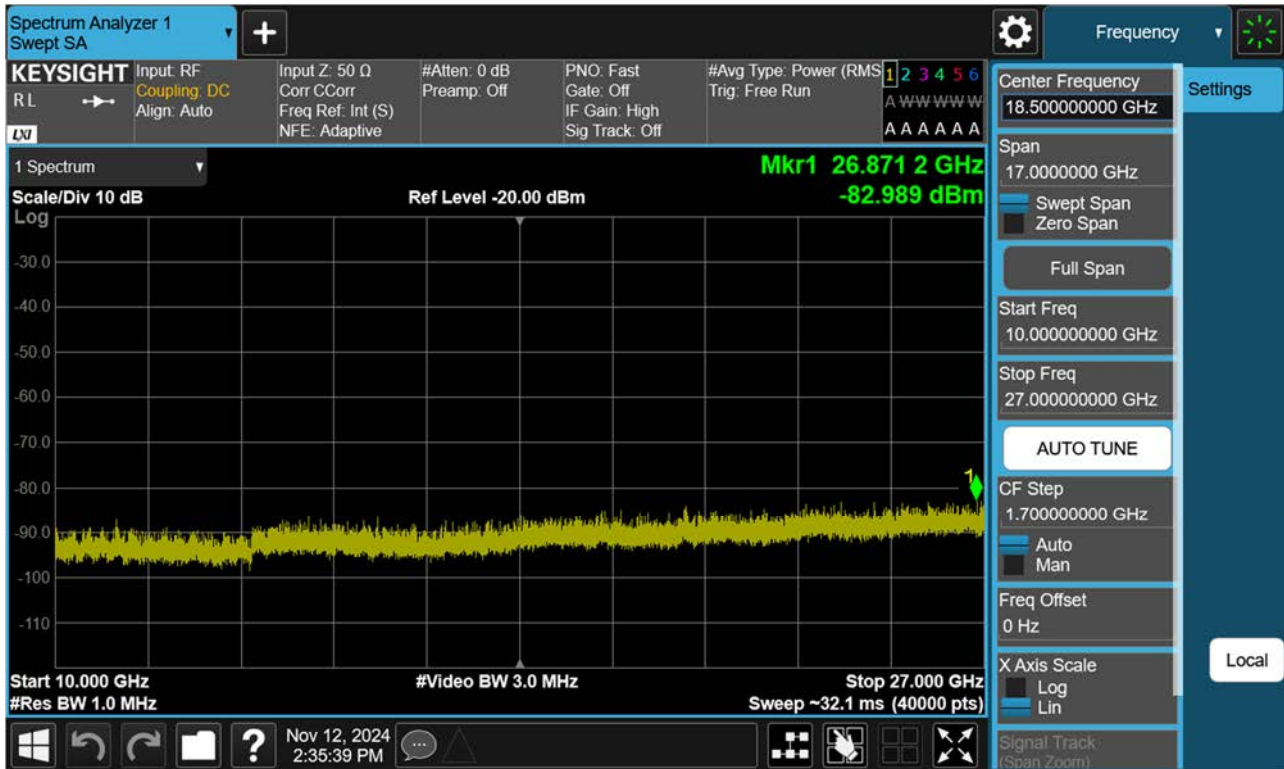
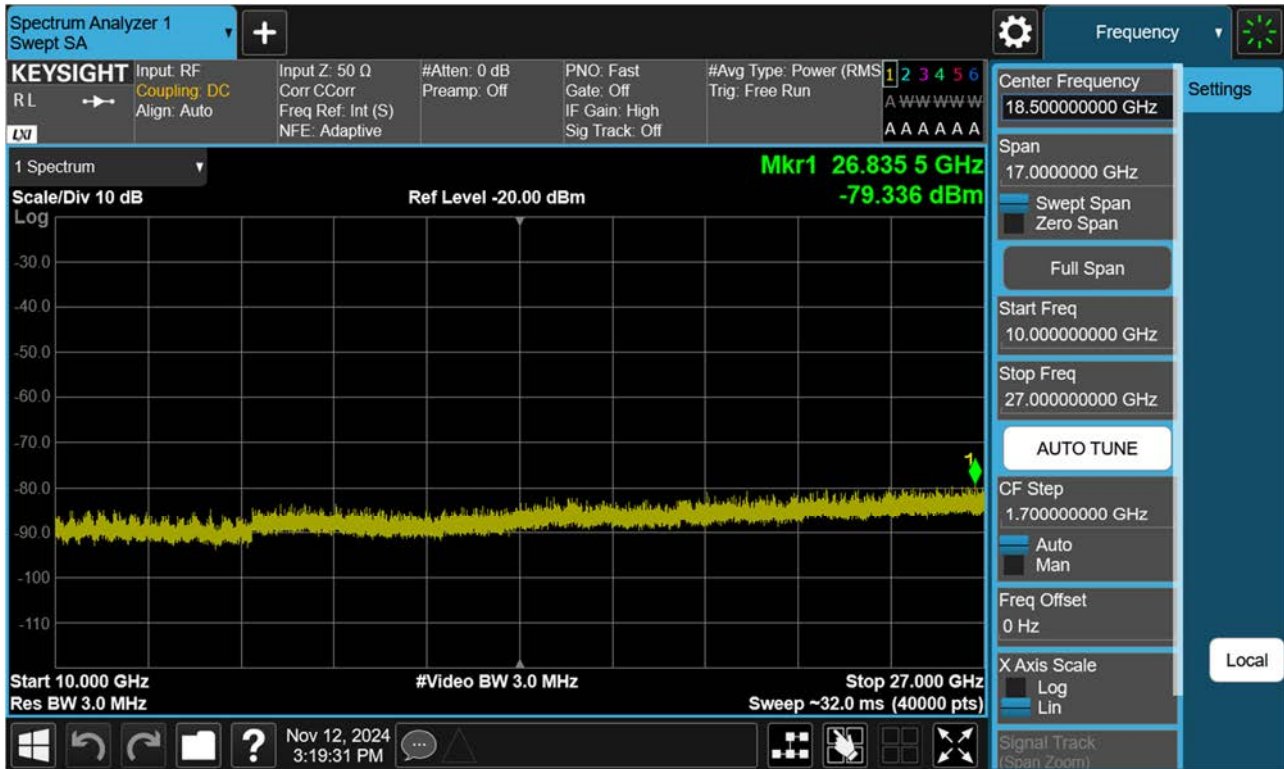


PCC 20MHz Ch40595 RB1 Offset99, SCC 5MHz Ch40712 RB1 Offset0

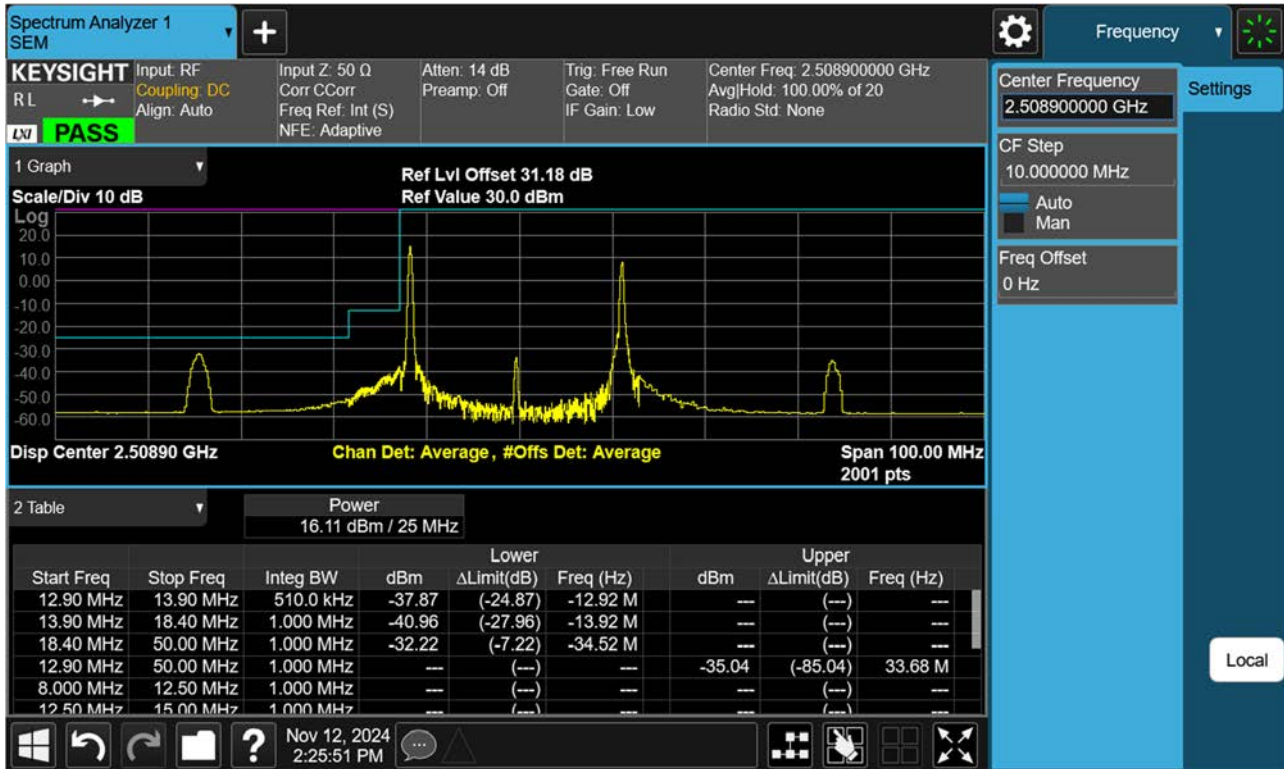


PCC 20MHz Ch41292 RB100 Offset0, SCC 20MHz Ch41490 RB100 Offset0

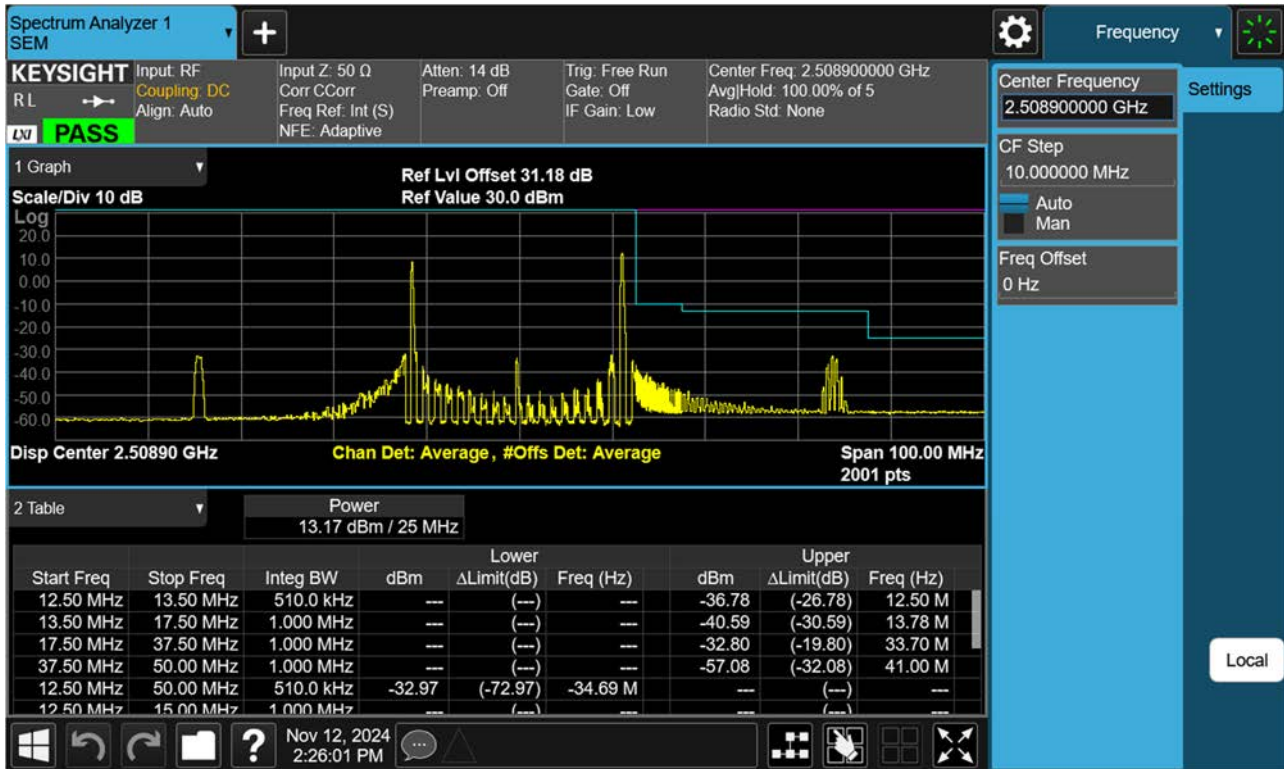


9.4 Channel Edge

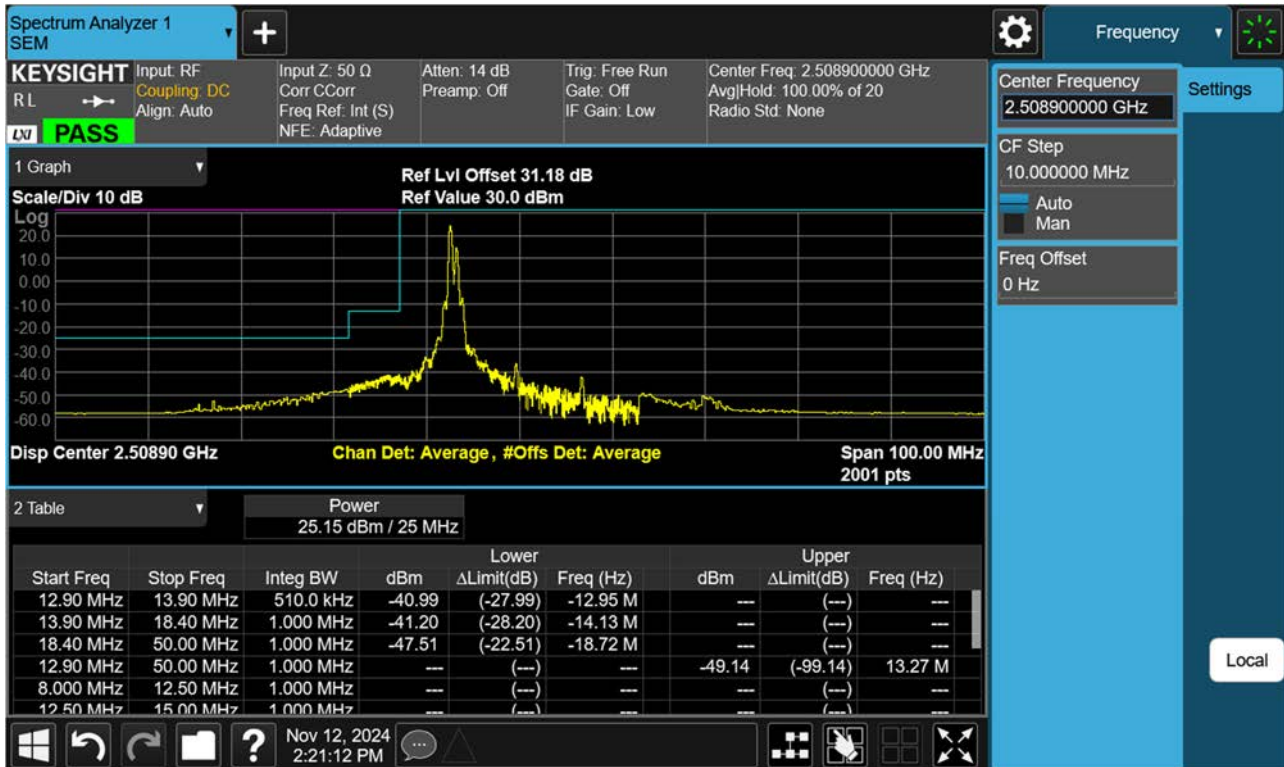
PCC 5MHz Ch39683 RB1 Offset0, SCC 20MHz Ch39800 RB1 Offset99-1



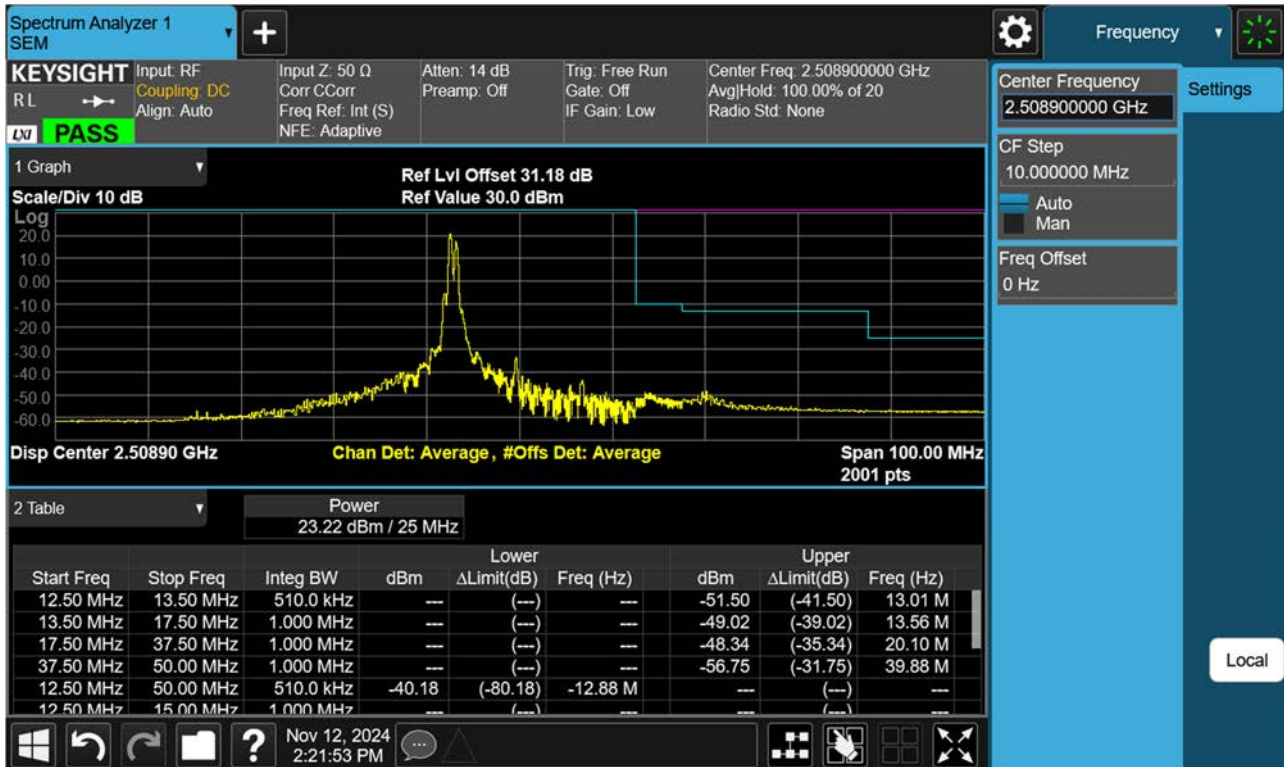
PCC 5MHz Ch39683 RB1 Offset0, SCC 20MHz Ch39800 RB1 Offset99-2



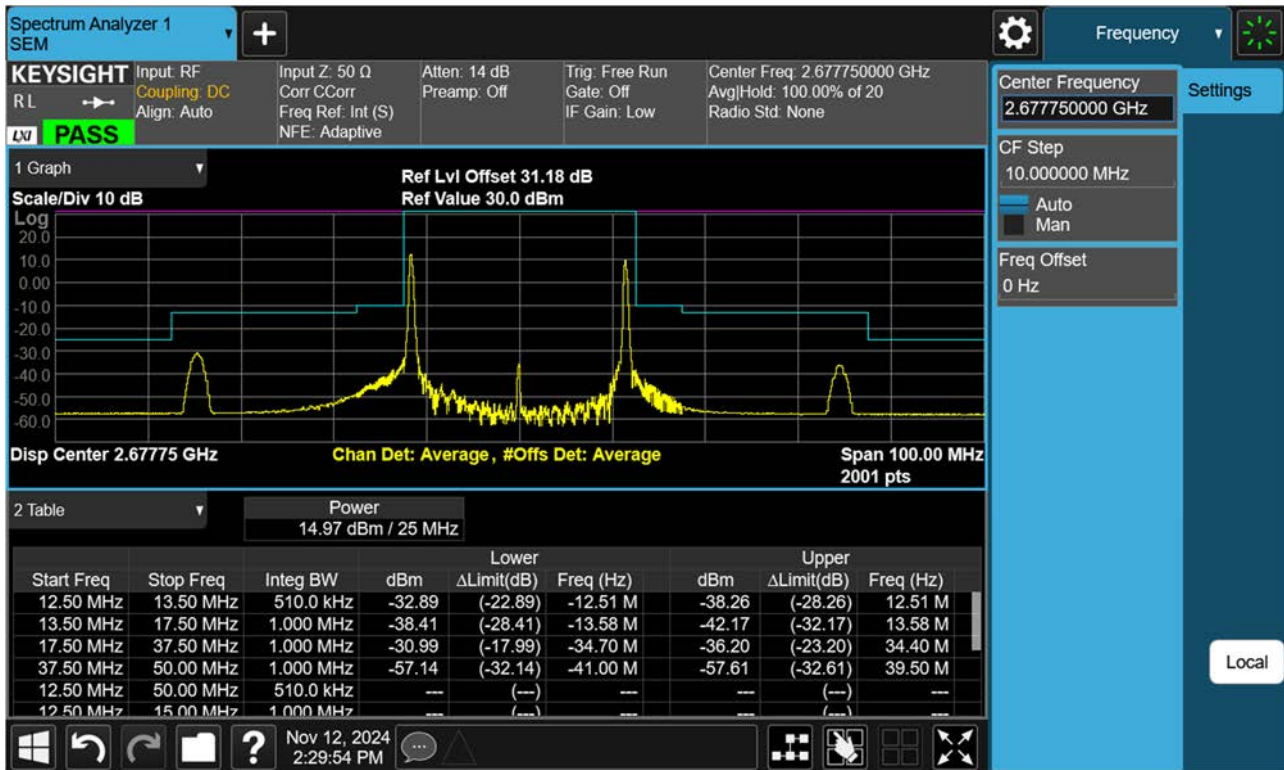
PCC 5MHz Ch39683 RB1 Offset24, SCC 20MHz Ch39800 RB1 Offset0-1



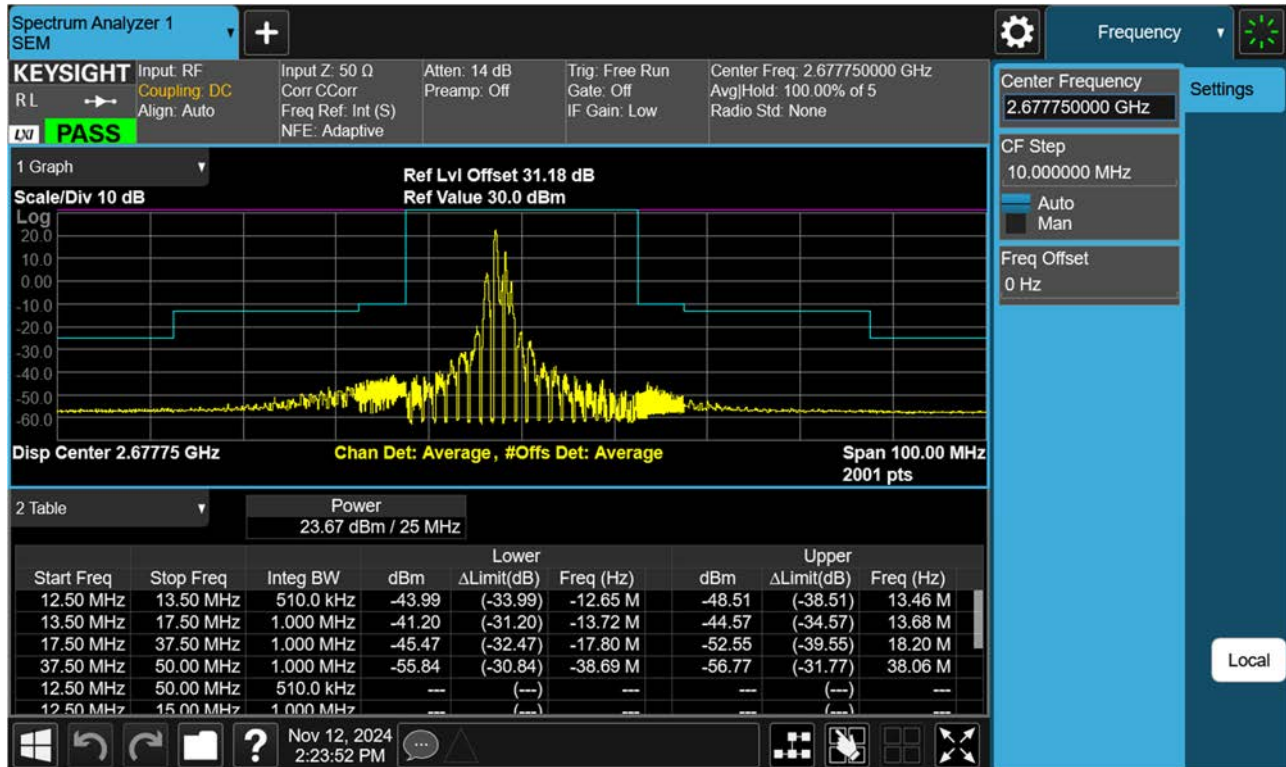
PCC 5MHz Ch39683 RB1 Offset24, SCC 20MHz Ch39800 RB1 Offset0-2



PCC 10MHz Ch41395 RB1 Offset0, SCC 15MHz Ch41515 RB1 Offset74



PCC 10MHz Ch41395 RB1 Offset49, SCC 15MHz Ch41515 RB1 Offset0



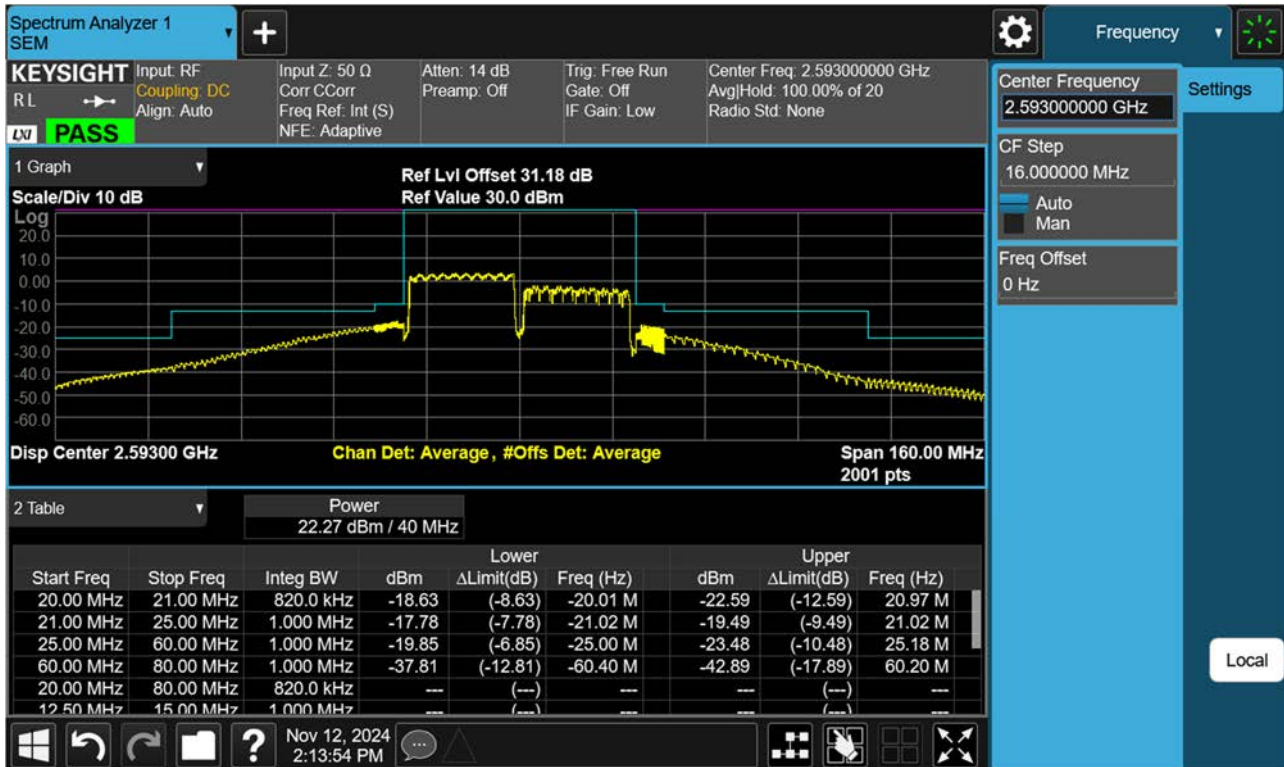
PCC 20MHz Ch39750 RB100 Offset0, SCC 20MHz Ch39948 RB100 Offset0-1



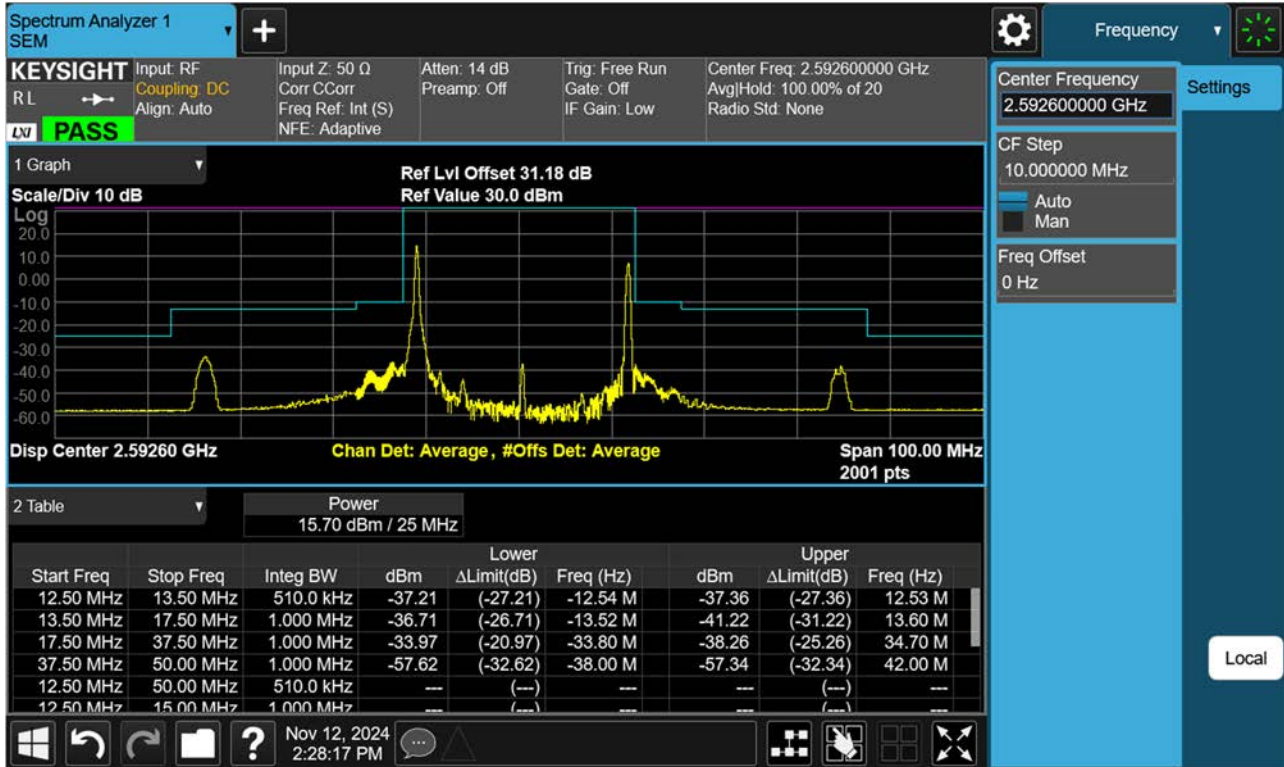
PCC 20MHz Ch39750 RB100 Offset0, SCC 20MHz Ch39948 RB100 Offset0-2



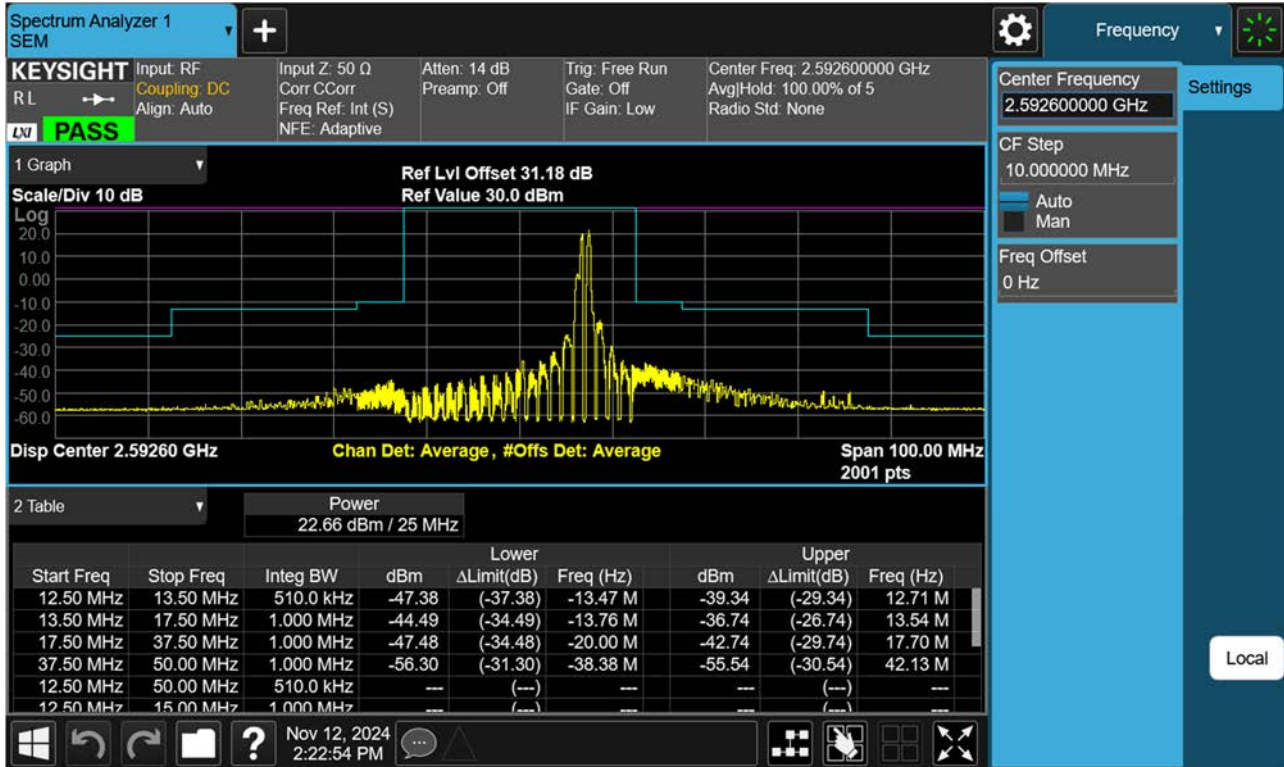
PCC 20MHz Ch40521 RB100 Offset0, SCC 20MHz Ch40719 RB100 Offset0



PCC 20MHz Ch40595 RB1 Offset0, SCC 5MHz Ch40712 RB1 Offset24



PCC 20MHz Ch40595 RB1 Offset99, SCC 5MHz Ch40712 RB1 Offset0



PCC 20MHz Ch41292 RB100 Offset0, SCC 20MHz Ch41490 RB100 Offset0



9.5 Frequency Stability / Variation of Ambient Temperature

▣ PCC Channel:	39683	
▣ PCC Frequency:	2499.3	MHz
▣ PCC BandWidth:	5	MHz
▣ SCC Channel:	39800	
▣ SCC Frequency:	2511.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0009	-0.0005	2499.29985	2510.99989
100 %		-30	0.0031	-0.0018	2499.29993	2510.99995
100 %		-20	-0.0011	-0.0016	2499.29991	2510.99988
100 %		-10	0.0009	-0.0029	2499.29996	2510.99984
100 %		0	-0.0011	0.0007	2499.29991	2510.99996
100 %		10	-0.0022	-0.0033	2499.29991	2510.99988
100 %		30	-0.0015	-0.0011	2499.29991	2510.99992
100 %		40	-0.0002	0.0008	2499.29995	2510.99998
100 %		50	-0.0019	0.0002	2499.29995	2510.99986
Batt. Endpoint	3.300	20	0.0007	-0.0022	2499.29992	2510.99996

▣ PCC Channel:	39705	
▣ PCC Frequency:	2501.5	MHz
▣ PCC BandWidth:	10	MHz
▣ SCC Channel:	39849	
▣ SCC Frequency:	2515.9	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0010	-0.0013	2501.49983	2515.89981
100 %		-30	0.0030	-0.0021	2501.49988	2515.89991
100 %		-20	-0.0005	-0.0009	2501.49990	2515.89995
100 %		-10	0.0011	-0.0032	2501.49990	2515.89990
100 %		0	-0.0008	0.0010	2501.49998	2515.89995
100 %		10	-0.0022	-0.0033	2501.49981	2515.89997
100 %		30	-0.0014	-0.0012	2501.49981	2515.89986
100 %		40	-0.0001	0.0004	2501.49992	2515.89995
100 %		50	-0.0018	-0.0003	2501.49986	2515.89992
Batt. Endpoint	3.300	20	0.0008	-0.0020	2501.49992	2515.89989

▣ PCC Channel:	39728	
▣ PCC Frequency:	2503.8	MHz
▣ PCC BandWidth:	15	MHz
▣ SCC Channel:	39899	
▣ SCC Frequency:	2520.9	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0012	-0.0008	2503.79996	2520.89991
100 %		-30	0.0023	-0.0021	2503.79992	2520.89992
100 %		-20	-0.0007	-0.0009	2503.79991	2520.89985
100 %		-10	0.0006	-0.0028	2503.79987	2520.89986
100 %		0	-0.0007	0.0007	2503.79989	2520.89986
100 %		10	-0.0014	-0.0036	2503.79986	2520.89999
100 %		30	-0.0016	-0.0015	2503.79999	2520.89994
100 %		40	0.0000	0.0009	2503.79991	2520.89996
100 %		50	-0.0017	0.0006	2503.79991	2520.89995
Batt. Endpoint	3.300	20	0.0008	-0.0020	2503.79987	2520.89988

▣ PCC Channel:	39750	
▣ PCC Frequency:	2506.0	MHz
▣ PCC BandWidth:	20	MHz
▣ SCC Channel:	39948	
▣ SCC Frequency:	2525.8	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0010	-0.0010	2505.99987	2525.79990
100 %		-30	0.0029	-0.0015	2505.99995	2525.79996
100 %		-20	-0.0012	-0.0014	2505.99990	2525.79986
100 %		-10	0.0007	-0.0027	2505.99981	2525.79991
100 %		0	-0.0011	0.0012	2505.99984	2525.79986
100 %		10	-0.0018	-0.0037	2505.99988	2525.79985
100 %		30	-0.0014	-0.0014	2505.99986	2525.79995
100 %		40	-0.0001	0.0003	2505.99986	2525.79992
100 %		50	-0.0021	-0.0003	2505.99985	2525.79988
Batt. Endpoint	3.300	20	0.0000	-0.0024	2505.99989	2525.79987

▣ PCC Channel:	41373	
▣ PCC Frequency:	2668.3	MHz
▣ PCC BandWidth:	5	MHz
▣ SCC Channel:	41490	
▣ SCC Frequency:	2680.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0009	-0.0009	2668.29988	2679.99986
100 %		-30	0.0022	-0.0016	2668.29989	2679.99992
100 %		-20	-0.0010	-0.0014	2668.29987	2679.99993
100 %		-10	0.0011	-0.0037	2668.29996	2679.99996
100 %		0	-0.0014	0.0013	2668.29991	2679.99988
100 %		10	-0.0016	-0.0038	2668.29994	2679.99998
100 %		30	-0.0015	-0.0017	2668.29991	2679.99991
100 %		40	-0.0003	0.0003	2668.29993	2679.99990
100 %		50	-0.0014	0.0006	2668.30000	2679.99988
Batt. Endpoint	3.300	20	0.0002	-0.0015	2668.29988	2679.99994

▣ PCC Channel:	41346	
▣ PCC Frequency:	2665.6	MHz
▣ PCC BandWidth:	10	MHz
▣ SCC Channel:	41490	
▣ SCC Frequency:	2680.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0009	-0.0006	2665.59987	2679.99982
100 %		-30	0.0031	-0.0020	2665.59997	2679.99989
100 %		-20	-0.0010	-0.0011	2665.59999	2679.99984
100 %		-10	0.0009	-0.0036	2665.59997	2679.99994
100 %		0	-0.0008	0.0007	2665.59992	2679.99988
100 %		10	-0.0016	-0.0031	2665.59987	2679.99998
100 %		30	-0.0020	-0.0012	2665.59991	2679.99994
100 %		40	-0.0001	0.0001	2665.59997	2679.99992
100 %		50	-0.0015	0.0003	2665.59991	2679.99984
Batt. Endpoint	3.300	20	0.0002	-0.0020	2665.59991	2679.99996

▣ PCC Channel:	41319	
▣ PCC Frequency:	2662.9	MHz
▣ PCC BandWidth:	15	MHz
▣ SCC Channel:	41490	
▣ SCC Frequency:	2680.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0010	-0.0009	2662.89988	2679.99986
100 %		-30	0.0023	-0.0021	2662.89987	2679.99993
100 %		-20	-0.0011	-0.0017	2662.89989	2679.99985
100 %		-10	0.0006	-0.0030	2662.89996	2679.99984
100 %		0	-0.0014	0.0008	2662.89985	2679.99989
100 %		10	-0.0015	-0.0032	2662.89997	2679.99992
100 %		30	-0.0021	-0.0012	2662.89990	2679.99994
100 %		40	-0.0002	0.0006	2662.89986	2679.99986
100 %		50	-0.0021	-0.0003	2662.89998	2679.99987
Batt. Endpoint	3.300	20	-0.0001	-0.0023	2662.89992	2679.99987

▣ PCC Channel:	41292	
▣ PCC Frequency:	2660.2	MHz
▣ PCC BandWidth:	20	MHz
▣ SCC Channel:	41490	
▣ SCC Frequency:	2680.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	3.880	MHz
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	3.880	+20(Ref)	0.0012	-0.0007	2660.19996	2679.99986
100 %		-30	0.0026	-0.0018	2660.19991	2679.99991
100 %		-20	-0.0006	-0.0011	2660.19992	2679.99994
100 %		-10	0.0007	-0.0031	2660.19995	2679.99993
100 %		0	-0.0010	0.0011	2660.19989	2679.99987
100 %		10	-0.0019	-0.0036	2660.19987	2679.99990
100 %		30	-0.0015	-0.0019	2660.19989	2679.99989
100 %		40	-0.0003	0.0002	2660.19992	2679.99995
100 %		50	-0.0022	0.0002	2660.19996	2679.99985
Batt. Endpoint	3.300	20	0.0005	-0.0020	2660.19999	2679.99994

9.6 Radiated Spurious Emissions

▣ PCC Channel :	<u>39750 (2506.0 MHz)</u>
▣ PCC BW(MHz) :	20
▣ PCC RB/ RB Offset :	<u>1/ 99</u>
▣ SCC Channel :	<u>39867 (2517.7 MHz)</u>
▣ SCC BW(MHz) :	5
▣ SCC RB/ RB Offset :	<u>1/ 0</u>
▣ DISTANCE:	<u>3 meters</u>
▣ LIMIT:	<u>-13.0 dBm</u>

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 023.70	-51.92	12.55	-64.12	3.69	V	-55.26
7 535.55	-52.95	10.98	-53.06	4.61	V	-46.69
10 047.40	-57.08	10.66	-52.16	5.48	V	-46.98

■ PCC Channel : 40528 (2583.8 MHz)
 ■ PCC BW(MHz) : 20
 ■ PCC RB/ RB Offset : 1/ 99
 ■ SCC Channel : 40645 (2595.5 MHz)
 ■ SCC BW(MHz) : 20
 ■ SCC RB/ RB Offset : 1/ 0
 ■ DISTANCE: 3 meters
 ■ LIMIT: -13.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 179.30	-51.37	12.45	-62.36	3.79	V	-53.70
7 768.95	-53.80	11.55	-54.66	4.70	V	-47.81
10 358.60	-57.71	10.52	-51.10	5.55	V	-46.13

☐ PCC Channel : 41292 (2660.2 MHz)
☐ PCC BW(MHz) : 20
☐ PCC RB/ RB Offset : 1/ 99
☐ SCC Channel : 41490 (2680.0 MHz)
☐ SCC BW(MHz) : 20
☐ SCC RB/ RB Offset : 1/ 0
☐ DISTANCE: 1 meters
☐ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 340.20	-51.94	13.22	-64.02	3.80	V	-54.60
8 010.30	-54.57	10.92	-52.62	4.77	V	-46.47
10 680.40	-55.58	10.63	-48.75	5.71	V	-43.83

9.7 Occupied Bandwidth

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	QPSK	25/0	20	40645	2595.5	QPSK	100/0	22.893
10	40549	2585.9	QPSK	50/0	15	40669	2597.9	QPSK	75/0	23.149
10	40526	2583.6	QPSK	50/0	20	40670	2598	QPSK	100/0	27.761
15	40571	2588.1	QPSK	75/0	10	40691	2600.1	QPSK	50/0	23.185
15	40545	2585.5	QPSK	75/0	15	40695	2600.5	QPSK	75/0	28.327
15	40523	2583.3	QPSK	75/0	20	40694	2600.4	QPSK	100/0	32.496
20	40595	2590.5	QPSK	100/0	5	40712	2602.2	QPSK	25/0	23.012
20	40571	2588.1	QPSK	100/0	10	40715	2602.5	QPSK	50/0	27.851
20	40546	2585.6	QPSK	100/0	15	40717	2602.7	QPSK	75/0	32.662
20	40521	2583.1	QPSK	100/0	20	40719	2602.9	QPSK	100/0	37.506

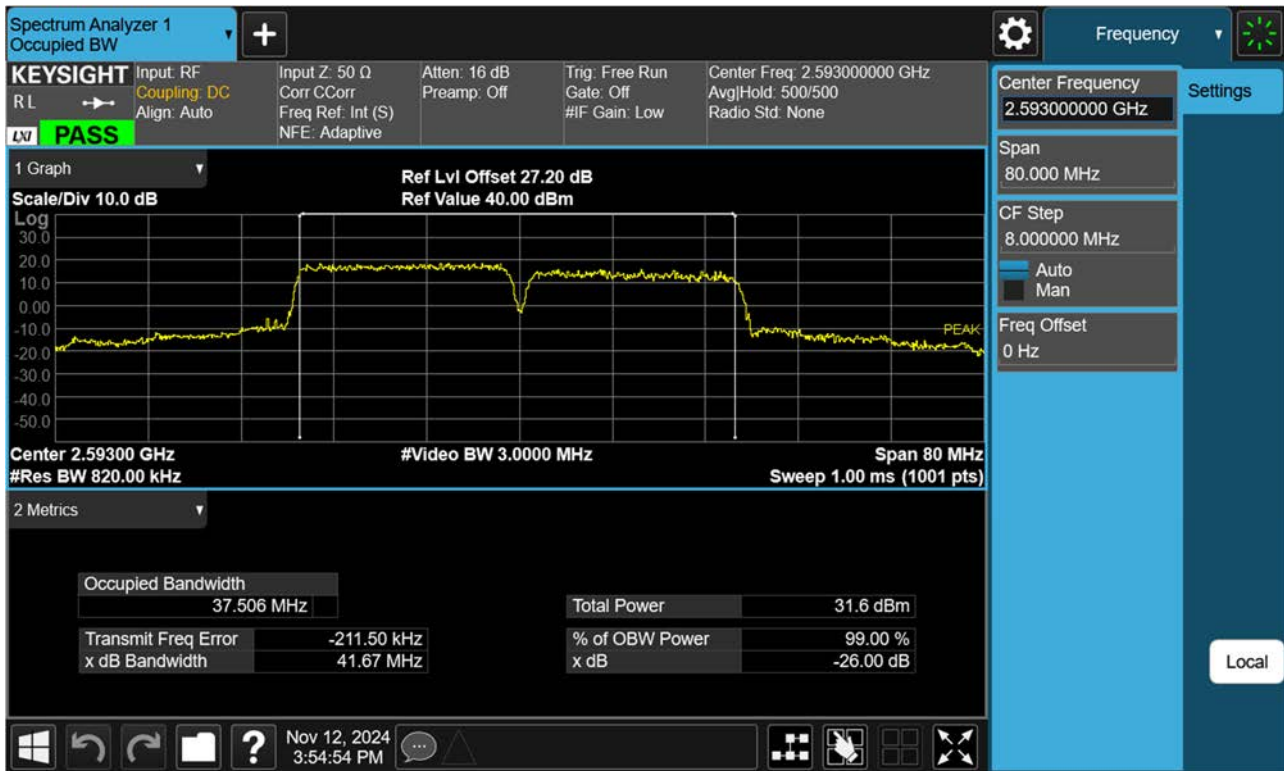
PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	16QAM	25/0	20	40645	2595.5	16QAM	100/0	22.826
10	40549	2585.9	16QAM	50/0	15	40669	2597.9	16QAM	75/0	23.128
10	40526	2583.6	16QAM	50/0	20	40670	2598	16QAM	100/0	27.758
15	40571	2588.1	16QAM	75/0	10	40691	2600.1	16QAM	50/0	23.116
15	40545	2585.5	16QAM	75/0	15	40695	2600.5	16QAM	75/0	28.289
15	40523	2583.3	16QAM	75/0	20	40694	2600.4	16QAM	100/0	32.569
20	40595	2590.5	16QAM	100/0	5	40712	2602.2	16QAM	25/0	22.968
20	40571	2588.1	16QAM	100/0	10	40715	2602.5	16QAM	50/0	27.851
20	40546	2585.6	16QAM	100/0	15	40717	2602.7	16QAM	75/0	32.656
20	40521	2583.1	16QAM	100/0	20	40719	2602.9	16QAM	100/0	37.587

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	64QAM	25/0	20	40645	2595.5	64QAM	100/0	22.813
10	40549	2585.9	64QAM	50/0	15	40669	2597.9	64QAM	75/0	23.115
10	40526	2583.6	64QAM	50/0	20	40670	2598	64QAM	100/0	27.714
15	40571	2588.1	64QAM	75/0	10	40691	2600.1	64QAM	50/0	23.171
15	40545	2585.5	64QAM	75/0	15	40695	2600.5	64QAM	75/0	28.425
15	40523	2583.3	64QAM	75/0	20	40694	2600.4	64QAM	100/0	32.611
20	40595	2590.5	64QAM	100/0	5	40712	2602.2	64QAM	25/0	23.027
20	40571	2588.1	64QAM	100/0	10	40715	2602.5	64QAM	50/0	27.871
20	40546	2585.6	64QAM	100/0	15	40717	2602.7	64QAM	75/0	32.663
20	40521	2583.1	64QAM	100/0	20	40719	2602.9	64QAM	100/0	37.581

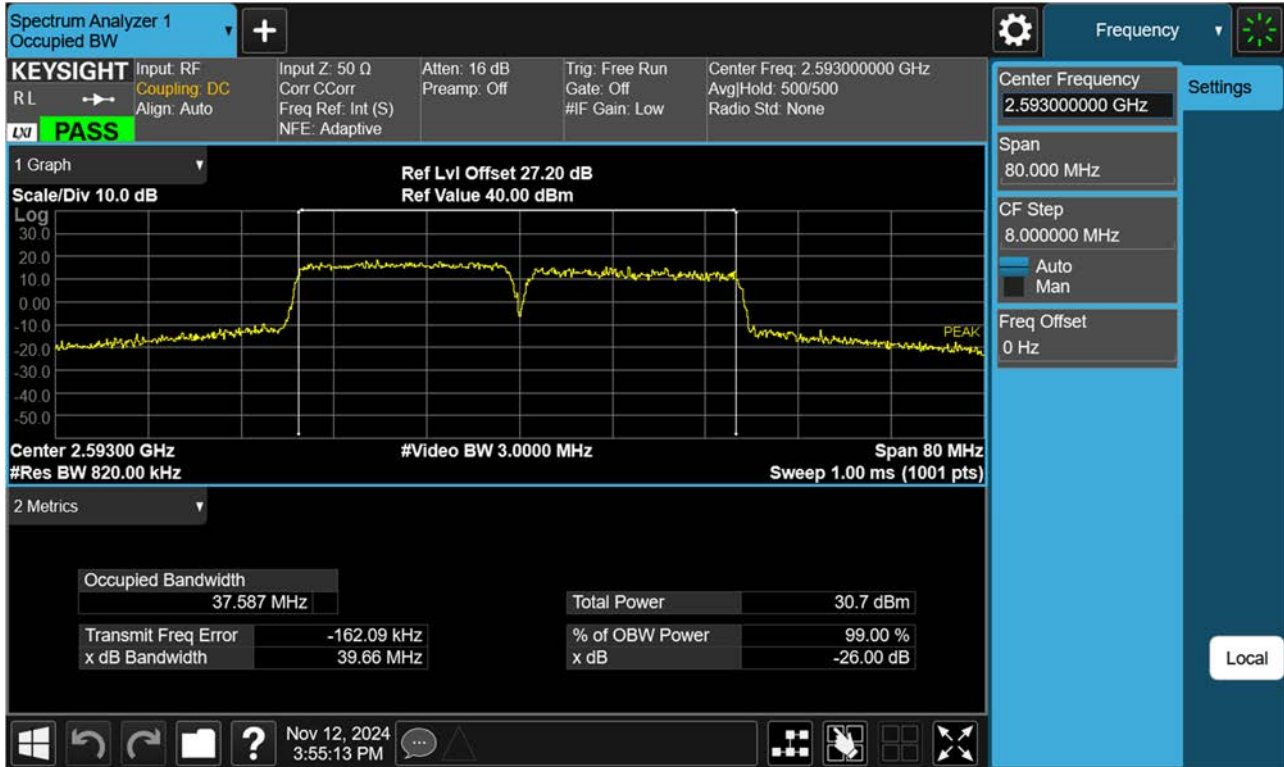
Note:

In order to simplify the report, attached plots were only widest bandwidth(20+20).

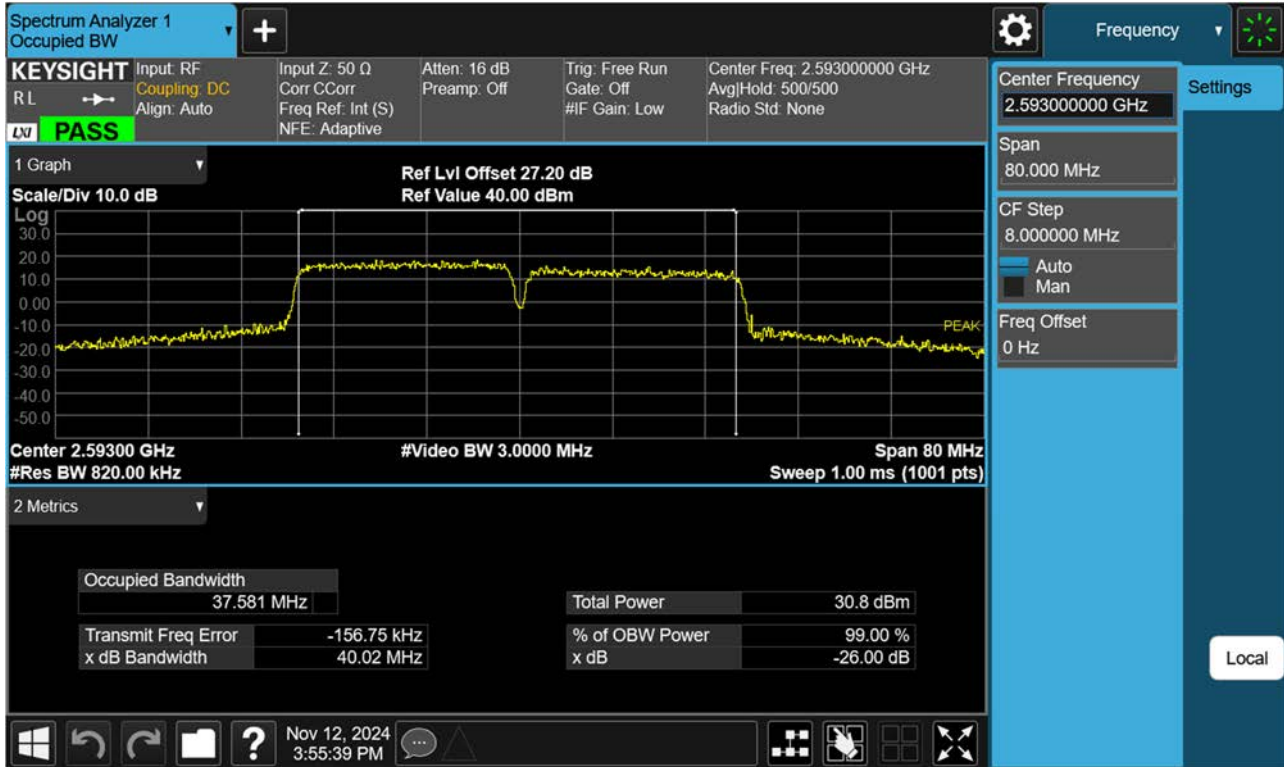
PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(QPSK)



PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(16QAM)



PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(64QAM)



9.8 Peak- to- Average Ratio

PCC					SCC					Data (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	QPSK	25/0	20	40645	2595.5	QPSK	100/0	4.78
10	40549	2585.9	QPSK	50/0	15	40669	2597.9	QPSK	75/0	4.21
10	40526	2583.6	QPSK	50/0	20	40670	2598	QPSK	100/0	4.55
15	40571	2588.1	QPSK	75/0	10	40691	2600.1	QPSK	50/0	4.28
15	40545	2585.5	QPSK	75/0	15	40695	2600.5	QPSK	75/0	4.62
15	40523	2583.3	QPSK	75/0	20	40694	2600.4	QPSK	100/0	4.53
20	40595	2590.5	QPSK	100/0	5	40712	2602.2	QPSK	25/0	4.51
20	40571	2588.1	QPSK	100/0	10	40715	2602.5	QPSK	50/0	4.54
20	40546	2585.6	QPSK	100/0	15	40717	2602.7	QPSK	75/0	4.56
20	40521	2583.1	QPSK	100/0	20	40719	2602.9	QPSK	100/0	4.65

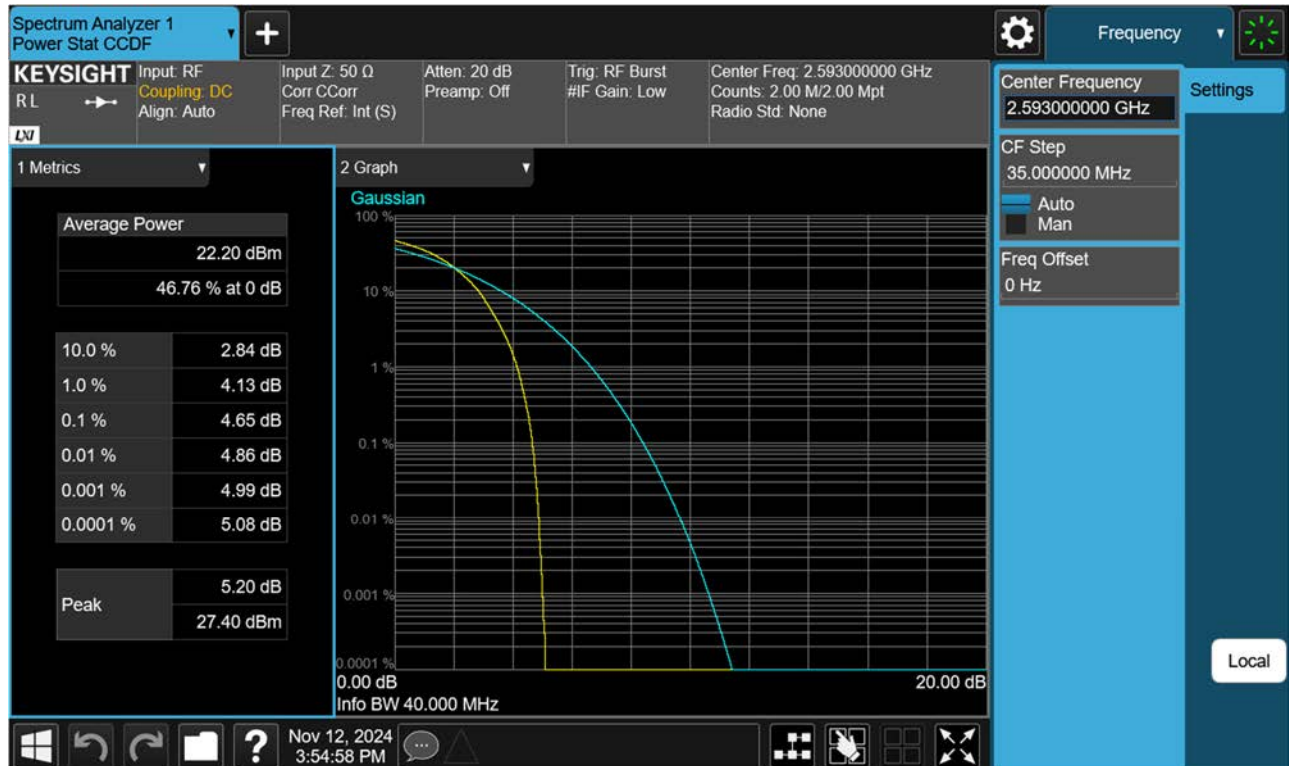
PCC					SCC					Data (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	16QAM	25/0	20	40645	2595.5	16QAM	100/0	5.46
10	40549	2585.9	16QAM	50/0	15	40669	2597.9	16QAM	75/0	5.45
10	40526	2583.6	16QAM	50/0	20	40670	2598	16QAM	100/0	5.34
15	40571	2588.1	16QAM	75/0	10	40691	2600.1	16QAM	50/0	5.46
15	40545	2585.5	16QAM	75/0	15	40695	2600.5	16QAM	75/0	5.38
15	40523	2583.3	16QAM	75/0	20	40694	2600.4	16QAM	100/0	5.32
20	40595	2590.5	16QAM	100/0	5	40712	2602.2	16QAM	25/0	5.42
20	40571	2588.1	16QAM	100/0	10	40715	2602.5	16QAM	50/0	5.34
20	40546	2585.6	16QAM	100/0	15	40717	2602.7	16QAM	75/0	5.33
20	40521	2583.1	16QAM	100/0	20	40719	2602.9	16QAM	100/0	5.44

PCC					SCC					Data (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
5	40528	2583.8	64QAM	25/0	20	40645	2595.5	64QAM	100/0	5.65
10	40549	2585.9	64QAM	50/0	15	40669	2597.9	64QAM	75/0	5.57
10	40526	2583.6	64QAM	50/0	20	40670	2598	64QAM	100/0	5.64
15	40571	2588.1	64QAM	75/0	10	40691	2600.1	64QAM	50/0	5.42
15	40545	2585.5	64QAM	75/0	15	40695	2600.5	64QAM	75/0	5.67
15	40523	2583.3	64QAM	75/0	20	40694	2600.4	64QAM	100/0	5.66
20	40595	2590.5	64QAM	100/0	5	40712	2602.2	64QAM	25/0	5.76
20	40571	2588.1	64QAM	100/0	10	40715	2602.5	64QAM	50/0	5.66
20	40546	2585.6	64QAM	100/0	15	40717	2602.7	64QAM	75/0	5.63
20	40521	2583.1	64QAM	100/0	20	40719	2602.9	64QAM	100/0	5.76

Note:

In order to simplify the report, attached plots were only Max.Bandwidth(20+20)

PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(QPSK)



PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(16QAM)



PCC 20 MHz Ch40521 RB100 Offset0, SCC 20 MHz Ch40719 RB100 Offset0_(64QAM)



10. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2412-FC003-P