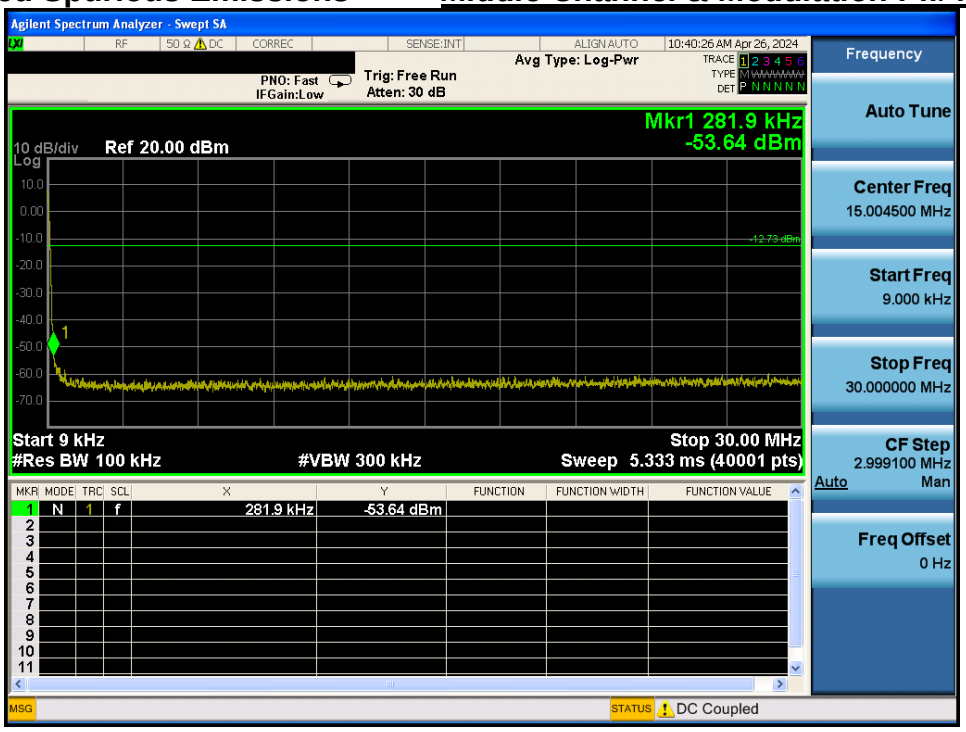
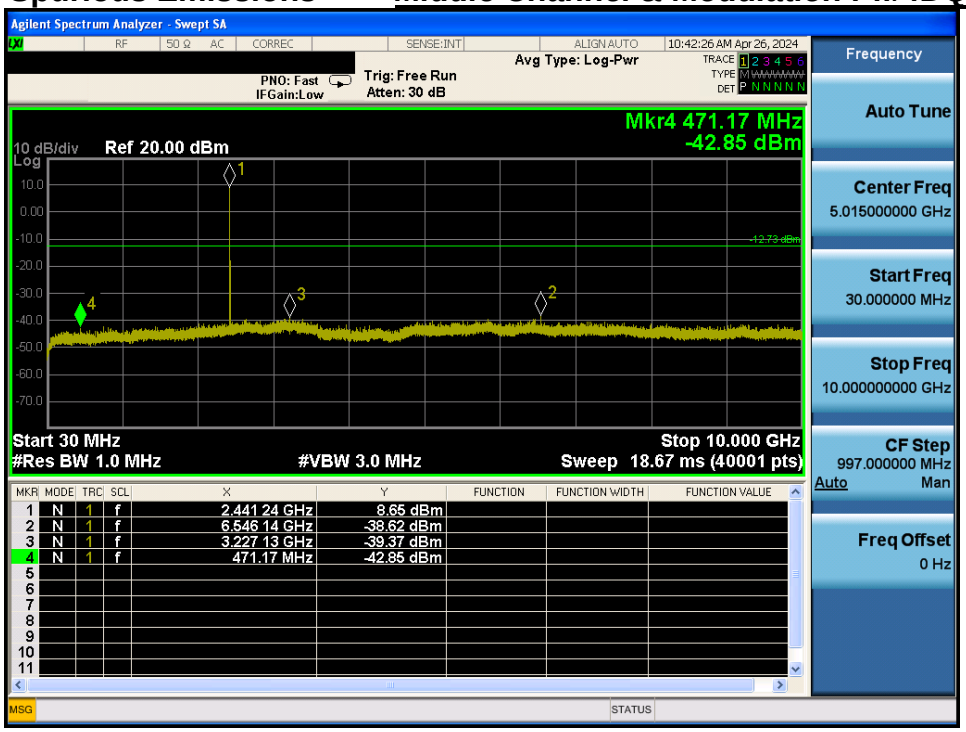
Reference for limit ***Middle Channel & Modulation : π/4DQPSK***

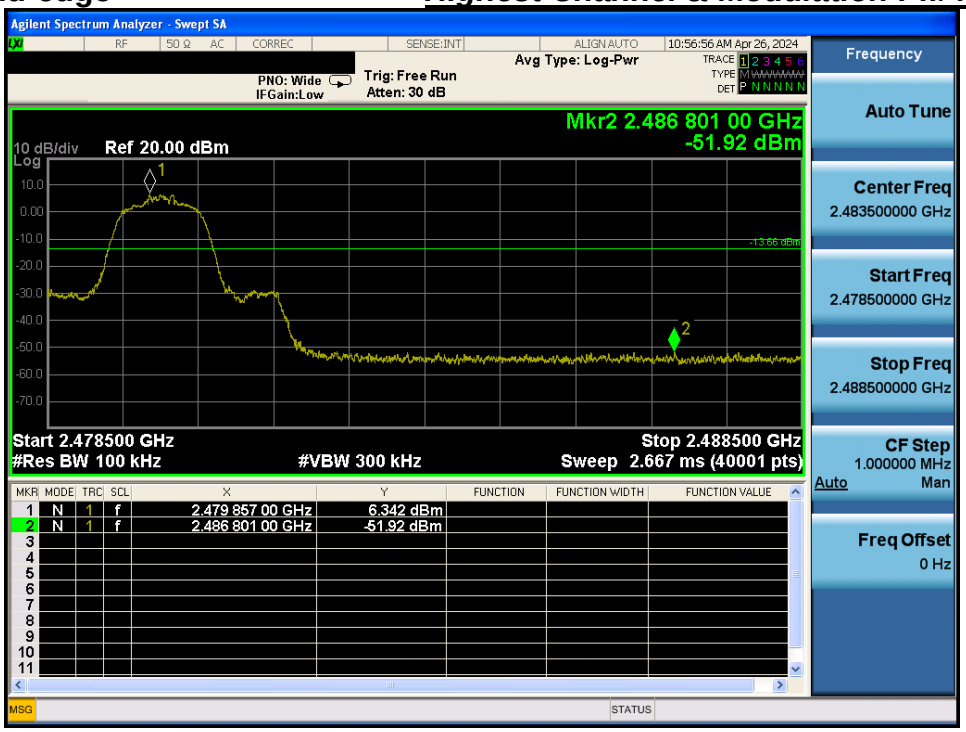
Conducted Spurious Emissions ***Middle Channel & Modulation : π/4DQPSK***



Conducted Spurious Emissions *Middle Channel & Modulation : π/4DQPSK*

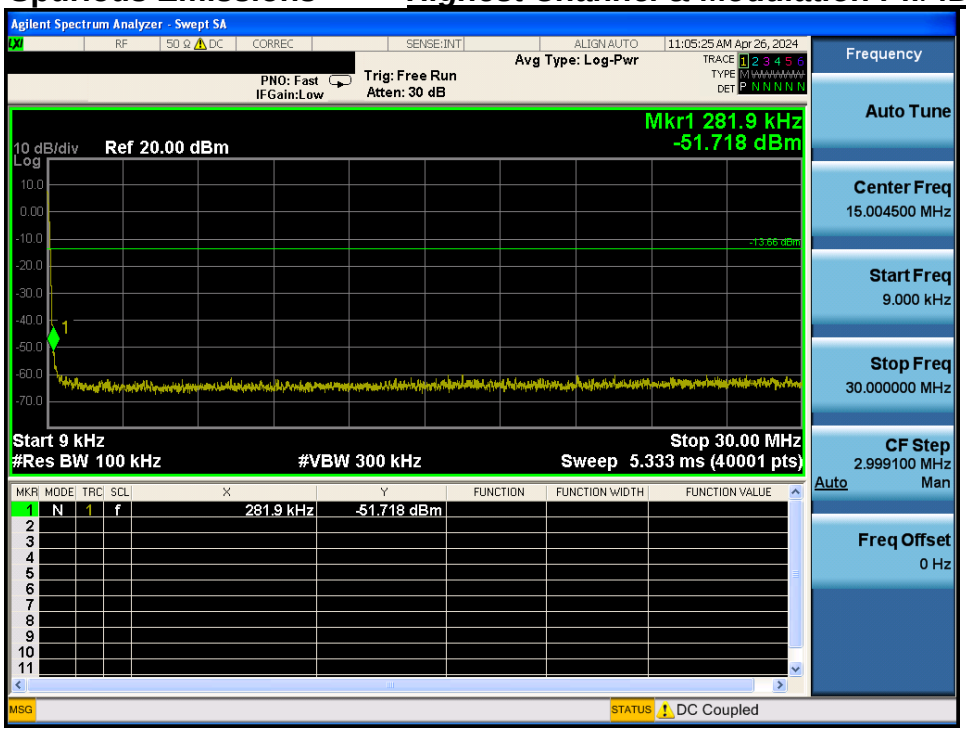


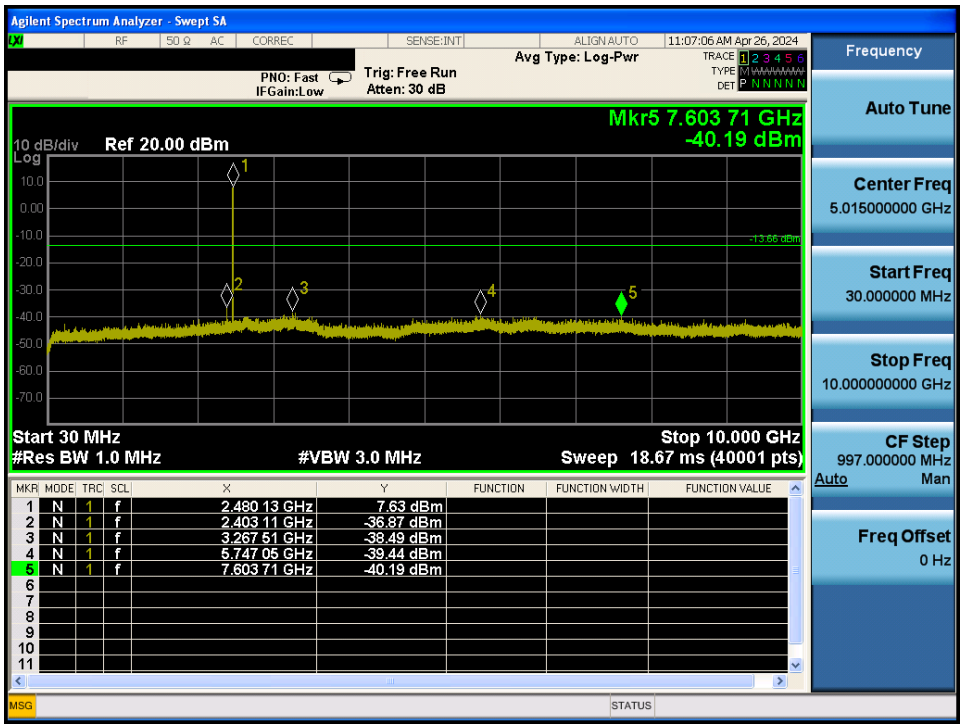
High Band-edge ***Highest Channel & Modulation : π/4DQPSK***



High Band-edge ***Hopping mode & Modulation : π/4DQPSK***

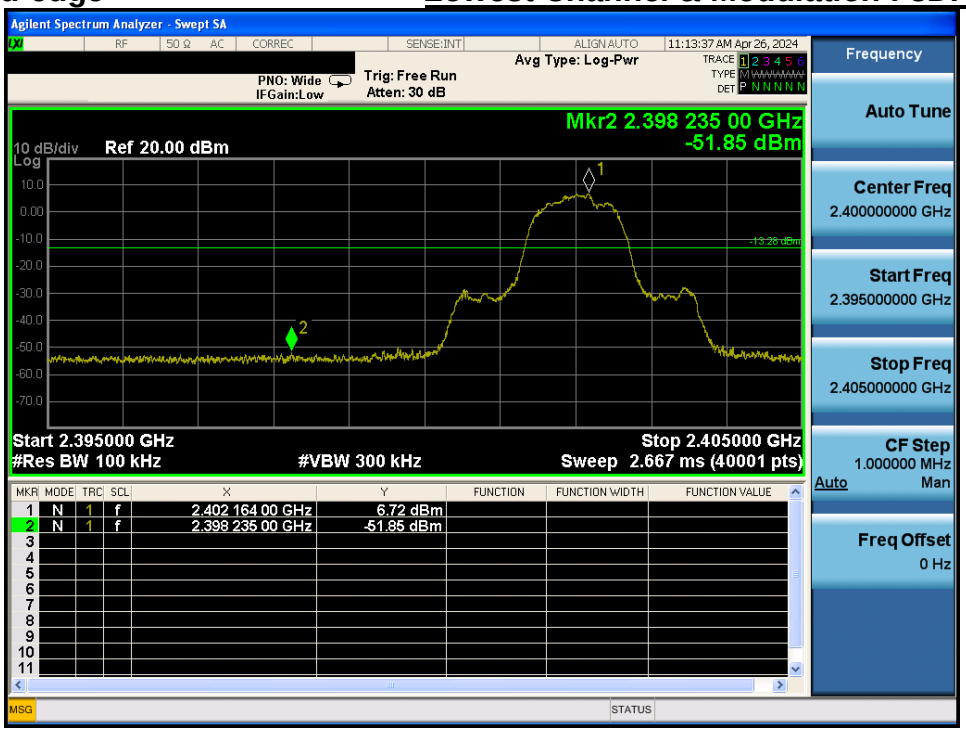
Conducted Spurious Emissions ***Highest Channel & Modulation : π/4DQPSK***





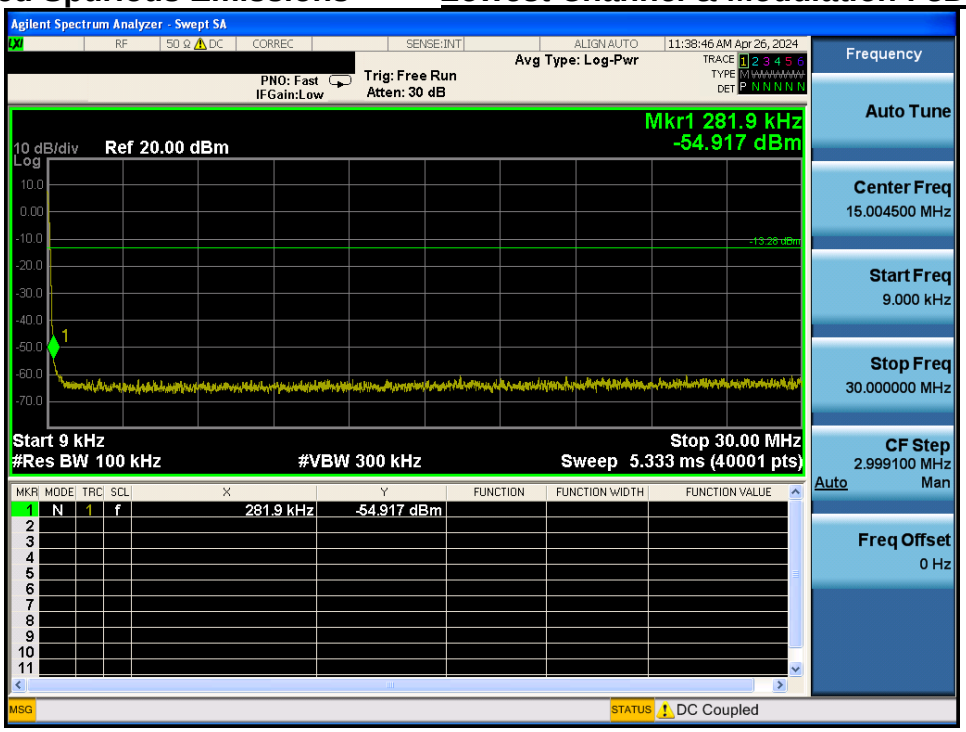
Conducted Spurious Emissions ***Highest Channel & Modulation : π/4DQPSK***

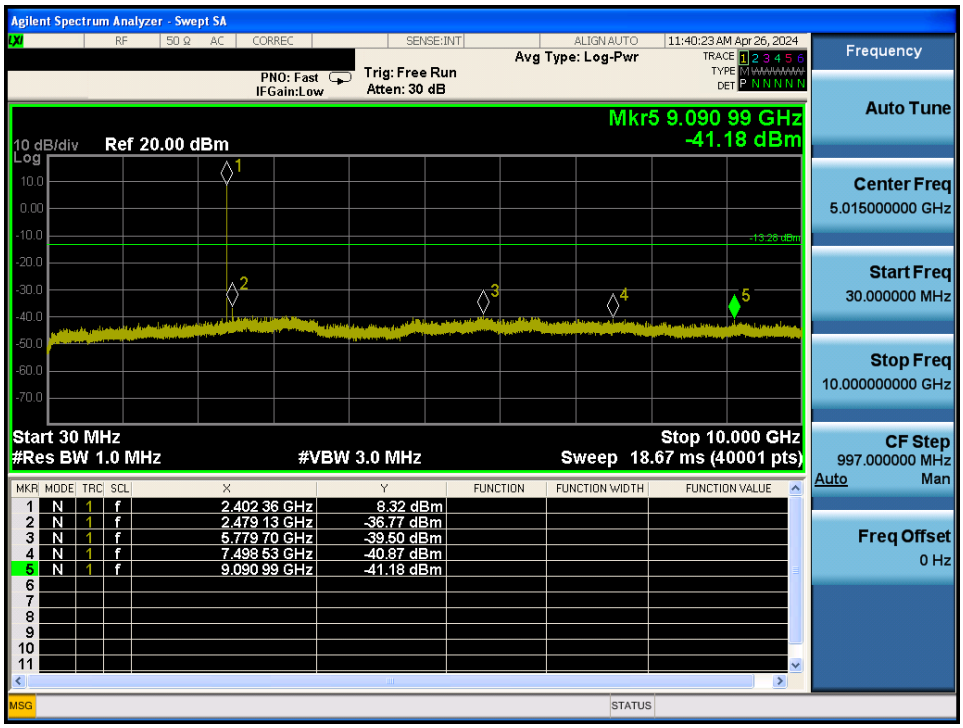
Low Band-edge ***Lowest Channel & Modulation : 8DPSK***



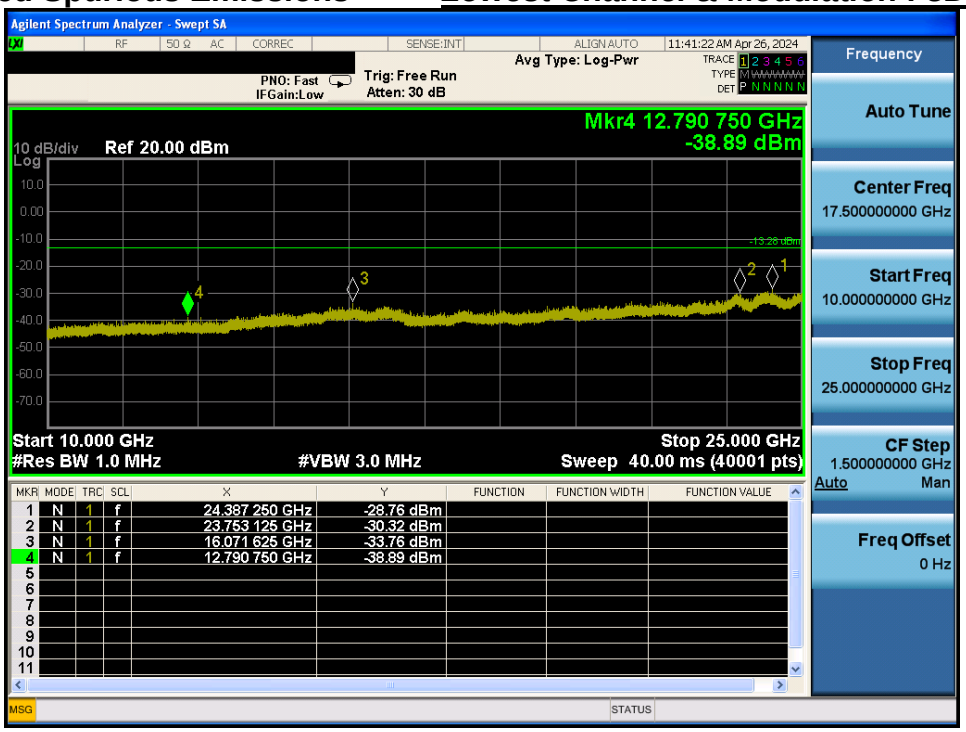
Low Band-edge ***Hopping mode & Modulation : 8DPSK***

Conducted Spurious Emissions ***Lowest Channel & Modulation : 8DPSK***



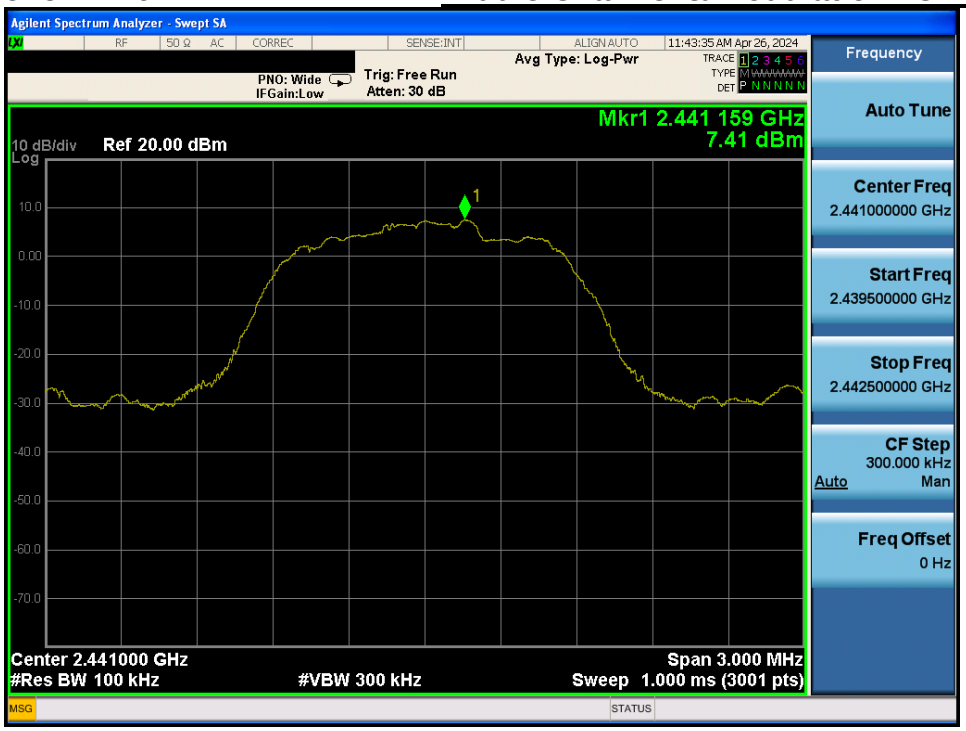


Conducted Spurious Emissions ***Lowest Channel & Modulation : 8DPSK***



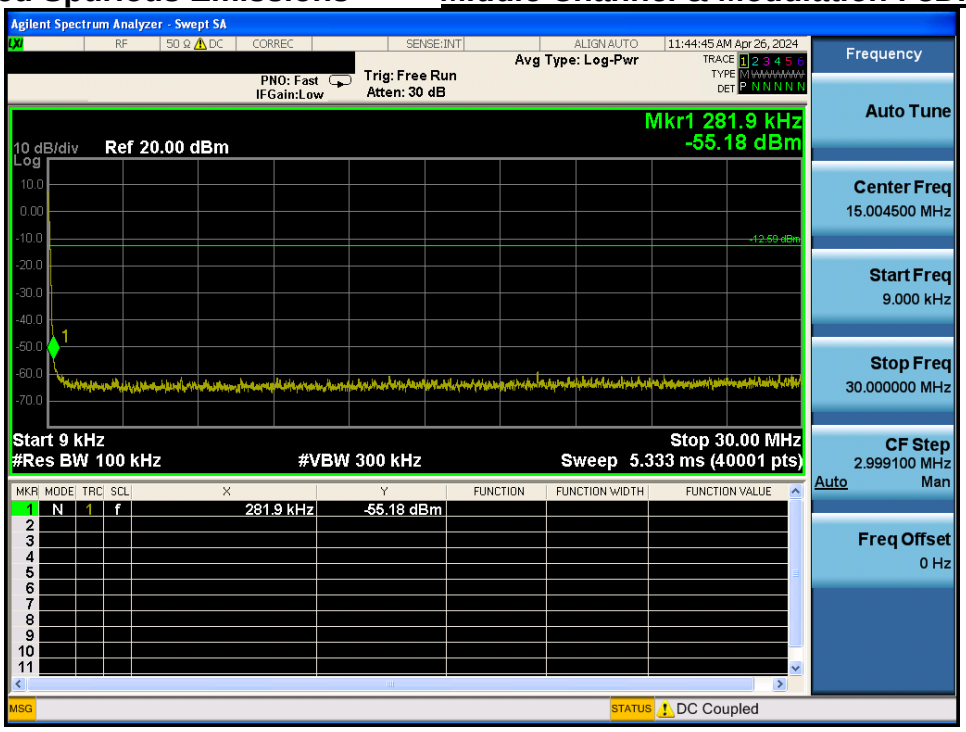
Reference for limit

Middle Channel & Modulation : 8DPSK

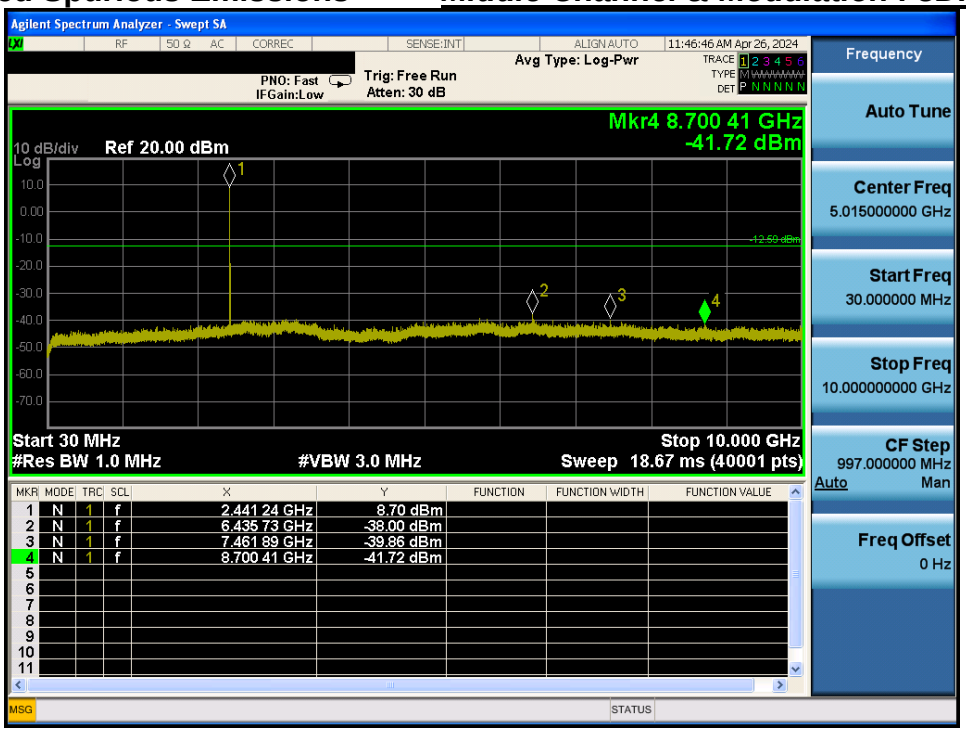


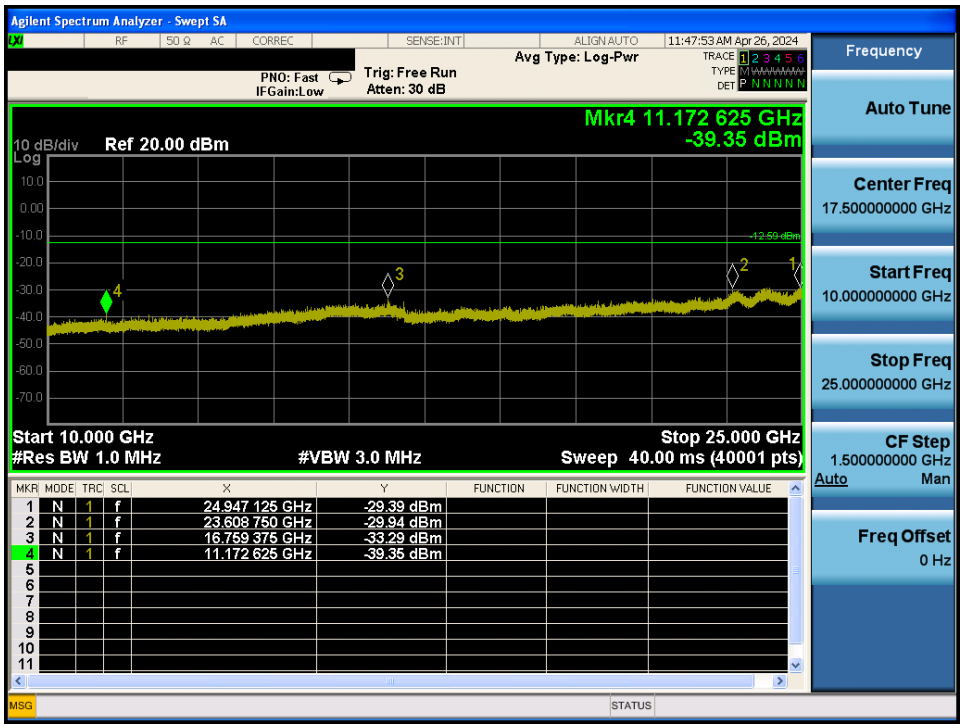
Conducted Spurious Emissions

Middle Channel & Modulation : 8DPSK

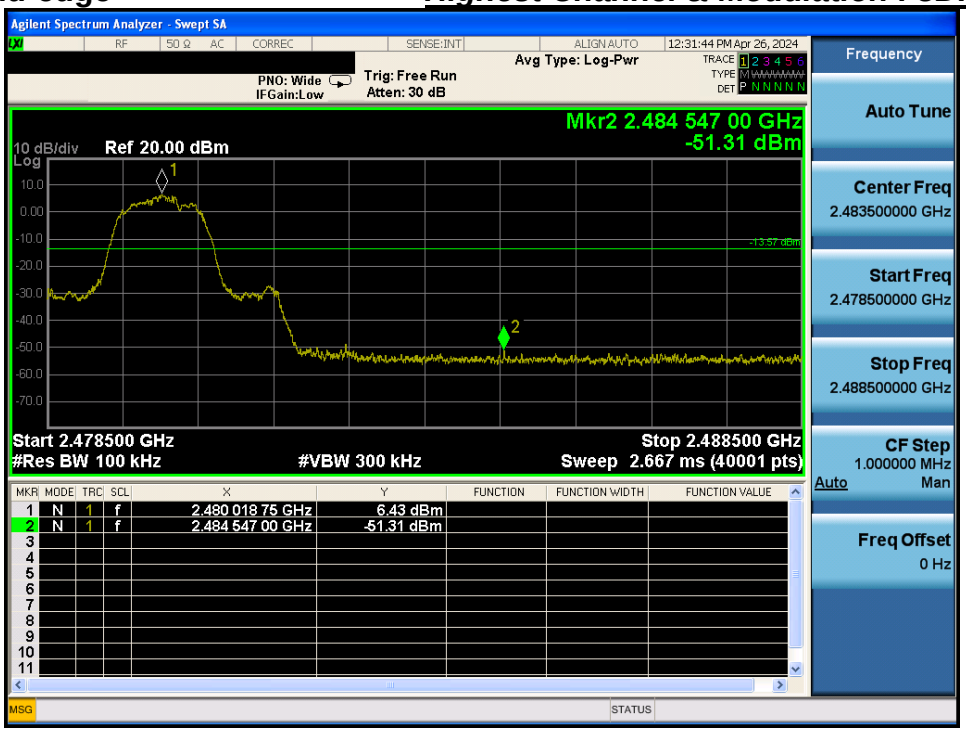


Conducted Spurious Emissions *Middle Channel & Modulation : 8DPSK*

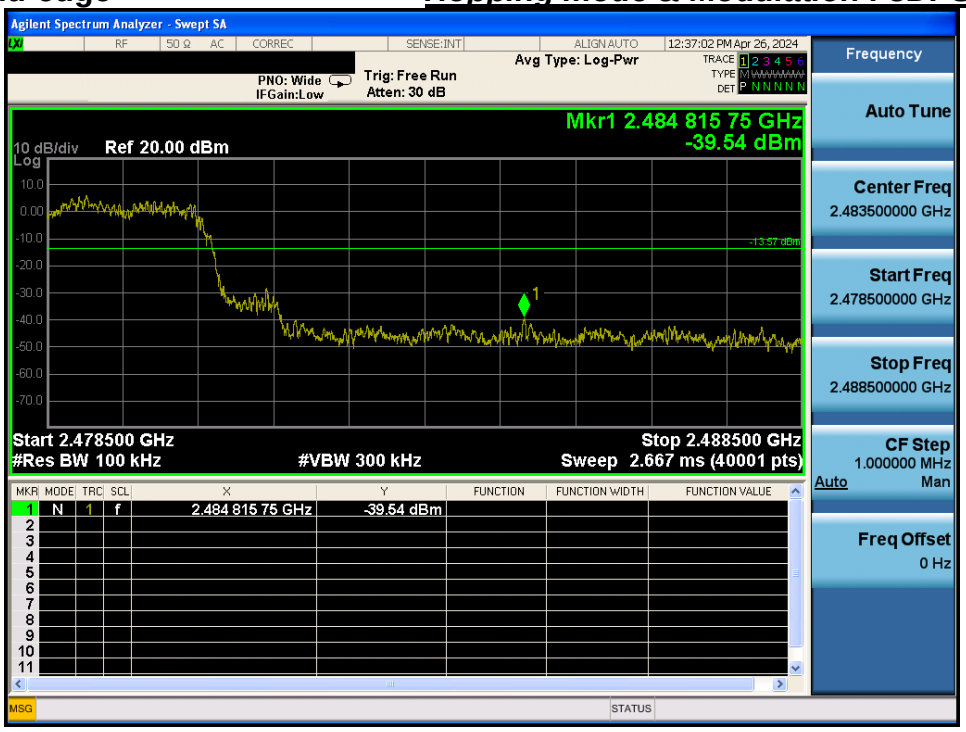




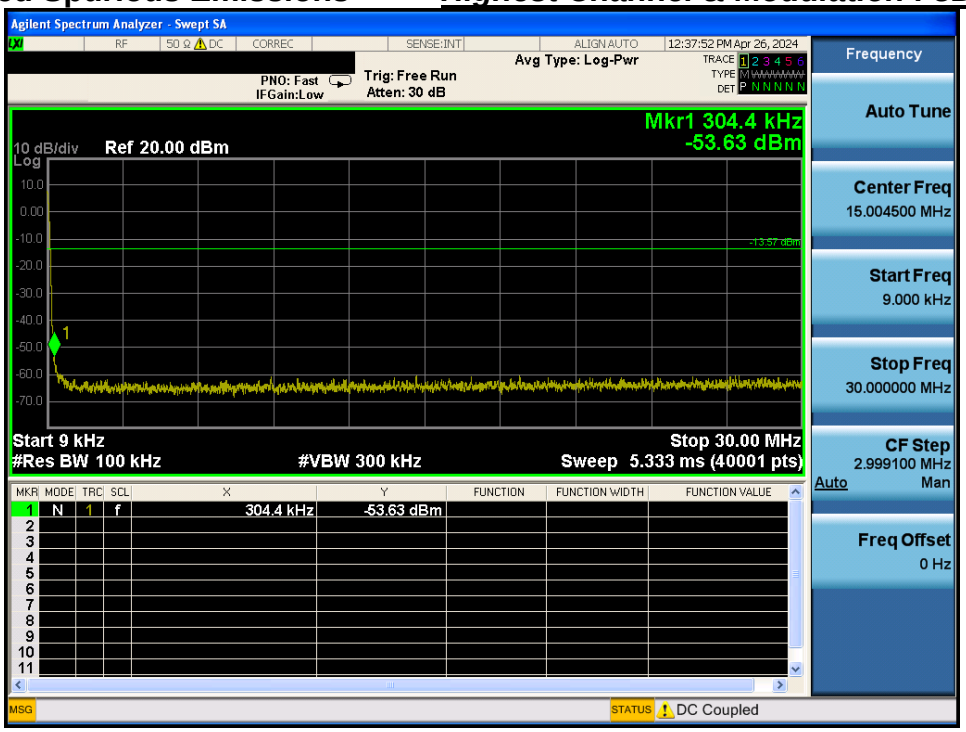
High Band-edge ***Highest Channel & Modulation : 8DPSK***

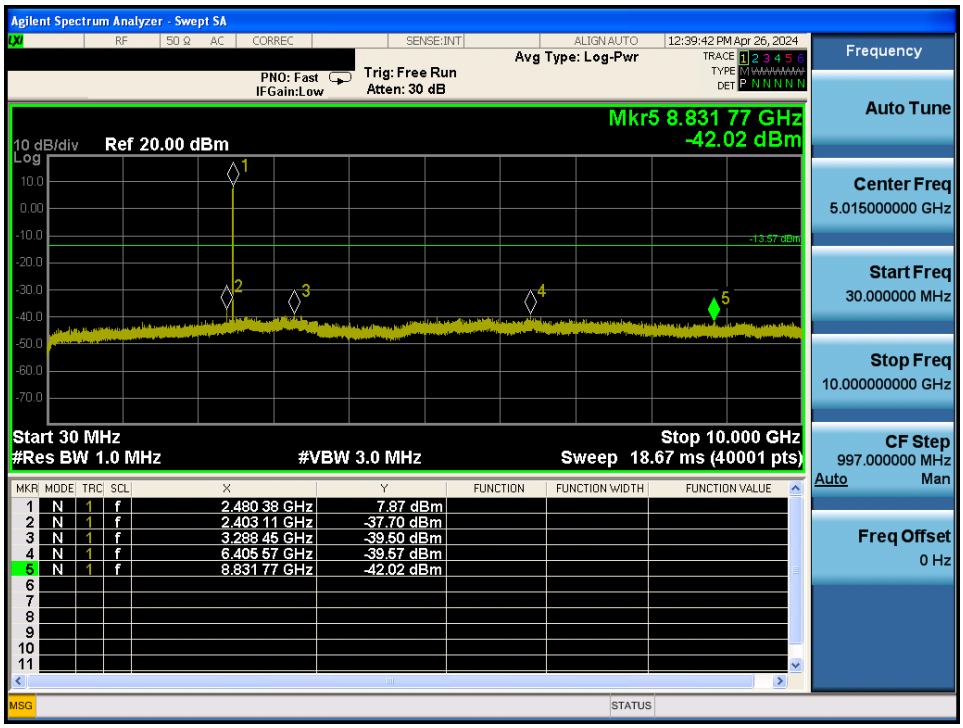


High Band-edge ***Hopping mode & Modulation : 8DPSK***



Conducted Spurious Emissions ***Highest Channel & Modulation : 8DPSK***





Conducted Spurious Emissions ***Highest Channel & Modulation : 8DPSK***

10. AC Power-Line Conducted Emissions

10.1. Test Setup

See test photographs for the actual connections between EUT and support equipment.

10.2. Limit

According to §15.207(a) for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.50	66 to 56 *	56 to 46 *
0.5 ~ 5.0	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

10.3. Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10.

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

10.4. Test Results

AC Power-Line Conducted Emissions (Graph) = Modulation : *8DPSK*

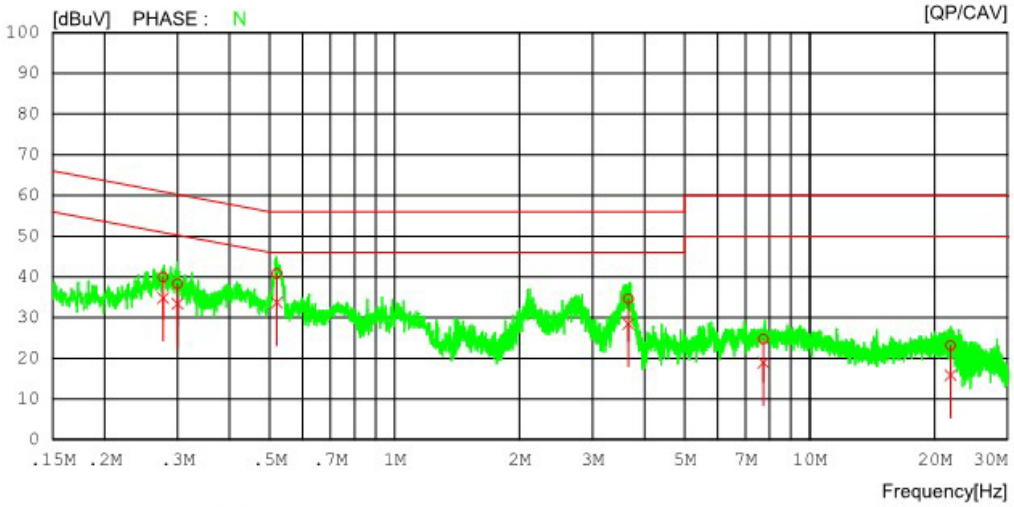
Results of Conducted Emission

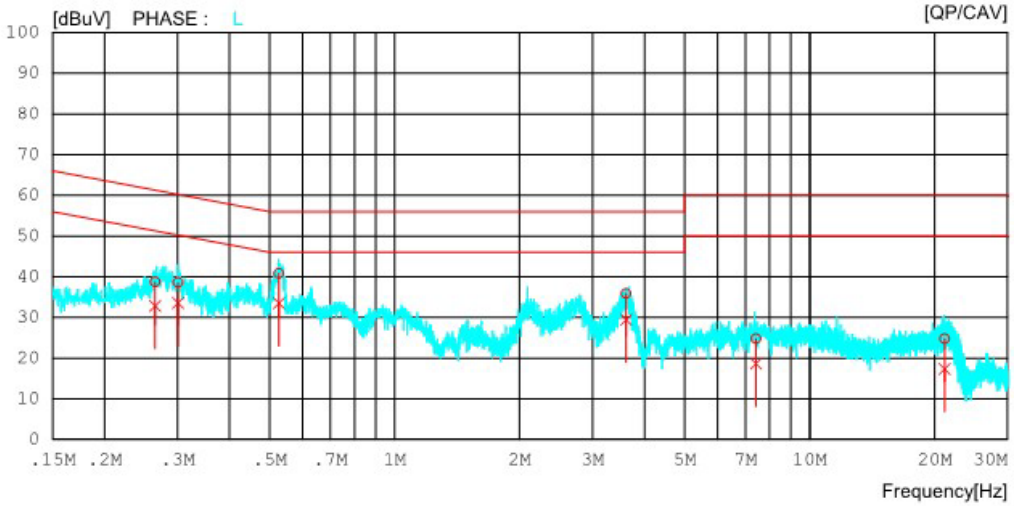
Date 2024-05-22

Order No.		Referrence No.	
Model No.	S50	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 'C / 41 %
Test Condition	BT	Operator	S.M.GIL
Memo	1M_2402		

LIMIT : FCC P15.207 AV
FCC P15.207 QP

Lisn Factor
1. NSLK 8128 RC-387_N_23.10.26
2. NSLK 8128 RC-387_L1_23.10.26
Cable Loss
1. C1_LISN TO RECIVER_2023-12-11
Pulse Limitter
1. PULSE LIMITER_ESH3-Z2_101333_2023.08.21





AC Power-Line Conducted Emissions (List) = Modulation : *8DPSK*

Results of Conducted Emission

Date 2024-05-22

Order No.		Referrence No.	
Model No.	S50	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humi.	23 'C / 41 %
Test Condition	BT	Operator	S.M.GIL

Memo 1M_2402

LIMIT : FCC P15.207 AV
FCC P15.207 QP

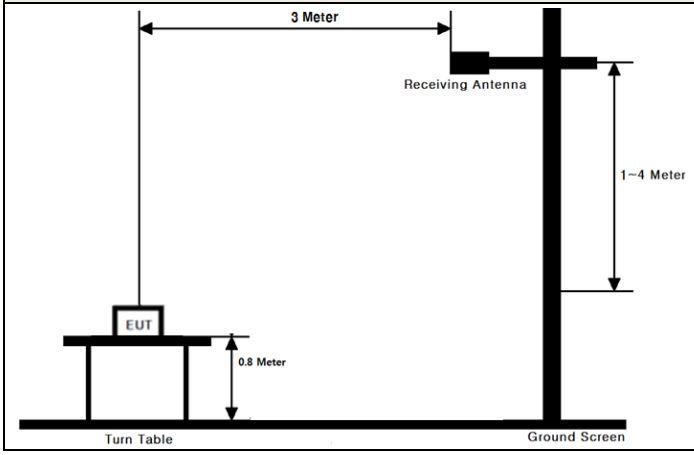
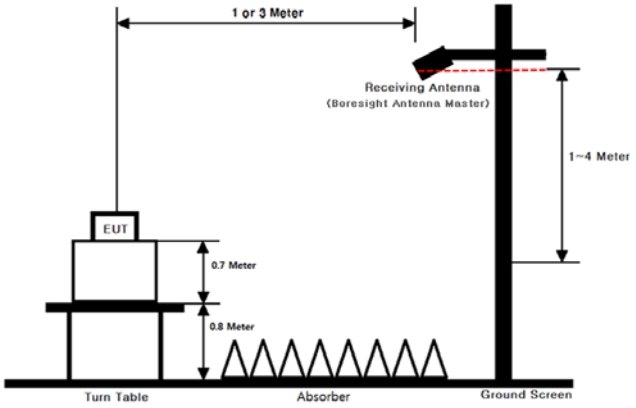
Lisn Factor
1. NSLK 8128 RC-387_N_23.10.26
2. NSLK 8128 RC-387_L1_23.10.26
Cable Loss
1. C1_LISN TO RECIVER_2023-12-11
Pulse Limitter
1. PULSE LIMITER_ESH3-Z2_101333_2023.08.21

NO	FREQ	READING QP [dBuV]	READING CAV [dBuV]	C.FACTOR [dB]	RESULT QP [dBuV]	RESULT CAV [dBuV]	LIMIT QP [dBuV]	LIMIT CAV [dBuV]	MARGIN QP [dBuV]	MARGIN CAV [dBuV]	PHASE
	[MHz]										
1	0.27667	29.95	24.79	9.99	39.94	34.78	60.92	50.92	20.98	16.14	N
2	0.29977	28.33	23.36	9.99	38.32	33.35	60.25	50.25	21.93	16.90	N
3	0.51992	30.79	23.66	10.00	40.79	33.66	56.00	46.00	15.21	12.34	N
4	3.65760	24.53	18.34	10.09	34.62	28.43	56.00	46.00	21.38	17.57	N
5	7.74020	14.44	8.60	10.28	24.72	18.88	60.00	50.00	35.28	31.12	N
6	21.84160	12.59	5.27	10.57	23.16	15.84	60.00	50.00	36.84	34.16	N
7	0.26473	28.75	22.83	9.99	38.74	32.82	61.28	51.28	22.54	18.46	L
8	0.30070	28.62	23.57	9.99	38.61	33.56	60.22	50.22	21.61	16.66	L
9	0.52609	30.81	23.48	10.03	40.84	33.51	56.00	46.00	15.16	12.49	L
10	3.61280	25.69	19.29	10.19	35.88	29.48	56.00	46.00	20.12	16.52	L
11	7.42320	14.42	8.29	10.37	24.79	18.66	60.00	50.00	35.21	31.34	L
12	21.14520	14.19	6.76	10.59	24.78	17.35	60.00	50.00	35.22	32.65	L

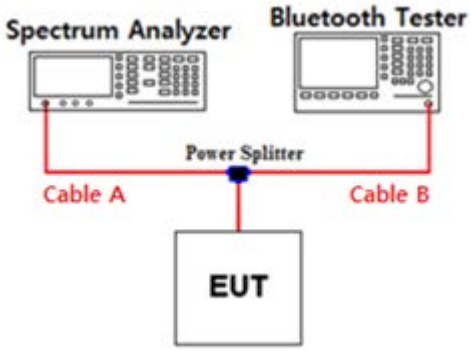
APPENDIX I

Test set up diagrams

▪ Radiated Measurement

Below 1 GHz	Above 1 GHz
	

▪ Conducted Measurement



Path loss information

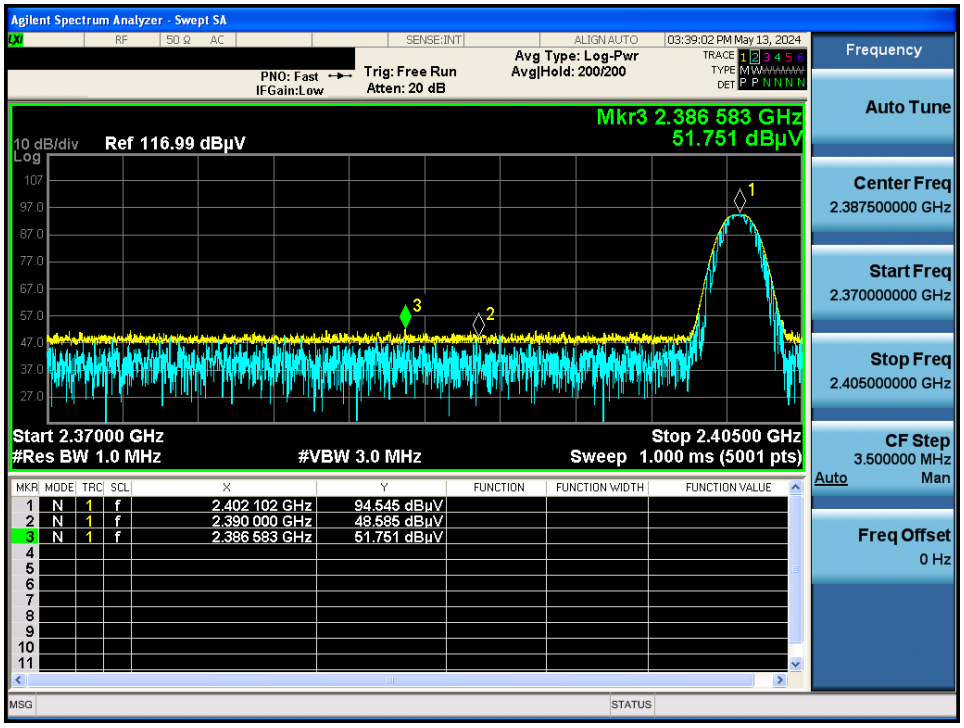
Frequency (GHz)	Path Loss (dB)	Frequency (GHz)	Path Loss (dB)
0.03	6.39	15	6.82
1	6.50	20	6.91
2.402 & 2.441 & 2.480	6.67	25	7.43
5	6.71	-	-
10	6.76	-	-

Note 1: The path loss from EUT to Spectrum analyzer was measured and used for test.
Path loss (S/A's correction factor) = Cable A + Power Splitter

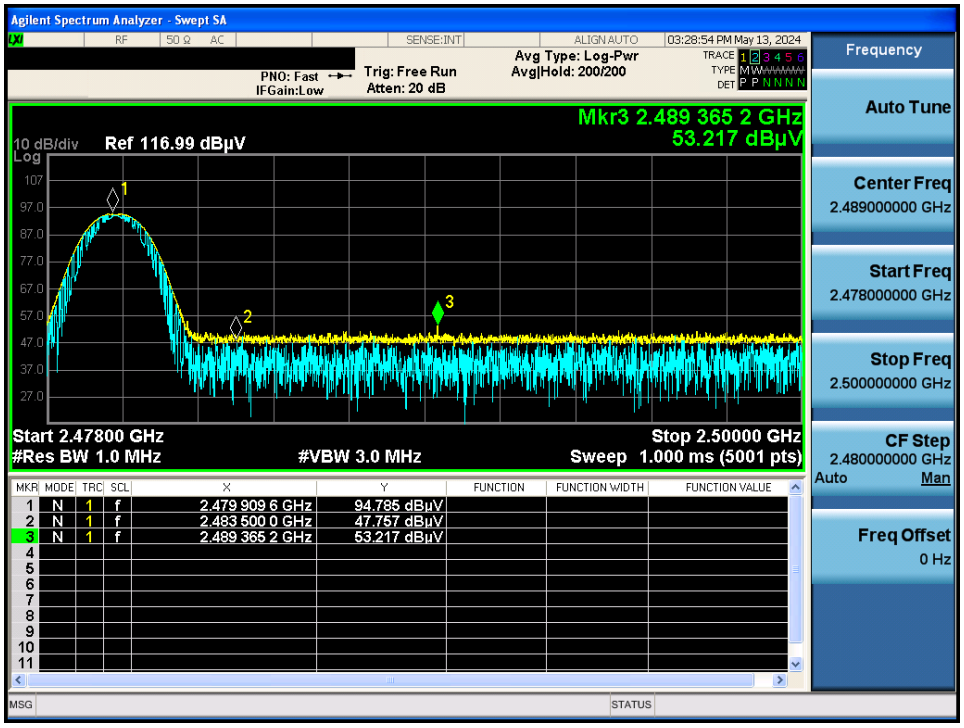
APPENDIX II

Unwanted Emissions (Radiated) Test Plot

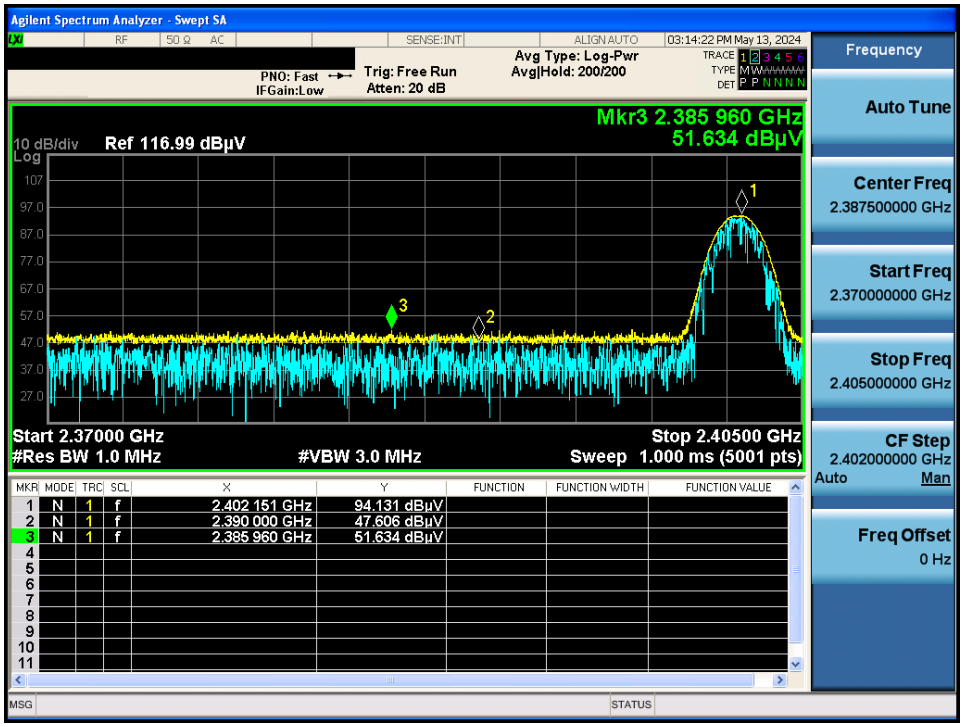
GFSK & Lowest & X & Hor — Detector Mode : PK



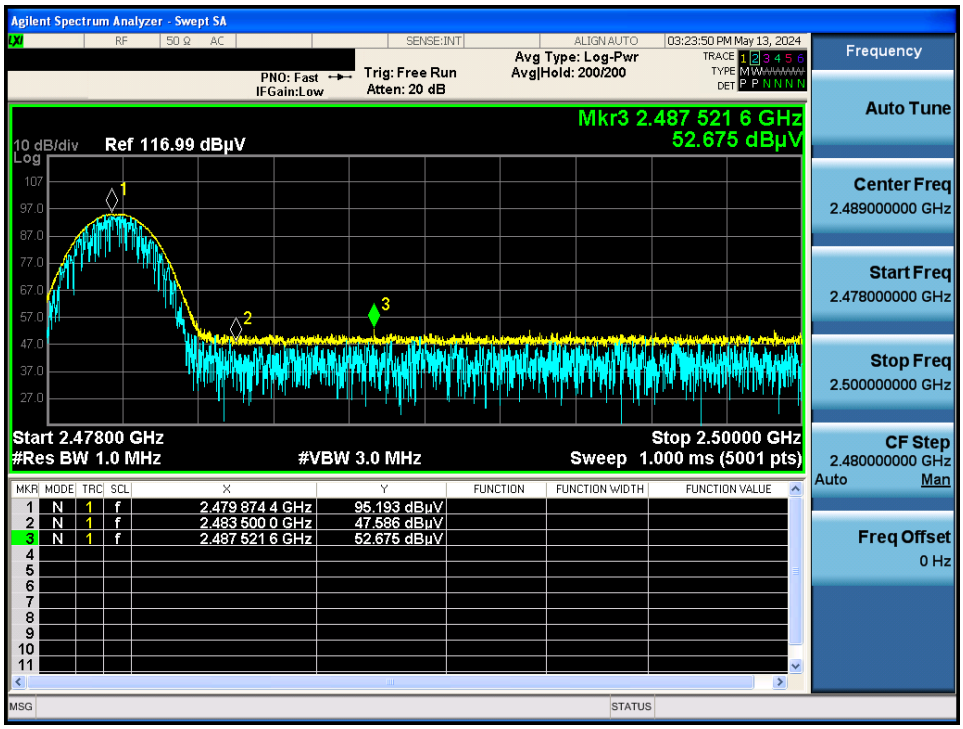
GFSK & Highest & X & Hor — Detector Mode : PK



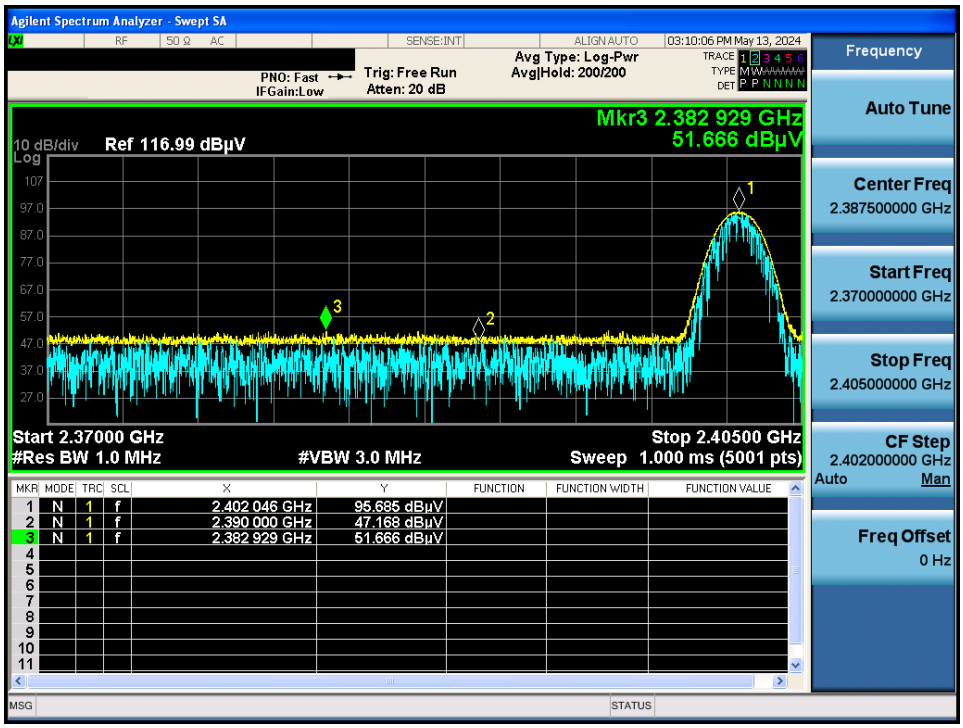
π/4DQPSK & Lowest & X & Hor — Detector Mode : PK



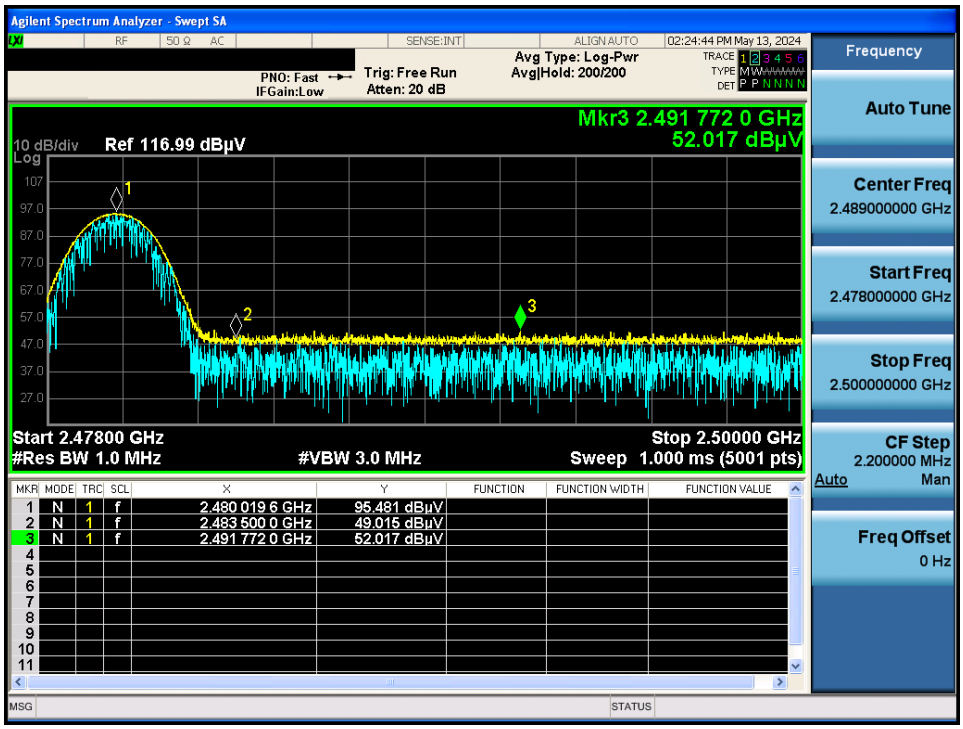
π/4DQPSK & Highest & X & Hor — Detector Mode : PK



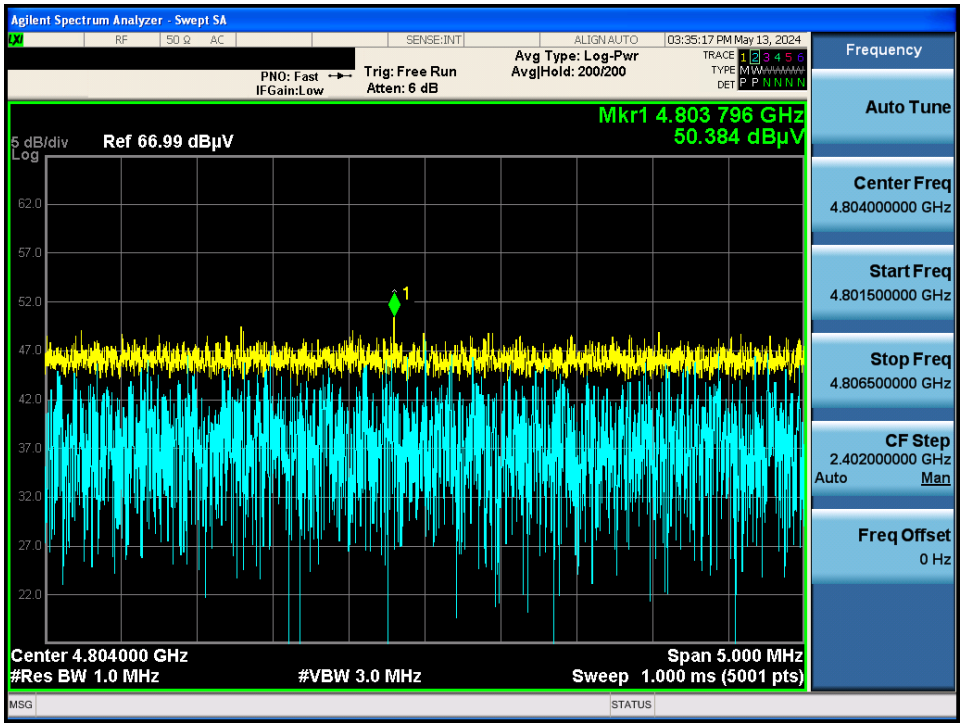
8DPSK & Lowest & X & Hor **Detector Mode : PK**



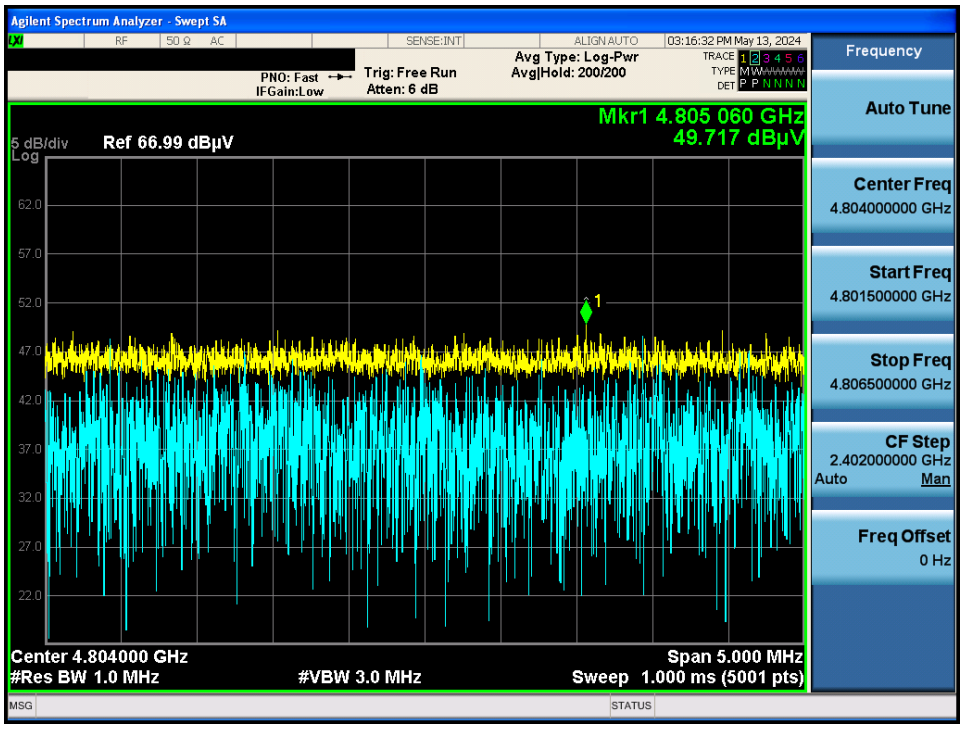
8DPSK & Lowest & X & Hor **Detector Mode : PK**



GFSK & Lowest & X & Hor **Detector Mode : PK**



π/4DQPSK & Lowest & X & Hor **Detector Mode : PK**



8DPSK & Middle & X & Hor **Detector Mode : PK**