

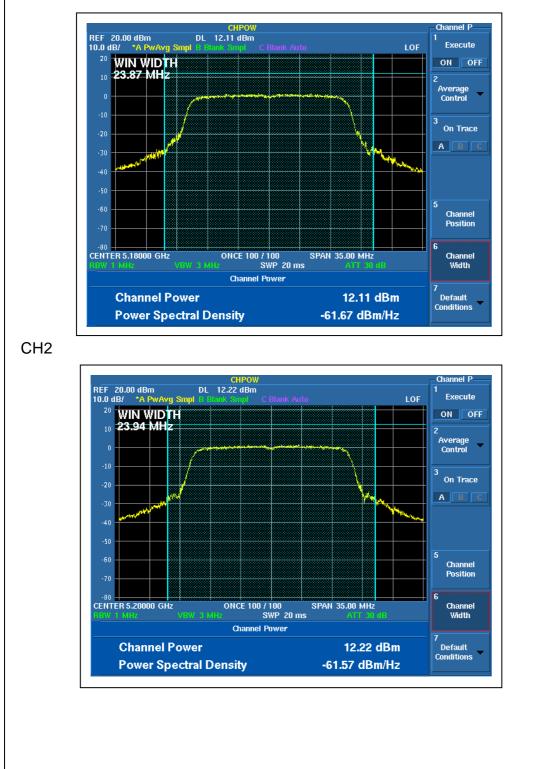
## CH19 Channel P CHPOW DL 14.10 dBm REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl <sup>20</sup> WIN WIDTH 10 22.05 MHz Execute ON OFF Average Control On Trace AB Channel Position ĥ ONCE 100 / 100 SWP 20 ms Channel Width CENTER 5.70000 GHz SPAN 35.00 MHz **Channel Power Channel Power** 14.10 dBm . Default Conditions **Power Spectral Density** -59.33 dBm/Hz CH20 CHPOW DL 15.46 dBm Channel P REF 20.00 dBm 10.0 dB/ \*A PwAvg Execute LOF <sup>20</sup> WIN WIDTH 10 22.79 MHz ON OFF Average Control On Trace A B C Channel Position 6 -80 CENTER 5.74500 GHz Channel Width ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz Channel Power **Channel Power** , Default Conditions 15.46 dBm -58.12 dBm/Hz **Power Spectral Density**



### CH22 Channel P CHPOW DL 15.34 dBm REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl Execute LOF WIN WIDTH 22.68 MHz ON OFF Average Control 3 On Trace еł. AB Channel Position ONCE 100 / 100 SWP 20 ms Channel Width CENTER 5.78500 GHz SPAN 35.00 MHz **Channel Power Channel Power** , Default Conditions 15.34 dBm **Power Spectral Density** -58.22 dBm/Hz CH23 Channel P CHPOW DL 15.15 dBm REF 20.00 dBm 10.0 dB/ \*A PwAvg Sm Execute LOF <sup>20</sup> WIN WIDTH 10 22.82 MHz ON OFF Average Control On Trace ABC 5 Channel Position 6 -80 CENTER 5.80500 GHz Channel Width ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz Channel Power **Channel Power** , Default Conditions 15.15 dBm -58.43 dBm/Hz **Power Spectral Density**



## For Chain (1) :CH1



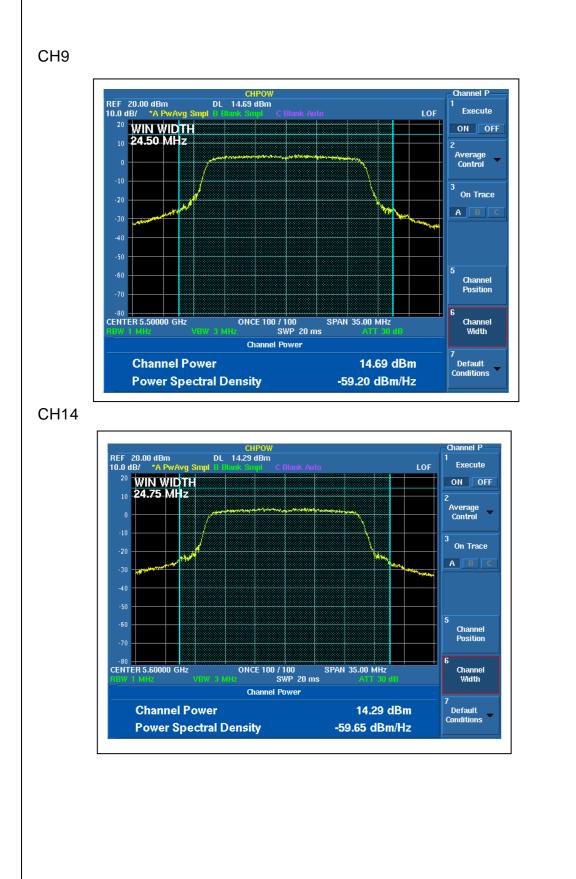


## CH4 CHPOW DL 12.13 dBm Channel P REF 20.00 dBm 10.0 dB/ \*A PwA Execute LOF <sup>20</sup> WIN WIDTH 10 24.08 MHz ON OFF Average Control 3 On Trace AB Channel Position Channel Width CENTER 5.24000 GHz ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz Channel Power **Channel Power** 12.13 dBm , Default Conditions **Power Spectral Density** -61.69 dBm/Hz CH5 CHPOW DL 16.09 dBm Channel P REF 20.00 dBm 10.0 dB/ \*A PwA Execute <sup>20</sup> WIN WID TH 10 24.64 MHz ON OFF Average Control On Trace ABC Channel Position ONCE 100 / 100 SWP 20 ms Channel Width CENTER 5.26000 GHz SPAN 35.00 MHz Channel Power **Channel Power** 16.09 dBm , Default Conditions **Power Spectral Density** -57.82 dBm/Hz

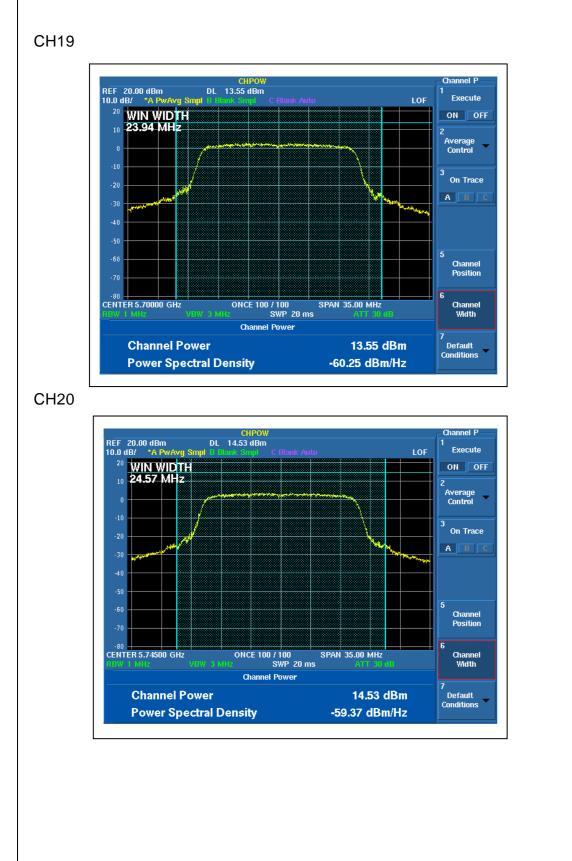


#### CH7 Channel P CHPOW DL 16.13 dBm REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl Execute LOF <sup>20</sup> WIN WID TH 10 24.85 MHz ON OFF Average Control On Trace AB Channel Position 6 នា ONCE 100 / 100 SWP 20 ms Channel Width CENTER 5.30000 GHz SPAN 35.00 MHz **Channel Power Channel Power** , Default Conditions 16.13 dBm **Power Spectral Density** -57.82 dBm/Hz CH8 Channel P CHPOV REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl DL 15.98 dBm Execute <sup>20</sup> WIN WIDTH 10 25.13 MHz ON OFF Average Control 3 On Trace ų. ABC Channel Position 6 CENTER 5.32000 GHz ONCE 100 / 100 SWP 20 ms Channel Width SPAN 35.00 MHz Channel Power , Default Conditions **Channel Power** 15.98 dBm **Power Spectral Density** -58.02 dBm/Hz

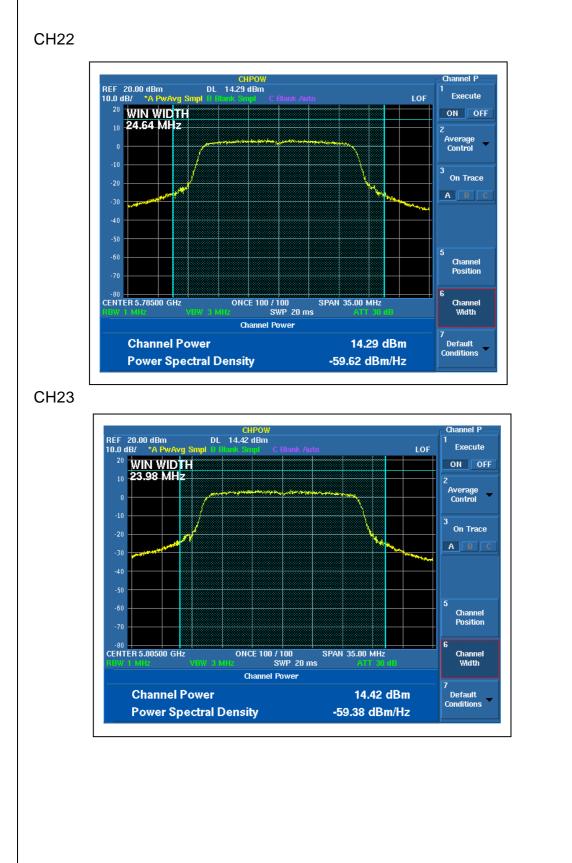






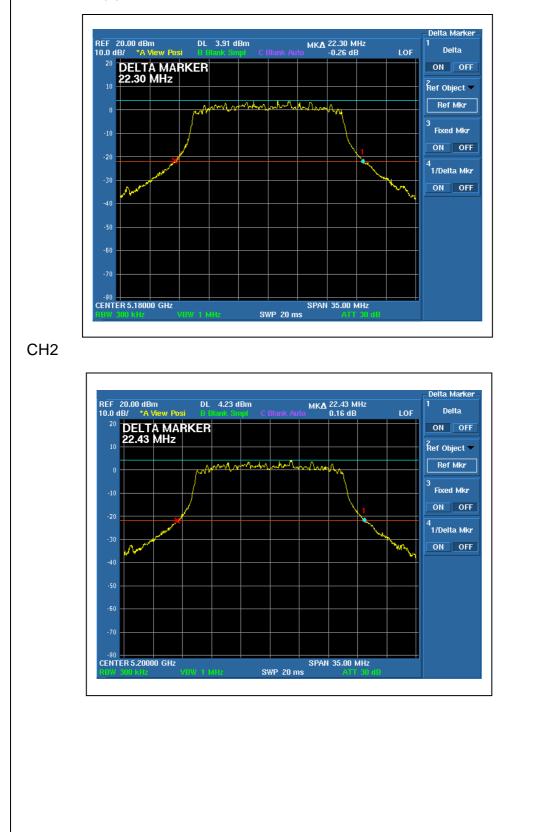




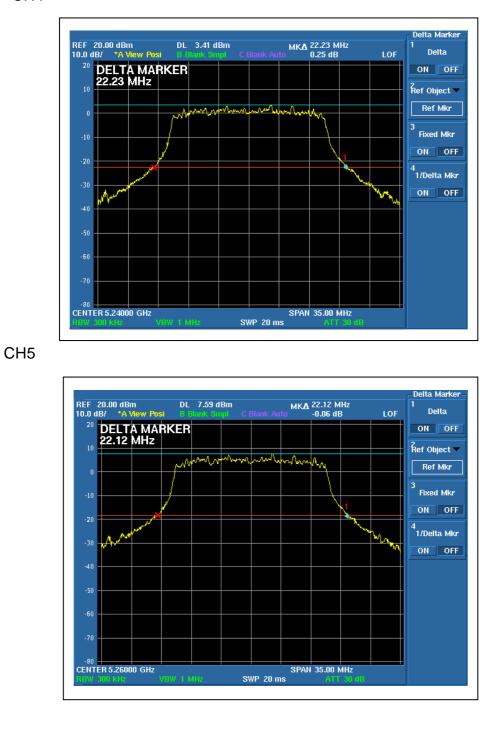




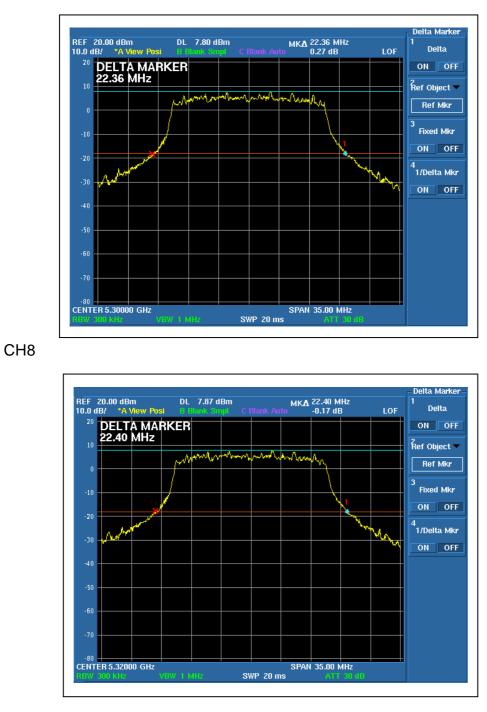
26dB Occupied Bandwidth: For Chain (0) :CH1



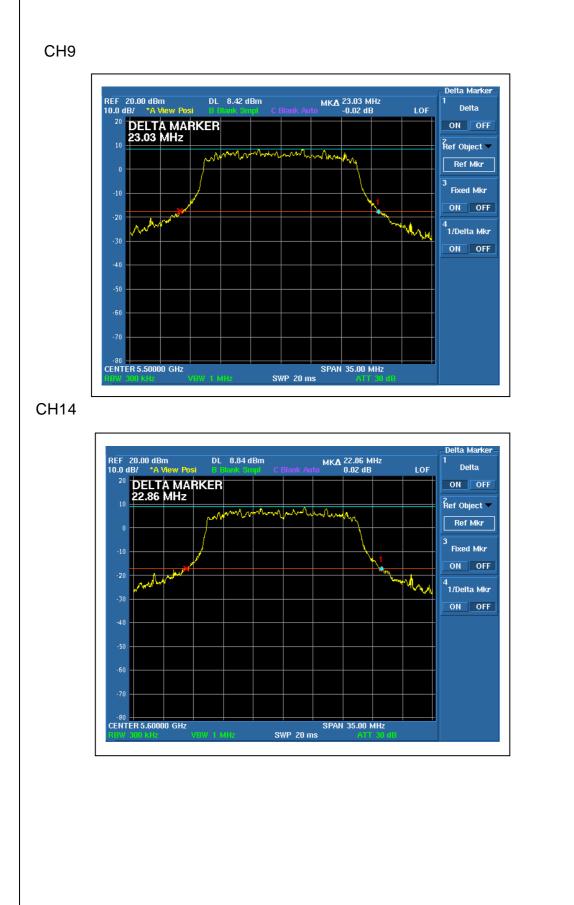




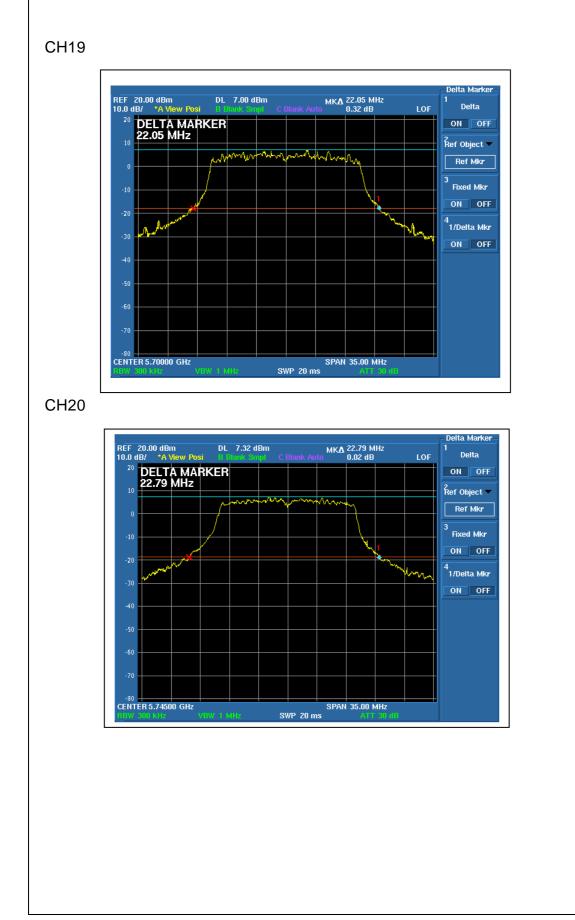










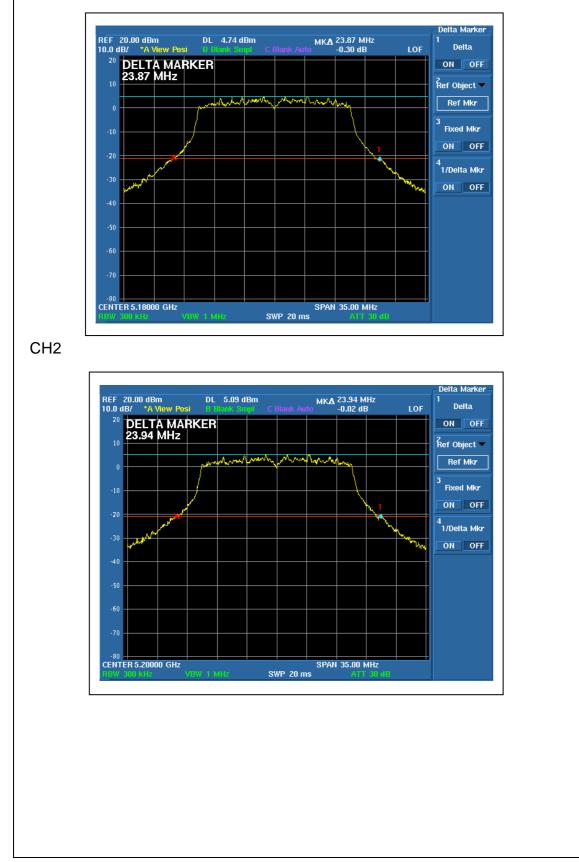




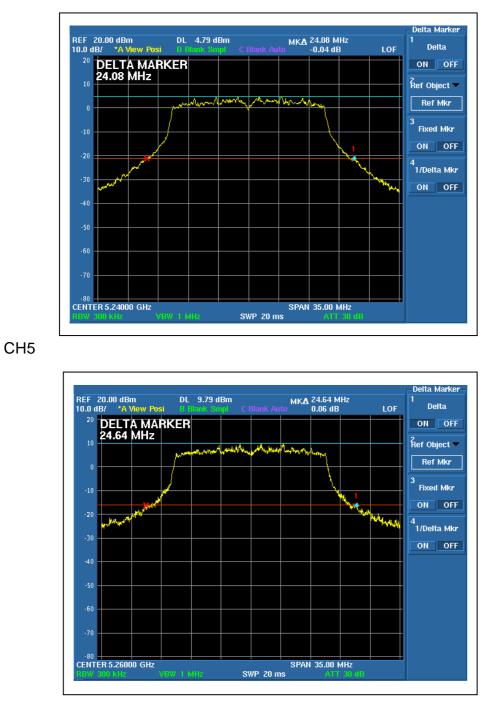
#### CH22 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Posi DL 8.21 dBm MKA 22.68 MHz -0.03 dB Delta LOF DELTA MARKER 22.68 MHz ON OFF 2 Ref Object 🔻 www And al M ካለ Ref Mkr 3 Fixed Mkr ON OFF - New 1 4 1/Delta Mkr ON OFF នា CENTER 5.78500 GHz SPAN 35.00 MHz SWP 20 ms CH23 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Posi MKA 22.82 MHz 0.04 dB DL 8.34 dBm Delta LOF DELTA MARKER ON OFF 2 Ref Object 🔻 month and marked V.v ٨V Ref Mkr 3 Fixed Mkr ON OFF A STATE 4 1/Delta Mkr Mu NW ON OFF -80 CENTER 5.80500 GHz SPAN 35.00 MHz SWP 20 ms



## For Chain (1) :CH1





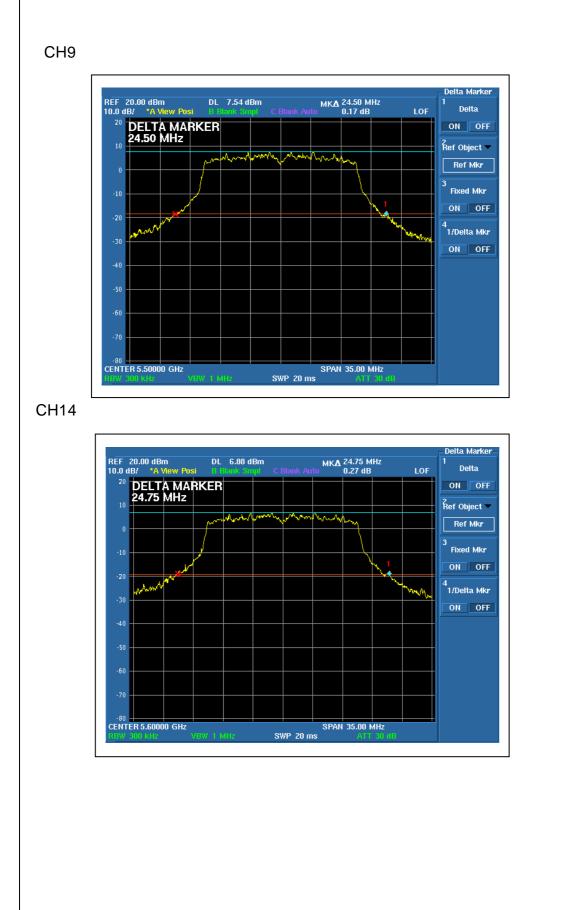




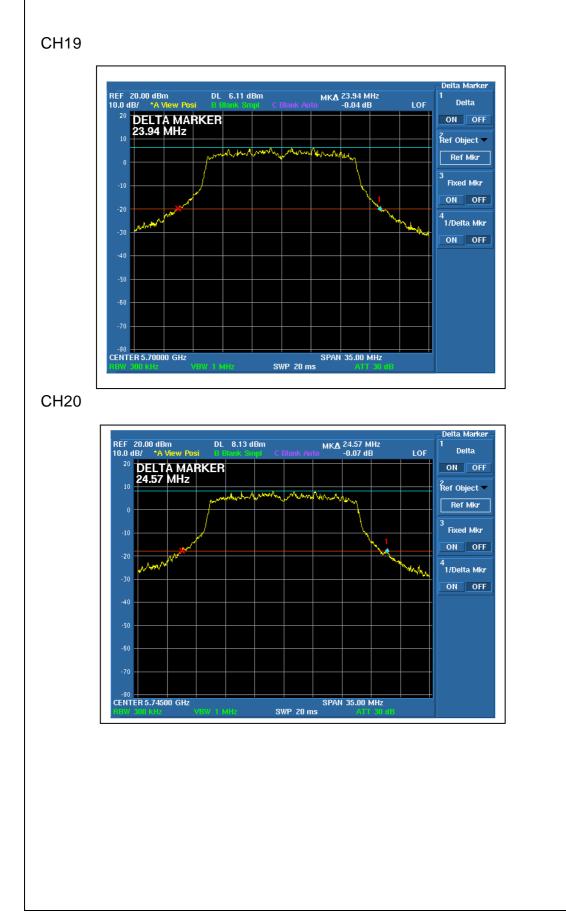


SWP 20 ms

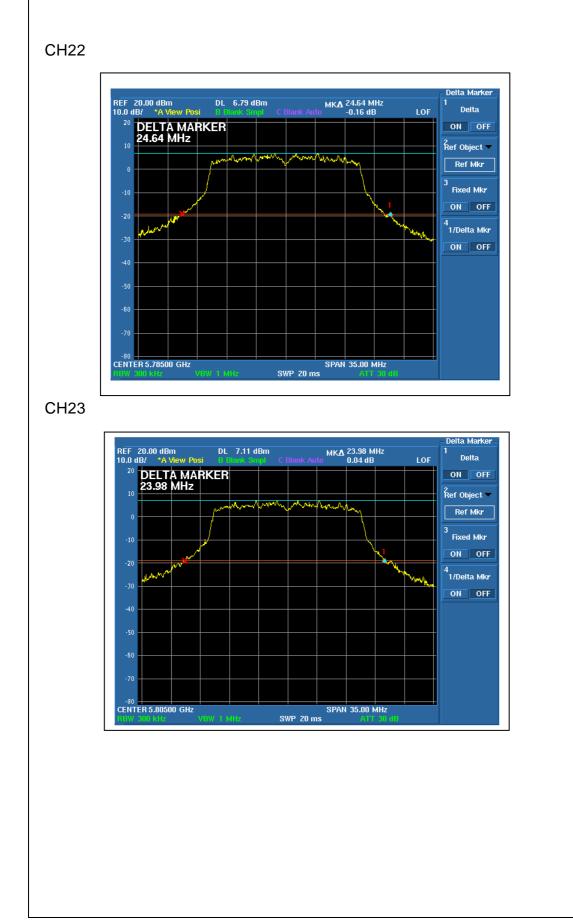














## DRAFT 802.11n (40MHz) OFDM MODULATION:

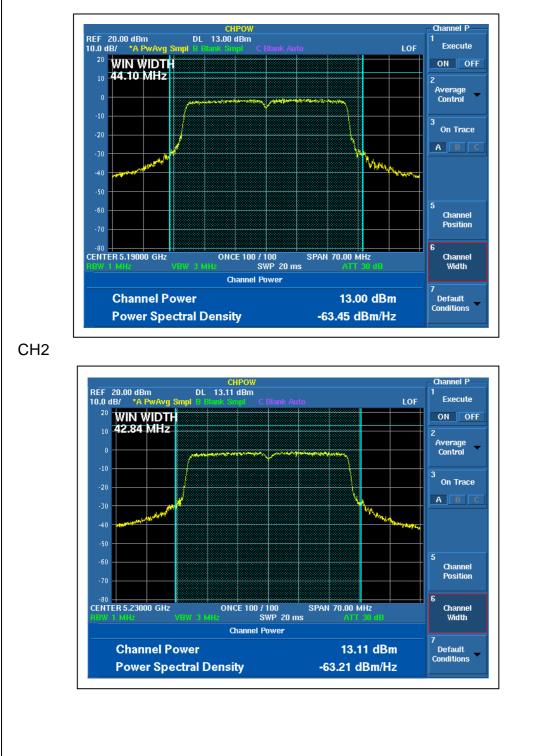
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		PEAK POWER OUTPUT (mW)		TOTAL PEAK POWER	TOTAL PEAK POWER	PEAK POWER LIMIT	26dBc Occupied Bandwidth (MHz)		PASS/ FAIL	
		Chain 0	Chain 1	Chain 0	Chain 1	(dBm)	(mW)	(dBm)	Chain 0	Chain 1	
1	5190	13.00	14.75	19.953	29.854	16.97	49.807	17.00	44.10	45.29	PASS
2	5230	13.11	14.62	20.464	28.973	16.94	49.437	17.00	42.84	45.15	PASS
3	5270	13.87	15.61	24.378	36.392	17.84	60.770	24.00	42.84	45.22	PASS
4	5310	13.87	15.70	24.378	37.154	17.89	61.532	24.00	42.63	45.29	PASS
5	5510	12.69	14.96	18.578	31.333	16.98	49.911	24.00	42.91	45.15	PASS
7	5590	12.53	15.07	17.906	32.137	16.99	50.043	24.00	43.89	45.15	PASS
9	5670	13.71	15.24	23.496	33.420	17.55	56.916	24.00	43.82	45.08	PASS
10	5755	13.57	15.00	22.751	31.623	17.35	54.374	30.00	43.68	45.22	PASS
11	5795	14.20	15.07	26.303	32.137	17.67	58.440	30.00	44.17	45.78	PASS

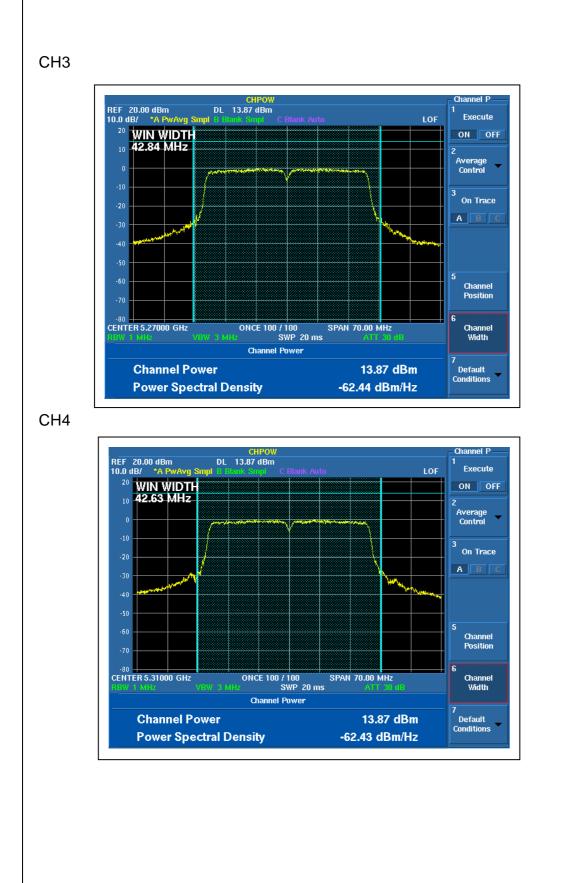
**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.



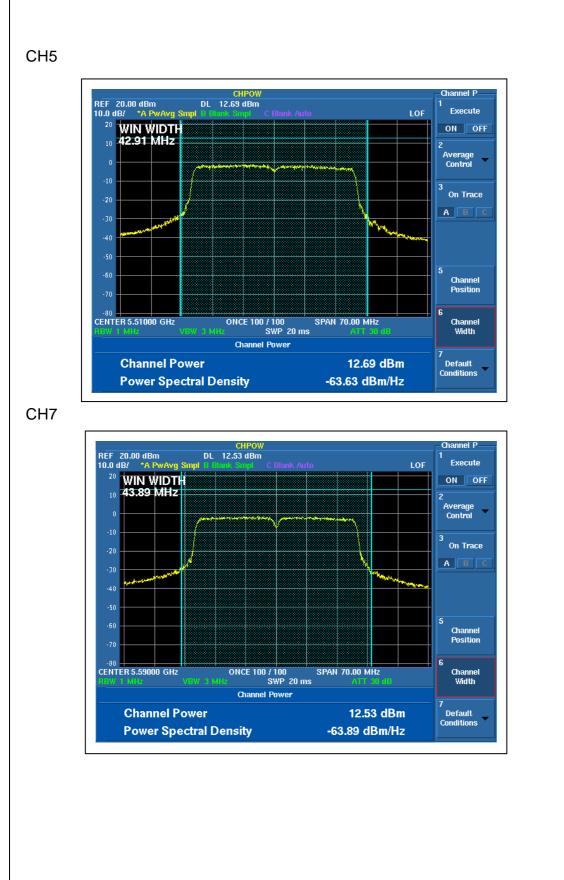
### Peak Power Output: For Chain (0) :CH1



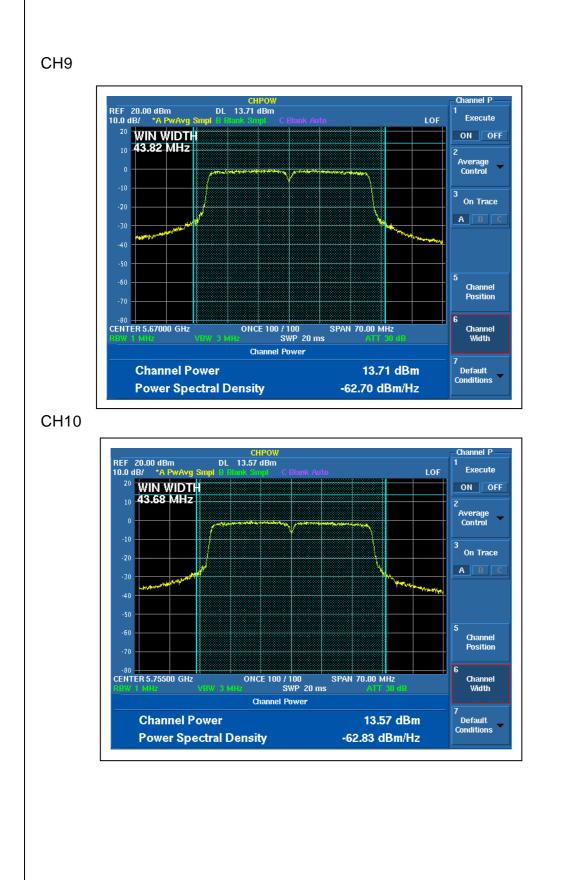










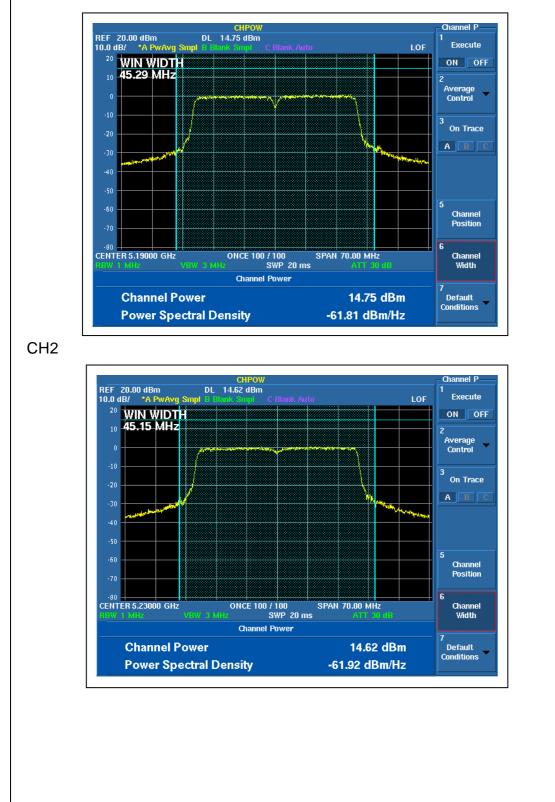






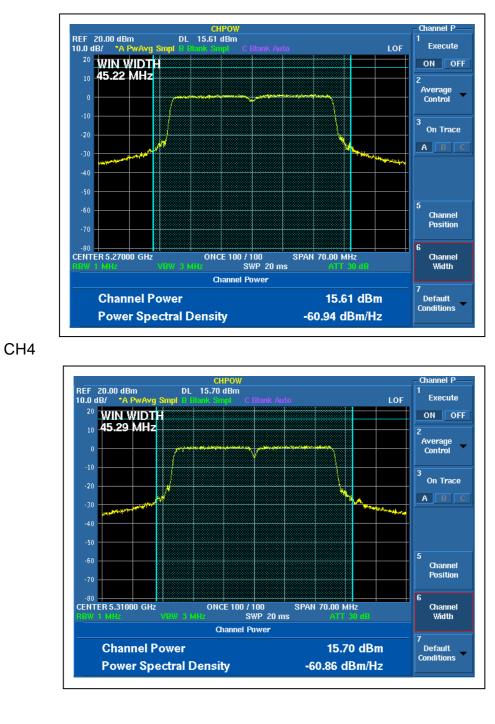


# For Chain (1) :CH1

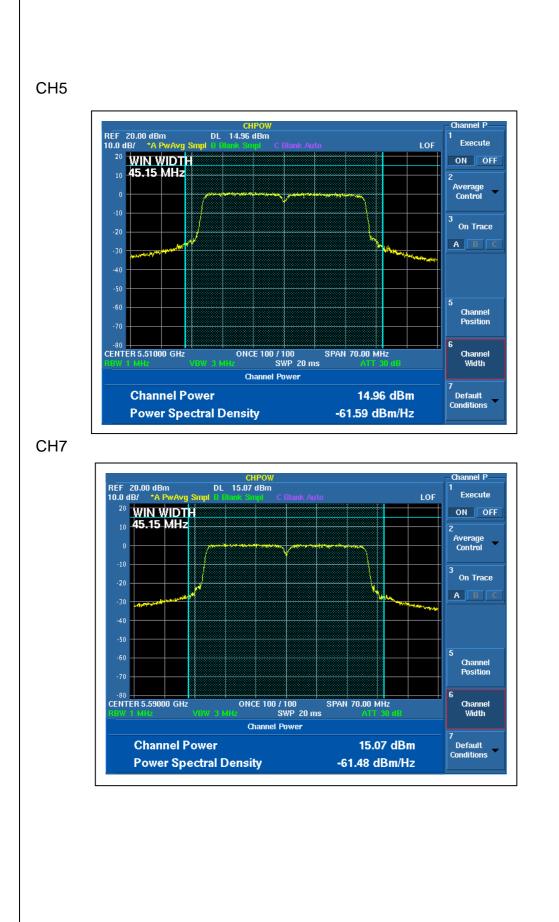




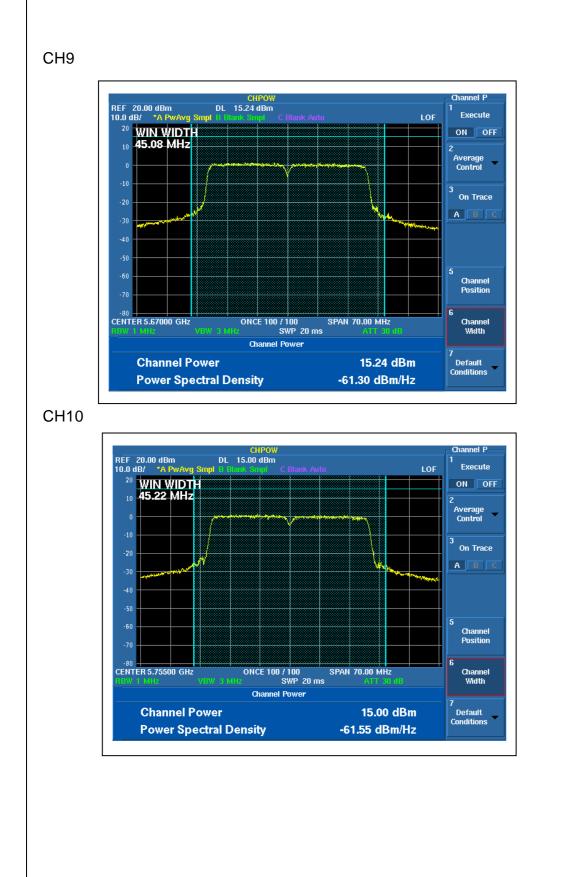










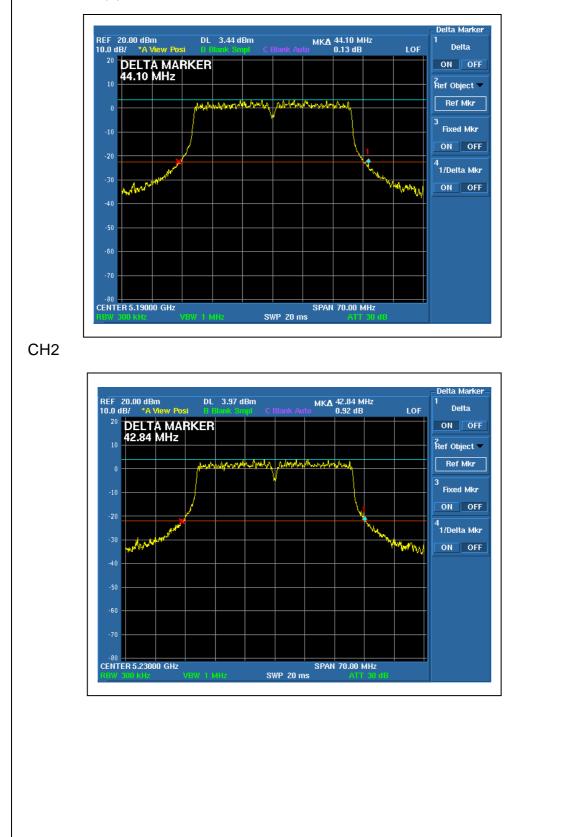




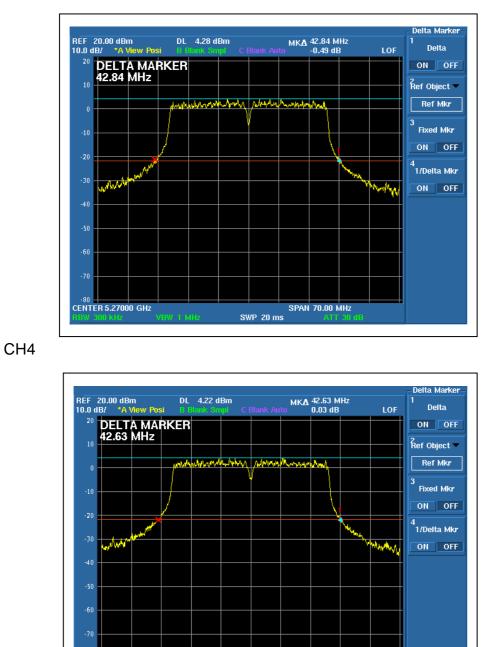




26dB Occupied Bandwidth: For Chain (0) :CH1





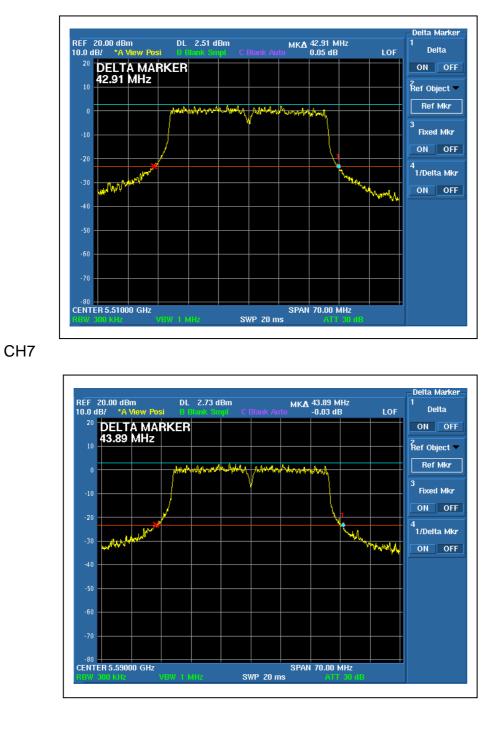


-80 CENTER 5.31000 GHz

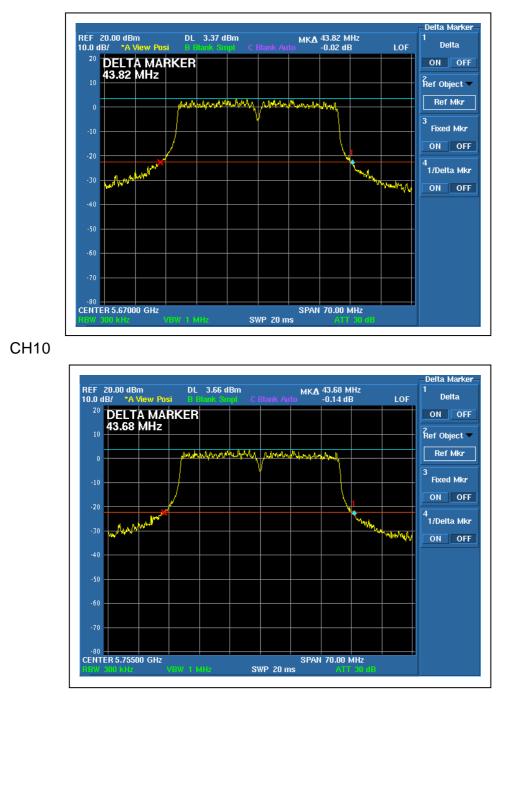
SPAN 70.00 MHz

SWP 20 ms

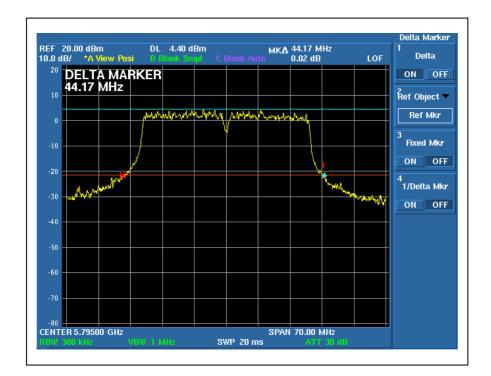






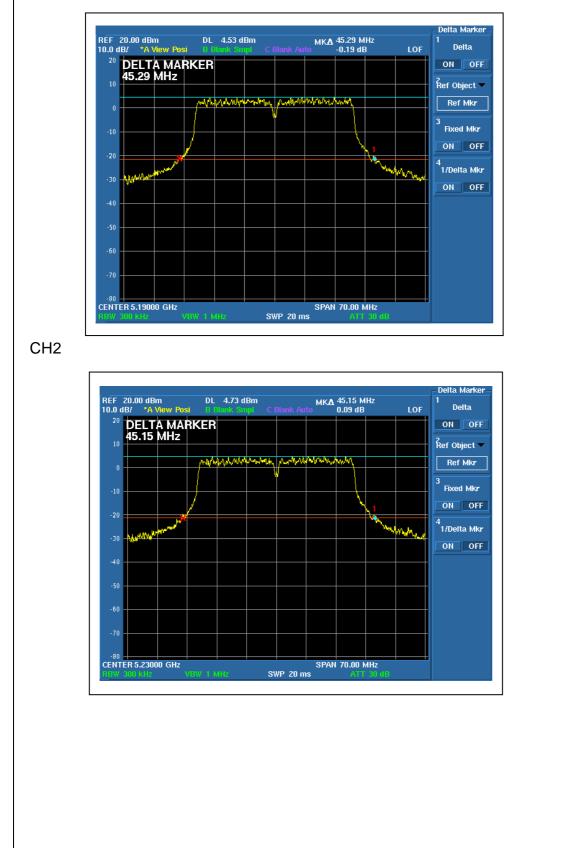




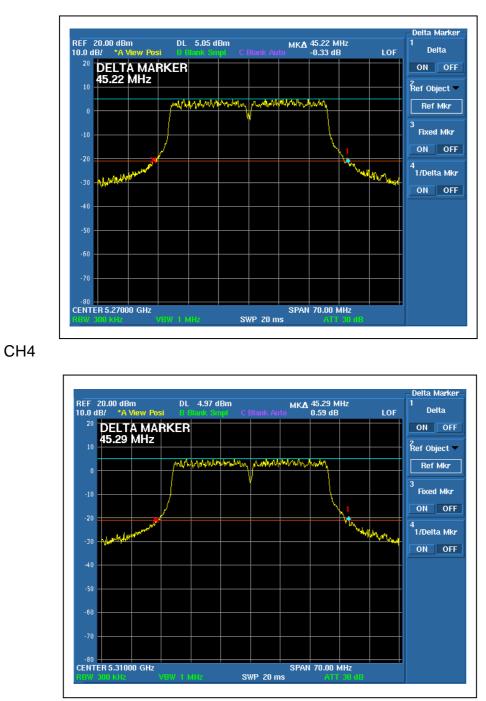




## For Chain (1) :CH1







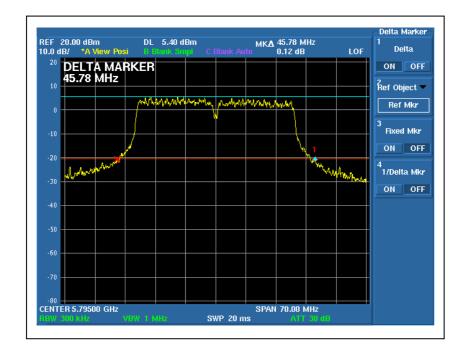


CH5 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Po мк**д** 45.15 MHz -0.81 dB DL 5.48 dBm Delta DELTA MARKER 45.15 MHz ON OFF Ref Object 🔻 n J. Ani ..... WAN Aller Ref Mkr Fixed Mkr ON OFF N mun mul البيوليوس 4 1/Delta Mkr Mumpunk ON OFF CENTER 5.51000 GHz SPAN 70.00 MHz SWP 20 ms CH7 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Pos МКА 45.15 MHz 0.58 dB DL 4.34 dBm Delta <sup>20</sup> DELTA MARKER 45.15 MHz ON OFF 2 Ref Object 🔻 maker har hard mp how when Ref Mkr Fixed Mkr ON OFF the work 4 1/Delta Mkr Markey Hard and ON OFF -80 CENTER 5.59000 GHz SPAN 70.00 MHz SWP 20 ms



CH9 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Posi DL 5.50 dBm мка 45.08 MHz -0.50 dB Delta LOF DELTA MARKER 45.08 MHz ON OFF Ref Object 🔻 my how have more my Montheman Ref Mkr 3 Fixed Mkr ON OFF ما ويواد المرواد الموالية 4 1/Delta Mkr murate ON OFF CENTER 5.67000 GHz SPAN 70.00 MHz SWP 20 ms CH10 Delta Marker REF 20.00 dBm 10.0 dB/ \*A View Posi DL 5.63 dBm MKA 45.22 MHz C Blank Auto -0.89 dB Delta LOF DELTA MARKER 45.22 MHz ON OFF 2 Ref Object 🔻 MANN and the Anadandil www.hundersold Ref Mkr Fixed Mkr ON OFF When when a start of the start the And dawn 4 1/Delta Mkr ON OFF CENTER 5.75500 GHz SPAN 70.00 MHz SWP 20 ms







## 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 &	MODEL NO.	SERIAL	CALIBRATED	CALIBRATED
MANUFACTURER		NO.	DATE	UNTIL
AD VANTEST SPECTRUM ANALYZER	U3772	160100280	July 26, 2008	July 25, 2009

#### NOTE:

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



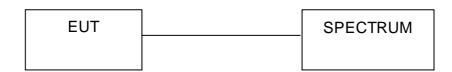
#### 4.4.3 TEST PROCEDURE

- 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.



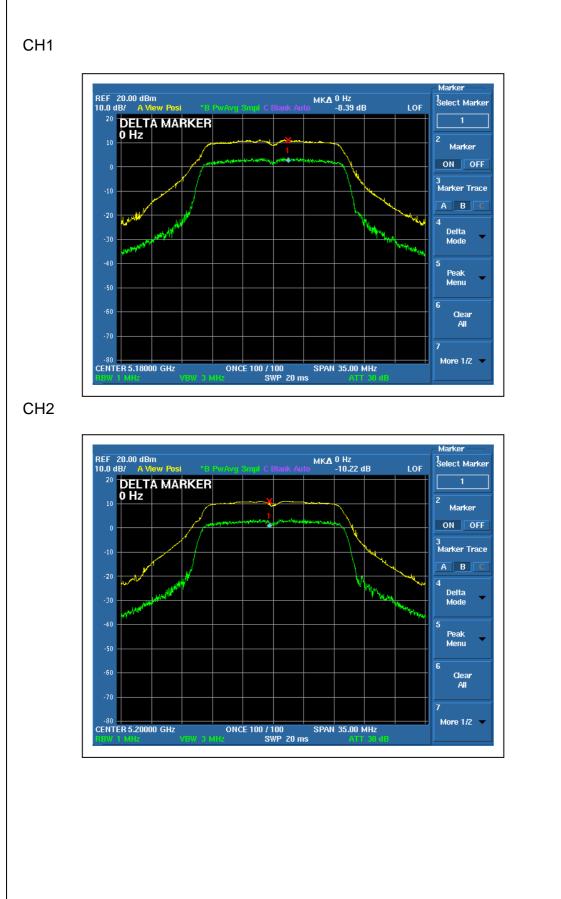
## 4.4.7 TEST RESULTS

#### 802.11a OFDM modulation

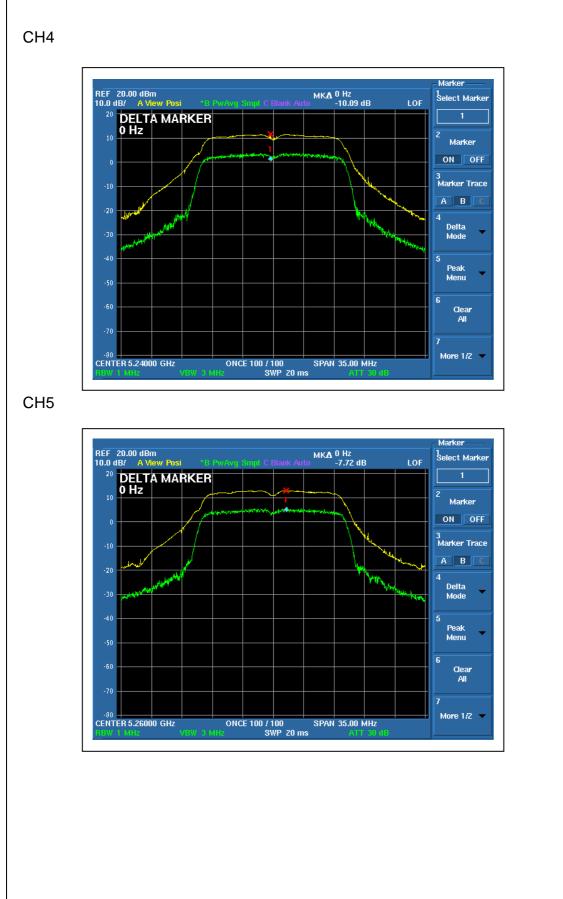
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz) (dB) PEAK POWER EXCURSION (dB) PEAK to AVERAGE EXCURSION LIM (dB)		AVERAGE EXCURSION LIMIT	PASS/FAIL
1	5180	8.39	13	PASS
2	5200	10.22	13	PASS
4	5240	10.09	13	PASS
5	5260	7.72	13	PASS
7	5300	9.18	13	PASS
8	5320	8.97	13	PASS
9	5500	8.09	13	PASS
14	5600	8.03	13	PASS
19	5700	9.02	13	PASS
20	5745	9.30	13	PASS
22	5785	7.77	13	PASS
23	5805	9.76	13	PASS

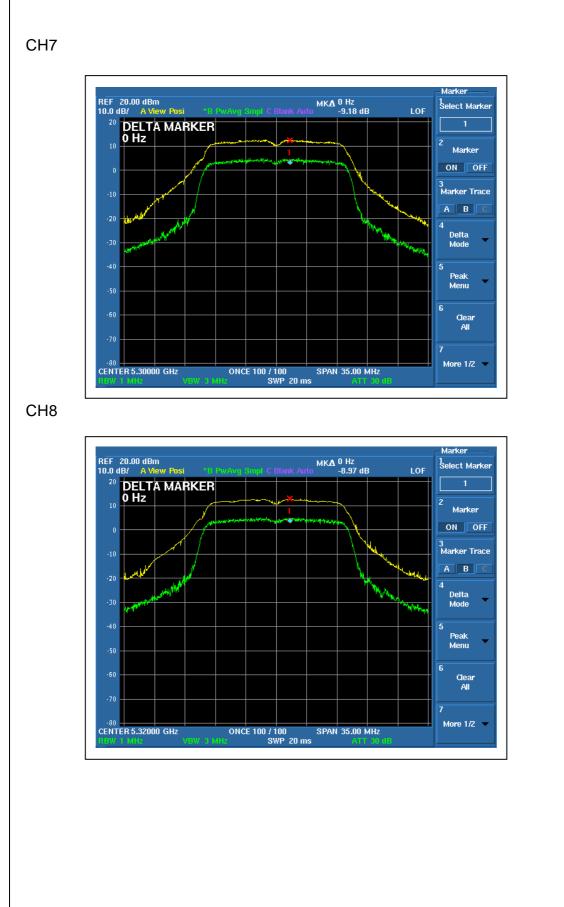




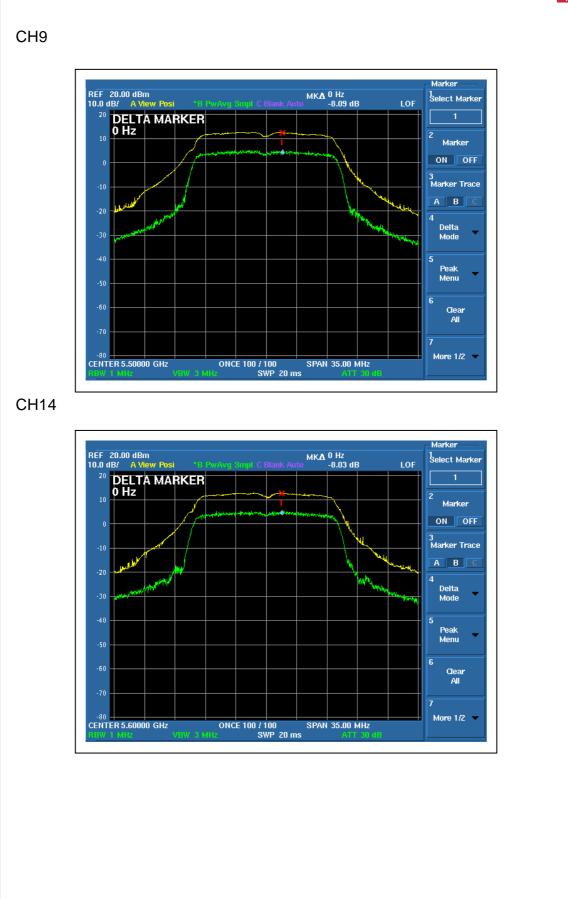










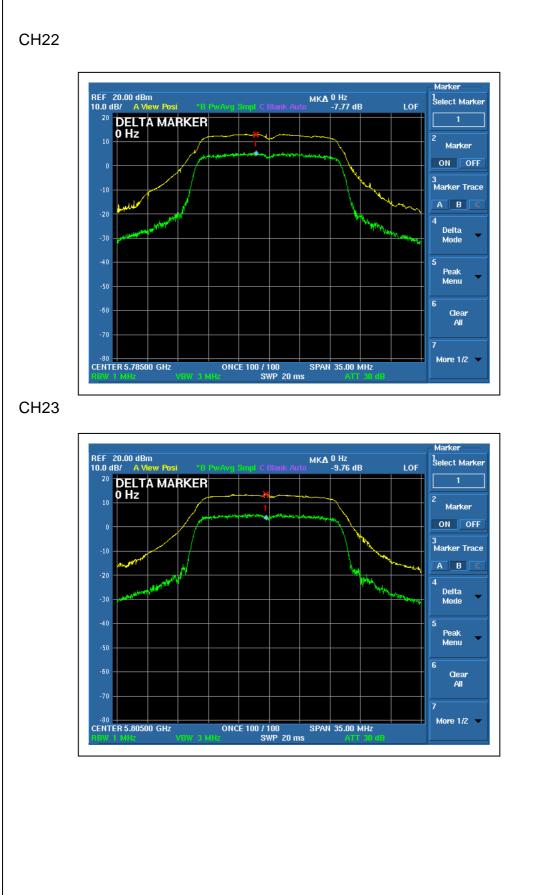




## CH19 Marker REF 20.00 dBm 10.0 dB/ A View Posi MKA 0 Hz -9.02 dB 1 Select Marker DELTA MARKER Marker ON OFF 3 Marker Trace ي ا A B C 11 mar Delta Mode Peak Menu Clear All -80 CENTER 5.70000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz CH20 Marker REF 20.00 dBm 10.0 dB/ A View Posi мк**д** 0 Hz -9.30 dB 1 Select Marker LOF DELTA MARKER 1 Marker × ON OFF 3 Marker Trace ABC 1 hybrac. Delta Mode Peak Menu Clear All More 1/2 CENTER 5.74500 GHz ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz

Report No.: RF80110H01-1







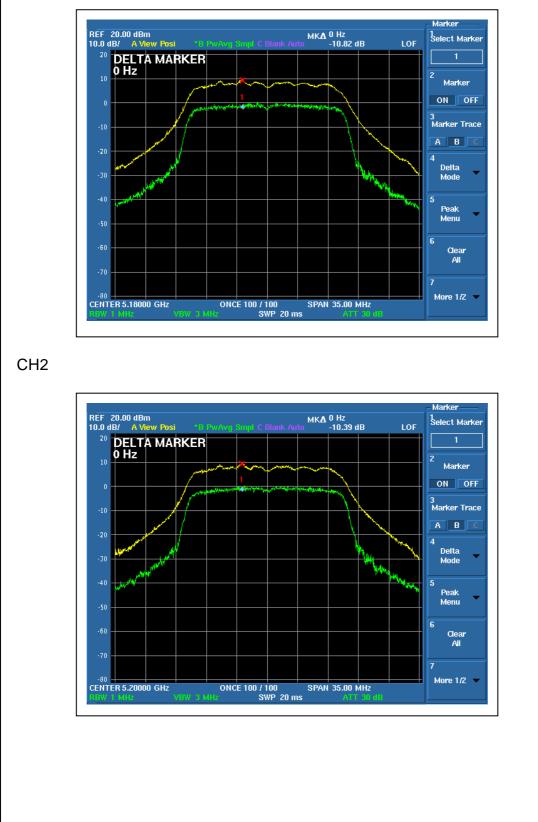
### DRAFT 802.11n (20MHz) OFDM MODULATION:

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

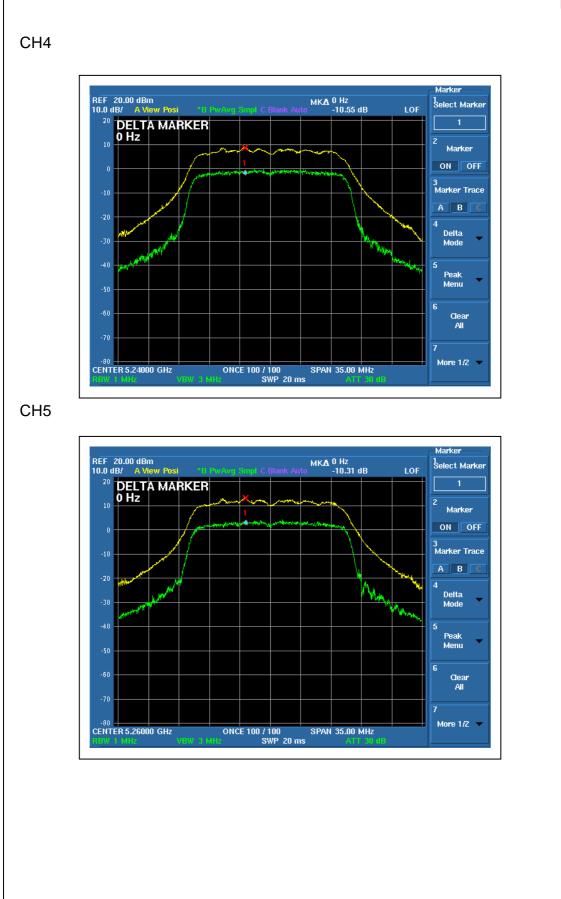
CHANNEL		PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT	PASS/FAIL
	(MHz)	Chain (0)	Chain(1)	(dB)	
1	5180	10.82	9.65	13	PASS
2	5200	10.39	10.12	13	PASS
4	5240	10.55	10.72	13	PASS
5	5260	10.31	9.59	13	PASS
7	5300	10.67	9.61	13	PASS
8	5320	11.32	9.73	13	PASS
9	5500	9.99	10.34	13	PASS
14	5600	10.49	9.41	13	PASS
19	5700	9.27	10.23	13	PASS
20	5745	7.90	10.05	13	PASS
22	5785	10.29	10.24	13	PASS
23	5805	10.39	9.71	13	PASS



## For Chain (0) : CH1

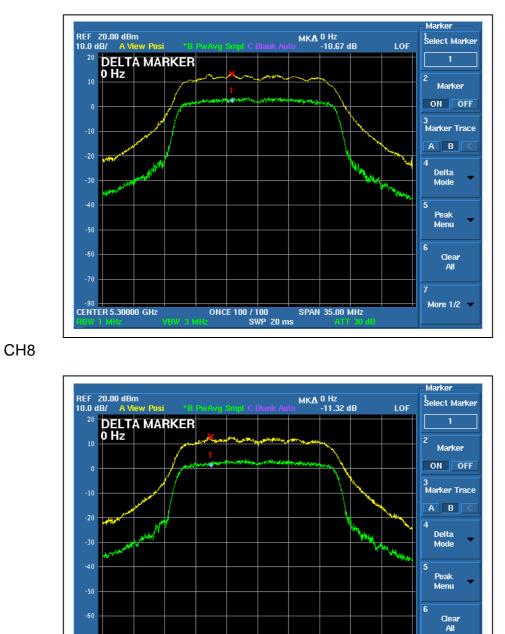












ONCE 100 / 100 SWP 20 ms

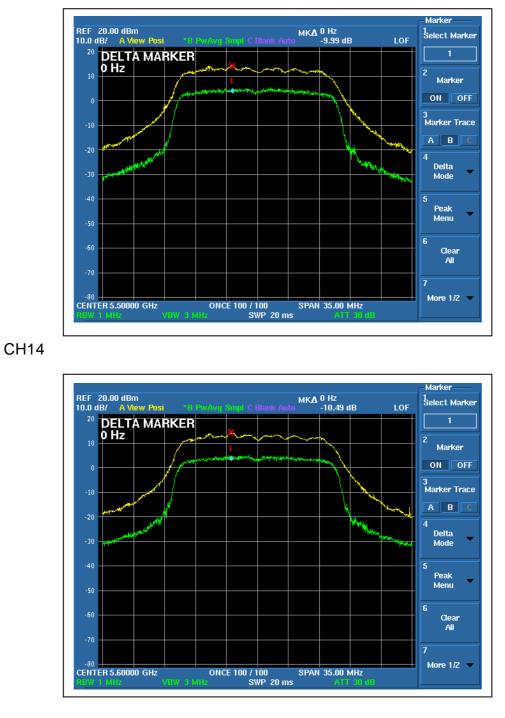
CENTER 5.32000 GHz

SPAN 35.00 MHz

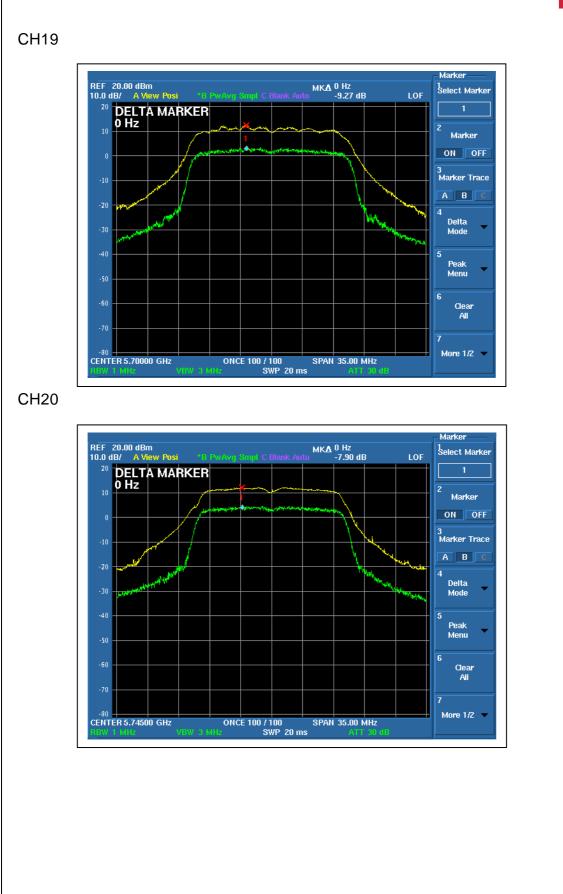
More 1/2









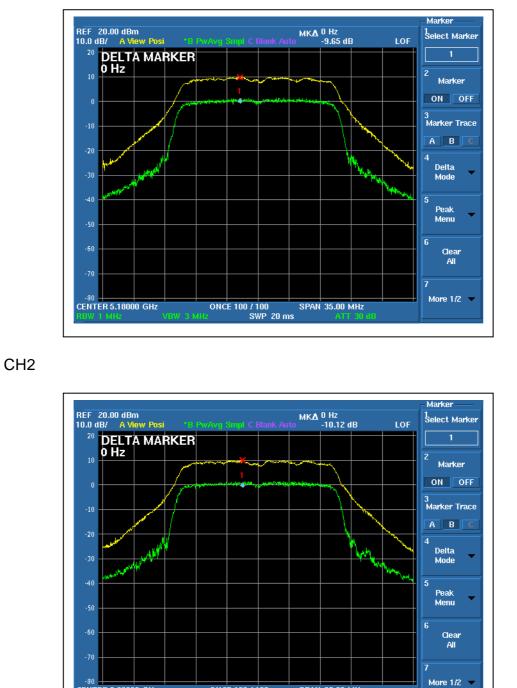




## CH22 Marker REF 20.00 dBm 10.0 dB/ A View Posi мк∆ 0 Hz -10.29 dB 1 Select Marker LOF DELTA MARKER Marker ON OFF 3 Marker Trace ABC Mr. 3.600 Delta Mode Peak Menu Clear All สก More 1/2 ONCE 100 / 100 SWP 20 ms CENTER 5.78500 GHz SPAN 35.00 MHz CH23 Marker -REF 20.00 dBm 10.0 dB/ A View Posi мк**д** 0 Hz -10.39 dB 1 Select Marker DELTA MARKER 0 Hz Marker ON OFF 3 Marker Trace ABC A.M. M. Hayes Delta Mode Peak Menu Clear All More 1/2 ONCE 100 / 100 SWP 20 ms CENTER 5.80500 GHz SPAN 35.00 MHz



## For Chain (1) : CH1

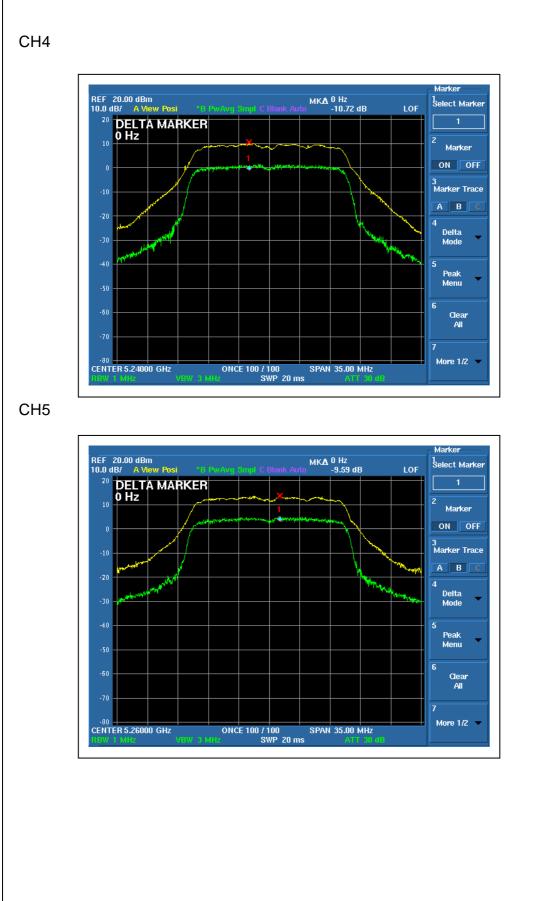


ONCE 100 / 100 SWP 20 ms

CENTER 5.20000 GHz

SPAN 35.00 MHz

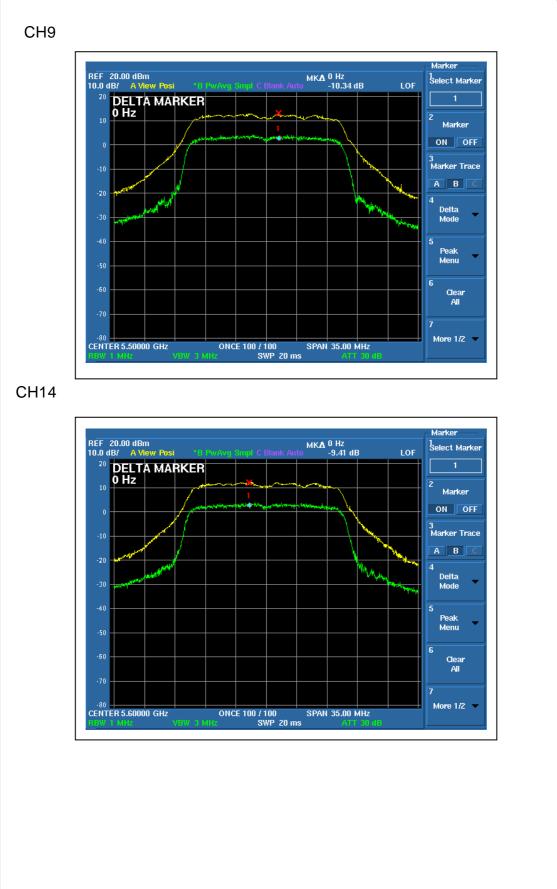




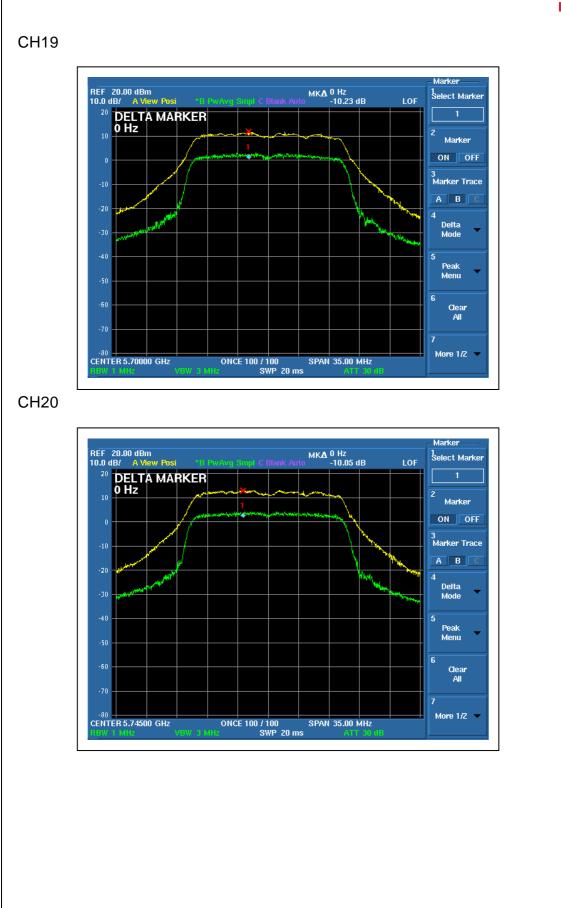


## CH7 Marker -REF 20.00 dBm 10.0 dB/ A View Posi MKA 0 Hz -9.61 dB 1 Select Marker LOF DELTA MARKER Marker ٠ ON OFF 3 Marker Trace A B WA. Delta Mode Peak Menu Clear All -80 CENTER 5.30000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz CH8 Marker REF 20.00 dBm 10.0 dB/ A View Posi MKA 0 Hz -9.73 dB 1 Select Marker LOF DELTA MARKER 1 Marker ON OFF 3 Marker Trace AB Mag Delta Mode Peak Menu Clear All -80 CENTER 5.32000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz

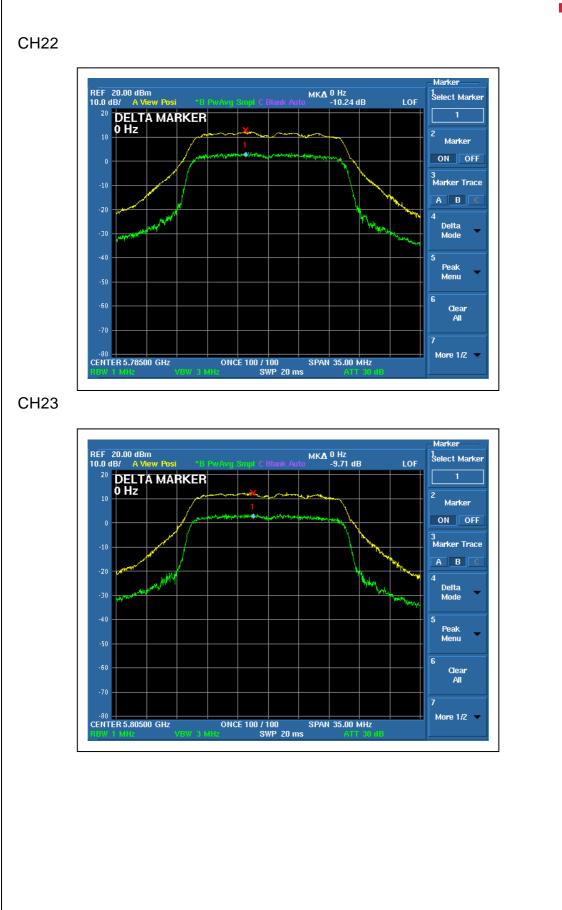














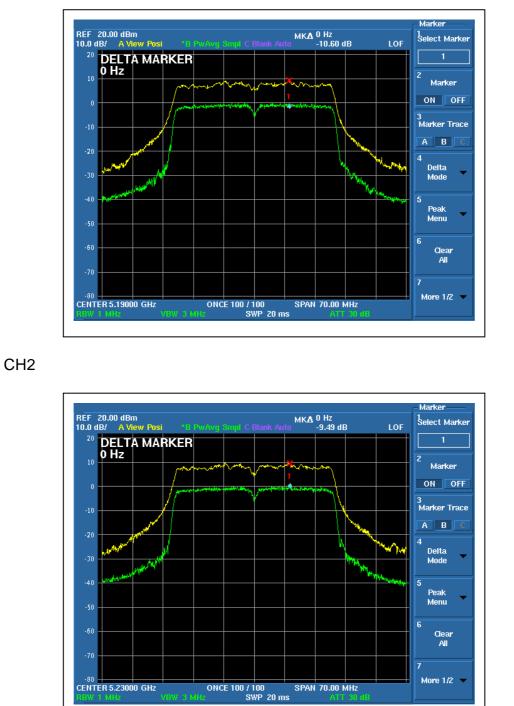
### DRAFT 802.11n (40MHz) OFDM MODULATION:

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

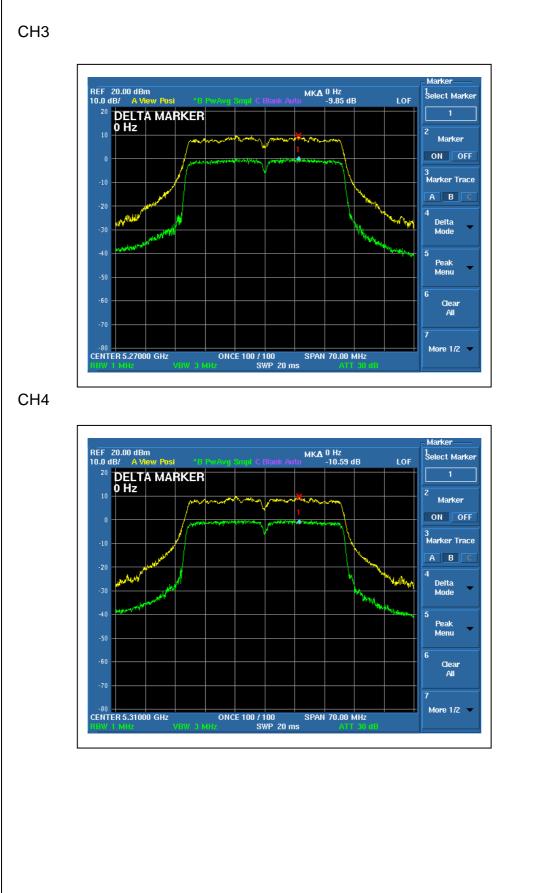
CHANNEL CHANNEL FREQUENCY		PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT	PASS/FAIL
	(MHz)	Chain (0)	Chain(1)	(dB)	
1	5190	10.60	10.46	13	PASS
2	5230	9.49	9.72	13	PASS
3	5270	9.85	9.75	13	PASS
4	5310	10.59	10.19	13	PASS
5	5510	10.20	10.64	13	PASS
7	5590	10.79	10.36	13	PASS
9	5670	10.64	9.86	13	PASS
10	5755	10.71	10.50	13	PASS
11	5795	10.30	10.78	13	PASS



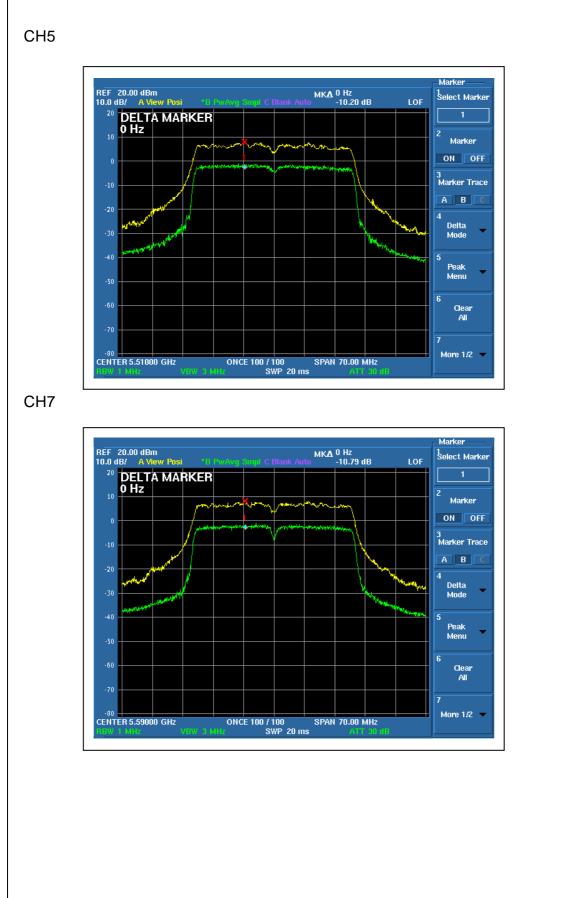
## For Chain (0) : CH1



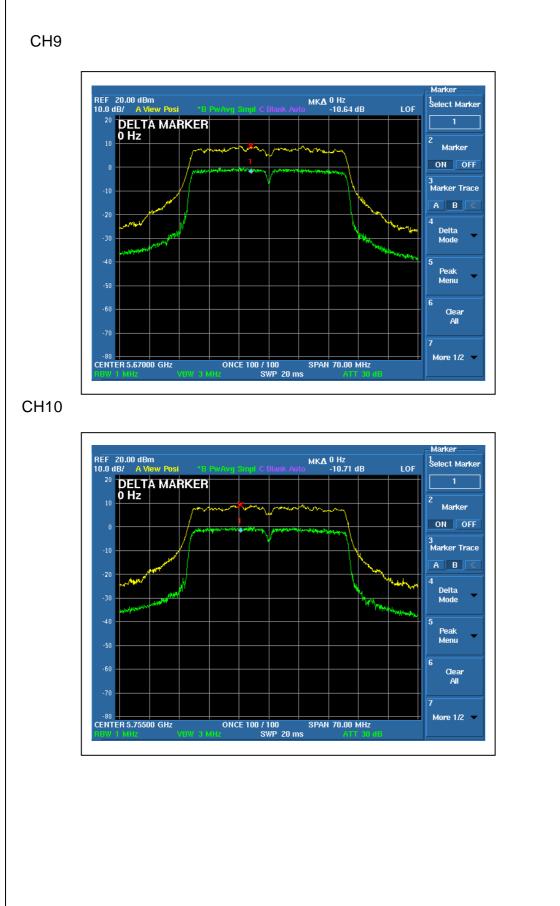




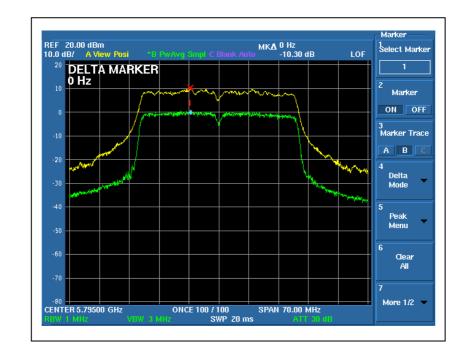






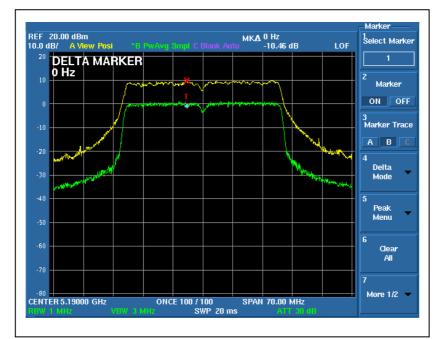


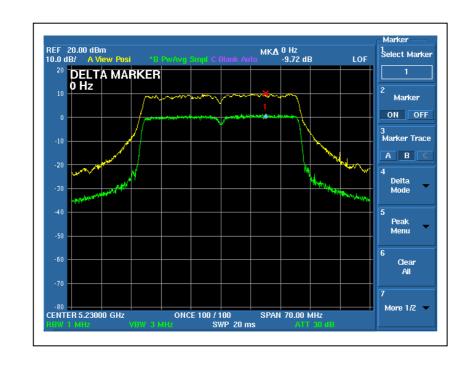




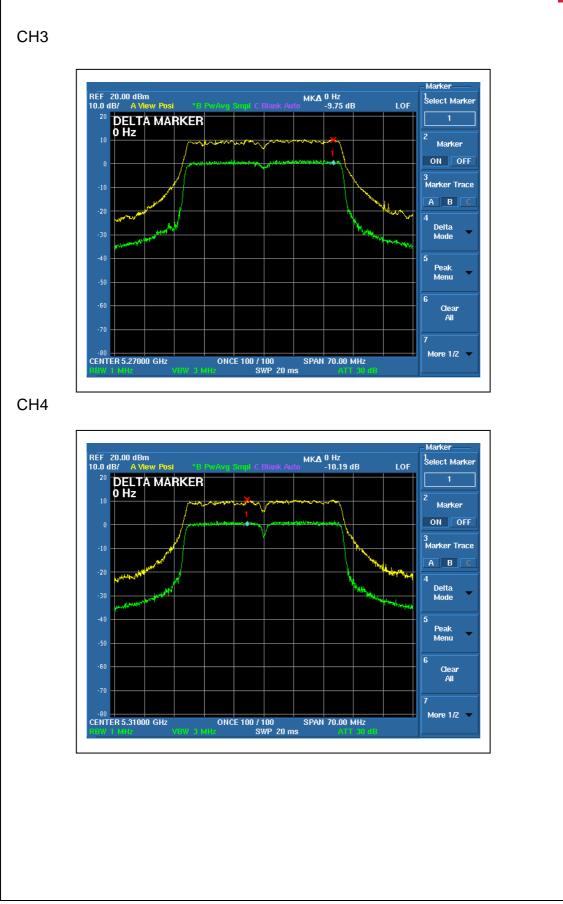


## For Chain (1) : CH1

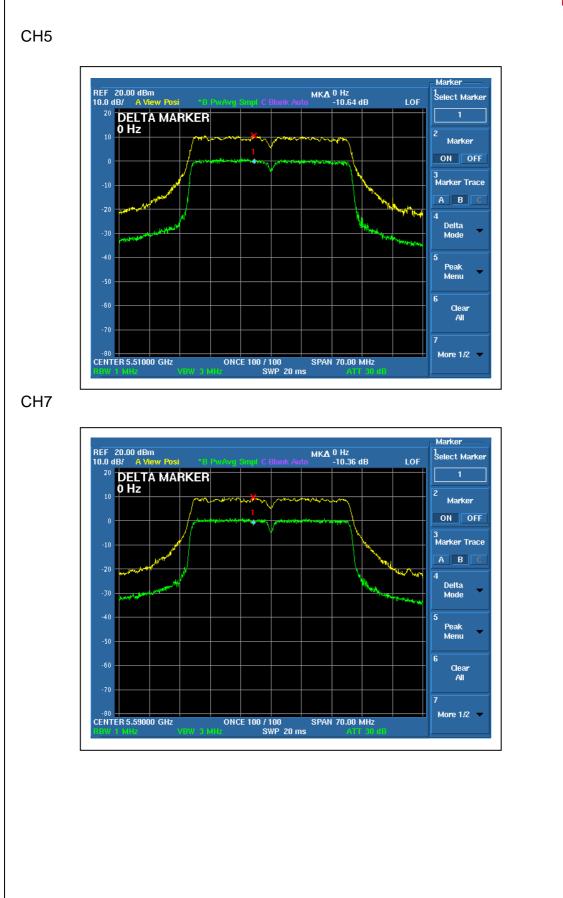




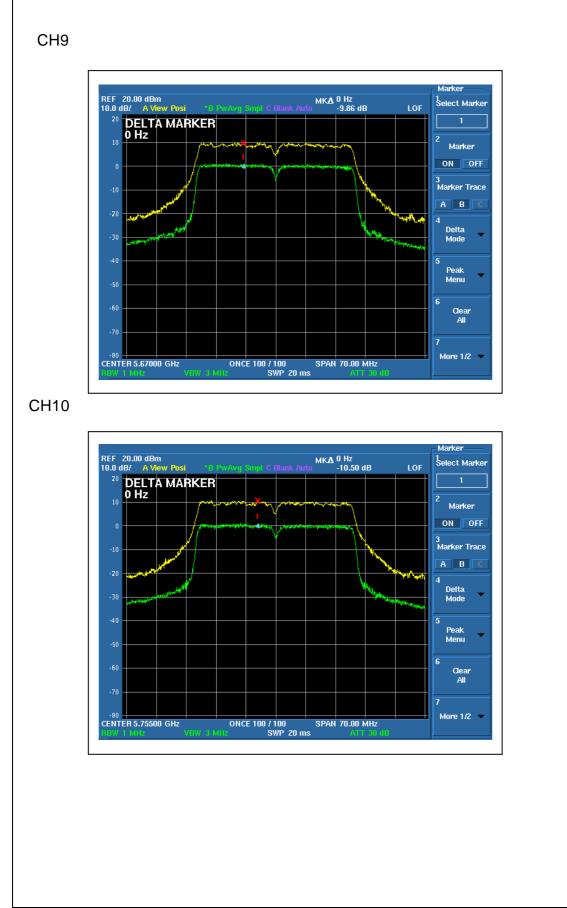




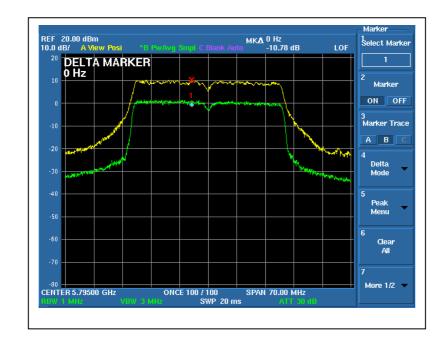














# 4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

### 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 &	MODEL NO.	SERIAL	CALIBRATED	CALIBRATED
MANUFACTURER		NO.	DATE	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



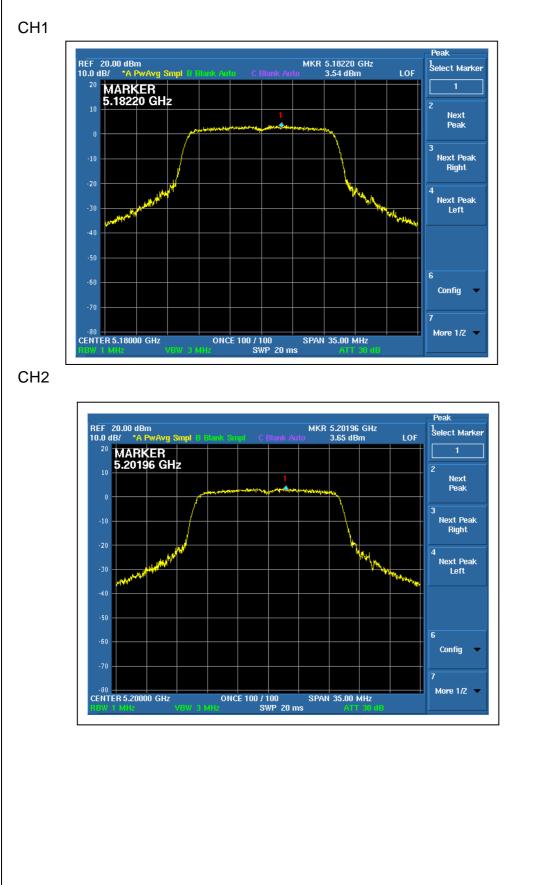
# 4.5.7 TEST RESULTS

# 802.11a OFDM modulation

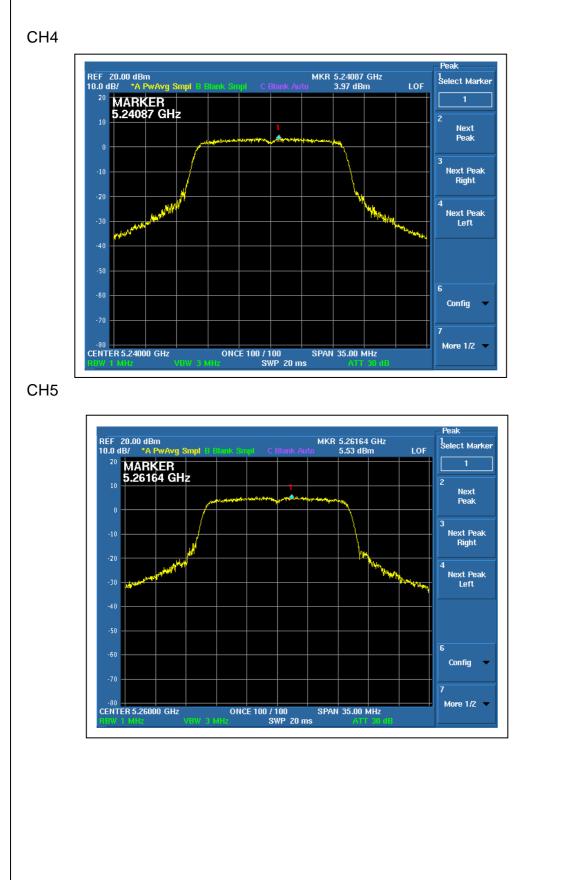
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	3.54	4	PASS
2	5200	3.65	4	PASS
4	5240	3.97	4	PASS
5	5260	5.53	11	PASS
7	5300	4.91	11	PASS
8	5320	5.31	11	PASS
9	5500	5.13	11	PASS
14	5600	5.34	11	PASS
19	5700	5.7	11	PASS
20	5745	5.13	17	PASS
22	5785	5.22	17	PASS
23	5805	5.51	17	PASS

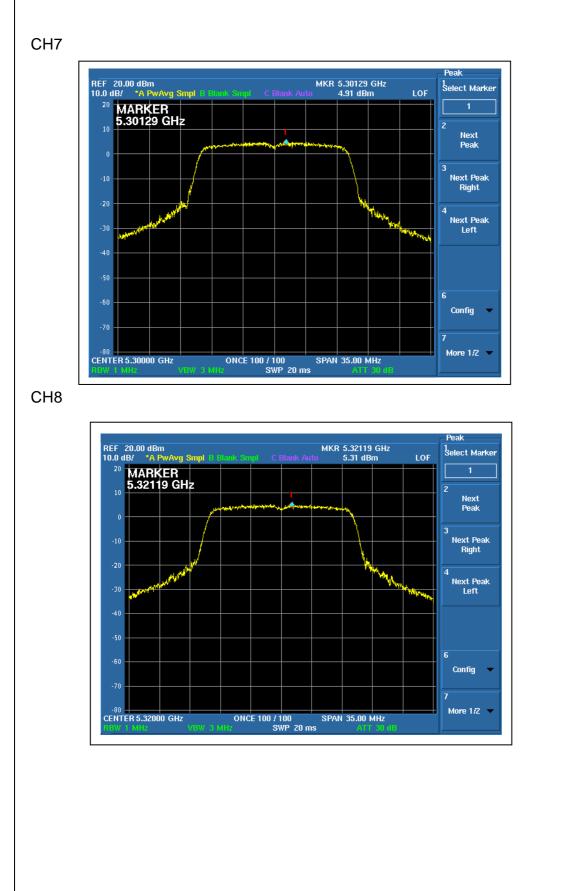




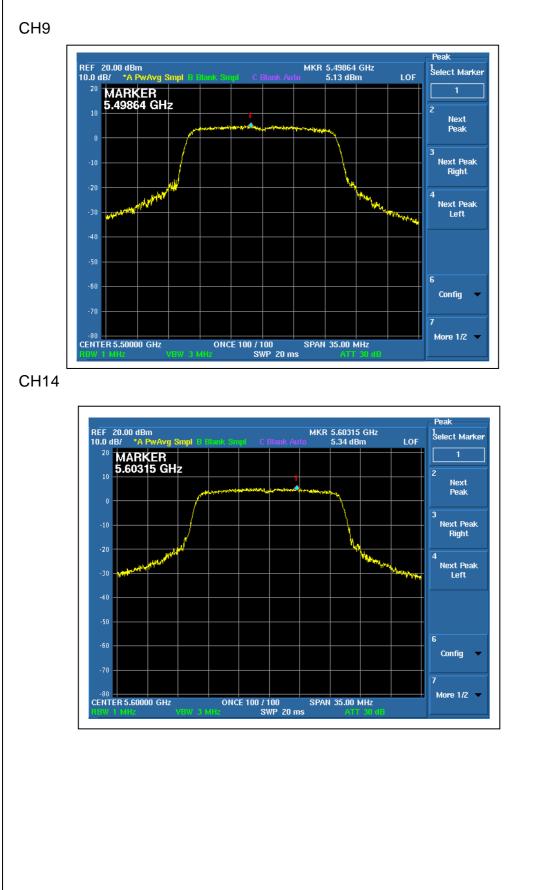




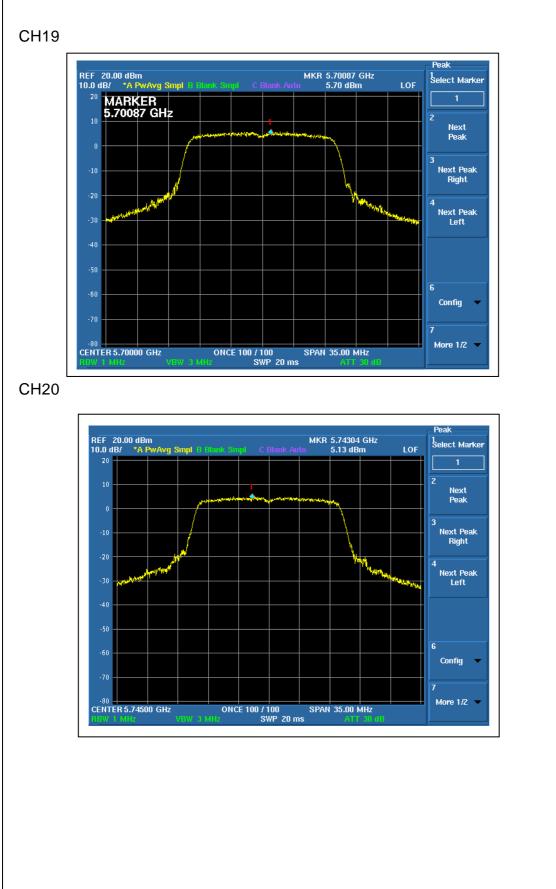




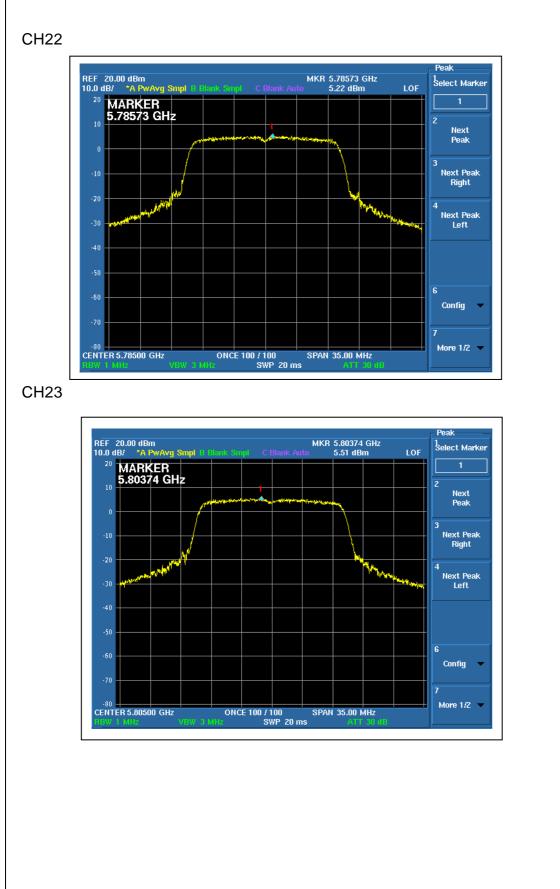














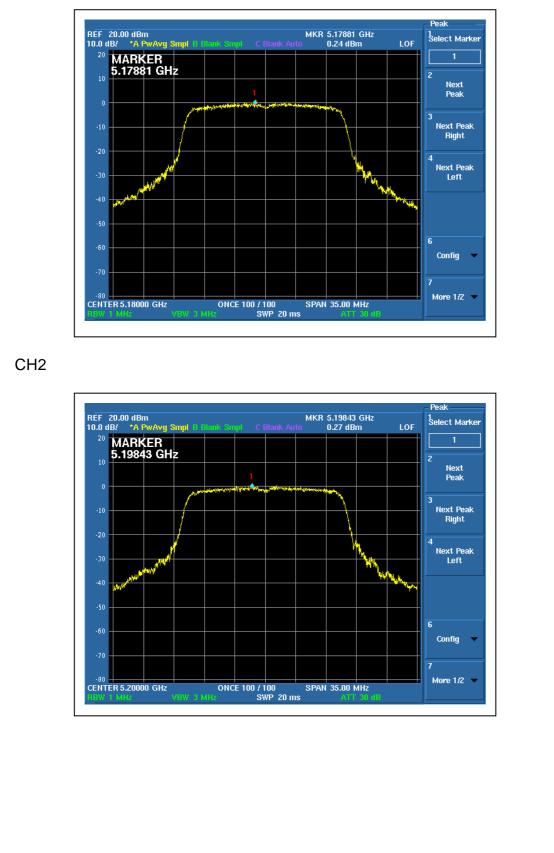
# DRAFT 802.11n (20MHz) OFDM MODULATION:

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

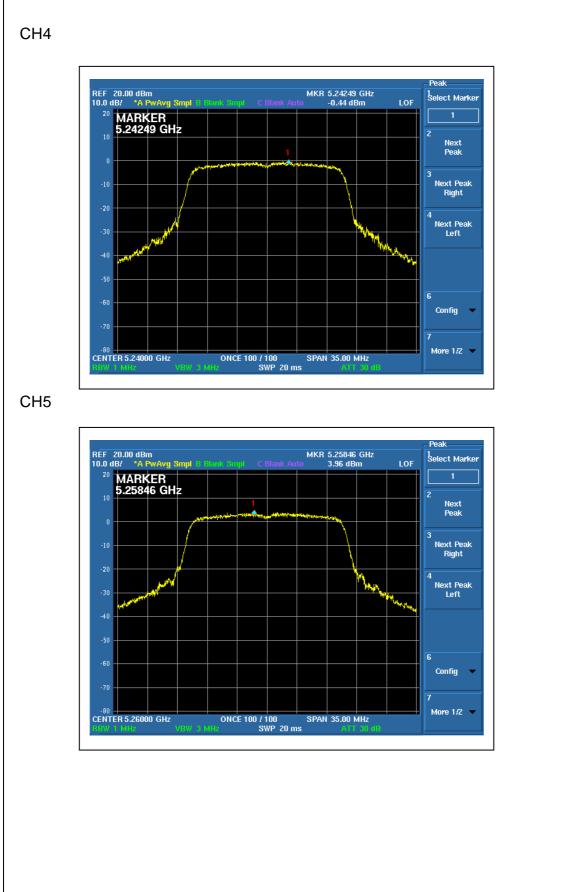
CHANNEL	CHANNEL FREQUENCY	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER	MAXIMUM LIMIT (dBm)	PASS/FAIL
	(MHz)	Iz) Chain (0) Chain(1) DENSITY	DENSITY (dBm)			
1	5180	0.24	1.28	3.80	4	PASS
2	5200	0.27	1.50	3.94	4	PASS
4	5240	-0.44	1.38	3.58	4	PASS
5	5260	3.96	5.11	7.58	11	PASS
7	5300	4.02	5.29	7.71	11	PASS
8	5320	3.74	5.07	7.47	11	PASS
9	5500	5.31	4.29	7.84	11	PASS
14	5600	5.08	3.89	7.54	11	PASS
19	5700	3.16	2.97	6.08	11	PASS
20	5745	4.44	4.25	7.36	17	PASS
22	5785	4.51	3.79	7.18	17	PASS
23	5805	4.62	3.61	7.15	17	PASS



For Chain (0) : CH1



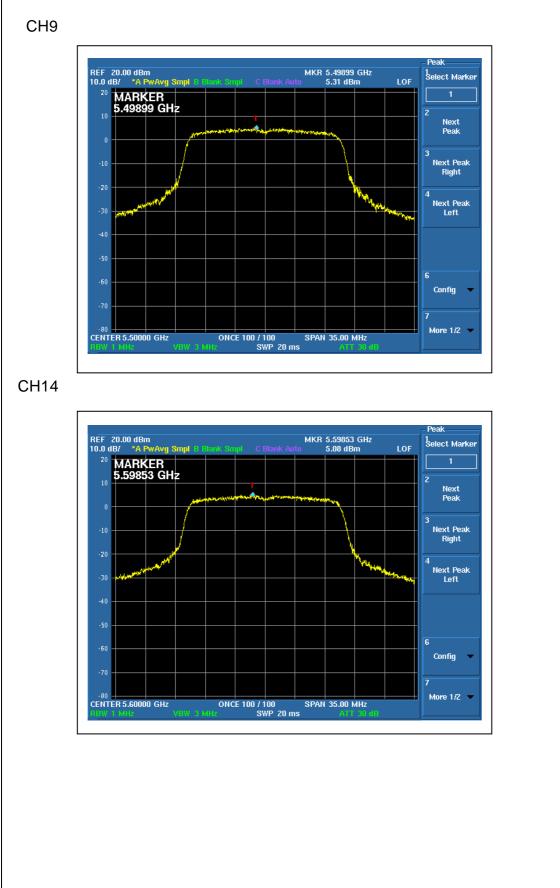




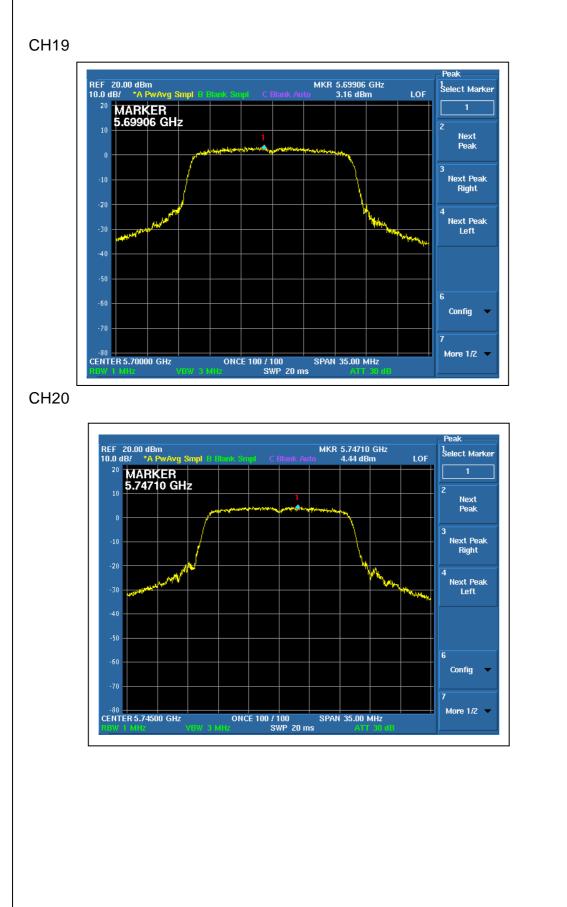


# CH7 Peak-REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl 1 MKR 5.30081 GHz 4.02 dBm 1 Select Marker LOF <sup>20</sup> MARKER 5.30081 GHz Next Peak Next Peak Right Next Peak Left Config -80 CENTER 5.30000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz CH8 Peak REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl MKR 5.31741 GHz 3.74 dBm 1 Select Marker LOF <sup>20</sup> MARKER 5.31741 GHz 1 Next Peak 3 Next Peak Right 1 v. Next Peak Left N Config --80 CENTER 5.32000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz

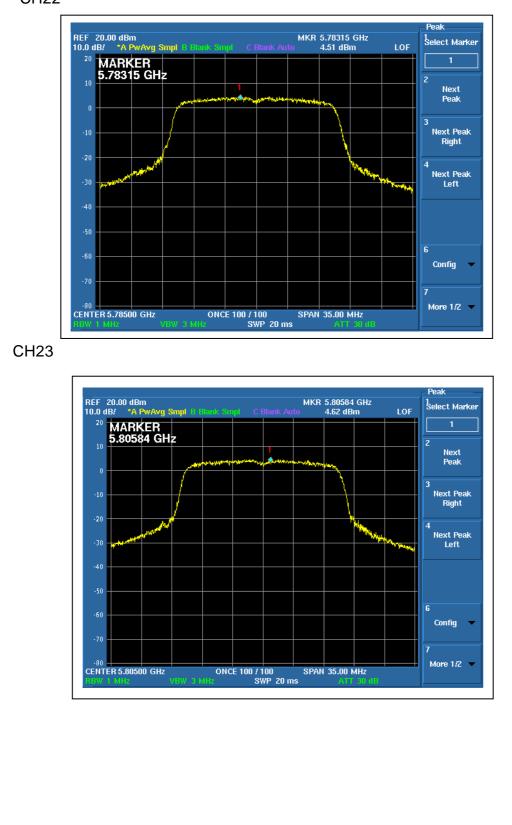






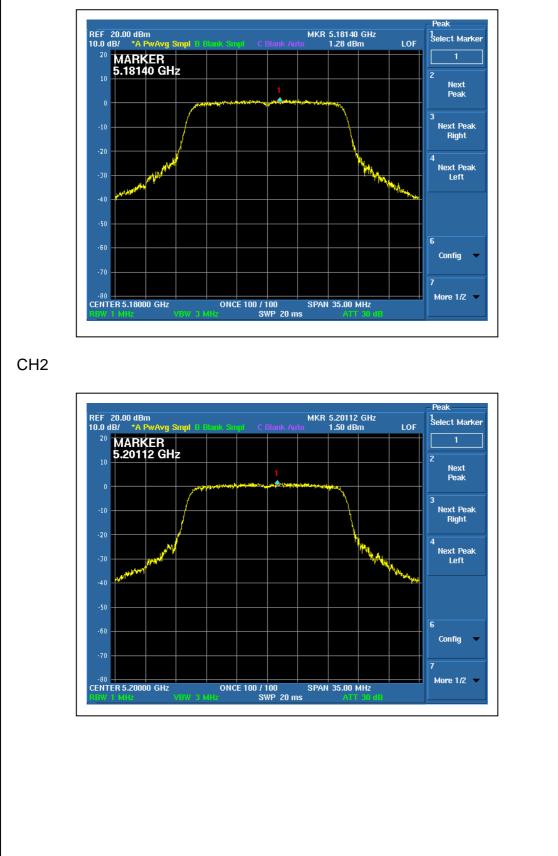




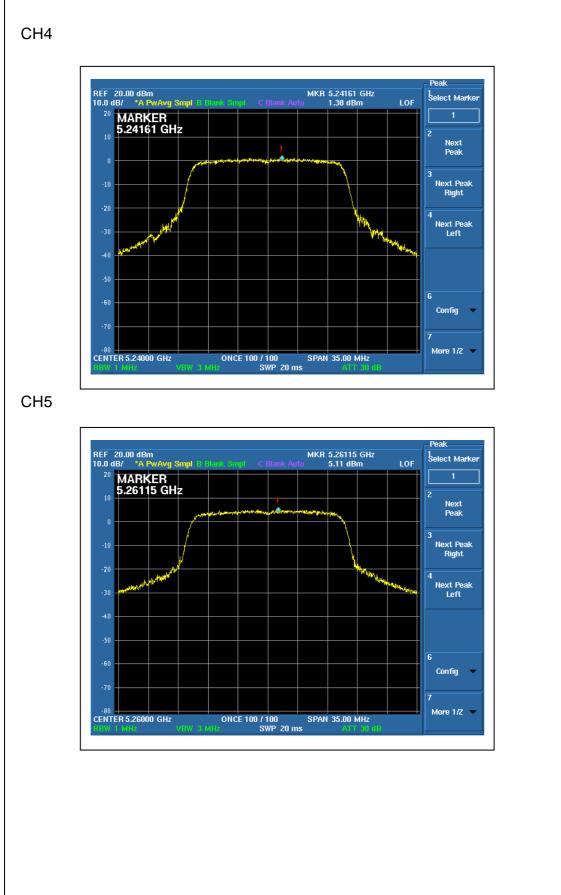




# For Chain (1) : CH1



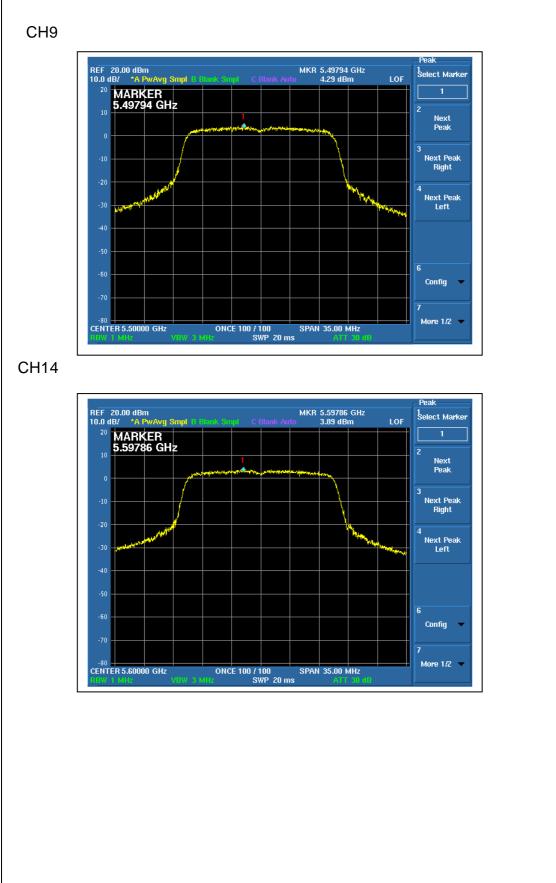




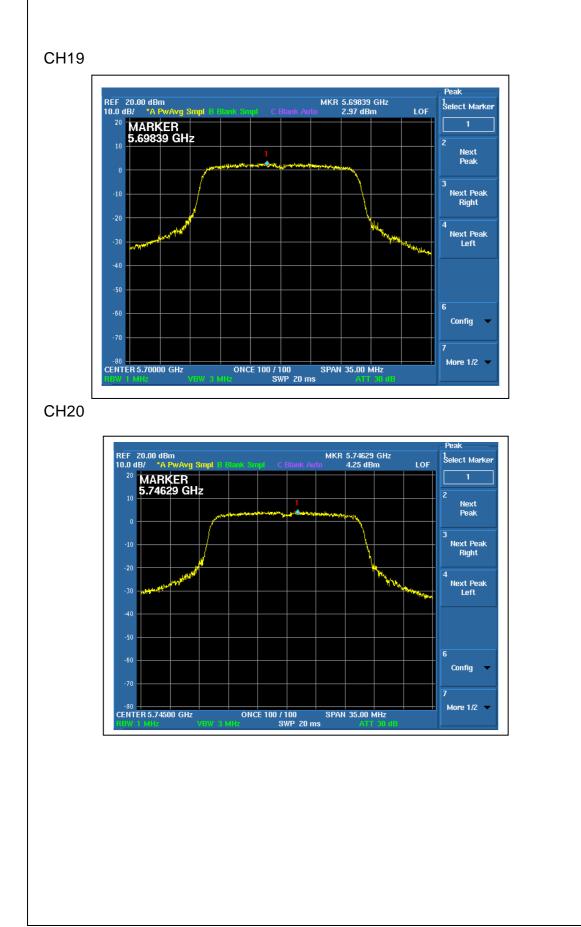


# CH7 Peak-REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl 1 MKR 5.29681 GHz 5.29 dBm 1 Select Marker LOF <sup>20</sup> MARKER 5.29681 GHz Next Peak Next Peak Right 14 Next Peak Left hin. Config -80 CENTER 5.30000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz CH8 Peak REF 20.00 dBm 10.0 dB/ \*A PwAvg Smpl MKR 5.31776 GHz 5.07 dBm 1 Select Marker LOF <sup>20</sup> MARKER 5.31776 GHz 1 Next Peak 3 Next Peak Right No. An a del Next Peak Left Config • -80 CENTER 5.32000 GHz More 1/2 ONCE 100 / 100 SWP 20 ms SPAN 35.00 MHz

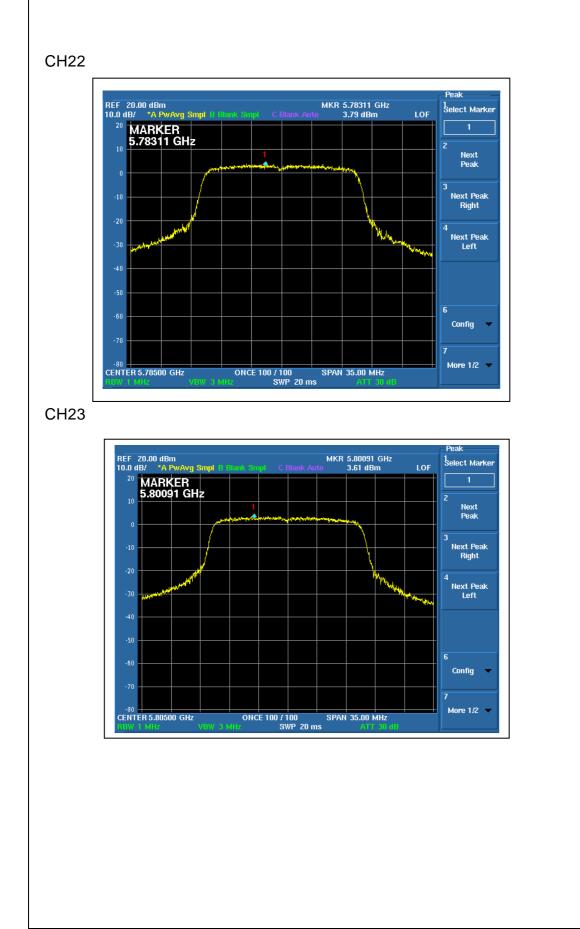














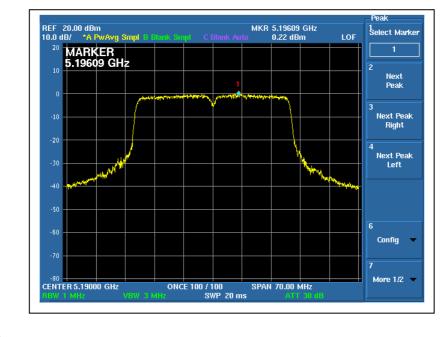
# DRAFT 802.11n (40MHz) OFDM MODULATION:

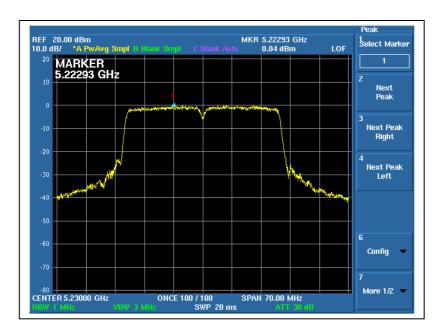
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Wen Yu		

	CHANNEL FREQUENCY	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER	MAXIMUM	PASS/FAIL
	(MHz)	Chain (0)	Chain(1)	DENSITY (dBm)	(dBm)	
1	5190	0.22	1.15	3.72	4	PASS
2	5230	0.04	1.36	3.76	4	PASS
3	5270	0.24	1.53	3.94	11	PASS
4	5310	-0.22	1.81	3.92	11	PASS
5	5510	-1.36	1.38	3.23	11	PASS
7	5590	-1.24	0.97	3.01	11	PASS
9	5670	-0.42	1.05	3.39	11	PASS
10	5755	0.13	0.83	3.50	17	PASS
11	5795	0.08	1.56	3.89	17	PASS

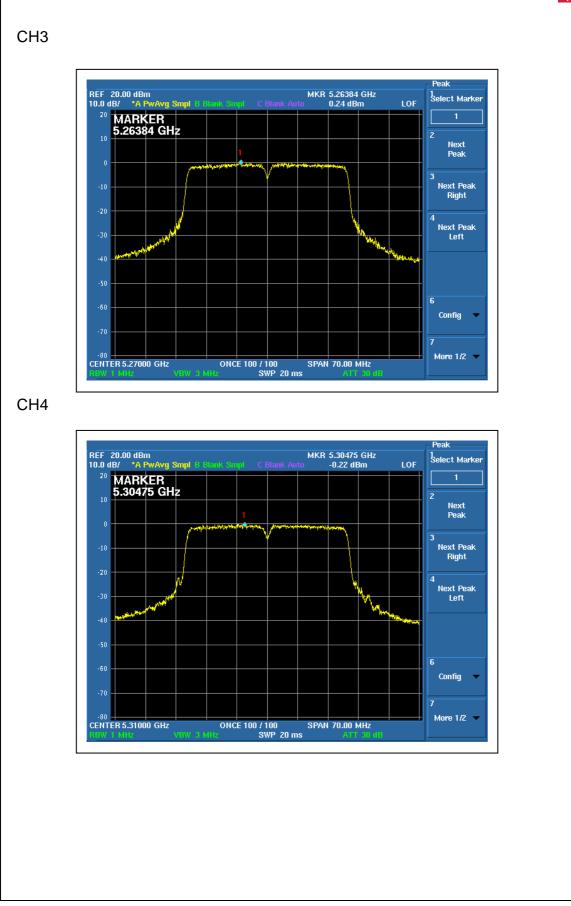


# For Chain (0) : CH1

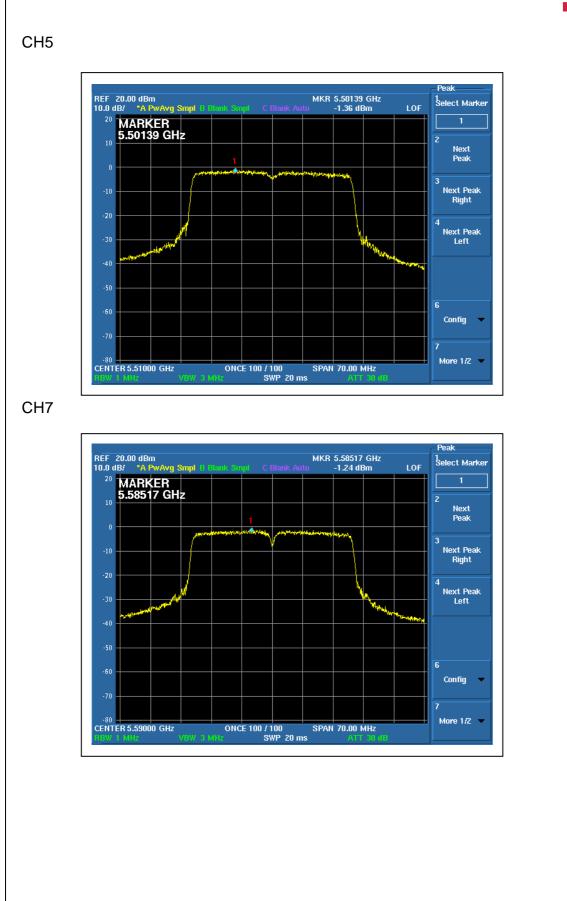




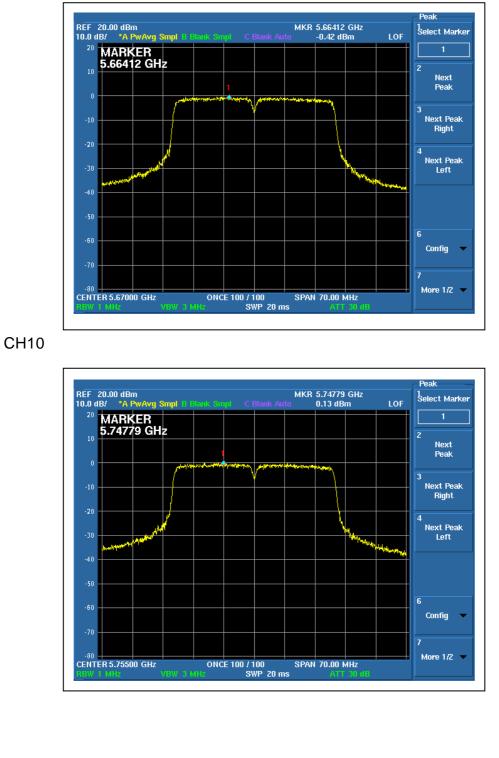




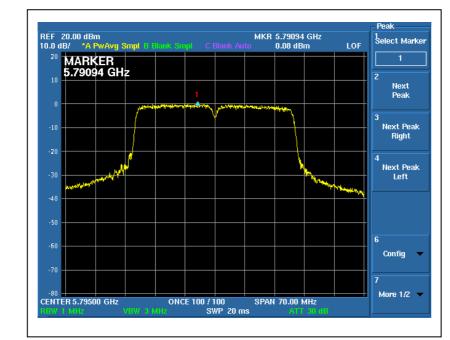






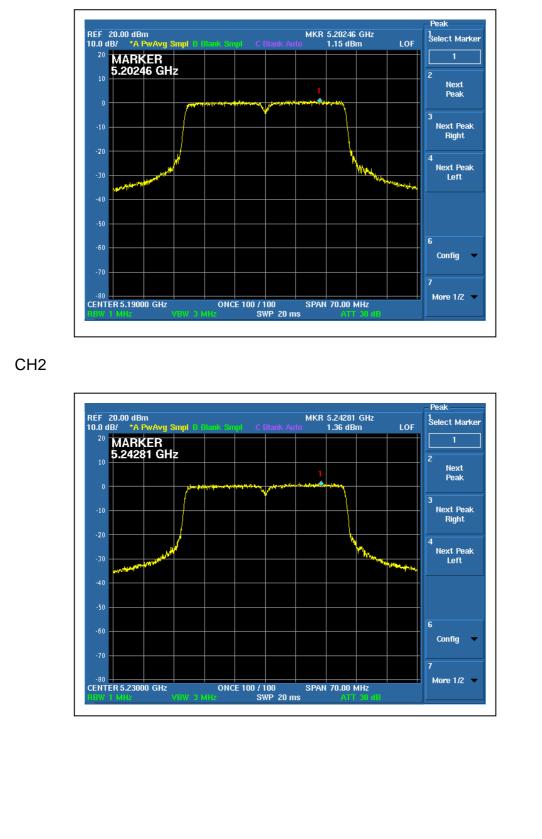




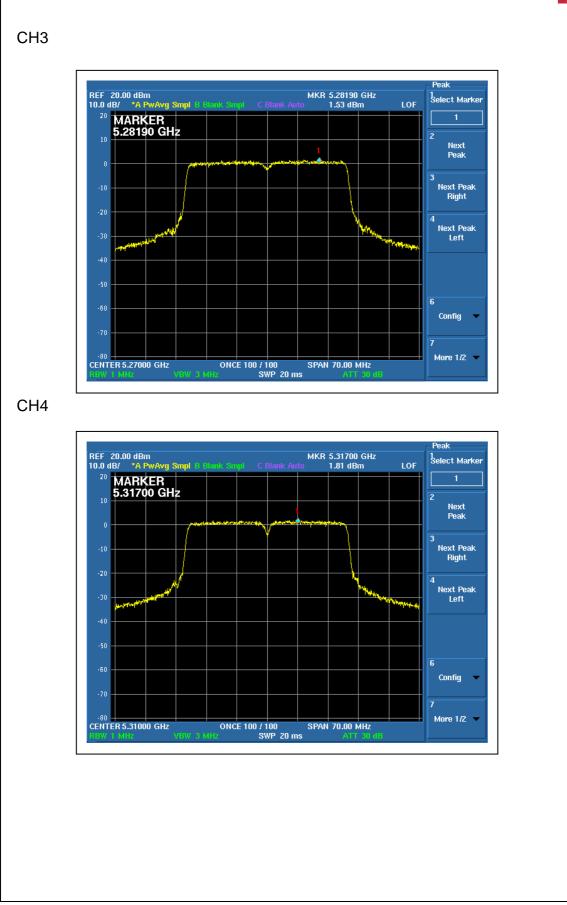




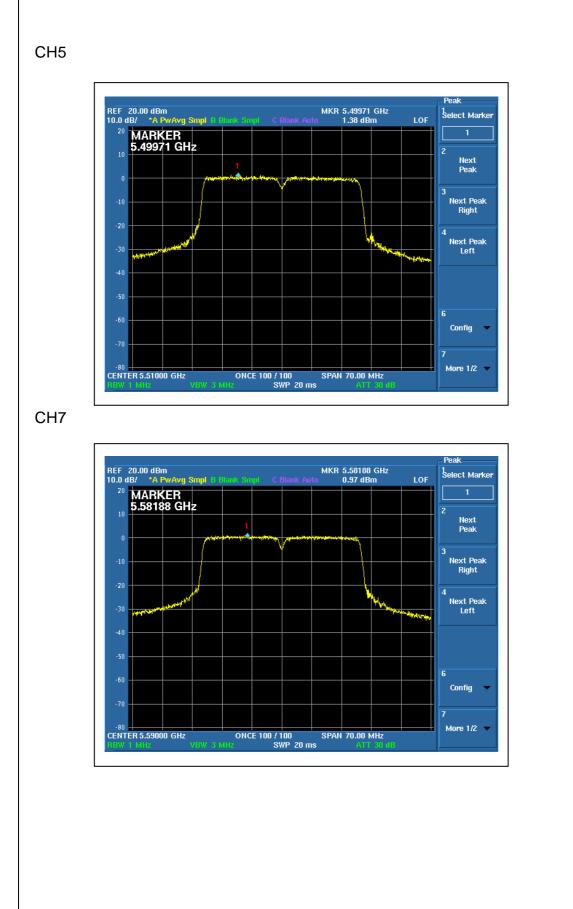
# For Chain (1) : CH1



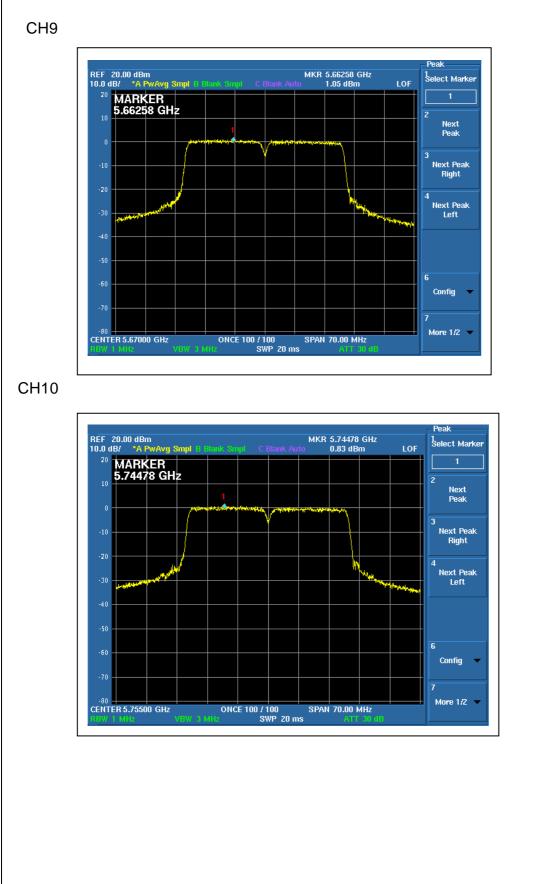




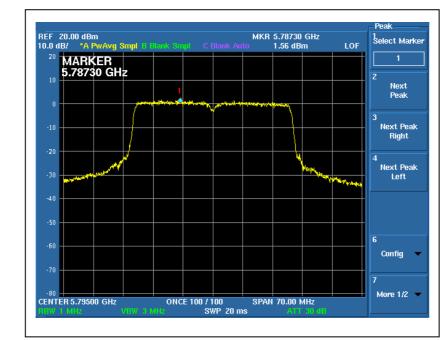














# 4.6 FREQUENCY STABILITY

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

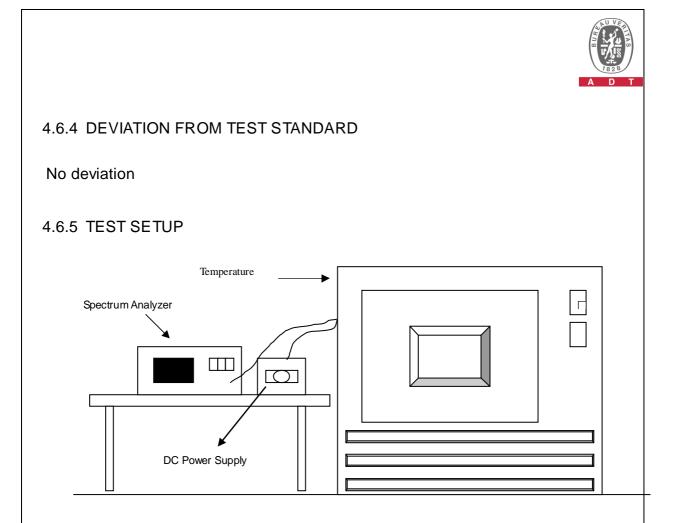
#### NOTE:

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.
- 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.



### 4.6.6 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	2 minute		5 minute		10 minute		
(°C)	supply (VAC)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	
	126.5	5320.028	0.000526	5320.0264	0.000496	5320.0244	0.000459	
50	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	
	126.5	5320.009	0.000169	5320.0085	0.000160	5320.0082	0.000154	
30	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	
	126.5	5320.0098	0.000184	5320.0096	0.000180	5320.0093	0.000175	
0	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	
	126.5	5320.0045	0.000085	5320.0042	0.000079	5320.0039	0.000073	
-10	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 &	MODEL NO.	SERIAL	CALIBRATED	CALIBRATED
MANUFACTURER		NO.	DATE	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.



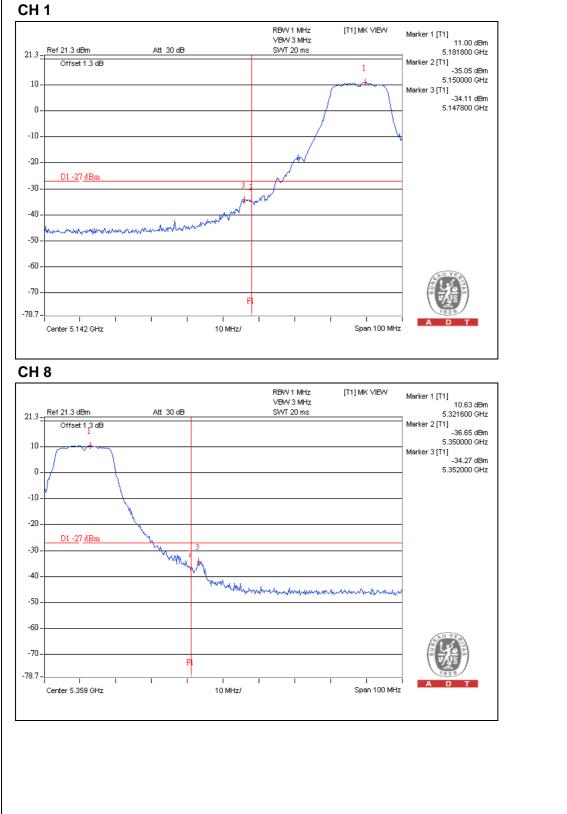
## 4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:

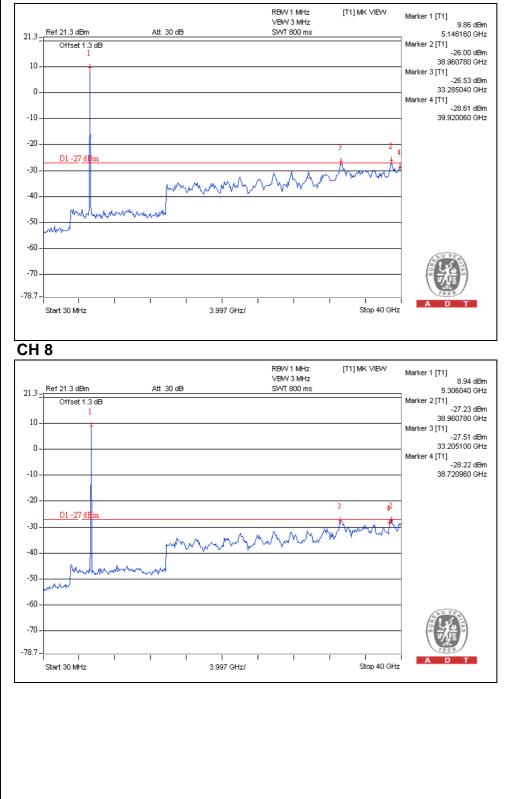
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.



## 802.11a OFDM modulation





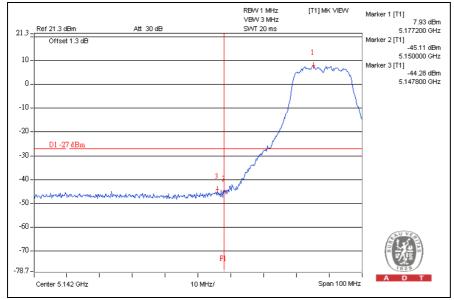


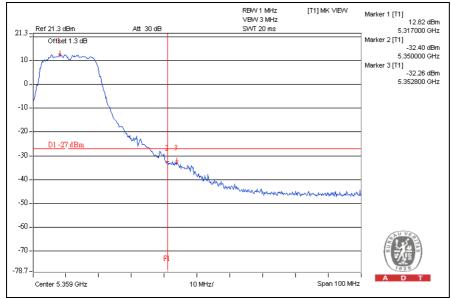


## DRAFT 802.11n (20MHz) OFDM MODULATION:

# For chain (0):

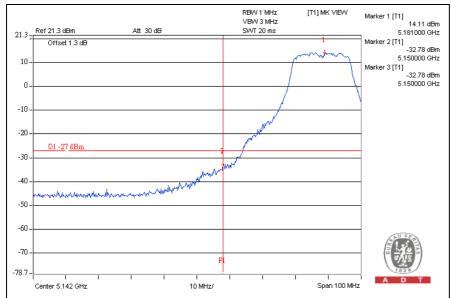
CH1

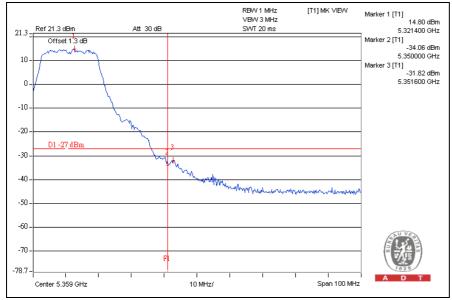






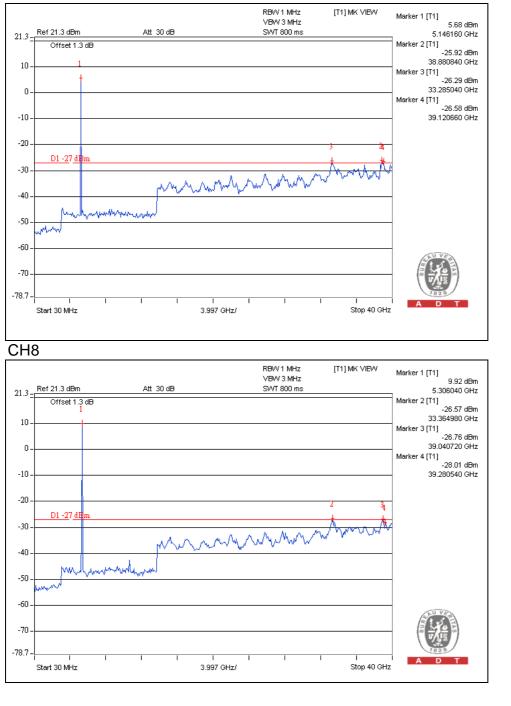
#### CH1





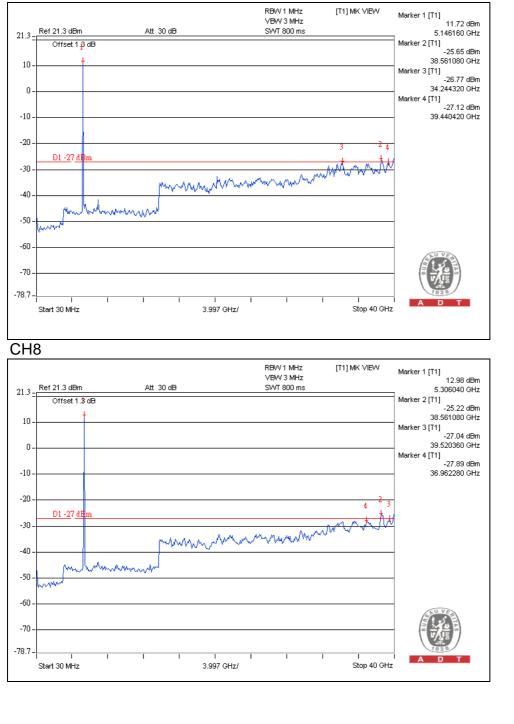










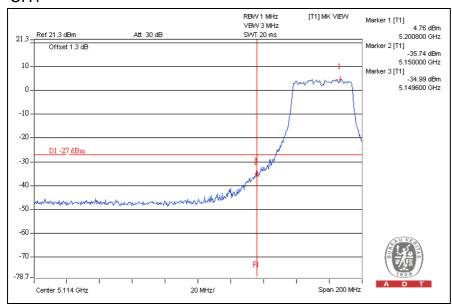


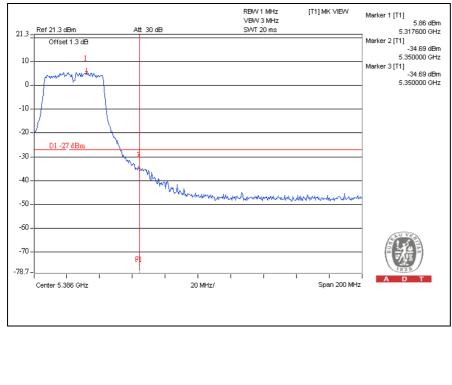


#### DRAFT 802.11n (40MHz) OFDM MODULATION:

## For chain (0):

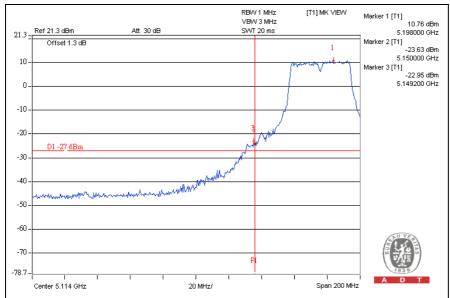
CH1

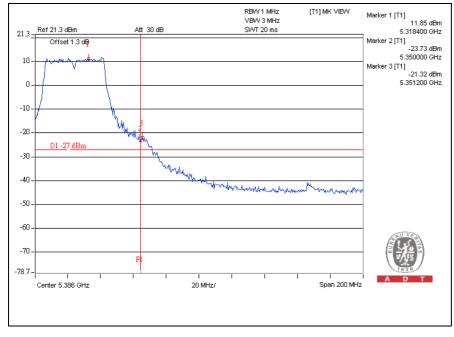






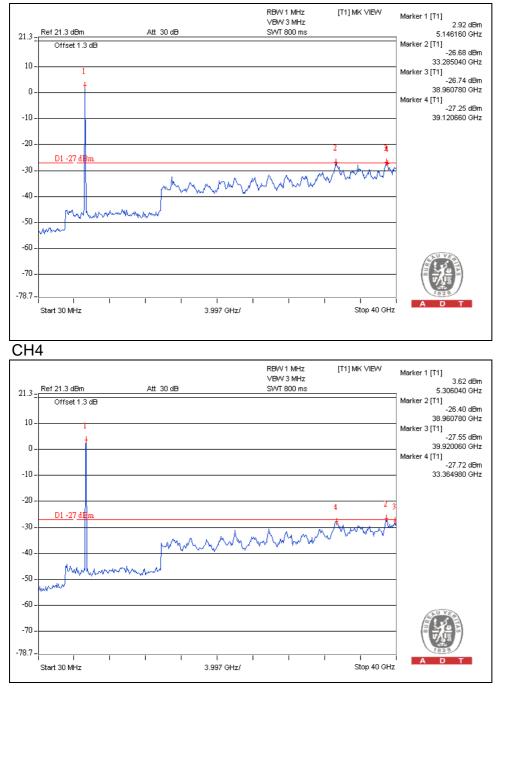
#### CH1







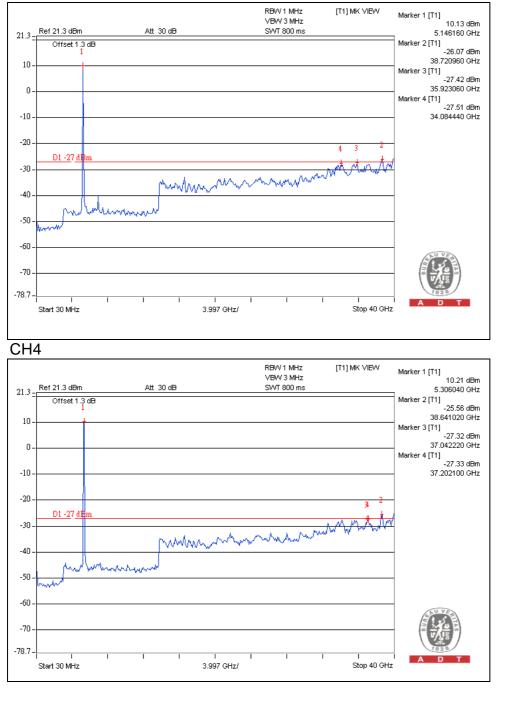




Report No.: RF80110H01-1







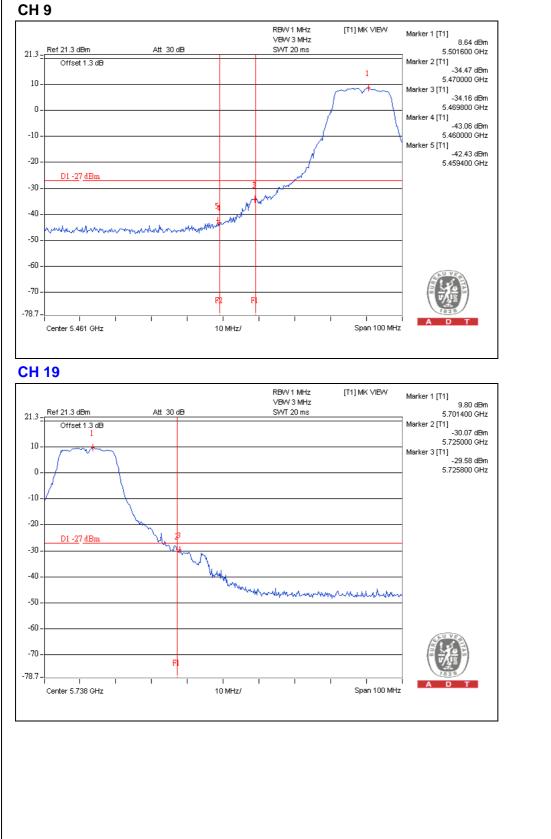


For 5.47 to 5.725GHz band:

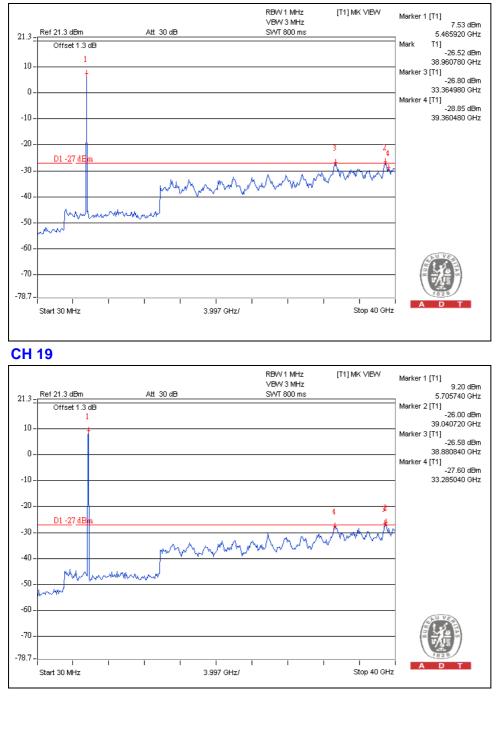
The spectrum plots (RBW=1MHz, VBW=3MHz) are attached on the following pages.



## 802.11a OFDM modulation





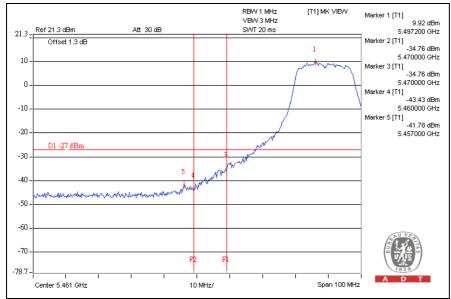


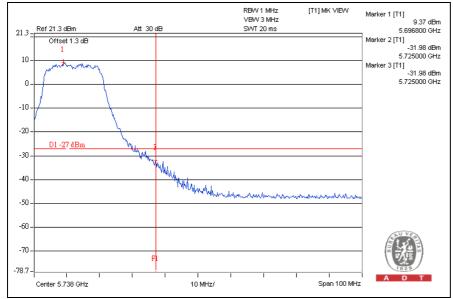


# DRAFT 802.11n (20MHz) OFDM MODULATION:

# For chain (0):

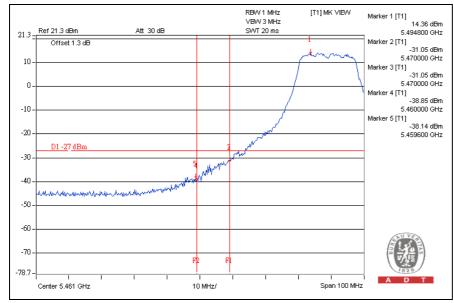
#### CH9

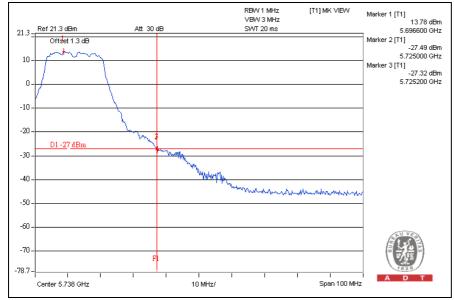






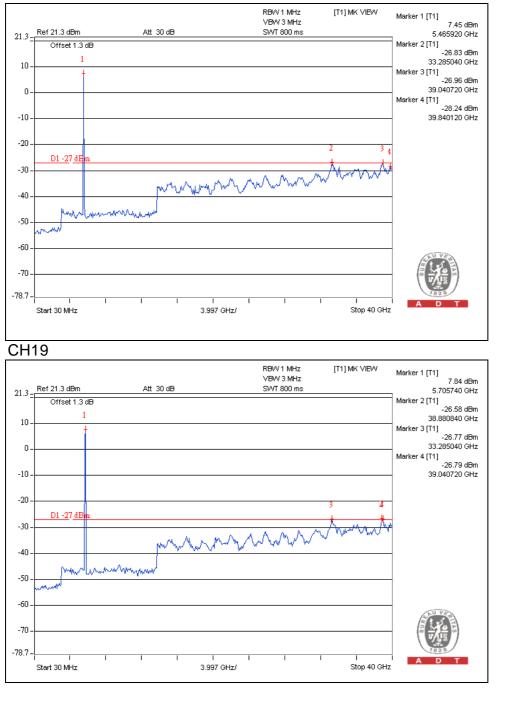
#### CH9



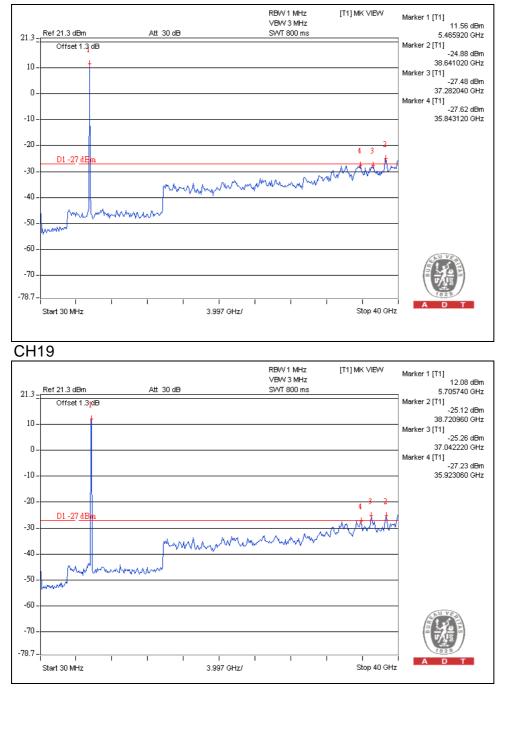










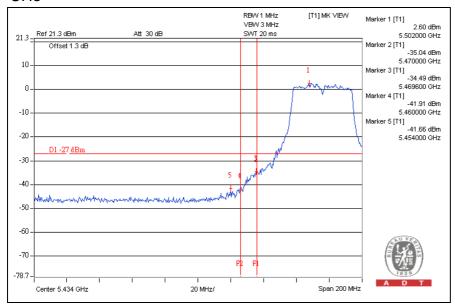


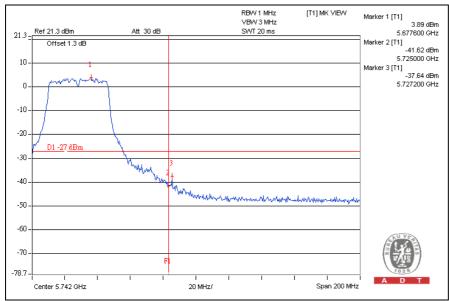


#### DRAFT 802.11n (40MHz) OFDM MODULATION:

## For chain (0):

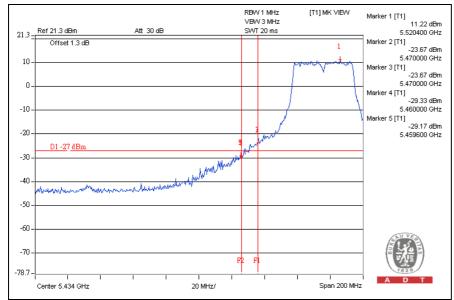
CH5

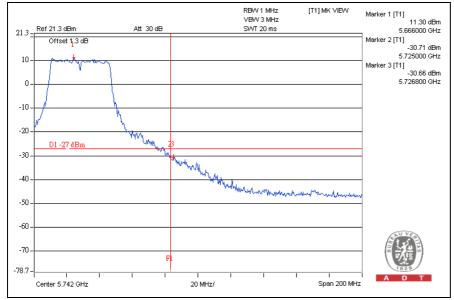




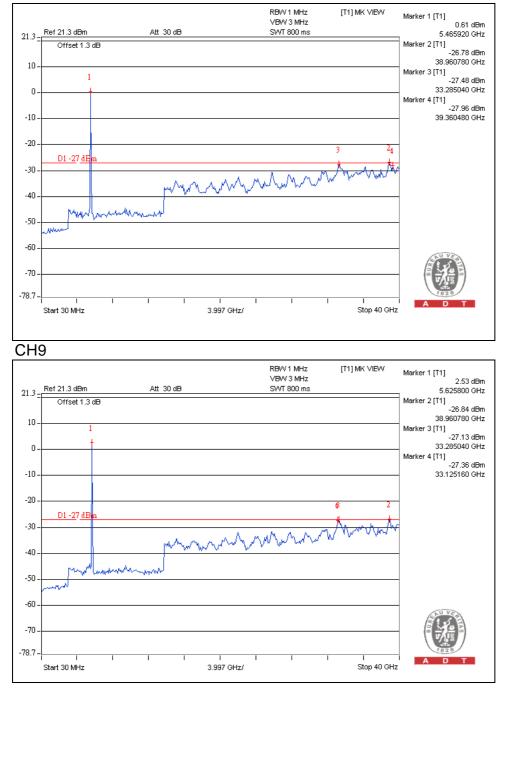


#### CH5

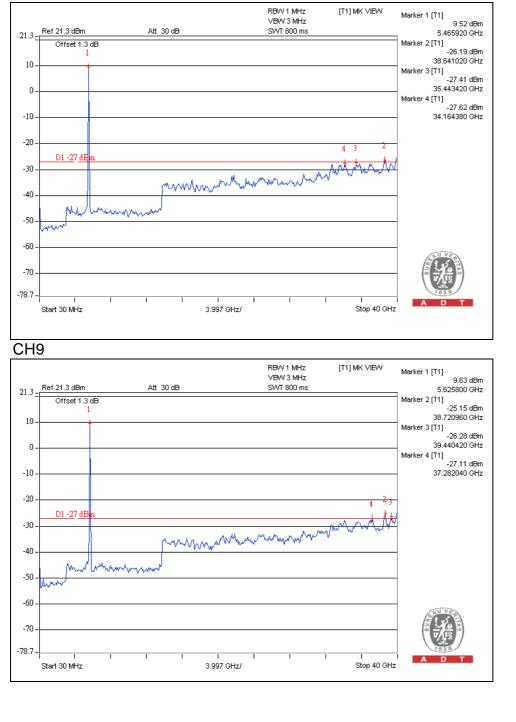












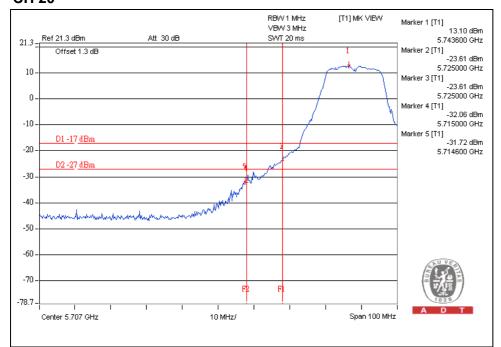


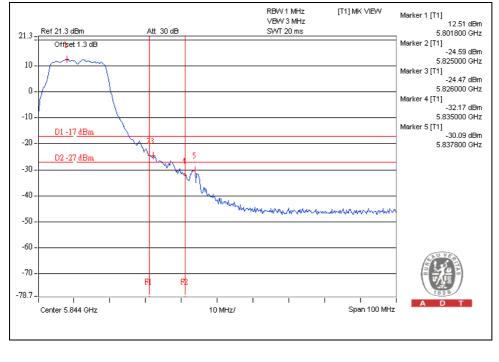
For 5.725 to 5.825GHz band:

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

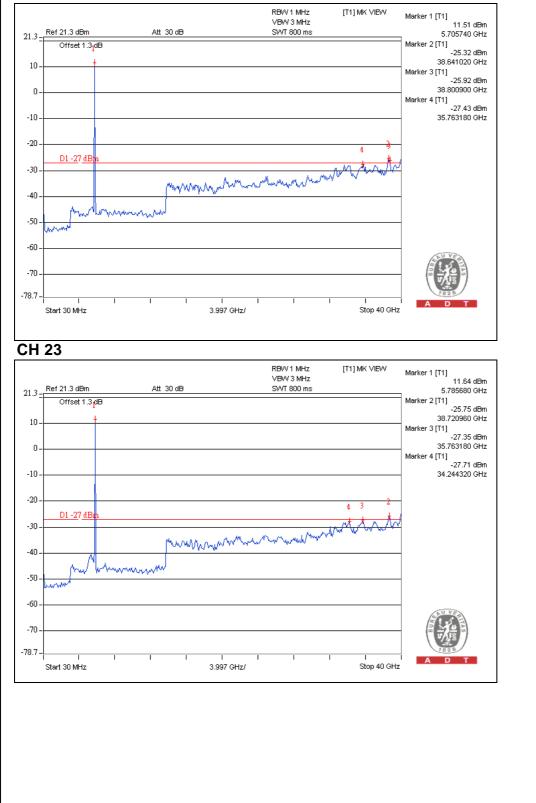


#### 802.11a OFDM modulation CH 20







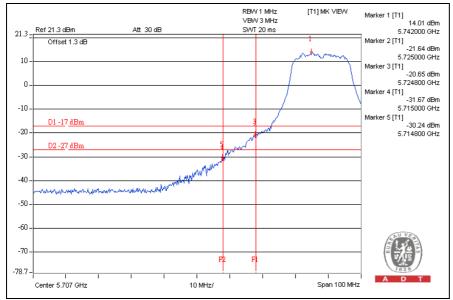


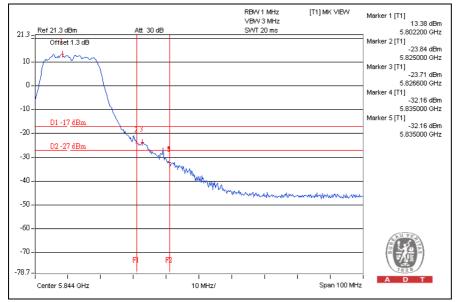


# DRAFT 802.11n (20MHz) OFDM MODULATION:

# For chain (0):

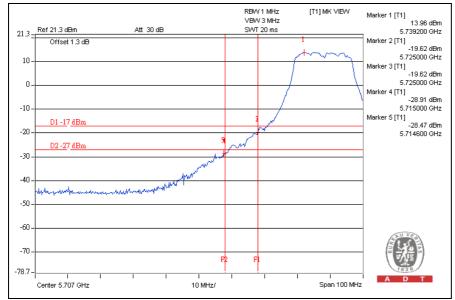
#### CH20

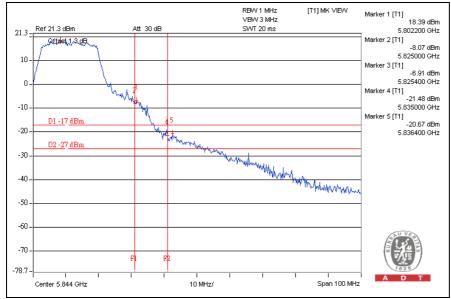






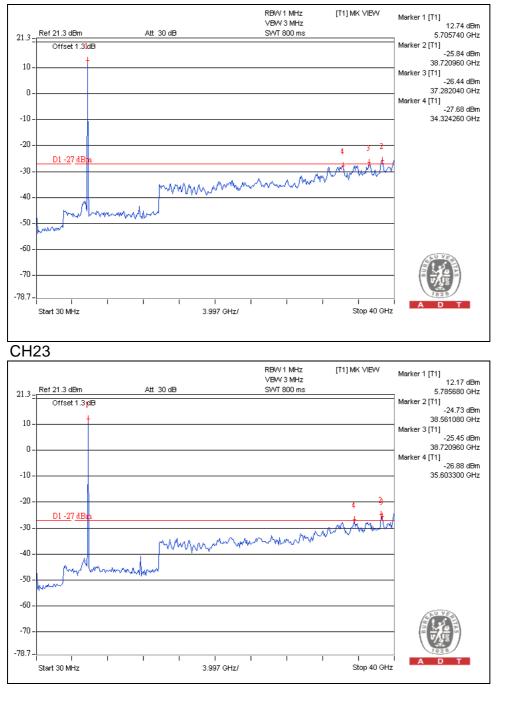
#### CH20





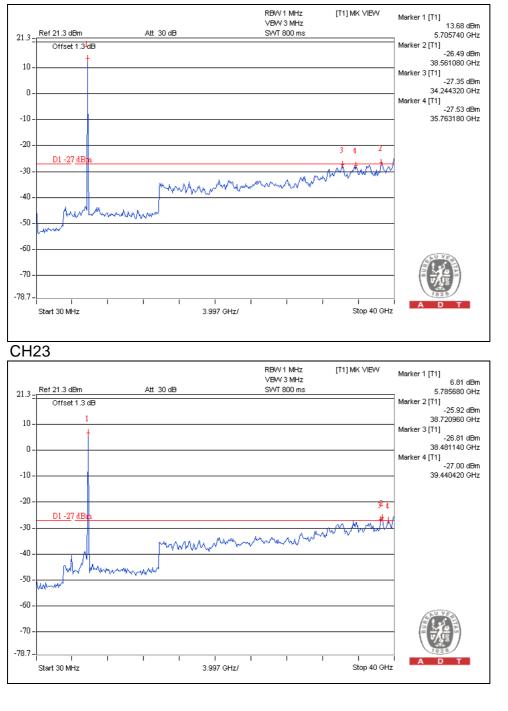








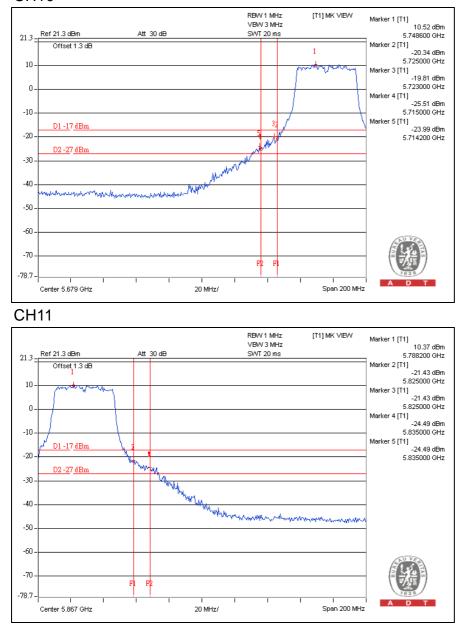






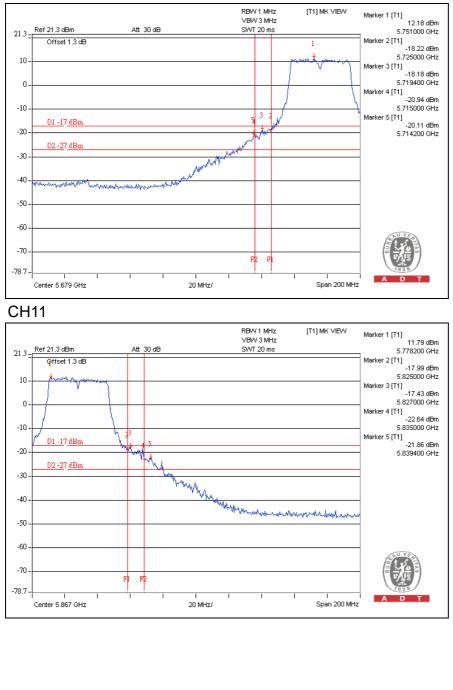
#### DRAFT 802.11n (40MHz) OFDM MODULATION:

## For chain (0):

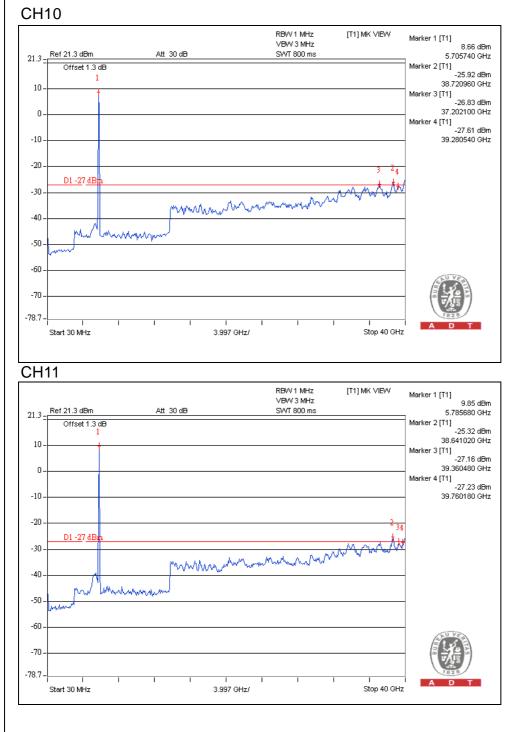






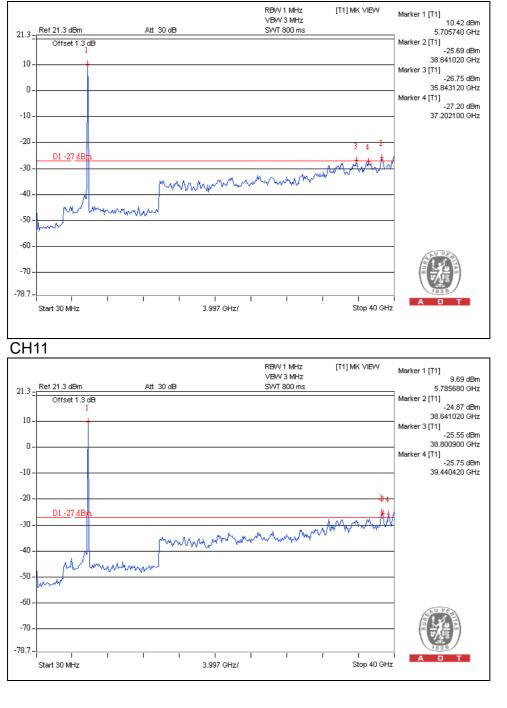














## 4.8 ANTENNA REQUIREMENT

#### 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:

Chain	Antenna	For 2.4GHz		Antenna			
Chain	Туре	Gain (dBi)	5.15~5.25GHz	5.25~5.35GHz	5.47~5.725GHz	5.725~5.825GHz	Connector
0	PCB Printed	0.29	-0.14	-0.86	0.21	0.14	NA
1	PCB Printed						



# 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, 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: <u>www.adt.com.tw/index.5/phtml</u>. 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.

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