



Appendix A: Transmitter Output Power



1 Average Power (Total)

Test Mode	Carrier Conf.	RF Ch.	Average Power [dBm]	Average Power [dBW]	Average Power [W]	Average Power [W/100 kHz]	Verdict
E-TM 1.1	5M(40W)	B	45.84	15.84	38.37	0.770	Pass
		M	46.06	16.06	40.36	0.807	Pass
		T	46.42	16.42	43.85	0.877	Pass
	10M(40W)	B	46.24	16.24	42.07	0.421	Pass
		M	45.97	15.97	39.54	0.395	Pass
		T	46.56	16.56	45.29	0.453	Pass
	15M(40W)	B	45.94	15.94	39.26	0.262	Pass
		M	46.08	16.08	40.55	0.270	Pass
		T	46.07	16.07	40.46	0.270	Pass
	20M(40W)	B	46.02	16.02	39.99	0.200	Pass
		M	= B	= B	= B	= B	Pass
		T	= B	= B	= B	= B	Pass

2 Peak-to-Average Ratio

(Not applicable)



Appendix B: Modulation Characteristics



1 Result Table

Test Mode	Digital modulation?	Verdict
E-TM 1.1	Yes	Pass



2 Test Plot

2.1 Test Mode = E-TM 1.1

EUTRA/LTE							
Freq:	2.63 GHz		Meas Setup:	1 TX x 1 RX	Ext. Att:	0 dB	
Mode:	DL FDD, 25 RB (5 MHz), Normal (CP)		Sync State:	OK	Capture Time:	20.1 ms	
CONTINUOUS		TRG : FREE RUN		RF	Frame	1 Of 1 (1)	
Result Summary							
Frame Result 1/1		Min	Mean	Limit	Max	Limit	Unit
EVM PDSCH QPSK			5.23	17.50			%
EVM PDSCH 16QAM				12.50			%
EVM PDSCH 64QAM				8.00			%
Time Alignment Error 2,1							ns
Time Alignment Error 3,1							ns
Time Alignment Error 4,1							ns
Results for Selection		Subframe(s)	ALL	Selection	Antenna 1	Frame Result 1/1	
EVM All		4.02		5.17		5.68	%
EVM Phys. Channel		4.05		5.19		5.71	%
EVM Phys. Signal		3.66		4.81		5.59	%
Frequency Error		- 20.65		- 2.61		12.83	Hz
Sampling Error		- 2.26		0.34		2.61	ppm
IQ Offset		- 66.55		- 58.30		- 52.98	dB
IQ Gain Imbalance		- 0.05		- 0.00		0.02	dB
IQ Quadrature Error		- 0.05		0.08		0.20	°
RSTP		- 21.12		- 21.07		- 21.02	dBm
OSTP		3.62		3.67		3.72	dBm

Running ...

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Appendix C: Occupied Bandwidth



1 Result Table

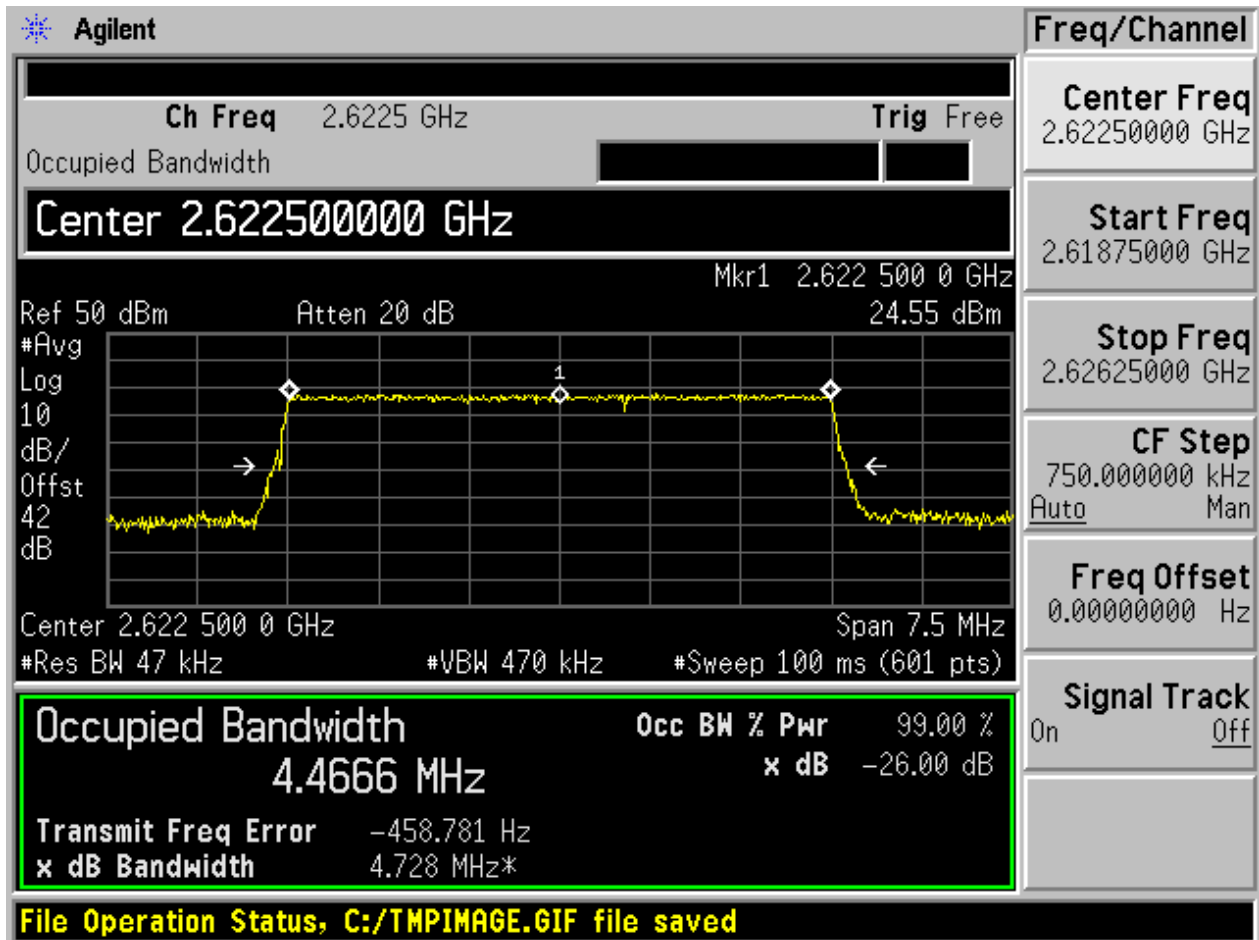
Test Mode	Carrier Conf.	RF Ch.	Occupied Bandwidth [MHz]	Verdict
E-TM 1.1	5M(40W)	B	4.47	Pass
		M	4.47	Pass
		T	4.47	Pass
	10M(40W)	B	8.91	Pass
		M	8.92	Pass
		T	8.91	Pass
	15M(40W)	B	13.37	Pass
		M	13.36	Pass
		T	13.36	Pass
	20M(40W)	B	17.81	Pass
		M	= B	Pass
		T	= B	Pass

2 Test Plot

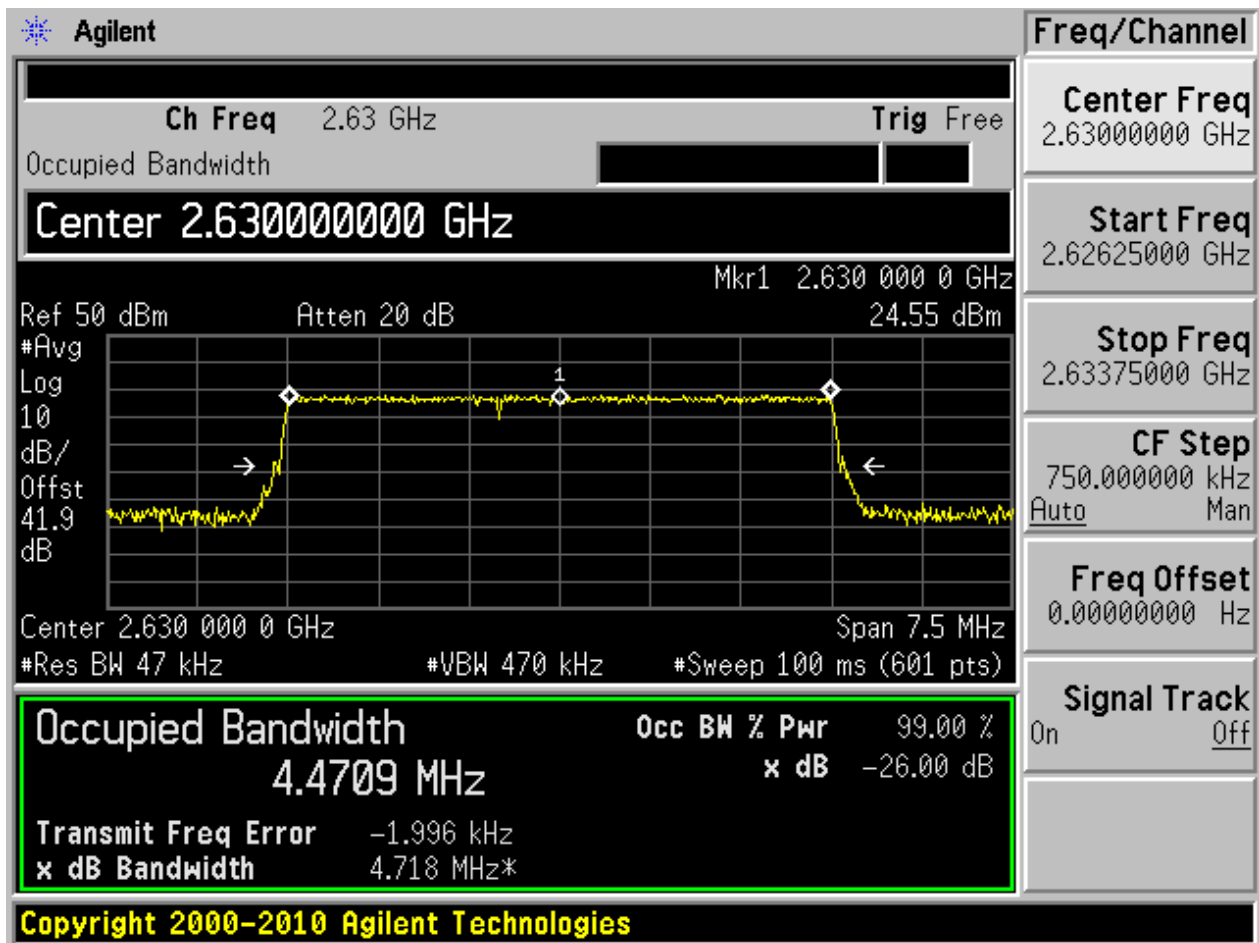
2.1 Test Mode = E-TM 1.1

2.1.1 Carrier Conf. = 5M(40W)

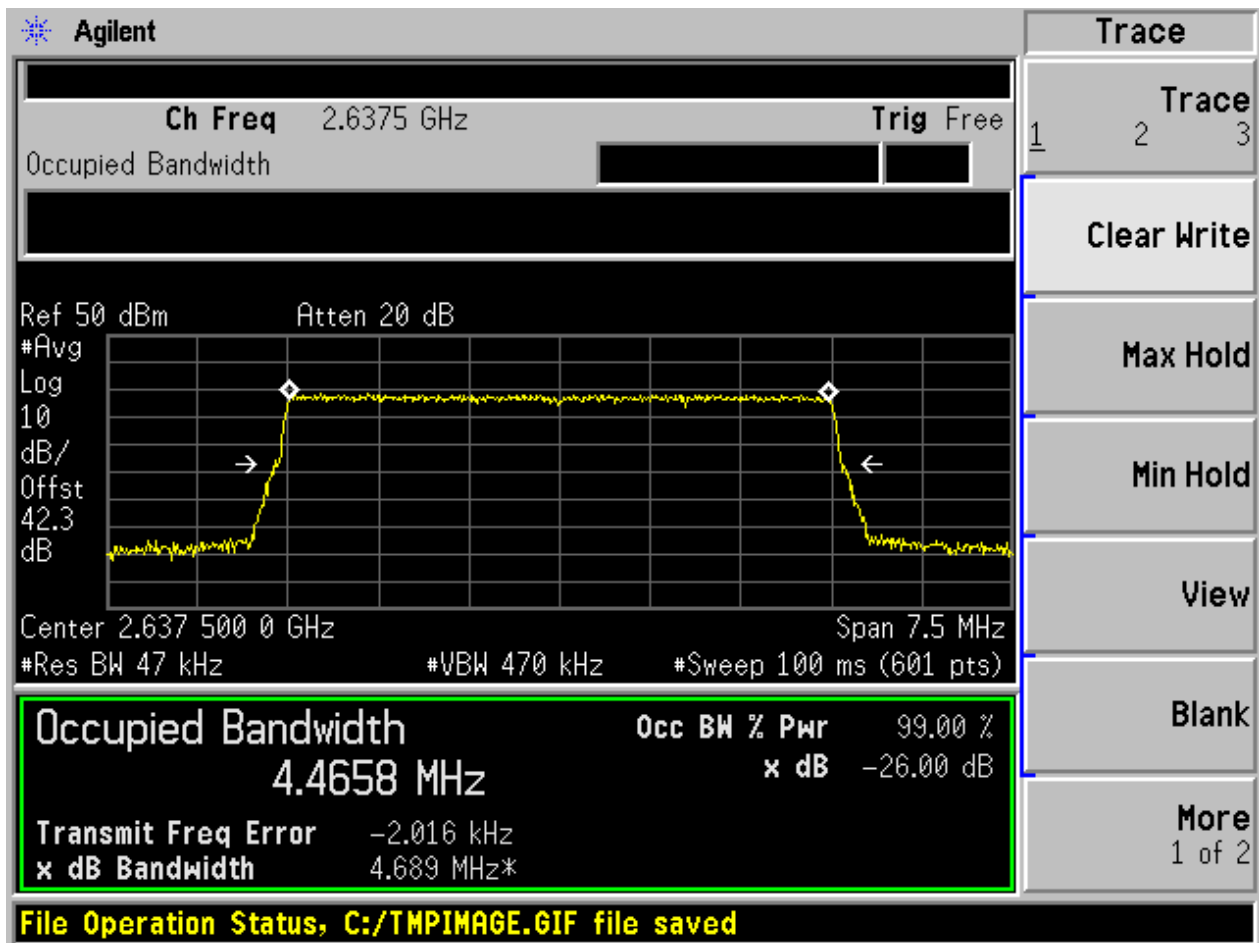
2.1.1.1 Ch. B



2.1.1.2 Ch. M

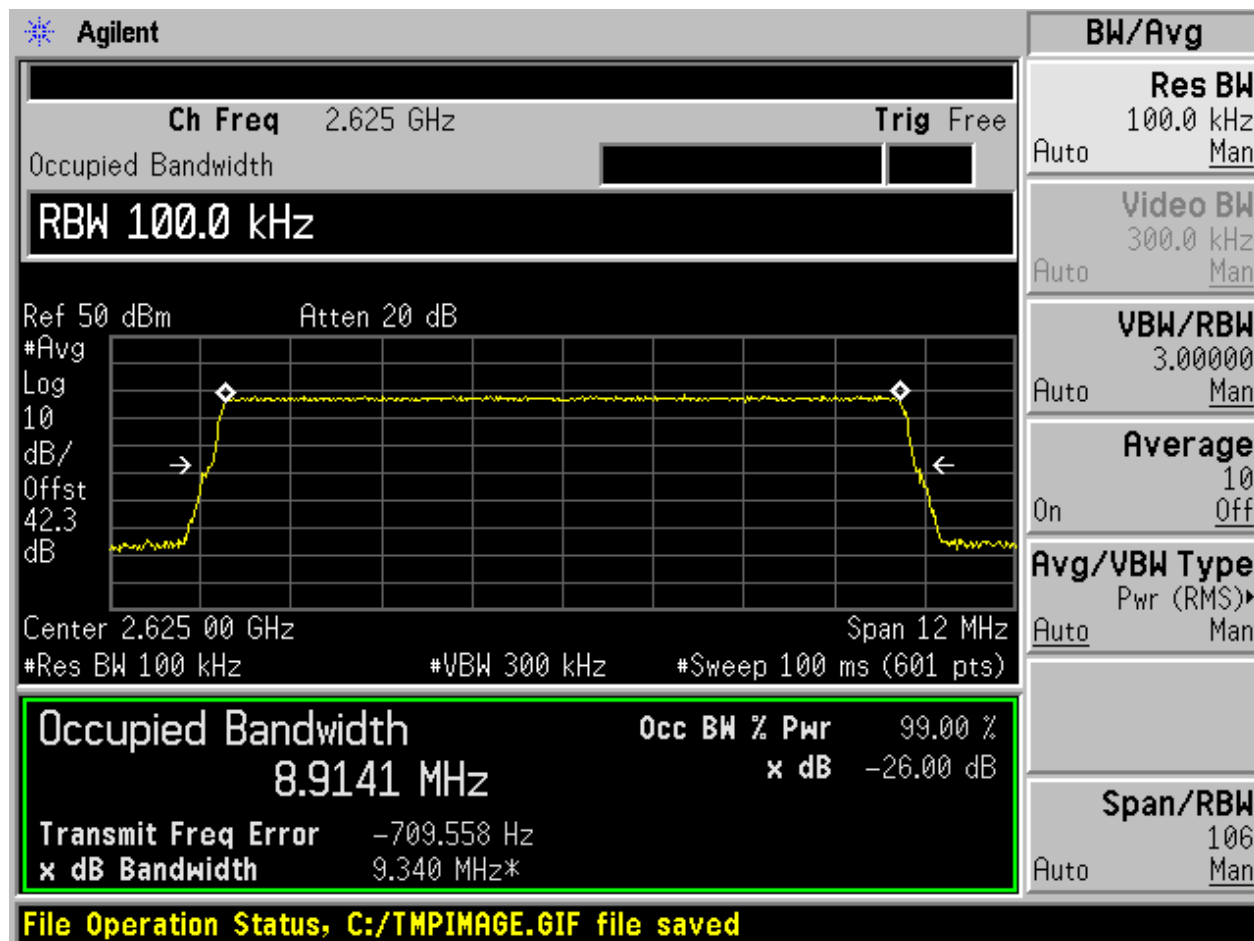


2.1.1.3 Ch. T

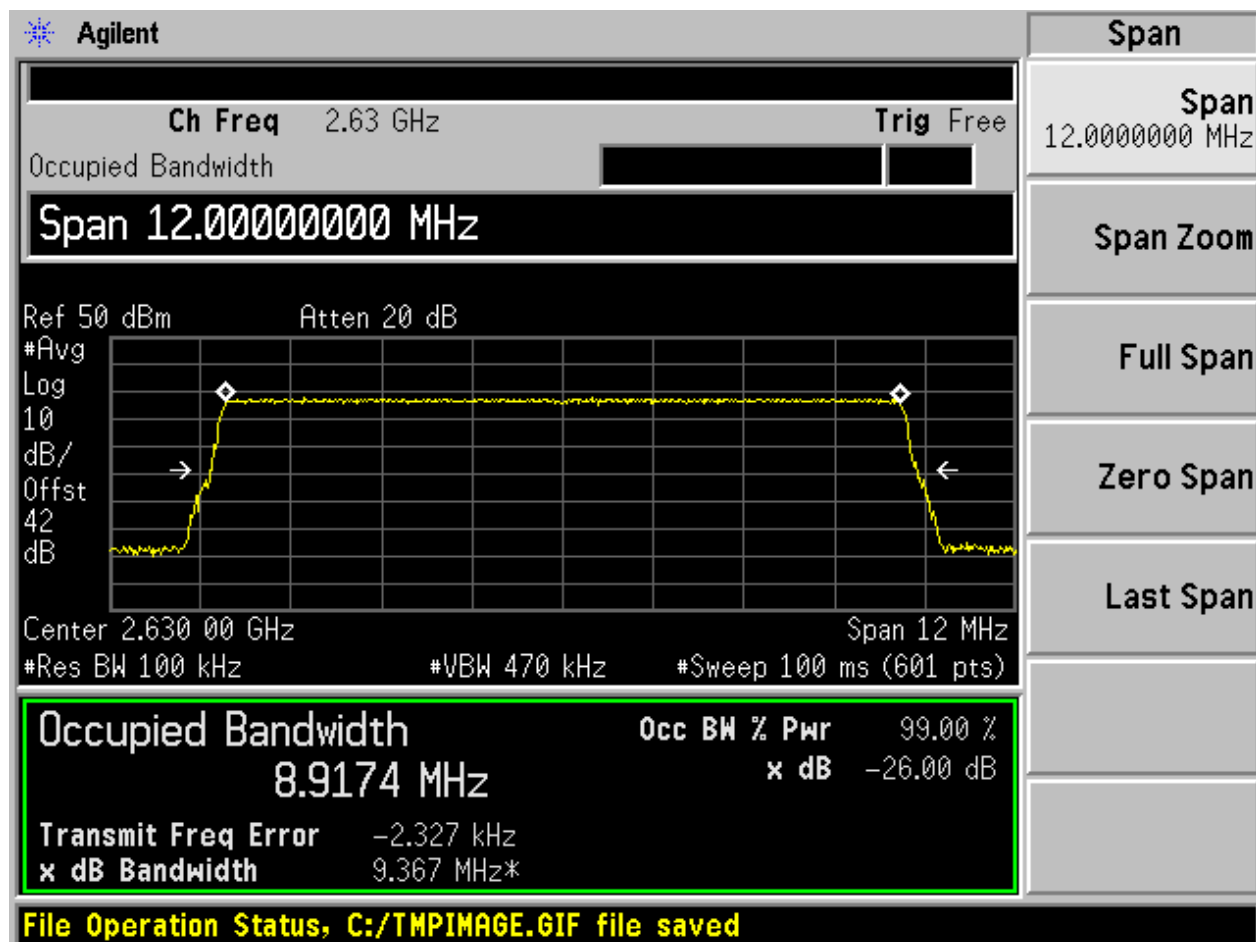


2.1.2 Carrier Conf. = 10M(40W)

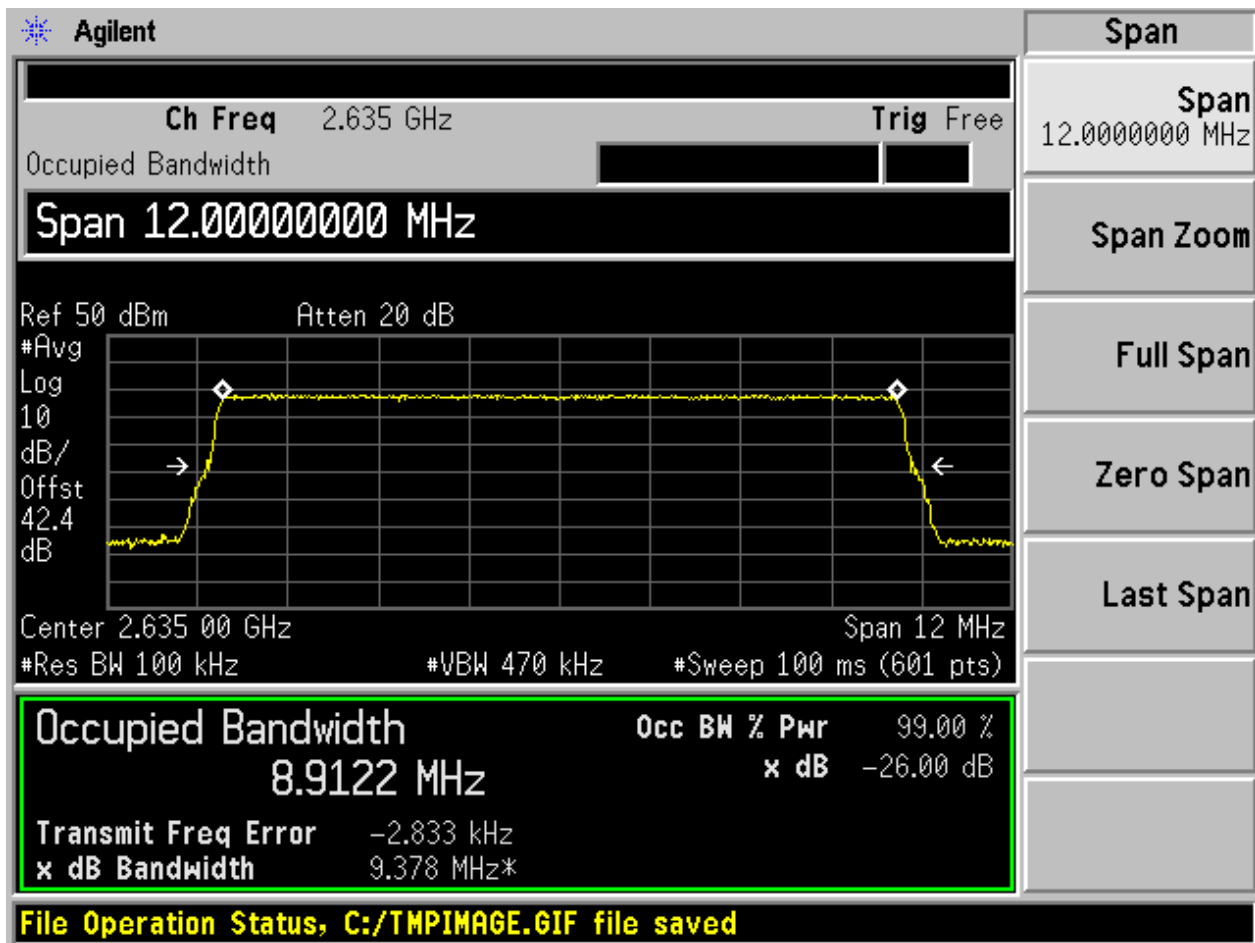
2.1.2.1 Ch. B



2.1.2.2 Ch. M

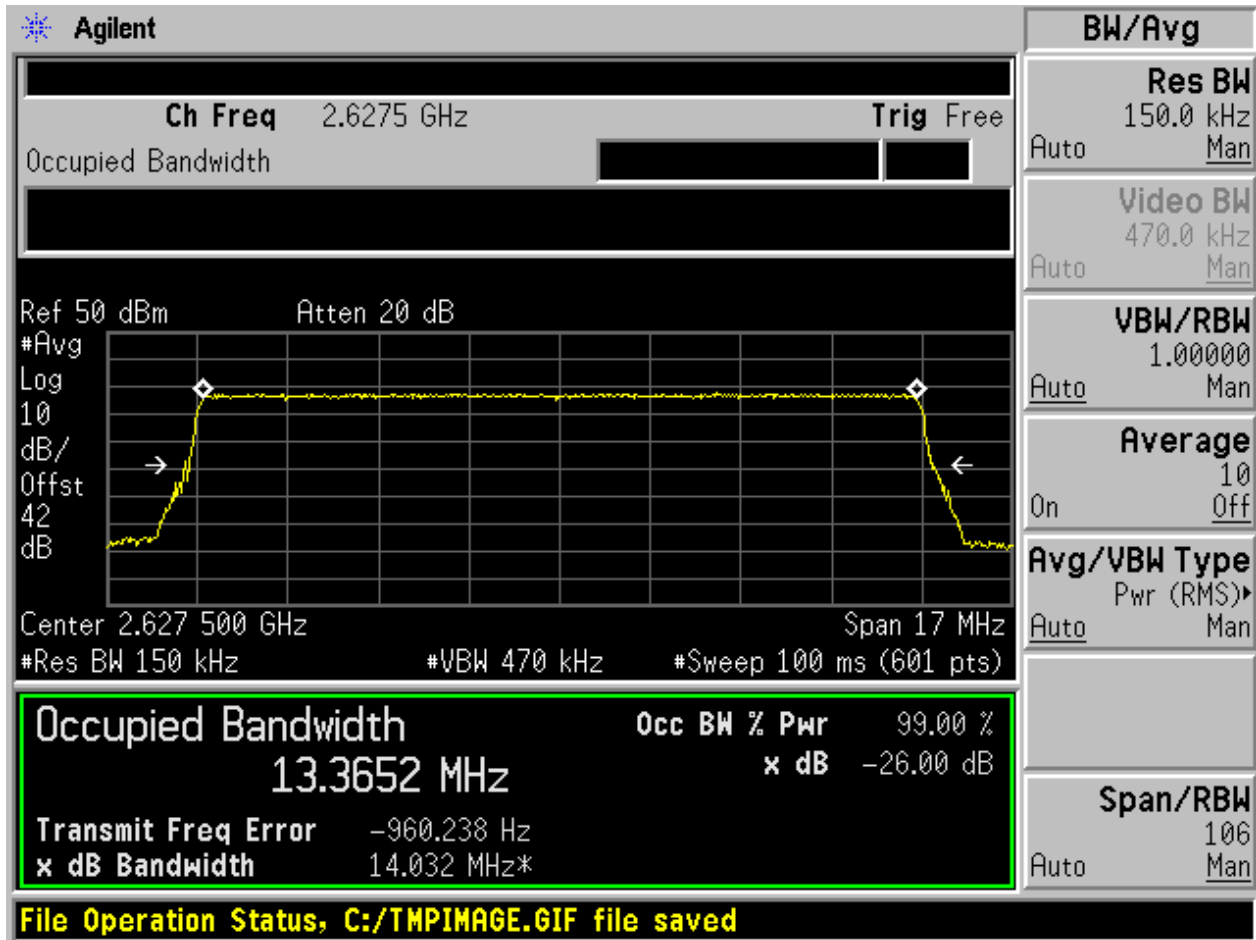


2.1.2.3 Ch. T

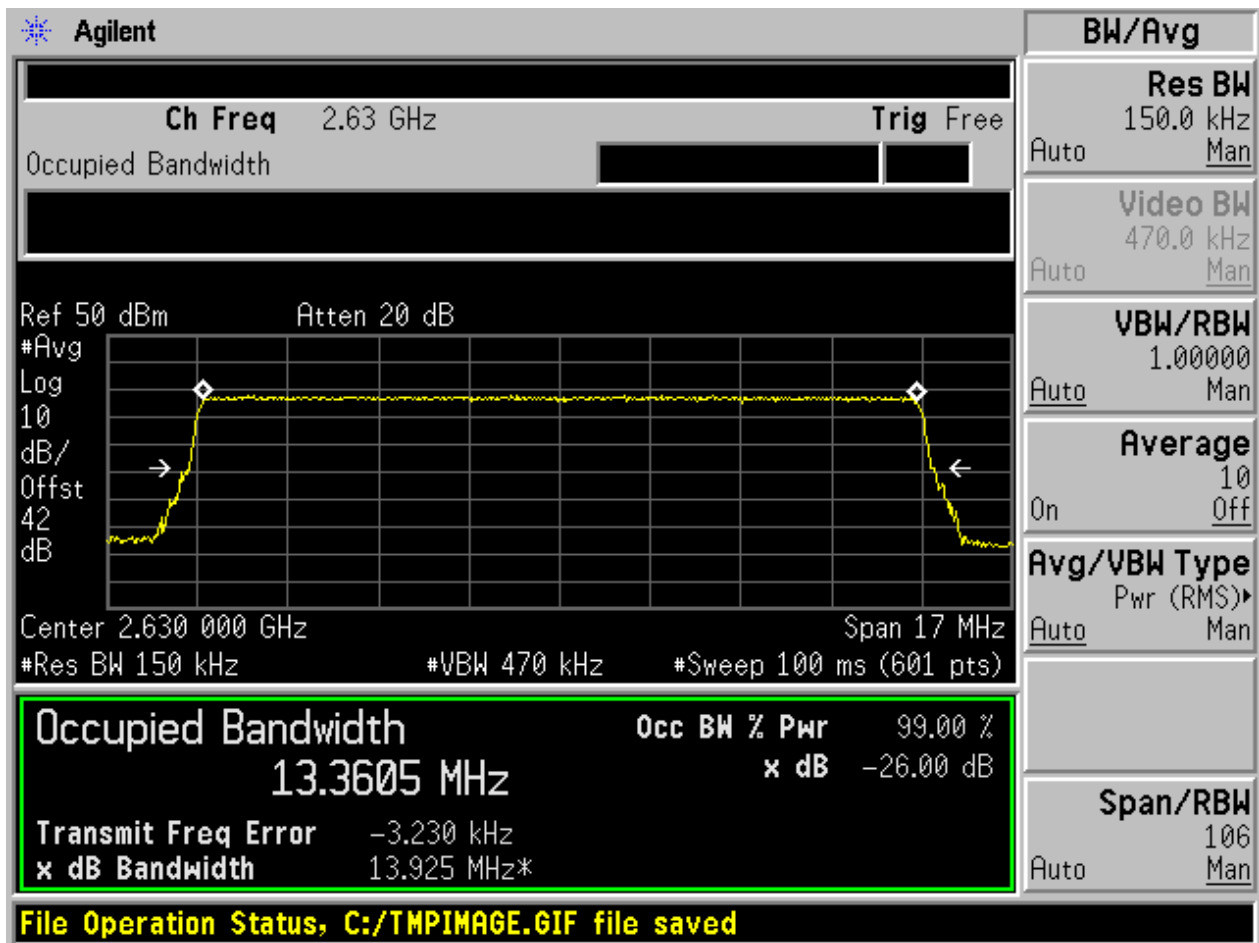


2.1.3 Carrier Conf. = 15M(40W)

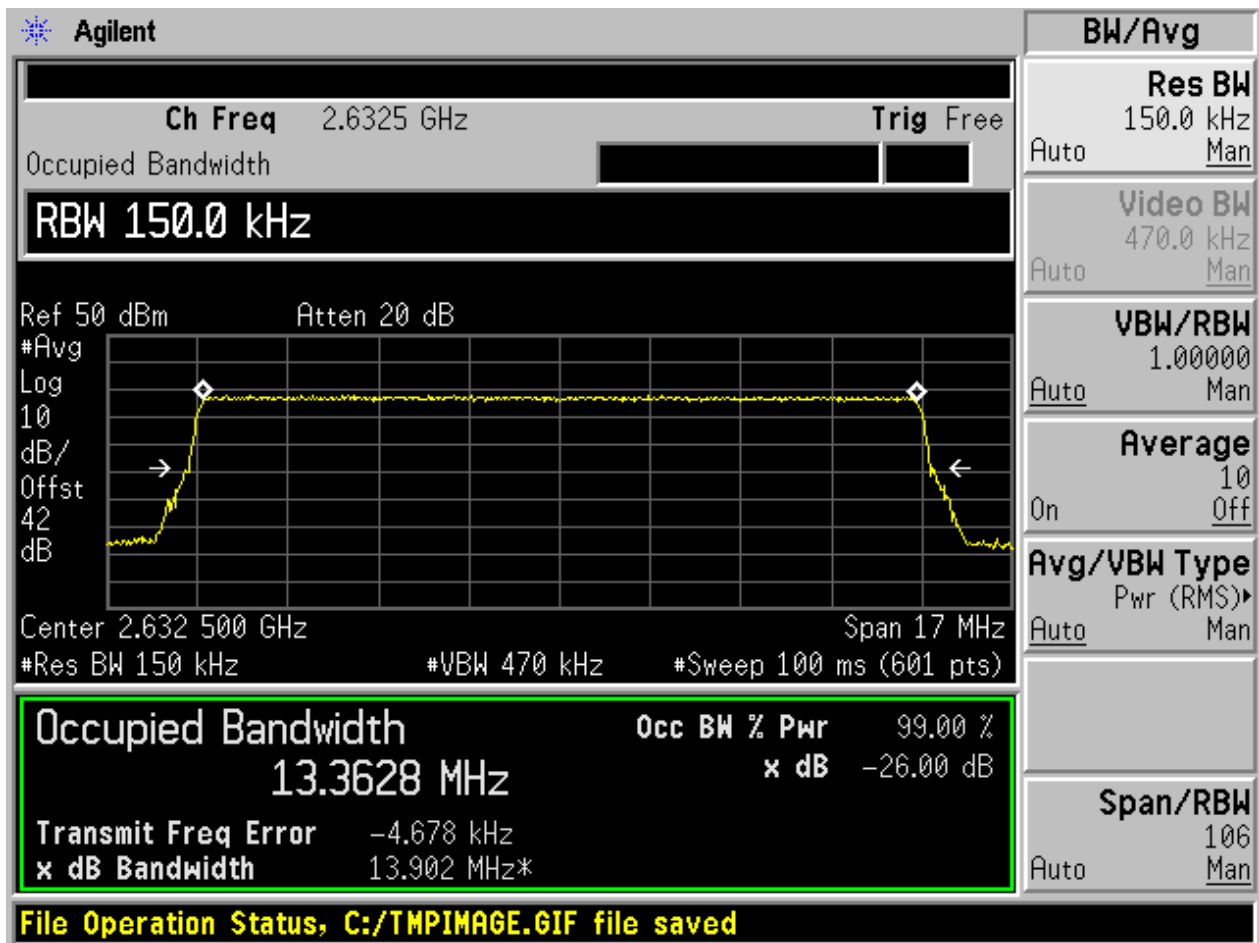
2.1.3.1 Ch. B



2.1.3.2 Ch. M

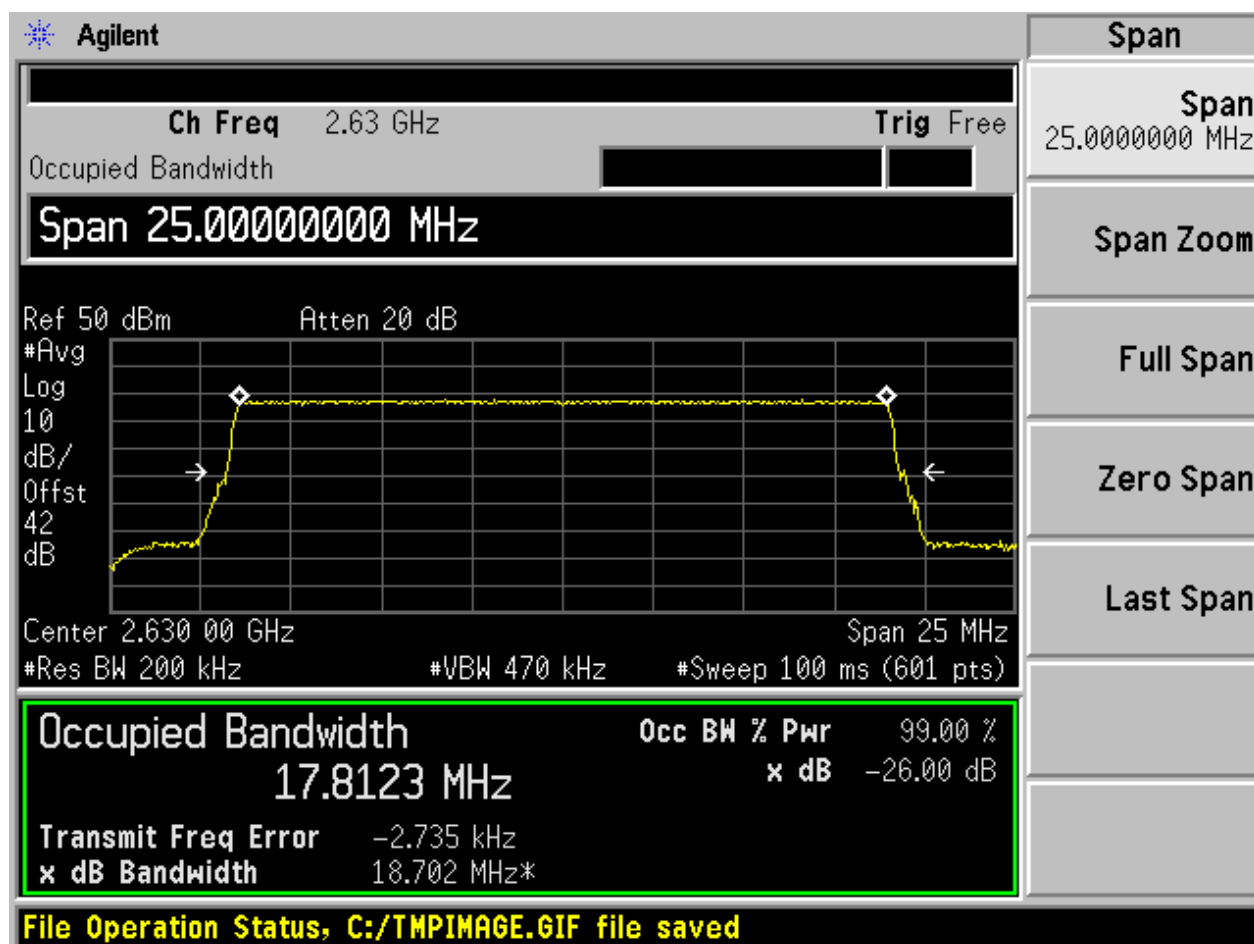


2.1.3.3 Ch. T



2.1.4 Carrier Conf. = 20M(40W)

2.1.4.1 Ch. B





2.1.4.2 Ch. M

= B



2.1.4.3 Ch. T

= B



Appendix D: Band Edges Compliance



1 Result Table

NOTE: The offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

FCC requirements:

Test Mode	Carrier Conf.	RF Ch.	Band Edges Emissions [dBm]	Verdict
E-TM 1.1	5M(40W)	B	-16.76	Pass
		T	-15.60	Pass
	20M(40W)	B	-23.74	Pass
		T	-23.00	Pass
E-TM 1.2	5M(40W)	B	-15.85	Pass
		T	-14.31	Pass
	20M(40W)	B	-23.28	Pass
		T	-22.85	Pass

IC requirements:

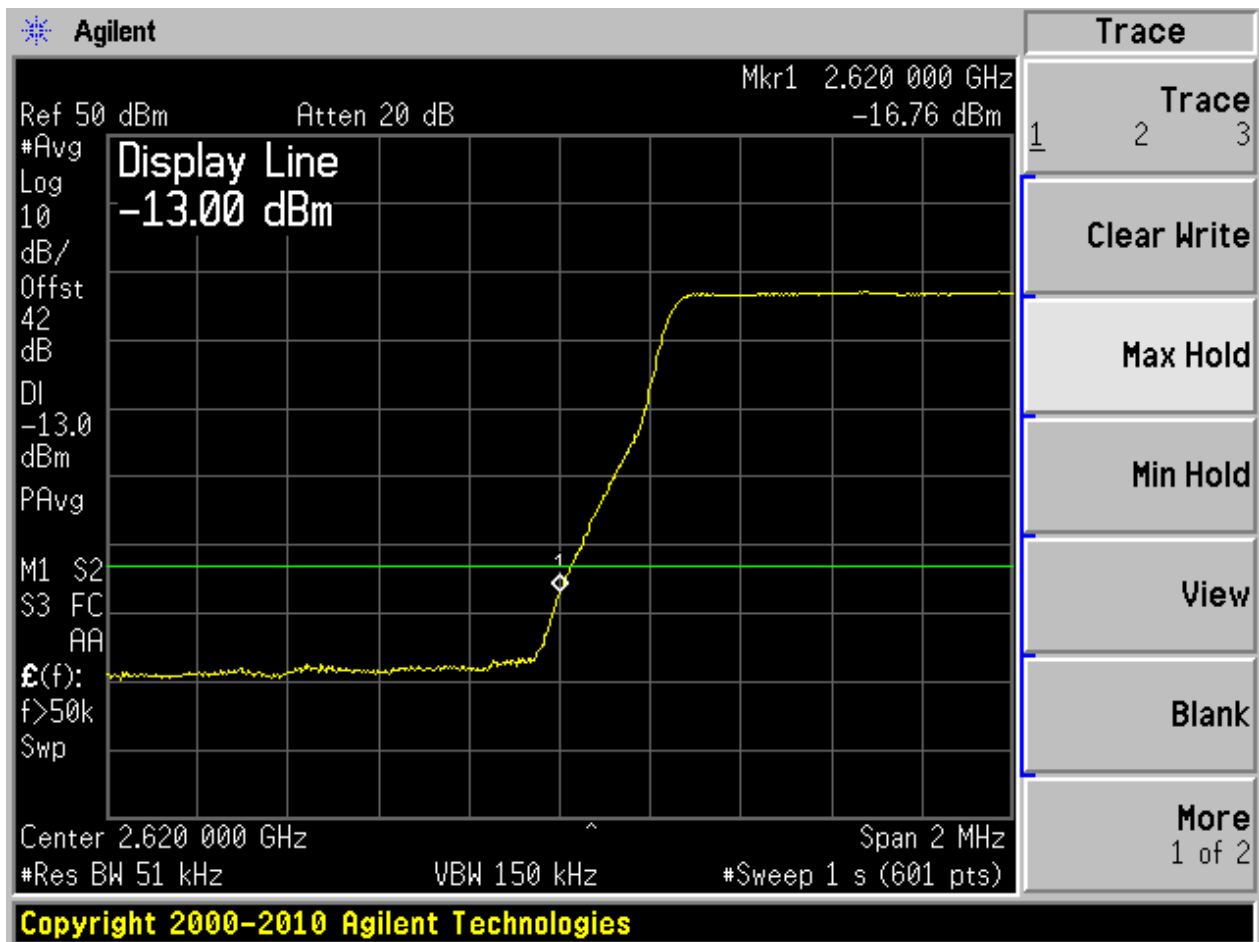
Test Mode	Carrier Conf.	RF Ch.	Band Edges Emissions [dBm]	Verdict
E-TM 1.1	5M(40W)	B	-20.24	Pass
		M	-18.10	Pass
		T	-17.71	Pass
	20M(40W)	B	-23.00	Pass
		M	= B	Pass
		T	= B	Pass
E-TM 1.2	5M(40W)	B	-17.67	Pass
		M	-18.47	Pass
		T	-17.69	Pass
	20M(40W)	B	-22.85	Pass
		M	= B	Pass
		T	= B	Pass

2 Test Plot (FCC requirements)

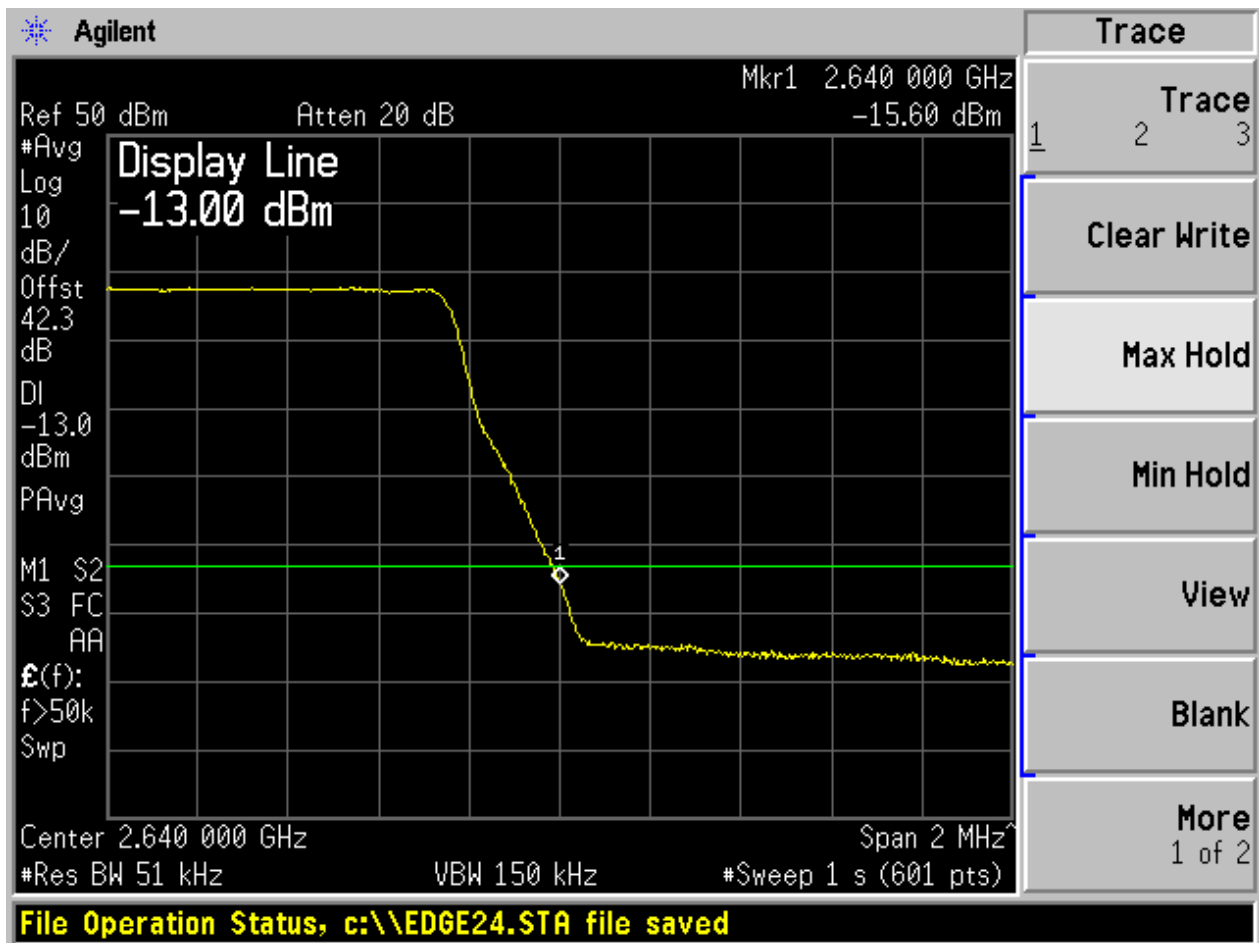
2.1 Test Mode = E-TM 1.1

2.1.1 Carrier Conf. = 5M(40W)

2.1.1.1 Ch. B

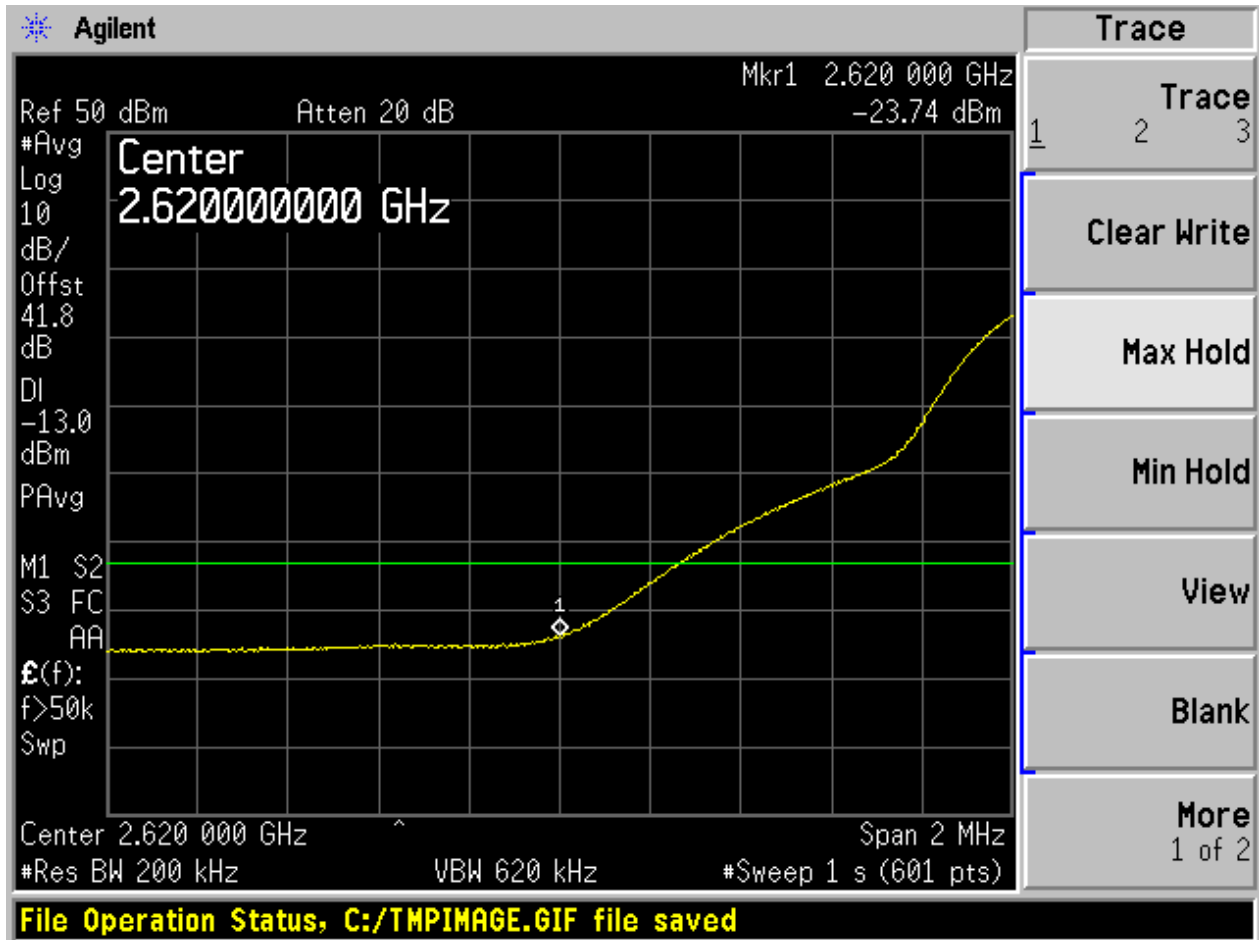


2.1.1.2 Ch. T

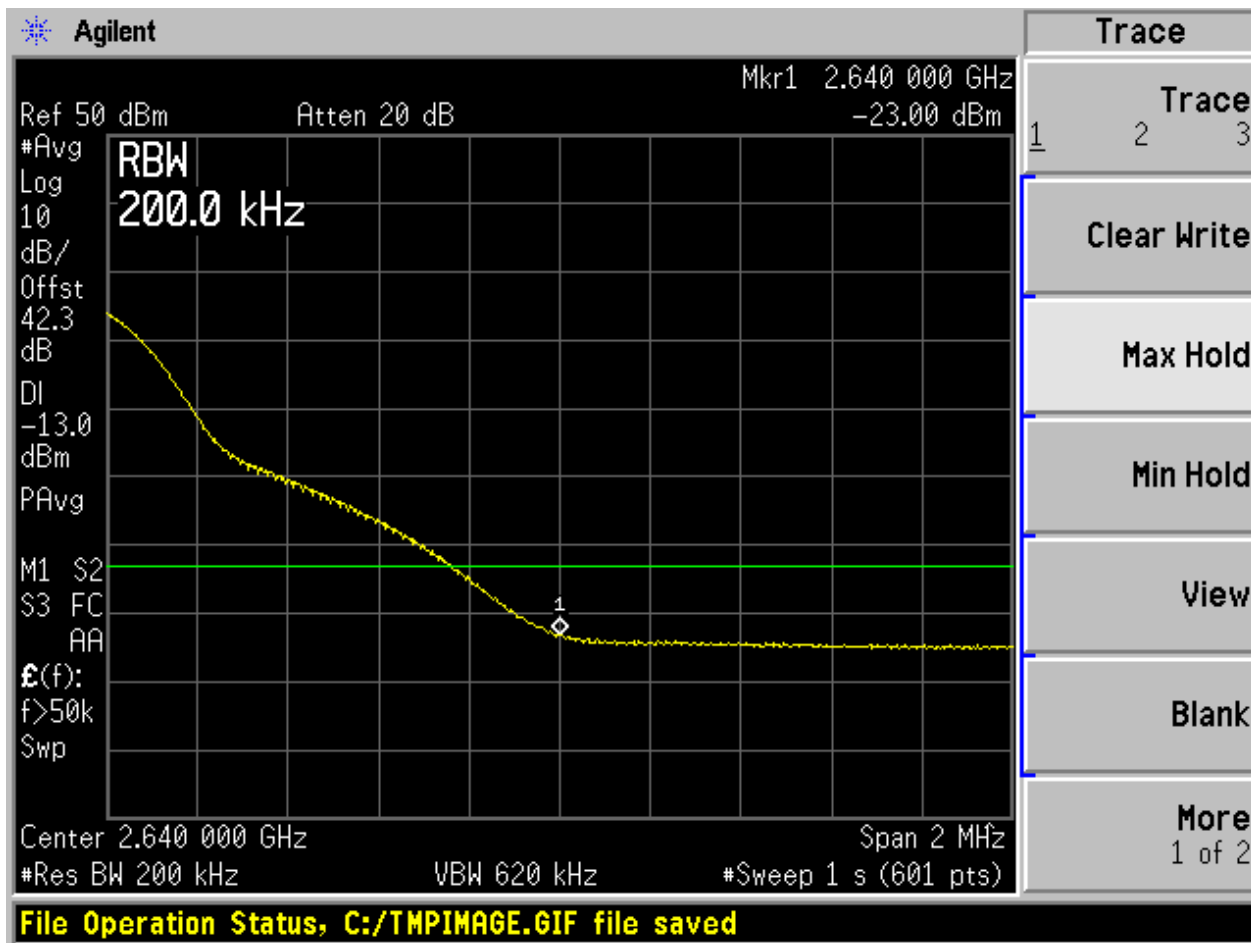


2.1.2 Carrier Conf. = 20M(40W)

2.1.2.1 Ch. B



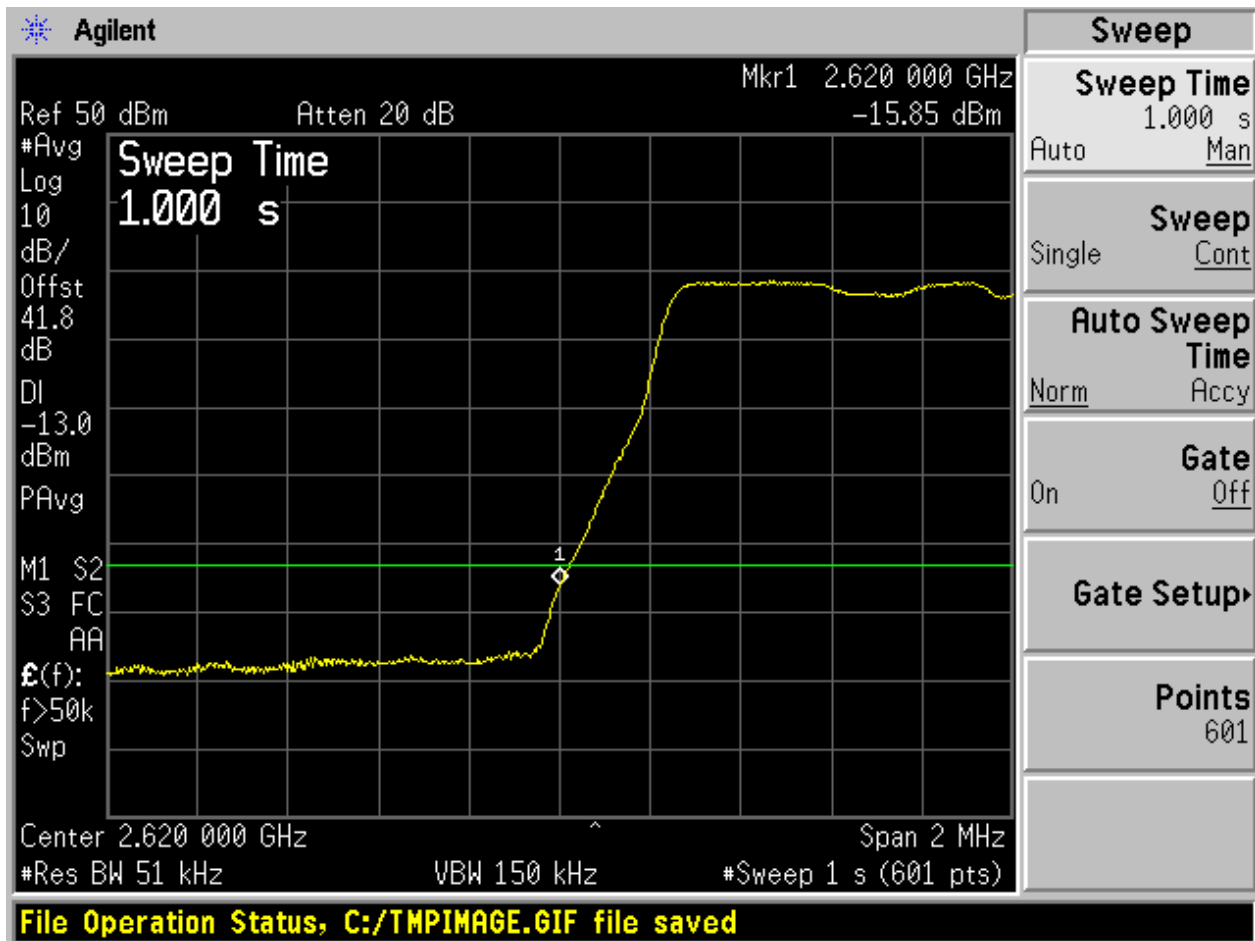
2.1.2.2 Ch. T



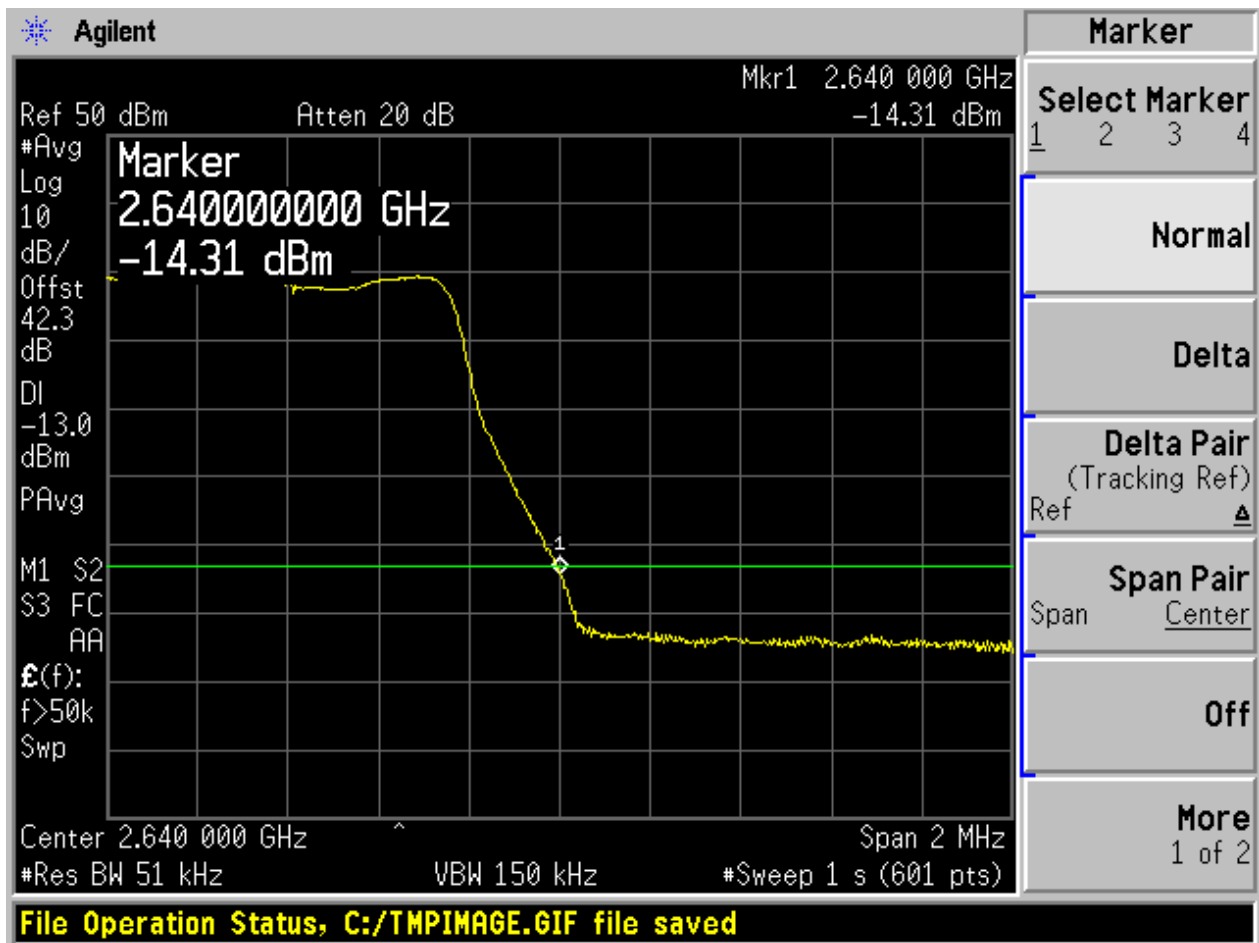
2.2 Test Mode = E-TM 1.2

2.2.1 Carrier Conf. = 5M(40W)

2.2.1.1 Ch. B

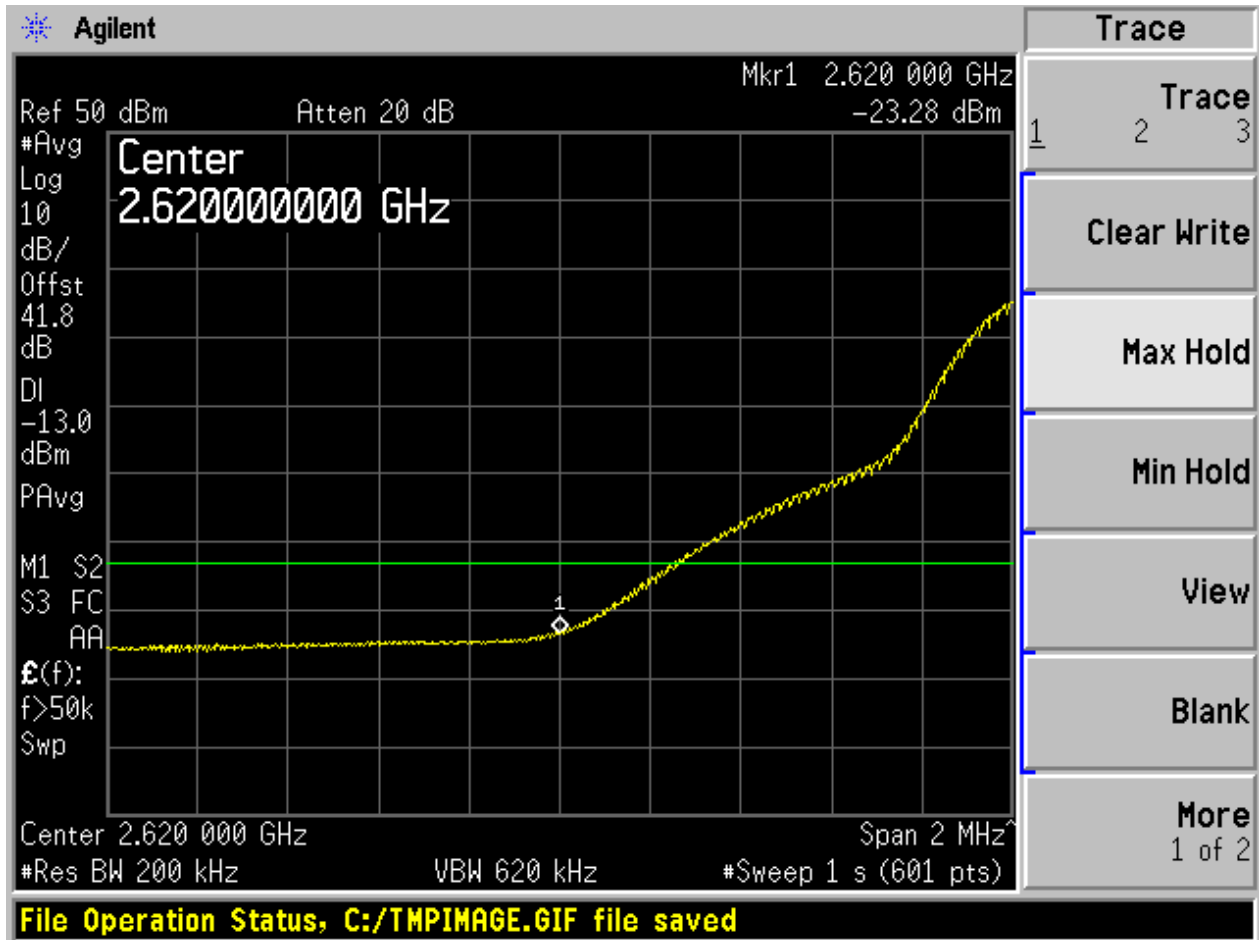


2.2.1.2 Ch. T

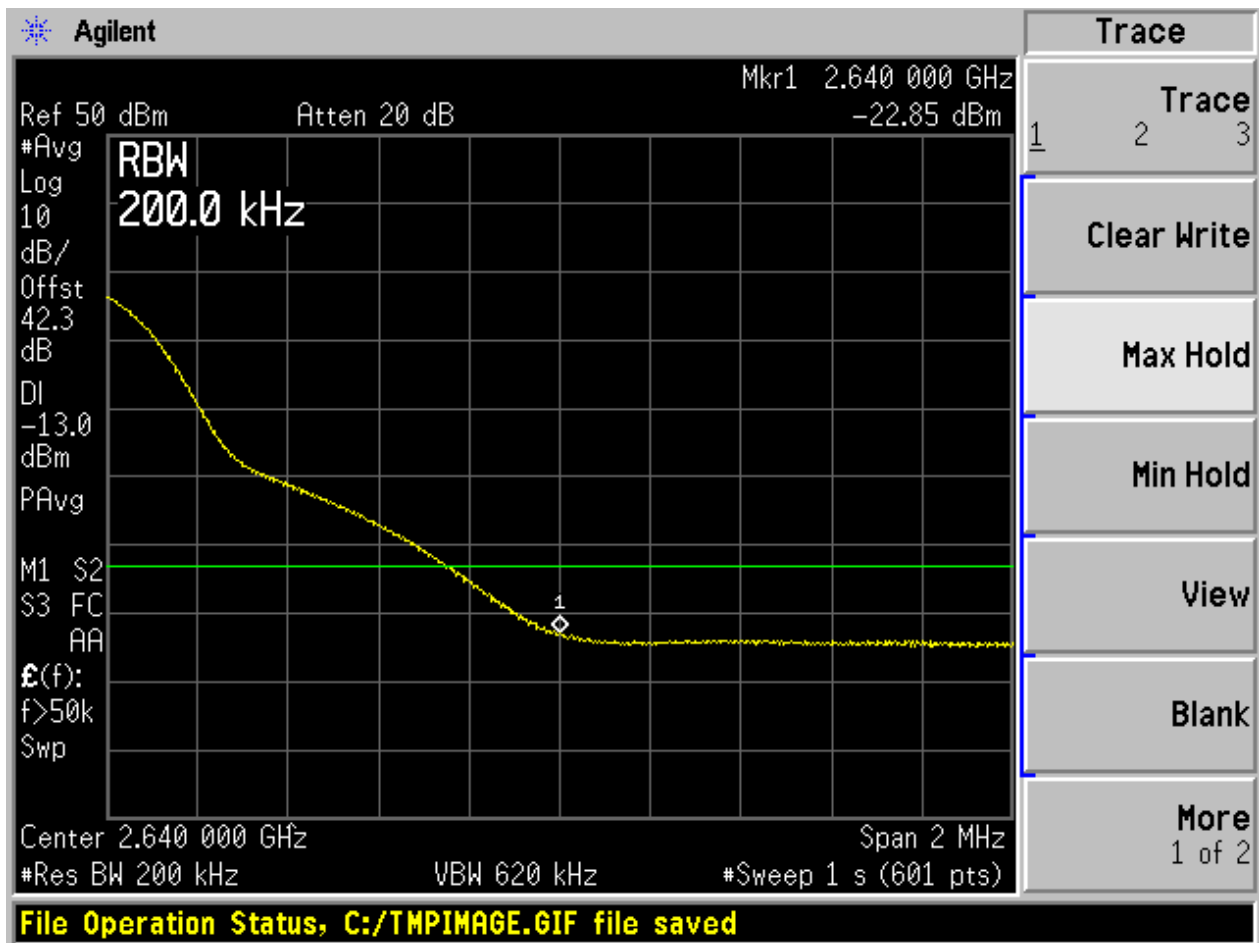


2.2.2 Carrier Conf. = 20M(40W)

2.2.2.1 Ch. B



2.2.2.2 Ch. T

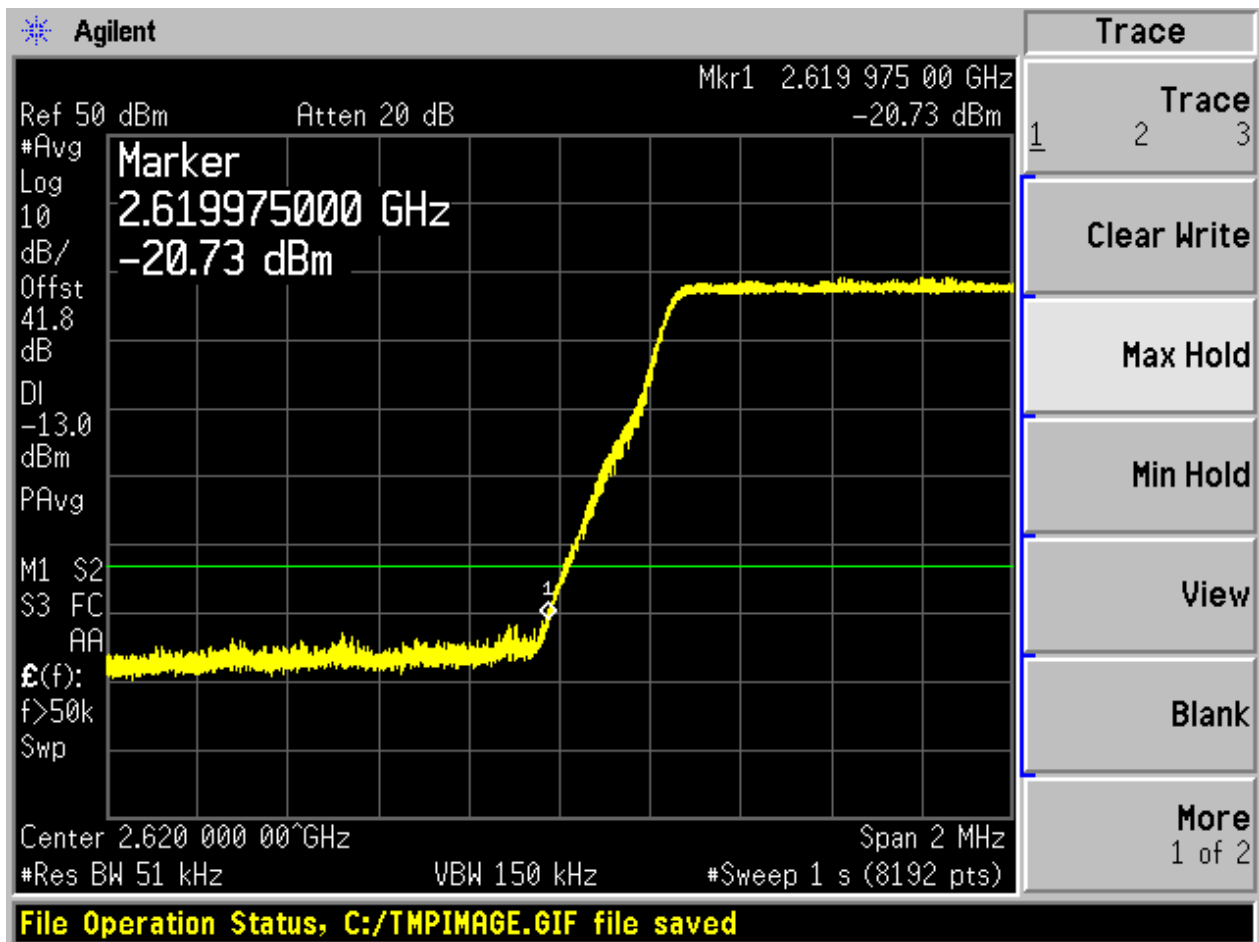


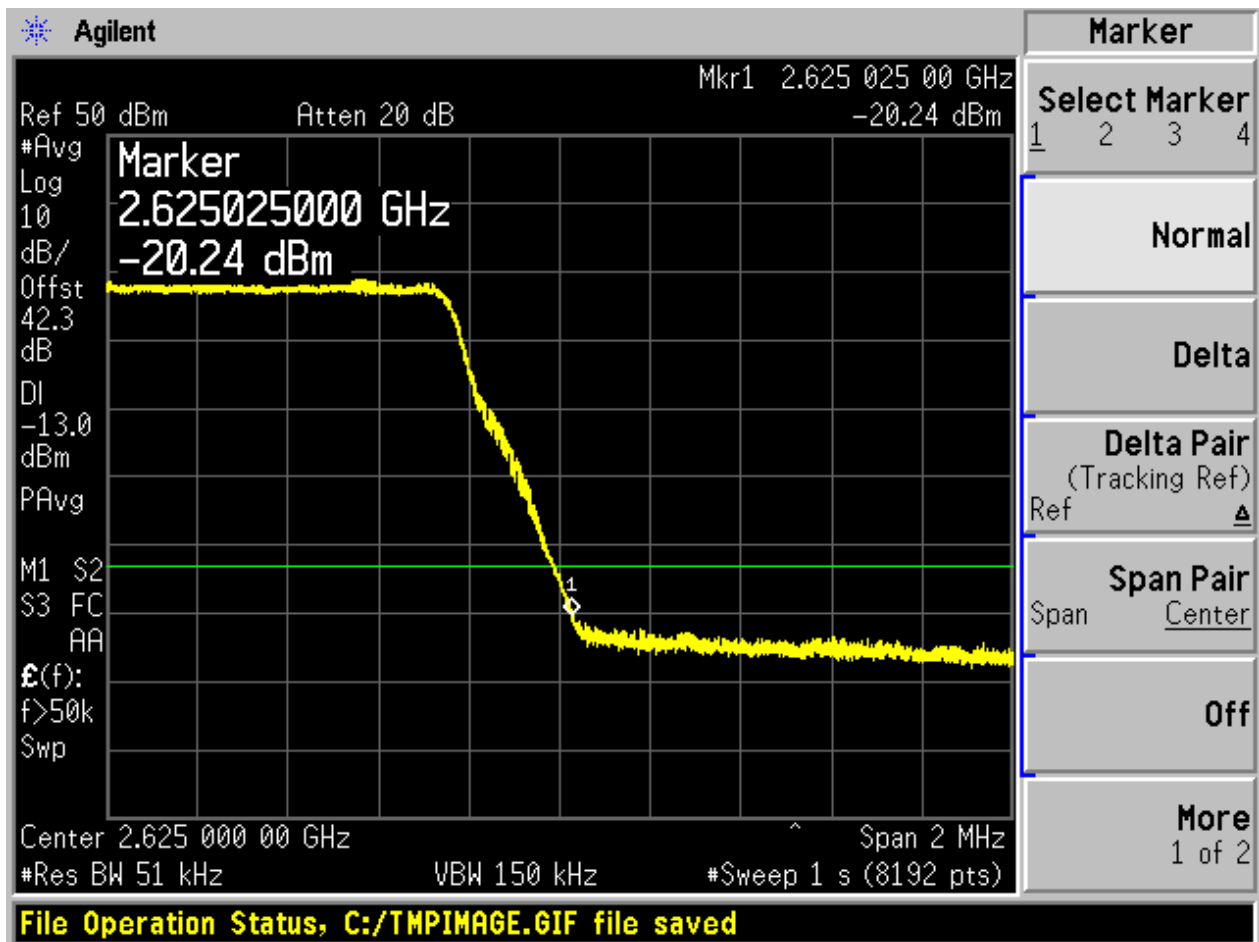
3 Test Plot (IC requirements)

3.1 Test Mode = E-TM 1.1

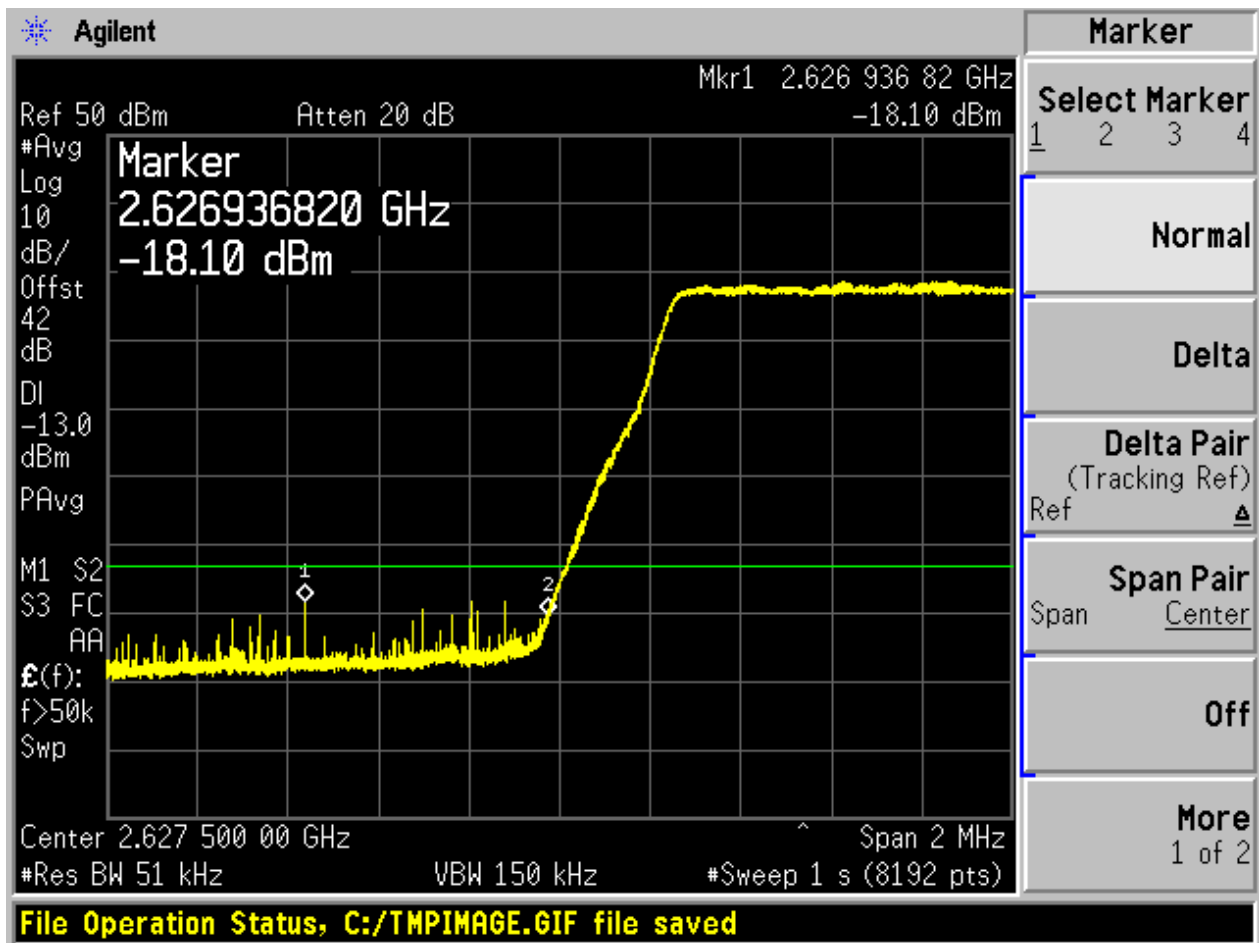
3.1.1 Carrier Conf. = 5M(40W)

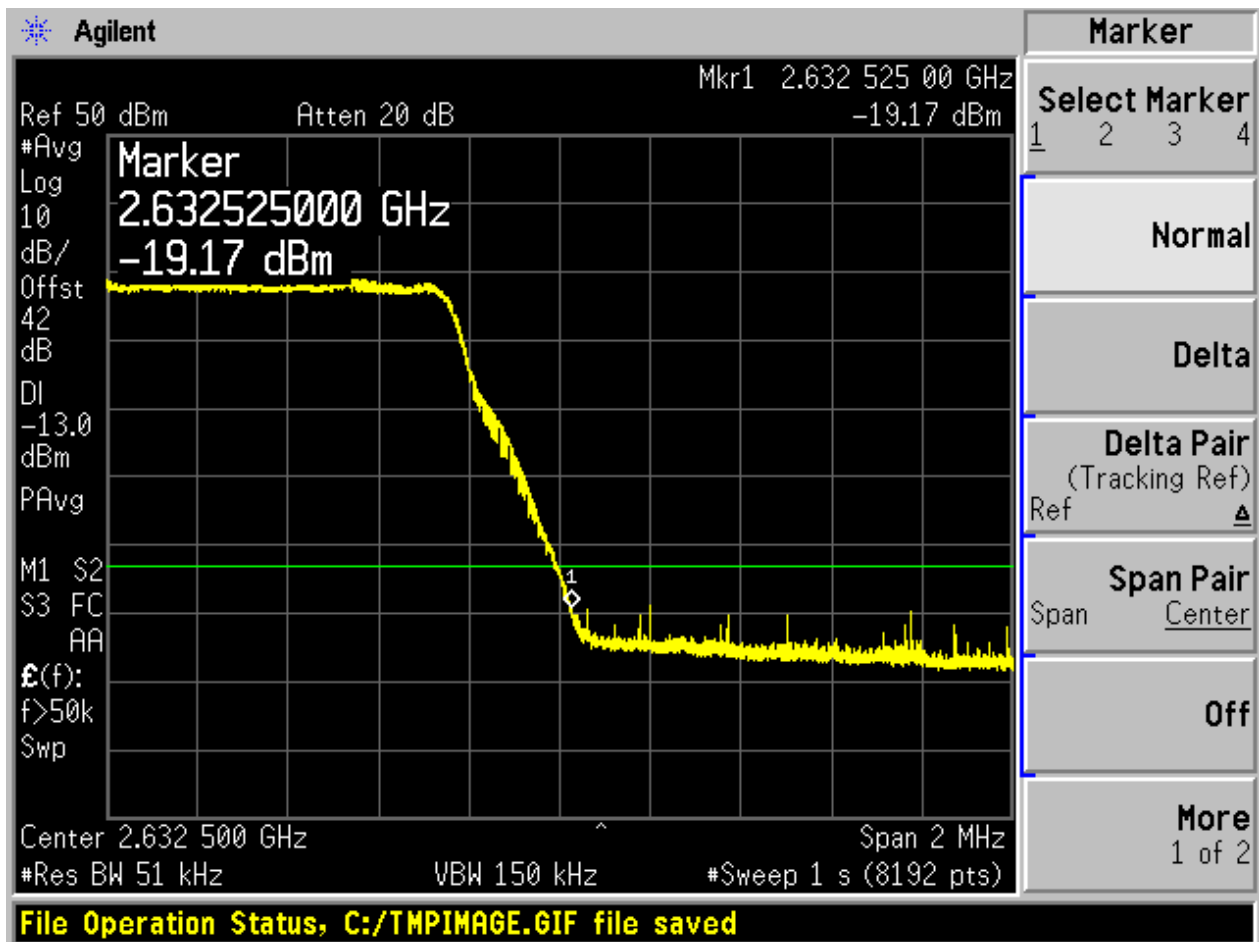
3.1.1.1 Ch. B



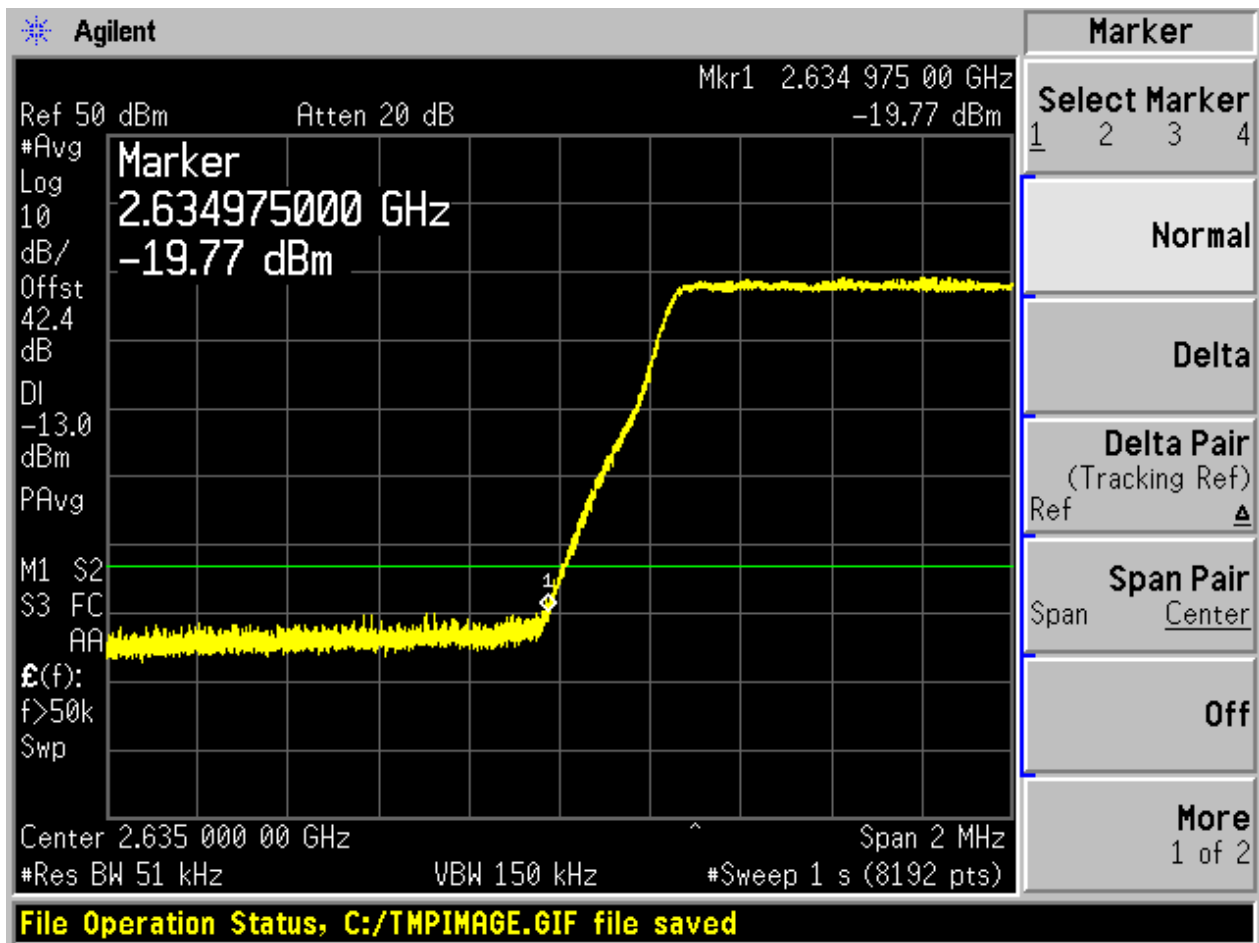


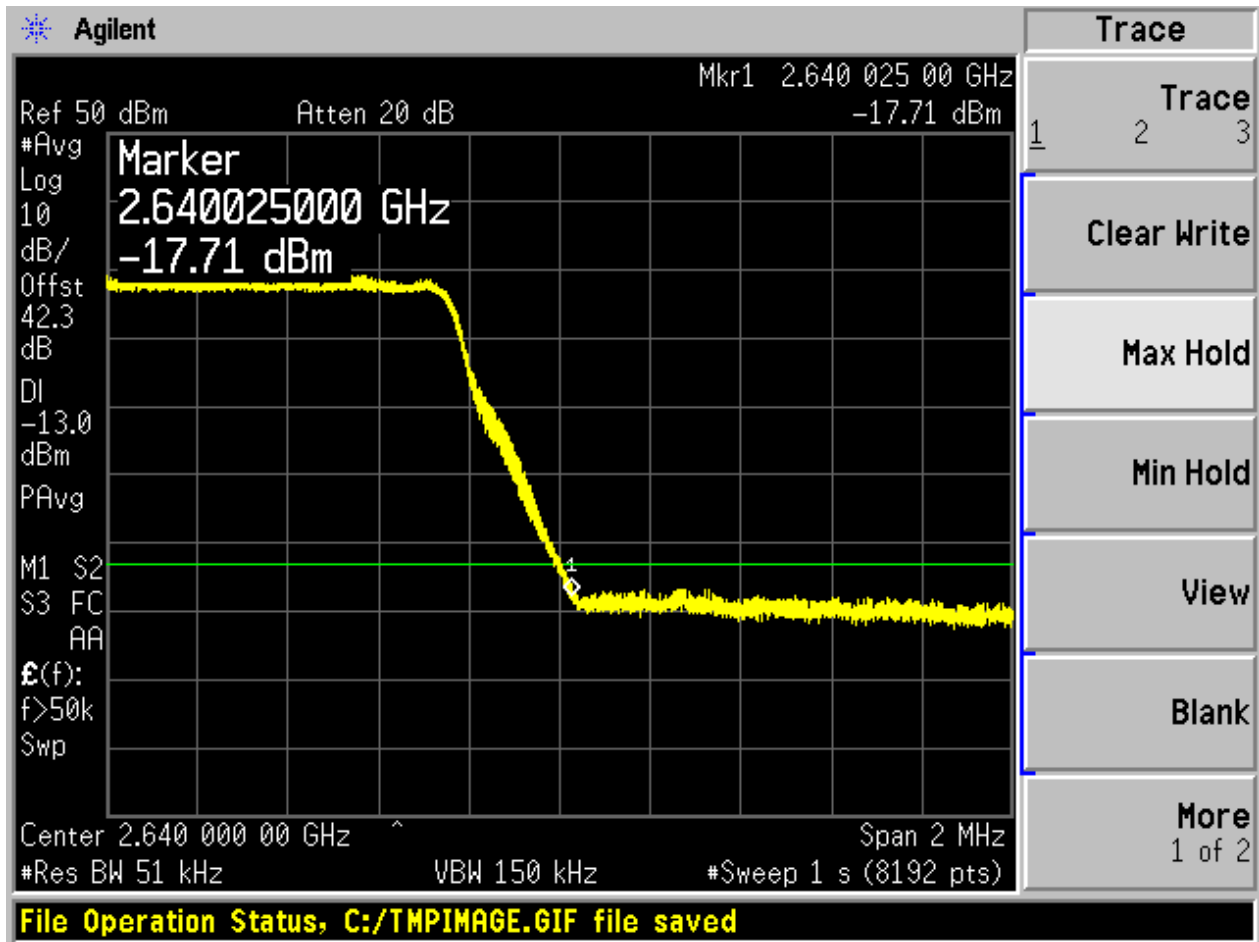
3.1.1.2 Ch. M





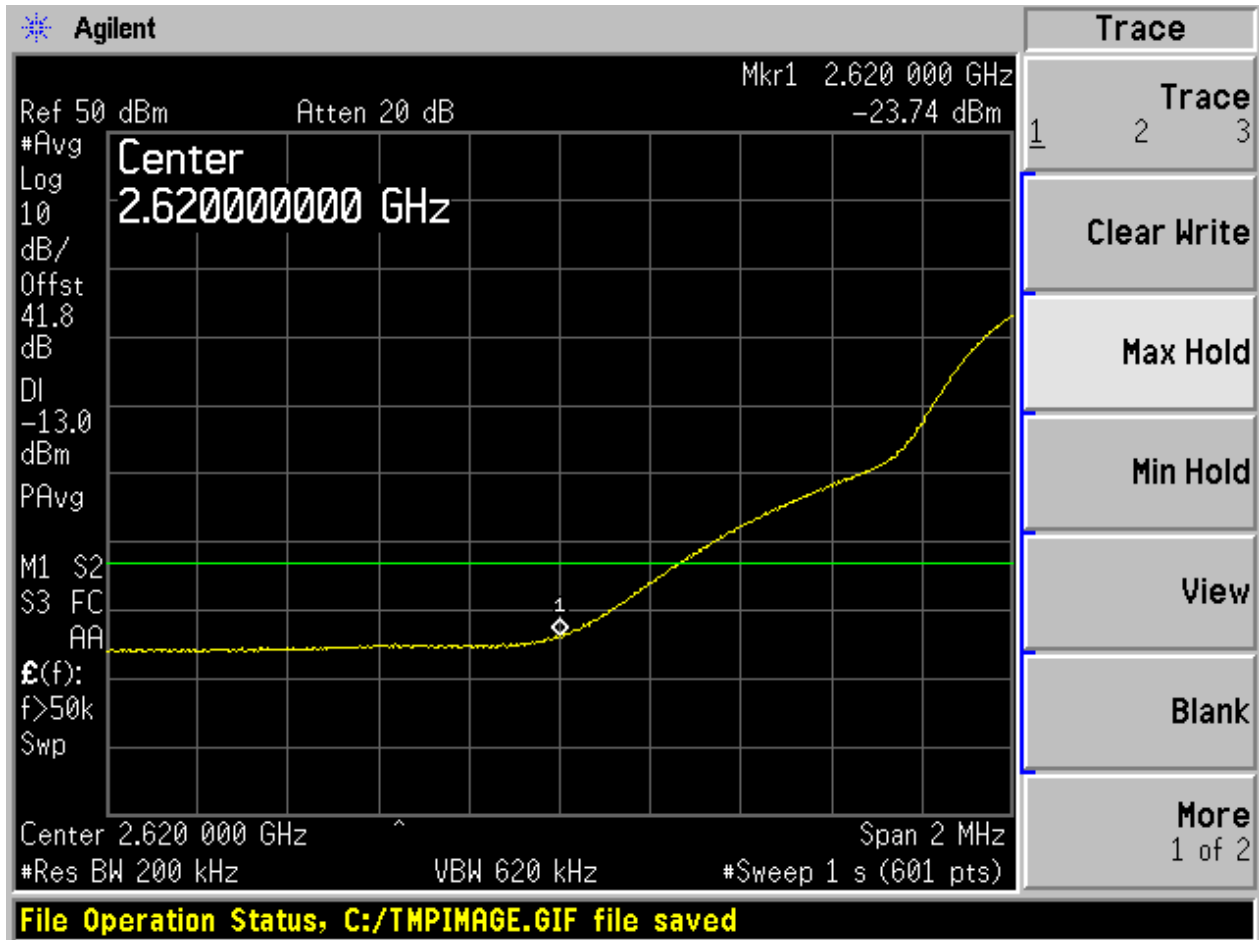
3.1.1.3 Ch. T

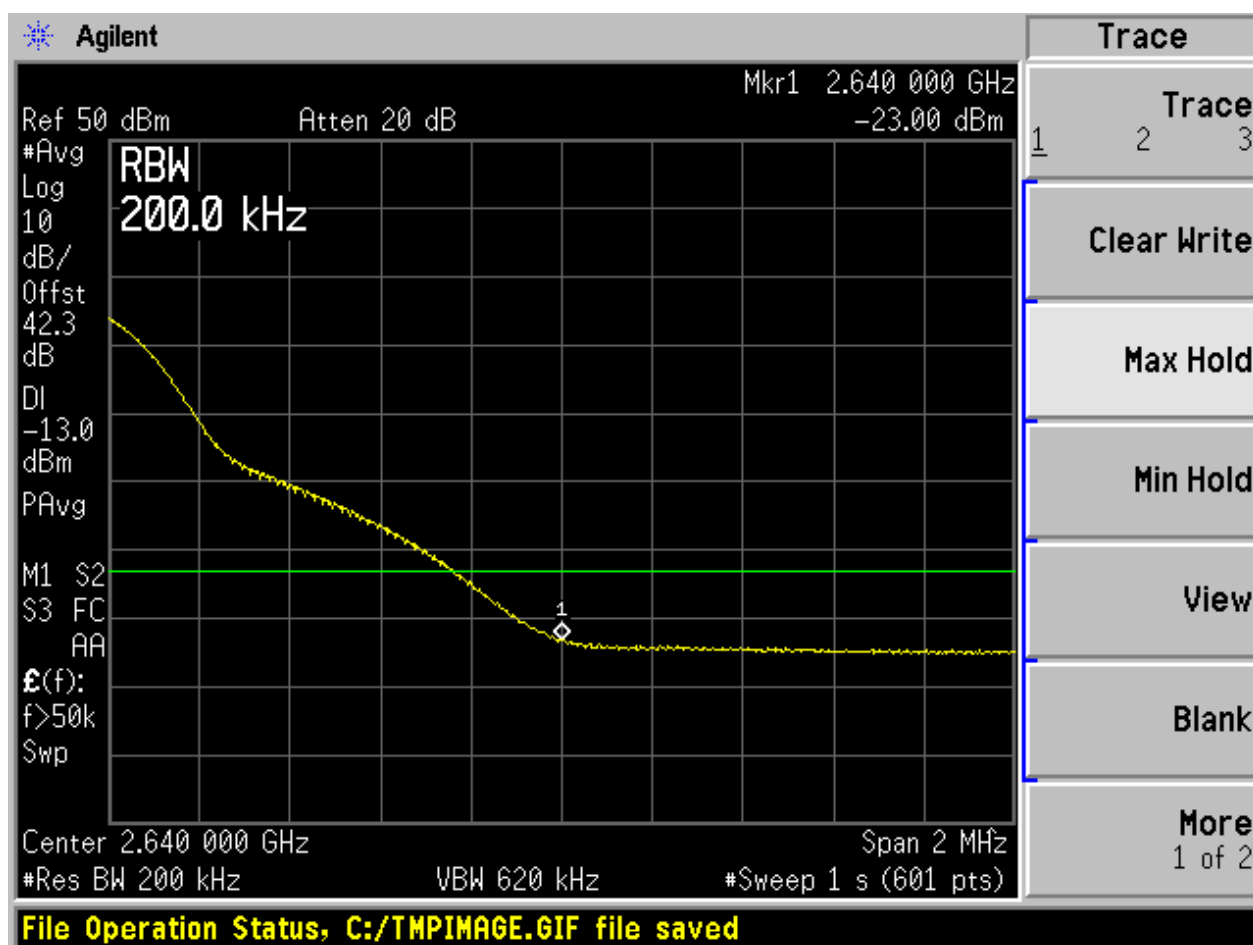




3.1.2 Carrier Conf. = 20M(40W)

3.1.2.1 Ch. B







3.1.2.2 Ch. M

= B



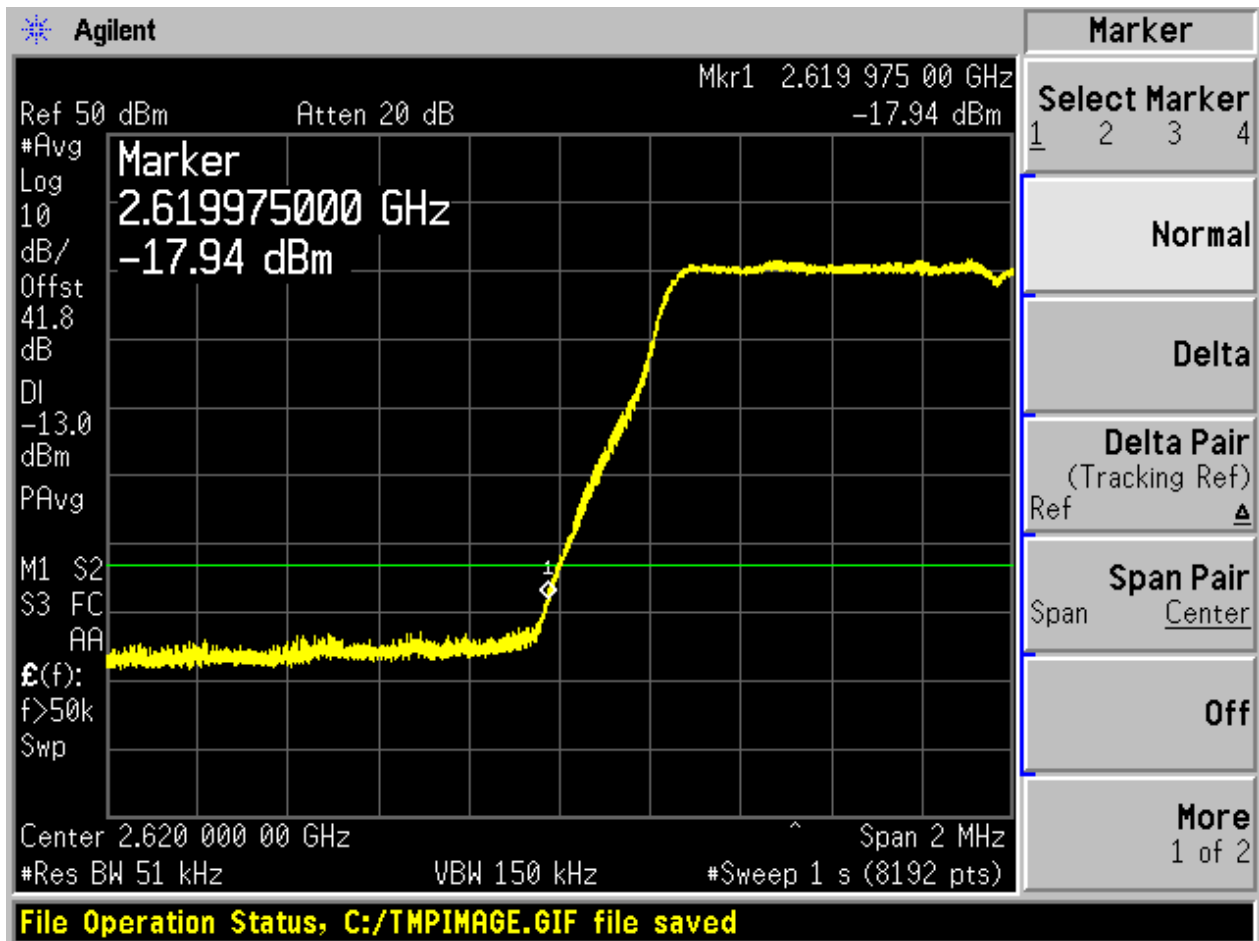
3.1.2.3 Ch. T

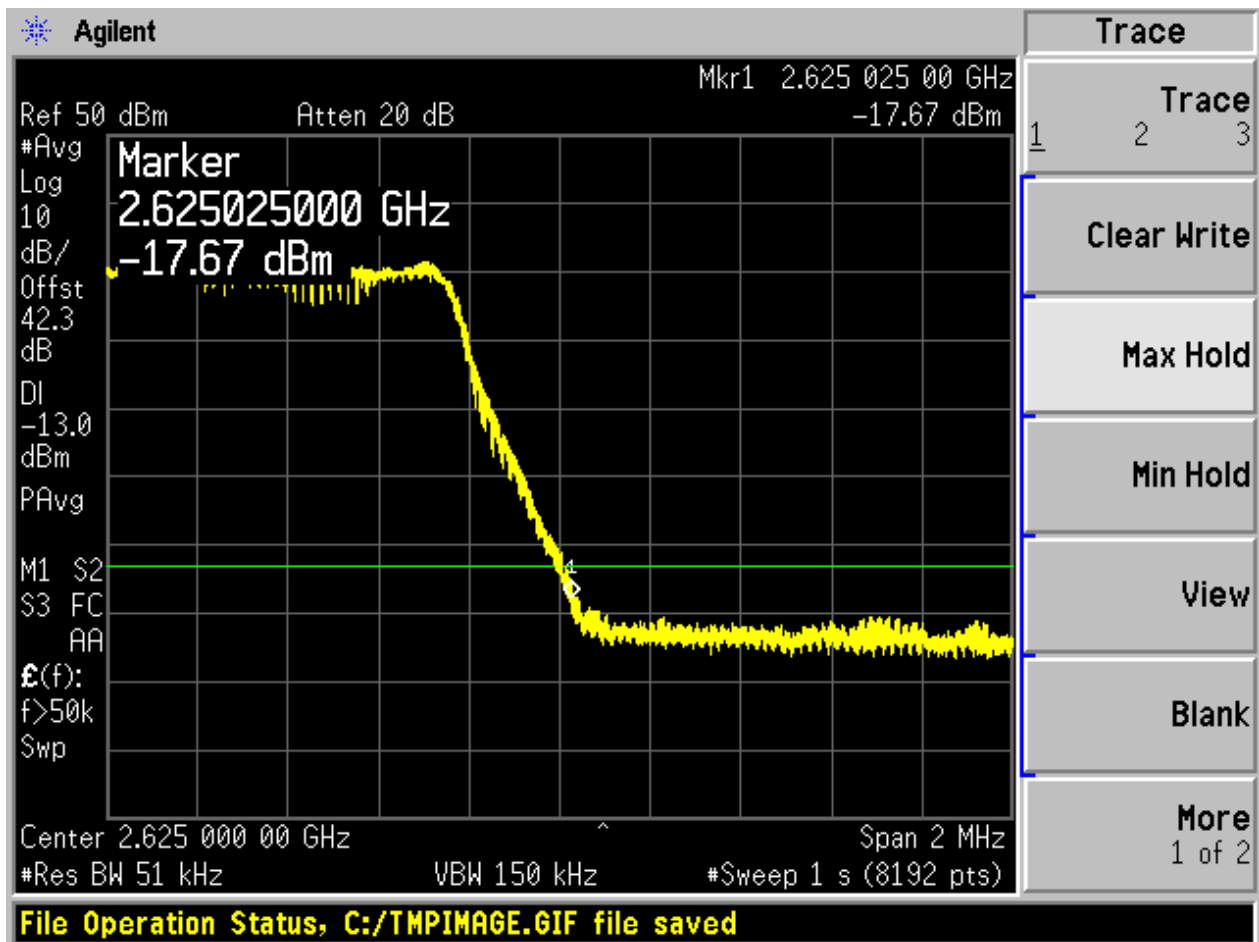
= B

3.2 Test Mode = E-TM 1.2

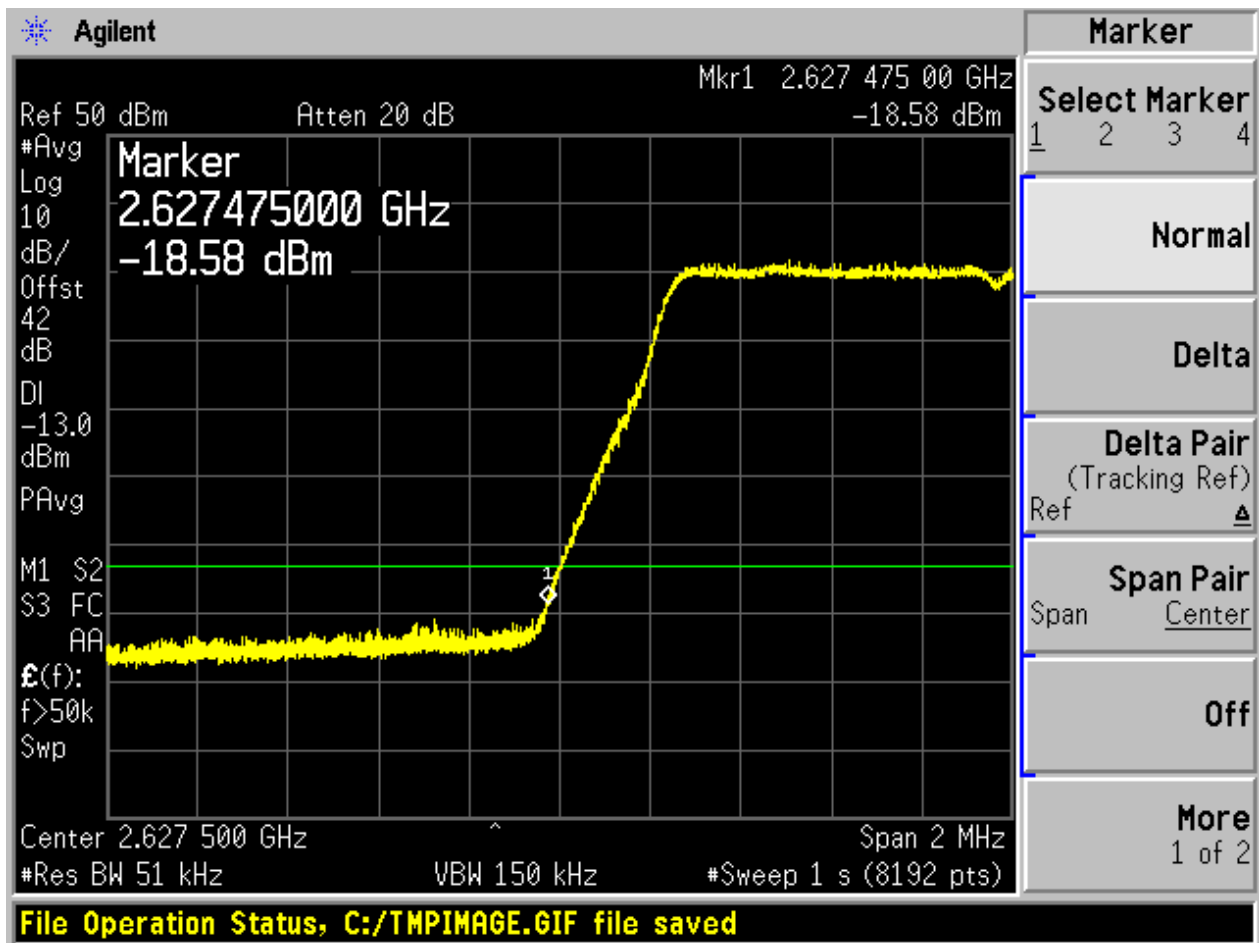
3.2.1 Carrier Conf. = 5M(40W)

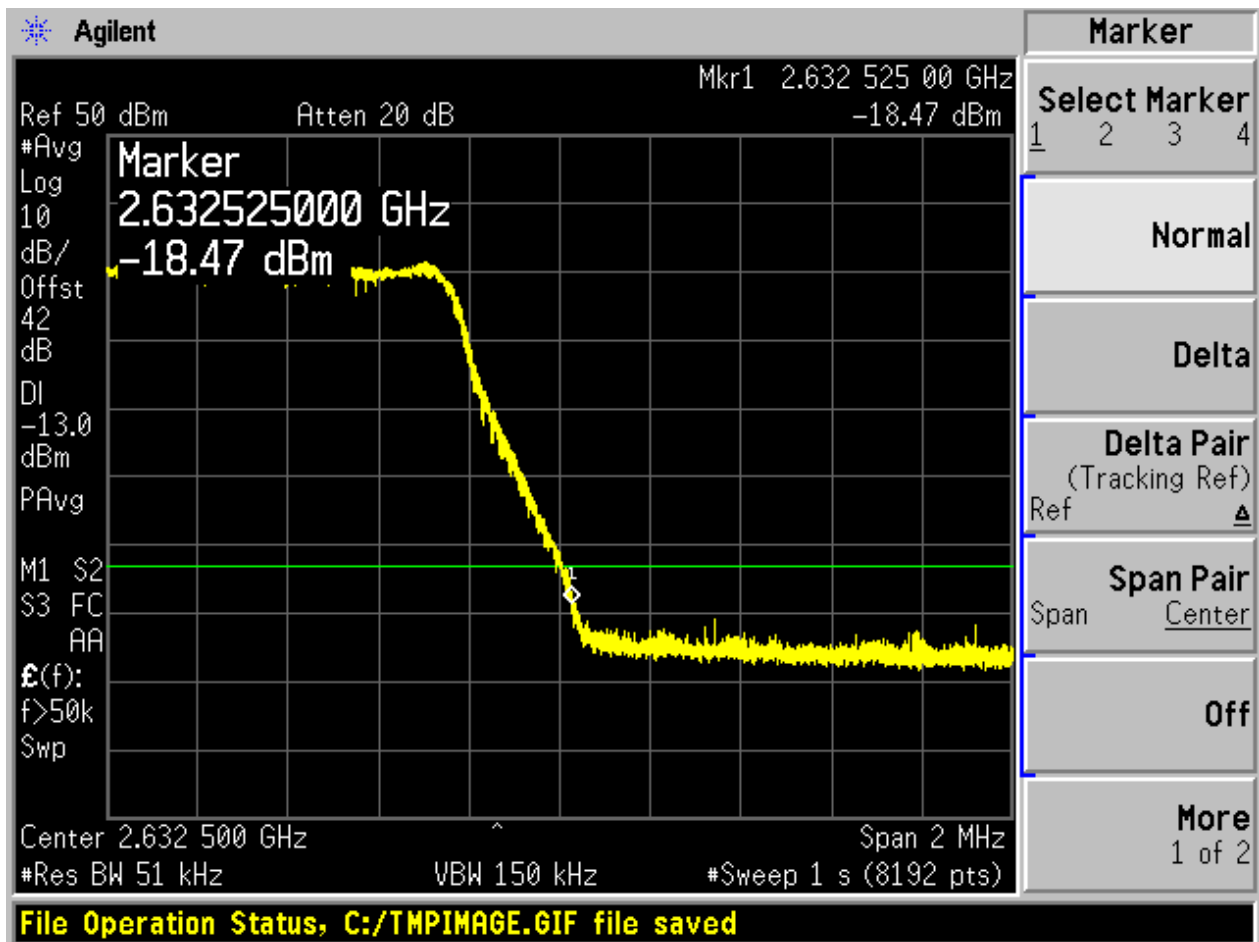
3.2.1.1 Ch. B



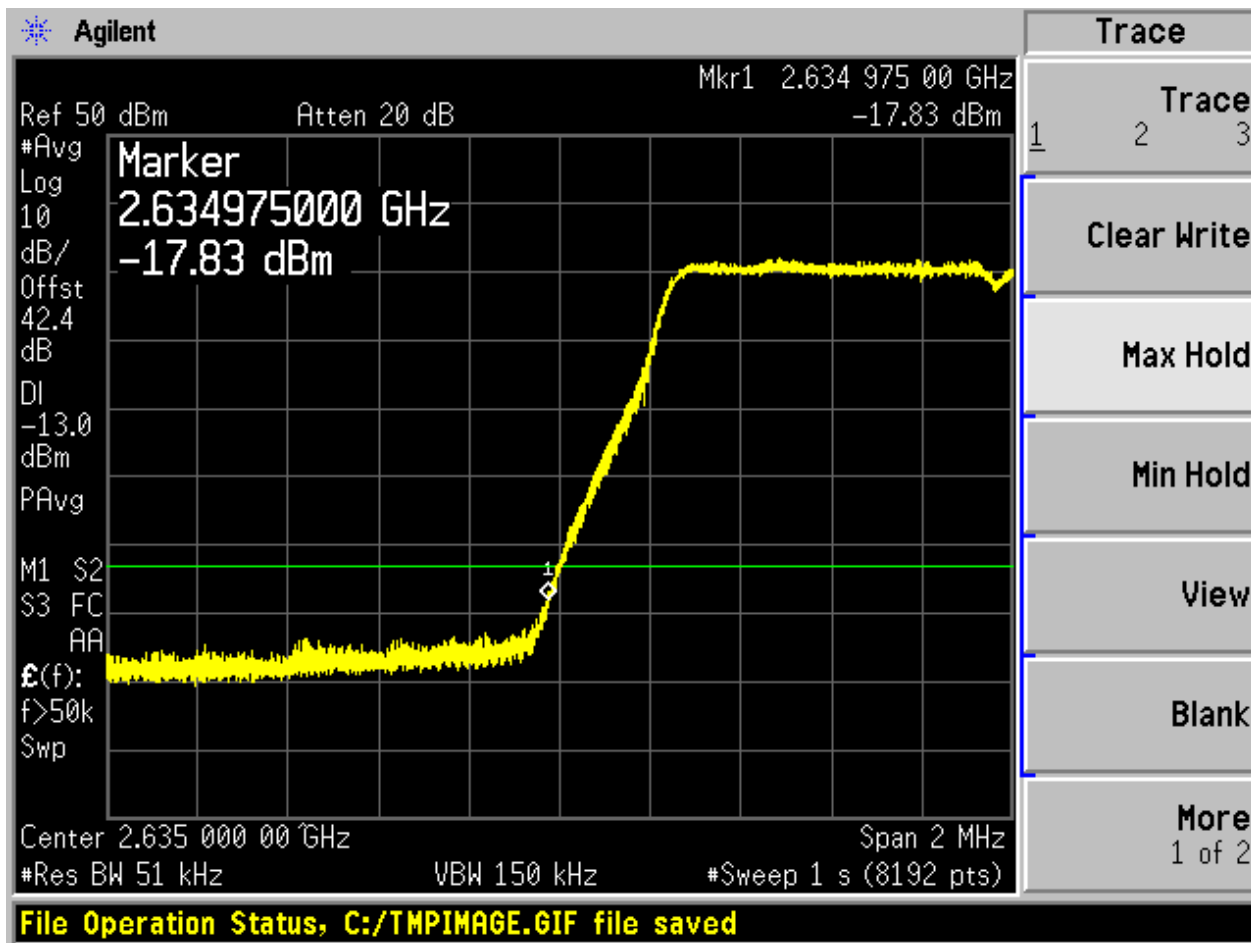


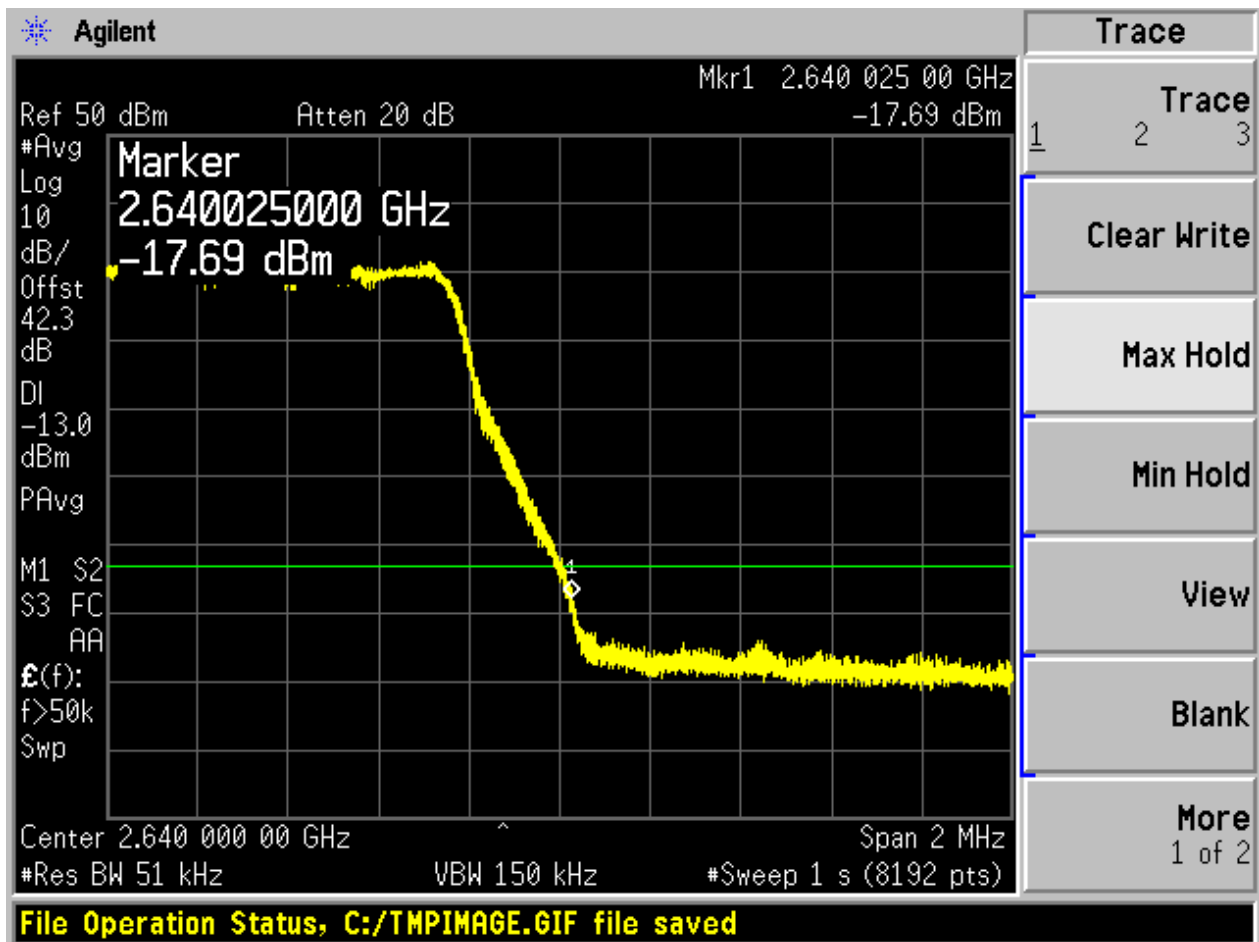
3.2.1.2 Ch. M





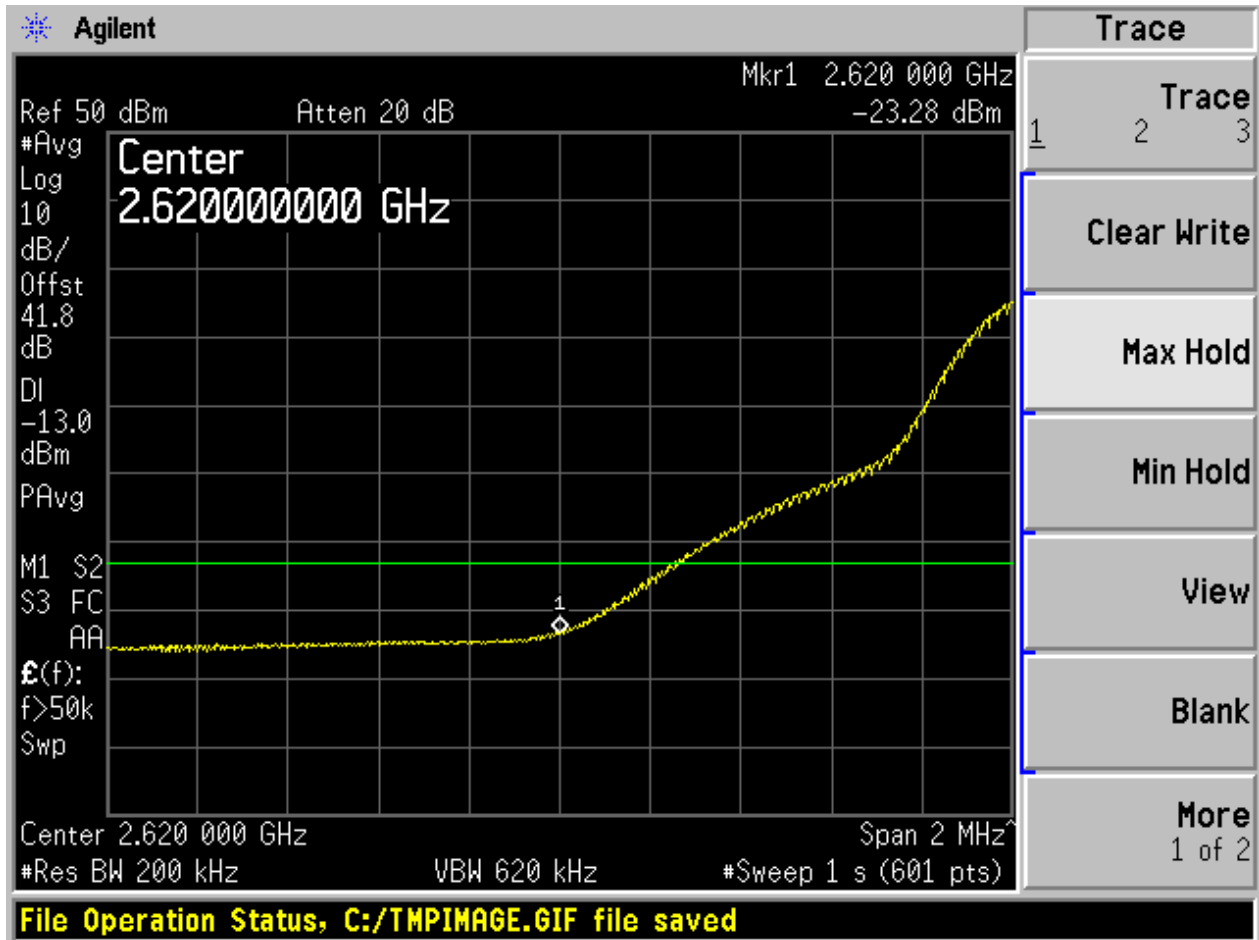
3.2.1.3 Ch. T

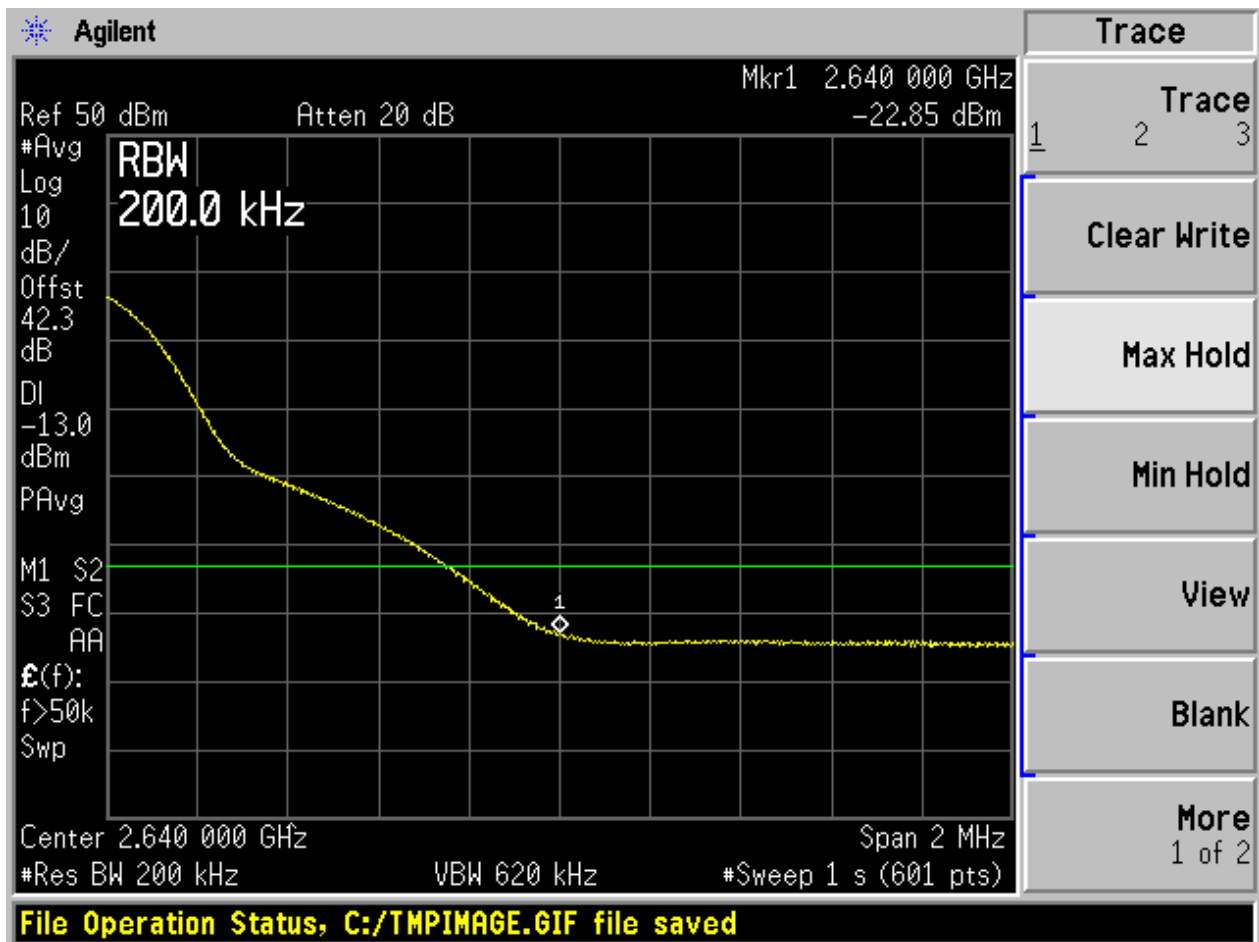




3.2.2 Carrier Conf. = 20M(40W)

3.2.2.1 Ch. B







3.2.2.2 Ch. M

= B



3.2.2.3 Ch. T

= B



Appendix E: Spurious Emission at Antenna Terminals



1 Result Table

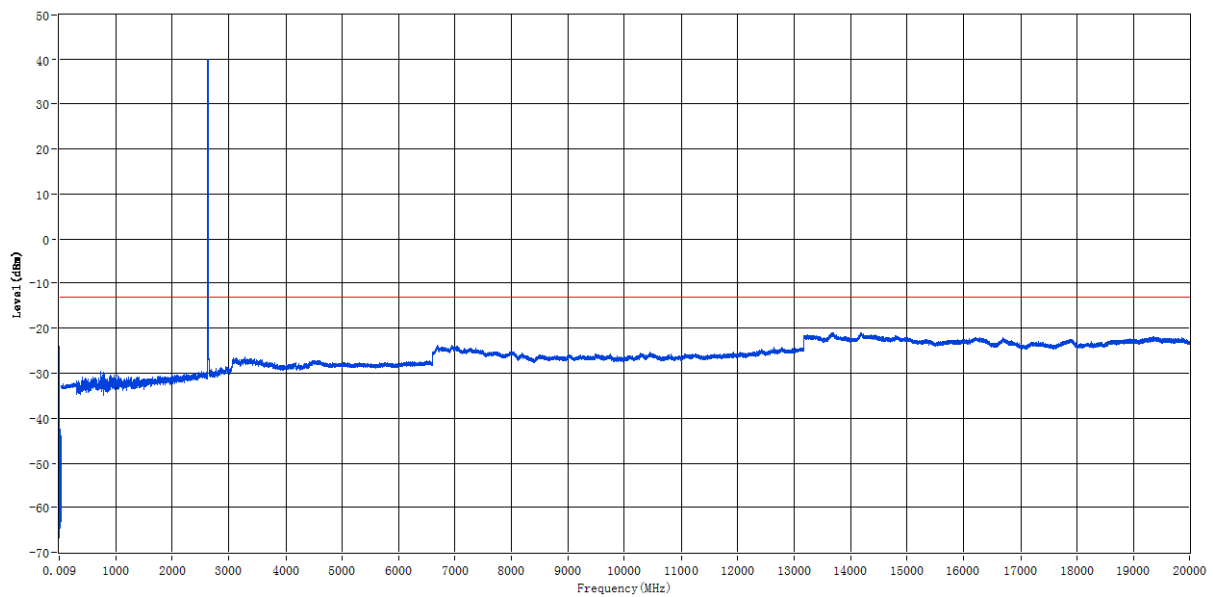
Test Mode	Carrier Conf.	RF Ch.	Spurious Emission at Antenna Terminals [dBm]	Verdict
E-TM 1.1	5M(40W)	B	< -13	Pass
		T	< -13	Pass
	20M(40W)	B	< -13	Pass
		T	= B	Pass

2 Test Plot

2.1 Test Mode = E-TM 1.1

2.1.1 Carrier Conf. = 5W(40W)

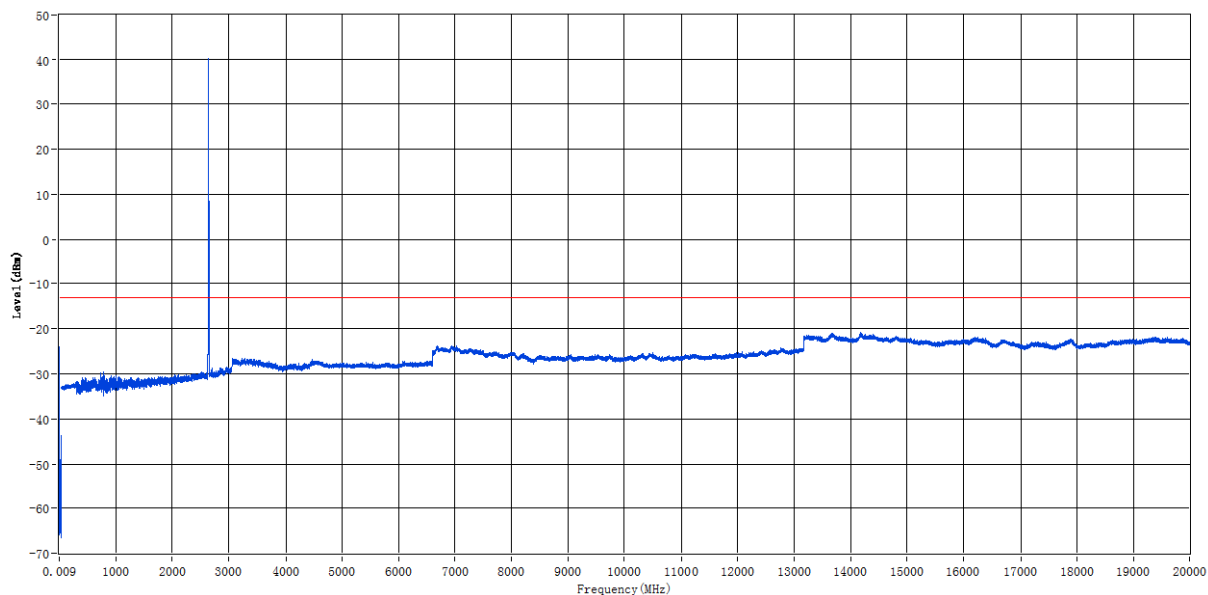
2.1.1.1 Ch. B



Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
0.009	0.15	0.001	RMS	124.988 k	-23.82	41.01	-13.00	10.82	Pass
0.15	30	0.01	RMS	8.031 M	-42.41	41.01	-13.00	29.41	Pass
30	20000	1	RMS	2.623 G	40.24	42.37	-13.00	-53.24	Fail

NOTE: The failed emission is the operating frequency, which should be ignored against the limit.

2.1.1.2 Ch. T

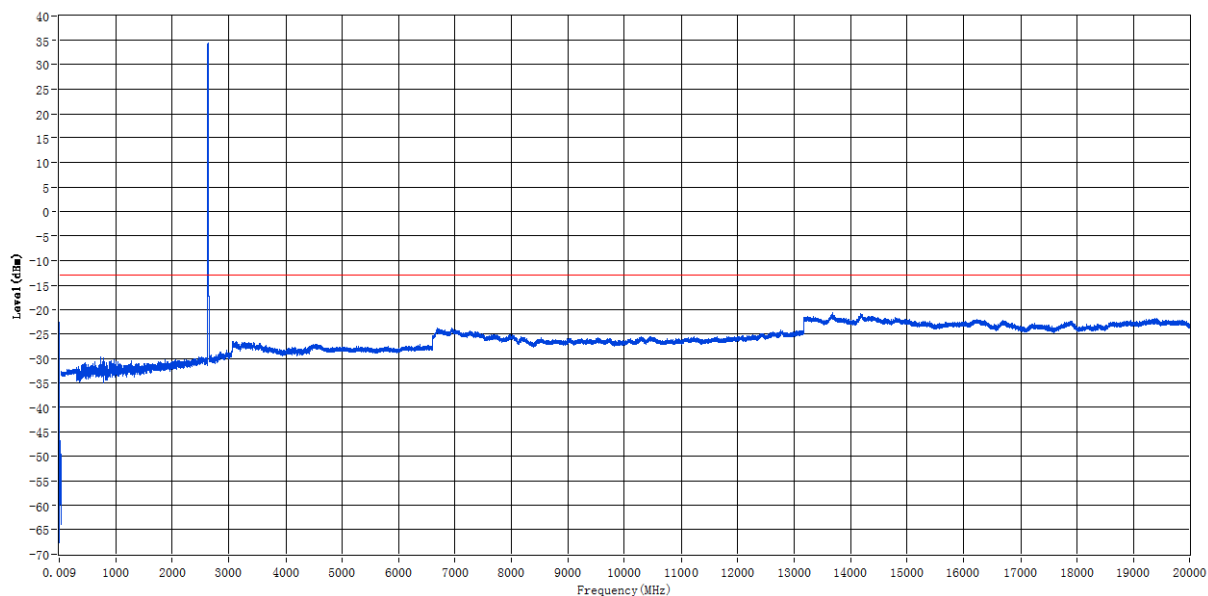


Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
0.009	0.15	0.001	RMS	124.936 k	-23.93	41.01	-13.00	10.93	Pass
0.15	30	0.01	RMS	22.942 M	-43.74	41.01	-13.00	30.74	Pass
30	20000	1	RMS	2.637 G	40.36	42.42	-13.00	-53.36	Fail

NOTE: The failed emission is the operating frequency, which should be ignored against to the limit.

2.1.2 Carrier Conf. = 20W(40W)

2.1.2.1 Ch. B



Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
0.009	0.15	0.001	RMS	125.040 k	-22.57	41.01	-13.00	9.57	Pass
0.15	30	0.01	RMS	246.612 k	-45.19	41.01	-13.00	32.19	Pass
30	20000	1	RMS	2.635 G	34.48	42.42	-13.00	-47.48	Fail

NOTE: The failed emission is the operating frequency, which should be ignored against to the limit.



2.1.2.2 Ch. T

= B



Appendix F: Field Strength of Spurious Radiation



1 Result Table

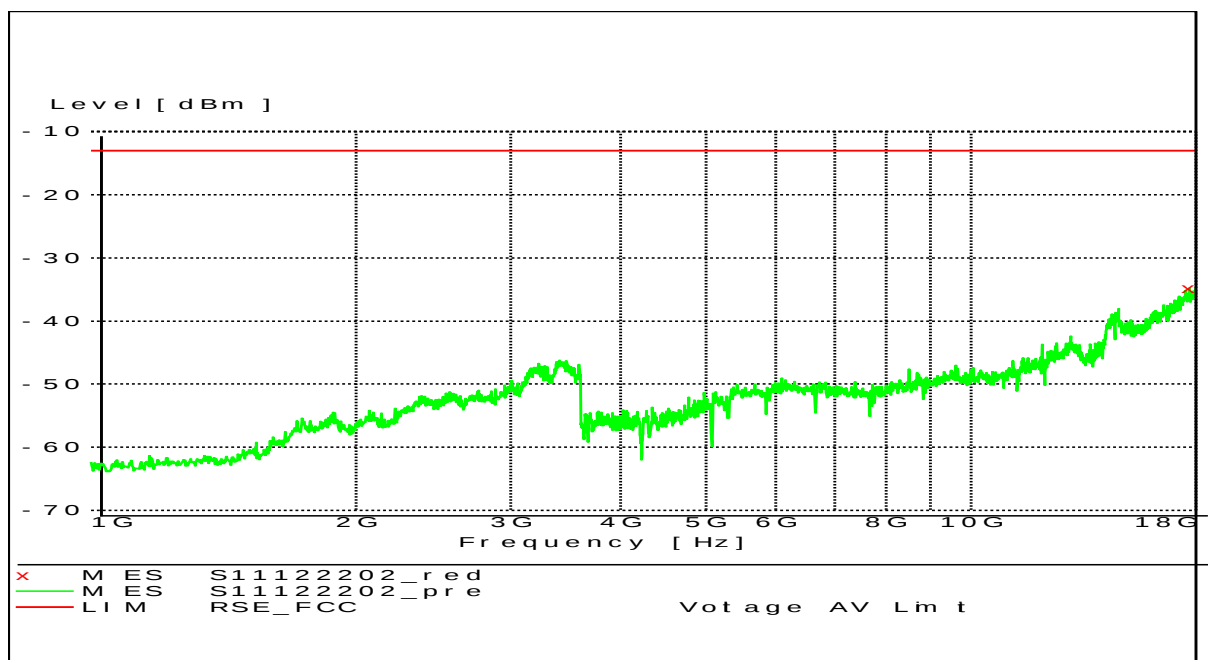
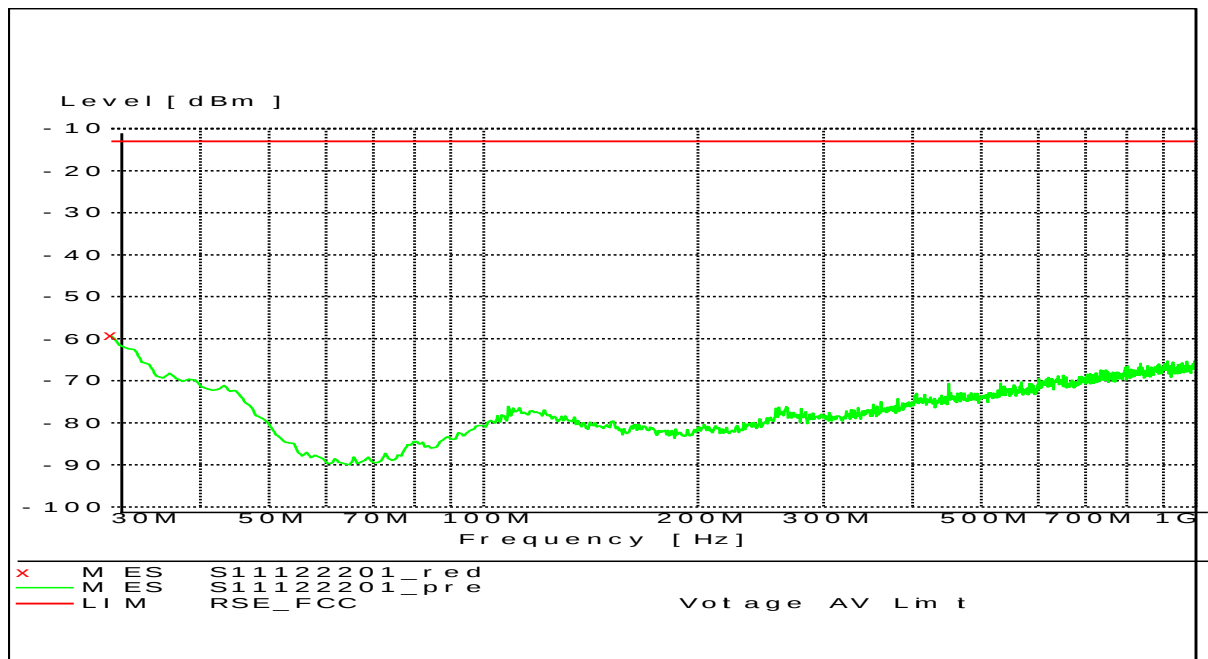
Test Mode	Carrier Conf.	RF Ch.	Field Strength of Spurious Radiation [dBm]	Verdict
E-TM 1.1	5M(40W)	M	< -13	Pass

2 Test Plot

2.1 Test Mode = E-TM 1.1

2.1.1 Carrier Conf. = 5M(40W)

2.1.1.1 Ch. M





Appendix G: Frequency Stability

1 Frequency Error vs. Temperature:

Test Mode	Carrier Conf.	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
E-TM 1.1	5M(40W)	M	100%	-30 °C	-22.99	-0.0087	-0.0009	Pass
				-20 °C	-20.29	-0.0077	0.0001	Pass
				-10 °C	+18.58	0.0071	0.0149	Pass
				0 °C	+18.01	0.0068	0.0147	Pass
				10 °C	+14.19	0.0054	0.0132	Pass
				20 °C	-20.65	-0.0079	---	Pass
				30 °C	+17.80	0.0068	0.0146	Pass
				40 °C	+16.70	0.0063	0.0142	Pass
				50 °C	+18.20	0.0069	0.0148	Pass

2 Frequency Error vs. Voltage:

Test Mode	Carrier Conf.	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
E-TM 1.1	5M(40W)	M	20 °C	85 %	-18.41	-0.007	0.0009	Pass
				100 %	-20.65	-0.0079	---	Pass
				115 %	-22.58	-0.0086	-0.0007	Pass



Appendix H: Receiver Spurious Emissions (Conducted)



NOTE: The requirements are only applicable to IC requirements.

1 Result Table

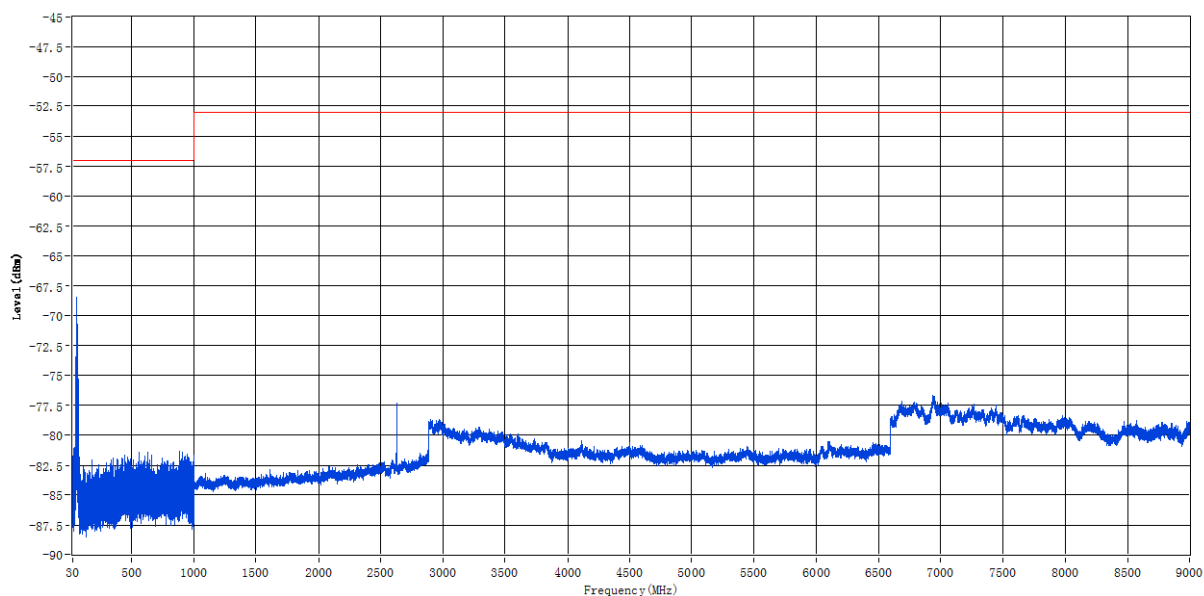
Test Mode	Carrier Conf.	RF Ch.	Receiver Spurious Emissions (Conducted) [dBm]	Verdict
E-TM 1.1	5M(40W)	M	<-57/-53	Pass
	20M(40W)	M	<-57/-53	Pass

2 Test Plot

2.1 Test Mode = E-TM 1.1

2.1.1 Carrier Conf. = 5M(40W)

2.1.1.1 Ch. M

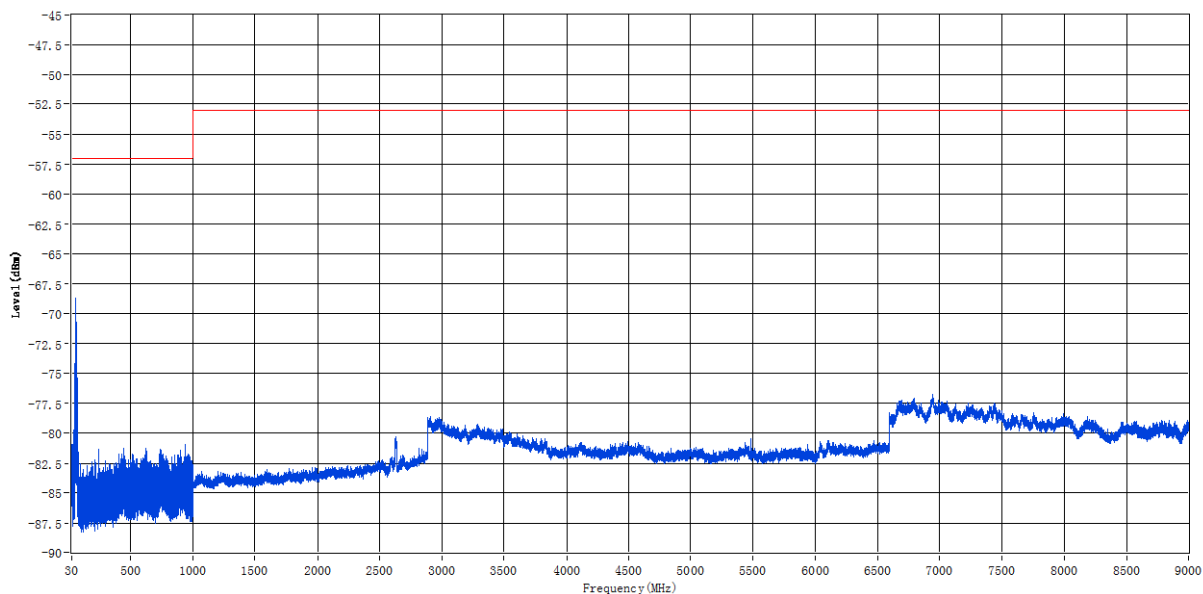


Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
30	1000	0.12	MaxPeak	59.784 M	-68.43	.00	-57.00	11.43	Pass
1000	9000	1	Average	6.938 G	-76.70	2.07	-53.00	23.70	Pass



2.1.2 Carrier Conf. = 20M(40W)

2.1.2.1 Ch. M



Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
30	1000	0.12	MaxPeak	59.701 M	-68.72	.00	-57.00	11.72	Pass
1000	9000	1	Average	6.943 G	-76.79	2.06	-53.00	23.79	Pass