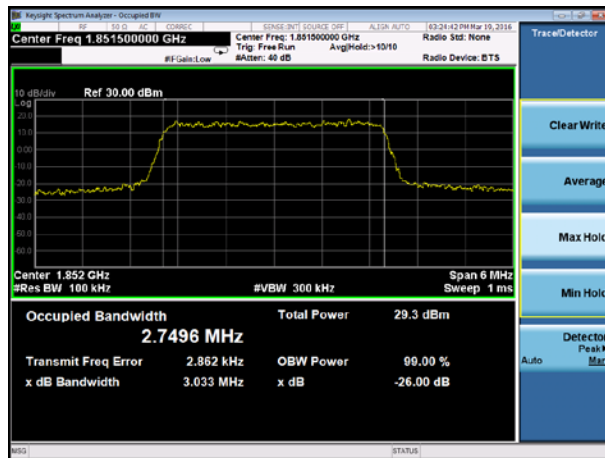
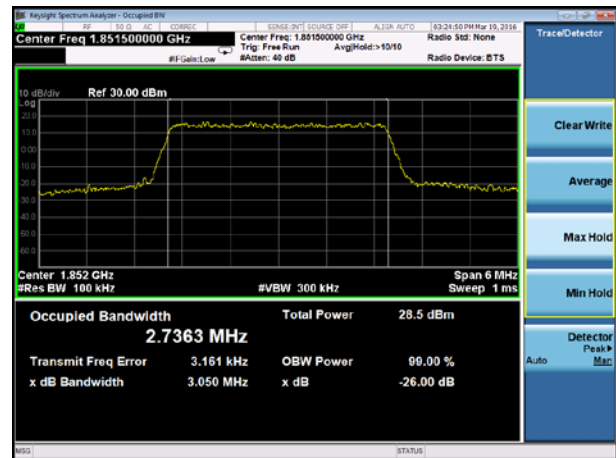




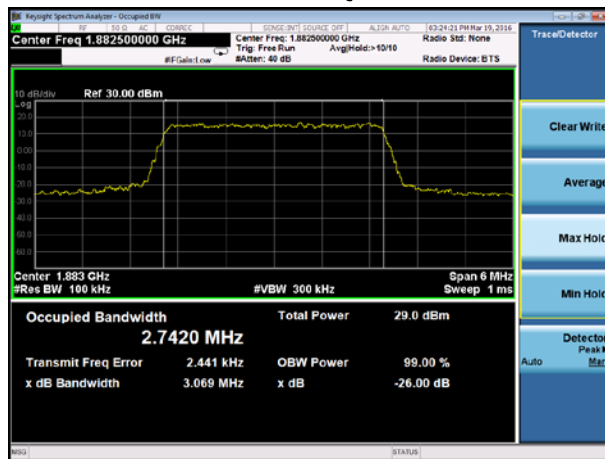
LTE Band 25 3MHz QPSK CH26055



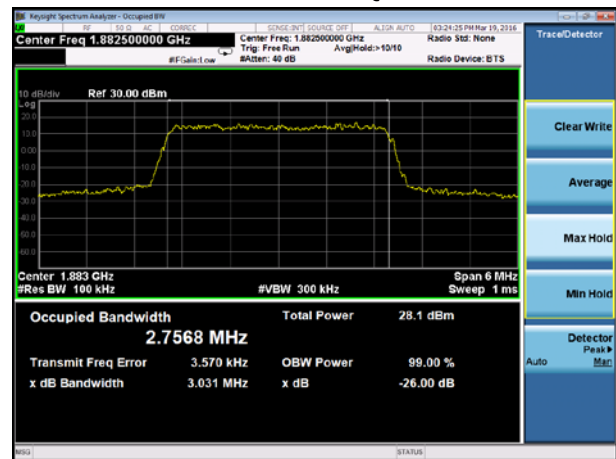
LTE Band 25 3MHz 16QAM CH26055



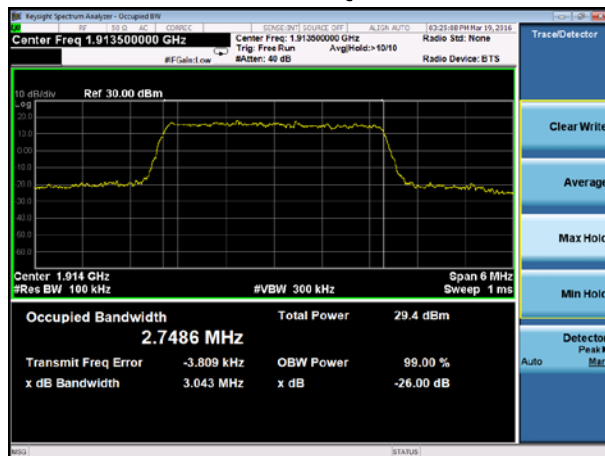
LTE Band 25 3MHz QPSK CH26365



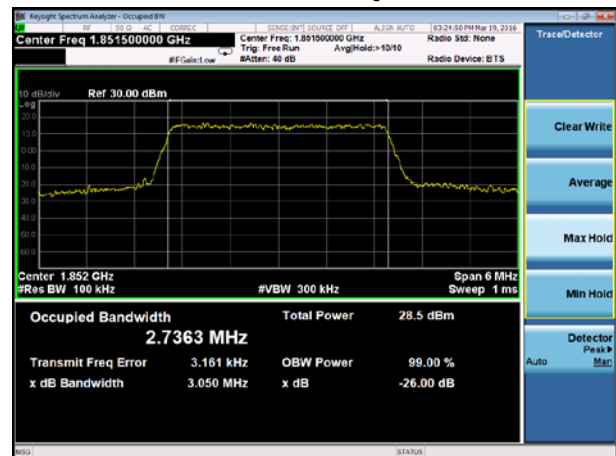
LTE Band 25 3MHz 16QAM CH26365



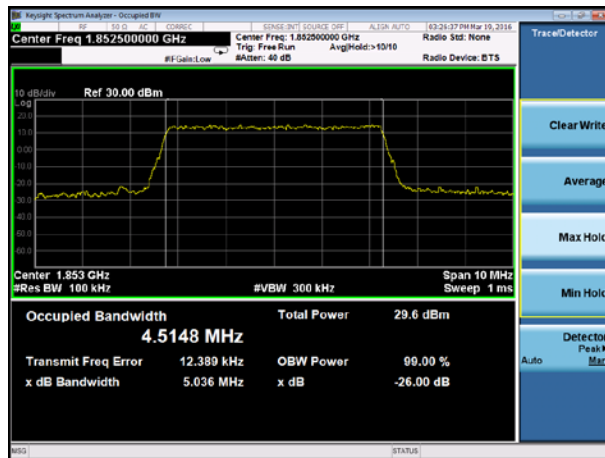
LTE Band 25 3MHz QPSK CH26675



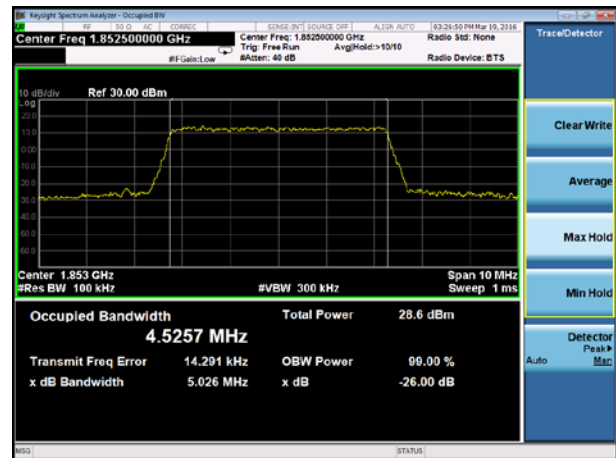
LTE Band 25 3MHz 16QAM CH26675



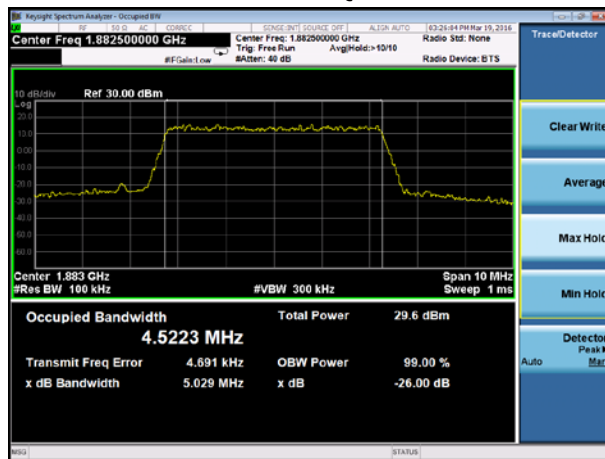
LTE Band 25 5MHz QPSK CH26065



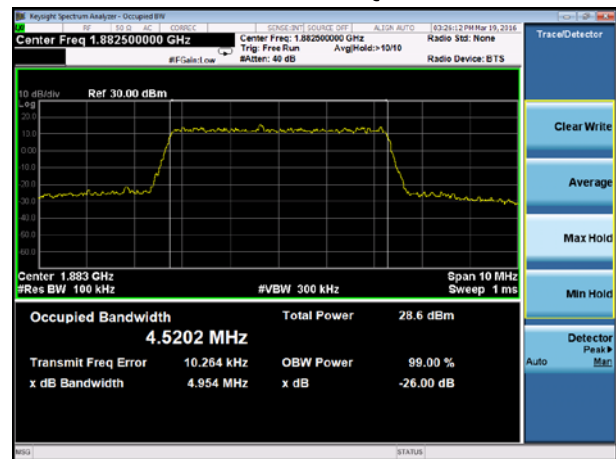
LTE Band 25 5MHz 16QAM CH26065



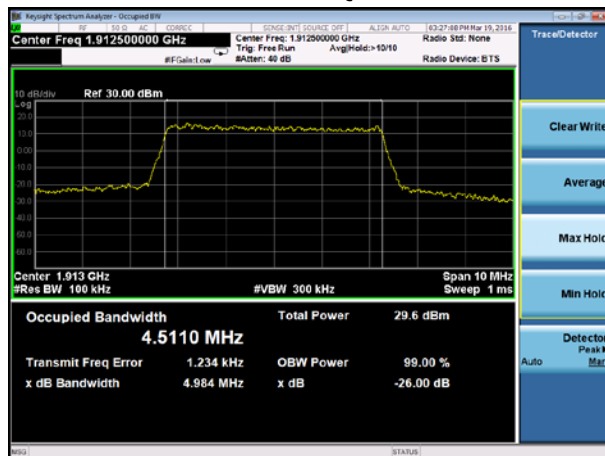
LTE Band 25 5MHz QPSK CH26365



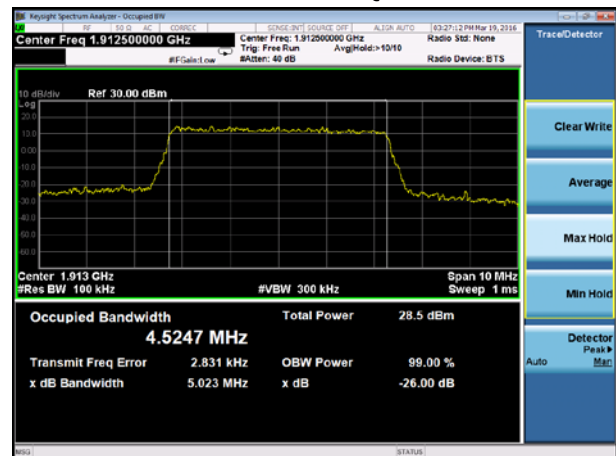
LTE Band 25 5MHz 16QAM CH26365



LTE Band 25 5MHz QPSK CH26665

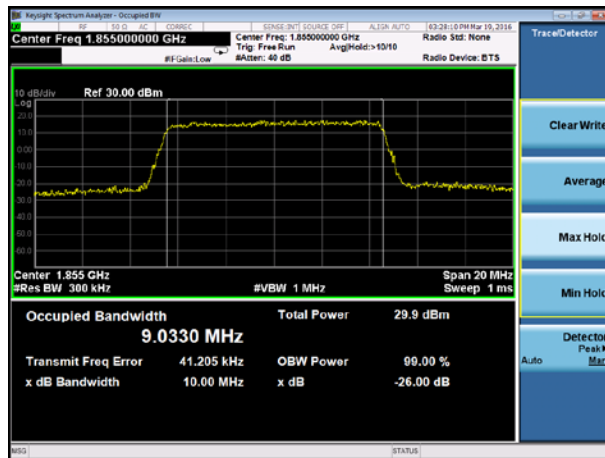


LTE Band 25 5MHz 16QAM CH26665

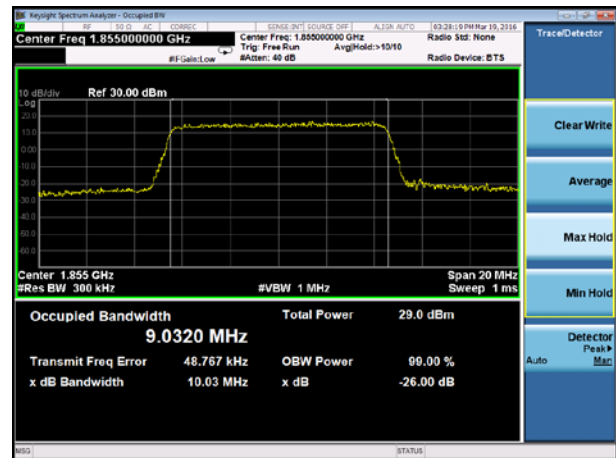




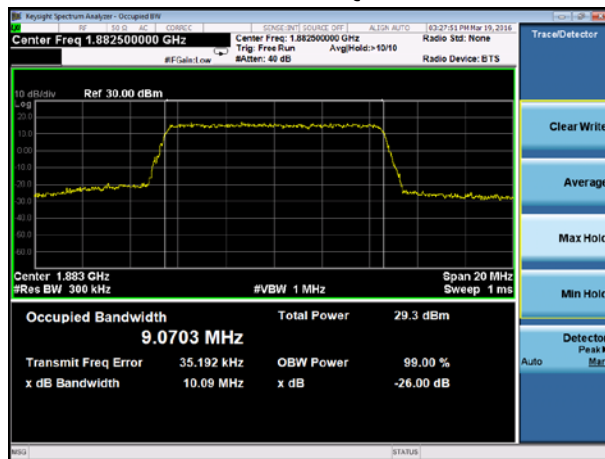
LTE Band 25 10MHz QPSK CH26090



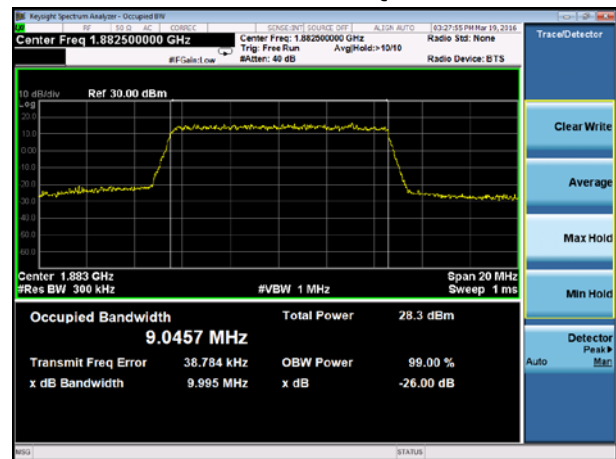
LTE Band 25 10MHz 16QAM CH26090



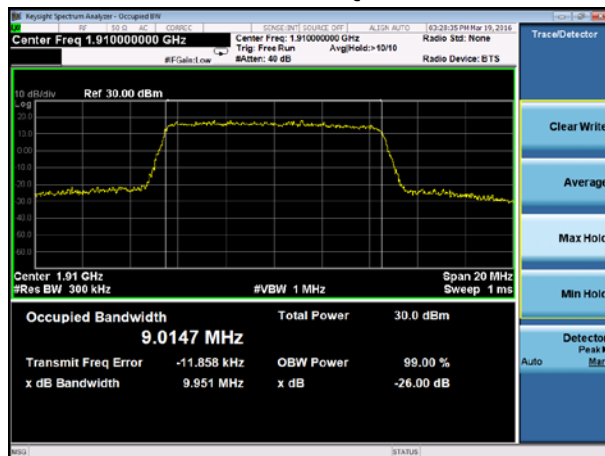
LTE Band 25 10MHz QPSK CH26365



LTE Band 25 10MHz 16QAM CH26365



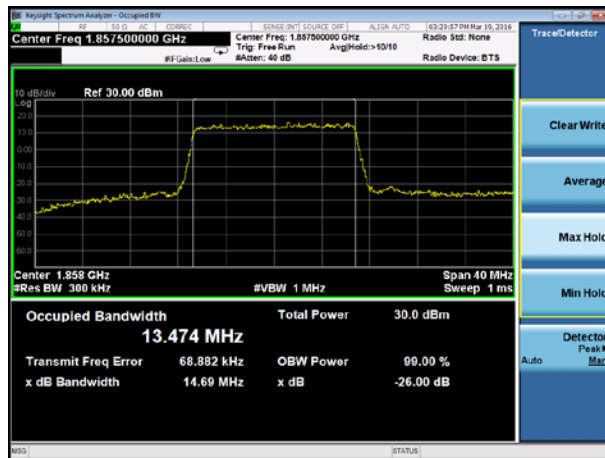
LTE Band 25 10MHz QPSK CH26640



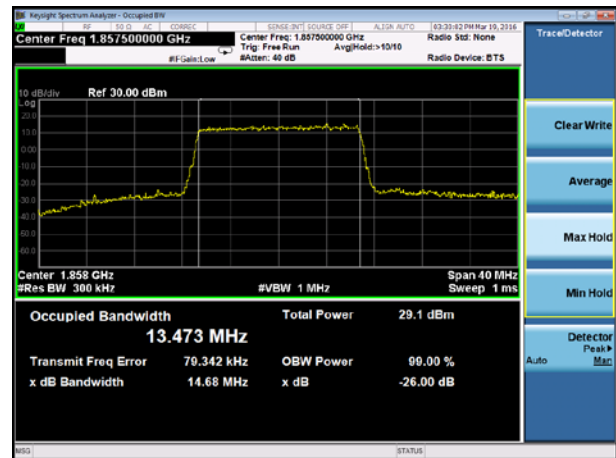
LTE Band 25 10MHz 16QAM CH26640



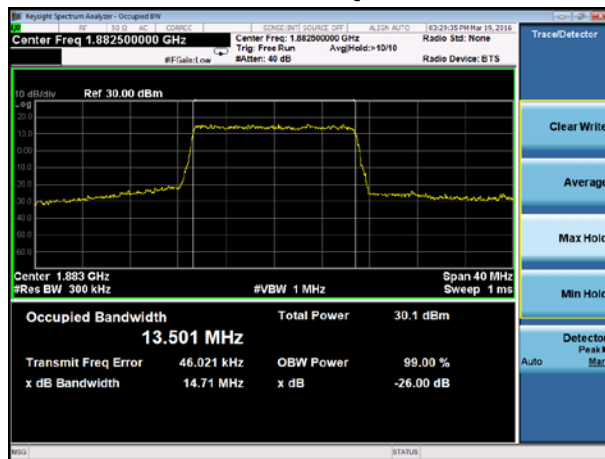
LTE Band 25 15MHz QPSK CH26115



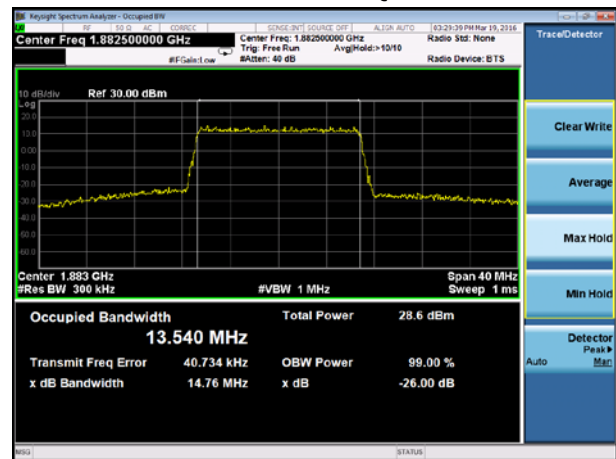
LTE Band 25 15MHz 16QAM CH26115



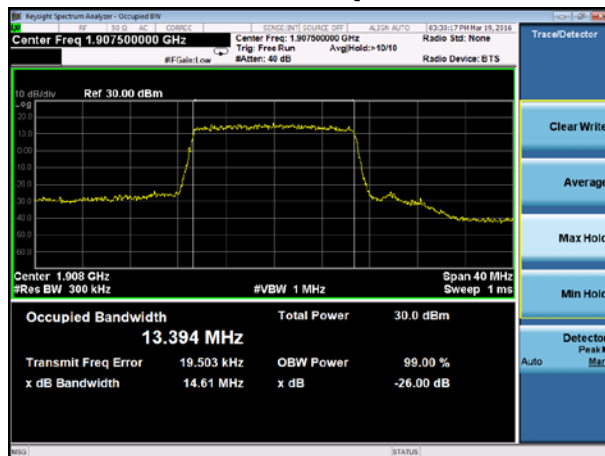
LTE Band 25 15MHz QPSK CH26365



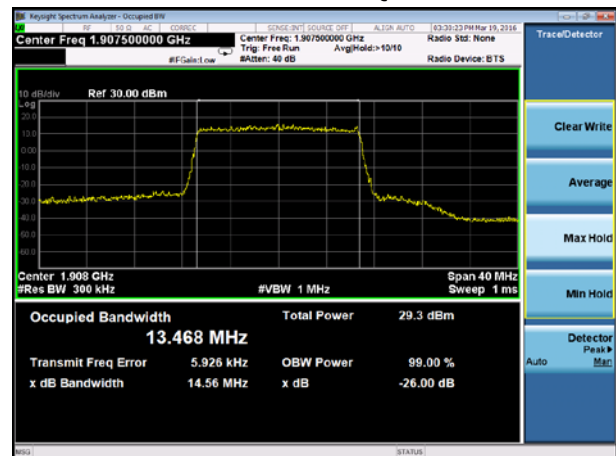
LTE Band 25 15MHz 16QAM CH26365



LTE Band 25 15MHz QPSK CH26615

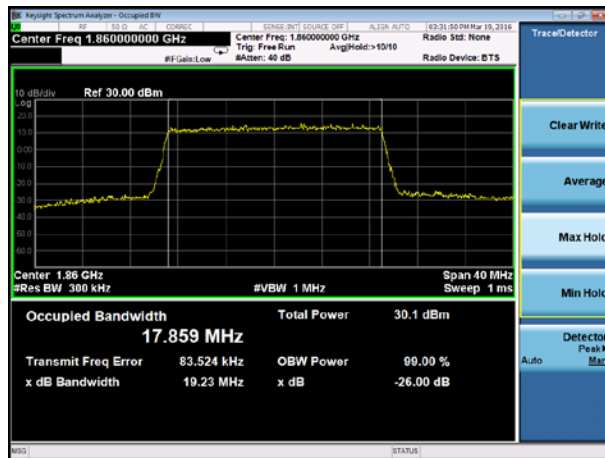


LTE Band 25 15MHz 16QAM CH26615

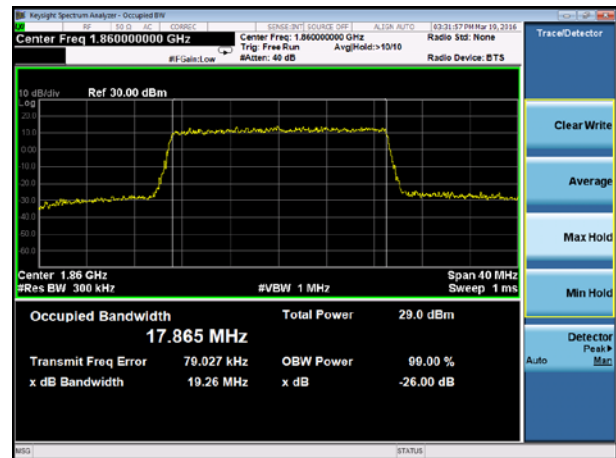




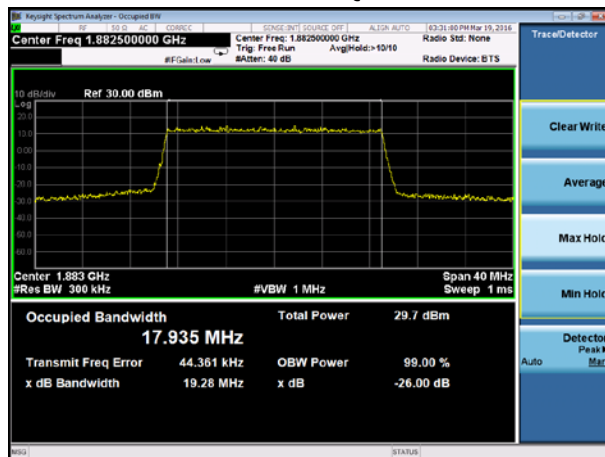
LTE Band 25 20MHz QPSK CH26140



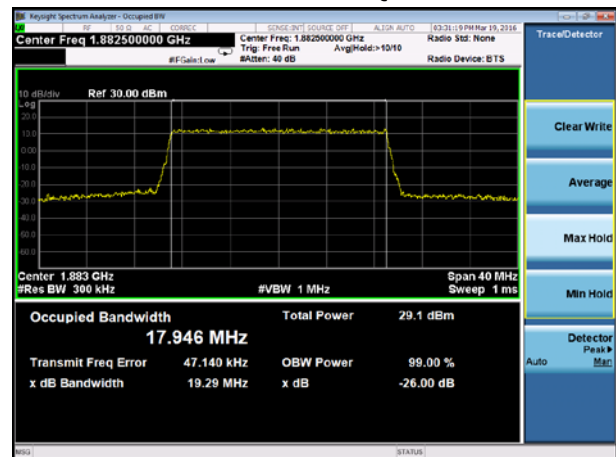
LTE Band 25 20MHz 16QAM CH26140



LTE Band 25 20MHz QPSK CH26365



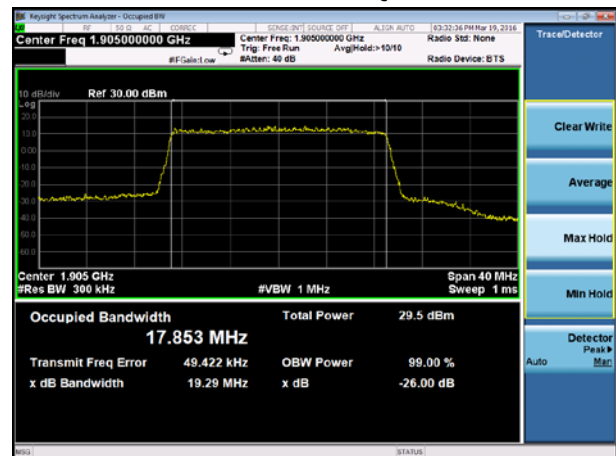
LTE Band 25 20MHz 16QAM CH26365



LTE Band 25 20MHz QPSK CH26590



LTE Band 25 20MHz 16QAM CH26590



5.4. Band Edge Compliance

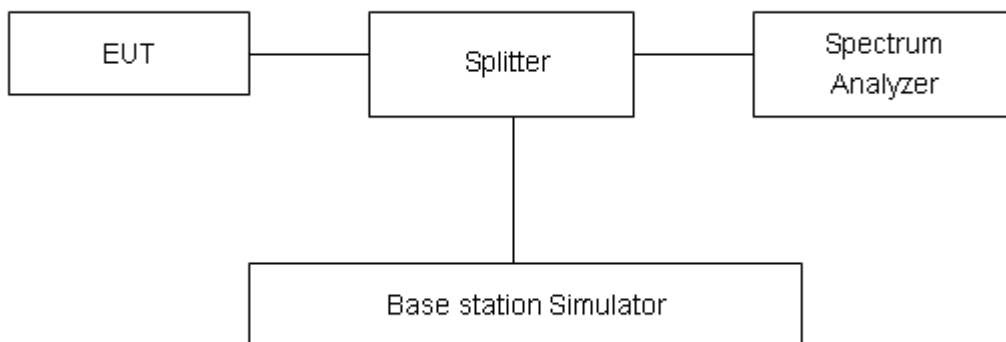
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The Average detector is used and RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900, RBW is set to 51kHz, VBW is set to 160kHz for WCDMA Band II, RBW is set to 15kHz, VBW is set to 51kHz for CDMA BC1, RBW is set to 15kHz, VBW is set to 51kHz for LTE Band 2/25(1.4MHz), RBW is set to 30kHz, VBW is set to 100kHz for LTE Band 2/25 (3MHz), RBW is set to 51kHz, VBW is set to 160kHz for LTE Band 2/25 (5MHz), RBW is set to 100kHz, VBW is set to 300kHz for LTE Band 2/25(10MHz), RBW is set to 150kHz, VBW is set to 510kHz for LTE Band 2/25(15MHz), RBW is set to 200kHz, VBW is set to 620kHz for LTE Band 2/25(20MHz). Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm
-------	---------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684\text{dB}$.

Test Result:

Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit (dBm)	Conclusion
GSM 1900 (GSM)	1850.0	-34.065	-13	PASS
	1910.0	-33.854	-13	PASS
GPRS 1900 (GMSK)	1850.0	-28.821	-13	PASS
	1910.0	-28.644	-13	PASS
EGPRS 1900 (8-PSK)	1850.0	-35.556	-13	PASS
	1910.0	-34.642	-13	PASS
WCDMA Band II RMC	1850	-27.914	-13	PASS
	1910	-25.520	-13	PASS
CDMA BC1 1xRTT	1850	-32.201	-13	PASS
	1910	-33.313	-13	PASS

LTE Band 2		Channel	RB	Reference value (dBm)	Limit (dBm)	Conclusion
Bandwidth	Modulation					
1.4MHz	QPSK	18607	1	-24.604	-13	PASS
			100%	-26.661	-13	PASS
		19193	1	-24.308	-13	PASS
			100%	-29.080	-13	PASS
	16QAM	18607	1	-25.000	-13	PASS
			100%	-26.992	-13	PASS
		19193	1	-24.934	-13	PASS
			100%	-29.069	-13	PASS
3MHz	QPSK	18615	1	-21.571	-13	PASS
			100%	-28.632	-13	PASS
		19185	1	-20.732	-13	PASS
			100%	-27.954	-13	PASS
	16QAM	18615	1	-21.715	-13	PASS
			100%	-27.349	-13	PASS
		19185	1	-20.626	-13	PASS
			100%	-27.816	-13	PASS
5MHz	QPSK	18625	1	-22.855	-13	PASS
			100%	-30.133	-13	PASS
		19175	1	-20.794	-13	PASS
			100%	-29.137	-13	PASS



LTE Band 2		Channel	RB	Reference value (dBm)	Limit (dBm)	Conclusion
Bandwidth	Modulation					
	16QAM	18625	1	-22.019	-13	PASS
			100%	-30.004	-13	PASS
		19175	1	-21.713	-13	PASS
			100%	-30.339	-13	PASS
10MHz	QPSK	18650	1	-34.255	-13	PASS
			100%	-33.144	-13	PASS
		19150	1	-30.136	-13	PASS
			100%	-33.110	-13	PASS
	16QAM	18650	1	-32.823	-13	PASS
			100%	-33.223	-13	PASS
		19150	1	-31.977	-13	PASS
			100%	-32.309	-13	PASS
15MHz	QPSK	18675	1	-28.141	-13	PASS
			100%	-34.921	-13	PASS
		19125	1	-27.648	-13	PASS
			100%	-33.516	-13	PASS
	16QAM	18675	1	-30.573	-13	PASS
			100%	-34.701	-13	PASS
		19125	1	-28.780	-13	PASS
			100%	-33.621	-13	PASS
20MHz	QPSK	18700	1	-31.875	-13	PASS
			100%	-35.451	-13	PASS
		19100	1	-32.061	-13	PASS
			100%	-32.460	-13	PASS
	16QAM	18700	1	-33.816	-13	PASS
			100%	-35.757	-13	PASS
		19100	1	-28.811	-13	PASS
			100%	-32.173	-13	PASS



LTE Band 25		Channel	RB	Reference value (dBm)	Limit (dBm)	Conclusion
Bandwidth	Modulation					
1.4MHz	QPSK	26047	1	-24.411	-13	PASS
			100%	-27.027	-13	PASS
		26683	1	-22.414	-13	PASS
			100%	-27.750	-13	PASS
	16QAM	26047	1	-24.703	-13	PASS
			100%	-26.599	-13	PASS
		26683	1	-23.389	-13	PASS
			100%	-26.783	-13	PASS
3MHz	QPSK	26055	1	-21.342	-13	PASS
			100%	-27.869	-13	PASS
		26675	1	-20.079	-13	PASS
			100%	-28.056	-13	PASS
	16QAM	26055	1	-21.270	-13	PASS
			100%	-27.177	-13	PASS
		26675	1	-18.525	-13	PASS
			100%	-28.071	-13	PASS
5MHz	QPSK	26065	1	-23.412	-13	PASS
			100%	-30.456	-13	PASS
		26665	1	-22.314	-13	PASS
			100%	-28.447	-13	PASS
	16QAM	26065	1	-21.574	-13	PASS
			100%	-29.626	-13	PASS
		26665	1	-19.592	-13	PASS
			100%	-29.899	-13	PASS
10MHz	QPSK	26090	1	-33.777	-13	PASS
			100%	-32.417	-13	PASS
		26640	1	-29.324	-13	PASS
			100%	-33.628	-13	PASS
	16QAM	26090	1	-35.047	-13	PASS
			100%	-33.341	-13	PASS
		26640	1	-31.369	-13	PASS
			100%	-33.294	-13	PASS
15MHz	QPSK	26115	1	-30.358	-13	PASS
			100%	-34.093	-13	PASS
		26615	1	-31.111	-13	PASS
			100%	-35.325	-13	PASS
	16QAM	26115	1	-29.329	-13	PASS
			100%	-34.067	-13	PASS
		26615	1	-28.857	-13	PASS
			100%	-33.823	-13	PASS
20MHz	QPSK	26140	1	-35.819	-13	PASS



LTE Band 25		Channel	RB	Reference value (dBm)	Limit (dBm)	Conclusion
Bandwidth	Modulation					
		26590	100%	-34.994	-13	PASS
			1	-32.840	-13	PASS
			100%	-32.895	-13	PASS
	16QAM	26140	1	-34.484	-13	PASS
			100%	-35.208	-13	PASS
		26590	1	-30.863	-13	PASS
			100%	-33.959	-13	PASS
			100%	-33.959	-13	PASS



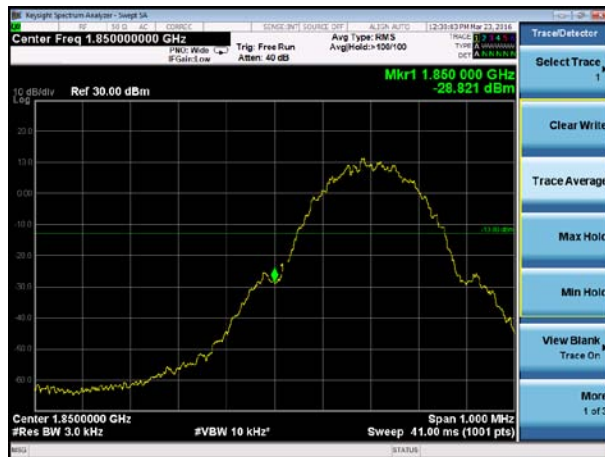
GSM1900 GSM CH512



GSM 1900 GSM CH810



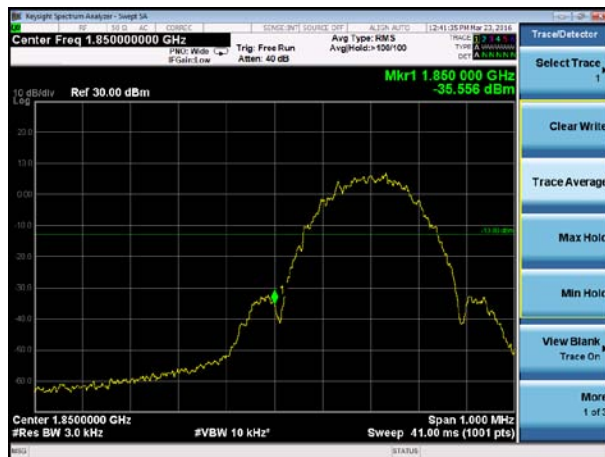
GSM1900 GPRS CH512



GSM 1900 GPRS CH810



GSM1900 EGPRS CH512



GSM 1900 EGPRS CH810





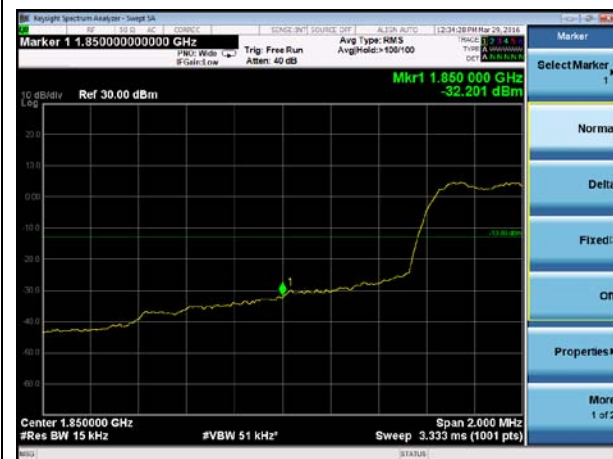
WCDMA Band II RMC CH9262



WCDMA Band II RMC CH9538



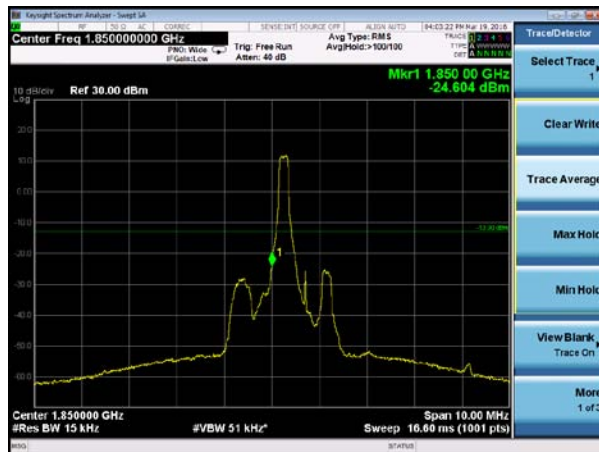
CDMA BC1 1xRTT CH25



CDMA BC1 1xRTT CH1175



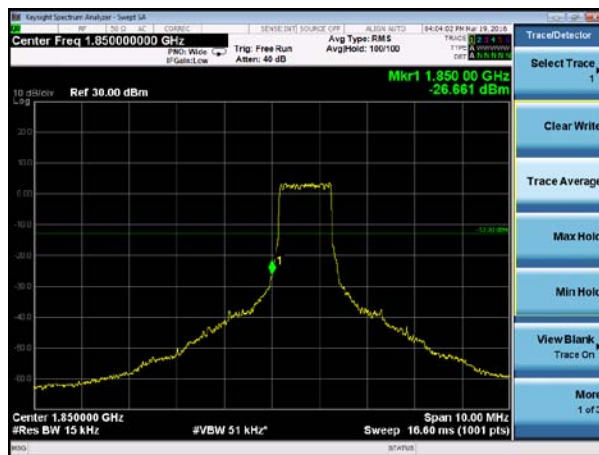
LTE Band 2 1.4MHz QPSK 1RB CH18607



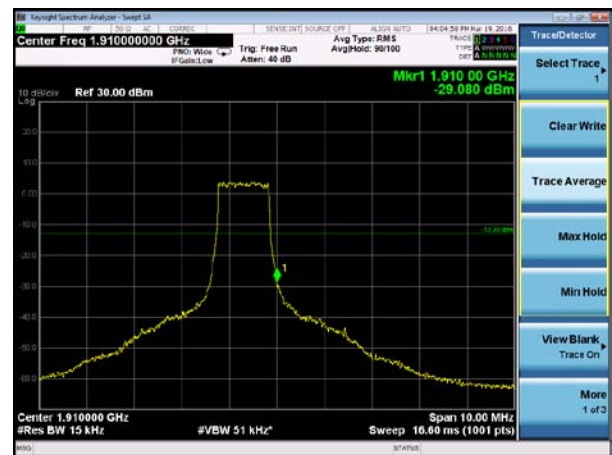
LTE Band 2 1.4MHz QPSK 1RB CH19193



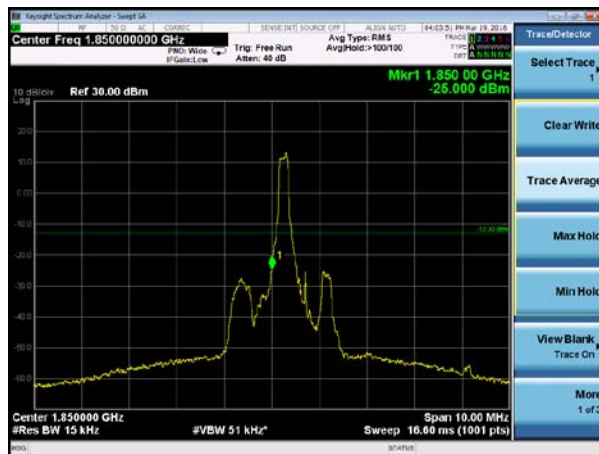
LTE Band 2 1.4MHz QPSK 100%RB CH18607



LTE Band 2 1.4MHz QPSK 100%RB CH19193

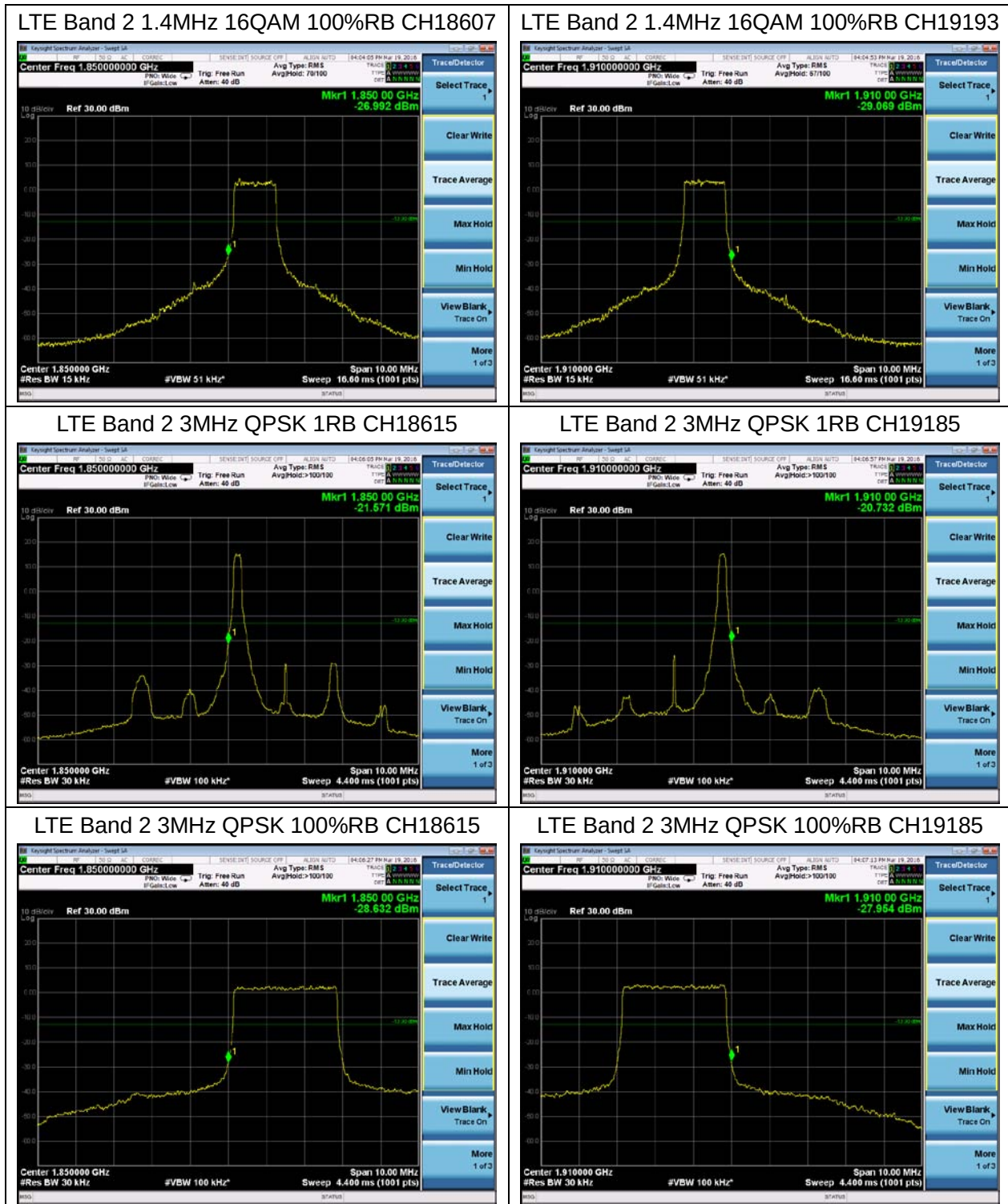


LTE Band 2 1.4MHz 16QAM 1RB CH18607

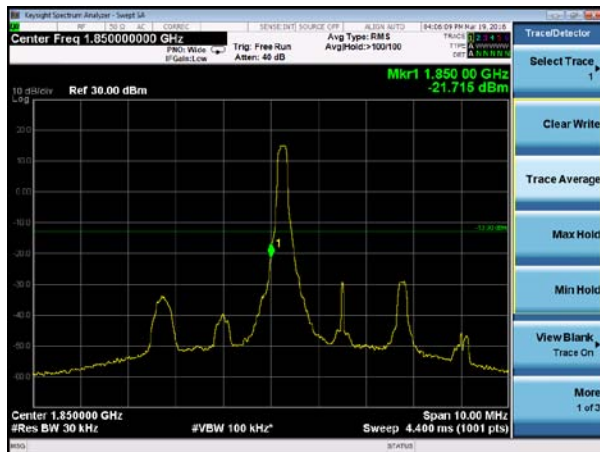


LTE Band 2 1.4MHz 16QAM 1RB CH19193





LTE Band 2 3MHz 16QAM 1RB CH18615



LTE Band 2 3MHz 16QAM 1RB CH19185



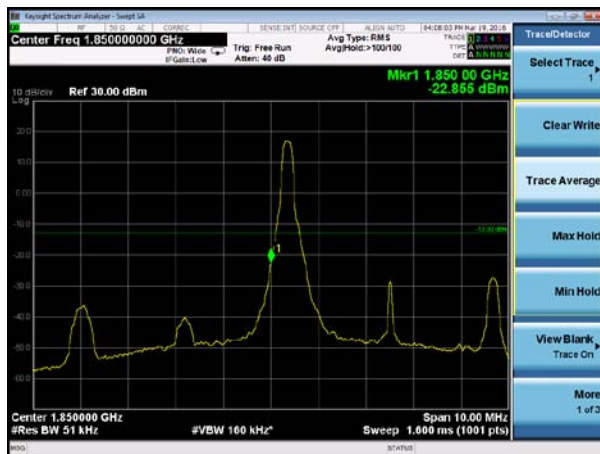
LTE Band 2 3MHz 16QAM 100%RB CH18615



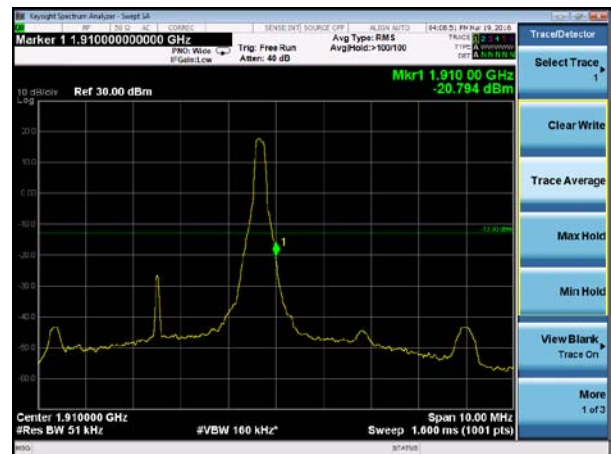
LTE Band 2 3MHz 16QAM 100%RB CH19185



LTE Band 2 5MHz QPSK 1RB CH18625



LTE Band 2 5MHz QPSK 1RB CH19175



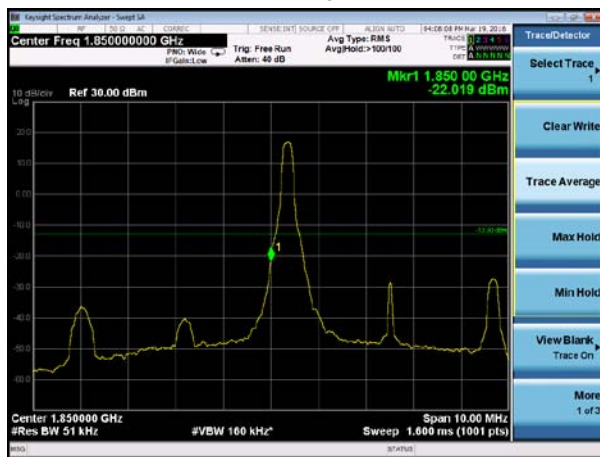
LTE Band 2 5MHz QPSK 100%RB CH18625



LTE Band 2 5MHz QPSK 100%RB CH19175



LTE Band 2 5MHz 16QAM 1RB CH18625



LTE Band 2 5MHz 16QAM 1RB CH19175



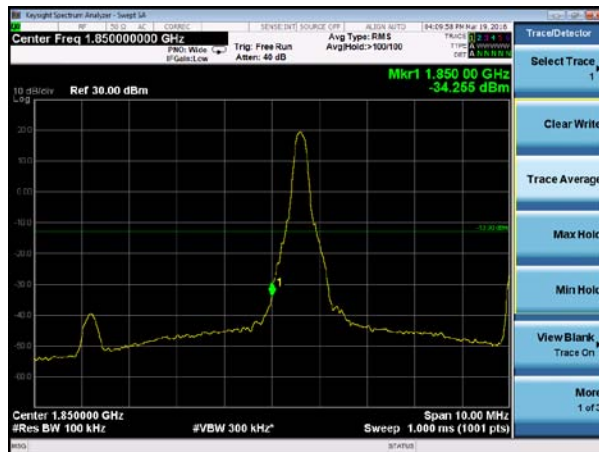
LTE Band 2 5MHz 16QAM 100%RB CH18625



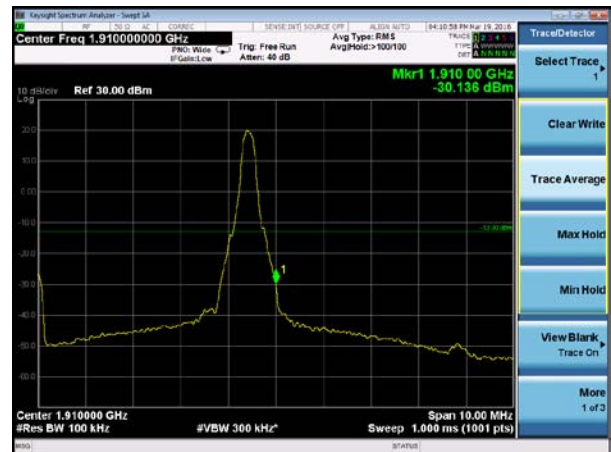
LTE Band 2 5MHz 16QAM 100%RB CH19175



LTE Band 2 10MHz QPSK 1RB CH18650



LTE Band 2 10MHz QPSK 1RB CH19150



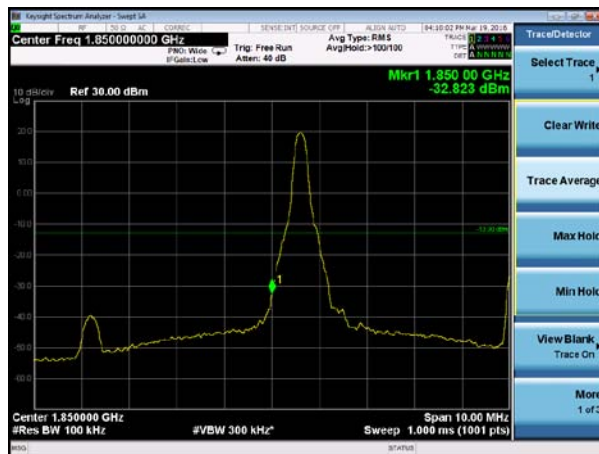
LTE Band 2 10MHz QPSK 100%RB CH18650



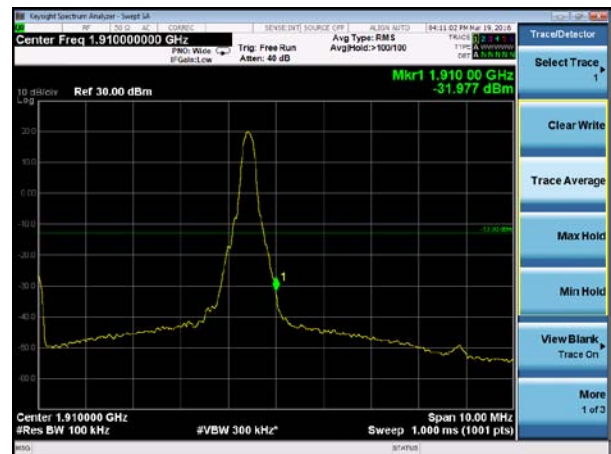
LTE Band 2 10MHz QPSK 100%RB CH19150



LTE Band 2 10MHz 16QAM 1RB CH18650



LTE Band 2 10MHz 16QAM 1RB CH19150



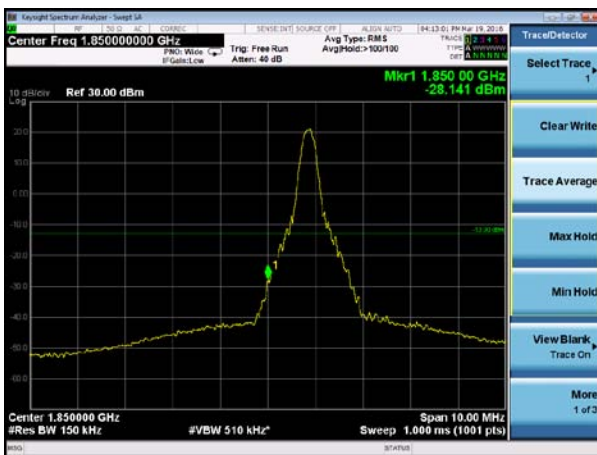
LTE Band 2 10MHz 16QAM 100%RB CH18650



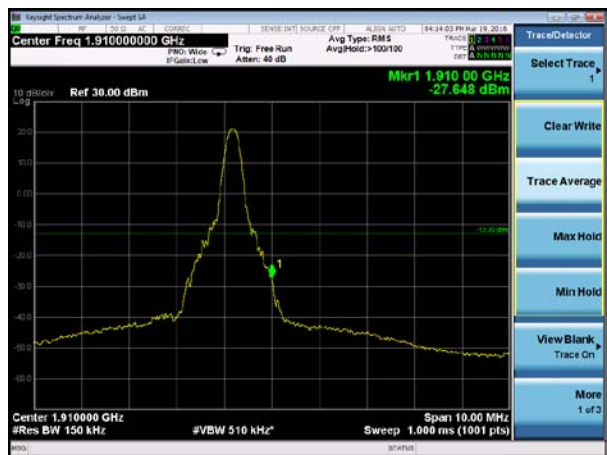
LTE Band 2 10MHz 16QAM 100%RB CH19150



LTE Band 2 15MHz QPSK 1RB CH18675



LTE Band 2 15MHz QPSK 1RB CH19125



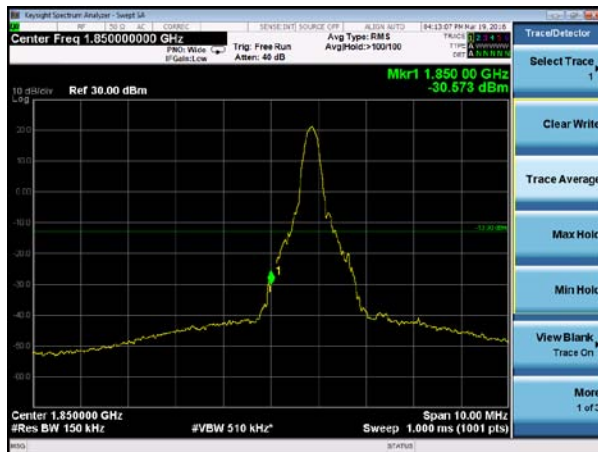
LTE Band 2 15MHz QPSK 100%RB CH18675



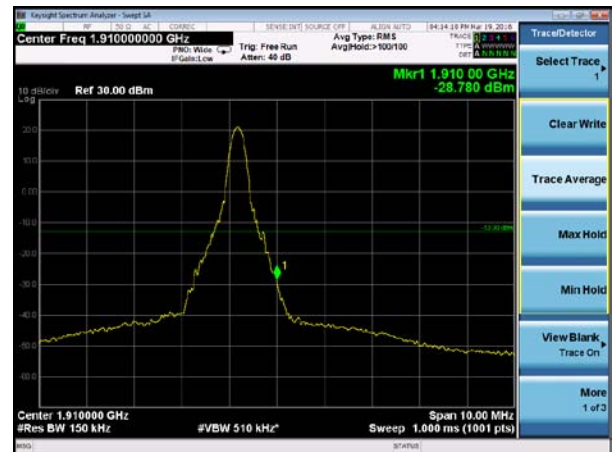
LTE Band 2 15MHz QPSK 100%RB CH19125



LTE Band 2 15MHz 16QAM 1RB CH18675



LTE Band 2 15MHz 16QAM 1RB CH19125



LTE Band 2 15MHz 16QAM 100%RB CH18675



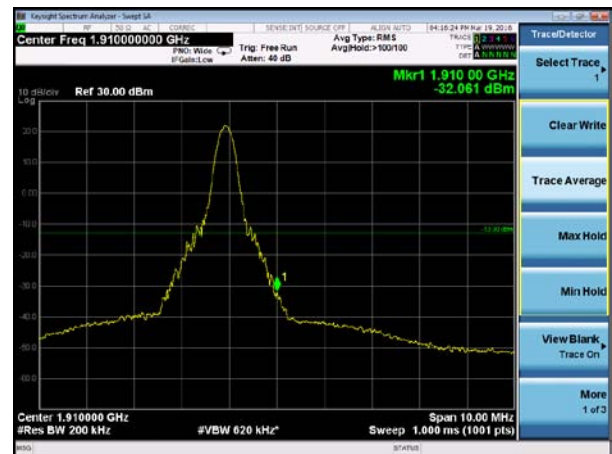
LTE Band 2 15MHz 16QAM 100%RB CH19125

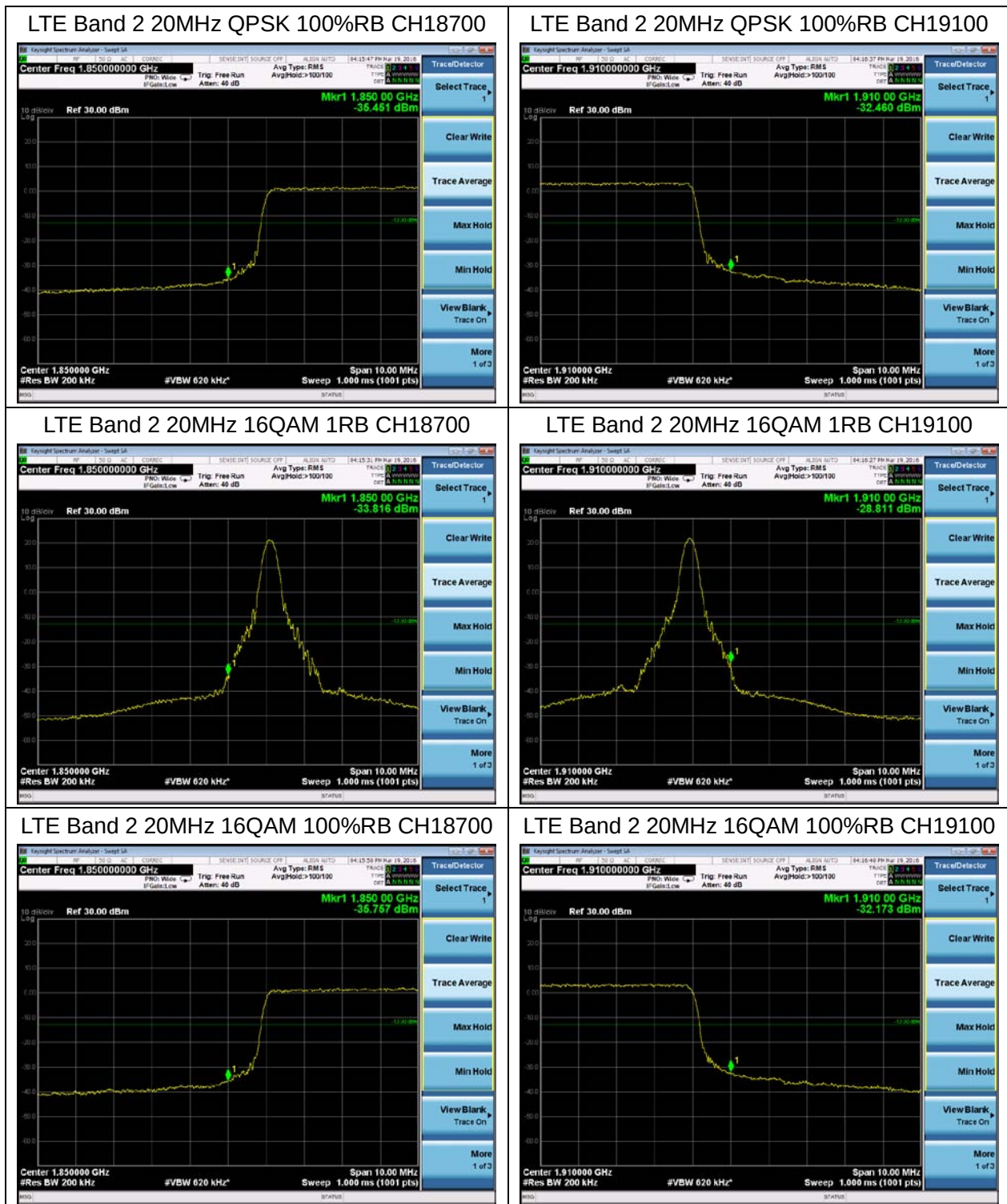


LTE Band 2 20MHz QPSK 1RB CH18700

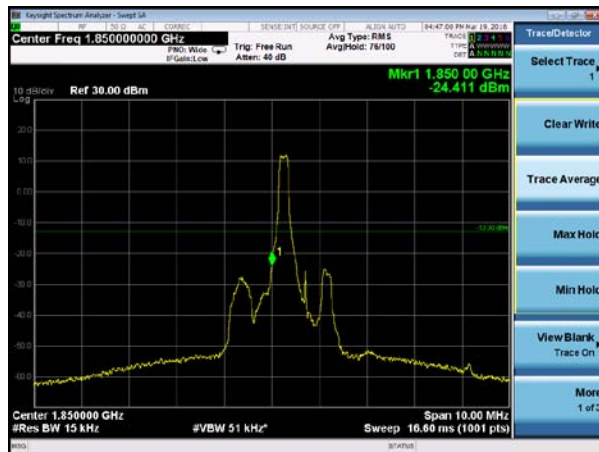


LTE Band 2 20MHz QPSK 1RB CH19100

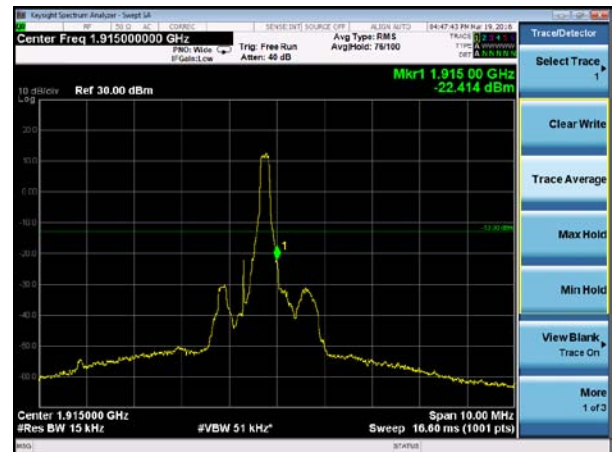




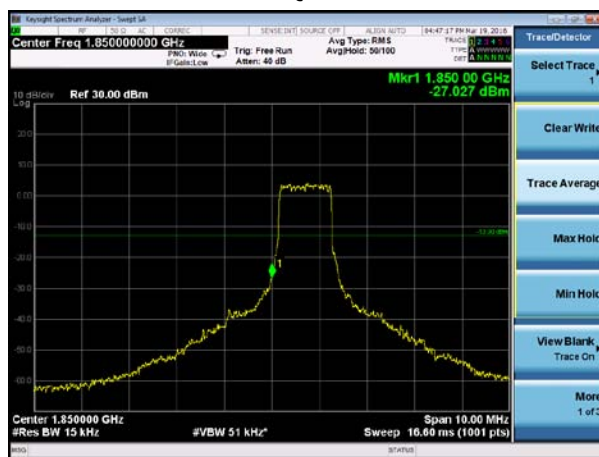
LTE Band 25 1.4MHz QPSK 1RB CH26047



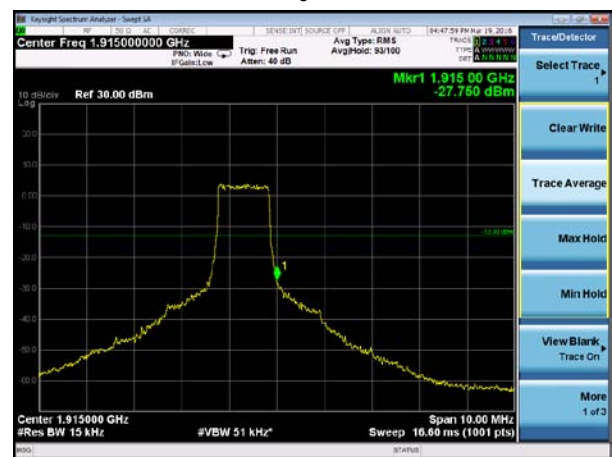
LTE Band 25 1.4MHz QPSK 1RB CH26683



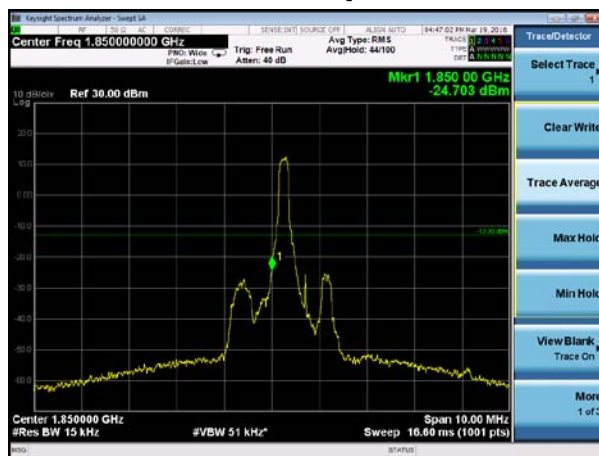
LTE Band 25 1.4MHz QPSK 100%RB CH26047



LTE Band 25 1.4MHz QPSK 100%RB CH26683



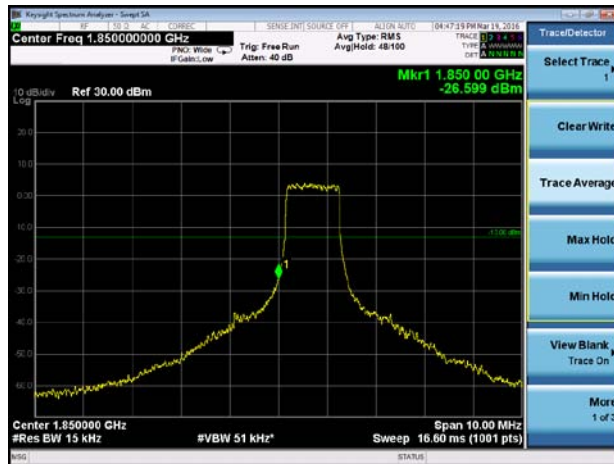
LTE Band 25 1.4MHz 16QAM 1RB CH26047



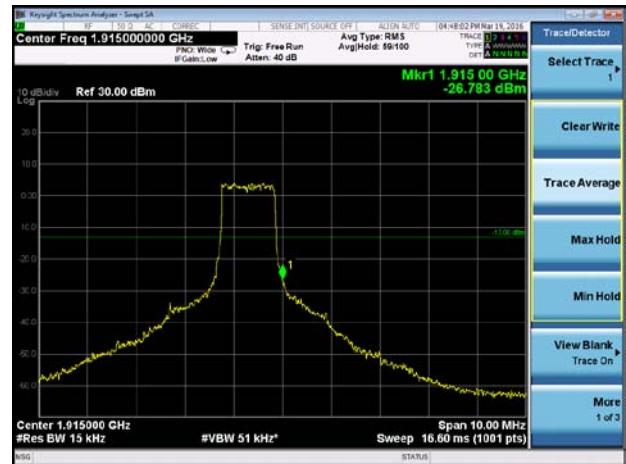
LTE Band 25 1.4MHz 16QAM 1RB CH26683



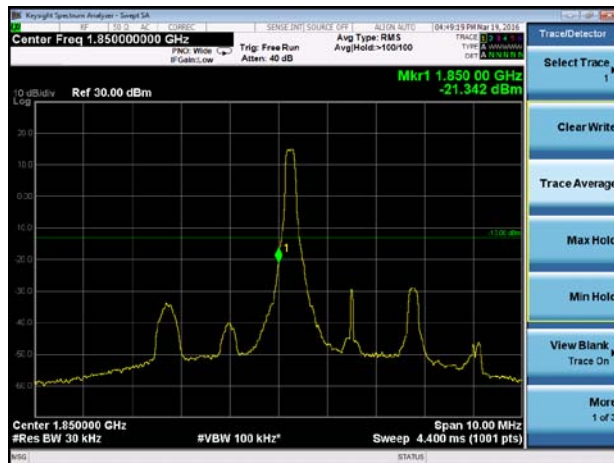
LTE Band 25 1.4MHz 16QAM 100%RB CH26047



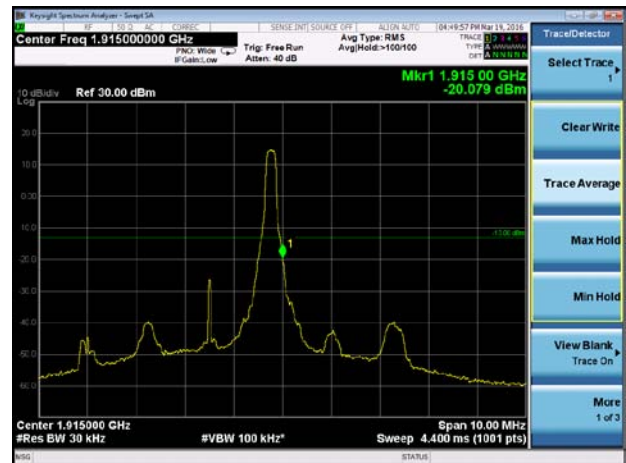
LTE Band 25 1.4MHz 16QAM 100%RB CH26683



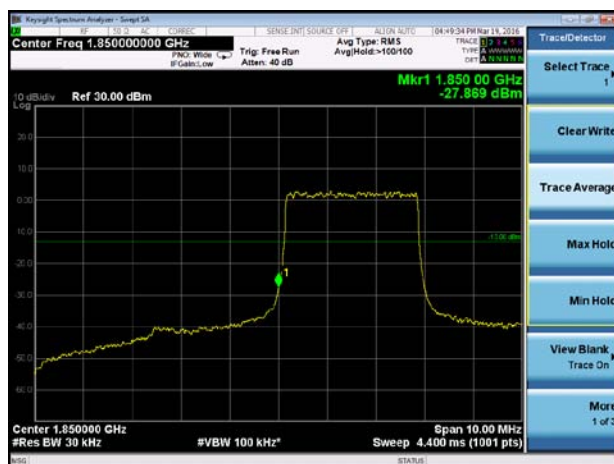
LTE Band 25 3MHz QPSK 1RB CH26055



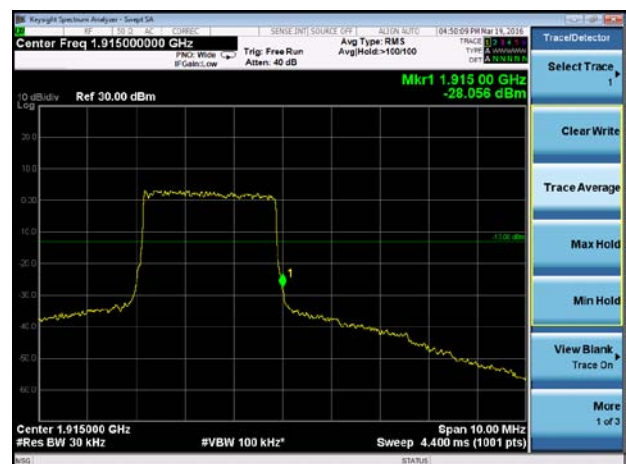
LTE Band 25 3MHz QPSK 1RB CH26675



LTE Band 25 3MHz QPSK 100%RB CH26055

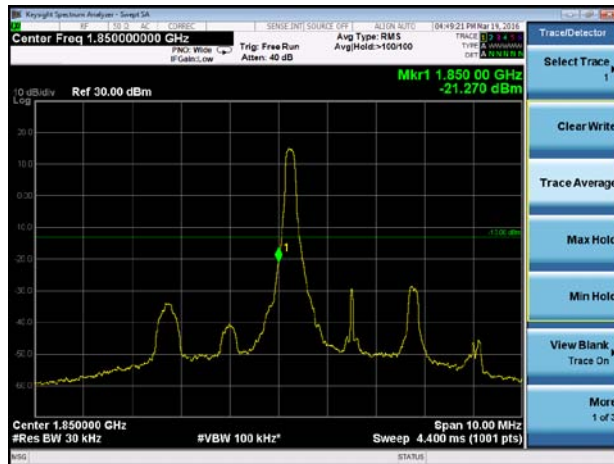


LTE Band 25 3MHz QPSK 100%RB CH26675

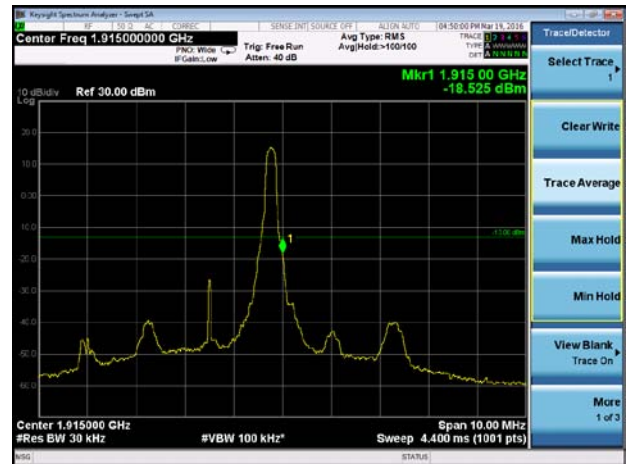




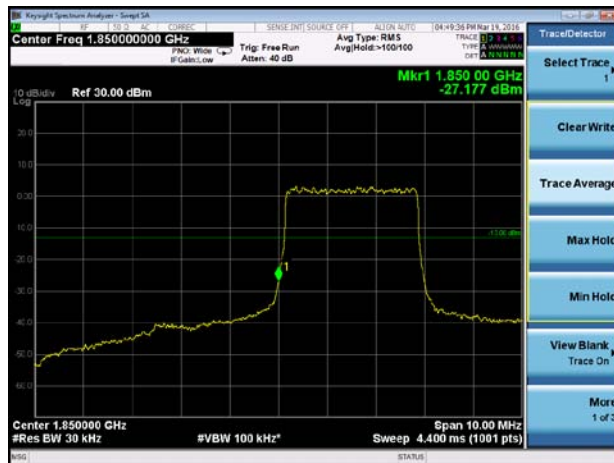
LTE Band 25 3MHz 16QAM 1RB CH26055



LTE Band 25 3MHz 16QAM 1RB CH26675



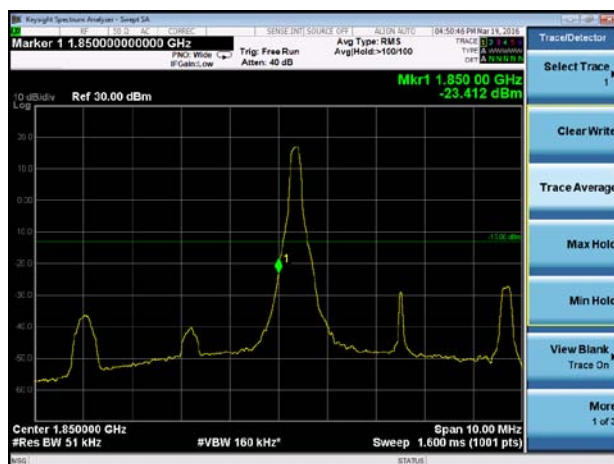
LTE Band 25 3MHz 16QAM 100%RB CH26055



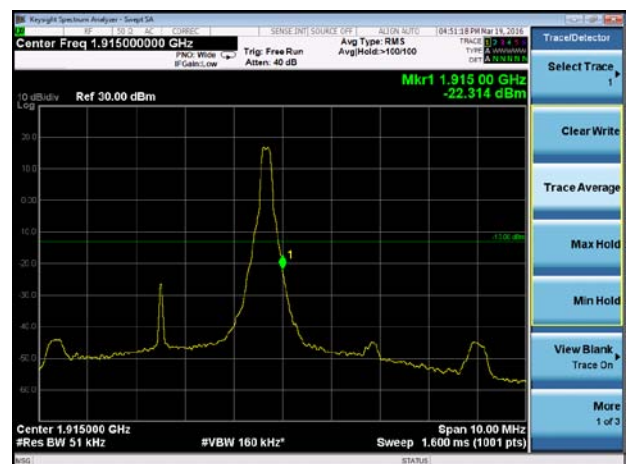
LTE Band 25 3MHz 16QAM 100%RB CH26675



LTE Band 25 5MHz QPSK 1RB CH26065

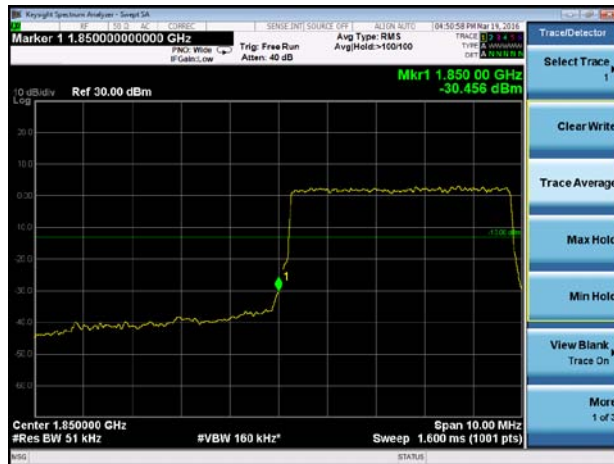


LTE Band 25 5MHz QPSK 1RB CH26665





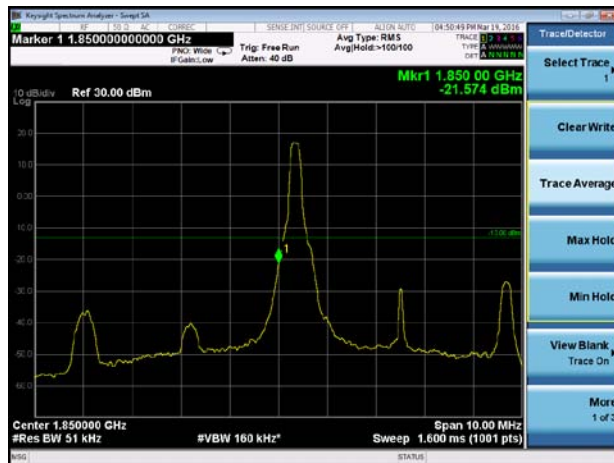
LTE Band 25 5MHz QPSK 100%RB CH26065



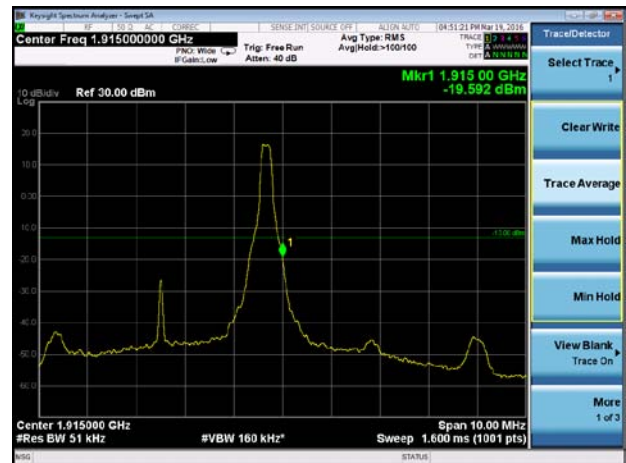
LTE Band 25 5MHz QPSK 100%RB CH26665



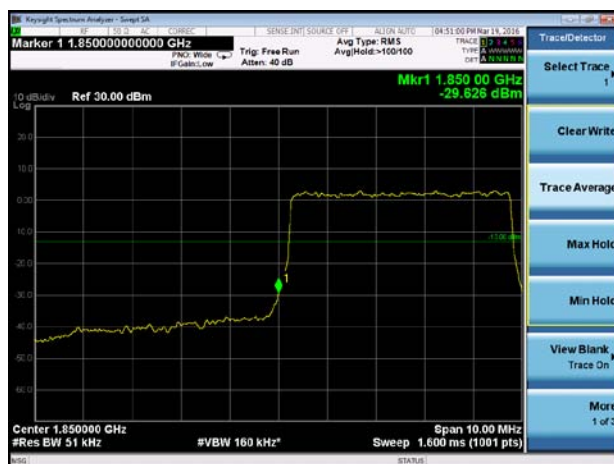
LTE Band 25 5MHz 16QAM 1RB CH26065



LTE Band 25 5MHz 16QAM 1RB CH26665



LTE Band 25 5MHz 16QAM 100%RB H26065

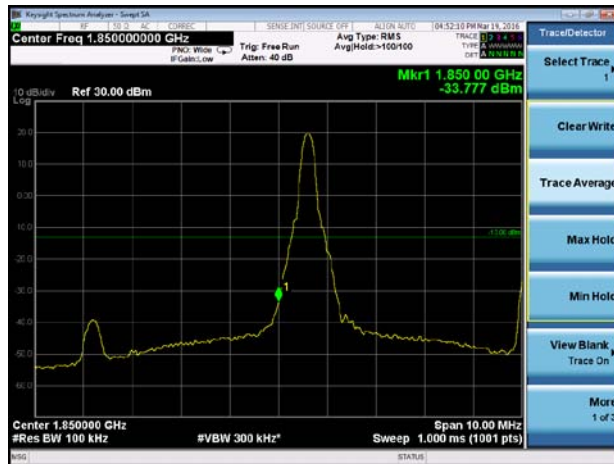


LTE Band 25 5MHz 16QAM 100%RB CH26665

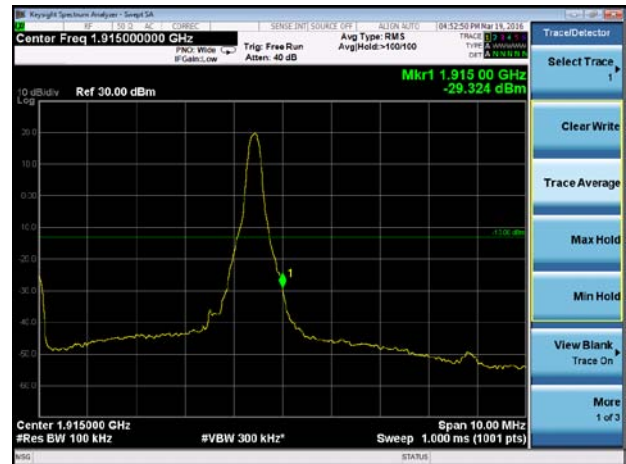




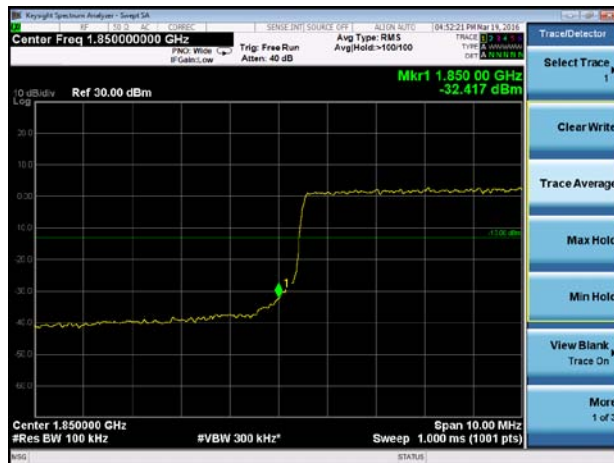
LTE Band 25 10MHz QPSK 1RB CH26090



LTE Band 25 10MHz QPSK 1RB CH26640



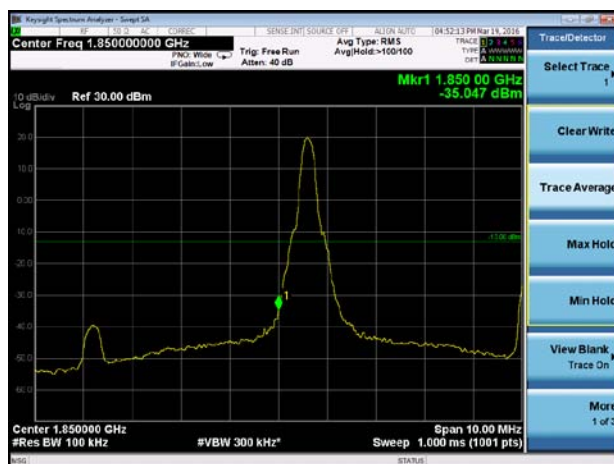
LTE Band 25 10MHz QPSK 100%RB CH26090



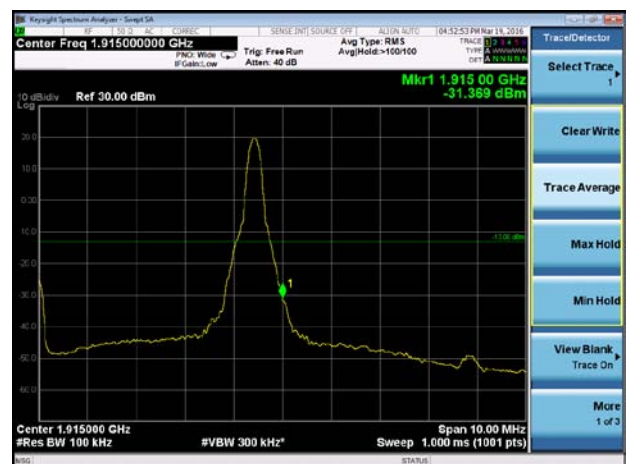
LTE Band 25 10MHz QPSK 100%RB CH26640

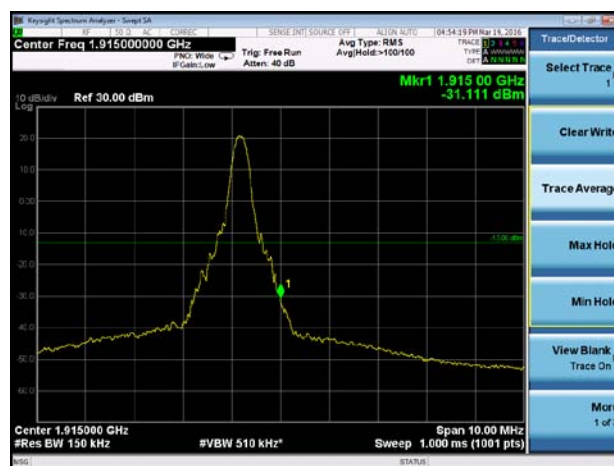
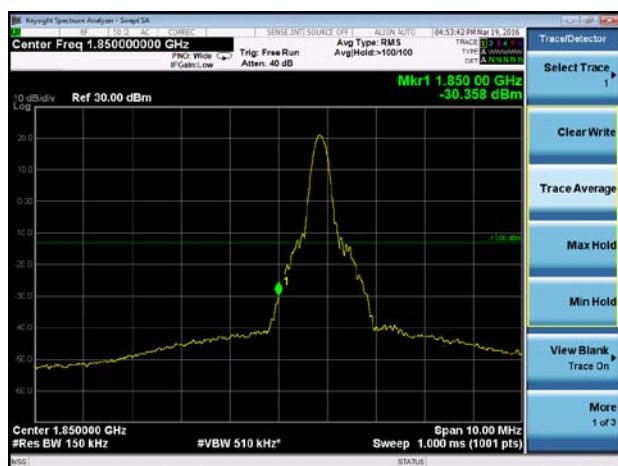
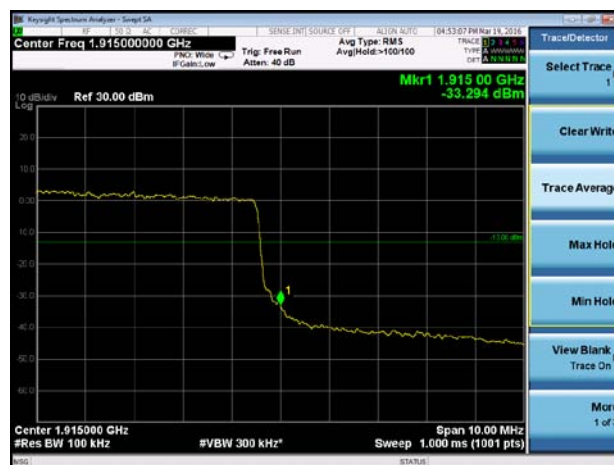
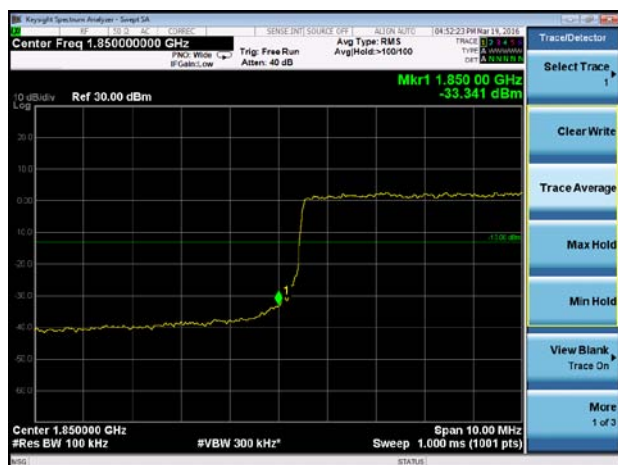


LTE Band 25 10MHz 16QAM 1RB CH26090



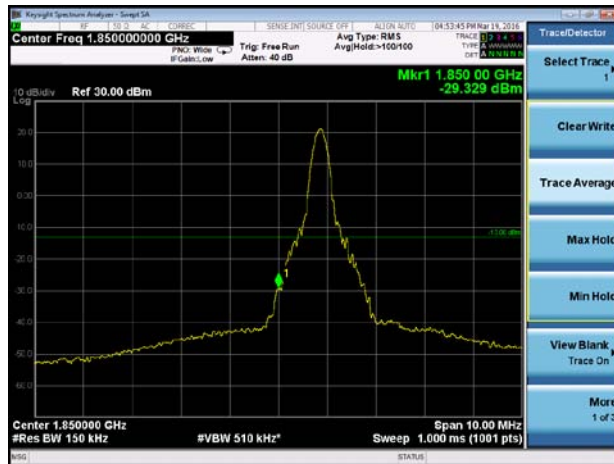
LTE Band 25 10MHz 16QAM 1RB CH26640



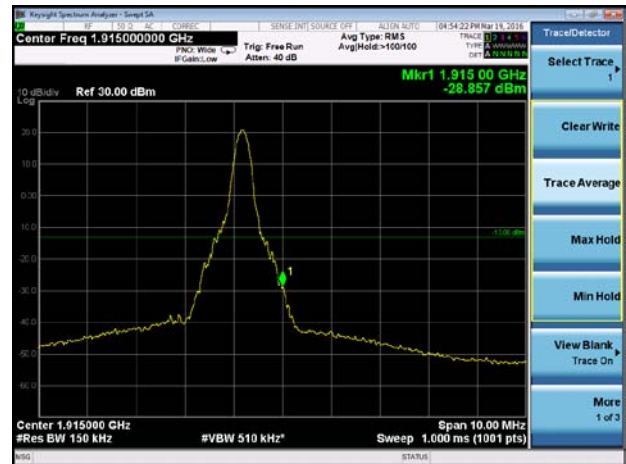




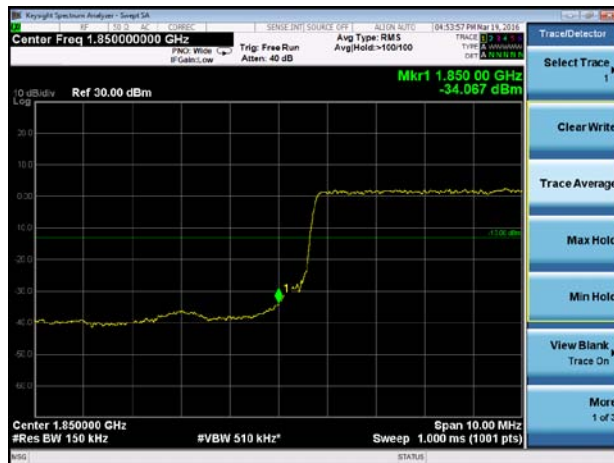
LTE Band 25 15MHz 16QAM 1RB CH26115



LTE Band 25 15MHz 16QAM 1RB CH26615



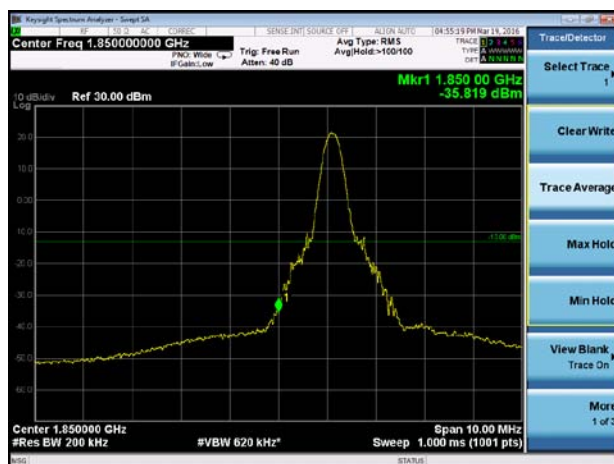
LTE Band 25 15MHz 16QAM 100%RB CH26115



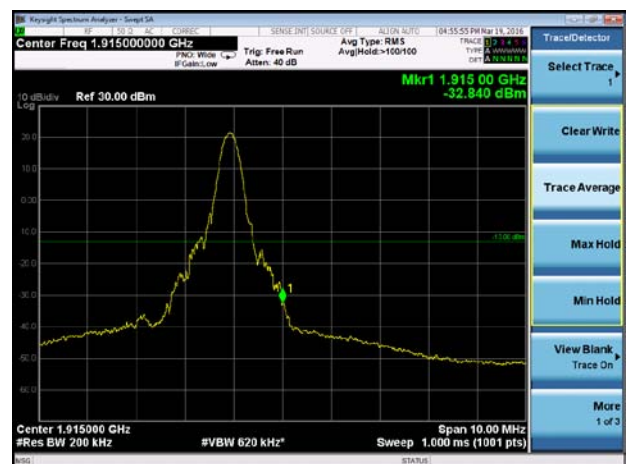
LTE Band 25 15MHz 16QAM 100%RB CH26615



LTE Band 25 20MHz QPSK 1RB CH26140

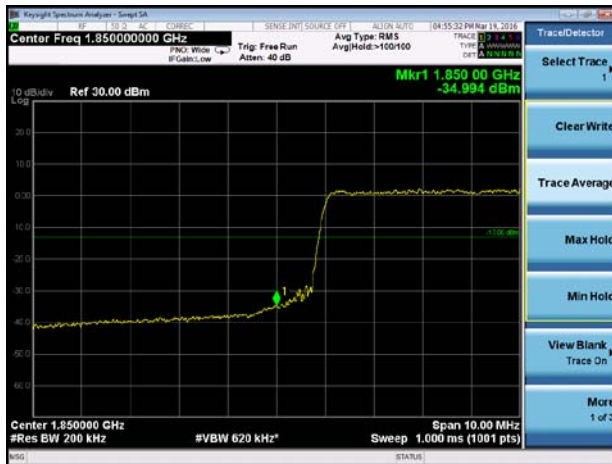


LTE Band 25 20MHz QPSK 1RB CH26590





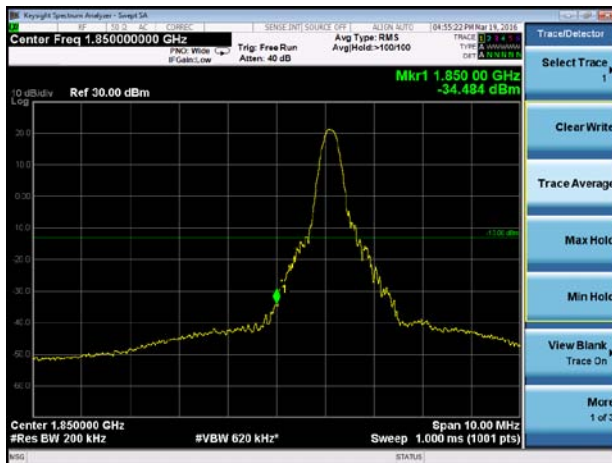
LTE Band 25 20MHz QPSK 100%RB CH26140



LTE Band 25 20MHz QPSK 100%RB CH26590



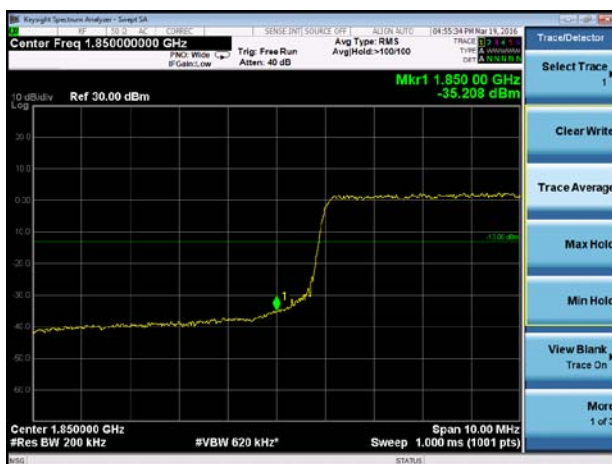
LTE Band 25 20MHz 16QAM 1RB CH26140



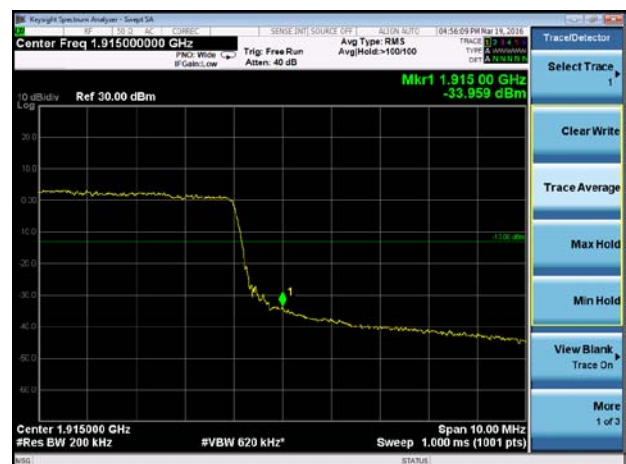
LTE Band 25 20MHz 16QAM 1RB CH26590



LTE Band 25 20MHz 16QAM 100%RB CH26140



LTE Band 25 20MHz 16QAM 100%RB CH26590



5.5. Peak-to-Average Power Ratio (PAPR)

Ambient condition

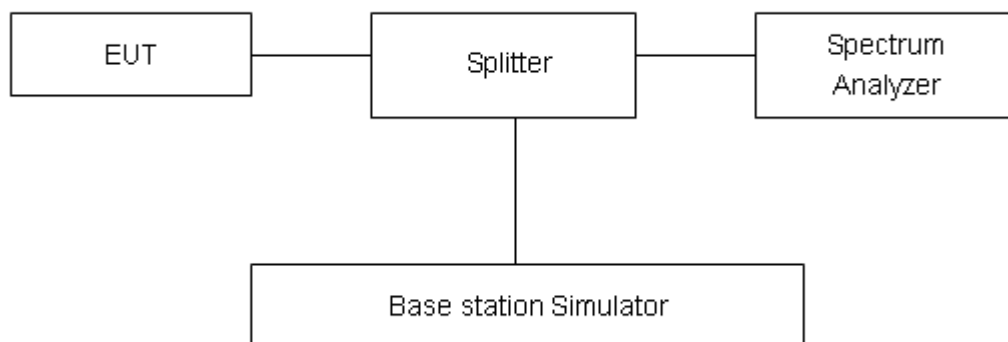
Temperature	Relative humidity
21°C ~25°C	40%~60%

Methods of Measurement

Measure the total peak power and record as PPK. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$PAPR (dB) = PPK (dBm) - PAvg (dBm)$.

Test Setup



Limits

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 in 24.232(d).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

**Test Results**

Mode	Channel	Frequency (MHz)	Peak(dBm)	Avg(dBm)	PAPR(dB)	Conclusion
GSM 1900 (GSM)	512	1850.2	29.35	29.33	0.019	PASS
	661	1880	29.50	29.47	0.032	PASS
	810	1909.8	29.46	29.44	0.021	PASS
GPRS 1900 (GMSK)	512	1850.2	29.41	29.29	0.043	PASS
	661	1880	29.43	29.43	0.029	PASS
	810	1909.8	29.52	29.37	0.031	PASS
EGPRS 1900 (8-PSK)	512	1850.2	25.52	25.48	0.039	PASS
	661	1880	25.49	25.43	0.056	PASS
	810	1909.8	25.58	25.50	0.084	PASS
WCDMA Band II (RMC)	9262	1852.4	27.47	24.24	3.23	PASS
	9400	1880	27.47	24.27	3.2	PASS
	9538	1907.6	27.5	24.31	3.19	PASS
CDMA BC1 1xRTT	25	1851.25	27.15	23.14	4.01	PASS
	600	1880	27.67	23.23	4.44	PASS
	1175	1908.75	27.02	23.05	3.97	PASS