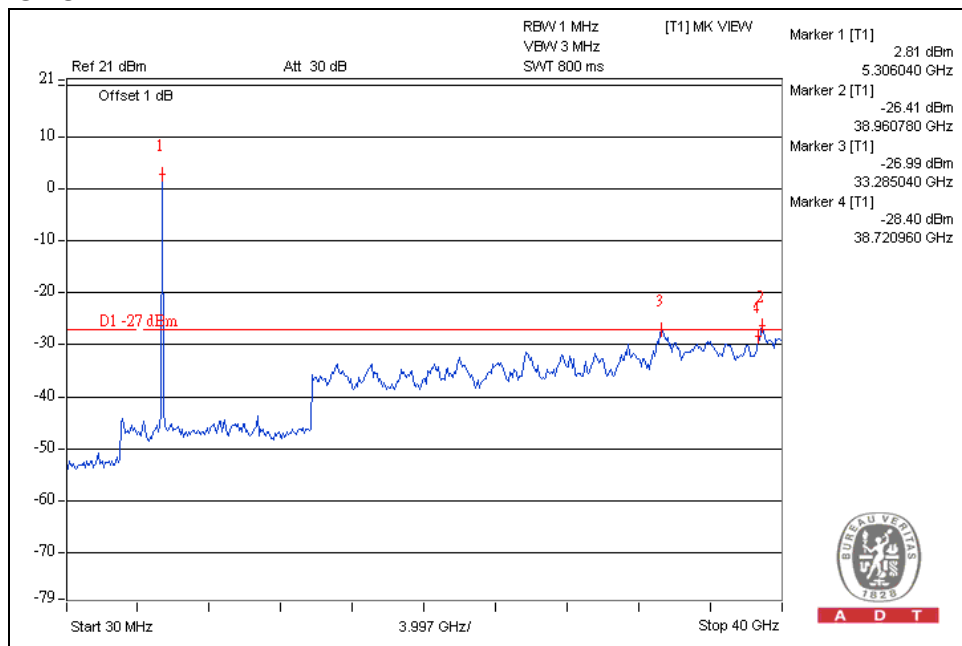


For chain (1):

CH1



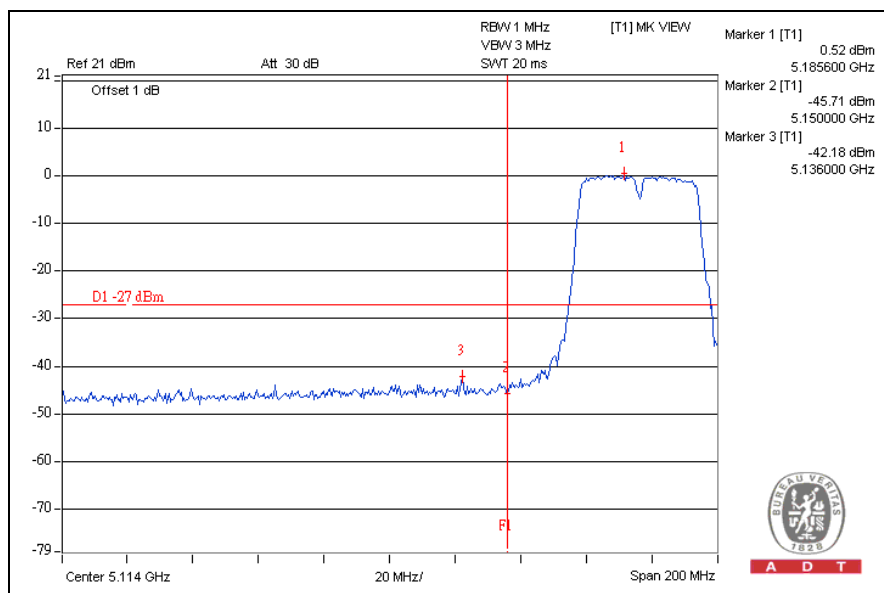
CH8



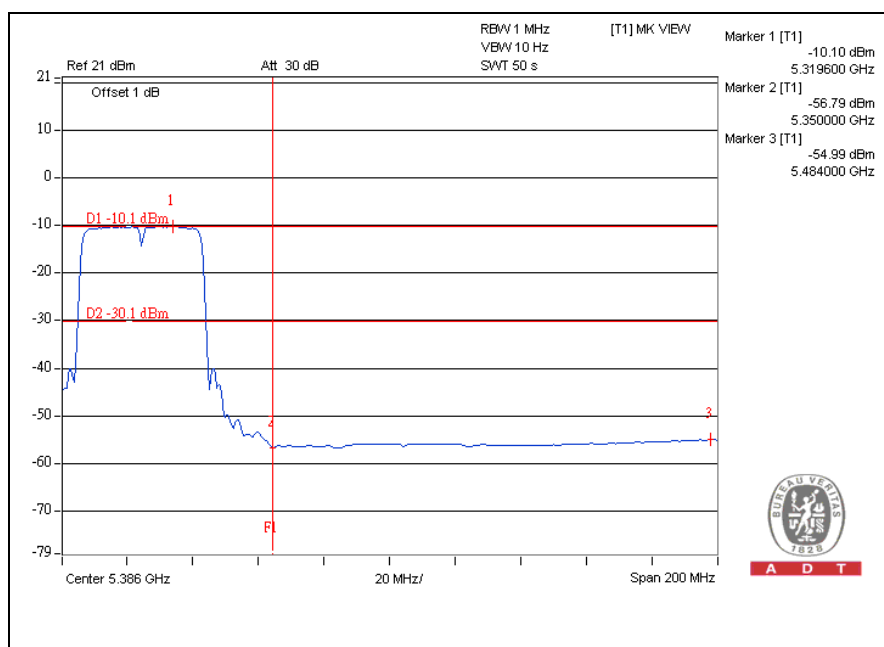
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH1

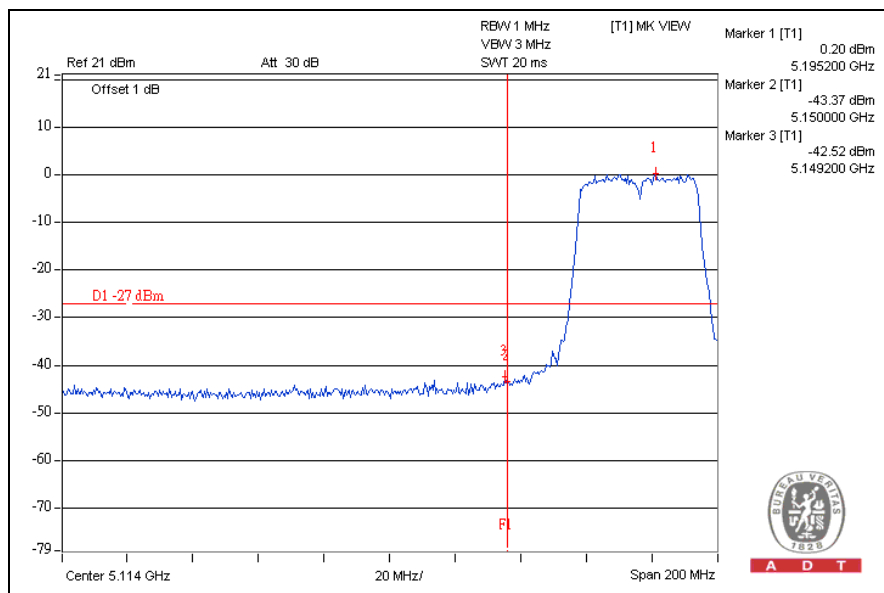


CH4

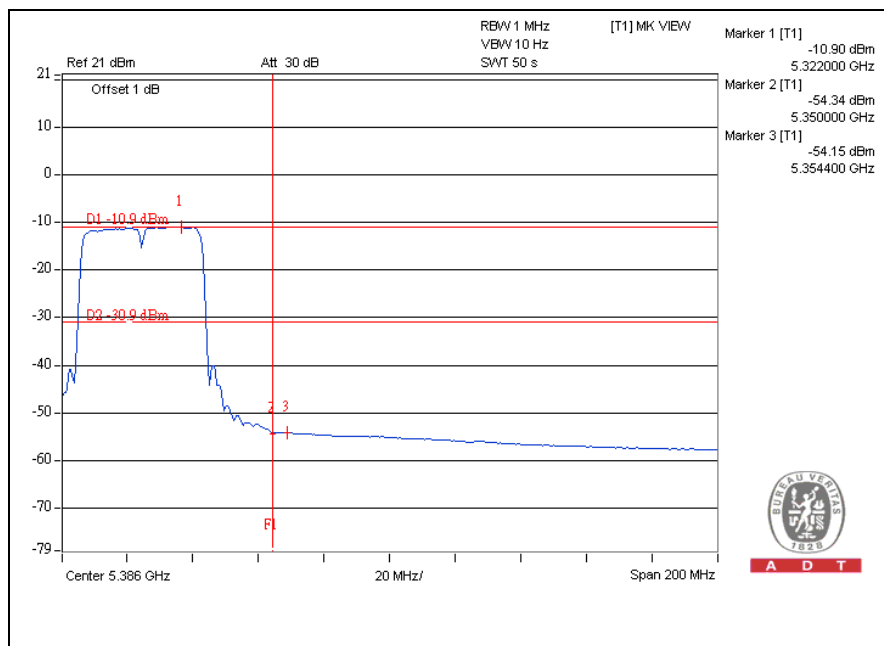


For chain (1):

CH1

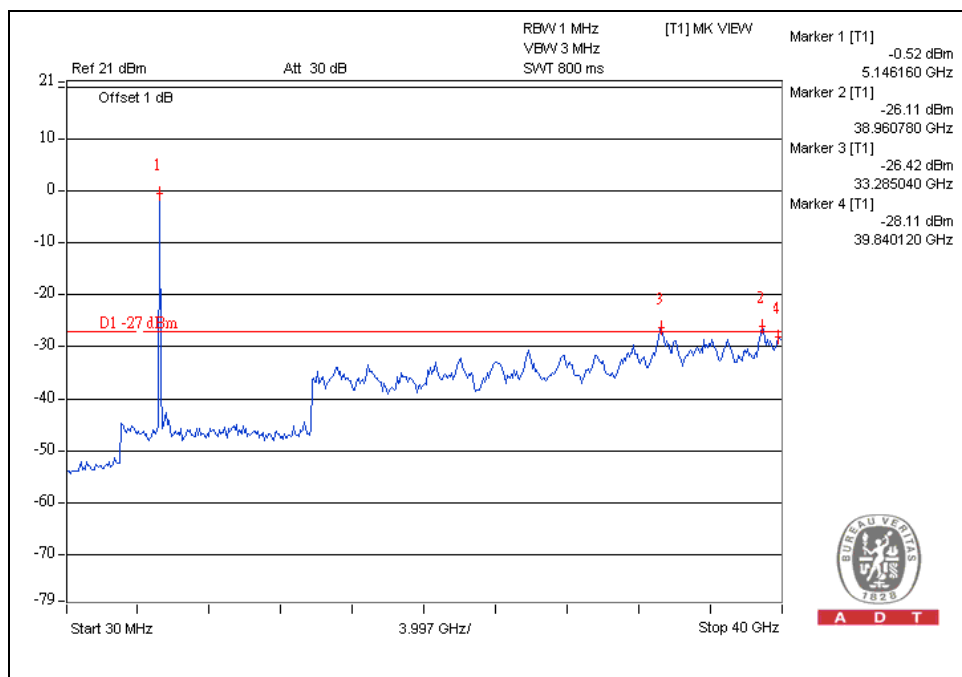


CH4

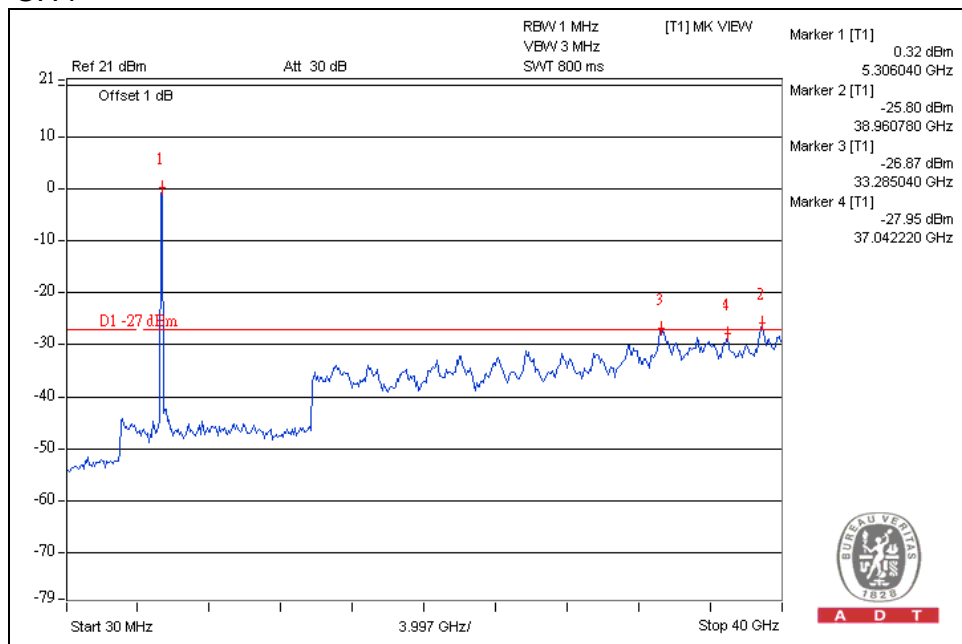


For chain (0):

CH1

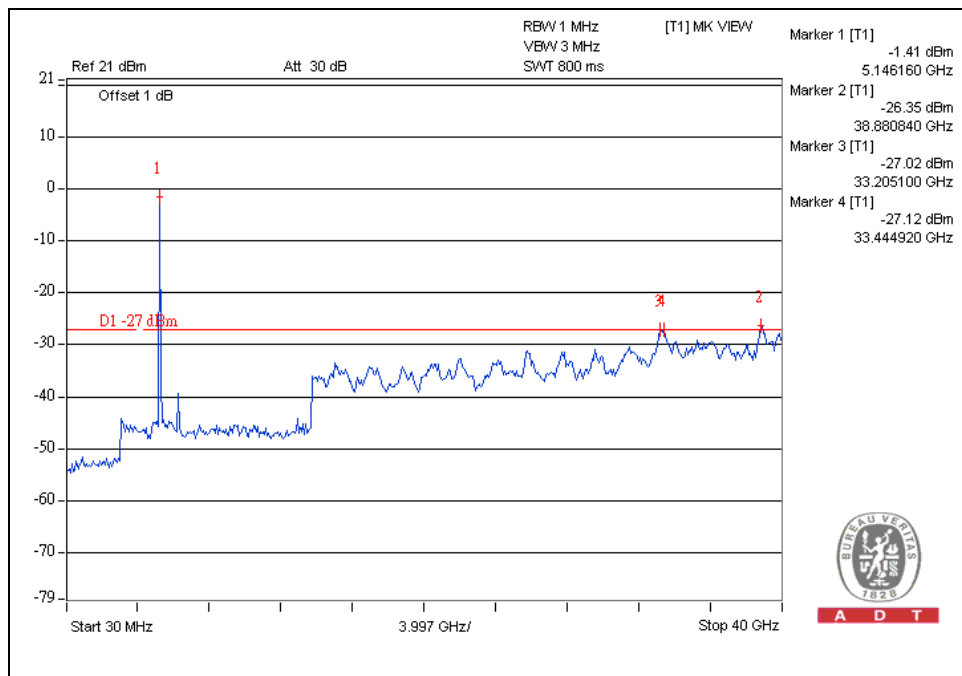


CH4

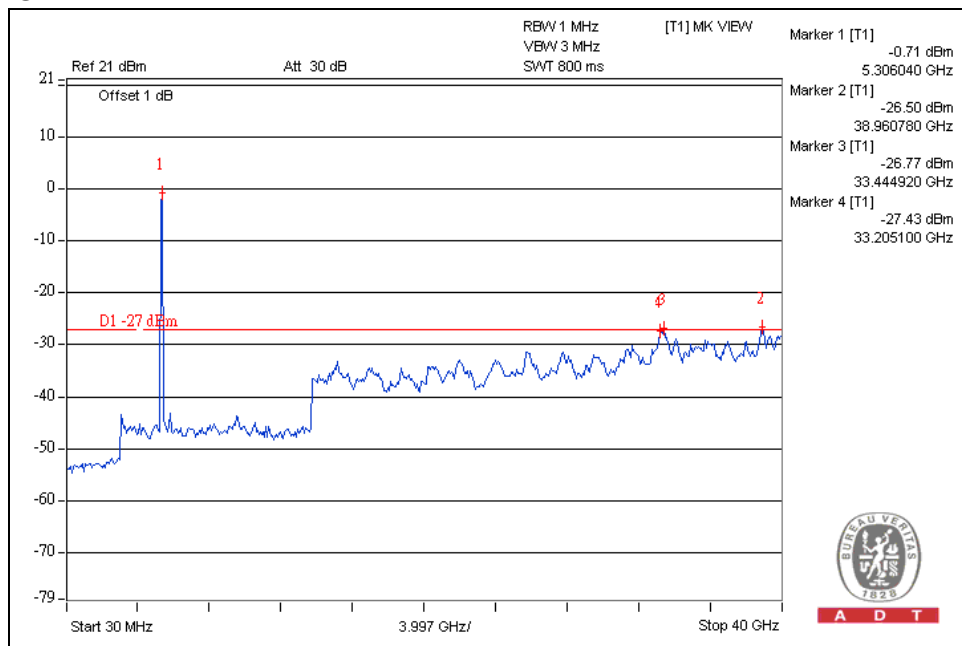


For chain (1):

CH1



CH4





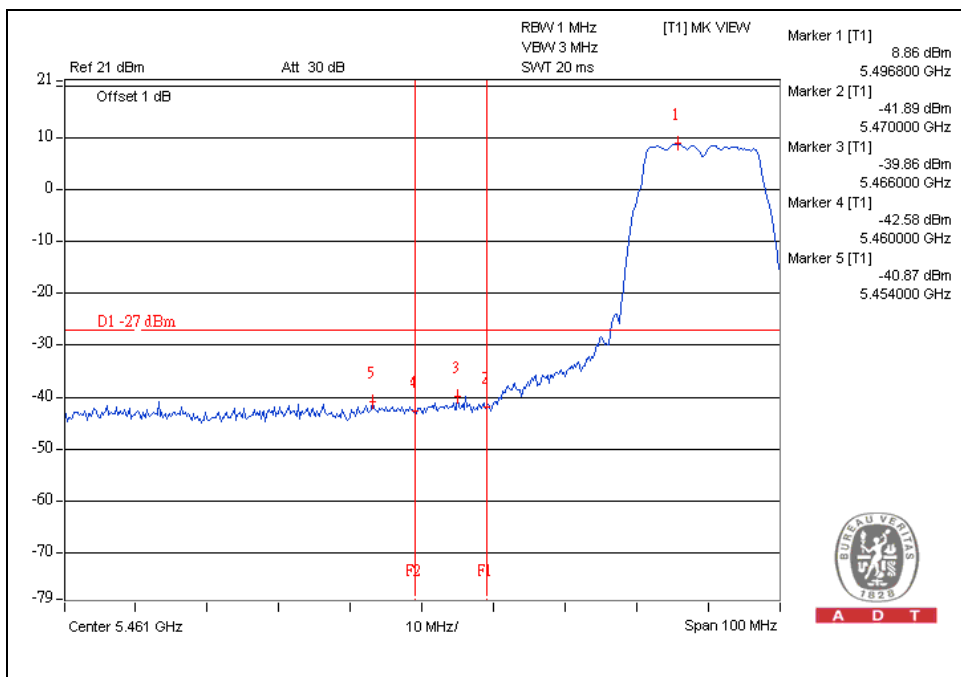
A D T

For 5.47 to 5.725GHz band:

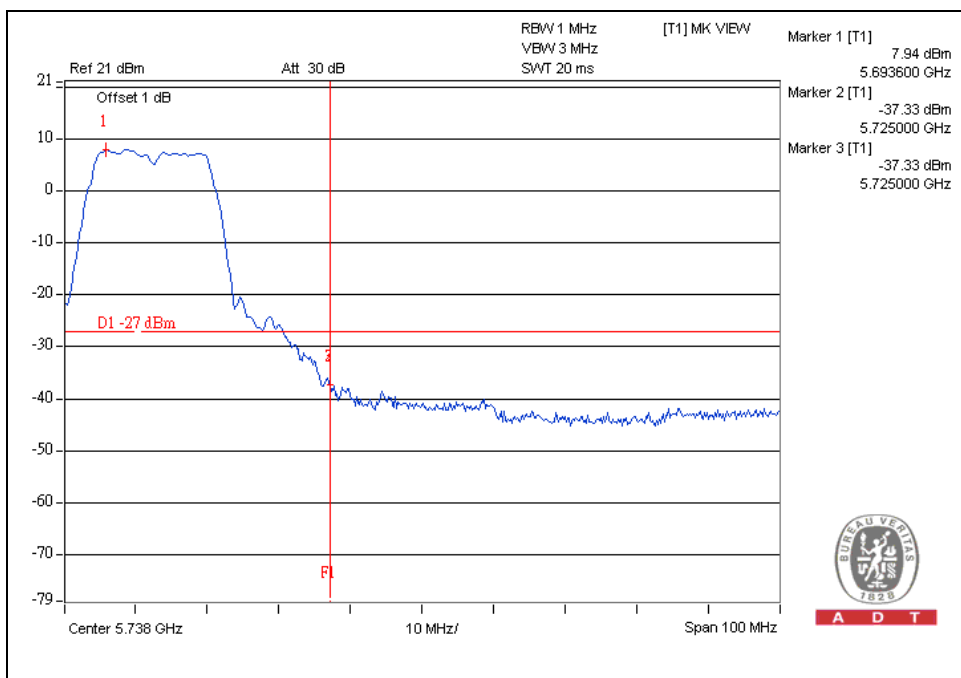
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

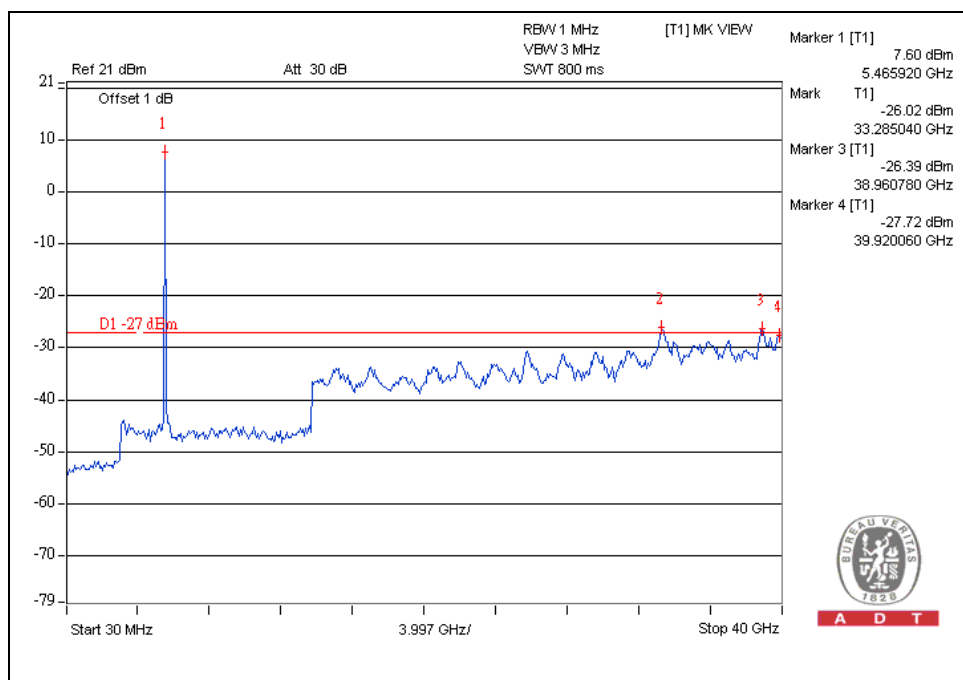
CH 9



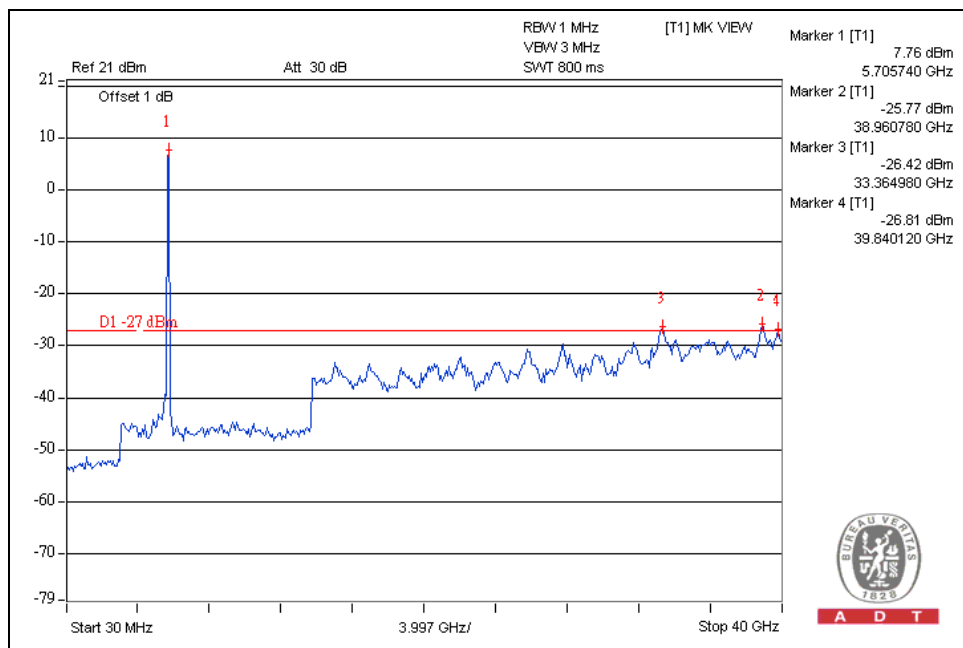
CH 19



CH 9



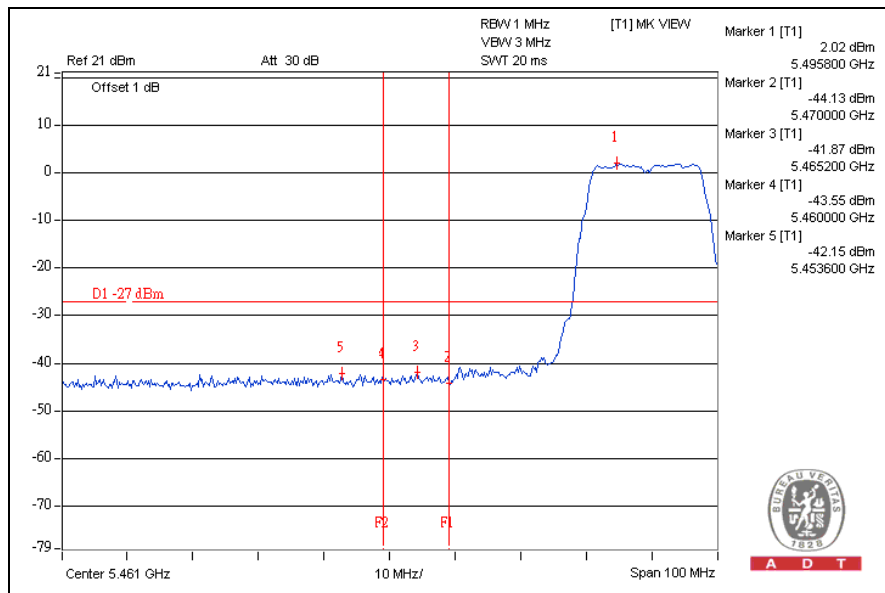
CH 19



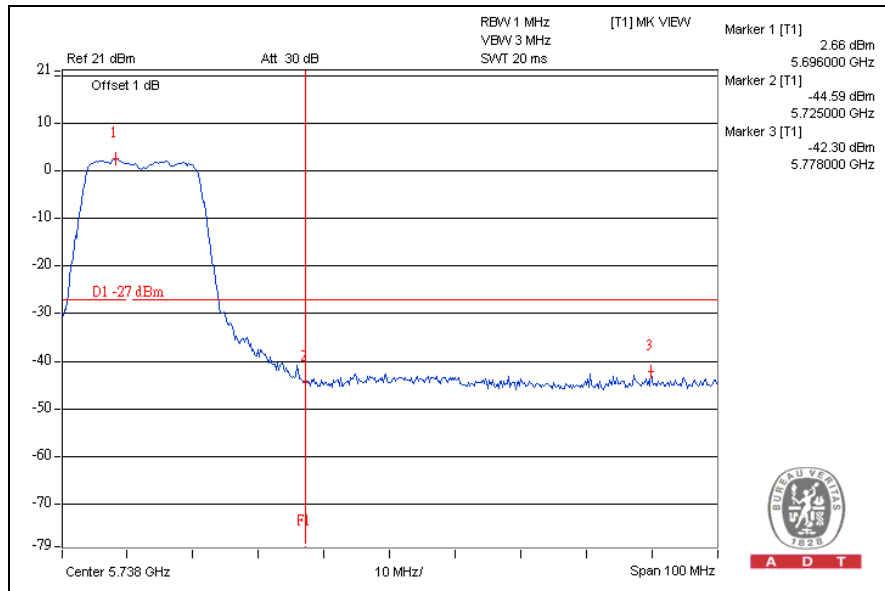
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH9

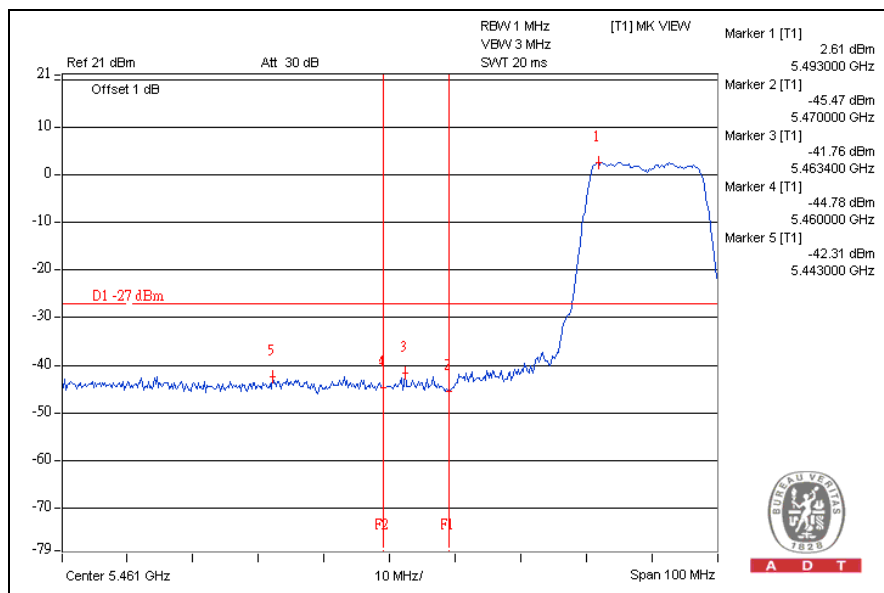


CH19

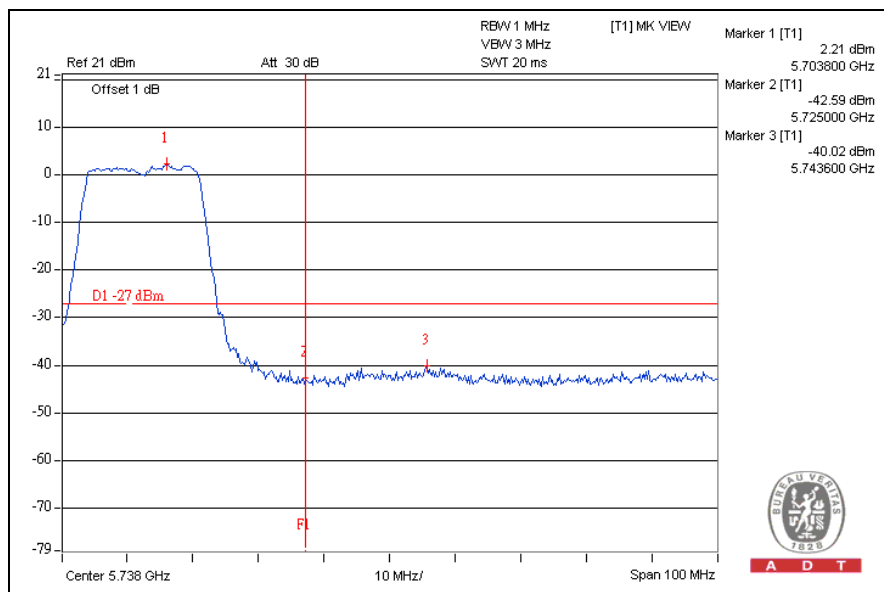


For chain (1):

CH9

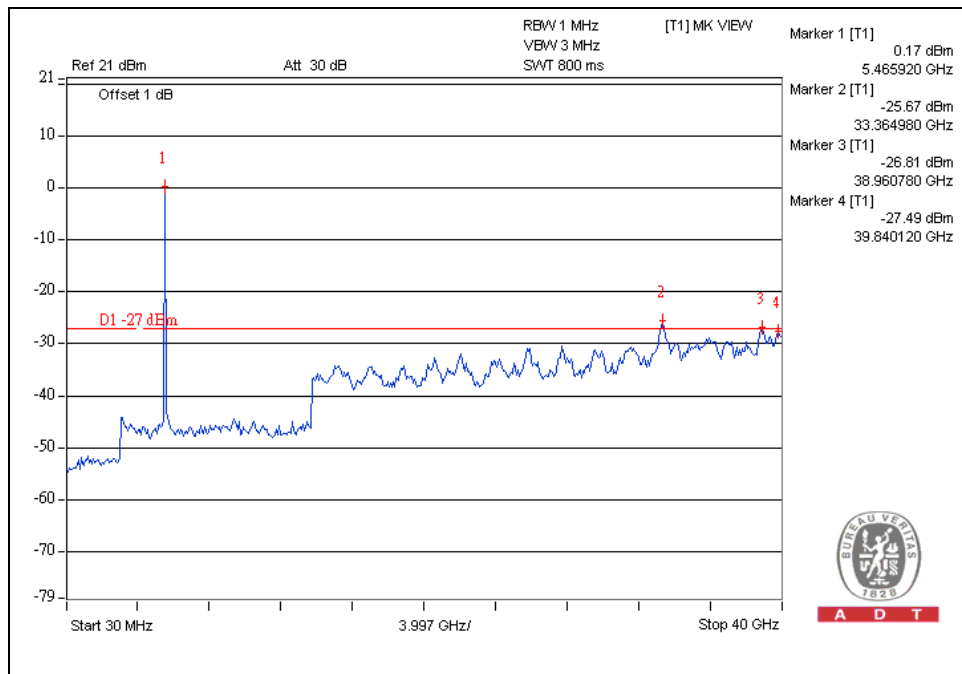


CH19

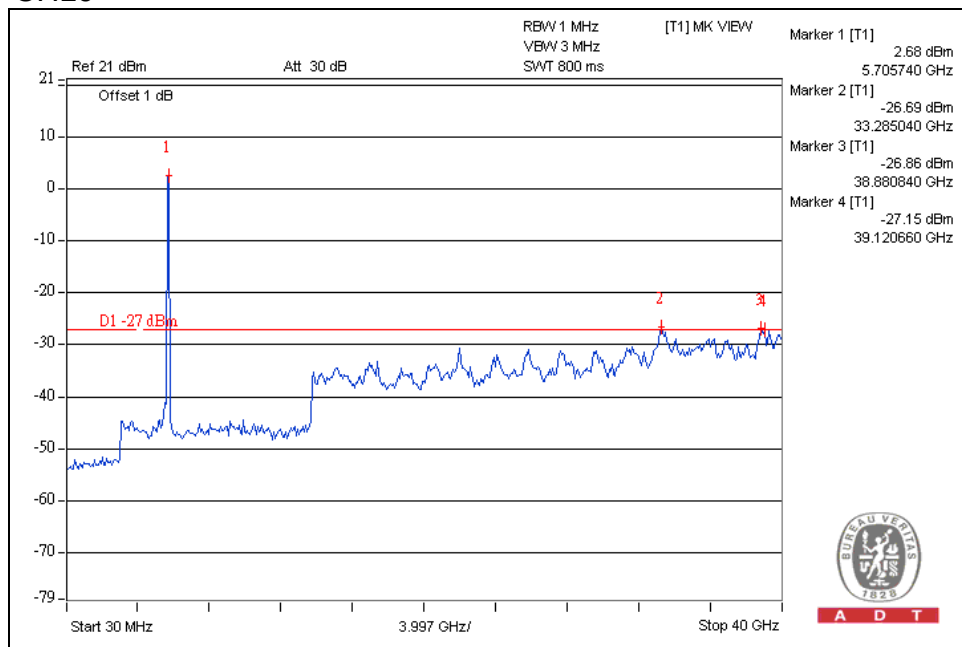


For chain (0):

CH9

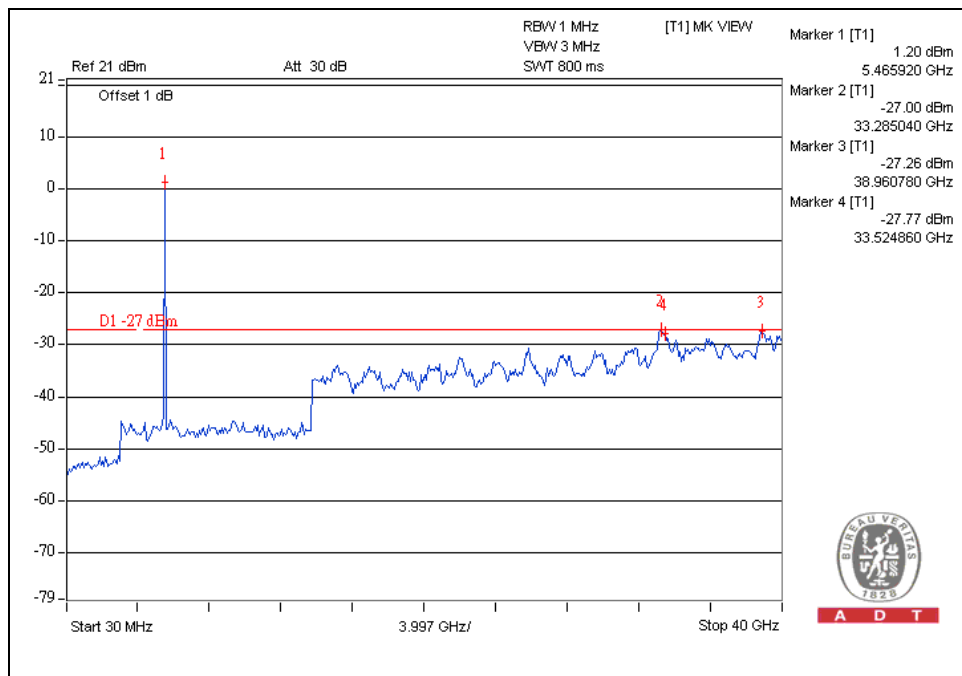


CH19

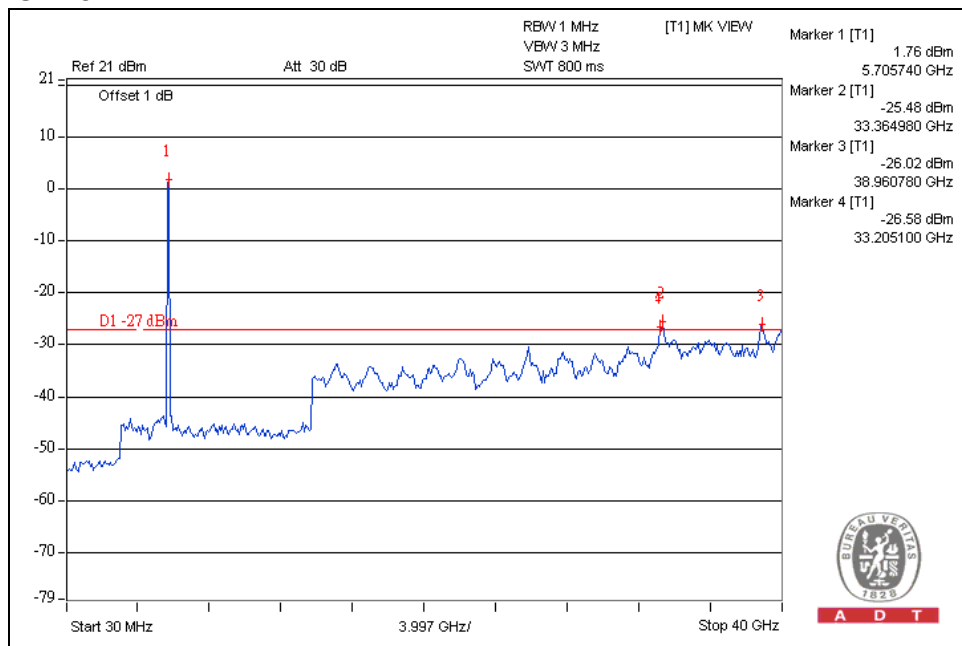


For chain (1):

CH9



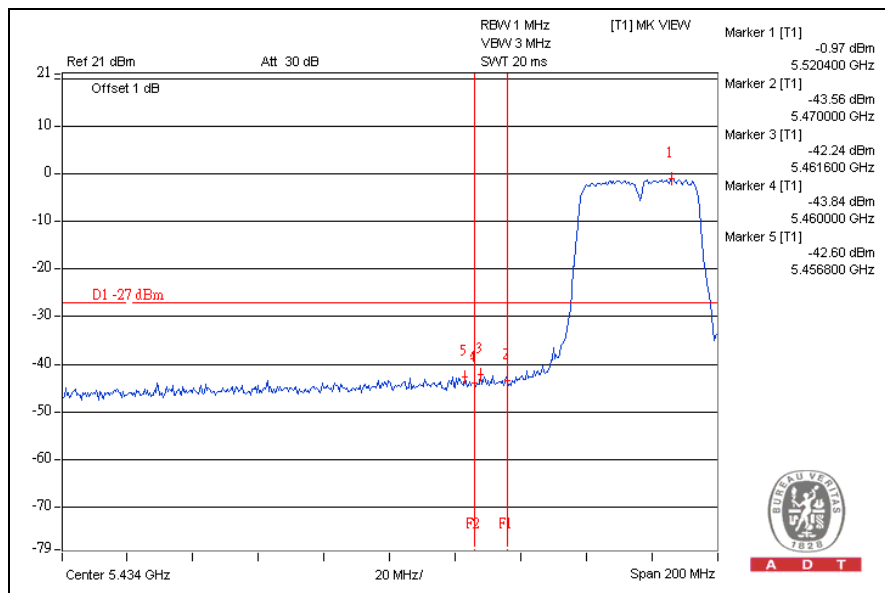
CH19



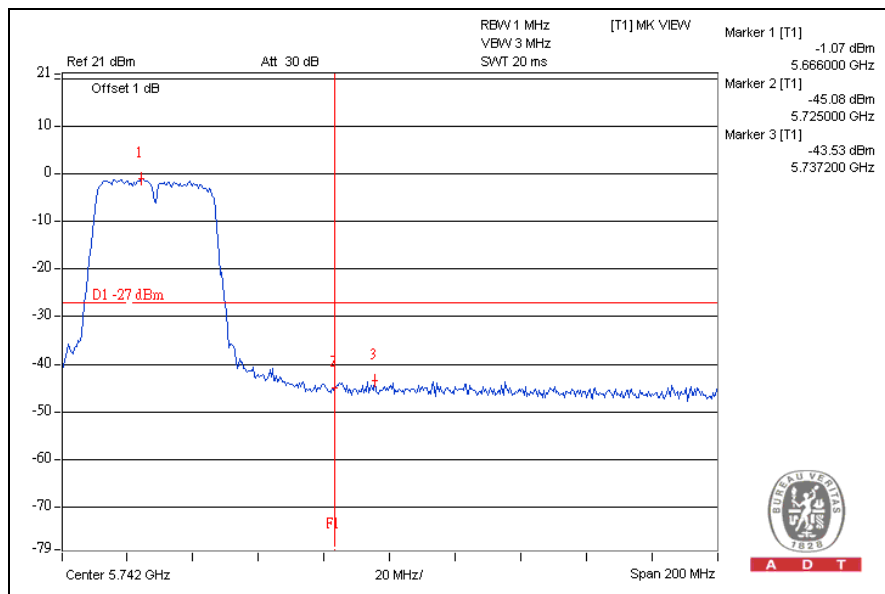
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH5

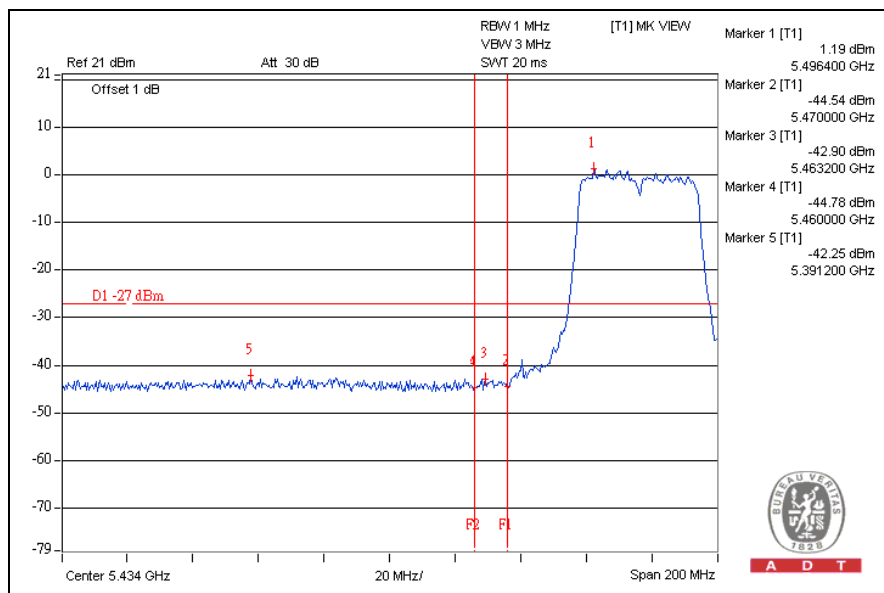


CH9

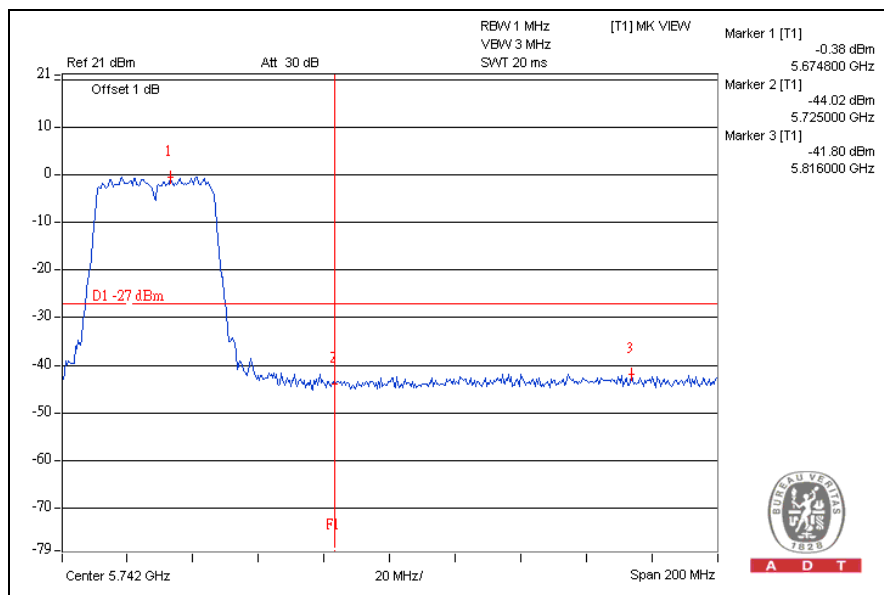


For chain (1):

CH5

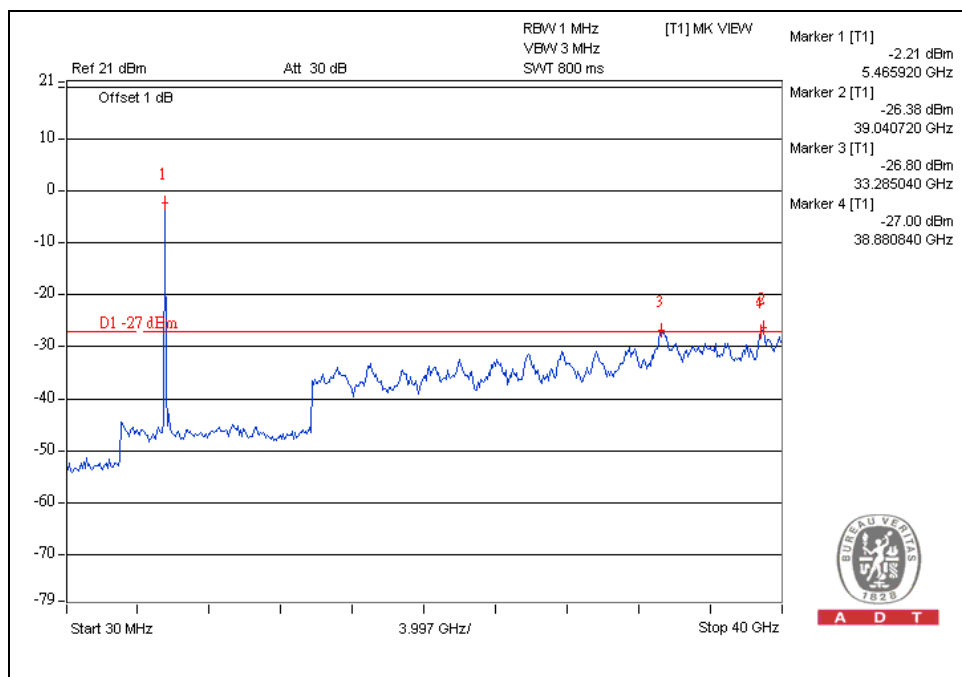


CH9



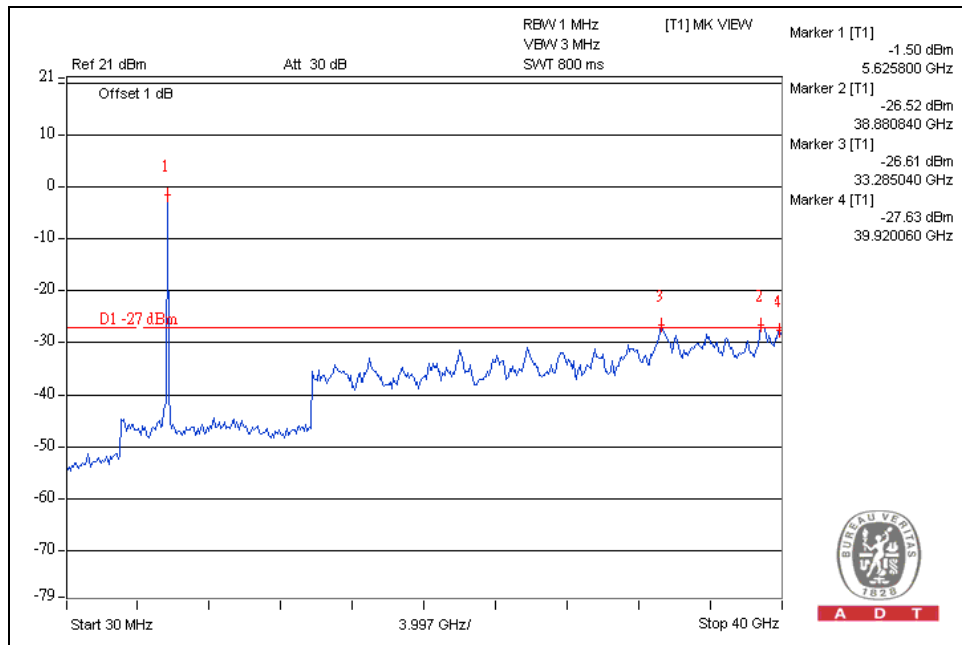
For chain (0):

CH5



A D T

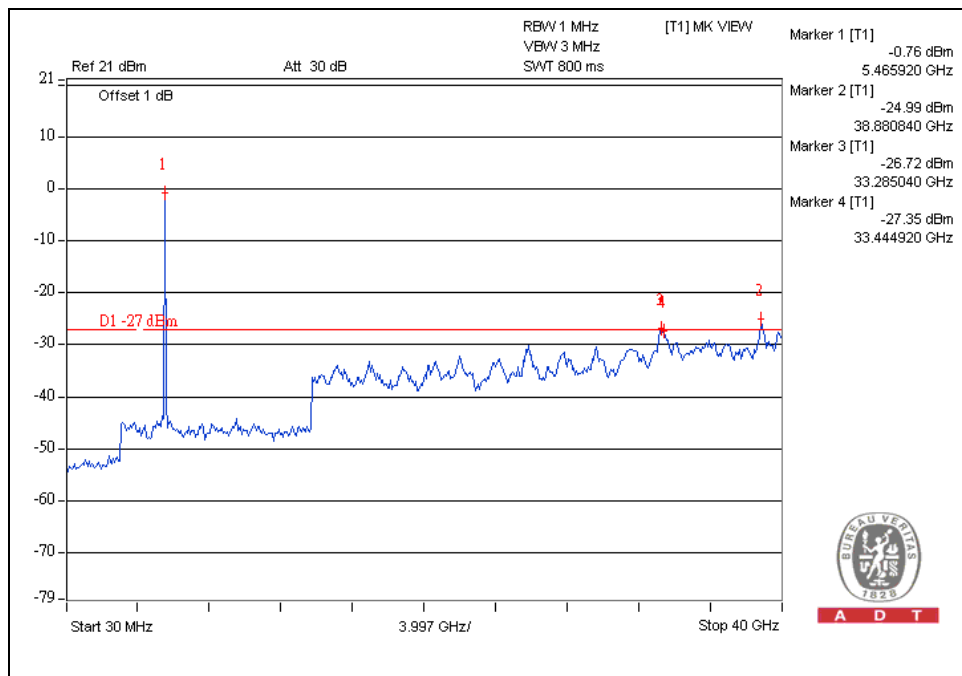
CH9



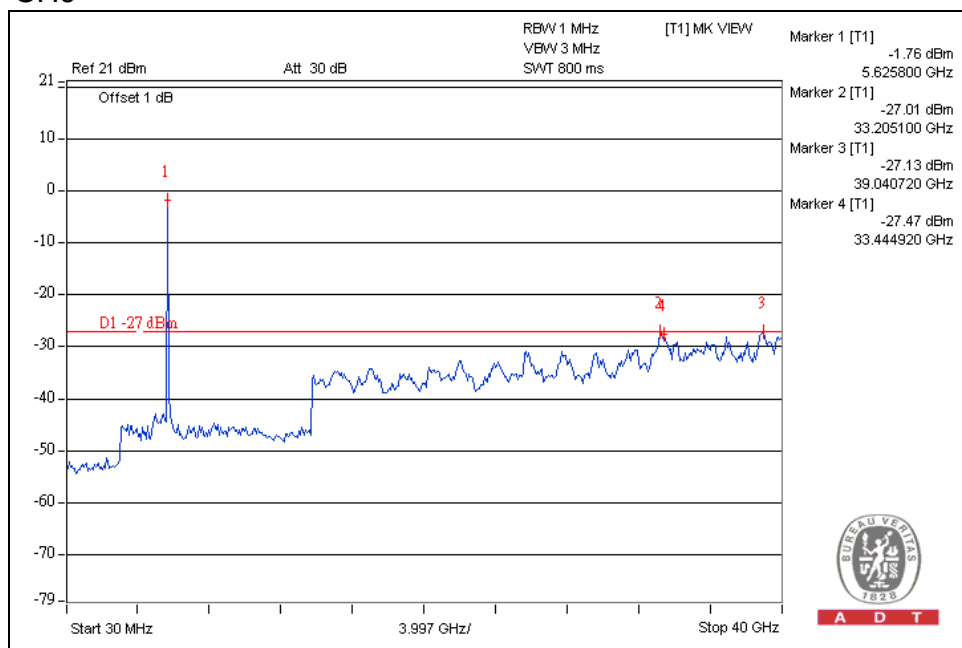
A D T

For chain (1):

CH5



CH9





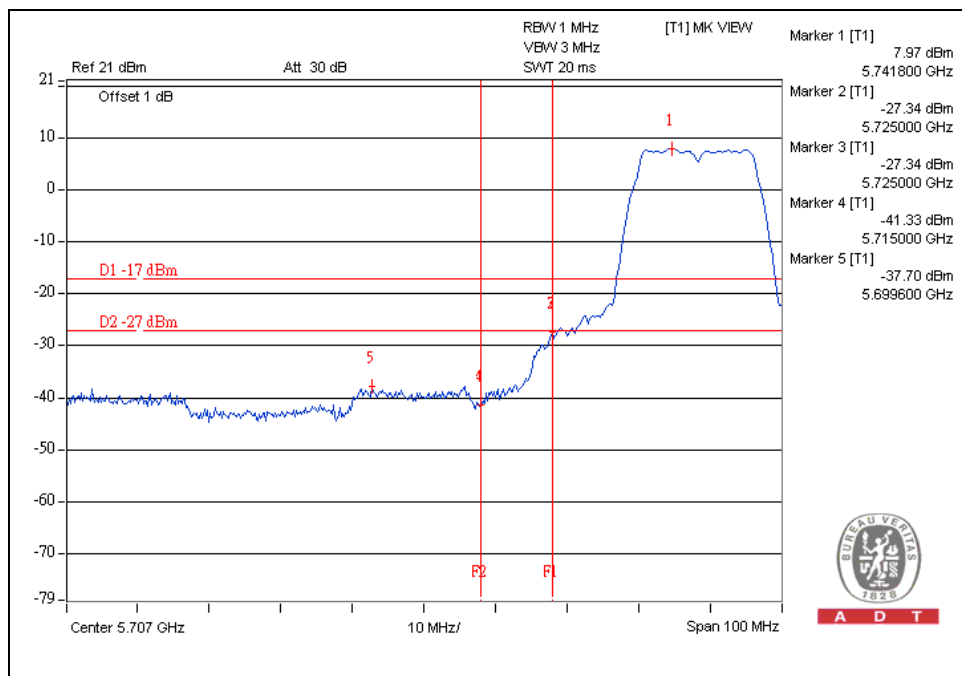
A D T

For 5.725 to 5.825GHz band:

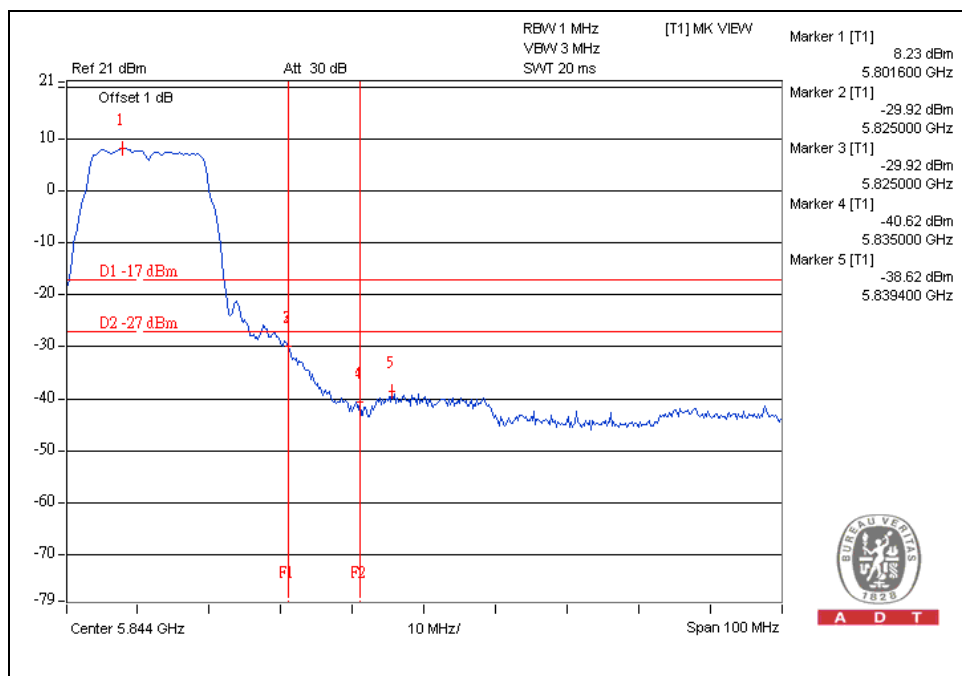
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

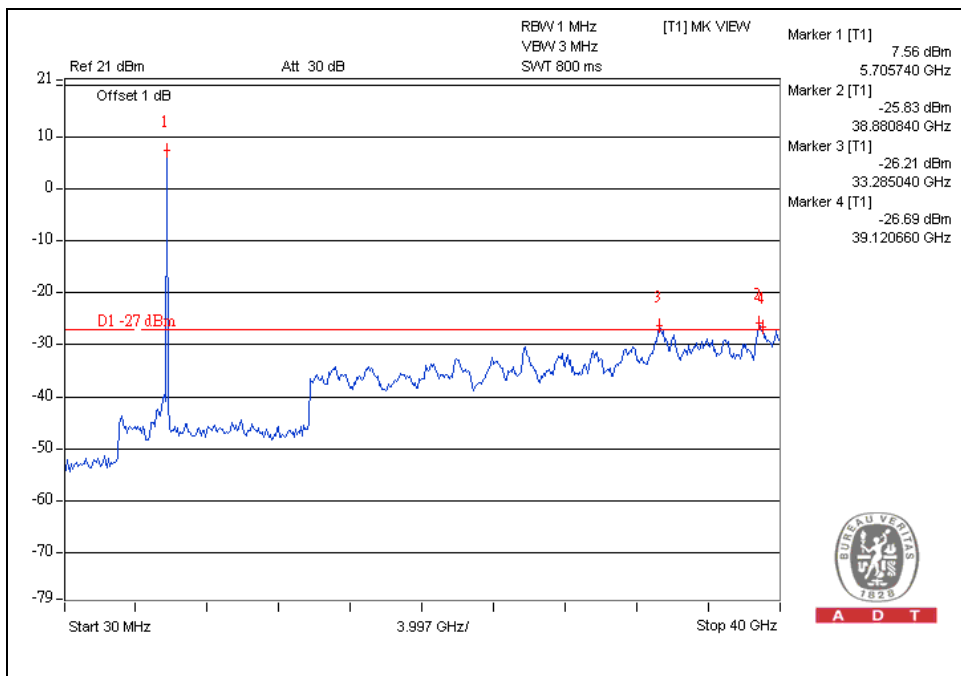
CH 20



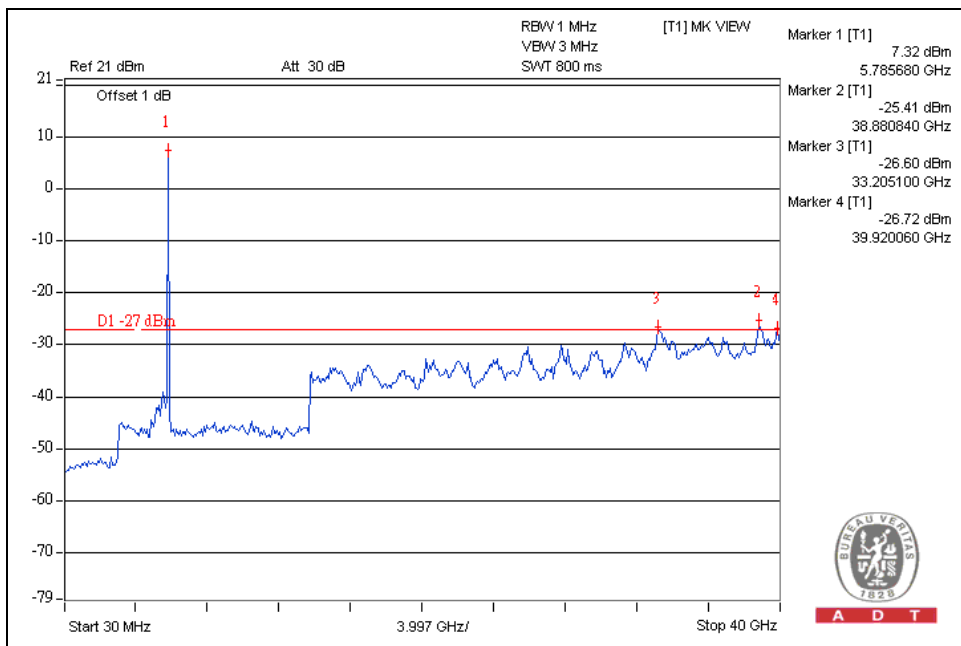
CH 23



CH 20



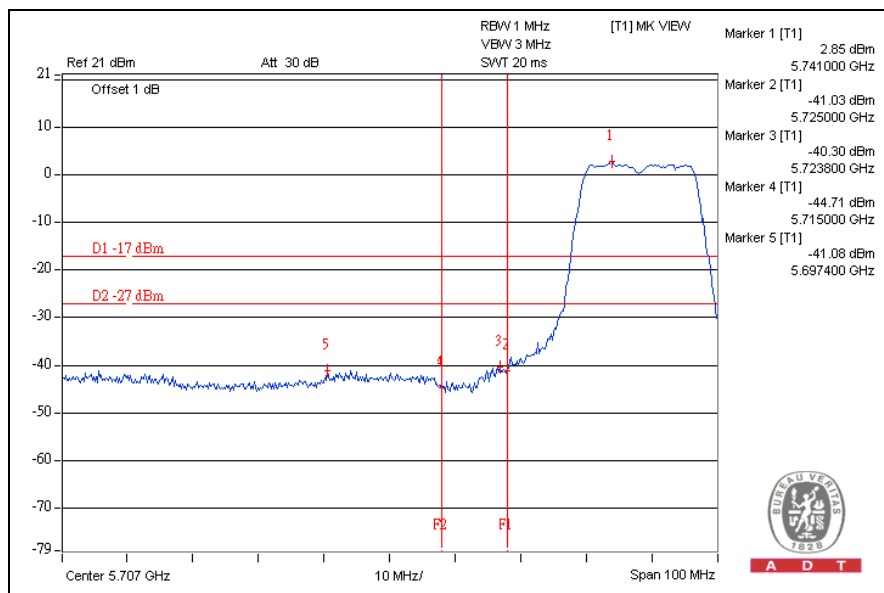
CH 23



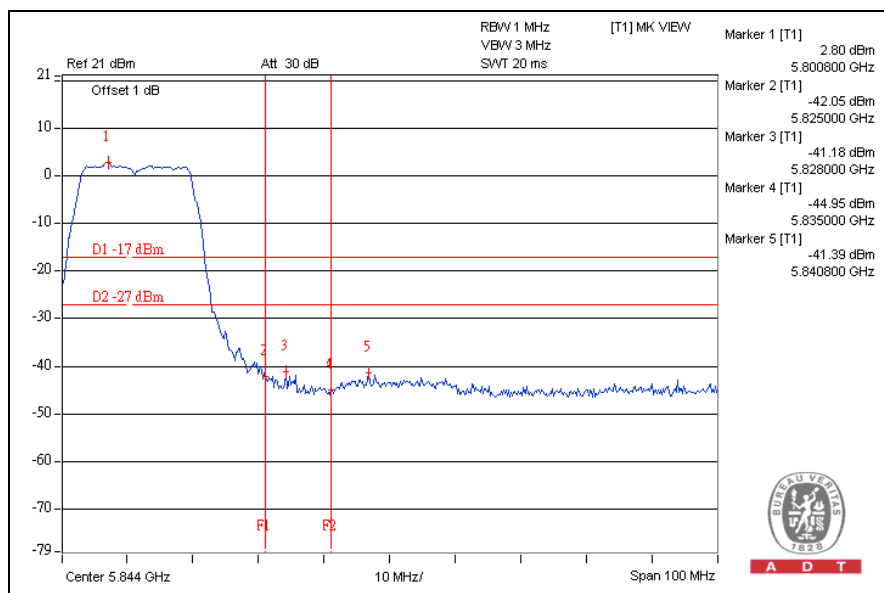
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH20

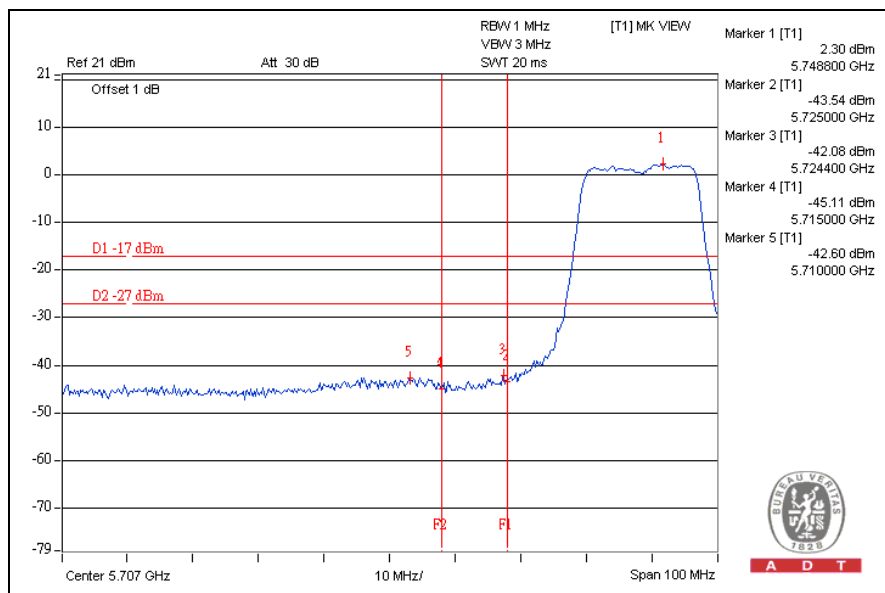


CH23

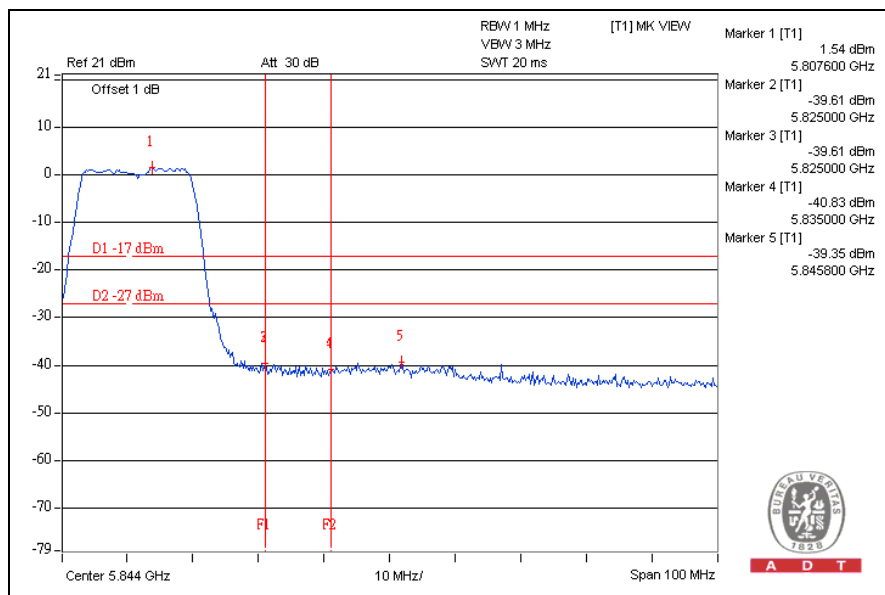


For chain (1):

CH20

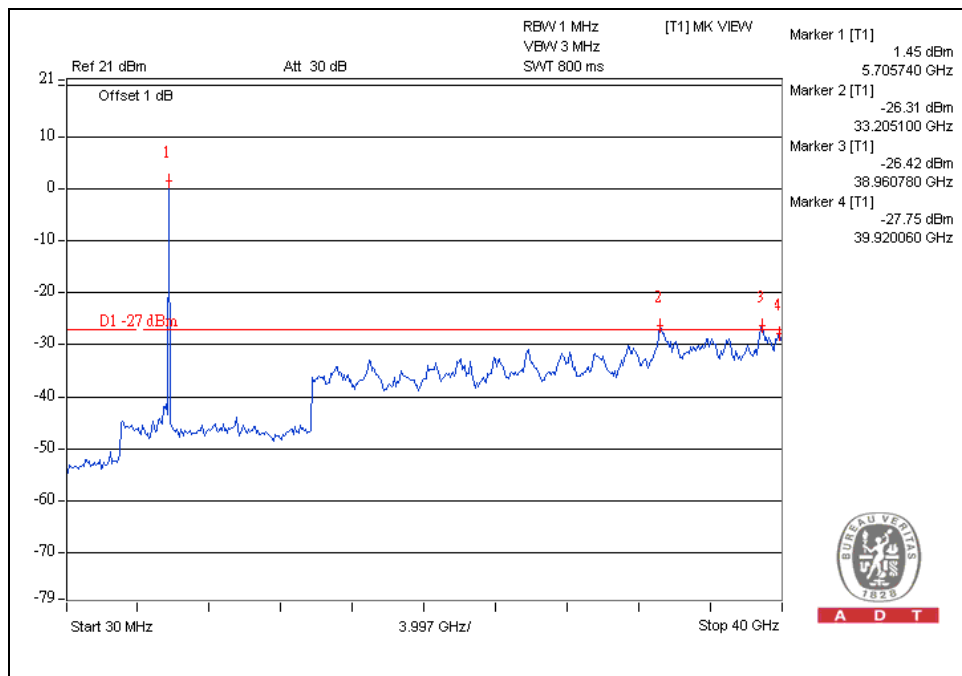


CH23

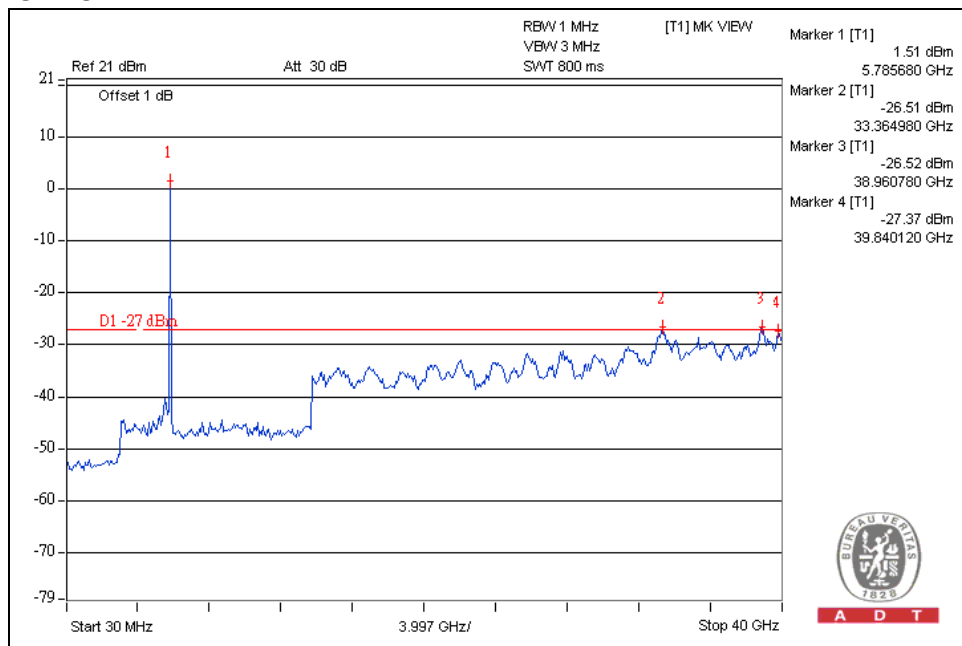


For chain (0):

CH20

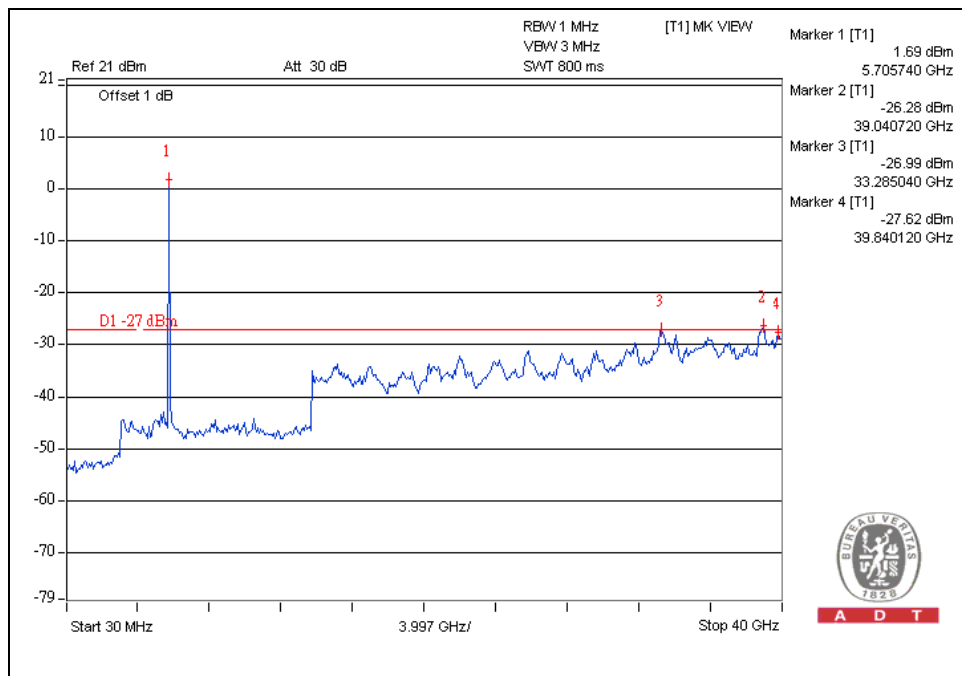


CH23

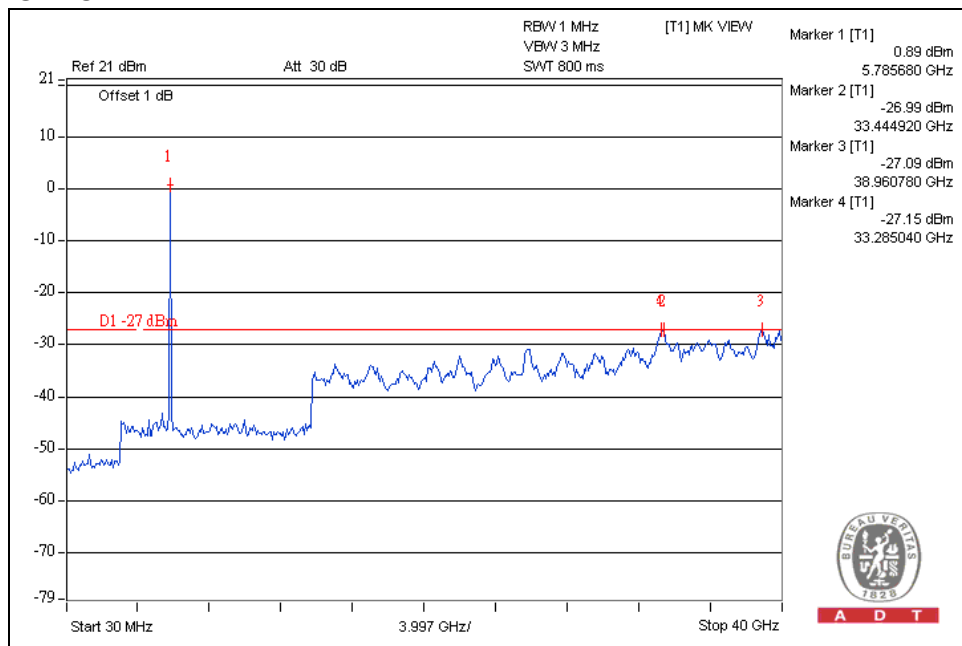


For chain (1):

CH20



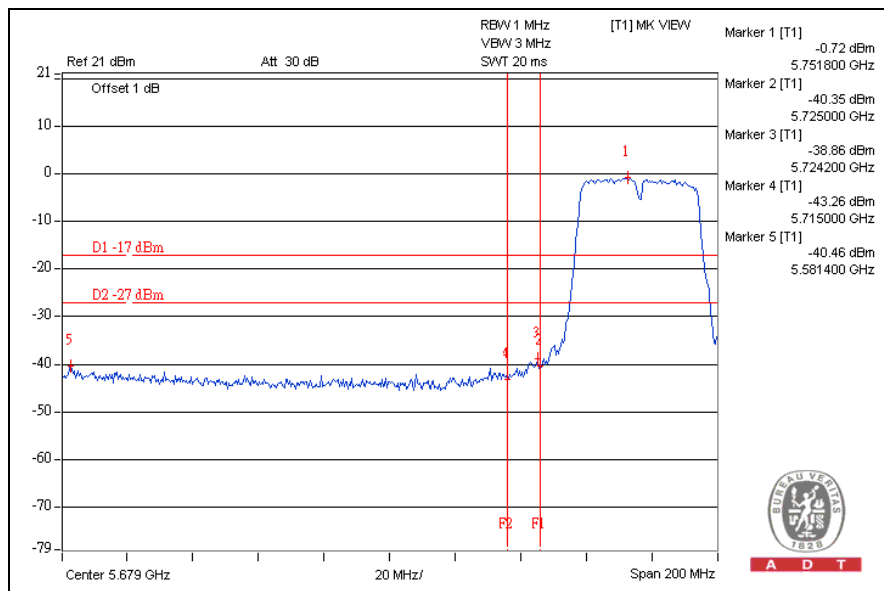
CH23



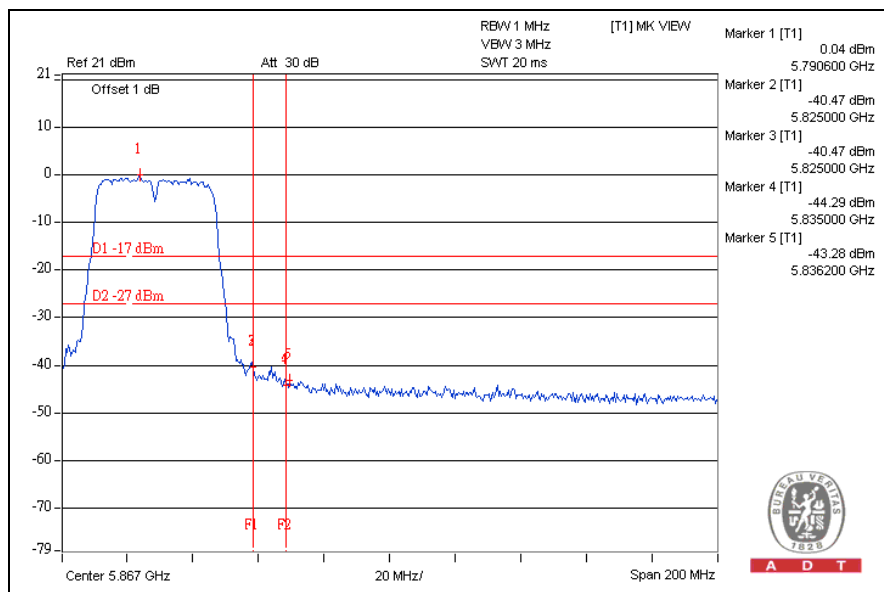
DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0):

CH10

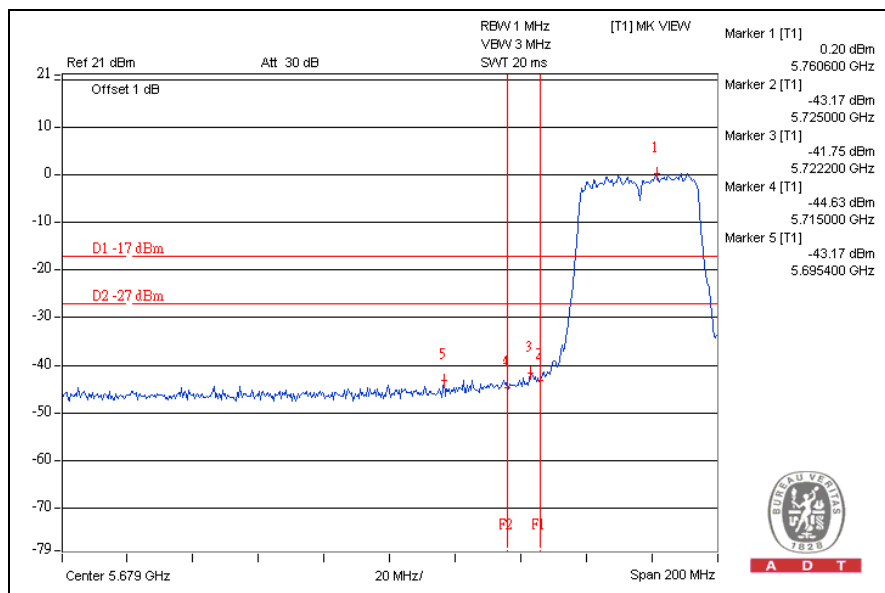


CH11

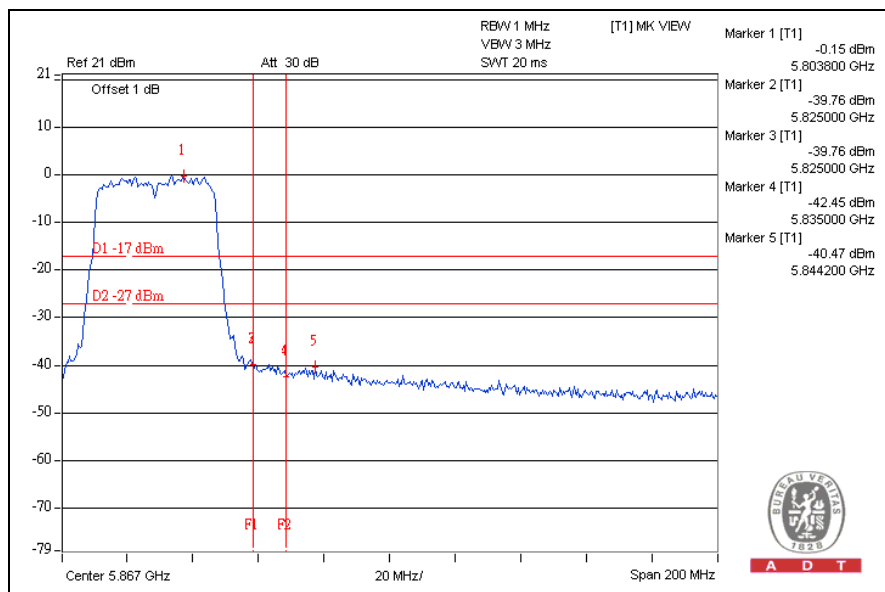


For chain (1):

CH10

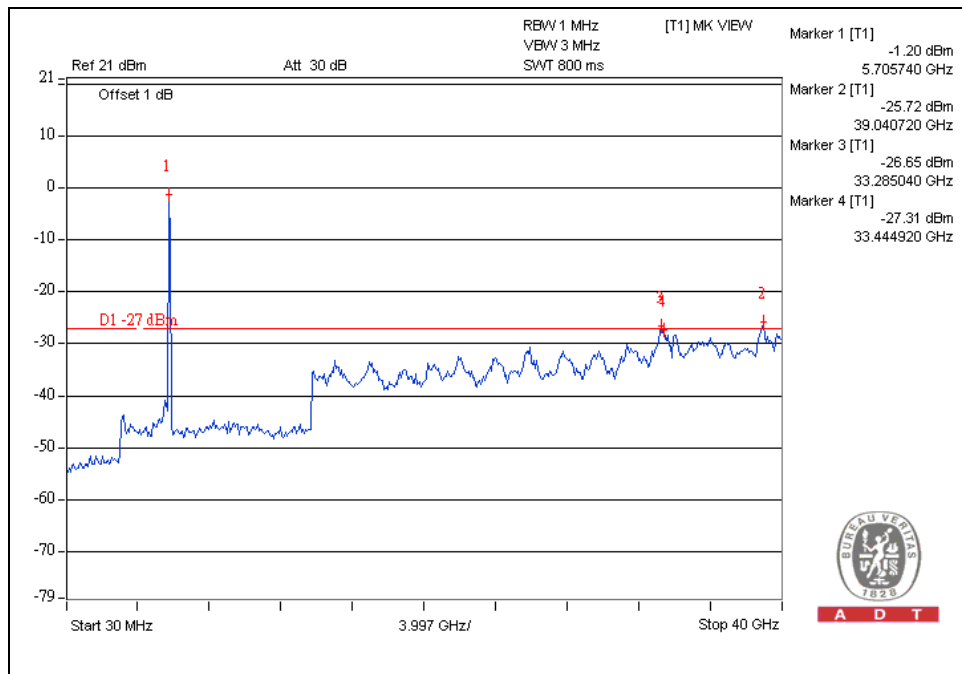


CH11

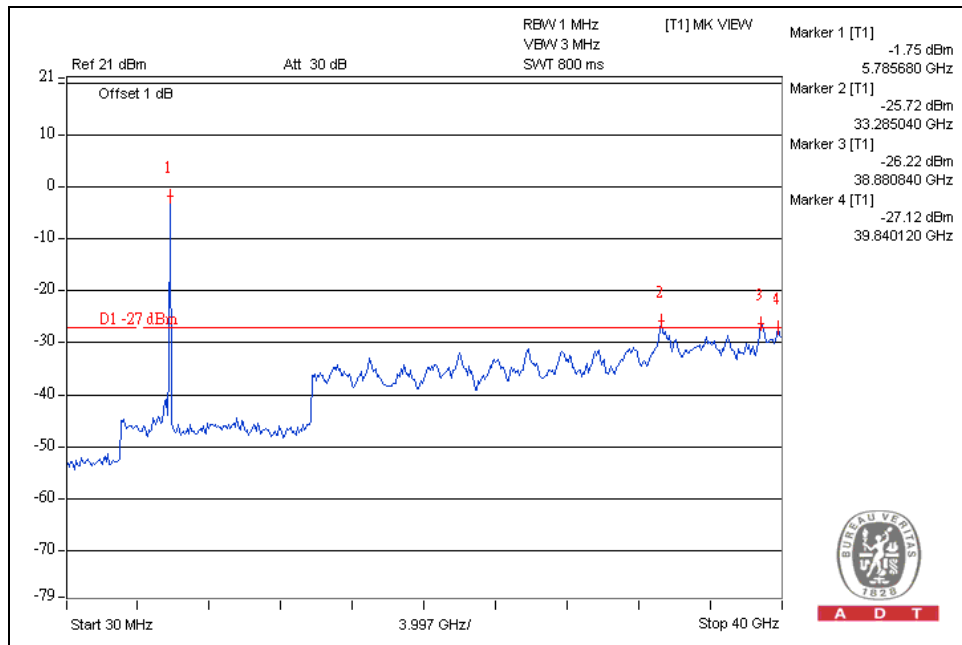


For chain (0):

CH10

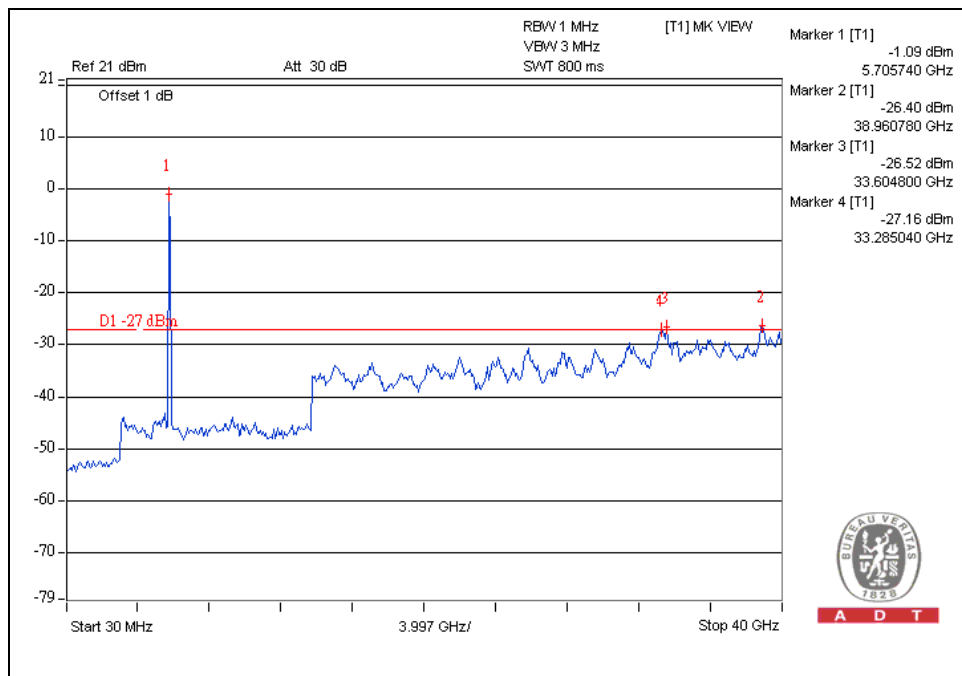


CH11

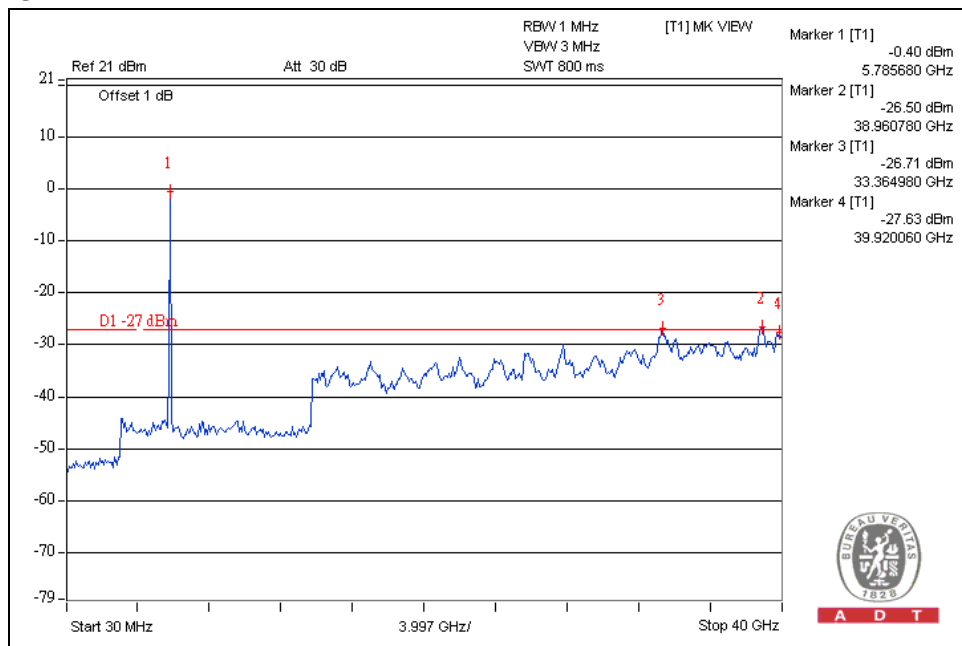


For chain (1):

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	0	3.5 (5250-5350MHz) 3 (5470-5725MHz) 3 (5725-5825MHz)	UFL-style
CHAIN(1)	Dipole	1.5	3	UFL-style



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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

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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



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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.

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