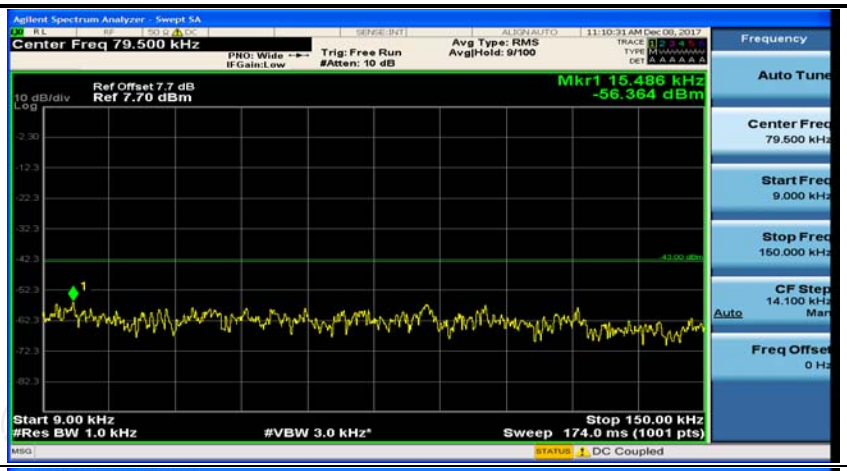
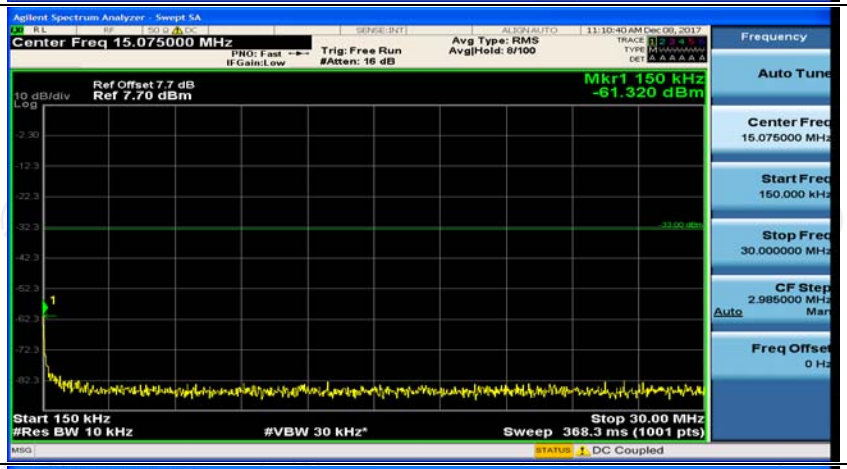
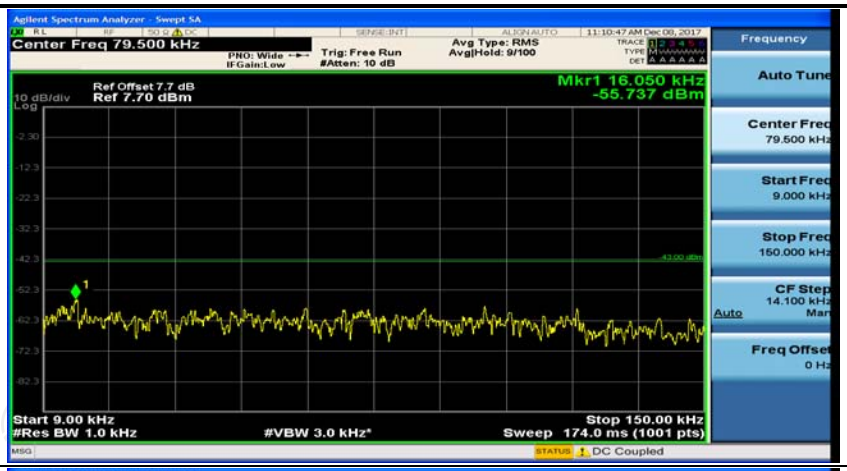
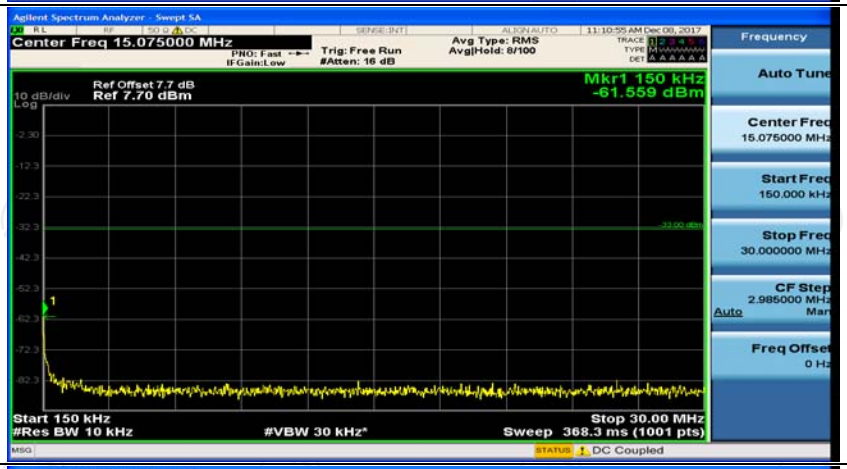


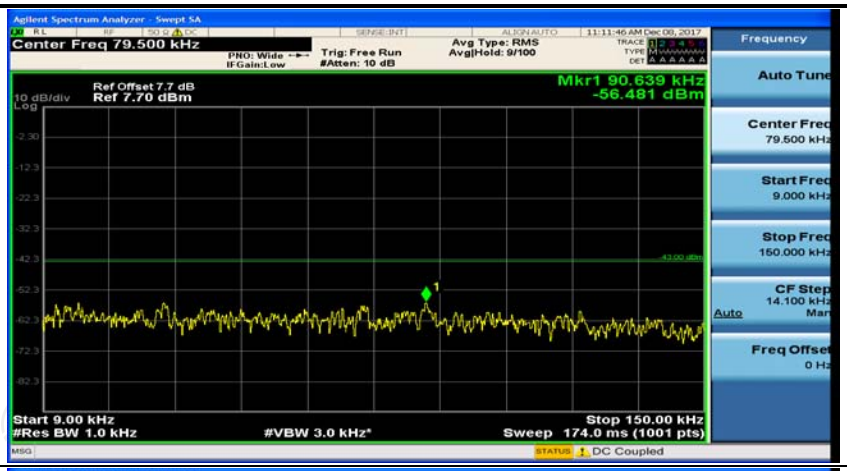


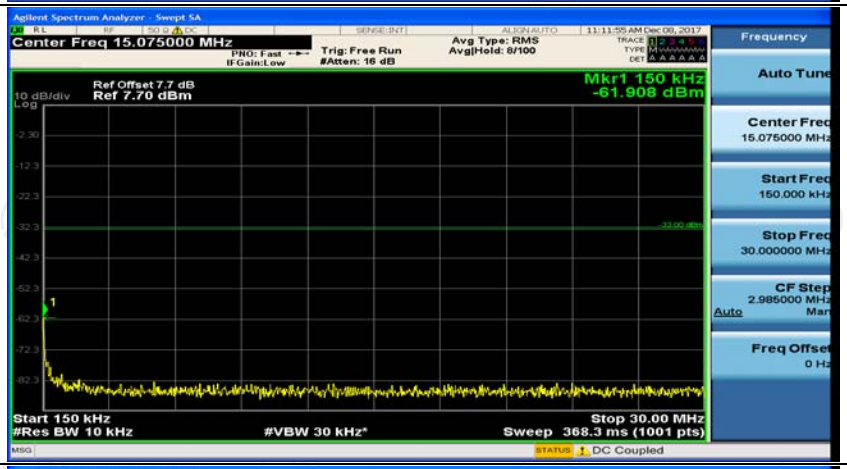
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#74



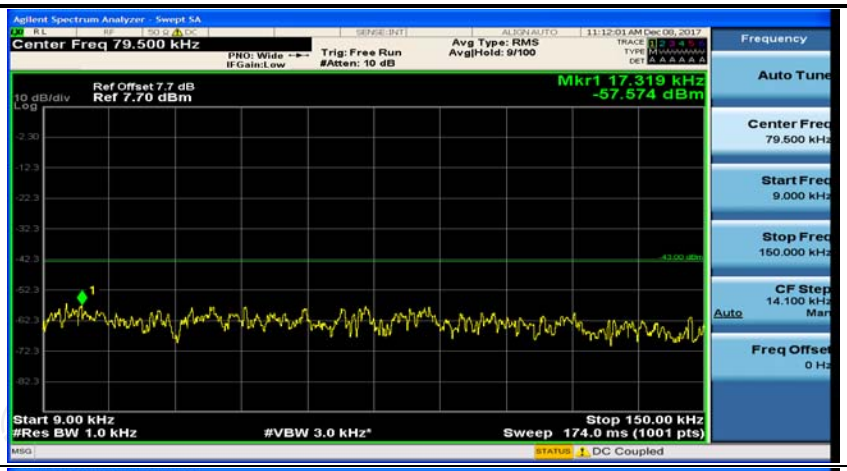


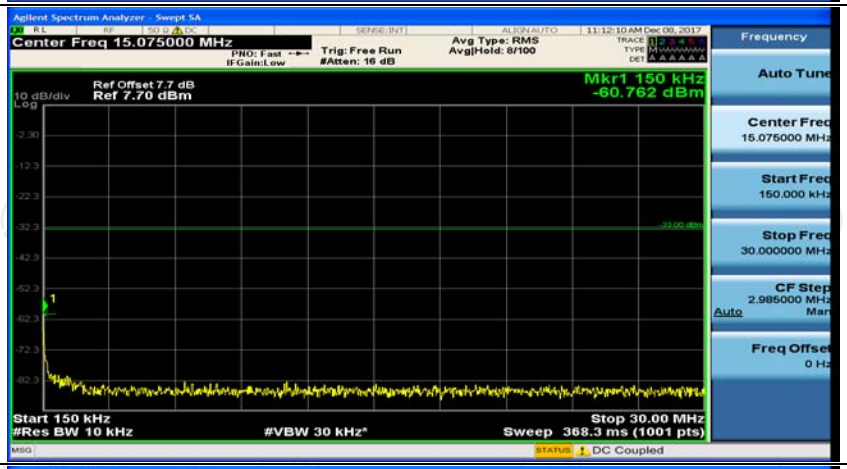
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#0



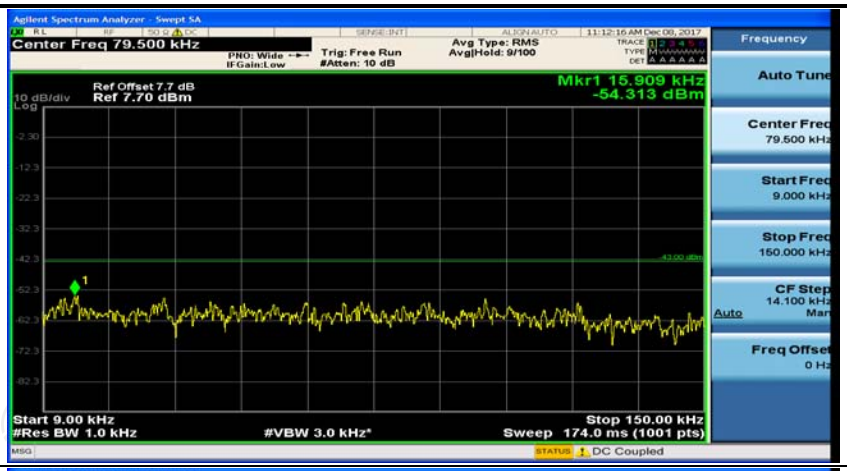


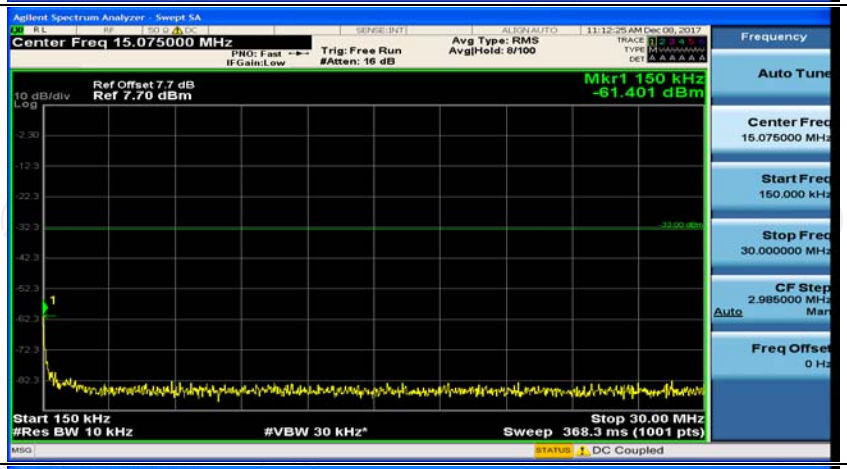
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#37



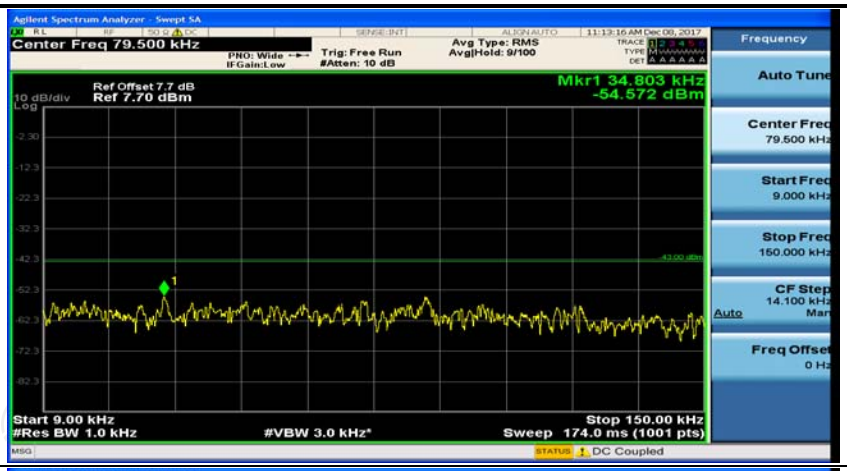


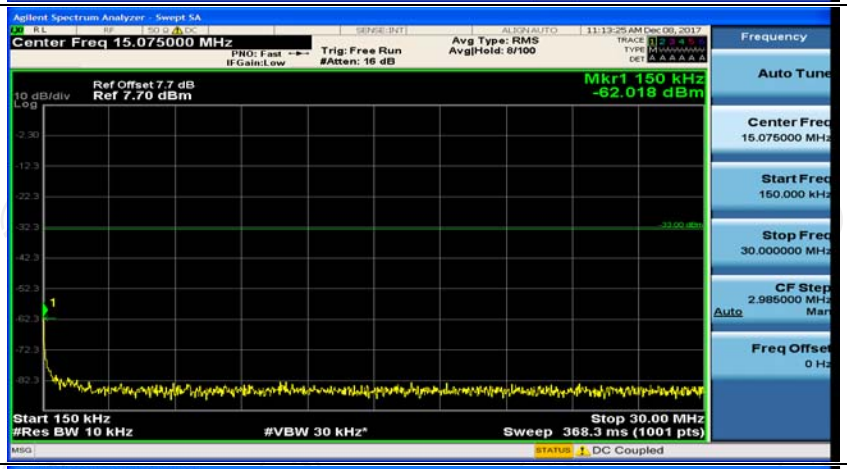
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#74



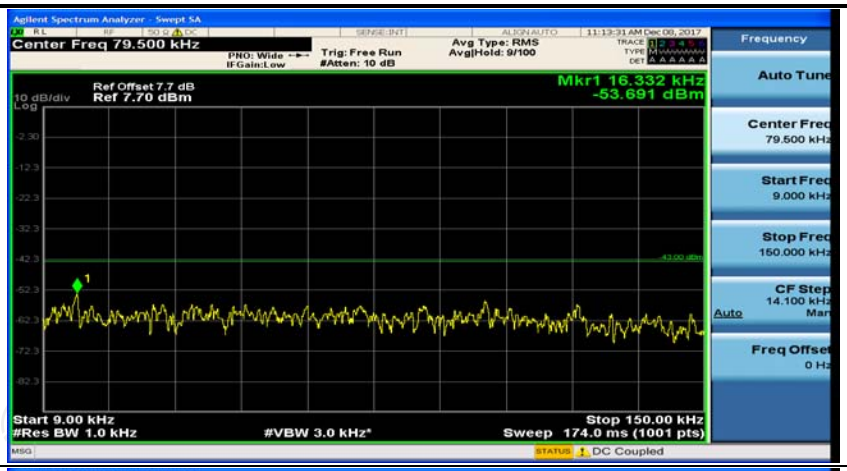


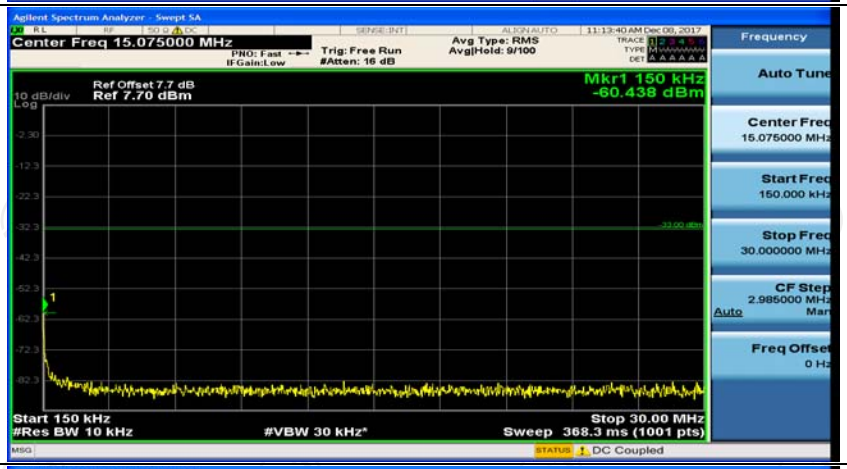
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#0



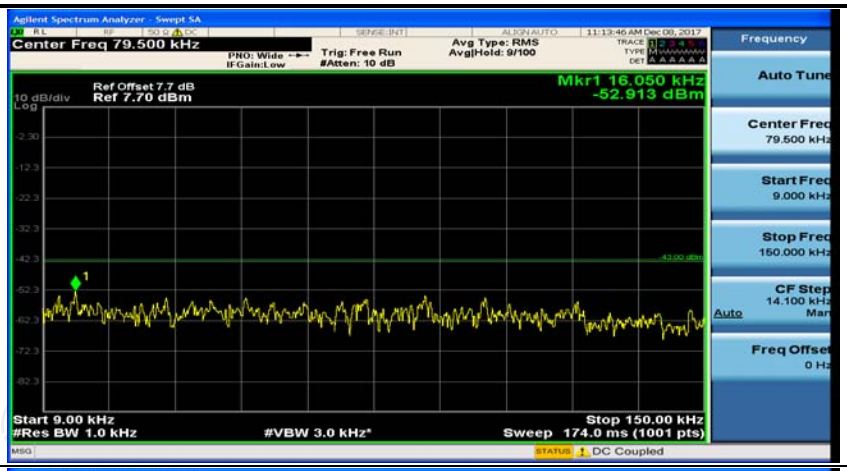


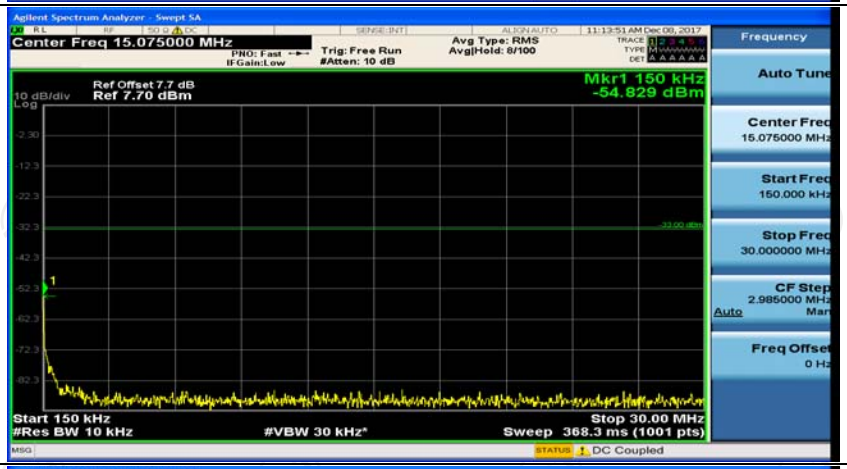
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#37





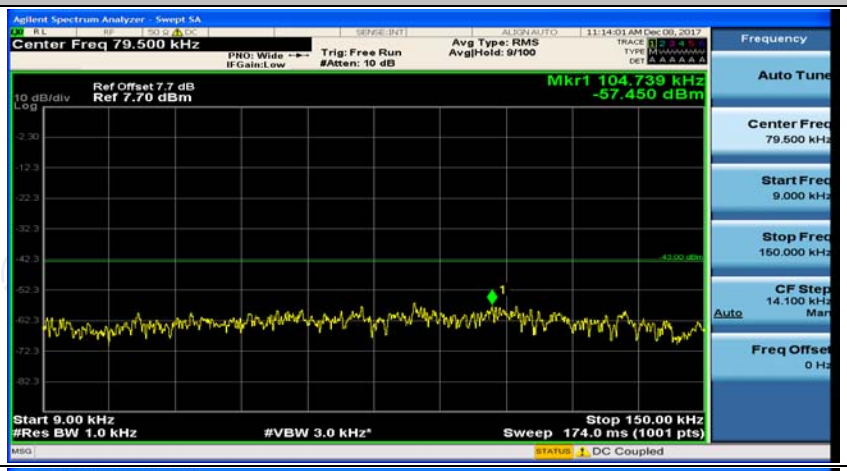
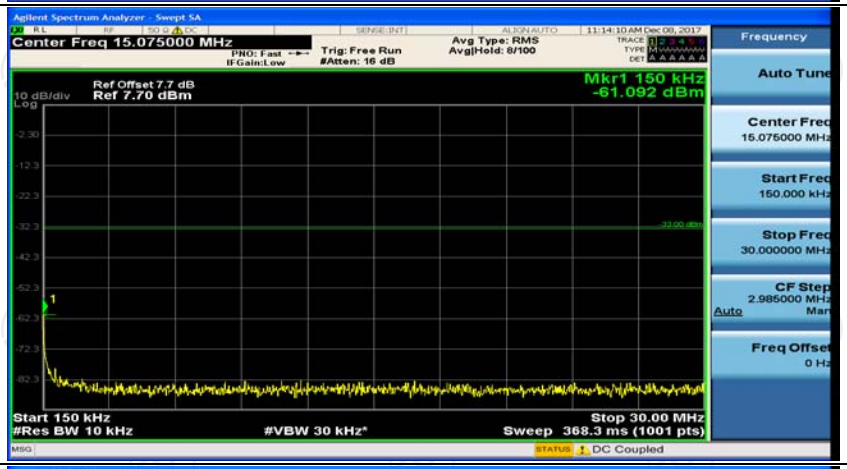
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#74


Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 9/100
11:13:46 AM Dec 09, 2017
Frequency
Auto Tune
Ref Offset 7.7 dB
10 dB/div
Ref 7.70 dBm
Mkr1 16.050 kHz
-52.913 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Freq Offset
0 Hz
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)
DC Coupled

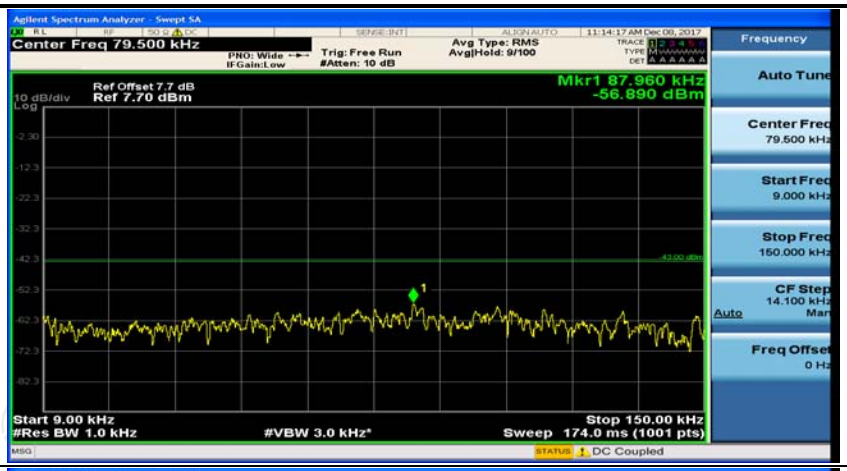

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 8/100
11:13:51 AM Dec 09, 2017
Frequency
Auto Tune
Ref Offset 7.7 dB
10 dB/div
Ref 7.70 dBm
Mkr1 150 kHz
-54.829 dBm
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Freq Offset
0 Hz
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.3 ms (1001 pts)
DC Coupled

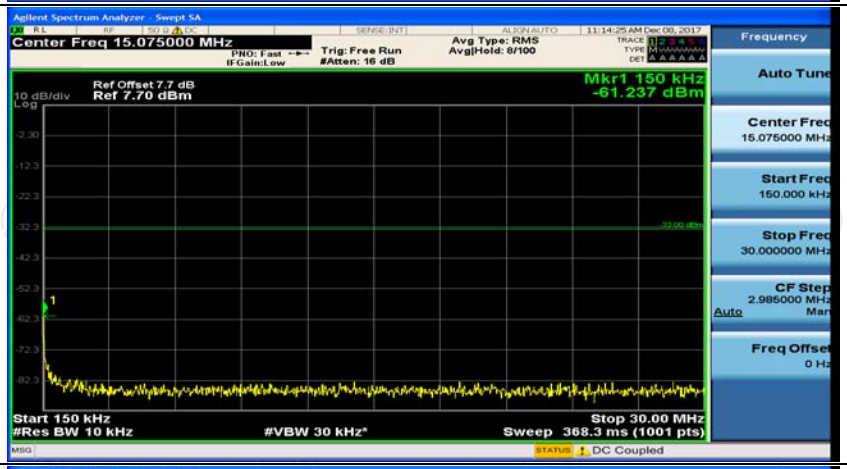

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 6/100
11:13:54 AM Dec 09, 2017
Frequency
Auto Tune
Ref Offset 7.7 dB
10 dB/div
Ref 30.00 dBm
Mkr2 25.533 GHz
-26.720 dBm
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.93 ms (1001 pts)

Channel Bandwidth: 20 MHz

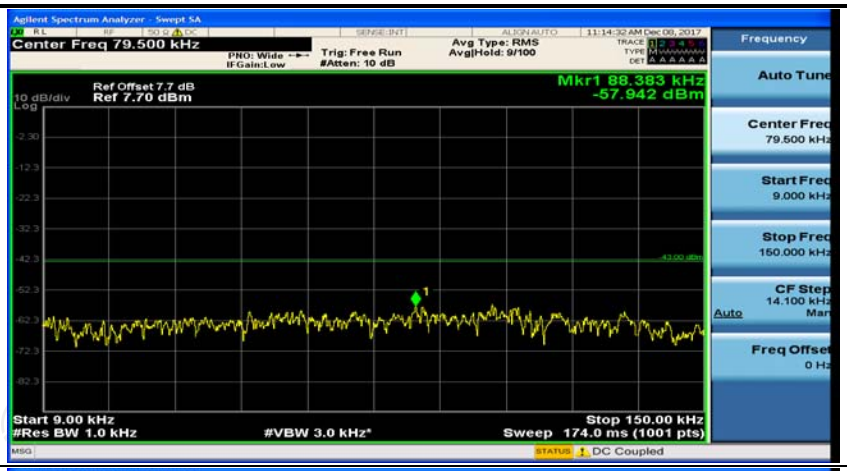
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#0



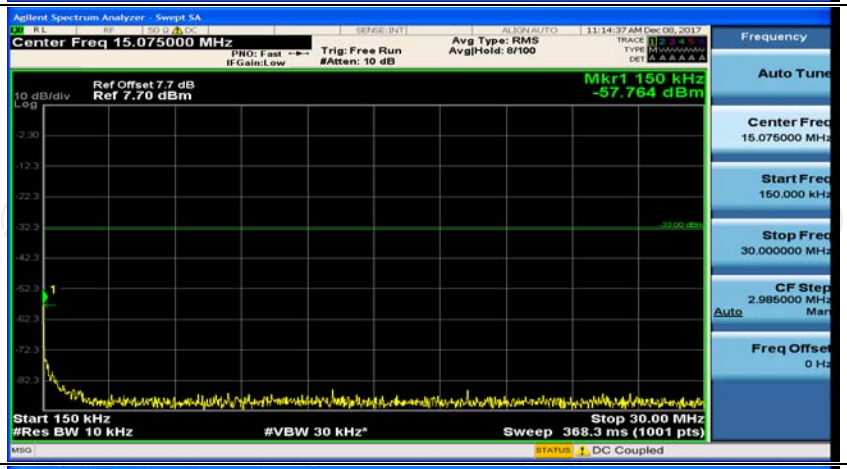
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#49



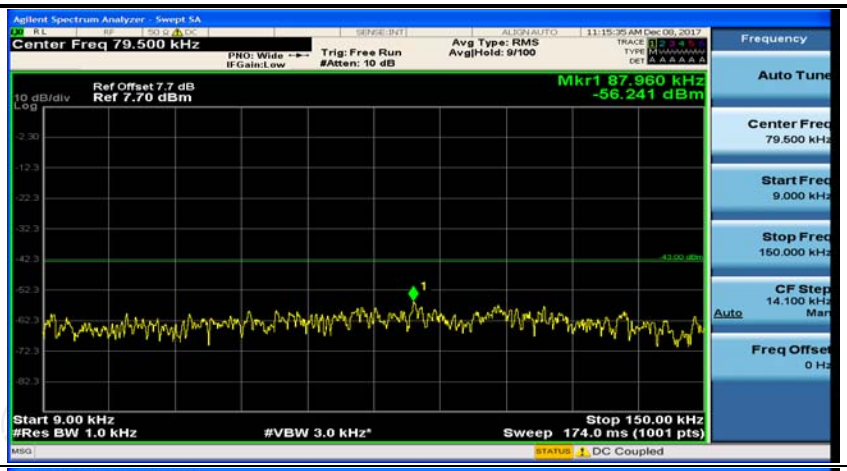


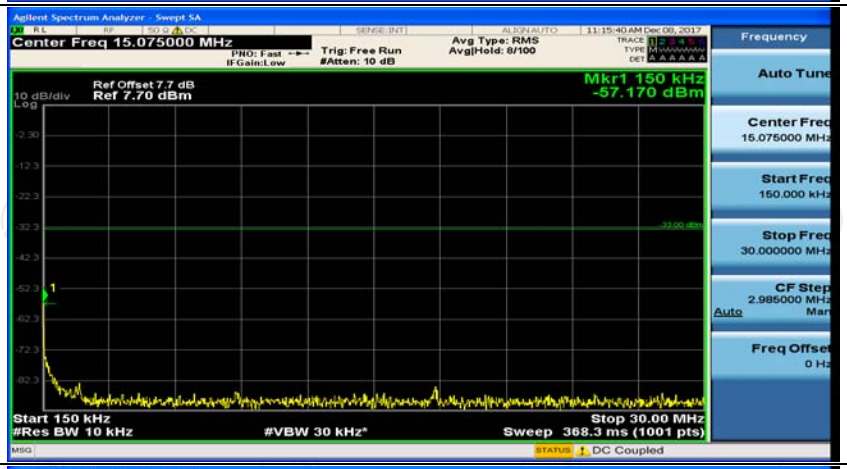
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#99



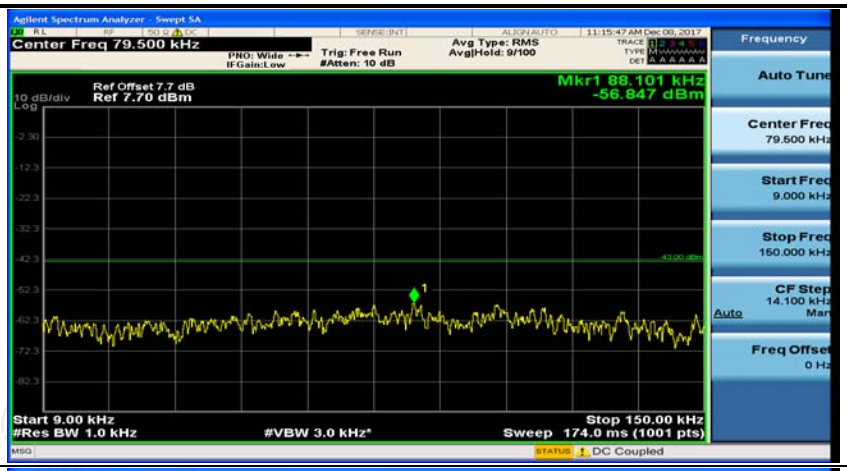


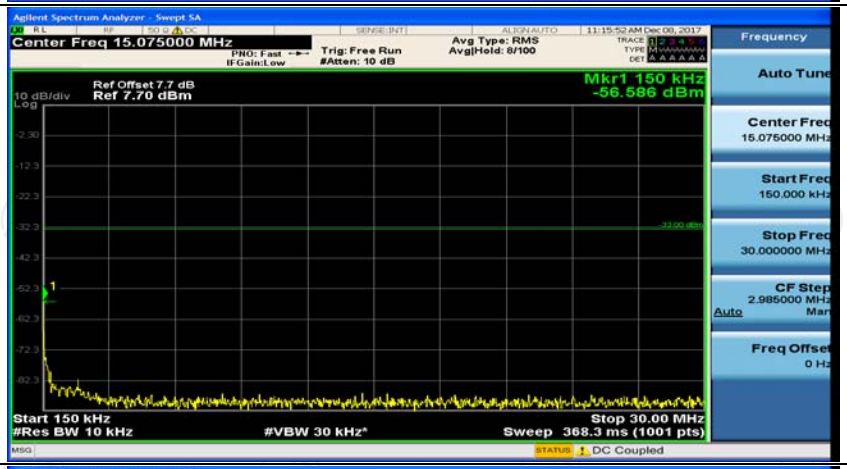
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0



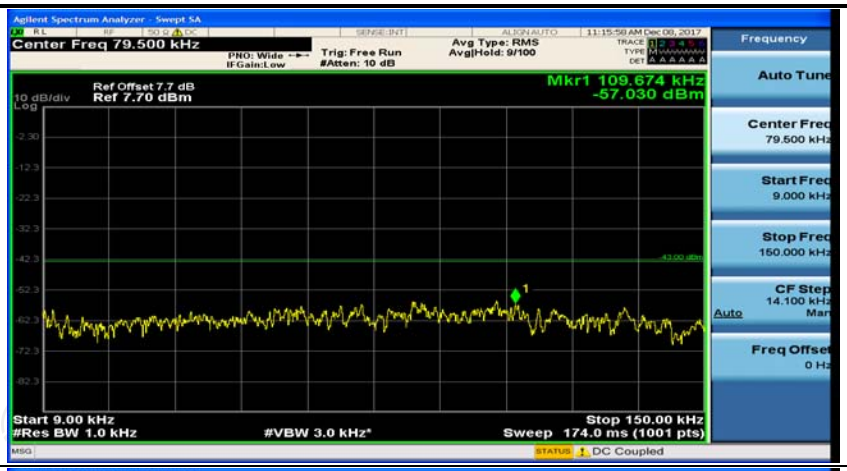


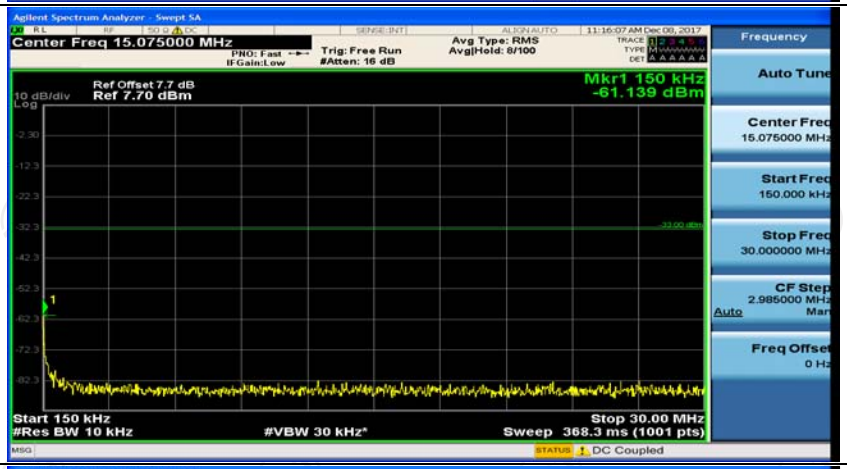
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49



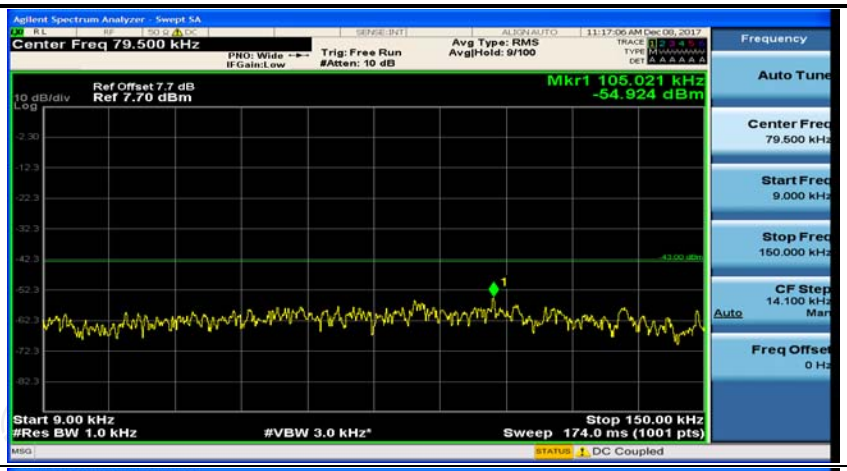


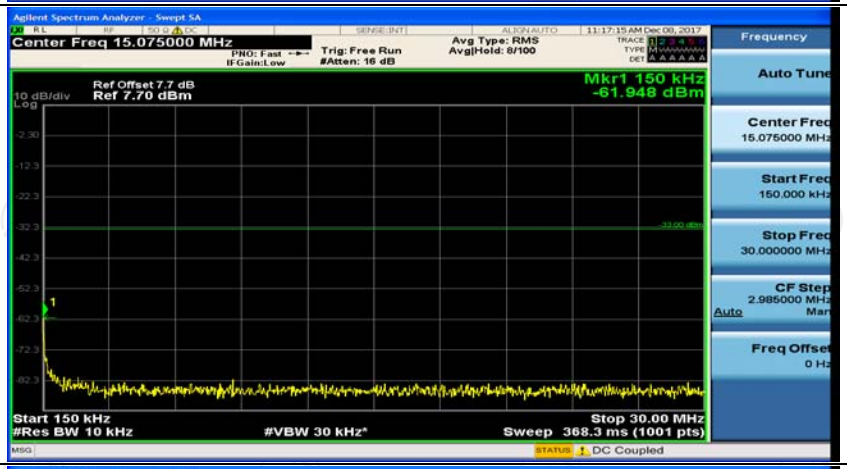
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#99



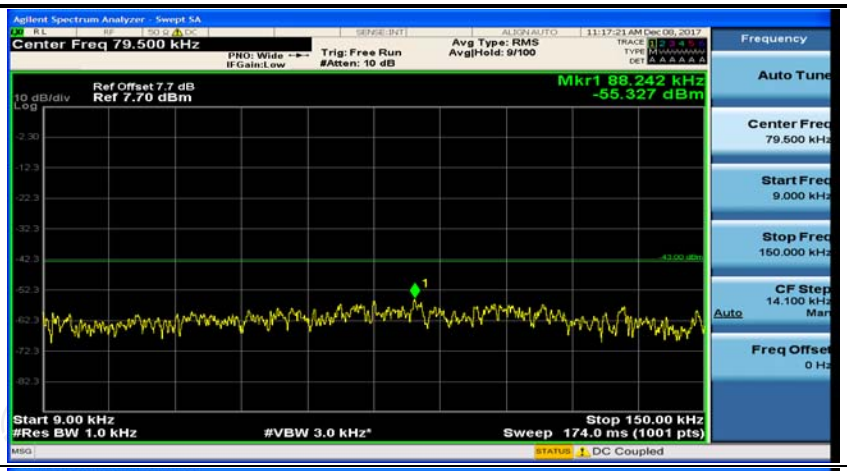


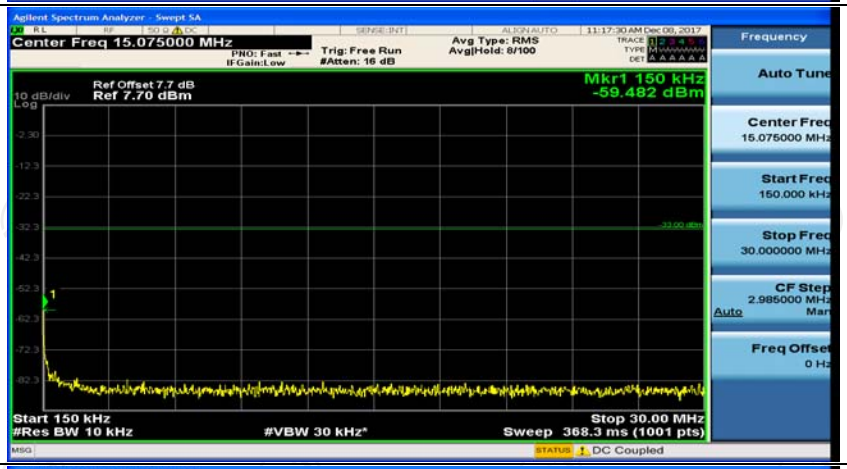
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0



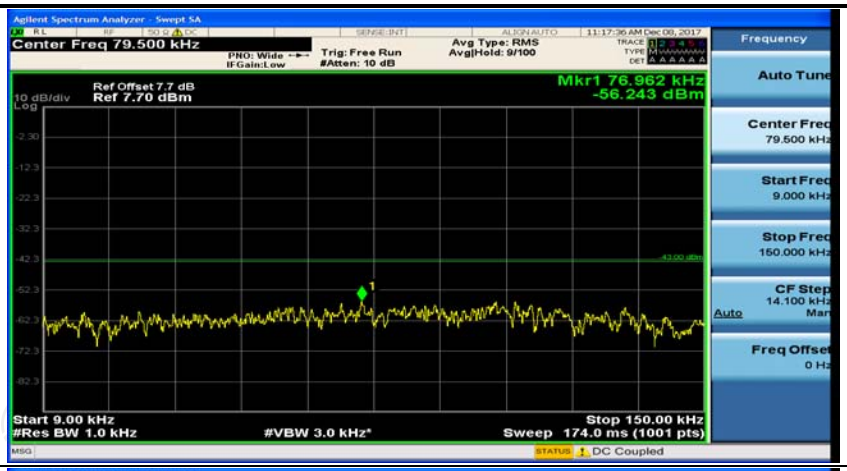


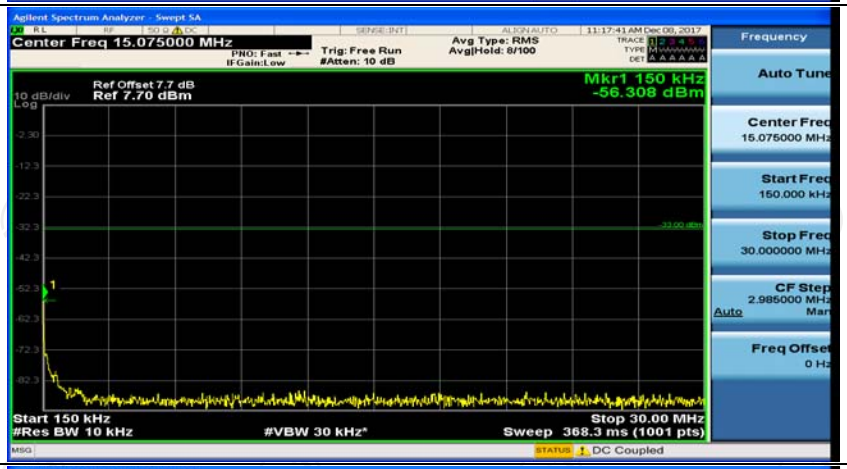
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49



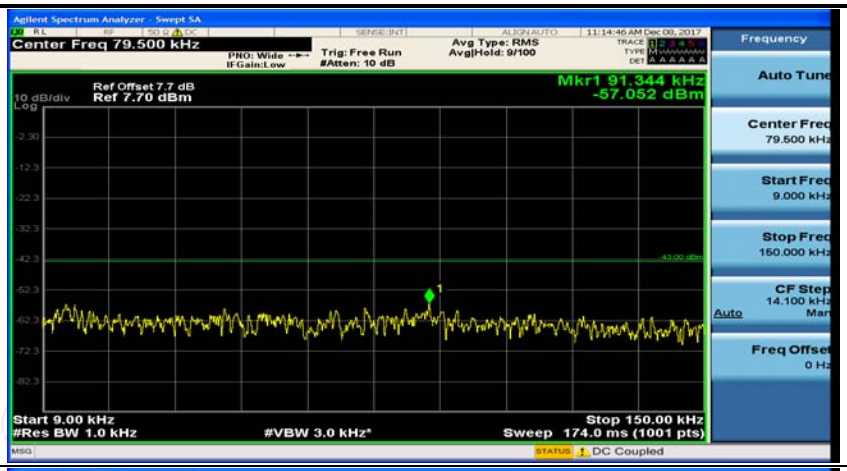


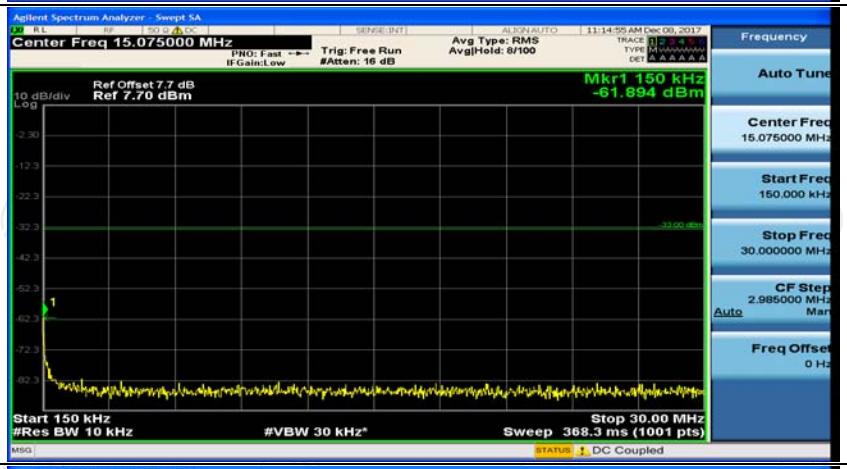
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#99



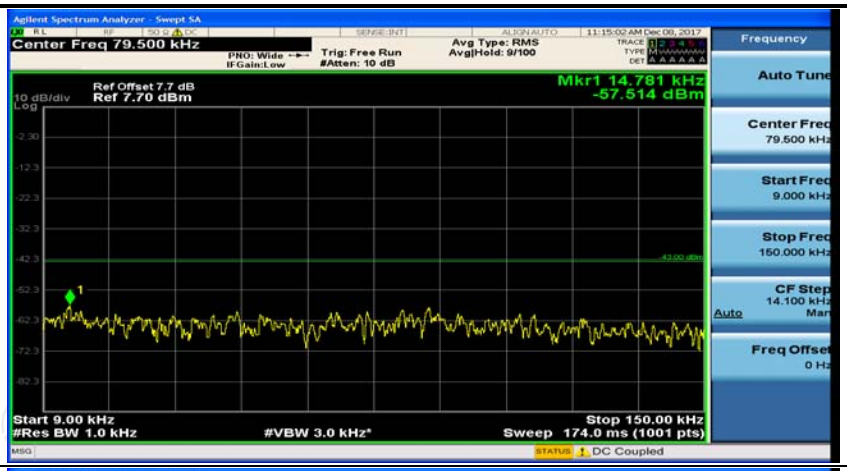


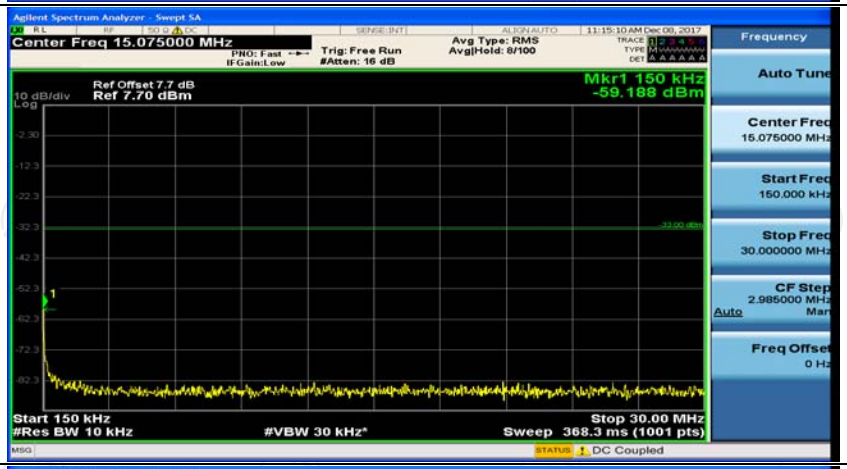
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0



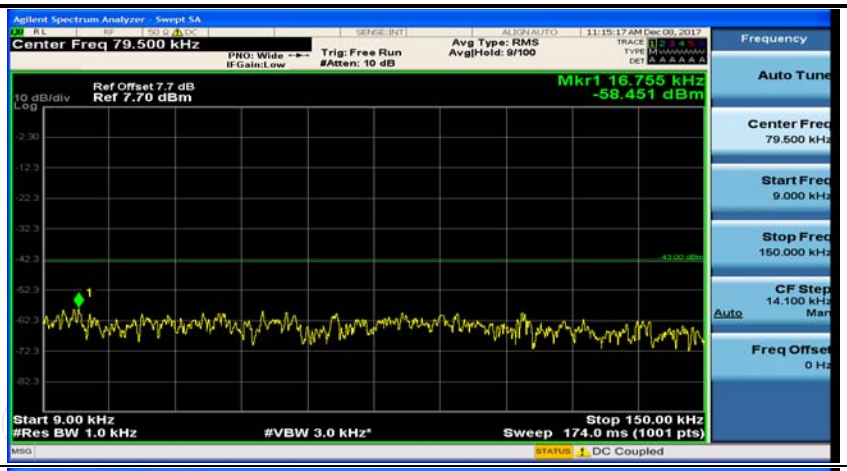


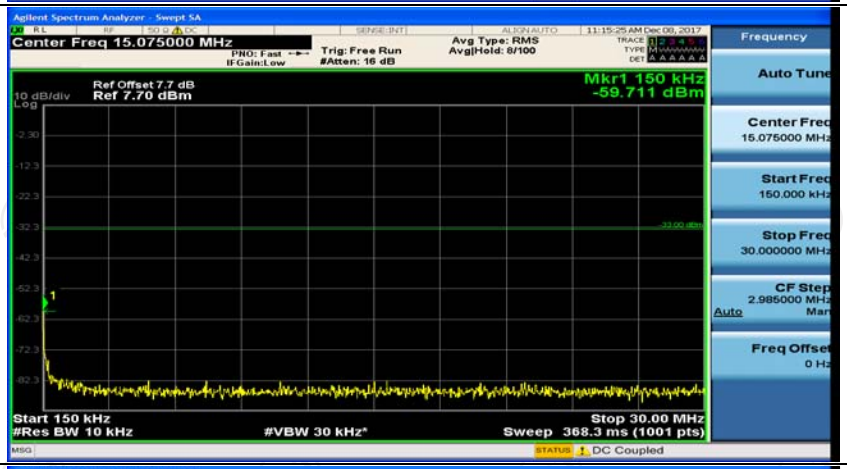
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49



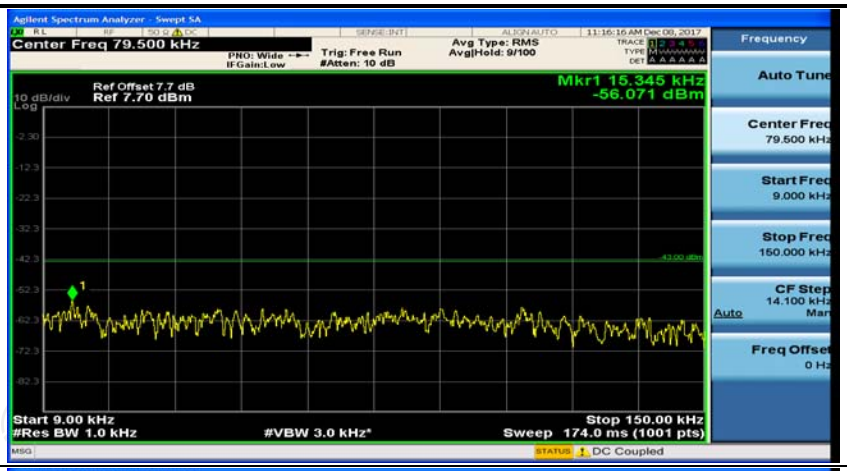


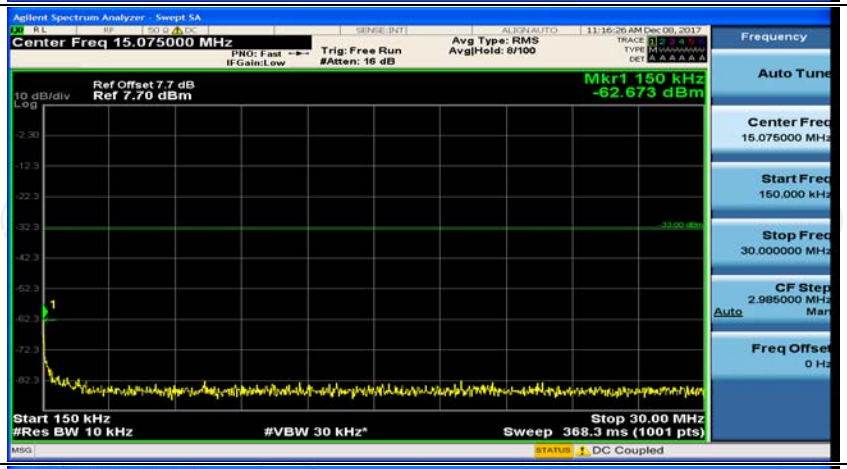
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99



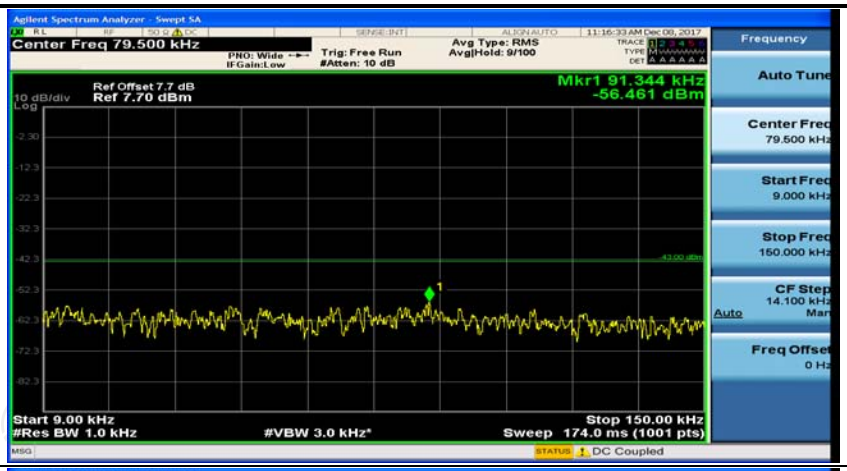


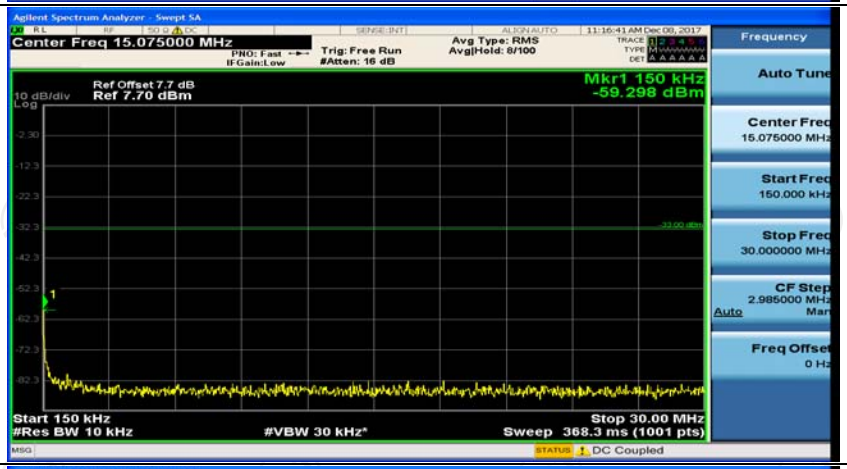
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0



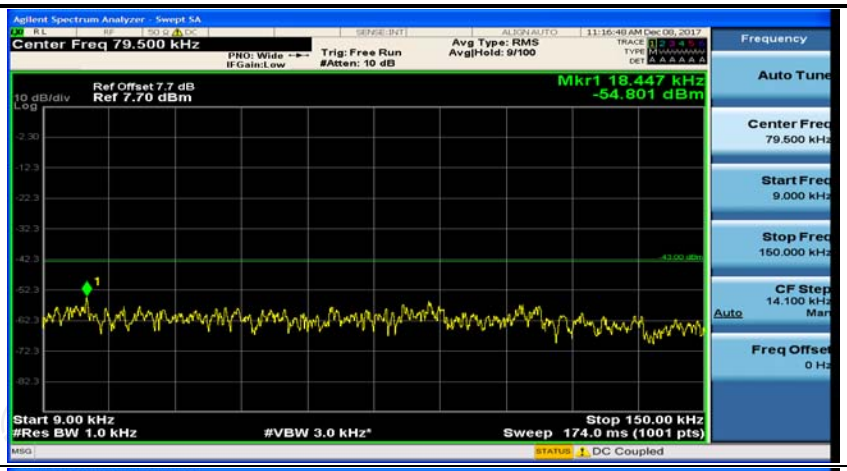


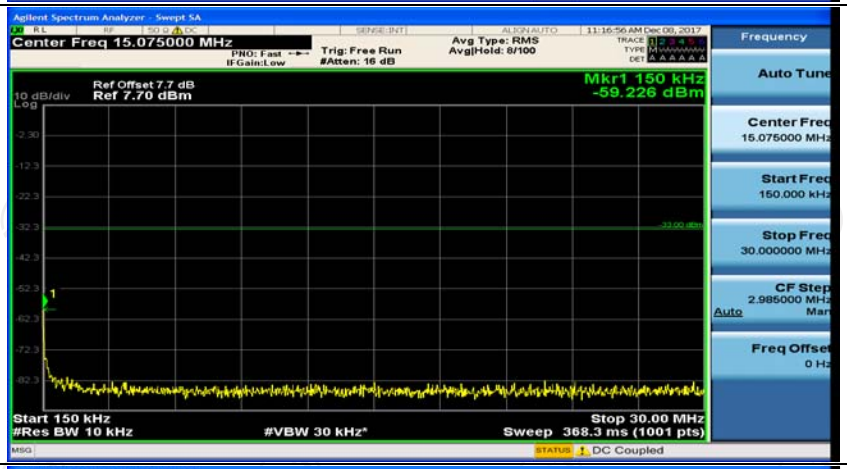
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49



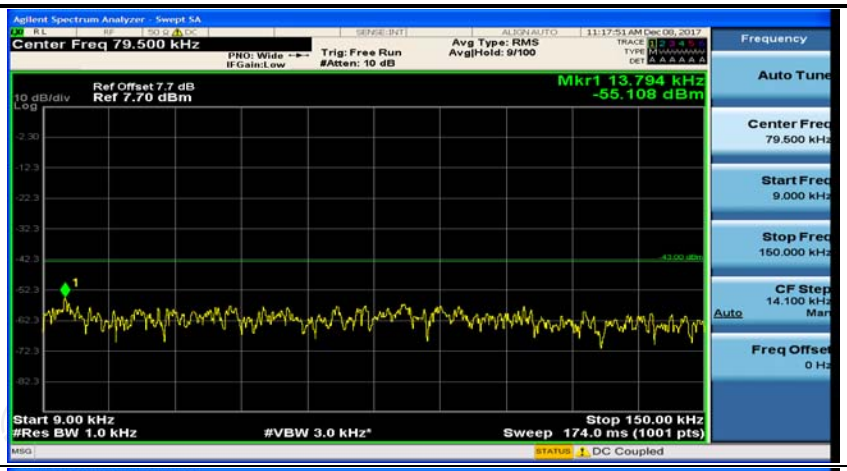


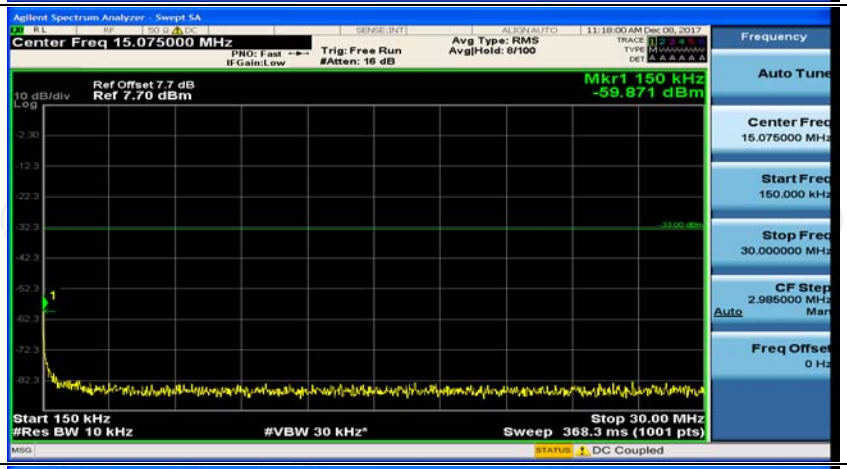
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99



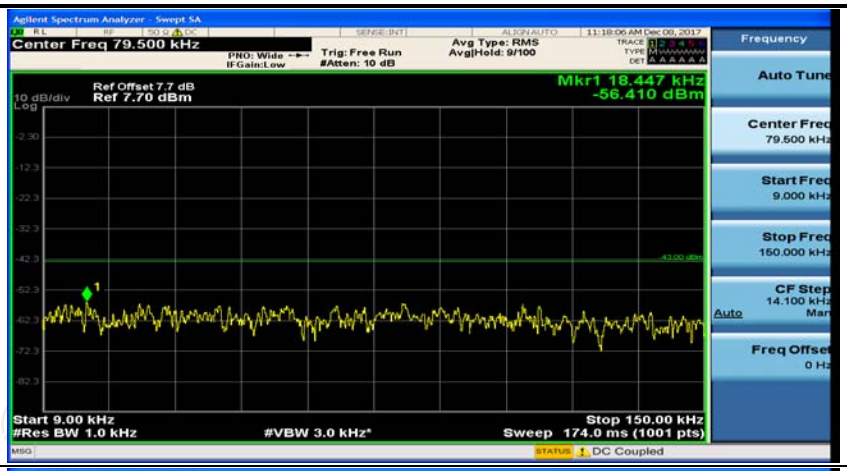


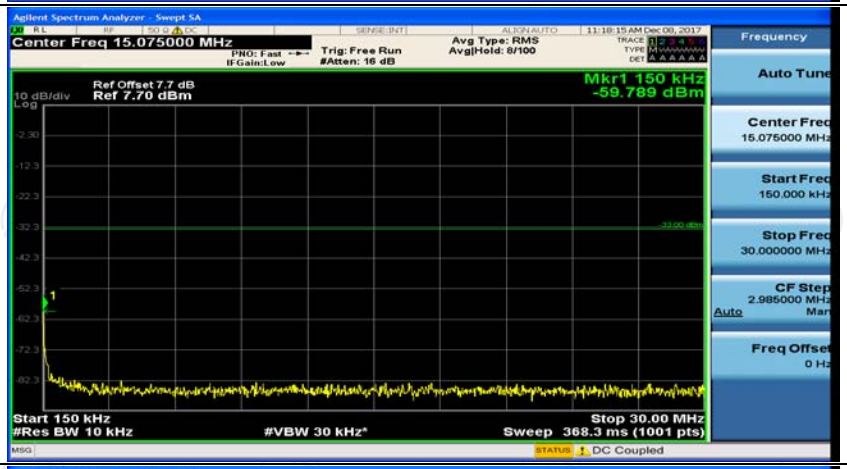
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



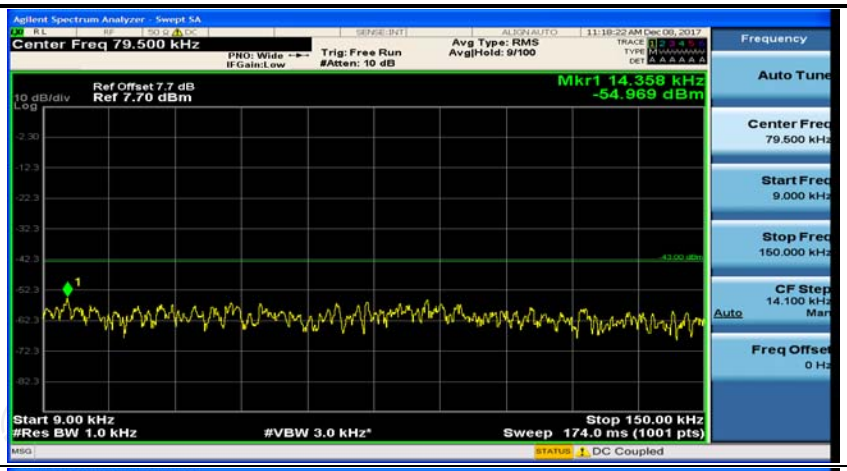


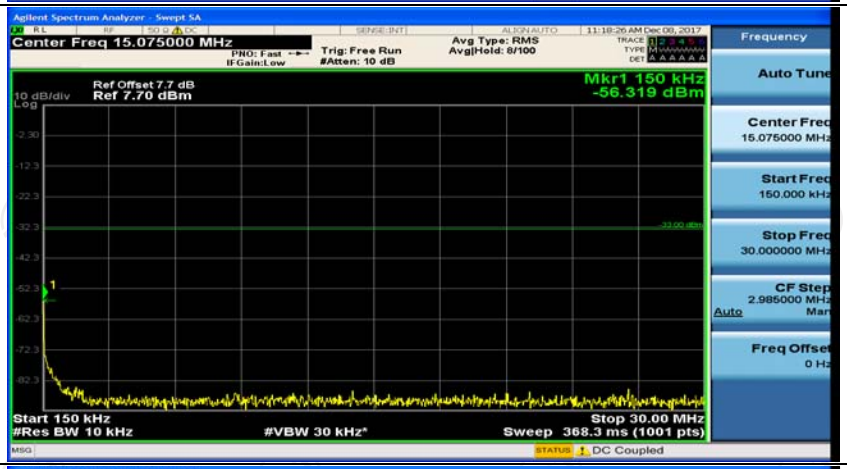
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49





(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99





Note: All bandwidth and modulation are tested, only the worst result is reported.

Appendix F: Frequency Stability

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz						
Voltage						
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	7.1	TN	-0.000632	± 2.5	PASS
		7.4	TN	-0.000626	± 2.5	PASS
		8.4	TN	-0.000657	± 2.5	PASS
	MCH	7.1	TN	0.000889	± 2.5	PASS
		7.4	TN	0.000767	± 2.5	PASS
		8.4	TN	0.000534	± 2.5	PASS
	HCH	7.1	TN	-0.001745	± 2.5	PASS
		7.4	TN	-0.001846	± 2.5	PASS
		8.4	TN	-0.001639	± 2.5	PASS
16QAM	LCH	7.1	TN	-0.001326	± 2.5	PASS
		7.4	TN	-0.001469	± 2.5	PASS
		8.4	TN	-0.001285	± 2.5	PASS
	MCH	7.1	TN	0.000009	± 2.5	PASS
		7.4	TN	0.000106	± 2.5	PASS
		8.4	TN	0.000124	± 2.5	PASS
	HCH	7.1	TN	-0.002255	± 2.5	PASS
		7.4	TN	-0.002234	± 2.5	PASS
		8.4	TN	-0.002263	± 2.5	PASS
Temperature						
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	0	-0.001112	± 2.5	PASS
		VN	10	-0.001465	± 2.5	PASS
		VN	20	-0.001098	± 2.5	PASS
		VN	30	-0.001152	± 2.5	PASS
		VN	40	-0.001105	± 2.5	PASS
		VN	45	-0.001445	± 2.5	PASS
	MCH	VN	0	0.000289	± 2.5	PASS
		VN	10	0.000567	± 2.5	PASS
		VN	20	0.000540	± 2.5	PASS
		VN	30	0.000783	± 2.5	PASS
		VN	40	0.000129	± 2.5	PASS
		VN	45	0.000296	± 2.5	PASS
	HCH	VN	0	-0.002475	± 2.5	PASS
		VN	10	-0.001633	± 2.5	PASS
		VN	20	-0.001704	± 2.5	PASS

		VN	30	-0.002242	± 2.5	PASS
		VN	40	-0.002459	± 2.5	PASS
		VN	45	-0.001622	± 2.5	PASS
16QAM	LCH	VN	0	-0.001235	± 2.5	PASS
		VN	10	-0.001476	± 2.5	PASS
		VN	20	-0.001585	± 2.5	PASS
		VN	30	-0.000719	± 2.5	PASS
		VN	40	-0.001252	± 2.5	PASS
		VN	45	-0.001422	± 2.5	PASS
	MCH	VN	0	-0.000189	± 2.5	PASS
		VN	10	-0.000396	± 2.5	PASS
		VN	20	-0.000091	± 2.5	PASS
		VN	30	-0.000502	± 2.5	PASS
		VN	40	-0.000243	± 2.5	PASS
		VN	45	-0.000030	± 2.5	PASS
	HCH	VN	0	-0.001362	± 2.5	PASS
		VN	10	-0.001746	± 2.5	PASS
		VN	20	-0.001988	± 2.5	PASS
		VN	30	-0.001734	± 2.5	PASS
		VN	40	-0.001823	± 2.5	PASS
		VN	45	-0.001651	± 2.5	PASS

Note: All bandwidth and modulation are tested, only the worst result is reported.

Appendix G :Field Strength of Spurious Radiation Measurement

Test Result

Bandwidth:	1.4M		Test channel:	Lowest
Modulation:	QPSK		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3701.4	Vertical	-39.42	-13.00	PASS
5552.1	V	-44.64		
-	V	-		
3701.4	Horizontal	-43.55		
5552.1	H	-40.98		
-	H	-		
Bandwidth:	1.4M		Test channel:	Middle
Modulation:	QPSK		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3765	Vertical	-43.10	-13.00	PASS
5647.5	V	-42.63		
-	V	-		
3765	Horizontal	-44.55		
5647.5	H	-43.42		
-	H	-		
Bandwidth:	1.4M		Test channel:	Highest
Modulation:	QPSK		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3828.6	Vertical	-41.80	-13.00	PASS
5742.9	V	-44.31		
-	V	-		
3828.6	Horizontal	-43.67		
5742.9	H	-42.72		
-	H	-		

Bandwidth:	1.4M		Test channel:	Lowest
Modulation:	16QAM		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3701.4	Vertical	-41.48	-13.00	PASS
5552.1	V	-45.63		
-	V	-		
3701.4	Horizontal	-42.92		
5552.1	H	-44.64		
-	H	-		
Bandwidth:	1.4M		Test channel:	Middle
Modulation:	16QAM		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3765	Vertical	-42.42	-13.00	PASS
5647.5	V	-44.52		
-	V	-		
3765	Horizontal	-41.89		
5647.5	H	-44.37		
-	H	-		
Bandwidth:	1.4M		Test channel:	Highest
Modulation:	16QAM		Temperature :	23~24°C
RB #:	1RB #0		Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3828.6	Vertical	-42.74	-13.00	PASS
5742.9	V	-43.48		
-	V	-		
3828.6	Horizontal	-43.51		
5742.9	H	-43.92		
-	H	-		

Note: All bandwidth and modulation are tested, only the worst result is reported.