

Bandwidth	Test status	LTE Band 13 Channel 23230 Test Results (ppm)	
		QPSK	16QAM
5MHz	-40°C/Normal Voltage	0.00022	-0.02604
	-30°C/Normal Voltage	-0.00203	-0.02249
	-20°C/Normal Voltage	-0.00272	-0.00797
	-10°C/Normal Voltage	-0.00165	0.03445
	0°C/Normal Voltage	-0.00018	0.03297
	10°C/Normal Voltage	-0.00093	-0.02716
	20°C/Normal Voltage	-0.00330	-0.03679
	30°C/Normal Voltage	-0.00271	-0.00685
	40°C/Normal Voltage	-0.00263	-0.00830
	50°C/Normal Voltage	-0.00049	-0.01060
	60°C/Normal Voltage	-0.00203	-0.01101
	70°C/Normal Voltage	0.00084	-0.01442
	80°C/Normal Voltage	0.00040	-0.02146
	85°C/Normal Voltage	-0.00301	-0.02216
	20°C/Min Voltage	-0.00225	-0.02006
	20°C/Max Voltage	-0.00334	-0.02955
10MHz	-40°C/Normal Voltage	-0.00396	-0.01558
	-30°C/Normal Voltage	-0.00301	-0.01306
	-20°C/Normal Voltage	-0.00224	-0.01606
	-10°C/Normal Voltage	-0.00465	-0.01453
	0°C/Normal Voltage	-0.00260	-0.01353
	10°C/Normal Voltage	-0.00377	-0.01633
	20°C/Normal Voltage	0.00173	-0.01482
	30°C/Normal Voltage	0.00276	-0.01651
	40°C/Normal Voltage	-0.00032	-0.01604
	50°C/Normal Voltage	-0.00161	-0.01311
	60°C/Normal Voltage	-0.00087	-0.01611
	70°C/Normal Voltage	-0.00093	-0.01573
	80°C/Normal Voltage	0.00185	-0.01488
	85°C/Normal Voltage	0.00023	-0.01517
	20°C/Min Voltage	-0.00132	-0.01306
	20°C/Max Voltage	-0.00390	-0.01573

## 5.7 Spurious Emissions at Antenna Terminals

### Ambient condition

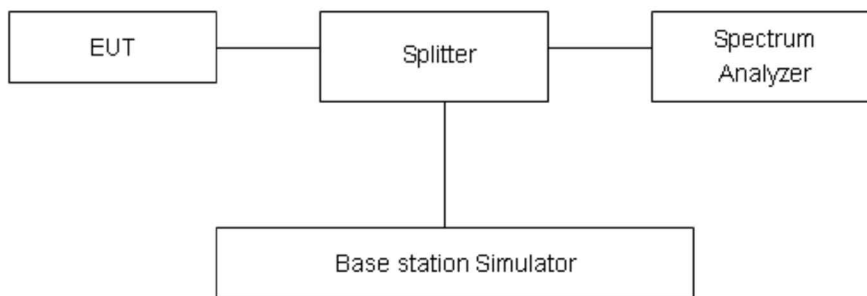
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 1MHz and VBW3MHz, Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

### Test setup



### Limits

LTE -4 Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log<sub>10</sub> (P) dB..”

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

LTE -13 Rule Part 27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to –70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and –80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be



tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

**LTE B4/12 Limit**

Limit	-13 dBm
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**LTE B13 Limit**

Limit out of the band 1559-1610 MHz	-13 dBm
Limit in the band 1559-1610 MHz	-40 dBm

**Measurement Uncertainty**

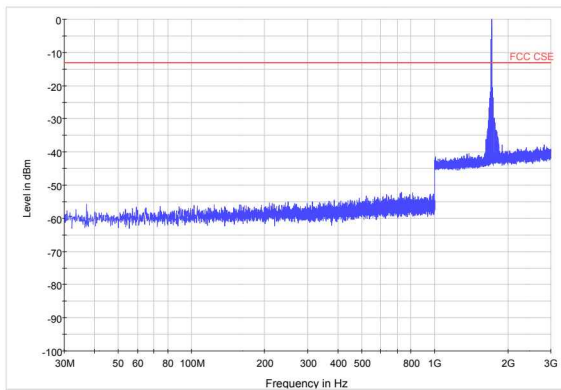
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-12.75GHz	1.407 dB

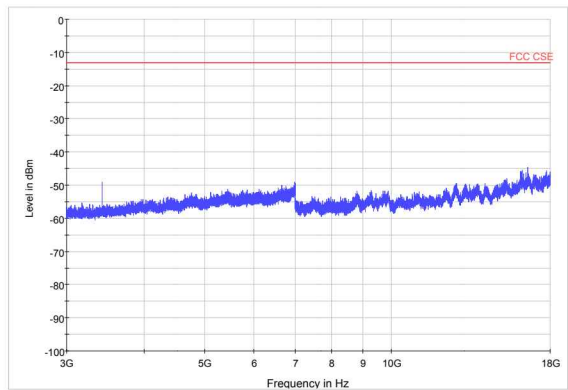


Test Result: PASS

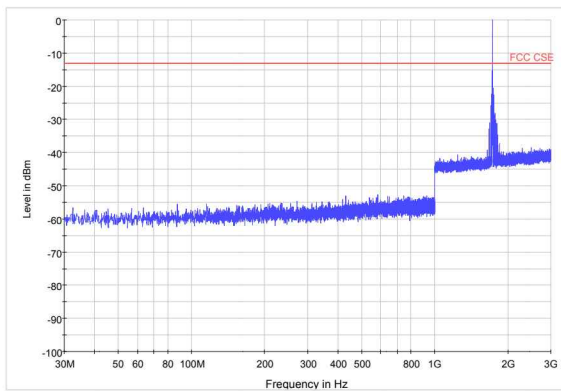
LTE Band 4 1.4MHz CH-Low 30MHz~3GHz



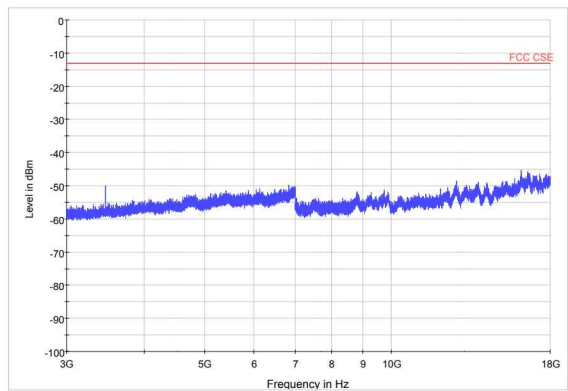
LTE Band 4 1.4MHz CH-Low 3GHz~18GHz



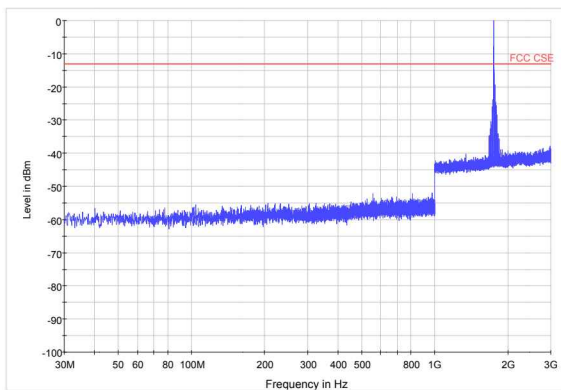
LTE Band 4 1.4MHz CH-Middle 30MHz~3GHz



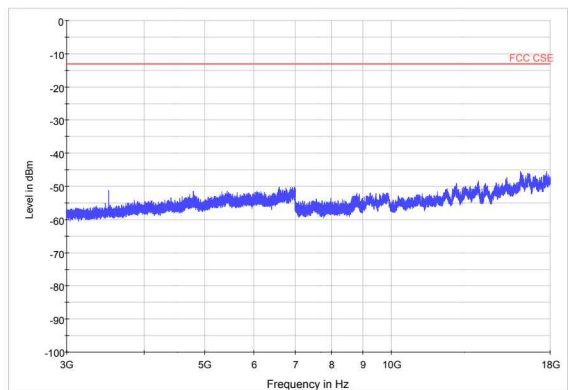
LTE Band 4 1.4MHz CH-Middle 3GHz~18GHz



LTE Band 4 1.4MHz CH-High 30MHz~3GHz

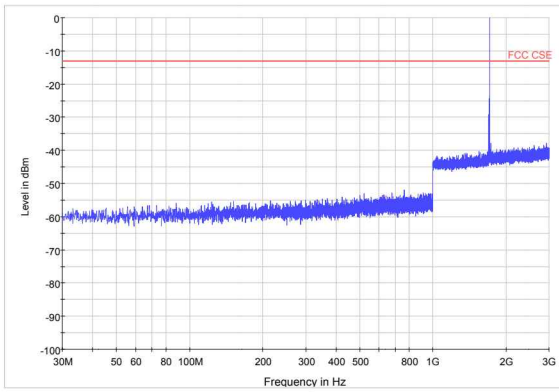


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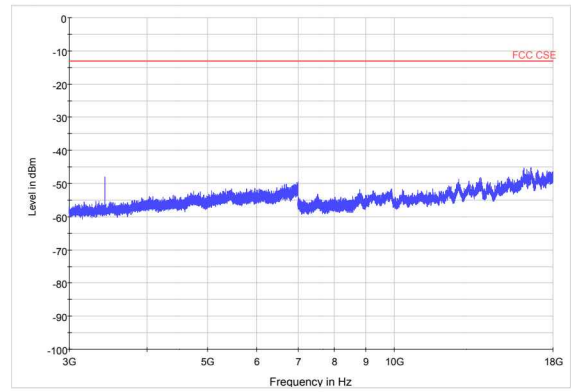




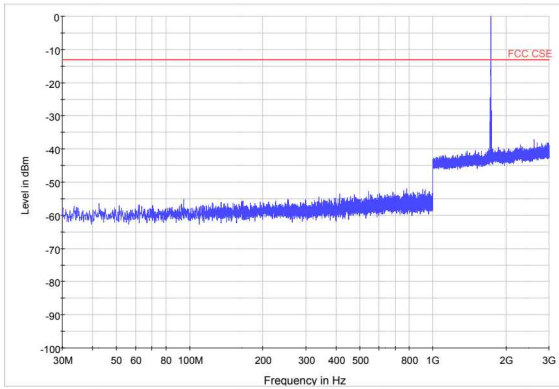
LTE Band 4 3MHz CH-Low 30MHz~3GHz



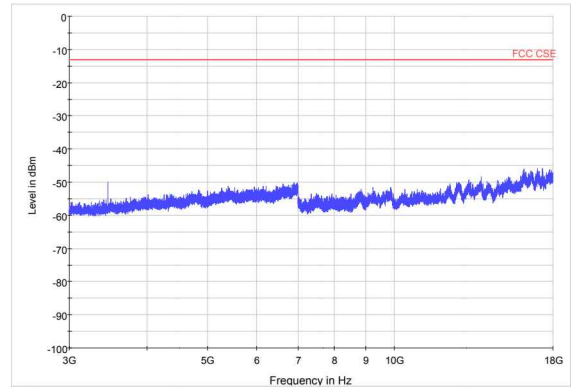
LTE Band 4 3MHz CH-Low 3GHz~18GHz



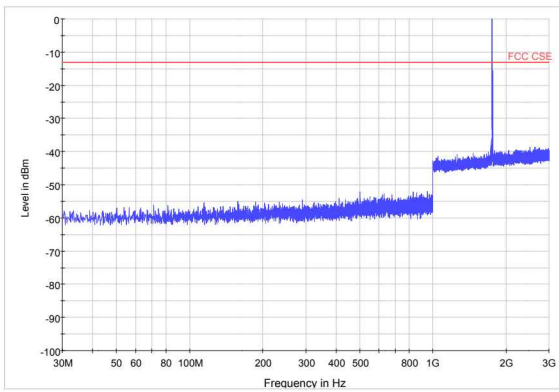
LTE Band 4 3MHz CH-Middle 30MHz~3GHz



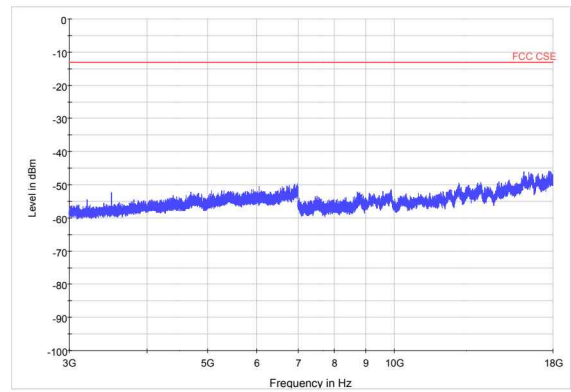
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LTE Band 4 3MHz CH-High 30MHz~3GHz

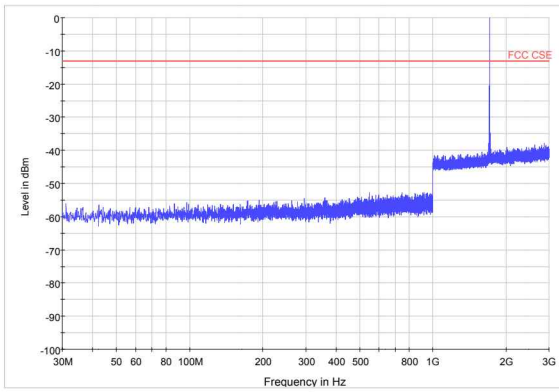


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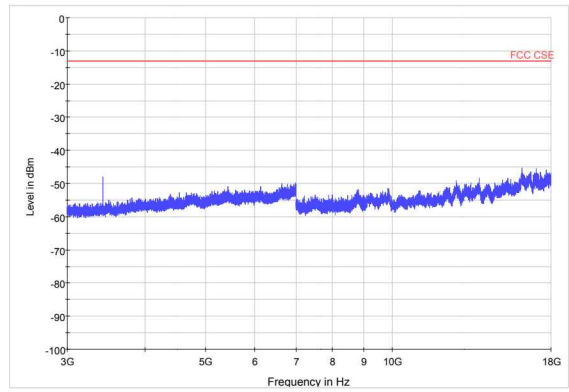




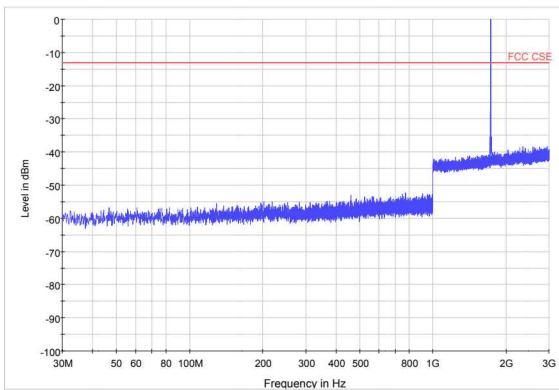
LTE Band 4 5MHz CH-Low 30MHz~3GHz



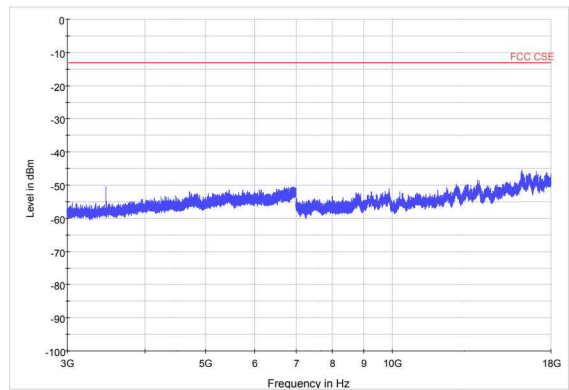
LTE Band 4 5MHz CH-Low 3GHz~18GHz



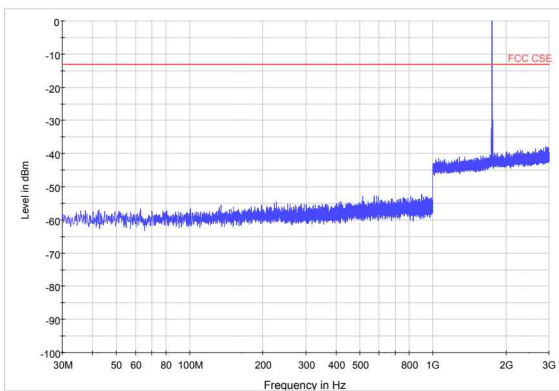
LTE Band 4 5MHz CH-Middle 30MHz~3GHz



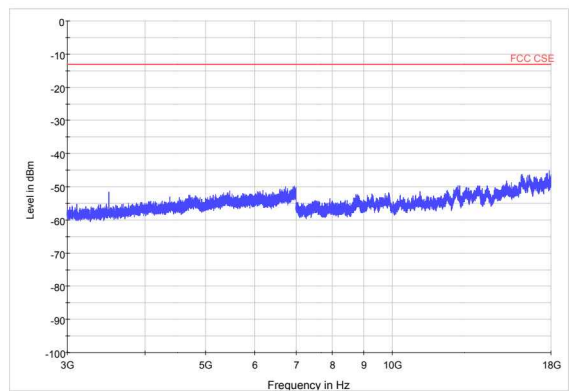
LTE Band 4 5MHz CH-Middle 3GHz~18GHz



LTE Band 4 5MHz CH-High 30MHz~3GHz

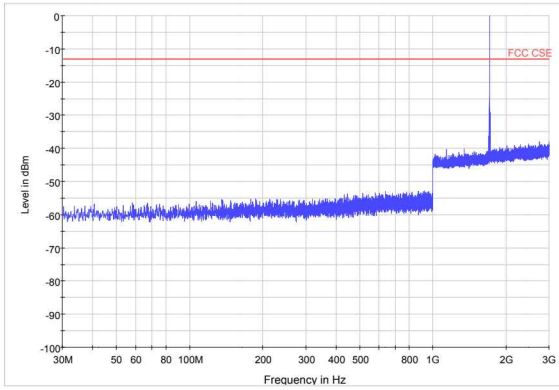


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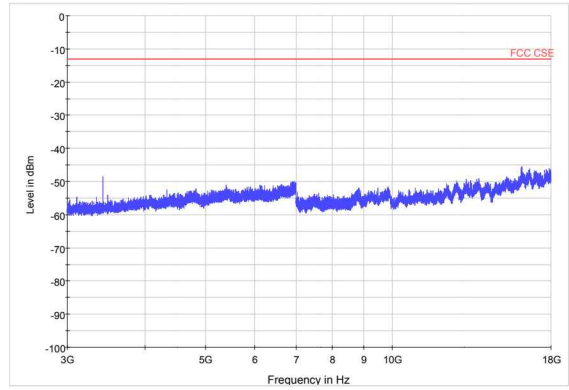




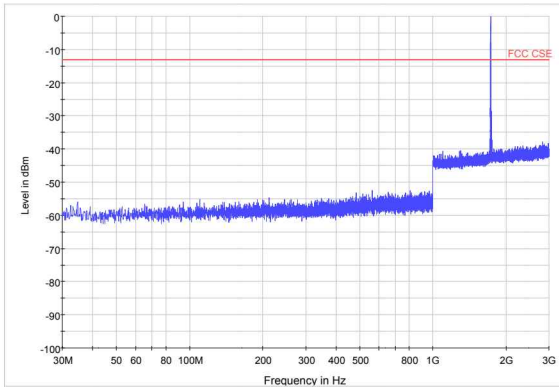
LTE Band 4 10MHz CH-Low 30MHz~3GHz



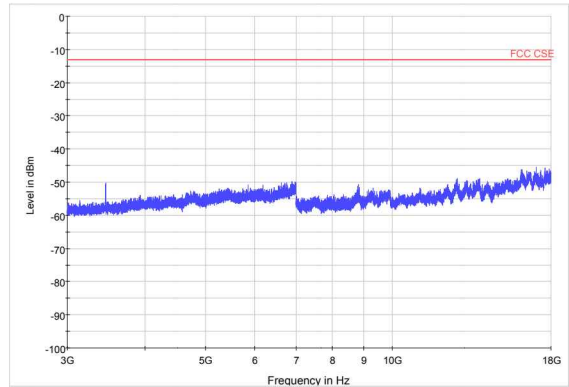
LTE Band 4 10MHz CH-Low 3GHz~18GHz



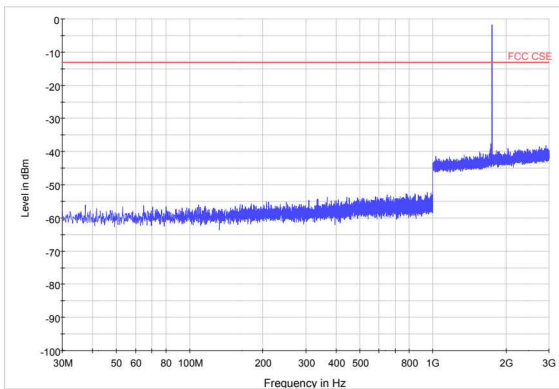
LTE Band 4 10MHz CH-Middle 30MHz~3GHz



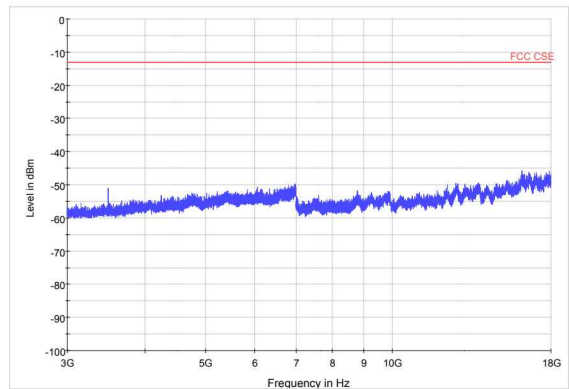
LTE Band 4 10MHz CH-Middle 3GHz~18GHz



LTE Band 4 10MHz CH-High 30MHz~3GHz

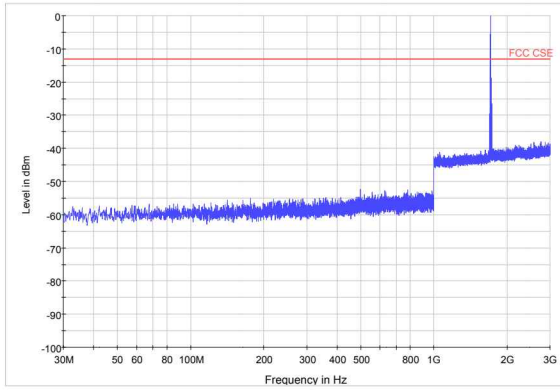


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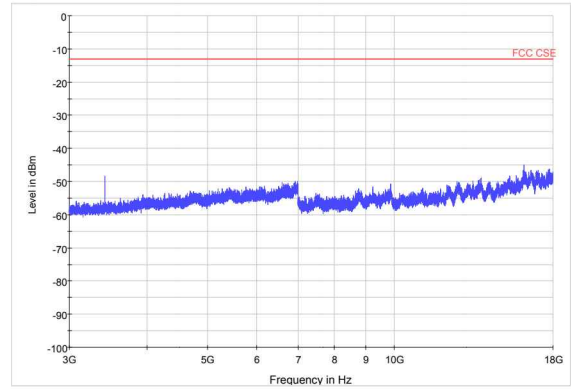




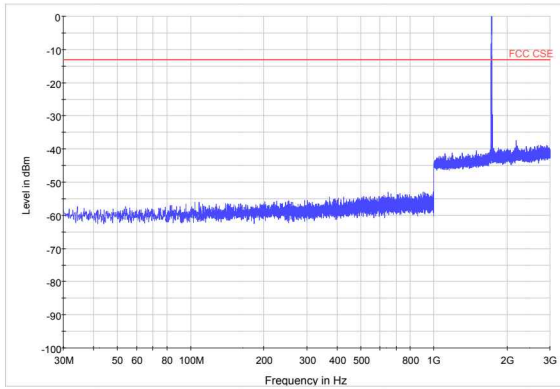
LTE Band 4 15MHz CH-Low 30MHz~3GHz



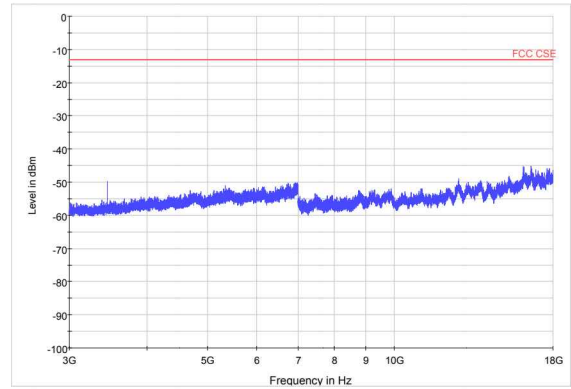
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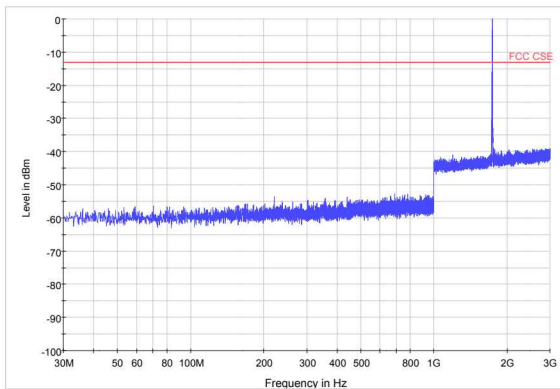
LTE Band 4 15MHz CH-Middle 30MHz~3GHz



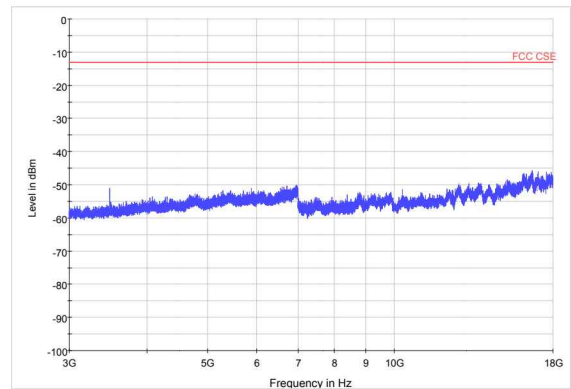
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LTE Band 4 15MHz CH-High 30MHz~3GHz



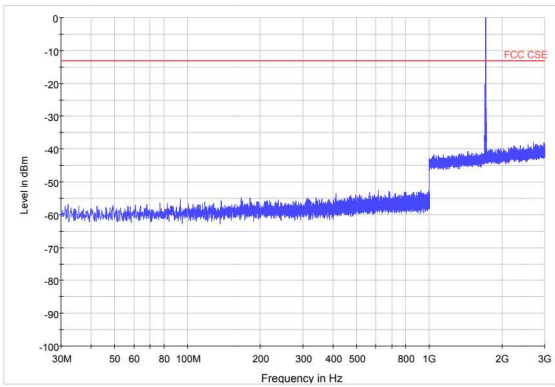
LTE Band 4 15MHz CH-High 3GHz~18GHz



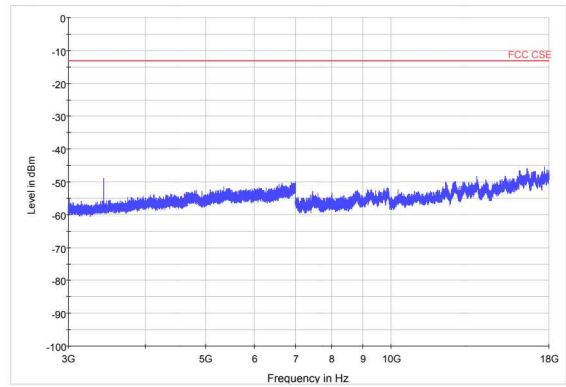




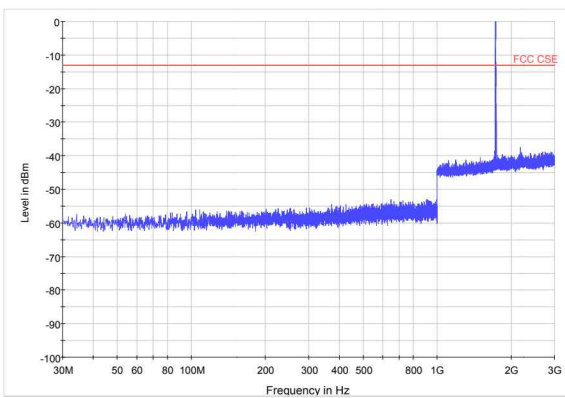
LTE Band 4 20MHz CH-Low 30MHz~3GHz



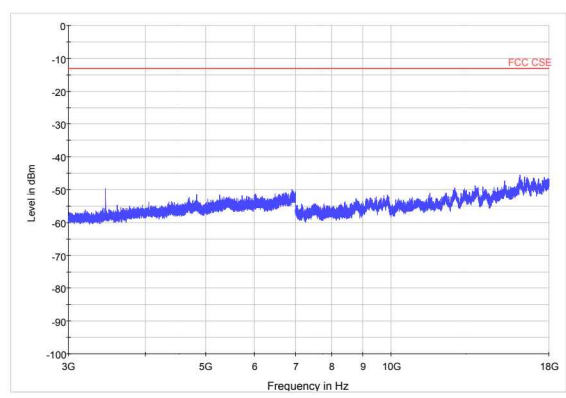
LTE Band 4 20MHz CH-Low 3GHz~18GHz



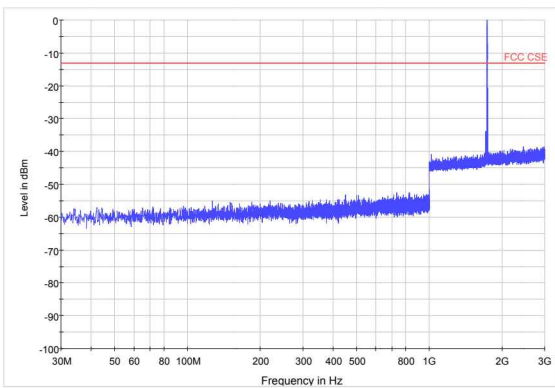
LTE Band 4 20MHz CH-Middle 30MHz~3GHz



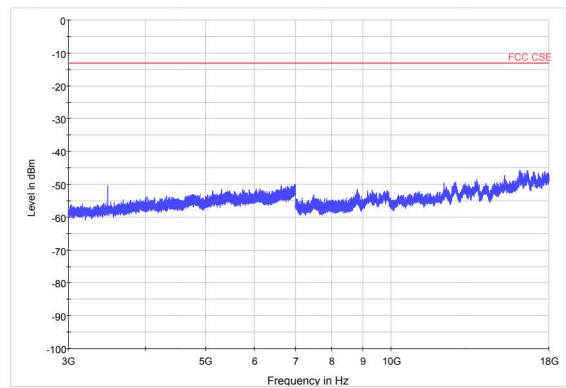
LTE Band 4 20MHz CH-Middle 3GHz~18GHz



LTE Band 4 20MHz CH-High 30MHz~3GHz

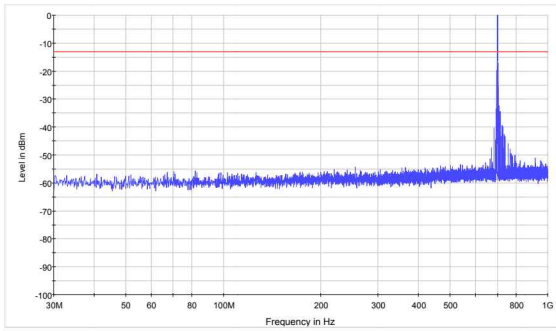


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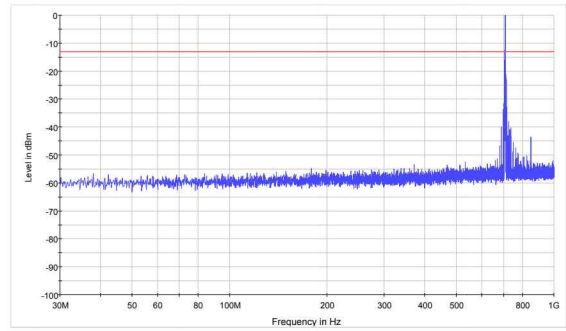




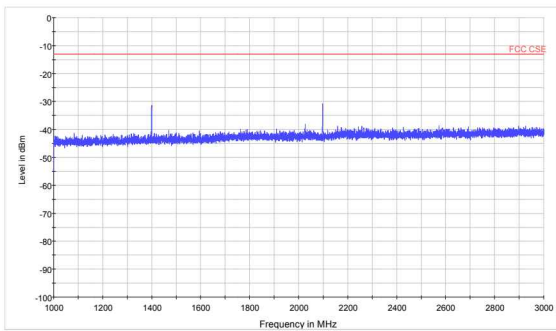
LTE Band 12 1.4MHz CH-Low 30MHz~1GHz



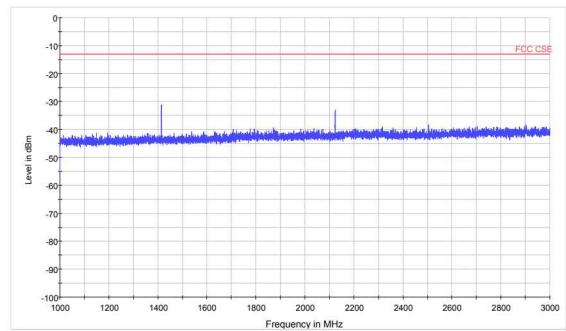
LTE Band 12 1.4MHz CH-Middle 30MHz~1GHz



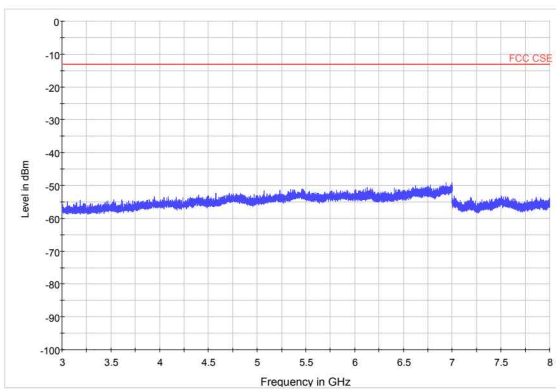
LTE Band 12 1.4MHz CH-Low 1GHz~3GHz



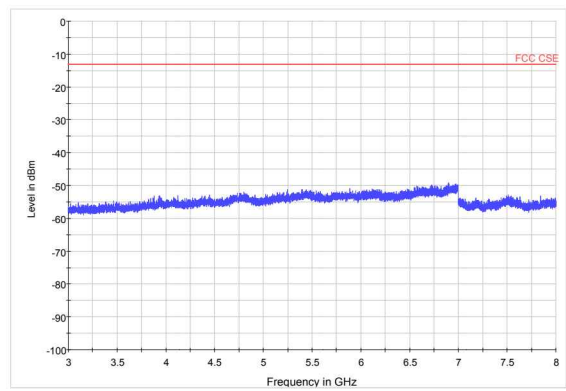
LTE Band 12 1.4MHz CH-Middle 1GHz~3GHz



LTE Band 12 1.4MHz CH-Low 3GHz~8GHz

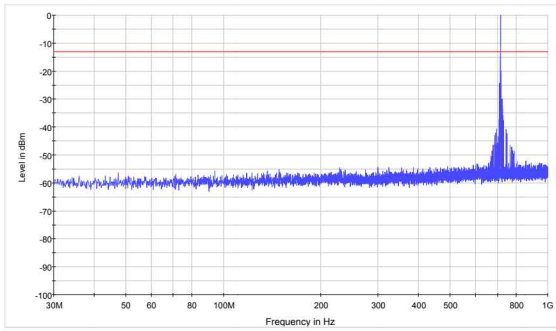


LTE Band 12 1.4MHz CH-Middle 3GHz~8GHz

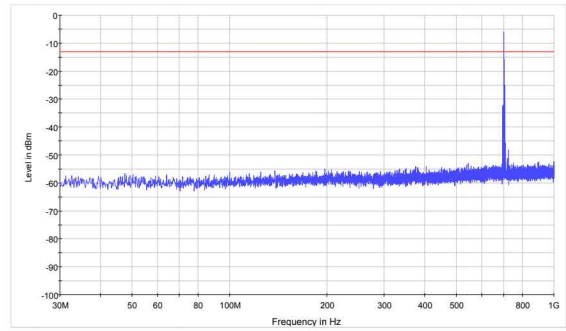




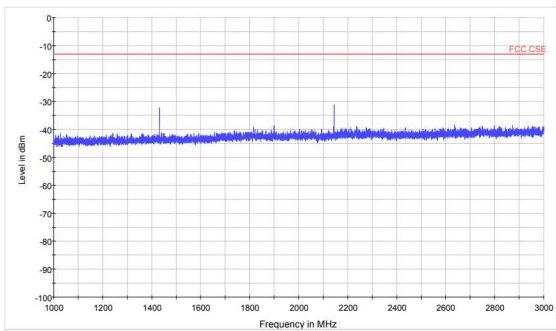
LTE Band 12 1.4MHz CH-High 30MHz~1GHz



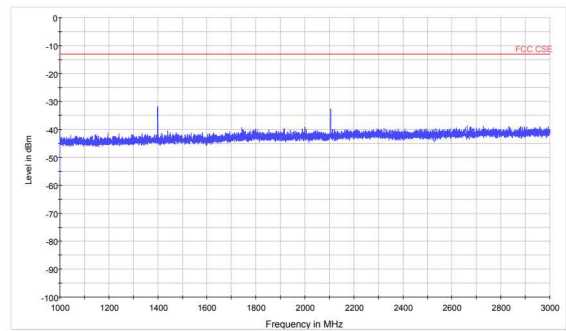
LTE Band 12 3MHz CH-Low 30MHz~1GHz



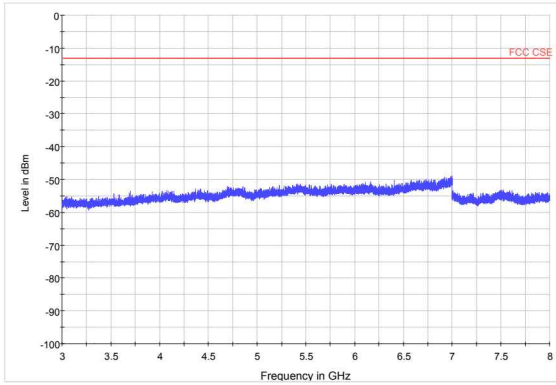
LTE Band 12 1.4MHz CH-High 1GHz~3GHz



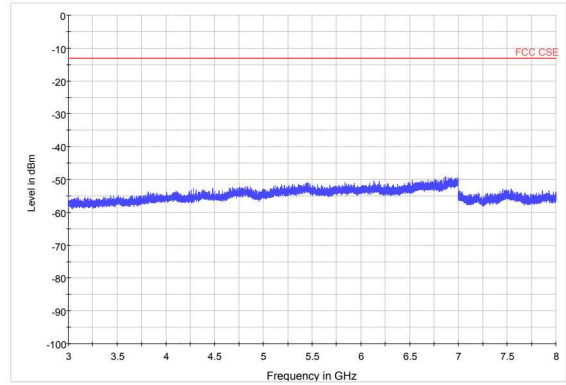
LTE Band 12 3MHz CH-Low 1GHz~3GHz



LTE Band 12 1.4MHz CH-High 3GHz~8GHz

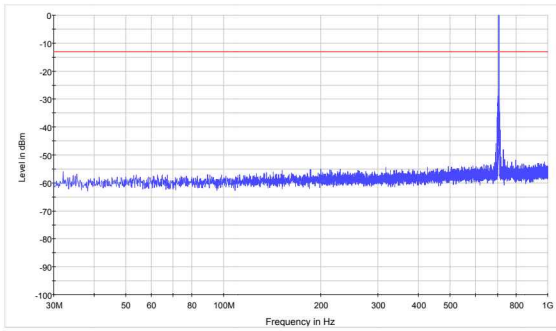


LTE Band 12 3MHz CH-Low 3GHz~8GHz

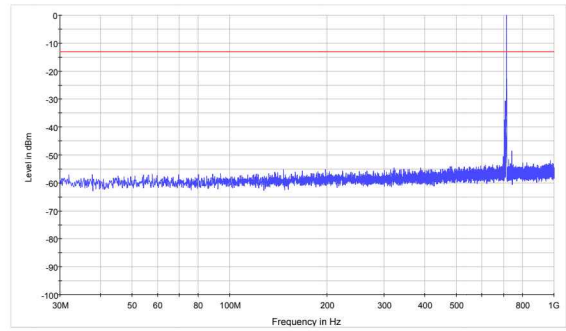




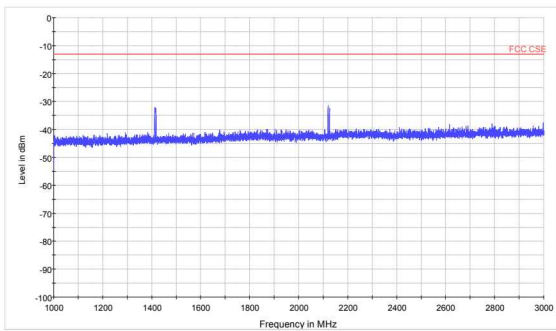
LTE Band 12 3MHz CH-Middle 30MHz~1GHz



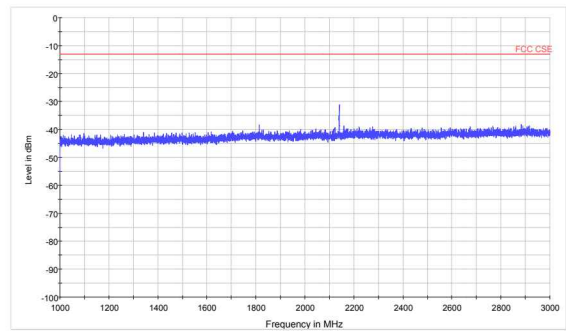
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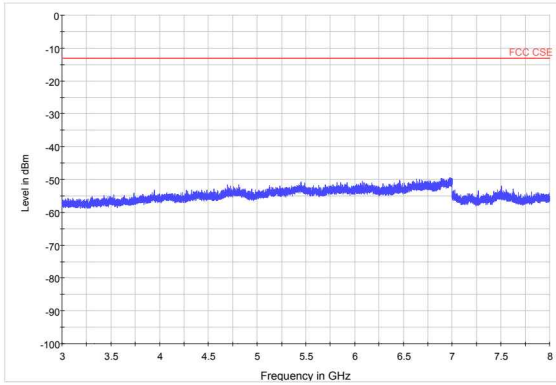
LTE Band 12 3MHz CH-Middle 1GHz~3GHz



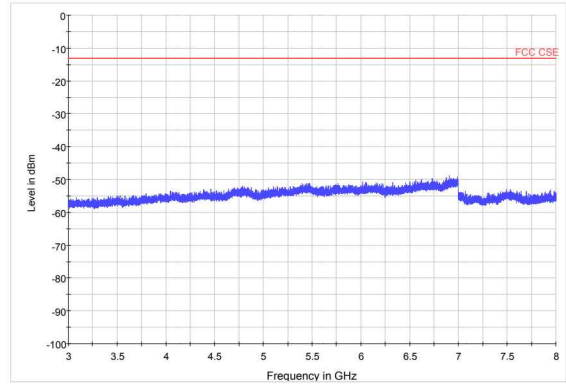
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LTE Band 12 3MHz CH-Middle 3GHz~8GHz

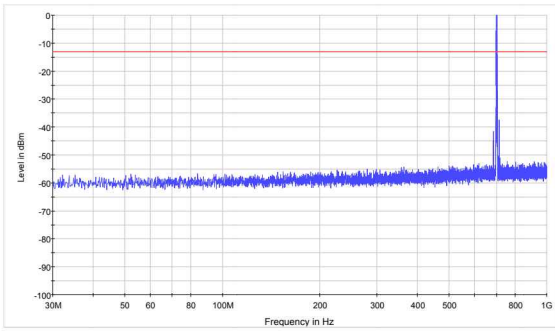


LTE Band 12 3MHz CH-High 3GHz~8GHz

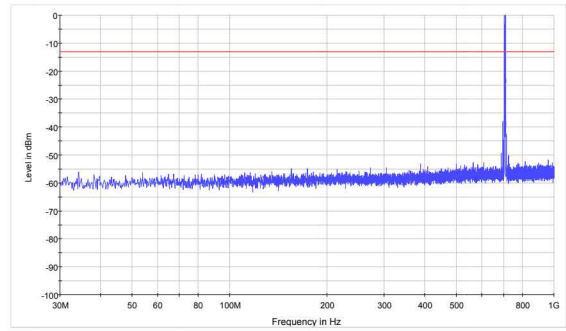




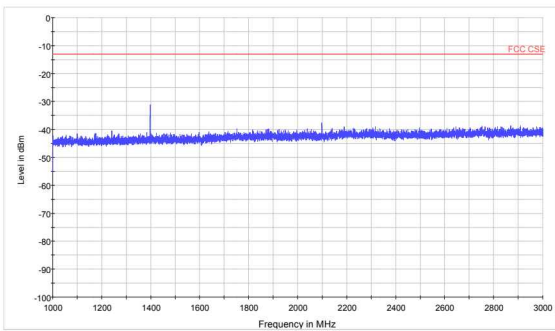
LTE Band 12 5MHz CH-Low 30MHz~1GHz



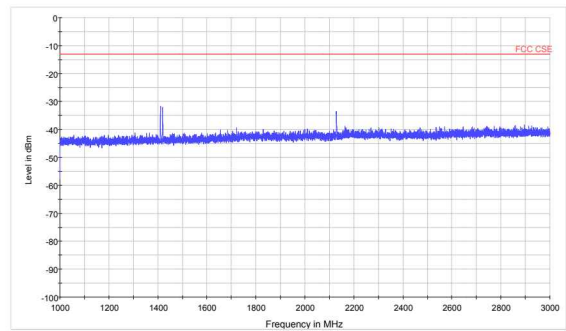
LTE Band 12 5MHz CH-Middle 30MHz~1GHz



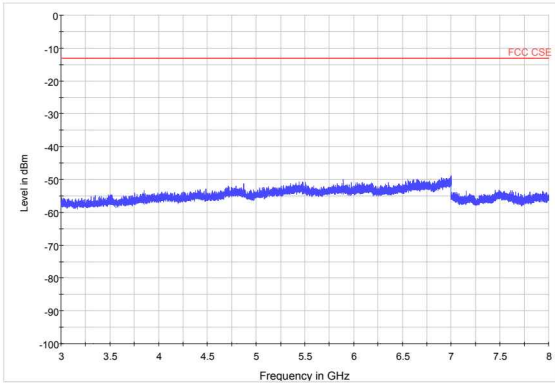
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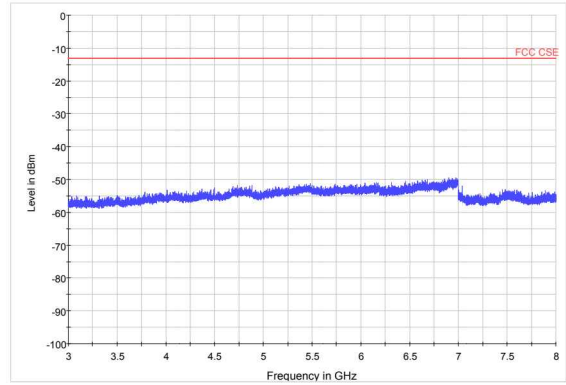
LTE Band 12 5MHz CH-Middle 1GHz~3GHz



LTE Band 12 5MHz CH-Low 3GHz~8GHz

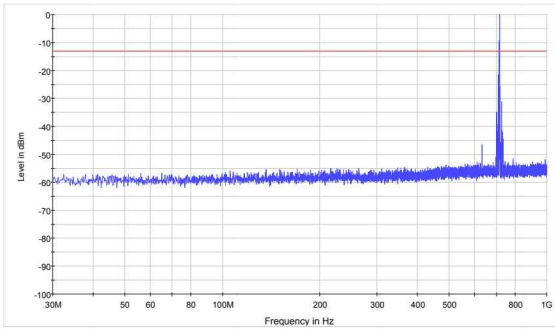


LTE Band 12 5MHz CH-Middle 3GHz~8GHz

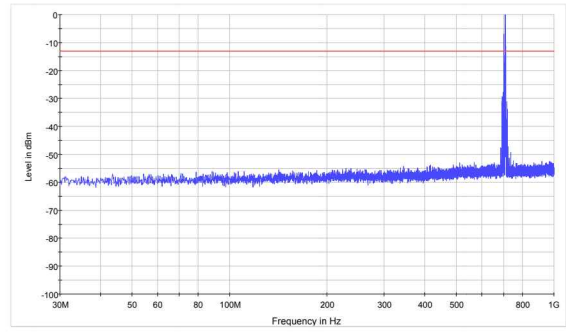




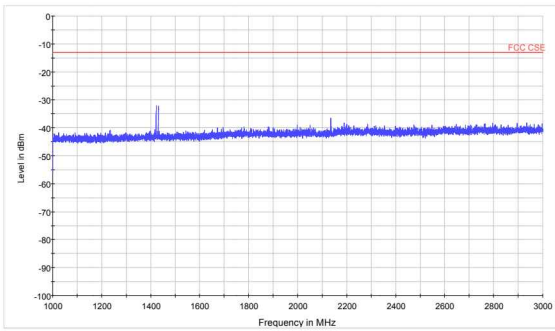
LTE Band 12 5MHz CH-High 30MHz~1GHz



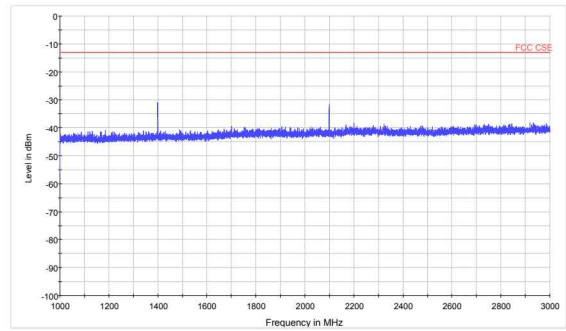
LTE Band 12 10MHz CH-Low 30MHz~1GHz



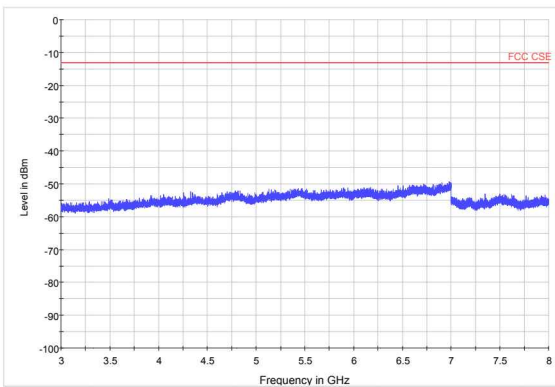
LTE Band 12 5MHz CH-High 1GHz~3GHz



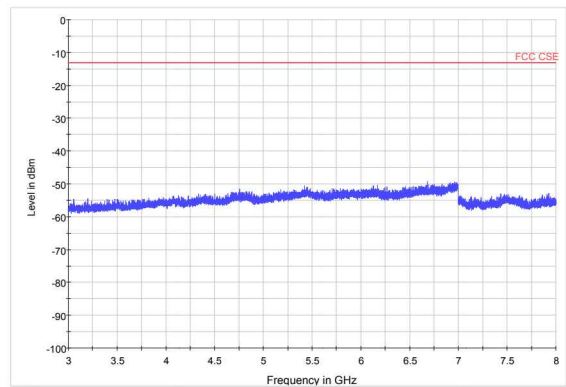
LTE Band 12 10MHz CH-Low 1GHz~3GHz



LTE Band 12 5MHz CH-High 3GHz~8GHz

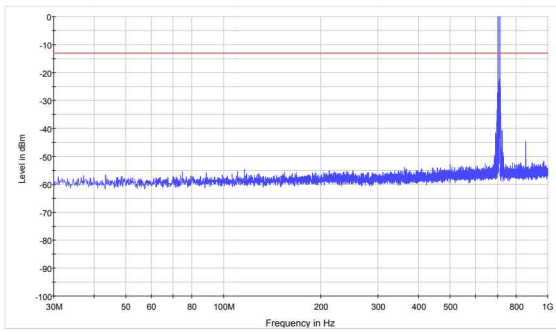


LTE Band 12 10MHz CH-Low 3GHz~8GHz

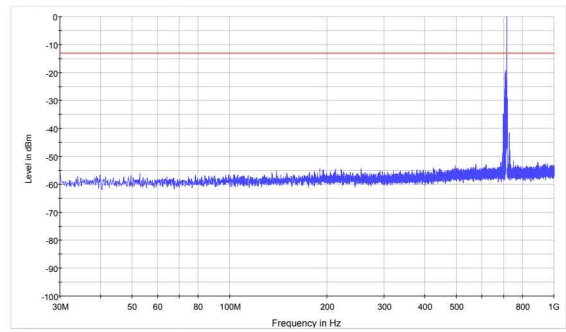




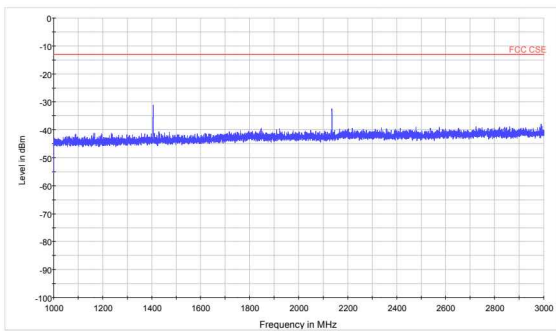
LTE Band 12 10MHz CH-Middle 30MHz~1GHz



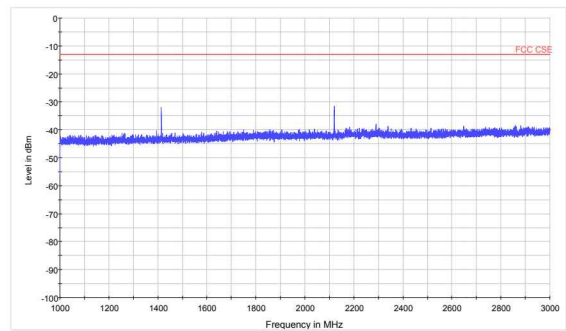
LTE Band 12 10MHz CH-High 30MHz~1GHz



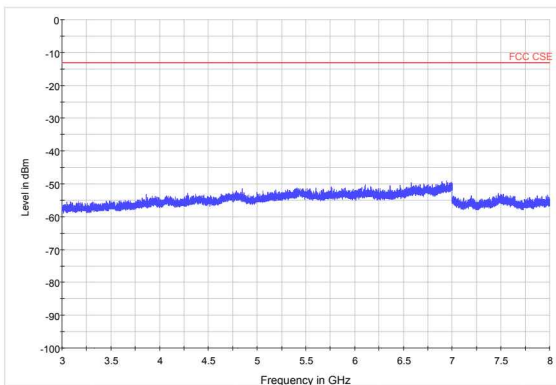
LTE Band 12 10MHz CH-Middle 1GHz~3GHz



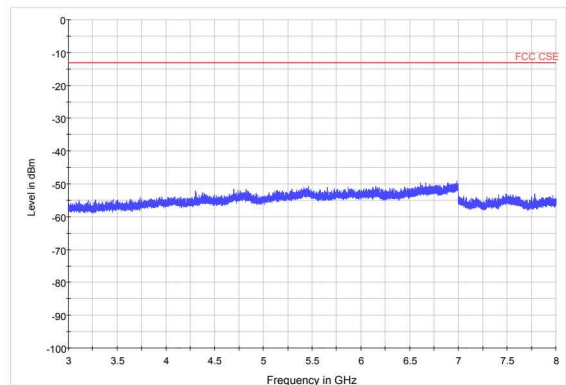
LTE Band 12 10MHz CH-High 1GHz~3GHz



LTE Band 12 10MHz CH-Middle 3GHz~8GHz

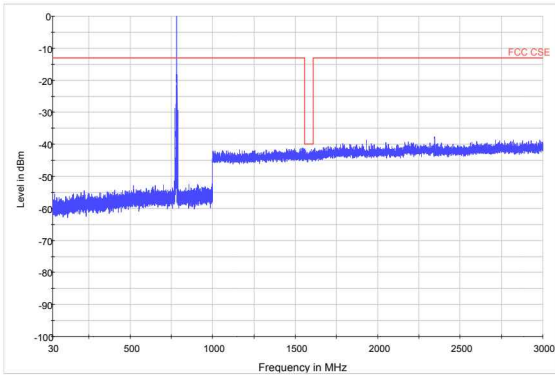


LTE Band 12 10MHz CH-High 3GHz~8GHz

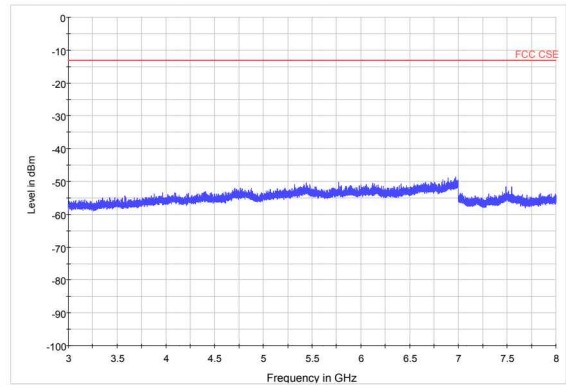




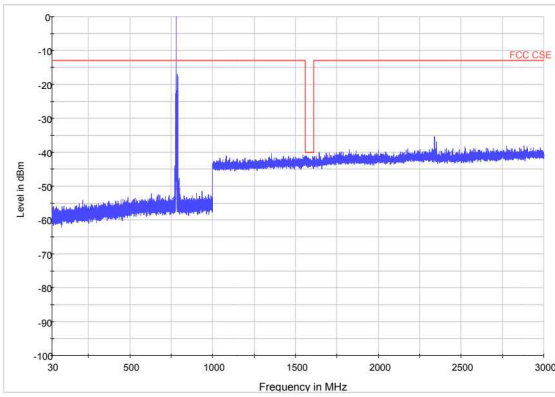
LTE Band 13 5MHz CH-Low 30MHz~3GHz



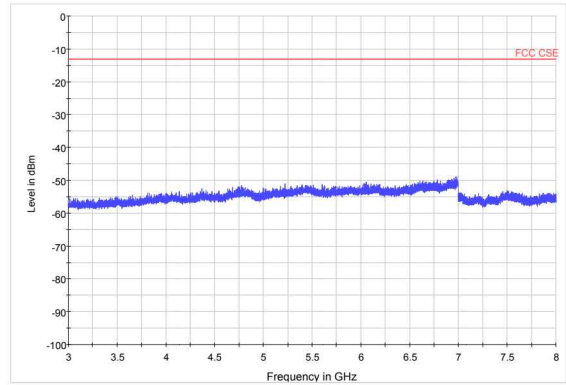
LTE Band 13 5MHz CH-Low 3GHz~8GHz



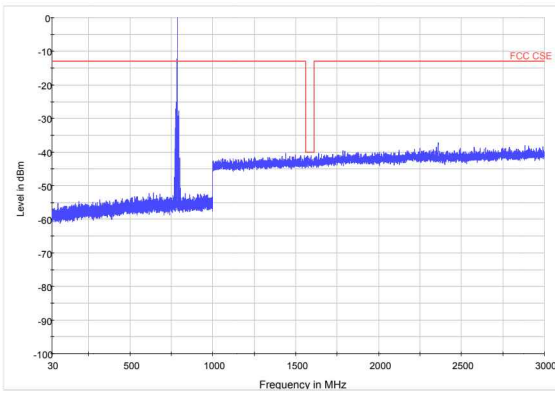
LTE Band 13 5MHz CH-Middle 30MHz~3GHz



LTE Band 13 5MHz CH-Middle 3GHz~8GHz



LTE Band 13 5MHz CH-High 30MHz~3GHz



LTE Band 13 5MHz CH-High 3GHz~8GHz

