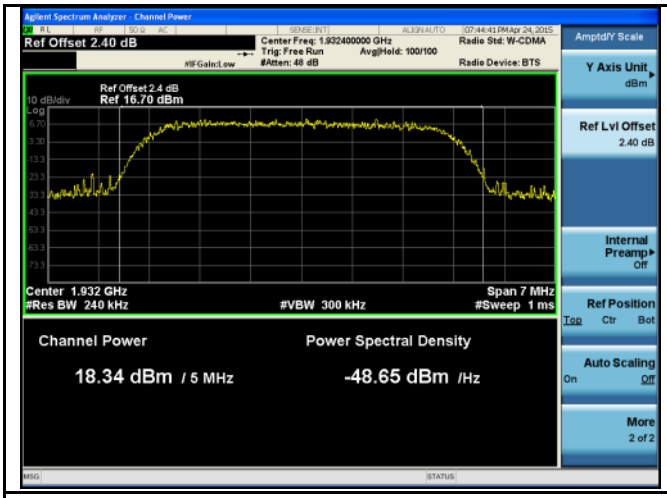
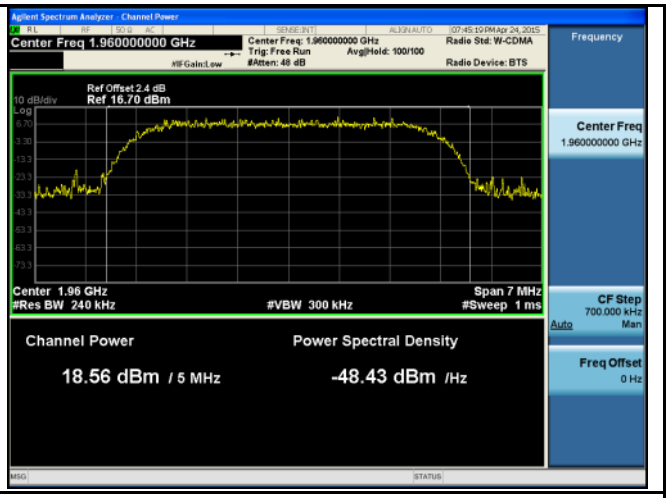
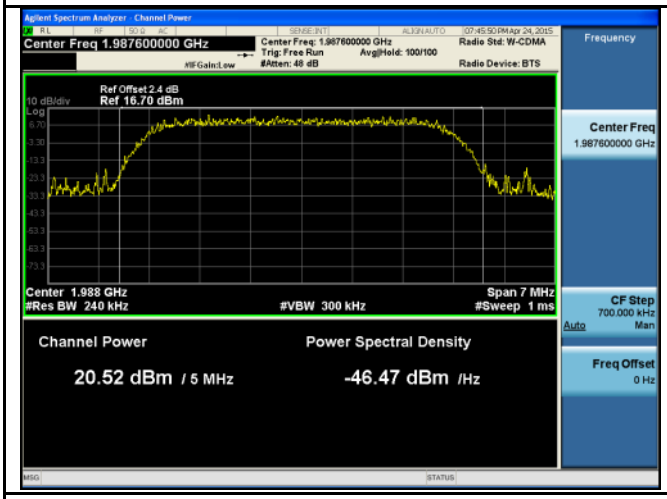
Test Plots for UMTS Band 2



PWR-Band2-QPSK-Low CH

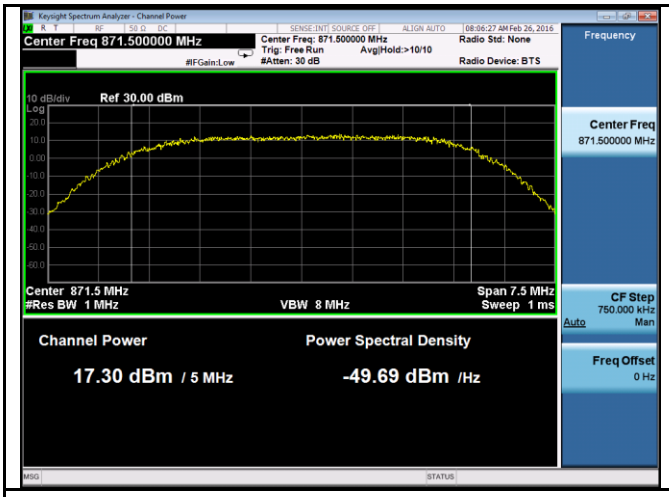


PWR-Band2-QPSK-Mid CH

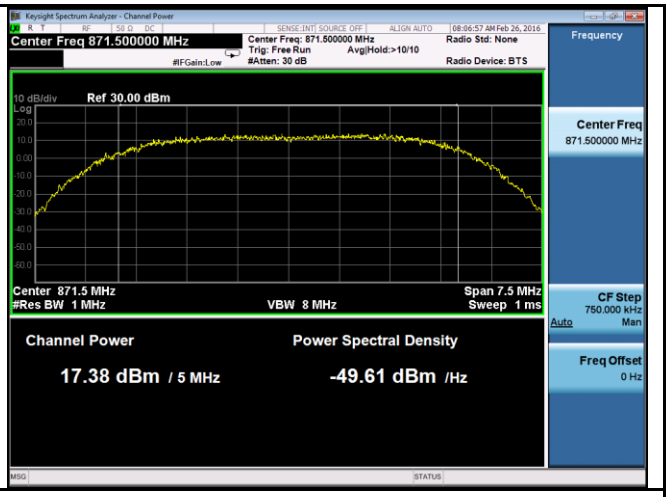


PWR-Band2-QPSK--High CH

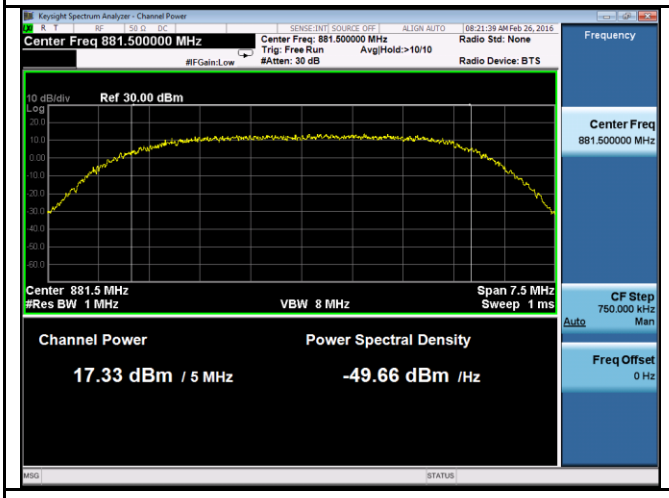
Test Plots for Band 5-QPSK-5MHz



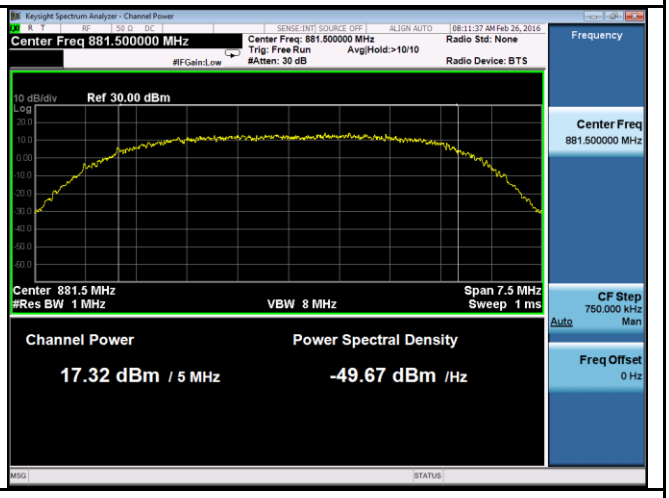
PWR-Band5-QPSK-5M BW-Low CH-Port1



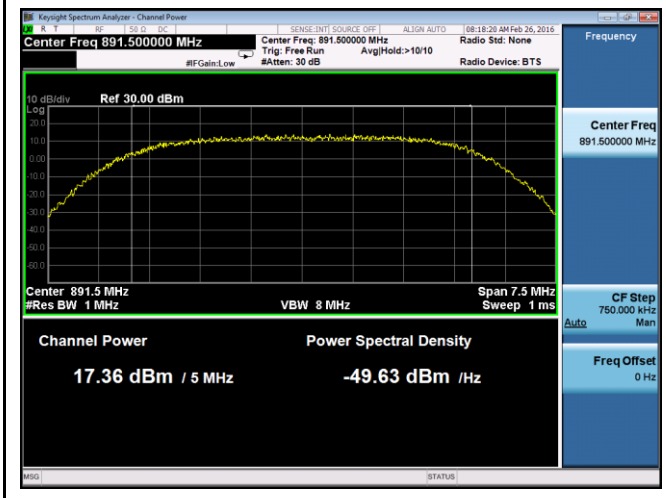
PWR- Band5-QPSK-5M BW-Low CH-Port2



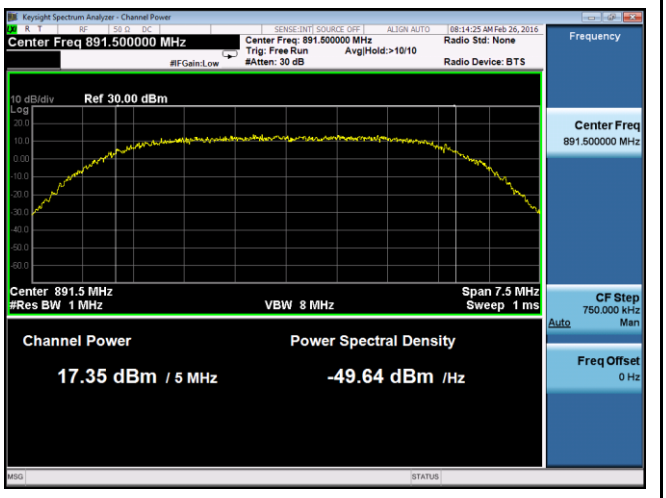
PWR- Band5-QPSK-5M BW-Mid CH-Port1



PWR- Band5-QPSK-5M BW-Mid CH-Port2



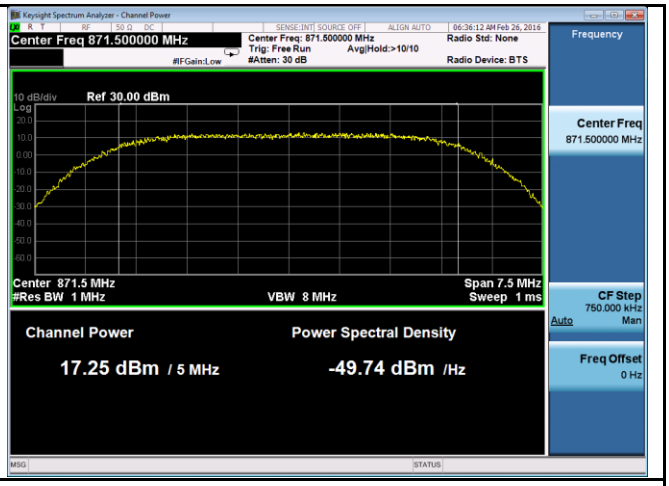
PWR- Band5-QPSK-5M BW-High CH-Port1



PWR- Band5-QPSK-5M BW-High CH-Port2

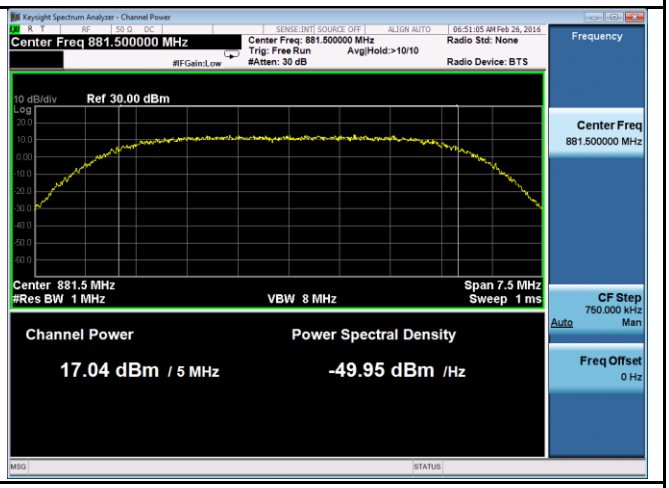
Test Plots for Band 5-64QAM-5MHz

PWR- Band5-64QAM-5M BW-Low CH-Port1

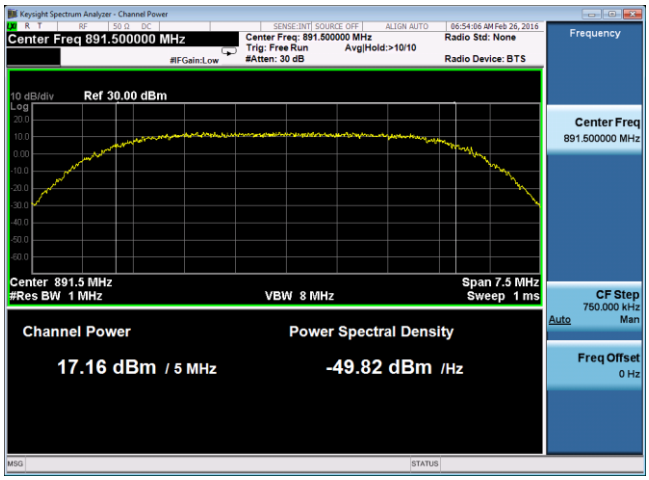


PWR- Band5-64QAM-5M BW-Low CH-Port2

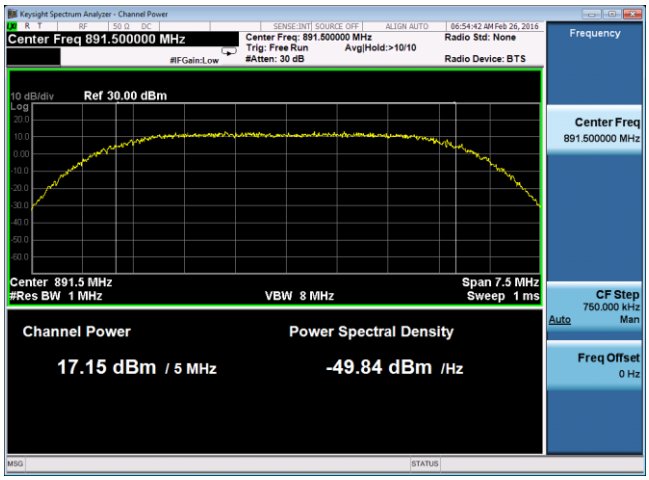
PWR- Band5-64QAM-5M BW-Mid CH-Port1



PWR- Band5-64QAM-5M BW-Mid CH-Port2

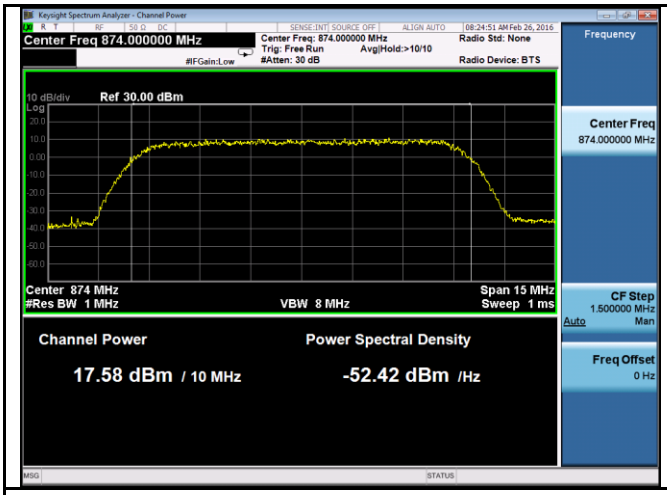


PWR- Band5-64QAM-5M BW-High CH-Port1

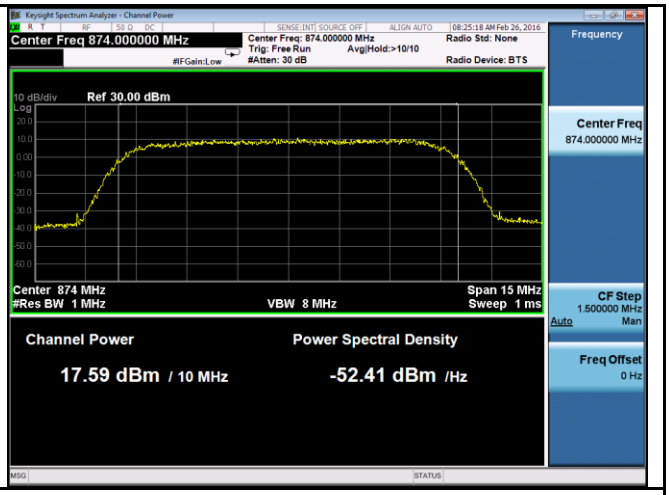


PWR- Band5-64QAM-5M BW-High CH-Port2

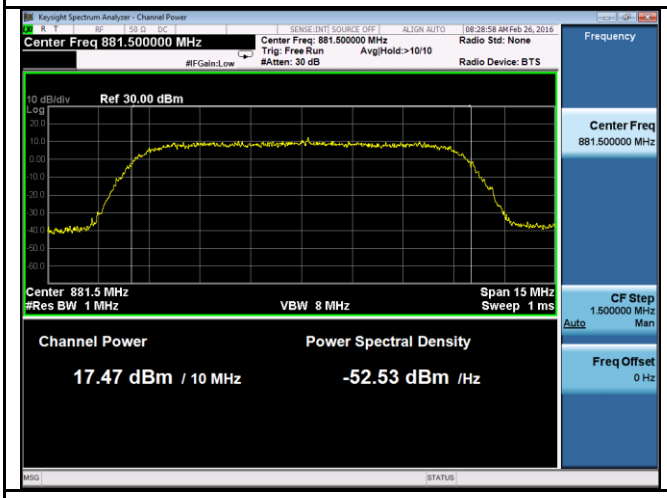
Test Plots for Band 5-QPSK-10MHz



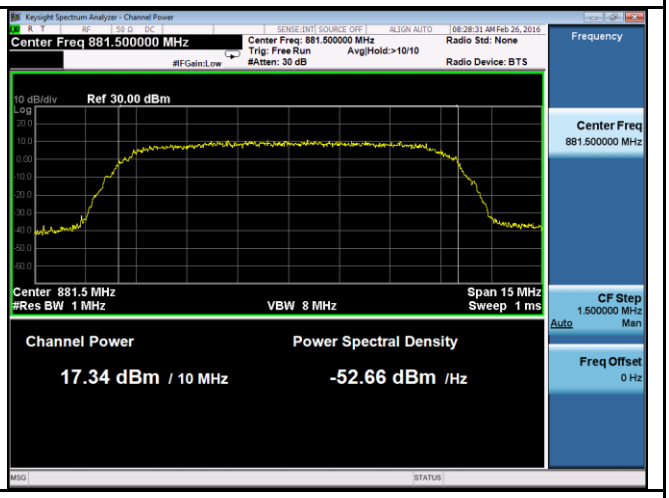
PWR- Band5-QPSK-10M BW-Low CH-Port1



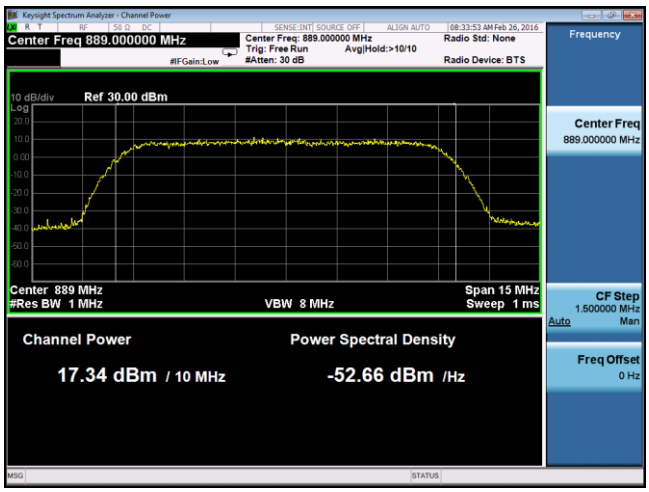
PWR- Band5-QPSK-10M BW-Low CH-Port2



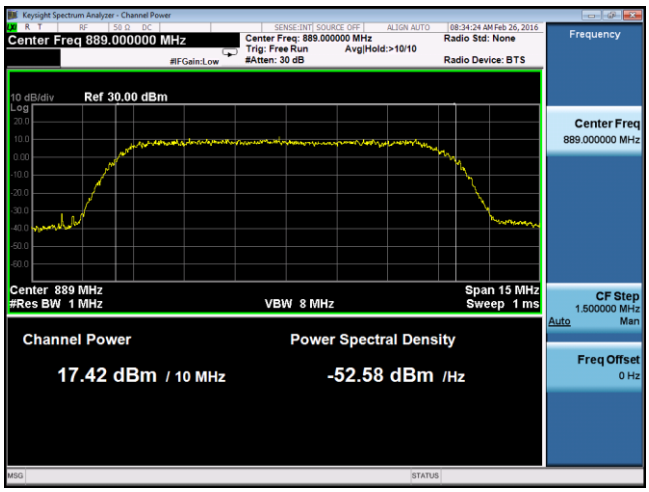
PWR- Band5-QPSK-10M BW-Mid CH-Port1



PWR- Band5-QPSK-10M BW-Mid CH-Port2

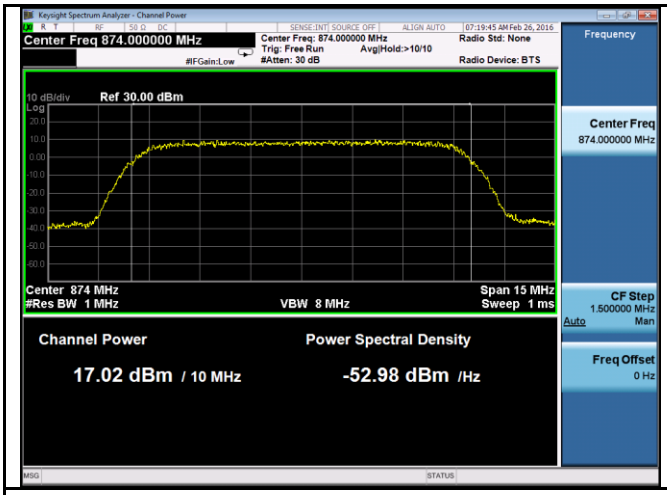


PWR- Band5-QPSK-10M BW-High CH-Port1

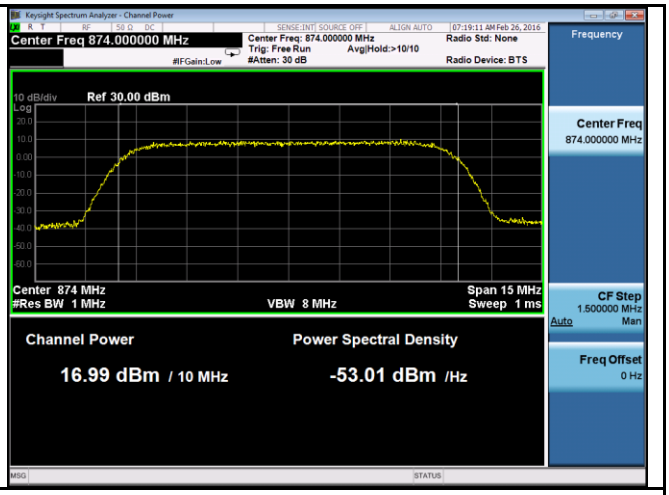


PWR- Band5-QPSK-10M BW-High CH-Port2

Test Plots for Band 5-64QAM-10MHz

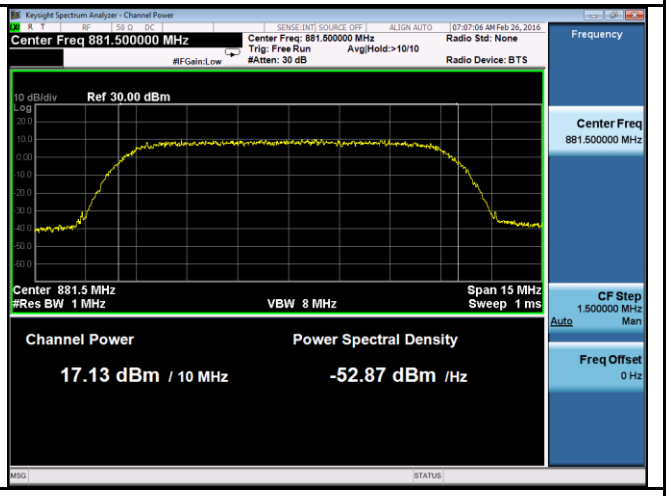


PWR- Band5-64QAM-10M BW-Low CH-Port1

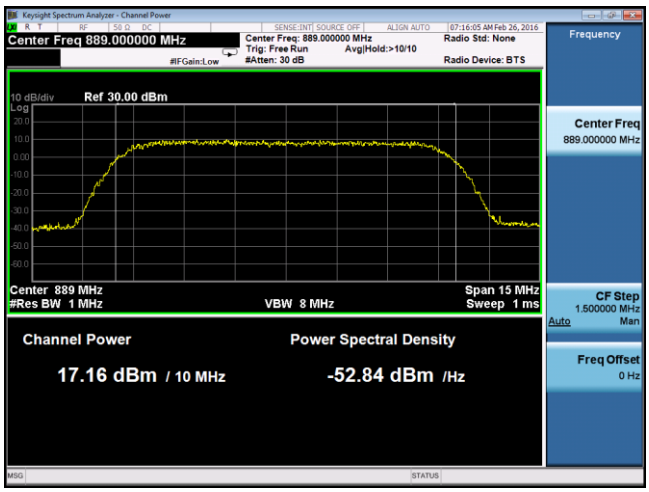


PWR- Band5-64QAM-10M BW-Low CH-Port2

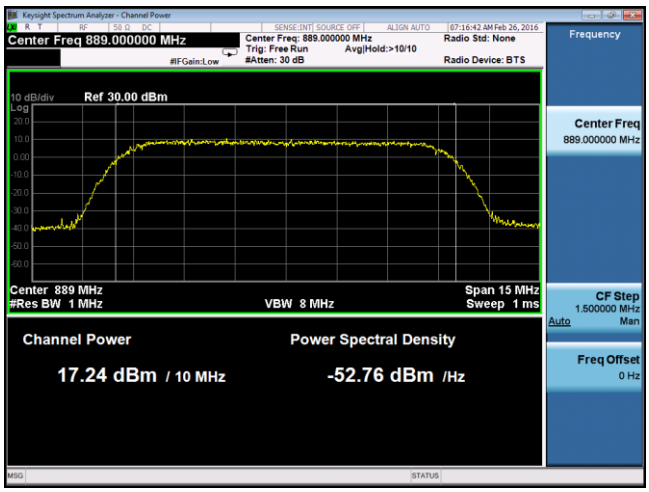
PWR- Band5-64QAM-10M BW-Mid CH-Port1



PWR- Band5-64QAM-10M BW-Mid CH-Port2

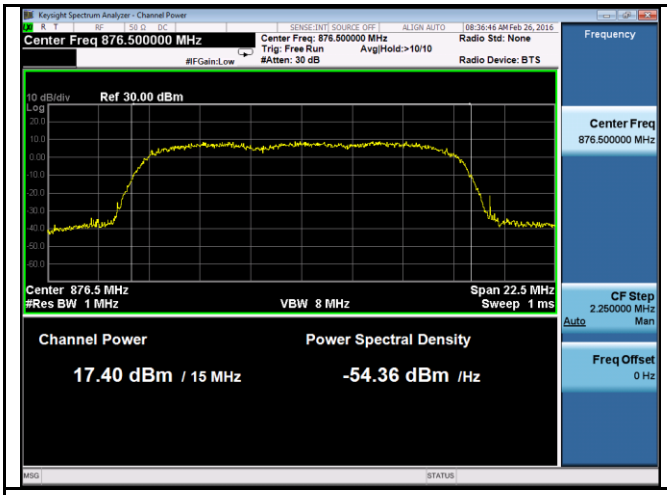


PWR- Band5-64QAM-10M BW-High CH-Port1

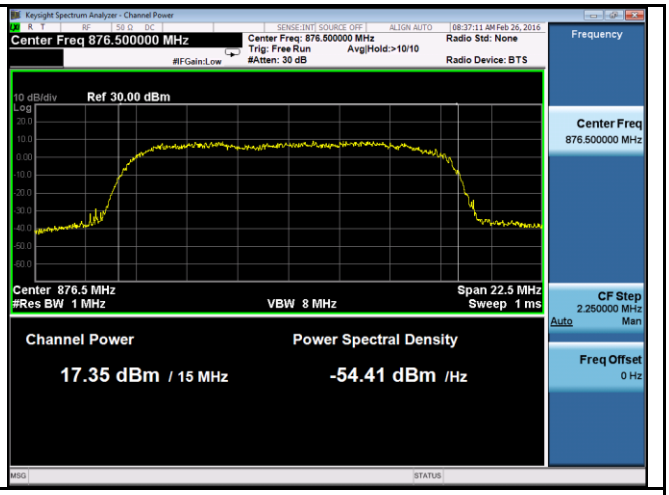


PWR- Band5-64QAM-10M BW-High CH-Port2

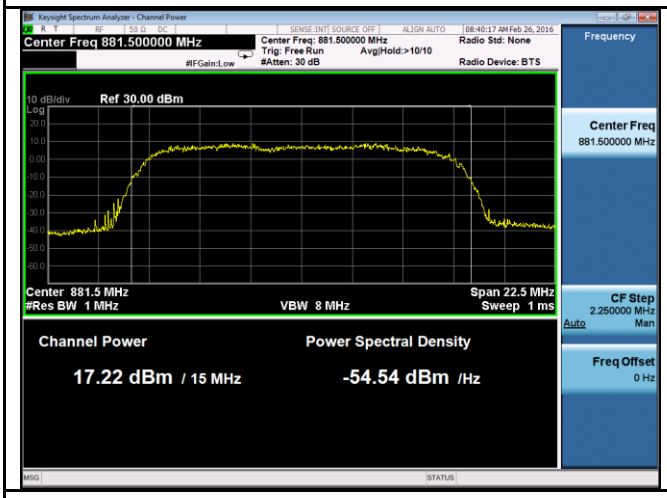
Test Plots for Band 5-QPSK-15MHz



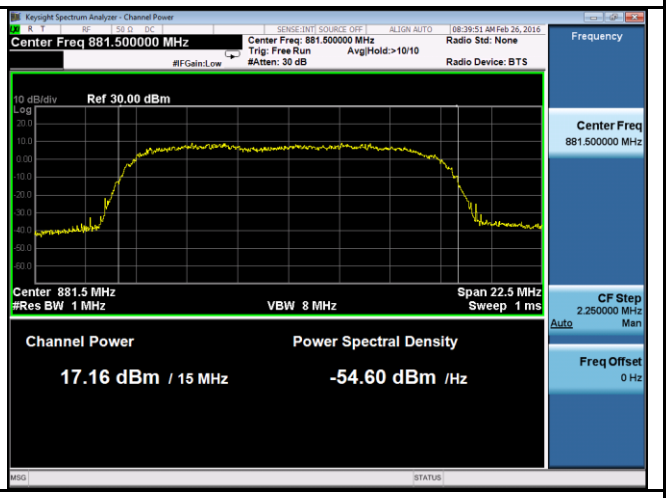
PWR- Band5-QPSK-15M BW-Low CH-Port1



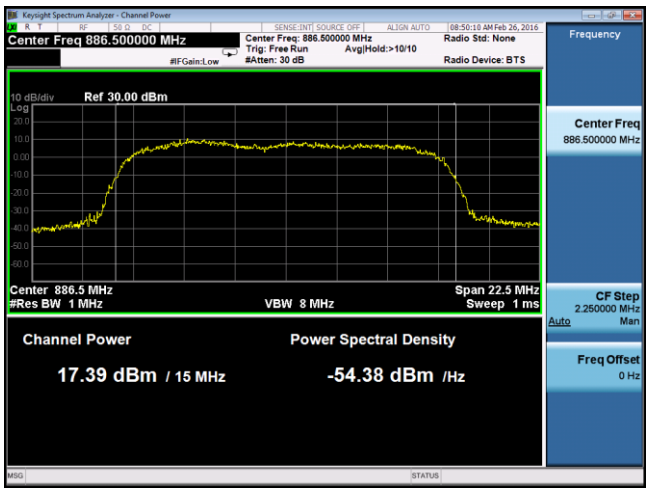
PWR- Band5-QPSK-15M BW-Low CH-Port2



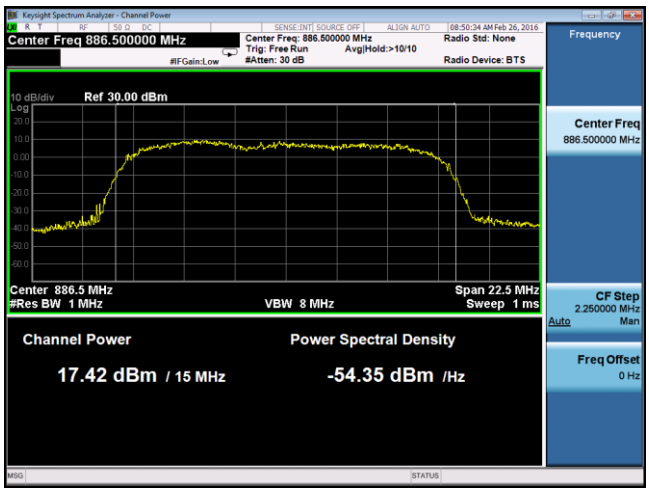
PWR- Band5-QPSK-15M BW-Mid CH-Port1



PWR- Band5-QPSK-15M BW-Mid CH-Port2

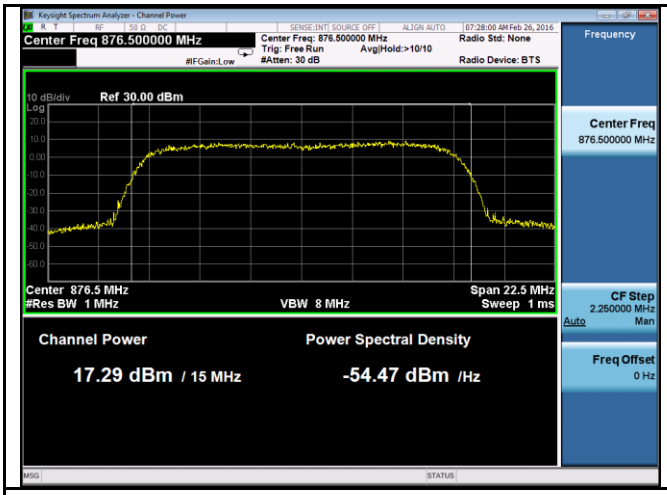


PWR- Band5-QPSK-15M BW-High CH-Port1

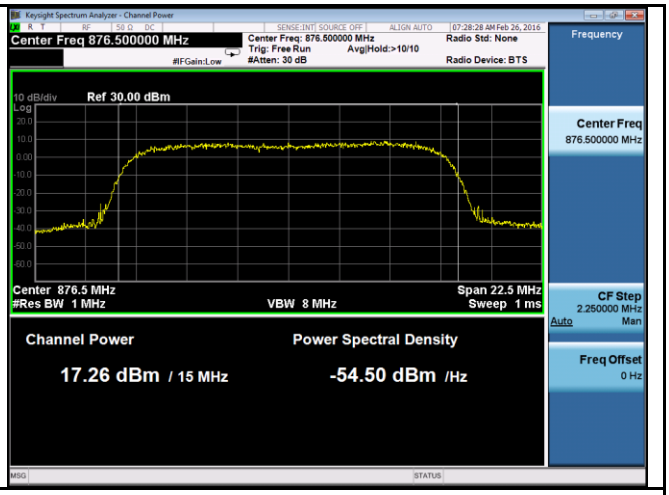


PWR- Band5-QPSK-15M BW-High CH-Port2

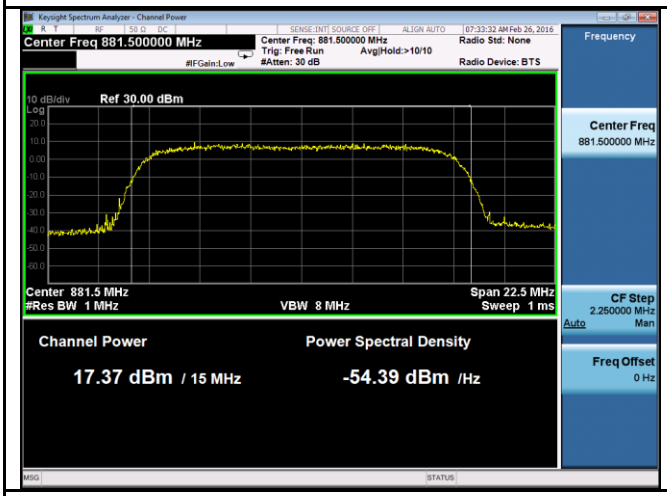
Test Plots for Band 5-64QAM-15MHz



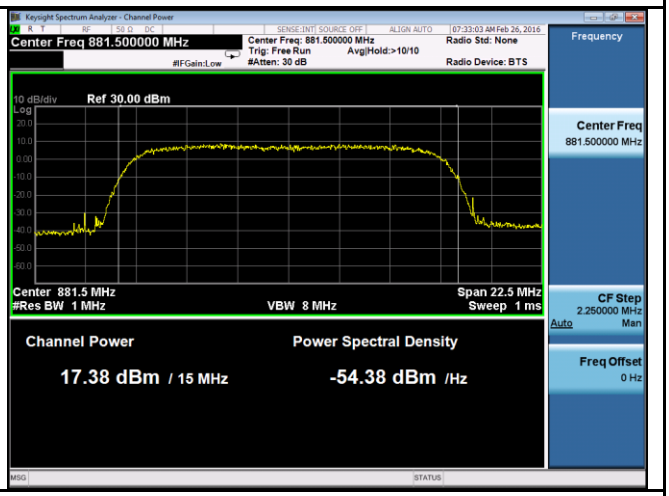
PWR- Band5-64QAM-15M BW-Low CH-Port1



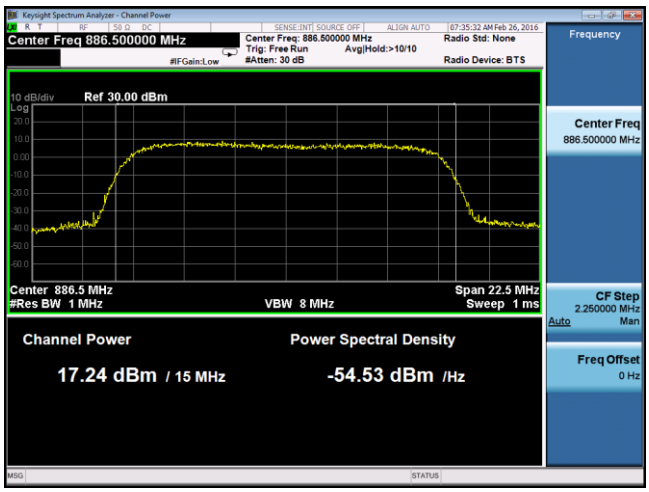
PWR- Band5-64QAM-15M BW-Low CH-Port2



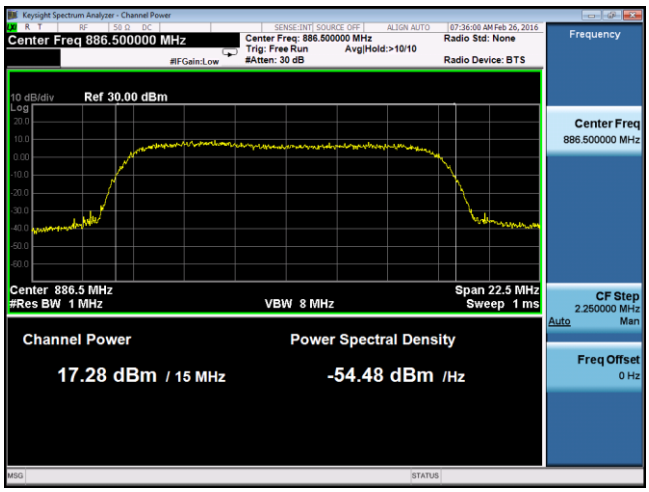
PWR- Band5-64QAM-15M BW-Mid CH-Port1



PWR- Band5-64QAM-15M BW-Mid CH-Port2

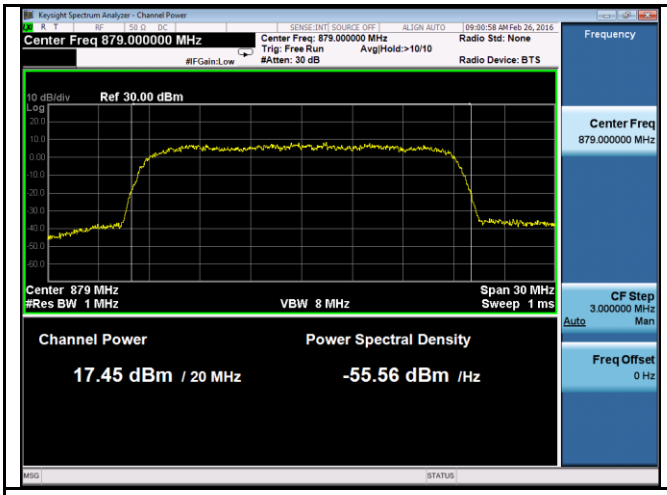


PWR- Band5-64QAM-15M BW-High CH-Port1

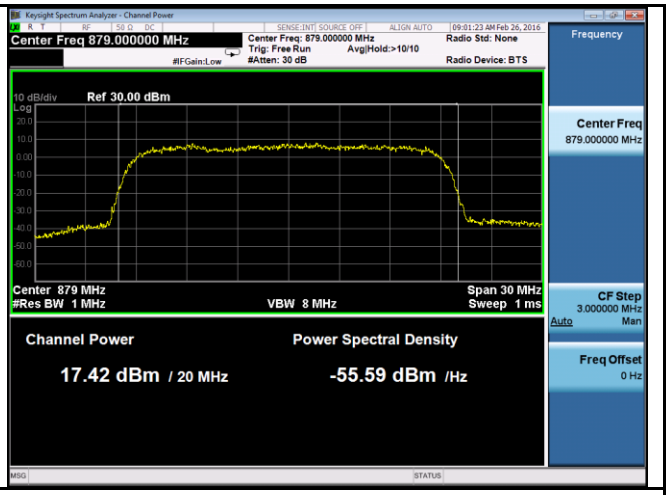


PWR- Band5-64QAM-15M BW-High CH-Port2

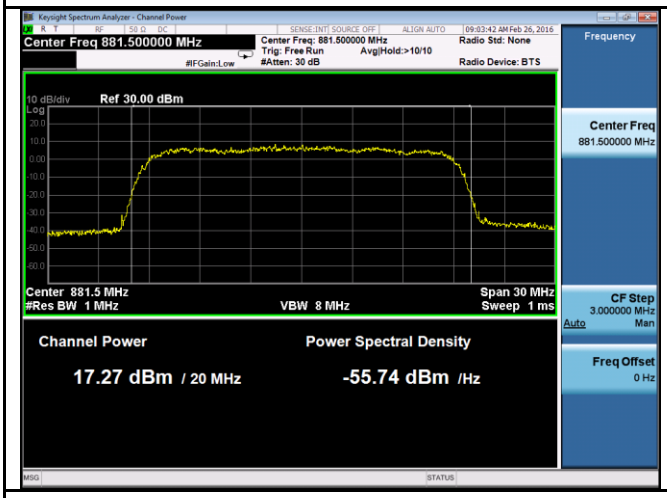
Test Plots for Band 5-QPSK-20MHz



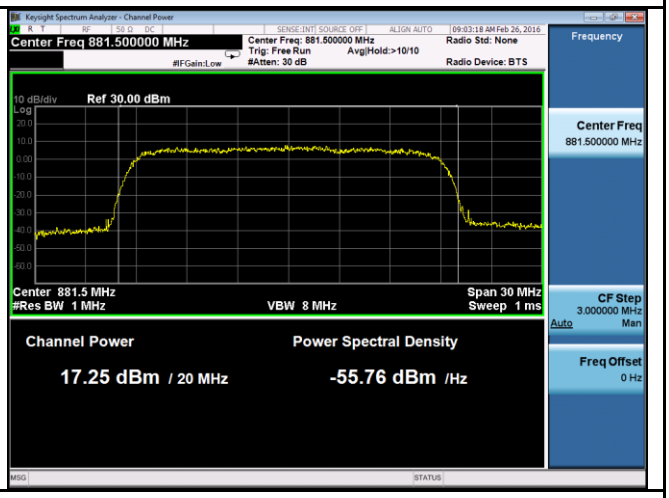
PWR-Band5-QPSK-20M BW-Low CH-Port1



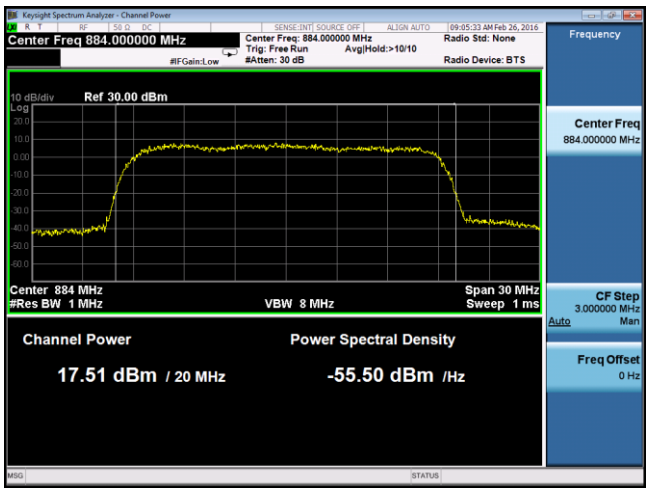
PWR- Band5-QPSK-20M BW-Low CH-Port2



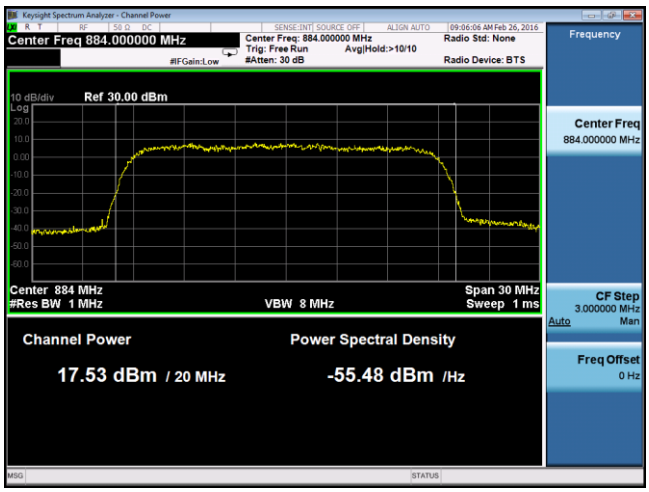
PWR- Band5-QPSK-20M BW-Mid CH-Port1



PWR- Band5-QPSK-20M BW-Mid CH-Port2

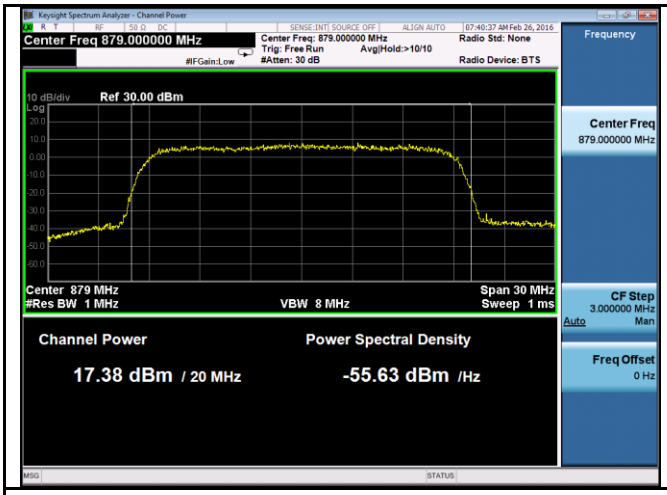


PWR- Band5-QPSK-20M BW-High CH-Port1

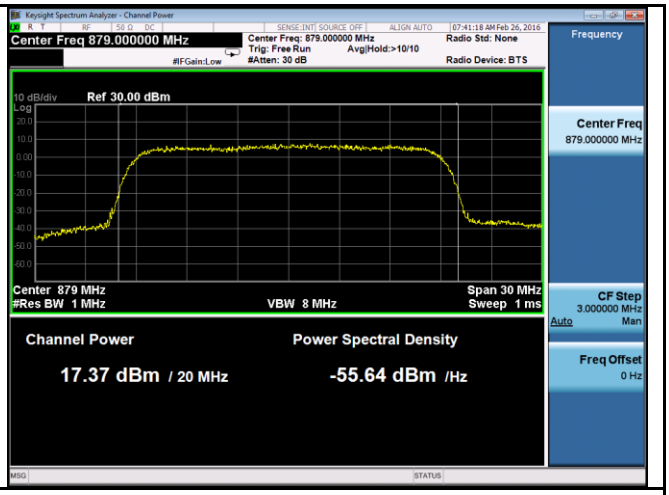


PWR- Band5-QPSK-20M BW-High CH-Port2

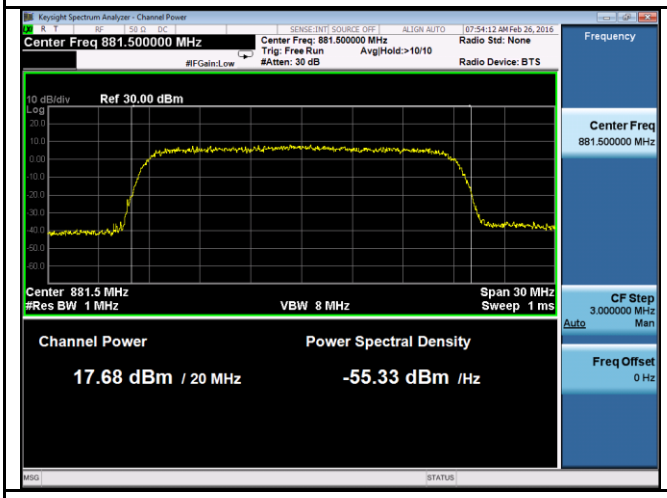
Test Plots for Band 5-64QAM-20MHz



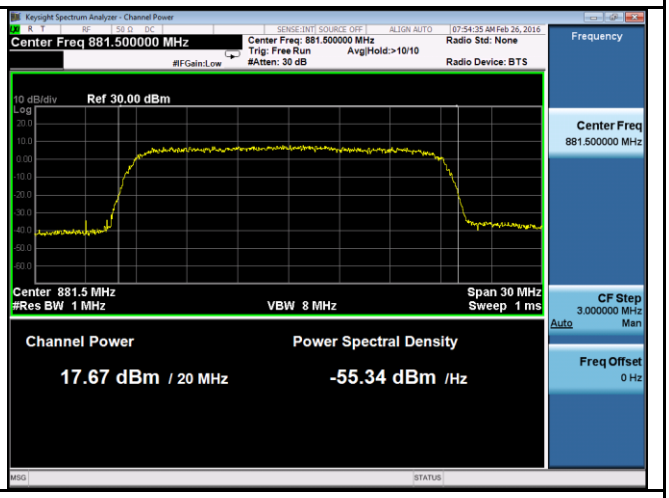
PWR- Band5-64QAM-20M BW-Low CH-Port1



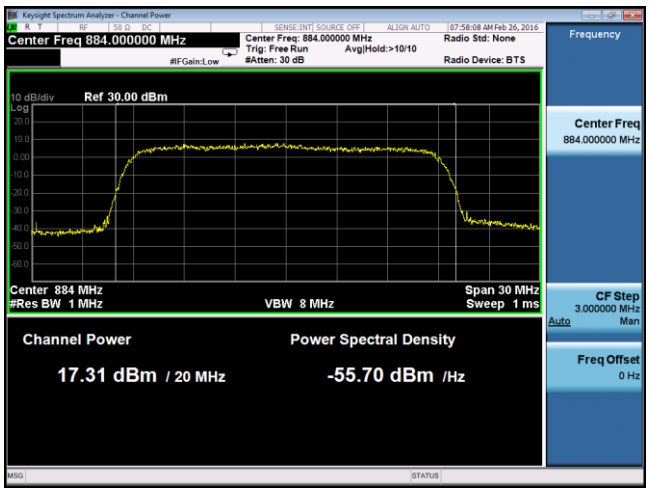
PWR- Band5-64QAM-20M BW-Low CH-Port2



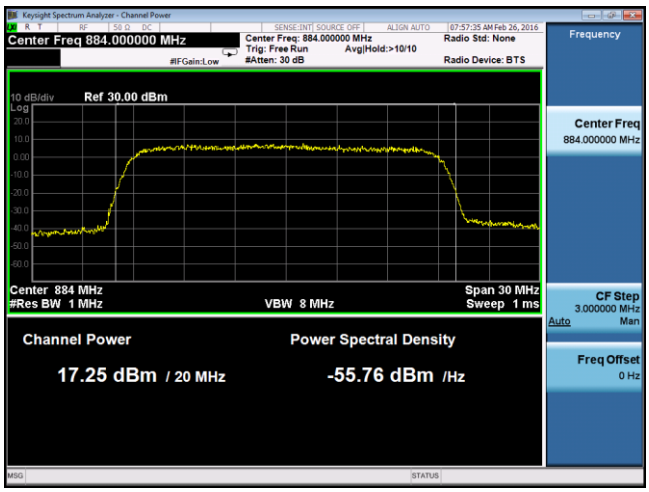
PWR- Band5-64QAM-20M BW-Mid CH-Port1



PWR- Band5-64QAM-20M BW-Mid CH-Port2

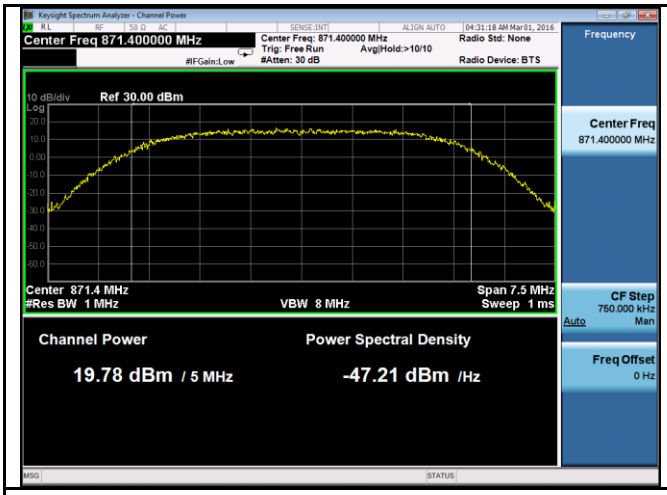


PWR- Band5-64QAM-20M BW-High CH-Port1

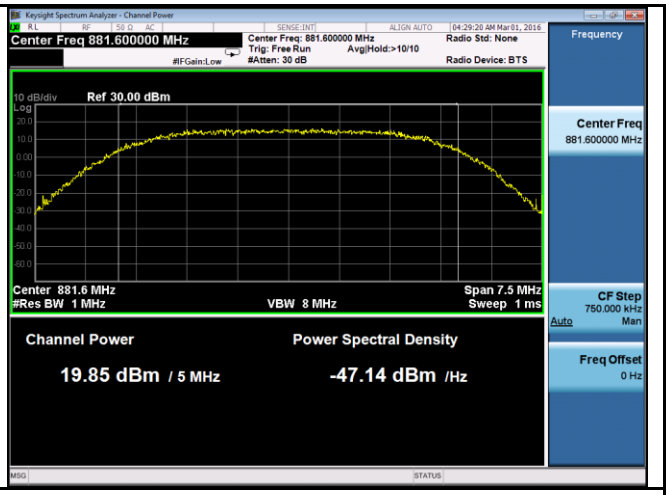


PWR- Band5-64QAM-20M BW-High CH-Port2

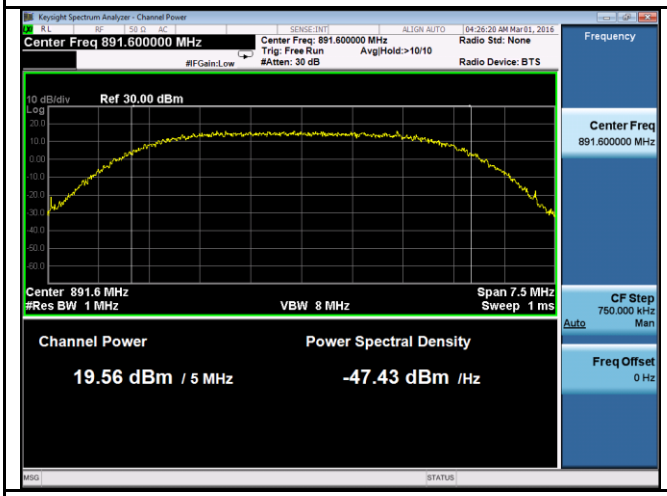
Test Plots for UMTS Band 5



PWR-Band5-QPSK-Low CH



PWR- Band5-QPSK-Mid CH

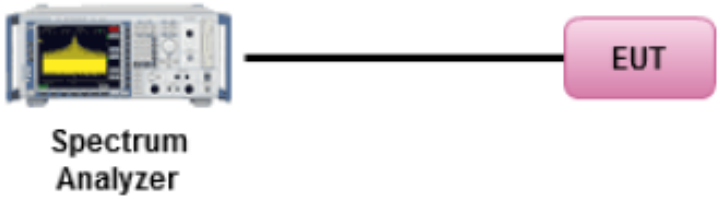


PWR- Band5-QPSK--High CH

10.2 Peak-Average Ratio

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR27.50	(b)	The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.	☒
47CFR24.232	(d)	Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.	☒

Test Setup			
Test Procedure	- EUT was set for low, mid, high channel with modulated mode and highest RF output power. - The spectrum analyzer was connected to the antenna terminal.		
Test Date	10/26/2015 – 11/02/2015 02/15/2016 - 02/29/2016	Environmental condition	Temperature 23°C Relative Humidity 48% Atmospheric Pressure 1008mbar
Remark	NONE		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by *Chen Ge* at *RF test site*.

Test Data for LTE band 2 (QPSK is the worst case)

Type	Channel	Frequency (MHz)	Peak-Average Ratio (dB)	Peak-Average Ratio (dB)
5MHz BW, QPSK	Low	1932.5	9.79	13
	Mid	1960.0	9.79	13
	High	1987.5	9.83	13
10MHz BW, QPSK	Low	1935.0	10.06	13
	Mid	1960.0	10.06	13
	High	1985.0	10.05	13
15MHz BW, QPSK	Low	1937.5	9.90	13
	Mid	1960.0	9.93	13
	High	1982.5	9.92	13
20MHz BW, QPSK	Low	1940.0	9.90	13
	Mid	1960.0	9.89	13
	High	1980.0	9.84	13

Test Data for WCDMA band 2

Type	Channel	Frequency (MHz)	Peak-Average Ratio (dB)	Peak-Average Ratio (dB)
3.84MHz BW, QPSK	Low	1932.4	8.11	13
	Mid	1960.0	8.76	13
	High	1987.6	8.20	13

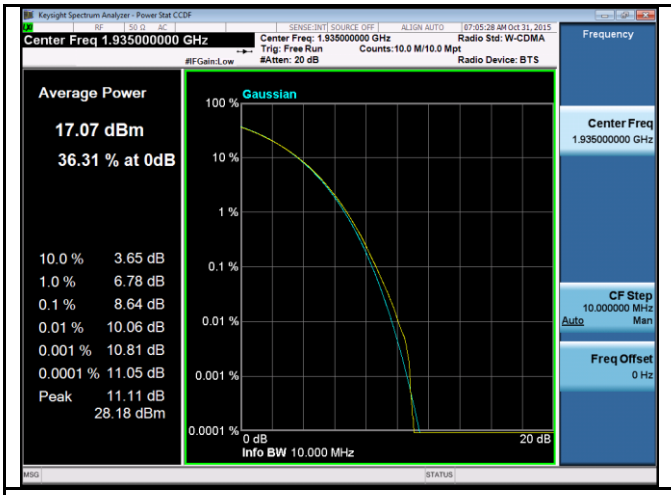
Test Data for LTE band 5 (QPSK is the worst case)

Type	Channel	Frequency (MHz)	Peak-Average Ratio (dB)	Peak-Average Ratio (dB)
5MHz BW, QPSK	Low	871.5	9.87	13
	Mid	881.5	9.84	13
	High	891.5	9.81	13
10MHz BW, QPSK	Low	874.0	9.80	13
	Mid	881.5	9.99	13
	High	889.0	9.74	13
15MHz BW, QPSK	Low	876.5	10.05	13
	Mid	881.5	10.04	13
	High	886.5	9.81	13
20MHz BW, QPSK	Low	879.0	9.93	13
	Mid	881.5	9.99	13
	High	884.0	9.88	13

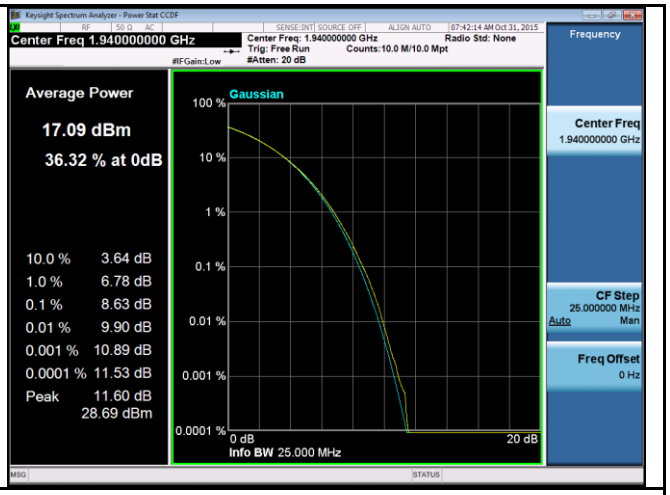
Test Data for WCDMA band 5

Type	Channel	Frequency (MHz)	Peak-Average Ratio (dB)	Peak-Average Ratio (dB)
3.84MHz BW, QPSK	Low	871.4	8.09	13
	Mid	881.6	8.09	13
	High	891.6	7.94	13

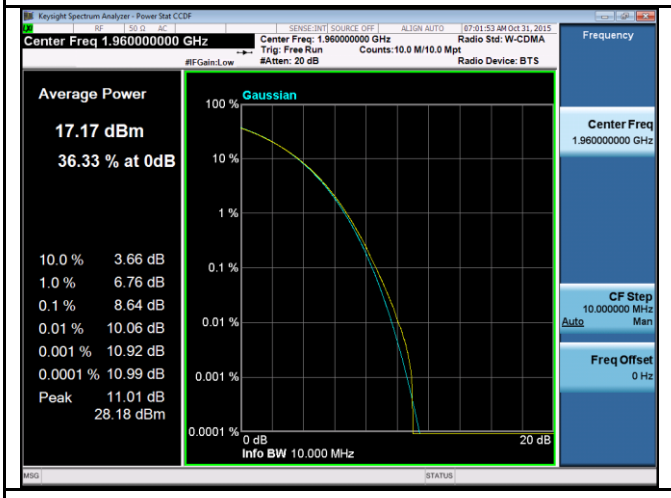
Test Plots for LTE Band 2:



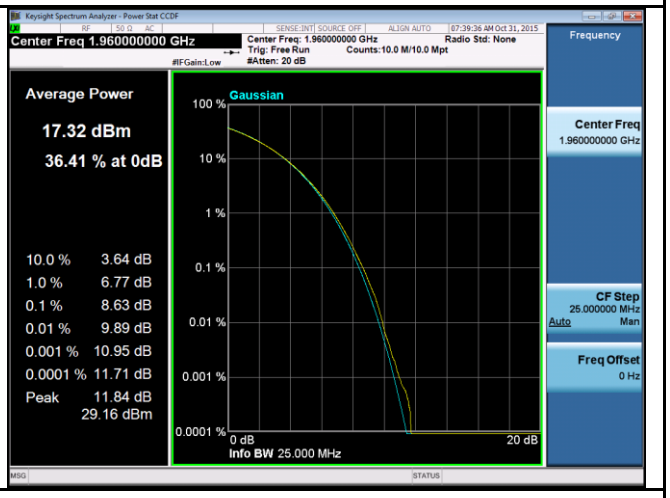
PK-AV-Ratio-Band2-QPSK-10M BW-Low



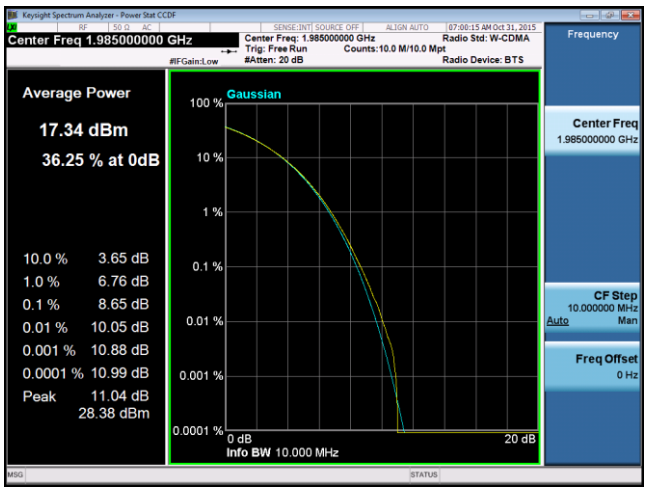
PK-AV-Ratio- Band2-QPSK-20M BW-Low



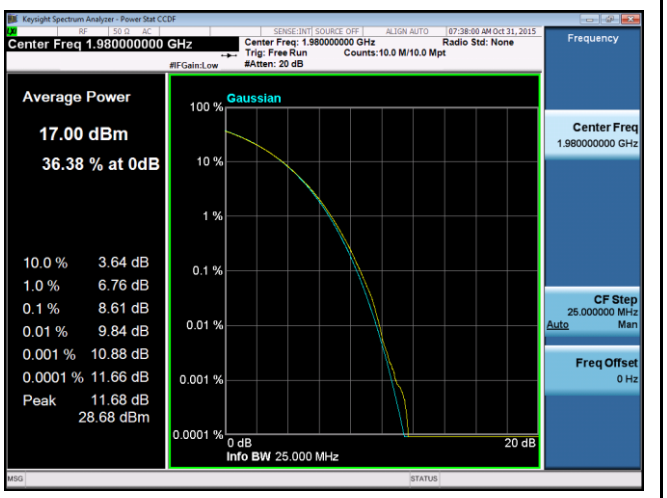
PK-AV-Ratio- Band2-QPSK-10M BW-Mid



PK-AV-Ratio- Band2-QPSK-20M BW-Mid



PK-AV-Ratio- Band2-QPSK-10M BW-High



PK-AV-Ratio- Band2-QPSK-20M BW-High