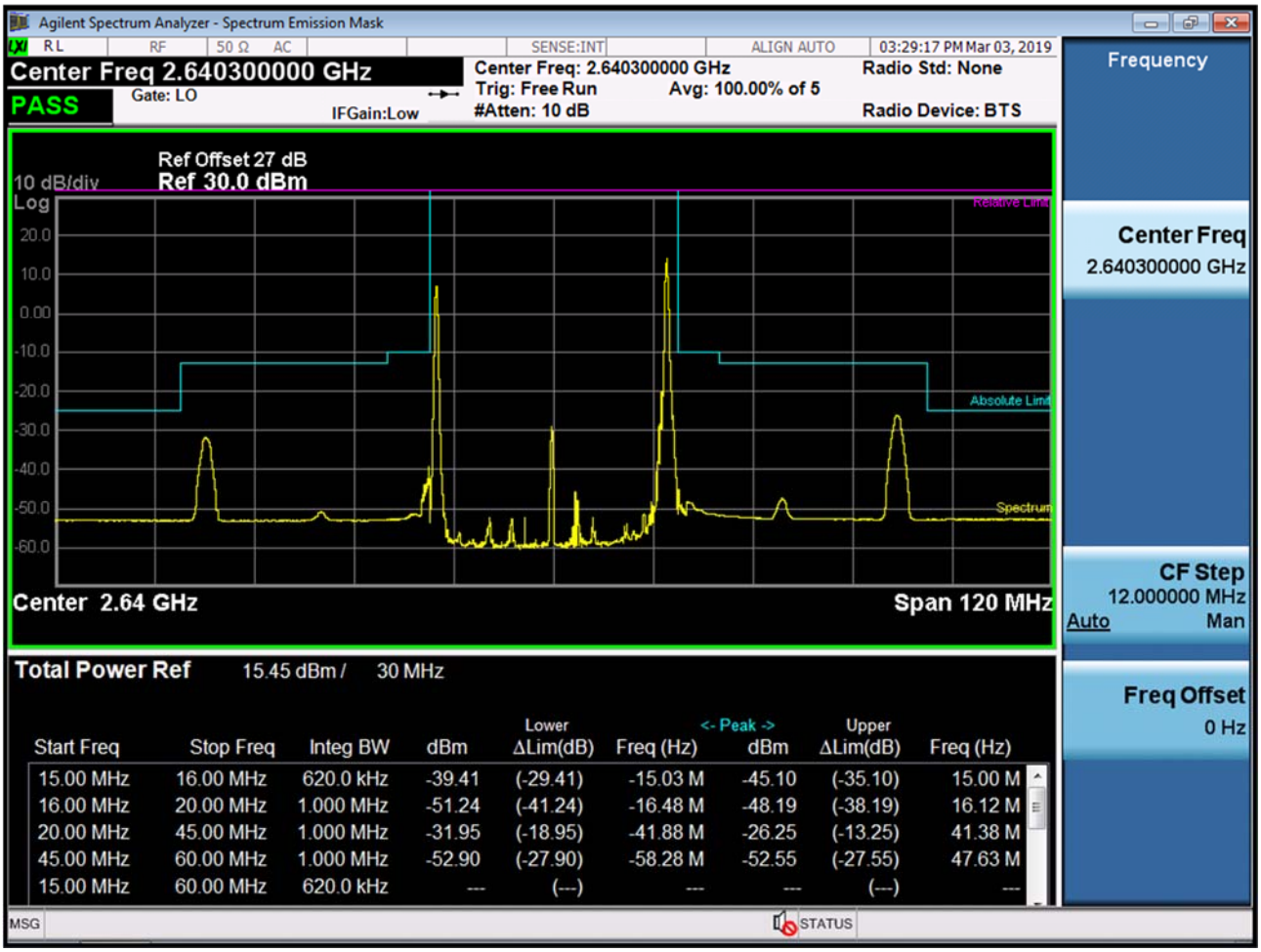
PCC 20MHz Ch41140 RB1 Offset99,

SCC 10MHz Ch40996 RB1 Offset0



8.5 Frequency Stability / Variation Of Ambient Temperature

- ▣ SCC Channel: 40265
- ▣ SCC Frequency: 2557.5 Hz
- ▣ SCC BandWidth: 5 MHz
- ▣ PCC Channel: 40382
- ▣ PCC Frequency: 2569.2 Hz
- ▣ PCC BandWidth: 20 MHz
- ▣ Voltage : 3.850 VDC
- ▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.015	-0.015	2557.50004	2569.19996
100%		-30	0.010	-0.018	2557.50002	2569.19995
100%		-20	0.012	0.009	2557.50003	2569.20002
100%		-10	-0.017	0.021	2557.49996	2569.20005
100%		0	0.020	-0.014	2557.50005	2569.19997
100%		10	0.013	-0.010	2557.50003	2569.19997
100%		30	-0.024	-0.013	2557.49994	2569.19997
100%		40	0.017	0.007	2557.50004	2569.20002
100%		50	0.008	0.024	2557.50002	2569.20006
Batt. Endpoint	3.600	20	0.020	-0.010	2557.50005	2569.19997

▣ SCC Channel: 40290

▣ SCC Frequency: 2560.0 Hz

▣ SCC BandWidth: 10 MHz

▣ PCC Channel: 40434

▣ PCC Frequency: 2574.4 Hz

▣ PCC BandWidth: 20 MHz

▣ Voltage : 3.850 VDC

▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.021	0.024	2560.00005	2574.40006
100%		-30	-0.012	-0.019	2559.99997	2574.39995
100%		-20	0.013	0.014	2560.00003	2574.40004
100%		-10	-0.021	0.017	2559.99995	2574.40004
100%		0	0.019	0.006	2560.00005	2574.40002
100%		10	-0.018	0.008	2559.99995	2574.40002
100%		30	0.024	-0.011	2560.00006	2574.39997
100%		40	0.006	-0.007	2560.00002	2574.39998
100%		50	-0.007	-0.013	2559.99998	2574.39997
Batt. Endpoint	3.600	20	0.009	-0.023	2560.00002	2574.39994

- ▣ SCC Channel: 40315
- ▣ SCC Frequency: 2562.5 Hz
- ▣ SCC BandWidth: 15 MHz
- ▣ PCC Channel: 40465
- ▣ PCC Frequency: 2577.5 Hz
- ▣ PCC BandWidth: 15 MHz
- ▣ Voltage : 3.850 VDC
- ▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	-0.008	-0.023	2562.49998	2577.49994
100%		-30	0.016	0.011	2562.50004	2577.50003
100%		-20	0.022	0.006	2562.50006	2577.50001
100%		-10	0.007	0.010	2562.50002	2577.50002
100%		0	0.023	0.007	2562.50006	2577.50002
100%		10	-0.015	0.024	2562.49996	2577.50006
100%		30	0.019	0.010	2562.50005	2577.50002
100%		40	-0.019	-0.020	2562.49995	2577.49995
100%		50	0.008	0.013	2562.50002	2577.50003
Batt. Endpoint	3.600	20	-0.020	-0.022	2562.49995	2577.49994

- ▣ SCC Channel: 40340
- ▣ SCC Frequency: 2565.0 Hz
- ▣ SCC BandWidth: 20 MHz
- ▣ PCC Channel: 40538
- ▣ PCC Frequency: 2584.8 Hz
- ▣ PCC BandWidth: 20 MHz
- ▣ Voltage : 3.850 VDC
- ▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	-0.017	0.010	2564.99996	2584.80003
100%		-30	0.013	0.009	2565.00003	2584.80002
100%		-20	0.017	0.018	2565.00004	2584.80005
100%		-10	-0.021	-0.024	2564.99995	2584.79994
100%		0	0.019	0.013	2565.00005	2584.80003
100%		10	0.025	-0.018	2565.00006	2584.79995
100%		30	0.022	0.023	2565.00006	2584.80006
100%		40	0.008	-0.018	2565.00002	2584.79995
100%		50	0.025	0.019	2565.00006	2584.80005
Batt. Endpoint	3.600	20	0.011	-0.024	2565.00003	2584.79994

▣ SCC Channel: 41215

▣ SCC Frequency: 2652.5 Hz

▣ SCC BandWidth: 5 MHz

▣ PCC Channel: 41098

▣ PCC Frequency: 2640.8 Hz

▣ PCC BandWidth: 20 MHz

▣ Voltage : 3.850 VDC

▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.022	0.005	2652.50006	2640.80001
100%		-30	0.013	0.024	2652.50004	2640.80006
100%		-20	0.016	0.012	2652.50004	2640.80003
100%		-10	-0.016	0.018	2652.49996	2640.80005
100%		0	0.012	0.023	2652.50003	2640.80006
100%		10	0.023	-0.009	2652.50006	2640.79998
100%		30	0.012	-0.022	2652.50003	2640.79994
100%		40	0.006	0.024	2652.50002	2640.80006
100%		50	-0.013	-0.017	2652.49997	2640.79996
Batt. Endpoint	3.600	20	-0.012	0.015	2652.49997	2640.80004

- ▣ SCC Channel: 41190
- ▣ SCC Frequency: 2650.0 Hz
- ▣ SCC BandWidth: 10 MHz
- ▣ PCC Channel: 41046
- ▣ PCC Frequency: 2635.6 Hz
- ▣ PCC BandWidth: 20 MHz
- ▣ Voltage : 3.850 VDC
- ▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.013	0.010	2650.00003	2635.60003
100%		-30	0.022	0.020	2650.00006	2635.60005
100%		-20	0.018	0.023	2650.00005	2635.60006
100%		-10	0.009	0.016	2650.00002	2635.60004
100%		0	-0.016	0.008	2649.99996	2635.60002
100%		10	0.011	0.019	2650.00003	2635.60005
100%		30	0.010	0.024	2650.00003	2635.60006
100%		40	-0.008	-0.020	2649.99998	2635.59995
100%		50	0.013	-0.023	2650.00004	2635.59994
Batt. Endpoint	3.600	20	-0.018	-0.018	2649.99995	2635.59995

▣ SCC Channel: 41165

▣ SCC Frequency: 2647.5 Hz

▣ SCC BandWidth: 15 MHz

▣ PCC Channel: 40994

▣ PCC Frequency: 2630.4 Hz

▣ PCC BandWidth: 20 MHz

▣ Voltage : 3.850 VDC

▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.020	0.009	2647.50005	2630.40002
100%		-30	0.024	0.016	2647.50006	2630.40004
100%		-20	-0.023	0.010	2647.49994	2630.40003
100%		-10	0.015	0.009	2647.50004	2630.40002
100%		0	0.016	0.015	2647.50004	2630.40004
100%		10	0.011	-0.009	2647.50003	2630.39998
100%		30	0.011	-0.008	2647.50003	2630.39998
100%		40	0.007	0.016	2647.50002	2630.40004
100%		50	-0.009	0.018	2647.49997	2630.40005
Batt. Endpoint	3.600	20	-0.009	-0.017	2647.49998	2630.39996

▣ SCC Channel: 41140

▣ SCC Frequency: 2645.0 Hz

▣ SCC BandWidth: 20 MHz

▣ PCC Channel: 40942

▣ PCC Frequency: 2625.2 Hz

▣ PCC BandWidth: 20 MHz

▣ Voltage : 3.850 VDC

▣ LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100%	3.850	+20(Ref)	0.020	0.005	2645.00005	2625.20001
100%		-30	0.007	0.018	2645.00002	2625.20005
100%		-20	0.023	-0.015	2645.00006	2625.19996
100%		-10	-0.018	-0.017	2644.99995	2625.19995
100%		0	-0.013	0.016	2644.99997	2625.20004
100%		10	-0.013	0.010	2644.99996	2625.20003
100%		30	0.009	0.012	2645.00002	2625.20003
100%		40	0.010	-0.017	2645.00003	2625.19996
100%		50	0.008	0.012	2645.00002	2625.20003
Batt. Endpoint	3.600	20	0.011	0.022	2645.00003	2625.20006

8.6 Radiated Spurious Emissions

▣ PCC Channel : 40290

▣ PCC BW(MHz) : 10

▣ PCC RB/ RB Offset : 1/ 49

▣ SCC Channel : 40434

▣ 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)
5,120.00	-37.82	12.60	-51.36	2.54	H	-41.30
7,680.00	-37.02	12.04	-45.05	2.94	H	-35.95
10,240.00	-40.30	11.13	-43.50	3.59	V	-35.96
12,800.00	-49.23	13.73	-53.16	4.23	V	-43.66

▣ PCC Channel : 40740

▣ PCC BW(MHz) : 10

▣ PCC RB/ RB Offset : 1/ 0

▣ SCC Channel : 40596

▣ SCC BW(MHz) : 15

▣ SCC RB/ RB Offset : 1/ 99

▣ DISTANCE: 1 meters

▣ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5,210.00	-41.04	13.21	-54.95	2.55	H	-44.29
7,815.00	-39.95	11.93	-45.82	2.99	H	-36.88
10,420.00	-44.08	10.92	-45.76	3.58	H	-38.42

▣ PCC Channel : 41140

▣ PCC BW(MHz) : 20

▣ PCC RB/ RB Offset : 1/ 0

▣ SCC Channel : 40996

▣ SCC BW(MHz) : 5

▣ SCC RB/ RB Offset : 1/ 49

▣ DISTANCE: 1 meters

▣ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5,290.00	-38.29	13.55	-51.89	2.60	H	-40.94
7,935.00	-38.89	11.67	-44.23	2.99	V	-35.55
10,580.00	-36.75	10.72	-39.56	3.60	V	-32.44
13,225.00	-51.40	13.59	-54.37	4.10	V	-44.87
15,870.00	-54.38	17.35	-59.35	4.55	V	-46.55

8.7 Occupied Bandwidth

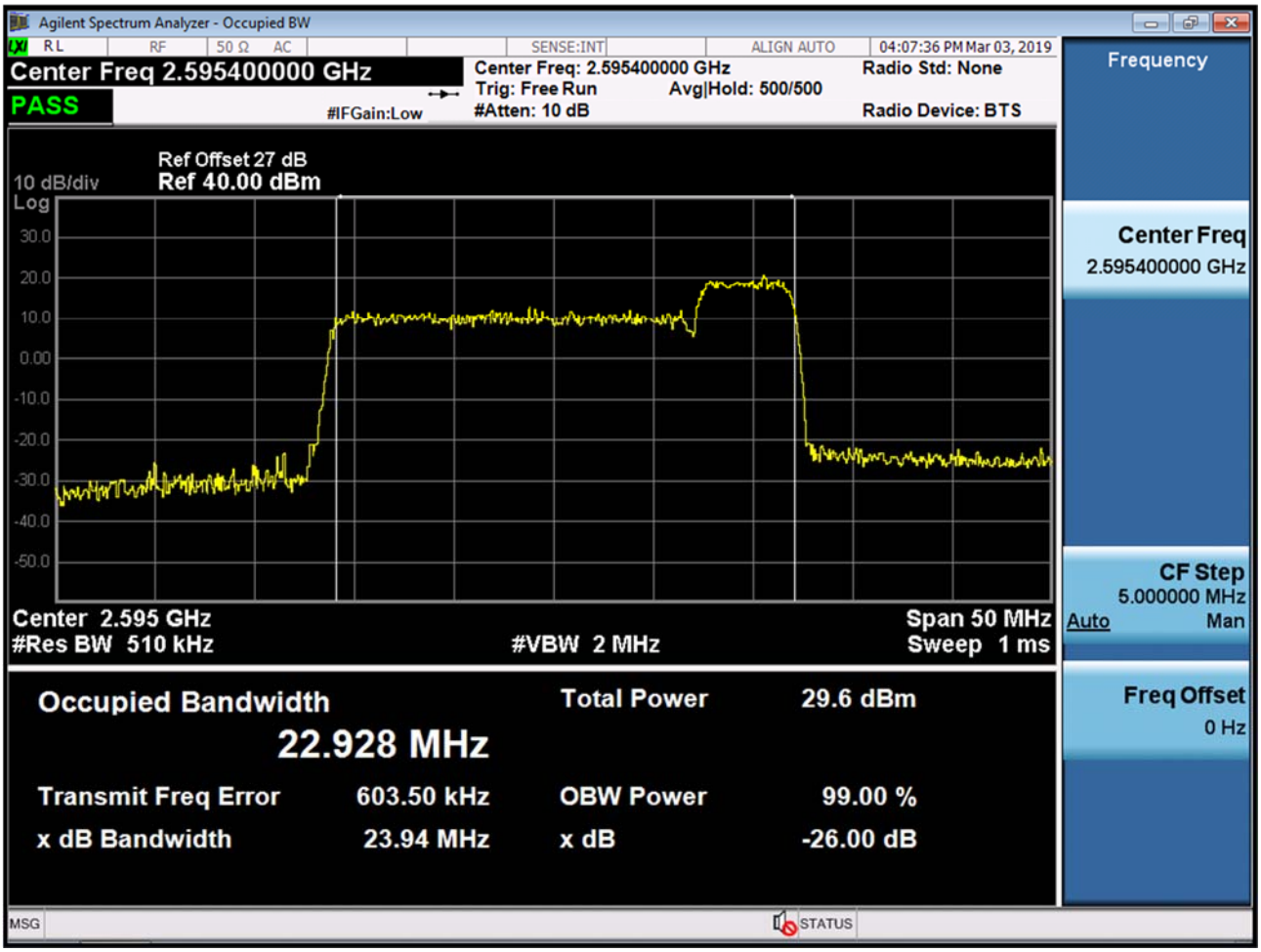
PCC				SCC				Data (MHz)
Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	
5	40740	QPSK	25/ 0	20	40623	QPSK	100/ 0	22.913
10	40740	QPSK	50/ 0	15	40620	QPSK	75/ 0	23.116
10	40740	QPSK	50/ 0	20	40596	QPSK	100/ 0	27.769
15	40740	QPSK	75/ 0	10	40620	QPSK	50/ 0	23.129
15	40740	QPSK	75/ 0	15	40590	QPSK	75/ 0	28.279
15	40740	QPSK	75/ 0	20	40569	QPSK	100/ 0	32.577
20	40740	QPSK	100/ 0	5	40623	QPSK	25/ 0	22.931
20	40740	QPSK	100/ 0	10	40596	QPSK	50/ 0	27.738
20	40740	QPSK	100/ 0	15	40569	QPSK	75/ 0	32.581
20	40740	QPSK	100/ 0	20	40542	QPSK	100/ 0	37.433

PCC				SCC				Data (MHz)
Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	
5	40740	16QAM	25/ 0	20	40623	16QAM	100/ 0	22.928
10	40740	16QAM	50/ 0	15	40620	16QAM	75/ 0	23.123
10	40740	16QAM	50/ 0	20	40596	16QAM	100/ 0	27.703
15	40740	16QAM	75/ 0	10	40620	16QAM	50/ 0	23.095
15	40740	16QAM	75/ 0	15	40590	16QAM	75/ 0	28.343
15	40740	16QAM	75/ 0	20	40569	16QAM	100/ 0	32.529
20	40740	16QAM	100/ 0	5	40623	16QAM	25/ 0	22.841
20	40740	16QAM	100/ 0	10	40596	16QAM	50/ 0	27.732
20	40740	16QAM	100/ 0	15	40569	16QAM	75/ 0	32.623
20	40740	16QAM	100/ 0	20	40542	16QAM	100/ 0	37.469

PCC				SCC				Data (MHz)
Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	Bandwidth [MHz]	Channel	Mod	RB/ RB Offset	
5	40740	64QAM	25/ 0	20	40623	64QAM	100/ 0	22.854
10	40740	64QAM	50/ 0	15	40620	64QAM	75/ 0	23.107
10	40740	64QAM	50/ 0	20	40596	64QAM	100/ 0	27.716
15	40740	64QAM	75/ 0	10	40620	64QAM	50/ 0	23.118
15	40740	64QAM	75/ 0	15	40590	64QAM	75/ 0	28.304
15	40740	64QAM	75/ 0	20	40569	64QAM	100/ 0	32.406
20	40740	64QAM	100/ 0	5	40623	64QAM	25/ 0	22.881
20	40740	64QAM	100/ 0	10	40596	64QAM	50/ 0	27.697
20	40740	64QAM	100/ 0	15	40569	64QAM	75/ 0	32.606
20	40740	64QAM	100/ 0	20	40542	64QAM	100/ 0	37.433

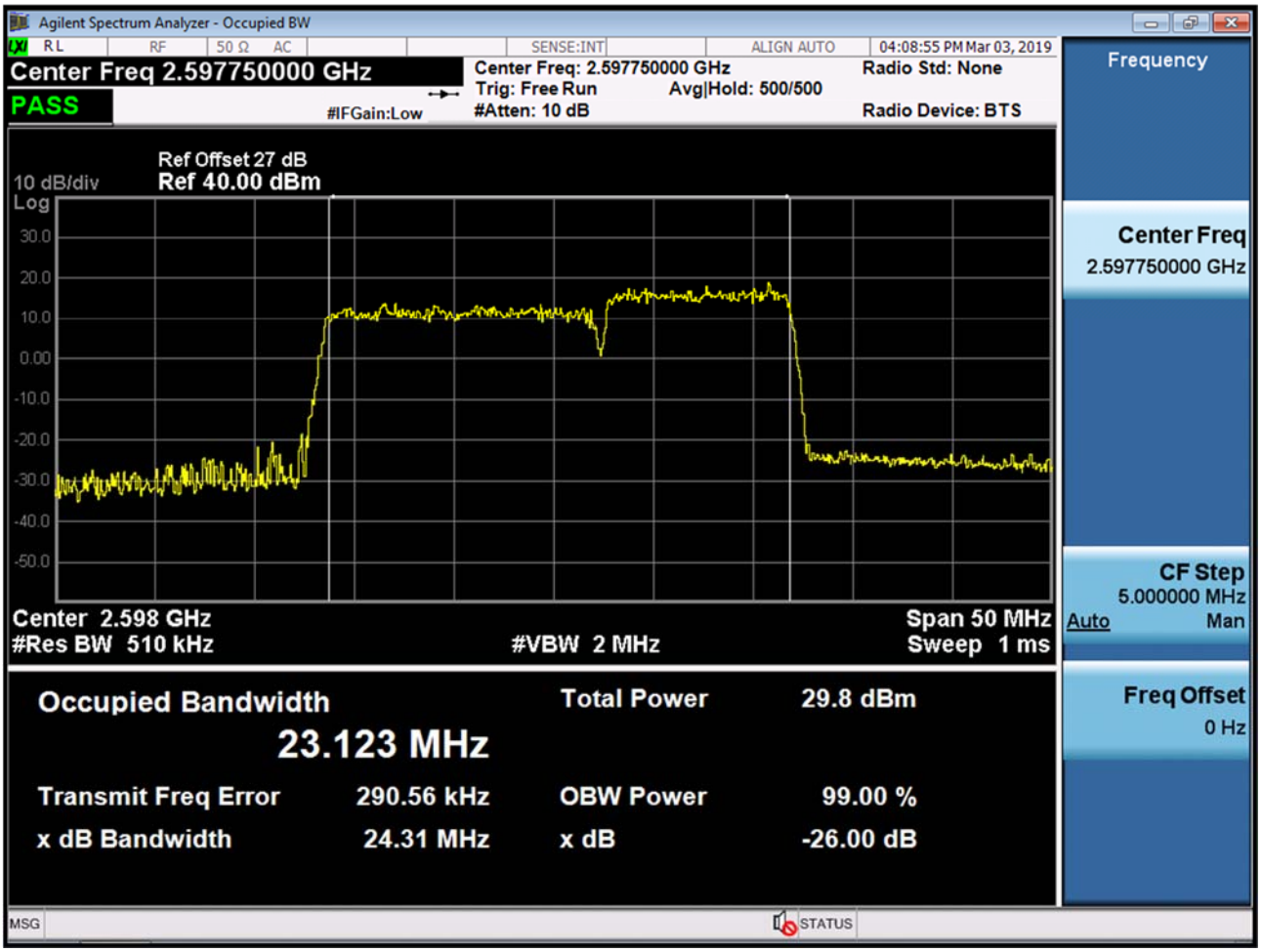
PCC 5MHz Ch40740 RB25 Offset0,

SCC 20MHz Ch40623 RB100 Offset0_(QPSK)



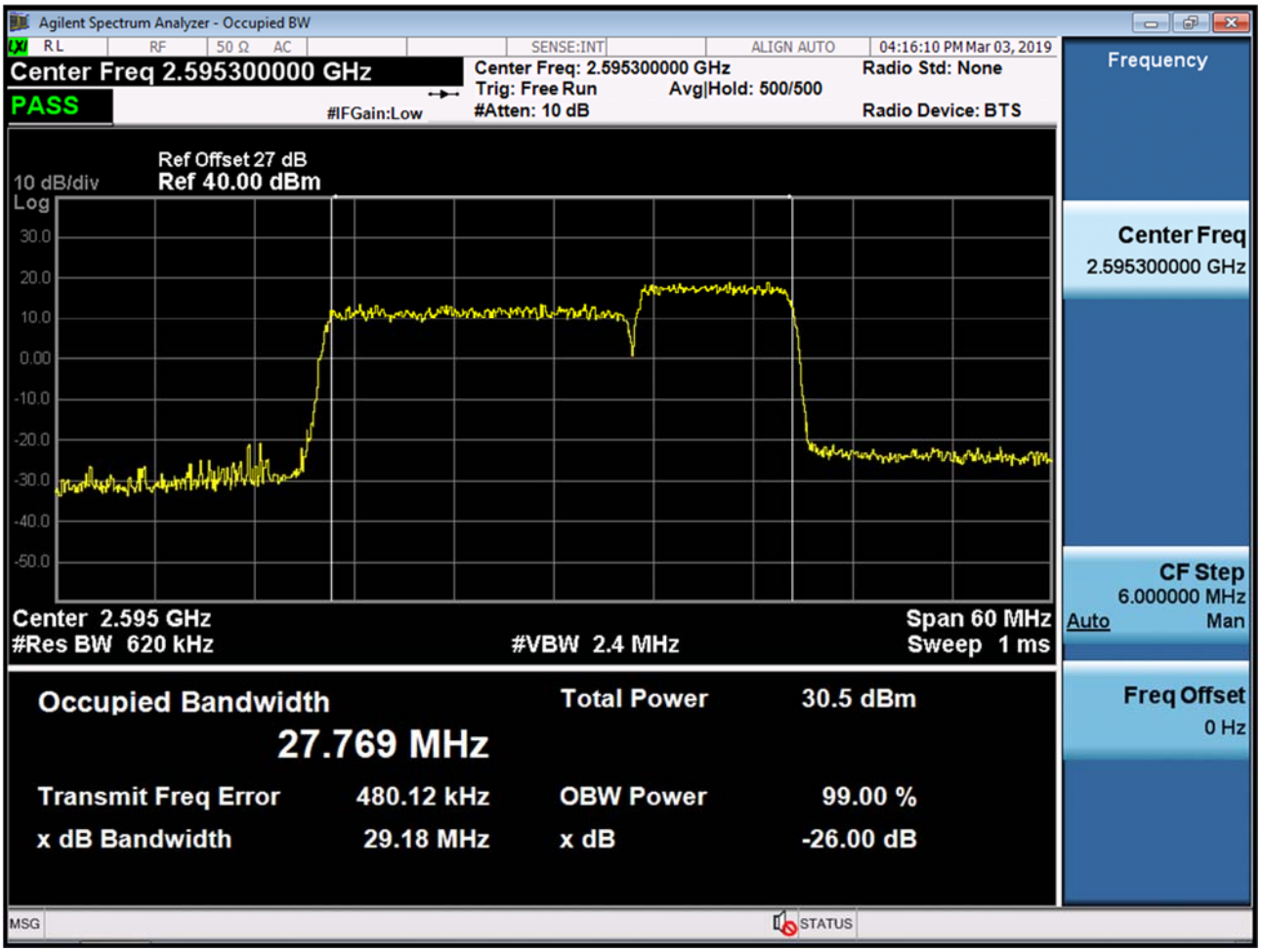
PCC 10MHz Ch40740 RB50 Offset0,

SCC 15MHz Ch40620 RB75 Offset0_(QPSK)



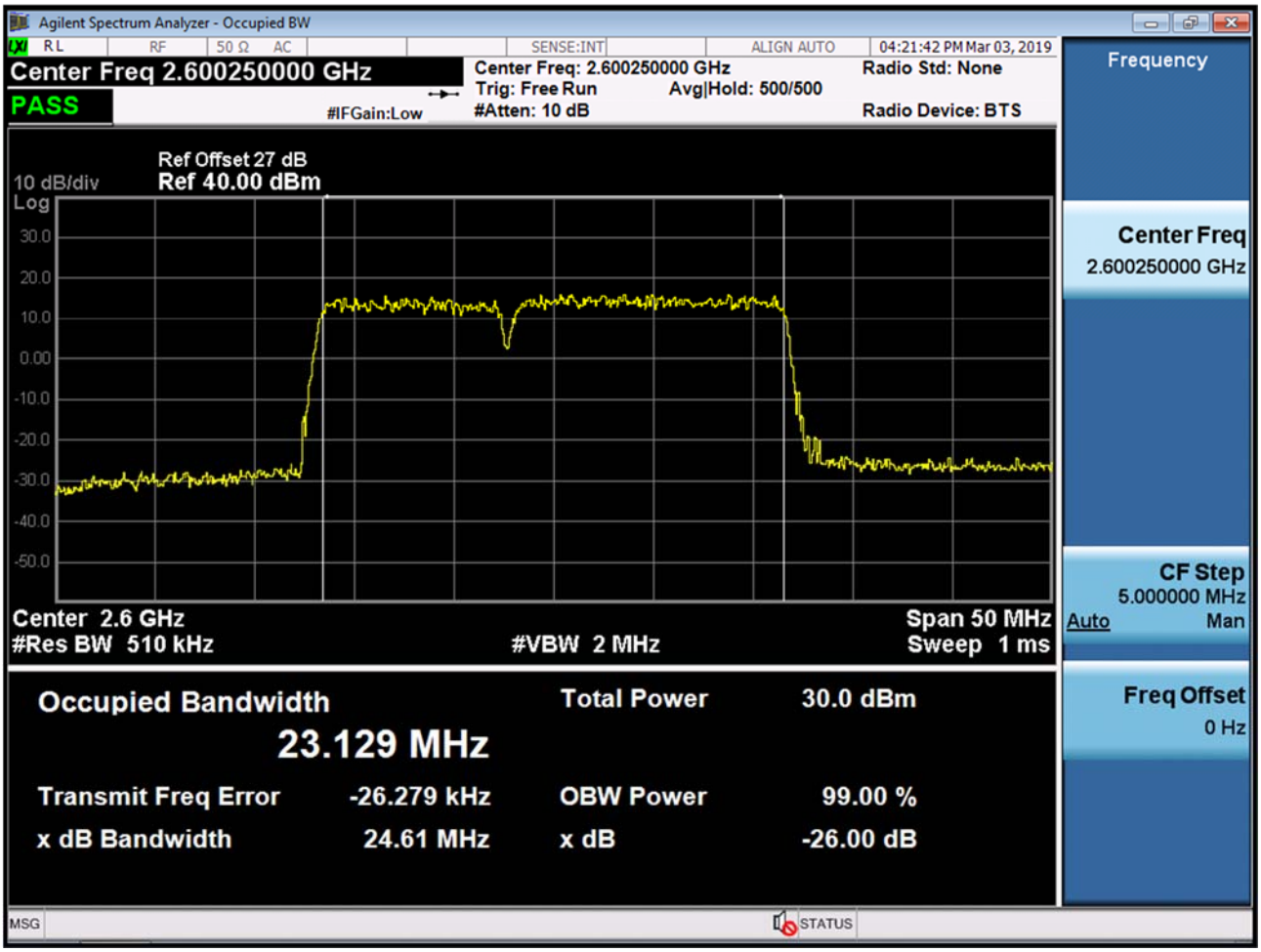
PCC 10MHz Ch40740 RB50 Offset0,

SCC 20MHz Ch40596 RB100 Offset0_(QPSK)



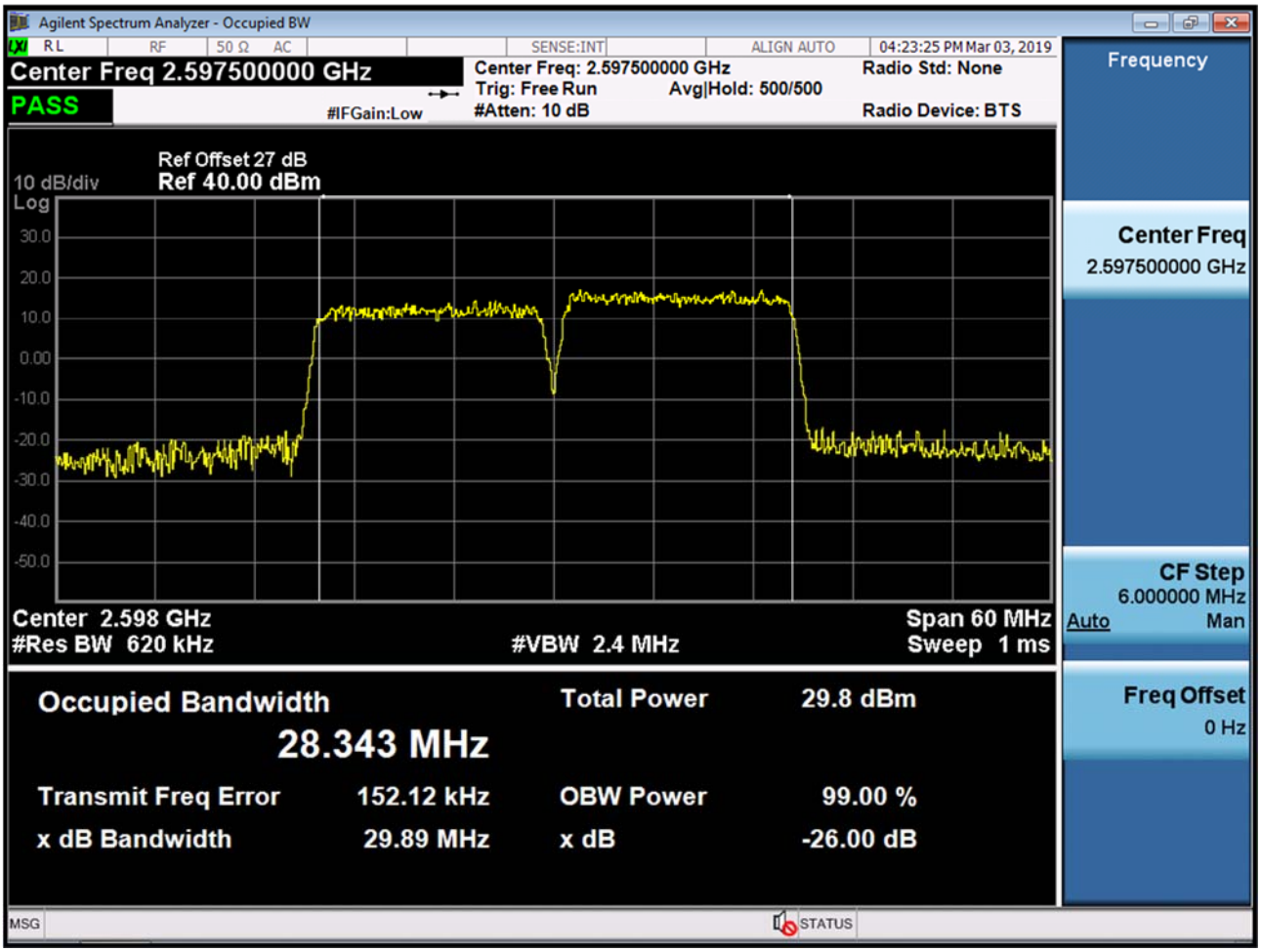
PCC 15MHz Ch40740 RB75 Offset0,

SCC 10MHz Ch40620 RB50 Offset0_(QPSK)



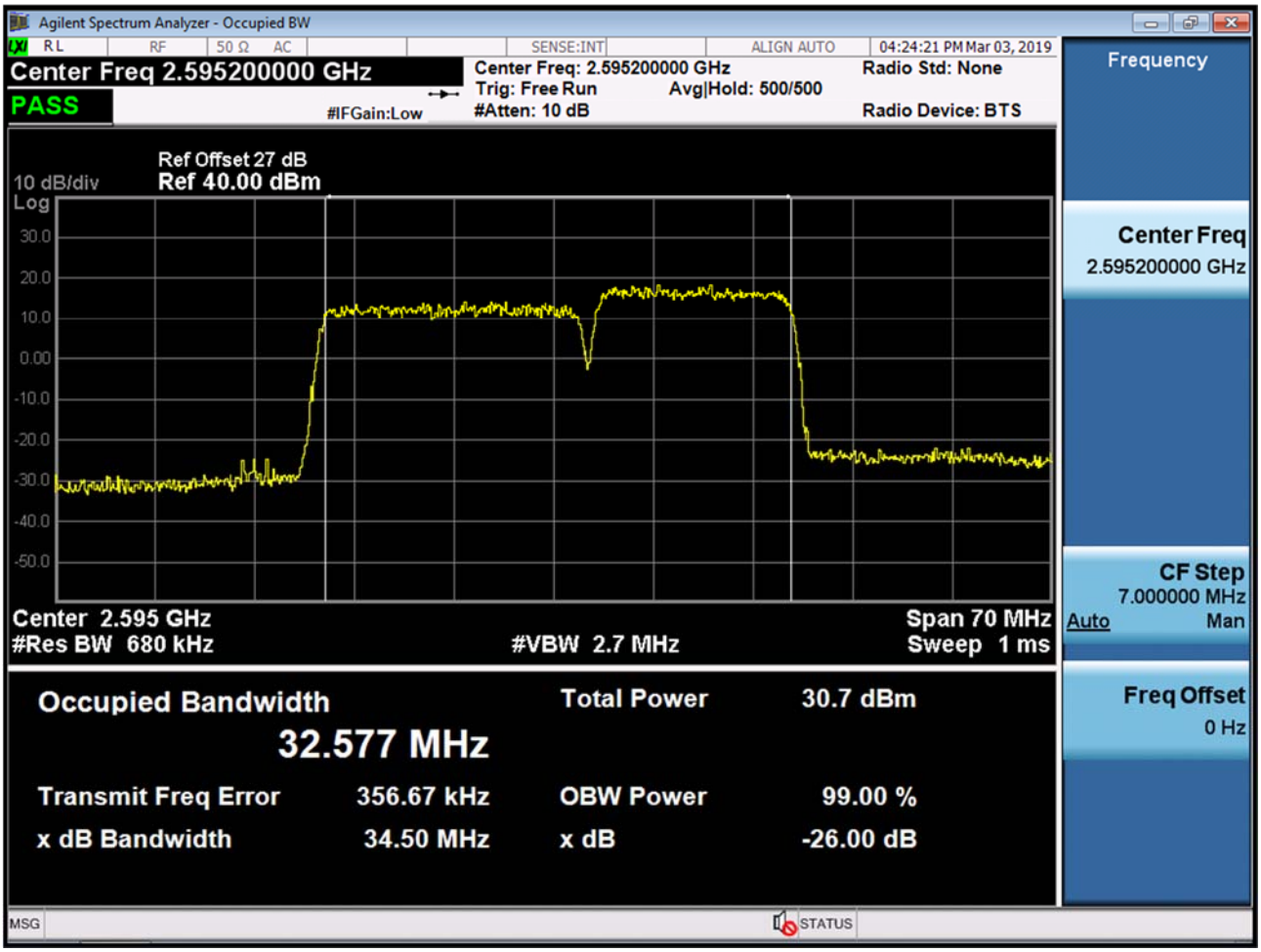
PCC 15MHz Ch40740 RB75 Offset0,

SCC 15MHz Ch40590 RB75 Offset0_(QPSK)



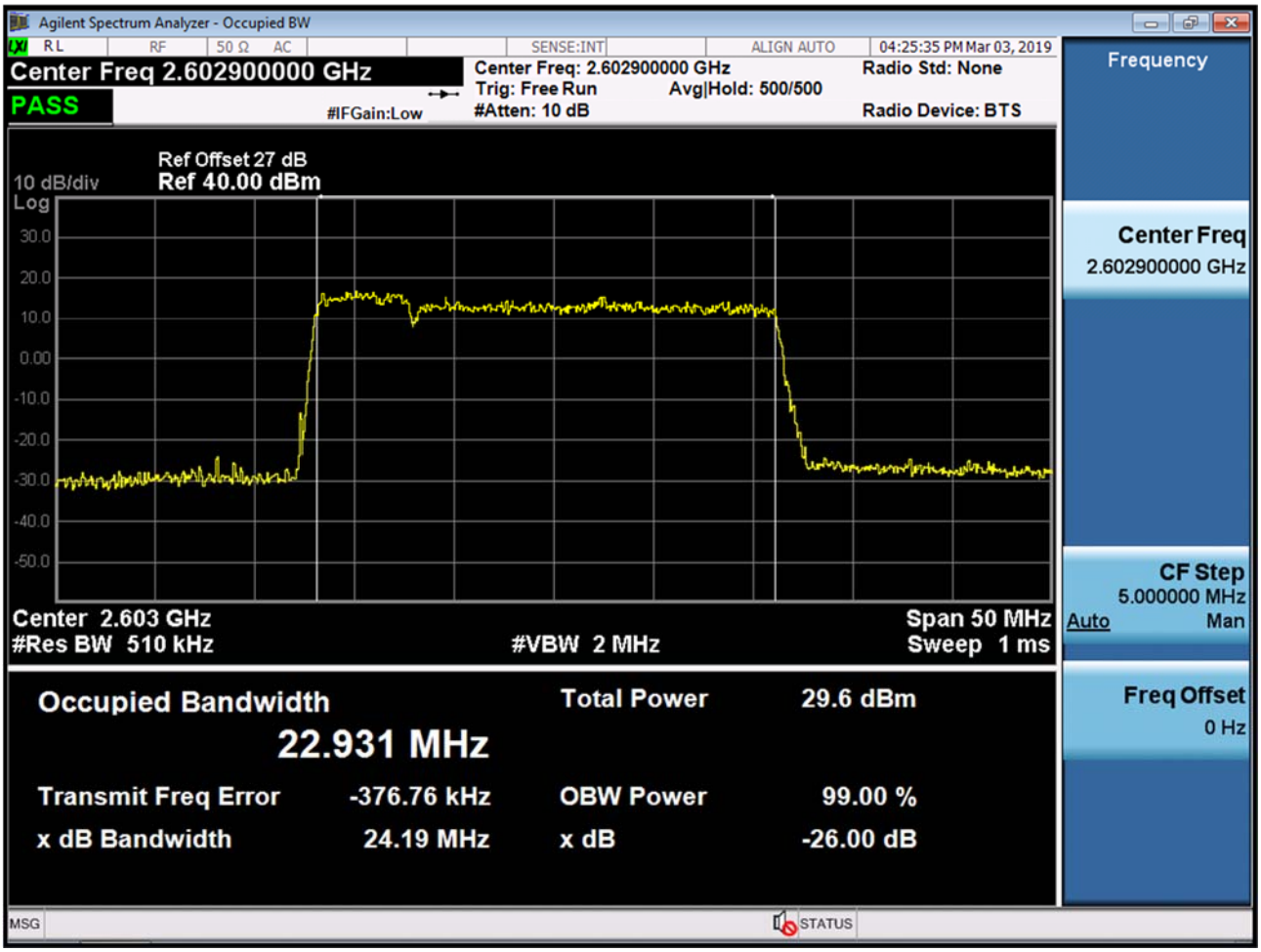
PCC 15MHz Ch40740 RB75 Offset0,

SCC 20MHz Ch40569 RB100 Offset0_(QPSK)



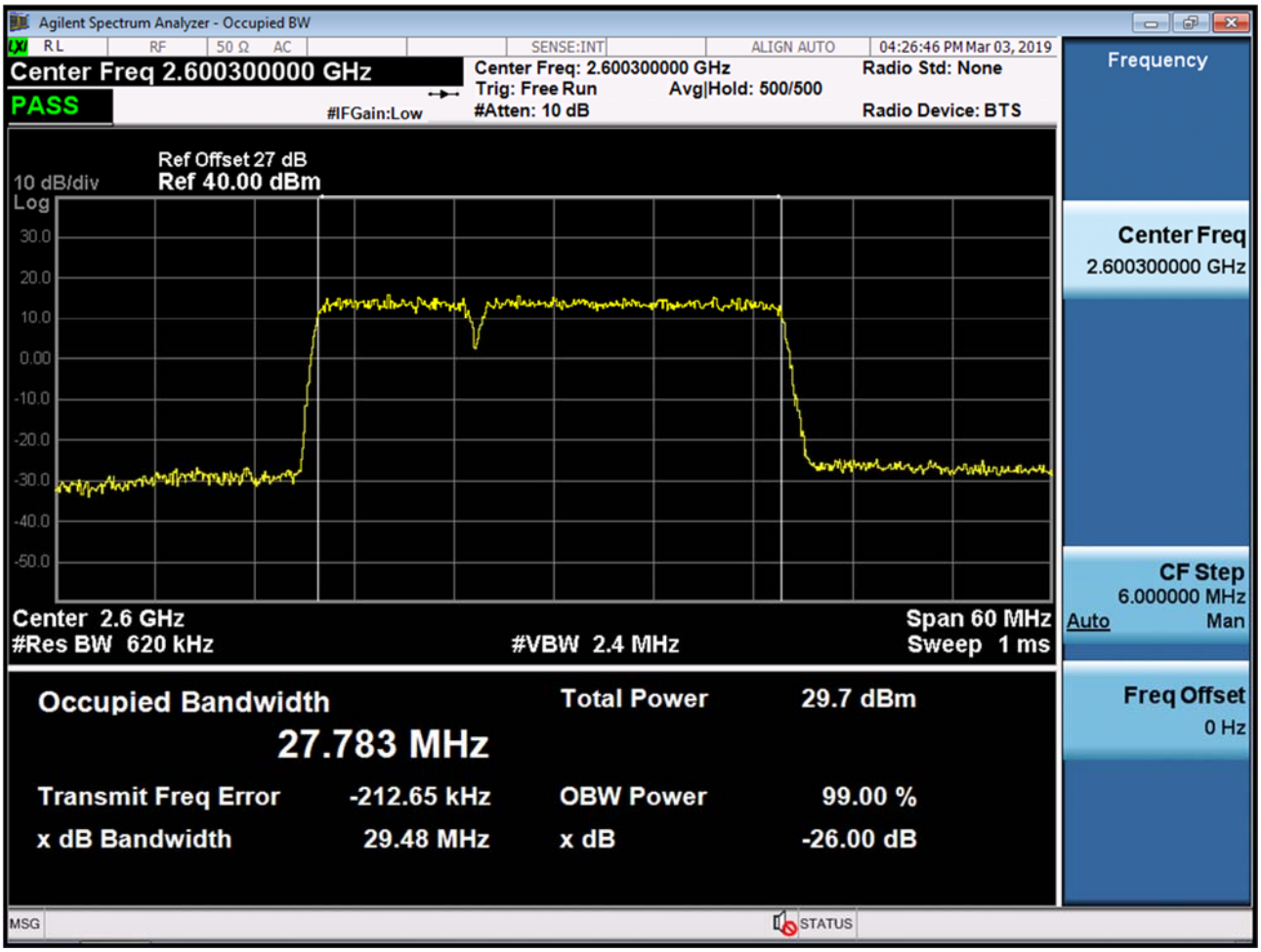
PCC 20MHz Ch40740 RB100 Offset0,

SCC 5MHz Ch40623 RB25 Offset0_(QPSK)



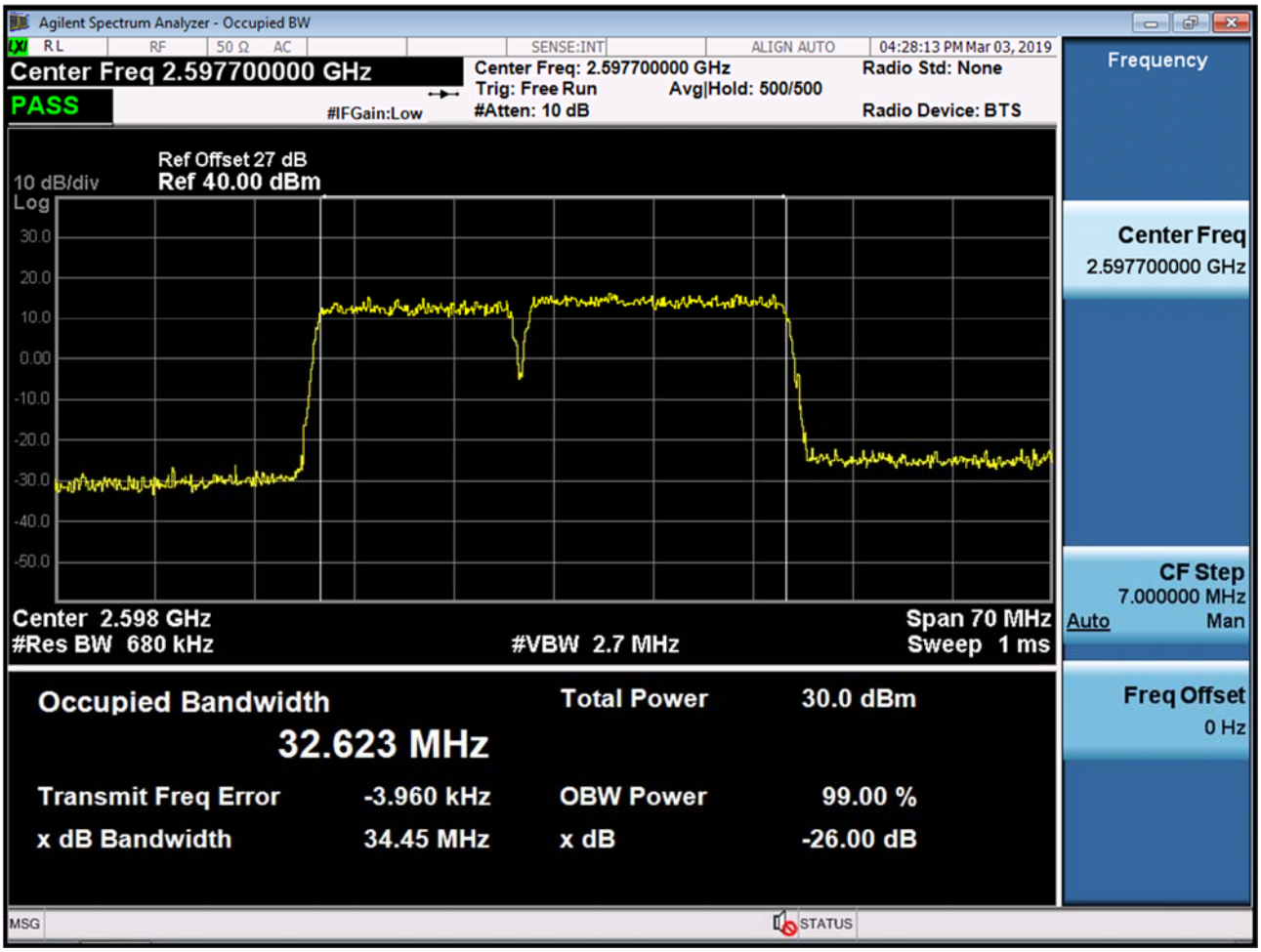
PCC 20MHz Ch40740 RB100 Offset0,

SCC 10MHz Ch40596 RB50 Offset0_(QPSK)



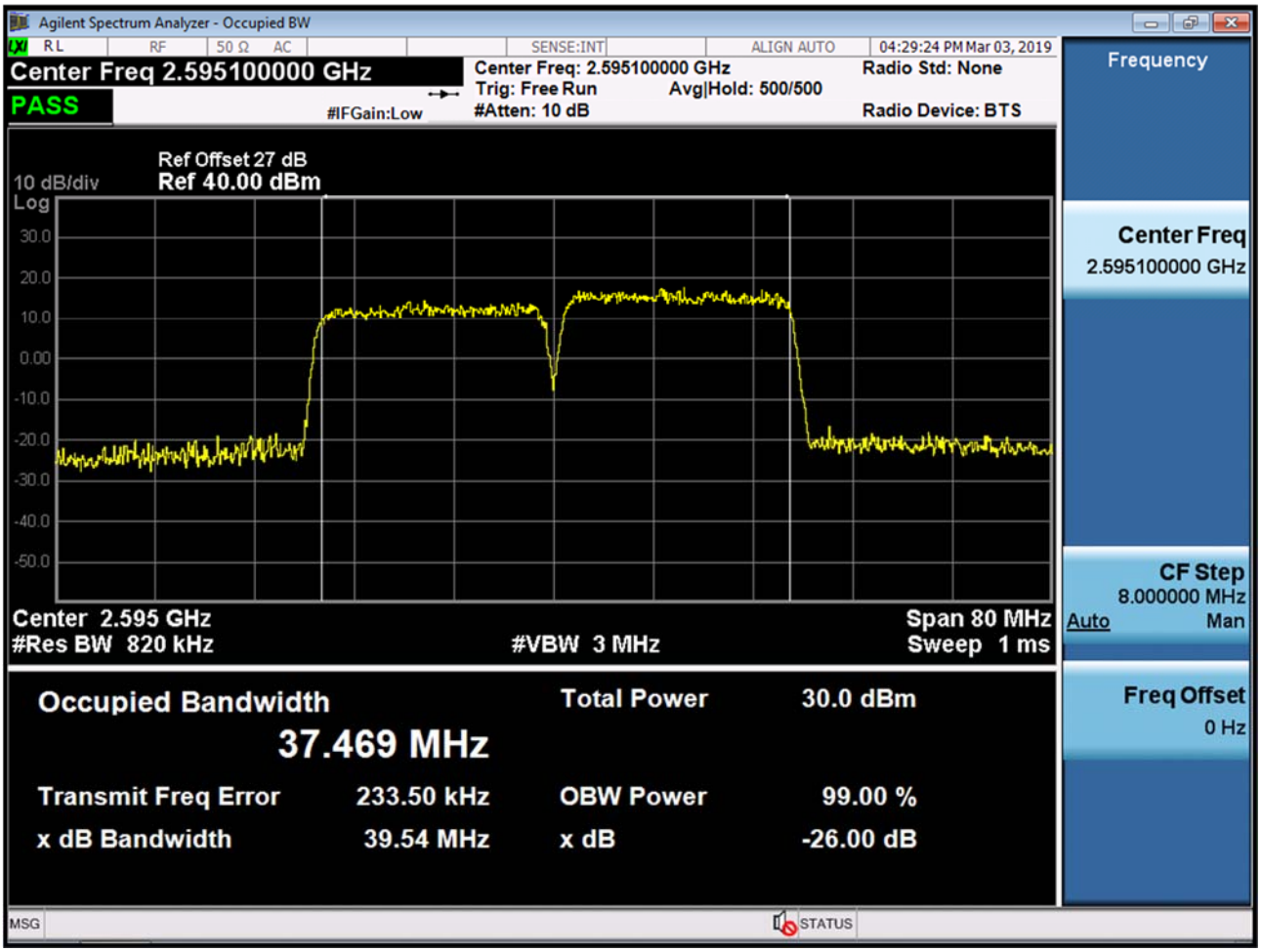
PCC 20MHz Ch40740 RB100 Offset0,

SCC 15MHz Ch40569 RB75 Offset0_(QPSK)



PCC 20MHz Ch40740 RB100 Offset0,

SCC 20MHz Ch40542 RB100 Offset0_(QPSK)



Note:

- All modes of operation were investigated and the worst case configuration results are reported in this PLOTs.

8.8 Emission Designator.

Mode	Modulation	Emission Designator
5MHz+20MHz	QPSK	22M9G7D
	16QAM	22M9W7D
	64QAM	22M9W7D
10MHz+15MHz	QPSK	23M1G7D
	16QAM	23M1W7D
	64QAM	23M1W7D
10MHz+20MHz	QPSK	27M8G7D
	16QAM	27M7W7D
	64QAM	27M7W7D
15MHz+15MHz	QPSK	28M3G7D
	16QAM	28M3W7D
	64QAM	28M3W7D
15MHz+20MHz	QPSK	32M6G7D
	16QAM	32M6W7D
	64QAM	32M6W7D
20MHz+20MHz	QPSK	37M4G7D
	16QAM	37M5W7D
	64QAM	37M4W7D

9. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-1903-FC016-P
2	HCT-RF-1903-FC017-P
3	HCT-RF-1903-FC018-P
4	HCT-RF-1903-FC019-P