

RF Test Report

Product Name: Multi-mode Multi-carriers Remote Radio Unit

Product Model: RRU3942

Report Number: SYBH(R)001012012EB-1

FCC ID: QISRRU3942

IC ID: 6369A-RRU3942

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Applicant: Huawei Technologies Co., Ltd.
Address: Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
Product Name: Multi-mode Multi-carriers Remote Radio Unit
Product Model: RRU3942
Version: V100R004

Date of Receipt Sample: 2011-12-09
Start Date of Test: 2011-12-12
End Date of Test: 2011-12-30

Test Result: Pass

Approved by Senior Engineer:	2012-01-01	Zhang Xinghai	<i>Zhang Xing hai</i>
	Date	Name	Signature

Prepared by:	2012-01-01	Huang Yuanqiu	<i>Huang yuanqiu</i>
	Date	Name	Signature



Modification Record

No.	Last Report No.	Modification Description
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2 Test Summary

Test Case	FCC Part No.	Requirements	Result
PCS Band			
Transmitter Output Power	2.1046 & 24.232	Peak EIRP not exceed 1640 W	Pass
Modulation Characteristics	2.104	Digital modulation	Pass
Occupied Bandwidth	2.104	(Not specified)	Pass
Band Edges Compliance	2.1051 & 24.238	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	2.1051 & 24.238	Below -13 dBm/1 kHz, 9 kHz to 150 kHz Below -13 dBm/10 kHz, 150 kHz to 30 MHz Below -13 dBm/1 MHz, 30 MHz to 10 th harmonics	Pass
Field Strength of Spurious Radiation	2.1053 & 24.238	Below -13 dBm/1 MHz	Pass
Frequency Stability	2.1055 & 24.235	Stay within the authorized frequency block	Pass

Test Case	IC Standard No.	Requirements	Result
PCS Band			
Transmitter Output Power	RSS-Gen, §4.8; RSS-133, §6.4	Average EIRP not exceed 1640 Watts (EBW ≤1MHz) Average EIRP not exceed 1640 Watts/MHz (EBW > 1MHz) Output power not exceed 100 Watts Peak-to-average ratio not exceed 13 dB	Pass
Modulation Characteristics	RSS-133, §6.2	Digital modulation	Pass
Occupied Bandwidth	RSS-Gen, §4.6	(Not specified)	Pass
Band Edges Compliance	RSS-Gen, §4.9; RSS-133, §6.5	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	RSS-Gen, §4.9; RSS-133, §6.5	Below -13 dBm/1 kHz, 9 kHz to 150 kHz Below -13 dBm/10 kHz, 150 kHz to 30 MHz Below -13 dBm/1 MHz, 30 MHz to 5 th harmonics	Pass
Field Strength of Spurious Radiation	RSS-Gen, §4.9; RSS-133, §6.5	Below -13 dBm/1 MHz	Pass
Frequency Stability	RSS-Gen, §4.7; RSS-133, §6.3	Maintained within the tolerances of ±1.0 ppm	Pass
Receiver Spurious Emissions (Conducted)	RSS-Gen, §4.10; RSS-Gen, §6; RSS-133, §6.6	Below -57 dBm/120 kHz (CISPR-QP), 30MHz to 1000 MHz Below -53 dBm/1 MHz (AV), 1 GHz to 3 th harmonics	Pass

3 Description of the Equipment under Test (EUT)

3.1 General Description

The RRU3942 is an outdoor remote radio unit. It is the radio frequency (RF) part of a distributed base station and can be located near antennas. The RRU3942 can modulate, demodulate, combine, and divide baseband and RF signals. It also processes baseband and RF signal data. With the Software Defined Radio (SDR) technology, the RRU3942 supports the dual-mode operation of any two modes of GSM and UMTS and LTE through software configuration modification.

3.2 EUT Identity

NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

3.2.1 Board

Board		
Board Name	Hardware Version	Description
WD5DJRXC20	VER.A	Transceiver Board
WD5DJRAC20	VER.B	Power Amplifier Board

3.2.2 Sub-Assembly

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
WBBP	--	Huawei	NodeB baseband Unit
WMPT	--	Huawei	Main Processing Unit
GTMU	--	Huawei	GBTS baseband Unit
LMPT	--	Huawei	LTE baseband Processing Unit
LBBP	--	Huawei	LTE Main Processing & Transmission Unit

3.3 Technical Description

3.3.1 Supported Frequency Range

Characteristics	Description
Downlink	1930 MHz~1990 MHz
Uplink	1850 MHz~1910 MHz

3.3.2 Transmitter / Receiver Characteristics

Characteristics	Description
System Type	<input checked="" type="checkbox"/> GSM <input type="checkbox"/> CDMA <input checked="" type="checkbox"/> UMTS <input type="checkbox"/> WiMAX <input checked="" type="checkbox"/> LTE <input checked="" type="checkbox"/> MSR(GSM&UMTS)
TX and RX Antenna Ports	2 * TRX, 2 * RX-only, 0 * TX-only
Multiple Carrier Supported	4
TX Output Power (per Antenna Port)	60W(47.8 dBm) max
Channel Spacing(s) / Bandwidth(s)	GSM system: 200 kHz UMTS system: 5 MHz LTE system: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
Designation of Emissions	GSM system: 246KGXW (GMSK modulation), 248KG7W (8PSK modulation) UMTS system: 4M15F9W LTE system: 1M09D9W (1.4 MHz channel bandwidth), 2M70D9W (3 MHz channel bandwidth), 4M50D9W (5 MHz channel bandwidth), 8M95D9W (10 MHz channel bandwidth), 13M4D9W (15 MHz channel bandwidth)

3.3.3 Power Supply

Specification	Description
Power Supply Type	Directly Connected to DC Power Supply
Input to EUT (DC power)	DC Voltage Nominal: \approx -48 V DC Voltage Range: \approx -36 V to -57 V

4 General Test Conditions / Configurations

4.1 Test Modes

Test Mode	Test Modes Description
E-TM 1.1	LTE system: 3GPP TS 36.141, clause 6.1.1, E-TM 1.1
E-TM 1.2	LTE system: 3GPP TS 36.141, clause 6.1.1, E-TM 1.2
E-TM 3.1	LTE system: 3GPP TS 36.141, clause 6.1.1, E-TM 3.1
TM-1	UMTS system: 3GPP TS 25.141, clause 6.1.1, TM-1
GMSK	GSM system: GSM/GPRS, GMSK modulation
8PSK	GSM system: EDGE, 8PSK modulation
MSR_TM1	MSR system: 3GPP TS 37.141, clause 4.9 (GSM system: GMSK; UMTS system: TM-1)
MSR_TM2	MSR system: 3GPP TS 37.141, clause 4.9 (GSM system: 8PSK; UMTS system: TM-1)

4.2 Test Configurations

TX / RX	Carrier Conf. (NOTE)	RF Channel		
		Bottom (B)	Middle (M)	Top (T)
TX	1*U(60W)	1932.4 MHz	1960 MHz	1987.6 MHz
	2*U(30W)	1932.4/1937.4 MHz	1960/1965 MHz	1982.6/1987.6 MHz
	3*U(20W)	1932.4/1937.4/1942.4 MHz	1955/1960/1965 MHz	1977.6/1982.6/1987.6 MHz
	4*U(15W)	1932.4/1937.4/1942.4/1947.4 MHz	1955/1960/1965/1970 MHz	1972.6/1977.6/1982.6/1987.6 MHz
	1*G(60W)	1930.4 MHz	1960 MHz	1989.6 MHz
	2*G(30W)	1930.4/1931 MHz	1960/1960.6 MHz	1989/1989.6 MHz
	3*G(20W)	1930.4/1931/1931.6 MHz	1959.4/1960/1960.6 MHz	1988.4/1989/1989.6 MHz
	4*G(15W)	1930.4/1931/1931.6/1932.2 MHz	1959.4/1960/1960.6/1961.2 MHz	1987.8/1988.4/1989/1989.6 MHz
	1*L1.4M(60W)	1930.7 MHz	1960 MHz	1989.3 MHz
	1*L3M(60W)	1931.5 MHz	1960 MHz	1988.5 MHz
	1*L5M(60W)	1932.5 MHz	1960 MHz	1987.5 MHz
	1*L10M(60W)	1935 MHz	1960 MHz	1985 MHz
	1*L15M(60W)	1937.5MHz	1960MHz	1982.5MHz
	2*L1.4M(30W)	1930.7/1932.1 MHz	1959.3/1960.7 MHz	1987.9/1989.3 MHz
	2*L3M(30W)	1931.5/1934.5 MHz	1958.5/1961.5 MHz	1985.5/1988.5 MHz
	2*L5M(30W)	1932.5/1937.5 MHz	1957.5/1962.5 MHz	1982.5/1987.5 MHz
	2*L10M(30W)	1935/1945 MHz	1955/1965 MHz	1975/1985 MHz
	2*L15M(30W)	1937.5/1952.5 MHz	---	1967.5/1982.5 MHz
	1*G(30W) & 1*U(30W)	G: 1930.4/1965 MHz; U: 1947.6 MHz;	---	G: 1955/1989.6 MHz; U: 1972.6 MHz;
	2*G(20W) &	G: 1930.4/1965 MHz;	---	G: 1955 /1989.6 MHz ;



TX / RX	Carrier Conf. (NOTE)	RF Channel		
		Bottom (B)	Middle (M)	Top (T)
	1*U(20W)	U: 1947.6 MHz;		U: 1972.6 MHz;
	2*G(20W) & 2*U(10W)	G: 1930.4/1965 MHz; U: 1945/1950MHz;	---	G: 1955/1989.6 MHz; U: 1970/1975 MHz;
	3*G(15W) & 1*U(15W)	G: 1930.4/1931/1965 MHz; U: 1947.6 MHz;	---	G: 1955/1989/1989.6 MHz; U: 1972.6 MHz;
	1*G(30W) & 2*U(15W)	G: 1930.4 MHz; U: 1957.6/1962.6 MHz;	---	G: 1989.6 MHz; U: 1957.4/1962.4 MHz;
	1*G(15W) & 3*U(15W)	G: 1930.4 MHz; U: 1952.6/1957.6/1962.6 MHz;	---	G: 1989.6 MHz; U: 1952.4/1957.4/1962.4 MHz;
	1*G(40W) & 1*U(20W)	G: 1930.4/1865 MHz; U: 1947.6 MHz;	---	G: 1955/1989.6 MHz; U: 1972.6 MHz;
RX	1*U(60W)	---	1880 MHz	---
	1*G(60W)	---	1880 MHz	---
	1*L5M(60W)	---	1880 MHz	---

NOTE: For the Carrier Configurations, the “n*TxxxM(yyyW)” denotes the n * multiple carriers of the radio system type T (G - GSM system, U - UMTS system, L - LTE system, C - CDMA system, W - WiMAX system), for which the channel bandwidth of each carrier is xxx MHz (applicable for T supporting various channel bandwidths) and the power level of each carrier is yyy Watts. While the combinations of several “n*TxxxM(yyyW)”s denotes the carrier configurations of the MSR (multiple standard radio) system.

4.3 Test Environments

Environment Parameter	Selected Values During Tests		
	Temperature	Voltage	Relative Humidity
Ambient Climate	Ambient	---	Ambient
Rated Voltage	---	-48 VDC	---

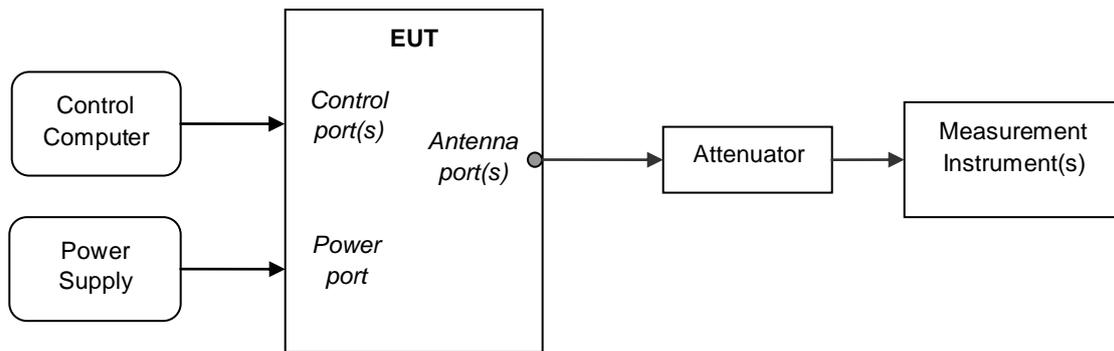
4.4 Test Setups

NOTE: See Appendix I for practical Test Setup Photos.

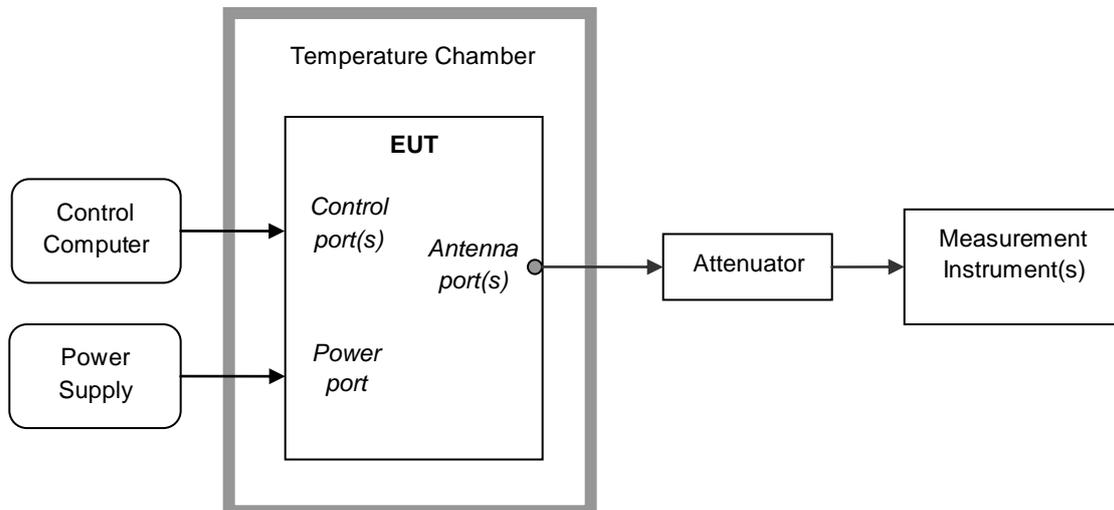
4.4.1 General Test Setup Configurations

Configuration	Description
Test Antenna Ports	Until otherwise declared, all TX tests are ONLY performed at the main Transmitter antenna port (e.g. TRXA, TXA and so on) of the EUT, and all RX tests are ONLY performed at the main Receiver antenna port (e.g. TRXA, RXA and so on) of the EUT.
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

4.4.2 Test Setup 1



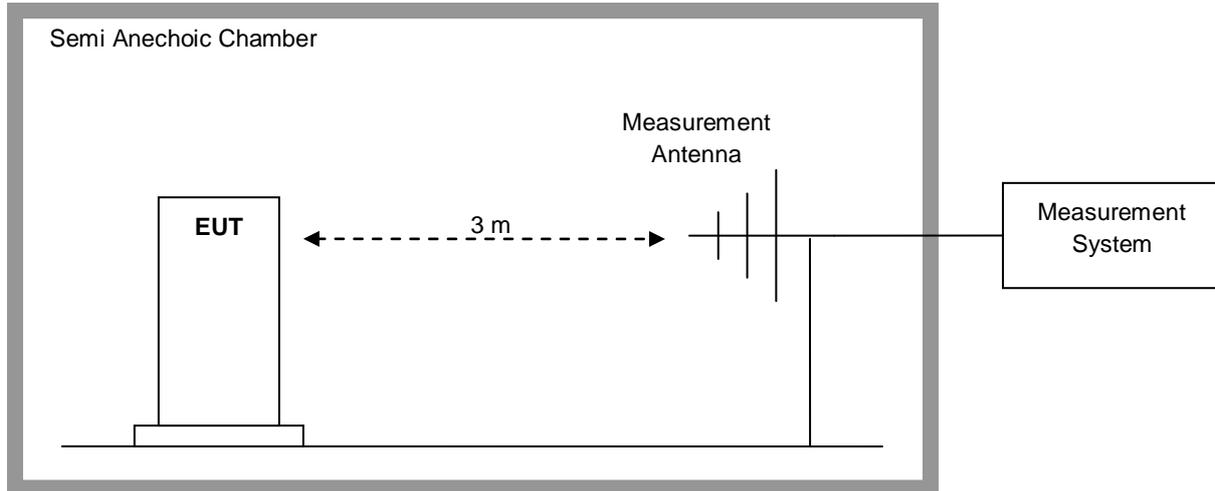
4.4.3 Test Setup 2



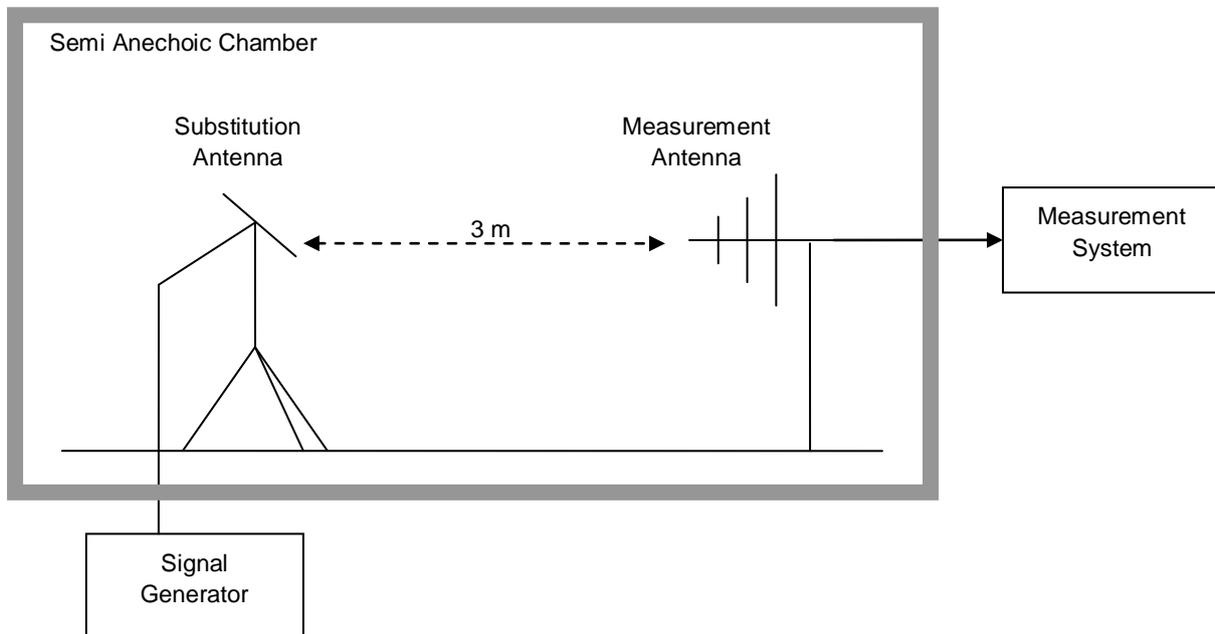
4.4.4 Test Setup 3

NOTE: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

4.4.4.1 Step 1: Pre-test



4.4.4.2 Step 2: Substitution method to verify the maximum ERP



4.5 Test Conditions

Test Case	Test Conditions	
Transmitter Output Power	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	UMTS system: 1*U(60W) 2*U(30W) 3*U(20W) 4*U(15W) GSM system: 1*G(60W) 2*G(30W) 3*G(20W) 4*G(15W) LTE system: 1*L1.4M(60W) 1*L3M(60W) 1*L5M(60W) 1*L10M(60W) 1*L15M(60W) 2*L1.4M(30W) 2*L3M(30W) 2*L5M(30W) 2*L10M(30W) 2*L15M(30W) MSR system (GSM&UMTS): 1*G(30W) & 1*U(30W) 2*G(20W) & 1*U(20W) 3*G(15W) & 1*U(15W) 1*G(30W) & 2*U(15W) 2*G(20W) & 2*U(10W) 1*G(15W) & 3*U(15W)
	RF Channels (TX)	GSM, UMTS, LTE system: B, M, T MSR system(GSM&UMTS): B,T
	Test Mode	UMTS system: TM-1 GSM system: GMSK, 8PSK LTE system: E-TM 1.1 MSR system: MSR_TM1
Modulation Characteristics	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	UMTS system: 1*U(60W) GSM system: 1*G(60W)



Test Case	Test Conditions	
		LTE system: 1*L10M(60W)
	RF Channels (TX)	M
	Test Mode	UMTS system: TM-1 GSM system: GMSK, 8PSK LTE system: E-TM 3.1 NOTE: An arbitrary test mode is selected to demonstrate compliance.
Occupied Bandwidth	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	UMTS system: 1*U(60W) GSM system: 1*G(60W) LTE system: 1*L1.4M(60W) 1*L3M(60W) 1*L5M(60W) 1*L10M(60W) 1*L15M(60W)
	RF Channels (TX)	B, M, T
	Test Mode	UMTS system: TM-1 GSM system: GMSK, 8PSK LTE system: E-TM 1.1
Band Edges Compliance	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	UMTS system: 1*U(60W) 4*U(15W) GSM system: 1*G(60W) 4*G(15W) LTE system: 1*L1.4M(60W) 1*L15M(60W) 2*L1.4M(30W) 2*L15M(30W) MSR system (GSM&UMTS): 1*G(40W) & 1*U(20W) 3*G(15W) & 1*U(15W) 1*G(15W) & 3*U(15W)
	RF Channels (TX)	B, T
	Test Mode	UMTS system: TM-1 GSM system: GMSK, 8PSK LTE system: E-TM 1.1 MSR system: MSR_TM1, MSR_TM2



Test Case	Test Conditions	
Spurious Emission at Antenna Terminals	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	UMTS system: 1*U(60W) 4*U(15W) GSM system: 1*G(60W) 4*G(15W) LTE system: 1*L1.4M(60W) 1*L15M(60W) 2*L1.4M(30W) 2*L15M(30W) MSR system (GSM&UMTS): 1*G(40W) & 1*U(20W) 3*G(15W) & 1*U(15W) 1*G(15W) & 3*U(15W)
	RF Channels (TX)	B, T
	Test Mode	UMTS system: TM-1 GSM system: GMSK, 8PSK LTE system: E-TM 1.1 MSR system: MSR_TM1
Field Strength of Spurious Radiation	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 3
	Carrier Conf.	GSM system: 1*G(60W) (each TRX) 1*G(40W) (TRXA) + 1*G(80W) (TRXB)
	RF Channels (TX)	M
Frequency Stability	Test Mode	GSM system: GMSK NOTE: The mode of higher power density level between GSM, UMTS and LTE systems under the same maximum power level, i.e. the system with the narrowest channel bandwidth, is selected.
	Test Configuration	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Climate.
	Test Setup	Test Setup 2
	Carrier Conf.	GSM system: 1*G(60W)
	RF Channels (TX)	M
	Test Mode	GSM system: GMSK NOTE: An arbitrary test mode is selected as a representative



Test Case	Test Conditions	
		since the un-modulation carrier configuration is required by the standards/rules.
Receiver Spurious Emissions (Conducted) (Only for IC requirement)	Test Configuration	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1
	Carrier Conf.	GSM system: 1*G(60W) LTE system: 1*L5M(60W)
	RF Channels (TX/RX)	M
	Test Mode	GSM system: GMSK, 8PSK LTE system: E-TM 1.1



5 Test Results

No.	Test Item	Test Result
1	Transmitter Output Power	Appendix A
2	Modulation Characteristics	Appendix B
3	Occupied Bandwidth	Appendix C
4	Band Edges Compliance	Appendix D
5	Spurious Emission at Antenna Terminals	Appendix E
6	Field Strength of Spurious Radiation	Appendix F
7	Frequency Stability	Appendix G
8	Receiver Spurious Emissions (Conducted) (Only for IC requirement)	Appendix H



6 Main Test Instruments

Equipment Name	Manufacturer	Model	Serial Number	Cal. Due
Test Setup 1 & 2				
Spectrum Analyzer	R&S	FSQ40	100025	2012-10-19
Spectrum Analyzer	Agilent	E4440A	MY49420179	2012-05-12
Spectrum Analyzer	Agilent	N9030A	MY49431033	2012-04-16
Temperature Chamber	Envirotronics	WPH700-2-30-WC	01066463	2012-10-08
Power Supply	KIKUSUI	PVS 100-28	FG000012	2012-10-14
Test Setup 3				
3m Semi Anechoic Chamber	S+M	---	---	---
EMI Test receiver	R&S	ESU	100144	2012-05-12
Broadband Antenna	SCHAFFNER	CBL6112D	25221	2012-04-08
Horn Antenna	R&S	HF906	359287/005	2012-05-07



7 Measurement Uncertainty

For a 95% confidence level ($k=2$), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmitter Output Power	Power (dBm)	U =0.39 dB
Occupied Bandwidth	Magnitude (%)	U=0.2%
Band Edge Compliance	Disturbance Power (dBm)	U=2.0 dB
Conducted Spurious Emissions	Disturbance Power (dBm)	U=2.0 dB
Field Strength of Spurious Radiation	ERP (dBm)	U=4.6 dB (30 MHz – 1GHz) U=3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy (ppm)	U=0.21 ppm

END



Appendix A: Transmitter Output Power



1 Average Power (Total)

NOTE: For the Average Power [W/MHz] for MSR system, only the carriers with channel bandwidths less than 1 MHz were considered.

Test Mode	Carrier Conf.	RF Ch.	Average Power [dBm]	Average Power [W]	Average Power [W/MHz]	Verdict
TM-1	1*U(60W)	B	47.71	59.02	11.804	Pass
		M	47.63	57.94	11.588	Pass
		T	47.58	57.28	11.456	Pass
	2*U(30W)	B	48.15	65.31	13.062	Pass
		M	48.23	66.53	13.306	Pass
		T	47.29	53.58	10.716	Pass
	3*U(20W)	B	47.17	52.12	10.424	Pass
		M	47.73	59.29	11.858	Pass
		T	47.73	59.29	11.858	Pass
4*U(15W)	B	47.97	62.66	12.532	Pass	
	M	48.19	65.92	13.184	Pass	
	T	47.06	50.82	10.164	Pass	
GMSK	1*G(60W)	B	47.59	57.41	---	Pass
		M	47.65	58.21	---	Pass
		T	47.66	58.34	---	Pass
	2*G(30W)	B	44.22/44.20	52.73	---	Pass
		M	44.44/44.18	53.98	---	Pass
		T	44.42/44.38	55.09	---	Pass
	3*G(20W)	B	42.51/42.47/42.64	53.85	---	Pass
		M	42.53/42.62/42.55	54.18	---	Pass
		T	42.74/42.57/42.60	55.06	---	Pass
4*G(15W)	B	41.23/41.38/41.36 /41.29	54.15	---	Pass	
	M	41.31/41.45/41.45 /41.58	55.84	---	Pass	
	T	41.38/41.34/41.23 /41.25	53.96	---	Pass	
8PSK	1*G(60W)	B	47.68	58.61	---	Pass
		M	47.71	59.02	---	Pass
		T	47.84	60.81	---	Pass
	2*G(30W)	B	44.69/44.88	60.21	---	Pass
		M	44.30/44.31	53.89	---	Pass
		T	44.39/44.20	53.78	---	Pass
3*G(20W)	B	42.50/42.71/42.39	53.78	---	Pass	
	M	42.53/42.58/42.41	53.44	---	Pass	



Test Mode	Carrier Conf.	RF Ch.	Average Power [dBm]	Average Power [W]	Average Power [W/MHz]	Verdict
		T	42.68/42.81/42.62	55.91	---	Pass
	4*G(15W)	B	39.33/39.75/39.49 /39.57	35.96	---	Pass
		M	39.61/39.57/39.87 /39.64	37.11	---	Pass
		T	39.53/39.52/39.58 /39.61	36.15	---	Pass
E-TM 1.1	1*L1.4M(60W)	B	47.75	59.57	42.55	Pass
		M	47.89	61.52	43.943	Pass
		T	47.93	62.09	44.35	Pass
	1*L3M(60W)	B	47.85	60.95	20.317	Pass
		M	47.83	60.67	20.223	Pass
		T	47.95	62.37	20.79	Pass
	1*L5M(60W)	B	47.46	55.72	11.144	Pass
		M	47.60	57.54	11.508	Pass
		T	47.68	58.61	11.722	Pass
	1*L10M(60W)	B	47.76	59.70	5.97	Pass
		M	47.44	55.46	5.546	Pass
		T	47.65	58.21	5.821	Pass
	1*L15M(60W)	B	48.00	63.10	4.207	Pass
		M	47.76	59.70	3.98	Pass
		T	47.67	58.48	3.899	Pass
	2*L1.4M(30W)	B	47.69	58.75	41.964	Pass
		M	47.86	61.09	43.636	Pass
		T	47.88	61.38	43.843	Pass
	2*L3M(30W)	B	47.97	62.66	20.887	Pass
		M	47.89	61.52	20.507	Pass
		T	47.82	60.53	20.177	Pass
	2*L5M(30W)	B	48.08	64.27	12.854	Pass
		M	47.99	62.95	12.59	Pass
		T	47.93	62.09	12.418	Pass
	2*L10M(30W)	B	48.10	64.57	6.457	Pass
		M	48.06	63.97	6.397	Pass
		T	48.04	63.68	6.368	Pass
	2*L15M(30W)	B	48.22	66.37	4.425	Pass
		T	48.00	63.10	4.207	Pass
MSR_TM1	1*G(30W) & 1*U(30W)	B	44.16 & 44.95	57.32	6.252	Pass
		T	44.35 & 44.86	57.85	6.124	Pass
	2*G(20W) & 1*U(20W)	B	42.33/42.98 & 43.03	57.05	4.018	Pass



Test Mode	Carrier Conf.	RF Ch.	Average Power [dBm]	Average Power [W]	Average Power [W/MHz]	Verdict
		T	42.8/42.6 & 43.1	57.67	4.084	Pass
	2*G(20W) & 2*U(10W)	B	42.2/42.84 & 40.3/40.05	56.66	4.166	Pass
		T	42.71/42.48 & 39.92/39.94	56.05	3.936	Pass
	3*G(15W) & 1*U(15W)	B	42.05/42.1/41.9 & 42.1	63.96	3.244	Pass
		T	42.4/42.43/41.4 & 41.9	64.17	3.098	Pass
	1*G(30W) & 2*U(15W)	B	43.78 & 41.66/41.88	53.95	6.014	Pass
		T	44.43 & 42/41.74	58.51	6.156	Pass
	1*G(15W) & 3*U(15W)	B	41.1 & 41.80/41.75/41.71	57.81	8.984	Pass
		T	41.1 & 41.87/41.88/41.86	59.03	9.228	Pass

2 Peak-to-Average Ratio

Test Mode	Carrier Conf.	RF Ch.	Peak-to-Average Ratio [dB]	Verdict
TM 1	1*U(60W)	B	7.25	Pass
		M	7.19	Pass
		T	7.32	Pass
GMSK	1*G(60W)	B	0.31	Pass
		M	0.34	Pass
		T	0.3	Pass
8PSK	1*G(60W)	B	3.38	Pass
		M	3.71	Pass
		T	3.8	Pass
E-TM 1.1	1*L15M(60W)	B	7.54	Pass
		M	7.20	Pass
		T	7.55	Pass



Appendix B: Modulation Characteristics

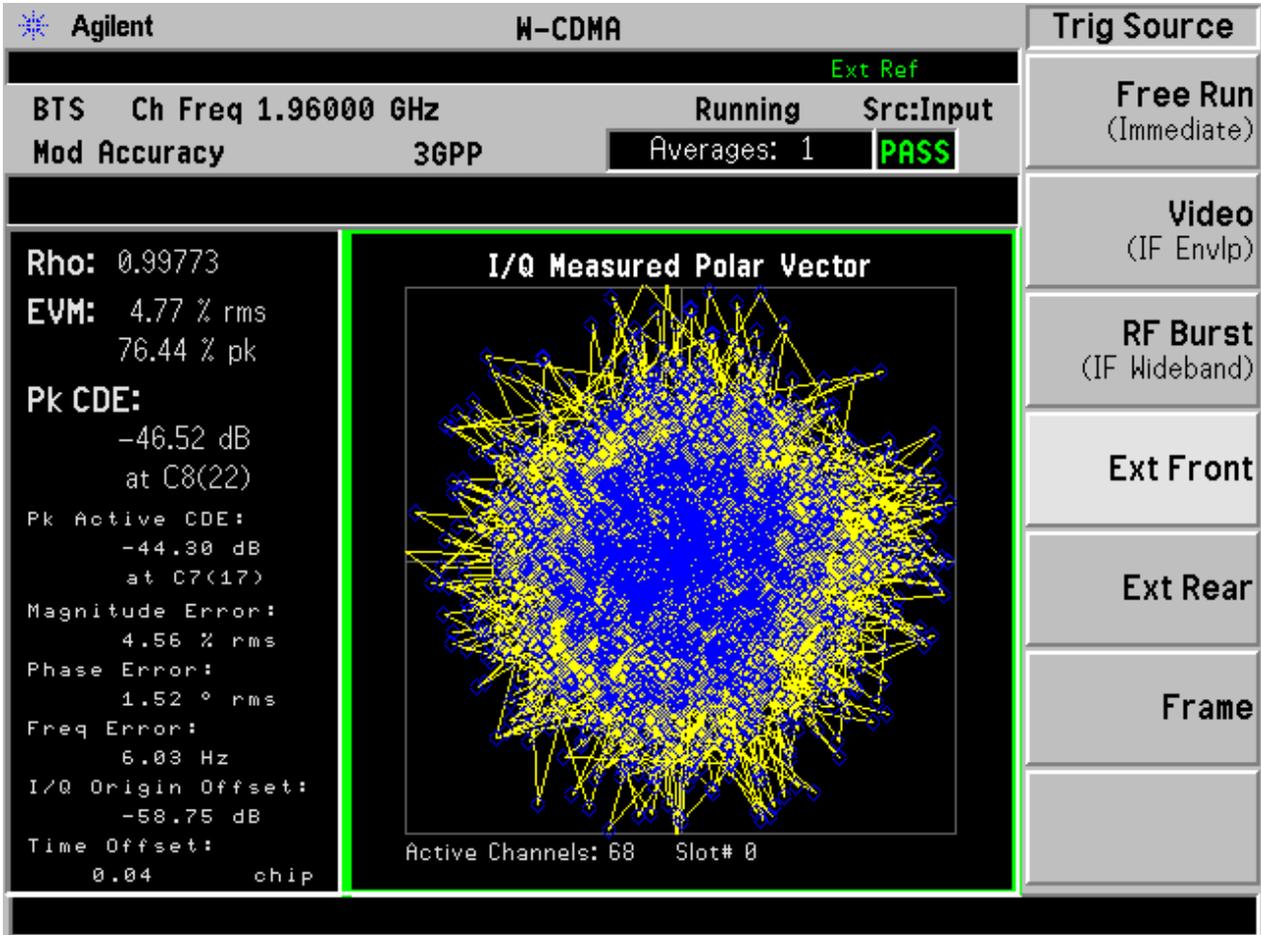


1 Result Table

Test Mode	Digital modulation?	Verdict
TM-1	Yes	Pass
GMSK	Yes	Pass
8PSK	Yes	Pass
E-TM3.1	Yes	Pass

2 Test Plot

2.1 Test Mode = TM-1





2.2 Test Mode = GMSK



Phase/Frequency Error

Marker 1 [T1]

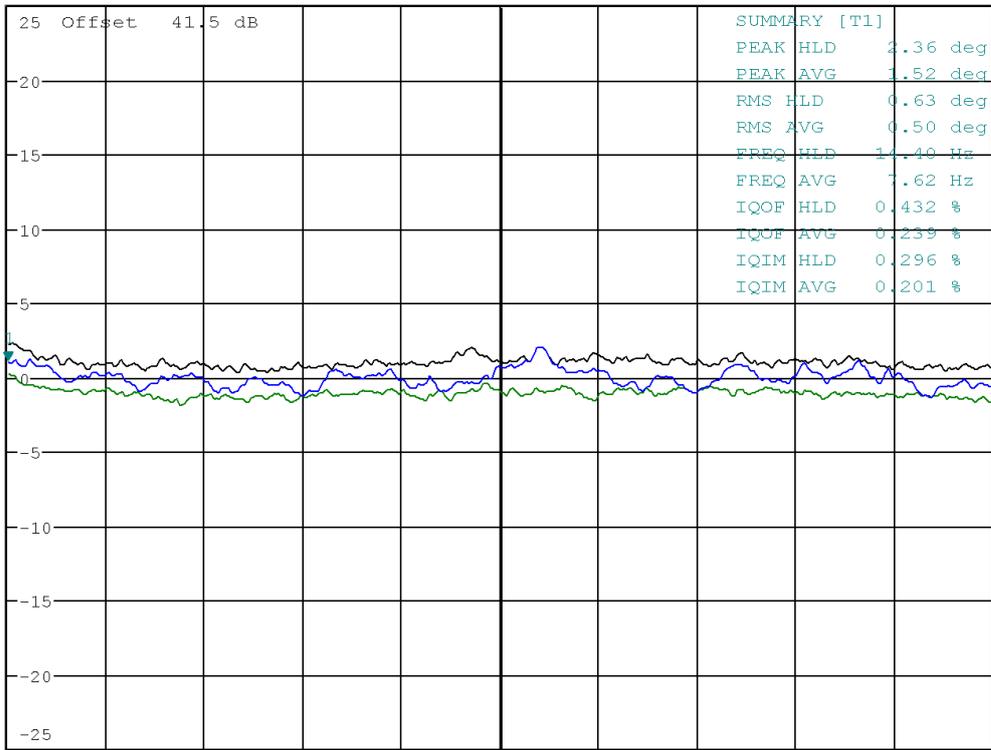
Ref 50.8 dBm Att 20 dB SWT 542.77 μ s -49.548000 μ s

deg

1 SA
CLRWR

2 PK
MAXH

3 MI
MINH



Center 1.95 GHz

54.28 μ s/

Date: 23.DEC.2011 11:23:39

2.3 Test Mode = 8PSK

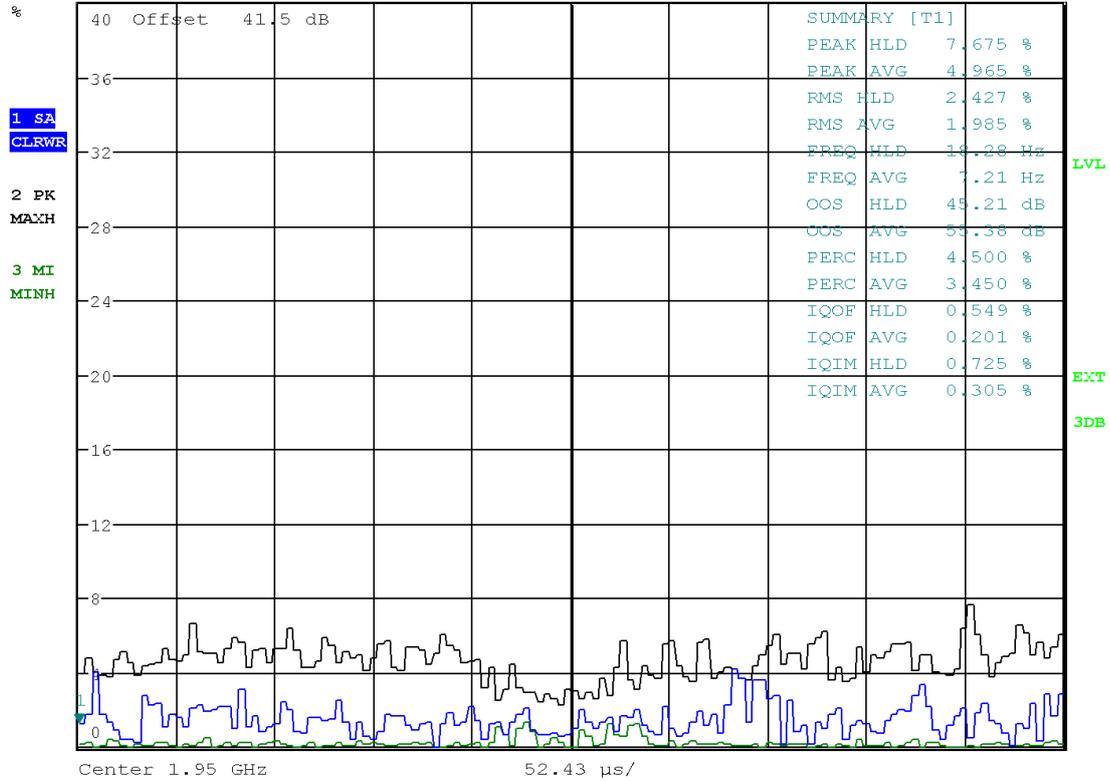


Modulation Accuracy

Marker 1 [T1]

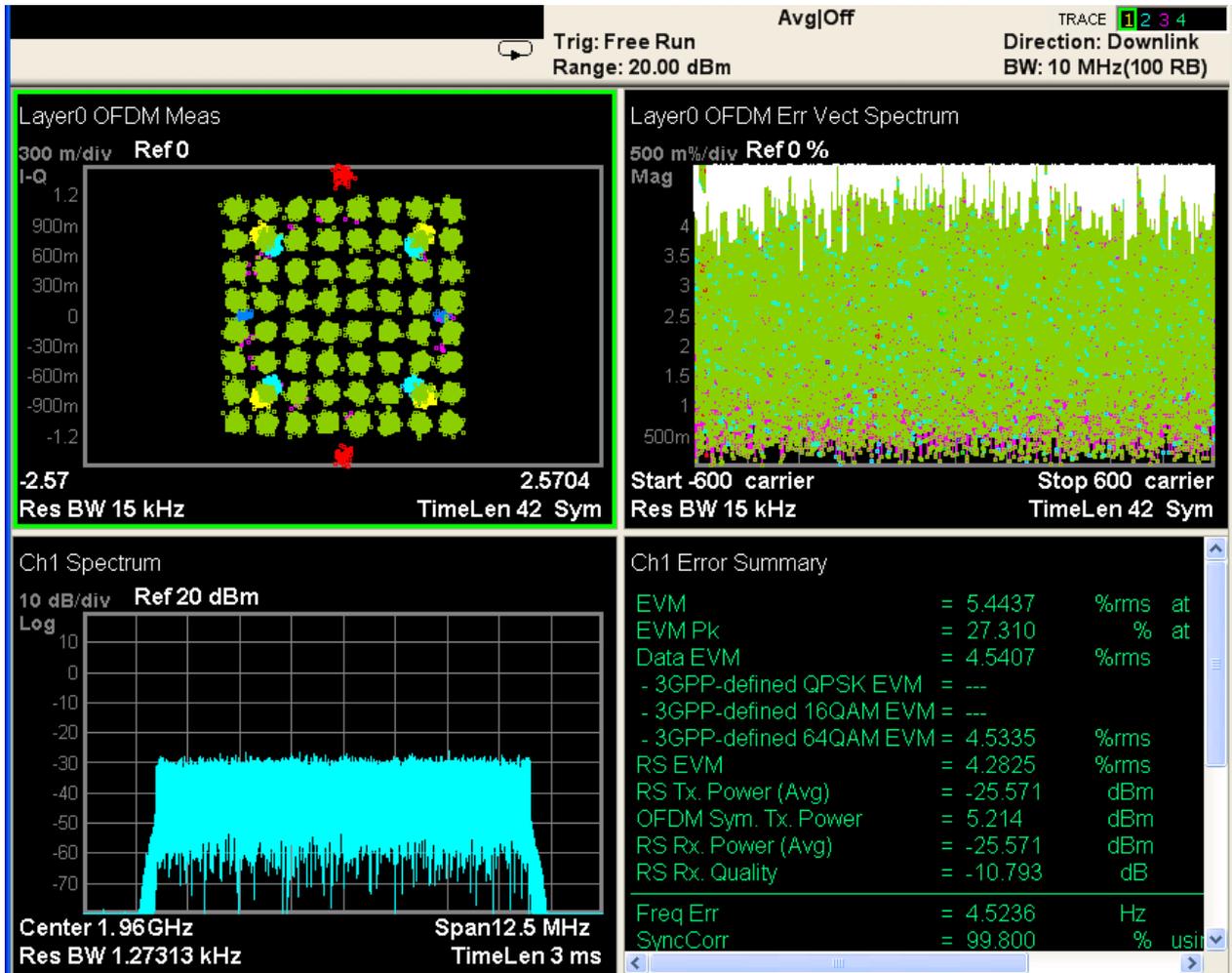
1.287 %

Ref 50.8 dBm Att 20 dB SWT 524.31 μ s -38.471100 μ s



Date: 23.DEC.2011 11:22:28

2.4 Test Mode = E-TM3.1





Appendix C: Occupied Bandwidth



1 Result Table

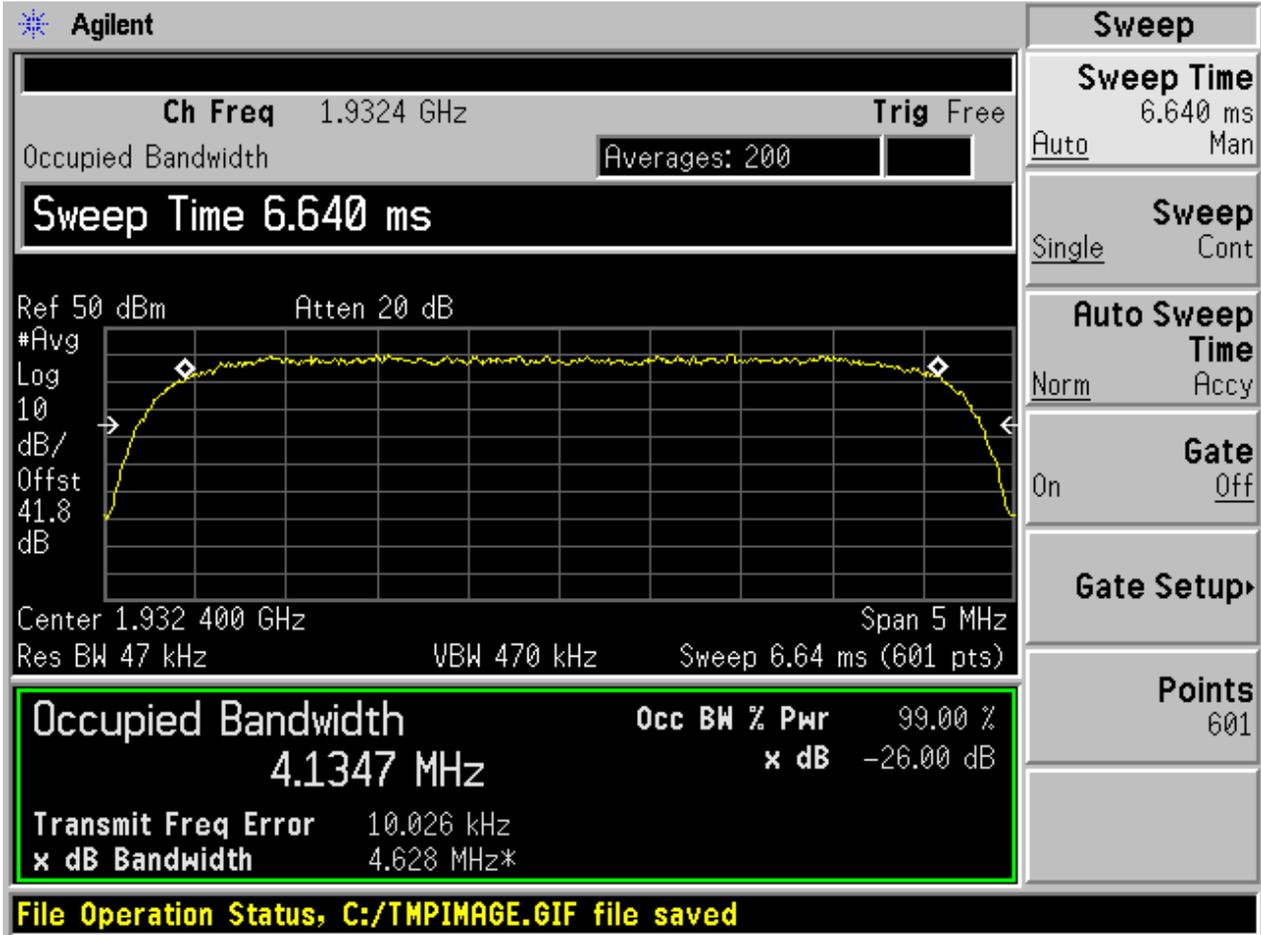
Test Mode	Carrier Conf.	RF Ch.	Occupied Bandwidth [MHz]	Verdict
TM-1	1*U(60W)	B	4.13	Pass
		M	4.14	Pass
		T	4.15	Pass
GMSK	1*G(60W)	B	0.246	Pass
		M	0.245	Pass
		T	0.246	Pass
8PSK	1*G(60W)	B	0.248	Pass
		M	0.245	Pass
		T	0.245	Pass
E-TM 1.1	1*L1.4M(60W)	B	1.090	Pass
		M	1.093	Pass
		T	1.091	Pass
	1*L3M(60W)	B	2.696	Pass
		M	2.691	Pass
		T	2.694	Pass
	1*L5M(60W)	B	4.481	Pass
		M	4.490	Pass
		T	4.492	Pass
	1*L10M(60W)	B	8.932	Pass
		M	8.950	Pass
		T	8.919	Pass
1*L15M(60W)	B	13.40	Pass	
	M	13.43	Pass	
	T	13.39	Pass	

2 Test Plot

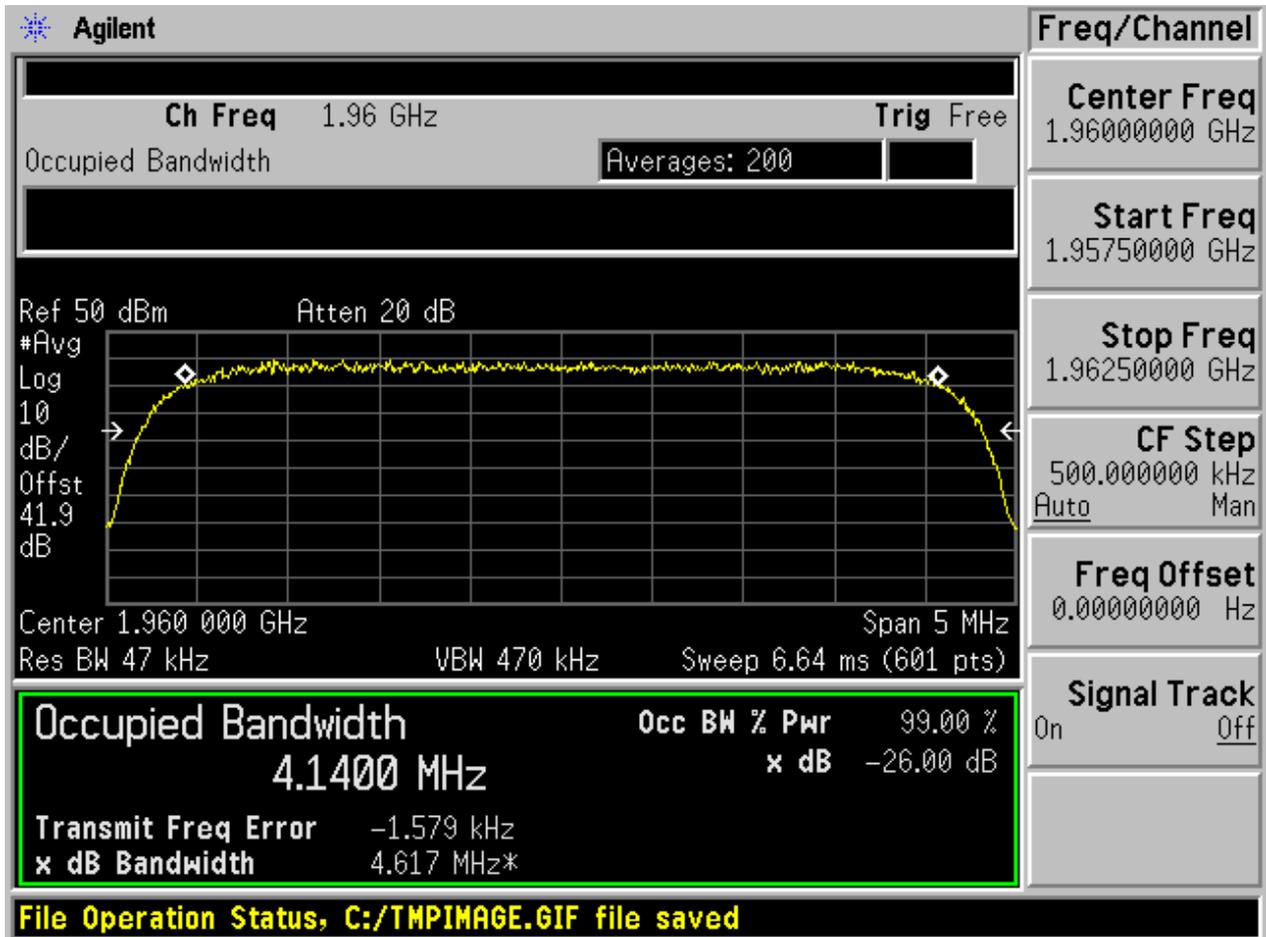
2.1 Test Mode = TM-1

2.1.1 Carrier Conf. = 1*U(60W)

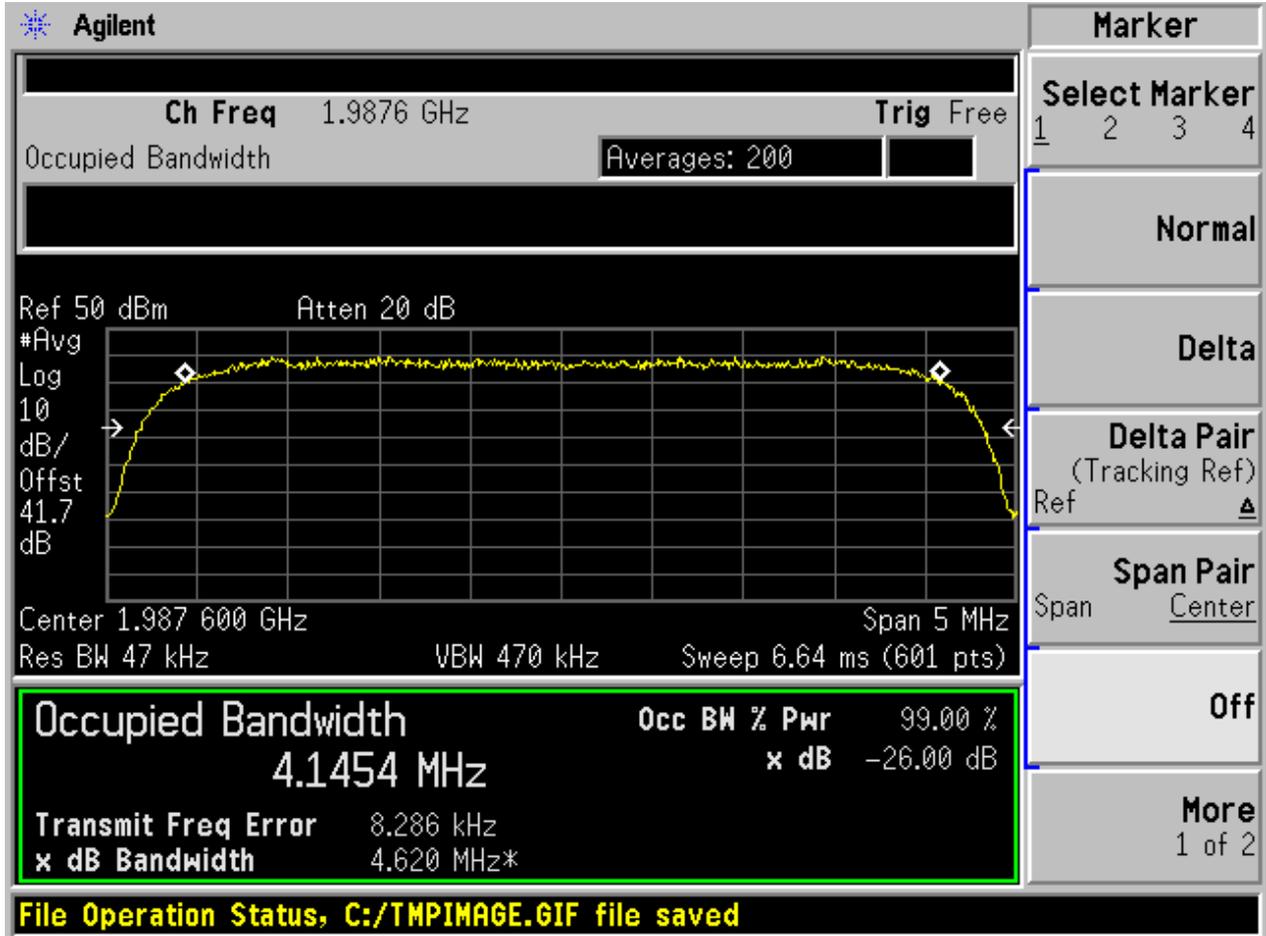
2.1.1.1 Ch. B



2.1.1.2 Ch. M

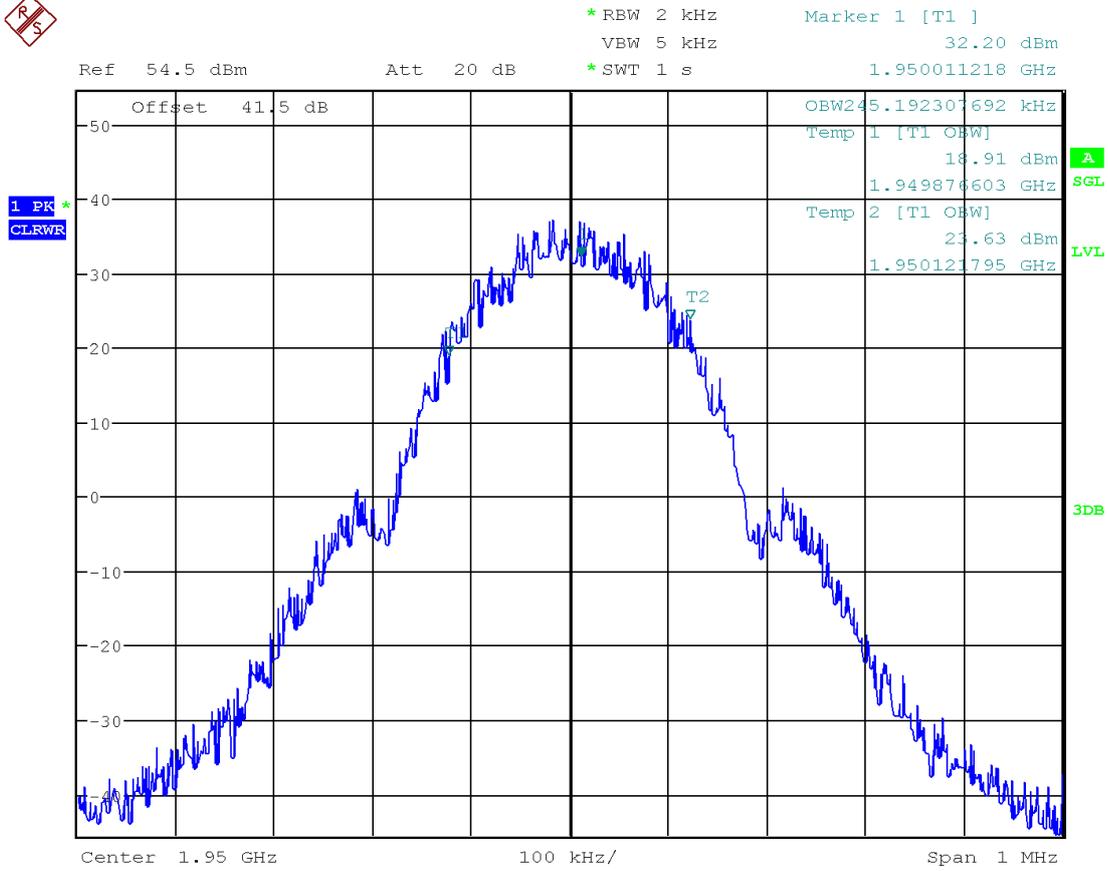


2.1.1.3 Ch. T



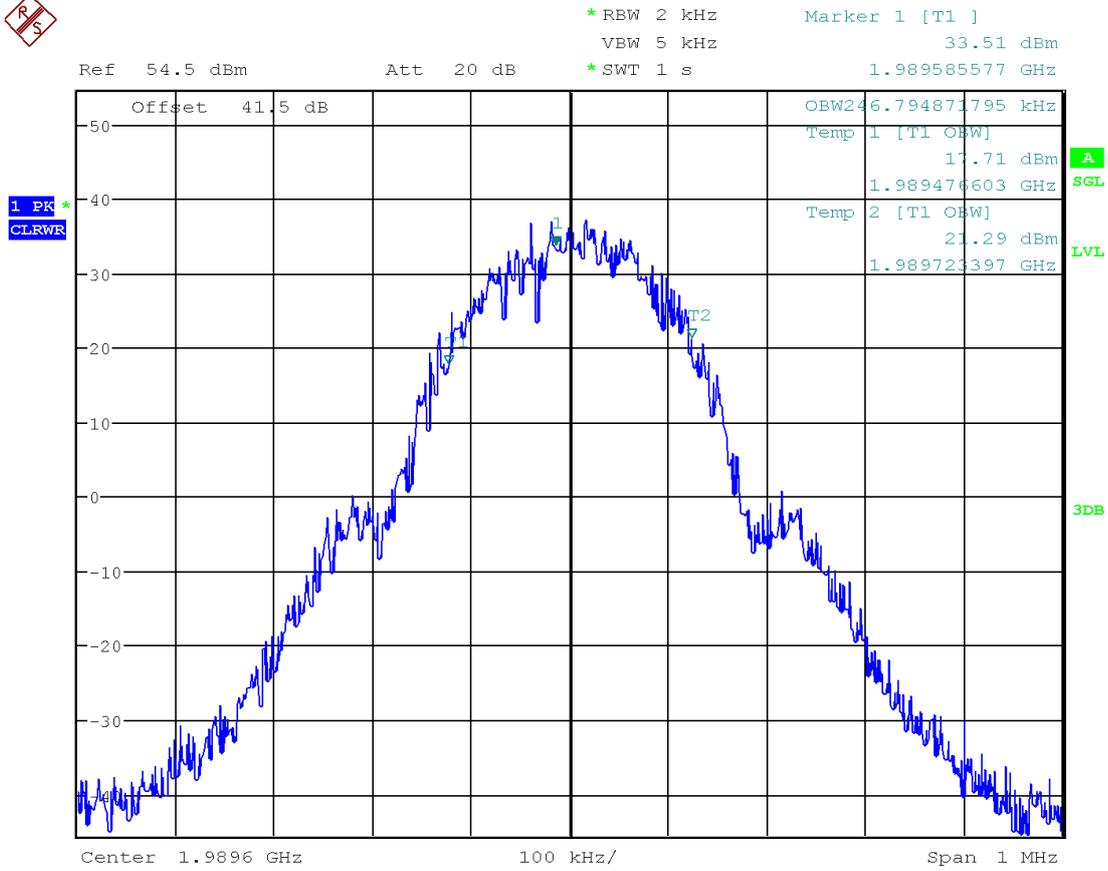


2.2.1.2 Ch. M



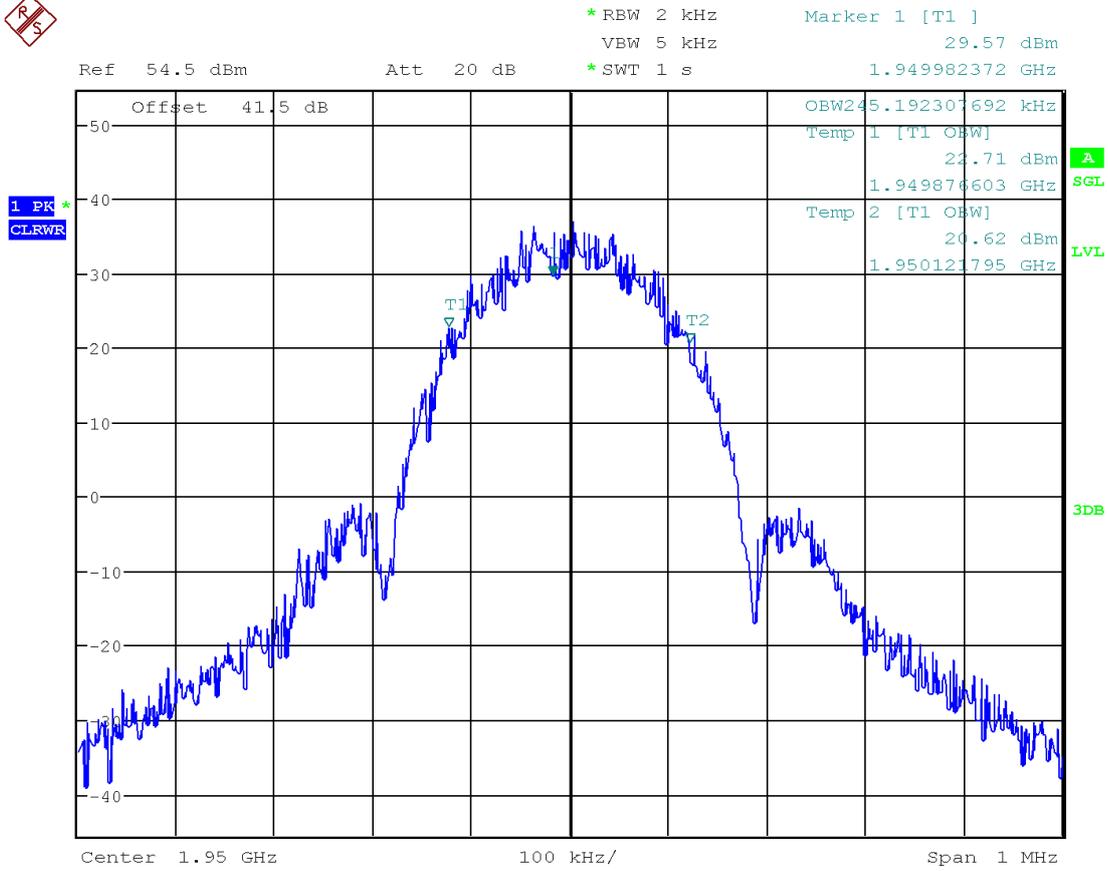
Date: 23.DEC.2011 10:47:02

2.2.1.3 Ch. T



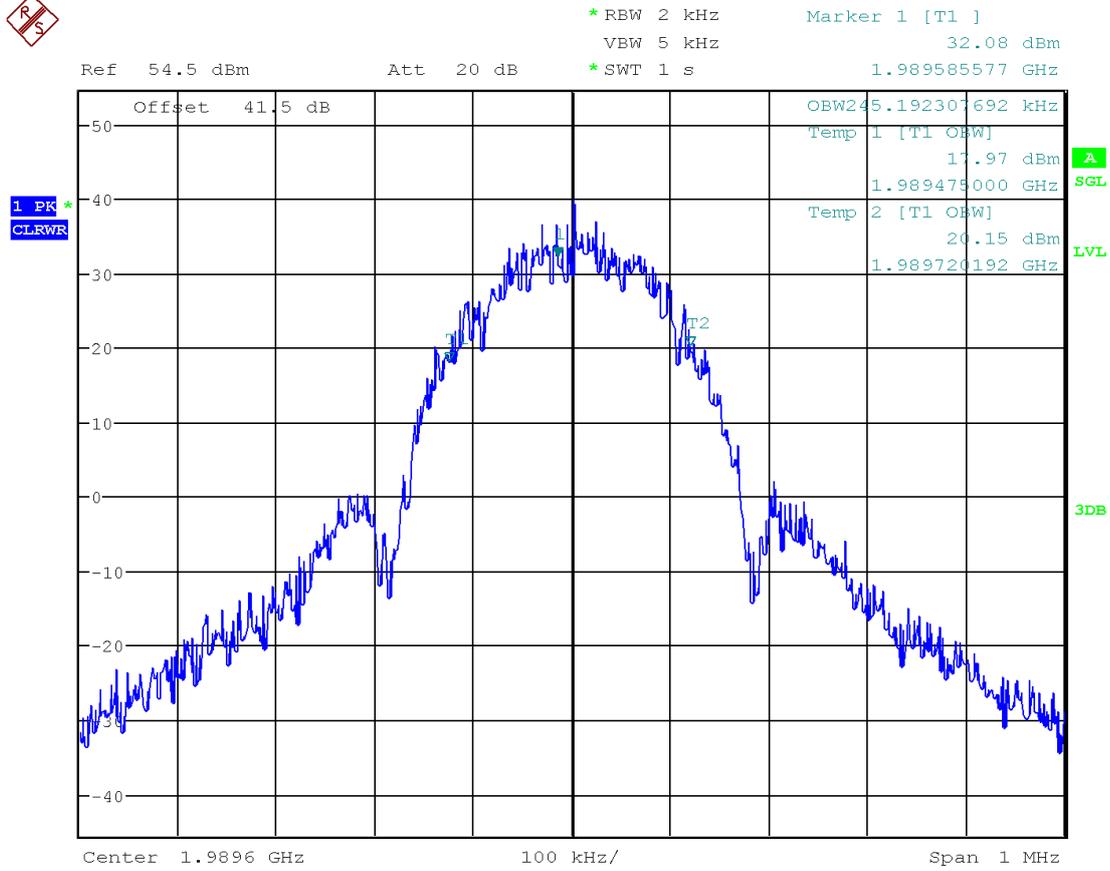
Date: 23.DEC.2011 10:47:59

2.3.1.2 Ch. M



Date: 23.DEC.2011 10:49:12

2.3.1.3 Ch. T

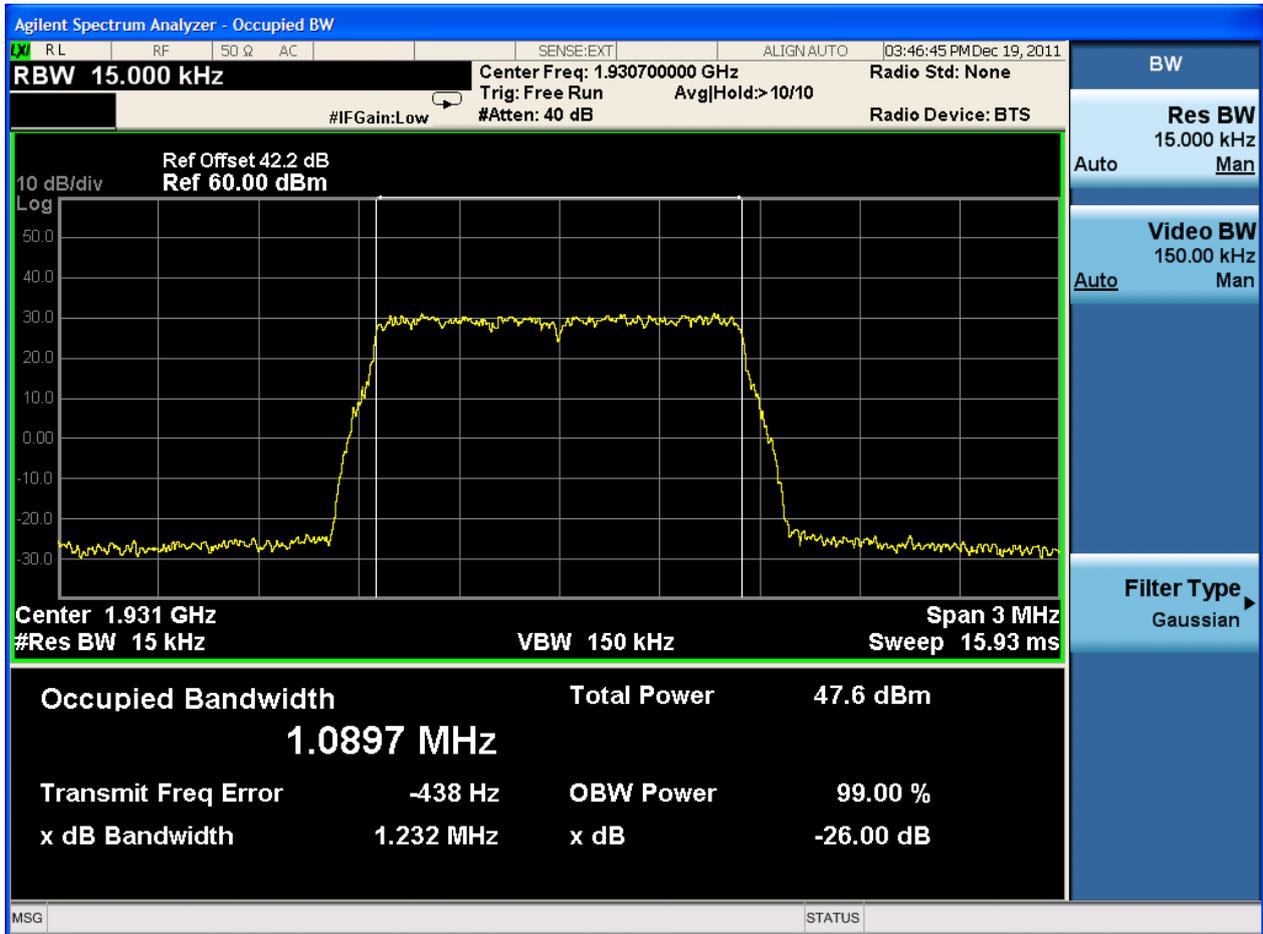


Date: 23.DEC.2011 10:48:32

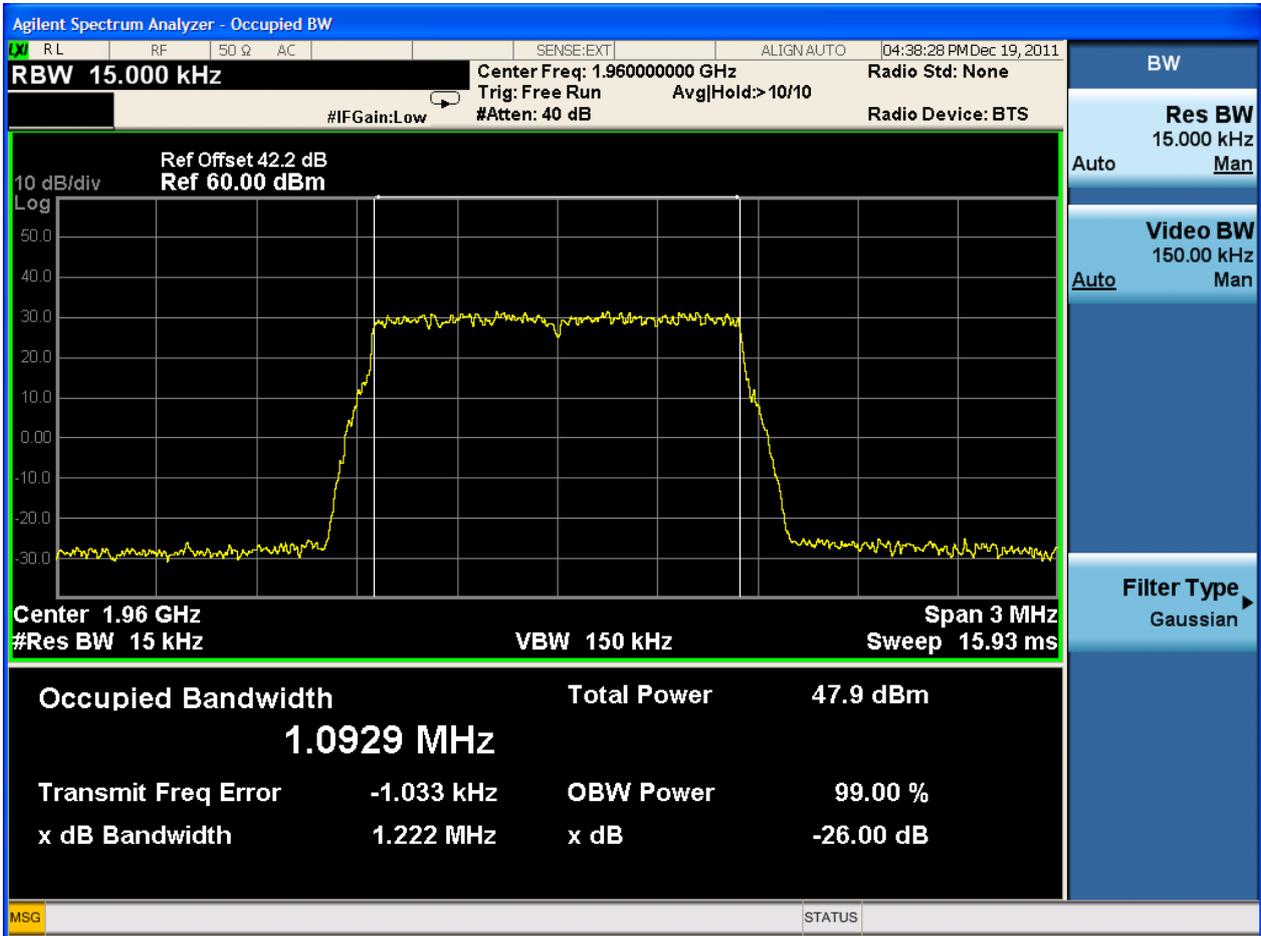
2.4 Test Mode = E-TM 1.1

2.4.1 Carrier Conf. = 1*L1.4M(60W)

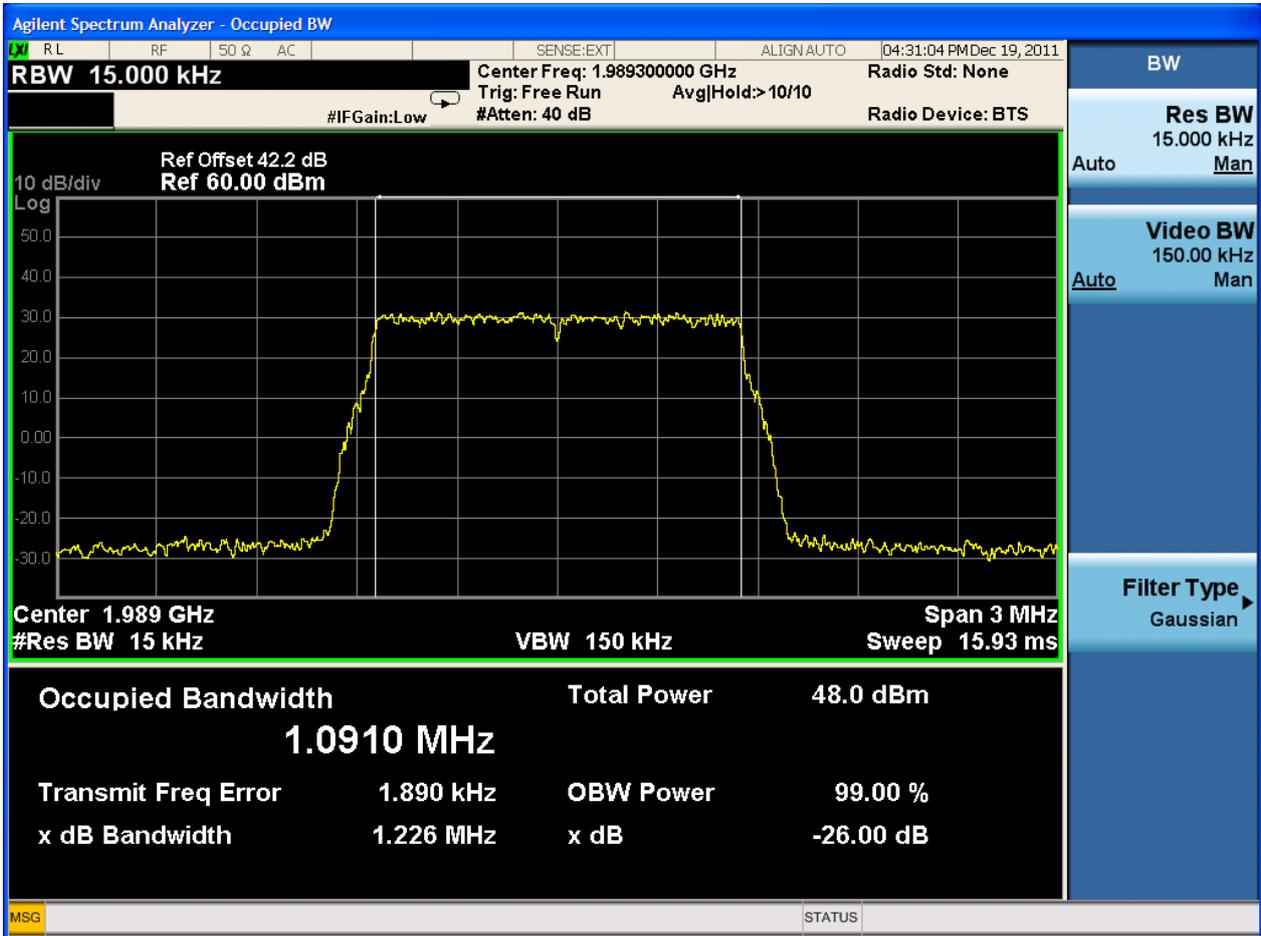
2.4.1.1 Ch. B



2.4.1.2 Ch. M

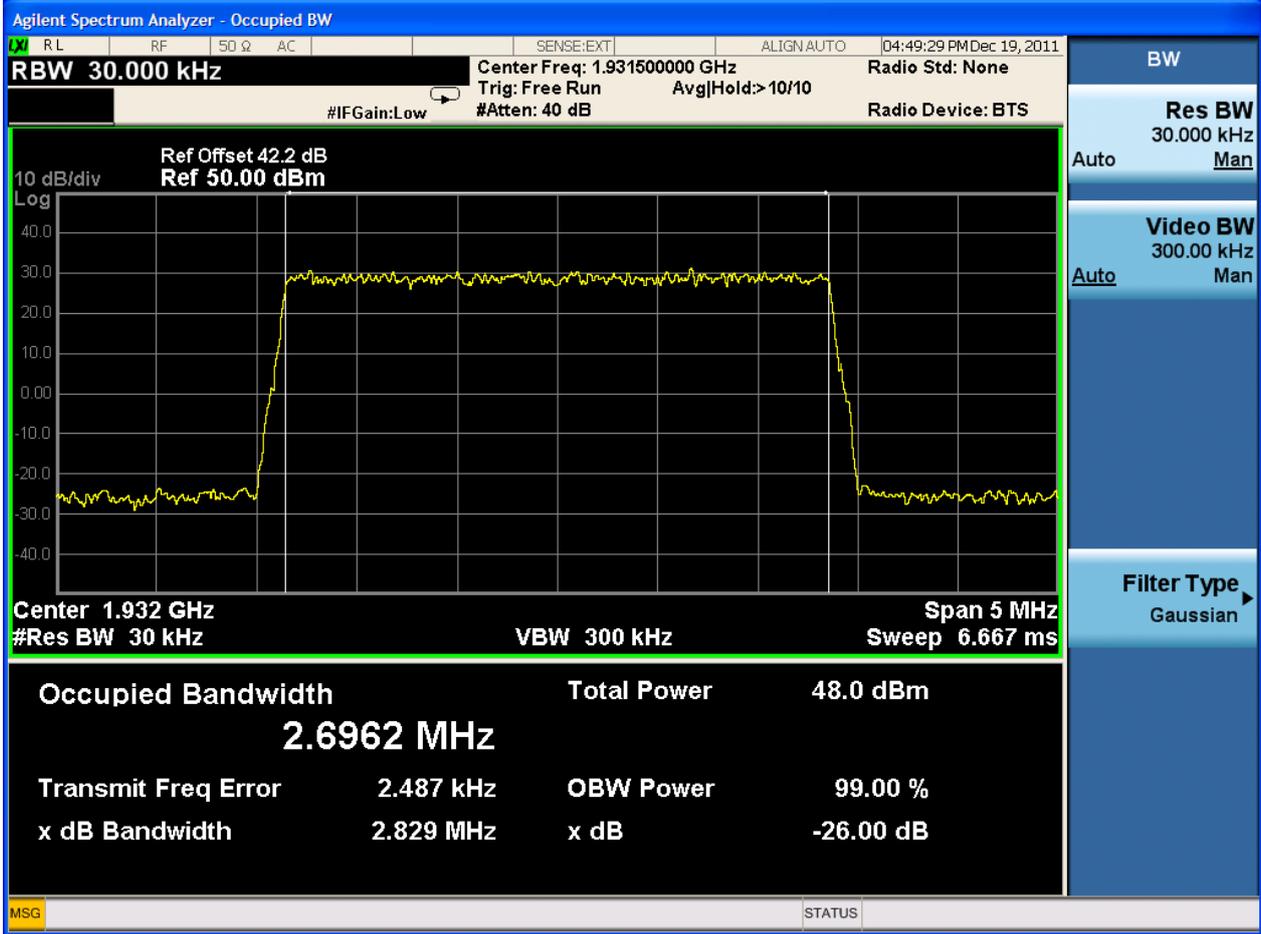


2.4.1.3 Ch. T

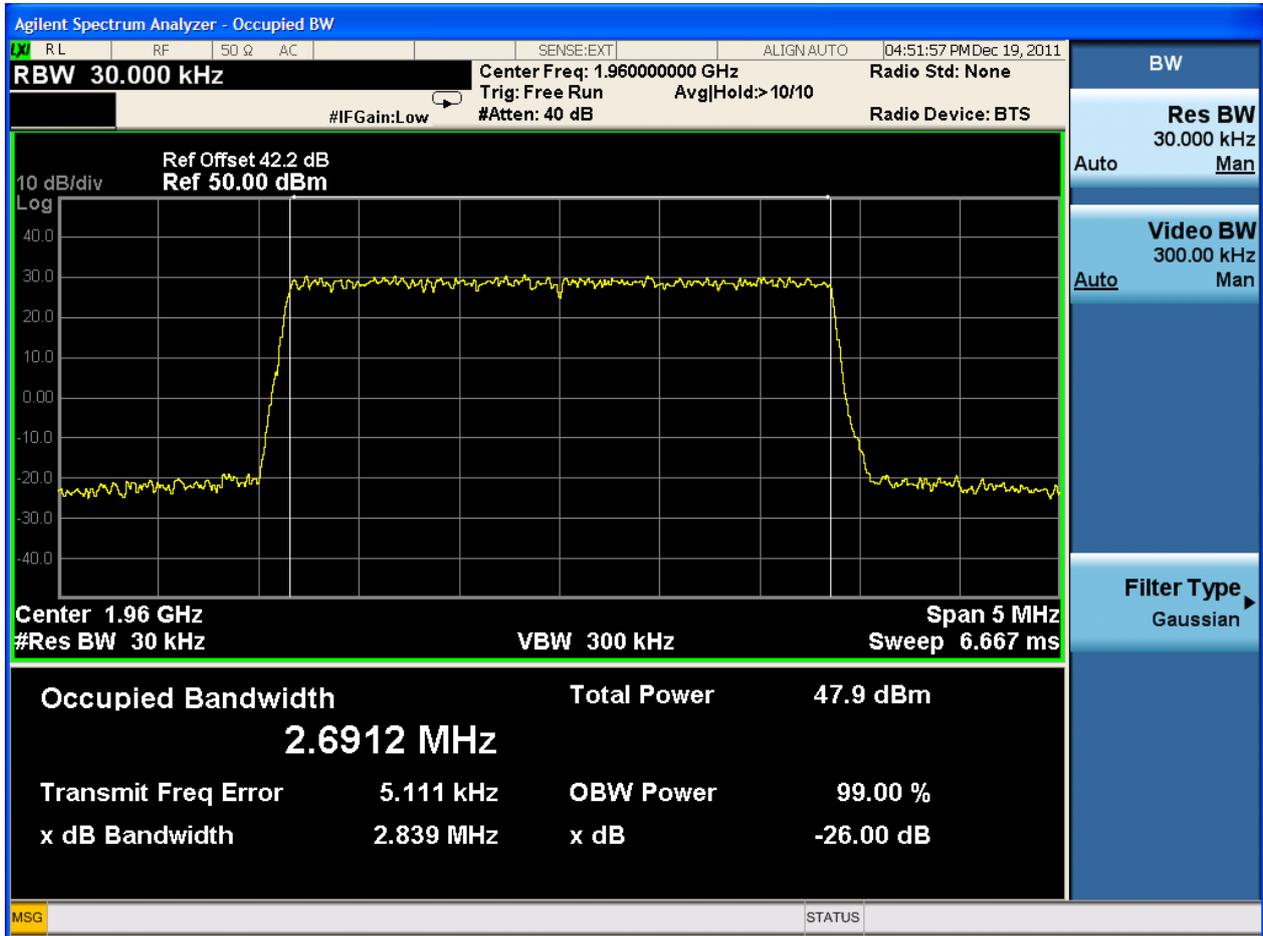


2.4.2 Carrier Conf. = 1*L3M(60W)

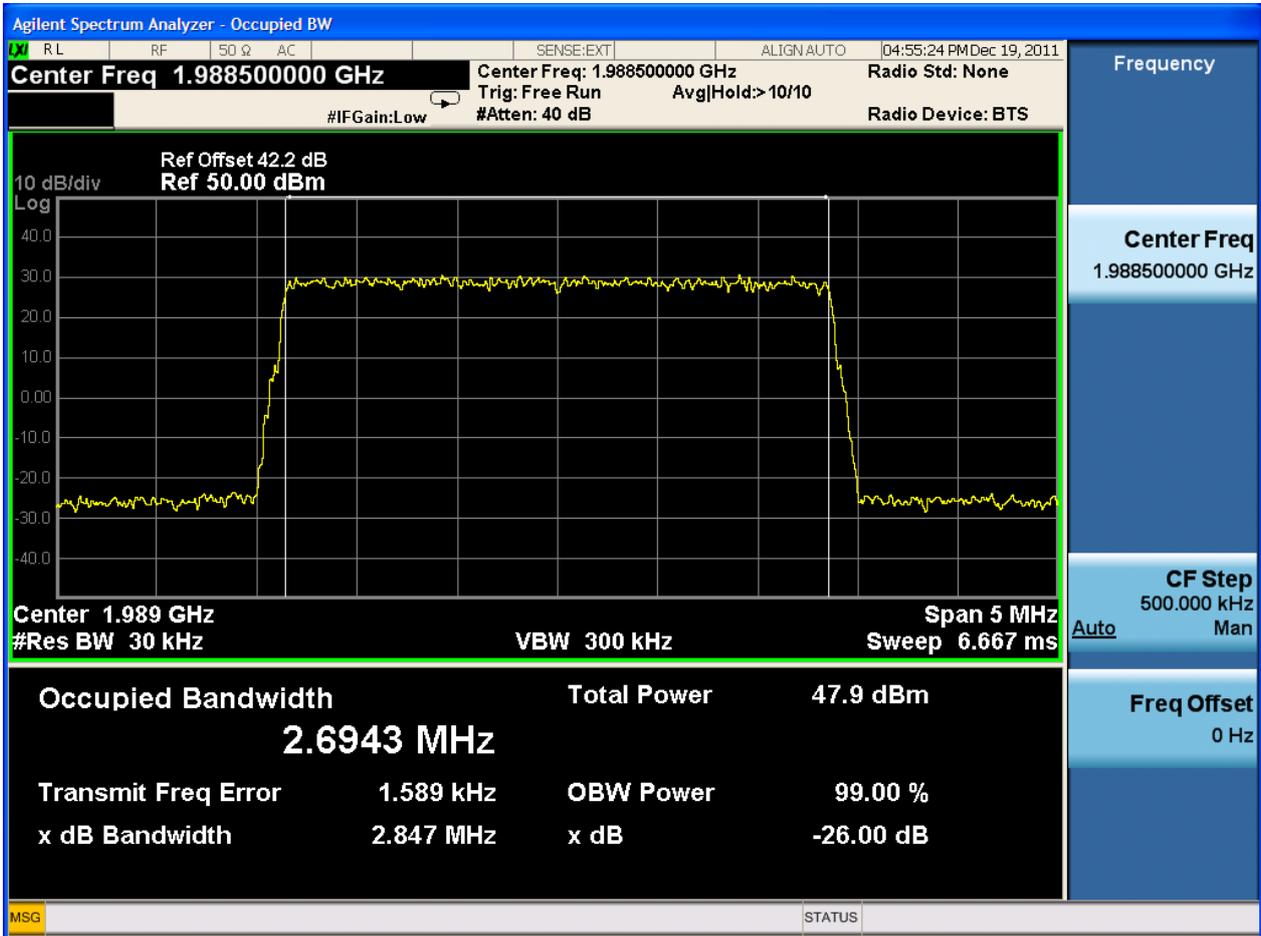
2.4.2.1 Ch. B



2.4.2.2 Ch. M

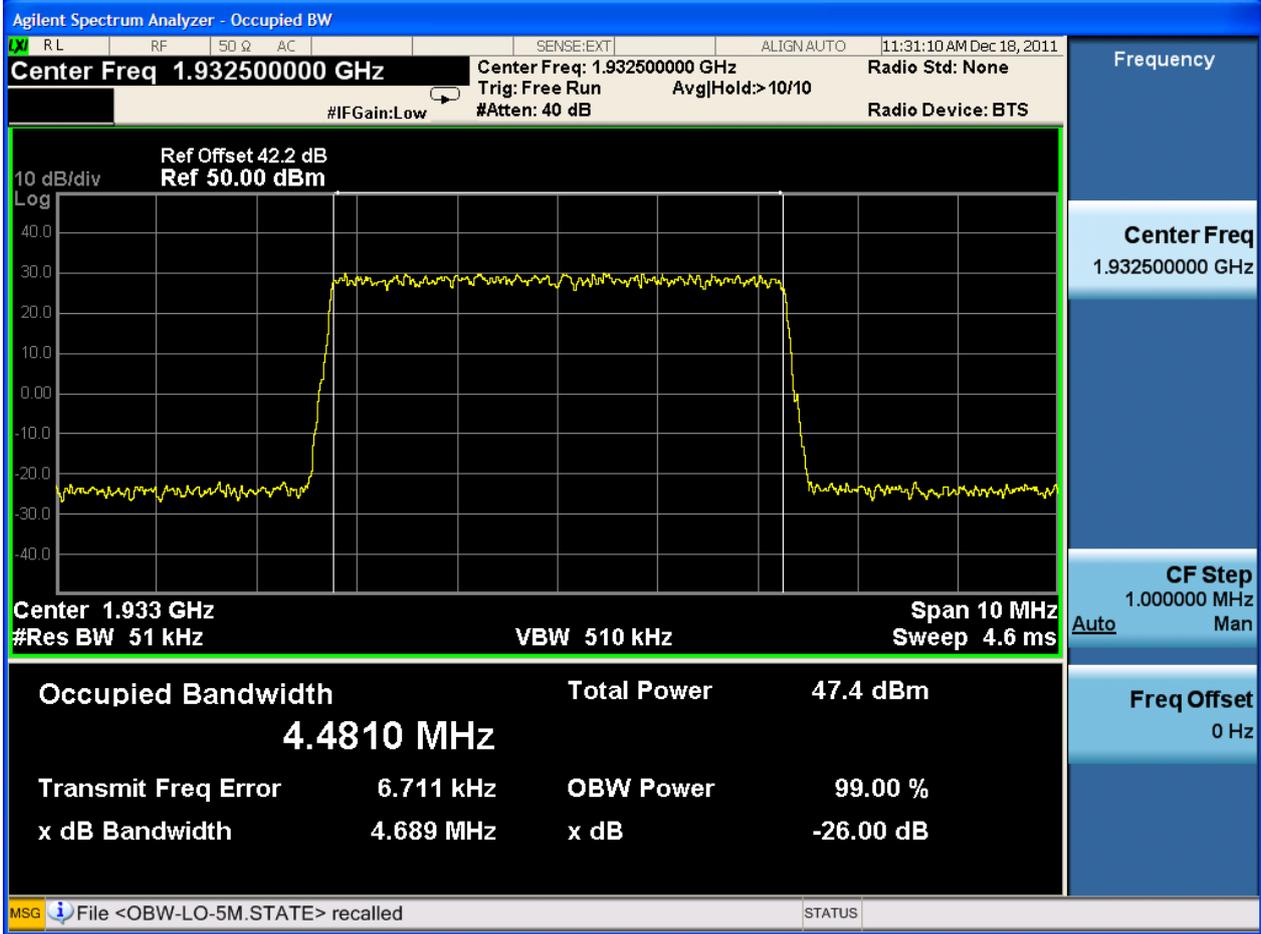


2.4.2.3 Ch. T

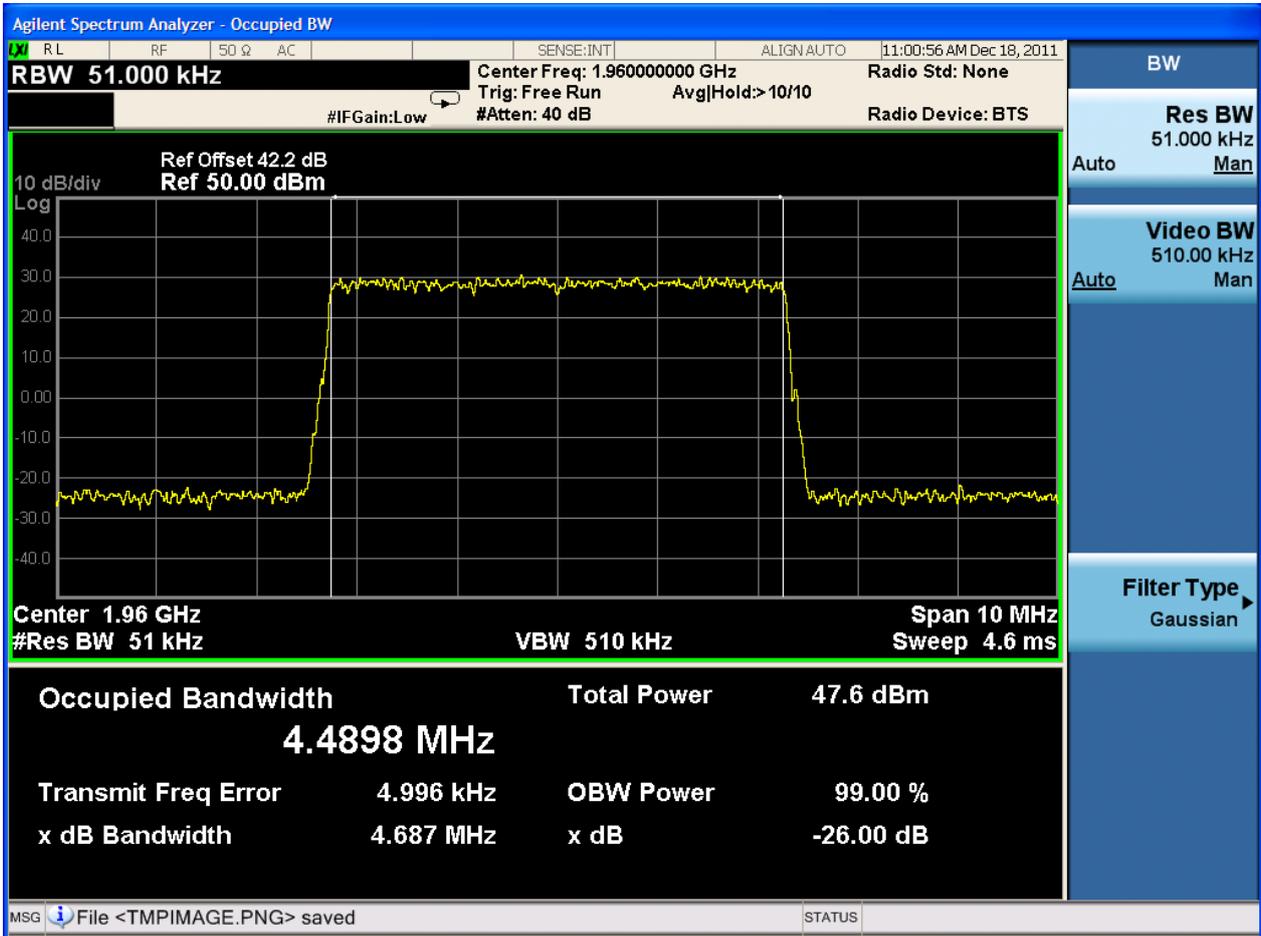


2.4.3 Carrier Conf. = 1*L5M(60W)

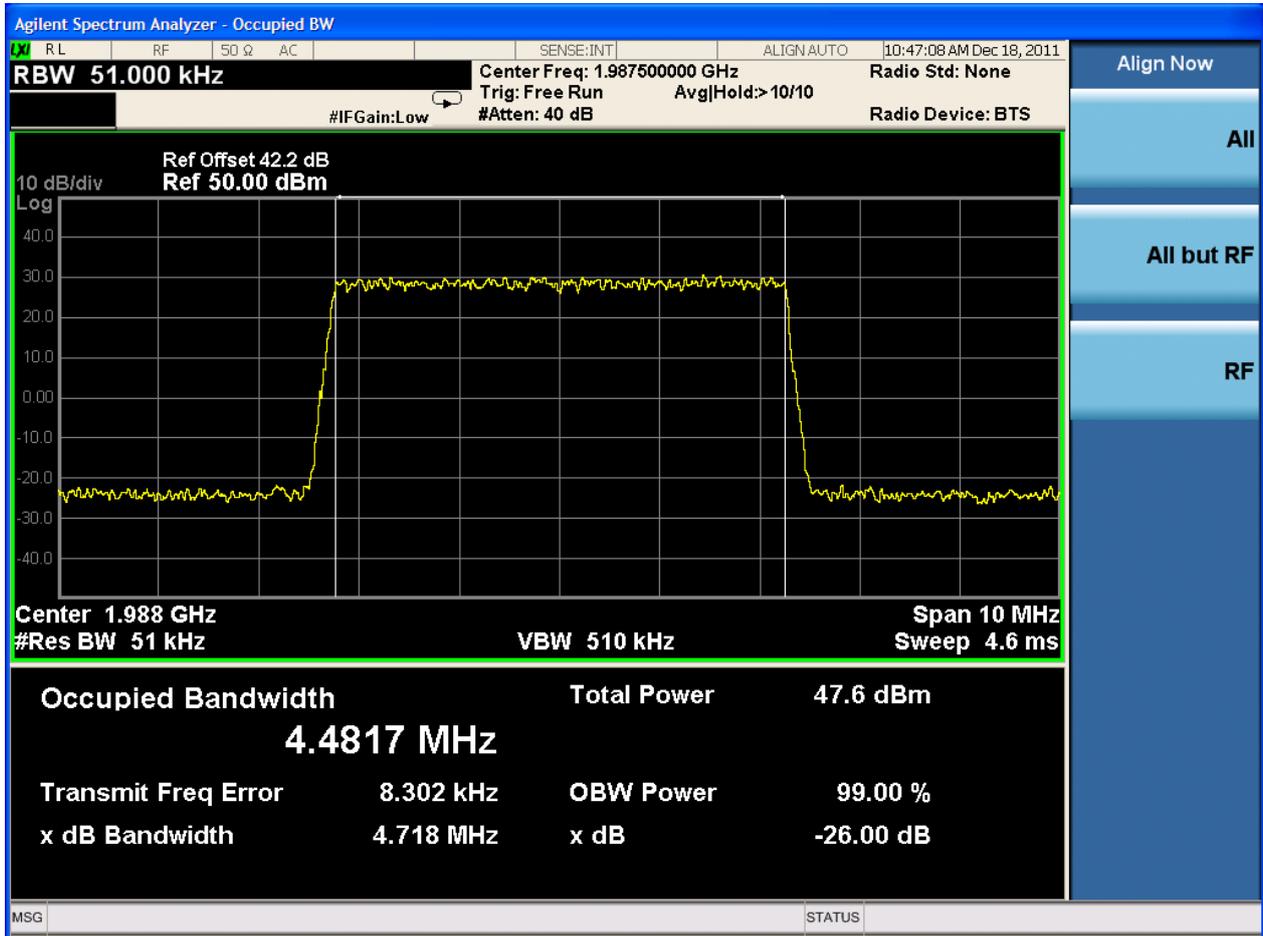
2.4.3.1 Ch. B



2.4.3.2 Ch. M

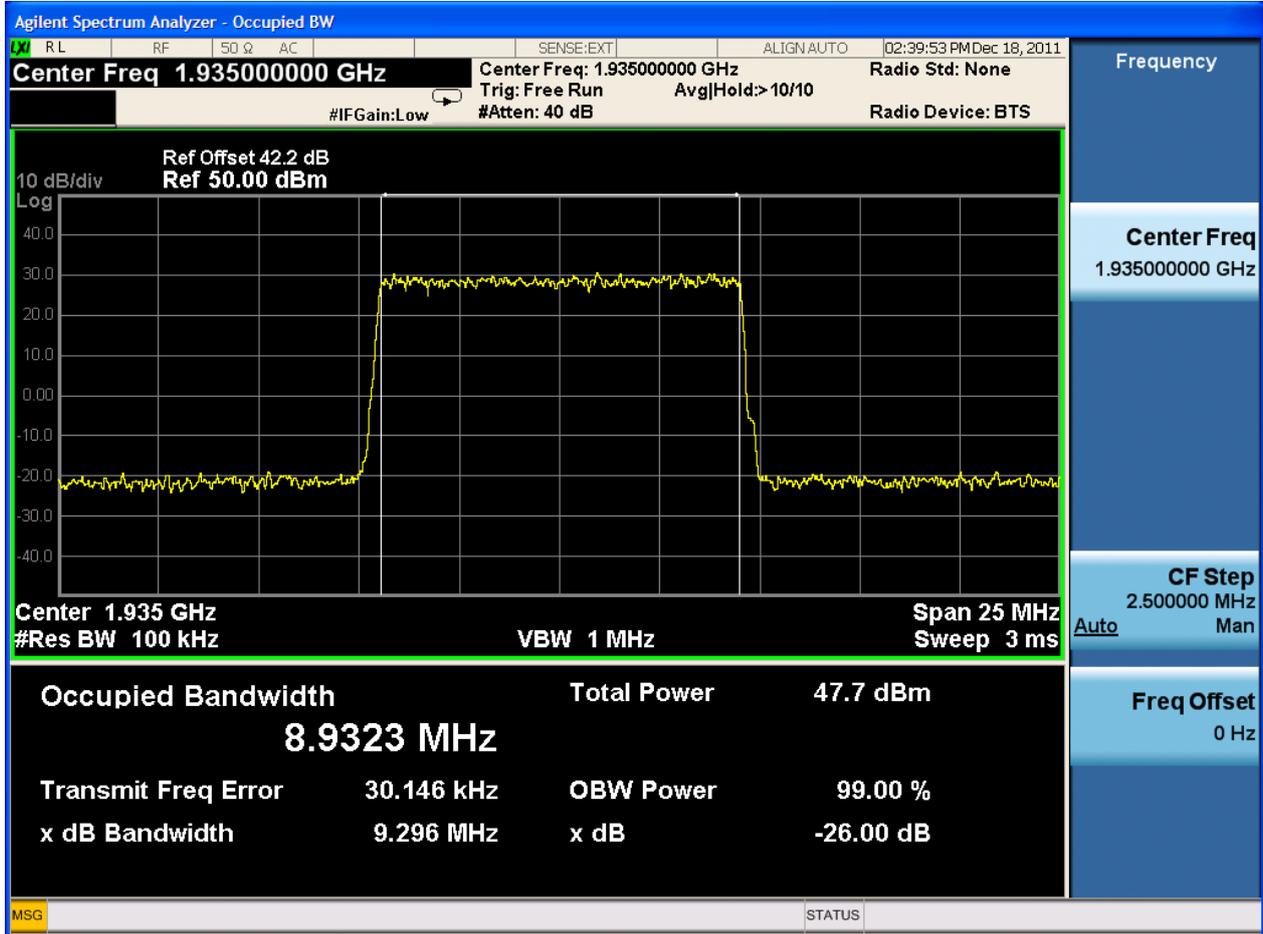


2.4.3.3 Ch. T

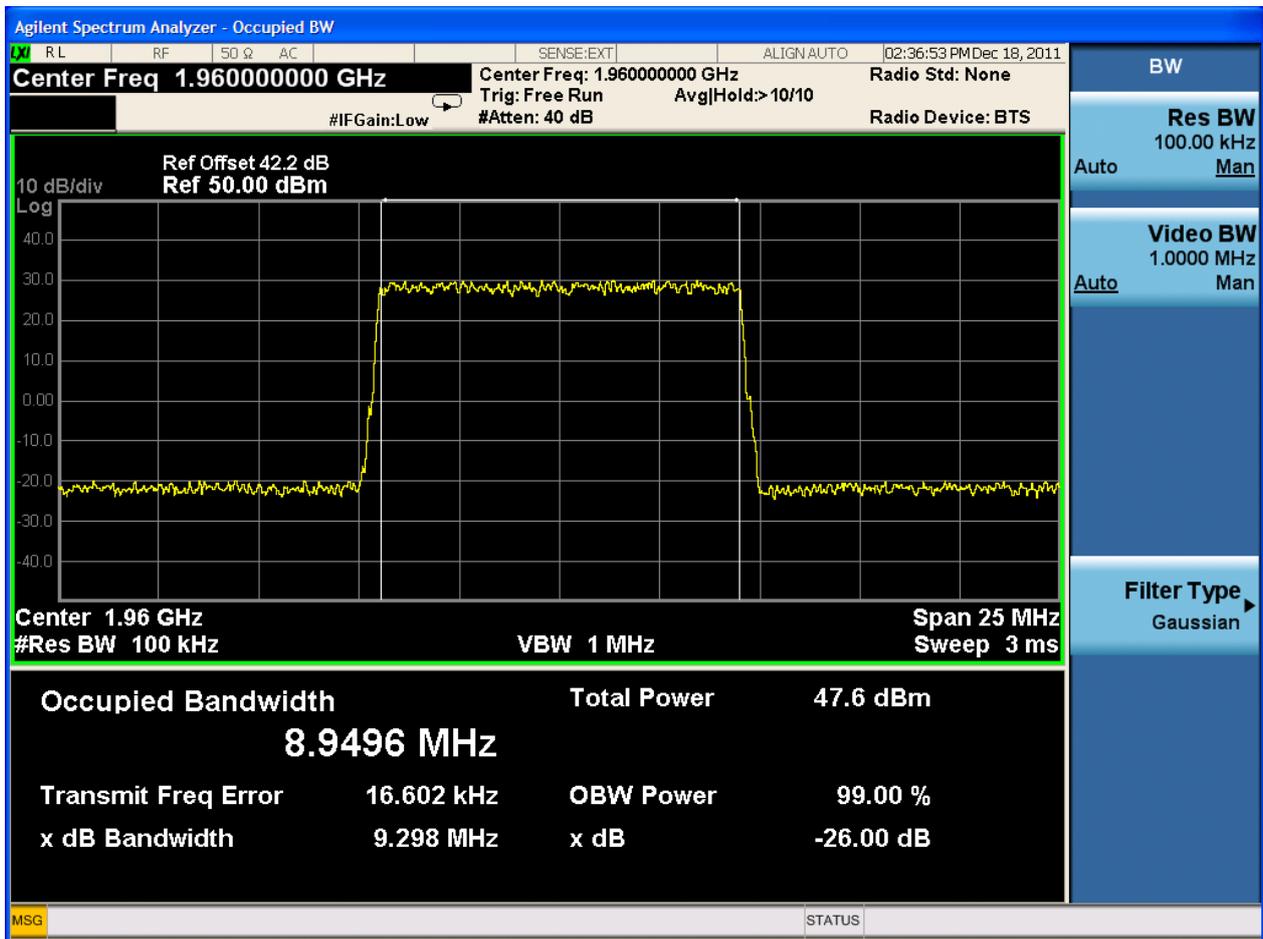


2.4.4 Carrier Conf. = 1*L10M(60W)

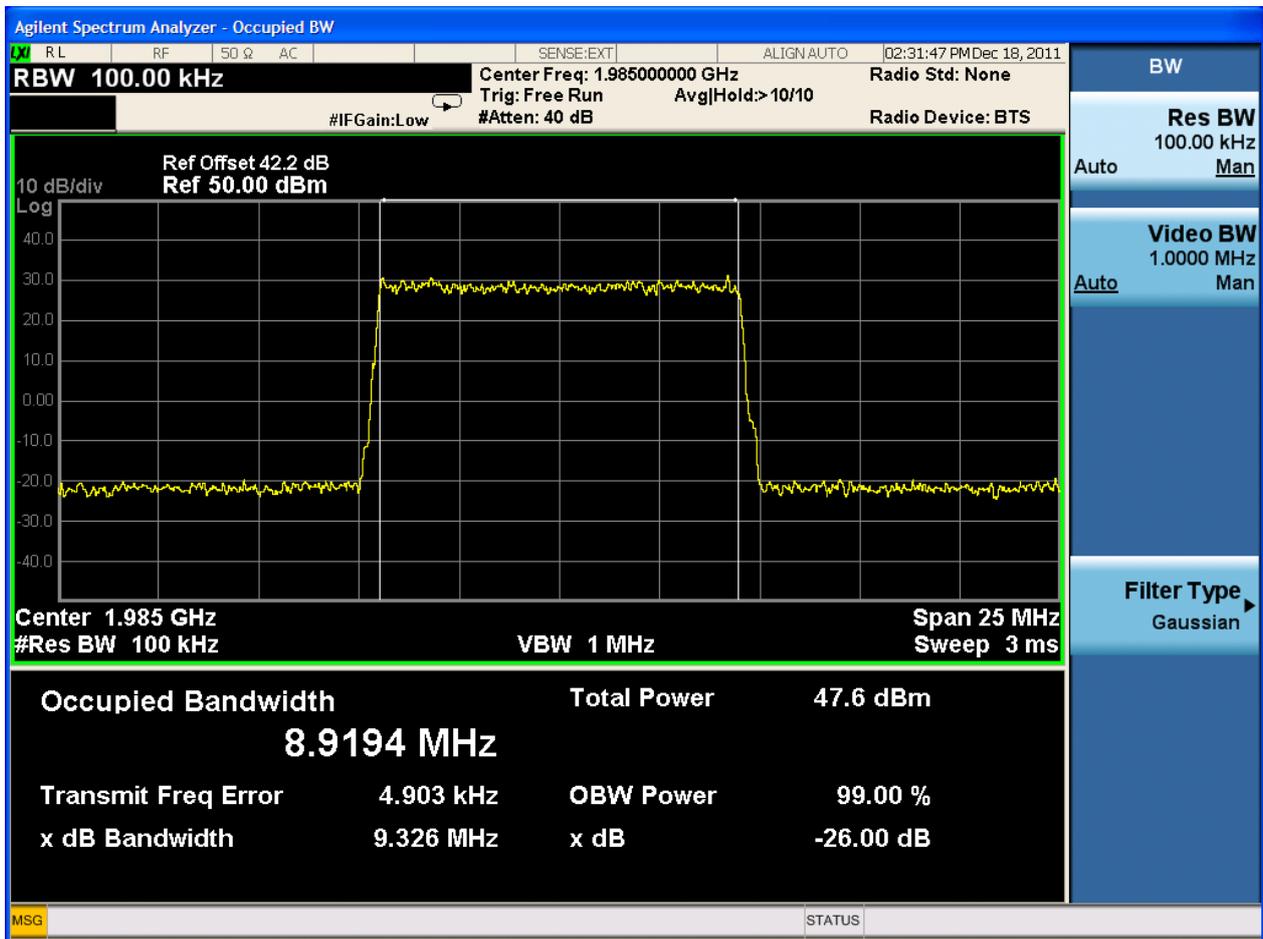
2.4.4.1 Ch. B



2.4.4.2 Ch. M

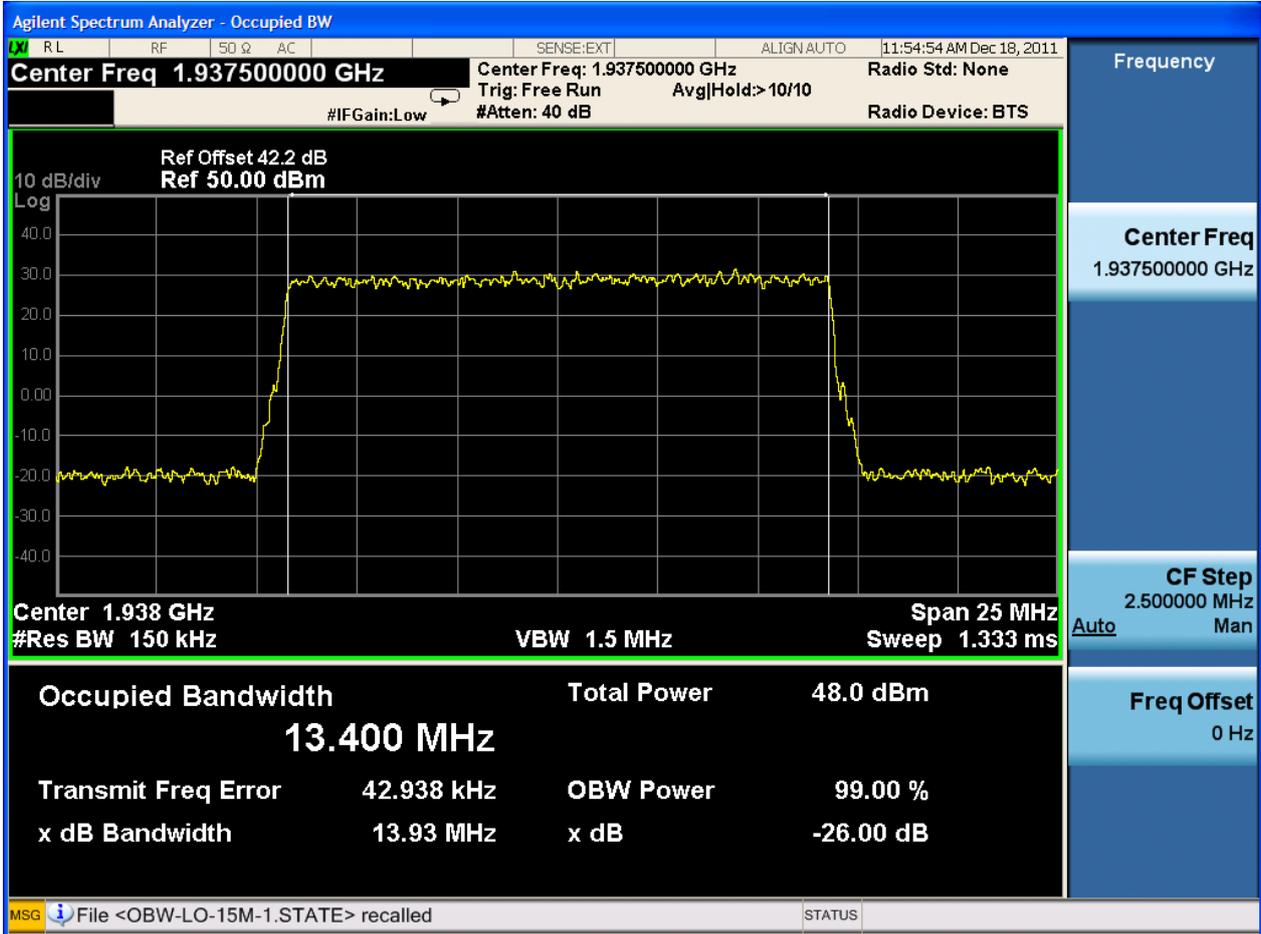


2.4.4.3 Ch. T

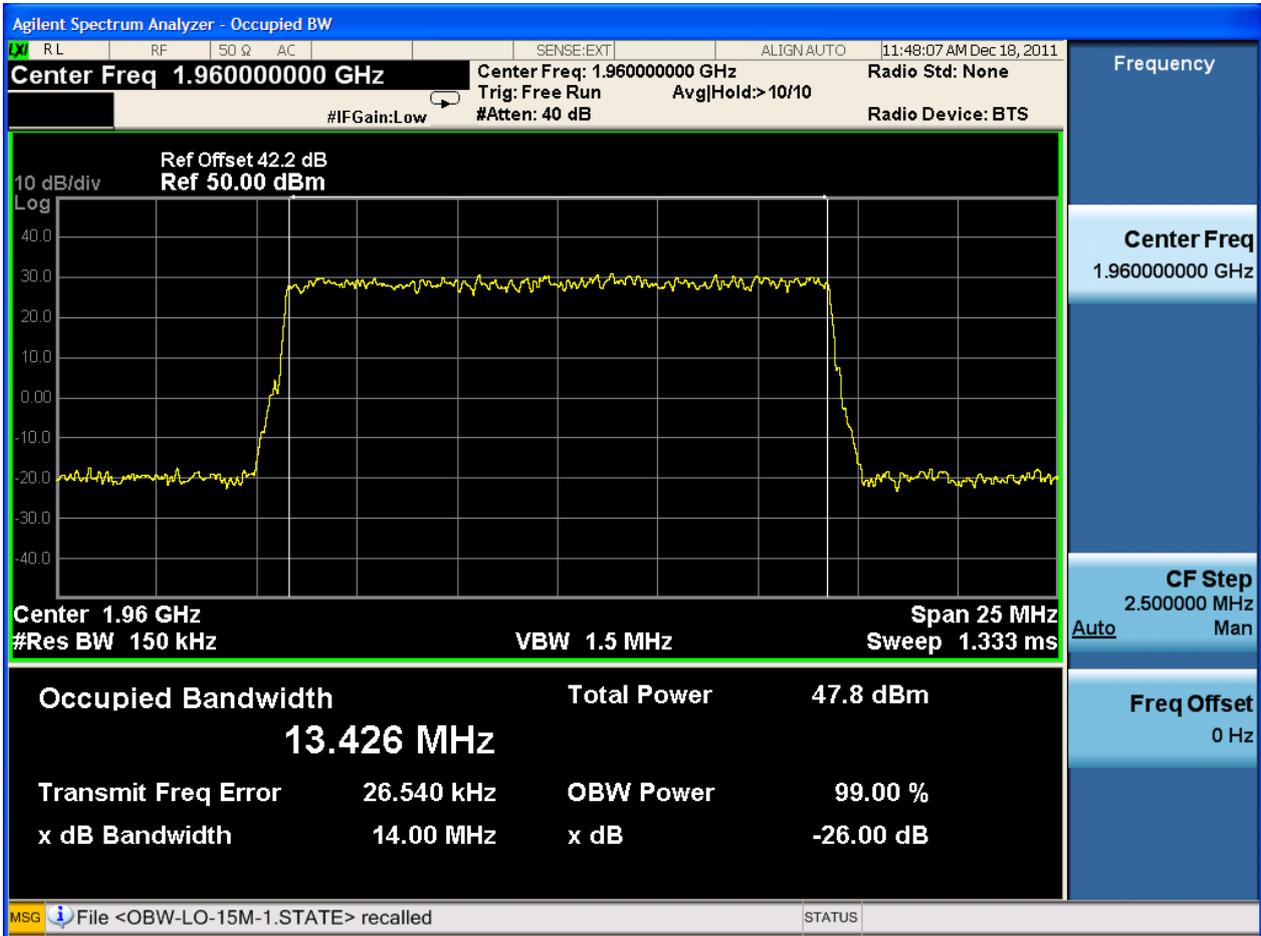


2.4.5 Carrier Conf. = 1*L15M(60W)

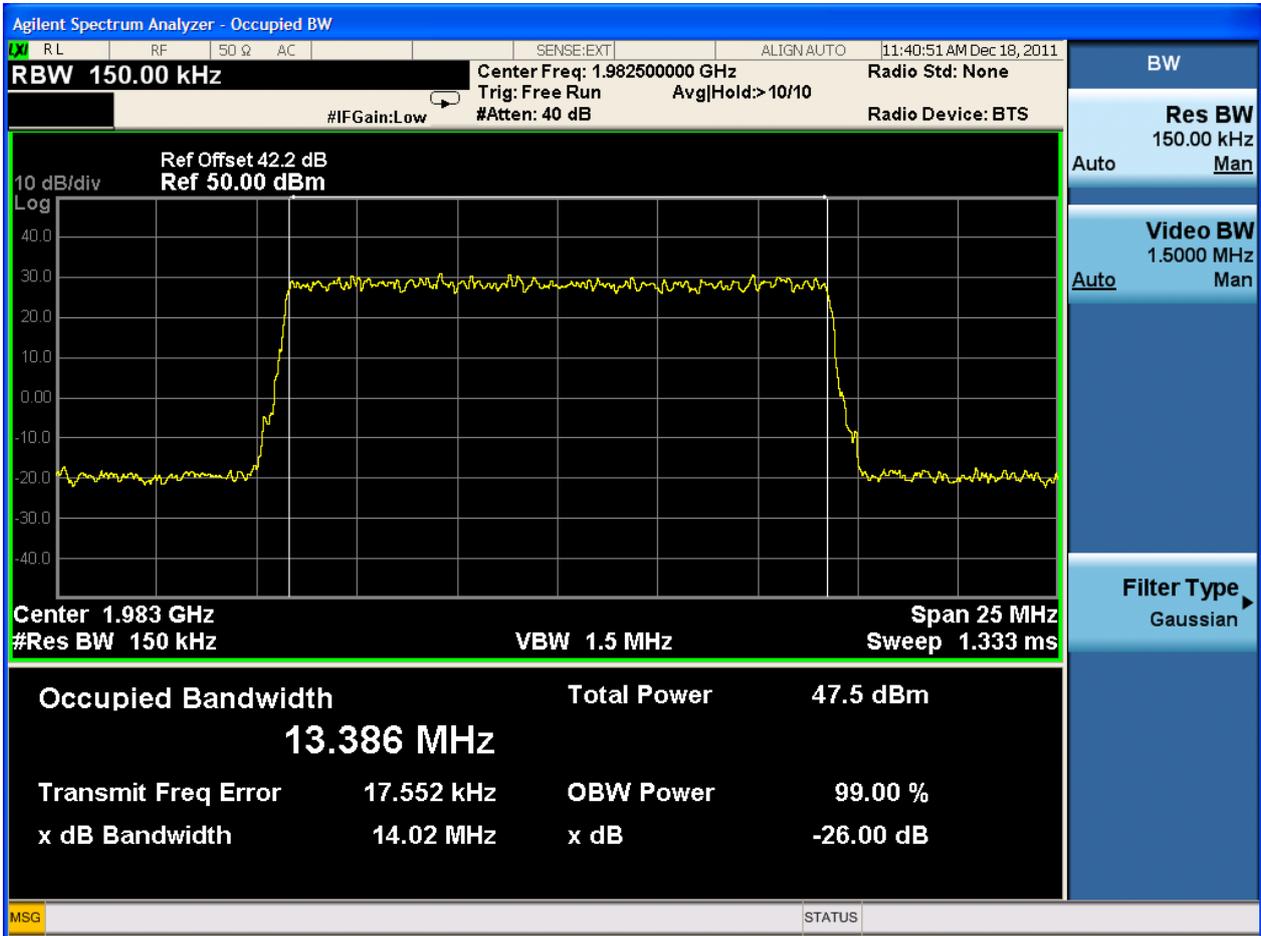
2.4.5.1 Ch. B



2.4.5.2 Ch. M



2.4.5.3 Ch. T





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.

Test Mode	Carrier Conf.	RF Ch.	Band Edges Emissions [dBm]	Verdict
TM-1	1*U(60W)	B	-16.56	Pass
		T	-16.58	Pass
	4*U(15W)	B	-20.29	Pass
		T	-19.74	Pass
GMSK	1*G(60W)	B	-32.04	Pass
		T	-31.48	Pass
	4*G(15W)	B	-30.59	Pass
		T	-31.33	Pass
8PSK	1*G(60W)	B	-26.06	Pass
		T	-18.61	Pass
	4*G(15W)	B	-32.18	Pass
		T	-31.99	Pass
E-TM 1.1	1*L1.4M(60W)	B	-25.76	Pass
		T	-27.03	Pass
	1*L15M(60W)	B	-18.86	Pass
		T	-18.59	Pass
	2*L1.4M(30W)	B	-28.94	Pass
		T	-29.74	Pass
	2*L15M(30W)	B	-22.33	Pass
		T	-22.41	Pass
MSR_TM1	1*G(40W) & 1*U(20W)	B	-33.05	Pass
		T	-24.79	Pass
	3*G(15W) & 1*U(15W)	B	-29.23	Pass
		T	-33.92	Pass
	1*G(15W) & 3*U(15W)	B	-26.32	Pass
		T	-24.37	Pass
MSR_TM2	1*G(40W) & 1*U(20W)	B	-27.59	Pass
		T	-24.30	Pass
	3*G(15W) & 1*U(15W)	B	-25.29	Pass
		T	-30.0	Pass
	1*G(15W) &	B	-24.79	Pass



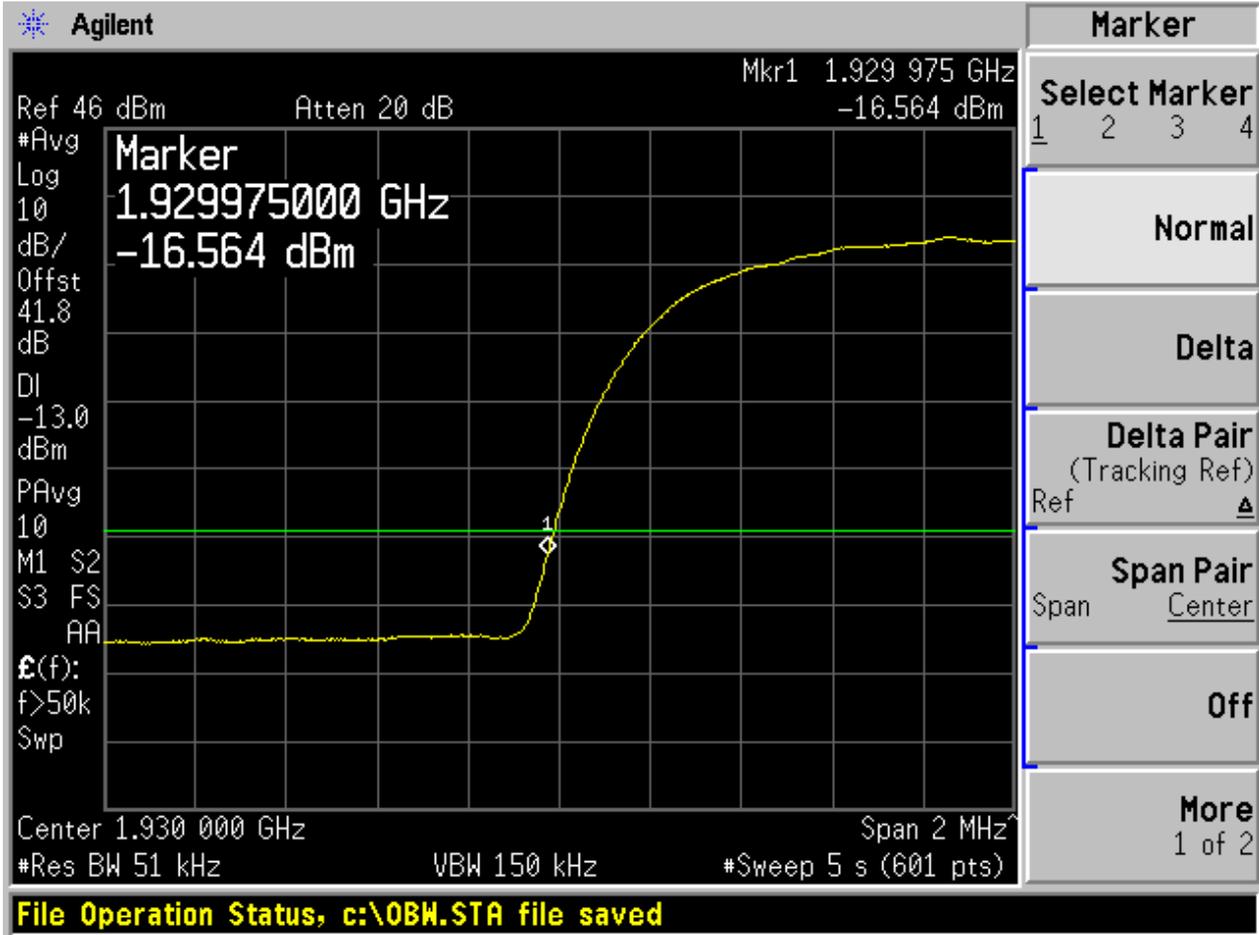
Test Mode	Carrier Conf.	RF Ch.	Band Edges Emissions [dBm]	Verdict
	3*U(15W)			
		T	-25.44	Pass

2 Test Plot

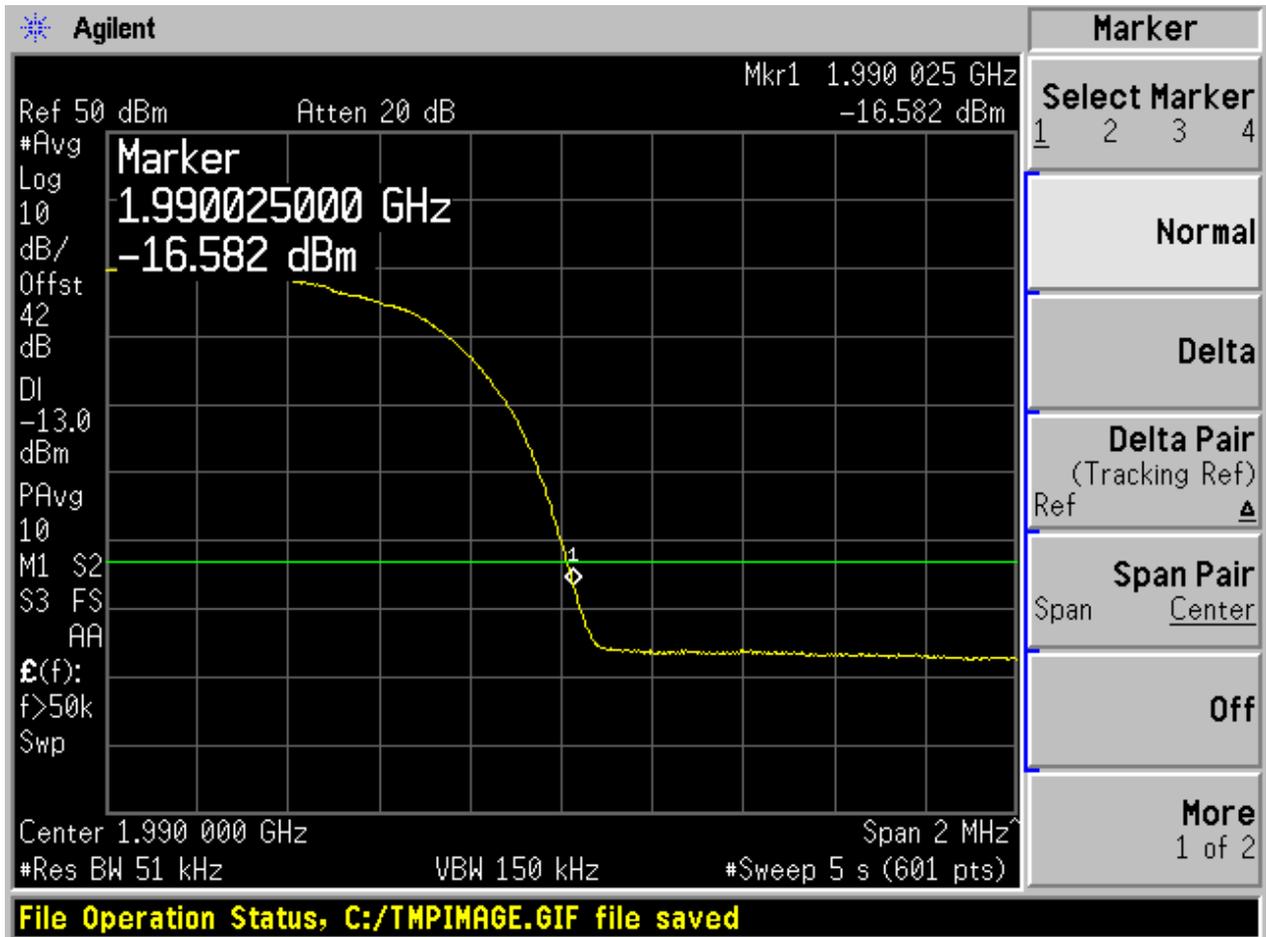
2.1 Test Mode = TM-1

2.1.1 Carrier Conf. = 1*U(60W)

2.1.1.1 Ch. B

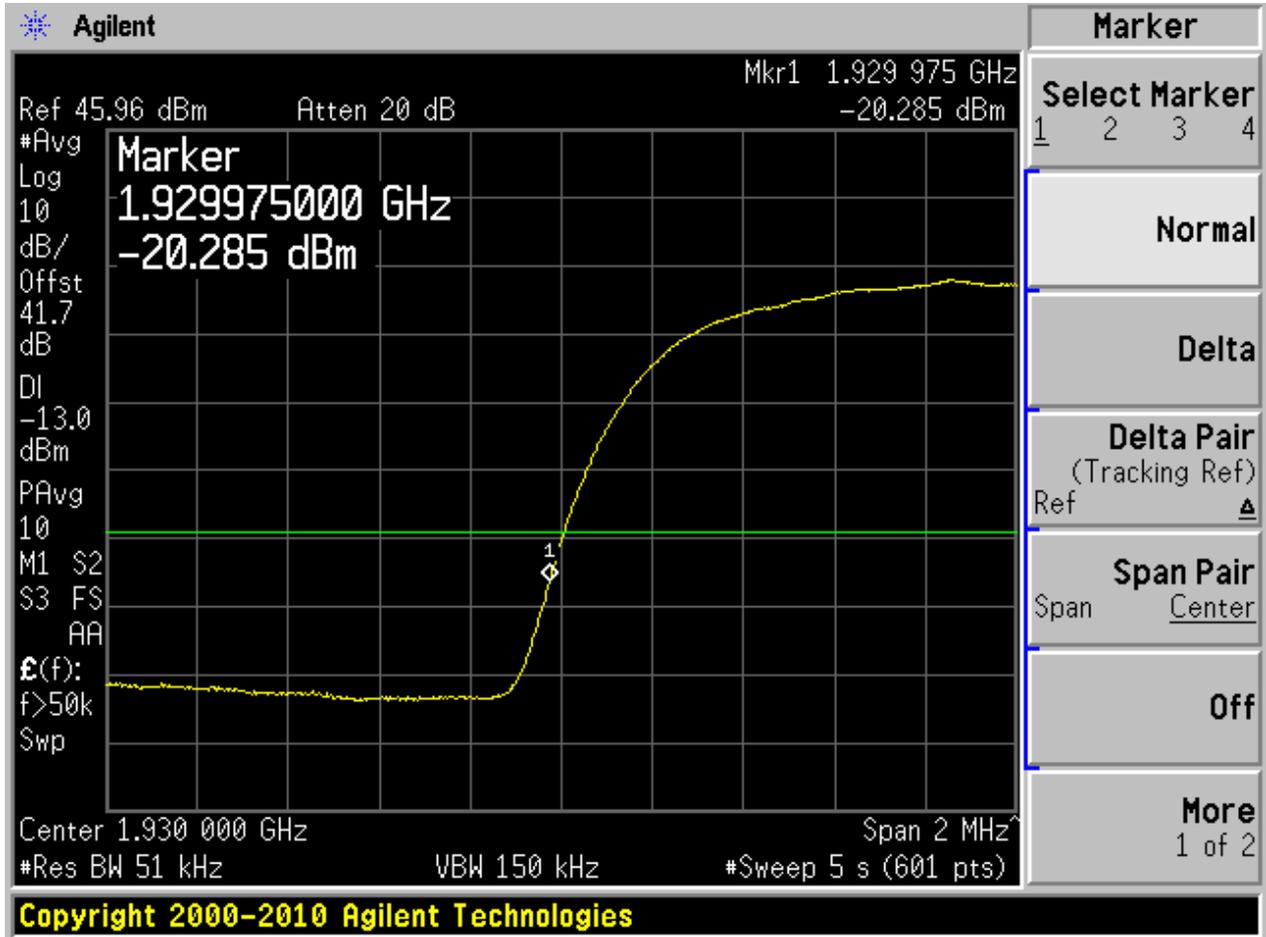


2.1.1.2 Ch. T

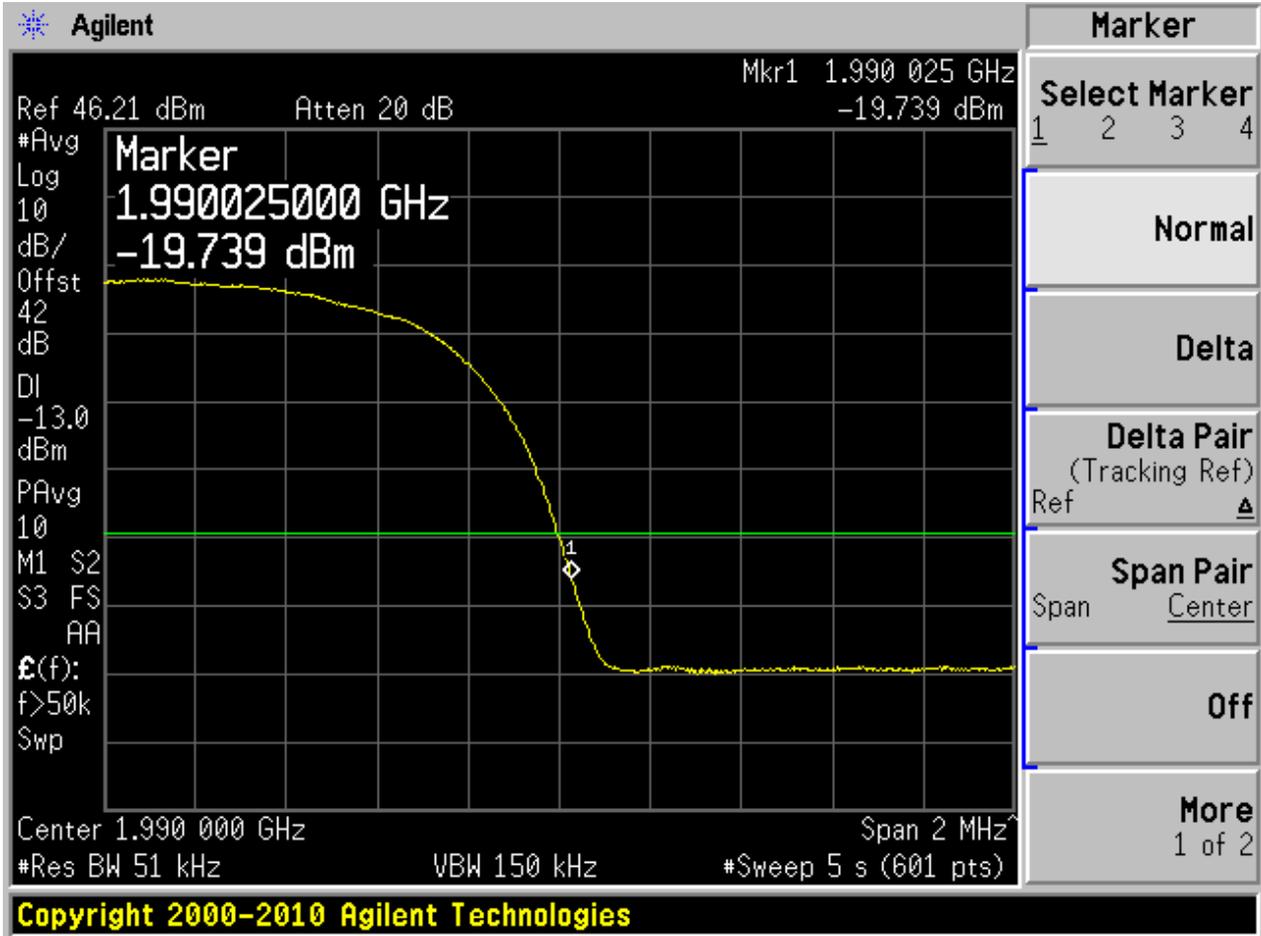


2.1.2 Carrier Conf. = 4*U(15W)

2.1.2.1 Ch. B



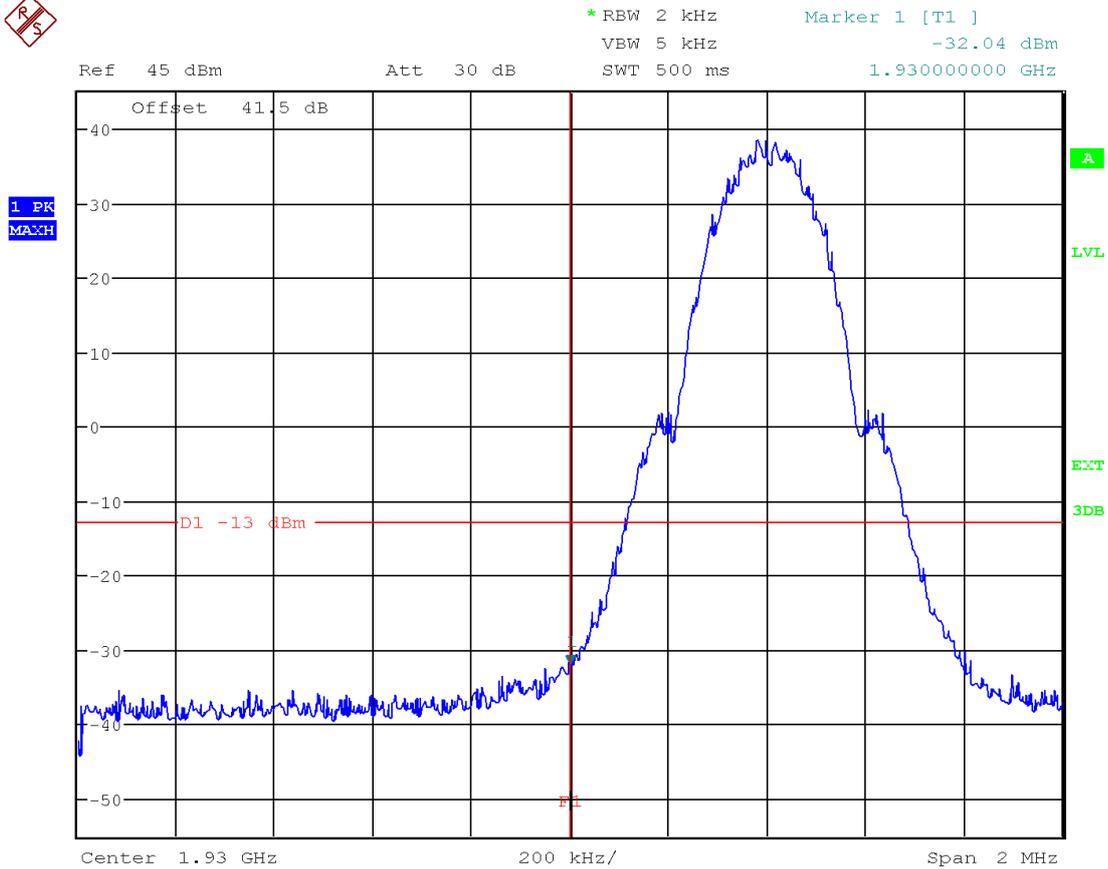
2.1.2.2 Ch. T



2.2 Test Mode = GMSK

2.2.1 Carrier Conf. = 1*G(60W)

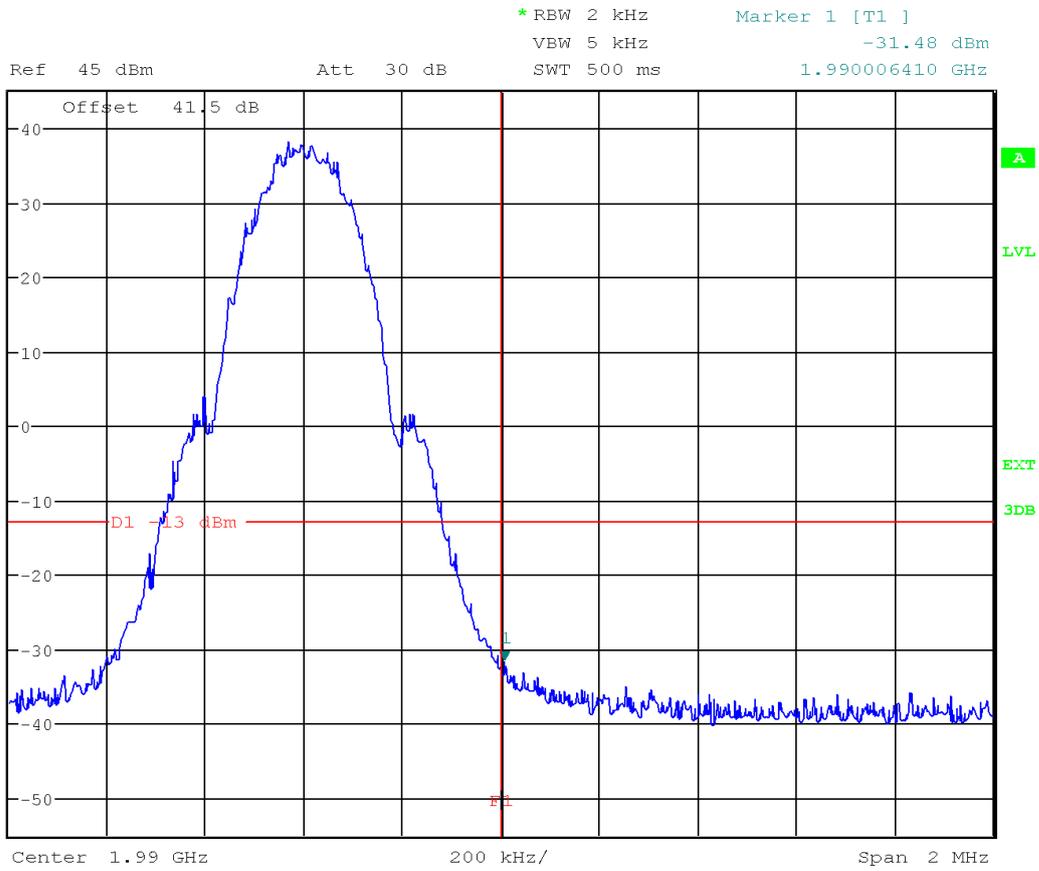
2.2.1.1 Ch. B



Date: 24.DEC.2011 12:12:04



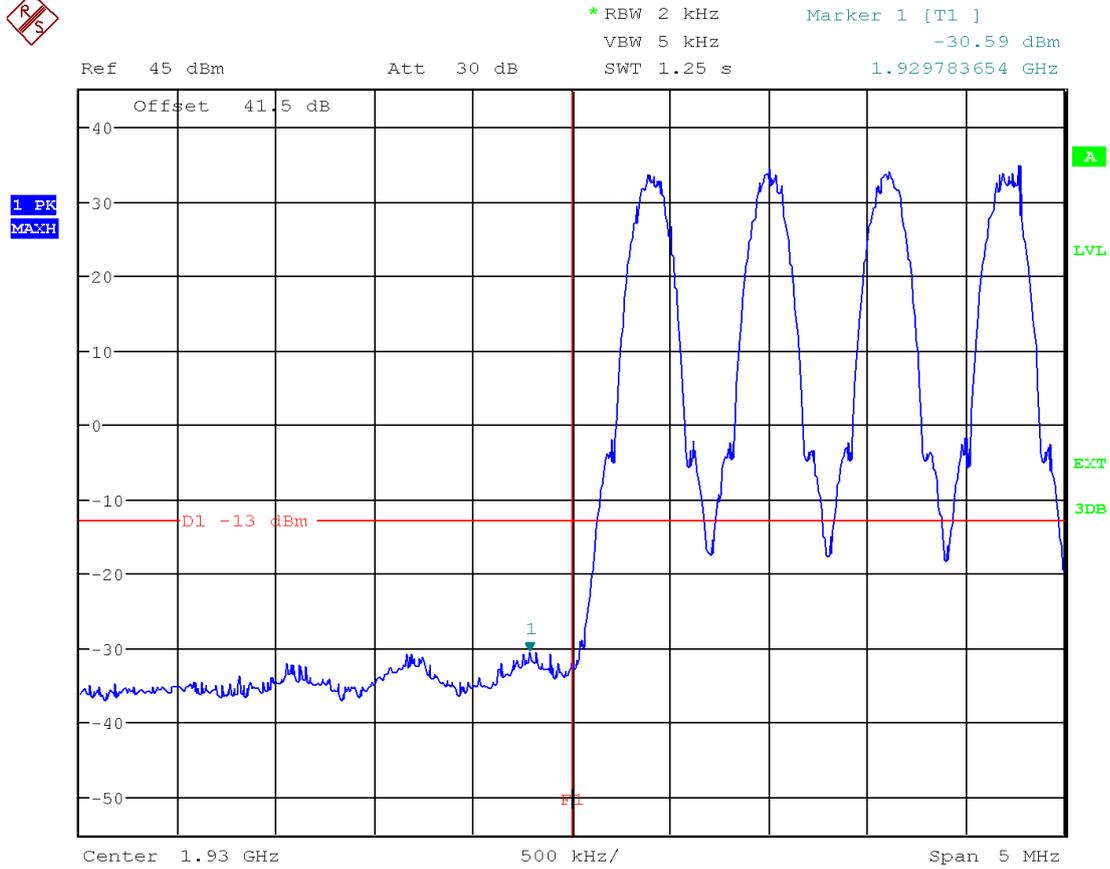
2.2.1.2 Ch. T



Date: 24.DEC.2011 12:13:09

2.2.2 Carrier Conf. = 4*G(15W)

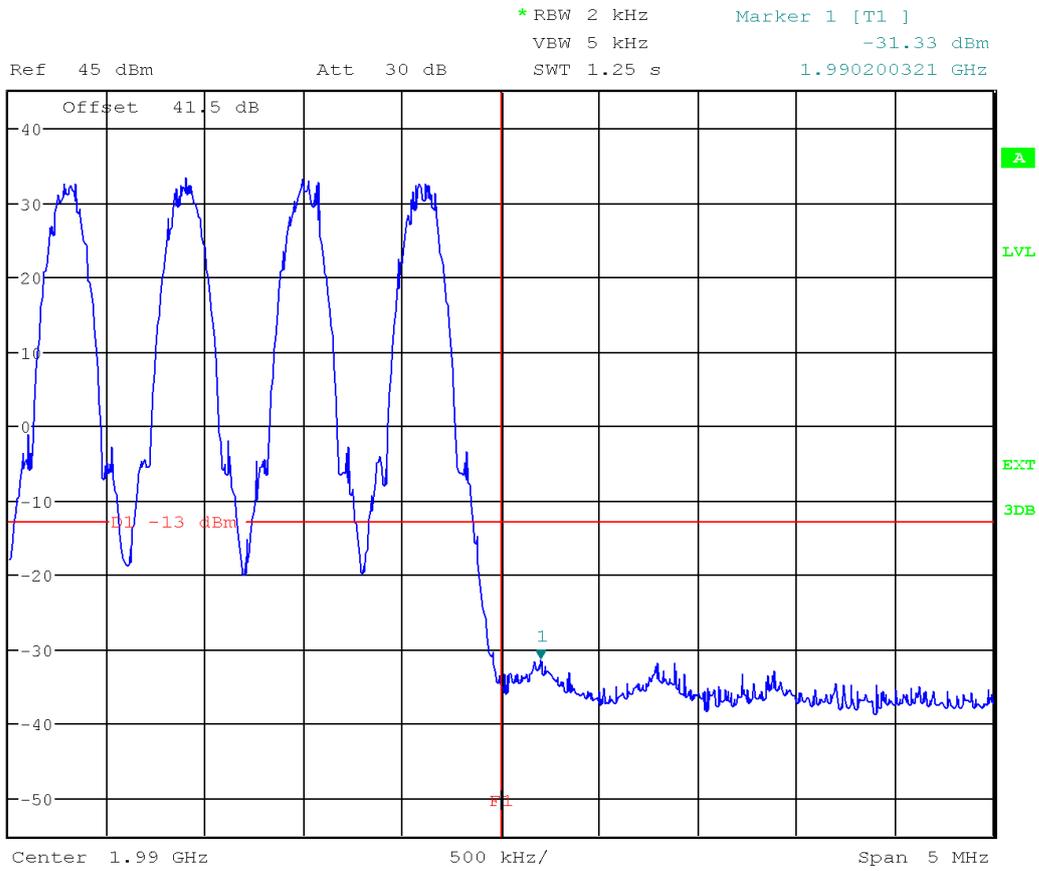
2.2.2.1 Ch. B



Date: 23.DEC.2011 15:06:46



2.2.2.2 Ch. T

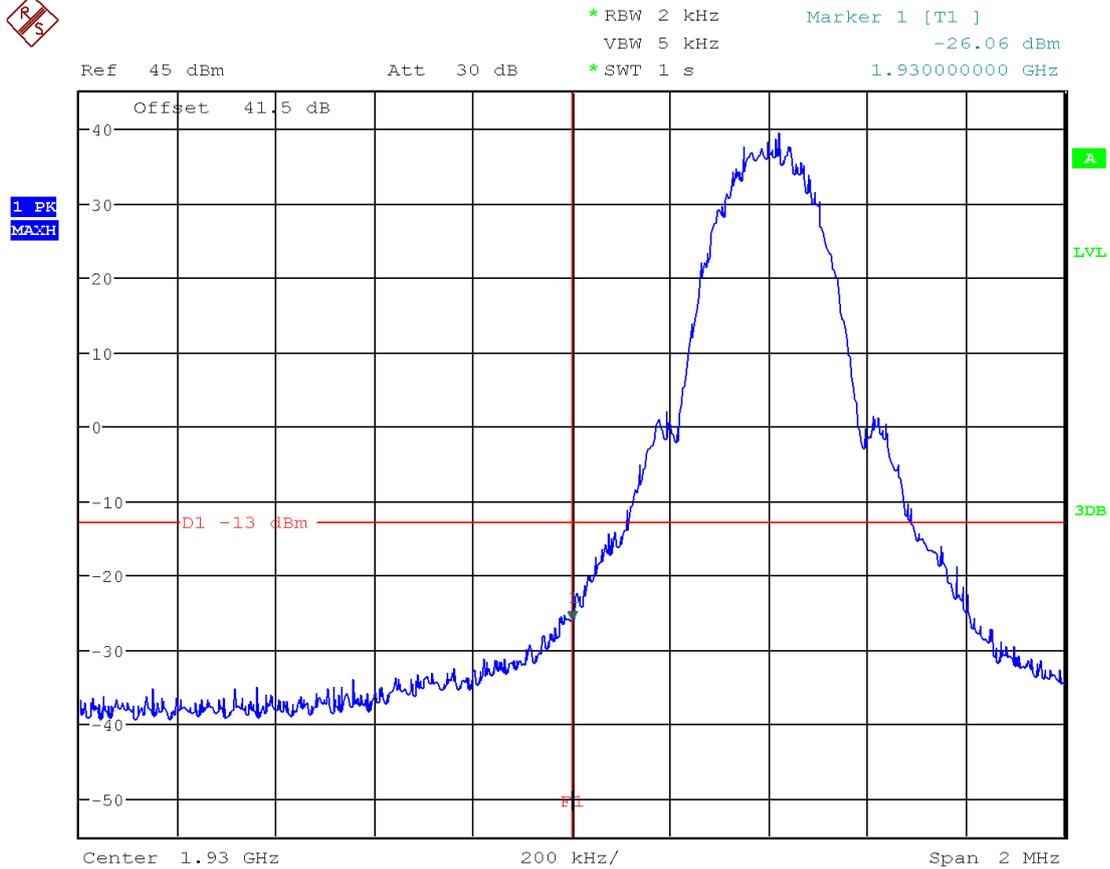


Date: 23.DEC.2011 14:45:18

2.3 Test Mode = 8PSK

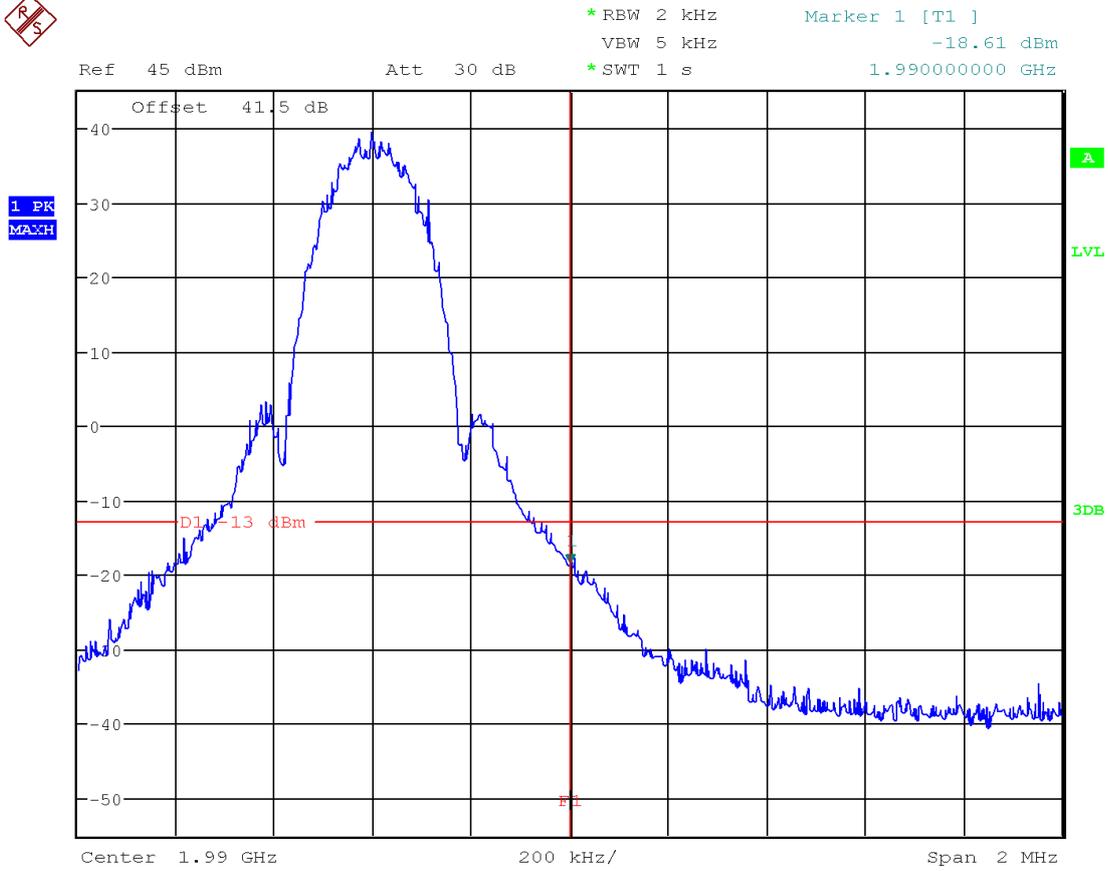
2.3.1 Carrier Conf. = 1*G(60W)

2.3.1.1 Ch. B



Date: 23.DEC.2011 10:55:44

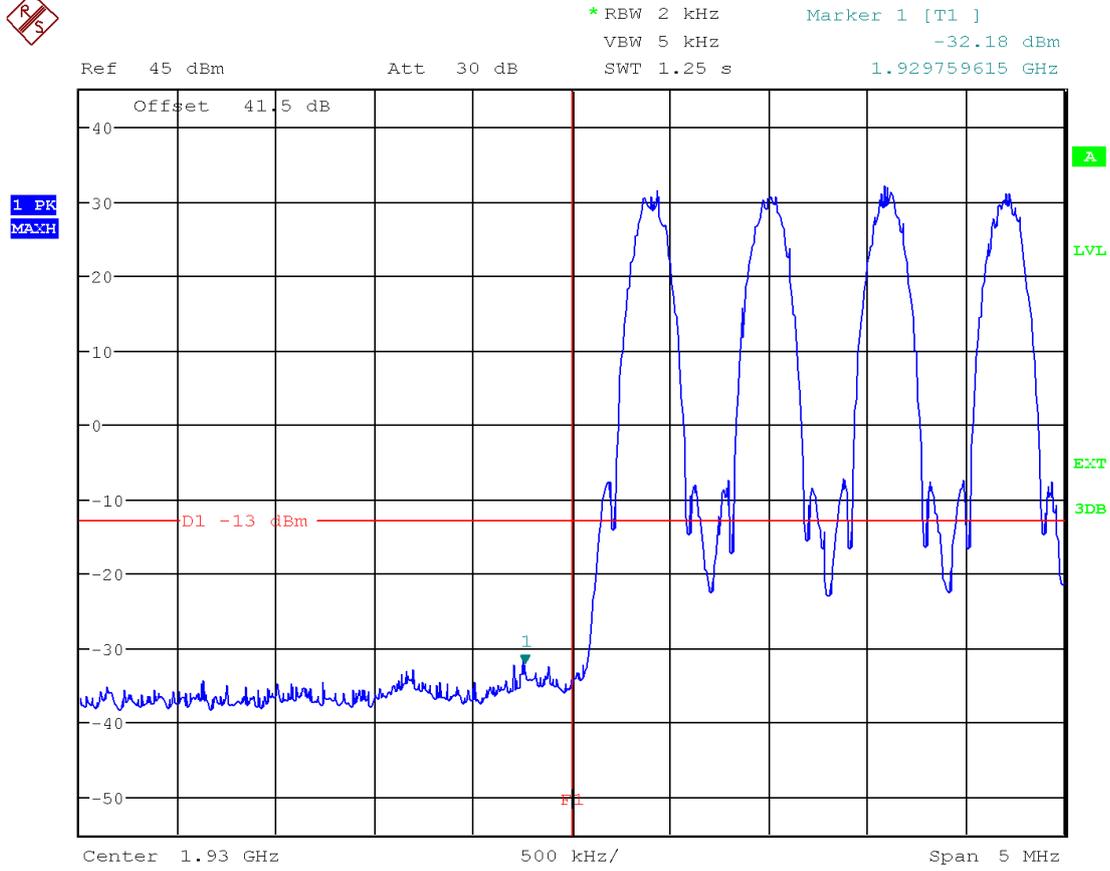
2.3.1.2 Ch. T



Date: 23.DEC.2011 11:17:44

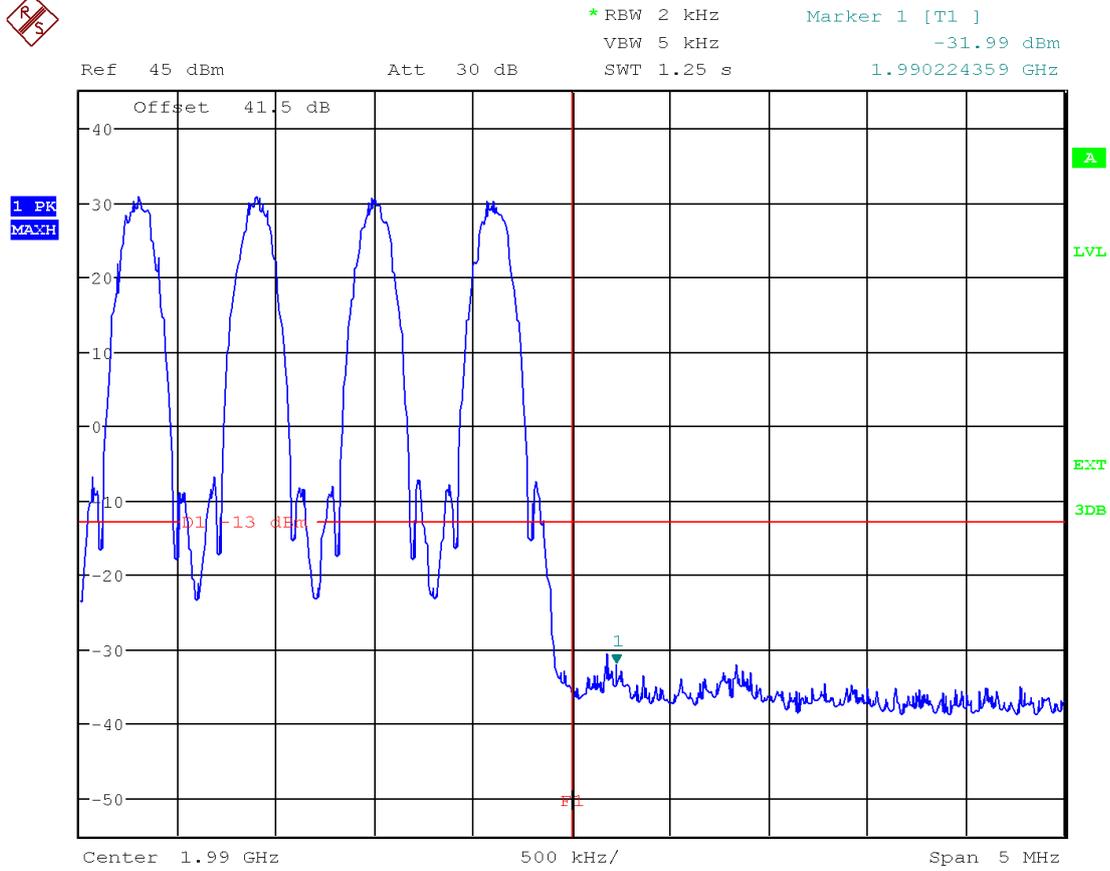
2.3.2 Carrier Conf. = 4*G(15W)

2.3.2.1 Ch. B



Date: 23.DEC.2011 14:50:56

2.3.2.2 Ch. T

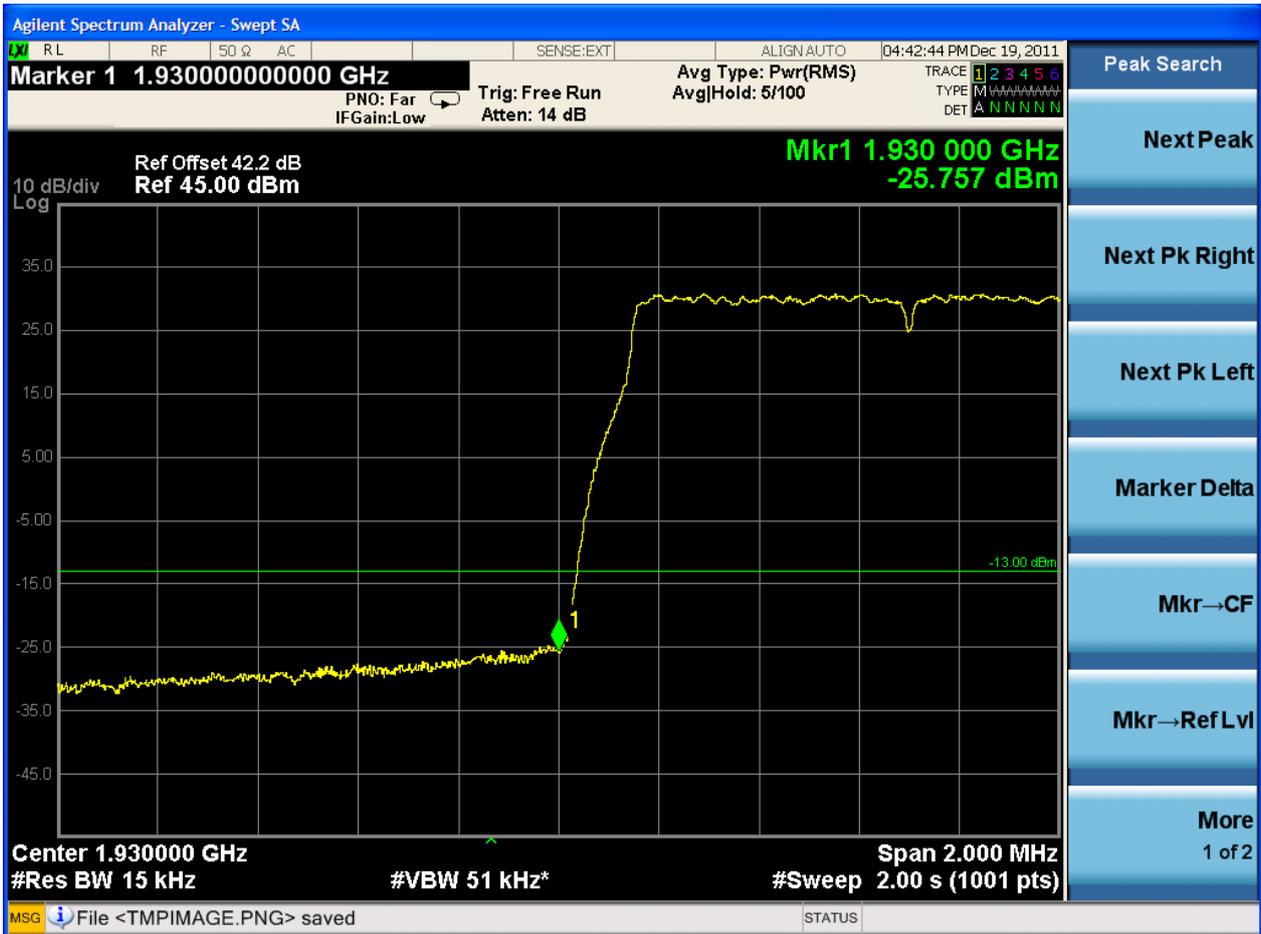


Date: 23.DEC.2011 14:47:43

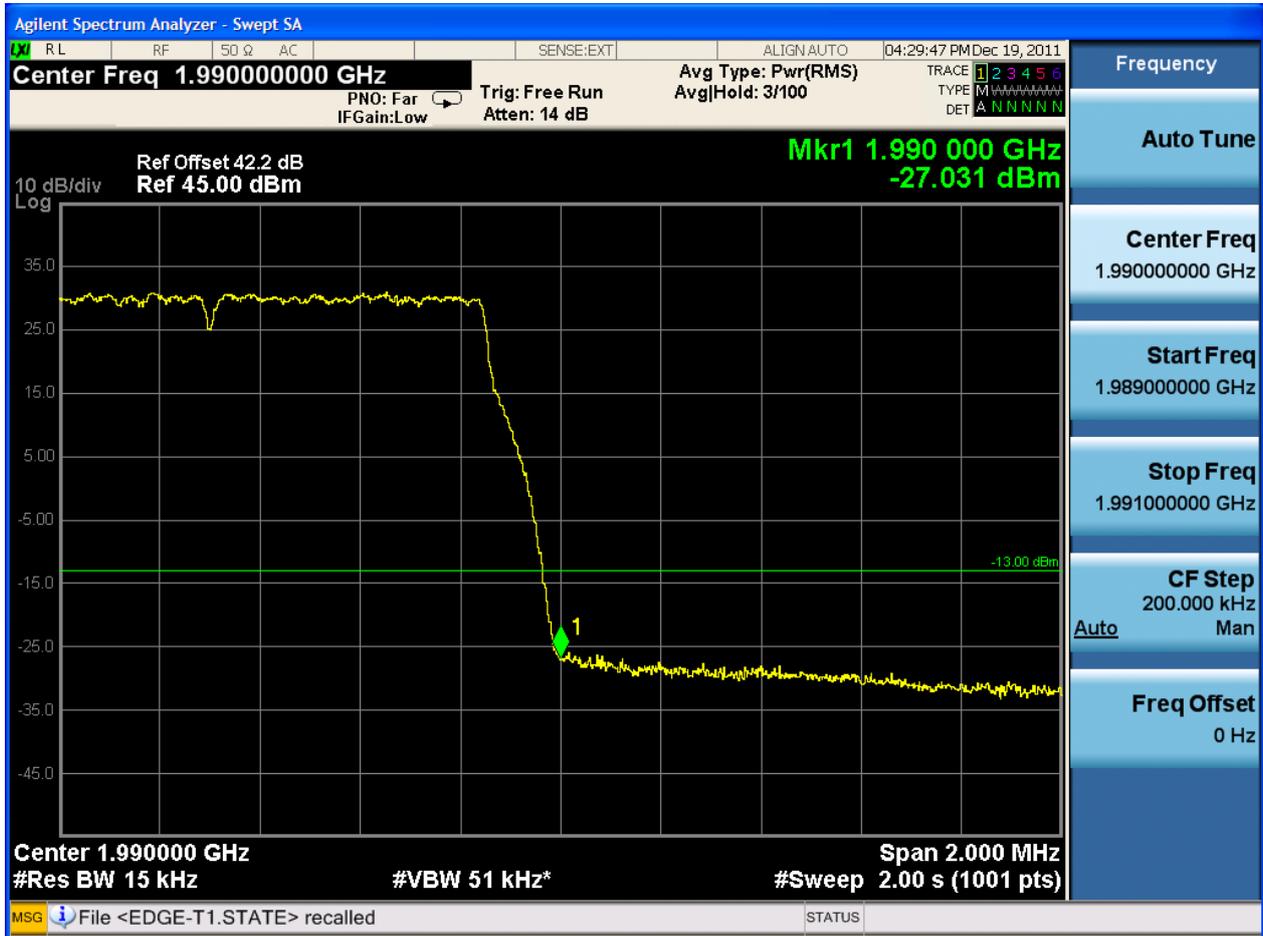
2.4 Test Mode = E-TM 1.1

2.4.1 Carrier Conf. = 1*L1.4M(60W)

2.4.1.1 Ch. B



2.4.1.2 Ch. T

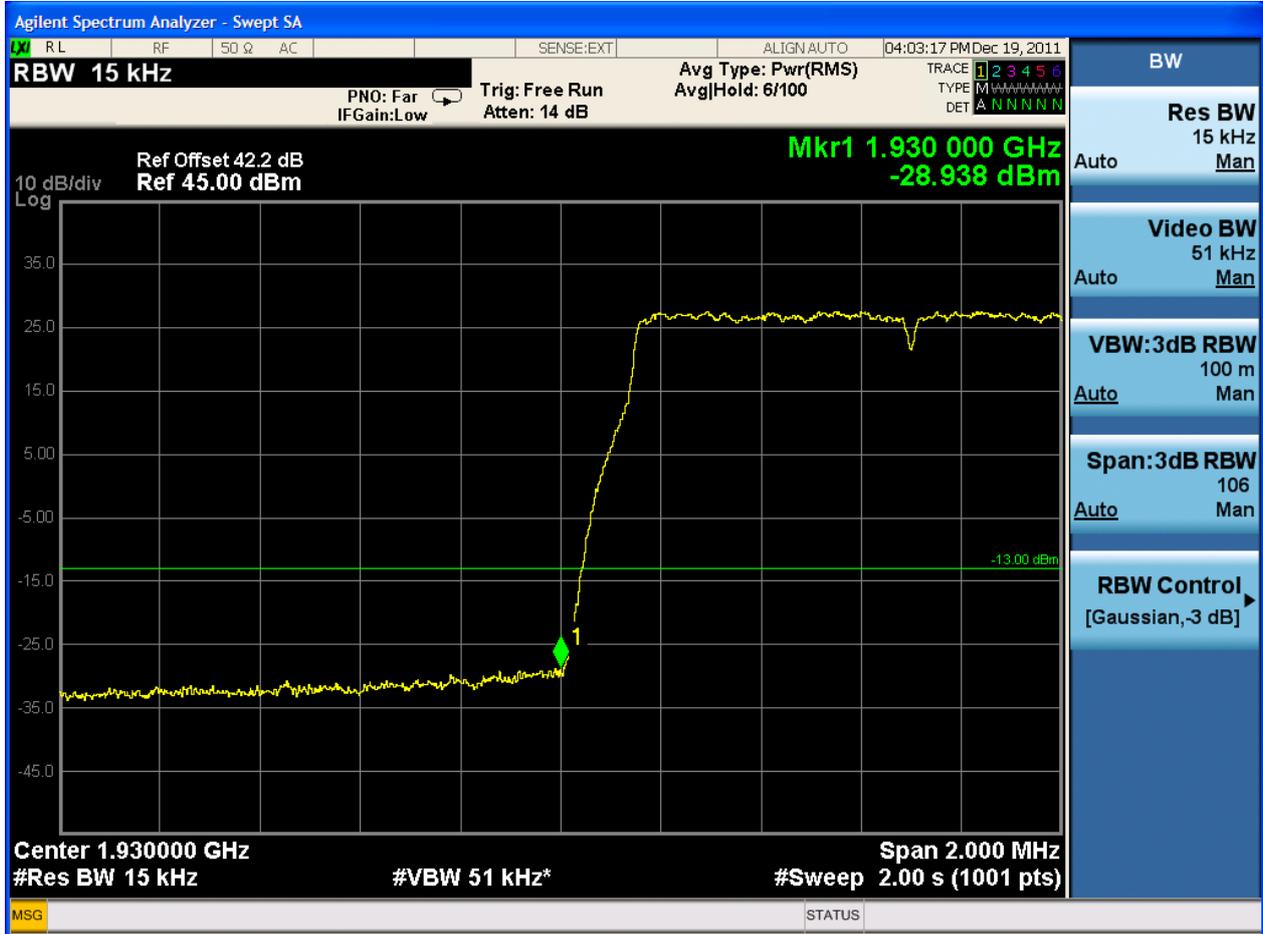


2.4.2.2 Ch. T



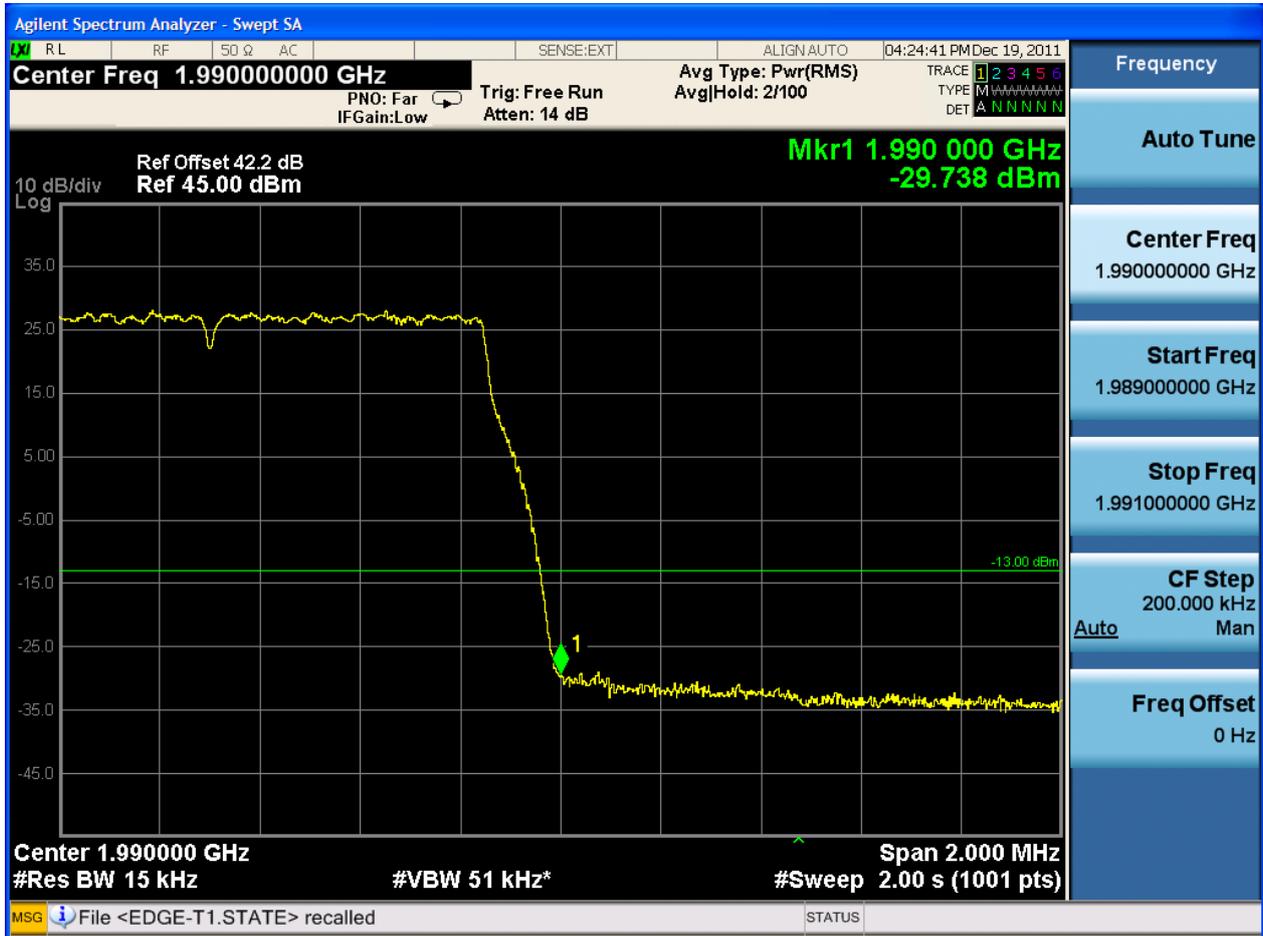
2.4.3 Carrier Conf. = 2*L1.4M(30W)

2.4.3.1 Ch. B





2.4.3.2 Ch. T



2.4.4 Carrier Conf. = 2*L15M(30W)

2.4.4.1 Ch. B

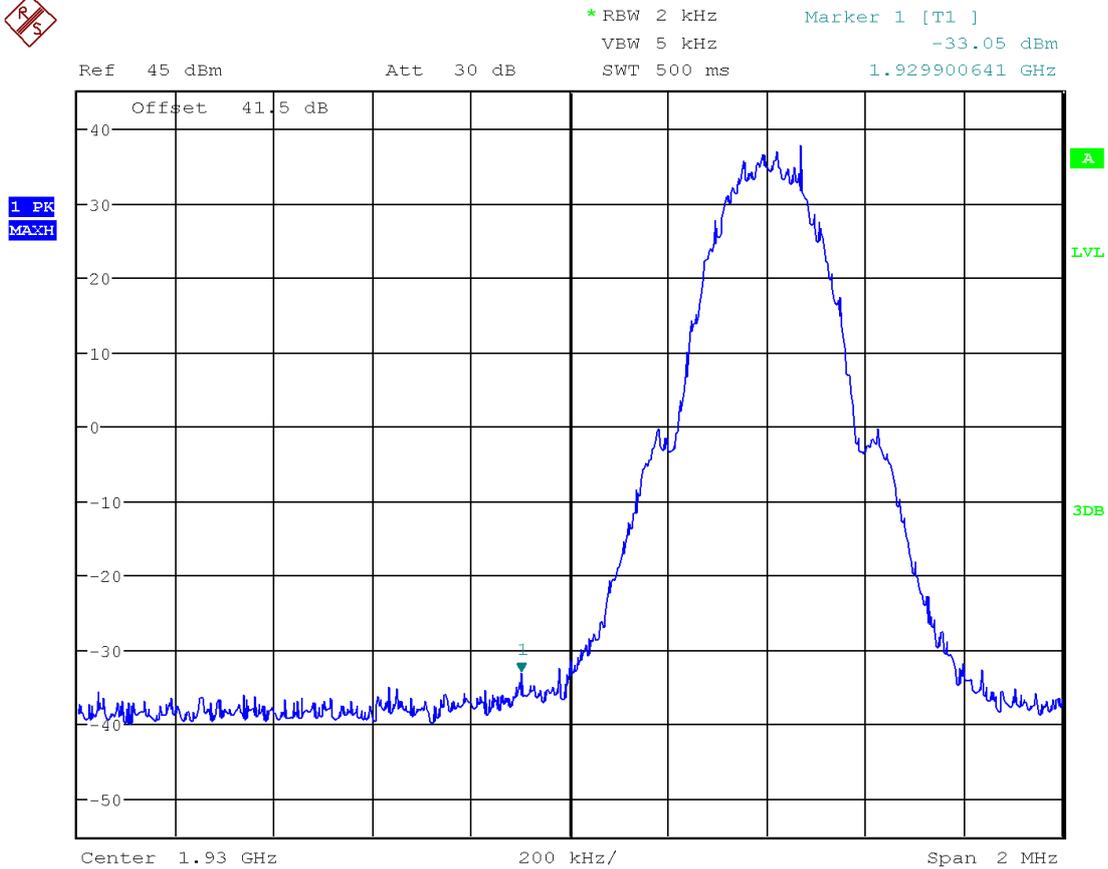




2.5 MSR_TM1

2.5.1 Carrier Conf. = 1*G(40W) & 1*U(20W)

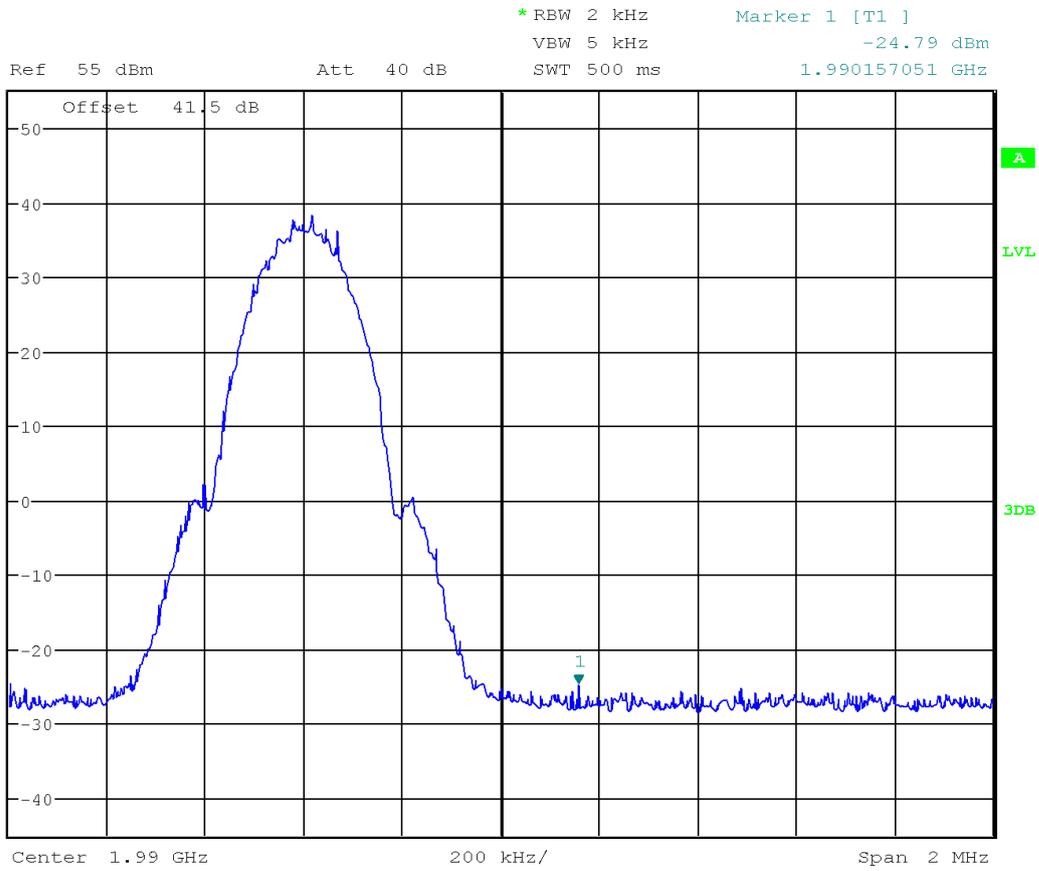
2.5.1.1 Ch. B



Date: 27.DEC.2011 21:45:49



2.5.1.2 Ch. T

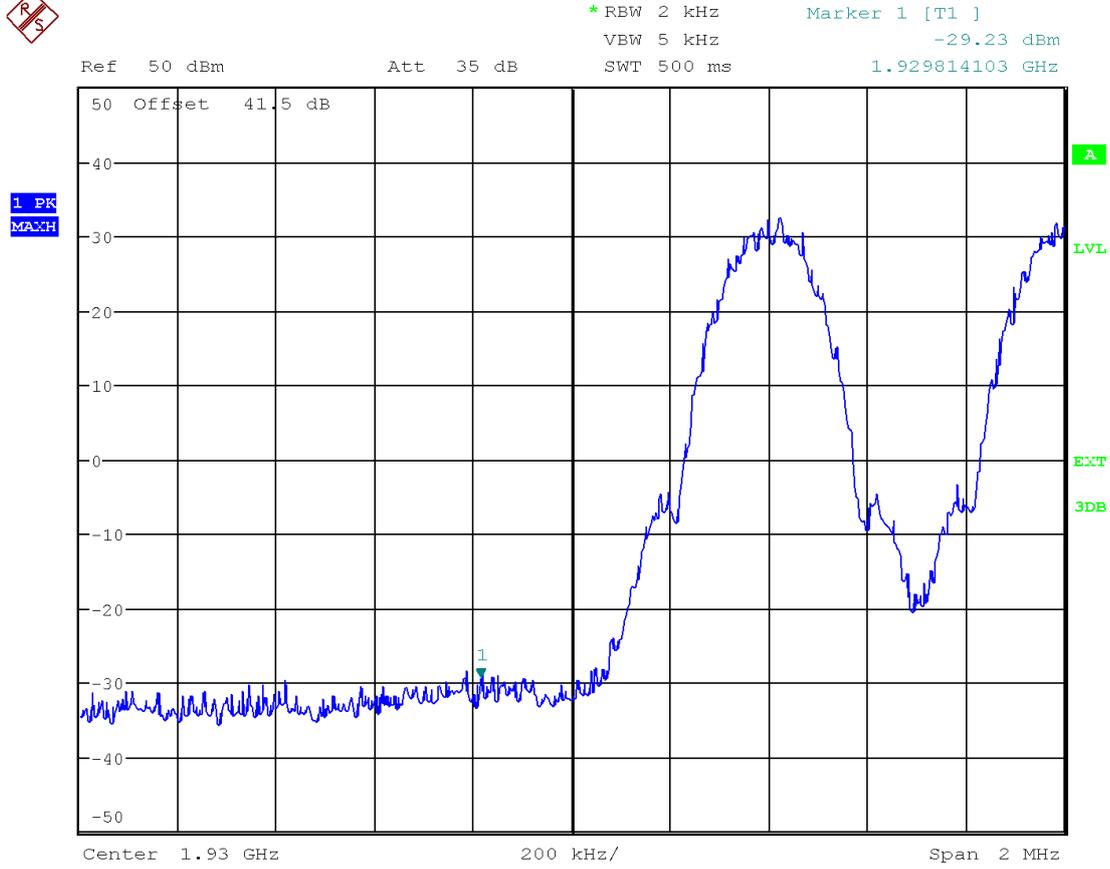


Date: 27.DEC.2011 21:01:50



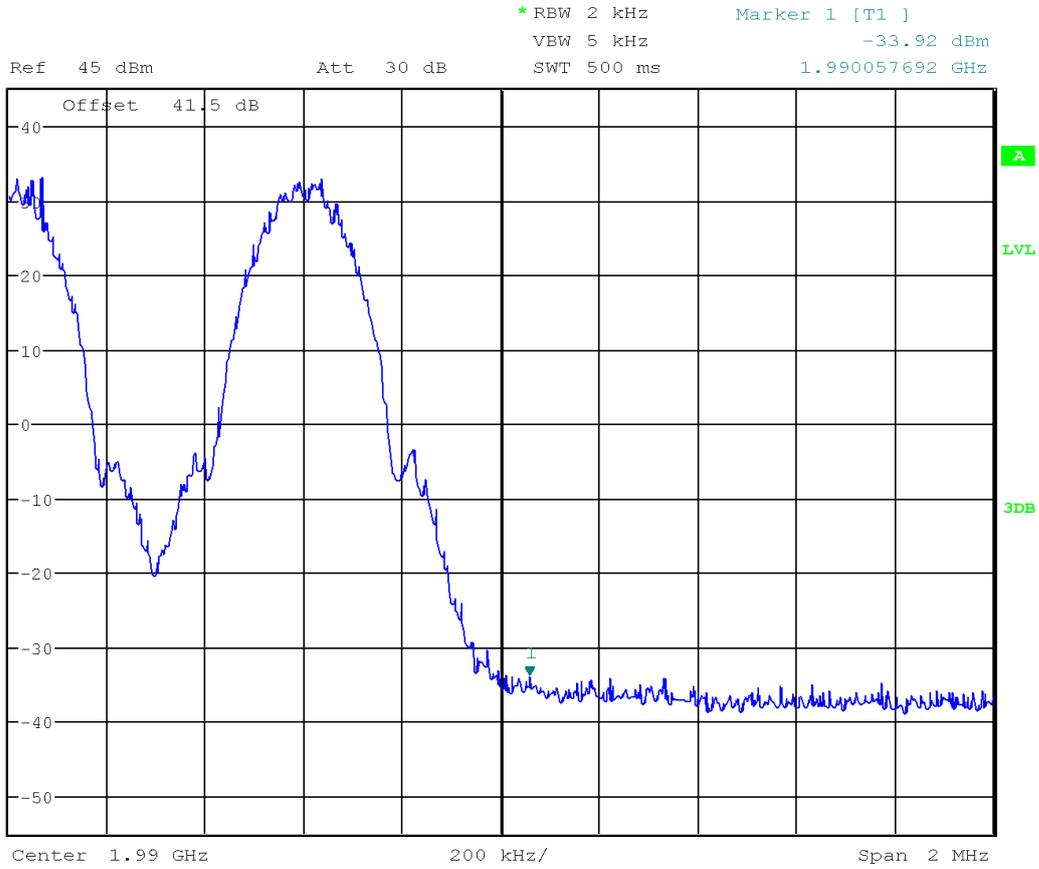
2.5.2 Carrier Conf. = 3*G(15W) & 1*U(15W)

2.5.2.1 Ch. B



Date: 27.DEC.2011 15:28:15

2.5.2.2 Ch. T

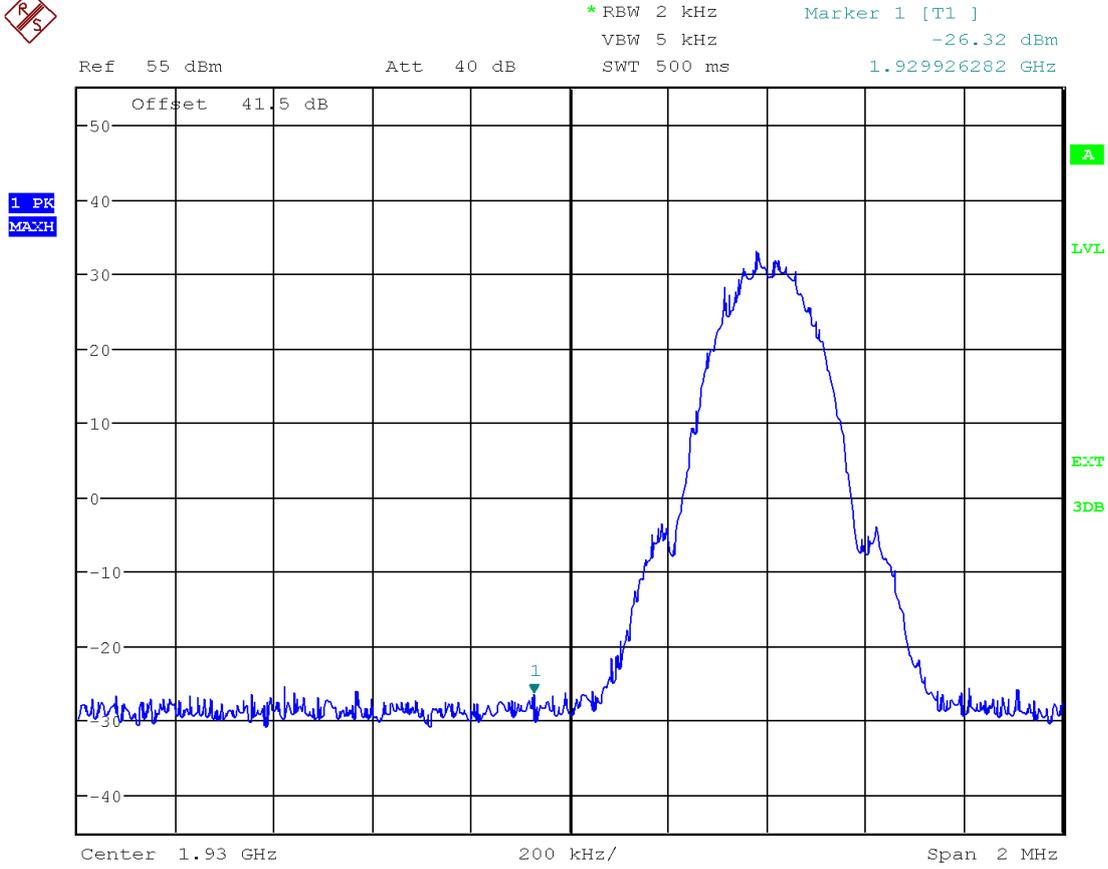


Date: 27.DEC.2011 21:39:30



2.5.3 Carrier Conf. = 1*G(15W) & 3*U(15W)

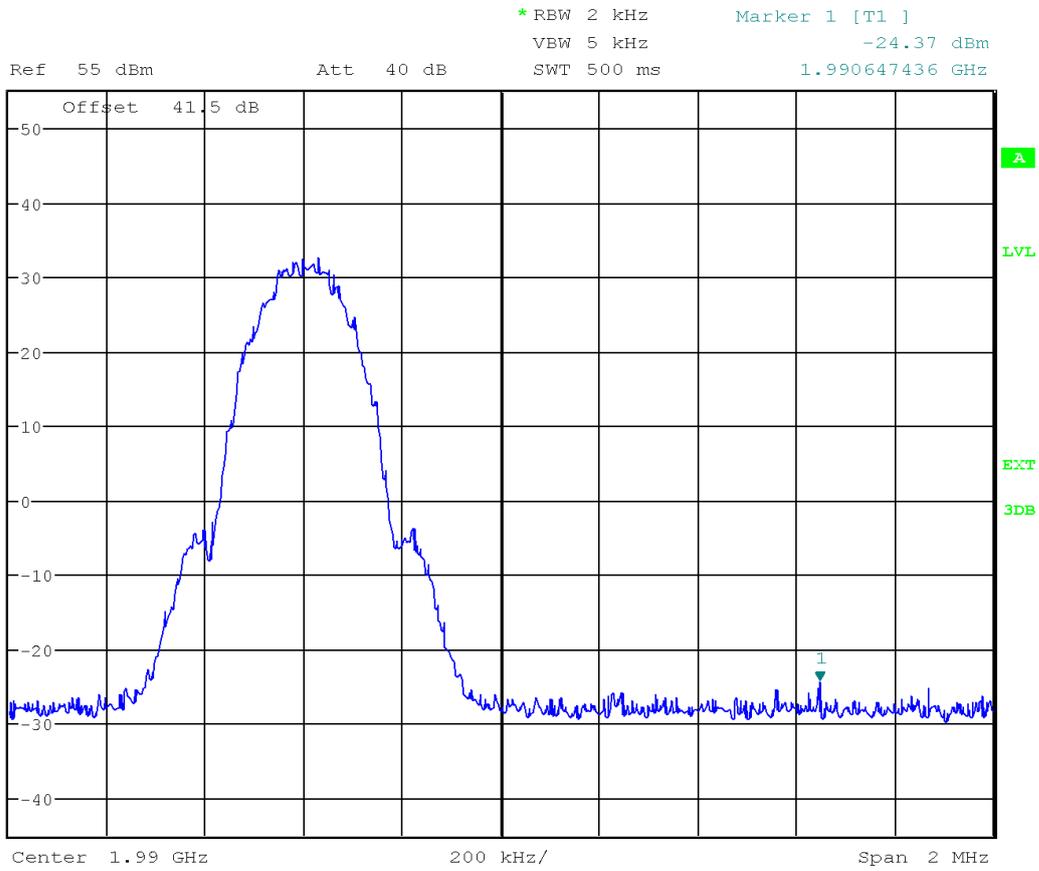
2.5.3.1 Ch. B



Date: 28.DEC.2011 11:49:59



2.5.3.2 Ch. T

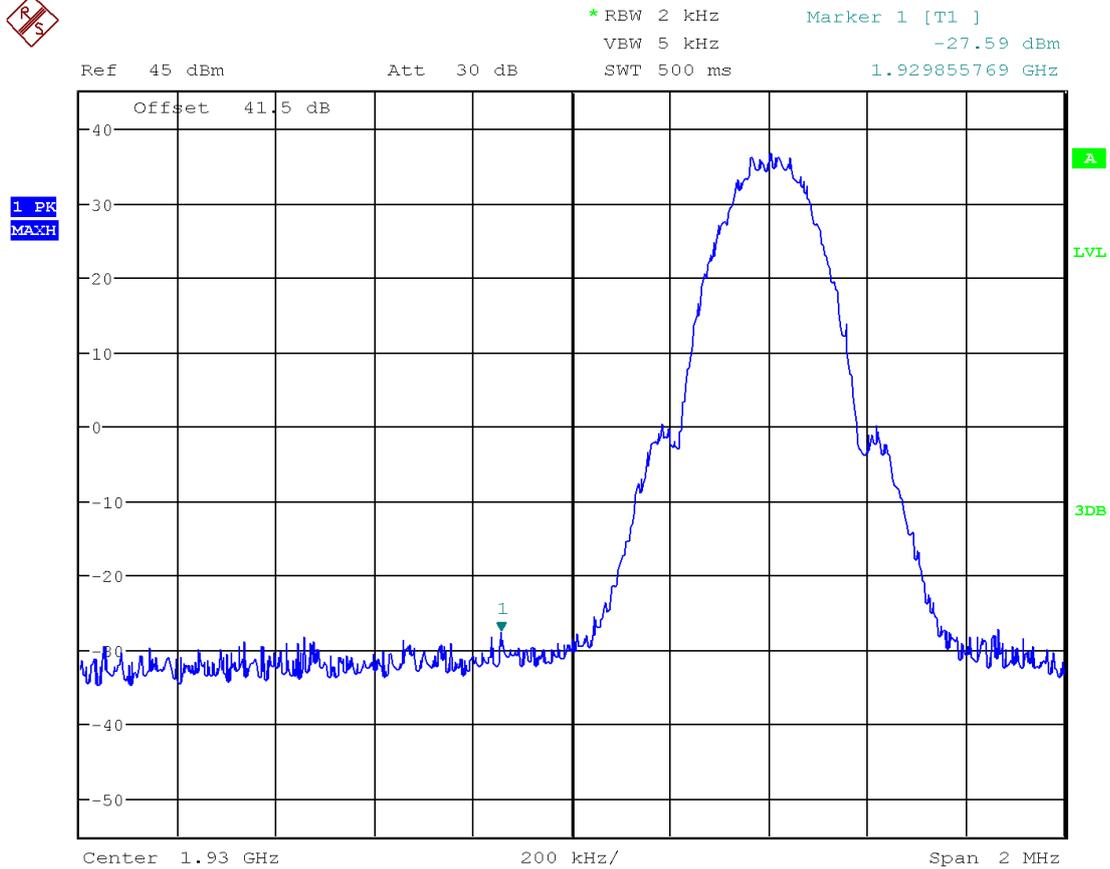


Date: 27.DEC.2011 15:56:15

2.6 MSR_TM2

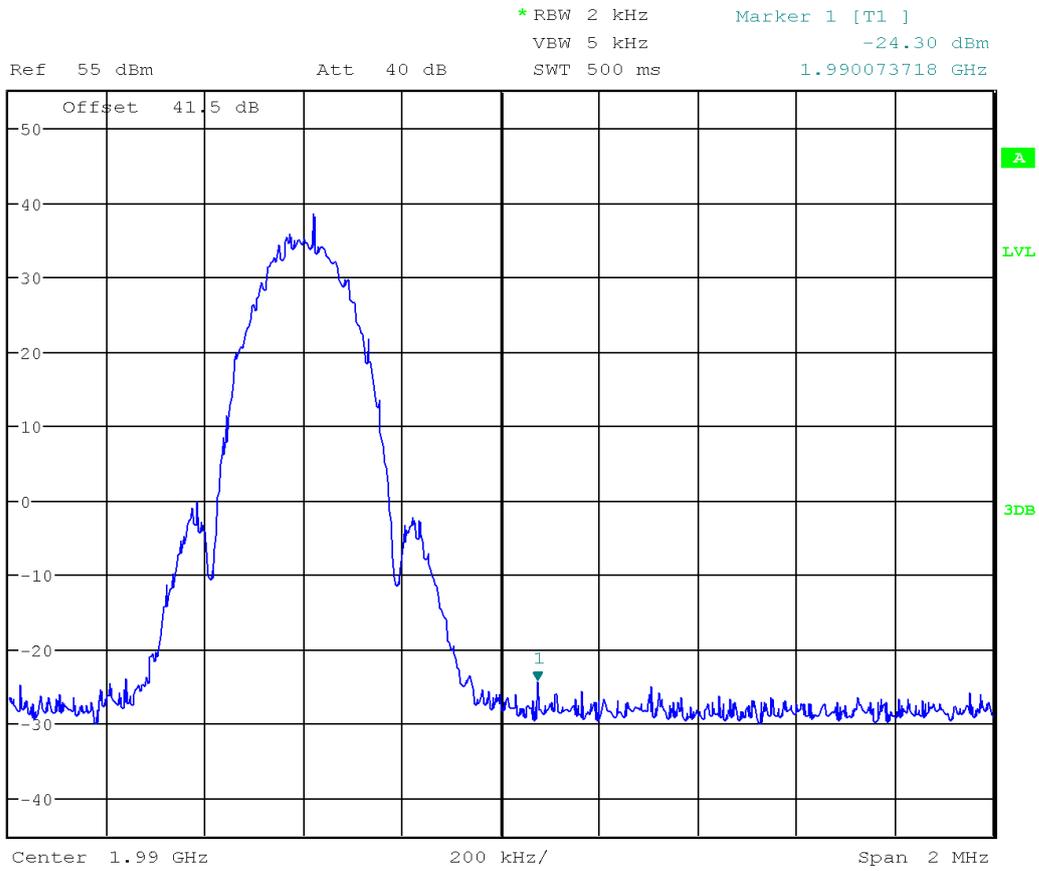
2.6.1 Carrier Conf. = 1*G(40W) & 1*U(20W)

2.6.1.1 Ch. B



Date: 27.DEC.2011 21:58:42

2.6.1.2 Ch. T

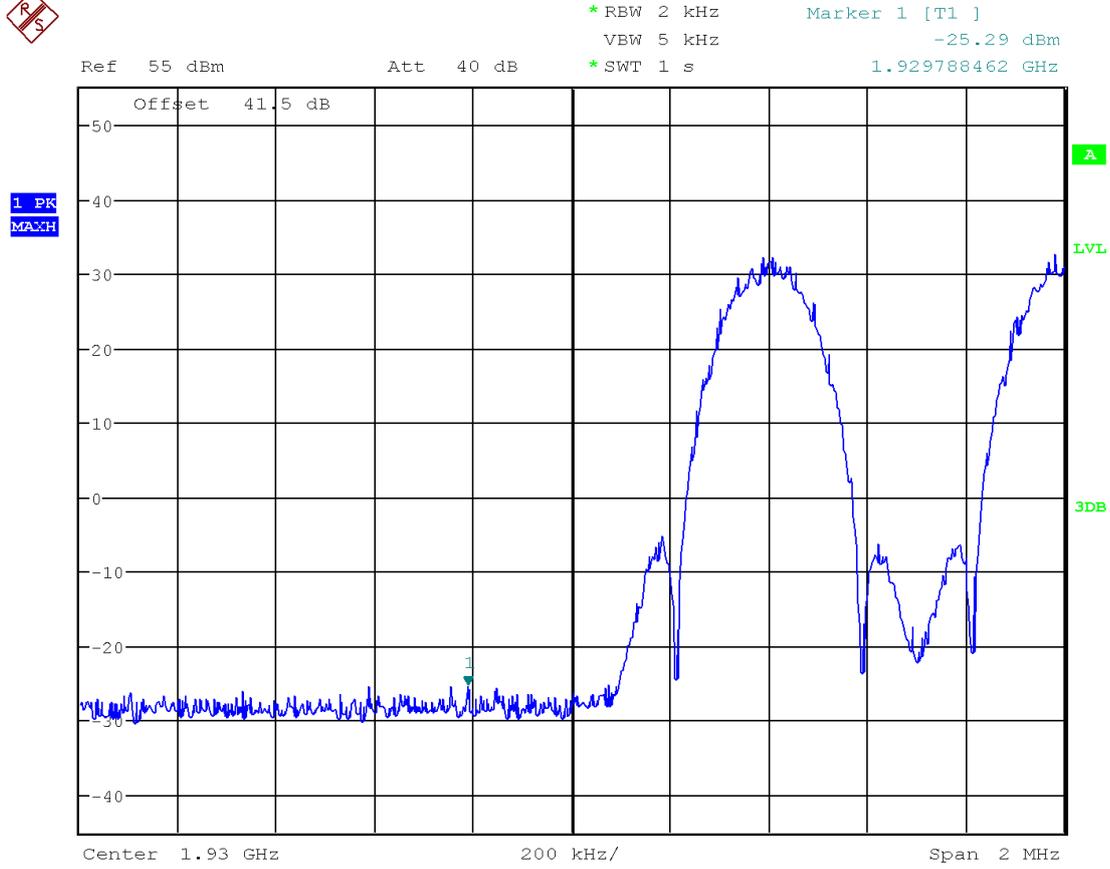


Date: 27.DEC.2011 21:03:48



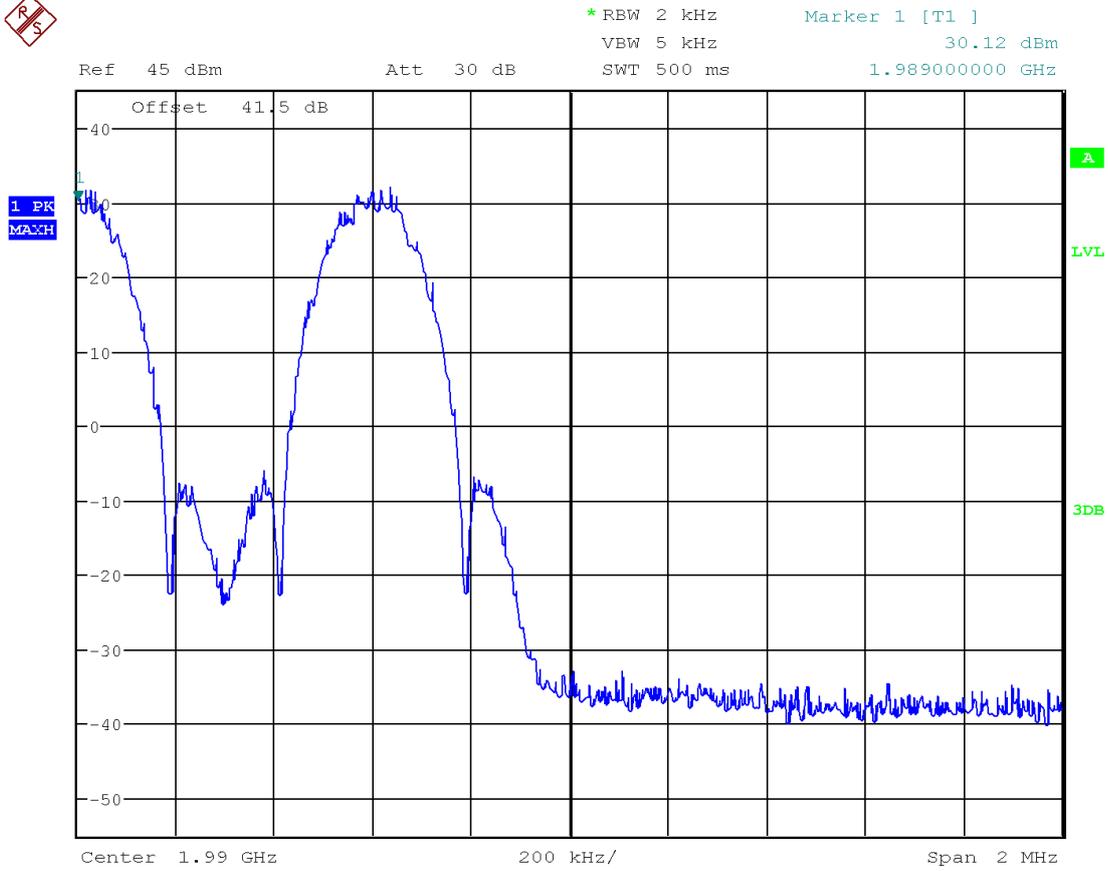
2.6.2 Carrier Conf. = 3*G(15W) & 1*U(15W)

2.6.2.1 Ch. B



Date: 27.DEC.2011 21:19:39

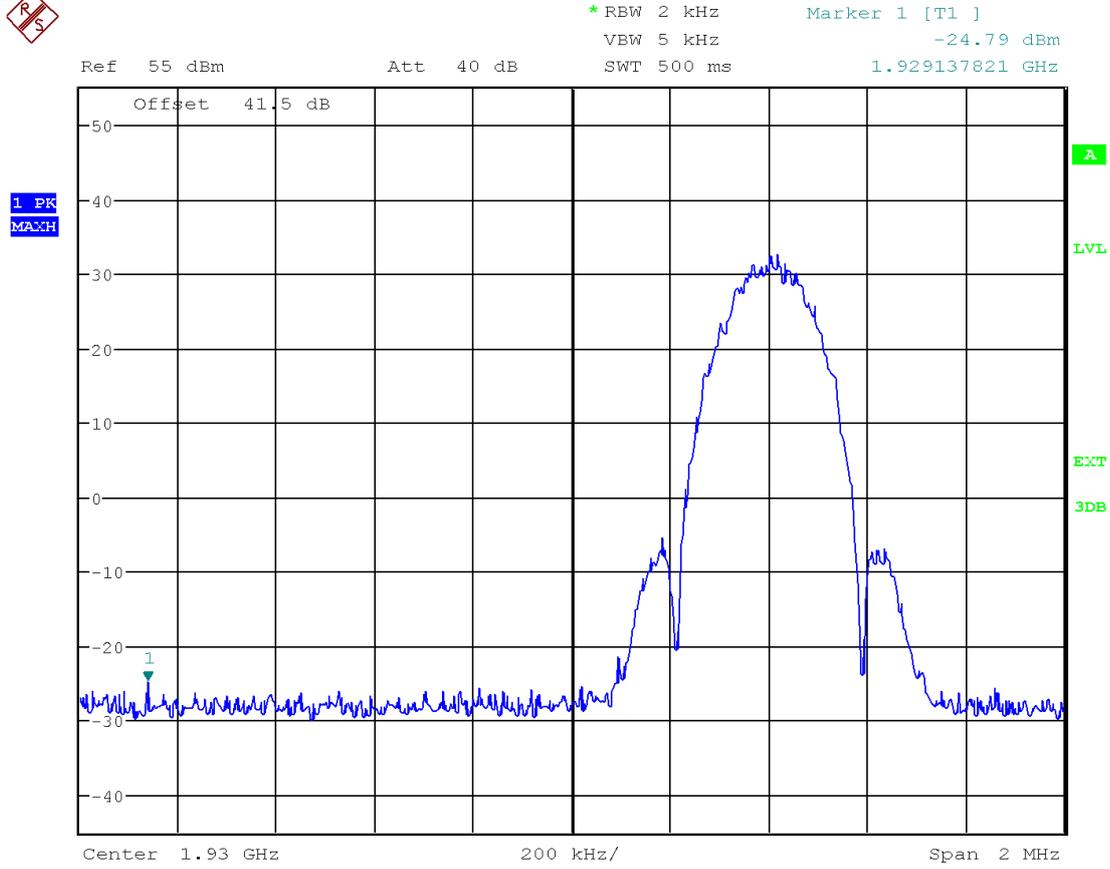
2.6.2.2 Ch. T



Date: 27.DEC.2011 21:34:39

2.6.3 Carrier Conf. = 1*G(15W) & 3*U(15W)

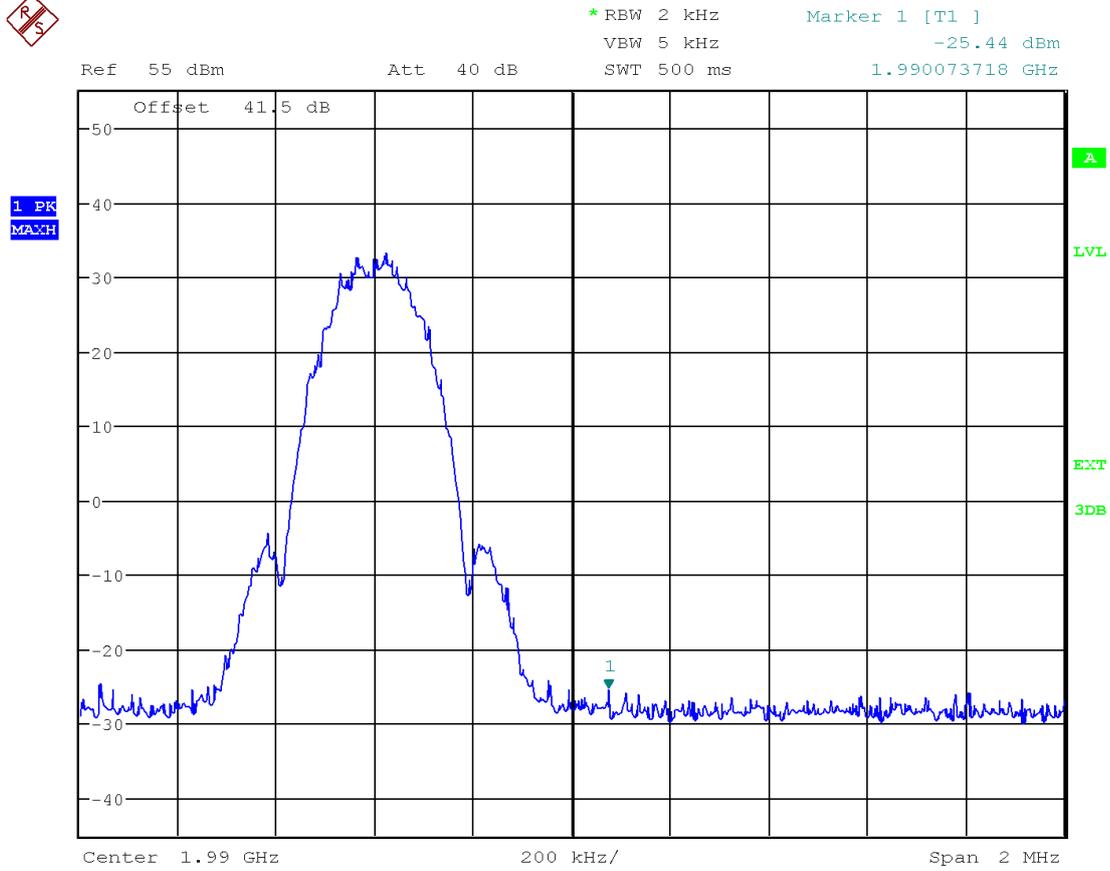
2.6.3.1 Ch. B



Date: 28.DEC.2011 11:46:31



2.6.3.2 Ch. T



Date: 28.DEC.2011 11:41:19



Appendix E: Spurious Emission at Antenna Terminals



1 Result Table

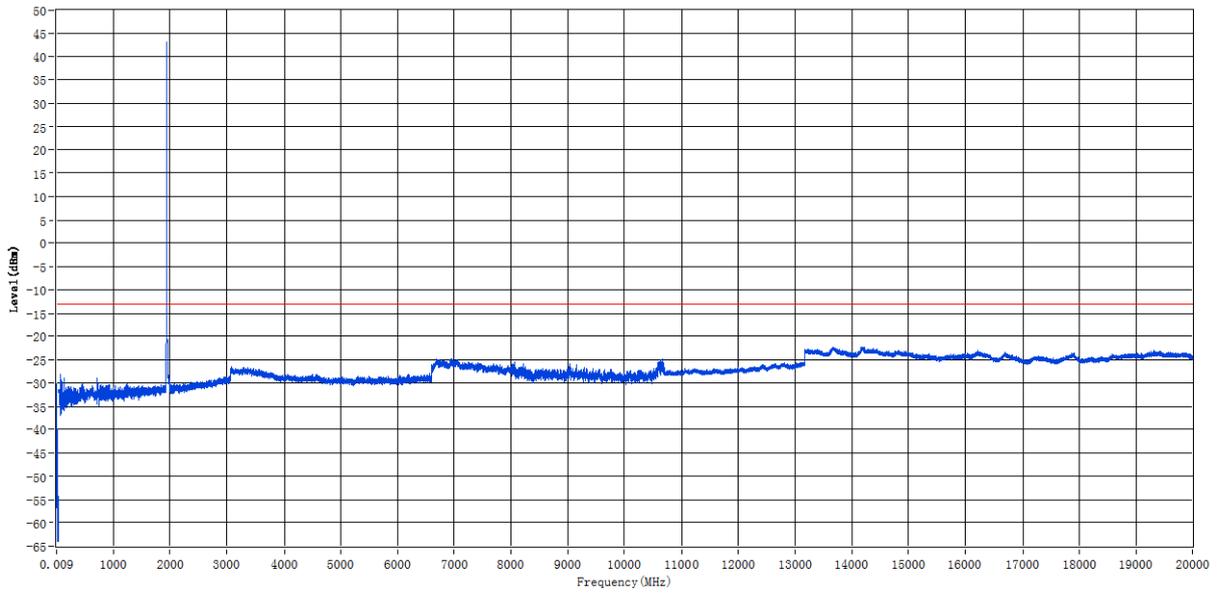
Test Mode	Carrier Conf.	RF Ch.	Spurious Emission at Antenna Terminals [dBm]	Verdict
TM-1	1*U(60W)	B	< -13	Pass
		T	< -13	Pass
	4*U(15W)	B	< -13	Pass
		T	< -13	Pass
GMSK	1*G(60W)	B	< -13	Pass
		T	< -13	Pass
	4*G(15W)	B	< -13	Pass
		T	< -13	Pass
E-TM 1.1	1*L1.4M(60W)	B	< -13	Pass
		T	< -13	Pass
	1*L15M(60W)	B	< -13	Pass
		T	< -13	Pass
	2*L1.4M(30W)	B	< -13	Pass
		T	< -13	Pass
	2*L15M(30W)	B	< -13	Pass
		T	< -13	Pass
MSR_TM1	1*G(40W) & 1*U(20W)	B	< -13	Pass
		T	< -13	Pass
	3*G(15W) & 1*U(15W)	B	< -13	Pass
		T	< -13	Pass
	1*G(15W) & 3*U(15W)	B	< -13	Pass
		T	< -13	Pass
MSR_TM2	1*G(40W) & 1*U(20W)	B	< -13	Pass
		T	< -13	Pass
	3*G(15W) & 1*U(15W)	B	< -13	Pass
		T	< -13	Pass
	1*G(15W) & 3*U(15W)	B	< -13	Pass
		T	< -13	Pass

2 Test Plot

2.1 Test Mode = TM-1

2.1.1 Carrier Conf. = 1*U(60W)

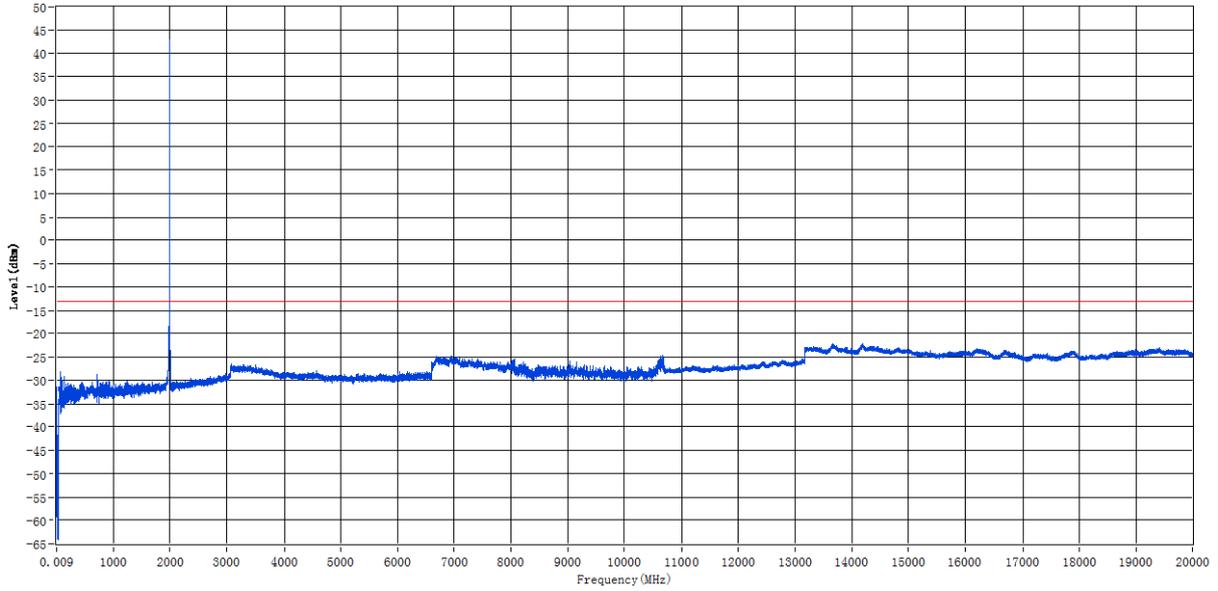
2.1.1.1 Ch. B



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	12.908 k	-39.84	42.25	-13.00	26.84	Pass
0.15	30	0.01	RMS	248.912 k	-30.15	42.25	-13.00	17.15	Pass
30	20000	1	RMS	1.933 G	43.19	42.32	-13.00	-56.19	Fail

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

2.1.1.2 Ch. T

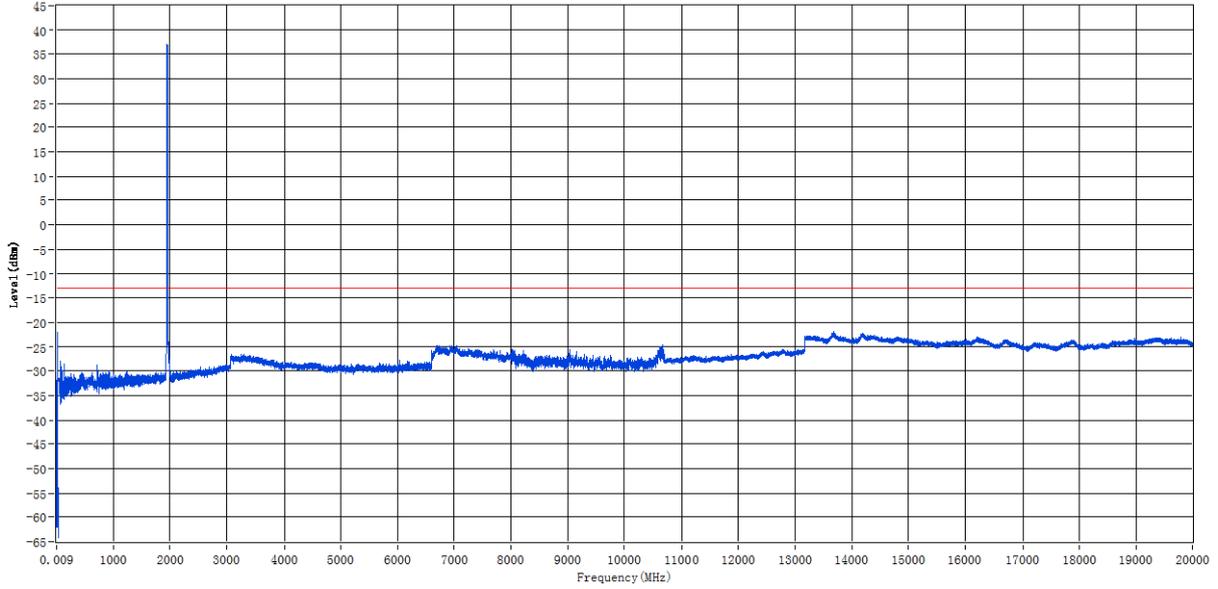


Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Transducer [dB]	Limit [dBm]	Margin [dB]	Verdict
0.009	0.15	0.001	RMS	12.873 k	-41.18	42.25	-13.00	28.18	Pass
0.15	30	0.01	RMS	248.912 k	-31.28	42.25	-13.00	18.28	Pass
30	20000	1	RMS	1.988 G	42.96	42.16	-13.00	-55.96	Fail

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

2.1.2 Carrier Conf. = 4*U(15W)

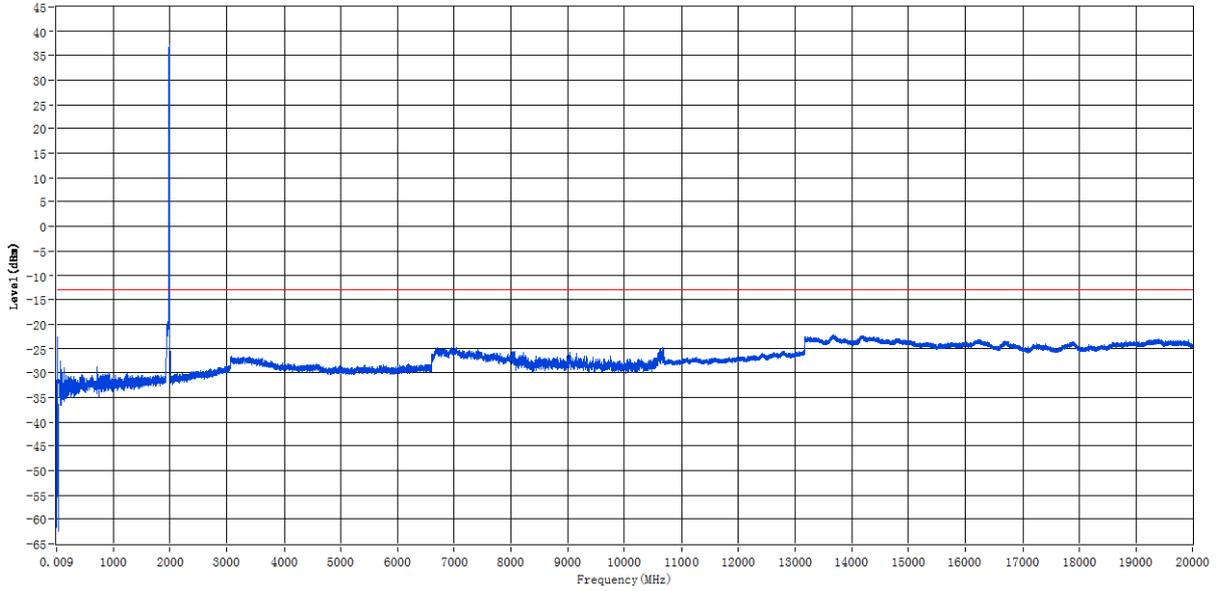
2.1.2.1 Ch. B



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	124.954 k	-43.27	42.25	-13.00	30.27	Pass
0.15	30	0.01	RMS	4.999 M	-22.02	42.25	-13.00	9.02	Pass
30	20000	1	RMS	1.933 G	37.04	42.32	-13.00	-50.04	Fail

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

2.1.2.2 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	124.868 k	-43.12	42.25	-13.00	30.12	Pass
0.15	30	0.01	RMS	4.999 M	-22.67	42.25	-13.00	9.67	Pass
30	20000	1	RMS	1.983 G	37.32	42.43	-13.00	-50.32	Fail

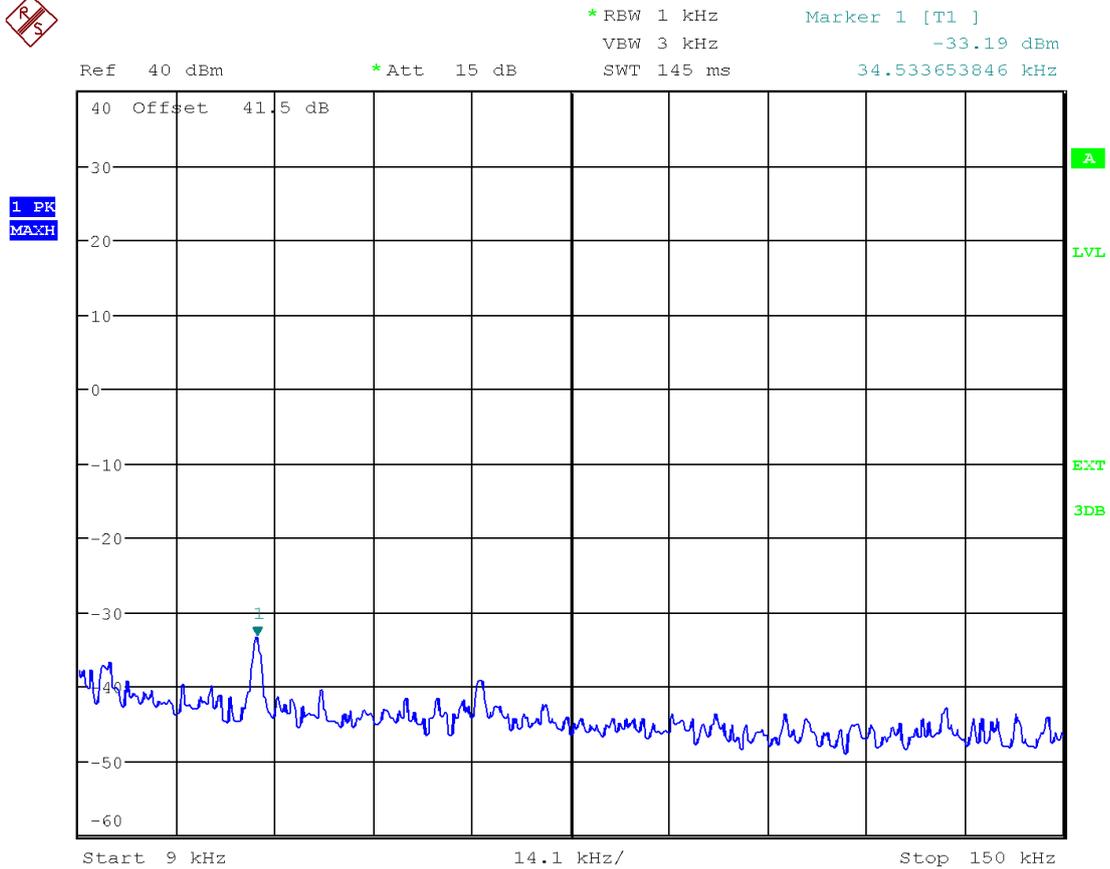
NOTE: The failed emission is the operating frequency, which should be ignored against to the limit.



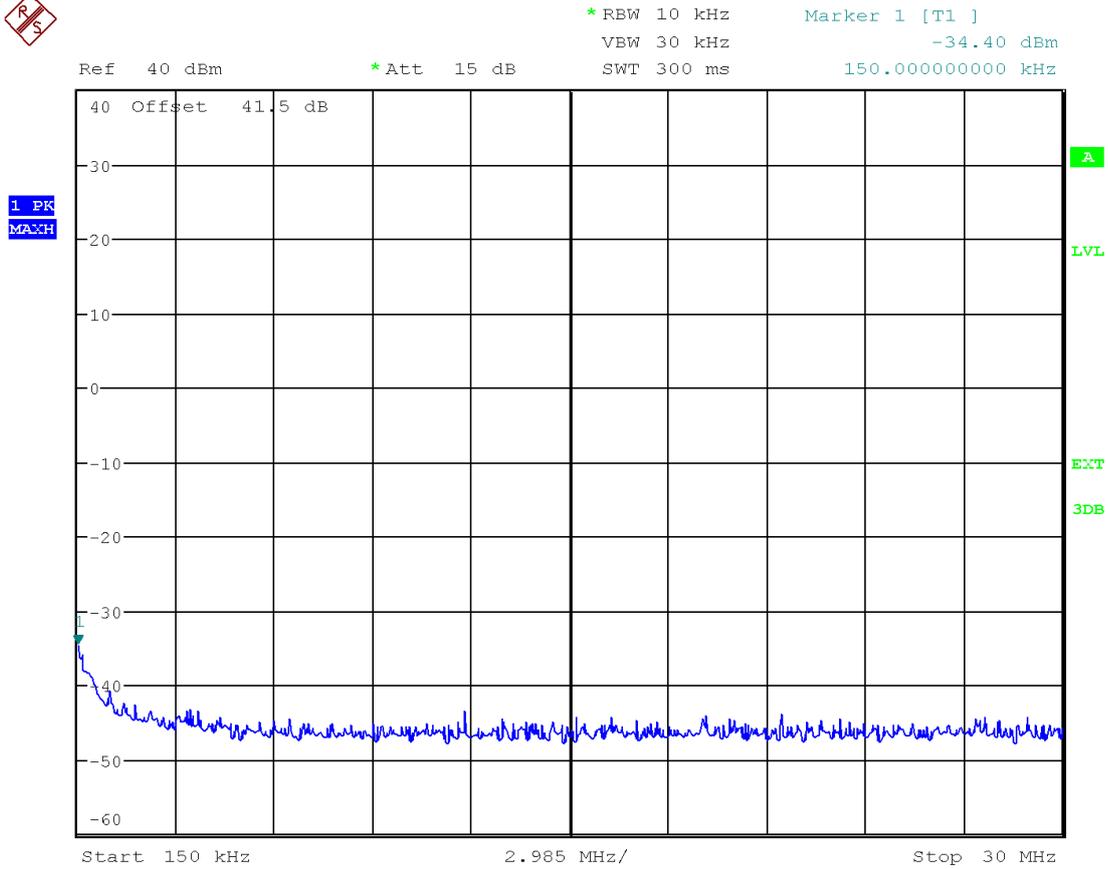
2.2 Test Mode = GMSK

2.2.1 Carrier Conf. = 1*G(60W)

2.2.1.1 Ch. B



Date: 23.DEC.2011 11:41:16



Date: 23.DEC.2011 11:42:52

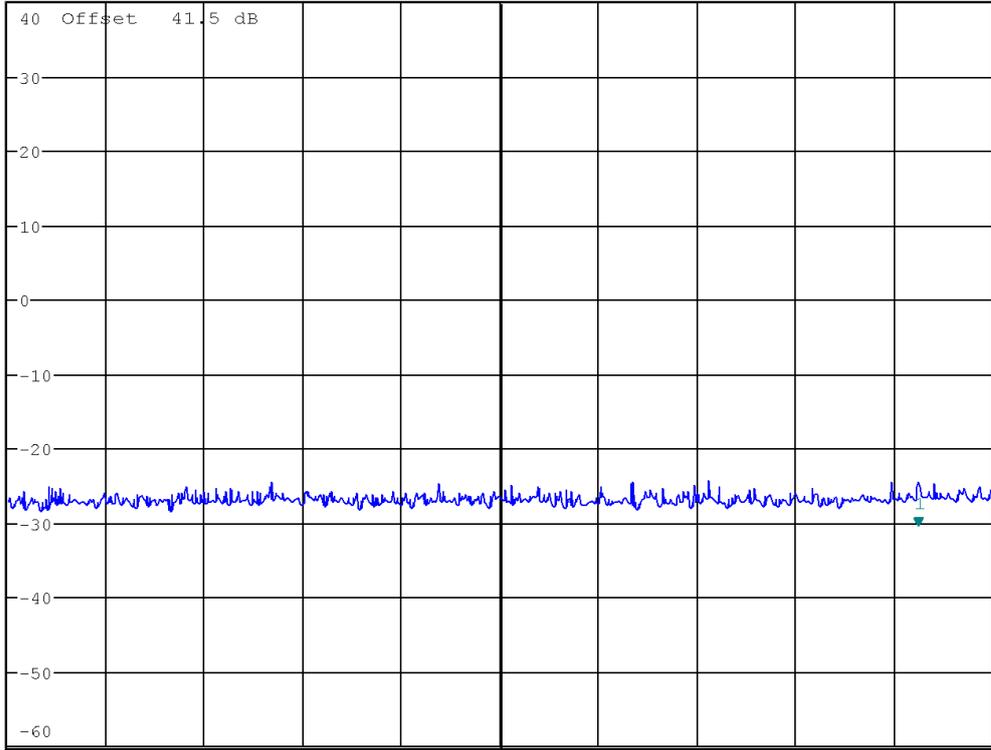


*RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz -30.55 dBm
 SWT 2.5 ms 926.939102564 MHz

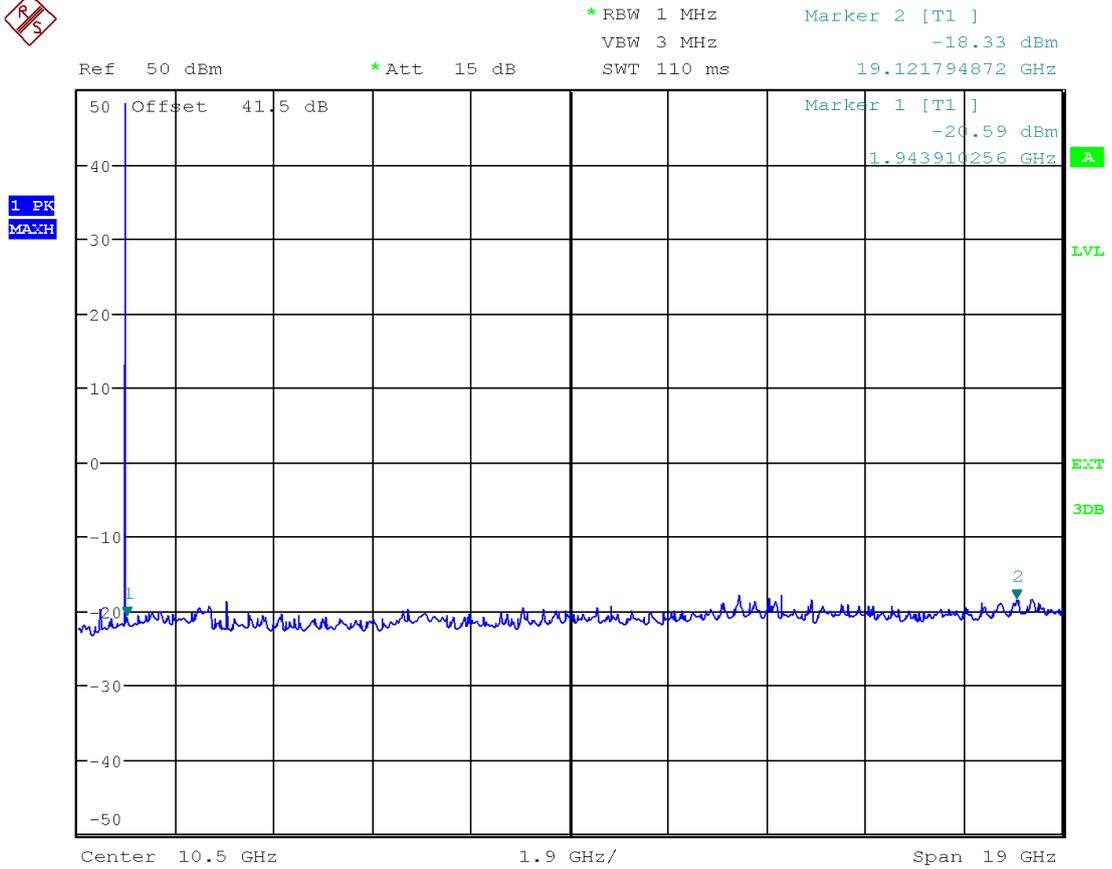
Ref 40 dBm

*Att 15 dB

1 PK
 MAXH



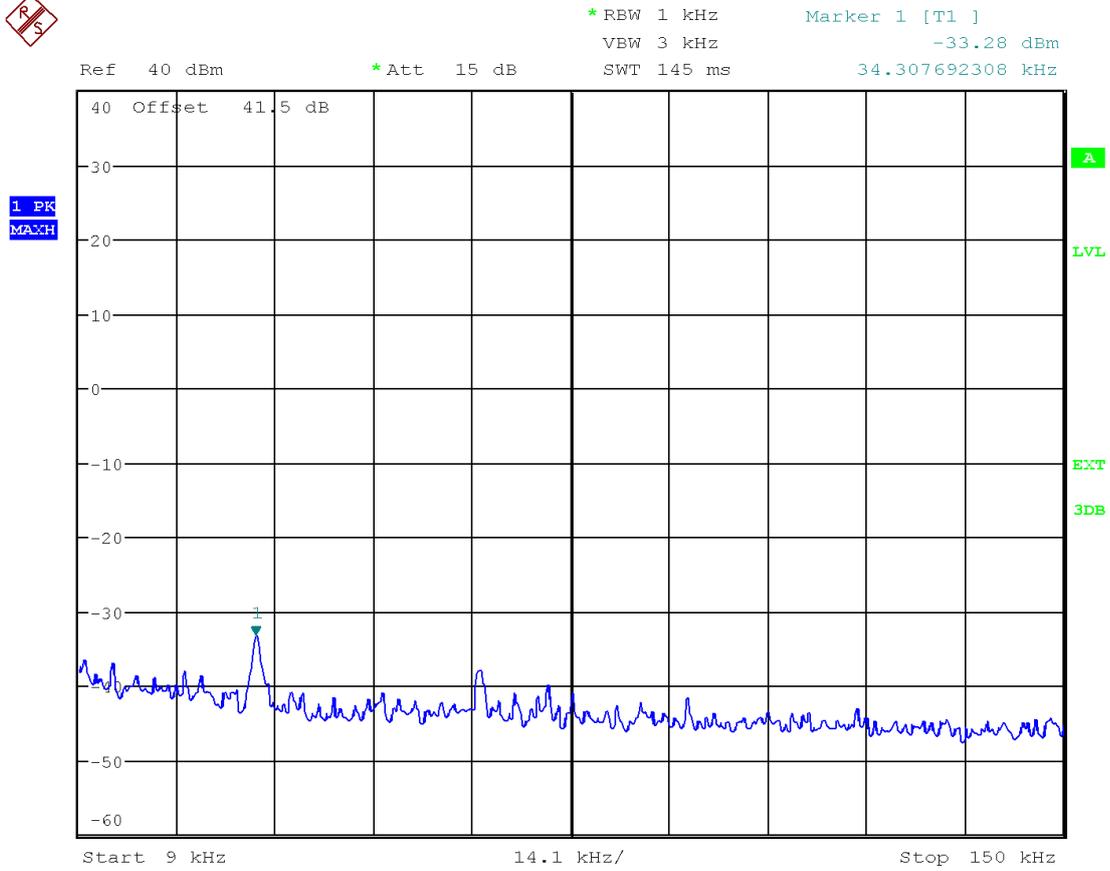
Date: 23.DEC.2011 11:40:15



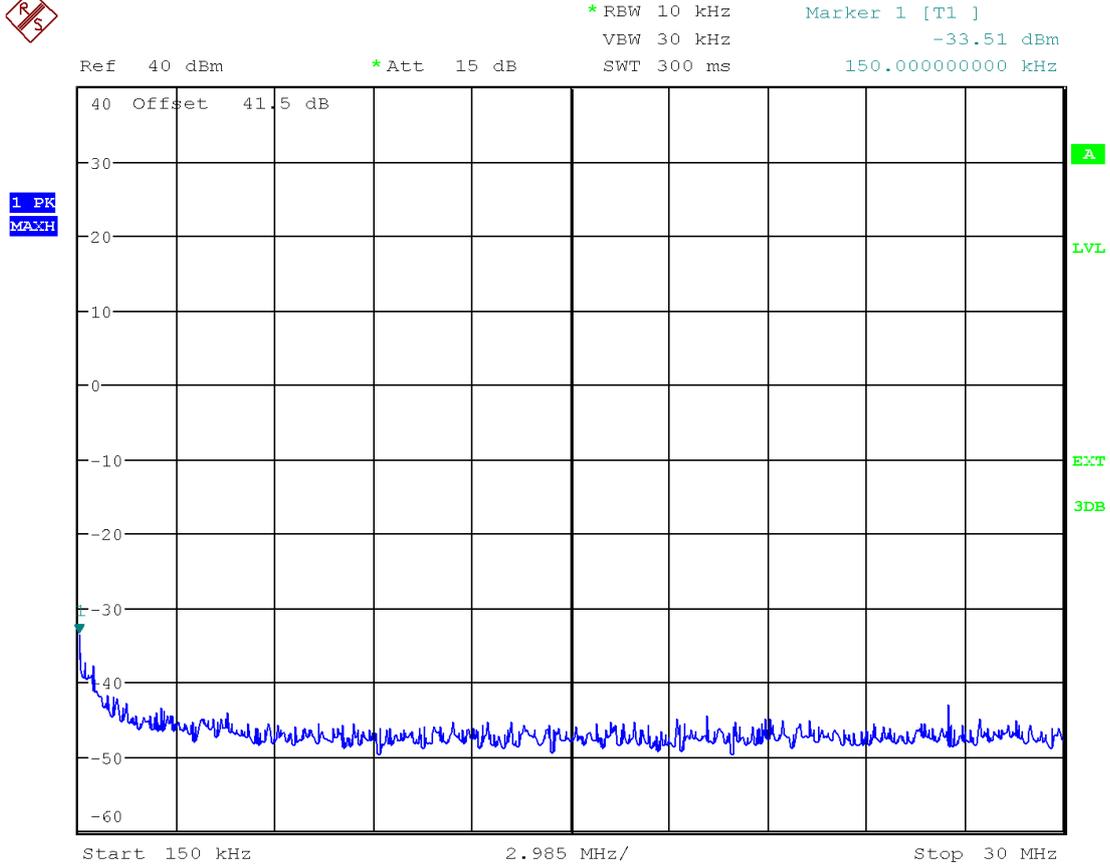
Date: 23.DEC.2011 11:38:38



2.2.1.2 Ch. T



Date: 23.DEC.2011 11:45:14



Date: 23.DEC.2011 11:46:01

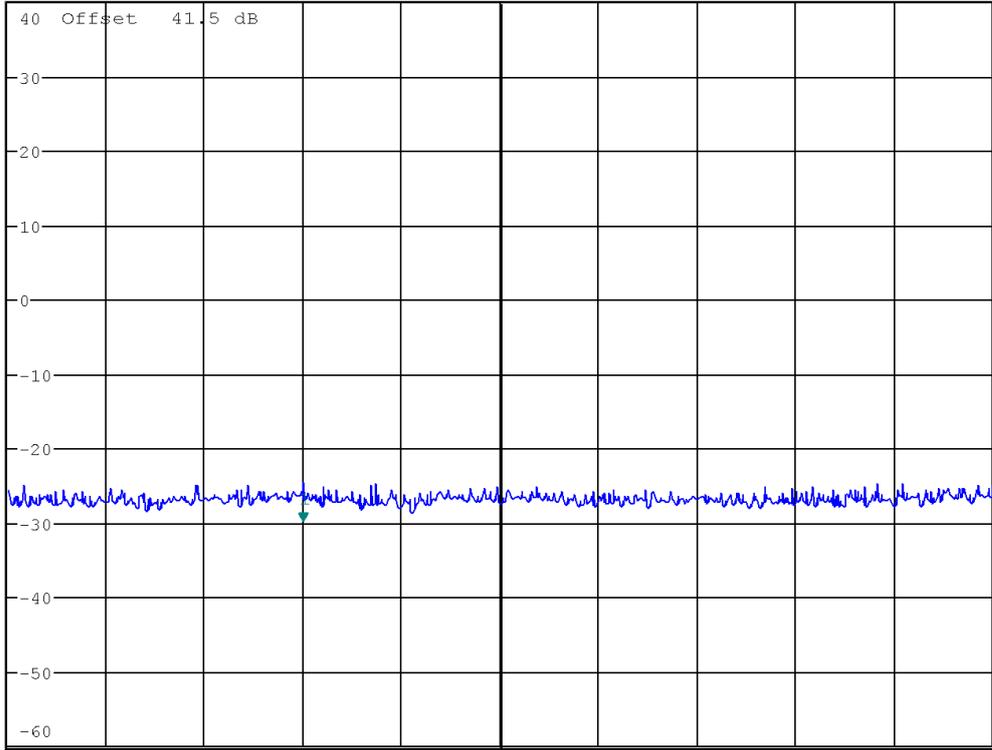


*REW 1 MHz Marker 1 [T1]
 VEW 3 MHz -29.83 dBm
 SWT 2.5 ms 320.689102564 MHz

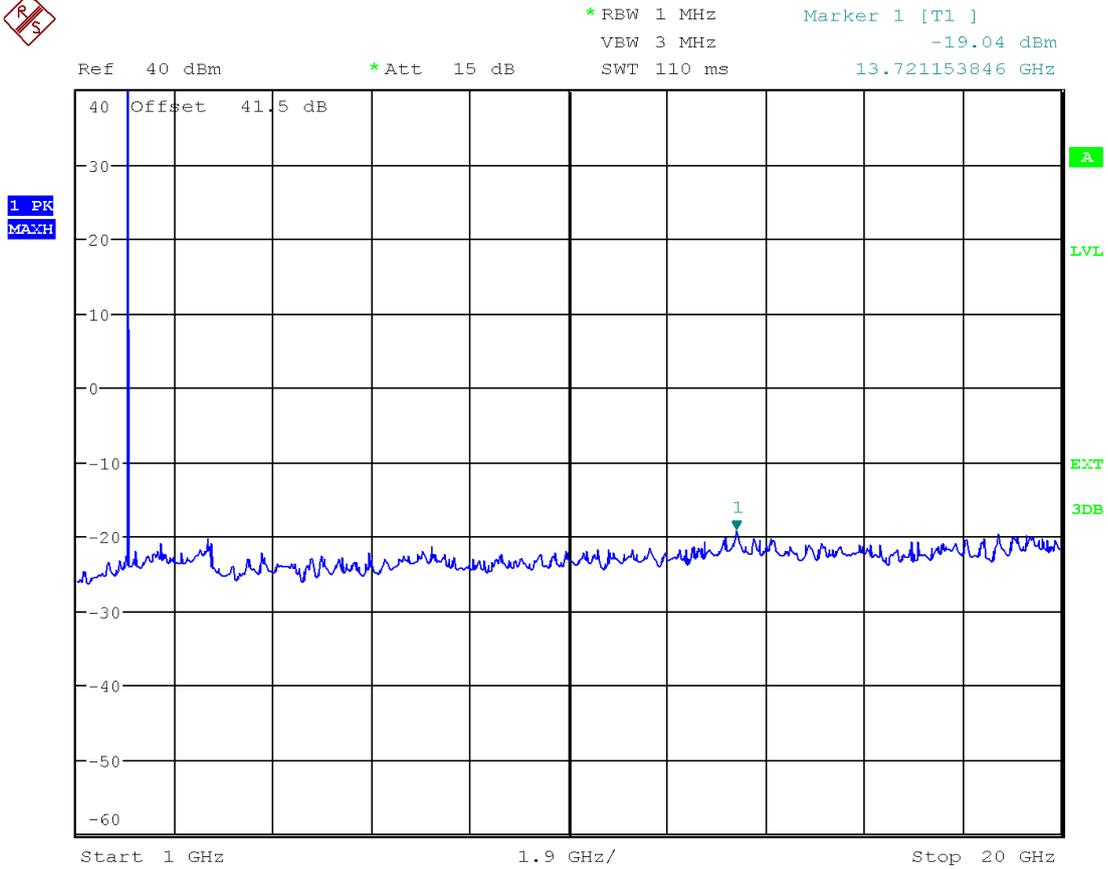
Ref 40 dBm

*Att 15 dB

1 PK
 MAXH



Date: 23.DEC.2011 11:46:39

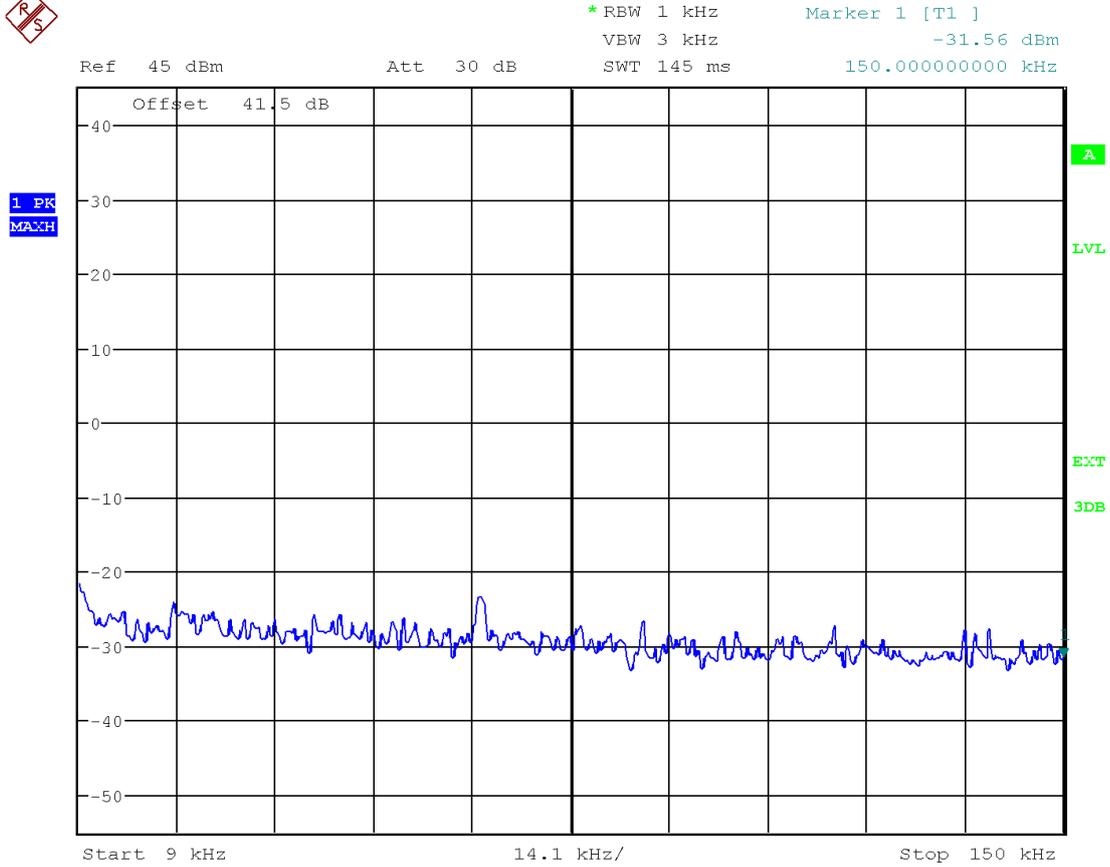


Date: 23.DEC.2011 11:47:32



2.2.2 Carrier Conf. = 4*G(15W)

2.2.2.1 Ch. B



Date: 24.DEC.2011 14:09:53

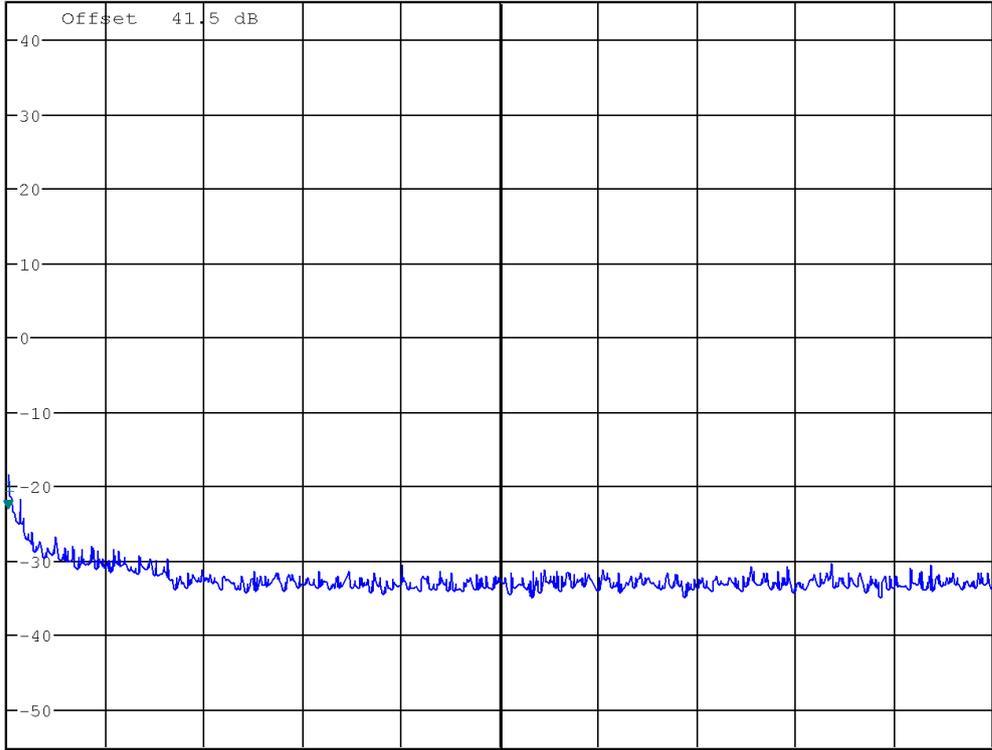


*REW 10 kHz Marker 1 [T1]
 VEW 30 kHz -23.11 dBm
 SWT 300 ms 150.000000000 kHz

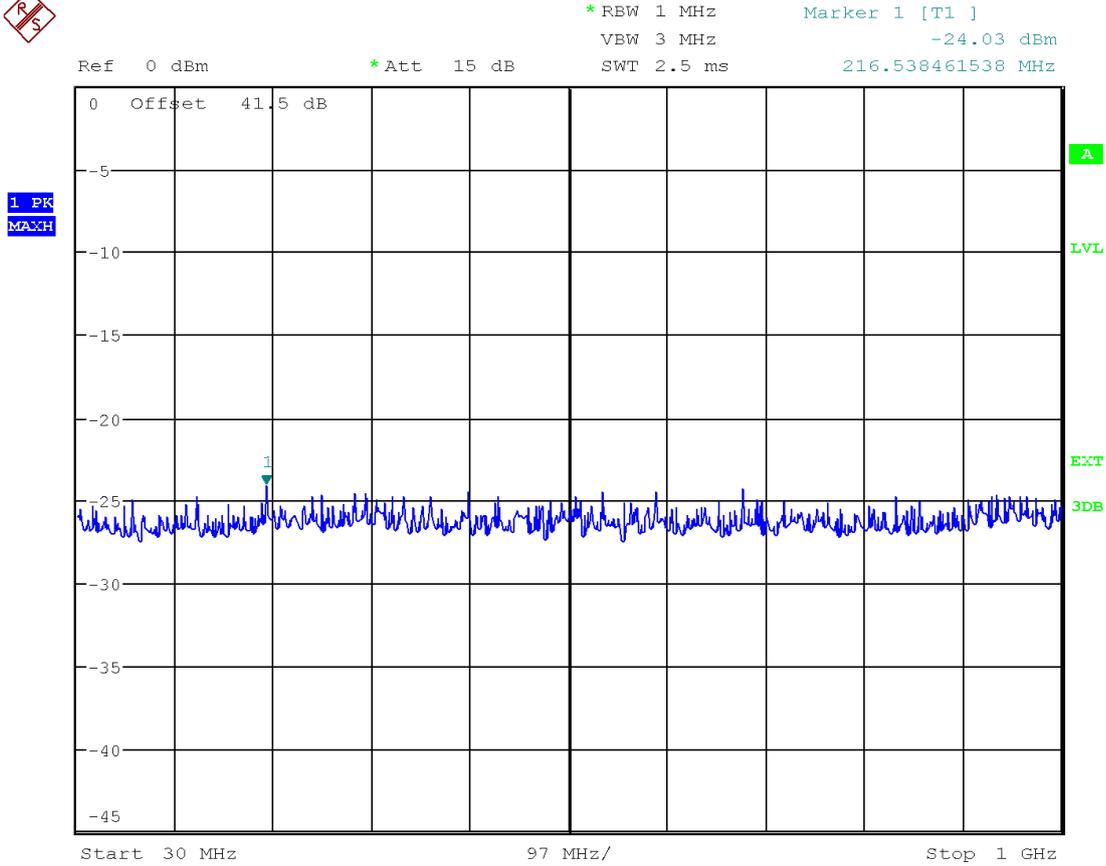
Ref 45 dBm

Att 30 dB

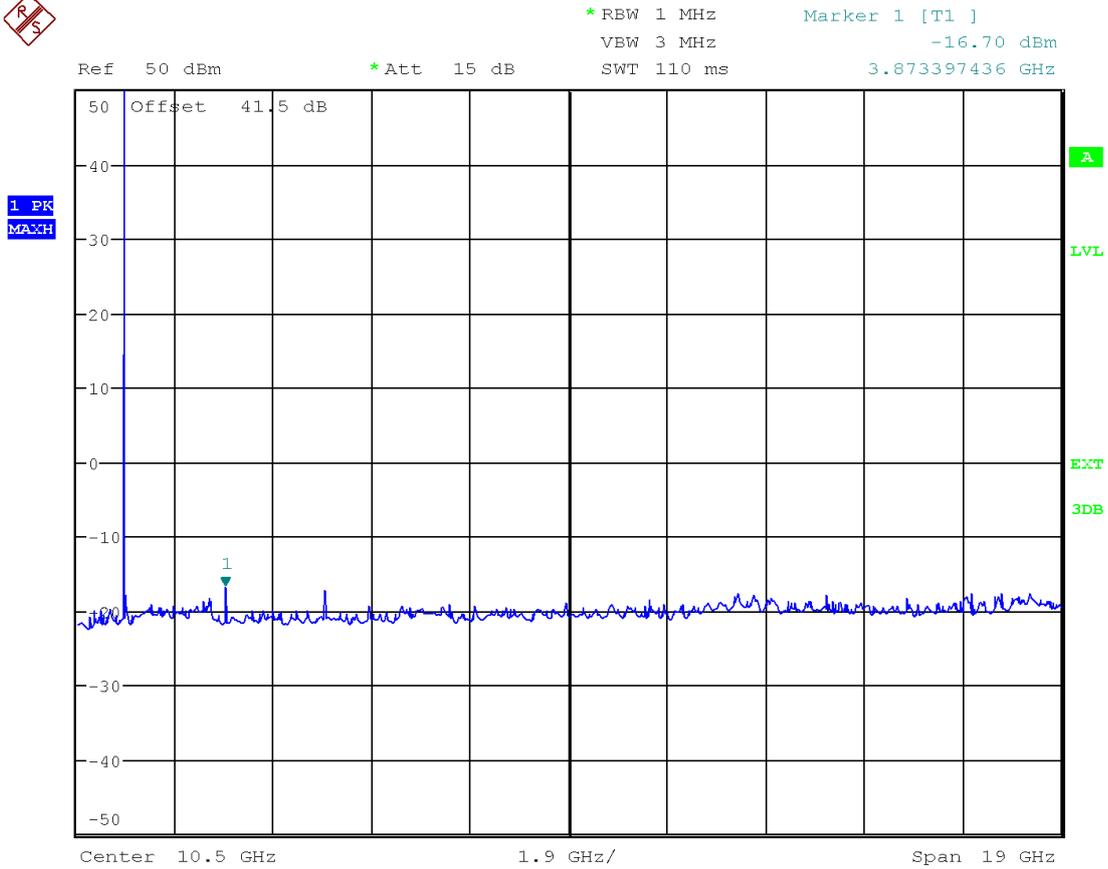
1 PK
 MAXH



Date: 24.DEC.2011 14:20:03



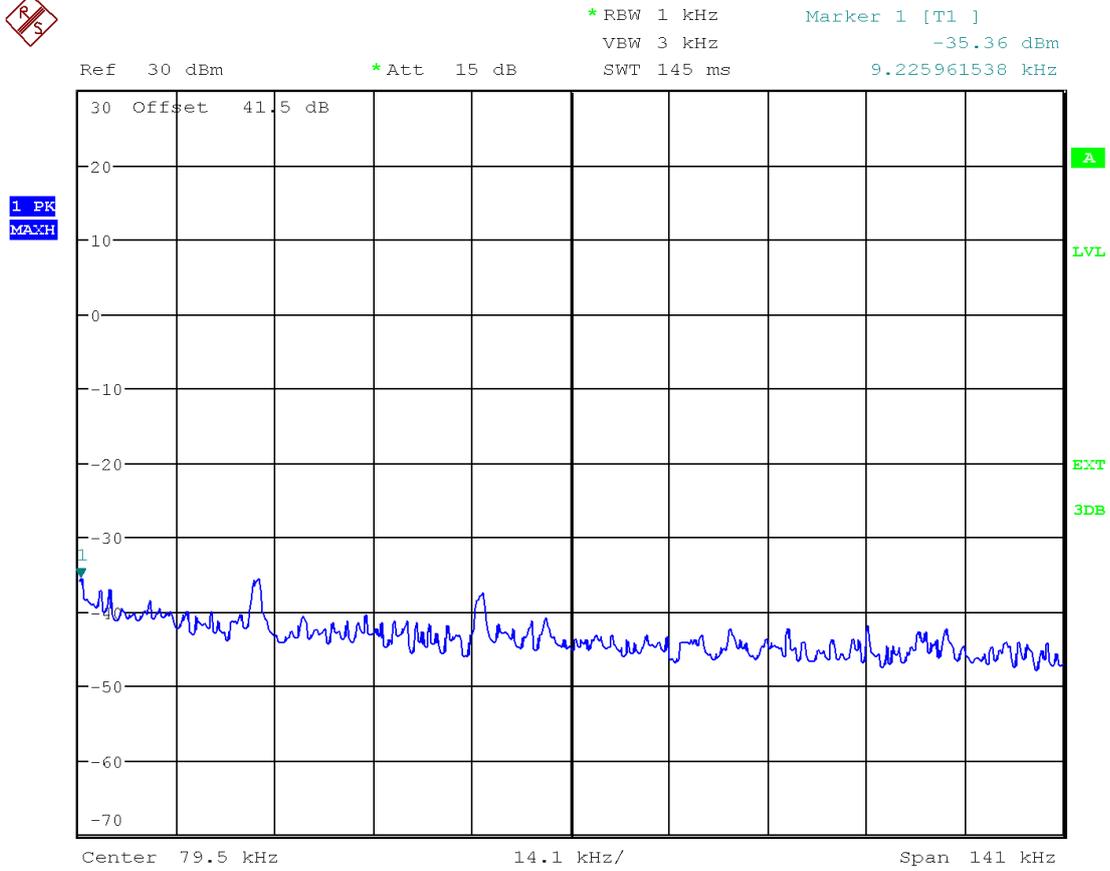
Date: 24.DEC.2011 14:28:11



Date: 24.DEC.2011 14:41:55



2.2.2.2 Ch. T



Date: 24.DEC.2011 14:56:54

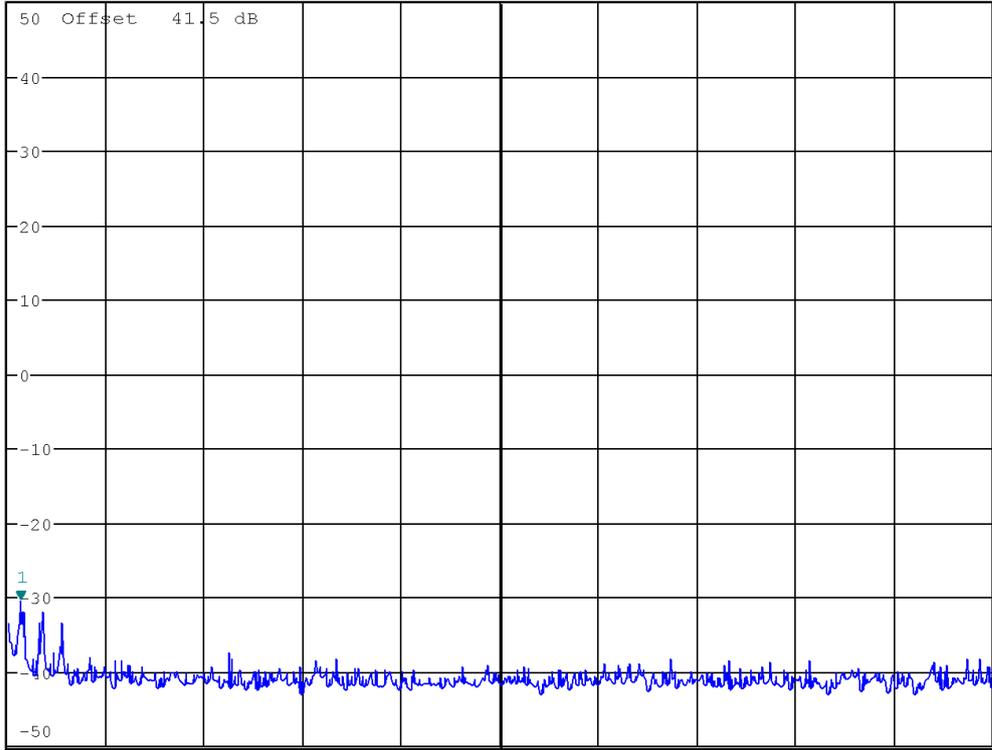


*RBW 10 kHz Marker 1 [T1]
 VEW 30 kHz -30.45 dBm
 SWT 300 ms 532.692307692 kHz

Ref 50 dBm

*Att 15 dB

1 PK
 MAXH



Date: 24.DEC.2011 14:54:53

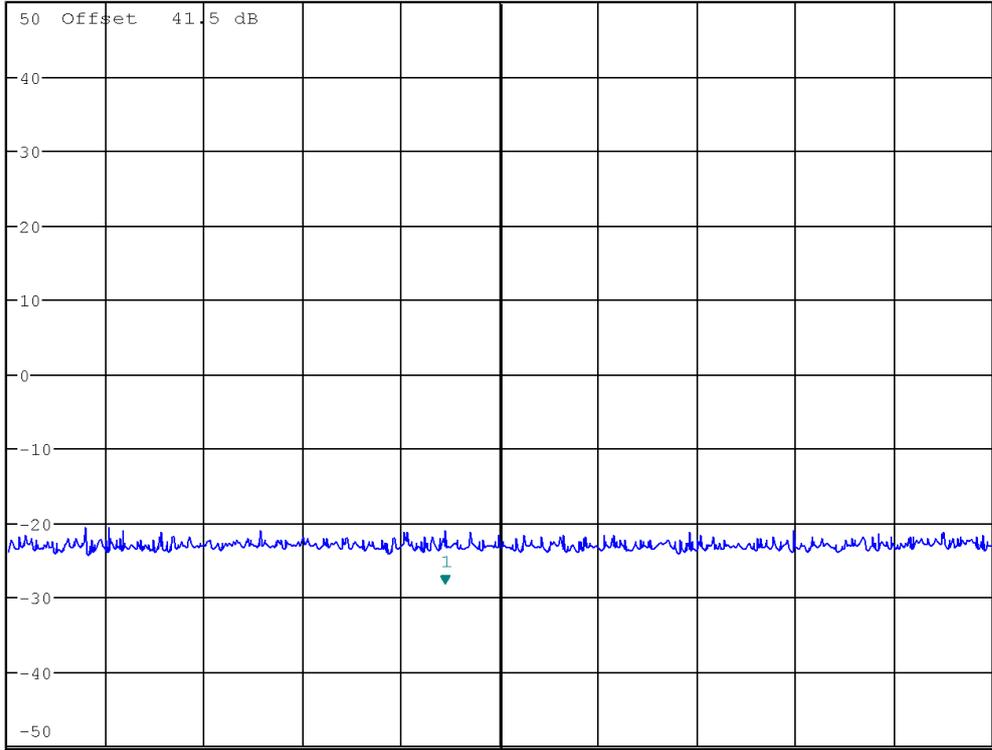


*RBW 1 MHz Marker 1 [T1]
 VEW 3 MHz -28.18 dBm
 SWT 2.5 ms 460.592948718 MHz

Ref 50 dBm

*Att 15 dB

1 PK
 MAXH

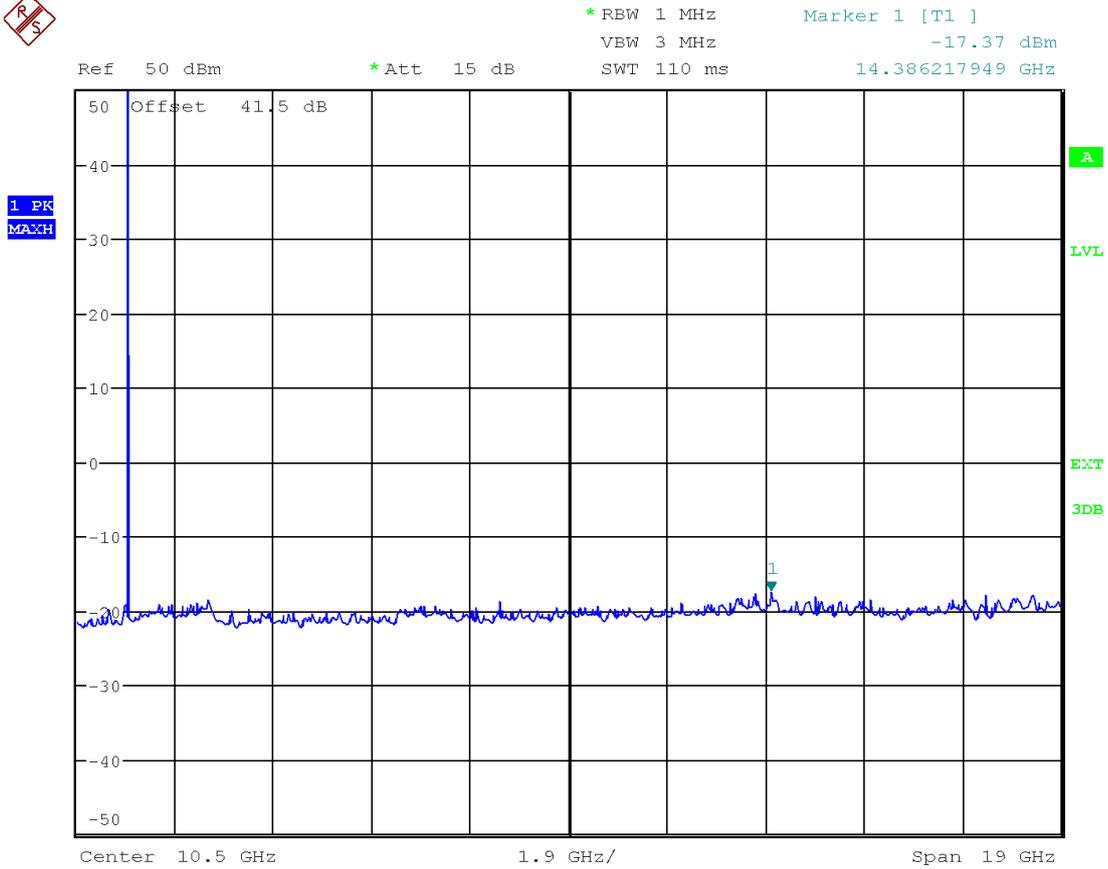


Start 30 MHz

97 MHz/

Stop 1 GHz

Date: 24.DEC.2011 14:53:03

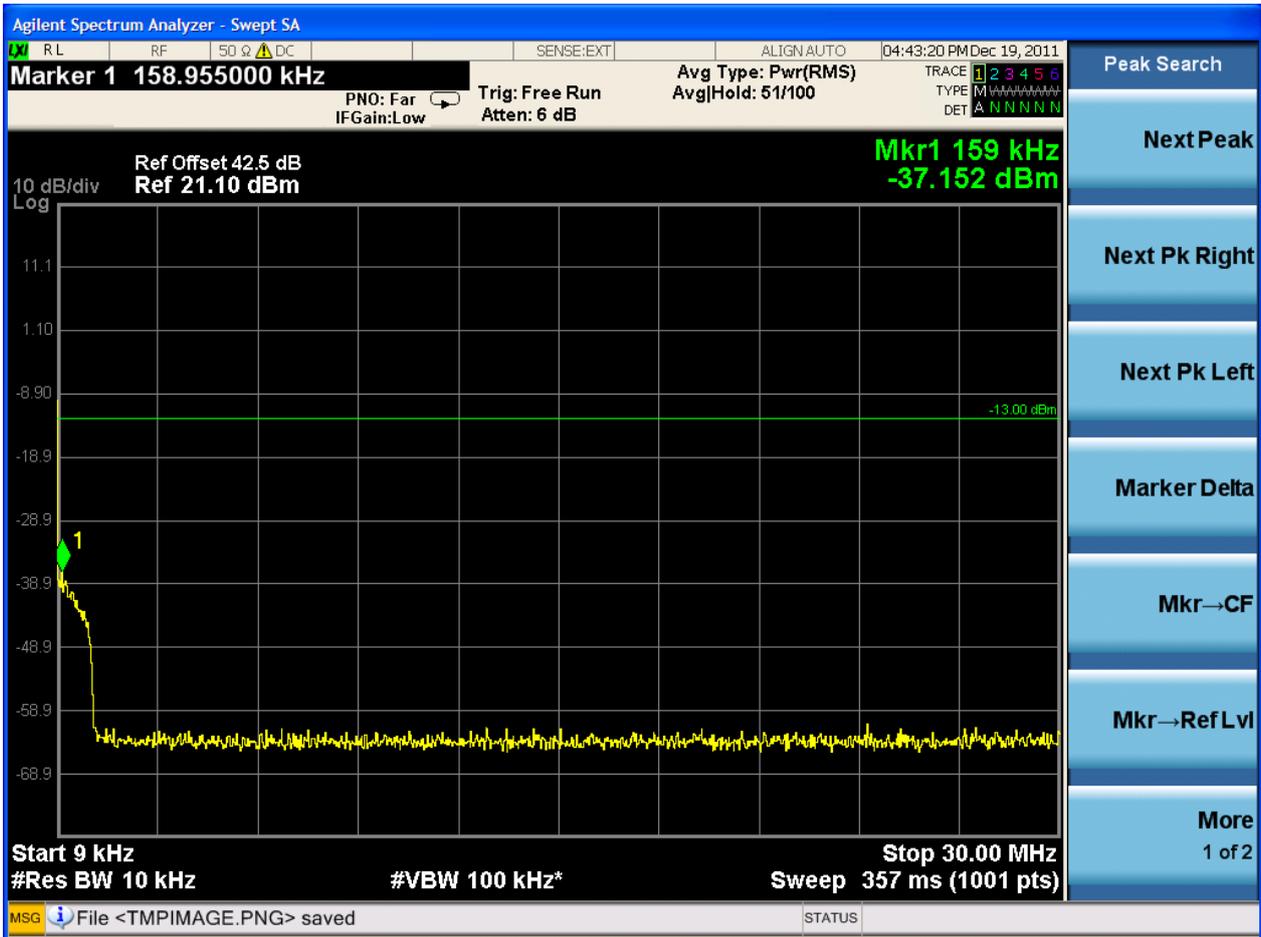


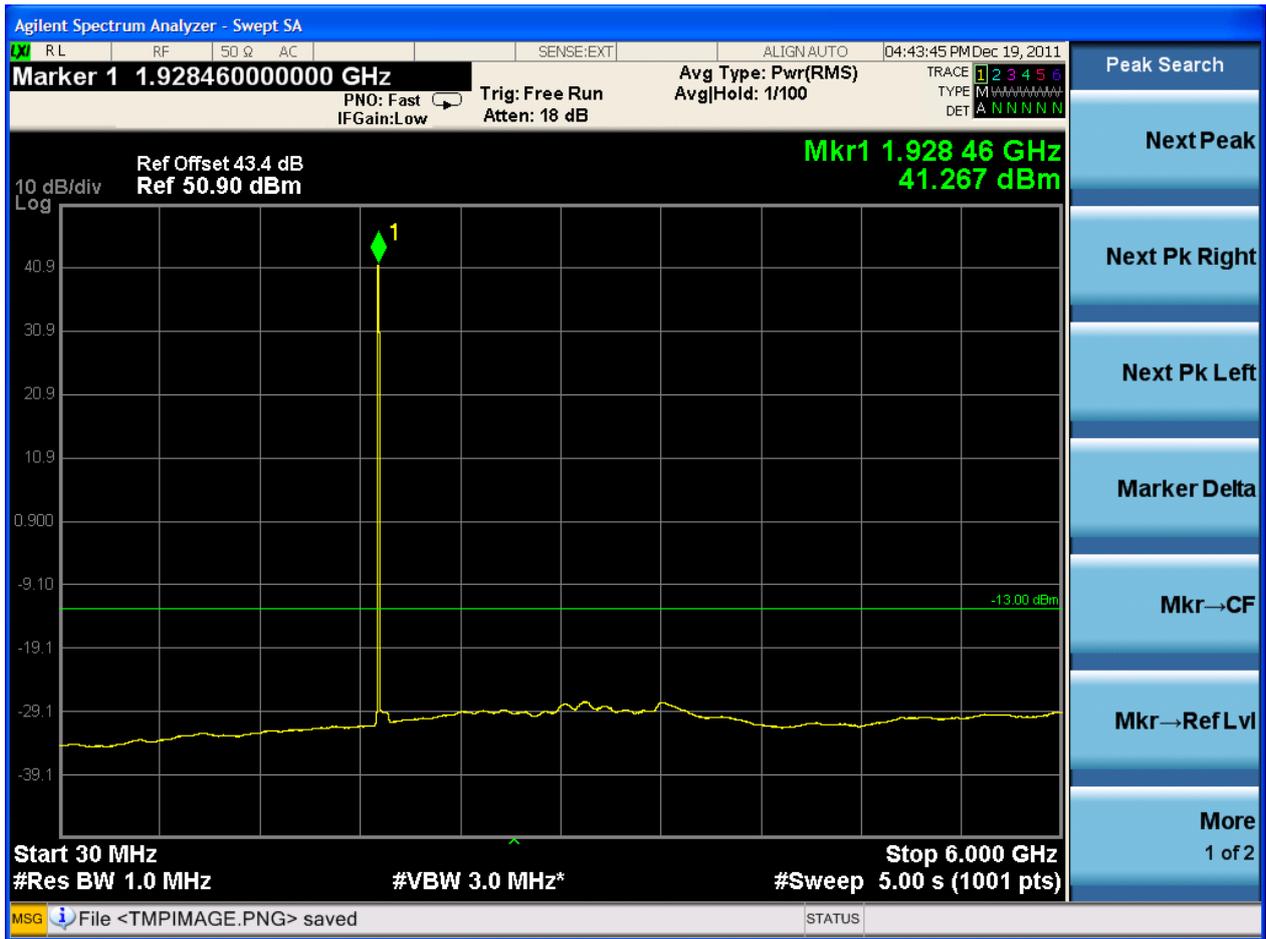
Date: 24.DEC.2011 14:51:28

2.3 Test Mode = E-TM 1.1

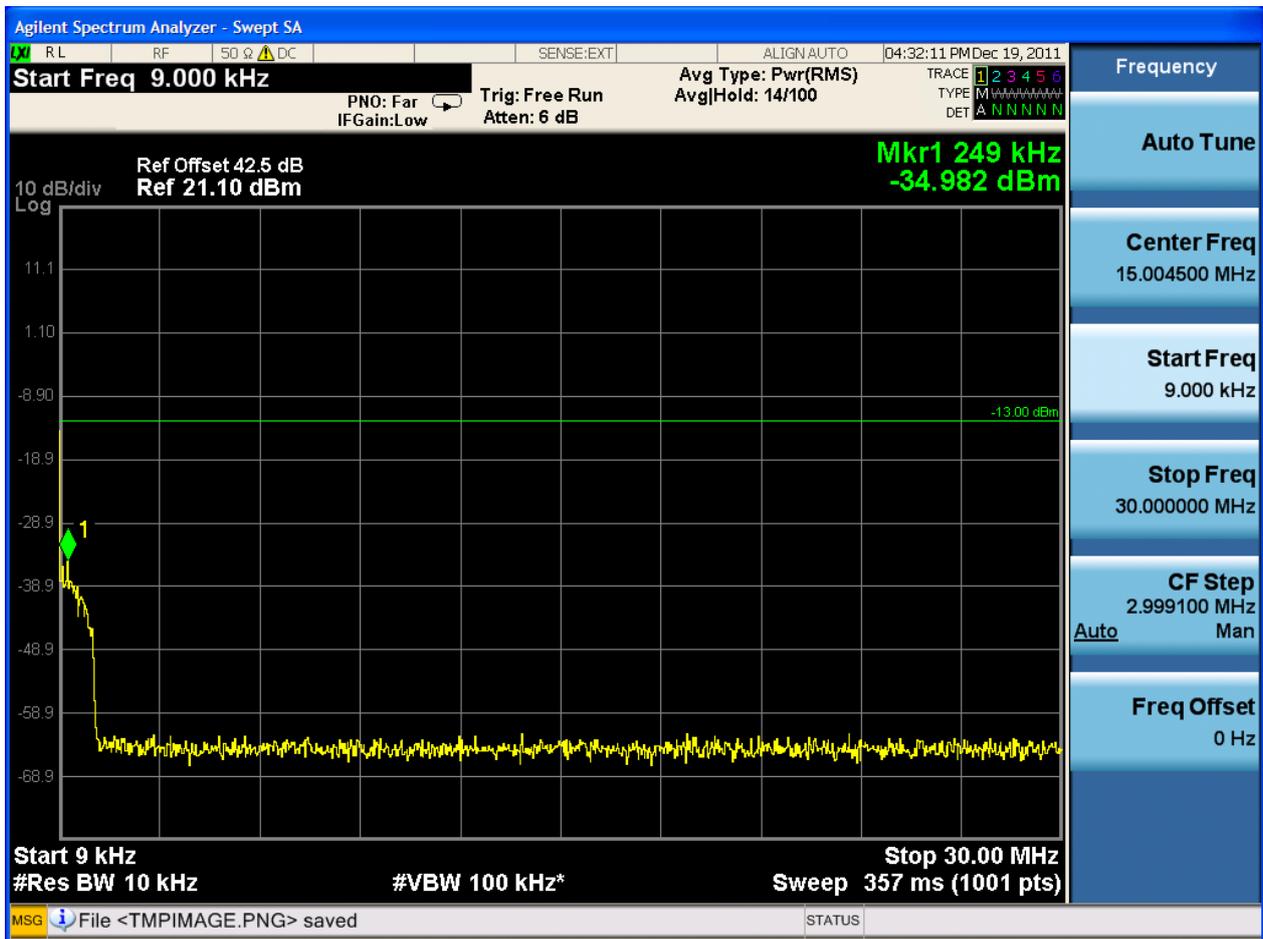
2.3.1 Carrier Conf. = 1*L1.4M(60W)

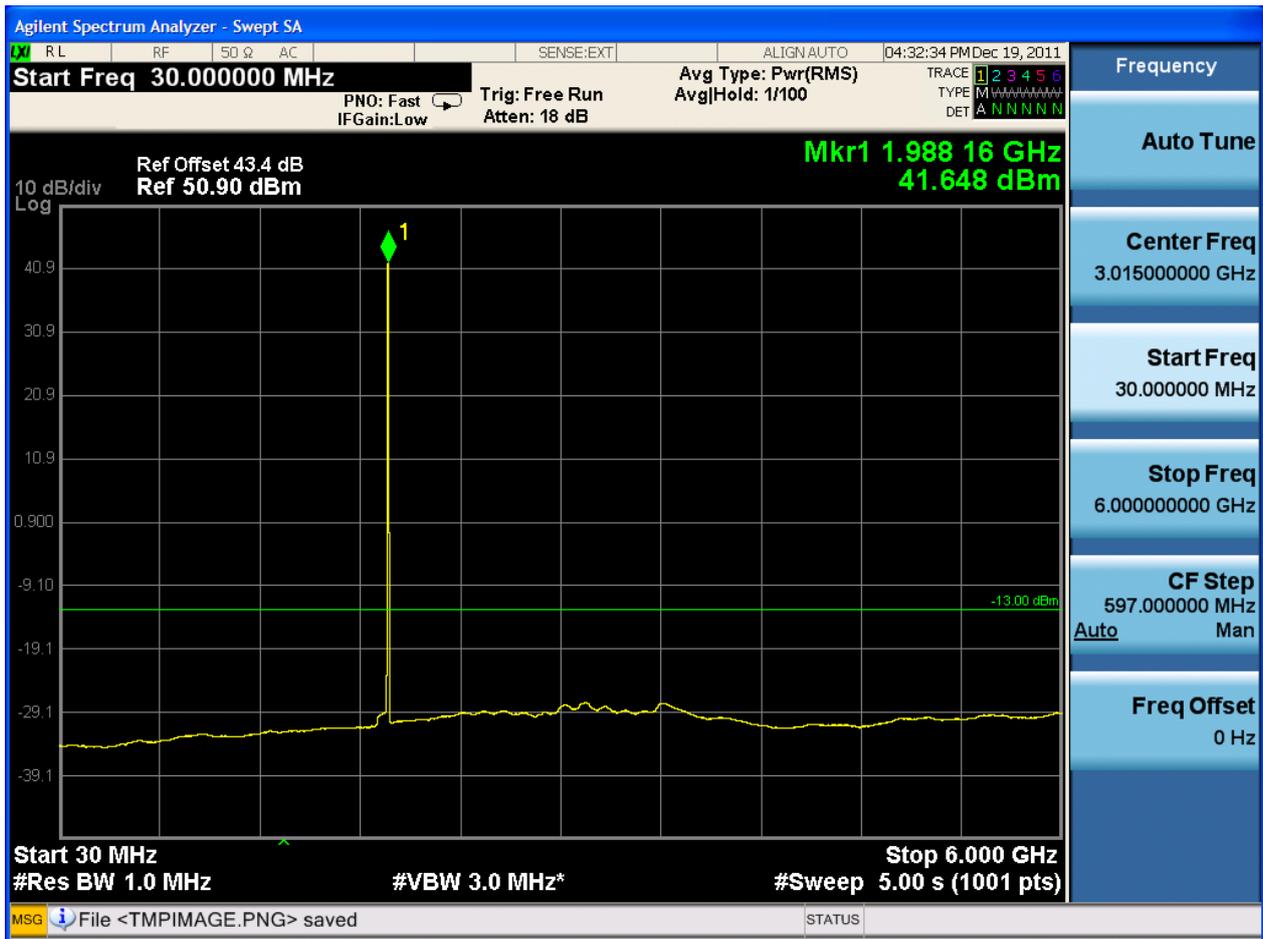
2.3.1.1 Ch. B





2.3.1.2 Ch. T

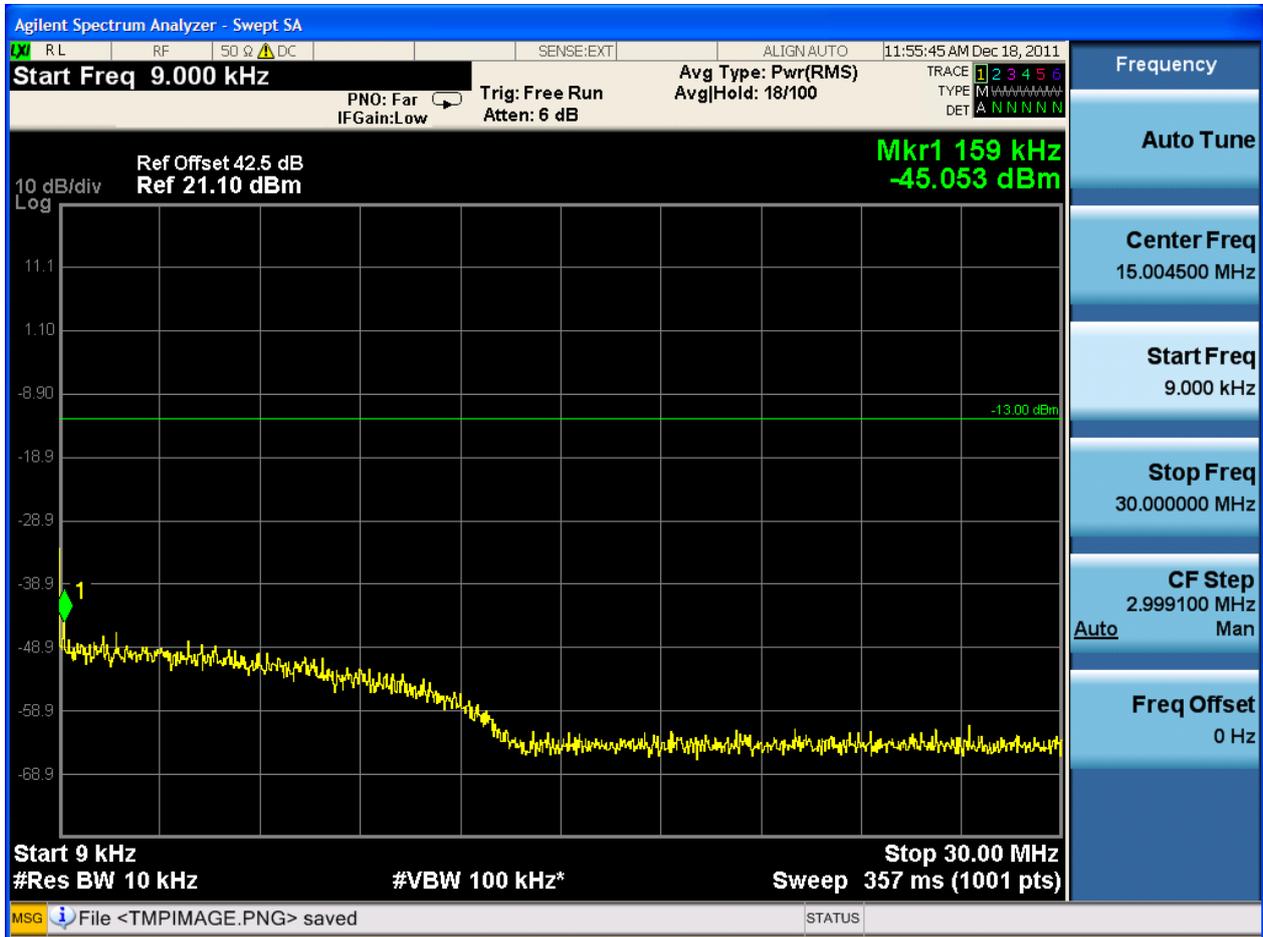


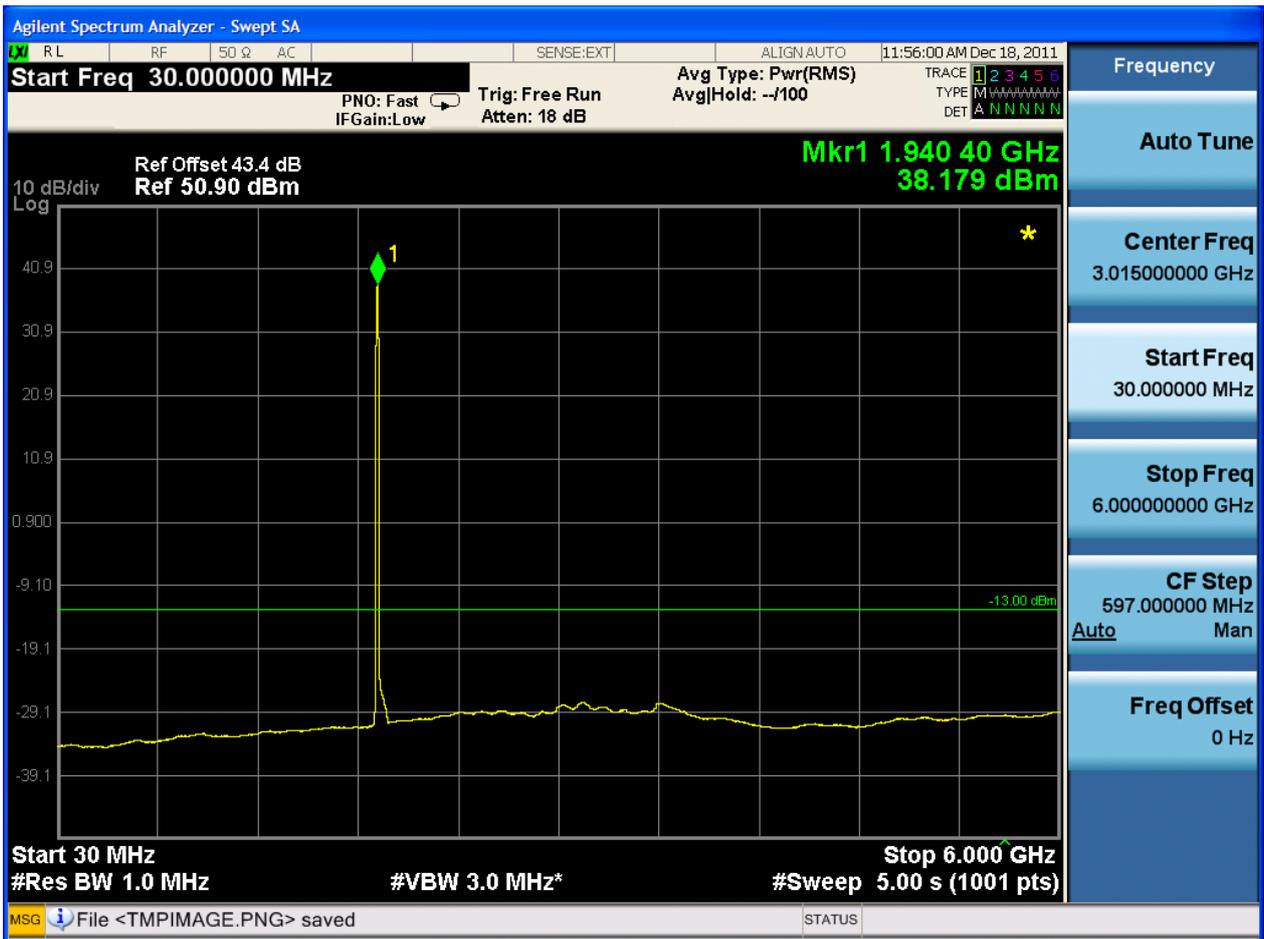




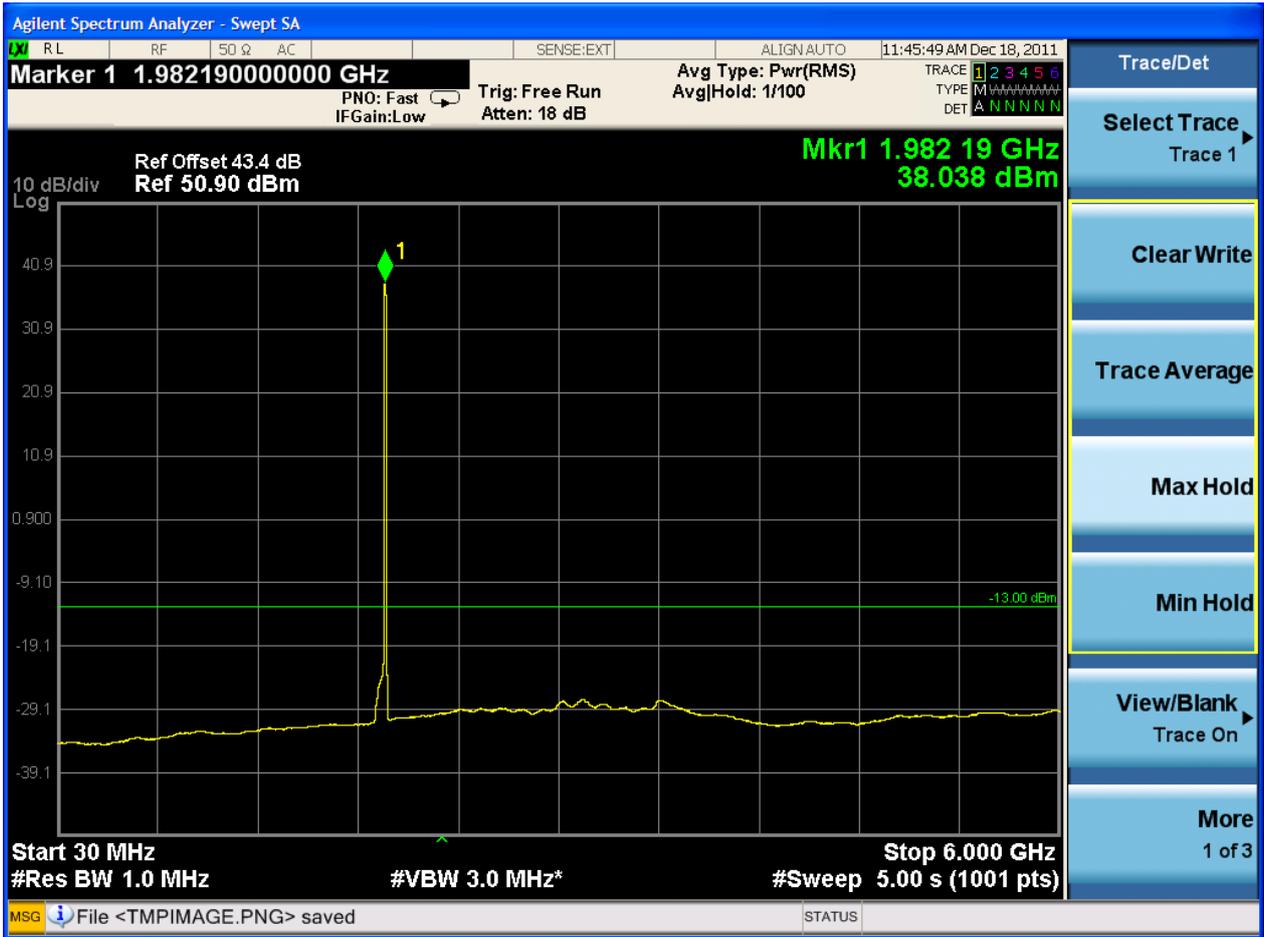
2.3.2 Carrier Conf. = 1*L15M(60W)

2.3.2.1 Ch. B

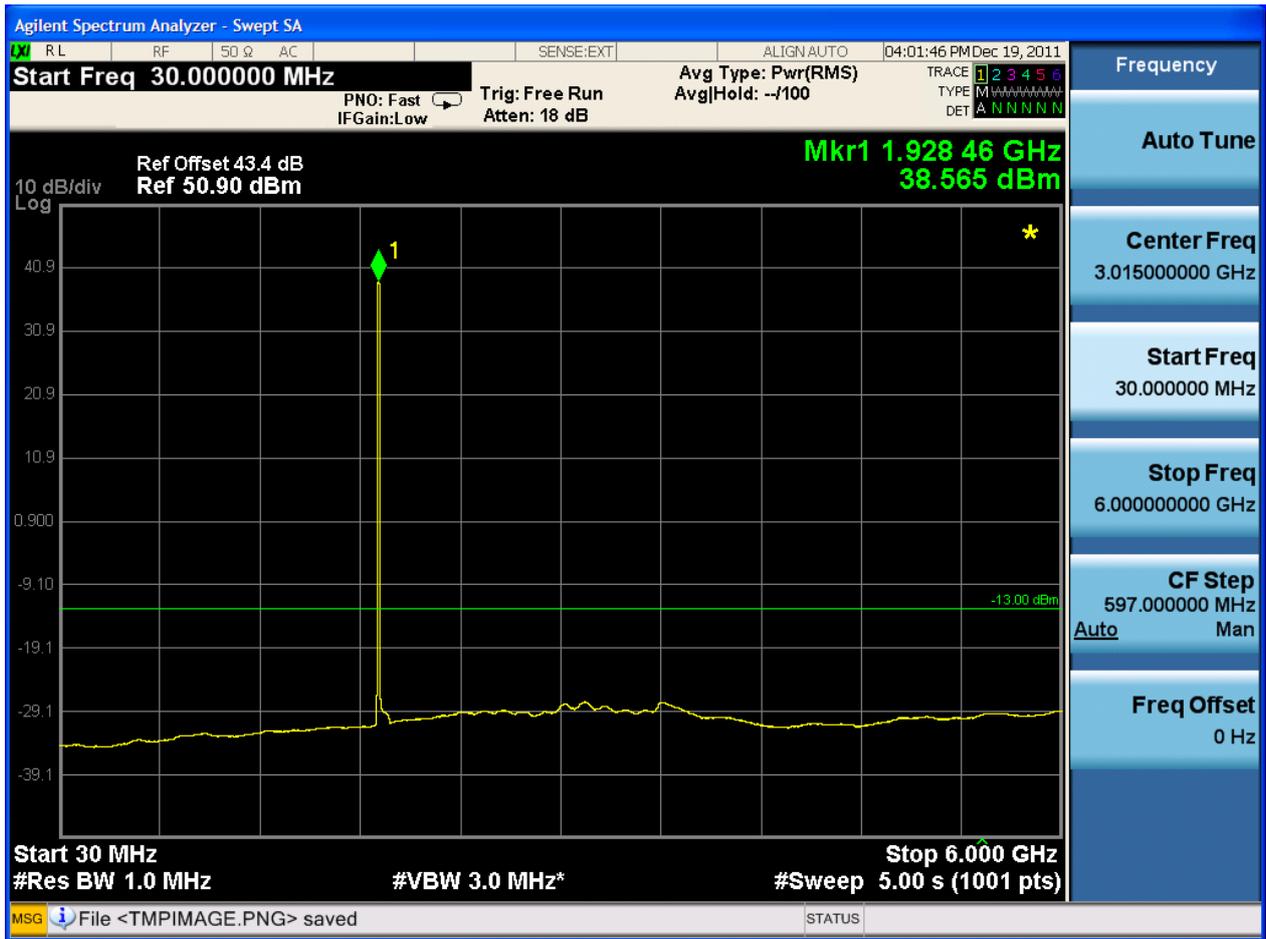




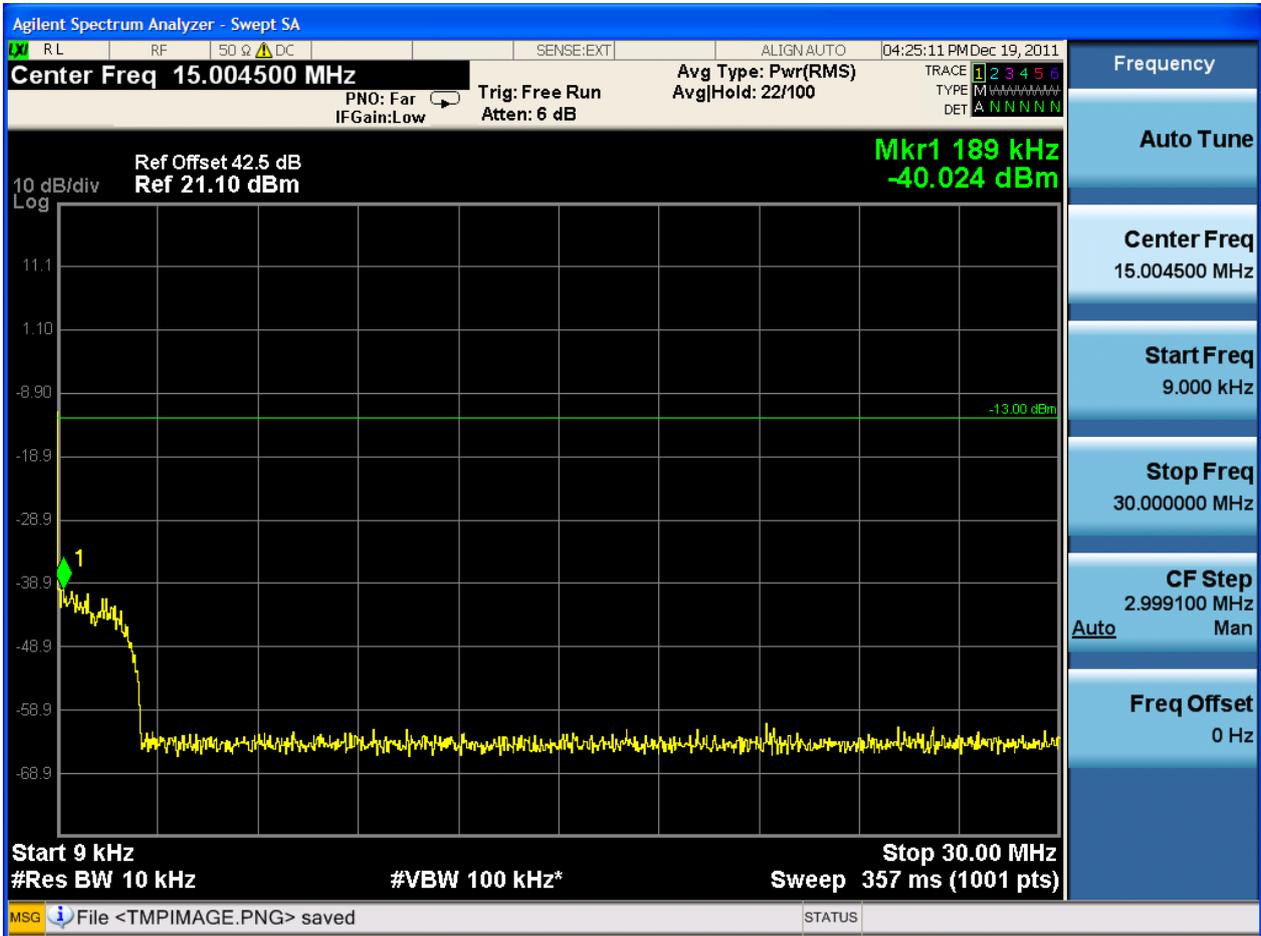


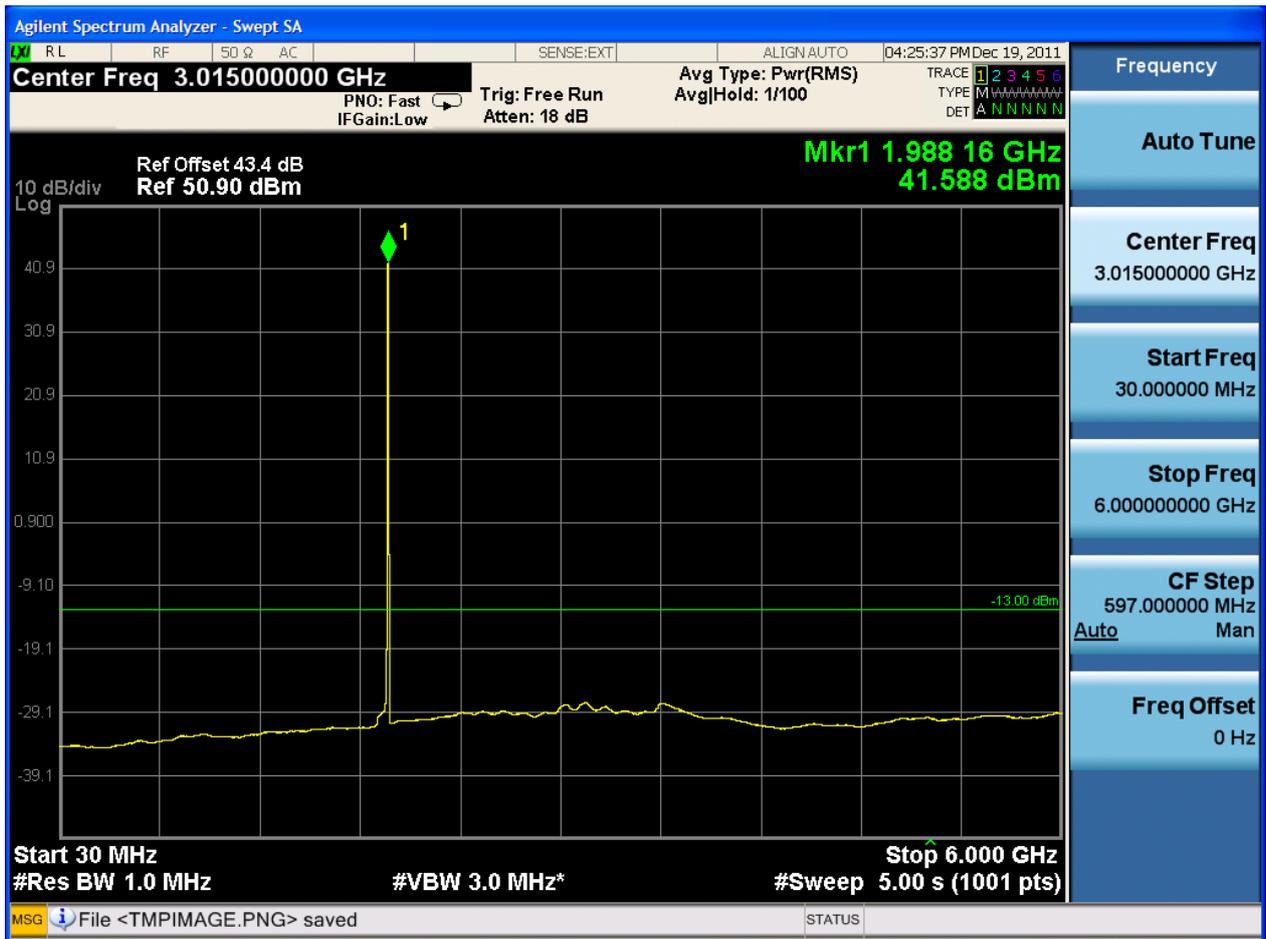






2.3.3.2 Ch. T

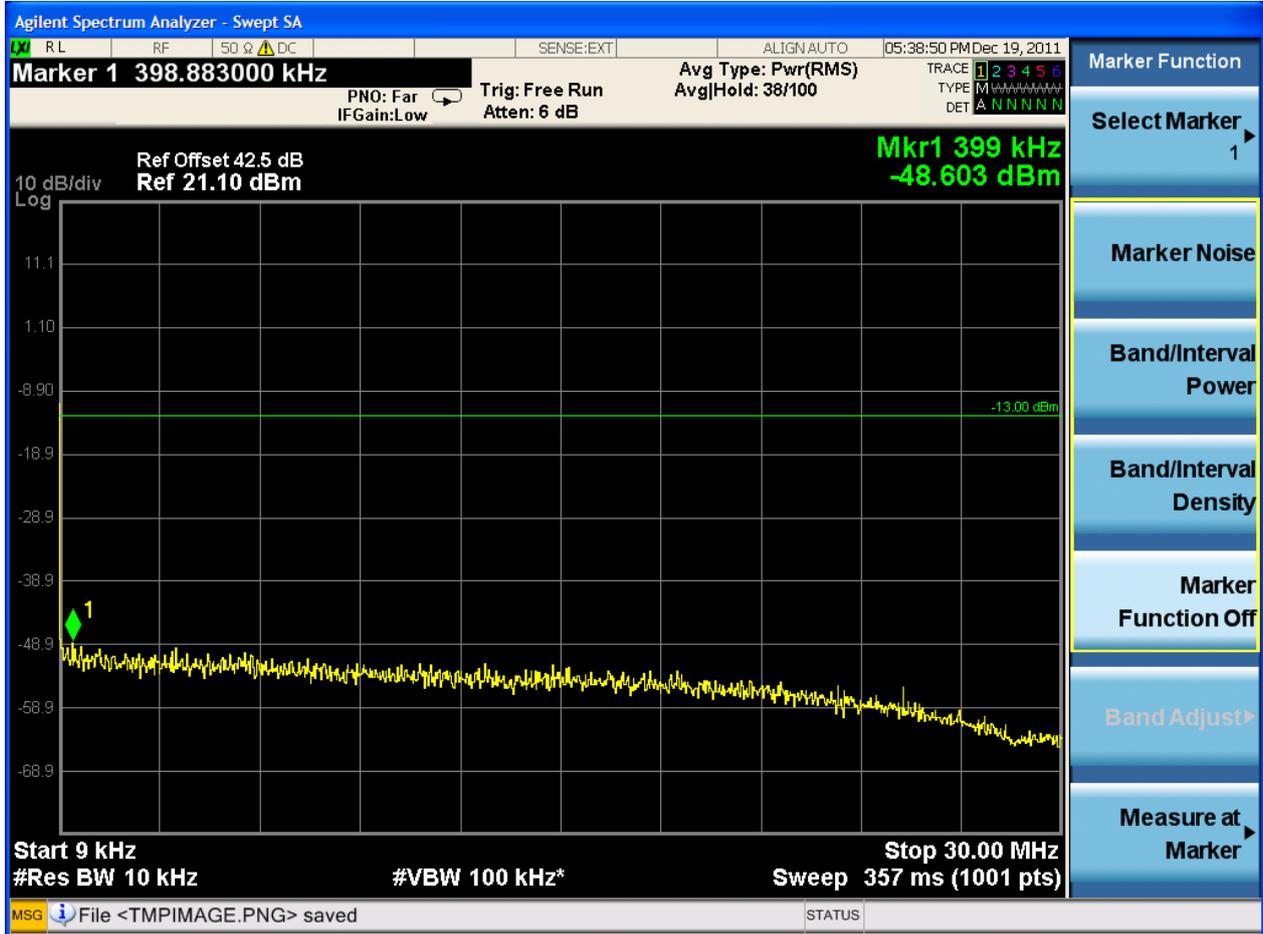


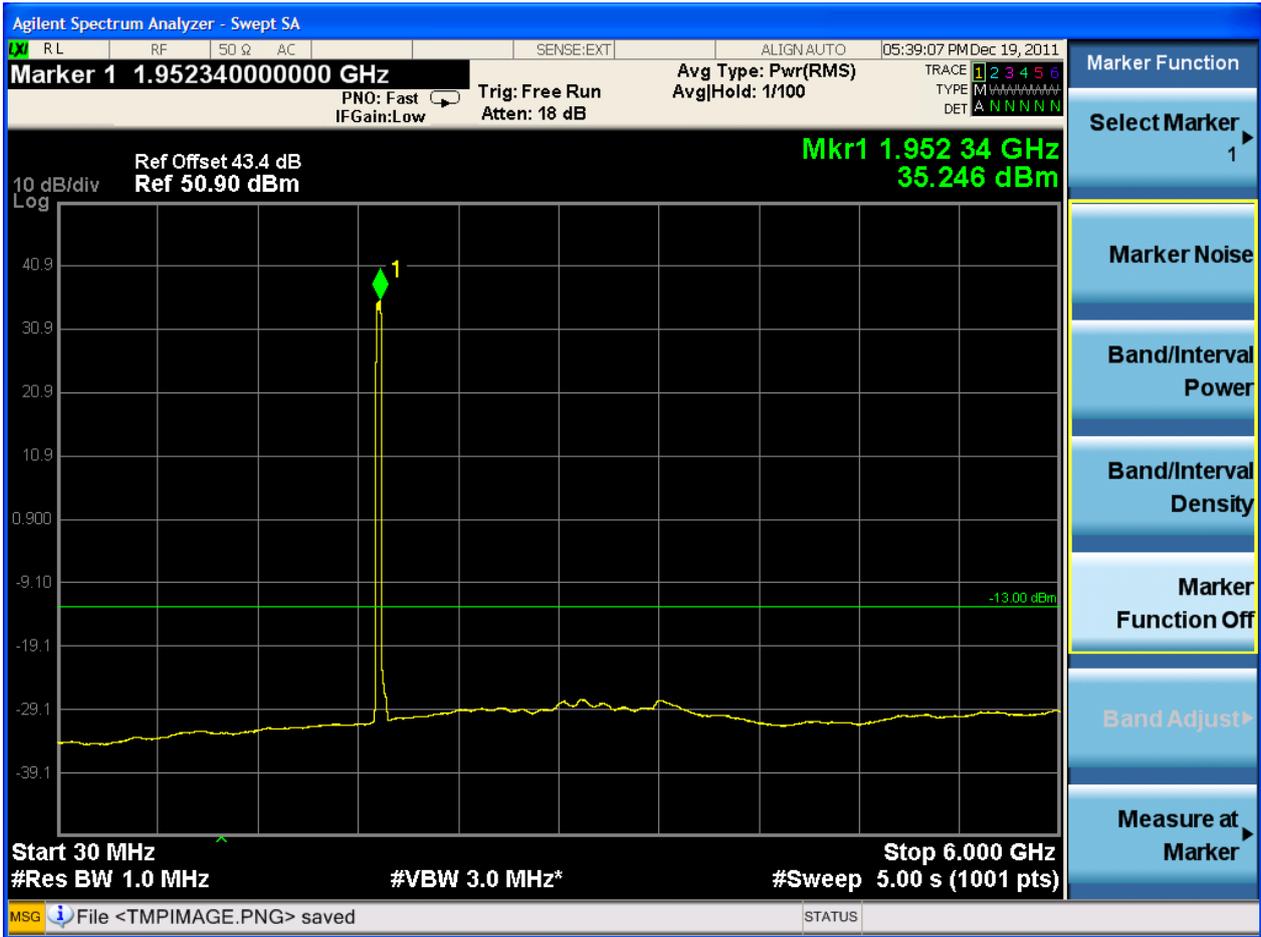




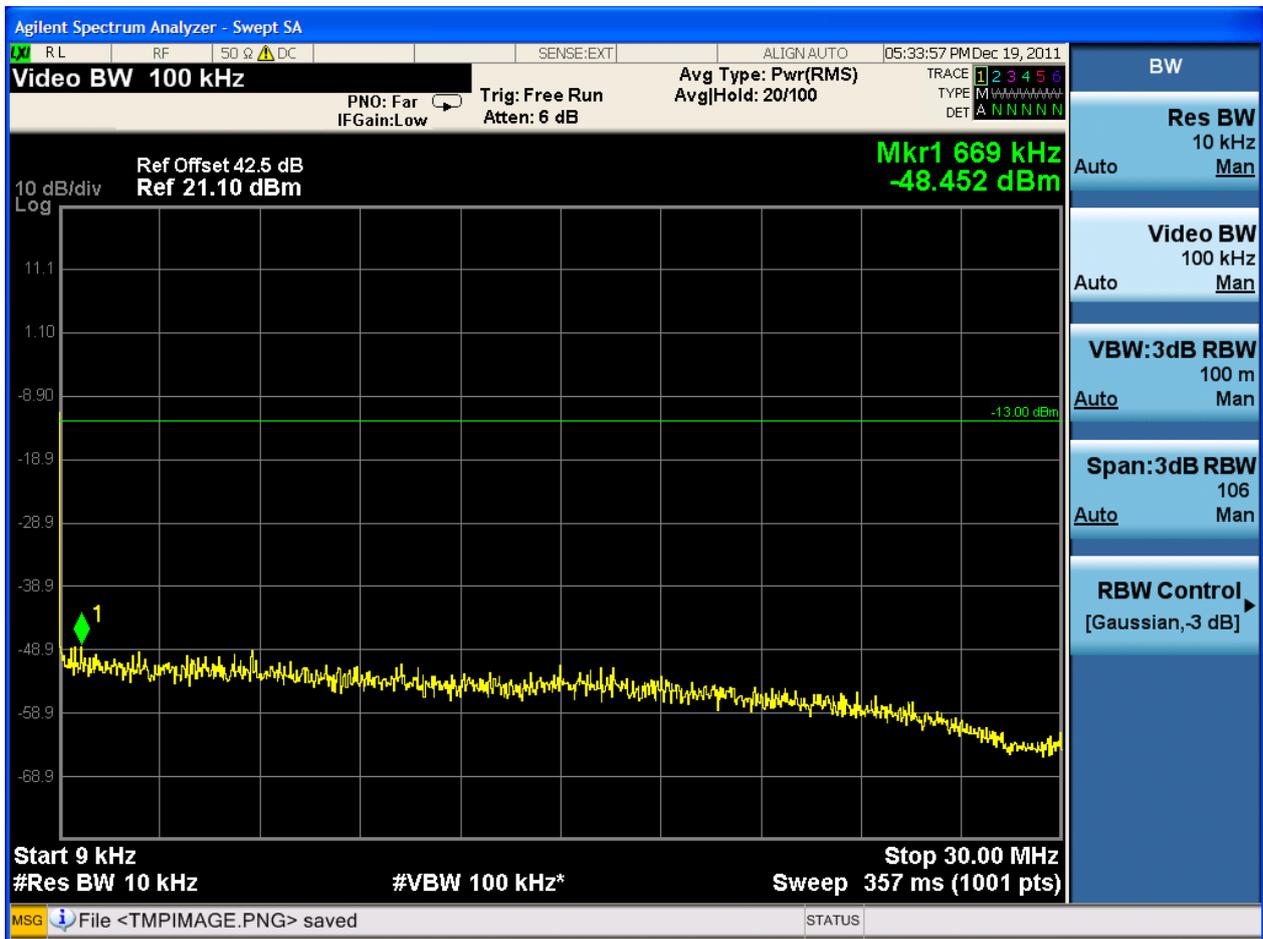
2.3.4 Carrier Conf. = 2*L15M(30W)

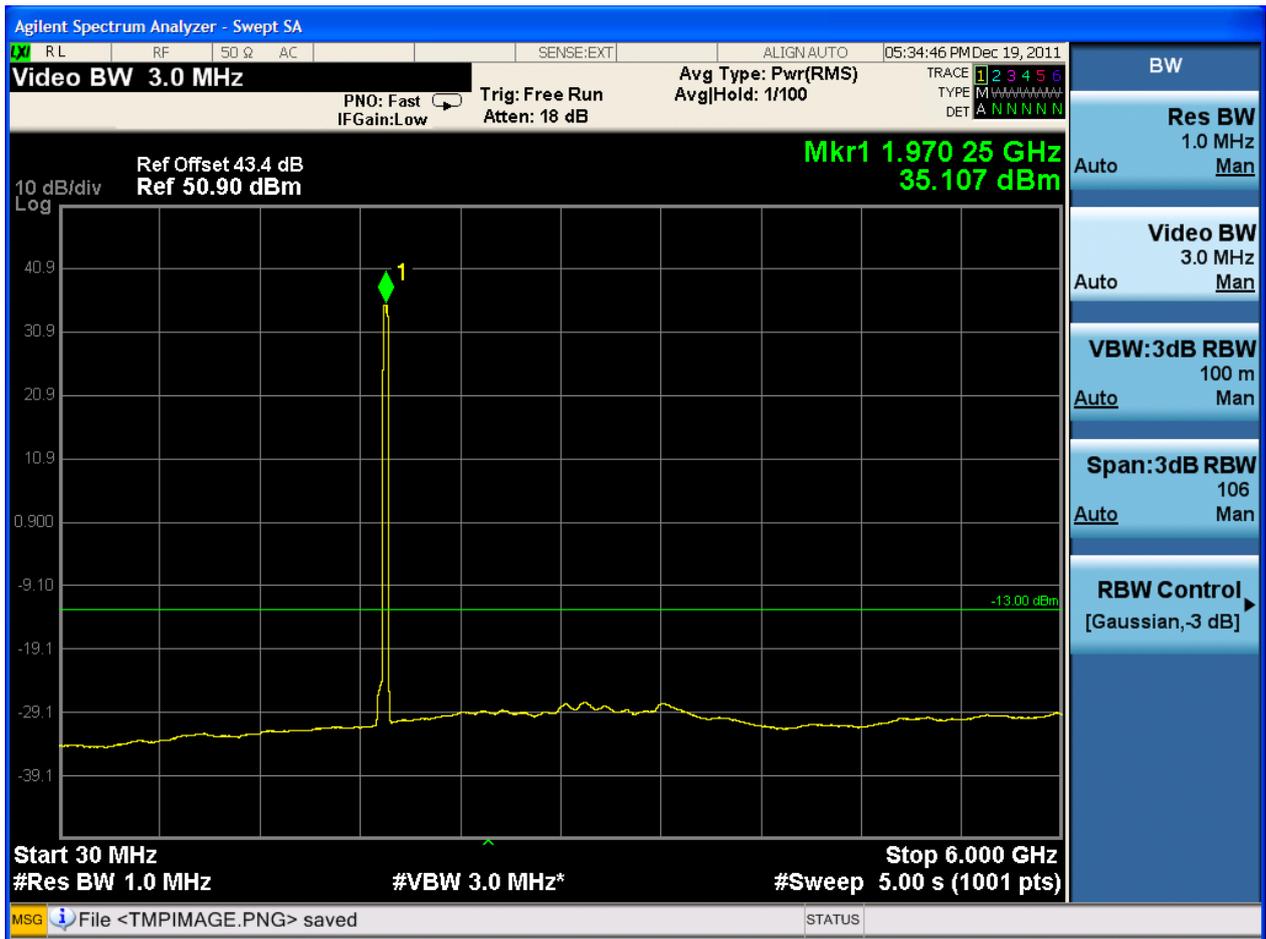
2.3.4.1 Ch. B





2.3.4.2 Ch. T





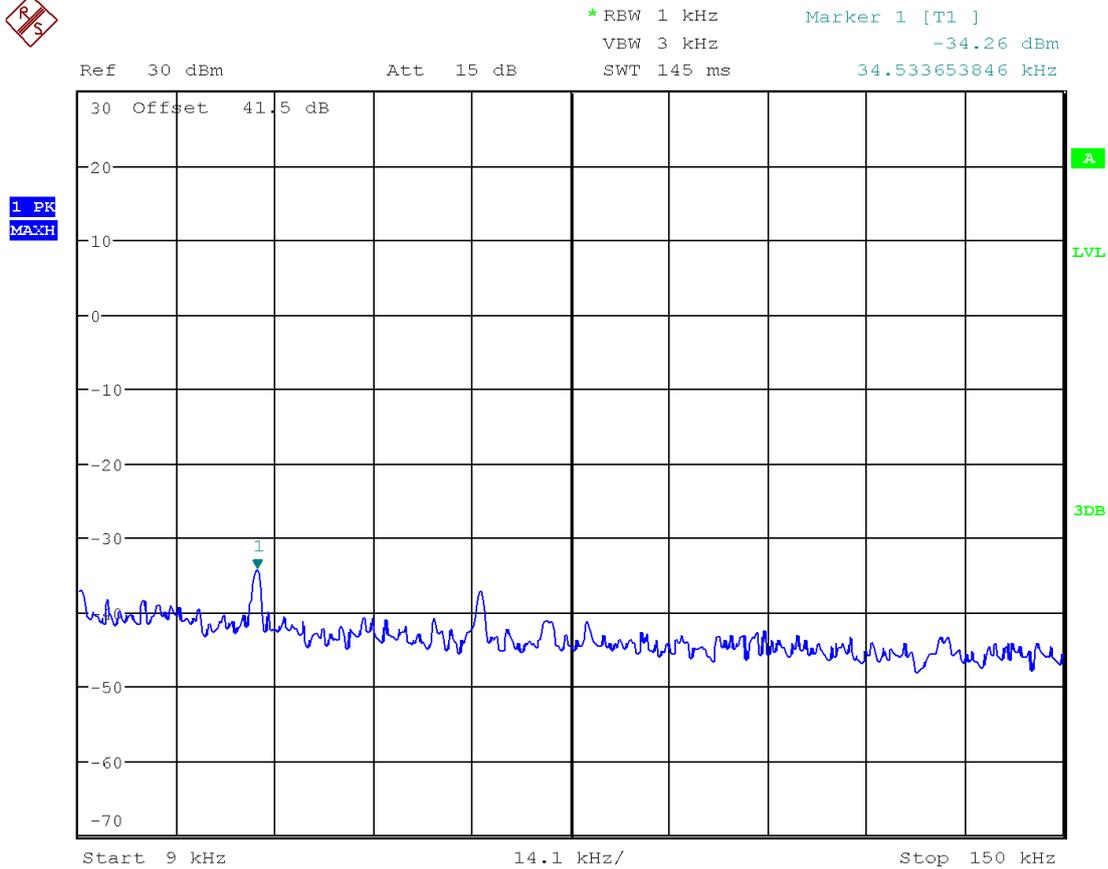




2.4 MSR_TM1

2.4.1 Carrier Conf. = 1*G(40W) & 1*U(20W)

2.4.1.1 Ch. B



Date: 26.DEC.2011 19:38:53

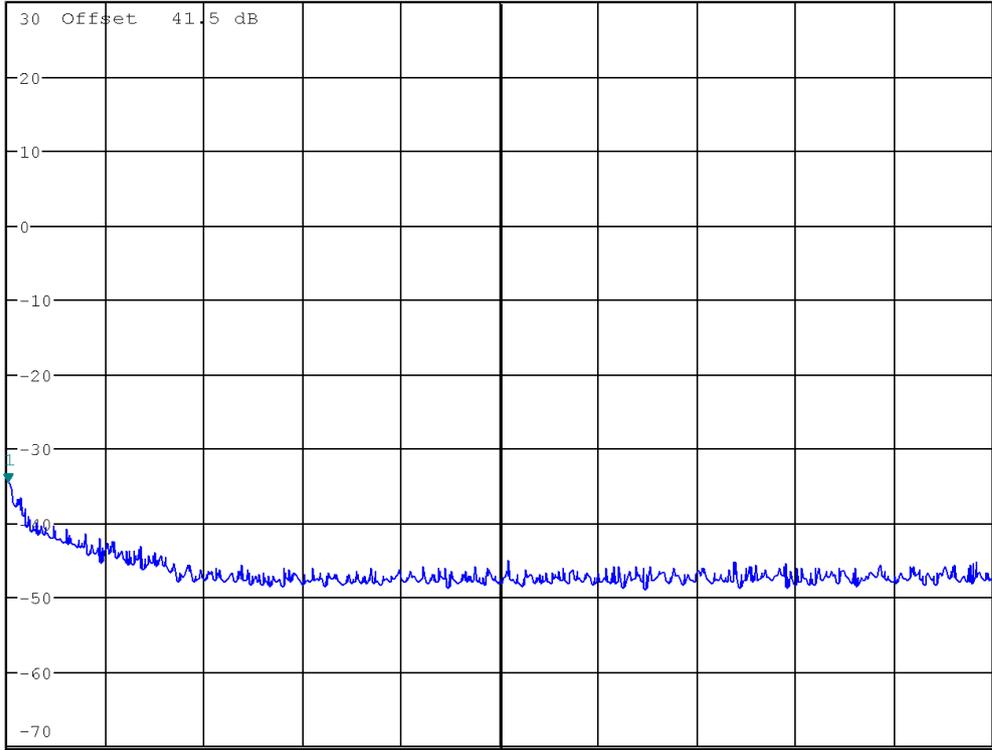


*RBW 10 kHz Marker 1 [T1]
VEW 30 kHz -34.51 dBm
SWT 300 ms 150.000000000 kHz

Ref 30 dBm

Att 15 dB

1 PK
MAXH

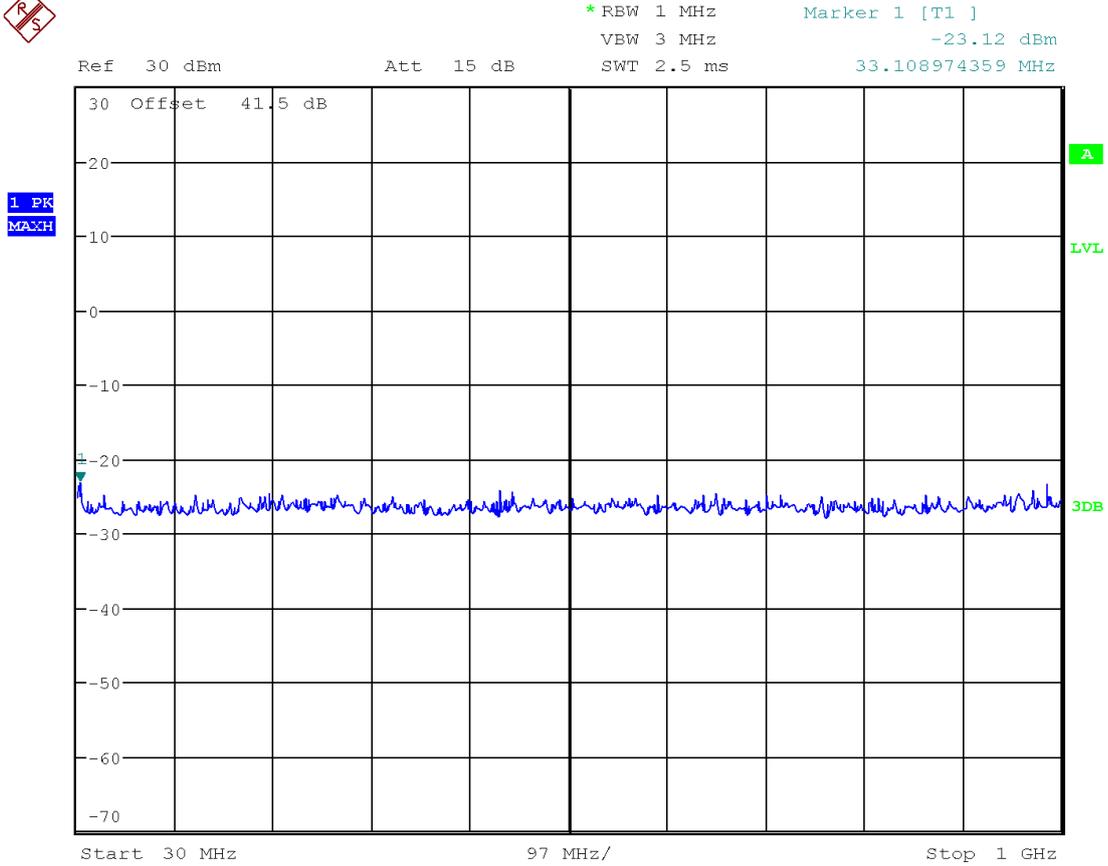


Start 150 kHz

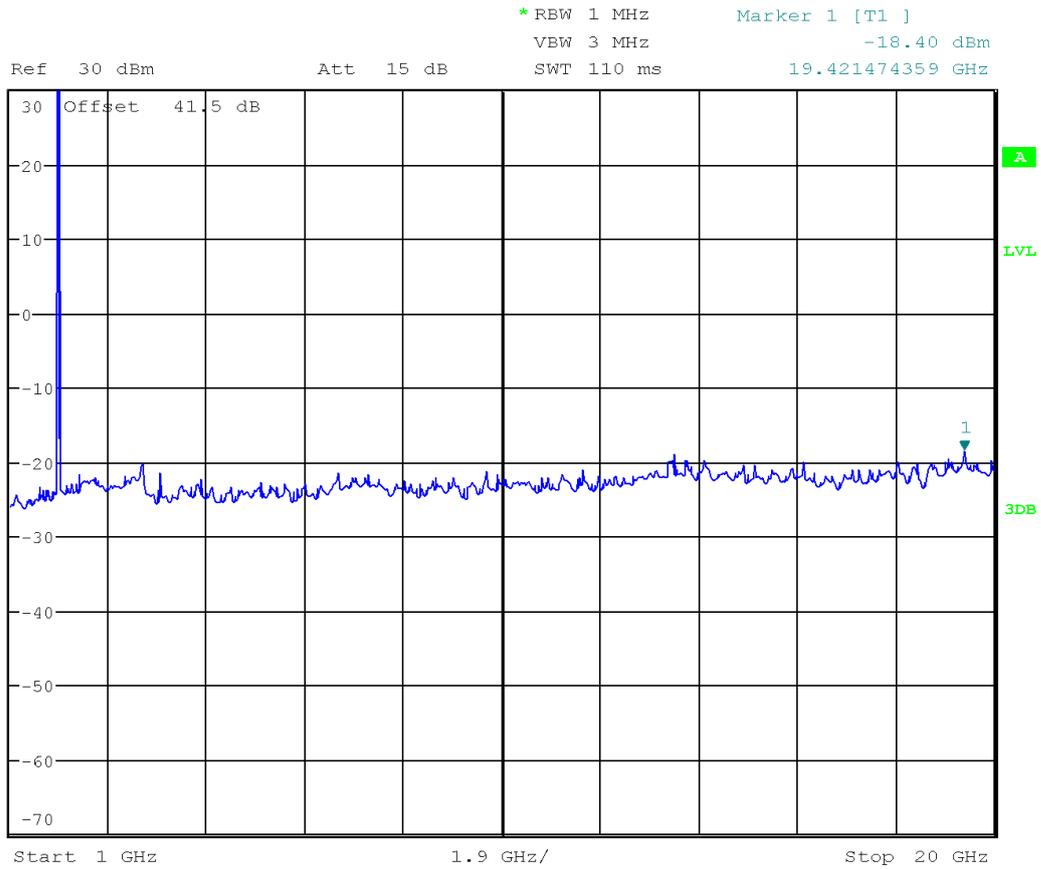
2.985 MHz/

Stop 30 MHz

Date: 26.DEC.2011 19:38:10



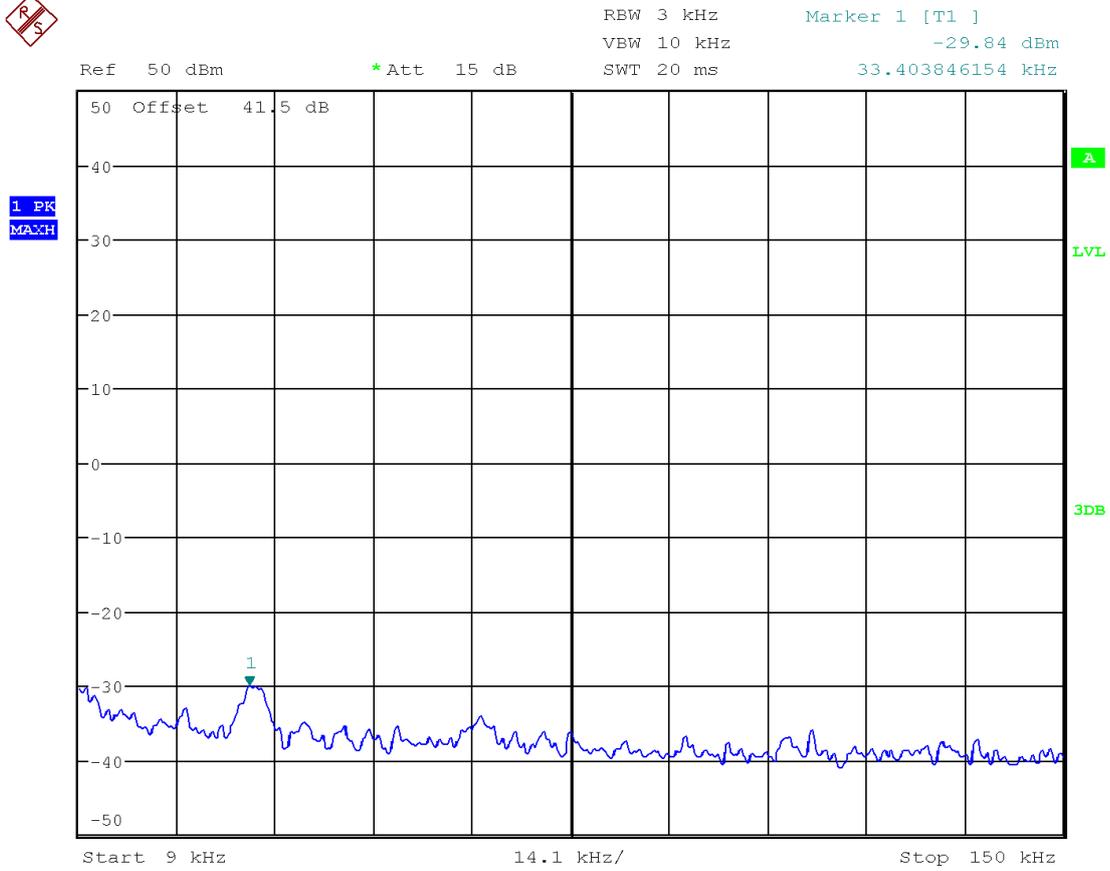
Date: 26.DEC.2011 19:41:09



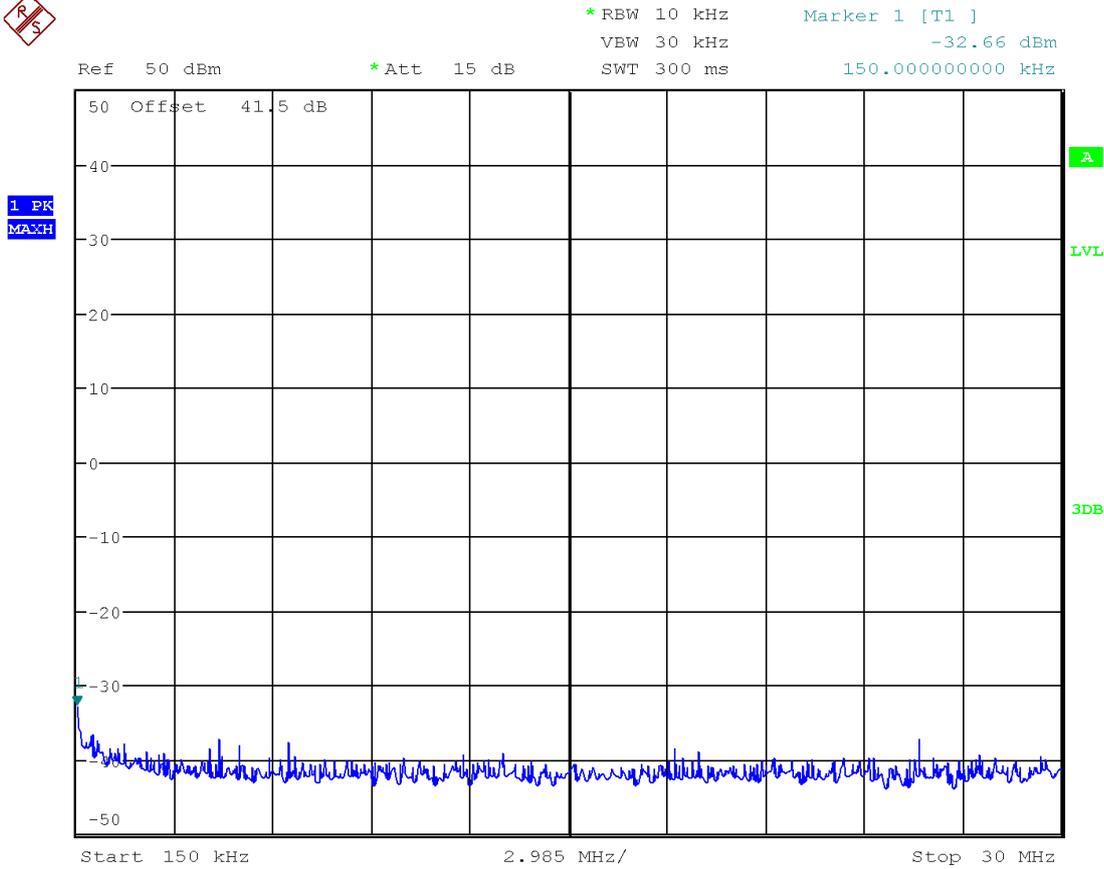
Date: 26.DEC.2011 19:42:21



2.4.1.2 Ch. T



Date: 26.DEC.2011 20:29:55



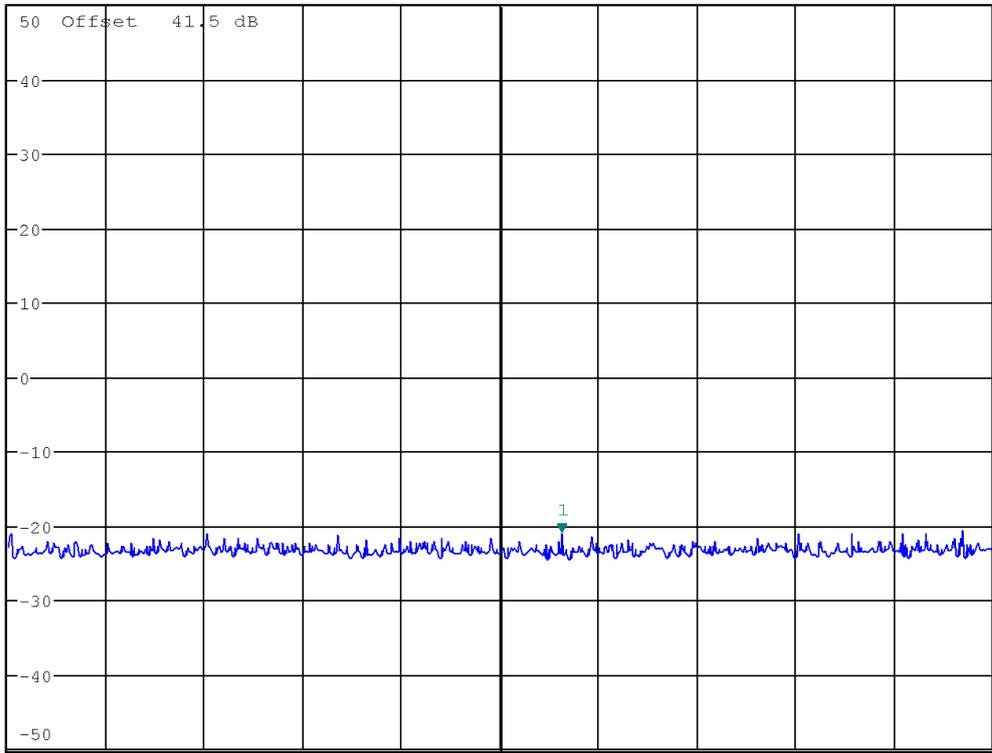
Date: 26.DEC.2011 20:30:47



*REW 1 MHz Marker 1 [T1]
 VEW 3 MHz -20.82 dBm
 SWT 2.5 ms 575.625000000 MHz

Ref 50 dBm *Att 15 dB

1 PK
 MAXH

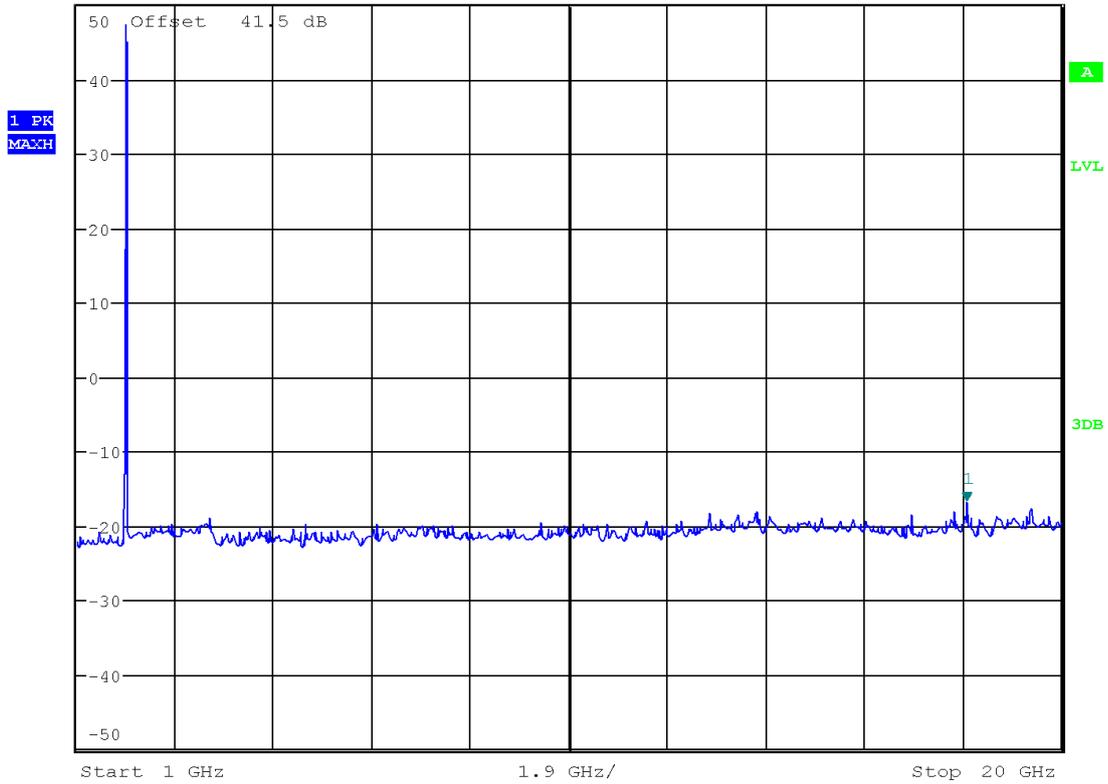


Date: 26.DEC.2011 20:31:50



*RBW 1 MHz Marker 1 [T1]
VEW 3 MHz -16.60 dBm
SWT 110 ms 18.182692308 GHz

Ref 50 dBm *Att 15 dB

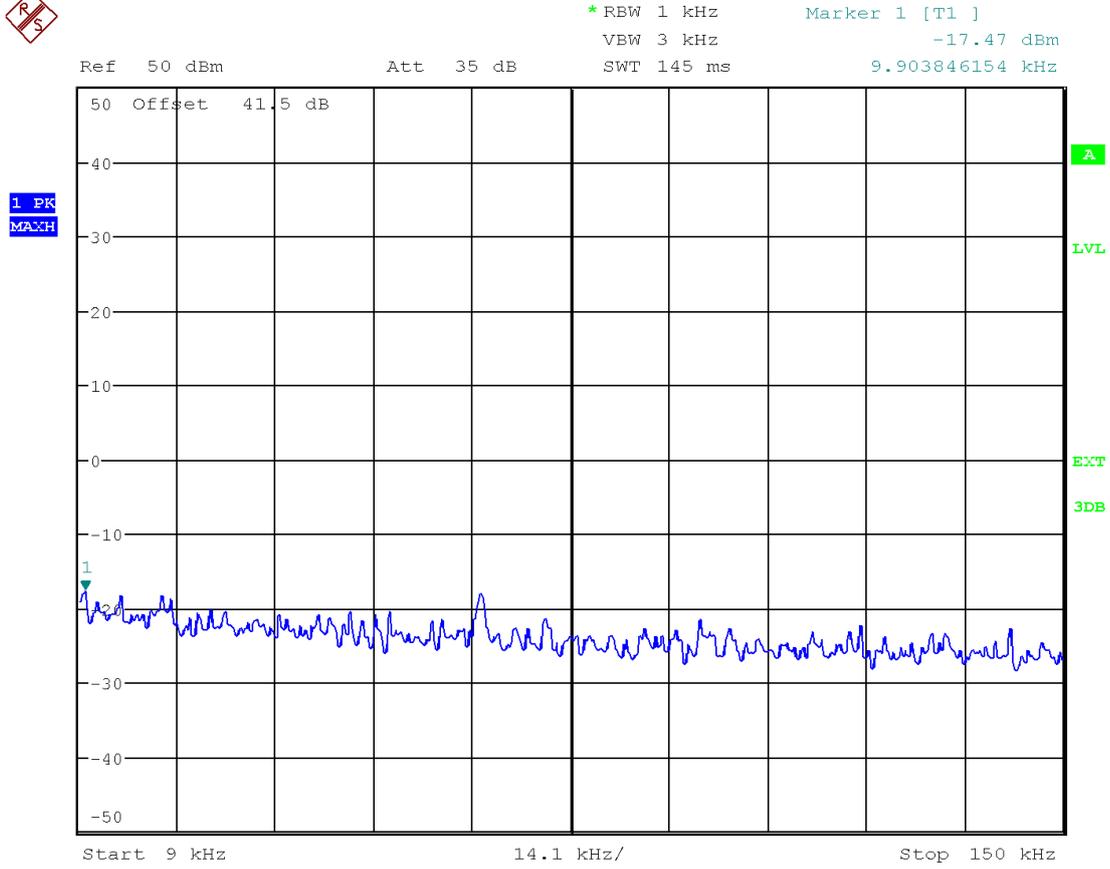


Date: 26.DEC.2011 20:32:56



2.4.2 Carrier Conf. = 3*G(15W) & 1*U(15W)

2.4.2.1 Ch. B



Date: 27.DEC.2011 15:31:17



*REW 10 kHz Marker 1 [T1]
 VEW 30 kHz -16.92 dBm
 SWT 300 ms 150.00000000 kHz

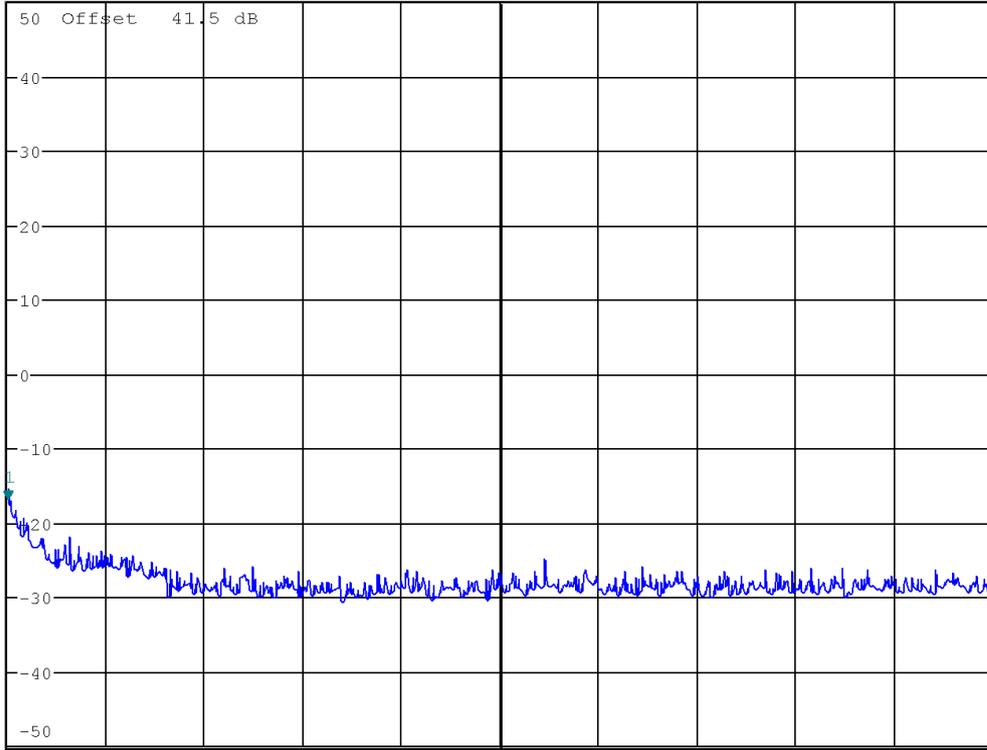
Ref 50 dBm

Att 35 dB

SWT 300 ms

150.00000000 kHz

1 PK
 MAXH



A
 LVL
 EXT
 3DB

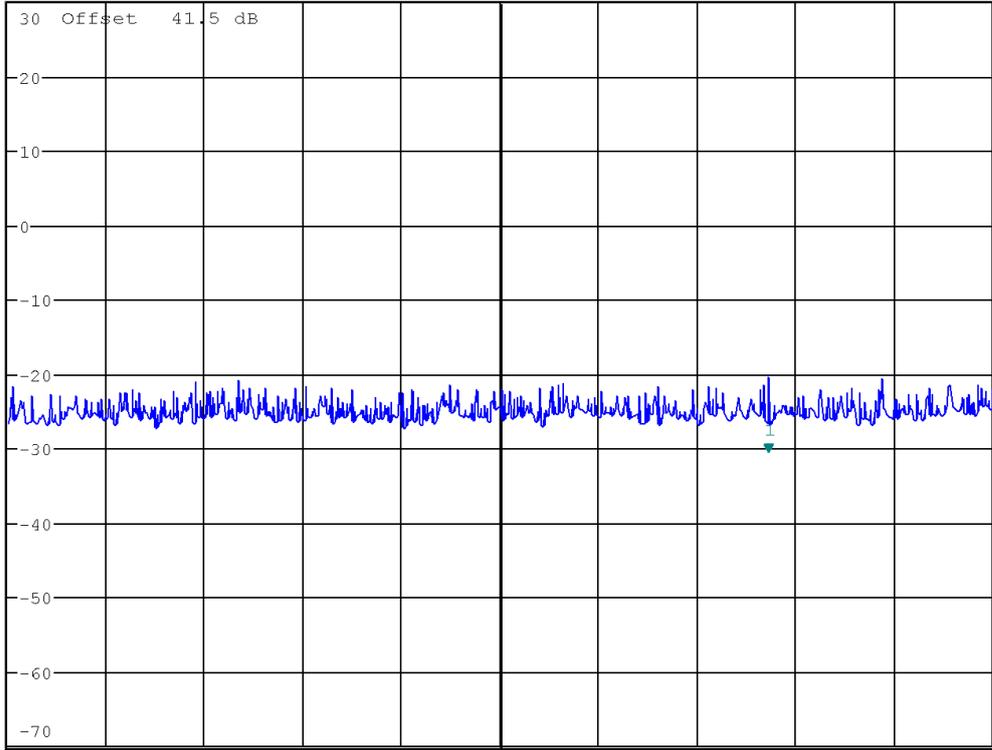
Date: 27.DEC.2011 15:32:00



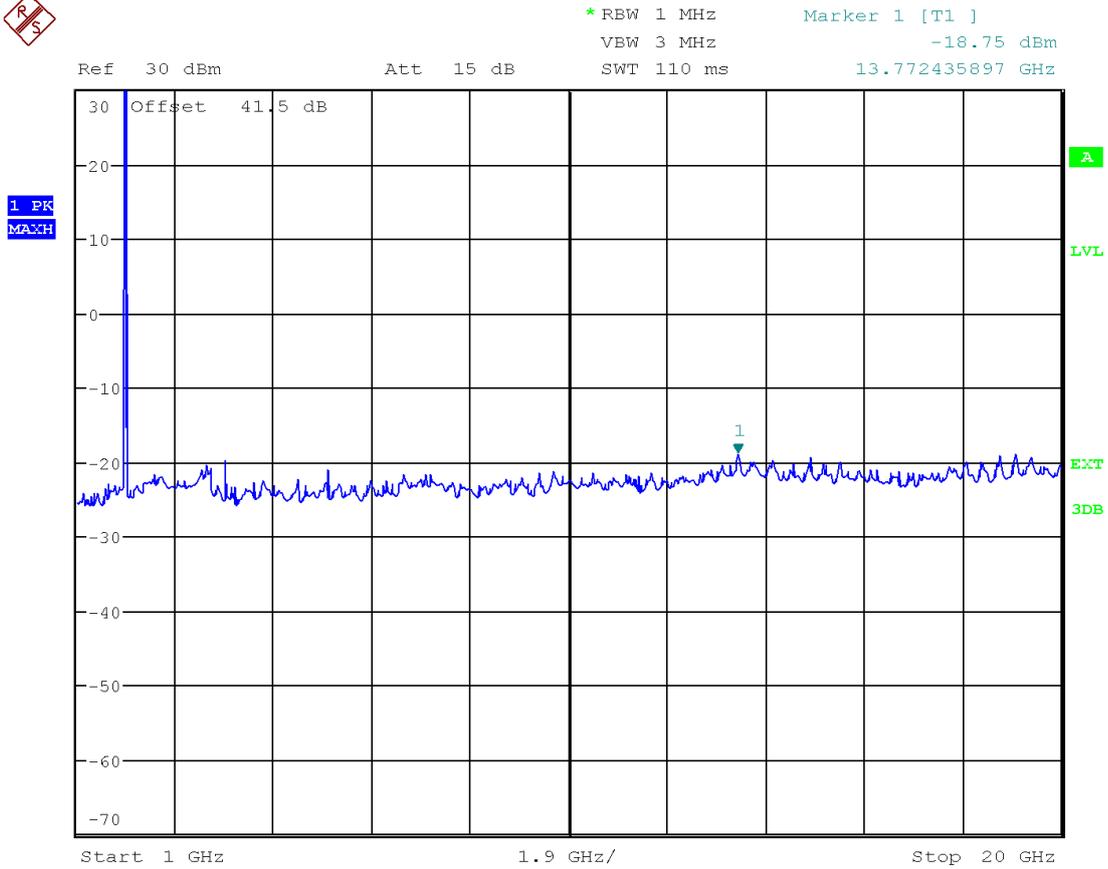
*RBW 1 MHz Marker 1 [T1]
 VEW 3 MHz -30.64 dBm
 SWT 2.5 ms 779.262820513 MHz

Ref 30 dBm Att 15 dB

1 PK
 MAXH



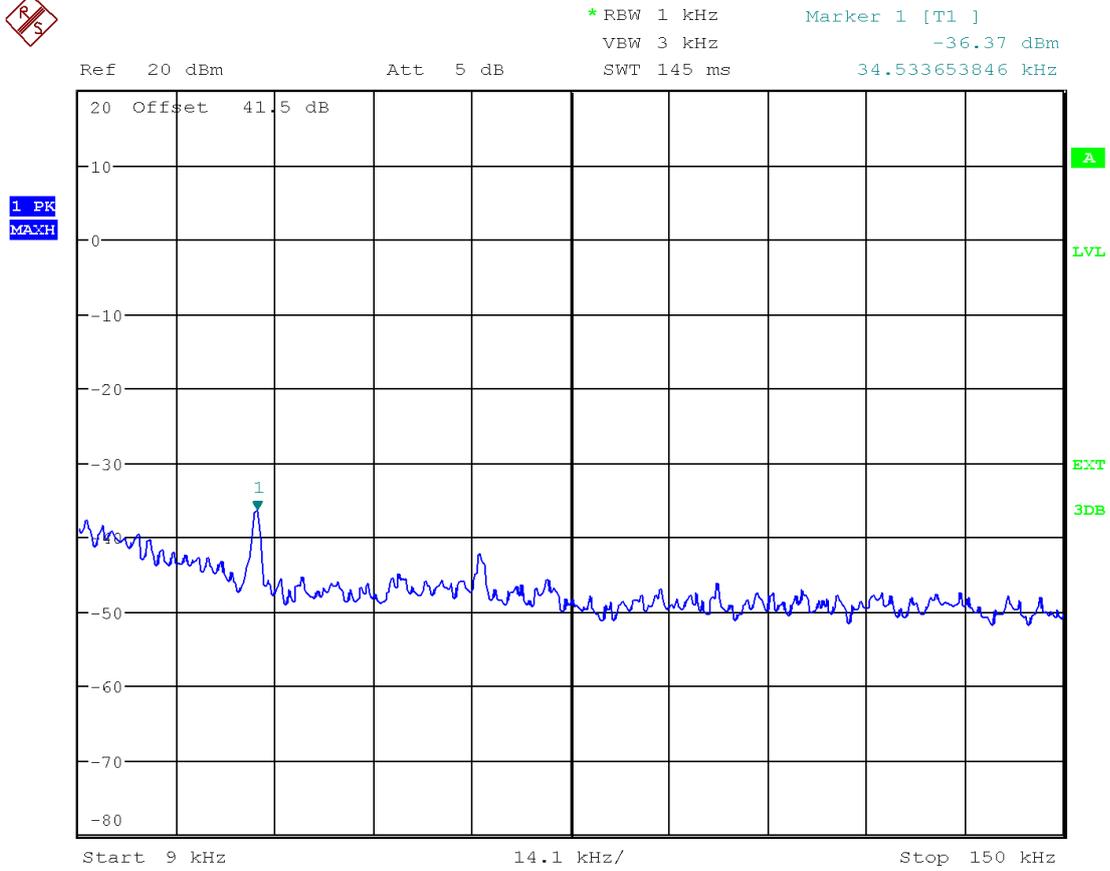
Date: 27.DEC.2011 15:33:36



Date: 27.DEC.2011 15:34:29



2.4.2.2 Ch. T



Date: 27.DEC.2011 15:59:08

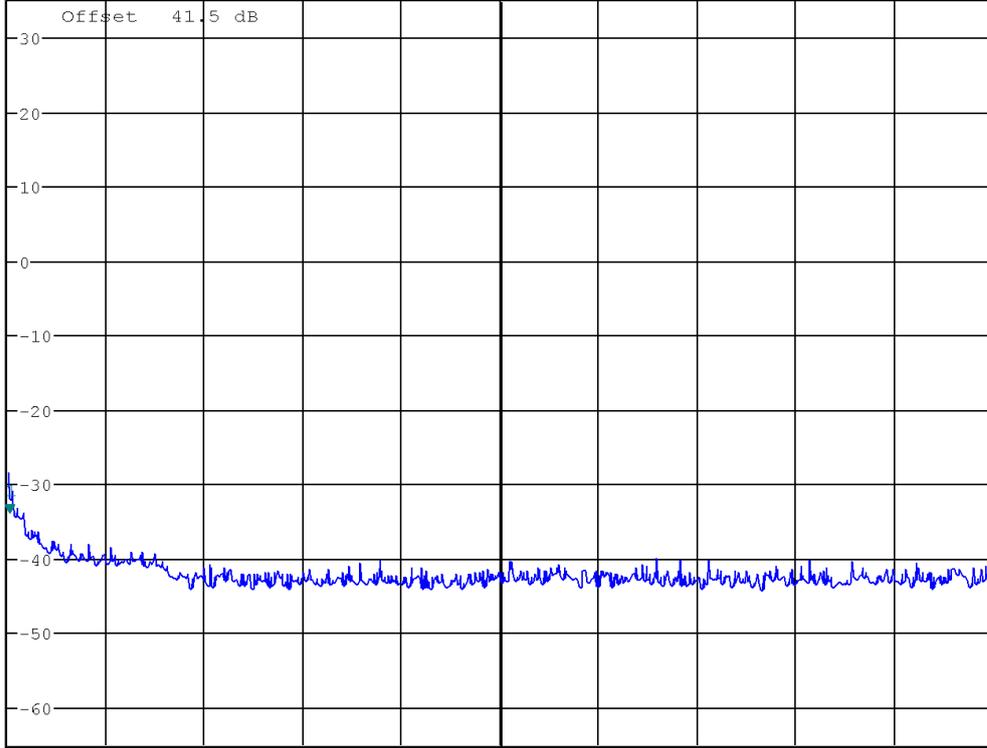


*RBW 10 kHz Marker 1 [T1]
 VEW 30 kHz -34.11 dBm
 SWT 300 ms 197.836538462 kHz

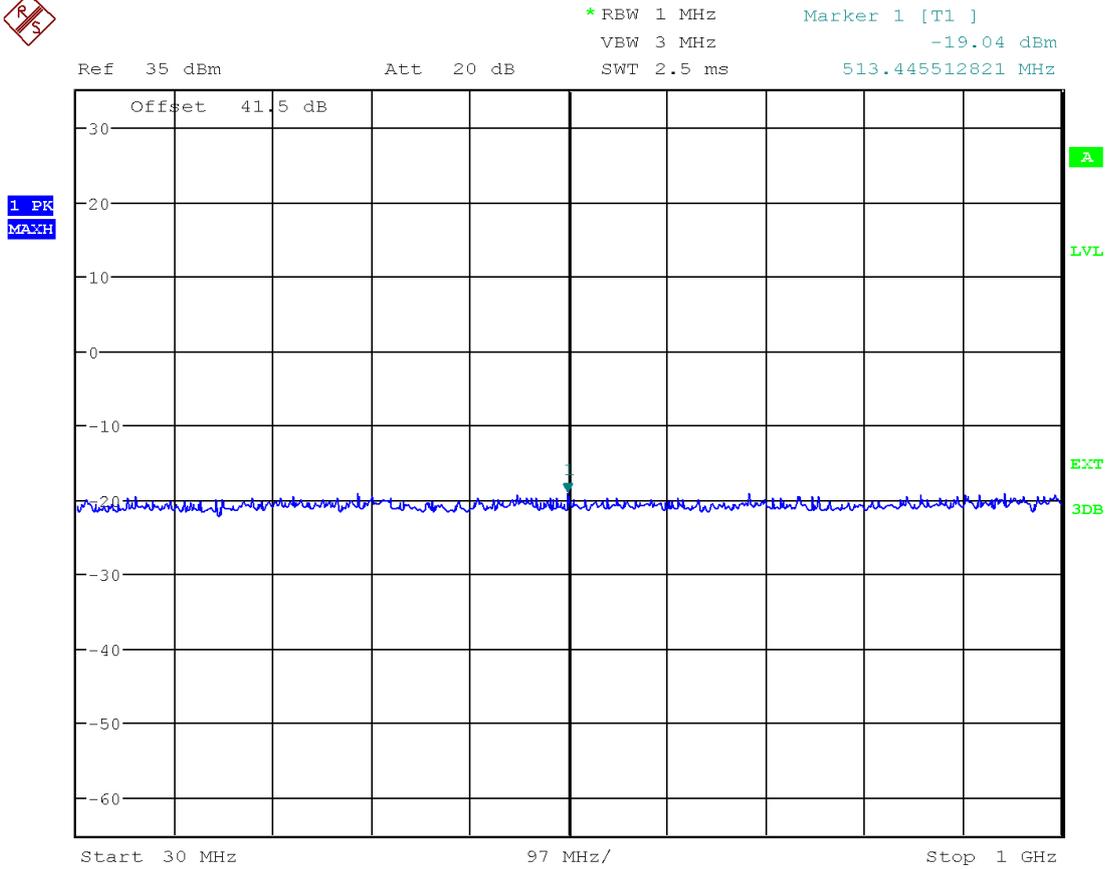
Ref 35 dBm

Att 20 dB

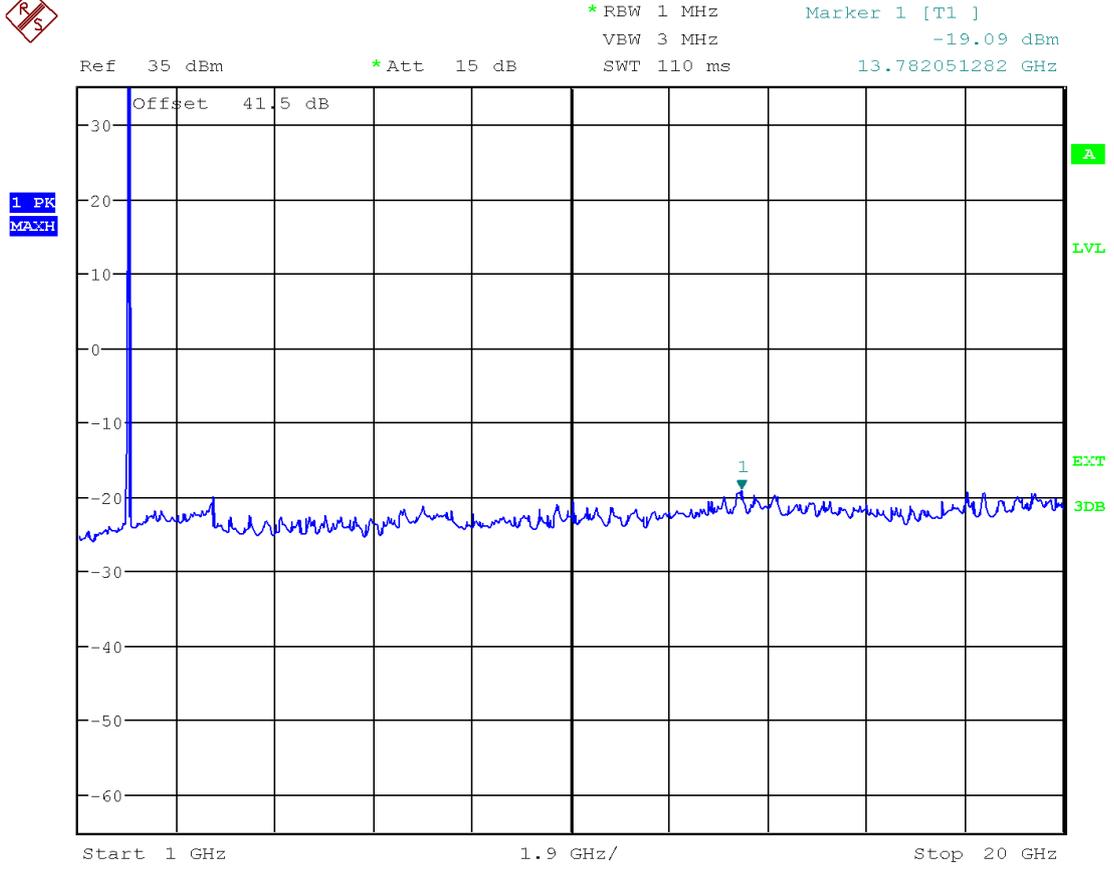
1 PK
 MAXH



Date: 27.DEC.2011 16:00:35



Date: 27.DEC.2011 16:01:56

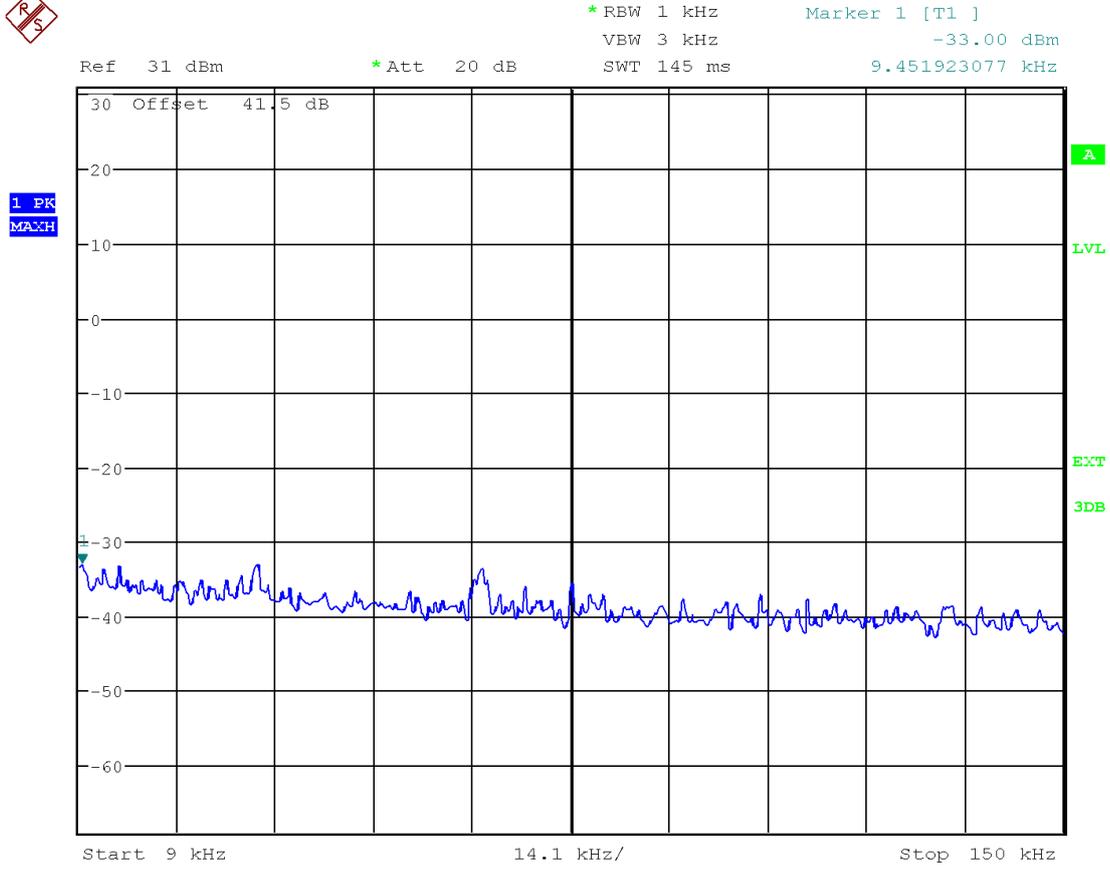


Date: 27.DEC.2011 16:02:56

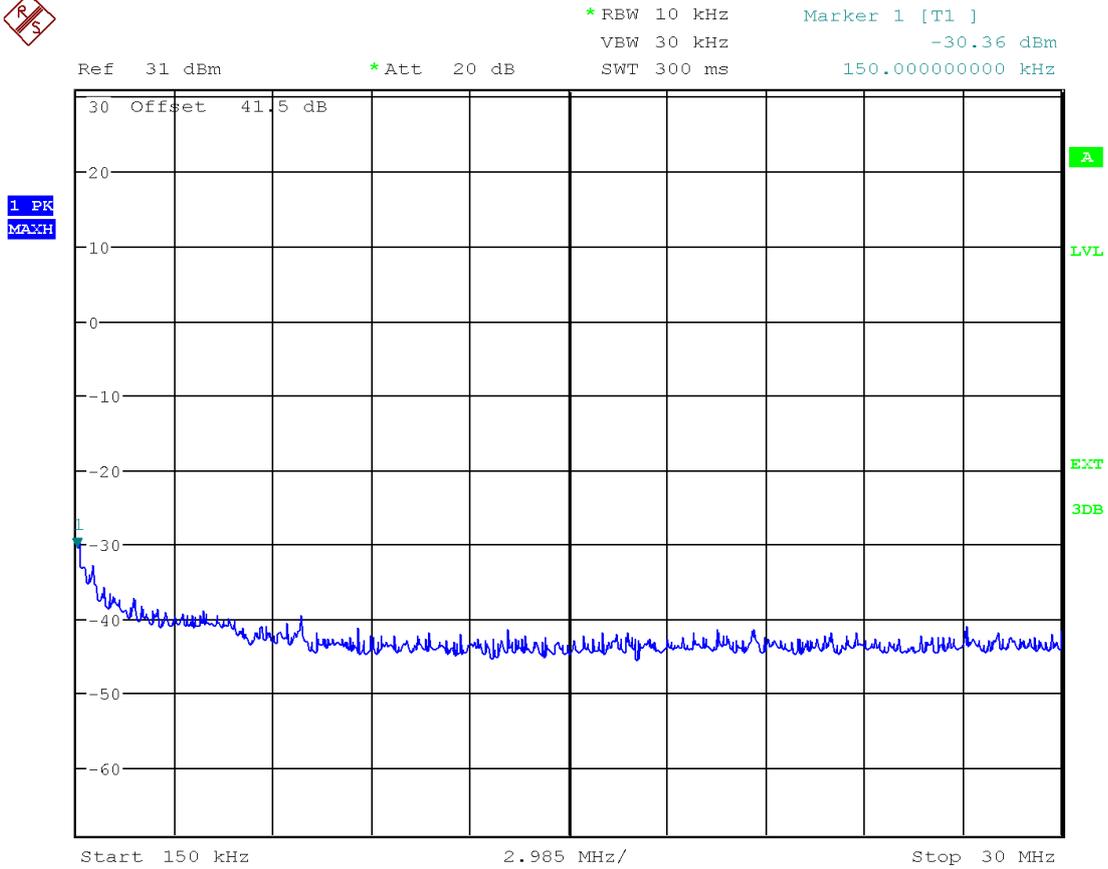


2.4.3 Carrier Conf. = 1*G(15W) & 3*U(15W)

2.4.3.1 Ch. B



Date: 28.DEC.2011 11:53:29



Date: 28.DEC.2011 11:55:01

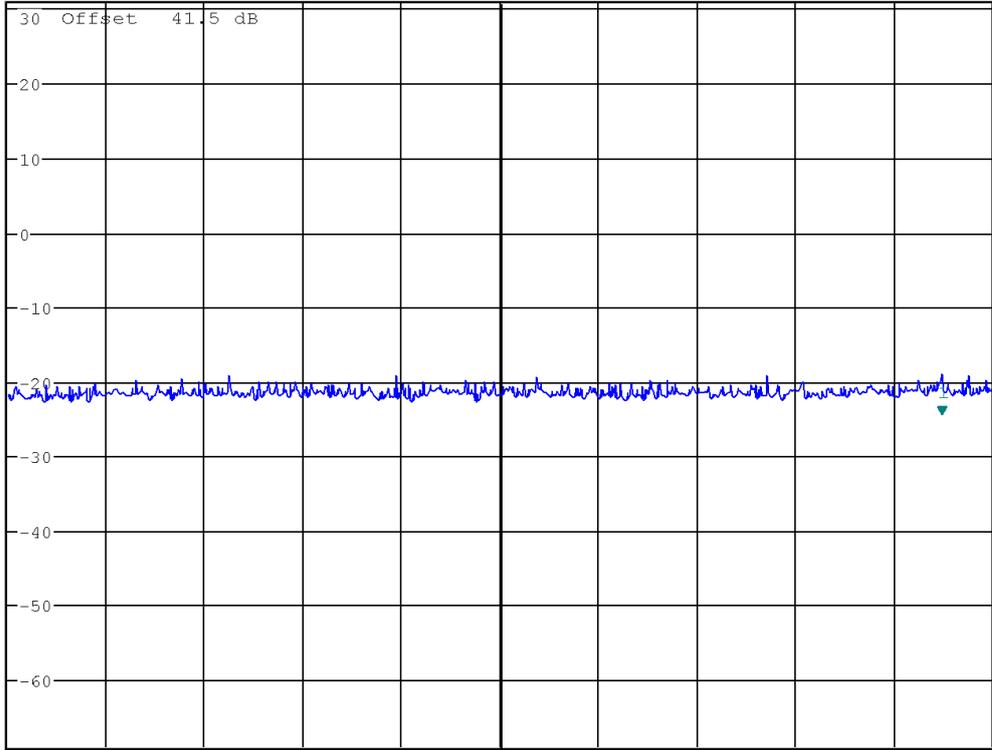


*REW 1 MHz Marker 1 [T1]
 VEW 3 MHz -24.66 dBm
 SWT 2.5 ms 950.256410256 MHz

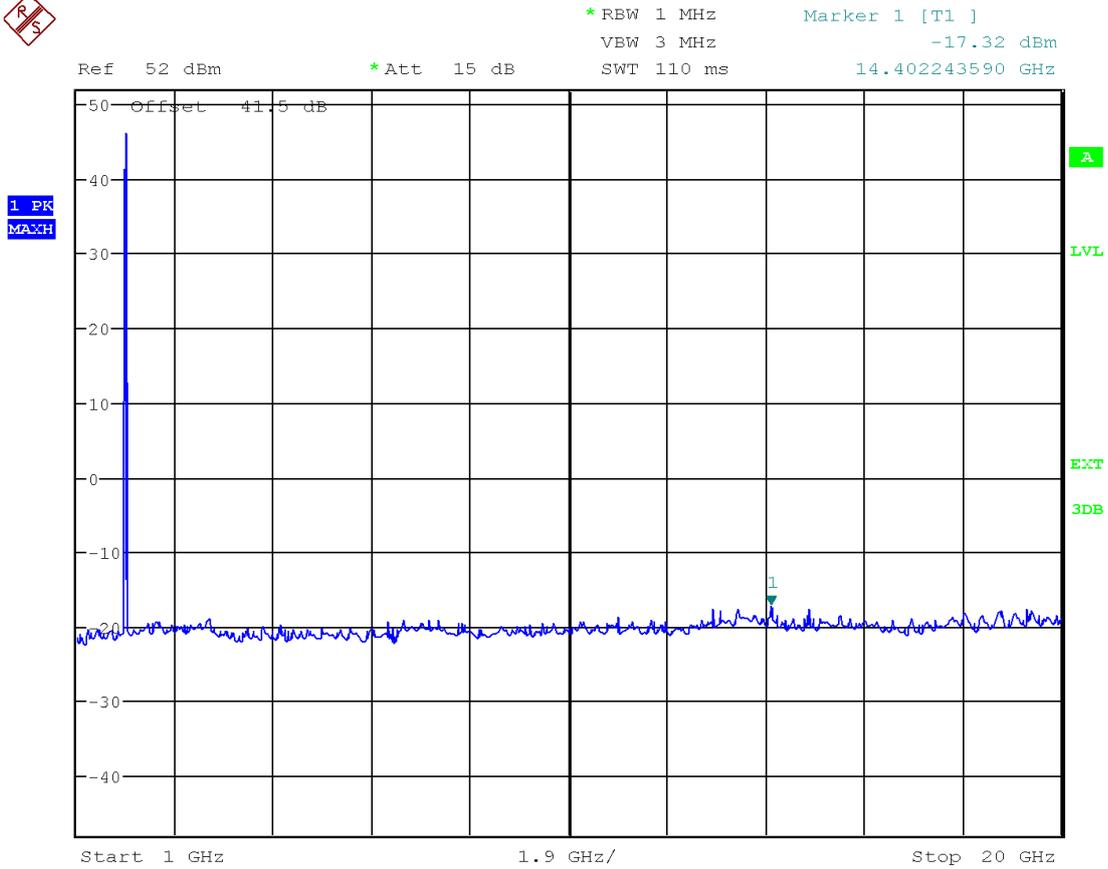
Ref 31 dBm

*Att 20 dB

1 PK
 MAXH

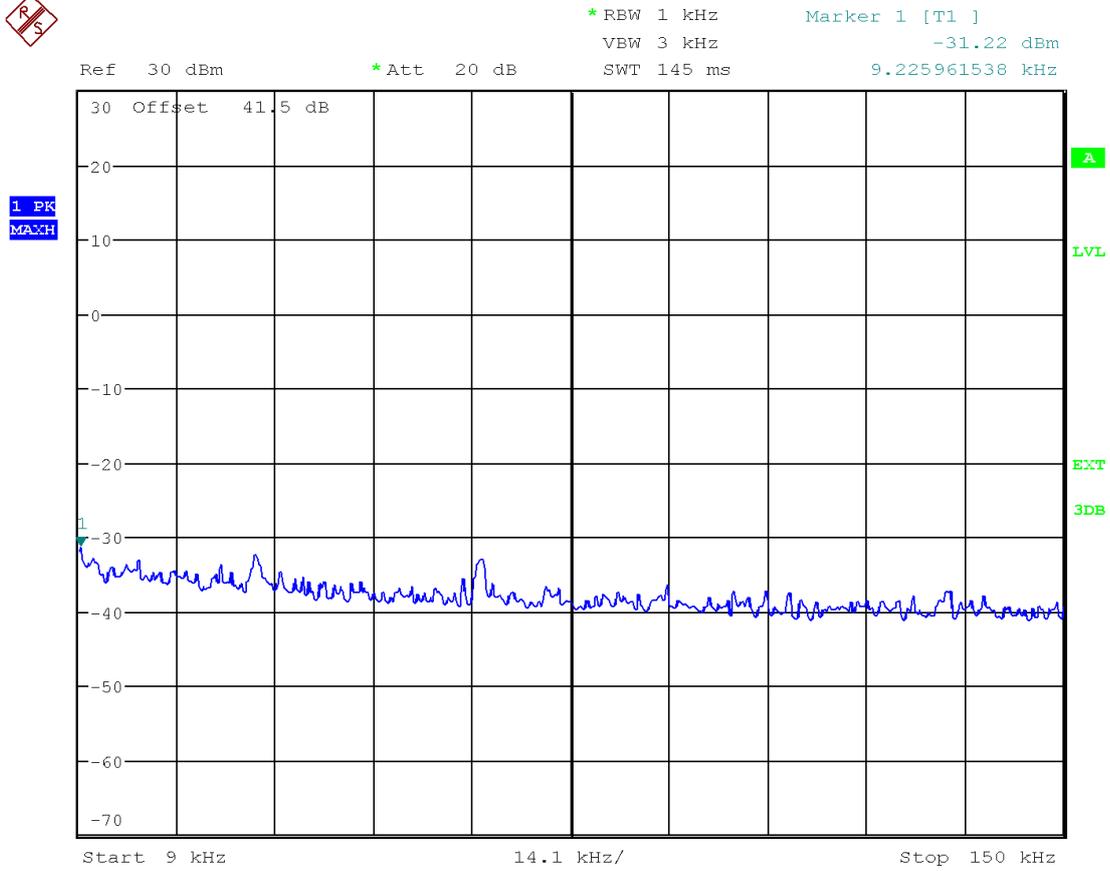


Date: 28.DEC.2011 11:55:54

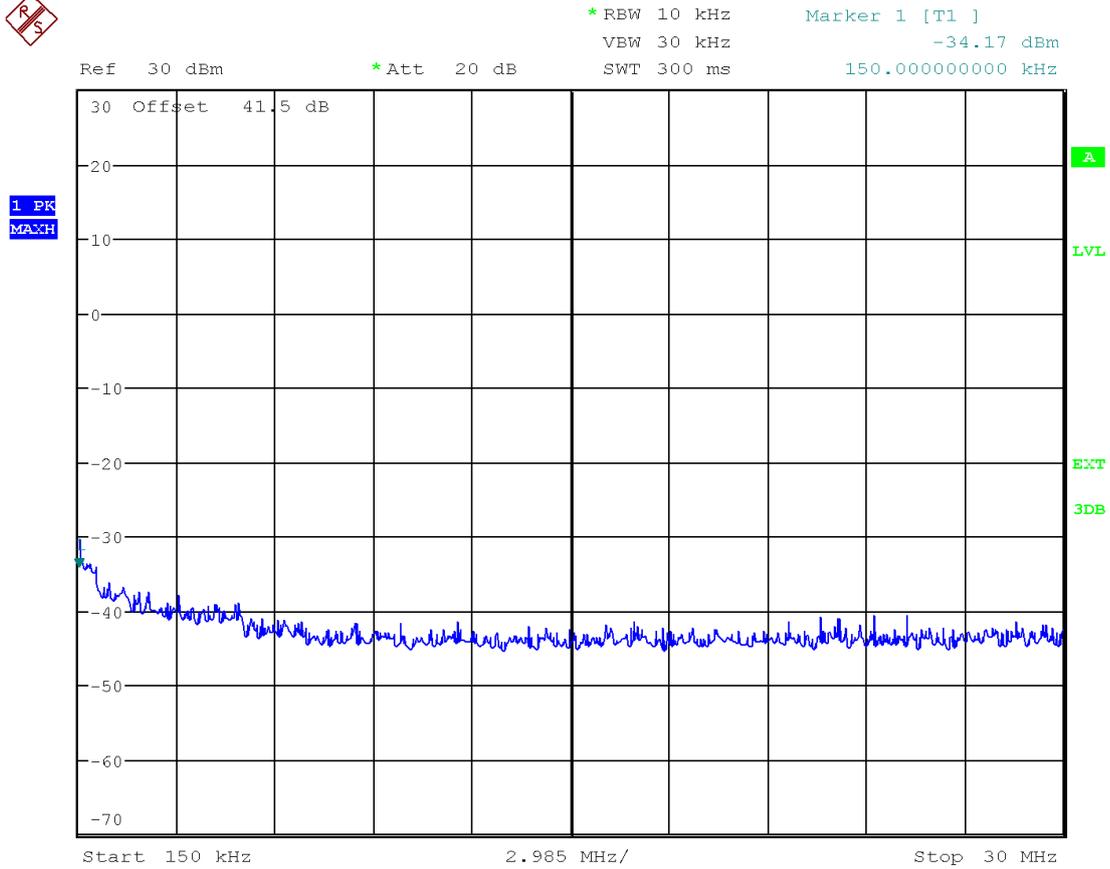


Date: 28.DEC.2011 11:57:21

2.4.3.2 Ch. T



Date: 28.DEC.2011 11:10:43



Date: 28.DEC.2011 11:11:47

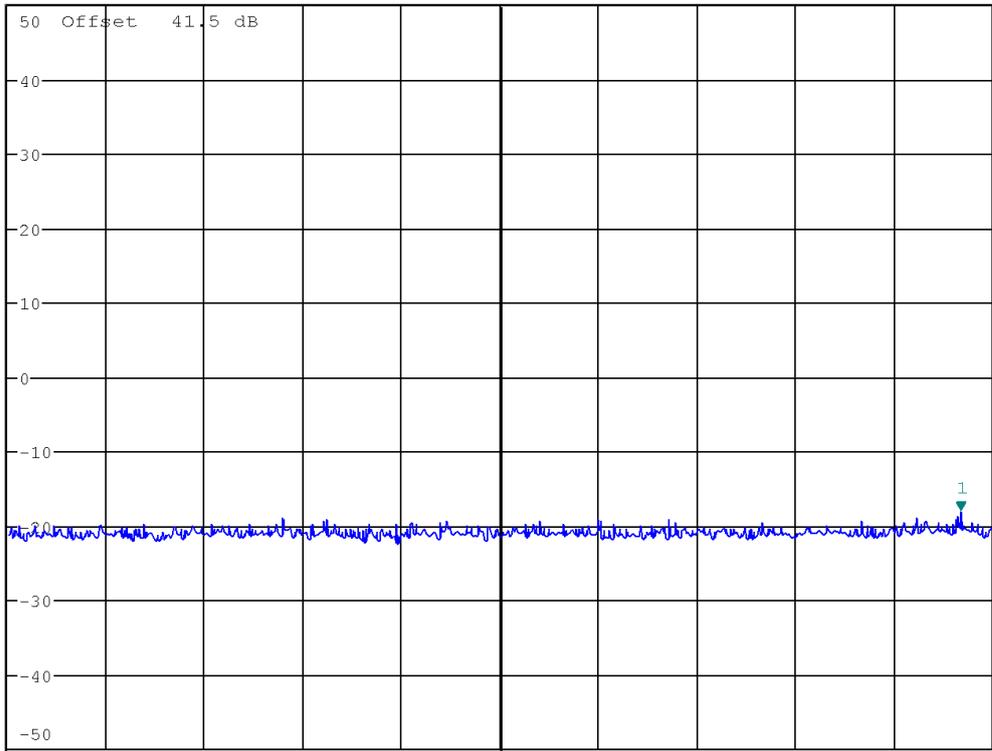


*REW 1 MHz Marker 1 [T1]
 VEW 3 MHz -18.05 dBm
 SWT 2.5 ms 968.910256410 MHz

Ref 50 dBm

*Att 20 dB

1 PK
 MAXH



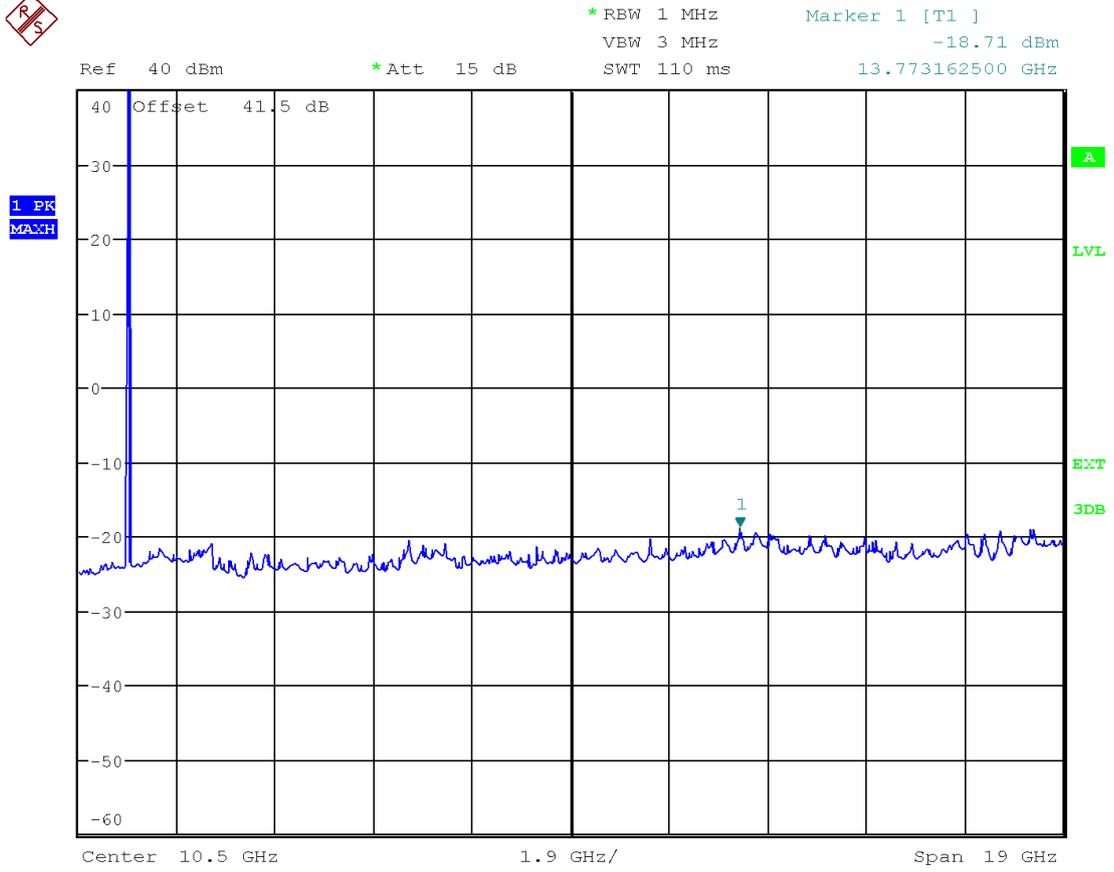
A

LVL

EXT

3DB

Date: 28.DEC.2011 11:12:45



Date: 28.DEC.2011 11:36:36



Appendix F: Field Strength of Spurious Radiation



1 Result Table

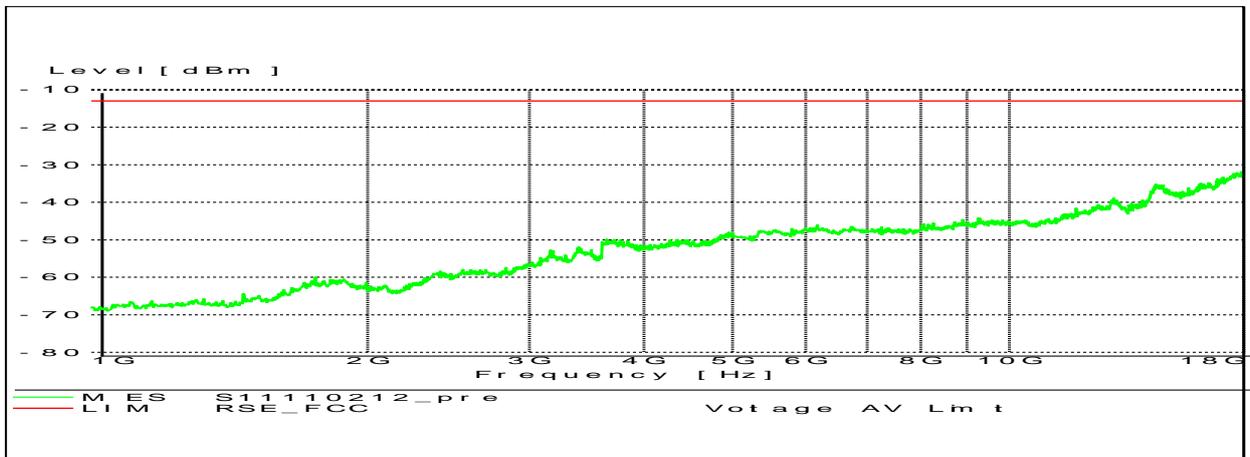
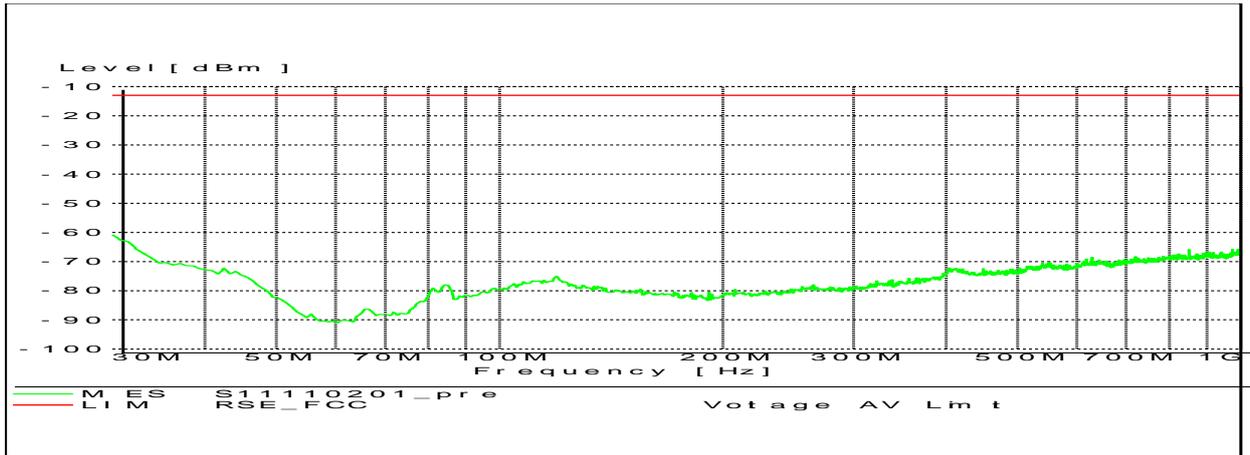
Test Mode	Carrier Conf.	RF Ch.	Field Strength of Spurious Radiation [dBm]	Verdict
GMSK	1*G(60W) (each TRX)	M	< -13	Pass
GMSK	1*G(40W) (TRXA) + 1*G(80W) (TRXB)	M	< -13	Pass

2 Test Plot

2.1 Test Mode = GMSK

2.1.1 Carrier Conf. = 1*G(60W) (each TRX)

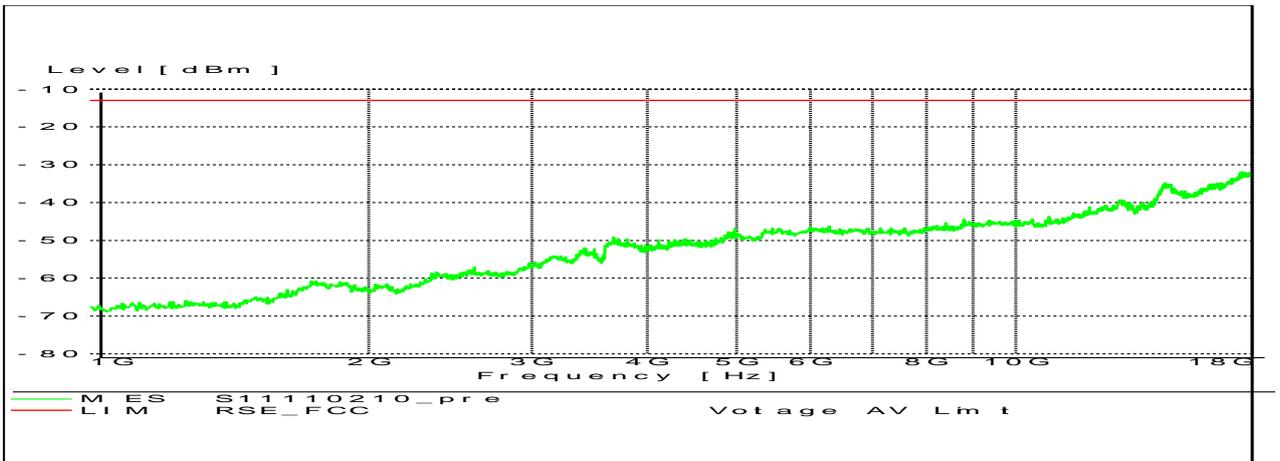
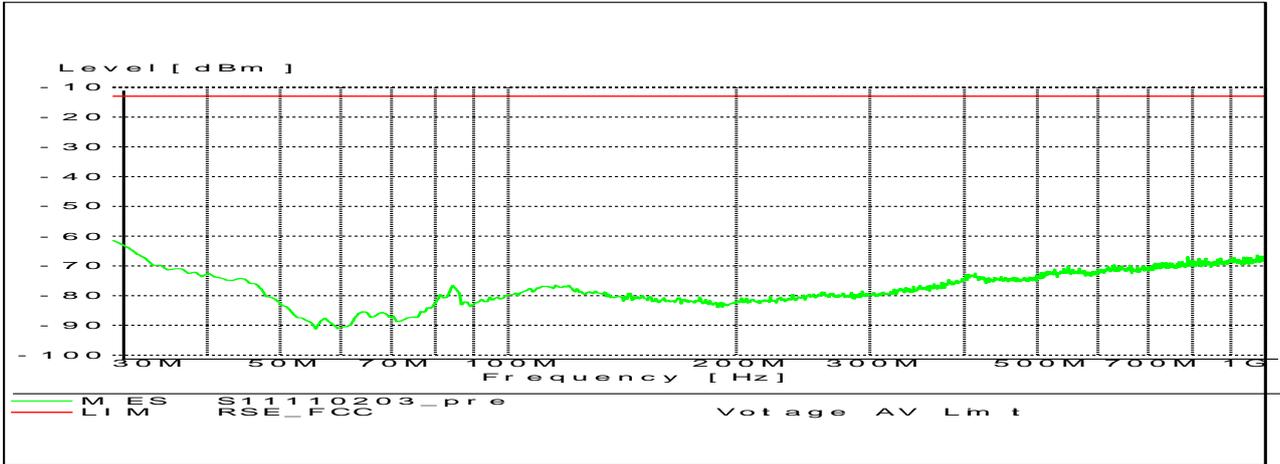
2.1.1.1 Ch. M



2.2 Test Mode = GMSK

2.2.1 Carrier Conf. = 1*G(40W) (TRXA) + 1*G(80W) (TRXB)

2.2.1.1 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
GMSK	1*G(60W)	M	100%	-30 °C	-0.2	-0.0001	0.0005	Pass
				-20 °C	-0.8	-0.0004	0.0002	Pass
				-10 °C	-0.7	-0.0004	0.0002	Pass
				0 °C	0.5	0.0003	0.0008	Pass
				10 °C	0.7	0.0004	0.0009	Pass
				20 °C	-1.1	-0.0006	---	Pass
				30 °C	0.8	0.0004	0.001	Pass
				40 °C	-0.9	-0.0005	0.0001	Pass
				50 °C	1.3	-0.0007	0.0012	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
GMSK	1*G(60W)	M	20 °C	85 %	-0.9	-0.0005	-0.0001	Pass
				100 %	-0.7	-0.0004	---	Pass
				115 %	1.0	0.0005	0.0009	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
GMSK	1*G(60W)	M	< -57/-53	Pass
8PSK	1*G(60W)	M	< -57/-53	Pass
E-TM 1.1	1*L5M(60W)	M	< -57/-53	Pass

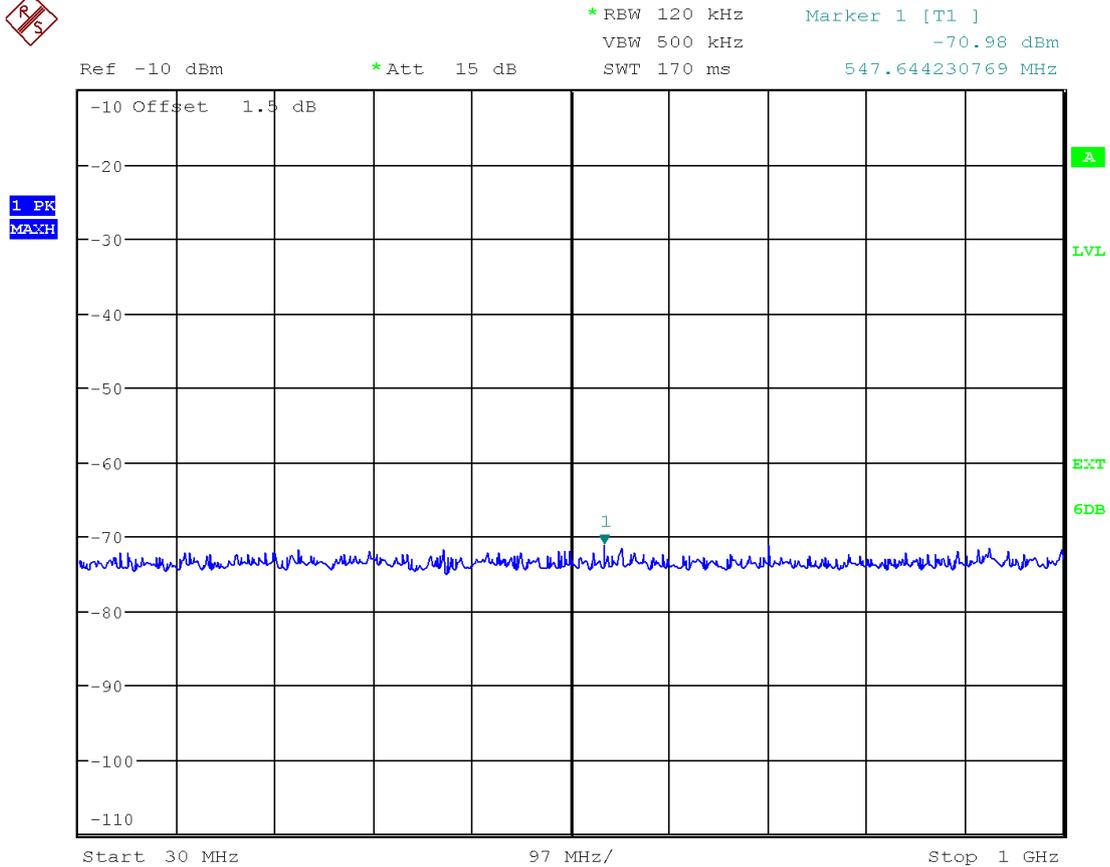


2 Test Plot

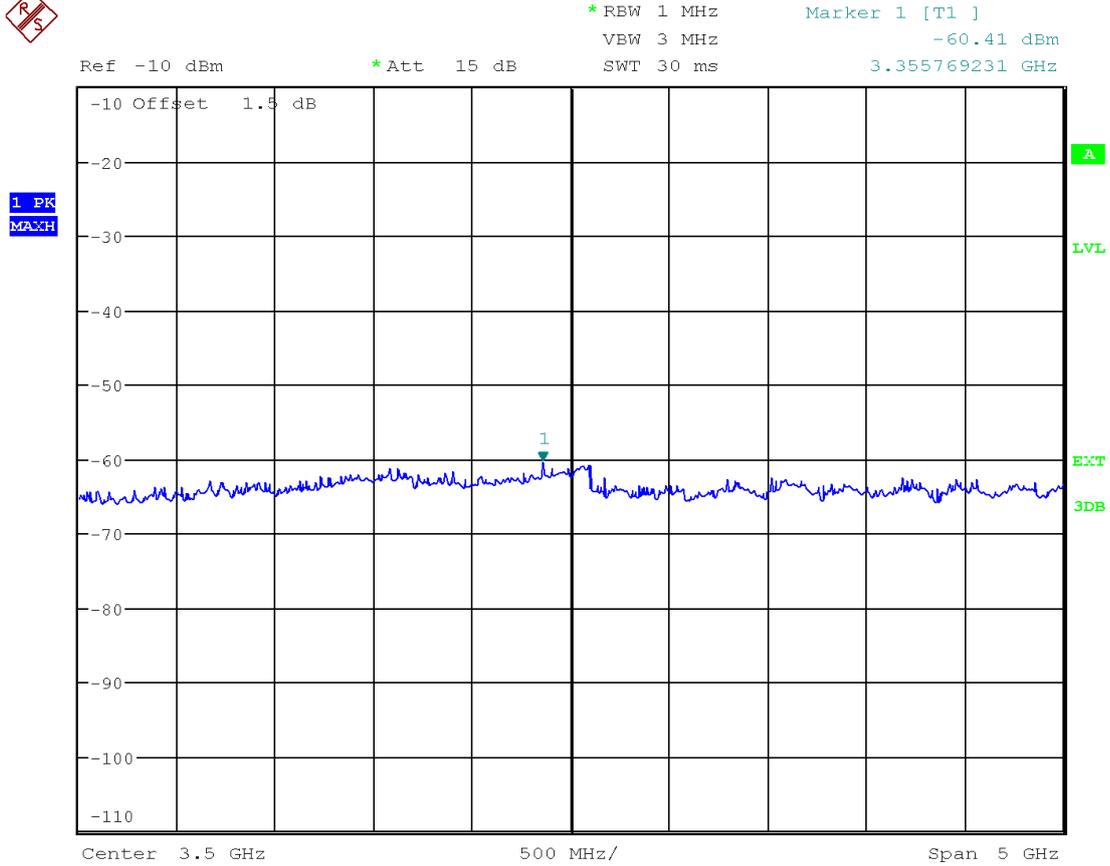
2.1 Test Mode = GMSK

2.1.1 Carrier Conf. = 1*G(60W)

2.1.1.1 Ch. M



Date: 24.DEC.2011 16:25:53



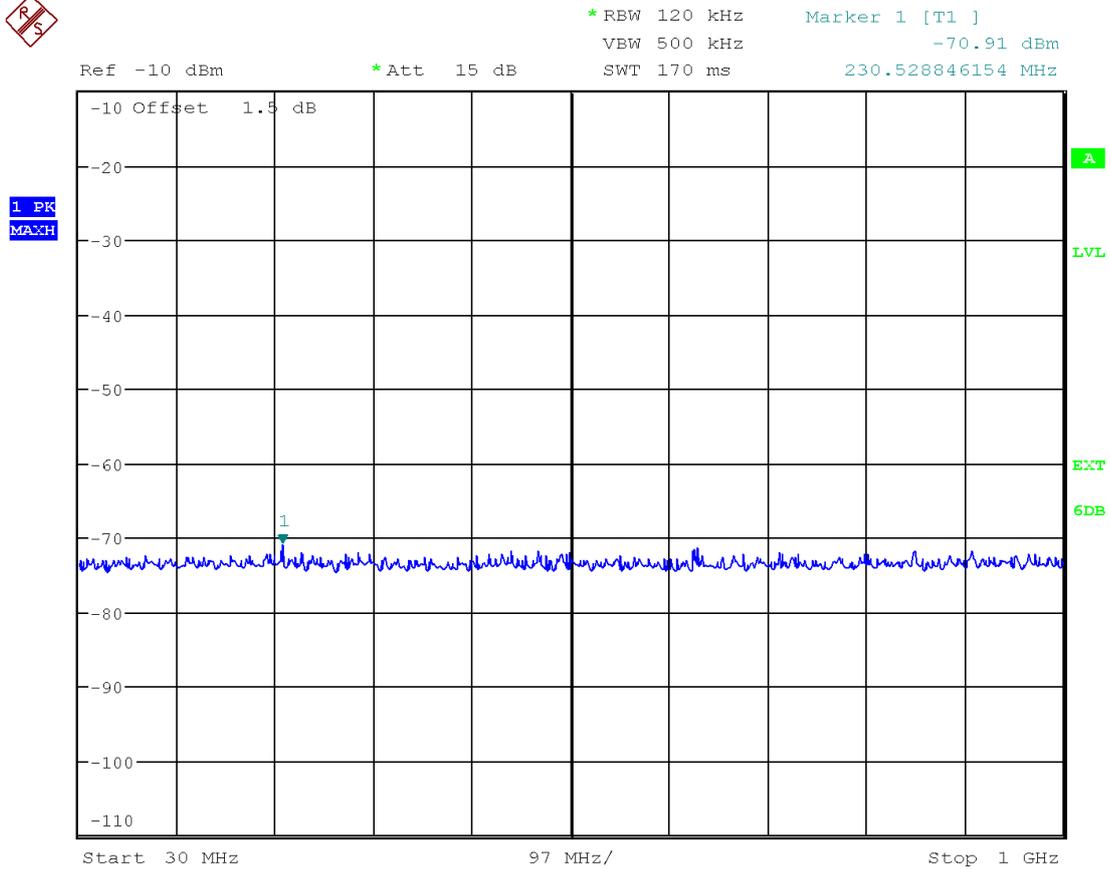
Date: 24.DEC.2011 16:24:30



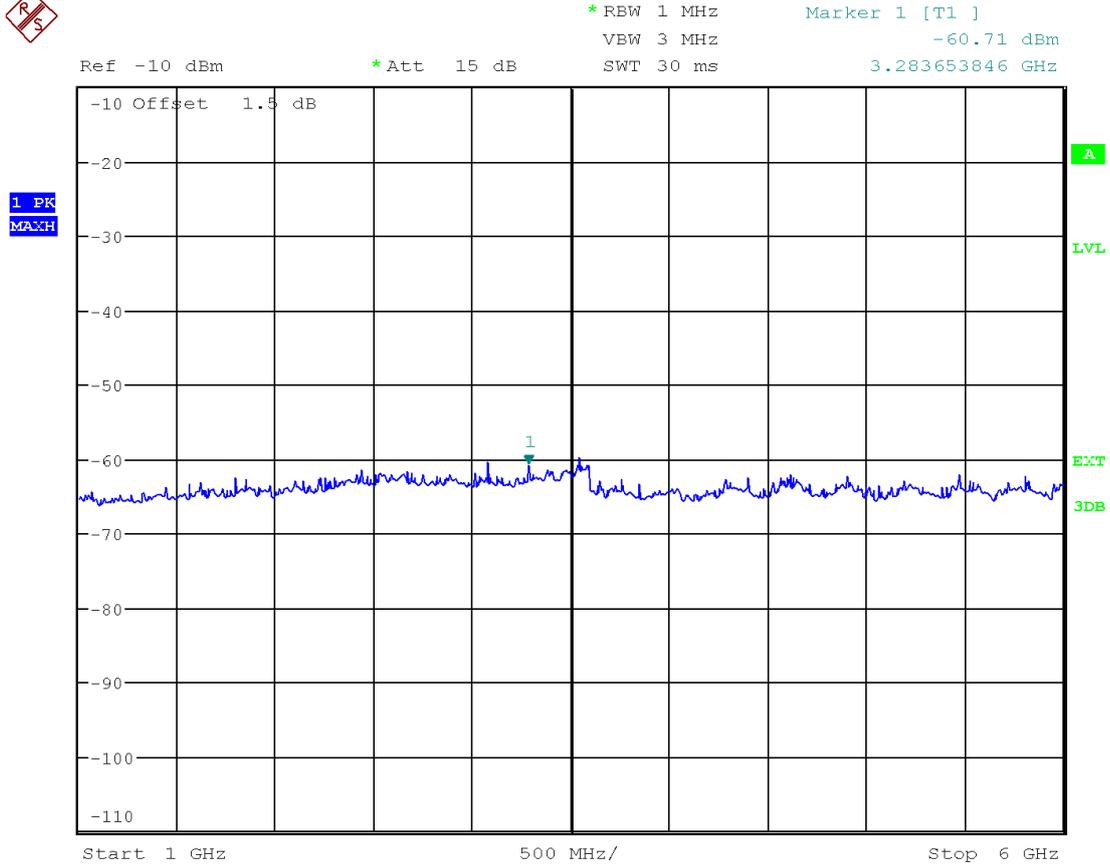
2.2 Test Mode = 8PSK

2.2.1 Carrier Conf. = 1*G(60W)

2.2.1.1 Ch. M



Date: 24.DEC.2011 16:12:45



Date: 24.DEC.2011 16:19:09



2.1 Test Mode = E-TM1.1

2.1.1 Carrier Conf. = 1*L5M(60W)

2.1.1.1 Ch. M

