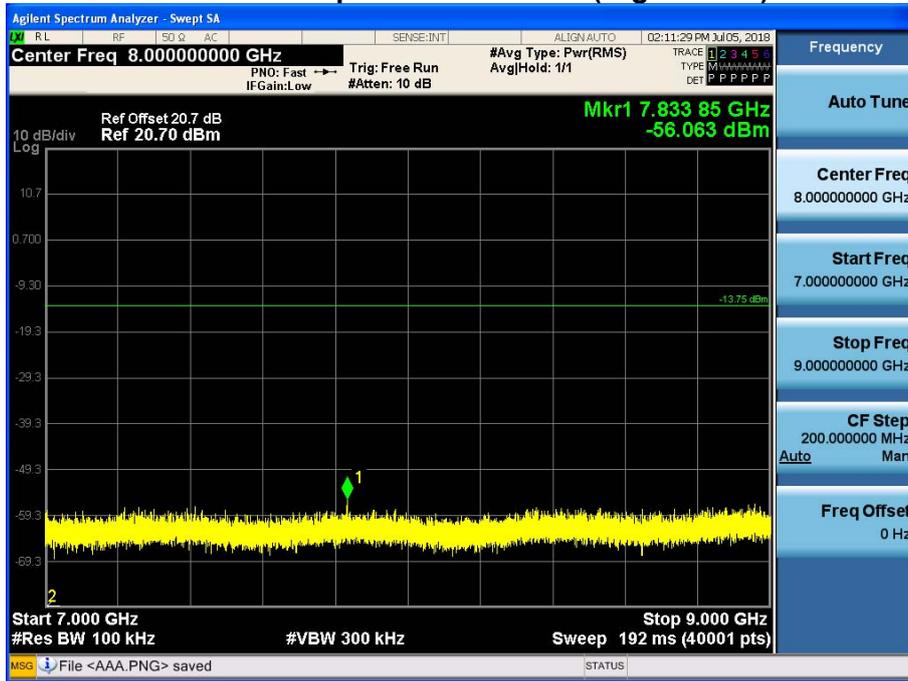


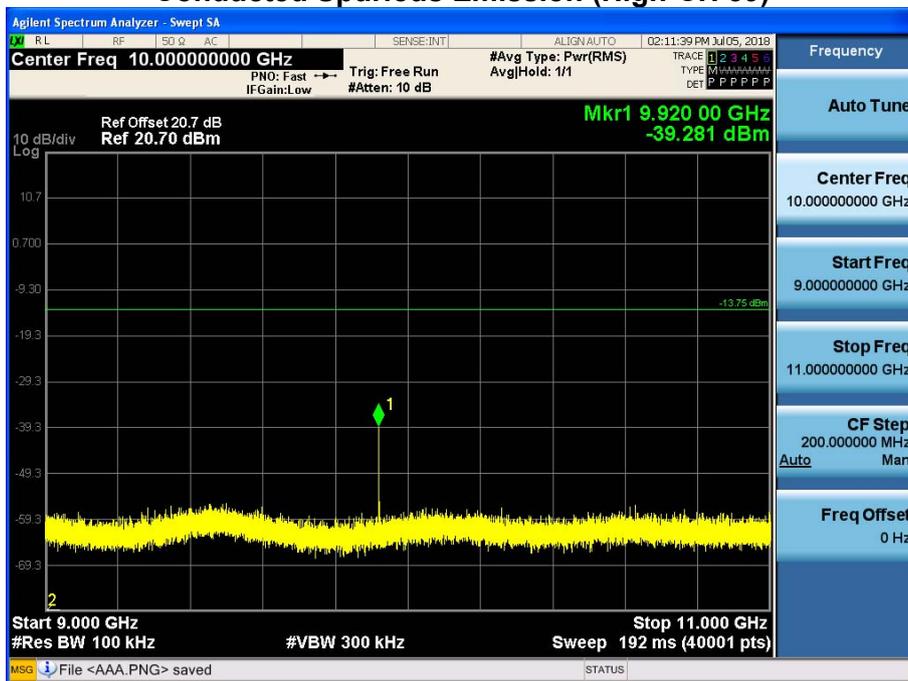
7 GHz ~ 9 GHz

Conducted Spurious Emission (High-CH 39)



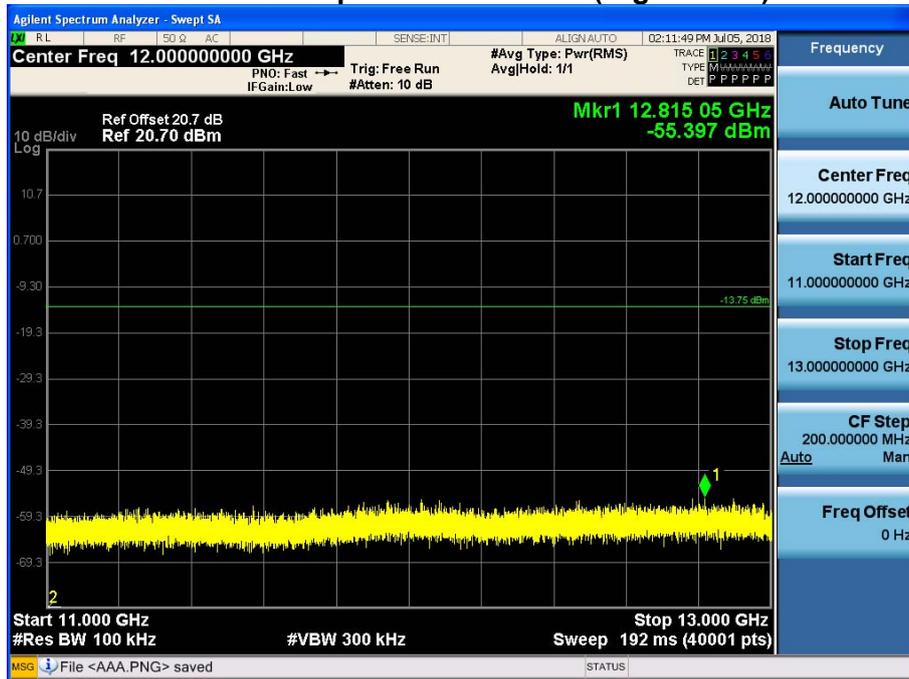
9 GHz ~ 11 GHz

Conducted Spurious Emission (High-CH 39)



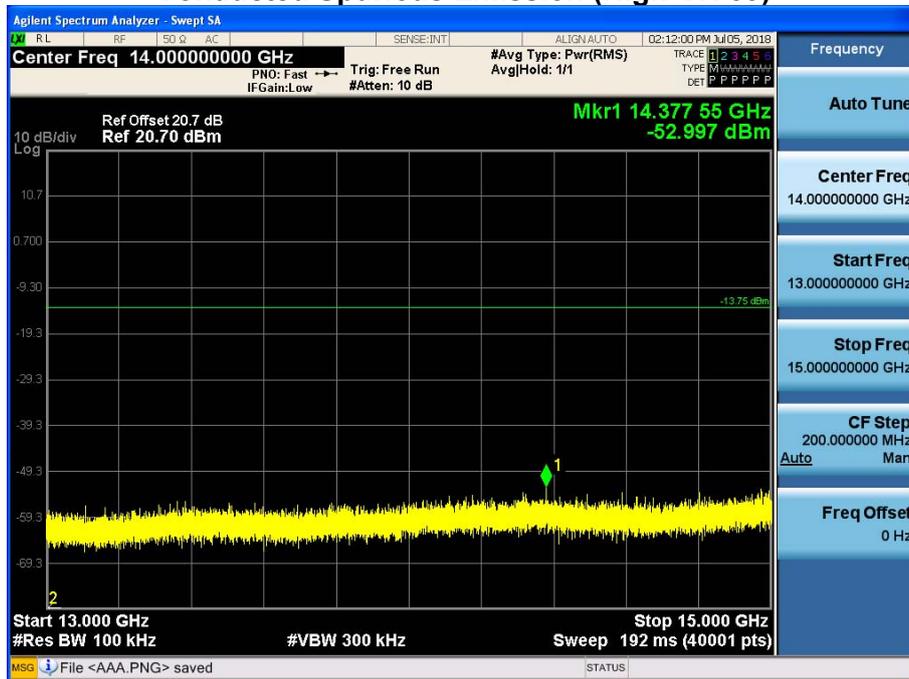
11 GHz ~ 13 GHz

Conducted Spurious Emission (High-CH 39)



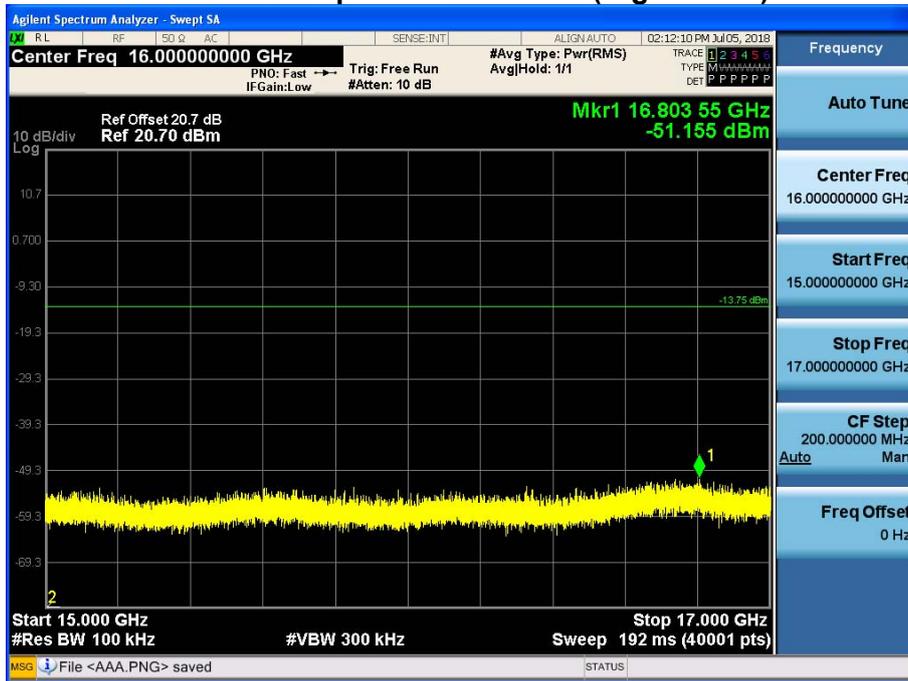
13 GHz ~ 15 GHz

Conducted Spurious Emission (High-CH 39)



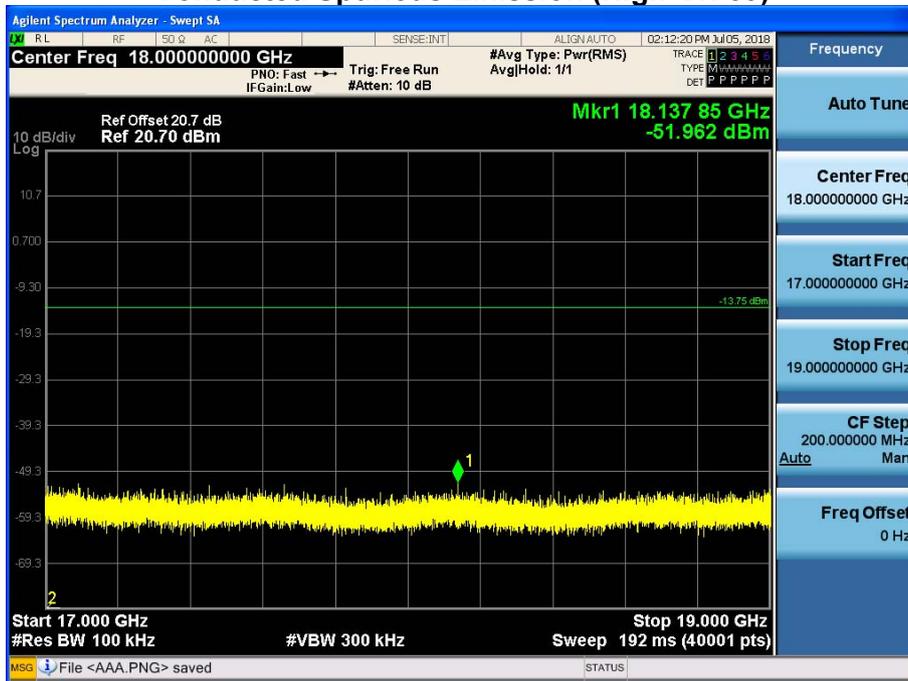
15 GHz ~ 17 GHz

Conducted Spurious Emission (High-CH 39)



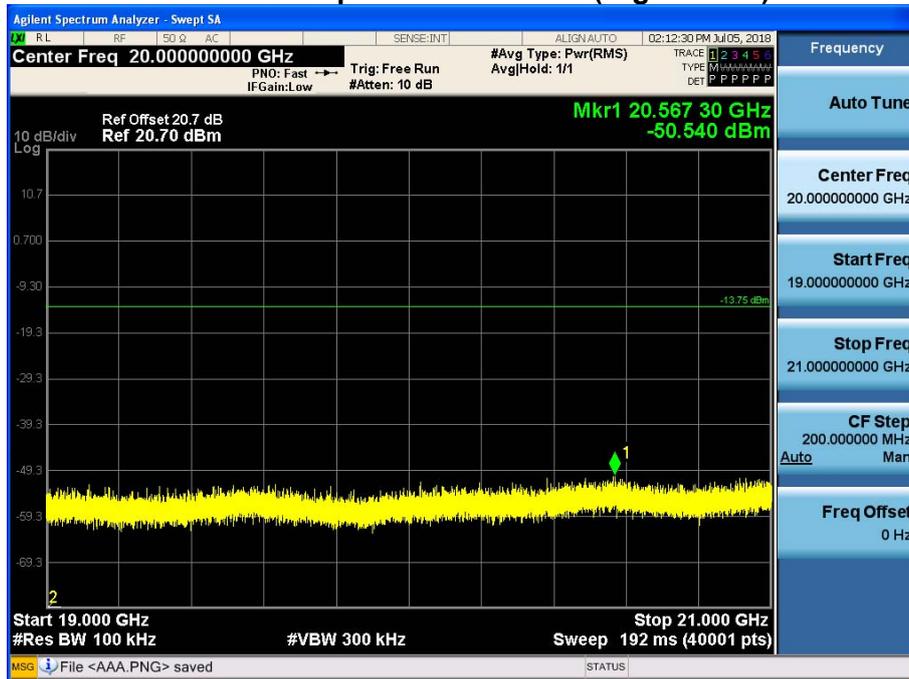
17 GHz ~ 19 GHz

Conducted Spurious Emission (High-CH 39)



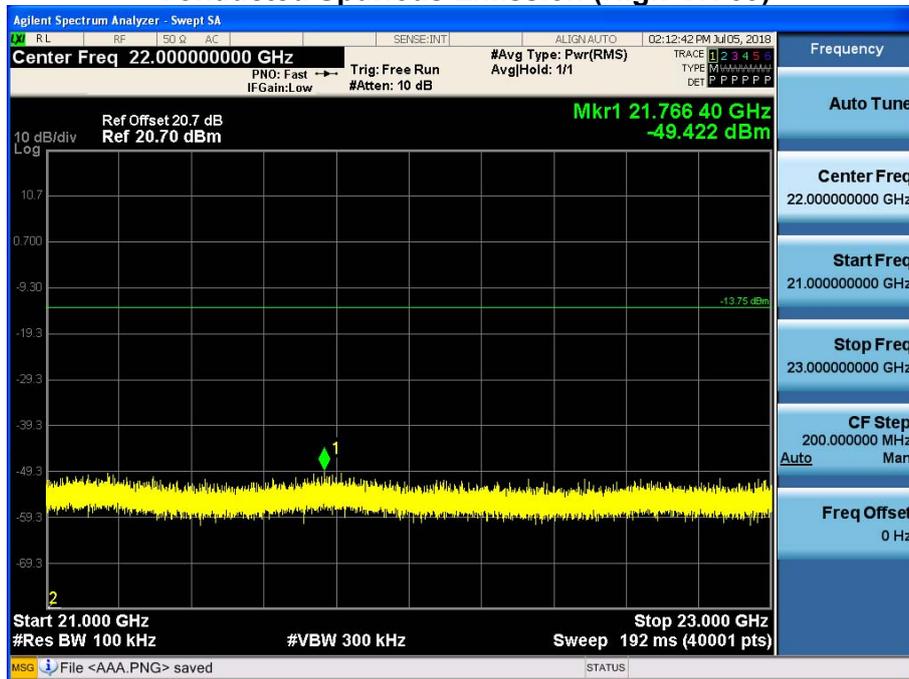
19 GHz ~ 21 GHz

Conducted Spurious Emission (High-CH 39)



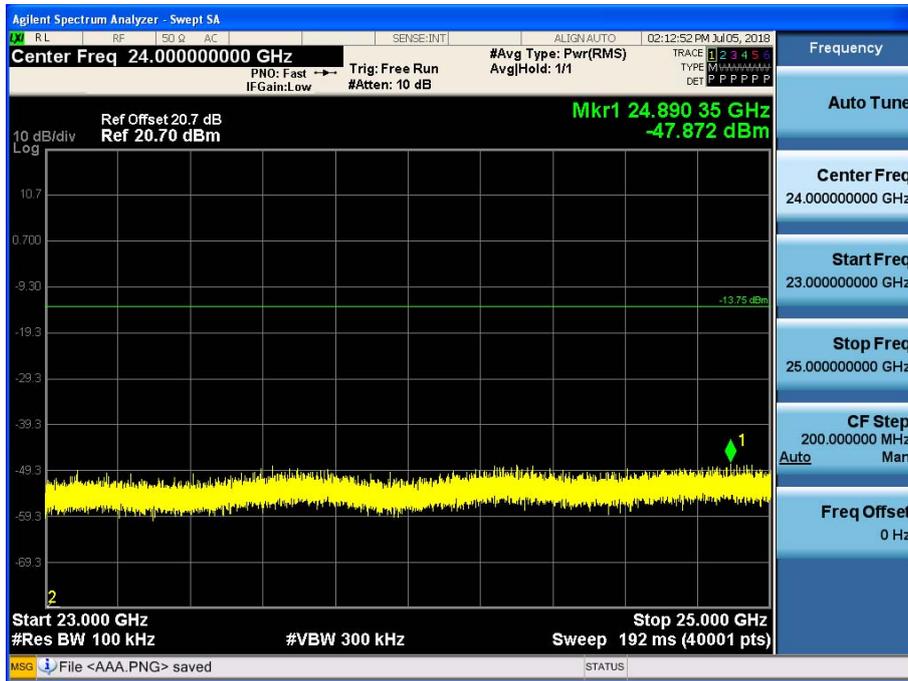
21 GHz ~ 23 GHz

Conducted Spurious Emission (High-CH 39)



23 GHz ~ 25 GHz

Conducted Spurious Emission (High-CH 39)

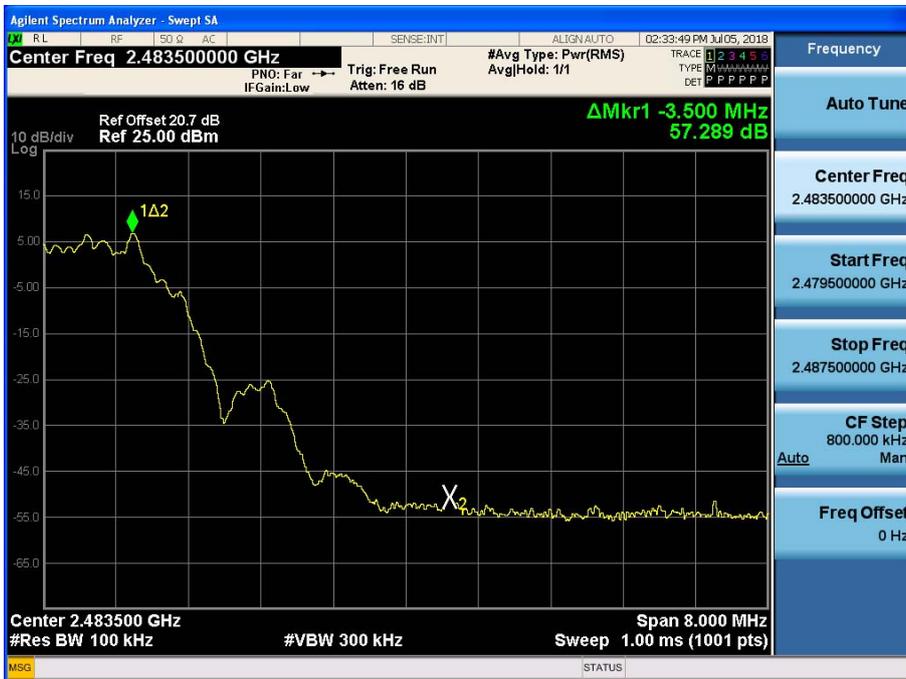


5.0 LE: 2M PHY RESULT PLOTS

BandEdge (Low-CH 0)

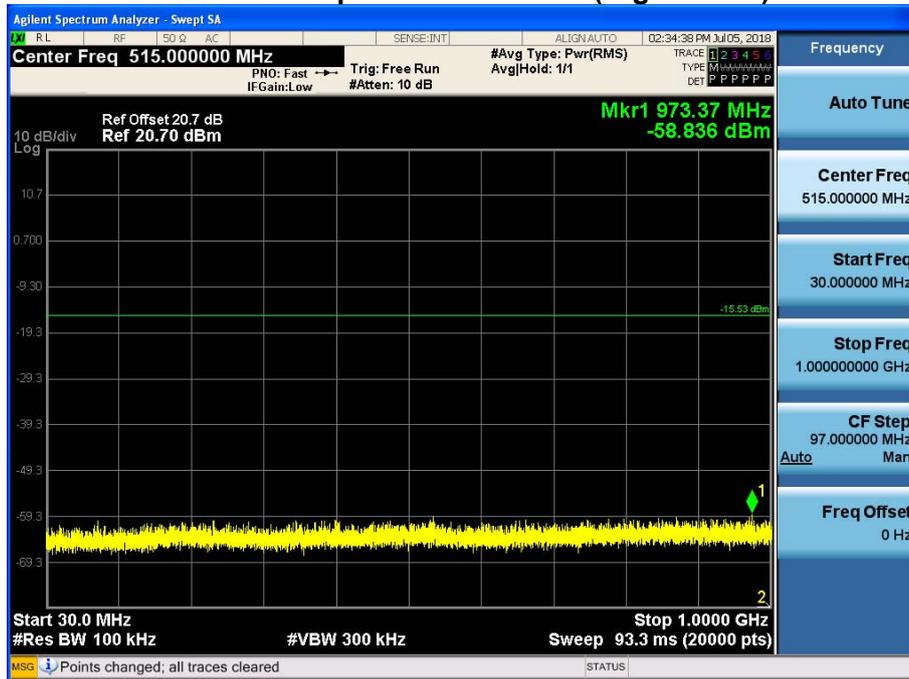


BandEdge (High-CH 39)



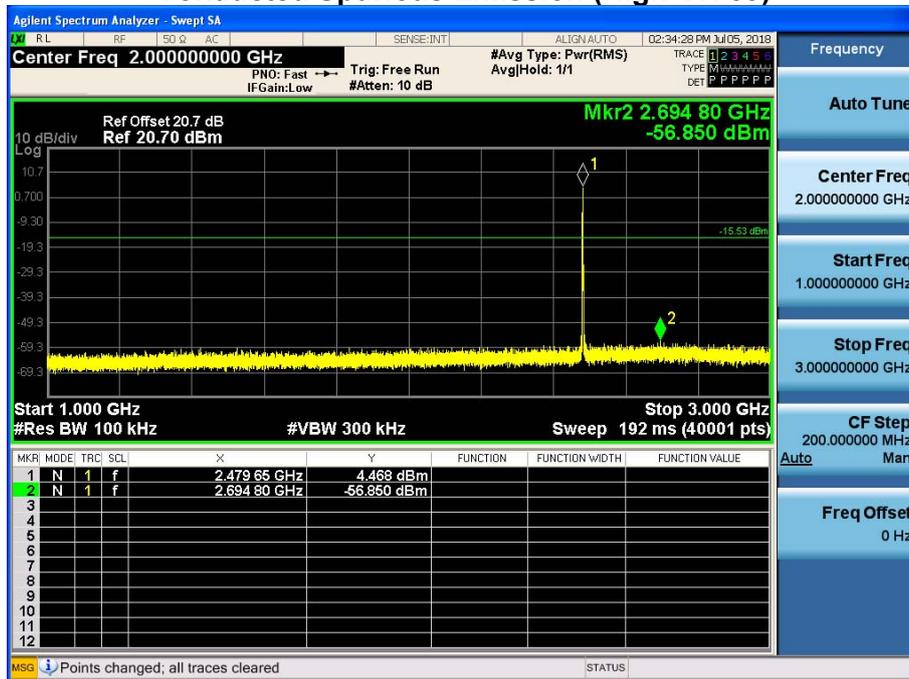
30 MHz ~ 1 GHz

Conducted Spurious Emission (High-CH 39)



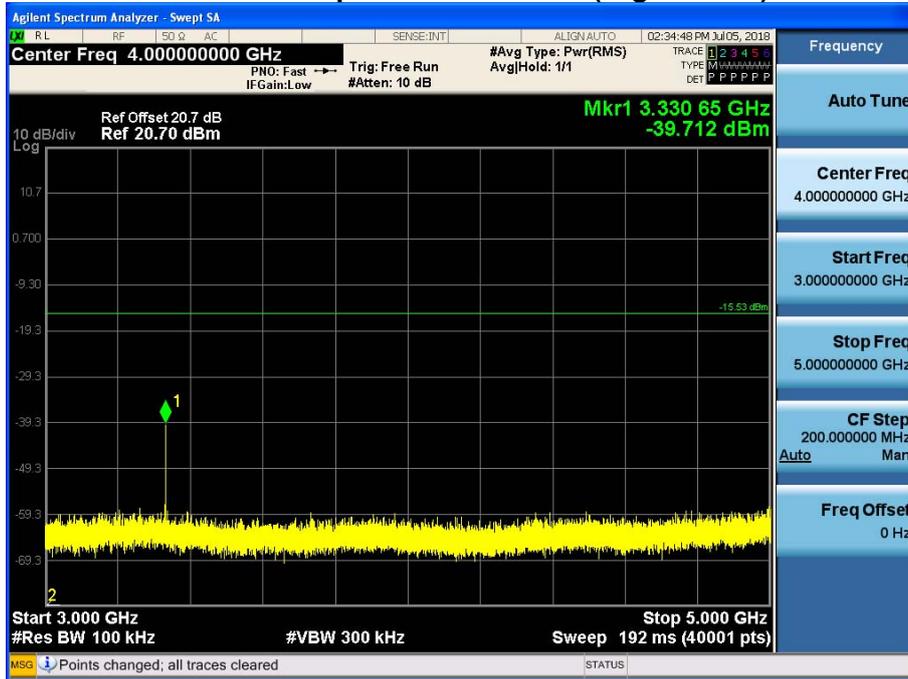
1 GHz ~ 3 GHz

Conducted Spurious Emission (High-CH 39)



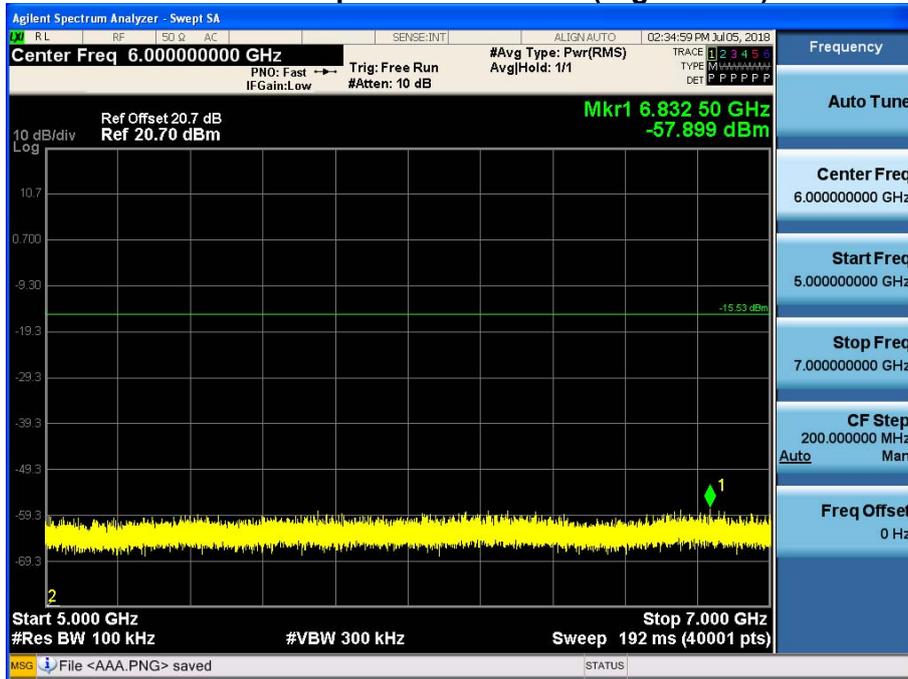
**3 GHz ~ 5 GHz**

**Conducted Spurious Emission (High-CH 39)**



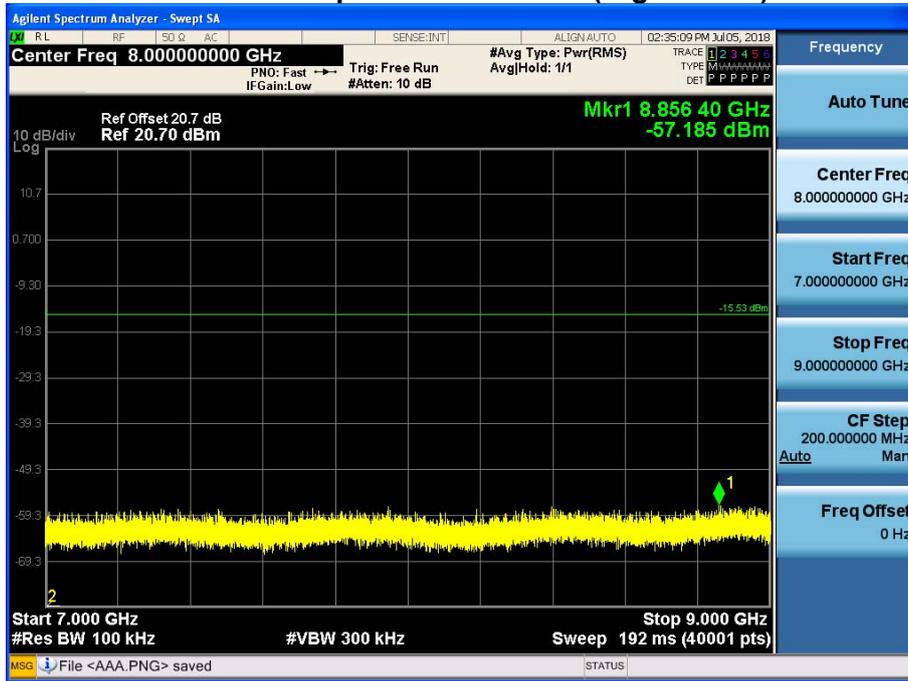
**5 GHz ~ 7 GHz**

**Conducted Spurious Emission (High-CH 39)**



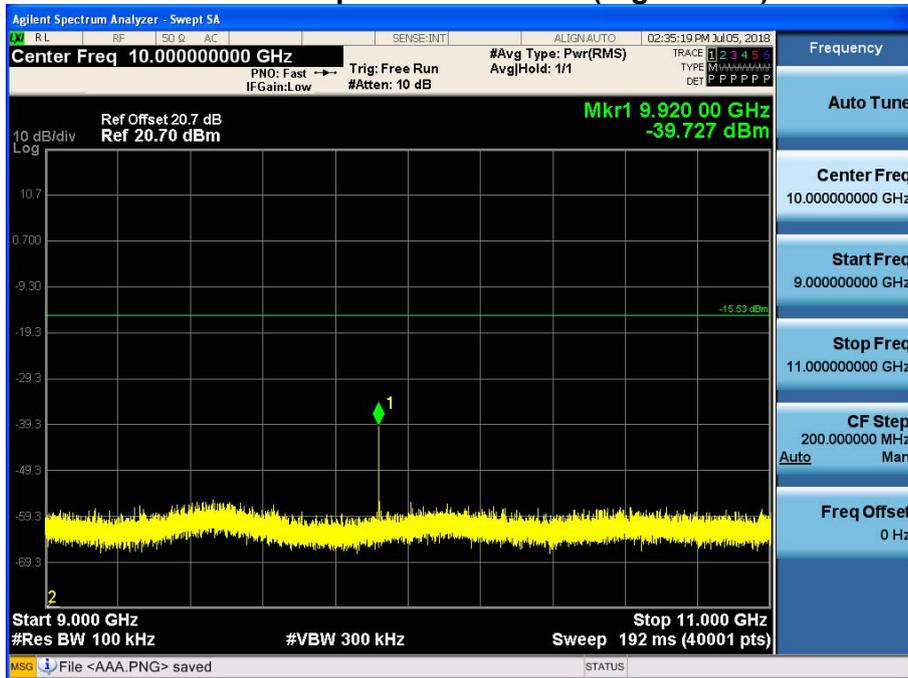
7 GHz ~ 9 GHz

Conducted Spurious Emission (High-CH 39)



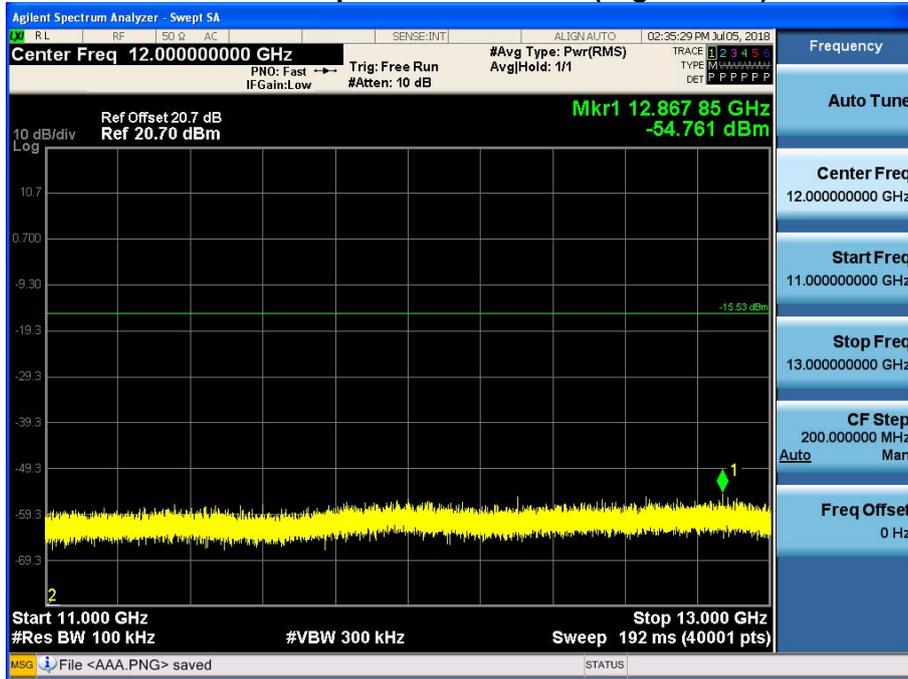
9 GHz ~ 11 GHz

Conducted Spurious Emission (High-CH 39)



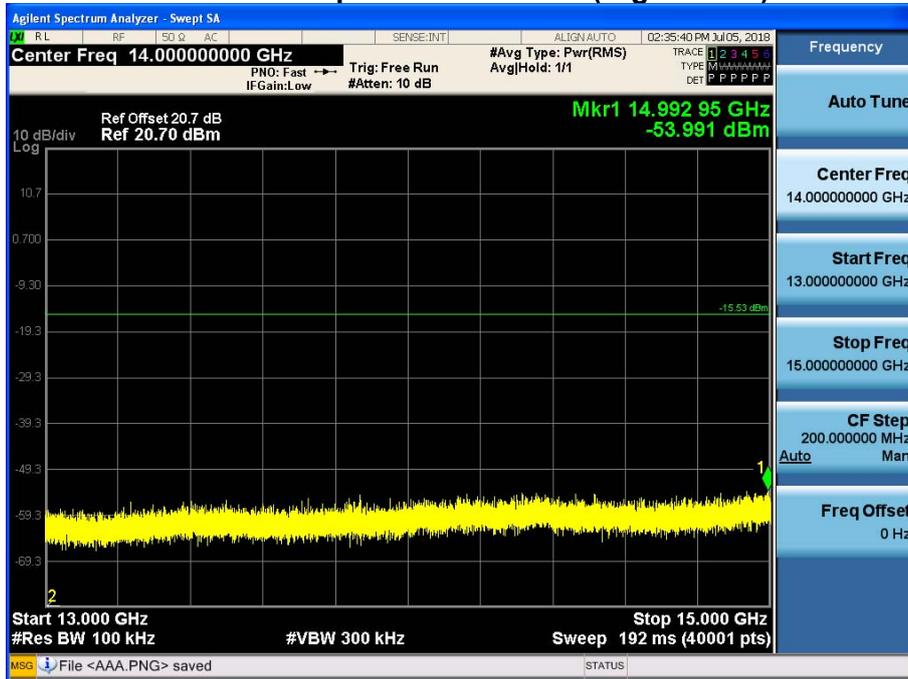
11 GHz ~ 13 GHz

Conducted Spurious Emission (High-CH 39)



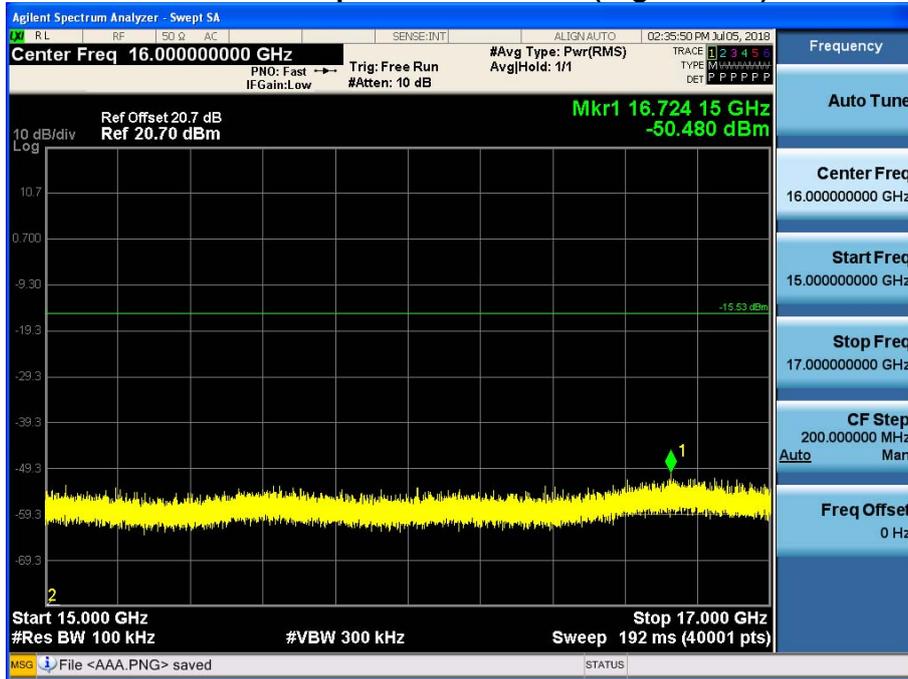
13 GHz ~ 15 GHz

Conducted Spurious Emission (High-CH 39)



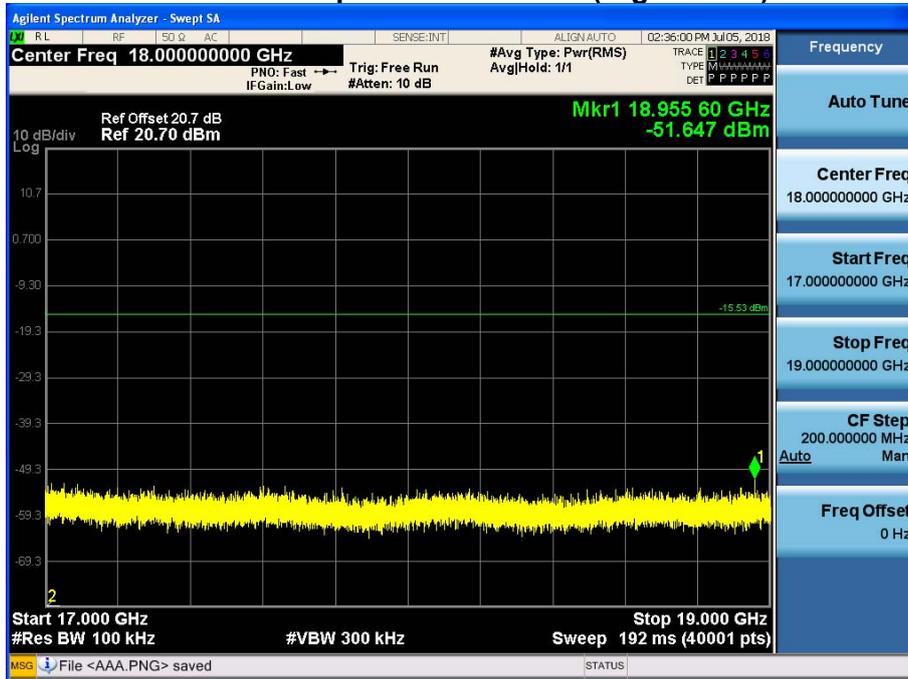
15 GHz ~ 17 GHz

Conducted Spurious Emission (High-CH 39)



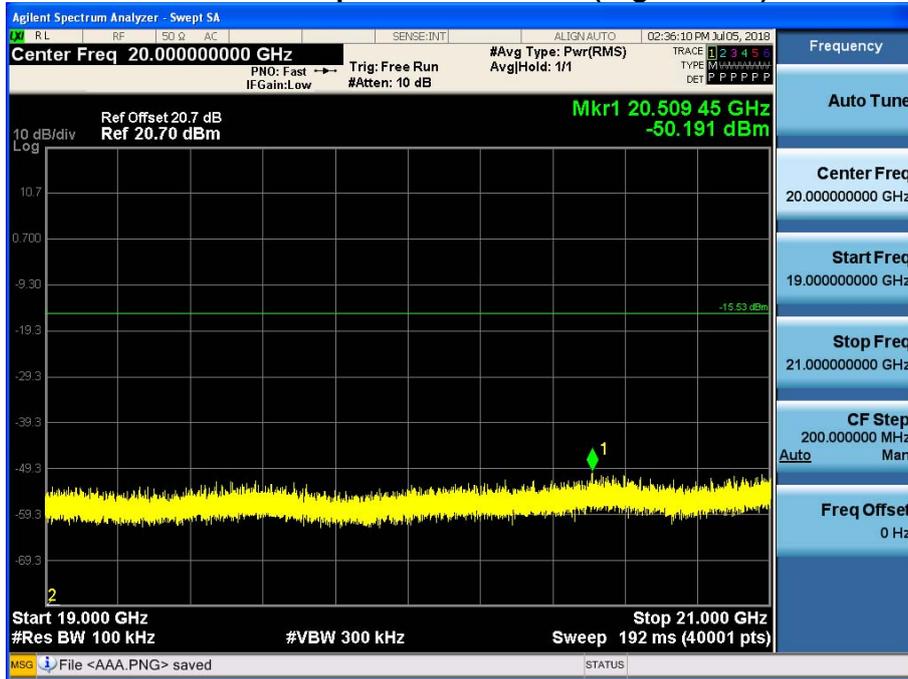
17 GHz ~ 19 GHz

Conducted Spurious Emission (High-CH 39)



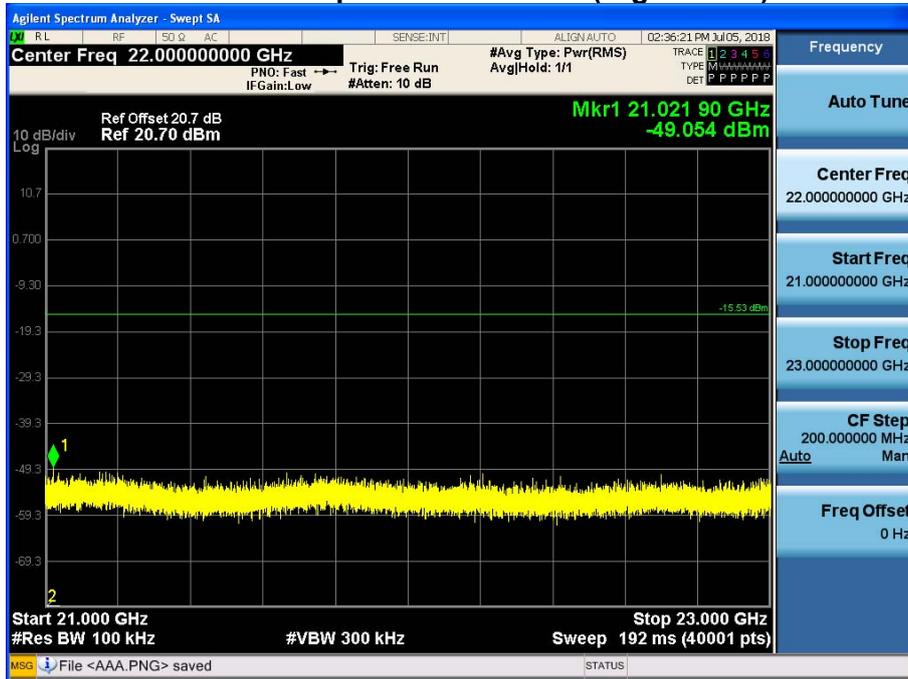
19 GHz ~ 21 GHz

Conducted Spurious Emission (High-CH 39)



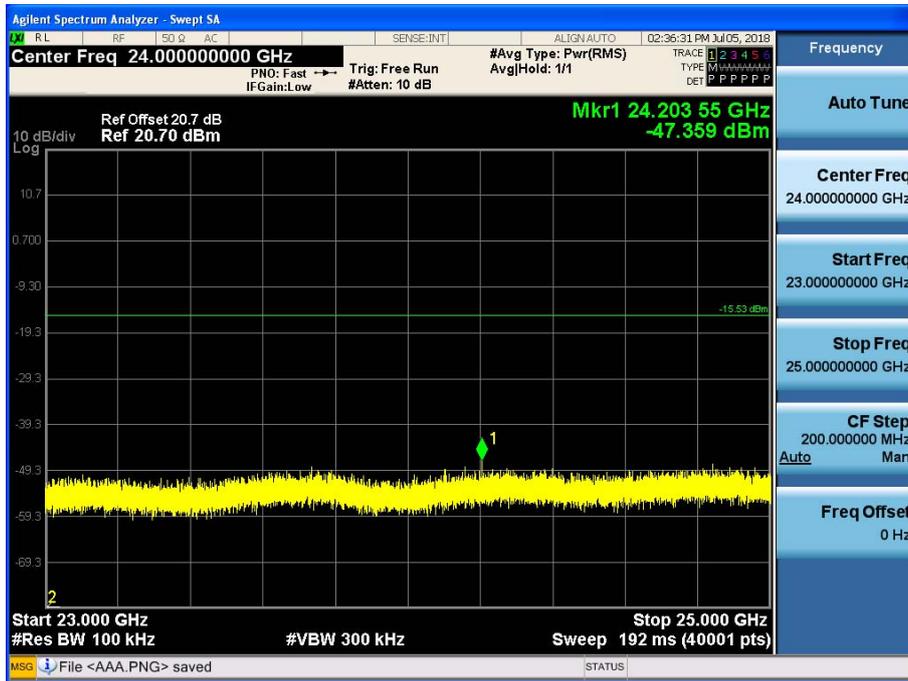
21 GHz ~ 23 GHz

Conducted Spurious Emission (High-CH 39)



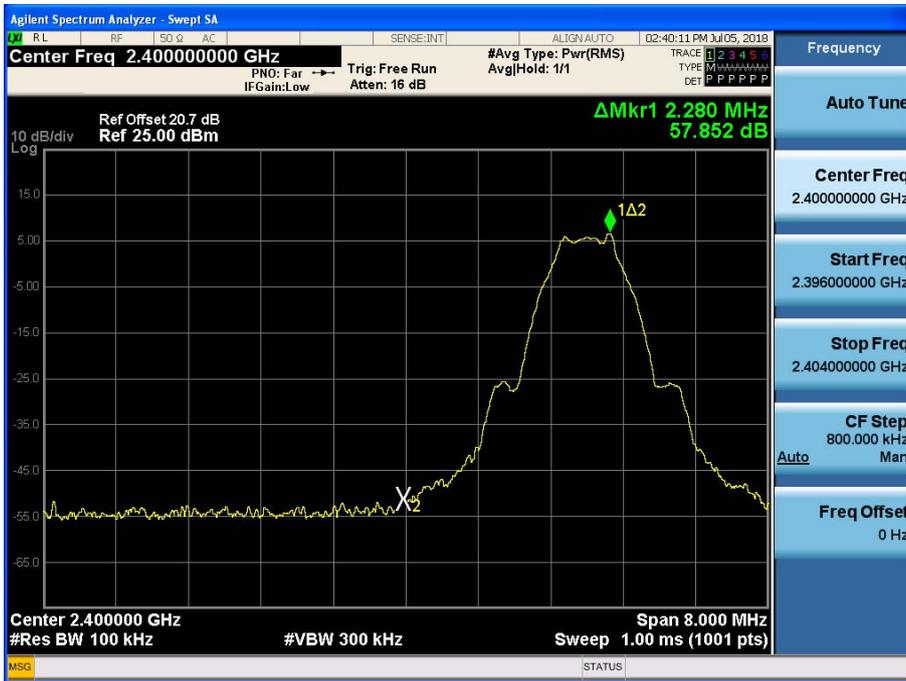
23 GHz ~ 25 GHz

Conducted Spurious Emission (High-CH 39)



5.0 LE: Coded PHY\_S8 RESULT PLOTS

BandEdge (Low-CH 0)

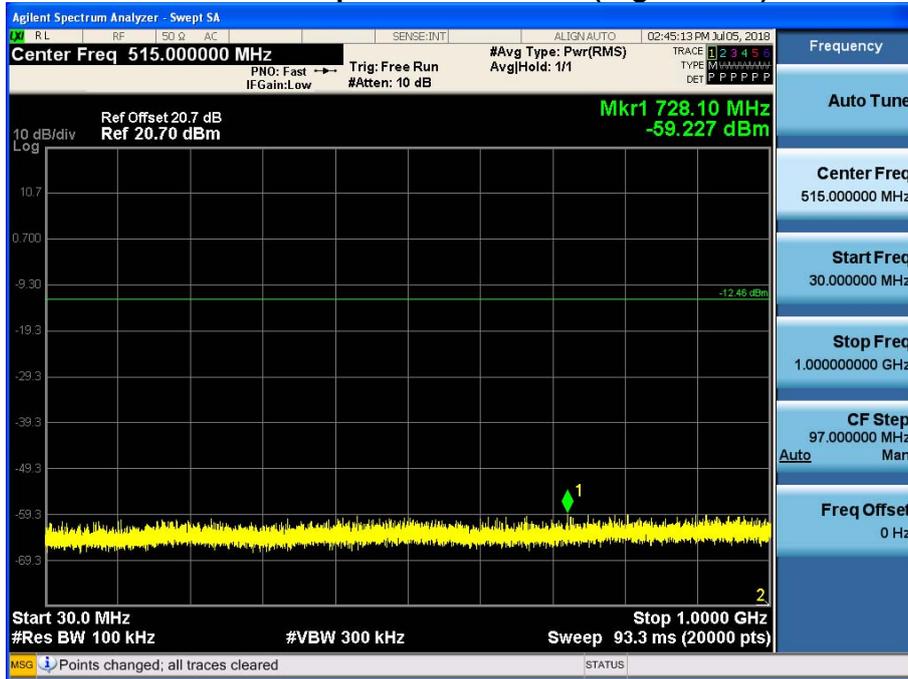


BandEdge (High-CH 39)



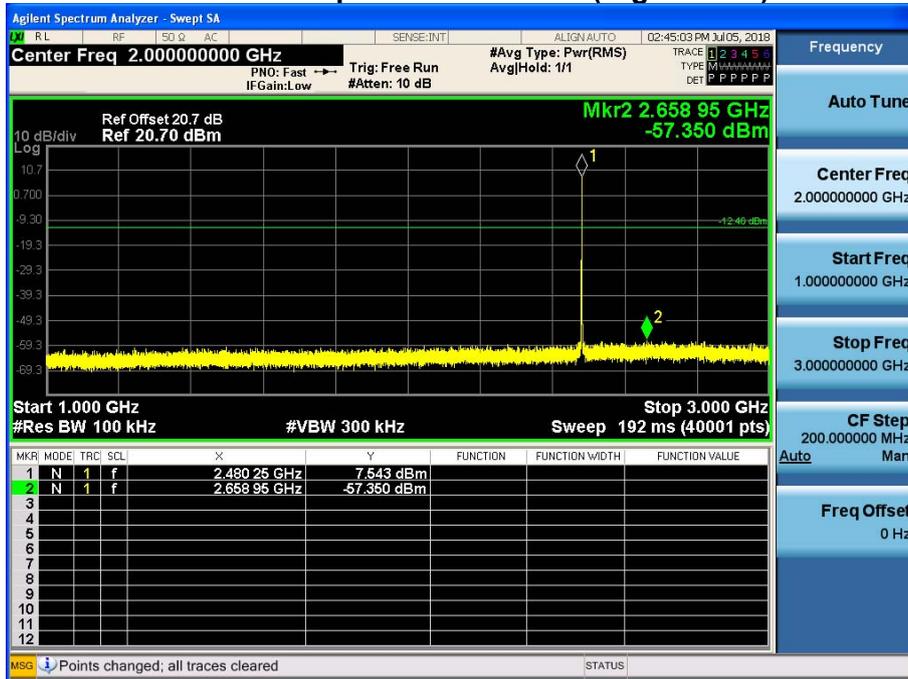
30 MHz ~ 1 GHz

Conducted Spurious Emission (High-CH 39)



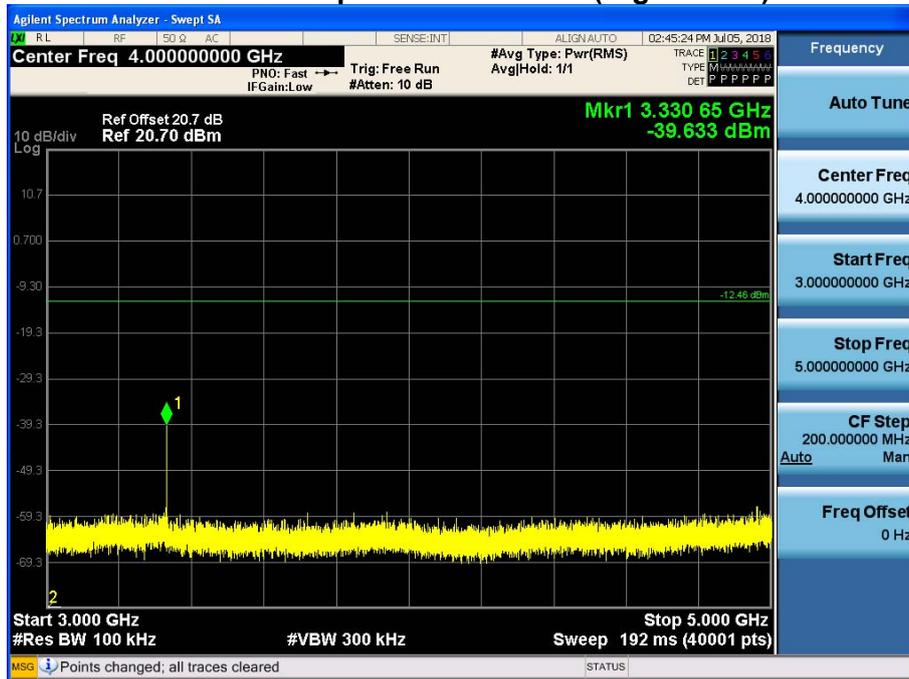
1 GHz ~ 3 GHz

Conducted Spurious Emission (High-CH 39)



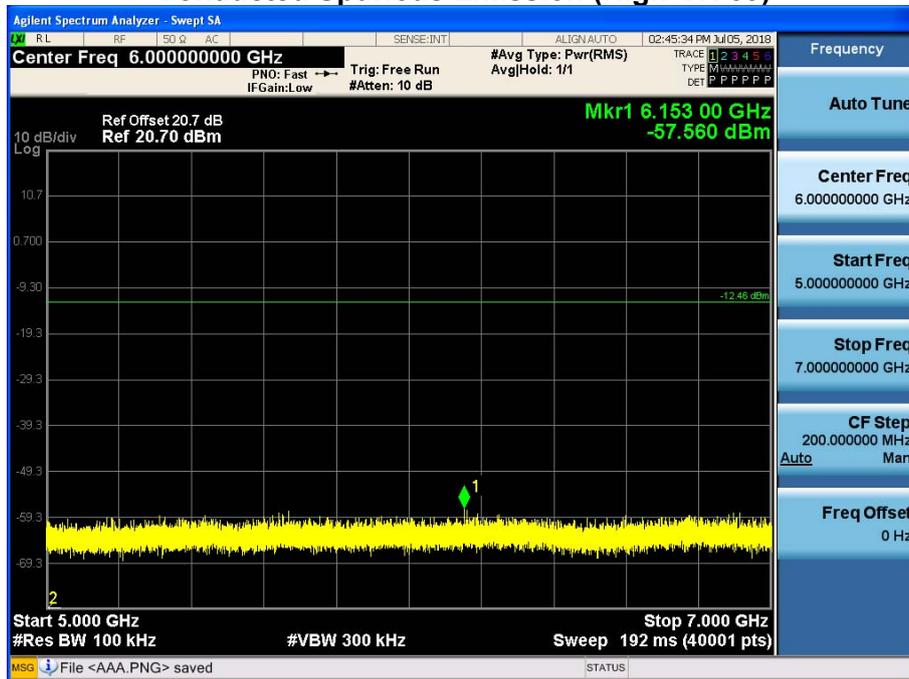
**3 GHz ~ 5 GHz**

**Conducted Spurious Emission (High-CH 39)**



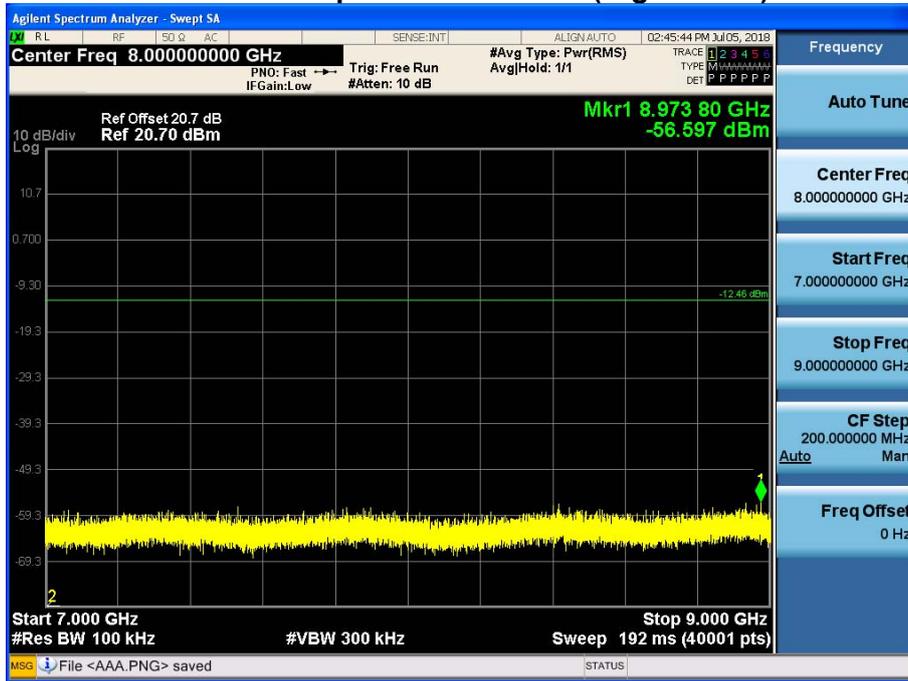
**5 GHz ~ 7 GHz**

**Conducted Spurious Emission (High-CH 39)**



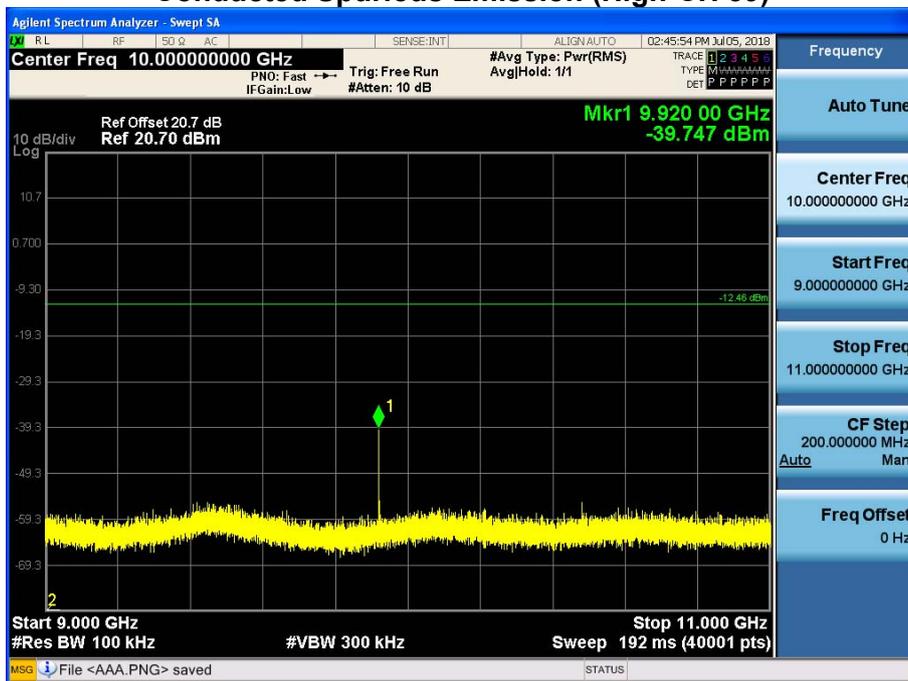
7 GHz ~ 9 GHz

Conducted Spurious Emission (High-CH 39)



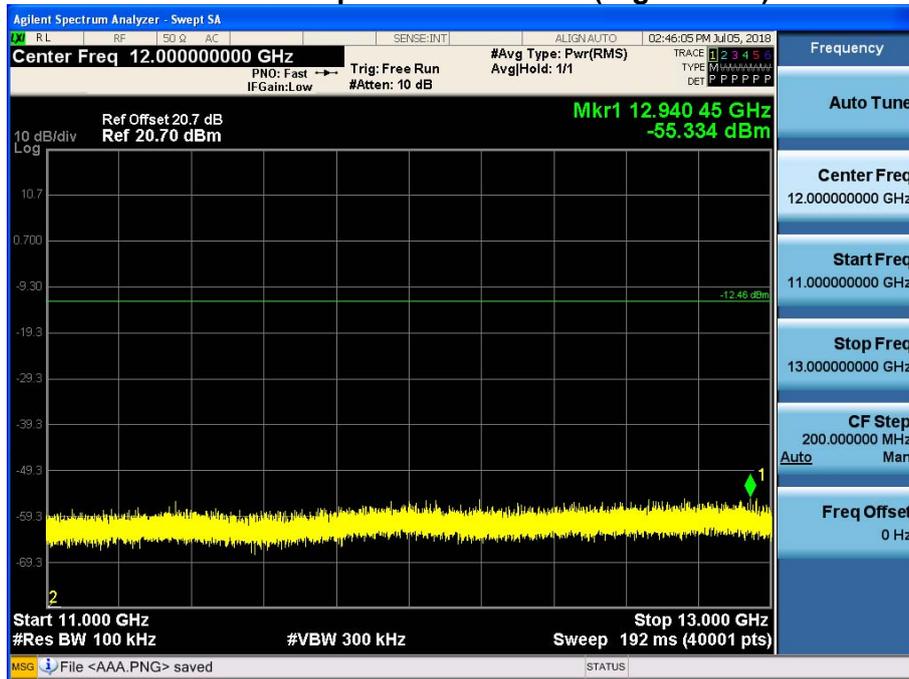
9 GHz ~ 11 GHz

Conducted Spurious Emission (High-CH 39)



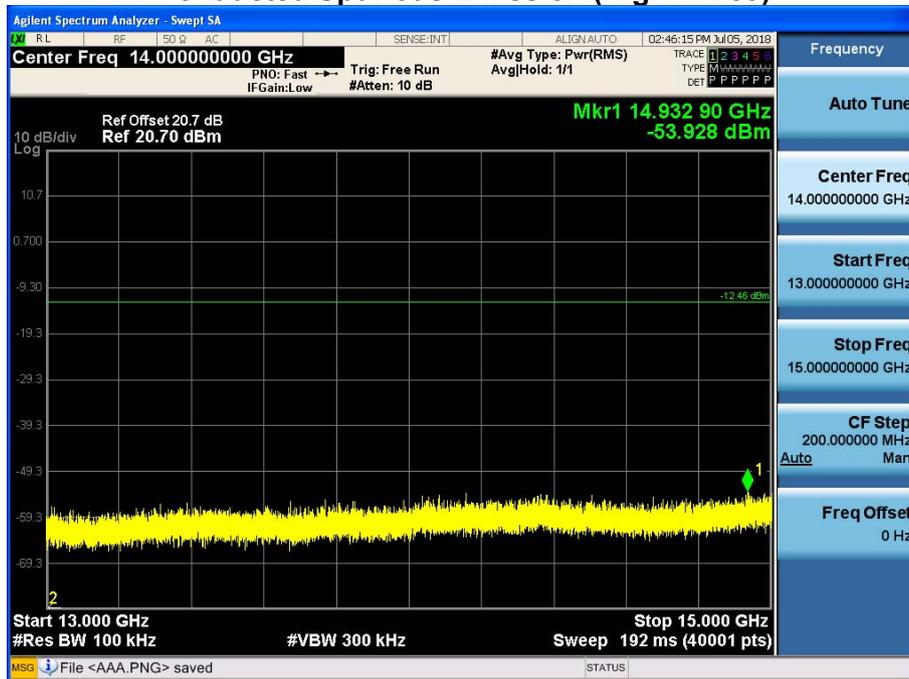
11 GHz ~ 13 GHz

Conducted Spurious Emission (High-CH 39)



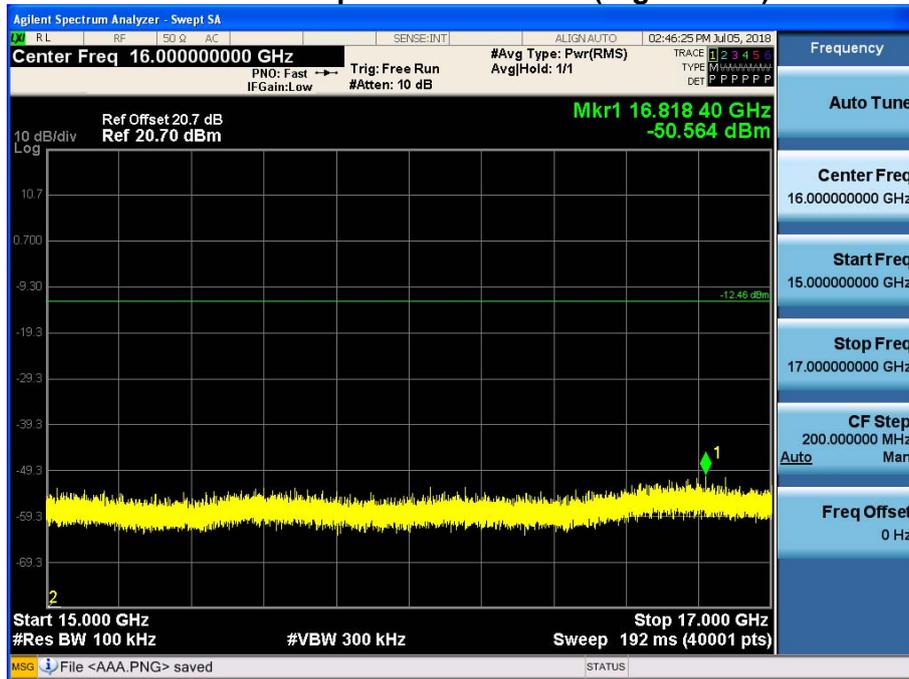
13 GHz ~ 15 GHz

Conducted Spurious Emission (High-CH 39)



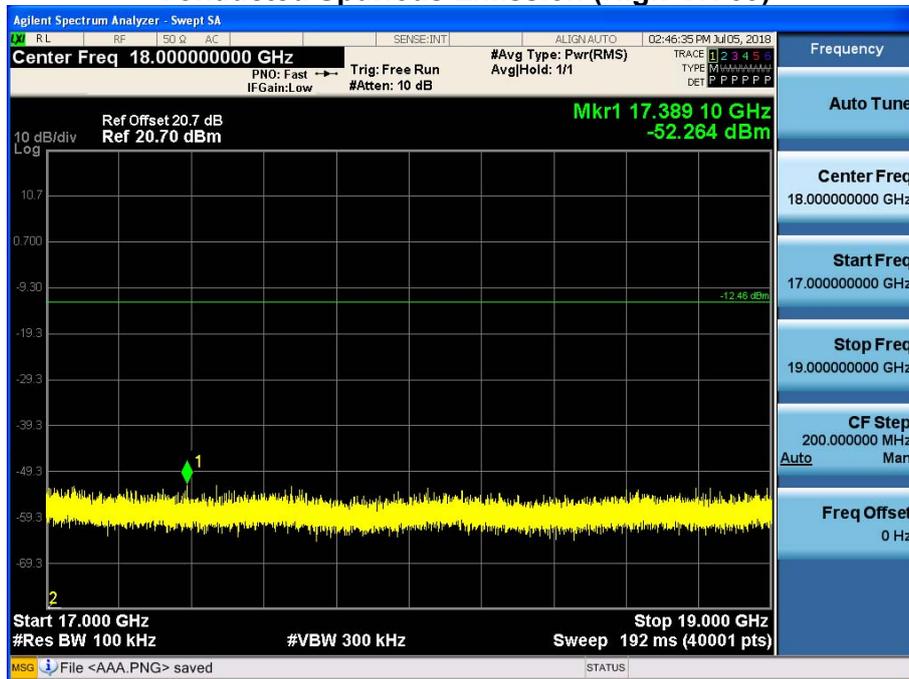
15 GHz ~ 17 GHz

Conducted Spurious Emission (High-CH 39)



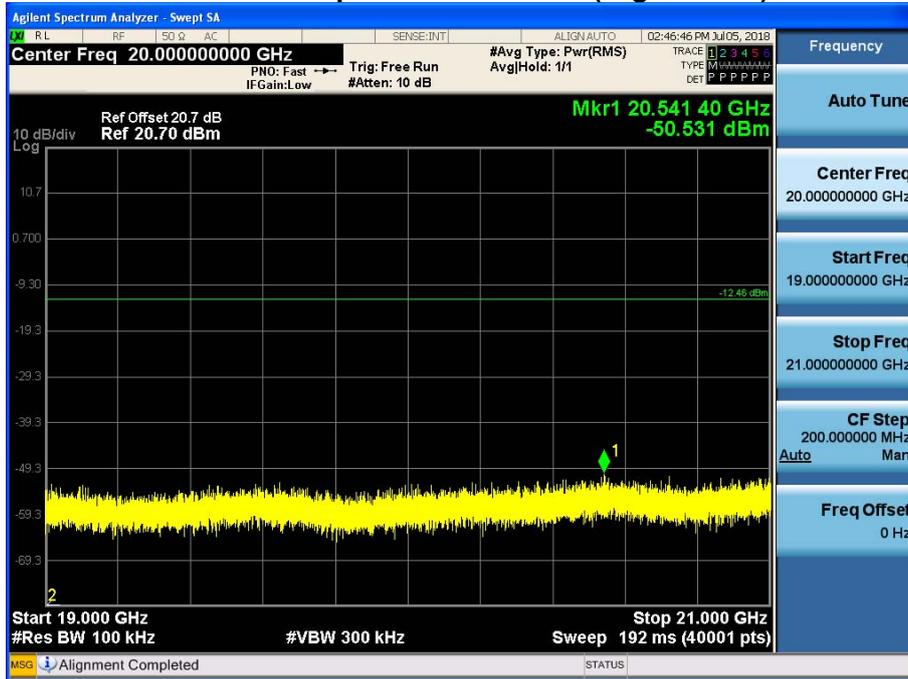
17 GHz ~ 19 GHz

Conducted Spurious Emission (High-CH 39)



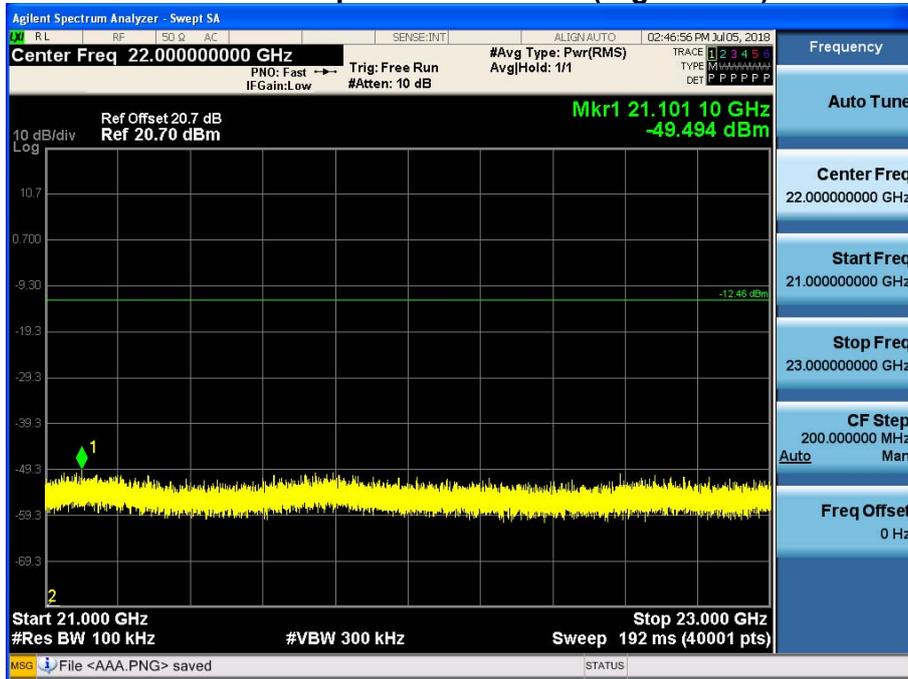
19 GHz ~ 21 GHz

Conducted Spurious Emission (High-CH 39)



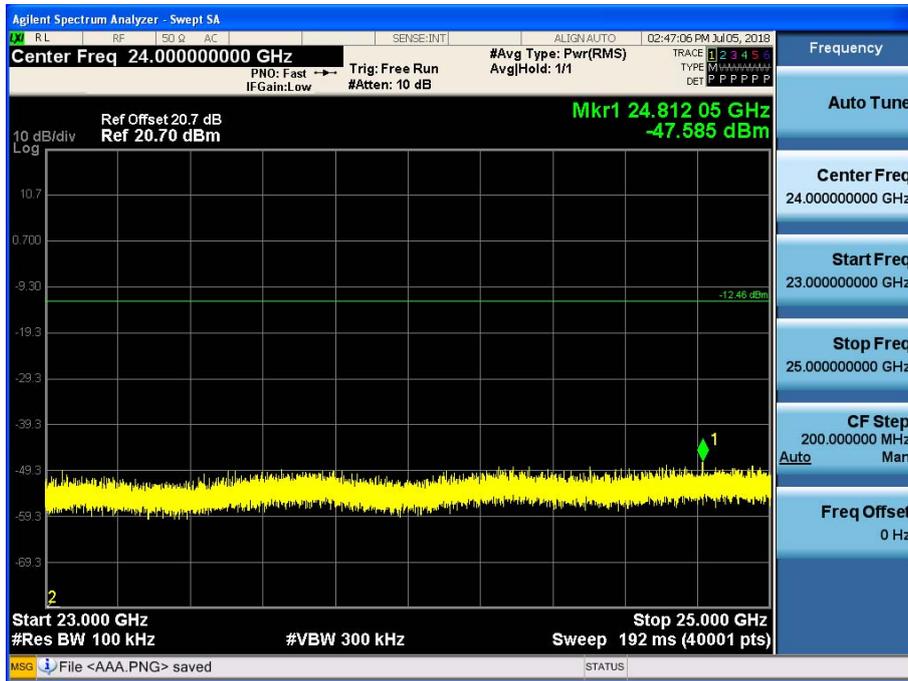
21 GHz ~ 23 GHz

Conducted Spurious Emission (High-CH 39)



23 GHz ~ 25 GHz

Conducted Spurious Emission (High-CH 39)



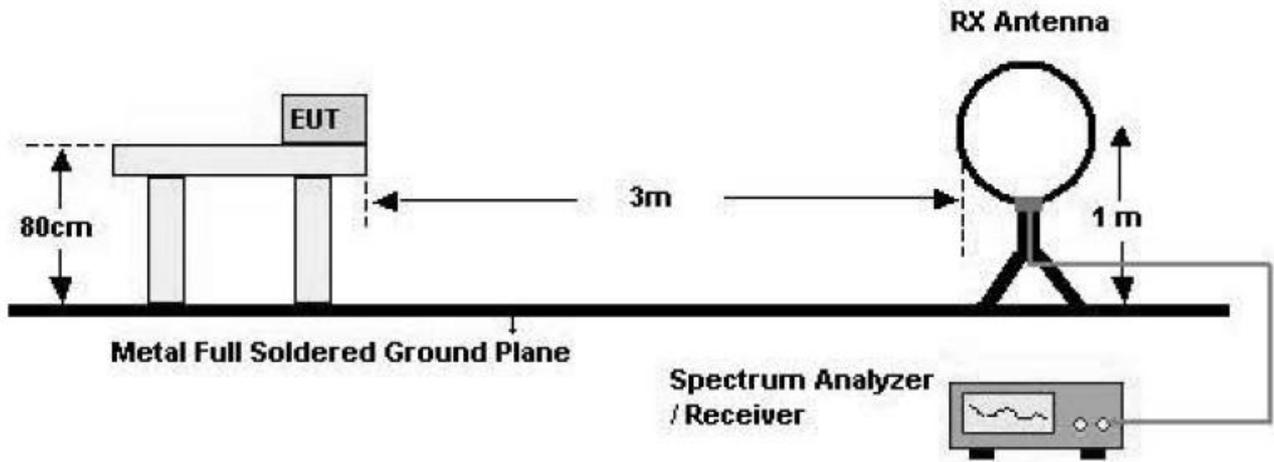
**9.7 RADIATED MEASUREMENT.****9.7.1 RADIATED SPURIOUS EMISSIONS.**

Test Requirements and limit, §15.205, §15.209, RSS-Gen(Issue 5) Section 8.9

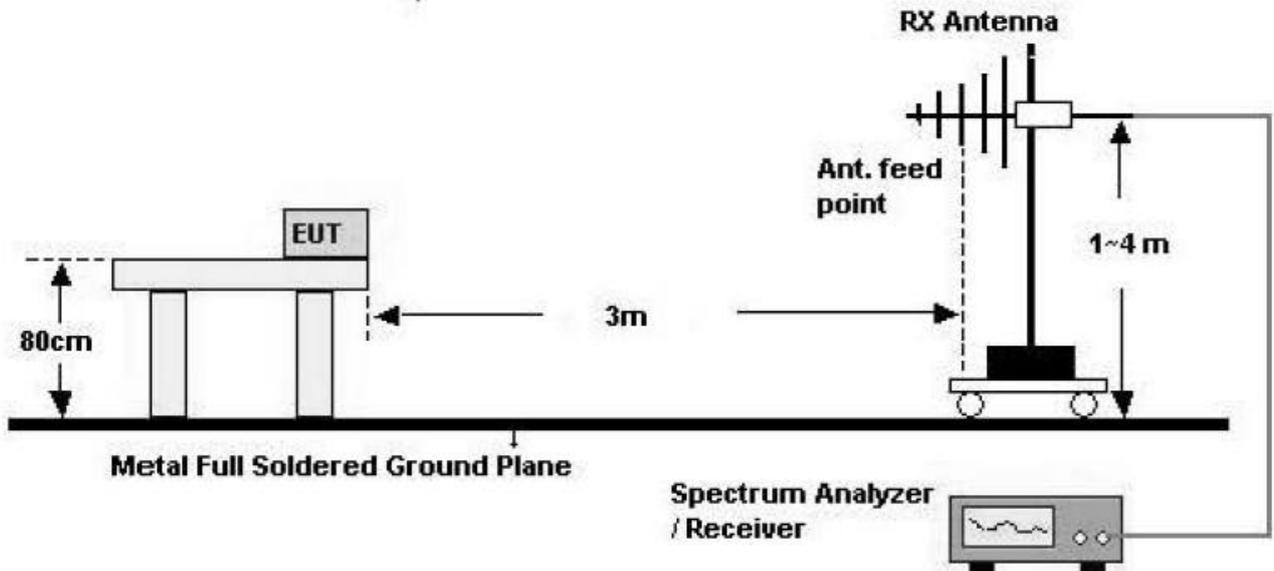
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

### Test Configuration

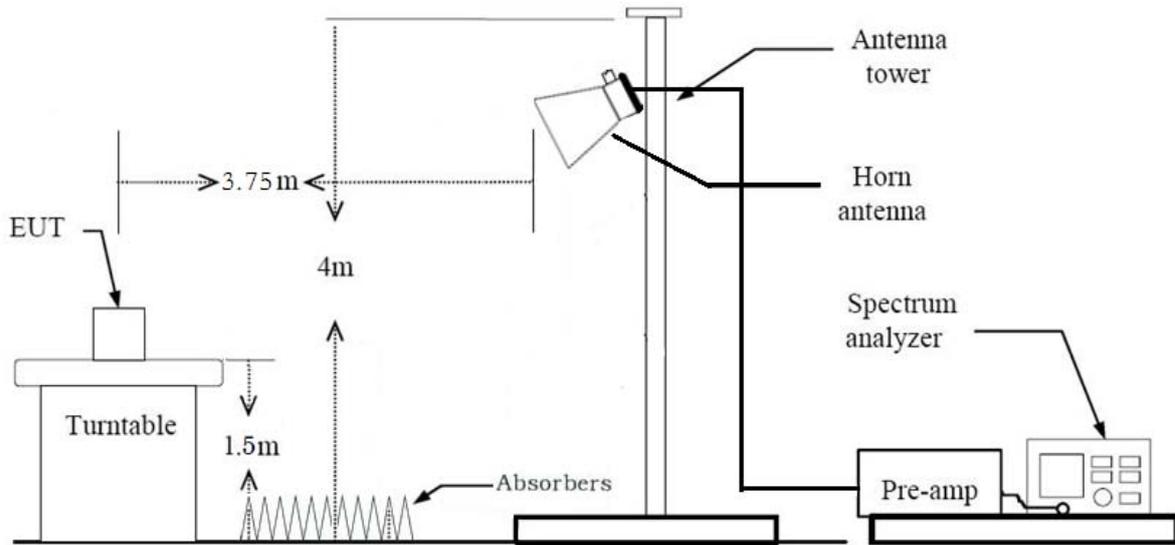
#### Below 30 MHz



#### 30 MHz - 1 GHz



**Above 1 GHz**



**TEST PROCEDURE USED**

Method 12.1 in KDB 558074 v04

**Spectrum Setting**

- Peak

Peak emission levels are measured by setting the instrument as follows:

RBW = cf. Table 1.

VBW  $\geq$  3 x RBW.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes.

(Note that the required measurement time may be longer for low duty cycle applications).

**Table 1 —RBW as a function of frequency**

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

- Average (duty cycle < 98%, duty cycle variations are less than  $\pm 2\%$ )

Set RBW = 1 MHz

Set VBW  $\geq 3 \times$  RBW

Detector = RMS.

Averaging type = power (*i.e.*, RMS).

Sweep time = auto.

Trace mode = average (at least 100 traces).

A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle.

**Note :**

1. We are performed the RSE and radiated band edge using standard radiated method(RMS).
2. According to SVSWR requirement in ANSI 63.4-2014, We performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor( reference distance : 3 m).
3. Distance extrapolation factor =  $20 \log (\text{test distance} / \text{specific distance})$  (dB)

LE Mode	T <sub>on</sub> (ms)	T <sub>total</sub> (ms)	Duty Cycle	Duty Cycle Factor (dB)
Bluetooth Version : 5.0 LE: 1M PHY	2.1200	2.5000	0.8480	0.72
Bluetooth Version : 5.0 LE: 2M PHY	1.0650	1.8750	0.5680	2.46
Bluetooth Version : 5.0 LE: Coded PHY_S8	2.1250	2.5000	0.8500	0.71

## TEST RESULTS

### 9 kHz – 30MHz

**Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

**Notes:**

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
6. The test results for below 30 MHz is correlated to an open site.  
The result on OATS is about 2 dB higher than semi-anechoic chamber (10 m chamber)

**TEST RESULTS****Below 1 GHz****Operation Mode:** Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

**Notes:**

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

**Above 1 GHz**

Operation Mode: CH.0

Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.-A.G.+D.F. [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4804	51.19	0	2.07	V	53.26	73.98	20.72	PK
4804	39.28	0.72	2.07	V	42.07	53.98	11.91	AV
7206	50.62	0	9.57	V	60.19	73.98	13.79	PK
7206	38.59	0.72	9.57	V	48.88	53.98	5.10	AV
4804	51.24	0	2.07	H	53.31	73.98	20.67	PK
4804	39.33	0.72	2.07	H	42.12	53.98	11.86	AV
7206	50.73	0	9.57	H	60.3	73.98	13.68	PK
7206	38.61	0.72	9.57	H	48.9	53.98	5.08	AV

\*A.F. : Antenna Factor / C.L. : Cable Loss / A.G. : Amplifier Gain / D.F. : Distance Factor

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + Distance Factor  
+ Duty Cycle Factor
5. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
7. 5.0 LE: 1M PHY