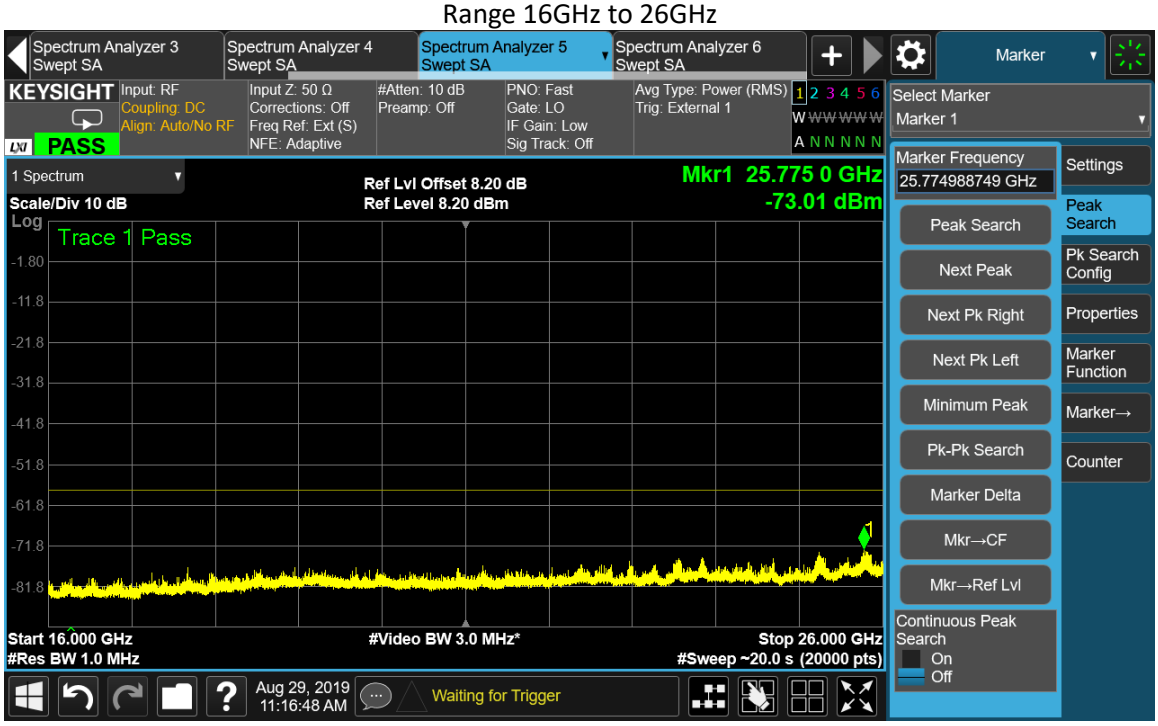
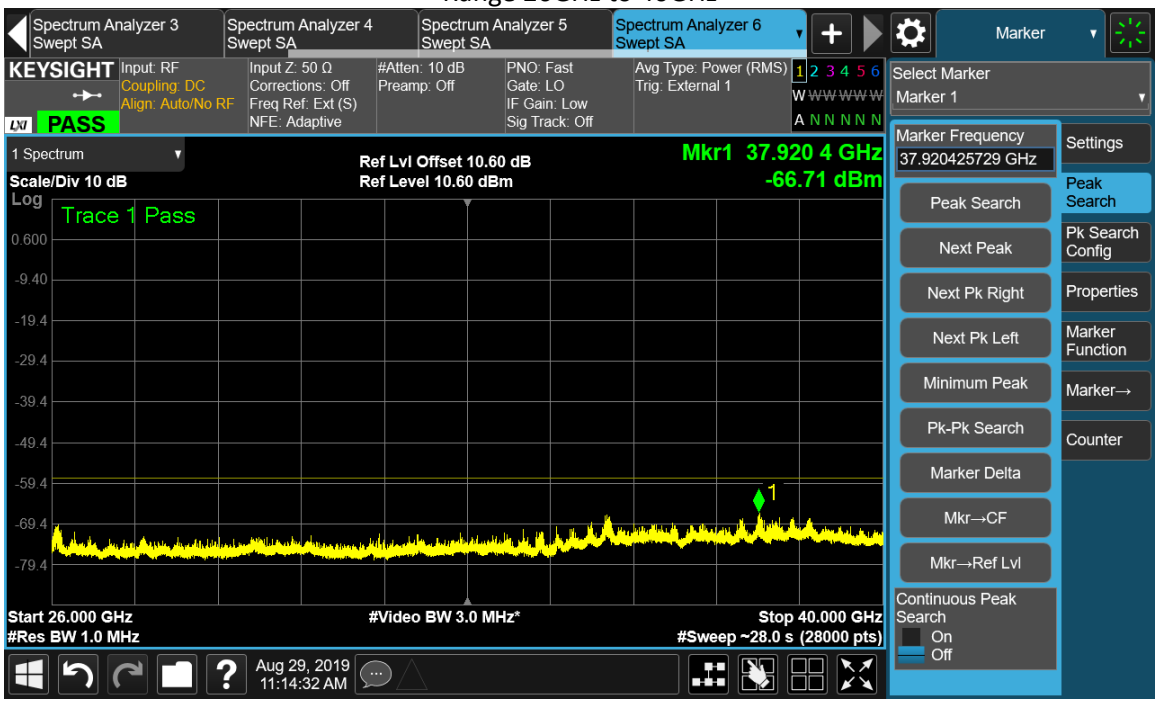
TEST REPORT

Range 16GHz to 26GHz



Range 26GHz to 40GHz



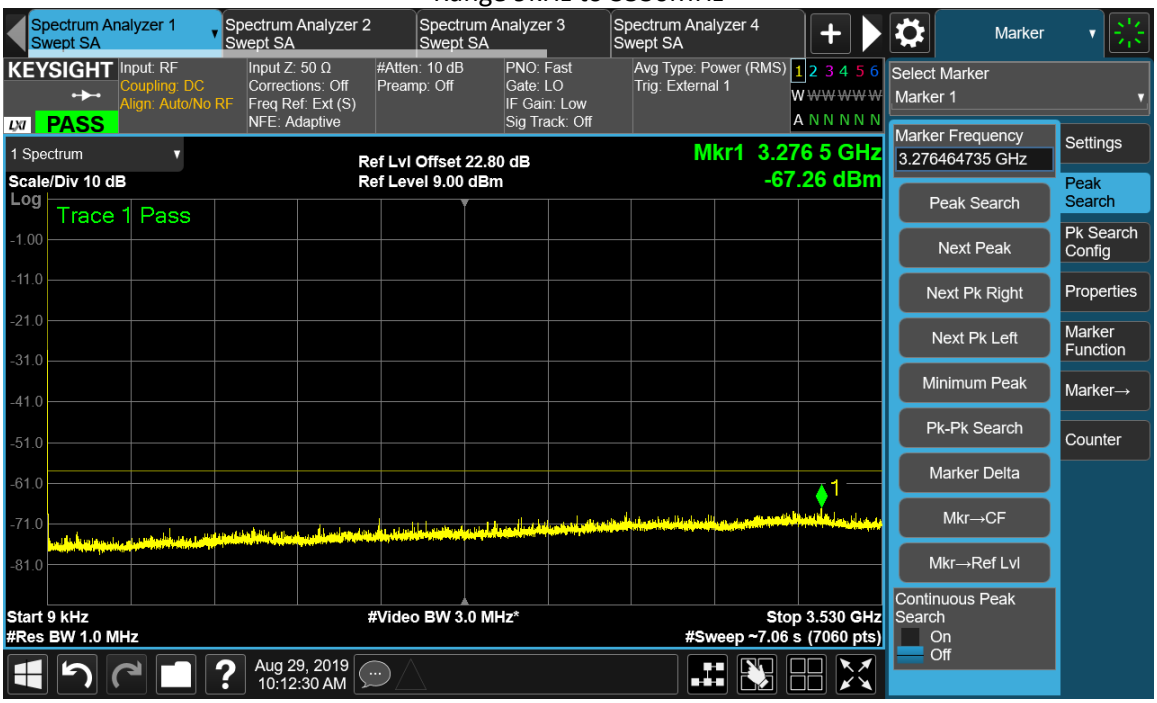
TEST REPORT

LTE-MIMO-3C-20-1:

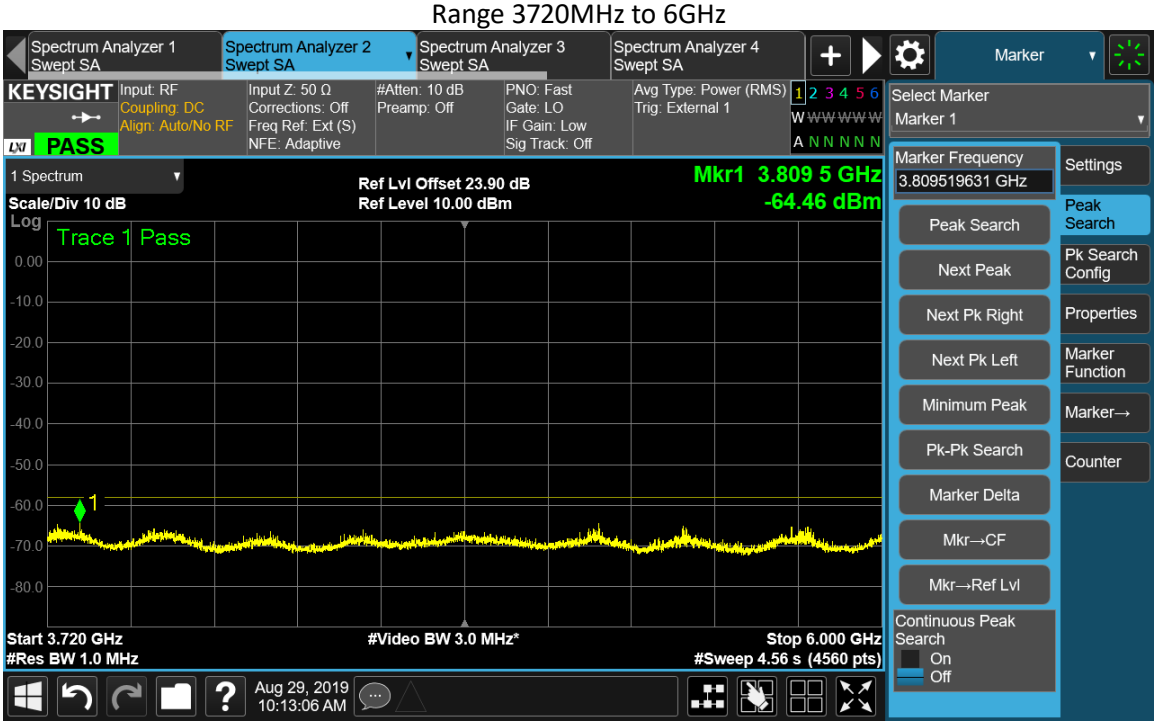
Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
21	T	64QAM	20	1000	-58.06

Channel Position T

Range 9kHz to 3530MHz

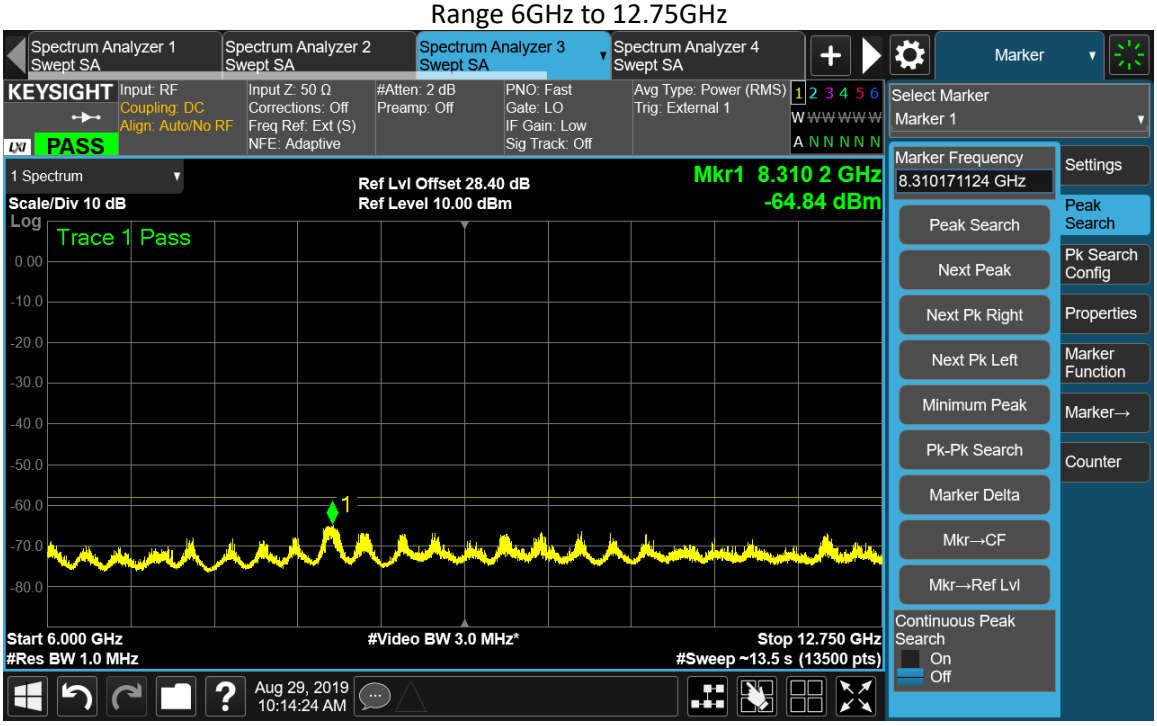


Range 3720MHz to 6GHz

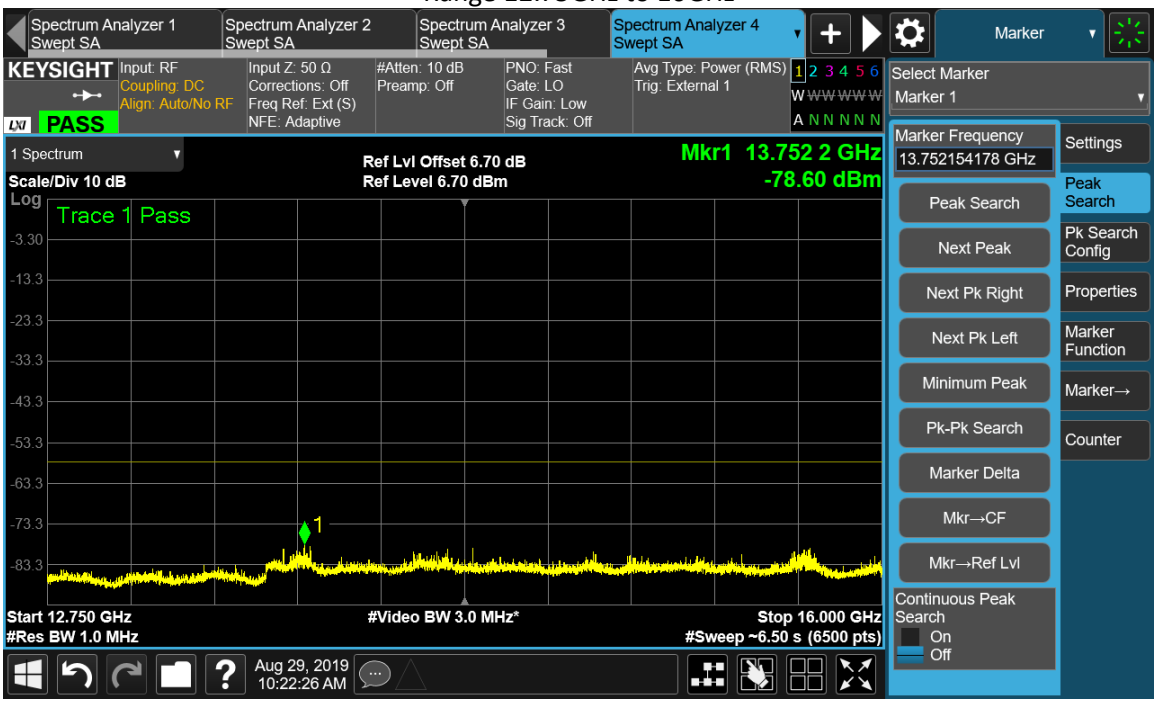


TEST REPORT

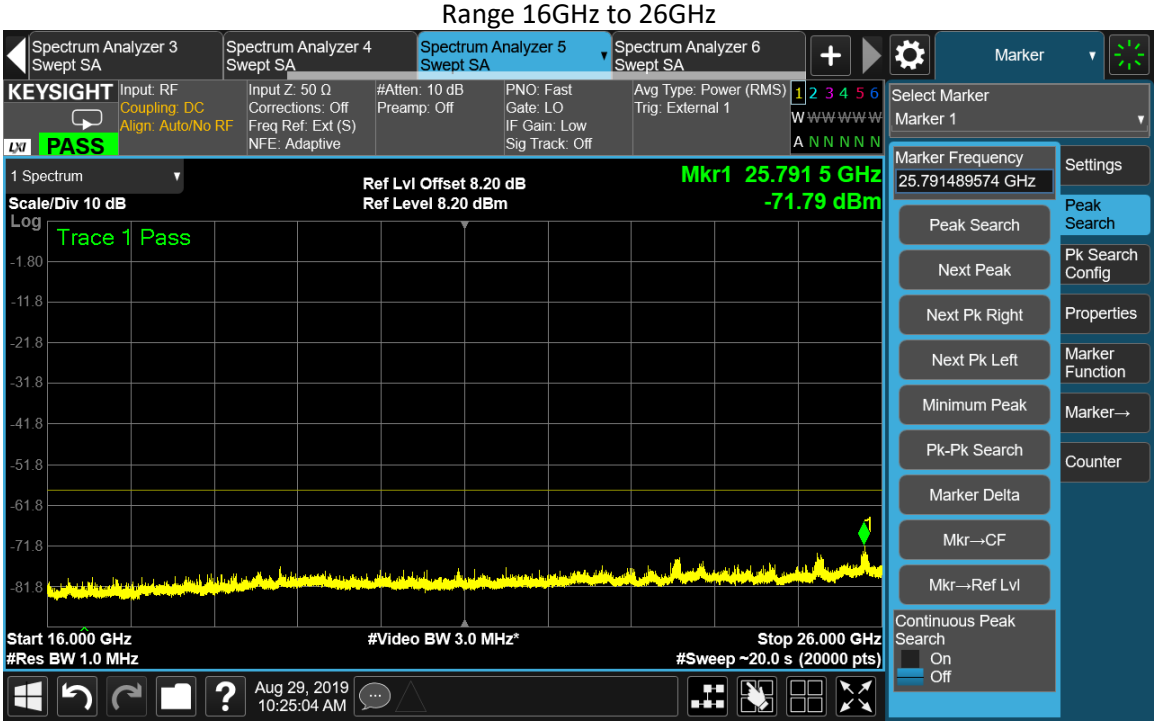
Range 6GHz to 12.75GHz



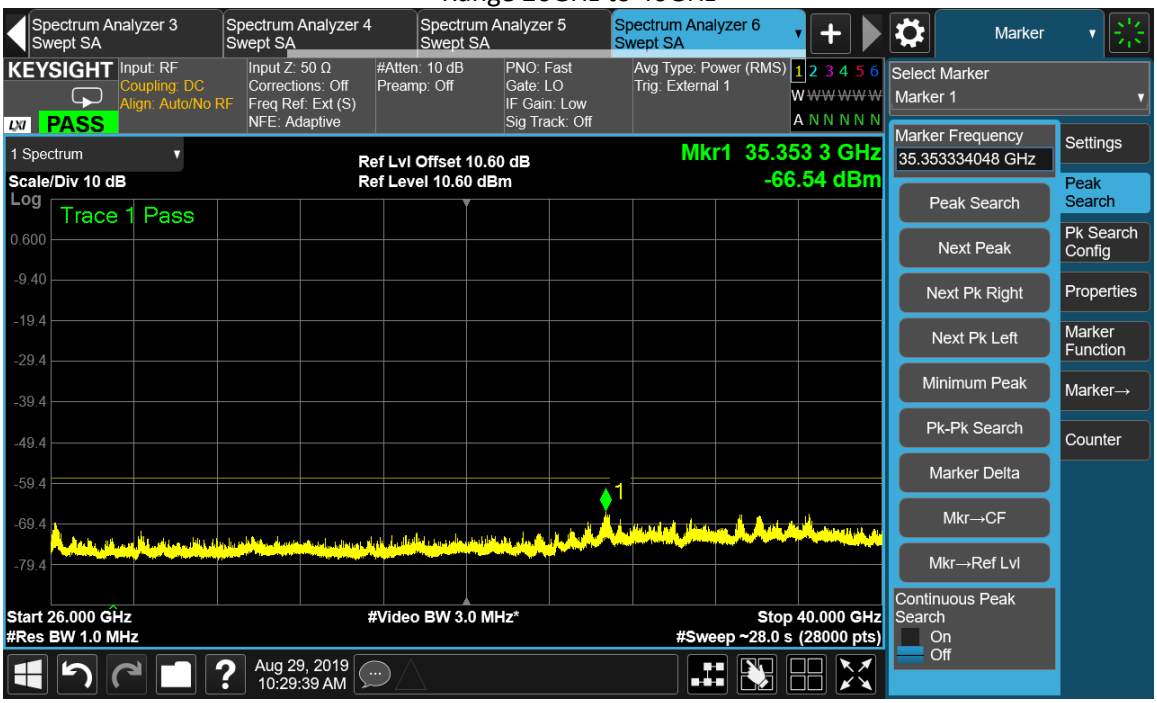
Range 12.75GHz to 16GHz



Range 16GHz to 26GHz



Range 26GHz to 40GHz



7 Radiated Unwanted Emission

Test result: **Pass**

7.1 Limit

The field strength of the carrier has been calculated assuming that the power is to be fed to a half-wave tuned dipoles as per 2.1053 (a).

$E(V/m) = (30 \times Gi \times Po)^{0.5} / d$

Where

Gi is the antenna gain of ideal half-wave dipoles,
Po is the power out of the transceiver in W,
d is the measurement distance in meter.

As per FCC Part 96, at all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed −25 dBm/MHz. In addition, the power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.
Therefore, the limit at 3m measurement distance is:
E(V/m) = 72.4 dBµV/m for the emissions of frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge.
E(V/m) = 57.4 dBµV/m for the emissions below 3530 MHz or above 3720 MHz.

7.2 Measurement Procedure

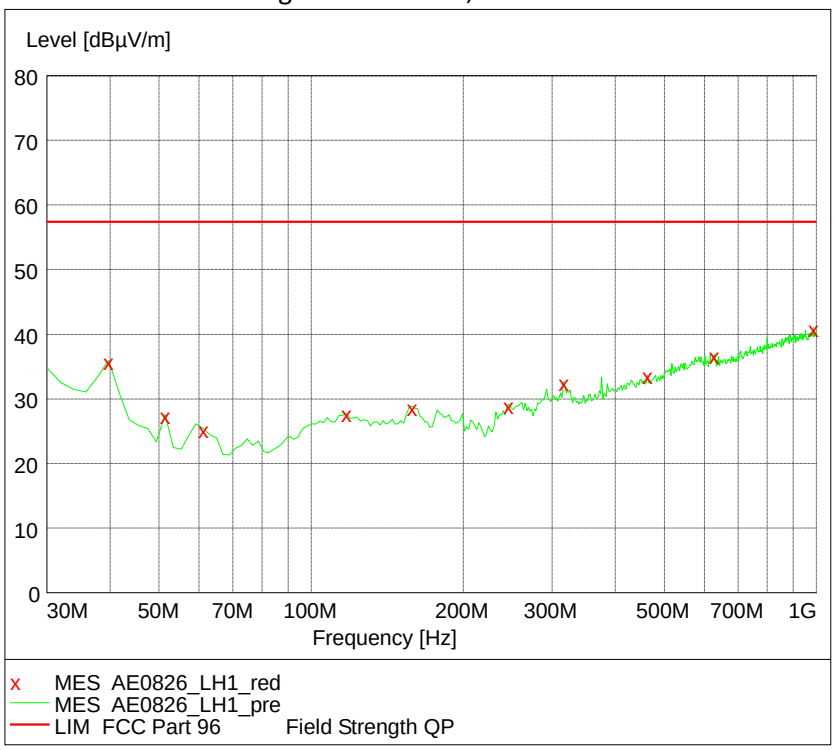
This measurement is carried out in semi-anechoic chamber.
A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within the chamber. Measurements of emissions from the EUT were obtained with the measurement antenna in both horizontal and vertical polarizations.
Emissions identified within the range 30MHz to 40GHz were then formally measured using a peak detector as the worst case.
The EUT was measured with the antenna height varied between 1 and 4 m with the turntable rotated between 0 and 360 degrees.

7.3 Measurement result

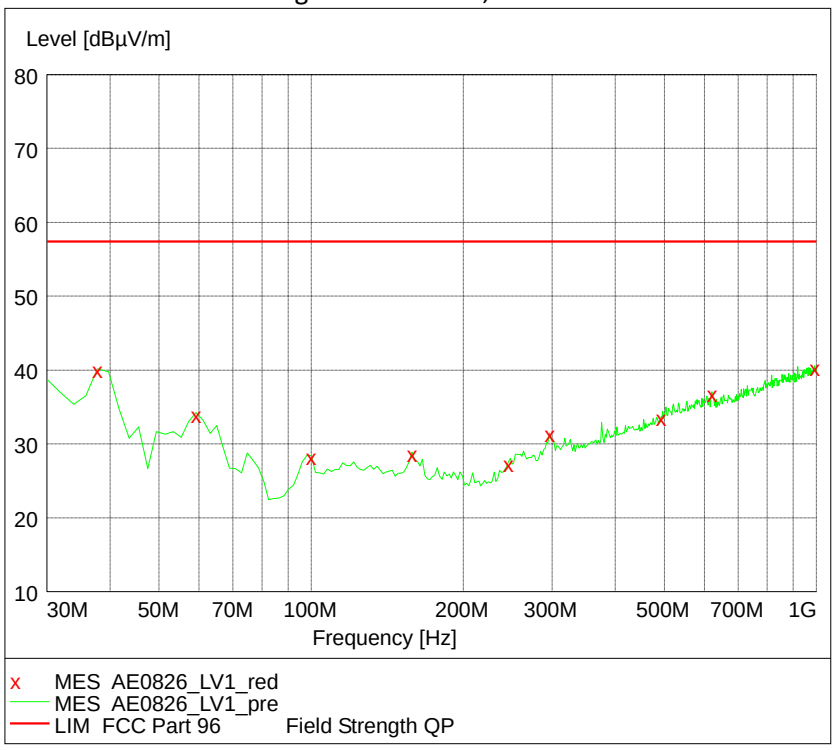
Configuration	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)
LTE-MIMO-1C-20	B	64QAM	20	1000
	M	64QAM	20	1000
	T	64QAM	20	1000

Channel Position B

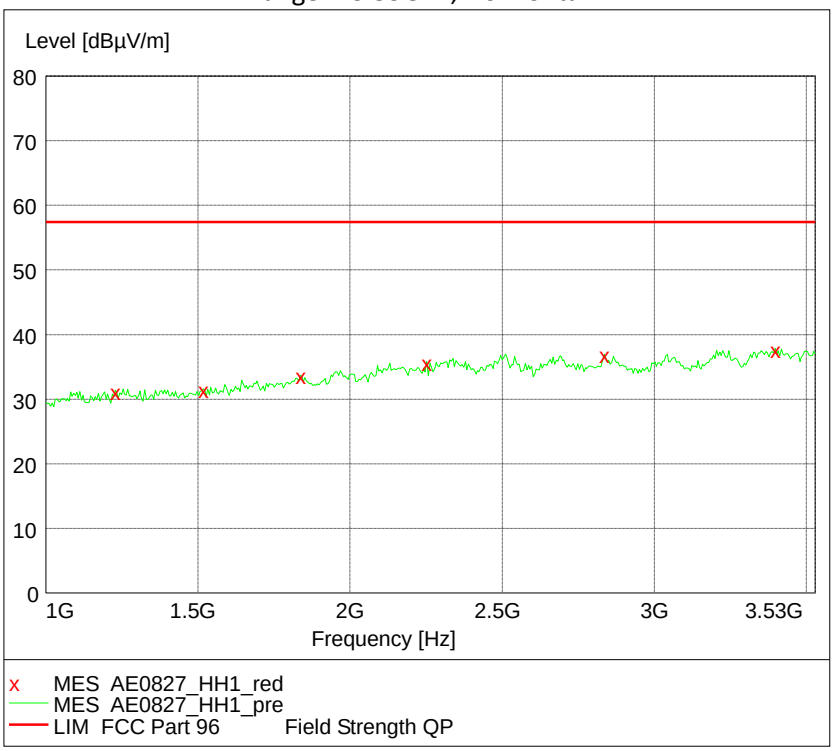
Range 30-1000MHz, Horizontal



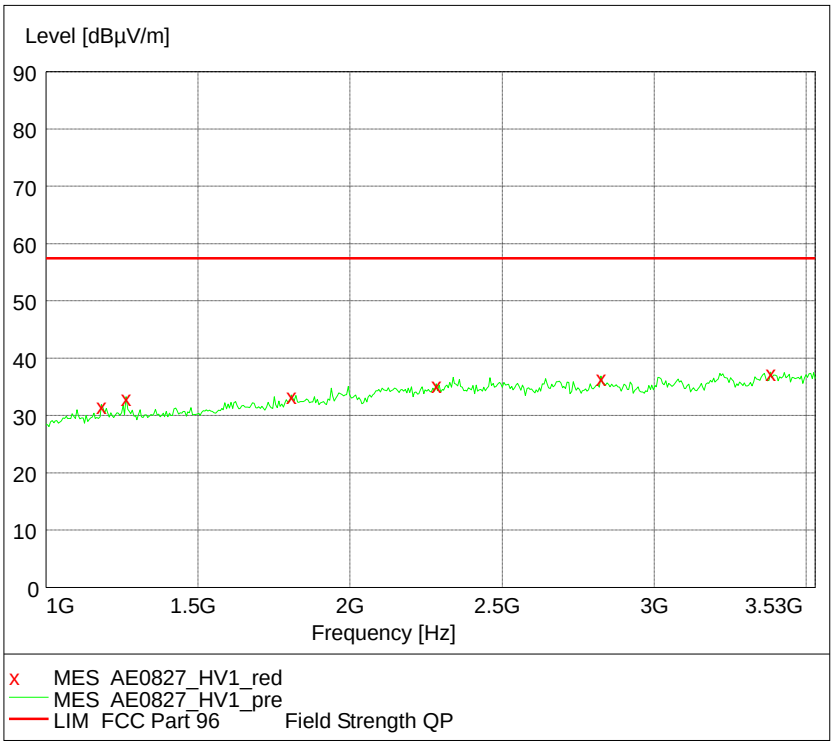
Range 30-1000MHz, Vertical



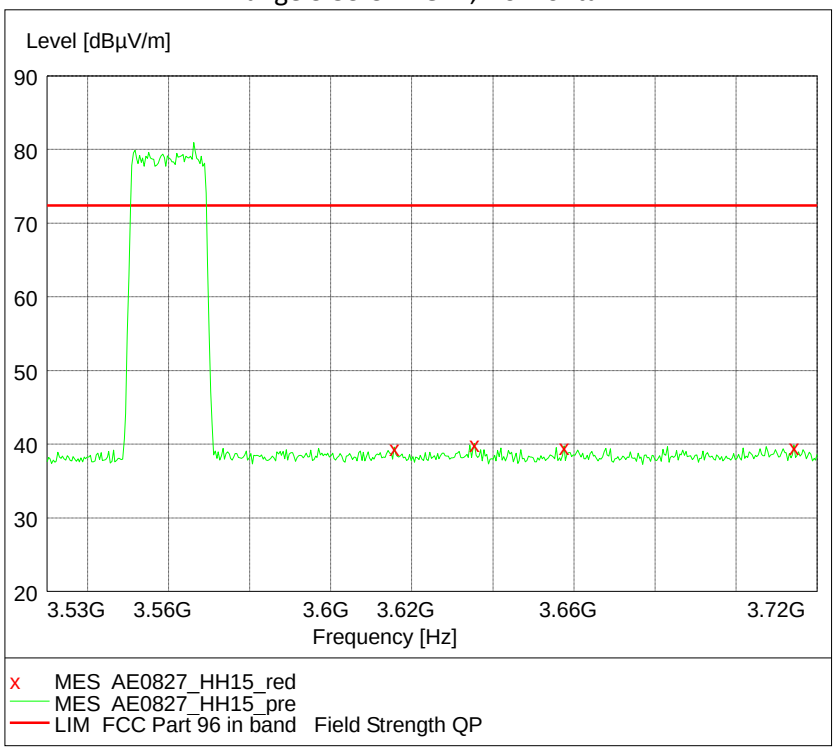
Range 1-3.53GHz, Horizontal



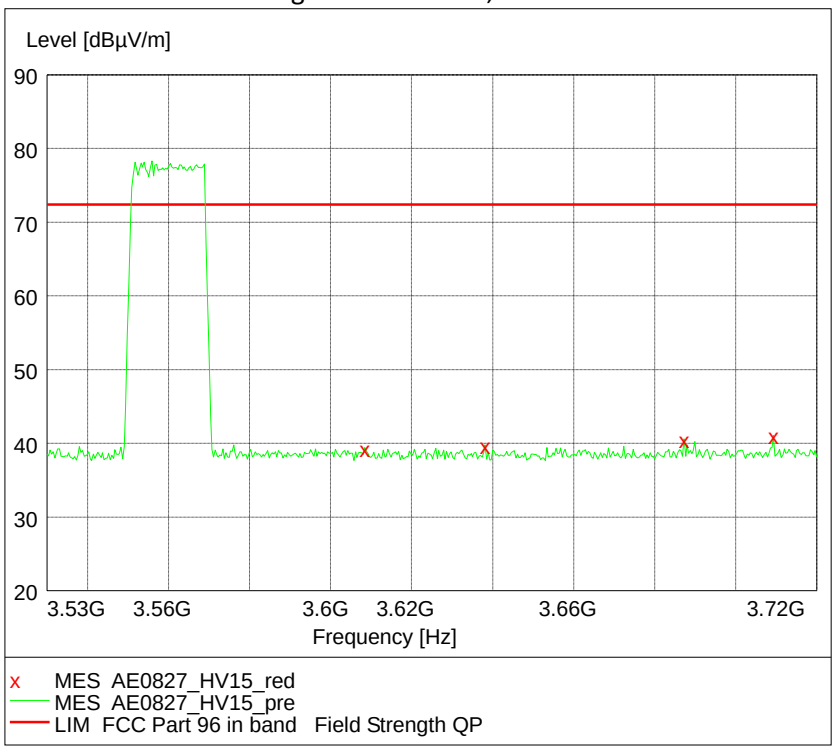
Range 1-3.53GHz, Vertical



Range 3.53-3.72GHz, Horizontal

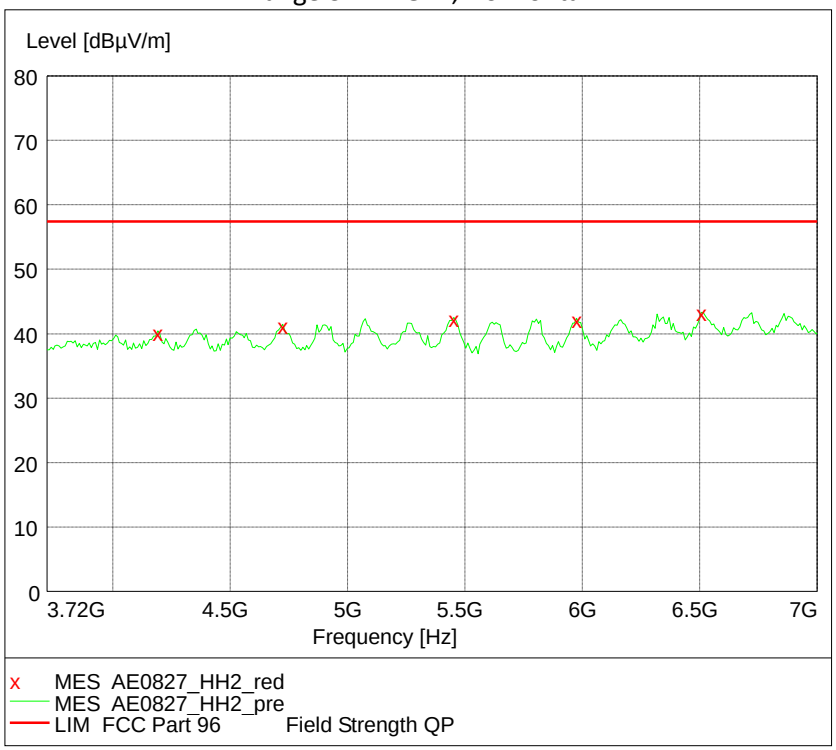


Range 3.53-3.72GHz, Vertical

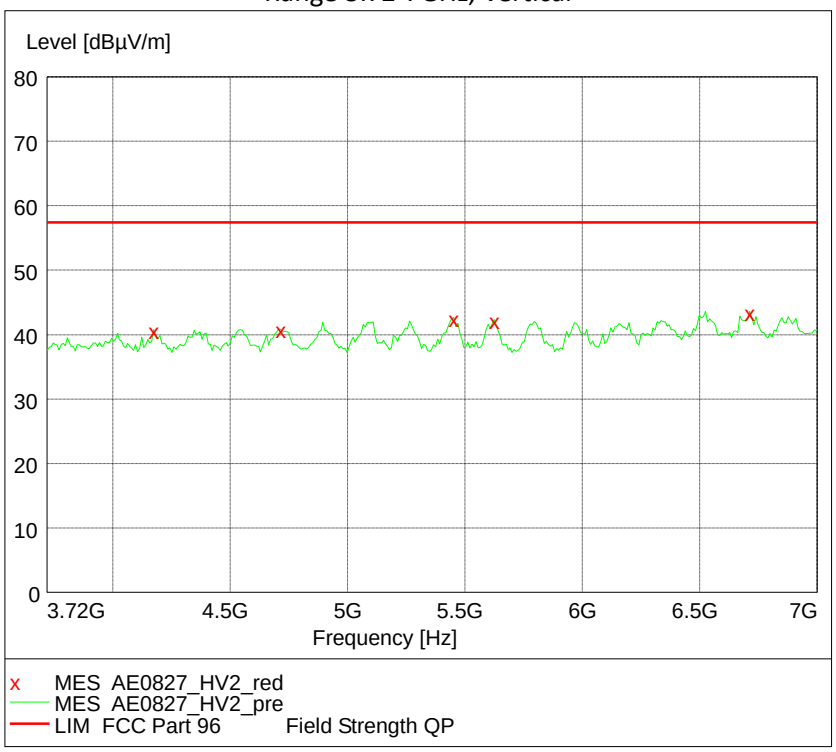


TEST REPORT

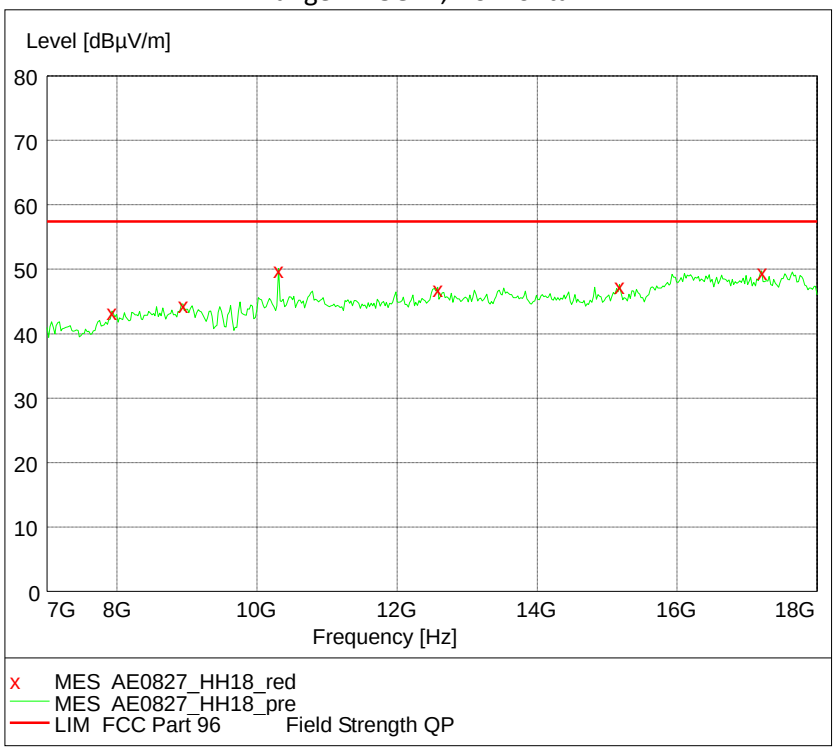
Range 3.72-7GHz, Horizontal



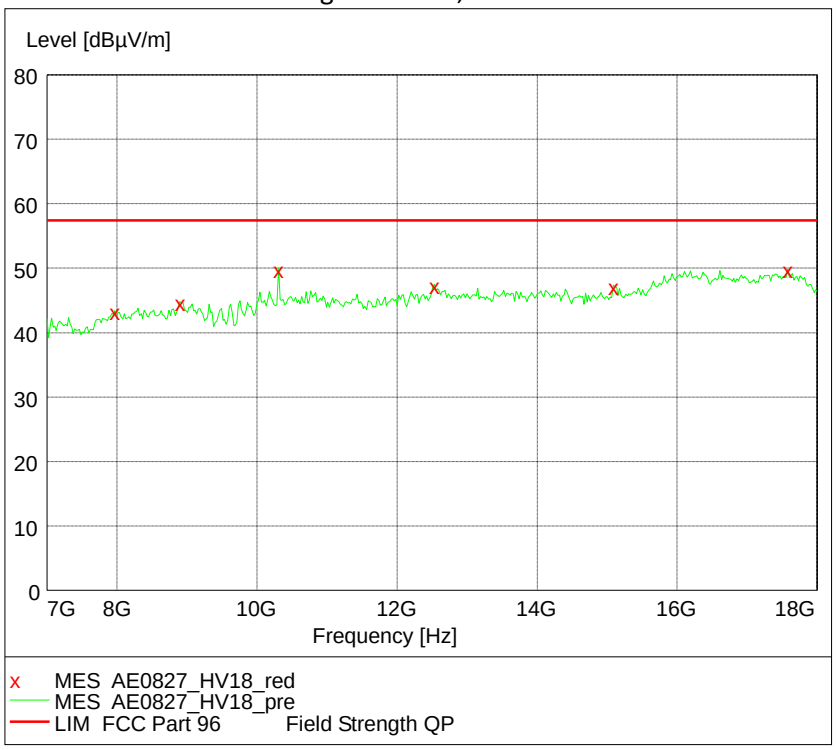
Range 3.72-7GHz, Vertical



Range 7-18GHz, Horizontal

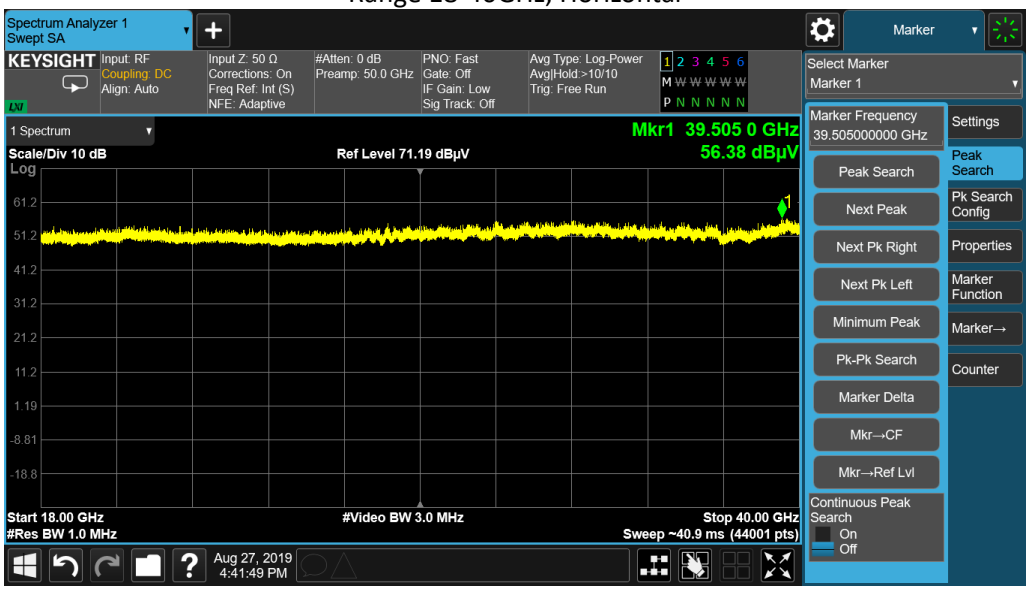


Range 7-18GHz, Vertical

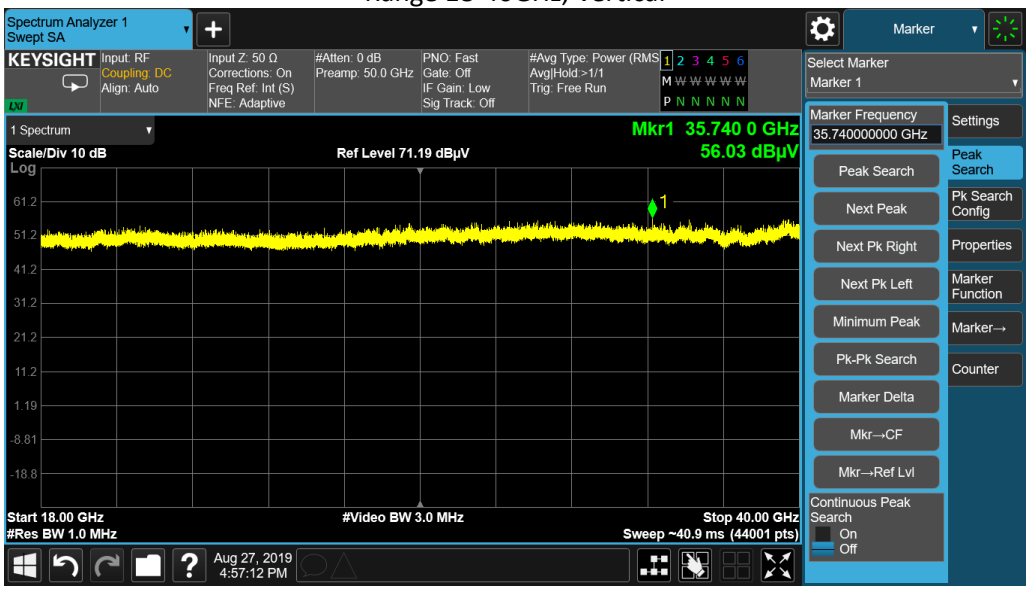


TEST REPORT

Range 18-40GHz, Horizontal

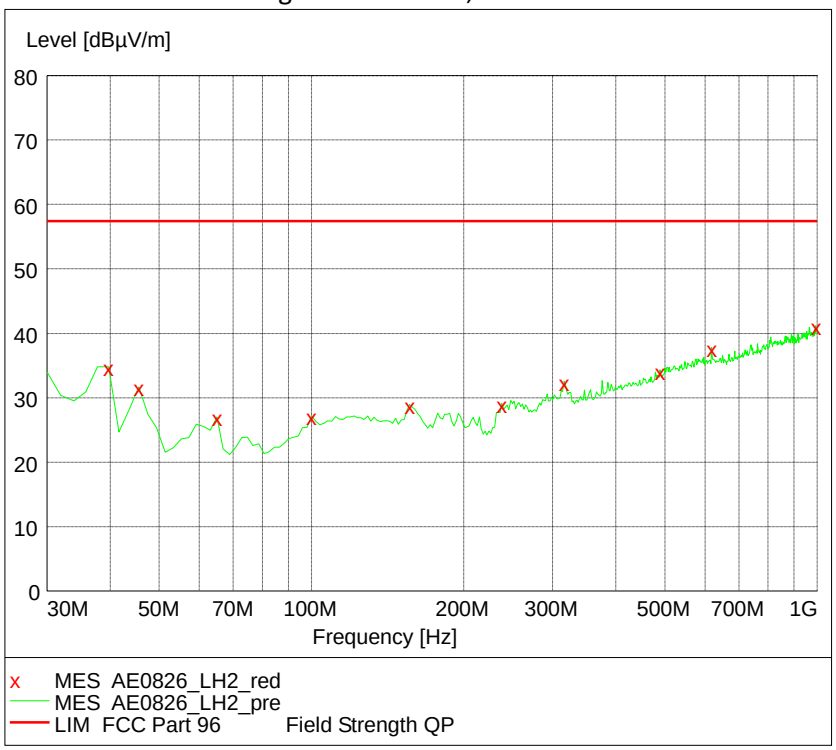


Range 18-40GHz, Vertical

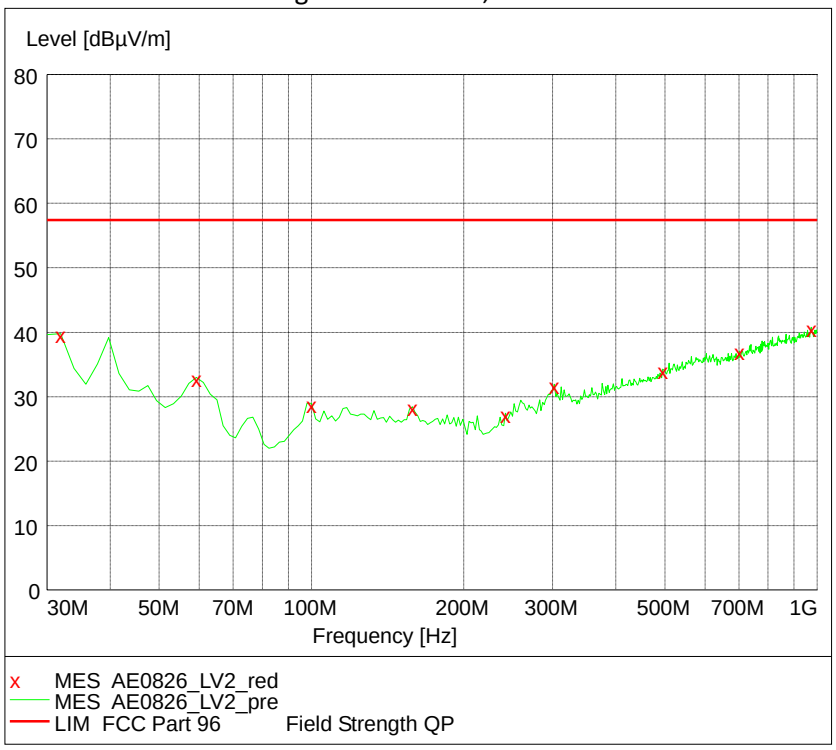


Channel Position M

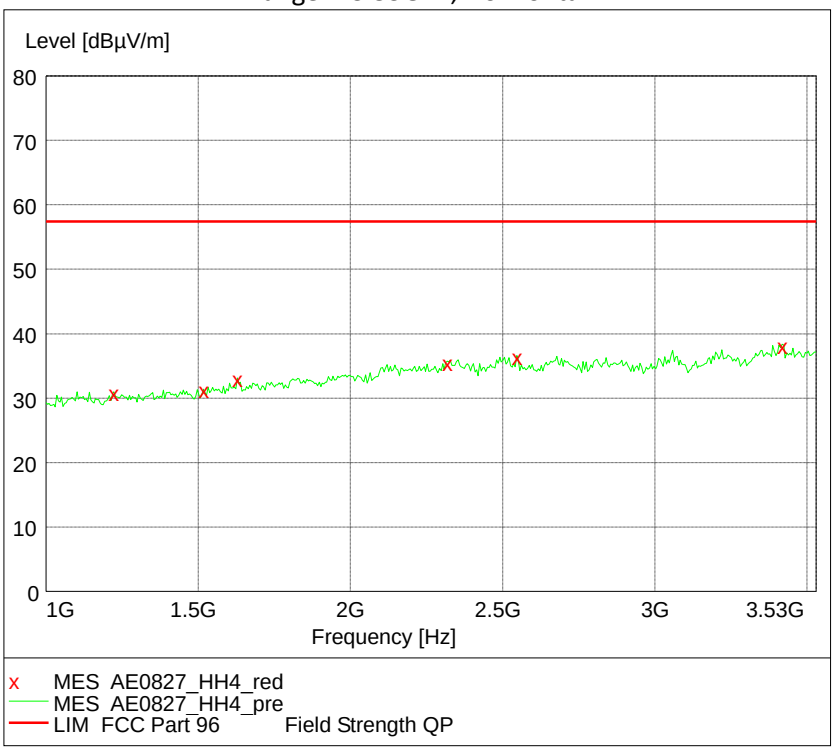
Range 30-1000MHz, Horizontal



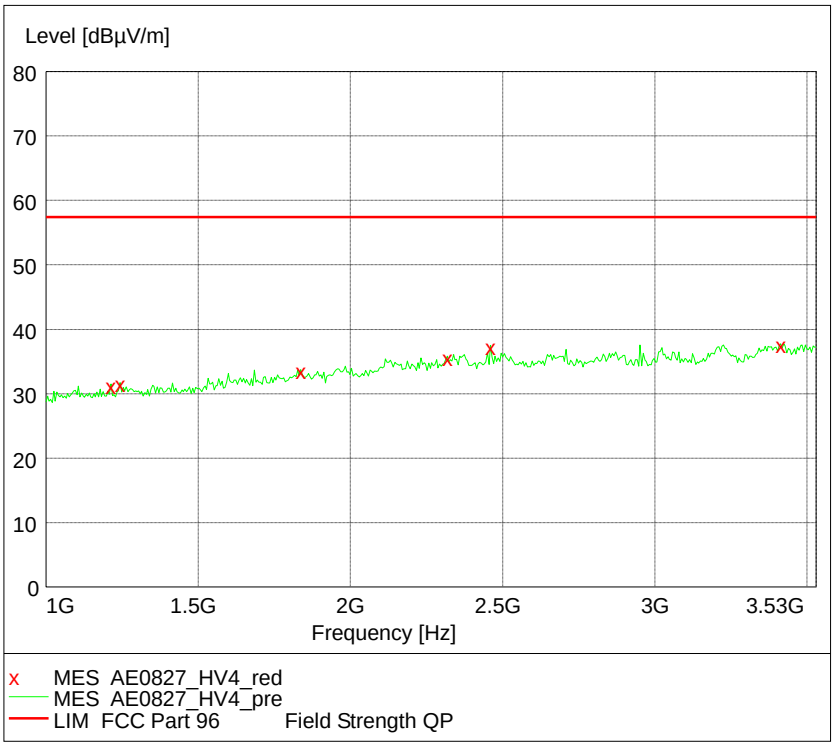
Range 30-1000MHz, Vertical



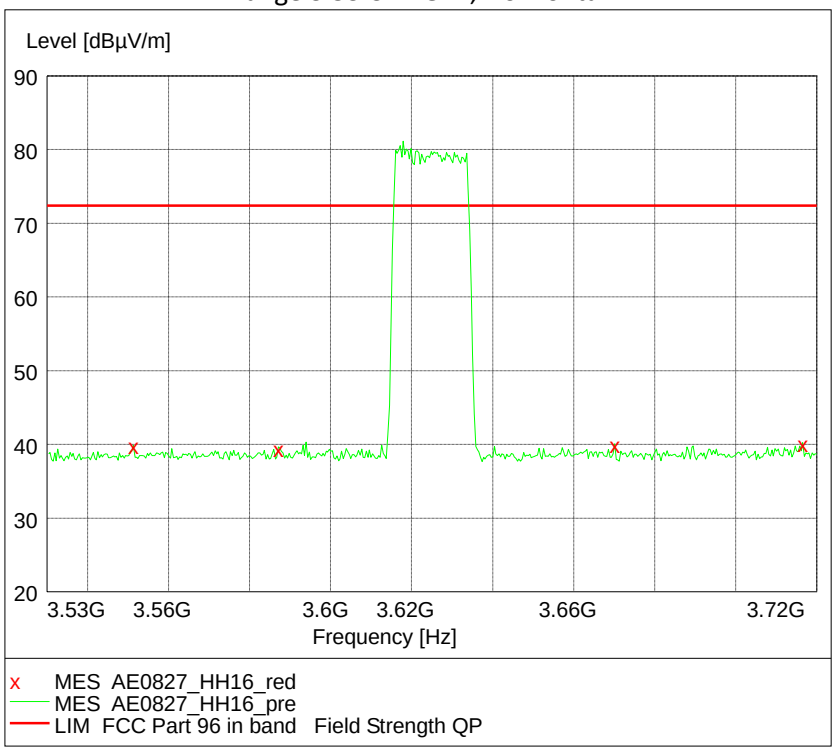
Range 1-3.53GHz, Horizontal



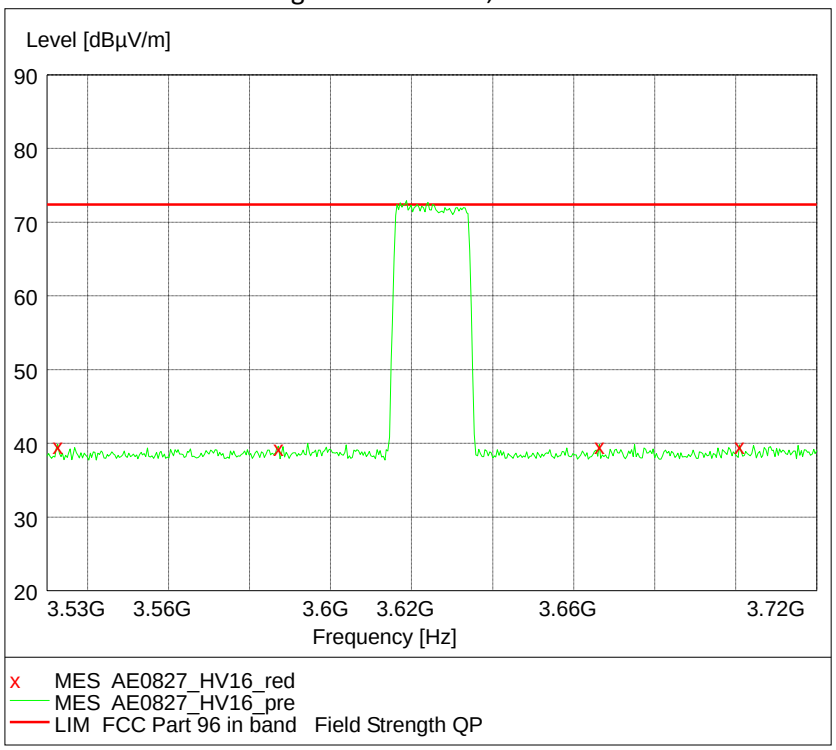
Range 1-3.53GHz, Vertical



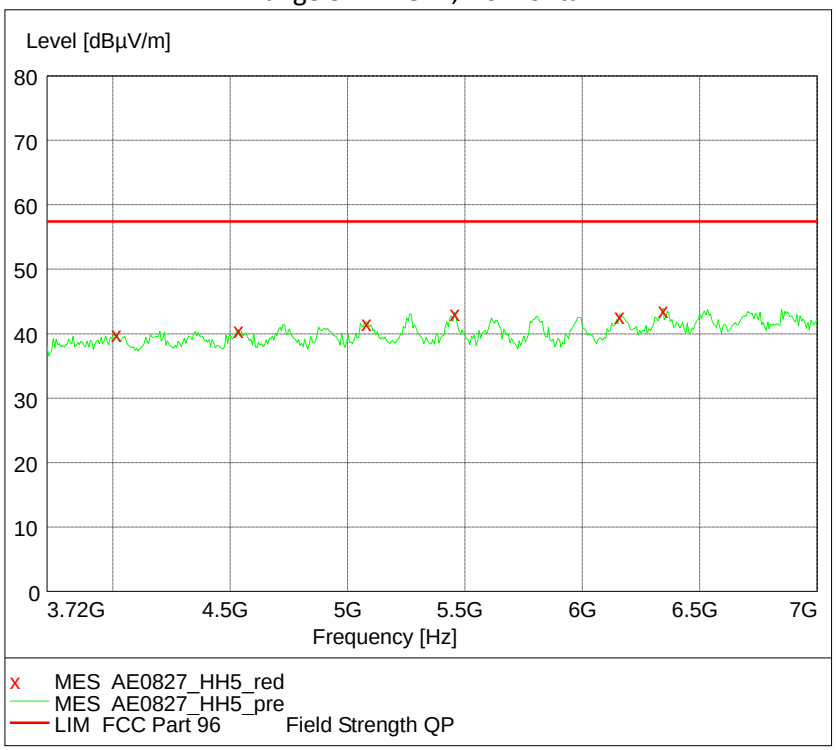
Range 3.53-3.72GHz, Horizontal



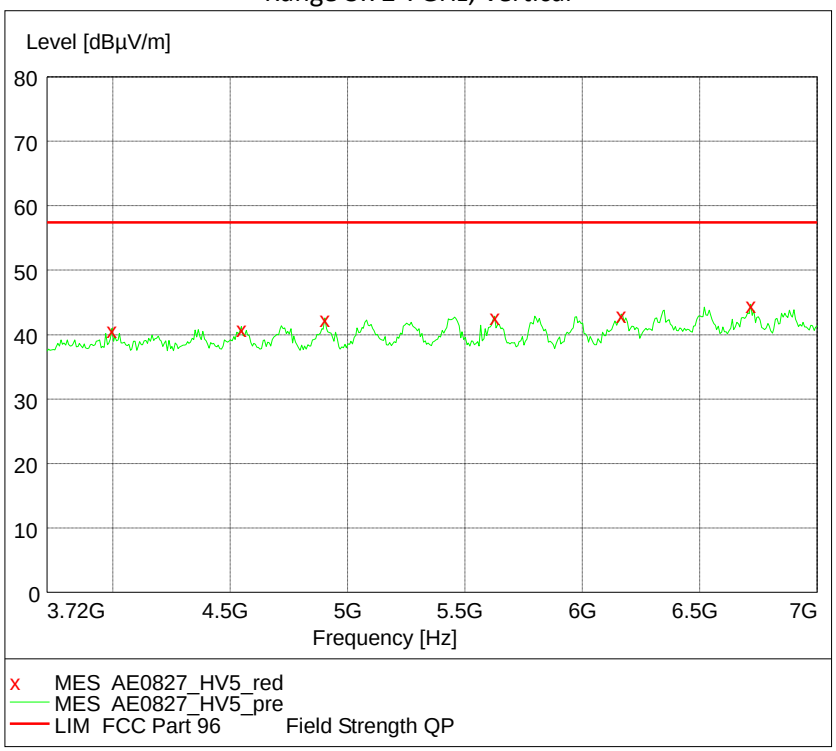
Range 3.53-3.72GHz, Vertical



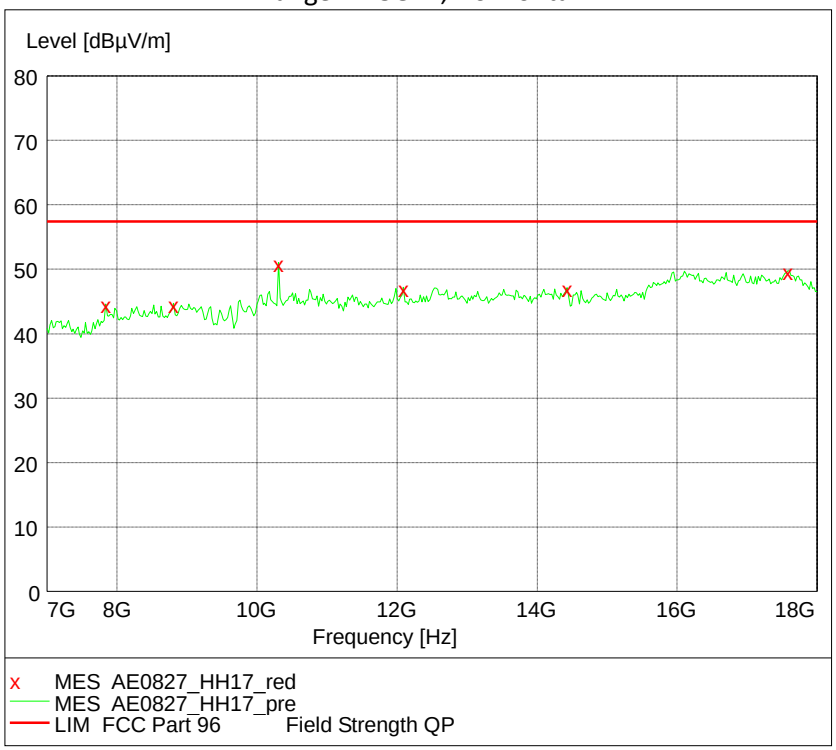
Range 3.72-7GHz, Horizontal



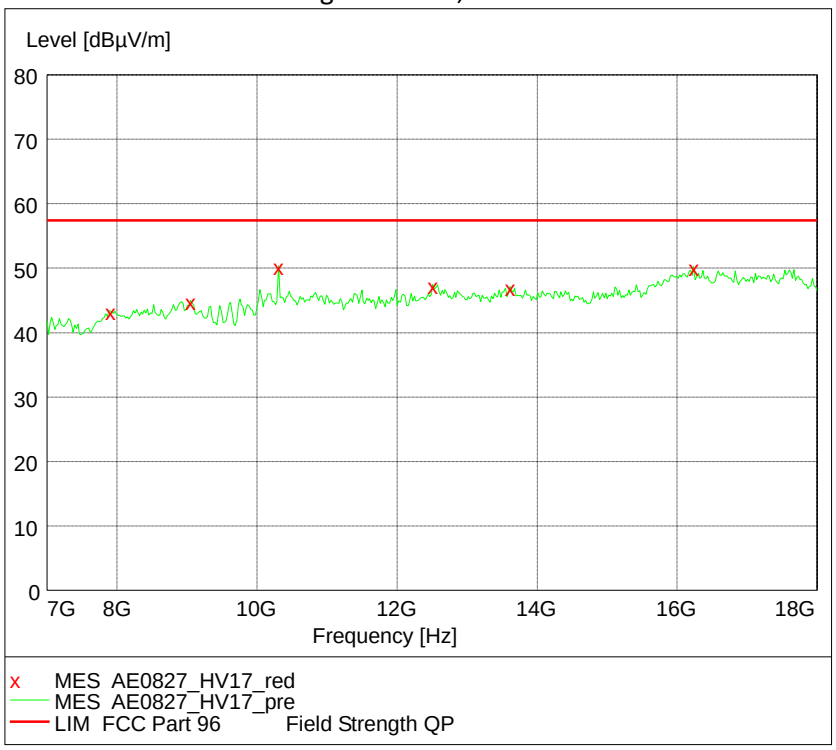
Range 3.72-7GHz, Vertical



Range 7-18GHz, Horizontal

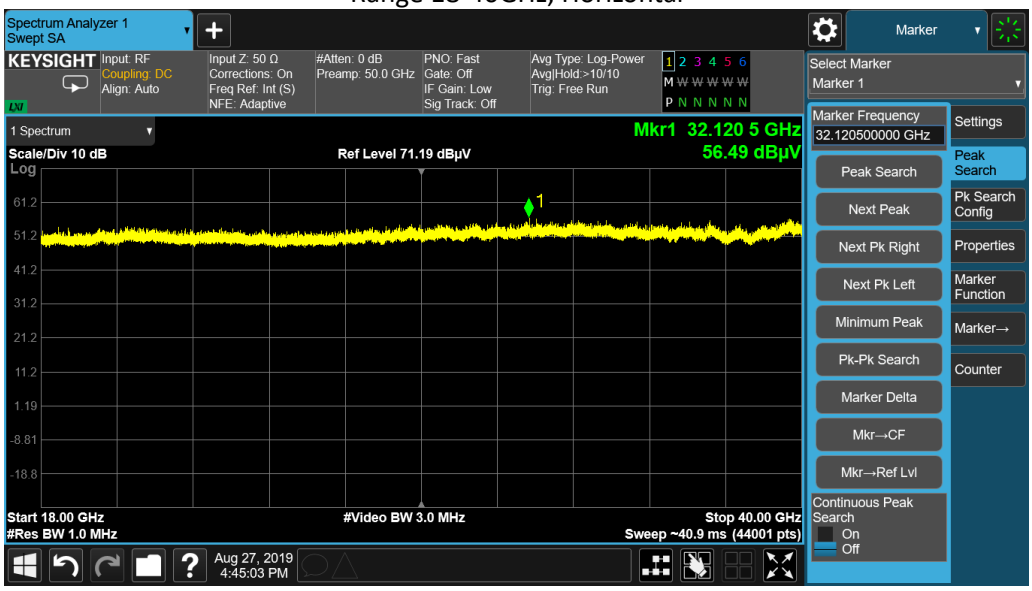


Range 7-18GHz, Vertical

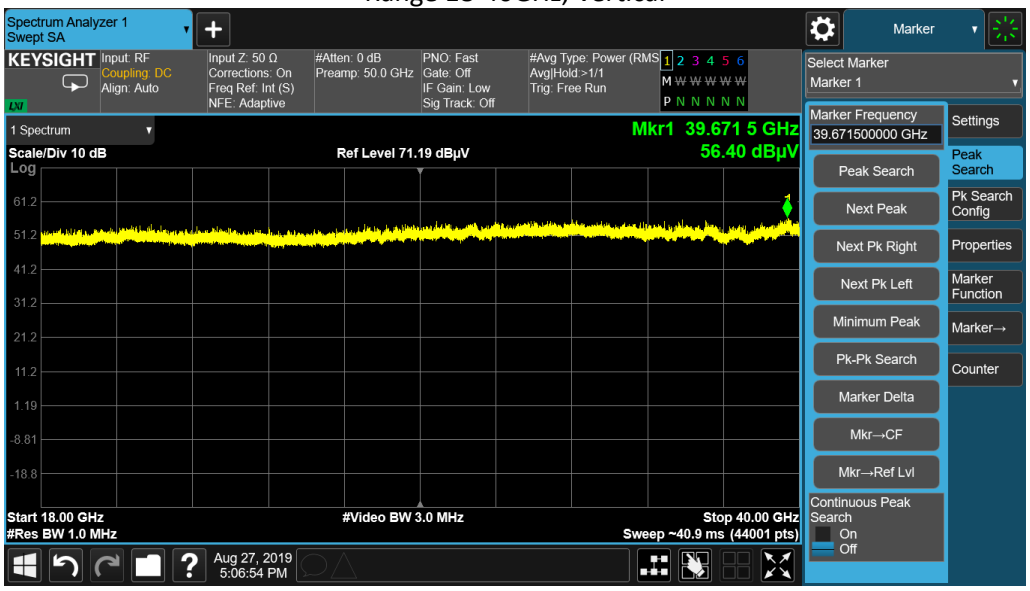


TEST REPORT

Range 18-40GHz, Horizontal

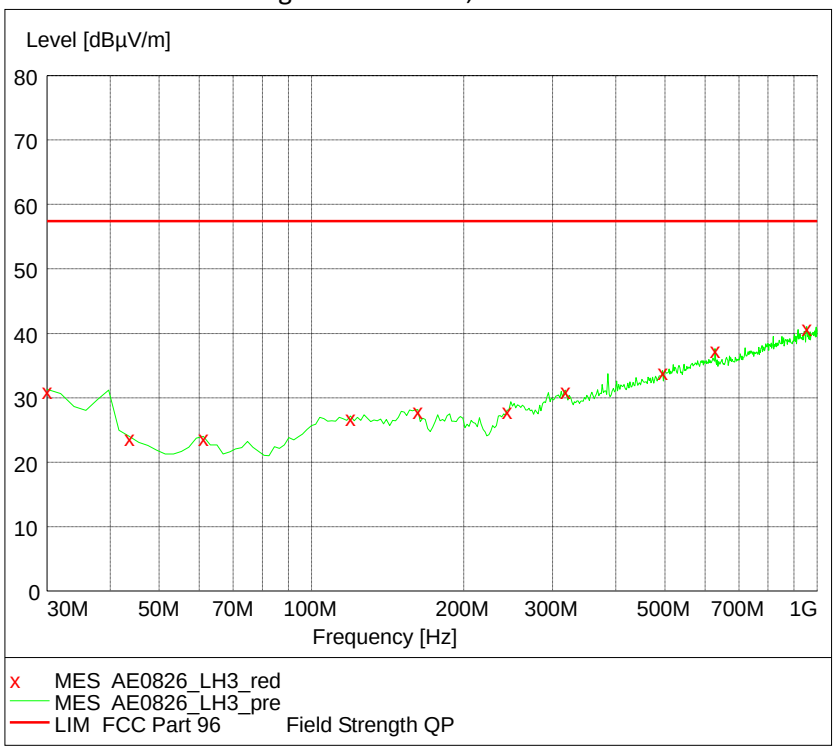


Range 18-40GHz, Vertical

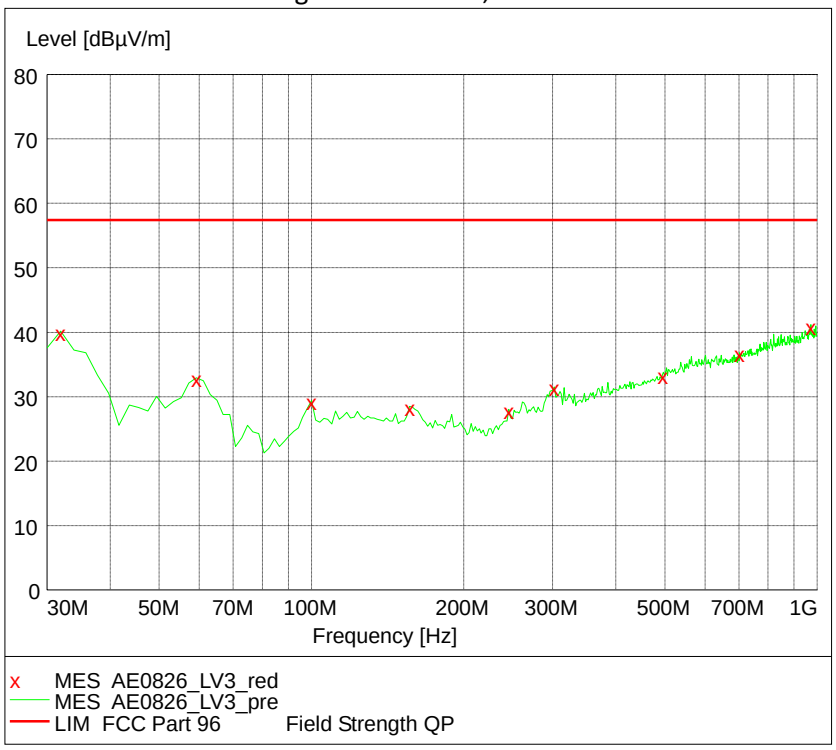


Channel Position T

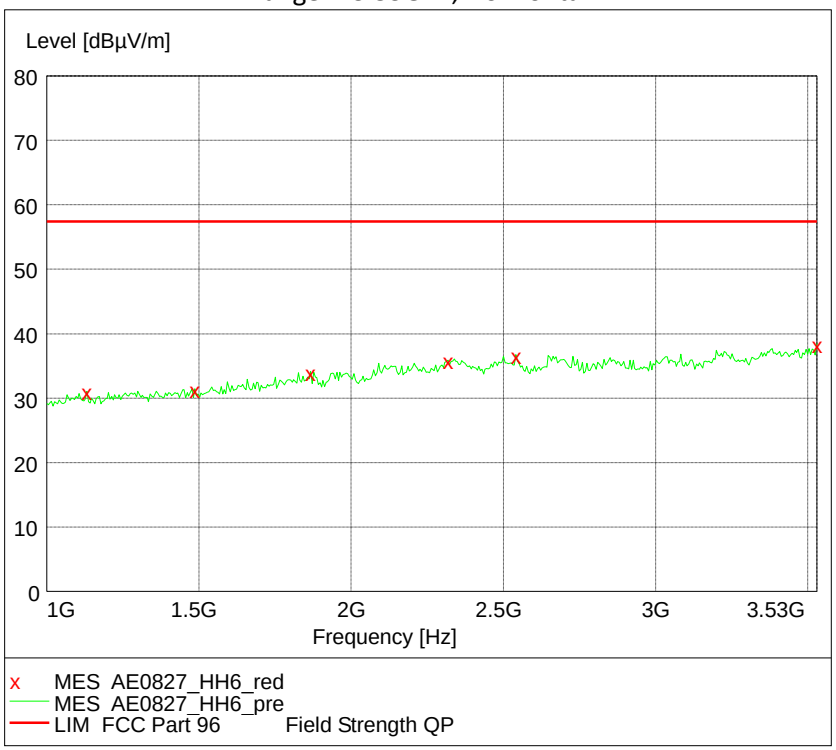
Range 30-1000MHz, Horizontal



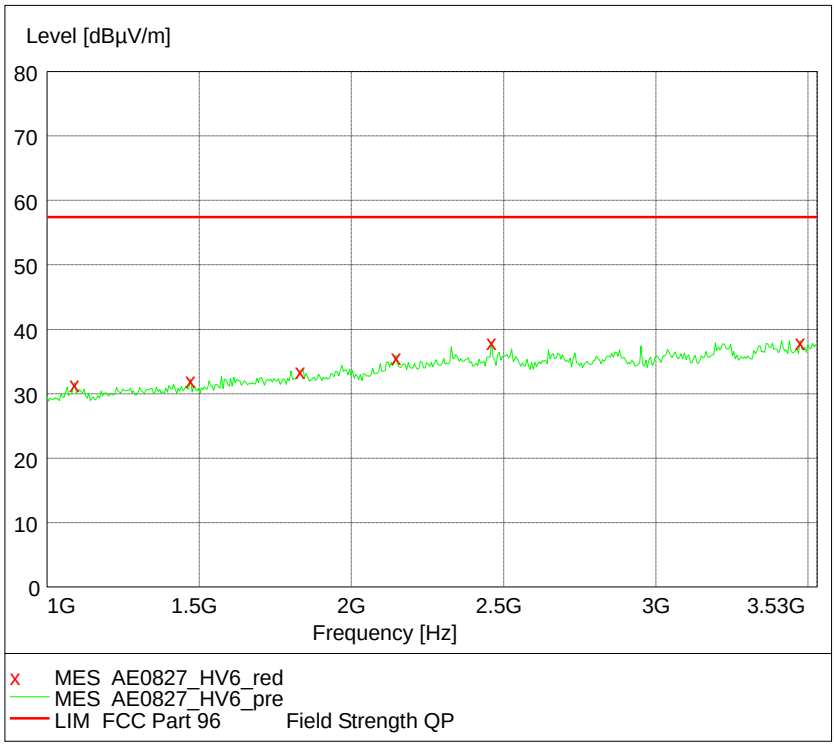
Range 30-1000MHz, Vertical



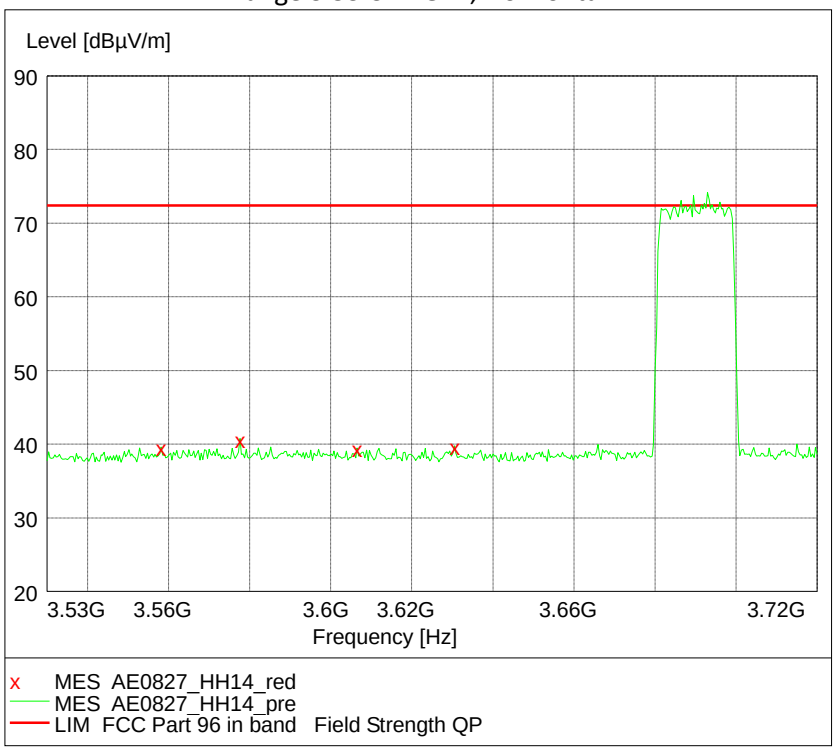
Range 1-3.53GHz, Horizontal



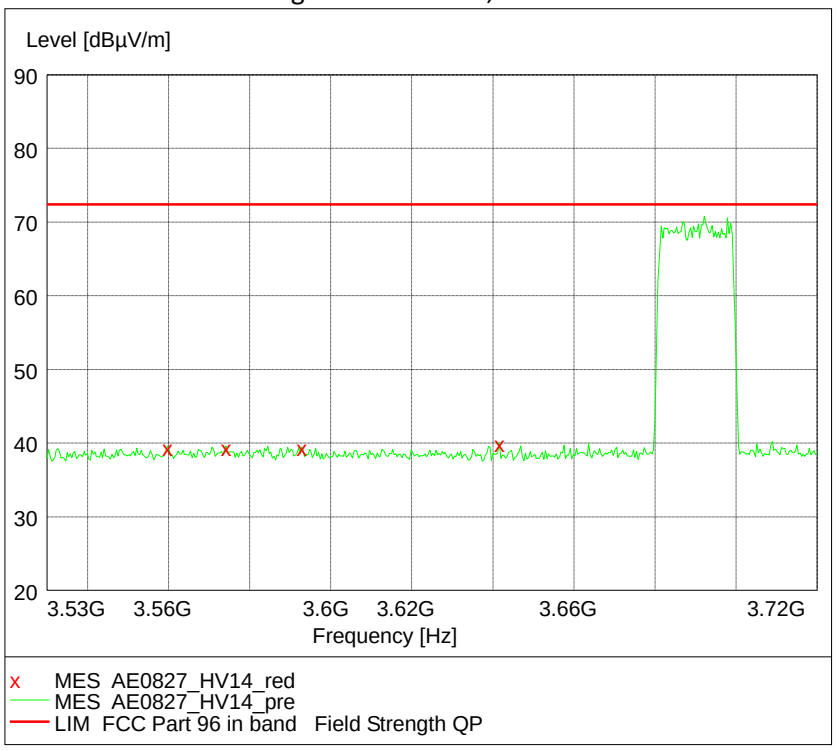
Range 1-3.53GHz, Vertical



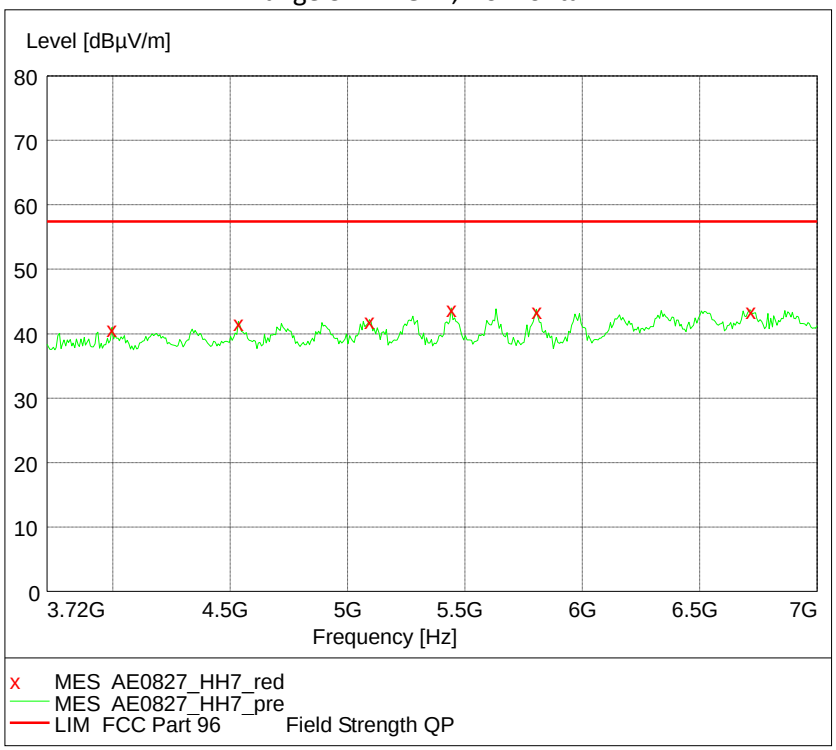
Range 3.53-3.72GHz, Horizontal



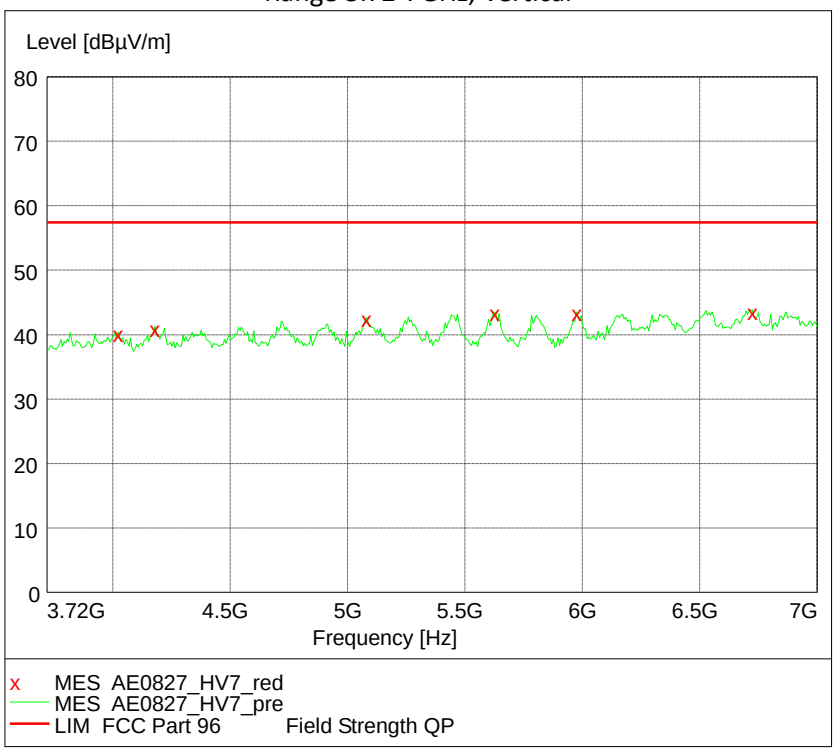
Range 3.53-3.72GHz, Vertical



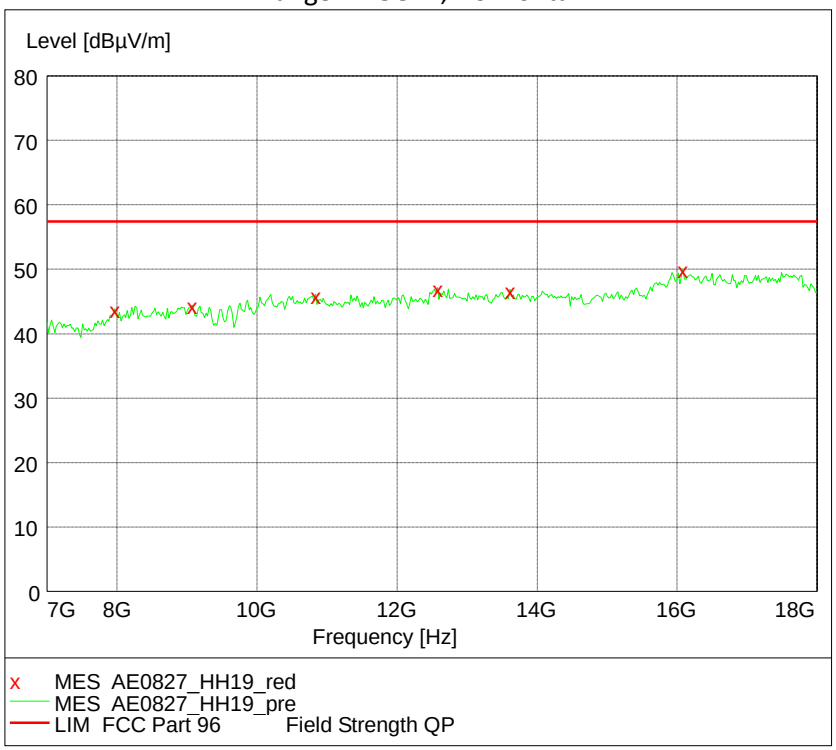
Range 3.72-7GHz, Horizontal



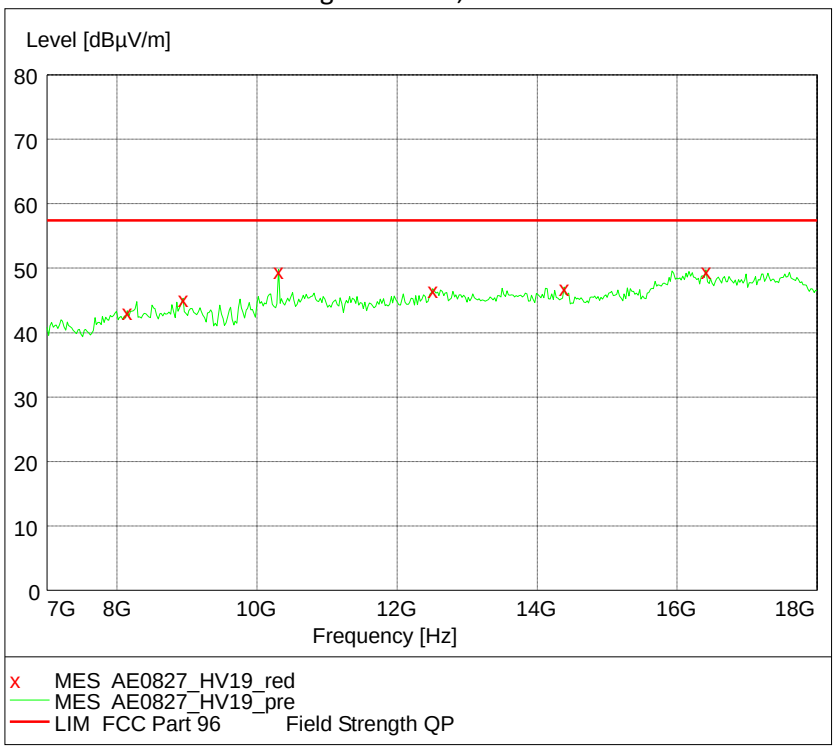
Range 3.72-7GHz, Vertical



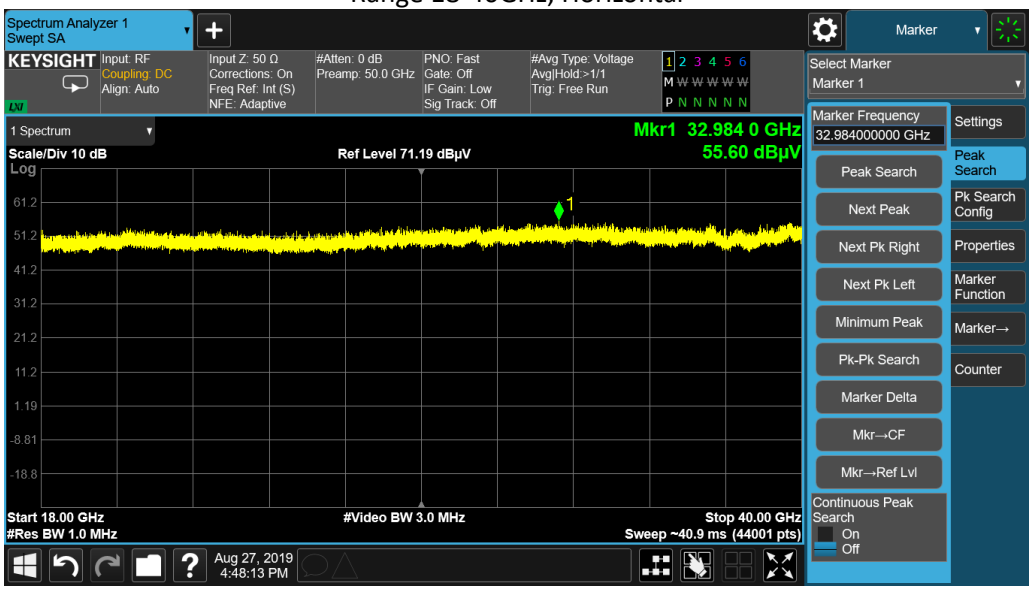
Range 7-18GHz, Horizontal



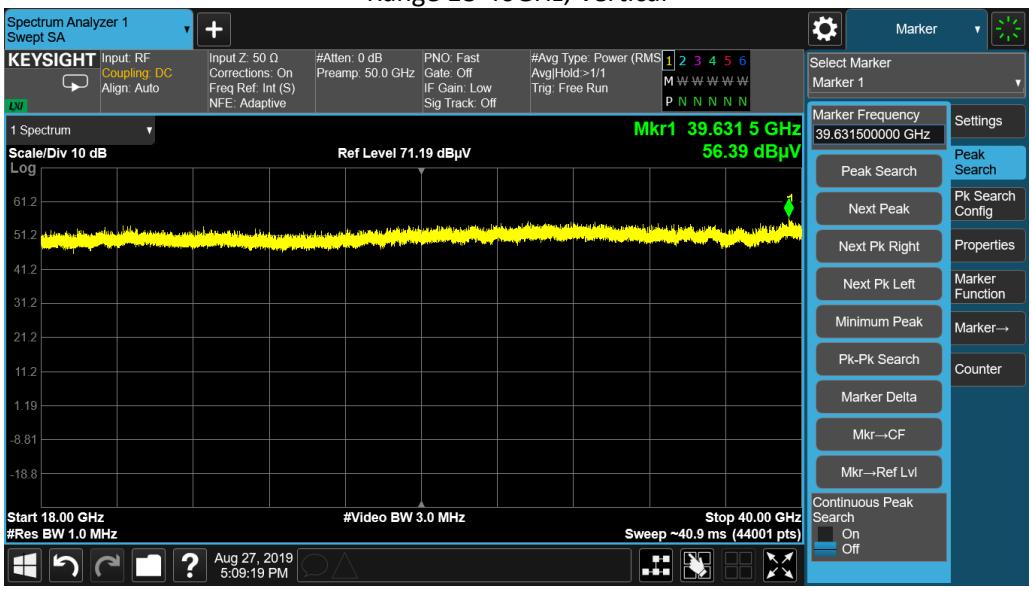
Range 7-18GHz, Vertical



Range 18-40GHz, Horizontal

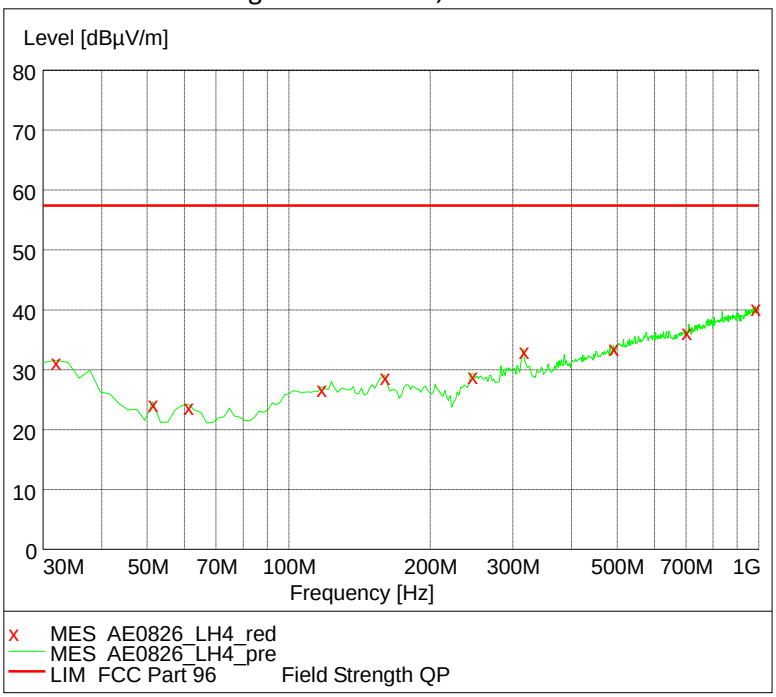


Range 18-40GHz, Vertical

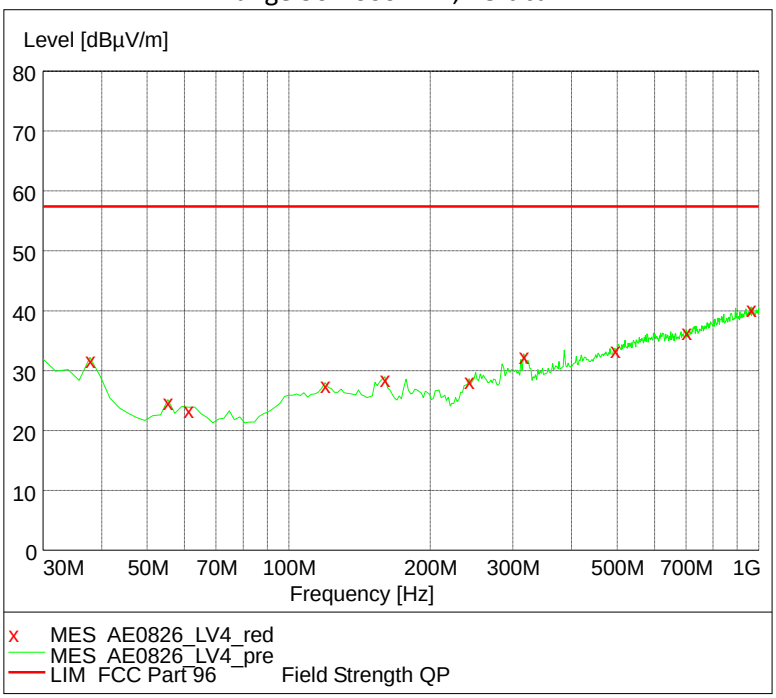


Configuration	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)
LTE-MIMO-2C-20-1	T	64QAM	20	1000

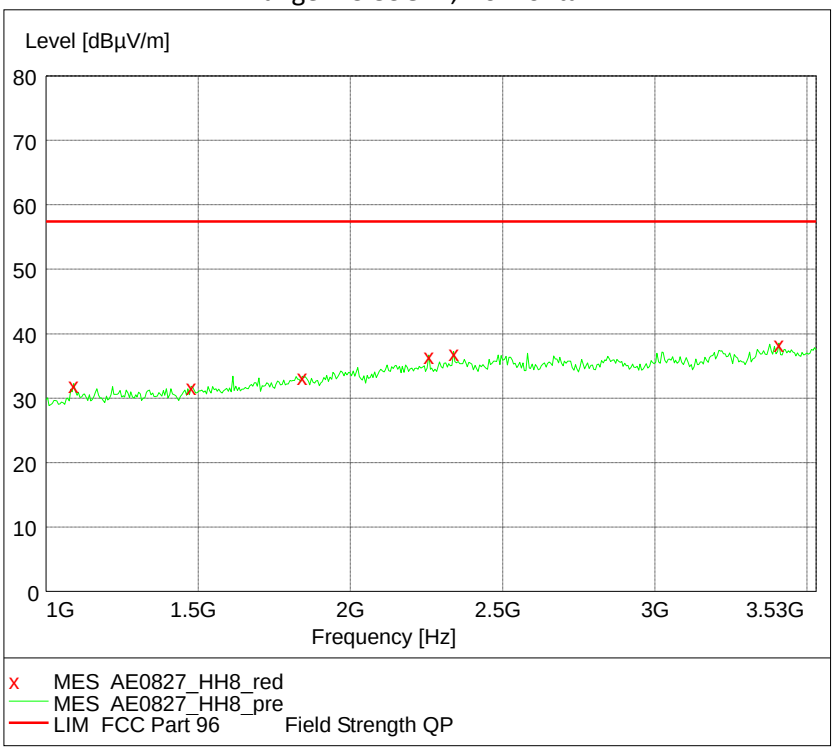
Channel Position T
Range 30-1000MHz, Horizontal



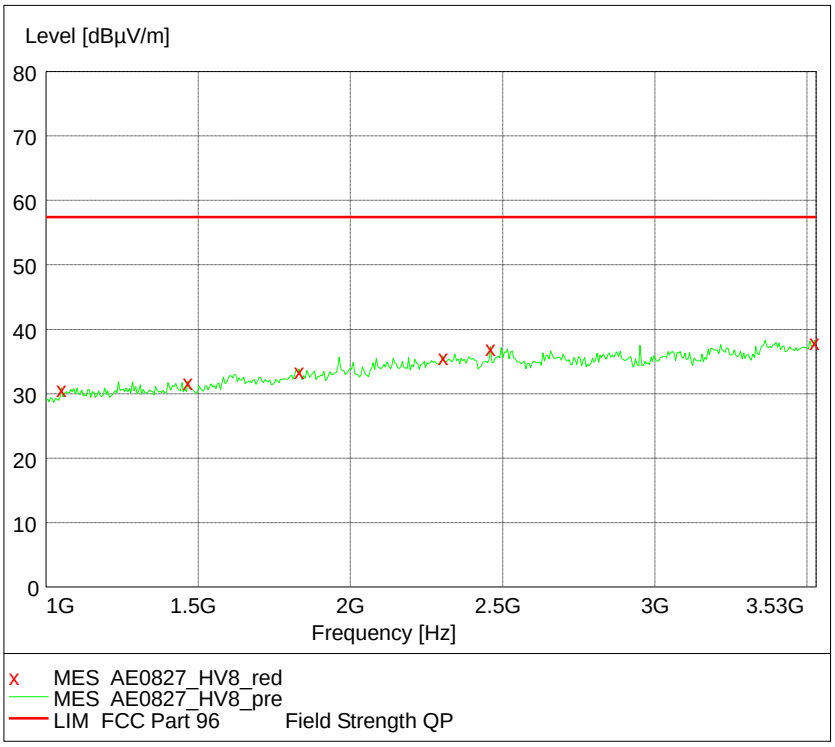
Range 30-1000MHz, Vertical



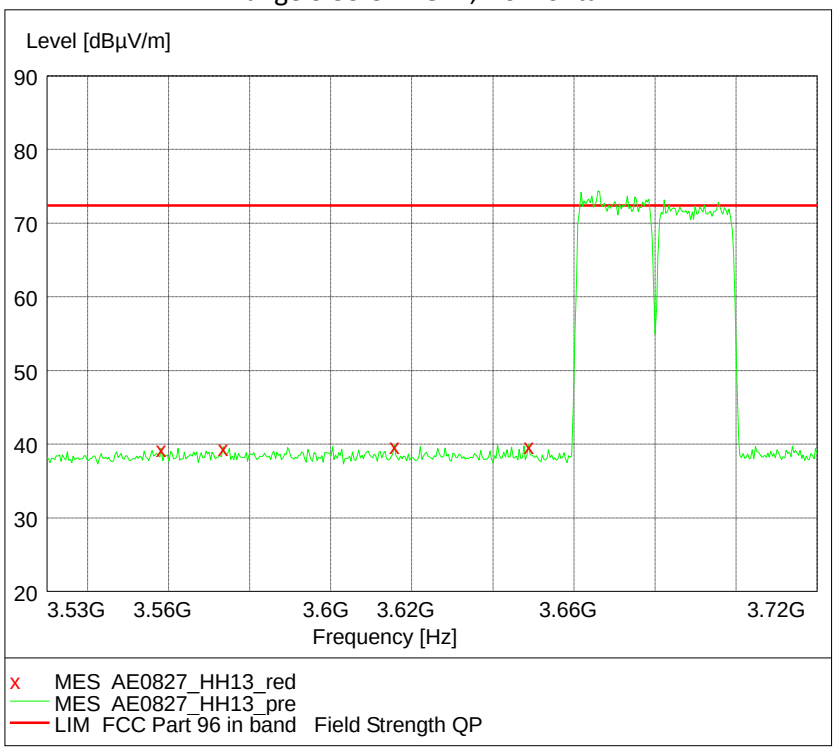
Range 1-3.53GHz, Horizontal



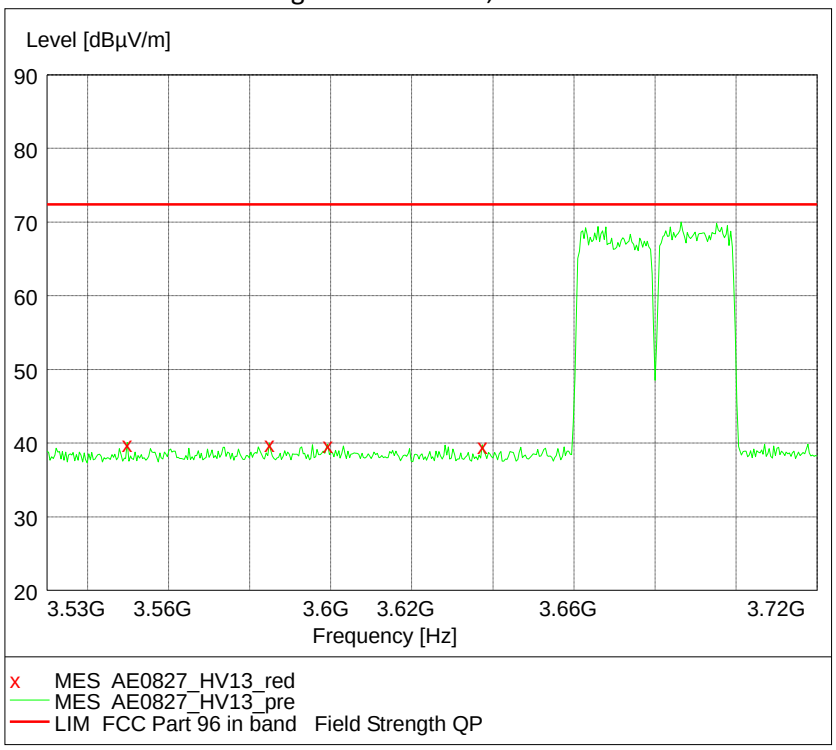
Range 1-3.53GHz, Vertical



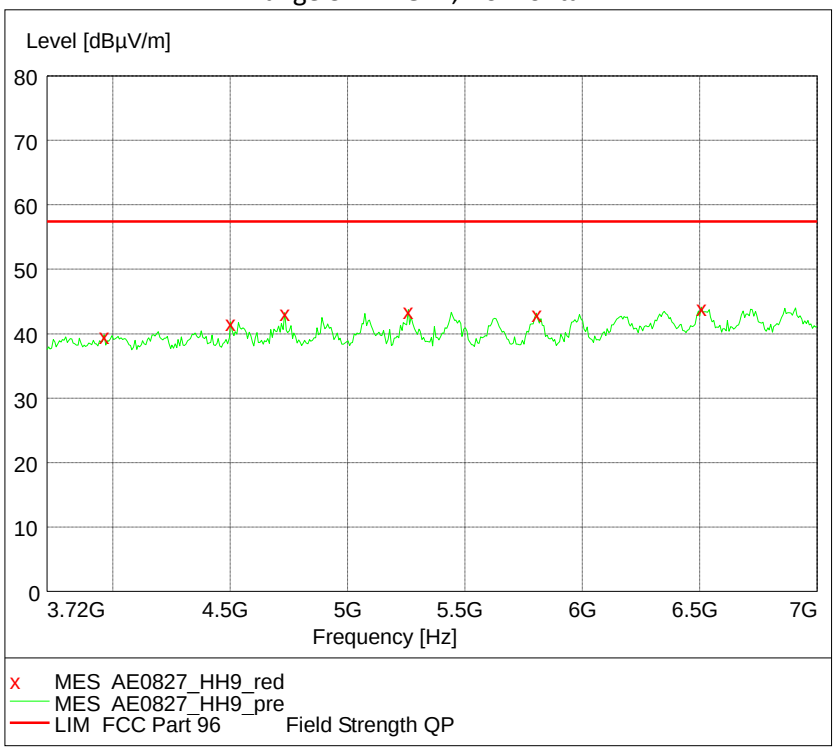
Range 3.53-3.72GHz, Horizontal



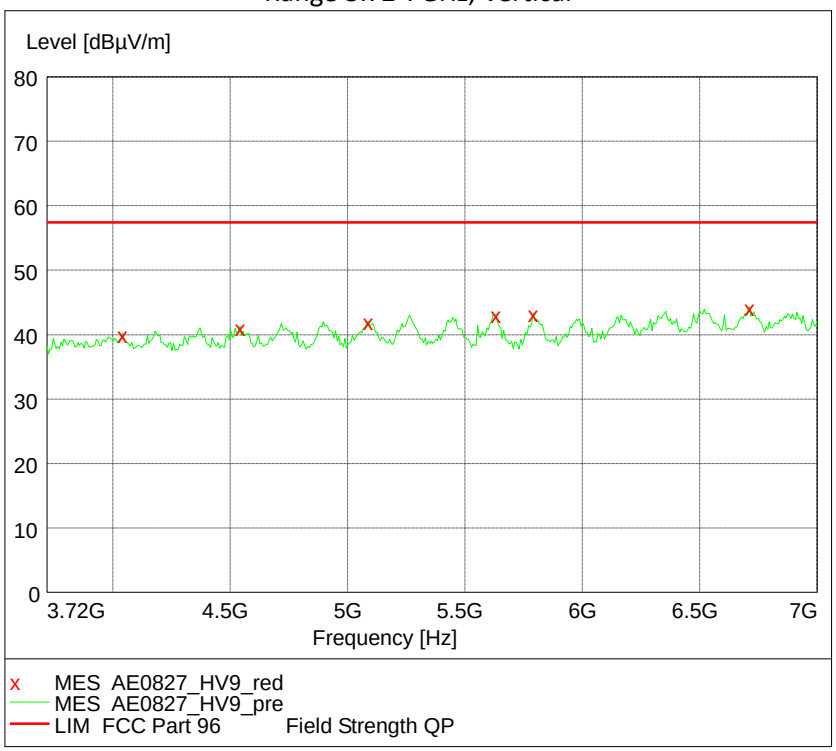
Range 3.53-3.72GHz, Vertical



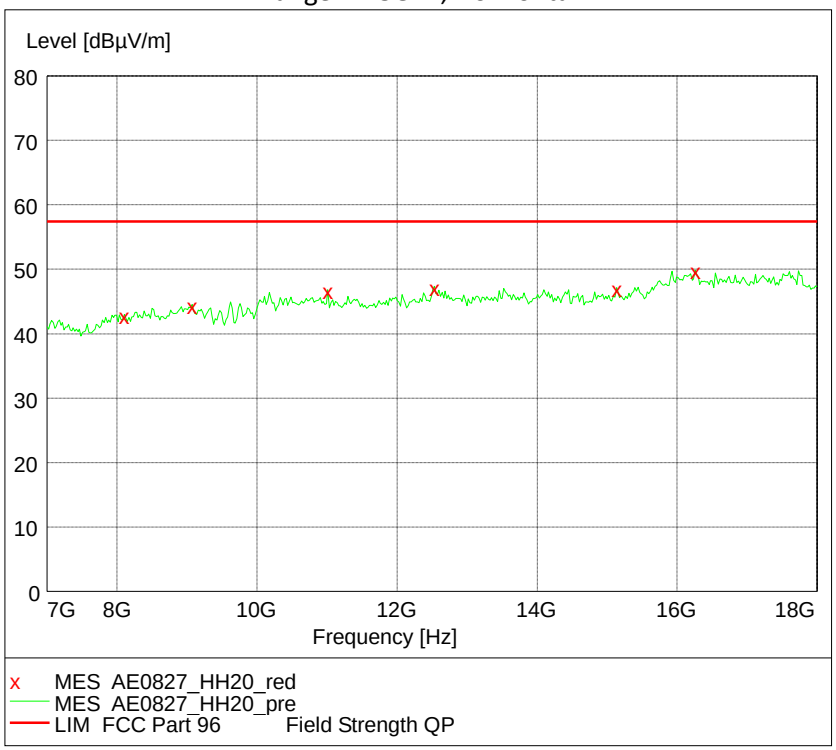
Range 3.72-7GHz, Horizontal



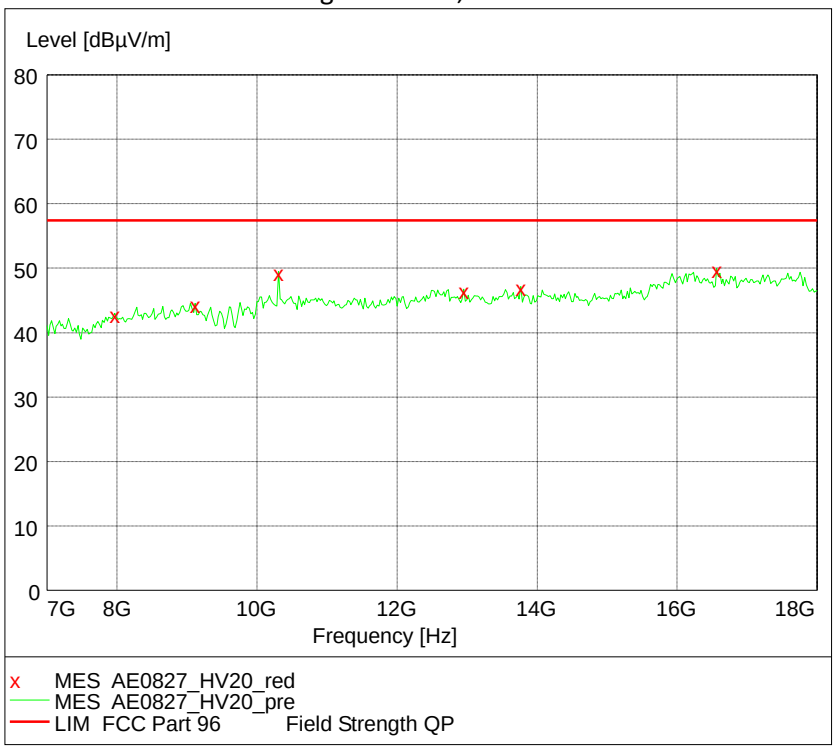
Range 3.72-7GHz, Vertical



Range 7-18GHz, Horizontal

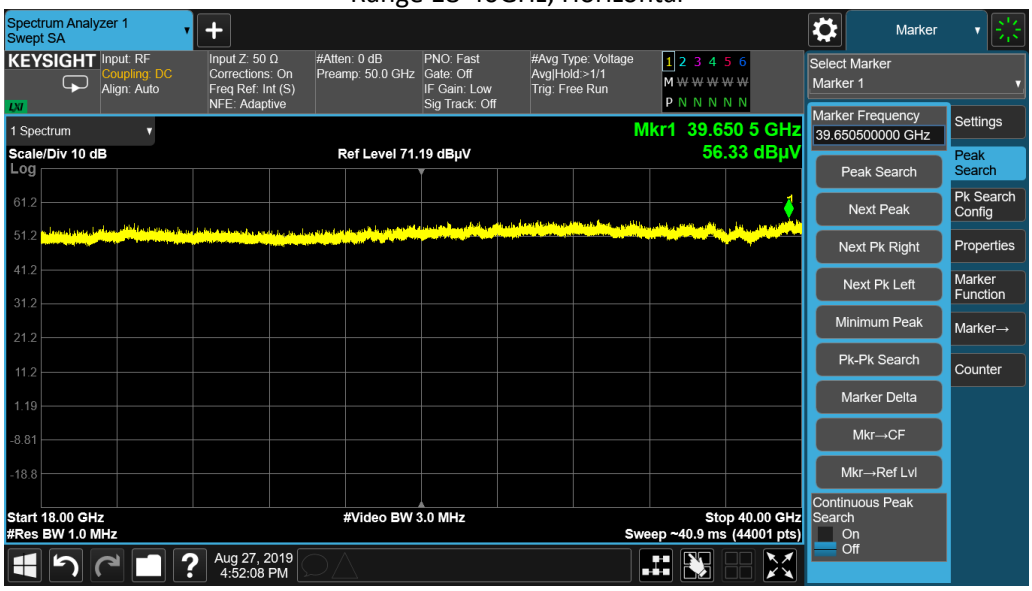


Range 7-18GHz, Vertical

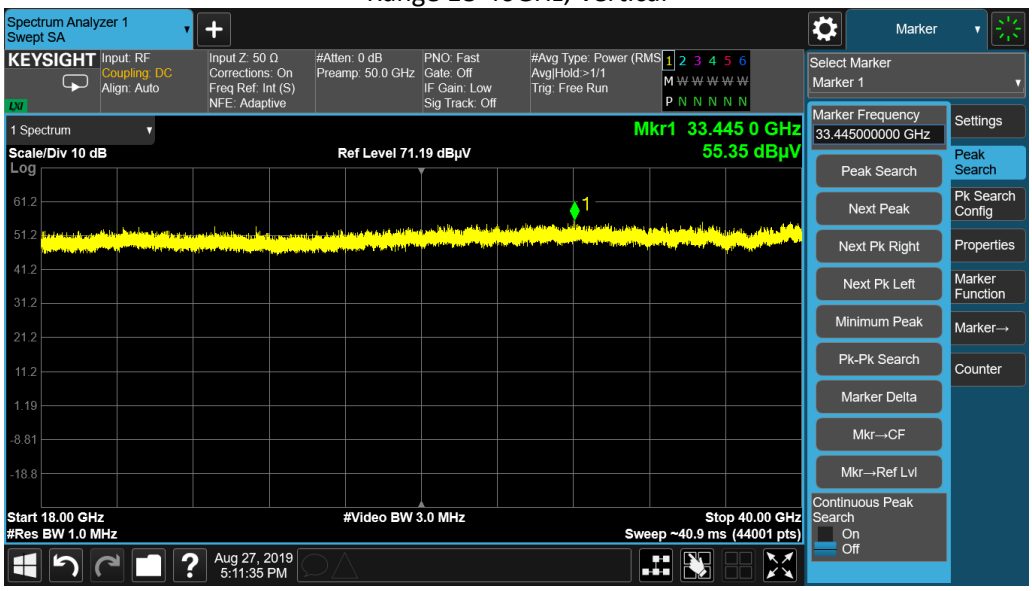


TEST REPORT

Range 18-40GHz, Horizontal

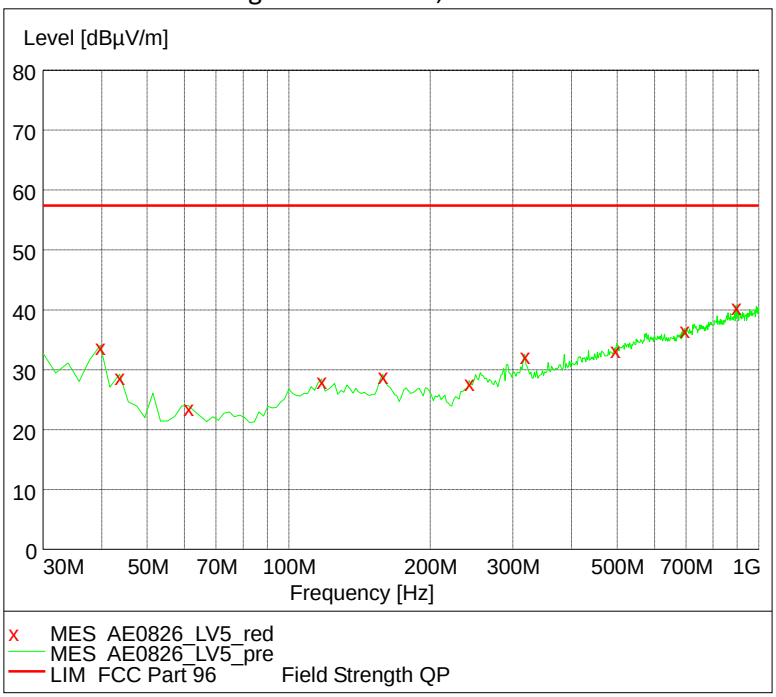


Range 18-40GHz, Vertical

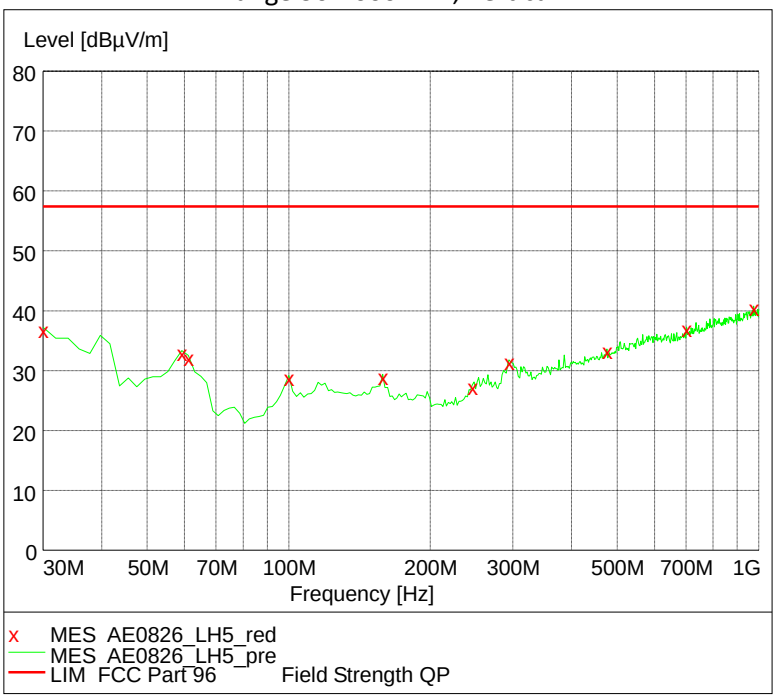


Configuration	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)
LTE-MIMO-3C-20-1	T	64QAM	20	1000

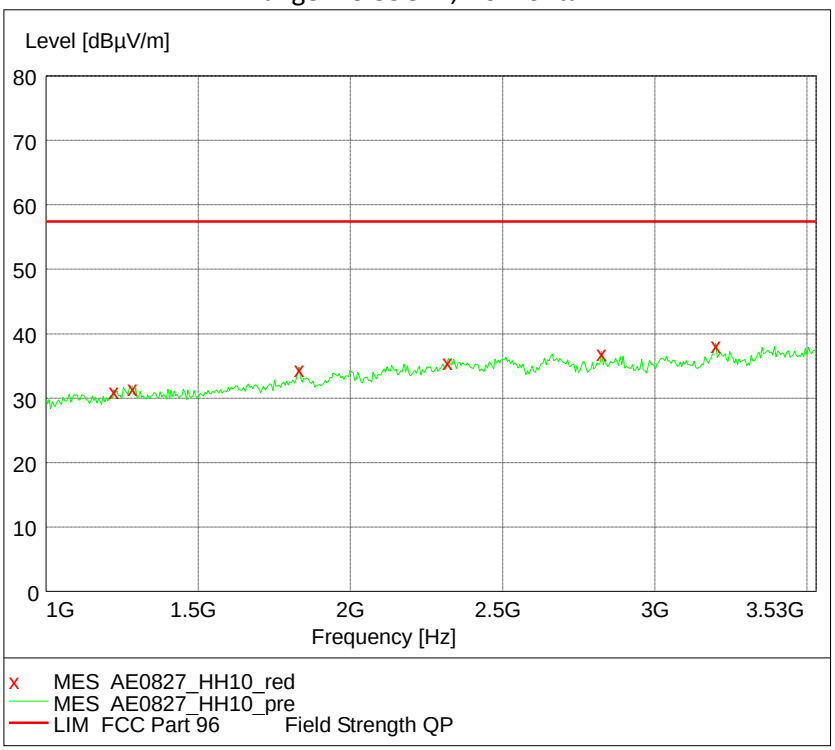
Channel Position T
Range 30-1000MHz, Horizontal



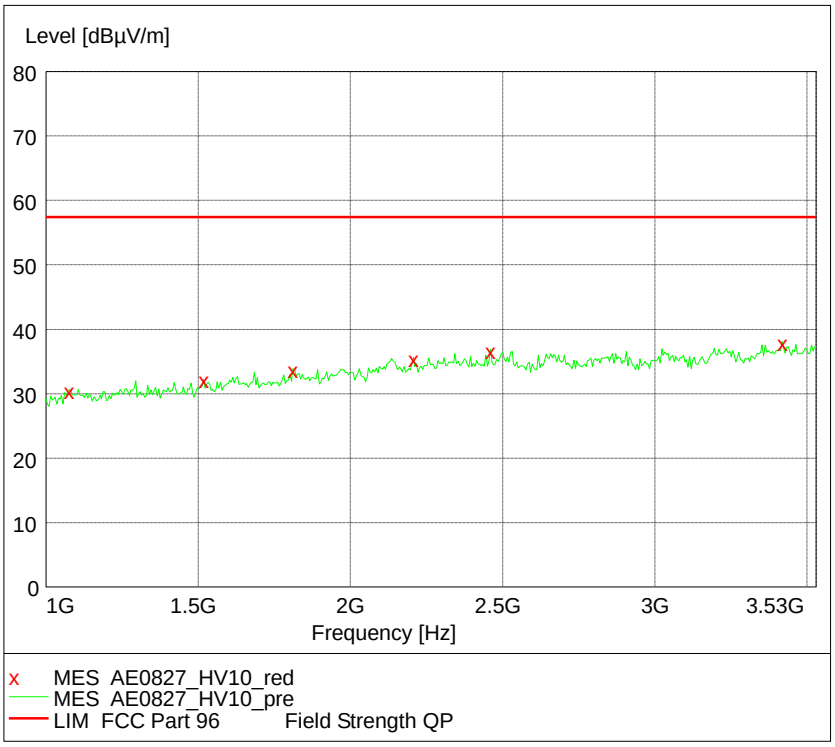
Range 30-1000MHz, Vertical



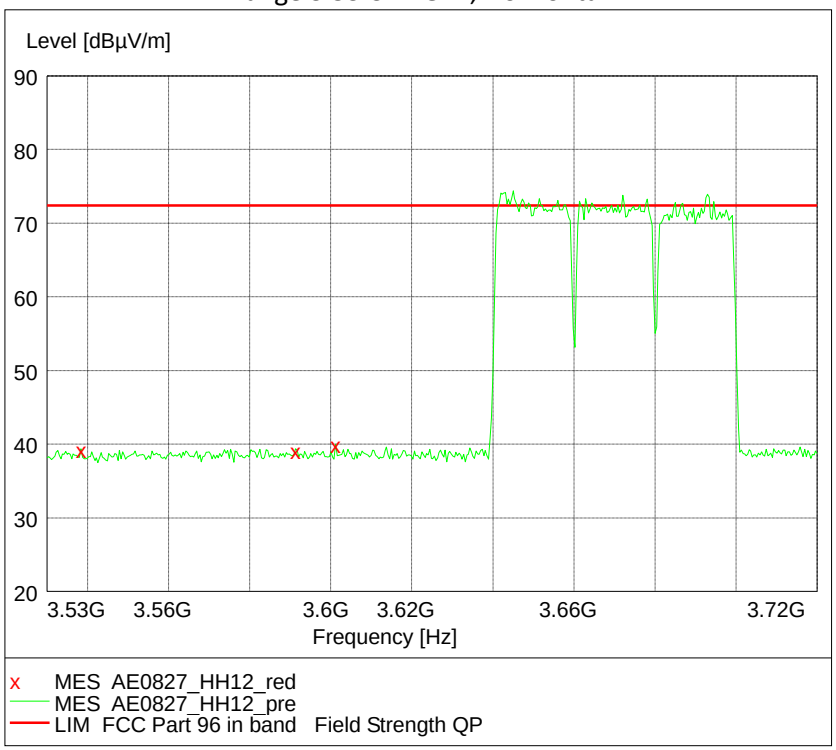
Range 1-3.53GHz, Horizontal



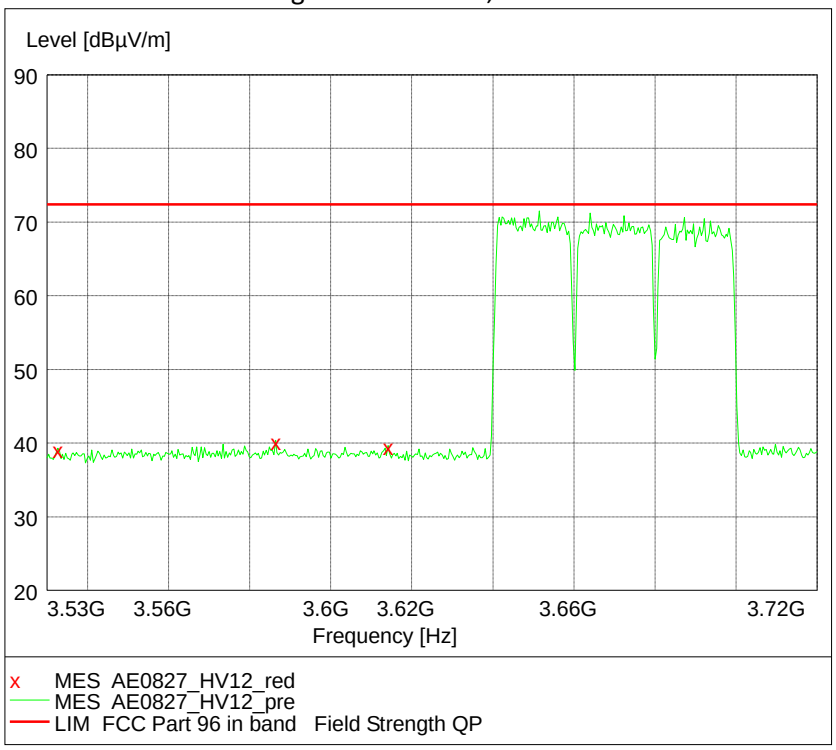
Range 1-3.53GHz, Vertical



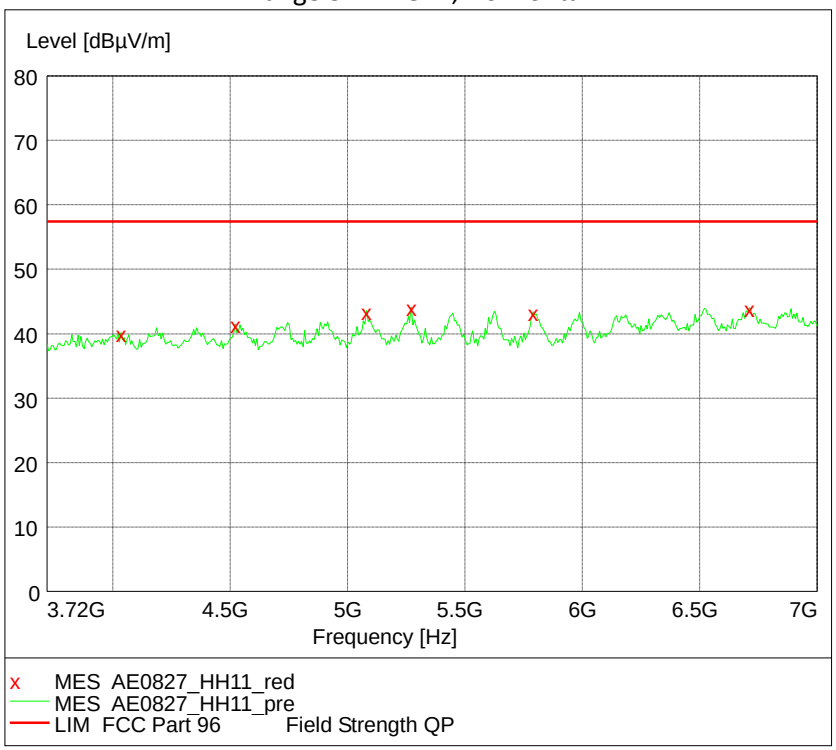
Range 3.53-3.72GHz, Horizontal



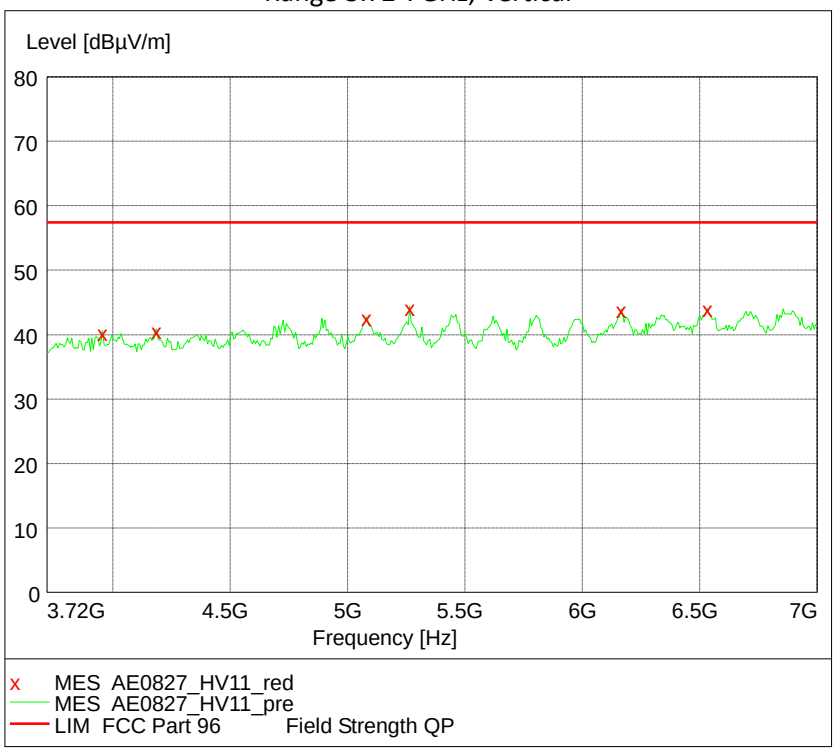
Range 3.53-3.72GHz, Vertical



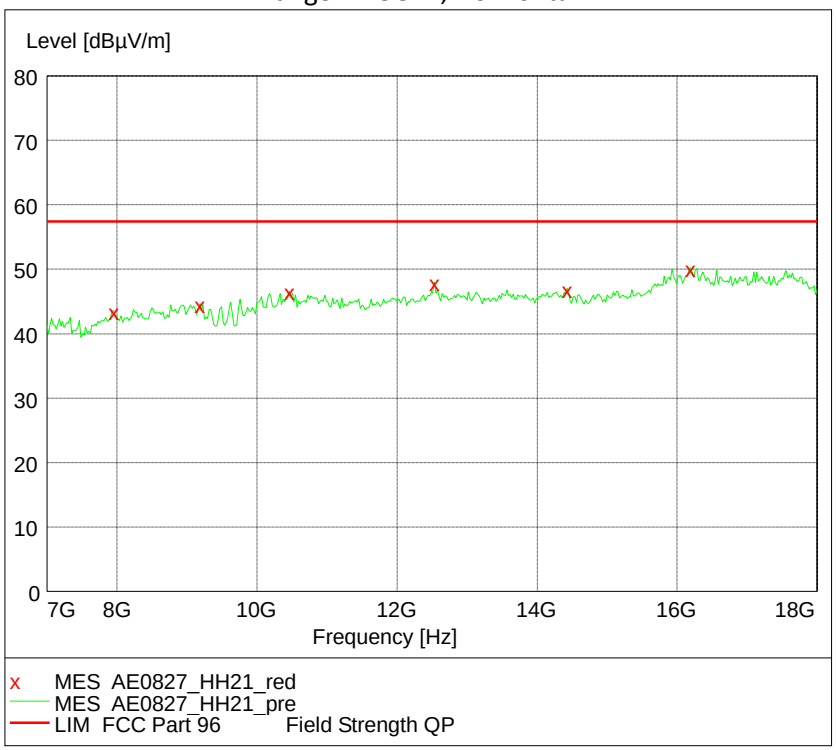
Range 3.72-7GHz, Horizontal



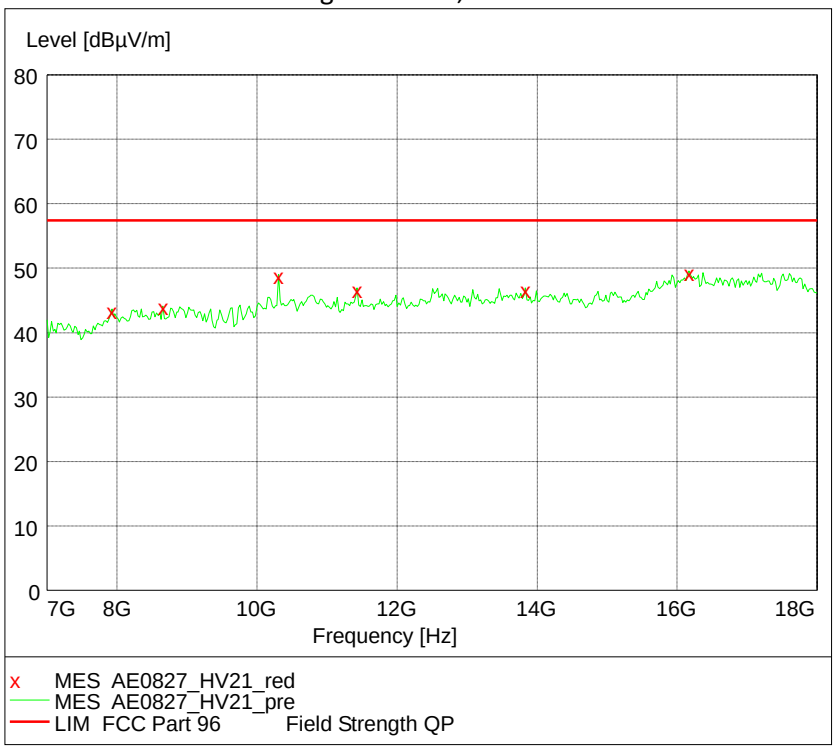
Range 3.72-7GHz, Vertical



Range 7-18GHz, Horizontal

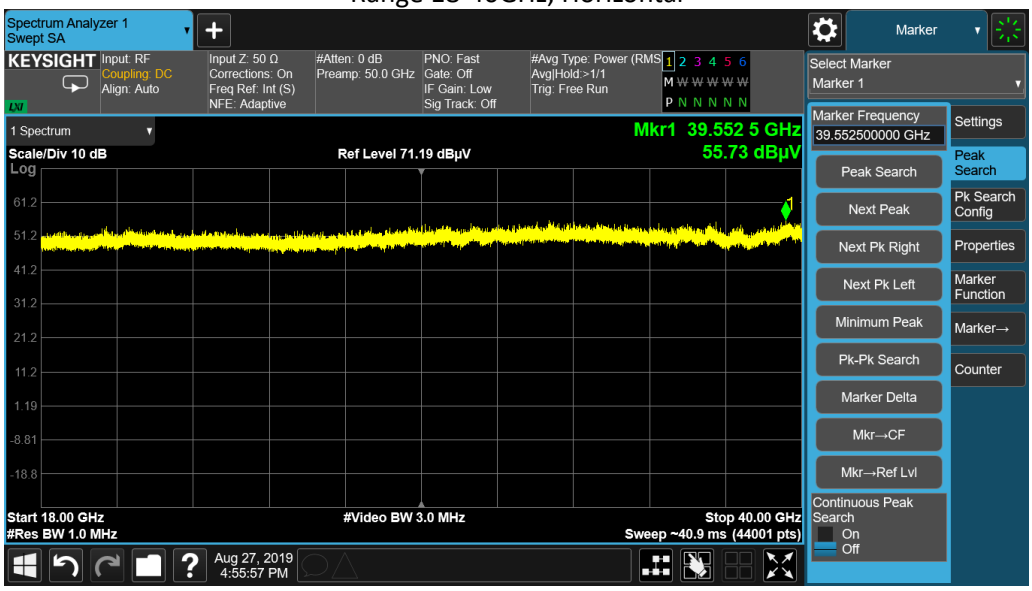


Range 7-18GHz, Vertical

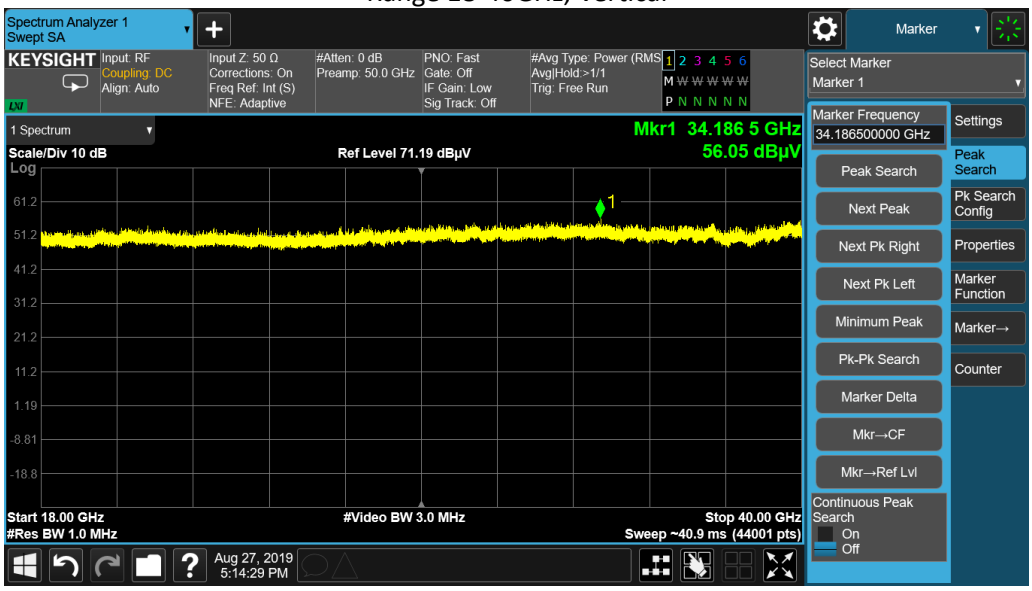


TEST REPORT

Range 18-40GHz, Horizontal



Range 18-40GHz, Vertical



8 Frequency Stability

Test result: **Tested**

8.1 Limit

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

8.2 Measurement Procedure

Temperature Variation
The EUT was tested over the temperature range -30°C to +50°C in 10°C steps with -48 VDC Power Supply. At each temperature step, the Base Station was configured to transmit at maximum power on the middle channel of the operating band.

Voltage Variation
The EUT was tested at the supplied voltages varied from 85 to 115 percent of the nominal values of -48 VDC. At +20°C, the Base Station was configured to transmit at maximum power on the middle channel of the frequency block.

8.3 Measurement result

Frequency Error – Temperature Variation

LTE-MIMO-1C-20

Antenna Port	Modulation	Temperature (°C)	Frequency Stability (Hz)		
			Channel Position B	Channel Position M	Channel Position T
21	64QAM	-30	-21	-23	-26
		-20	-22	-24	-27
		-10	-21	-24	-26
		0	-34	-17	-27
		10	-38	-36	-28
		20	-28	-32	-15
		30	-22	-35	-28
		40	-15	-27	-25
		50	-23	-19	-27

Frequency Error – Voltage Variation

LTE-MIMO-1C-20

Antenna Port	Modulation	Temperature (°C)	Supply Voltage (V)	Frequency Stability (Hz)		
				Channel Position B	Channel Position M	Channel Position T
21	64QAM	20	-40.8	-16	-28	-38
			-48.0	-13	-32	-37
			-55.2	-25	-15	-21

********** END **********