Figure 236: 64QAM 40MHz B.W.; 2670.0MHz, 15kHz

Figure 237: 64QAM 40MHz B.W.; 2670.0MHz, 30kHz

Figure 238: 64QAM 40MHz B.W.; 2670.0MHz, 60kHz

Figure 239: 64QAM 60MHz B.W.; 2526.0MHz, 30kHz

Figure 240: 64QAM 60MHz B.W.; 2526.0MHz, 60kHz

Figure 241: 64QAM 60MHz B.W.; 2593.0MHz, 30kHz

Figure 242: 64QAM 60MHz B.W.; 2593.0MHz, 60kHz

Figure 243: 64QAM 60MHz B.W.; 2660.0MHz, 30kHz

Figure 244: 64QAM 60MHz B.W.; 2660.0MHz, 60kHz

Figure 245: 256QAM 40MHz B.W.; 2516.0MHz, 15kHz

Figure 246: 256QAM 40MHz B.W.; 2516.0MHz, 30kHz

Figure 247: 256QAM 40MHz B.W.; 2516.0MHz, 60kHz

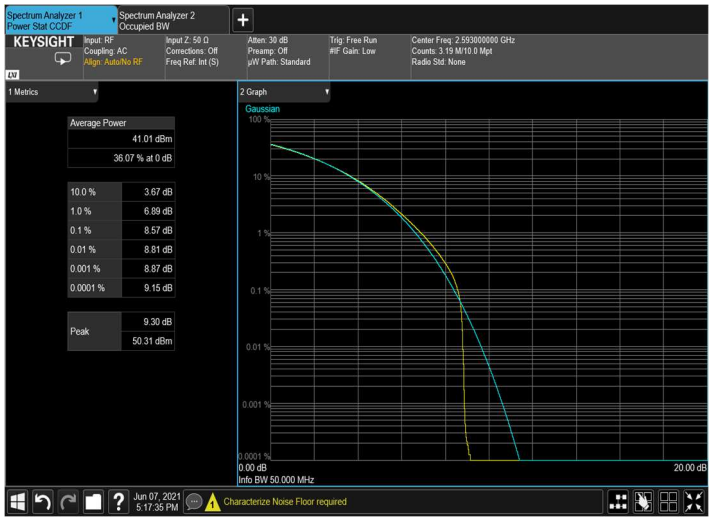

Figure 248: 256QAM 40MHz B.W.; 2593.0MHz, 15kHz

Figure 249: 256QAM 40MHz B.W.; 2593.0MHz, 30kHz

Figure 250: 256QAM 40MHz B.W.; 2593.0MHz, 60kHz

Figure 251: 256QAM 40MHz B.W.; 2670.0MHz, 15kHz

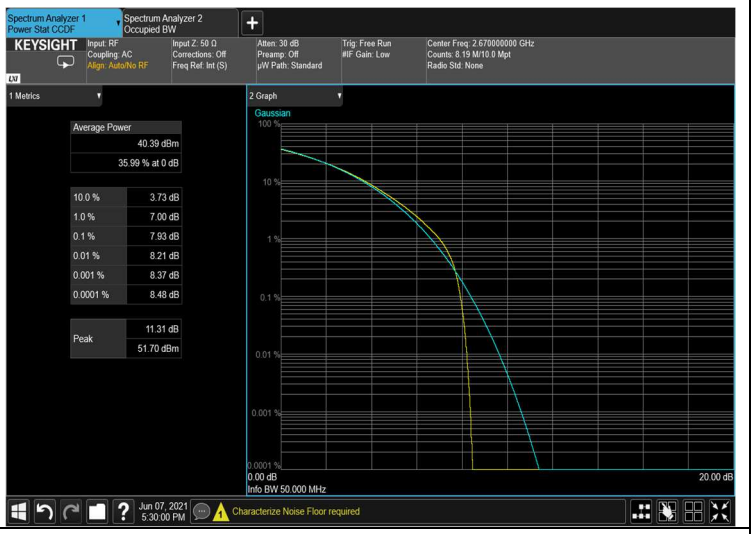

Figure 252: 256QAM 40MHz B.W.; 2670.0MHz, 30kHz

Figure 253: 256QAM 40MHz B.W.; 2670.0MHz, 60kHz

Figure 254: 256QAM 60MHz B.W.; 2526.0MHz, 30kHz

Figure 255: 256QAM 60MHz B.W.; 2526.0MHz, 60kHz

Figure 256: output 256QAM 60MHz B.W.; 2593.0MHz, 30kHz

Figure 257: output 256QAM 60MHz B.W.; 2593.0MHz, 60kHz

Figure 258: 256QAM 60MHz B.W.; 2660.0MHz, 30kHz

Figure 259: 256QAM 60MHz B.W.; 2660.0MHz, 60kHz

Figure 260: QPSK 40MHz B.W.; 2516.0MHz, 15kHz

Figure 261: QPSK 40MHz B.W.; 2516.0MHz, 30kHz

Figure 262: QPSK 40MHz B.W.; 2516.0MHz, 60kHz

Figure 263: QPSK 40MHz B.W.; 2593.0MHz, 15kHz

Figure 264: QPSK 40MHz B.W.; 2593.0MHz, 30kHz

Figure 265: QPSK 40MHz B.W.; 2593.0MHz, 60kHz

Figure 266: QPSK 40MHz B.W.; 2670.0MHz, 15kHz

Figure 267: QPSK 40MHz B.W.; 2670.0MHz, 30kHz

Figure 268: QPSK 40MHz B.W.; 2670.0MHz, 60kHz

Figure 269: QPSK 60MHz B.W.; 2526.0MHz, 30kHz

Figure 270: QPSK 60MHz B.W.; 2526.0MHz, 60kHz

Figure 271: QPSK 60MHz B.W.; 2593.0MHz, 30kHz

Figure 272: QPSK 60MHz B.W.; 2593.0MHz, 60kHz

Figure 273: QPSK 60MHz B.W.; 2660.0MHz, 30kHz

Figure 274: QPSK 60MHz B.W.; 2660.0MHz, 60kHz

4G

V

Bandwidth (MHz)	Modulation	Operation Frequency (MHz)	0.1% PAPR (dB)	Limit (dB)
20	16QAM	2506	7.62	13
		2593	8.21	13
		2680	7.22	13
	64QAM	2506	7.51	13
		2593	8.17	13
		2680	7.22	13
	QPSK	2506	7.62	13
		2593	8.26	13
		2680	7.22	13

Table 22 Test Results Peak to Average Power Ratio 64QAM/16QAM/QPSK

Figure 275: 16QAM 20MHz B.W.; 2506.0MHz

Figure 276: 16QAM 20MHz B.W.; 2593.0MHz

Figure 277: 16QAM 20MHz B.W.; 2680.0MHz

Figure 278: 64QAM 20MHz B.W.; 2506.0MHz

Figure 279: 64QAM 20MHz B.W.; 2593.0MHz

Figure 280: 64QAM 20MHz B.W.; 2680.0MHz

Figure 281: QPSK 20MHz B.W.; 2506.0MHz

Figure 282: QPSK 20MHz B.W.; 2593.0MHz

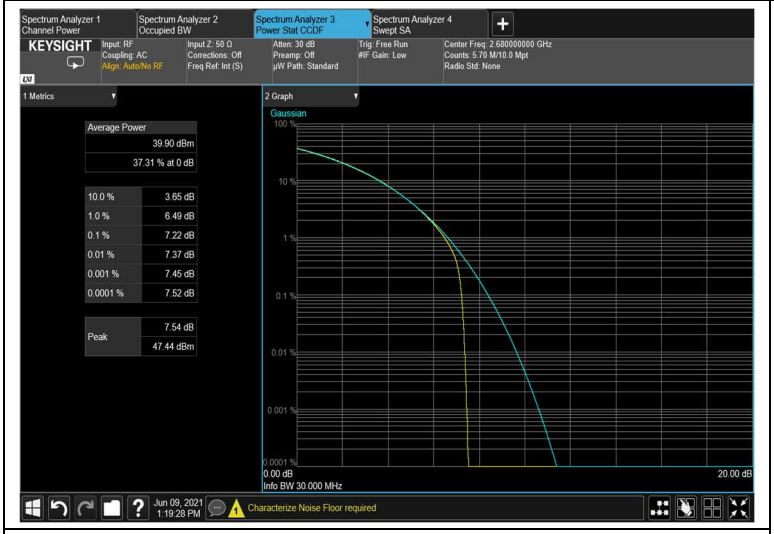

Figure 283: QPSK 20MHz B.W.; 2680.0MHz

6.5 Test Equipment Used; 0.1% PAPR

Instrument	Manufacturer	Model	Serial Number	Calibration	
				Last Calibration	Calibration Due
EXA signal Analyzer	Keysight	UXA N9040B	MY56080119	January 31, 2020	January 31, 2022
EXG Vector Signal Generator	Agilent Technologies	N5172B	MY53051952	January 17, 2019	January 17, 2022
40 dB Attenuator	Weinschel Associates	WA 39-40-33	-	November 1, 2020	November 1, 2021
RF Coaxial Cable	Huber-Suner	SLLS210B	-	November 1, 2020	November 1, 2021

Table 23 Test Equipment Used

7 Band Edge Spectrum

7.1 Test Specification

FCC Part 27, Subpart C, Section 27.53 (c)(1)

7.2 Test Procedure

(Temperature (22°C)/ Humidity (35%RH))
The E.U.T. antenna terminal was connected to the spectrum analyzer through an external attenuator and an appropriate coaxial cable (41.1dB).
The spectrum analyzer was set to 100 kHz R.B.W.

7.3 Test Limit

The power of any emission outside of the authorized operating frequency ranges (2496-2690 MHz) must be attenuated below the transmitting power (P) by a factor of at least 43 + log (P) dB, yielding –13dBm.

7.4 Test Results

JUDGEMENT: Passed

See additional information in:
5G: Table 24 to Table 27, and Figure 284 to Figure 329.
4G: Table 28 and Figure 330 to Figure 329.

5G

	Bandwidth	Sub Carrier	Operation Frequency	Reading
	(MHz)	(kHz)	(MHz)	(dBm)
Modulation 16QAM	40	15	2516	-16.567
		30		-26.708
		60		-40.392
		15	2670	-15.807
		30		-26.690
		60		-38.053
	60	30	2526	-29.764
		60		-38.621
		30	2660	-30.288
		60		-35.054

Table 24 Band Edge Spectrum Results 16QAM

	Bandwidth	Sub Carrier	Operation Frequency	Reading
	(MHz)	(kHz)	(MHz)	(dBm)
Modulation 64QAM	40	15	2516	-29.735
		30		-37.208
		60		-40.234
		15	2670	-19.323
		30		-26.695
		60		-34.188
	60	30	2526	-37.879
		60		-40.749
		30	2660	-34.188
		60		-35.095

Table 25 Band Edge Spectrum Results 64QAM

	Bandwidth	Sub Carrier	Operation Frequency	Reading
	(MHz)	(kHz)	(MHz)	(dBm)
Modulation 256QAM	40	15	2516	-26.936
		30		-33.541
		60		-38.914
		15	2670	-16.737
		30		-20.853
		60		-35.680
	60	30	2526	-35.900
		60		-39.133
		30	2660	-28.438
		60		-24.379

Table 26 Band Edge Spectrum Results 256QAM

	Bandwidth	Sub Carrier	Operation Frequency	Reading
	(MHz)	(kHz)	(MHz)	(dBm)
Modulation QPSK	40	15	2516	-26.262
		30		-34.810
		60		-40.013
		15	2670	-24.379
		30		-30.962
		60		-37.218
	60	30	2526	-37.061
		60		-39.244
		30	2660	-32.701
		60		-35.425

Table 27 Band Edge Spectrum Results QPSK