



Report No.: SYBH(R)164082007EB-1
FCC ID: QISRRU3701C-2.5G

FCC TEST REPORT OF DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C

November 8, 2007

Reliability Laboratory of Huawei Technologies Co., Ltd.

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REPORT ON FCC Test of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C
FCC ID: QISRRU3701C-2.5G
Report No.: SYBH(R)164082007EB-1

REGULATION 47 CFR Part 2,
47 CFR Part 27

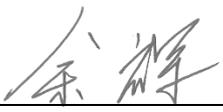
CONCLUSION There are 7 items need to be tested, 7 items have been tested. The sample of the model completely meets the requirements

The final judgement is **PASSED**.

General Manager:

2007-11-08	张兴海	
Date	Name	Signature

Technical Responsibility For Area of Testing:

2007-11-08	余辉	
Date	Name	Signature

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1 General Information

1.1 Test Site

1.1.1 Test Lab

Test lab: Huawei Technologies Co., Ltd.
Address: Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
Tel.: 0086 755 26540808
Fax: 0086 755 26633000
Internet: <http://www.huawei.com>

1.1.2 State of Accreditation

The test site has been submitted to , and registration granted under the registration number 97456 on April 20, 2006.

The test site has been accredited by , and the accredited number is 2174.01 in January of 2006.

1.2 Application Information

1.2.1 Details of Applicant

Applicant: Huawei Technologies Co., Ltd.
Address: Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China

1.2.2 Test Period

Date of start: September 20, 2007
Date of end: November 8, 2007

1.3 Applied Standards

1.3.1 FCC Rules and Regulations

- 47 CFR Part 2 (10-1-05 Edition)
Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
- 47 CFR Part 27 (10-1-06 Edition)
Miscellaneous Wireless Communications Services

1.3.2 Supporting Standards

- EIA/TIA-603-C: 2004
Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
- EIA/TIA-102-CAAA:1999
Digital C4FM/CQPSK Transceiver Measurement Methods (ANSI/TIA/EIA-102.CAAA-1999)
- WiMAX Forum™ Mobile Radio Conformance Tests (WiMAX MRCT) (2007-08)
- ITU-R Recommendation SM.329-10 (2003)
- ANSI C63.4: 2003
Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

1.4 Test Items

The following requirements and test specifications within Table 1 are relevant to the conformity to FCC rules and regulations.

Table 1 Summary of test items

FCC measurement specification	FCC limit	Description	Conclusion	Remark
§ 2.1046	§ 27.50(h)(1)	Maximum channel power	Passed	
§ 2.1047	---	Modulation characteristics	Passed	
§ 2.1049	---	Occupied bandwidth	Passed	
§ 2.1051 § 27.53(l)(6)	§ 27.53(l)(2)	Band edge compliance	Passed	
§ 2.1051 § 27.53(l)(6)	§ 27.53(l)(2)	Spurious emissions at antenna terminals	Passed	
§ 2.1053 § 27.53(l)(6)	§ 27.53(l)(2)	Radiated spurious emissions	Passed	
§ 2.1055	§ 27.54	Frequency stability	Passed	

NOTE 1: If no FCC limits was applied, limits for product standards may be employed in the present test report.

NOTE 2: Measurement taken in the present test report was within the measurement uncertainty of measurement system.

2 Description of the Equipment

2.1 General Description

The BTS3703 is a WiMAX base station developed by Huawei based on the IEEE802.16e-2005 protocols. The RRU3701C (i.e. the EUT) is the distributed site remote radio unit of the BTS3703. The RRU3701C performs the intermediate frequency and radio frequency processing. The RRU3701C and the distributed site indoor baseband unit BBU3703 (BBU) are connected through fibers.

Refer to Figure 1 for the appearance of the EUT (RRU3701C).

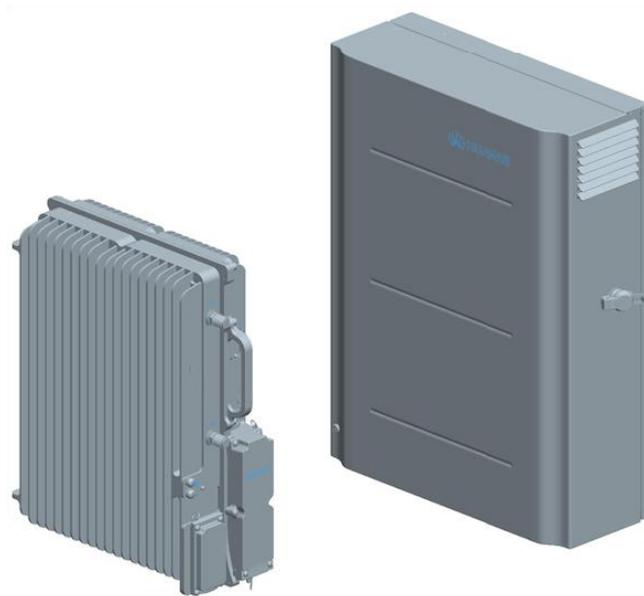


Figure 1 Appearance of the EUT (RRU3701C)

2.2 Technical Description

2.2.1 Duplex Mode

- Time Division Duplex (TDD)

2.2.2 Access Method

- TDMA/OFDMA

2.2.3 Operating Frequency Band

- 2.5 GHz band (BRS/EBS)

2.2.4 Operating Frequency Range

Refer to CFR Part 2 section § 27.5(i) for the frequency assignment.

Table 2 Operating Frequency Range

2.5 GHz band:	<p>Operating frequency range: 2496 MHz to 2690 MHz</p> <p>In addition, the following frequency coverage, defined by applicant are available for assignment for 2.5 GHz band:</p> <ul style="list-style-type: none"> - 2.5 GHz low block: 2496 MHz to 2606 MHz - 2.5 GHz middle block: 2530 MHz to 2640 MHz - 2.5 GHz high block: 2580 MHz to 2690 MHz
---------------	--

2.2.5 Transmit Power

The maximum transmit power of each antenna port for the EUT is 40.0 dBm (10 Watts) for 2.5 GHz band.

2.2.6 Modulation and Coding Scheme (MCS) for Downlink (DL)

- QPSK 1/2
- QPSK 3/4
- 16QAM 1/2
- 16QAM 3/4
- 64QAM 1/2
- 64QAM 2/3
- 64QAM 3/4

2.2.7 Channel Bandwidth & Channel Spacing

- 5 MHz
- 10 MHz.

2.2.8 Type of Emission

Refer to CFR Part 2 section § 2.201 and § 2.202.

- 5M00W7D
- 10M0W7D

2.2.9 Tune-up Procedure

Refer to CFR Part 2 section § 2.1033(c)(9) for the turn-up procedure. See the document “Tune-up Procedure” in TCF.

2.3 Engineering Description

2.3.1 Power Supply

According to CFR Part 2 section § 2.1033(c)(8), the voltage and current in the final RF stage is:

Table 3 Rated voltage of the EUT

Input rated voltage:	⎓ -48 V
Allowed voltage range:	⎓ -40 V to ⎓ -60 V
Power Consumption	2.5 GHz band: 330 Watts

2.3.2 Environment

Table 4 Environment

Temperature:	-40 °C to +55 °C
Relative humidity:	5% to 100%
Air pressure:	70 kPa to 106 kPa

2.4 Identity of the Equipment

2.4.1 Sub-Assembly Identity

Table 5 Sub-assembly identity

Module	Qty.	Hardware Version	Serial number	Description
QL32TRU	1	VER.C	020FEP1075800033	Radio Board
QL32PWR	1	VER.C	020FCW1076800062	Power Board

2.4.2 Adapter Information

(Not applicable for the EUT)

2.4.3 Battery Information

(Not applicable for the EUT)

2.4.4 FCC Identification

FCC grantee code: QIS
FCC product code: RRU3701C-2.5G
FCC identification (ID): QISRRU3701C-2.5G

3 Test Setting

3.1 Main Test Instruments

Table 6 Main test instruments

ID	Equipment	Model	Serial number	Manufacturer	Cal. date	Cal. due
1	Signal Analyzer (NOTE 1)	FSQ 26	200010	R&S	03.12.2007	1 year
2	Attenuator	30 dB	050913001 060904147 070601049	Shanghai, Huaxiang	---	---
3	Temperature Chamber	GZ-ESPEC	9805016	GZ-ESPEC	10.13.2006	2 year
4	3m Semi Anechoic Chamber	N/A	N/A	S+M	---	12.28.2007
5	Test Receiver Display Unit	ESMI	829214/011	R&S	---	05.29.2008
6	Test Receiver RF Unit	ESMI	829550/008	R&S	---	05.29.2008
7	Receiver	ESCS30	830245/018	R&S	---	05.29.2008
8	Pre-Amplifier	83017A	3950M00246	Agilent	---	05.21.2008
9	Bi-Log Antenna	CBL 6112B	2941	Schaffner	---	02.15.2008
10	Horn Antenna	HF906	359287/006	R&S	---	11.09.2007

NOTE 1: The analyzer function for WiMAX was equipped, which is called the option of K93.

NOTE 2: The signal generator equipped two modules to simulate two vector signals.

3.2 Test Modes

Test modes are summarized in Table 7 per technical descriptions of the EUT. Tests within the present test report were performed under various test modes.

Table 7 Test modes list

Test mode	Description
QPSK 1/2	The modulation and coding scheme (MCS) of this test mode is QPSK 1/2 according to IEEE 802.16e-2005.
QPSK 3/4	The modulation and coding scheme (MCS) of this test mode is QPSK 3/4 according to IEEE 802.16e-2005.
16QAM 1/2	The modulation and coding scheme (MCS) of this test mode is 16QAM 1/2 according to IEEE 802.16e-2005.
16QAM 3/4	The modulation and coding scheme (MCS) of this test mode is 16QAM 3/4 according to IEEE 802.16e-2005.
64QAM 1/2	The modulation and coding scheme (MCS) of this test mode is 64QAM 1/2 according to IEEE 802.16e-2005.
64QAM 2/3	The modulation and coding scheme (MCS) of this test mode is 64QAM 2/3 according to IEEE

Test mode	Description
	802.16e-2005.
64QAM 3/4	The modulation and coding scheme (MCS) of this test mode is 64QAM 3/4 according to IEEE 802.16e-2005.

4 Test Results

4.1 General Description

The EUT was tested at any frequency and at any rate and any format, as described by test modes of the present test report. The transmitting phenomena of the EUT at any intended bit rate and modulation format operation was considered. Unless otherwise stated, the EUT was tested under fully loading. All the boundary limits of the operational environmental profile (normal and extreme conditions) were considered.

Unless otherwise stated, all test modes were employed to perform tests.

For the tests, typical operating frequency points (channels) were used, which include bottom channel, middle channel and top channel of each frequency block as Table 8. Unless otherwise stated, all tested frequency points in the table were employed to perform tests.

Table 8 Frequency points (channels) selected to perform tests

2.5 GHz band:	2.5 GHz low block:	2501 MHz, 2551 MHz, 2601 MHz
	2.5 GHz middle block:	2535 MHz, 2585 MHz, 2635 MHz
	2.5 GHz high block:	2585 MHz, 2635 MHz, 2685 MHz

4.2 Maximum Channel Power

4.2.1 Test Conditions

Table 9 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.2.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1046 and Part 27 section § 27.50(h)(1), the maximum EIRP of a base station shall not exceed $33 \text{ dBW} + 10 \log(X/Y) \text{ dBW}$, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition.

As to the limit, the X is 10 MHz and Y is 6 MHz for the EUT, so the limit is calculated to be $33 \text{ dBW} + 10 \log(10 \text{ MHz}/6 \text{ MHz}) = 65 \text{ dBm}$.

4.2.3 Test Method and Setup

4.2.3.1 Test Method

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum channel power of the EUT by the Signal Analyzer.

4.2.3.2 Test Setup

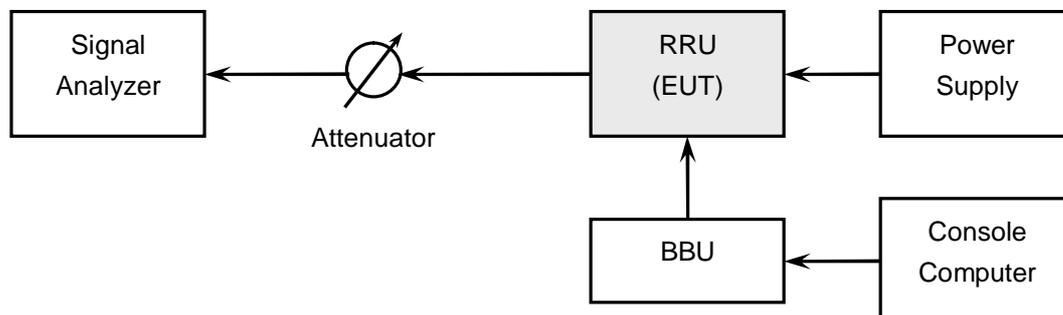


Figure 2 Setup for test of maximum channel power

4.2.4 Test Records

All test modes were considered for this test. All typical frequency points were considered for this test.

4.2.4.1 5 MHz Bandwidth

Table 10 Test: TX output power - 2.5 GHz low block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2501 MHz	Channel middle 2551 MHz	Channel top 2601 MHz	
QPSK 1/2	40.96	40.94	40.98	< 65
QPSK 3/4	40.74	40.89	40.95	< 65
16QAM 1/2	40.78	40.83	40.94	< 65
16QAM 3/4	40.64	40.76	40.86	< 65
64QAM 1/2	40.66	40.89	40.85	< 65
64QAM 2/3	40.94	40.95	40.96	< 65
64QAM 3/4	40.79	40.76	40.72	< 65

Table 11 Test: TX output power - 2.5 GHz middle block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2535 MHz	Channel middle 2585 MHz	Channel top 2635 MHz	
QPSK 1/2	38.94	38.89	38.77	< 65
QPSK 3/4	38.89	38.89	38.78	< 65
16QAM 1/2	38.91	38.9	38.8	< 65
16QAM 3/4	38.83	38.83	38.69	< 65
64QAM 1/2	38.84	38.87	38.7	< 65
64QAM 2/3	38.89	38.89	38.81	< 65
64QAM 3/4	38.79	38.75	38.65	< 65

Table 12 Test: TX output power - 2.5 GHz high block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2585 MHz	Channel middle 2635 MHz	Channel top 2685 MHz	
QPSK 1/2	40.77	40.93	40.84	< 65
QPSK 3/4	40.77	40.9	40.62	< 65
16QAM 1/2	40.84	40.87	40.67	< 65
16QAM 3/4	40.82	40.8	40.56	< 65
64QAM 1/2	40.74	40.82	40.6	< 65
64QAM 2/3	40.76	40.88	40.68	< 65
64QAM 3/4	40.63	40.71	40.48	< 65

4.2.4.2 10 MHz Bandwidth

Table 13 Test: TX output power - 2.5 GHz low block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2501 MHz	Channel middle 2551 MHz	Channel top 2601 MHz	
QPSK 1/2	40.60	40.42	41.16	< 65
QPSK 3/4	40.69	40.45	41.31	< 65
16QAM 1/2	40.78	40.46	41.31	< 65
16QAM 3/4	40.63	40.40	41.26	< 65
64QAM 1/2	40.73	40.41	41.19	< 65
64QAM 2/3	40.72	40.47	41.34	< 65
64QAM 3/4	40.53	40.21	41.07	< 65

Table 14 Test: TX output power - 2.5 GHz middle block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2535 MHz	Channel middle 2585 MHz	Channel top 2635 MHz	
QPSK 1/2	39.27	39.19	38.71	< 65
QPSK 3/4	39.26	39.18	38.77	< 65
16QAM 1/2	39.25	39.07	38.79	< 65
16QAM 3/4	39.23	39.02	38.74	< 65
64QAM 1/2	39.25	39.01	38.74	< 65
64QAM 2/3	39.35	38.95	38.78	< 65
64QAM 3/4	39.17	38.95	38.69	< 65

Table 15 Test: TX output power - 2.5 GHz high block

Test mode	Measured maximum channel power (dBm)			Limit (dBm)
	Channel bottom 2585 MHz	Channel middle 2635 MHz	Channel top 2685 MHz	
QPSK 1/2	40.40	40.36	40.60	< 65
QPSK 3/4	40.56	40.46	40.48	< 65
16QAM 1/2	40.49	40.57	40.60	< 65
16QAM 3/4	40.55	40.44	40.56	< 65
64QAM 1/2	40.52	40.45	40.74	< 65
64QAM 2/3	40.58	40.55	40.87	< 65
64QAM 3/4	40.41	40.30	40.68	< 65

4.2.5 Conclusion

The equipment **passed** the requirement of this clause.

4.3 Modulation Characteristics

4.3.1 Test Conditions

Table 16 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.3.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1047 and Part 27, no specific modulation characteristics requirement limits is applicable.

According to WiMAX MRCT, the relative constellation error (RCE) for base station is listed in Table 17.

Table 17 Allowed relative constellation errors vs. MCS

Modulation (independent of the code rate)	RCE (dB)
QPSK	-18
16QAM	-24
64QAM	-30

4.3.3 Test Method and Setup

4.3.3.1 Test Method

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the RCE and the constellation of the EUT by the Signal Analyzer.

4.3.3.2 Test Setup

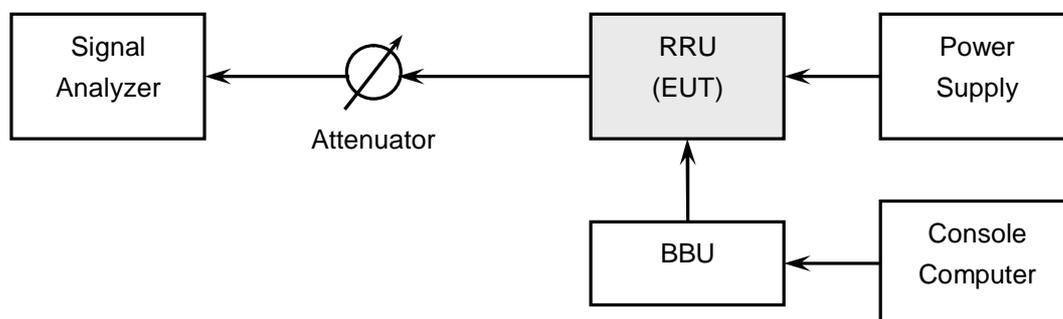


Figure 3 Setup for test of modulation characteristics

4.3.4 Test Records

All test modes were considered for this test. Only middle frequency points were considered for this test.

4.3.4.1 5 MHz Bandwidth

Table 18 Test: TX modulation characteristics - 2.5 GHz low block

Test mode	Measured modulation characteristics for channel middle: 2551 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-32.76	< -18	NOTE
QPSK 3/4	QPSK	-32.9	< -18	NOTE
16QAM 1/2	16QAM	-32.16	< -24	NOTE
16QAM 3/4	16QAM	-32.75	< -24	NOTE
64QAM 1/2	64QAM	-32.97	< -30	NOTE
64QAM 2/3	64QAM	-32.78	< -30	NOTE
64QAM 3/4	64QAM	-32.74	< -30	NOTE

Table 19 Test: TX modulation characteristics - 2.5 GHz middle block

Test mode	Measured modulation characteristics for channel middle: 2585 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-35.44	< -18	NOTE
QPSK 3/4	QPSK	-35.77	< -18	NOTE
16QAM 1/2	16QAM	-33.26	< -24	NOTE
16QAM 3/4	16QAM	-35.18	< -24	NOTE
64QAM 1/2	64QAM	-35.16	< -30	NOTE
64QAM 2/3	64QAM	-34.91	< -30	NOTE
64QAM 3/4	64QAM	-35.77	< -30	NOTE

Table 20 Test: TX modulation characteristics - 2.5 GHz high block

Test mode	Measured modulation characteristics for channel middle: 2635 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-31.15	< -18	NOTE
QPSK 3/4	QPSK	-31.16	< -18	NOTE
16QAM 1/2	16QAM	-30.96	< -24	NOTE
16QAM 3/4	16QAM	-31.26	< -24	NOTE
64QAM 1/2	64QAM	-31.24	< -30	NOTE
64QAM 2/3	64QAM	-31.02	< -30	NOTE
64QAM 3/4	64QAM	-31.35	< -30	NOTE

NOTE: refer to detailed in clause 4.3.5 of the present test report.

4.3.4.2 10 MHz Bandwidth

Table 21 Test: TX modulation characteristics - 2.5 GHz low block

Test mode	Measured modulation characteristics for channel middle: 2551 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-38.76	< -18	NOTE
QPSK 3/4	QPSK	-39.00	< -18	NOTE
16QAM 1/2	16QAM	-38.12	< -24	NOTE
16QAM 3/4	16QAM	-37.81	< -24	NOTE
64QAM 1/2	64QAM	-37.49	< -30	NOTE
64QAM 2/3	64QAM	-38.9	< -30	NOTE
64QAM 3/4	64QAM	-36.42	< -30	NOTE

Table 22 Test: TX modulation characteristics - 2.5 GHz middle block

Test mode	Measured modulation characteristics for channel middle: 2585 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-41.28	< -18	NOTE
QPSK 3/4	QPSK	-41.29	< -18	NOTE
16QAM 1/2	16QAM	-40.56	< -24	NOTE
16QAM 3/4	16QAM	-40.42	< -24	NOTE
64QAM 1/2	64QAM	-40.38	< -30	NOTE
64QAM 2/3	64QAM	-40.86	< -30	NOTE
64QAM 3/4	64QAM	-41.02	< -30	NOTE

Table 23 Test: TX modulation characteristics - 2.5 GHz high block

Test mode	Measured modulation characteristics for channel middle: 2635 MHz			
	Type of modulation	RCE		Constellation
		Measured	Limit	
QPSK 1/2	QPSK	-42.00	< -18	NOTE
QPSK 3/4	QPSK	-41.00	< -18	NOTE
16QAM 1/2	16QAM	-42.00	< -24	NOTE
16QAM 3/4	16QAM	-41.00	< -24	NOTE
64QAM 1/2	64QAM	-41.00	< -30	NOTE
64QAM 2/3	64QAM	-42.00	< -30	NOTE
64QAM 3/4	64QAM	-42.00	< -30	NOTE

NOTE: refer to detailed in clause 4.3.5 of the present test report.

4.3.5 Conclusion

The equipment **passed** the requirement of this clause. Also refer to [Appendix A](#) of the present test report for detailed.

4.4 Occupied Bandwidth

4.4.1 Test Conditions

Table 24 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.4.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1049 and Part 27, no specific modulation characteristics requirement limits is applicable.

The occupied bandwidth is defined in section § 2.1049: the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The occupied bandwidth is normally called 99% bandwidth.

According to section § 27.53(l)(6), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. The emission bandwidth is normally called 26 dB bandwidth.

4.4.3 Test Method and Setup

4.4.3.1 Test Method

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the occupied bandwidth of the EUT by the Signal Analyzer.

4.4.3.2 Test Setup

The main settings of the Signal Analyzer were as below:

- Measurement bandwidth (RBW): 100 kHz

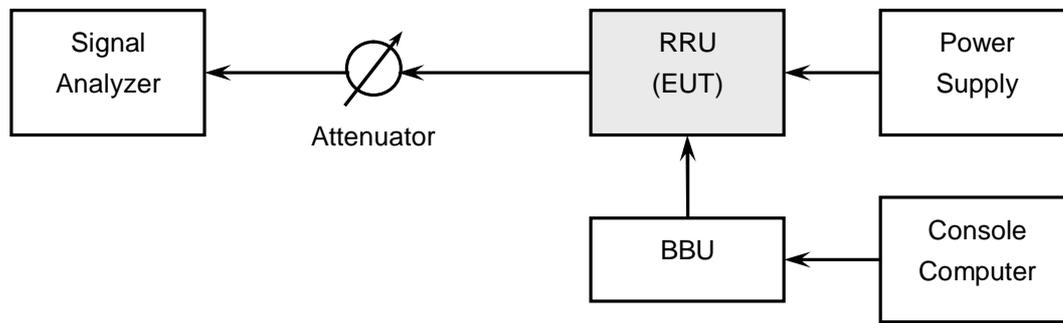


Figure 4 Setup for test of occupied bandwidth

4.4.4 Test Records

All test modes were considered for this test. All typical frequency points were considered for this test.

4.4.4.1 5 MHz Bandwidth

Table 25 Test: TX occupied bandwidth - 2.5 GHz low block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2501 MHz		Channel middle 2551 MHz		Channel top 2601 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	4.688	5.409	4.688	5.409	4.688	5.409
QPSK 3/4	4.688	5.409	4.688	5.409	4.688	5.409
16QAM 1/2	4.688	5.409	4.688	5.409	4.688	5.409
16QAM 3/4	4.688	5.409	4.688	5.409	4.688	5.449
64QAM 1/2	4.688	5.409	4.688	5.369	4.688	5.449
64QAM 2/3	4.688	5.409	4.688	5.409	4.688	5.449
64QAM 3/4	4.688	5.409	4.688	5.449	4.688	5.449

Table 26 Test: TX occupied bandwidth - 2.5 GHz middle block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2535 MHz		Channel middle 2585 MHz		Channel top 2635 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	4.688	5.409	4.688	5.369	4.688	5.409
QPSK 3/4	4.688	5.409	4.688	5.409	4.688	5.369
16QAM 1/2	4.688	5.409	4.688	5.409	4.688	5.449
16QAM 3/4	4.688	5.409	4.688	5.409	4.688	5.449
64QAM 1/2	4.688	5.409	4.688	5.409	4.688	5.369
64QAM 2/3	4.688	5.409	4.688	5.409	4.688	5.449
64QAM 3/4	4.688	5.409	4.688	5.369	4.688	5.449

Table 27 Test: TX occupied bandwidth - 2.5 GHz high block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2585 MHz		Channel middle 2635 MHz		Channel top 2685 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	4.688	5.409	4.688	5.369	4.688	5.409
QPSK 3/4	4.688	5.409	4.688	5.369	4.688	5.449
16QAM 1/2	4.688	5.409	4.688	5.409	4.688	5.409
16QAM 3/4	4.688	5.409	4.688	5.409	4.688	5.409
64QAM 1/2	4.688	5.409	4.688	5.409	4.688	5.409
64QAM 2/3	4.688	5.409	4.688	5.409	4.688	5.409
64QAM 3/4	4.688	5.409	4.688	5.369	4.688	5.409

4.4.4.2 10 MHz Bandwidth

Table 28 Test: TX occupied bandwidth - 2.5 GHz low block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2501 MHz		Channel middle 2551 MHz		Channel top 2601 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	9.295	10.577	9.295	10.577	9.295	10.577
QPSK 3/4	9.295	10.417	9.295	10.417	9.295	10.417
16QAM 1/2	9.295	10.417	9.295	10.417	9.295	10.417
16QAM 3/4	9.295	10.417	9.295	10.417	9.295	10.417
64QAM 1/2	9.295	10.417	9.295	10.497	9.295	10.417
64QAM 2/3	9.295	10.417	9.295	10.497	9.295	10.417
64QAM 3/4	9.295	10.417	9.295	10.497	9.295	10.417

Table 29 Test: TX occupied bandwidth - 2.5 GHz middle block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2535 MHz		Channel middle 2585 MHz		Channel top 2635 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	9.295	10.497	9.295	10.497	9.295	10.577
QPSK 3/4	9.295	10.497	9.295	10.497	9.295	10.577
16QAM 1/2	9.295	10.497	9.295	10.497	9.295	10.577
16QAM 3/4	9.295	10.657	9.295	10.577	9.295	10.657
64QAM 1/2	9.295	10.577	9.295	10.577	9.295	10.577
64QAM 2/3	9.295	10.417	9.295	10.417	9.295	10.497
64QAM 3/4	9.295	10.417	9.295	10.417	9.295	10.417

Table 30 Test: TX occupied bandwidth - 2.5 GHz high block

Test mode	Measured bandwidth (MHz)					
	Channel bottom 2585 MHz		Channel middle 2635 MHz		Channel top 2685 MHz	
	99%	26 dB	99%	26 dB	99%	26 dB
QPSK 1/2	9.295	10.417	9.295	10.497	9.295	10.417
QPSK 3/4	9.295	10.417	9.295	10.497	9.295	10.417
16QAM 1/2	9.295	10.417	9.295	10.497	9.295	10.417
16QAM 3/4	9.295	10.417	9.295	10.497	9.295	10.417
64QAM 1/2	9.295	10.417	9.295	10.497	9.295	10.417
64QAM 2/3	9.295	10.417	9.295	10.497	9.295	10.417
64QAM 3/4	9.295	10.417	9.295	10.497	9.295	10.417

4.4.5 Conclusion

The equipment **passed** the requirement of this clause. Also refer to [Appendix B](#) of the present test report for detailed.

4.5 Band Edge Compliance

4.5.1 Test Conditions

Table 31 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.5.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1051 and Part 27 section § 27.53(l)(2) and § 27.53(l)(6), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least $43 + 10 \lg (P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The limit is calculated to be $P (W) - \{43 \text{ dB} + 10 \lg [P (W)]\} = 10 \lg [1000 P (W)] (\text{dBm}) - 43 \text{ dB} - 10 \lg [P (W)] = 30 \text{ dBm} - 43 \text{ dB} = -13 \text{ dBm}$.

4.5.3 Test Method and Setup

4.5.3.1 Test Method

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum band edge emissions of the EUT by the Signal Analyzer.

4.5.3.2 Test Setup

The main settings of the Signal Analyzer were as below:

- Measurement bandwidth (RBW): 50 kHz or 100 kHz (1% of emission bandwidth)
- Center frequency (CF): frequency point of the licensee's band block
- Sweep width (Span): at least 2 MHz

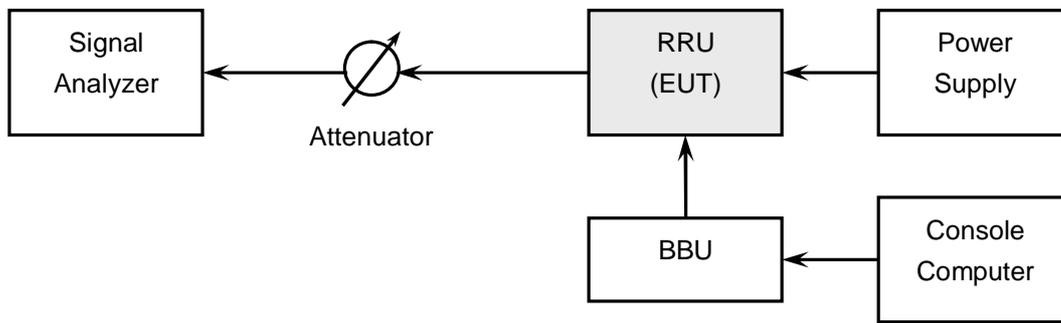


Figure 5 Setup for test of band edge compliance

4.5.4 Test Records

All test modes were considered for this test. Only channel bottom and channel top operating frequency points were performed for this test.

4.5.4.1 5 MHz Bandwidth

NOTE: The licensee's band block for 2.5 GHz band was "2496 MHz to 2690 MHz".

Table 32 Test: TX band edge compliance - 2.5 GHz band

Test mode	Measured maximum band edge emissions				Limit (dBm)
	Channel bottom 2498.5 MHz		Channel top 2687.5 MHz		
	Emission frequency (MHz)	Emission level (dBm)	Emission frequency (MHz)	Emission level (dBm)	
QPSK 1/2	2496.00	-15.14	2690.00	-16.15	< -13
QPSK 3/4	2496.00	-15.41	2690.00	-15.63	< -13
16QAM 1/2	2496.00	-15.73	2690.00	-15.83	< -13
16QAM 3/4	2496.00	-15.86	2690.00	-15.49	< -13
64QAM 1/2	2496.00	-15.18	2690.00	-16.42	< -13
64QAM 2/3	2496.00	-15.43	2690.00	-15.51	< -13
64QAM 3/4	2496.00	-15.90	2690.00	-15.54	< -13

4.5.4.2 10 MHz Bandwidth

NOTE: The licensee's band block for 2.5 GHz low, middle and high blocks were respectively "2496 MHz to 2606 MHz", "2530 MHz to 2640 MHz", and "2580 MHz to 2690 MHz".

Table 33 Test: TX band edge compliance - 2.5 GHz low block

Test mode	Measured maximum band edge emissions		Limit (dBm)
	Channel bottom 2501 MHz	Channel top 2601 MHz	

	Emission frequency (MHz)	Emission level (dBm)	Emission frequency (MHz)	Emission level (dBm)	
QPSK 1/2	2496.00	-22.14	2606.29	-16.42	< -13
QPSK 3/4	2496.00	-22.35	2606.29	-16.13	< -13
16QAM 1/2	2496.00	-22.03	2606.29	-16.59	< -13
16QAM 3/4	2496.00	-21.83	2606.29	-16.58	< -13
64QAM 1/2	2496.00	-21.78	2606.29	-16.31	< -13
64QAM 2/3	2496.00	-21.62	2606.29	-16.34	< -13
64QAM 3/4	2496.00	-22.66	2606.32	-16.66	< -13

Table 34 Test: TX band edge compliance - 2.5 GHz middle block

Test mode	Measured maximum band edge emissions				Limit (dBm)
	Channel bottom 2535 MHz		Channel top 2635 MHz		
	Emission frequency (MHz)	Emission level (dBm)	Emission frequency (MHz)	Emission level (dBm)	
QPSK 1/2	2530.00	-22.93	2640.00	-22.81	< -13
QPSK 3/4	2530.00	-23.45	2640.00	-22.59	< -13
16QAM 1/2	2530.00	-24.42	2640.00	-23.18	< -13
16QAM 3/4	2530.00	-22.46	2640.00	-23.22	< -13
64QAM 1/2	2530.00	-23.34	2640.00	-23.58	< -13
64QAM 2/3	2530.00	-22.12	2640.00	-23.53	< -13
64QAM 3/4	2530.00	-24.26	2640.00	-24.08	< -13

Table 35 Test: TX band edge compliance - 2.5 GHz high block

Test mode	Measured maximum band edge emissions				Limit (dBm)
	Channel bottom 2585 MHz		Channel top 2685 MHz		
	Emission frequency (MHz)	Emission level (dBm)	Emission frequency (MHz)	Emission level (dBm)	
QPSK 1/2	2580.00	-22.90	2690.29	-17.92	< -13
QPSK 3/4	2580.00	-22.88	2690.29	-18.14	< -13
16QAM 1/2	2580.00	-22.74	2690.32	-18.58	< -13
16QAM 3/4	2580.00	-22.46	2690.29	-18.52	< -13
64QAM 1/2	2580.00	-22.83	2690.35	-18.57	< -13
64QAM 2/3	2580.00	-22.36	2690.29	-18.56	< -13
64QAM 3/4	2580.00	-23.16	2690.29	-18.98	< -13

4.5.5 Conclusion

The equipment **passed** the requirement of this clause. Also refer to [Appendix C](#) of the present test report for detailed.

4.6 Spurious Emissions at Antenna Terminals

4.6.1 Test Conditions

Table 36 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.6.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1051 and Part 27 section § 27.53(l)(2) and § 27.53(l)(6), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least $43 + 10 \lg(P)$ dB. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.

The limit is calculated to be $P(W) - \{43 \text{ dB} + 10 \lg[P(W)]\} = 10 \lg[1000 P(W)] \text{ (dBm)} - 43 \text{ dB} - 10 \lg[P(W)] = 30 \text{ dBm} - 43 \text{ dB} = -13 \text{ dBm}$.

4.6.3 Test Method and Setup

4.6.3.1 Test Method

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the maximum unwanted emissions of the EUT by the Signal Analyzer.

4.6.3.2 Test Setup

According to 47CFR part § 27.53(l)(2) and § 27.53(l)(6), the main settings of the Signal Analyzer were as below:

- Measurement bandwidth (RBW): 1 MHz
- Sweep width (Span): 9 kHz to 10th harmonic included

Alternatively, according to ITU SM.329-10,

- Measurement bandwidth (RBW) for 9 kHz up to 150 KHz: 1 kHz
- Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz
- Measurement bandwidth (RBW) for 30 MHz up to 1 GHz: 100 kHz
- Measurement bandwidth (RBW) for 1 GHz up to 10th harmonic included: 1 MHz

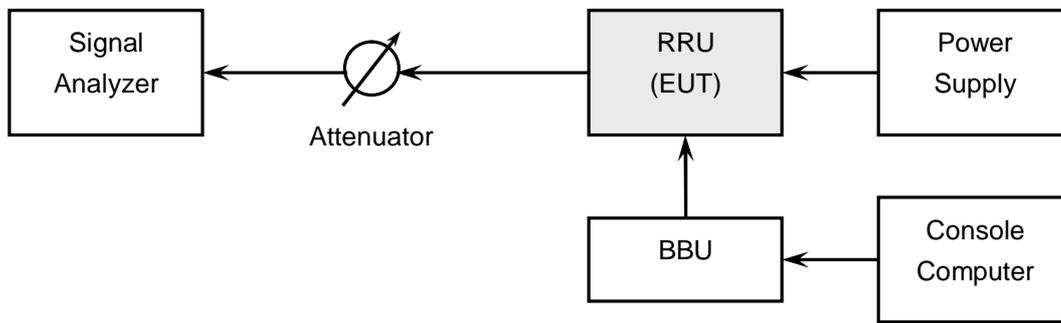


Figure 6 Setup for test of spurious emissions at antenna terminal

4.6.4 Test Records

All test modes were considered for this test. Only channel bottom and channel top operating frequency points were performed for this test.

4.6.4.1 5 MHz Bandwidth

Table 37 Test: TX spurious emissions at antenna terminal - 2.5 GHz low block

Test mode	Measured maximum spurious emissions levels (dBm)		Limit (dBm)
	Channel bottom 2501 MHz	Channel top 2601 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

Table 38 Test: TX spurious emissions at antenna terminal - 2.5 GHz middle block

Test mode	Measured maximum spurious emissions levels (dBm)		Limit (dBm)
	Channel bottom 2535 MHz	Channel top 2635 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

Table 39 Test: TX spurious emissions at antenna terminal - 2.5 GHz high block

Test mode	Measured maximum spurious emissions levels (dBm)		Limit (dBm)
	Channel bottom 2585 MHz	Channel top 2685 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

NOTE: refer to detailed in clause 4.6.5 of the present test report.

4.6.4.2 10 MHz Bandwidth

Table 40 Test: TX spurious emissions at antenna terminal - 2.5 GHz low block

Test mode	Measured maximum spurious emissions levels (dBm)		Limit (dBm)
	Channel bottom 2501 MHz	Channel top 2601 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

Table 41 Test: TX spurious emissions at antenna terminal - 2.5 GHz middle block

Test mode	Measured maximum spurious emissions levels (dBm)		Limit (dBm)
	Channel bottom 2535 MHz	Channel top 2635 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

Table 42 Test: TX spurious emissions at antenna terminal - 2.5 GHz high block

Test mode	Measured maximum spurious emissions levels (dBm)	Limit (dBm)
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	Channel bottom 2585 MHz	Channel top 2685 MHz	
QPSK 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
QPSK 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
16QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 1/2	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 2/3	< -13 (see NOTE)	< -13 (see NOTE)	< -13
64QAM 3/4	< -13 (see NOTE)	< -13 (see NOTE)	< -13

NOTE: refer to detailed in clause 4.6.5 of the present test report.

4.6.5 Conclusion

The equipment **passed** the requirement of this clause. Also refer to Appendix D of the present test report for detailed.

4.7 Radiated Spurious Emissions

4.7.1 Test Conditions

Table 43 Test conditions

Test position:	Enclosure
Test environment:	Normal voltage: -48 VDC Normal temperature: 23 °C

4.7.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1053 and Part 27 section § 27.53(l)(2) and § 27.53(l)(6), the power of any emissions outside the licensee's frequency bands of operation must be attenuated below the transmitter power (P in watts) by at least $43 + 10 \lg (P)$ dB. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.

The limit is calculated to be $P (W) - \{43 \text{ dB} + 10 \lg [P (W)]\} = 10 \lg [1000 P (W)] (\text{dBm}) - 43 \text{ dB} - 10 \lg [P (W)] = 30 \text{ dBm} - 43 \text{ dB} = -13 \text{ dBm}$.

4.7.3 Test Method and Setup

4.7.3.1 Test Method

The EUT, equipped with non-integral antenna, was connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer.

For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, the ERP shall be measured when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in section § 2.1033(c)(8). The EUT was connected to ancillary in order to simulate normal operating conditions with reference to the guidance given in the standard for this type of equipment.

- Step (a): Measure the radiated maximum output power by the Test Receiver received from the Test Antenna.
- Step (b): Use substitution method to verify the maximum output power. The EUT was substituted by a dipole antenna. The dipole is connected to a Signal Generator. And then adjust the output level of the Signal Generator to get the same received power recorded in step (a) on Test Receiver, and record the power level of Signal Generator. The cable loss at the test frequency should be compensated.

4.7.3.2 Test Setup

According to 47CFR part § 27.53(l)(2) and § 27.53(l)(6), the main settings of the Signal Analyzer were as below:

- Measurement bandwidth (RBW): 1 MHz
- Sweep width (Span): 9 kHz to 10th harmonic included

Alternatively, according to ITU SM.329-10,

- Measurement bandwidth (RBW) for 9 kHz up to 150 KHz: 1 kHz
- Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz
- Measurement bandwidth (RBW) for 30 MHz up to 1 GHz: 100 kHz
- Measurement bandwidth (RBW) for 1 GHz up to 10th harmonic included: 1 MHz

Step (a): Pre-test

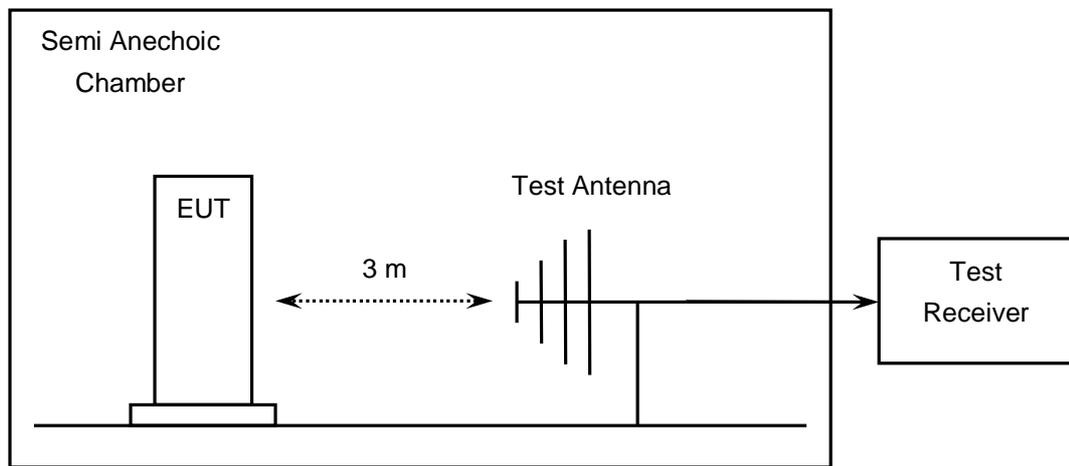


Figure 7 Setup for test of radiated spurious emissions - step (a)

Step (b): Substitution method to verify the maximum ERP

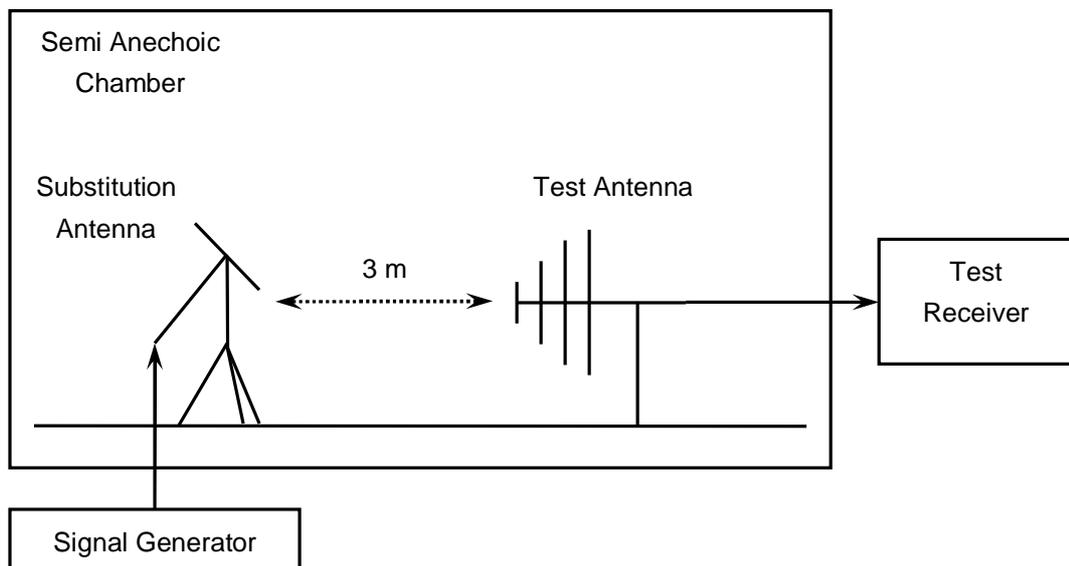


Figure 8 Setup for test for radiated spurious emissions - step (b)

NOTE 1: The sweep width may be divided into several parts for the accuracy of measurement.

NOTE 2: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

4.7.4 Test Records

NOTE: Only worse case was recorded in the present test report.

Table 44 Test: TX radiated spurious emissions

Test frequency range	Measured maximum spurious emissions levels (dBm)	Limit (dBm)
30 MHz to 10 th harmonic included	< -13 (refer to clause 4.7.5)	< -13

4.7.5 Conclusion

The equipment **passed** the requirement of this clause. Also refer to [Appendix E](#) of the present test report for detailed.

4.8 Frequency Stability

4.8.1 Test Conditions

Table 45 Test conditions

Test position:	Antenna connector (TRX-A)
Test environment:	Voltage: Rated (-48 VDC), 85% Rated (-40 VDC), 115% Rated (-60 VDC) Temperature: -30 °C to +50 °C at intervals of +10 °C

4.8.2 Test Specification and Limit

According to 47 CFR Part 2 section § 2.1055 and Part 27 section § 27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to WiMAX MRCT, the frequency tolerance is limited to ± 2 ppm.

4.8.3 Test Method and Setup

4.8.3.1 Test Method

The frequency stability shall be measured with variation of ambient temperature from -30 °C to +50 °C. Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10 °C through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement.

The frequency stability shall be measured with variation of primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

The EUT was connected to a Signal Analyzer via the main RF connector, and through an appropriate Attenuator. Diversity RF connectors were connected to 50 Ohm match load. The EUT was controlled to transmit maximum power by a Console Computer. Measure and record the frequency error of the EUT by the Signal Analyzer.

4.8.3.2 Test Setup

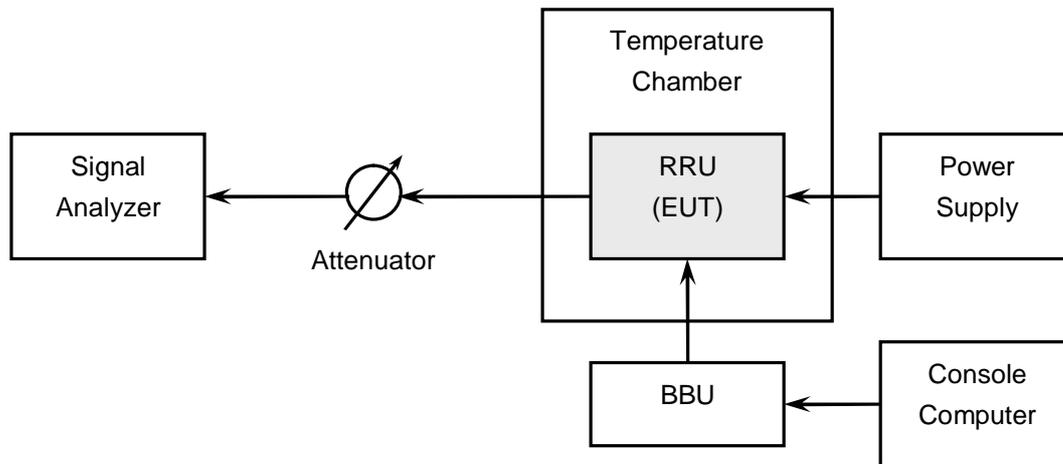


Figure 9 Setup for test of frequency stability

4.8.4 Test Records

All test modes were considered for this test. All typical frequency points were considered for this test.

4.8.4.1 5 MHz Bandwidth

Table 46 Test: TX frequency stability - 2.5 GHz low block

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	-2.31	-0.01	2.54	0.01	-2.5	0.04	< ±2
	-20 °C	-2.56	-0.01	2.56	0.01	-2.46	0.04	< ±2
	-10 °C	-2.53	-0.01	-4.54	-0.02	1.66	-0.01	< ±2
	0 °C	-2.78	-0.01	-4.36	-0.02	1.31	-0.01	< ±2
	+10 °C	-3.12	-0.01	-4.23	-0.02	1.84	-0.01	< ±2
	+20 °C	-3.23	0.02	-1.94	-0.02	-0.26	-0.01	< ±2
	+30 °C	-3.45	0.02	-1.13	-0.02	-0.45	-0.01	< ±2
	+40 °C	-3.62	0.02	-1.44	-0.02	-0.62	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.34	0.01	-1.24	0.01	0.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.67	0.01	-1.67	0.01	0.87	0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	-2.45	-0.02	-2.88	-0.03	-2.53	0.02	< ±2
	-20 °C	-2.06	-0.02	-2.33	-0.03	-2.46	0.02	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	-10 °C	1.88	0.01	1.53	-0.03	-2.13	-0.02	< ±2
	0 °C	1.08	0.01	1.46	-0.03	-4.24	-0.02	< ±2
	+10 °C	1.04	0.01	1.26	-0.03	-4.01	-0.02	< ±2
	+20 °C	-2.33	0.02	1.28	0.02	-0.62	0	< ±2
	+30 °C	-2.42	0.02	1.32	0.02	-0.35	0	< ±2
	+40 °C	-2.21	0.02	1.26	0.02	-0.72	0	< ±2
	+50 °C	-2.56	0.02	-1.44	0.01	-1.12	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.44	0.02	-1.86	0.01	-1.57	-0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.67	0.02	1.55	0.01	-1.34	-0.01	< ±2
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.66	-0.02	-3.68	0.02	-2.76	0.03	< ±2
	-20 °C	-2.25	-0.02	-3.25	0.02	-2.03	0.03	< ±2
	-10 °C	-1.47	0.01	-1.68	-0.02	1.14	0.01	< ±2
	0 °C	-1.26	0.01	-1.92	-0.02	1.23	0.01	< ±2
	+10 °C	-1.53	0.01	-1.68	-0.02	1.02	0.01	< ±2
	+20 °C	-0.38	0	-0.29	0.01	0.48	0	< ±2
	+30 °C	-0.26	0	-0.24	0.01	0.56	0	< ±2
	+40 °C	-0.63	0	-0.27	0.01	0.53	0	< ±2
	+50 °C	-0.42	0	-1.9	0.01	-3.02	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-0.45	0.01	-1.68	0.01	-3.04	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.88	0.01	-1.67	0.01	-2.44	0.01	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	-4.2	-0.03	-3.13	-0.05	-2.32	-0.03	< ±2
	-20 °C	-4.12	-0.03	-3.42	-0.05	-2.02	-0.03	< ±2
	-10 °C	-1.35	-0.01	-2.45	-0.02	-1.15	0.01	< ±2
	0 °C	-1.52	-0.01	-2.56	-0.02	-1.08	0.01	< ±2
	+10 °C	-1.51	-0.01	-2.53	-0.02	-1.09	0.01	< ±2
	+20 °C	1.58	0	-1.52	0.02	0.47	0	< ±2
	+30 °C	1.52	0	-1.43	0.02	0.56	0	< ±2
	+40 °C	1.46	0	-1.54	0.02	0.85	0	< ±2
	+50 °C	1.43	0	-2.27	0.01	-2.86	0.01	< ±2
85% rated (-40 VDC)	+20 °C	1.65	0.01	-1.86	0.01	-1.86	0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
115% rated (-60 VDC)	+20 °C	1.67	0.01	-1.77	0.01	-1.94	0.01	< ±2
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.47	-0.01	-1.53	-0.02	-2.19	0.02	< ±2
	-20 °C	-2.33	-0.01	-1.59	-0.02	-2.46	0.02	< ±2
	-10 °C	-1.58	-0.01	-1.58	-0.01	-4.74	0.02	< ±2
	0 °C	-1.44	-0.01	-1.46	-0.01	-4.52	0.02	< ±2
	+10 °C	-1.58	-0.01	-1.82	-0.01	-4.56	0.02	< ±2
	+20 °C	-0.44	0.02	-0.26	0.02	-0.56	0	< ±2
	+30 °C	-0.54	0.02	-0.45	0.02	-0.73	0	< ±2
	+40 °C	-0.62	0.02	-0.56	0.02	-0.38	0	< ±2
	+50 °C	-0.38	0.02	-2.86	0.01	1.59	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-0.98	0.02	-1.68	0.01	0.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.86	0.02	-1.76	0.01	-0.86	0.01	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	-2.45	0.01	-2.03	0.02	-2.22	0.03	< ±2
	-20 °C	-2.36	0.01	-2.06	0.02	-2.52	0.03	< ±2
	-10 °C	-3.4	0.01	-2.19	-0.02	1.31	0.01	< ±2
	0 °C	-3.29	0.01	-2.08	-0.02	1.51	0.01	< ±2
	+10 °C	-3.38	0.01	-2.19	-0.02	1.31	0.01	< ±2
	+20 °C	-0.78	0.02	0.99	0.02	1.32	0.01	< ±2
	+30 °C	-0.69	0.02	0.87	0.02	1.42	0.01	< ±2
	+40 °C	-0.83	0.02	1.01	0.02	1.63	0.01	< ±2
	+50 °C	-0.92	0.02	1.42	0.01	-1.85	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.03	0.02	1.53	0.01	-1.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.98	0.02	1.62	0.01	-1.37	0.01	< ±2
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	-2.68	0.02	-2.38	0.04	-1.58	0.05	< ±2
	-20 °C	-2.56	0.02	-2.54	0.04	-1.86	0.05	< ±2
	-10 °C	-2.37	0.02	-1.22	-0.02	2.93	0.01	< ±2
	0 °C	-2.45	0.02	-1.35	-0.02	2.87	0.01	< ±2
	+10 °C	-2.57	0.02	-1.53	-0.02	2.86	0.01	< ±2
	+20 °C	-1.15	0.02	-0.86	0.02	-2.58	0.01	< ±2
	+30 °C	-1.34	0.02	-0.92	0.02	-2.91	0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	+40 °C	-1.26	0.02	-0.86	0.02	-2.62	0.01	< ±2
	+50 °C	-1.85	0.02	-2.4	0.01	-2.19	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.56	0.02	-2.06	0.01	-2.03	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.84	0.02	-1.86	0.01	-2.04	0.01	< ±2

Table 47 Test: TX frequency stability - 2.5 GHz middle block

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	-2.3	-0.01	0.88	-0.01	1.2	-0.01	< ±2
	-20 °C	-2.35	-0.01	-2.09	-0.01	1.06	-0.01	< ±2
	-10 °C	-1.63	-0.01	-2.01	-0.01	-0.13	-0.01	< ±2
	0 °C	-1.85	-0.01	-2.64	-0.01	-0.54	-0.01	< ±2
	+10 °C	-1.96	-0.01	-2.05	-0.01	-2.01	-0.01	< ±2
	+20 °C	-2.71	-0.01	-0.06	-0.01	-2.79	-0.01	< ±2
	+30 °C	-2.61	-0.01	-2.68	-0.01	-2.06	-0.01	< ±2
	+40 °C	-2.73	-0.01	-2.58	-0.01	-2.14	-0.01	< ±2
	+50 °C	-1.47	-0.01	-2.28	-0.01	-2.03	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.57	-0.01	-2.06	-0.01	-2.05	-0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.49	-0.01	-2.18	-0.01	-1.98	-0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	3.12	-0.01	-0.63	-0.01	-0.38	-0.01	< ±2
	-20 °C	2.98	-0.01	-0.86	-0.01	-0.83	-0.01	< ±2
	-10 °C	-2.02	-0.01	1.33	-0.01	-2.05	-0.01	< ±2
	0 °C	-2.68	-0.01	1.25	-0.01	-2.08	-0.01	< ±2
	+10 °C	-2.61	-0.01	1.06	-0.01	-2.16	-0.01	< ±2
	+20 °C	-2.28	-0.01	-1.9	-0.01	0.66	-0.01	< ±2
	+30 °C	-2.92	-0.01	-1.92	-0.01	0.72	-0.01	< ±2
	+40 °C	-2.39	-0.01	-2.94	-0.01	0.83	-0.01	< ±2
	+50 °C	-3.27	-0.01	-2.85	-0.01	-2.11	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.68	-0.01	-2.64	-0.01	-2.09	-0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
115% rated (-60 VDC)	+20 °C	-2.95	-0.01	-2.83	-0.01	-2.15	-0.01	< ±2
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.45	-0.02	2.09	-0.02	1.05	-0.02	< ±2
	-20 °C	-2.16	-0.02	2.04	-0.02	-1.84	-0.02	< ±2
	-10 °C	-2.15	-0.02	-1.61	-0.02	-1.82	-0.02	< ±2
	0 °C	-2.43	-0.02	-1.72	-0.02	-2.19	-0.02	< ±2
	+10 °C	-2.06	-0.02	-1.92	-0.02	-2.46	-0.02	< ±2
	+20 °C	2.04	-0.02	-0.26	-0.02	-2.47	-0.02	< ±2
	+30 °C	-2.38	-0.02	-1.08	-0.02	-2.56	-0.02	< ±2
	+40 °C	-2.65	-0.02	-2.98	-0.02	-2.78	-0.02	< ±2
85% rated (-40 VDC)	+20 °C	-2.67	-0.02	-3.06	-0.02	-2.81	-0.02	< ±2
115% rated (-60 VDC)	+20 °C	-2.86	-0.02	-2.07	-0.02	-2.64	-0.02	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	-1.34	-0.02	1.29	-0.02	-2.1	-0.02	< ±2
	-20 °C	-1.65	-0.02	1.09	-0.02	-2.08	-0.02	< ±2
	-10 °C	-2.66	-0.02	-2.97	-0.02	-0.39	-0.02	< ±2
	0 °C	-2.61	-0.02	-2.81	-0.02	-0.98	-0.02	< ±2
	+10 °C	-2.46	-0.02	-2.04	-0.02	-1.05	-0.02	< ±2
	+20 °C	-1.75	-0.02	-2.79	-0.02	-1.15	-0.02	< ±2
	+30 °C	-2.08	-0.02	-2.43	-0.02	-1.06	-0.02	< ±2
	+40 °C	-1.95	-0.02	-2.85	-0.02	-1.52	-0.02	< ±2
85% rated (-40 VDC)	+20 °C	-1.94	-0.02	-2.43	-0.02	-1.26	-0.02	< ±2
115% rated (-60 VDC)	+20 °C	-1.76	-0.02	-2.29	-0.02	-1.57	-0.02	< ±2
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-1.32	-0.03	-0.65	-0.03	1.56	-0.03	< ±2
	-20 °C	-1.65	-0.03	-1.02	-0.03	1.83	-0.03	< ±2
	-10 °C	-2.86	-0.03	-2.83	-0.03	2.23	-0.03	< ±2
	0 °C	-2.91	-0.03	-2.91	-0.03	2.05	-0.03	< ±2
	+10 °C	-2.92	-0.03	-2.86	-0.03	2.16	-0.03	< ±2
	+20 °C	-2.84	-0.03	-4.49	-0.03	-0.96	-0.03	< ±2
	+30 °C	-2.67	-0.03	-4.28	-0.03	-0.99	-0.03	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	+40 °C	-2.83	-0.03	-4.52	-0.03	-1.03	-0.03	< ±2
	+50 °C	-2.65	-0.03	-4.92	-0.03	-1.08	-0.03	< ±2
85% rated (-40 VDC)	+20 °C	-2.64	-0.03	-4.06	-0.03	-1.09	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-2.83	-0.03	-4.17	-0.03	-1.67	-0.03	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	-1.28	-0.03	1.38	-0.03	-1.25	-0.03	< ±2
	-20 °C	-1.36	-0.03	1.08	-0.03	-1.34	-0.03	< ±2
	-10 °C	-2.76	-0.03	-2.51	-0.03	1.07	-0.03	< ±2
	0 °C	-2.45	-0.03	-2.19	-0.03	1.09	-0.03	< ±2
	+10 °C	-2.65	-0.03	-2.43	-0.03	1.62	-0.03	< ±2
	+20 °C	-1.83	-0.03	-1.43	-0.03	-1.71	-0.03	< ±2
	+30 °C	-1.92	-0.03	-1.94	-0.03	-1.82	-0.03	< ±2
	+40 °C	-1.89	-0.03	-1.83	-0.03	-1.93	-0.03	< ±2
	+50 °C	-1.67	-0.03	-1.74	-0.03	-1.85	-0.03	< ±2
85% rated (-40 VDC)	+20 °C	-1.86	-0.03	-1.82	-0.03	-1.64	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-1.92	-0.03	-1.64	-0.03	-1.85	-0.03	< ±2
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	-1.07	-0.03	2.3	-0.03	2.04	-0.03	< ±2
	-20 °C	-1.65	-0.03	2.61	-0.03	2.08	-0.03	< ±2
	-10 °C	-2.1	-0.03	-2.14	-0.03	-2.95	-0.03	< ±2
	0 °C	-2.13	-0.03	-2.38	-0.03	-2.61	-0.03	< ±2
	+10 °C	-2.34	-0.03	-2.45	-0.03	-2.34	-0.03	< ±2
	+20 °C	-1.44	-0.03	2.52	-0.03	-2.02	-0.03	< ±2
	+30 °C	-1.58	-0.03	2.82	-0.03	-2.1	-0.03	< ±2
	+40 °C	-1.63	-0.03	2.16	-0.03	-2.34	-0.03	< ±2
	+50 °C	-1.83	-0.03	2.43	-0.03	-2.51	-0.03	< ±2
85% rated (-40 VDC)	+20 °C	-1.64	-0.03	2.09	-0.03	-2.16	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-1.86	-0.03	2.28	-0.03	-2.38	-0.03	< ±2

Table 48 Test: TX frequency stability - 2.5 GHz high block

Test environment	Measured maximum frequency error	Limit (ppm)
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		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	0.88	-0.01	1.2	-0.01	-1.78	0.01	< ±2
	-20 °C	-2.09	-0.01	1.06	-0.01	-1.25	0.01	< ±2
	-10 °C	-2.01	-0.01	-0.13	-0.01	-1.81	0.01	< ±2
	0 °C	-2.64	-0.01	-0.54	-0.01	-1.63	0.01	< ±2
	+10 °C	-2.05	-0.01	-2.01	-0.01	-1.46	0.01	< ±2
	+20 °C	-0.06	-0.01	-2.79	-0.01	-1.75	0.01	< ±2
	+30 °C	-2.68	-0.01	-2.06	-0.01	-1.85	0.01	< ±2
	+40 °C	-2.58	-0.01	-2.14	-0.01	-1.43	0.01	< ±2
	+50 °C	-2.28	-0.01	-2.03	-0.01	-1.85	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.34	-0.01	-2.43	-0.01	-1.95	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.53	-0.01	-2.51	-0.01	-1.67	0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	-0.63	-0.01	-0.38	-0.01	0.32	0.01	< ±2
	-20 °C	-0.86	-0.01	-0.83	-0.01	0.24	0.01	< ±2
	-10 °C	1.33	-0.01	-2.05	-0.01	0.38	0.01	< ±2
	0 °C	1.25	-0.01	-2.08	-0.01	0.46	0.01	< ±2
	+10 °C	1.06	-0.01	-2.16	-0.01	0.56	0.01	< ±2
	+20 °C	-1.9	-0.01	0.66	-0.01	0.82	0.01	< ±2
	+30 °C	-1.92	-0.01	0.72	-0.01	0.91	0.01	< ±2
	+40 °C	-2.94	-0.01	0.83	-0.01	0.72	0.01	< ±2
	+50 °C	-2.85	-0.01	-2.11	-0.01	0.94	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.86	-0.01	-1.99	-0.01	0.95	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.63	-0.01	-1.83	-0.01	0.86	0.01	< ±2
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	2.09	-0.02	1.05	-0.02	-2.62	0.03	< ±2
	-20 °C	2.04	-0.02	-1.84	-0.02	-2.56	0.03	< ±2
	-10 °C	-1.61	-0.02	-1.82	-0.02	-2.88	0.03	< ±2
	0 °C	-1.72	-0.02	-2.19	-0.02	-2.82	0.03	< ±2
	+10 °C	-1.92	-0.02	-2.46	-0.02	-2.91	0.03	< ±2
	+20 °C	-0.26	-0.02	-2.47	-0.02	-2.85	0.03	< ±2
	+30 °C	-1.08	-0.02	-2.56	-0.02	-2.72	0.03	< ±2
	+40 °C	-2.98	-0.02	-2.78	-0.02	-2.68	0.03	< ±2
	+50 °C	-3.8	-0.02	-2.79	-0.02	-2.91	0.03	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
85% rated (-40 VDC)	+20 °C	-3.62	-0.02	-2.88	-0.02	-2.64	0.03	< ±2
115% rated (-60 VDC)	+20 °C	-3.24	-0.02	-2.67	-0.02	-2.89	0.03	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	1.29	-0.02	-2.1	-0.02	-2.33	0.03	< ±2
	-20 °C	1.09	-0.02	-2.08	-0.02	-2.56	0.03	< ±2
	-10 °C	-2.97	-0.02	-0.39	-0.02	-2.46	0.03	< ±2
	0 °C	-2.81	-0.02	-0.98	-0.02	-2.72	0.03	< ±2
	+10 °C	-2.04	-0.02	-1.05	-0.02	-2.85	0.03	< ±2
	+20 °C	-2.79	-0.02	-1.15	-0.02	-2.92	0.03	< ±2
	+30 °C	-2.43	-0.02	-1.06	-0.02	-2.83	0.03	< ±2
	+40 °C	-2.85	-0.02	-1.52	-0.02	-2.76	0.03	< ±2
	+50 °C	-2.65	-0.02	-1.18	-0.02	-2.84	0.03	< ±2
85% rated (-40 VDC)	+20 °C	-2.06	-0.02	-1.52	-0.02	-2.83	0.03	< ±2
115% rated (-60 VDC)	+20 °C	-2.43	-0.02	-1.44	-0.02	-2.43	0.03	< ±2
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-0.65	-0.03	1.56	-0.03	-2.12	0.04	< ±2
	-20 °C	-1.02	-0.03	1.83	-0.03	-2.62	0.04	< ±2
	-10 °C	-2.83	-0.03	2.23	-0.03	-2.51	0.04	< ±2
	0 °C	-2.91	-0.03	2.05	-0.03	-2.72	0.04	< ±2
	+10 °C	-2.86	-0.03	2.16	-0.03	-2.92	0.04	< ±2
	+20 °C	-4.49	-0.03	-0.96	-0.03	-2.83	0.04	< ±2
	+30 °C	-4.28	-0.03	-0.99	-0.03	-2.75	0.04	< ±2
	+40 °C	-4.52	-0.03	-1.03	-0.03	-2.69	0.04	< ±2
	+50 °C	-4.92	-0.03	-1.08	-0.03	-2.89	0.04	< ±2
85% rated (-40 VDC)	+20 °C	-4.12	-0.03	-1.64	-0.03	-2.64	0.04	< ±2
115% rated (-60 VDC)	+20 °C	-4.61	-0.03	-1.09	-0.03	-2.16	0.04	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	1.38	-0.03	-1.25	-0.03	-2.12	0.04	< ±2
	-20 °C	1.08	-0.03	-1.34	-0.03	-2.16	0.04	< ±2
	-10 °C	-2.51	-0.03	1.07	-0.03	-2.03	0.04	< ±2
	0 °C	-2.19	-0.03	1.09	-0.03	-2.09	0.04	< ±2
	+10 °C	-2.43	-0.03	1.62	-0.03	-2.62	0.04	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	+20 °C	-1.43	-0.03	-1.71	-0.03	-2.42	0.04	< ±2
	+30 °C	-1.94	-0.03	-1.82	-0.03	-2.38	0.04	< ±2
	+40 °C	-1.83	-0.03	-1.93	-0.03	-2.46	0.04	< ±2
	+50 °C	-1.74	-0.03	-1.85	-0.03	-2.26	0.04	< ±2
85% rated (-40 VDC)	+20 °C	-1.86	-0.03	-1.94	-0.03	-2.75	0.04	< ±2
115% rated (-60 VDC)	+20 °C	-1.94	-0.03	-1.68	-0.03	-1.99	0.04	< ±2
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	2.3	-0.03	2.04	-0.03	-1.97	0.04	< ±2
	-20 °C	2.61	-0.03	2.08	-0.03	-2.06	0.04	< ±2
	-10 °C	-2.14	-0.03	-2.95	-0.03	-2.75	0.04	< ±2
	0 °C	-2.38	-0.03	-2.61	-0.03	-2.7	0.04	< ±2
	+10 °C	-2.45	-0.03	-2.34	-0.03	-2.7	0.04	< ±2
	+20 °C	2.52	-0.03	-2.02	-0.03	-2.16	0.04	< ±2
	+30 °C	2.82	-0.03	-2.1	-0.03	-2.52	0.04	< ±2
	+40 °C	2.16	-0.03	-2.34	-0.03	-2.43	0.04	< ±2
	+50 °C	2.43	-0.03	-2.51	-0.03	-2.53	0.04	< ±2
85% rated (-40 VDC)	+20 °C	2.38	-0.03	-2.16	-0.03	-2.64	0.04	< ±2
115% rated (-60 VDC)	+20 °C	2.41	-0.03	-2.34	-0.03	-1.98	0.04	< ±2

4.8.4.2 10 MHz Bandwidth

Table 49 Test: TX frequency stability - 2.5 GHz low block

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	-2.31	-0.01	2.54	0.01	-2.5	0.04	< ±2
	-20 °C	-2.56	-0.01	2.56	0.01	-2.46	0.04	< ±2
	-10 °C	-2.53	-0.01	-4.54	-0.02	1.66	-0.01	< ±2
	0 °C	-2.78	-0.01	-4.36	-0.02	1.31	-0.01	< ±2
	+10 °C	-3.12	-0.01	-4.23	-0.02	1.84	-0.01	< ±2
	+20 °C	-3.23	0.02	-1.94	-0.02	-0.26	-0.01	< ±2
	+30 °C	-3.45	0.02	-1.13	-0.02	-0.45	-0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	+40 °C	-3.62	0.02	-1.44	-0.02	-0.62	-0.01	< ±2
	+50 °C	-1.23	0.01	-1.68	0.01	1.47	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.34	0.01	-1.24	0.01	0.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.67	0.01	-1.67	0.01	0.87	0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	-2.45	-0.02	-2.88	-0.03	-2.53	0.02	< ±2
	-20 °C	-2.06	-0.02	-2.33	-0.03	-2.46	0.02	< ±2
	-10 °C	1.88	0.01	1.53	-0.03	-2.13	-0.02	< ±2
	0 °C	1.08	0.01	1.46	-0.03	-4.24	-0.02	< ±2
	+10 °C	1.04	0.01	1.26	-0.03	-4.01	-0.02	< ±2
	+20 °C	-2.33	0.02	1.28	0.02	-0.62	0	< ±2
	+30 °C	-2.42	0.02	1.32	0.02	-0.35	0	< ±2
	+40 °C	-2.21	0.02	1.26	0.02	-0.72	0	< ±2
	+50 °C	-2.56	0.02	-1.44	0.01	-1.12	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.44	0.02	-1.86	0.01	-1.57	-0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.67	0.02	1.55	0.01	-1.34	-0.01	< ±2
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.66	-0.02	-3.68	0.02	-2.76	0.03	< ±2
	-20 °C	-2.25	-0.02	-3.25	0.02	-2.03	0.03	< ±2
	-10 °C	-1.47	0.01	-1.68	-0.02	1.14	0.01	< ±2
	0 °C	-1.26	0.01	-1.92	-0.02	1.23	0.01	< ±2
	+10 °C	-1.53	0.01	-1.68	-0.02	1.02	0.01	< ±2
	+20 °C	-0.38	0	-0.29	0.01	0.48	0	< ±2
	+30 °C	-0.26	0	-0.24	0.01	0.56	0	< ±2
	+40 °C	-0.63	0	-0.27	0.01	0.53	0	< ±2
	+50 °C	-0.42	0	-1.9	0.01	-3.02	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-0.45	0.01	-1.68	0.01	-3.04	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.88	0.01	-1.67	0.01	-2.44	0.01	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	-4.2	-0.03	-3.13	-0.05	-2.32	-0.03	< ±2
	-20 °C	-4.12	-0.03	-3.42	-0.05	-2.02	-0.03	< ±2
	-10 °C	-1.35	-0.01	-2.45	-0.02	-1.15	0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	0 °C	-1.52	-0.01	-2.56	-0.02	-1.08	0.01	< ±2
	+10 °C	-1.51	-0.01	-2.53	-0.02	-1.09	0.01	< ±2
	+20 °C	1.58	0	-1.52	0.02	0.47	0	< ±2
	+30 °C	1.52	0	-1.43	0.02	0.56	0	< ±2
	+40 °C	1.46	0	-1.54	0.02	0.85	0	< ±2
	+50 °C	1.43	0	-2.27	0.01	-2.86	0.01	< ±2
85% rated (-40 VDC)	+20 °C	1.65	0.01	-1.86	0.01	-1.86	0.01	< ±2
115% rated (-60 VDC)	+20 °C	1.67	0.01	-1.77	0.01	-1.94	0.01	< ±2
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.47	-0.01	-1.53	-0.02	-2.19	0.02	< ±2
	-20 °C	-2.33	-0.01	-1.59	-0.02	-2.46	0.02	< ±2
	-10 °C	-1.58	-0.01	-1.58	-0.01	-4.74	0.02	< ±2
	0 °C	-1.44	-0.01	-1.46	-0.01	-4.52	0.02	< ±2
	+10 °C	-1.58	-0.01	-1.82	-0.01	-4.56	0.02	< ±2
	+20 °C	-0.44	0.02	-0.26	0.02	-0.56	0	< ±2
	+30 °C	-0.54	0.02	-0.45	0.02	-0.73	0	< ±2
	+40 °C	-0.62	0.02	-0.56	0.02	-0.38	0	< ±2
	+50 °C	-0.38	0.02	-2.86	0.01	1.59	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-0.98	0.02	-1.68	0.01	0.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.86	0.02	-1.76	0.01	-0.86	0.01	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	-2.45	0.01	-2.03	0.02	-2.22	0.03	< ±2
	-20 °C	-2.36	0.01	-2.06	0.02	-2.52	0.03	< ±2
	-10 °C	-3.4	0.01	-2.19	-0.02	1.31	0.01	< ±2
	0 °C	-3.29	0.01	-2.08	-0.02	1.51	0.01	< ±2
	+10 °C	-3.38	0.01	-2.19	-0.02	1.31	0.01	< ±2
	+20 °C	-0.78	0.02	0.99	0.02	1.32	0.01	< ±2
	+30 °C	-0.69	0.02	0.87	0.02	1.42	0.01	< ±2
	+40 °C	-0.83	0.02	1.01	0.02	1.63	0.01	< ±2
	+50 °C	-0.92	0.02	1.42	0.01	-1.85	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.03	0.02	1.53	0.01	-1.96	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-0.98	0.02	1.62	0.01	-1.37	0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2501 MHz		Channel Middle 2551 MHz		Channel Top 2601 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	-2.68	0.02	-2.38	0.04	-1.58	0.05	< ±2
	-20 °C	-2.56	0.02	-2.54	0.04	-1.86	0.05	< ±2
	-10 °C	-2.37	0.02	-1.22	-0.02	2.93	0.01	< ±2
	0 °C	-2.45	0.02	-1.35	-0.02	2.87	0.01	< ±2
	+10 °C	-2.57	0.02	-1.53	-0.02	2.86	0.01	< ±2
	+20 °C	-1.15	0.02	-0.86	0.02	-2.58	0.01	< ±2
	+30 °C	-1.34	0.02	-0.92	0.02	-2.91	0.01	< ±2
	+40 °C	-1.26	0.02	-0.86	0.02	-2.62	0.01	< ±2
	+50 °C	-1.85	0.02	-2.4	0.01	-2.19	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.56	0.02	-2.06	0.01	-2.03	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.84	0.02	-1.86	0.01	-2.04	0.01	< ±2

Table 50 Test: TX frequency stability - 2.5 GHz middle block

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	-2.3	-0.01	0.88	-0.01	1.2	-0.01	< ±2
	-20 °C	-2.35	-0.01	-2.09	-0.01	1.06	-0.01	< ±2
	-10 °C	-1.63	-0.01	-2.01	-0.01	-0.13	-0.01	< ±2
	0 °C	-1.85	-0.01	-2.64	-0.01	-0.54	-0.01	< ±2
	+10 °C	-1.96	-0.01	-2.05	-0.01	-2.01	-0.01	< ±2
	+20 °C	-2.71	-0.01	-0.06	-0.01	-2.79	-0.01	< ±2
	+30 °C	-2.61	-0.01	-2.68	-0.01	-2.06	-0.01	< ±2
	+40 °C	-2.73	-0.01	-2.58	-0.01	-2.14	-0.01	< ±2
	+50 °C	-1.47	-0.01	-2.28	-0.01	-2.03	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-1.57	-0.01	-2.06	-0.01	-2.05	-0.01	< ±2
115% rated (-60 VDC)	+20 °C	-1.49	-0.01	-2.18	-0.01	-1.98	-0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	3.12	-0.01	-0.63	-0.01	-0.38	-0.01	< ±2
	-20 °C	2.98	-0.01	-0.86	-0.01	-0.83	-0.01	< ±2
	-10 °C	-2.02	-0.01	1.33	-0.01	-2.05	-0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
	0 °C	-2.68	-0.01	1.25	-0.01	-2.08	-0.01	< ±2
	+10 °C	-2.61	-0.01	1.06	-0.01	-2.16	-0.01	< ±2
	+20 °C	-2.28	-0.01	-1.9	-0.01	0.66	-0.01	< ±2
	+30 °C	-2.92	-0.01	-1.92	-0.01	0.72	-0.01	< ±2
	+40 °C	-2.39	-0.01	-2.94	-0.01	0.83	-0.01	< ±2
	+50 °C	-3.27	-0.01	-2.85	-0.01	-2.11	-0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.68	-0.01	-2.64	-0.01	-2.09	-0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.95	-0.01	-2.83	-0.01	-2.15	-0.01	< ±2
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	-2.45	-0.02	2.09	-0.02	1.05	-0.02	< ±2
	-20 °C	-2.16	-0.02	2.04	-0.02	-1.84	-0.02	< ±2
	-10 °C	-2.15	-0.02	-1.61	-0.02	-1.82	-0.02	< ±2
	0 °C	-2.43	-0.02	-1.72	-0.02	-2.19	-0.02	< ±2
	+10 °C	-2.06	-0.02	-1.92	-0.02	-2.46	-0.02	< ±2
	+20 °C	2.04	-0.02	-0.26	-0.02	-2.47	-0.02	< ±2
	+30 °C	-2.38	-0.02	-1.08	-0.02	-2.56	-0.02	< ±2
	+40 °C	-2.65	-0.02	-2.98	-0.02	-2.78	-0.02	< ±2
+50 °C	-3.4	-0.02	-3.8	-0.02	-2.79	-0.02	< ±2	
85% rated (-40 VDC)	+20 °C	-2.67	-0.02	-3.06	-0.02	-2.81	-0.02	< ±2
115% rated (-60 VDC)	+20 °C	-2.86	-0.02	-2.07	-0.02	-2.64	-0.02	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	-1.34	-0.02	1.29	-0.02	-2.1	-0.02	< ±2
	-20 °C	-1.65	-0.02	1.09	-0.02	-2.08	-0.02	< ±2
	-10 °C	-2.66	-0.02	-2.97	-0.02	-0.39	-0.02	< ±2
	0 °C	-2.61	-0.02	-2.81	-0.02	-0.98	-0.02	< ±2
	+10 °C	-2.46	-0.02	-2.04	-0.02	-1.05	-0.02	< ±2
	+20 °C	-1.75	-0.02	-2.79	-0.02	-1.15	-0.02	< ±2
	+30 °C	-2.08	-0.02	-2.43	-0.02	-1.06	-0.02	< ±2
	+40 °C	-1.95	-0.02	-2.85	-0.02	-1.52	-0.02	< ±2
+50 °C	-1.83	-0.02	-2.65	-0.02	-1.18	-0.02	< ±2	
85% rated (-40 VDC)	+20 °C	-1.94	-0.02	-2.43	-0.02	-1.26	-0.02	< ±2
115% rated (-60 VDC)	+20 °C	-1.76	-0.02	-2.29	-0.02	-1.57	-0.02	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-1.32	-0.03	-0.65	-0.03	1.56	-0.03	< ±2
	-20 °C	-1.65	-0.03	-1.02	-0.03	1.83	-0.03	< ±2
	-10 °C	-2.86	-0.03	-2.83	-0.03	2.23	-0.03	< ±2
	0 °C	-2.91	-0.03	-2.91	-0.03	2.05	-0.03	< ±2
	+10 °C	-2.92	-0.03	-2.86	-0.03	2.16	-0.03	< ±2
	+20 °C	-2.84	-0.03	-4.49	-0.03	-0.96	-0.03	< ±2
	+30 °C	-2.67	-0.03	-4.28	-0.03	-0.99	-0.03	< ±2
	+40 °C	-2.83	-0.03	-4.52	-0.03	-1.03	-0.03	< ±2
	+50 °C	-2.65	-0.03	-4.92	-0.03	-1.08	-0.03	< ±2
85% rated (-40 VDC)	+20 °C	-2.64	-0.03	-4.06	-0.03	-1.09	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-2.83	-0.03	-4.17	-0.03	-1.67	-0.03	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	-1.28	-0.03	1.38	-0.03	-1.25	-0.03	< ±2
	-20 °C	-1.36	-0.03	1.08	-0.03	-1.34	-0.03	< ±2
	-10 °C	-2.76	-0.03	-2.51	-0.03	1.07	-0.03	< ±2
	0 °C	-2.45	-0.03	-2.19	-0.03	1.09	-0.03	< ±2
	+10 °C	-2.65	-0.03	-2.43	-0.03	1.62	-0.03	< ±2
	+20 °C	-1.83	-0.03	-1.43	-0.03	-1.71	-0.03	< ±2
	+30 °C	-1.92	-0.03	-1.94	-0.03	-1.82	-0.03	< ±2
	+40 °C	-1.89	-0.03	-1.83	-0.03	-1.93	-0.03	< ±2
	+50 °C	-1.67	-0.03	-1.74	-0.03	-1.85	-0.03	< ±2
85% rated (-40 VDC)	+20 °C	-1.86	-0.03	-1.82	-0.03	-1.64	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-1.92	-0.03	-1.64	-0.03	-1.85	-0.03	< ±2
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	-1.07	-0.03	2.3	-0.03	2.04	-0.03	< ±2
	-20 °C	-1.65	-0.03	2.61	-0.03	2.08	-0.03	< ±2
	-10 °C	-2.1	-0.03	-2.14	-0.03	-2.95	-0.03	< ±2
	0 °C	-2.13	-0.03	-2.38	-0.03	-2.61	-0.03	< ±2
	+10 °C	-2.34	-0.03	-2.45	-0.03	-2.34	-0.03	< ±2
	+20 °C	-1.44	-0.03	2.52	-0.03	-2.02	-0.03	< ±2
	+30 °C	-1.58	-0.03	2.82	-0.03	-2.1	-0.03	< ±2
	+40 °C	-1.63	-0.03	2.16	-0.03	-2.34	-0.03	< ±2
		+50 °C	-1.83	-0.03	2.43	-0.03	-2.51	-0.03

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2535 MHz		Channel Middle 2585 MHz		Channel Top 2635 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
85% rated (-40 VDC)	+20 °C	-1.64	-0.03	2.09	-0.03	-2.16	-0.03	< ±2
115% rated (-60 VDC)	+20 °C	-1.86	-0.03	2.28	-0.03	-2.38	-0.03	< ±2

Table 51 Test: TX frequency stability - 2.5 GHz high block

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of QPSK 1/2								
100% rated (-48 VDC)	-30 °C	0.88	-0.01	1.2	-0.01	-1.78	0.01	< ±2
	-20 °C	-2.09	-0.01	1.06	-0.01	-1.25	0.01	< ±2
	-10 °C	-2.01	-0.01	-0.13	-0.01	-1.81	0.01	< ±2
	0 °C	-2.64	-0.01	-0.54	-0.01	-1.63	0.01	< ±2
	+10 °C	-2.05	-0.01	-2.01	-0.01	-1.46	0.01	< ±2
	+20 °C	-0.06	-0.01	-2.79	-0.01	-1.75	0.01	< ±2
	+30 °C	-2.68	-0.01	-2.06	-0.01	-1.85	0.01	< ±2
	+40 °C	-2.58	-0.01	-2.14	-0.01	-1.43	0.01	< ±2
	+50 °C	-2.28	-0.01	-2.03	-0.01	-1.85	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.34	-0.01	-2.43	-0.01	-1.95	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.53	-0.01	-2.51	-0.01	-1.67	0.01	< ±2
Test mode of QPSK 3/4								
100% rated (-48 VDC)	-30 °C	-0.63	-0.01	-0.38	-0.01	0.32	0.01	< ±2
	-20 °C	-0.86	-0.01	-0.83	-0.01	0.24	0.01	< ±2
	-10 °C	1.33	-0.01	-2.05	-0.01	0.38	0.01	< ±2
	0 °C	1.25	-0.01	-2.08	-0.01	0.46	0.01	< ±2
	+10 °C	1.06	-0.01	-2.16	-0.01	0.56	0.01	< ±2
	+20 °C	-1.9	-0.01	0.66	-0.01	0.82	0.01	< ±2
	+30 °C	-1.92	-0.01	0.72	-0.01	0.91	0.01	< ±2
	+40 °C	-2.94	-0.01	0.83	-0.01	0.72	0.01	< ±2
	+50 °C	-2.85	-0.01	-2.11	-0.01	0.94	0.01	< ±2
85% rated (-40 VDC)	+20 °C	-2.86	-0.01	-1.99	-0.01	0.95	0.01	< ±2
115% rated (-60 VDC)	+20 °C	-2.63	-0.01	-1.83	-0.01	0.86	0.01	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
Test mode of 16QAM 1/2								
100% rated (-48 VDC)	-30 °C	2.09	-0.02	1.05	-0.02	-2.62	0.03	< ±2
	-20 °C	2.04	-0.02	-1.84	-0.02	-2.56	0.03	< ±2
	-10 °C	-1.61	-0.02	-1.82	-0.02	-2.88	0.03	< ±2
	0 °C	-1.72	-0.02	-2.19	-0.02	-2.82	0.03	< ±2
	+10 °C	-1.92	-0.02	-2.46	-0.02	-2.91	0.03	< ±2
	+20 °C	-0.26	-0.02	-2.47	-0.02	-2.85	0.03	< ±2
	+30 °C	-1.08	-0.02	-2.56	-0.02	-2.72	0.03	< ±2
	+40 °C	-2.98	-0.02	-2.78	-0.02	-2.68	0.03	< ±2
	+50 °C	-3.8	-0.02	-2.79	-0.02	-2.91	0.03	< ±2
85% rated (-40 VDC)	+20 °C	-3.62	-0.02	-2.88	-0.02	-2.64	0.03	< ±2
115% rated (-60 VDC)	+20 °C	-3.24	-0.02	-2.67	-0.02	-2.89	0.03	< ±2
Test mode of 16QAM 3/4								
100% rated (-48 VDC)	-30 °C	1.29	-0.02	-2.1	-0.02	-2.33	0.03	< ±2
	-20 °C	1.09	-0.02	-2.08	-0.02	-2.56	0.03	< ±2
	-10 °C	-2.97	-0.02	-0.39	-0.02	-2.46	0.03	< ±2
	0 °C	-2.81	-0.02	-0.98	-0.02	-2.72	0.03	< ±2
	+10 °C	-2.04	-0.02	-1.05	-0.02	-2.85	0.03	< ±2
	+20 °C	-2.79	-0.02	-1.15	-0.02	-2.92	0.03	< ±2
	+30 °C	-2.43	-0.02	-1.06	-0.02	-2.83	0.03	< ±2
	+40 °C	-2.85	-0.02	-1.52	-0.02	-2.76	0.03	< ±2
	+50 °C	-2.65	-0.02	-1.18	-0.02	-2.84	0.03	< ±2
85% rated (-40 VDC)	+20 °C	-2.06	-0.02	-1.52	-0.02	-2.83	0.03	< ±2
115% rated (-60 VDC)	+20 °C	-2.43	-0.02	-1.44	-0.02	-2.43	0.03	< ±2
Test mode of 64QAM 1/2								
100% rated (-48 VDC)	-30 °C	-0.65	-0.03	1.56	-0.03	-2.12	0.04	< ±2
	-20 °C	-1.02	-0.03	1.83	-0.03	-2.62	0.04	< ±2
	-10 °C	-2.83	-0.03	2.23	-0.03	-2.51	0.04	< ±2
	0 °C	-2.91	-0.03	2.05	-0.03	-2.72	0.04	< ±2
	+10 °C	-2.86	-0.03	2.16	-0.03	-2.92	0.04	< ±2
	+20 °C	-4.49	-0.03	-0.96	-0.03	-2.83	0.04	< ±2
	+30 °C	-4.28	-0.03	-0.99	-0.03	-2.75	0.04	< ±2
	+40 °C	-4.52	-0.03	-1.03	-0.03	-2.69	0.04	< ±2
	+50 °C	-4.92	-0.03	-1.08	-0.03	-2.89	0.04	< ±2

Test environment		Measured maximum frequency error						Limit (ppm)
		Channel Bottom 2585 MHz		Channel Middle 2635 MHz		Channel Top 2685 MHz		
Voltage	Temperature	Hz	ppm	Hz	ppm	Hz	ppm	
85% rated (-40 VDC)	+20 °C	-4.12	-0.03	-1.64	-0.03	-2.64	0.04	< ±2
115% rated (-60 VDC)	+20 °C	-4.61	-0.03	-1.09	-0.03	-2.16	0.04	< ±2
Test mode of 64QAM 2/3								
100% rated (-48 VDC)	-30 °C	1.38	-0.03	-1.25	-0.03	-2.12	0.04	< ±2
	-20 °C	1.08	-0.03	-1.34	-0.03	-2.16	0.04	< ±2
	-10 °C	-2.51	-0.03	1.07	-0.03	-2.03	0.04	< ±2
	0 °C	-2.19	-0.03	1.09	-0.03	-2.09	0.04	< ±2
	+10 °C	-2.43	-0.03	1.62	-0.03	-2.62	0.04	< ±2
	+20 °C	-1.43	-0.03	-1.71	-0.03	-2.42	0.04	< ±2
	+30 °C	-1.94	-0.03	-1.82	-0.03	-2.38	0.04	< ±2
	+40 °C	-1.83	-0.03	-1.93	-0.03	-2.46	0.04	< ±2
	+50 °C	-1.74	-0.03	-1.85	-0.03	-2.26	0.04	< ±2
85% rated (-40 VDC)	+20 °C	-1.86	-0.03	-1.94	-0.03	-2.75	0.04	< ±2
115% rated (-60 VDC)	+20 °C	-1.94	-0.03	-1.68	-0.03	-1.99	0.04	< ±2
Test mode of 64QAM 3/4								
100% rated (-48 VDC)	-30 °C	2.3	-0.03	2.04	-0.03	-1.97	0.04	< ±2
	-20 °C	2.61	-0.03	2.08	-0.03	-2.06	0.04	< ±2
	-10 °C	-2.14	-0.03	-2.95	-0.03	-2.75	0.04	< ±2
	0 °C	-2.38	-0.03	-2.61	-0.03	-2.7	0.04	< ±2
	+10 °C	-2.45	-0.03	-2.34	-0.03	-2.7	0.04	< ±2
	+20 °C	2.52	-0.03	-2.02	-0.03	-2.16	0.04	< ±2
	+30 °C	2.82	-0.03	-2.1	-0.03	-2.52	0.04	< ±2
	+40 °C	2.16	-0.03	-2.34	-0.03	-2.43	0.04	< ±2
	+50 °C	2.43	-0.03	-2.51	-0.03	-2.53	0.04	< ±2
85% rated (-40 VDC)	+20 °C	2.38	-0.03	-2.16	-0.03	-2.64	0.04	< ±2
115% rated (-60 VDC)	+20 °C	2.41	-0.03	-2.34	-0.03	-1.98	0.04	< ±2

4.8.5 Conclusion

The equipment **passed** the requirement of this clause.

5 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO17025 as in Table 52.

Table 52 System measurement uncertainty

Test items		Extended uncertainty
Bandwidth	Magnitude (%)	U = 0.2%; k = 2
Band edge compliance	Disturbance power (dBm)	U = 2.0 dB; k = 2
Conducted spurious emissions at antenna terminals	Disturbance power (dBm)	U = 2.0 dB; k = 2
Frequency stability	Frequency accuracy (ppm)	U = 0.21 ppm; k = 2
Field strength of spurious radiation	ERP (dBm) (30 MHz to 1 G)	U = 4.6 dB; k = 2
	ERP (dBm) (> 1 G)	U = 2.2 dB; k = 2
Conducted output power	Power (dBm)	U = 0.39 dB; k = 2

6 Appendix

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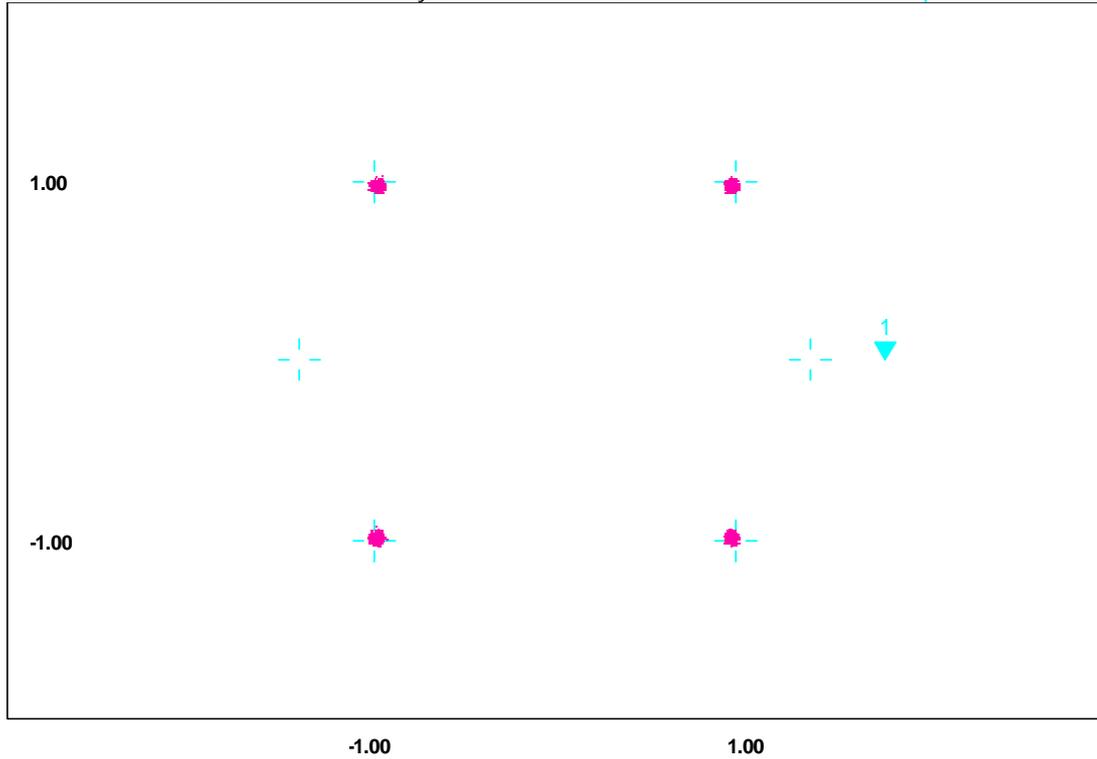
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Appendix A Modulation Characteristics

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 9.9 dBm	Ref. Level / Att: 19.9 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.0031
Inphase 1.8338



Running ...

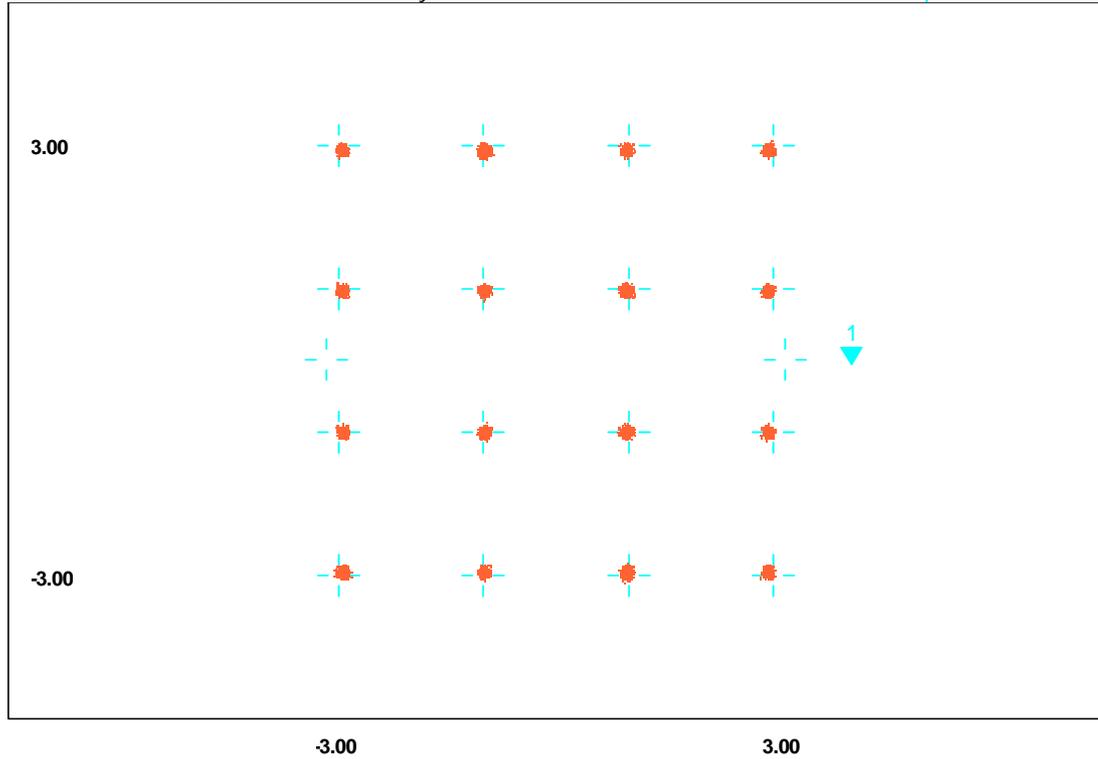
Date: 1.NOV.2007 09:35:44

1.1.3 Test Mode of 16QAM 1/2

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.551 GHz	Signal Level Setting: 10 dBm	Ref. Level / Att: 20 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.0787
Inphase 4.0899



Running ...

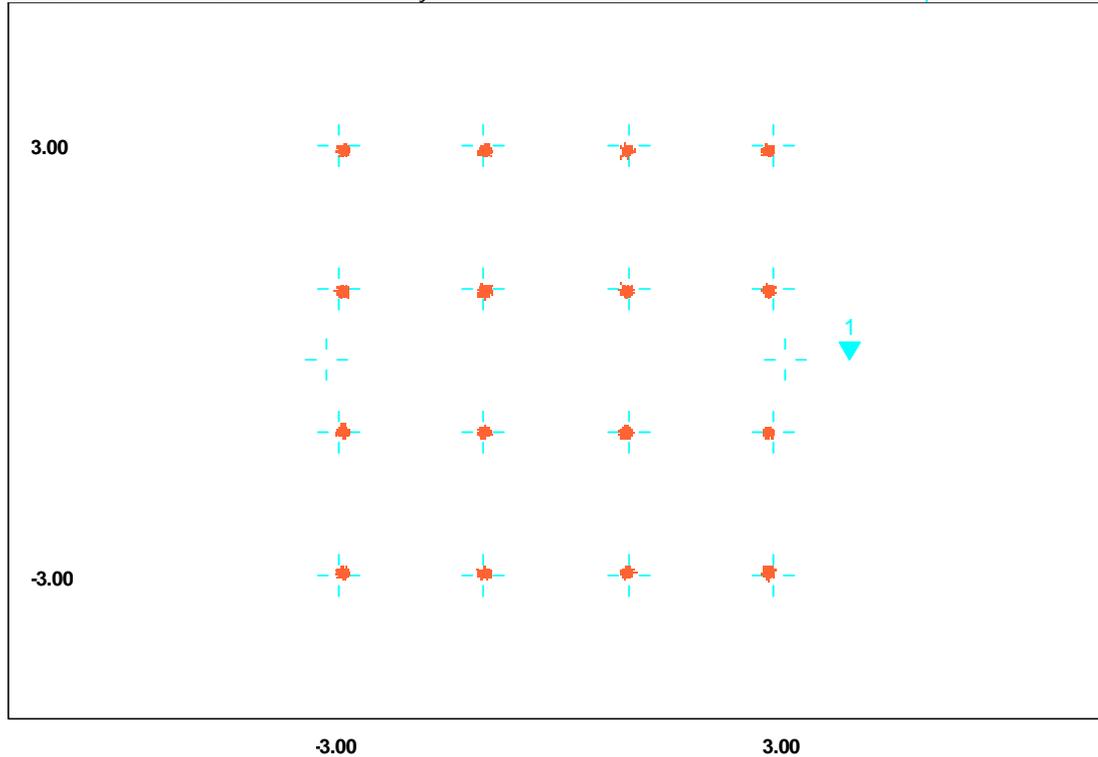
Date: 1.NOV.2007 09:47:18

1.1.4 Test Mode of 16QAM 3/4

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.551 GHz	Signal Level Setting: 10 dBm	Ref. Level / Att: 20 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.0062
Inphase 4.0714



Running ...

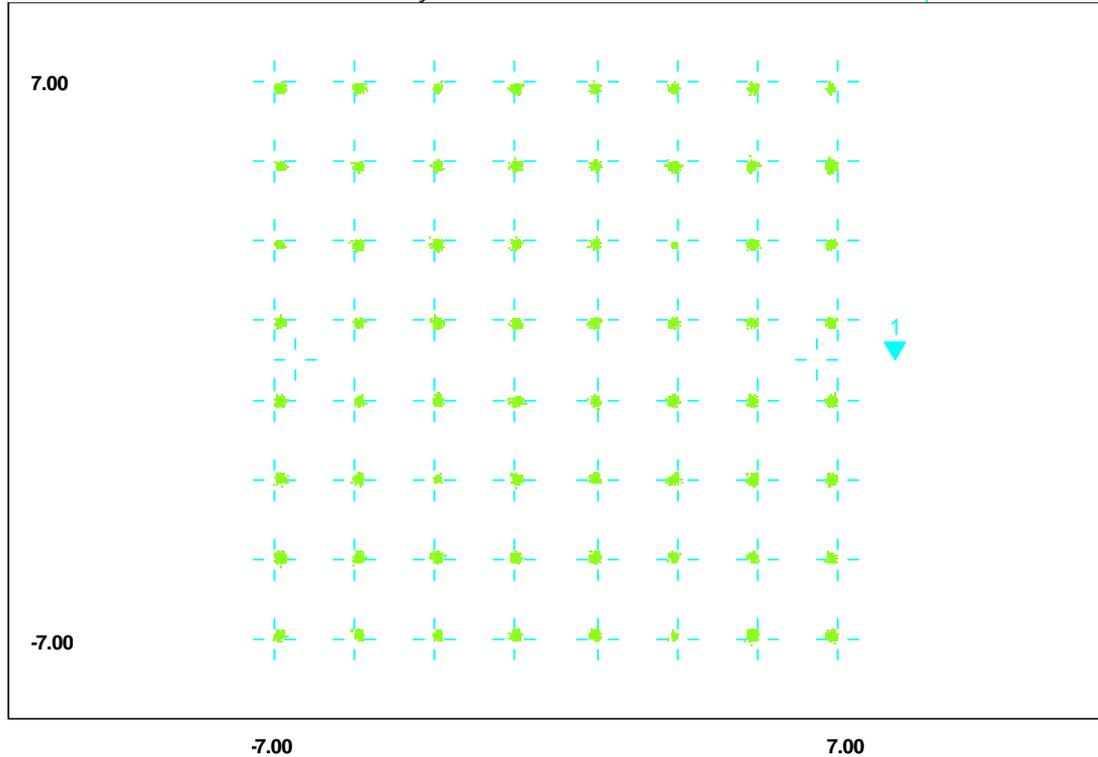
Date: 1.NOV.2007 09:49:42

1.1.5 Test Mode of 64QAM 1/2

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 9.4 dBm	Ref. Level / Att: 19.4 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0199
Inphase 8.4609



Running ...

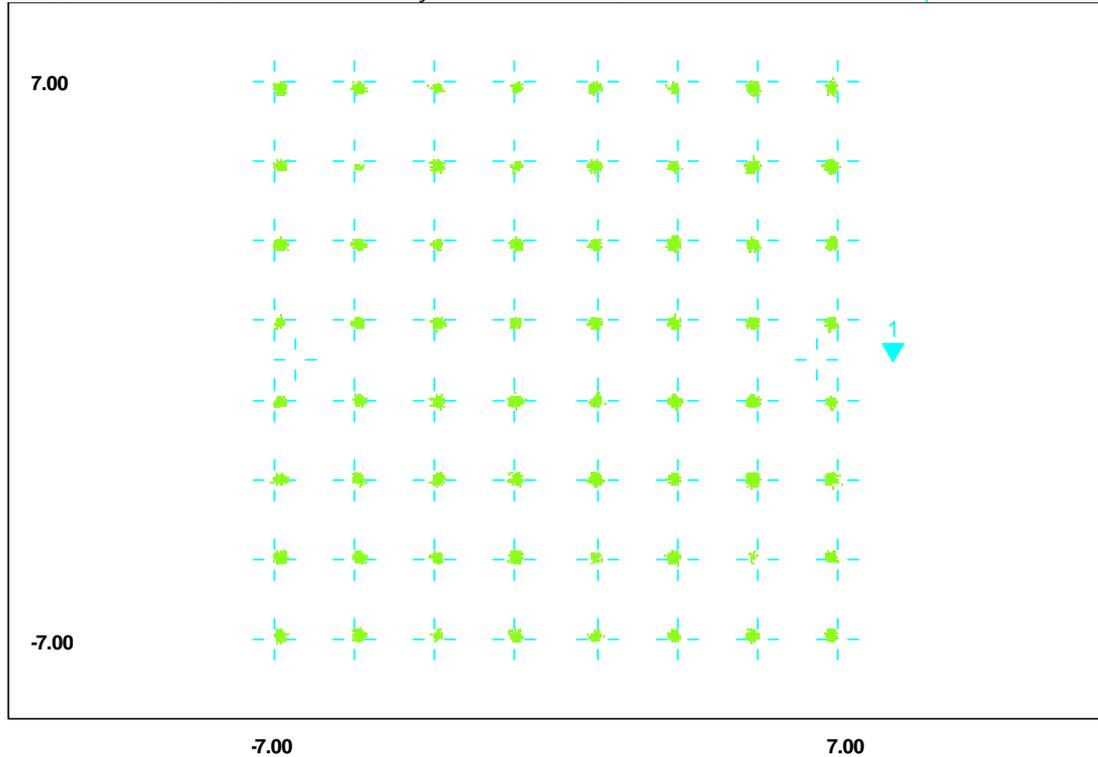
Date: 1.NOV.2007 10:02:51

1.1.6 Test Mode of 64QAM 2/3

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 9.4 dBm	Ref. Level / Att: 19.4 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature -0.028
Inphase 8.3912



Running ...

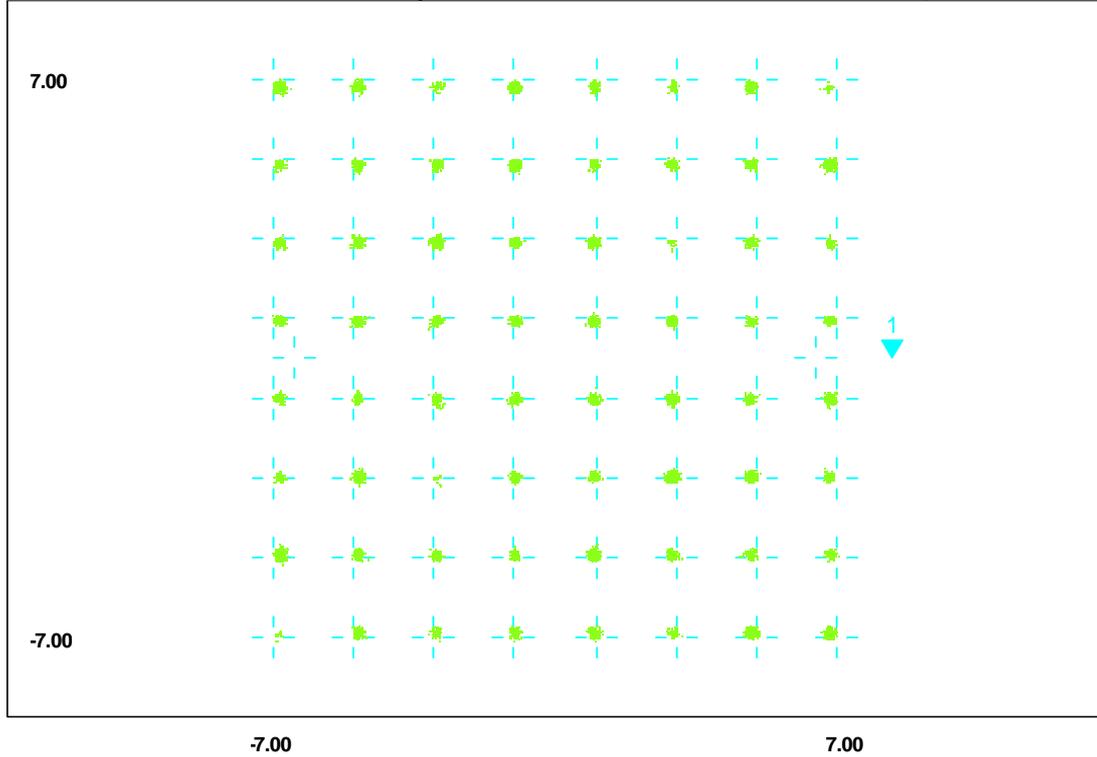
Date: 1.NOV.2007 10:05:50

1.1.7 Test Mode of 64QAM 3/4

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 8.8 dBm	Ref. Level / Att: 18.8 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature -0.012
Inphase 8.4202

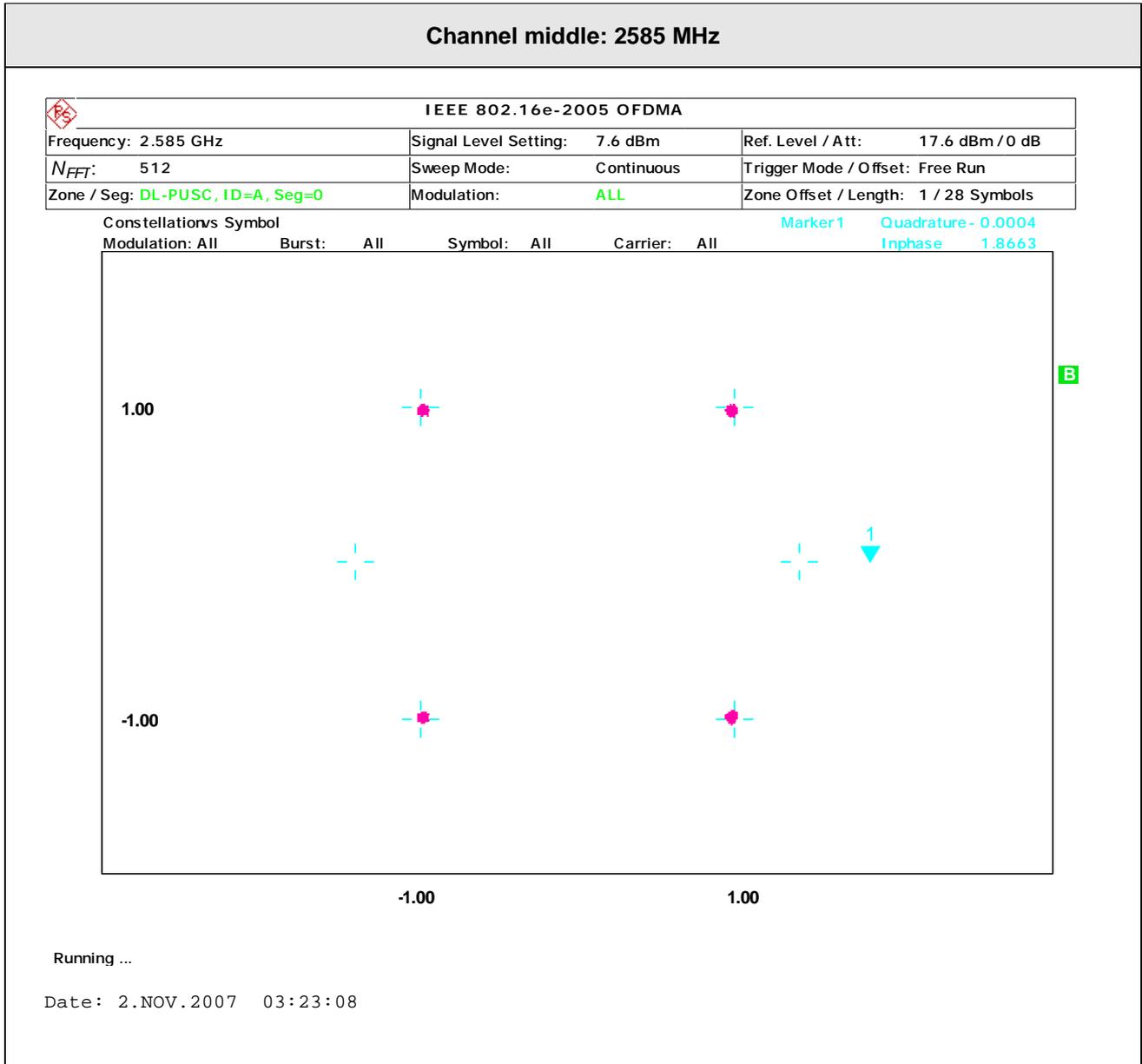


Running ...

Date: 1.NOV.2007 10:11:20

1.2 2.5 GHz middle block

1.2.1 Test Mode of QPSK 1/2

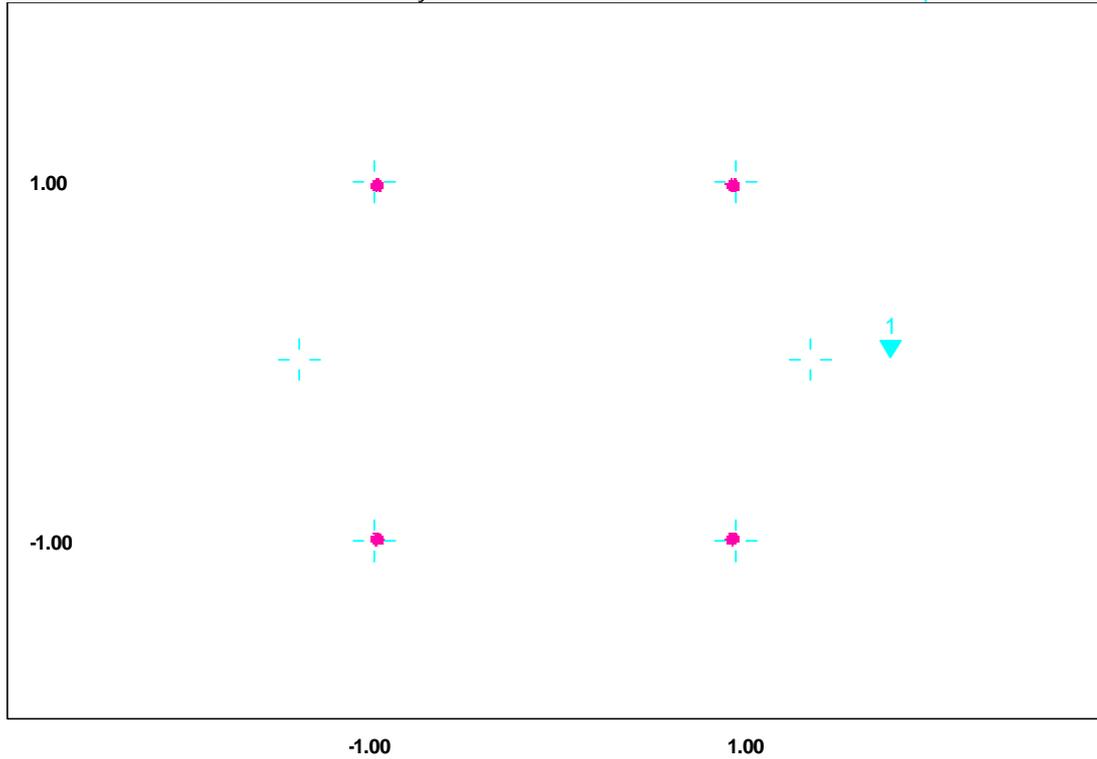


1.2.2 Test Mode of QPSK 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.585 GHz	Signal Level Setting: 8 dBm	Ref. Level / Att: 18 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0074
Inphase 1.8595



Running ...

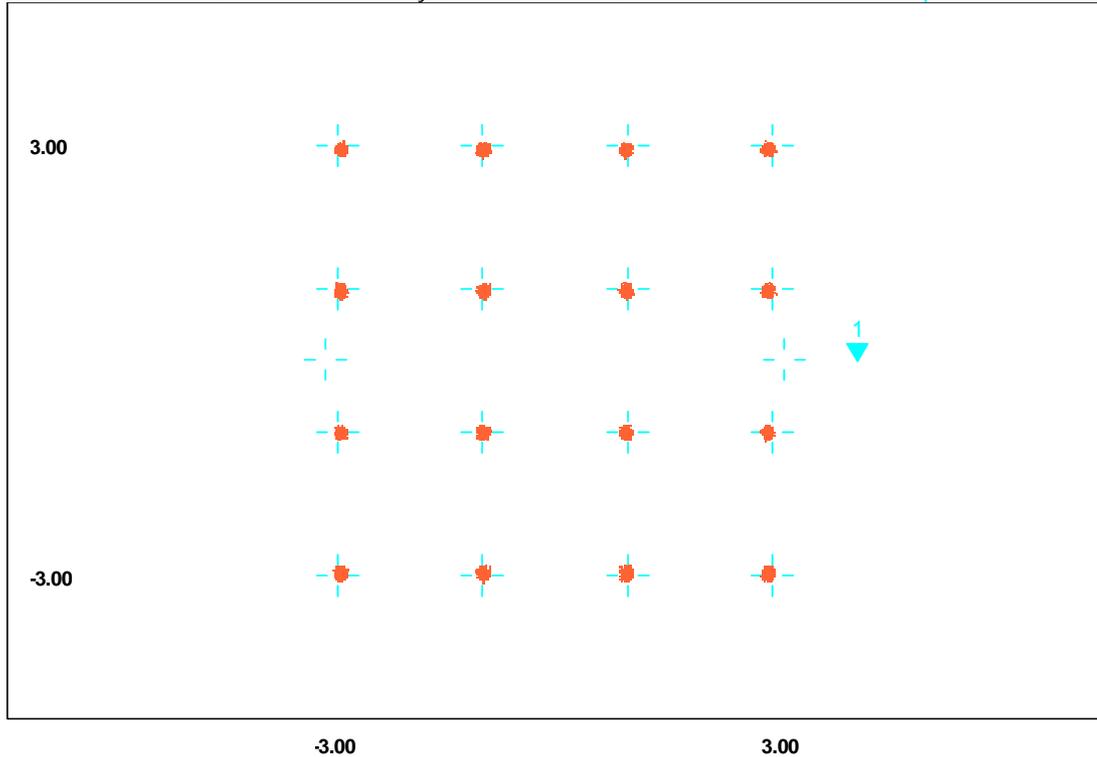
Date: 2.NOV.2007 03:28:06

1.2.3 Test Mode of 16QAM 1/2

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 8.1 dBm	Ref. Level / Att: 18.1 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.0267
Inphase 4.1824



Running ...

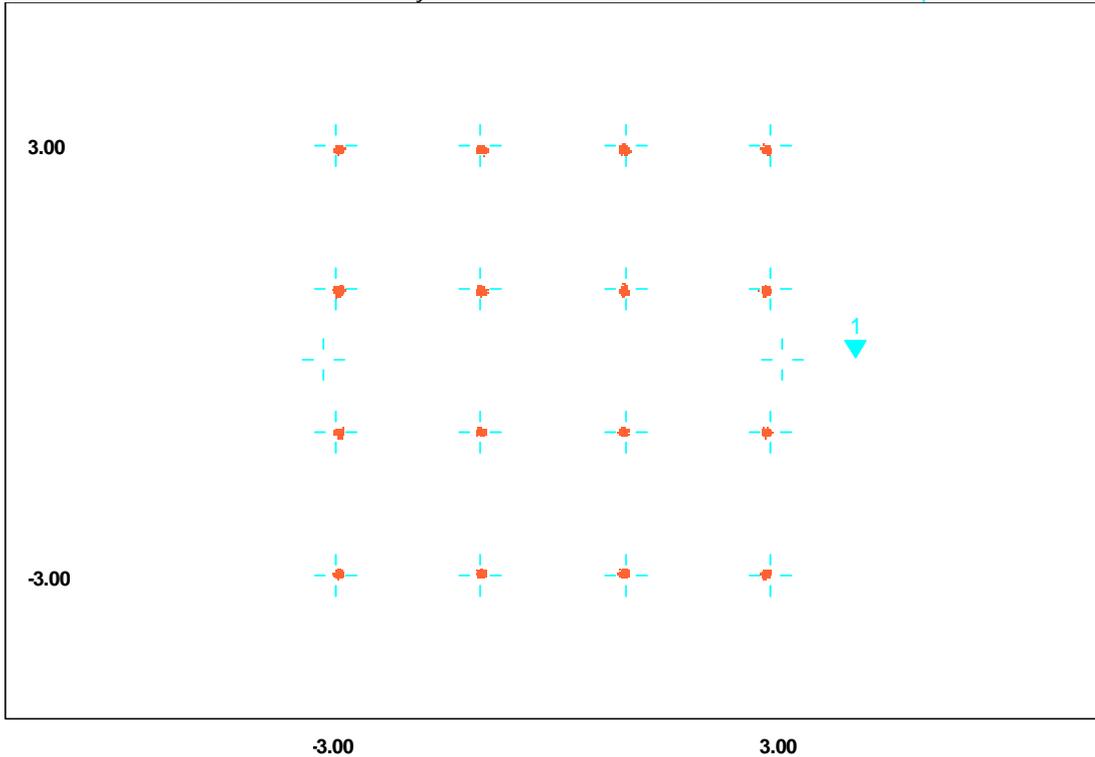
Date: 2.NOV.2007 03:33:55

1.2.4 Test Mode of 16QAM 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.9 dBm	Ref. Level / Att: 16.9 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0169
Inphase 4.1798



Running ...

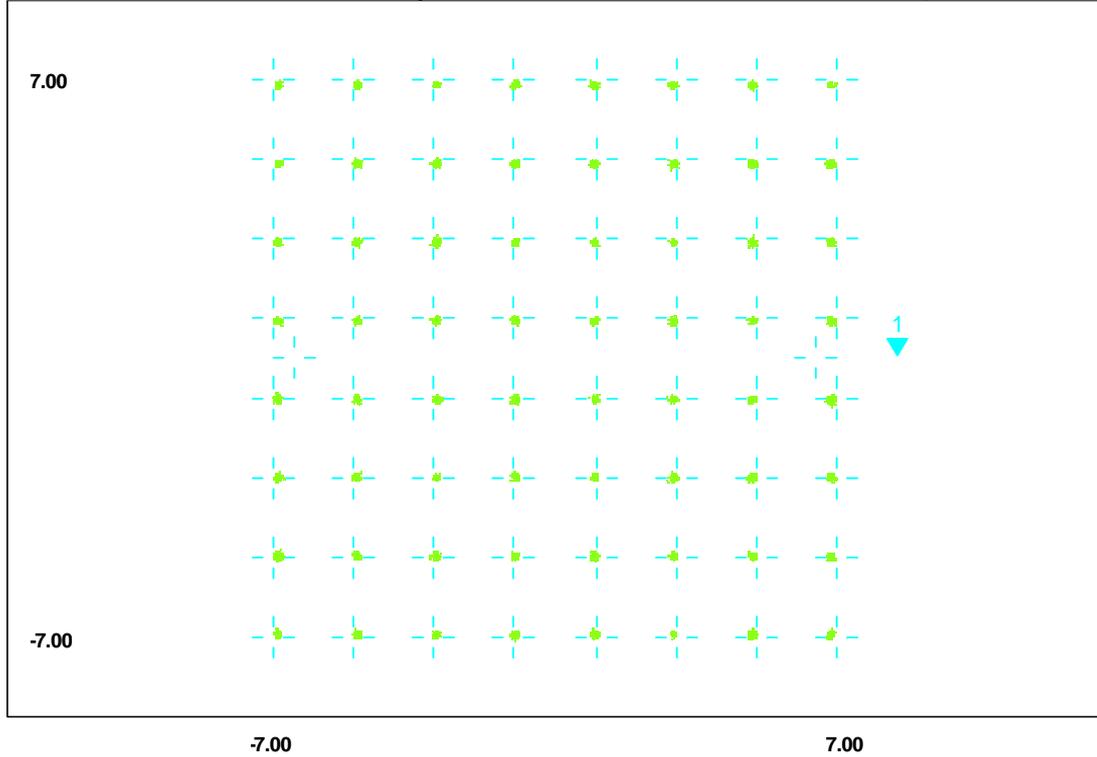
Date: 2.NOV.2007 03:37:18

1.2.5 Test Mode of 64QAM 1/2

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.6 dBm	Ref. Level / Att: 16.6 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0228
Inphase 8.5218



Running ...

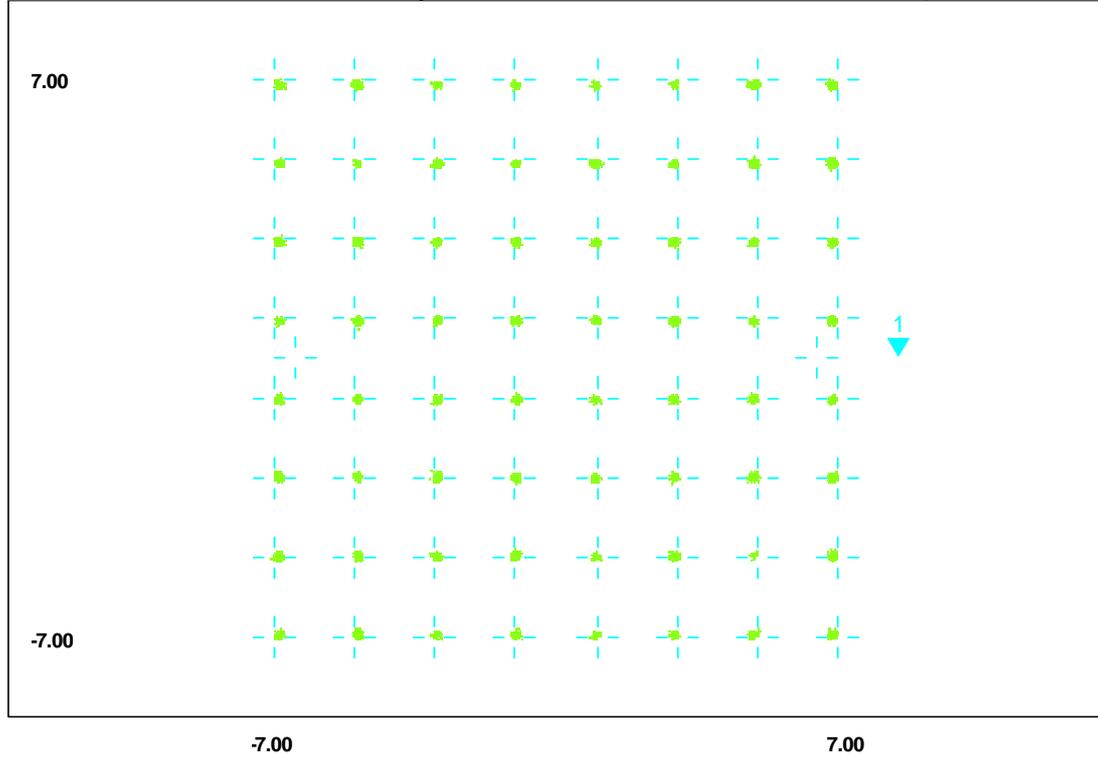
Date: 2.NOV.2007 03:42:12

1.2.6 Test Mode of 64QAM 2/3

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 8.1 dBm	Ref. Level / Att: 18.1 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0373
Inphase 8.5304



Running ...

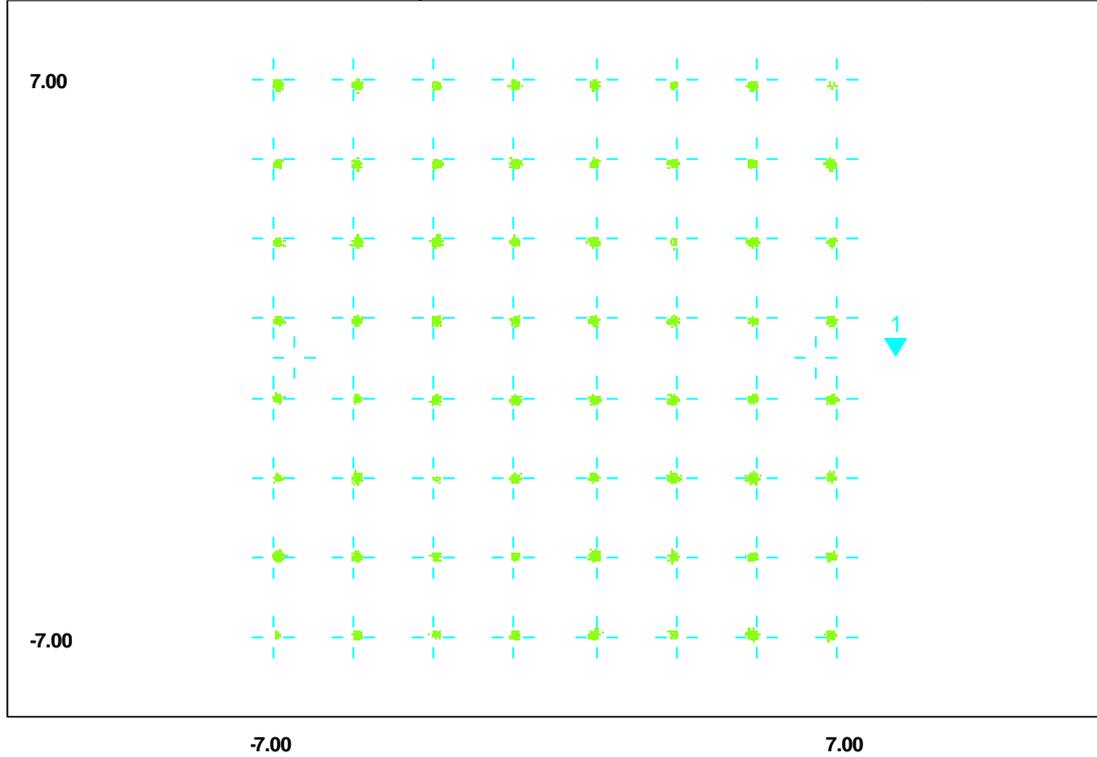
Date: 2.NOV.2007 03:44:33

1.2.7 Test Mode of 64QAM 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 8.2 dBm	Ref. Level / Att: 18.2 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0256
Inphase 8.5041

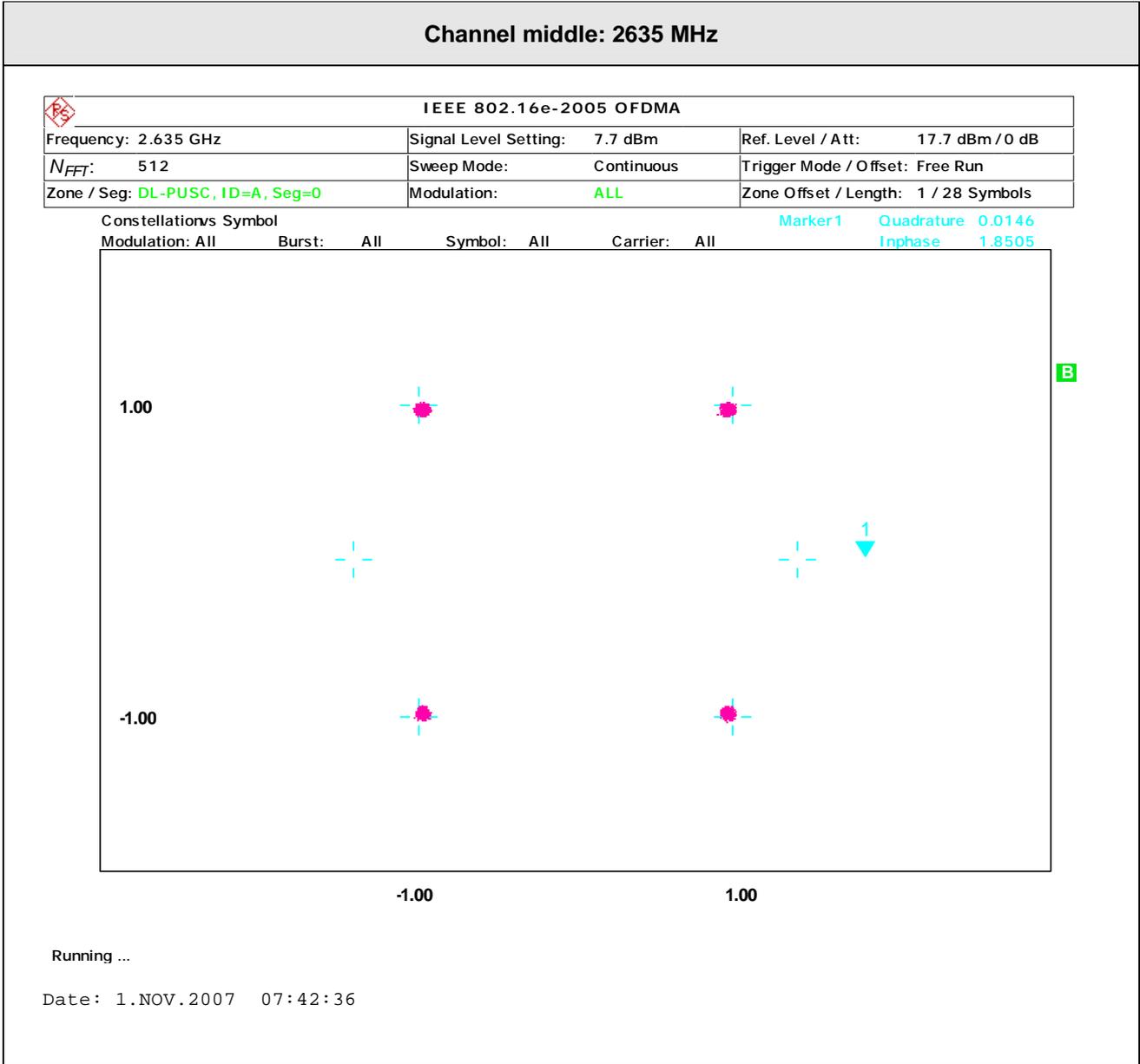


Running ...

Date: 2.NOV.2007 03:50:25

1.3 2.5 GHz high block

1.3.1 Test Mode of QPSK 1/2

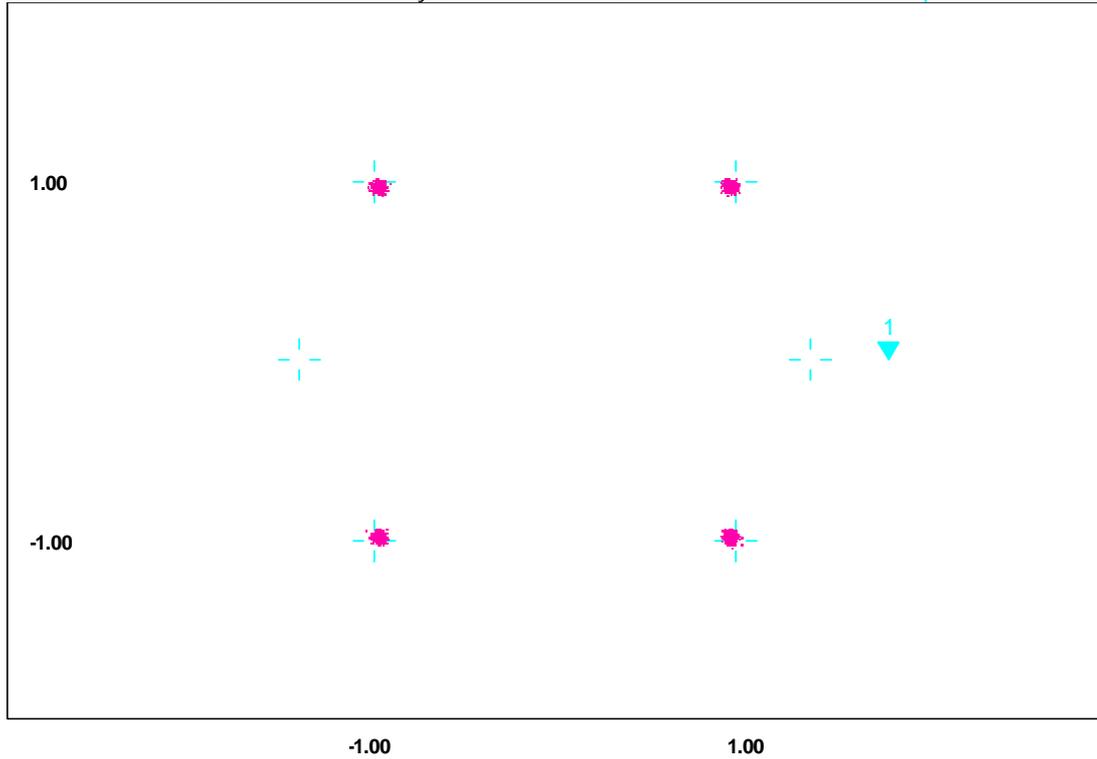


1.3.2 Test Mode of QPSK 3/4

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.0003
Inphase 1.8458



Running ...

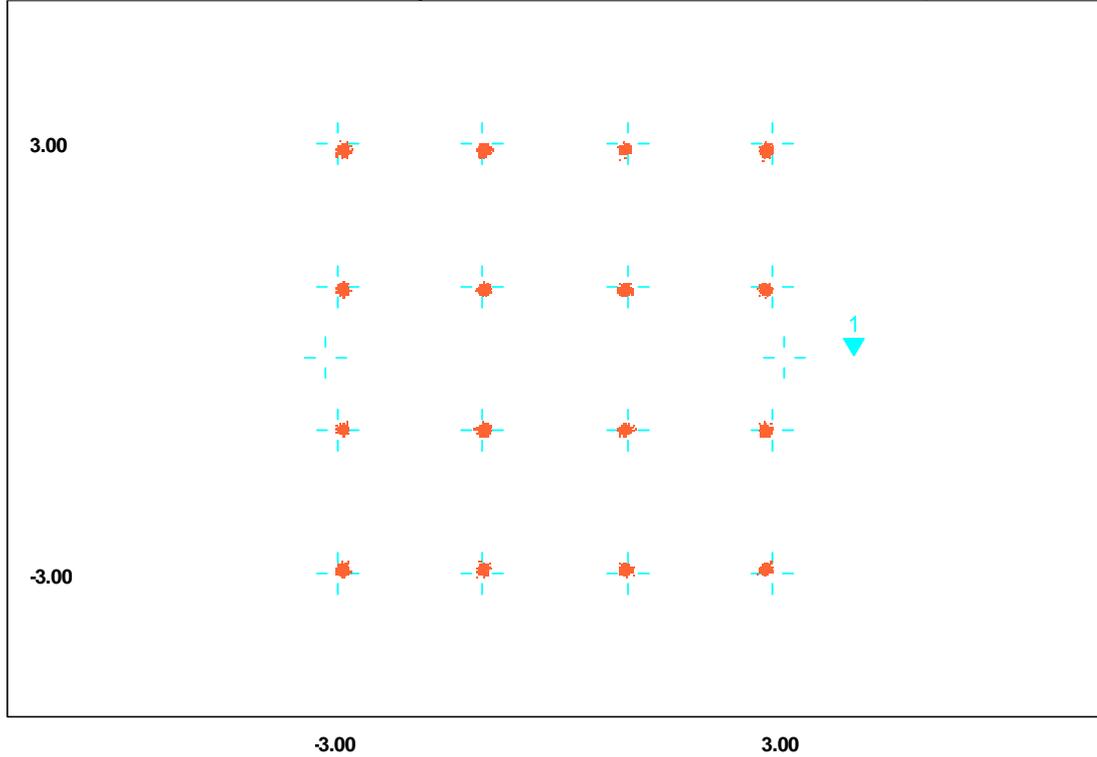
Date: 1.NOV.2007 07:44:08

1.3.3 Test Mode of 16QAM 1/2

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation vs Symbol
 Modulation: All Burst: All Symbol: All Carrier: All
 Marker1 Quadrature 0.0325
 Inphase 4.1282



Running ...

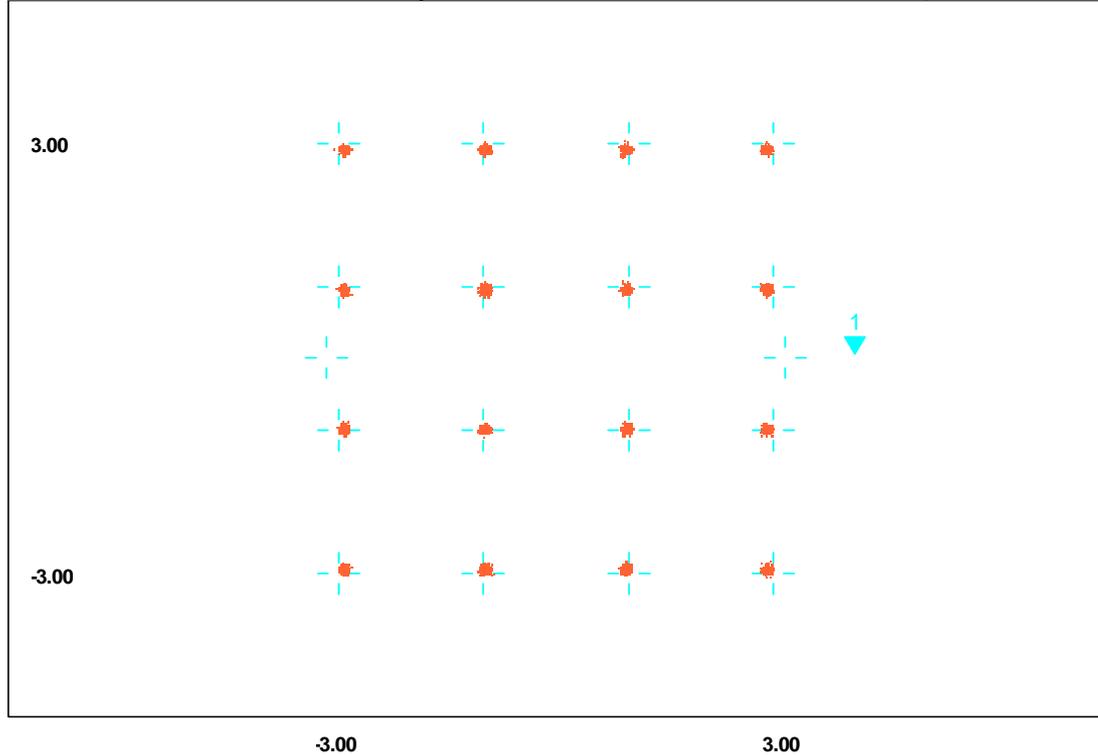
Date: 1.NOV.2007 07:46:20

1.3.4 Test Mode of 16QAM 3/4

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0371
Inphase 4.1429



Running ...

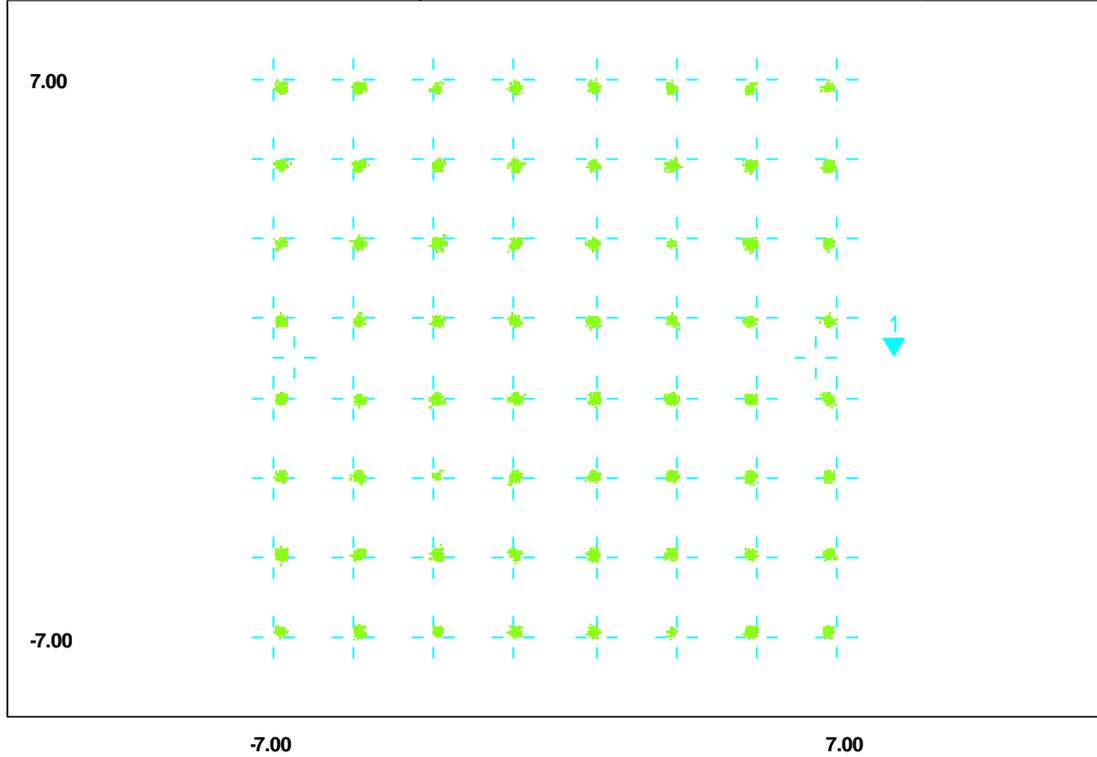
Date: 1.NOV.2007 07:48:07

1.3.5 Test Mode of 64QAM 1/2

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA		
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0352
Inphase 8.4696



Running ...

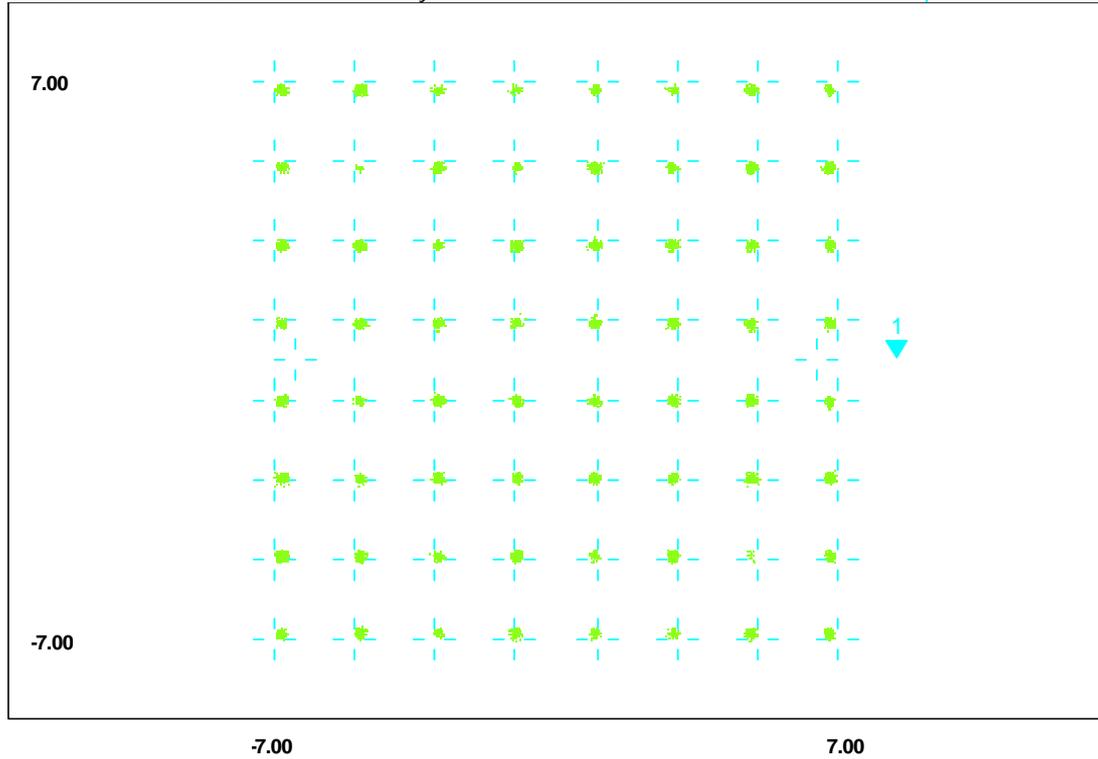
Date: 1.NOV.2007 07:50:27

1.3.6 Test Mode of 64QAM 2/3

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0448
Inphase 8.5046



Running ...

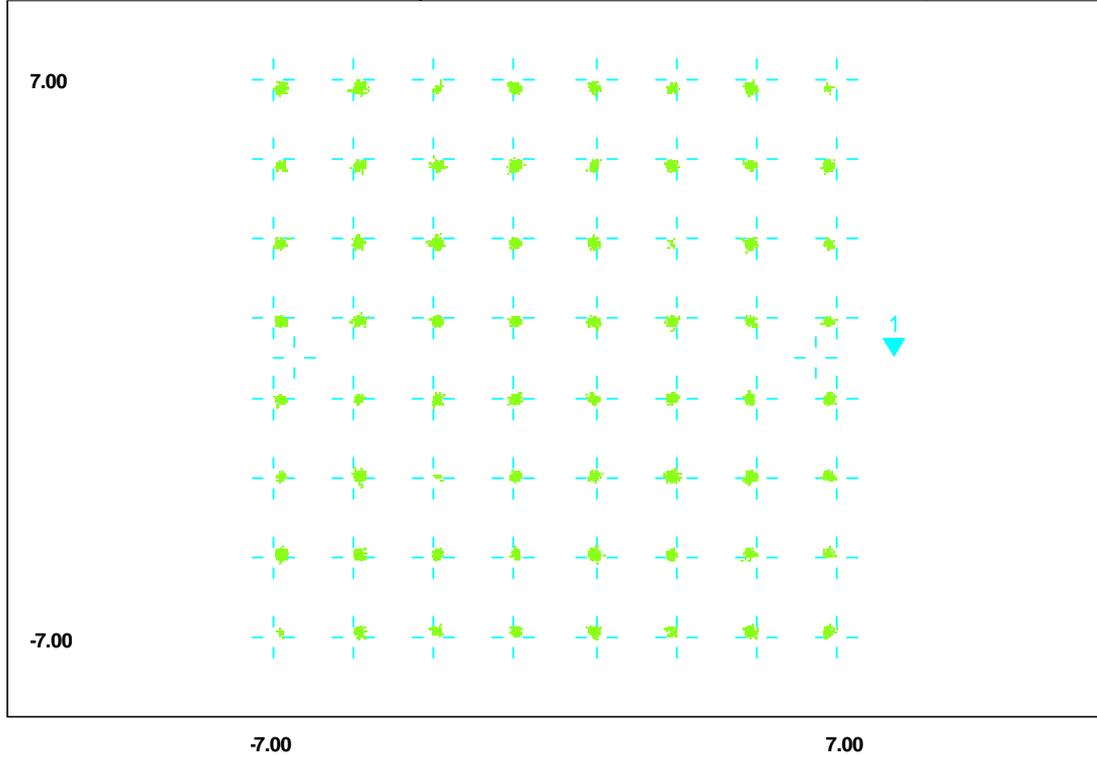
Date: 1.NOV.2007 07:52:25

1.3.7 Test Mode of 64QAM 3/4

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 7.7 dBm	Ref. Level / Att: 17.7 dBm / 0 dB	
N_{FFT} : 512	Sweep Mode: Continuous	Trigger Mode / Offset: Free Run	
Zone / Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset / Length: 1 / 28 Symbols	

Constellation/s Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0472
Inphase 8.4308



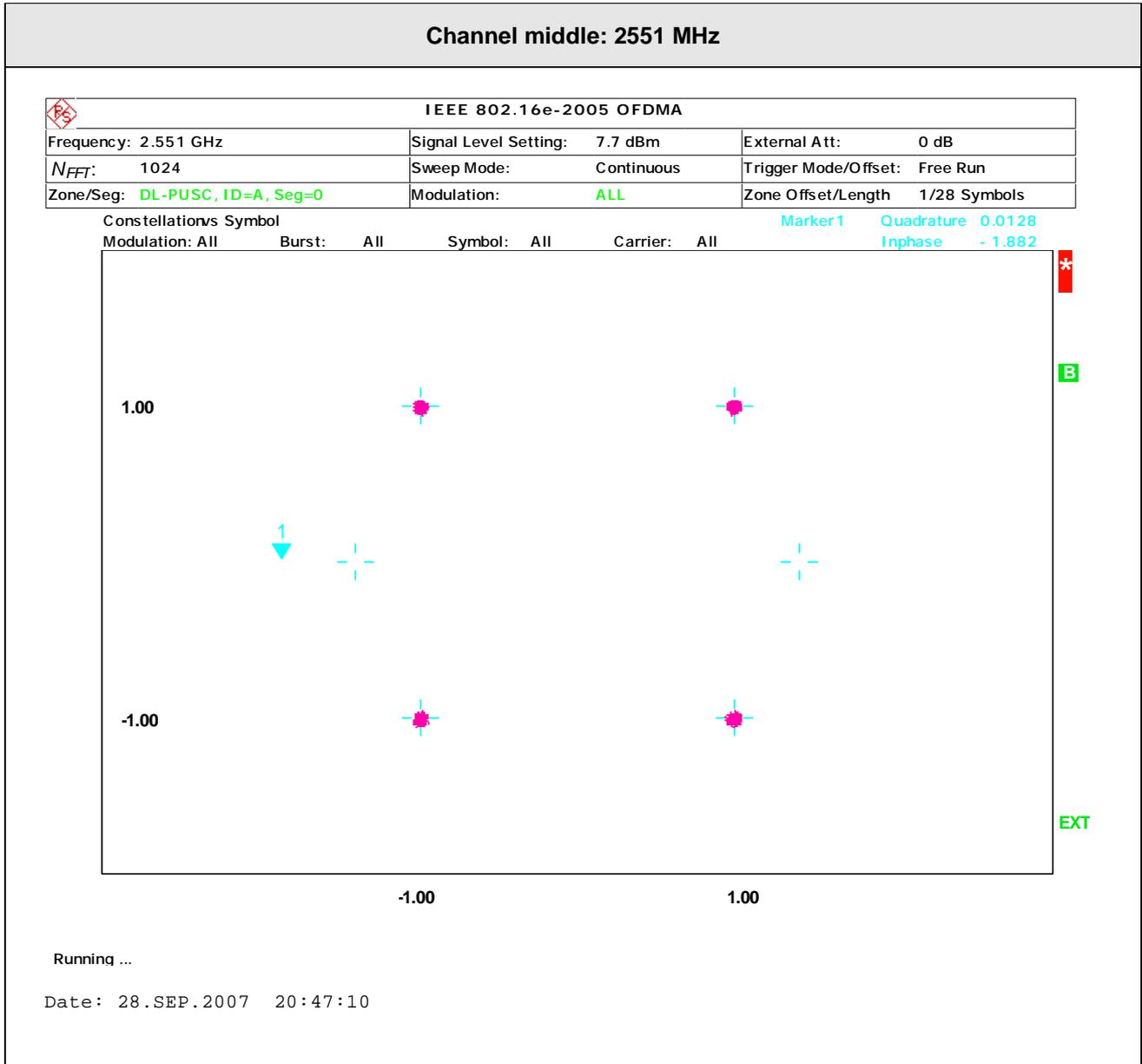
Running ...

Date: 1.NOV.2007 07:54:11

2 10 MHz Bandwidth

2.1 2.5 GHz low block

2.1.1 Test Mode of QPSK 1/2



2.1.2 Test Mode of QPSK 3/4

Channel middle: 2551 MHz

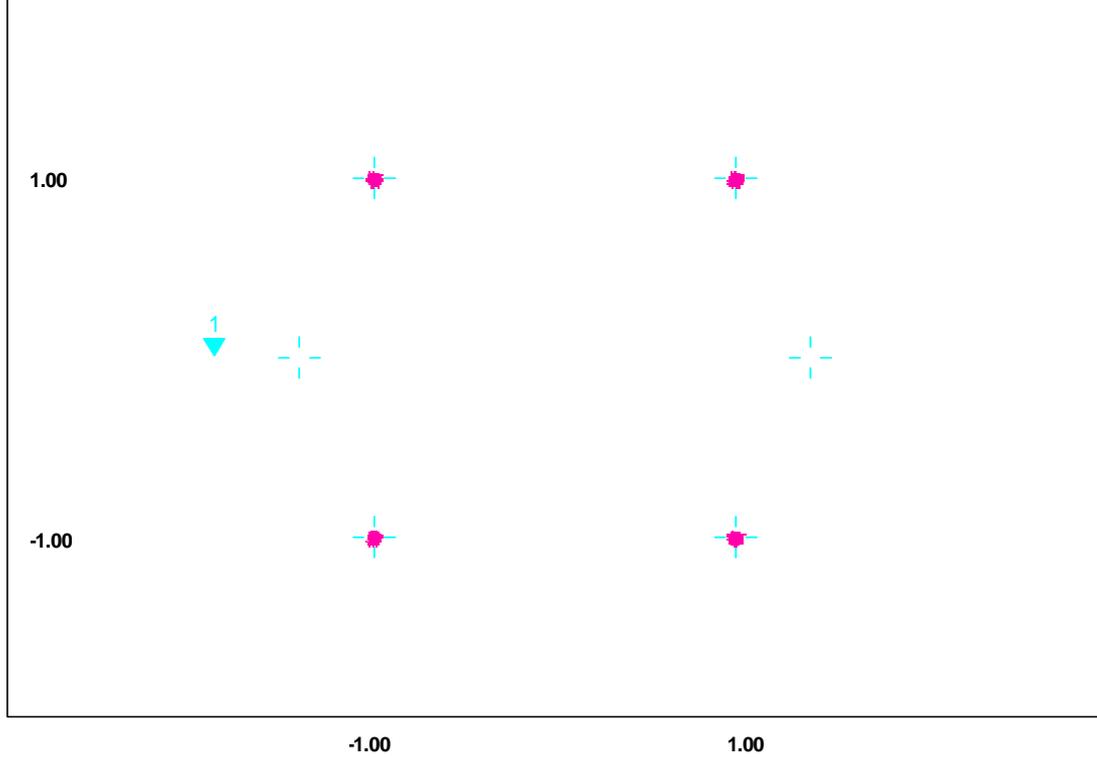
IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 7.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Marker1 Quadrature 0.0064

Modulation: All Burst: All Symbol: All Carrier: All

Inphase -1.8835



Running ...

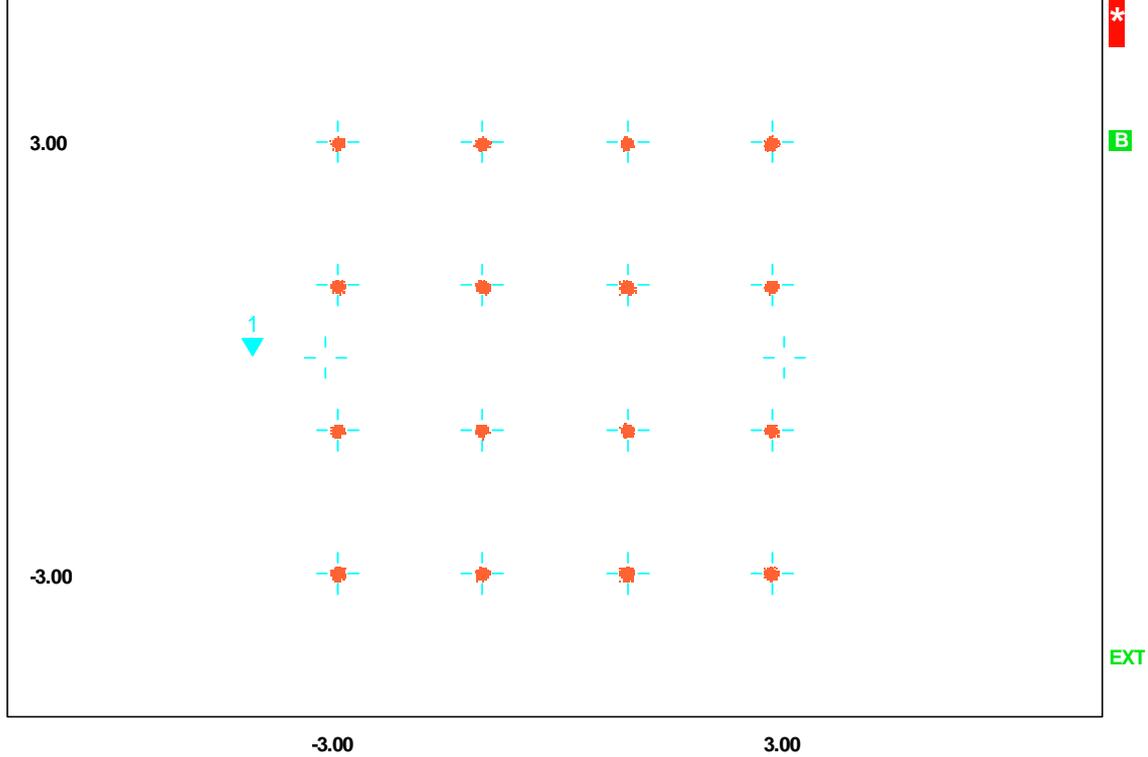
Date: 28.SEP.2007 20:31:08

2.1.3 Test Mode of 16QAM 1/2

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 7.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0108
Inphase -4.1715



Running ...

Date: 28.SEP.2007 20:32:34

2.1.4 Test Mode of 16QAM 3/4

Channel middle: 2551 MHz

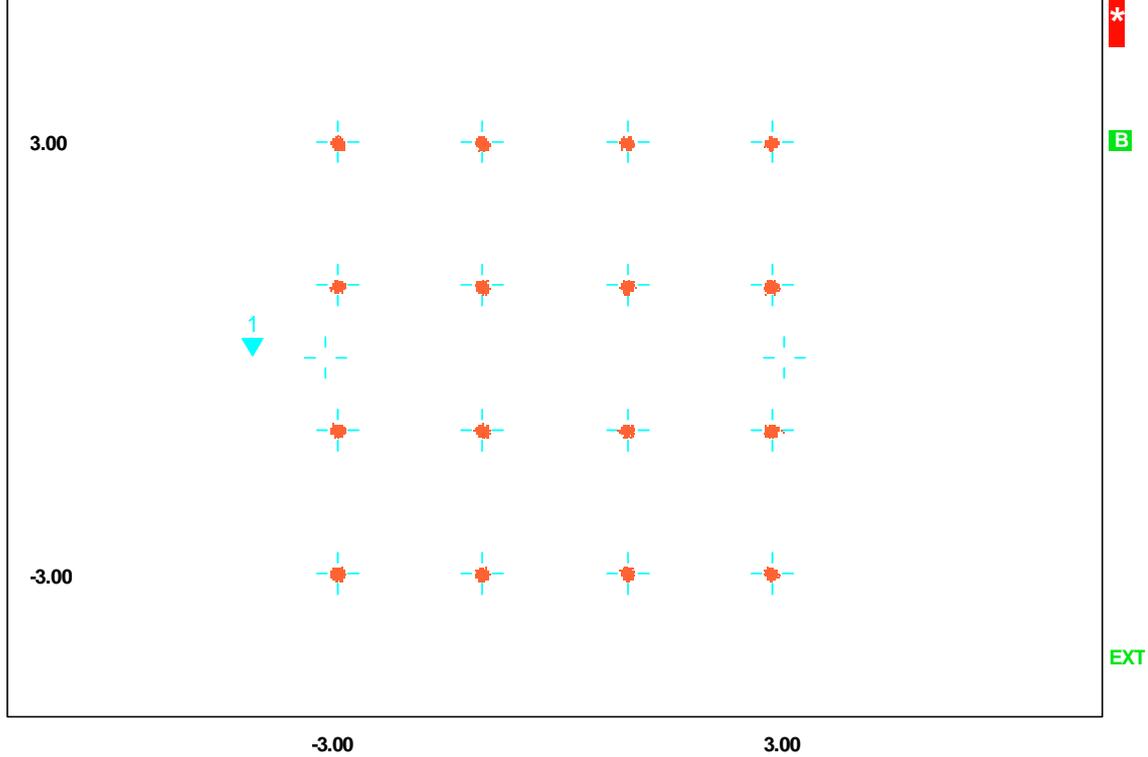
IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 7.6 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Modulation: All Burst: All Symbol: All Carrier: All

Marker1 Quadrature 0.0044

Inphase -4.1739



Running ...

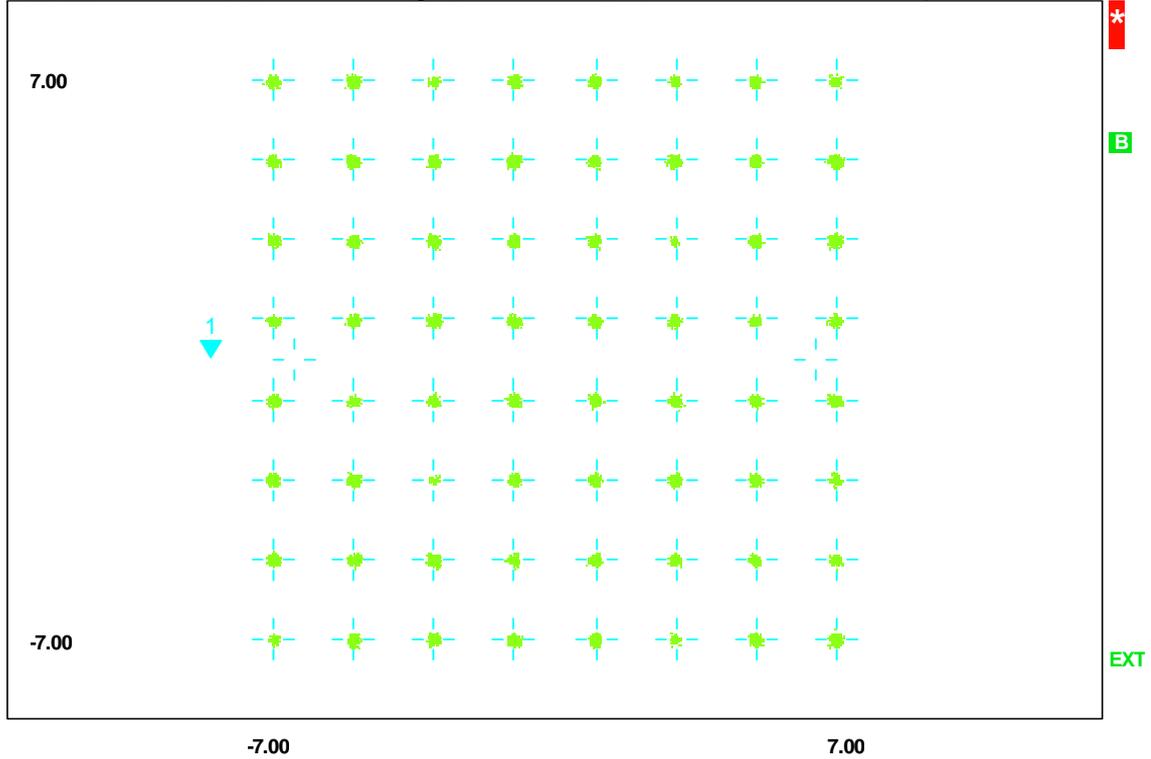
Date: 28.SEP.2007 20:36:15

2.1.5 Test Mode of 64QAM 1/2

Channel middle: 2551 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 7.3 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0395
Inphase -8.5534



Running ...

Date: 28.SEP.2007 20:39:35

2.1.6 Test Mode of 64QAM 2/3

Channel middle: 2551 MHz

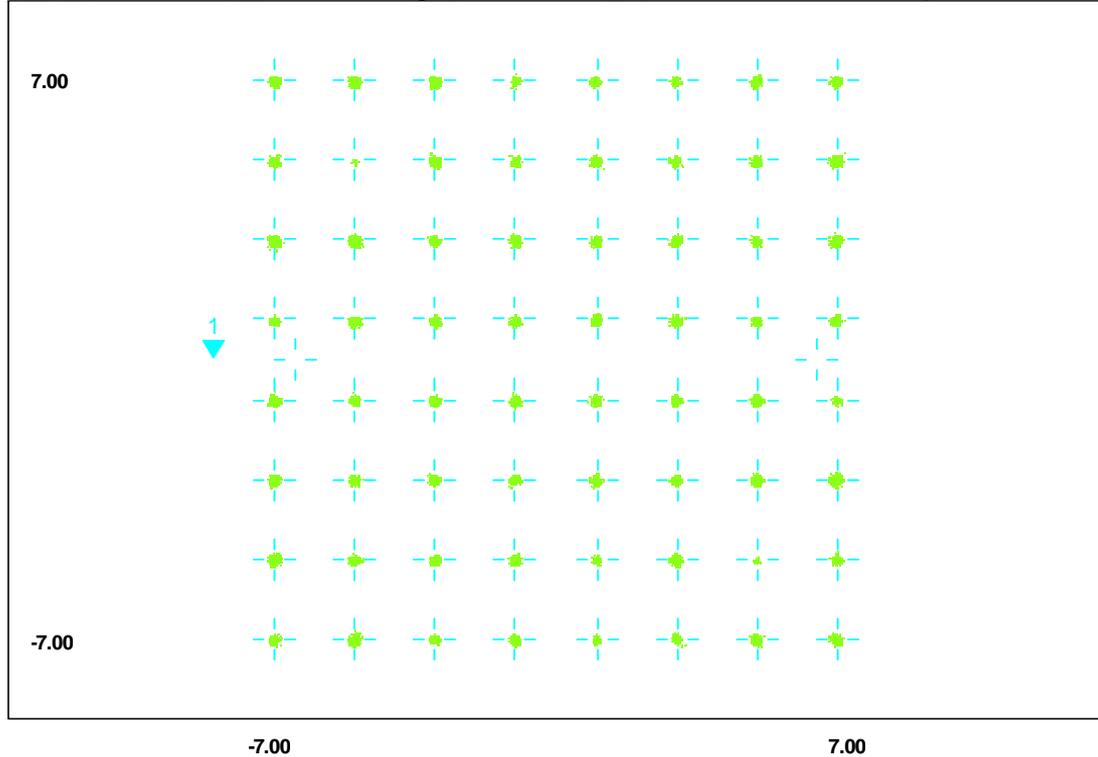
IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 6.5 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Modulation: All Burst: All Symbol: All Carrier: All

Marker1 Quadrature 0.0267

Inphase -8.5362



Running ...

Date: 28.SEP.2007 20:42:43

2.1.7 Test Mode of 64QAM 3/4

Channel middle: 2551 MHz

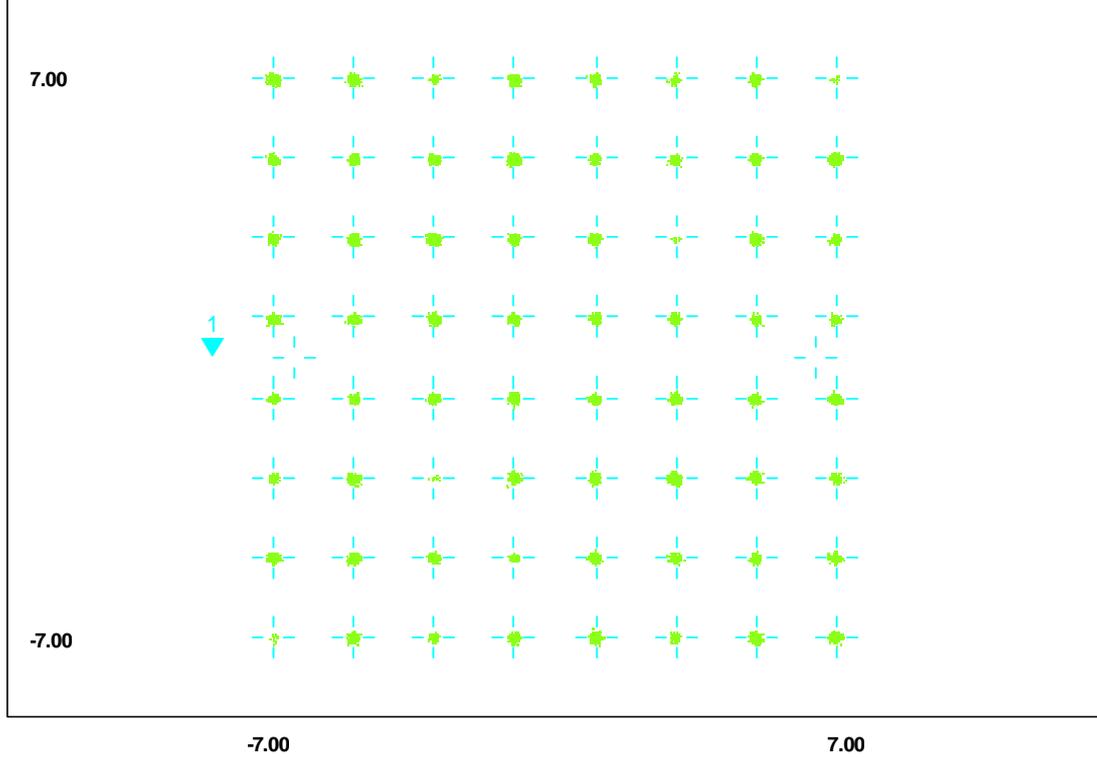
IEEE 802.16e-2005 OFDMA			
Frequency: 2.551 GHz	Signal Level Setting: 7.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Marker1 Quadrature 0.0262

Modulation: All Burst: All Symbol: All Carrier: All

Inphase -8.5199

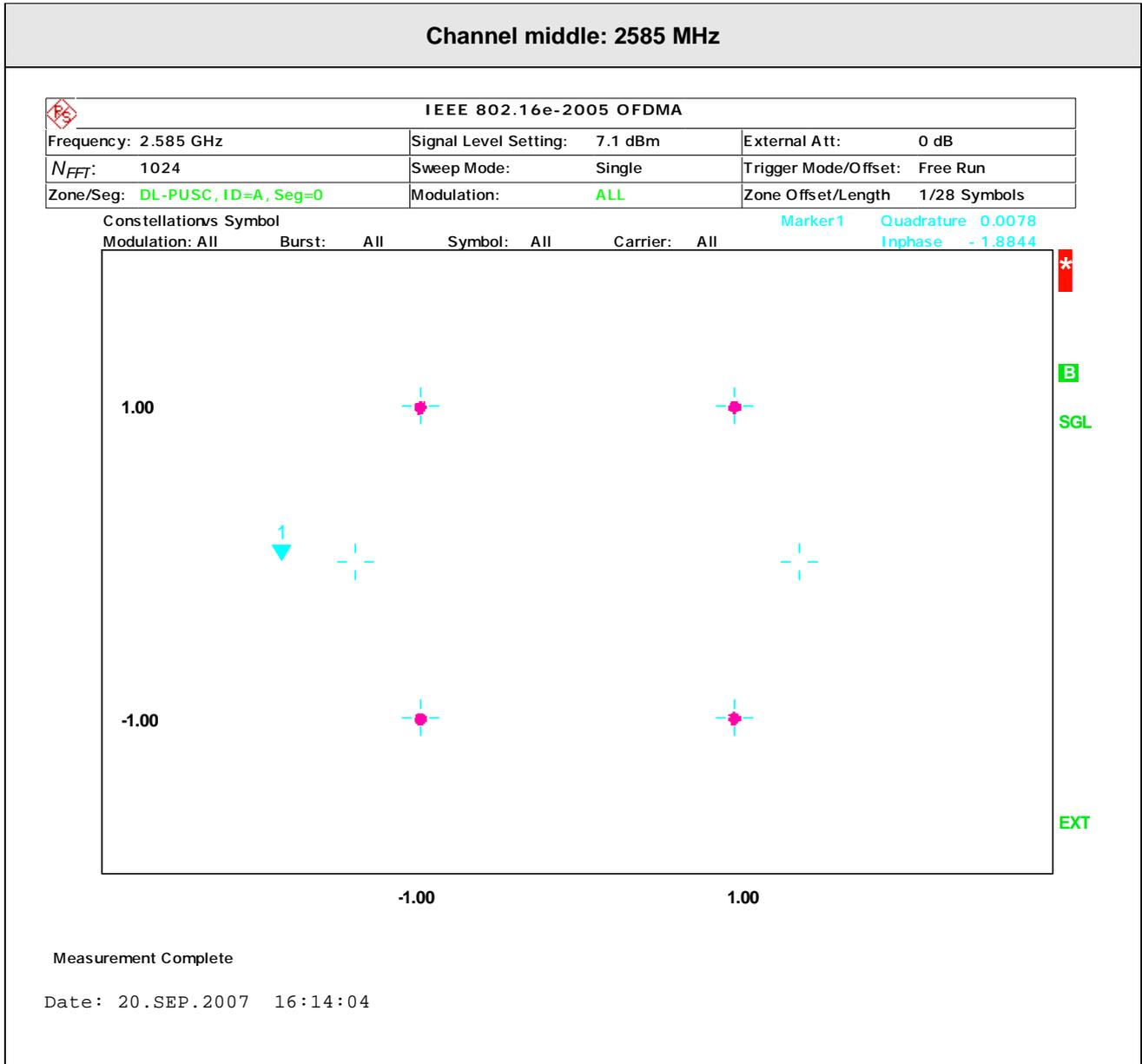


Running ...

Date: 28.SEP.2007 20:48:33

2.2 2.5 GHz middle block

2.2.1 Test Mode of QPSK 1/2



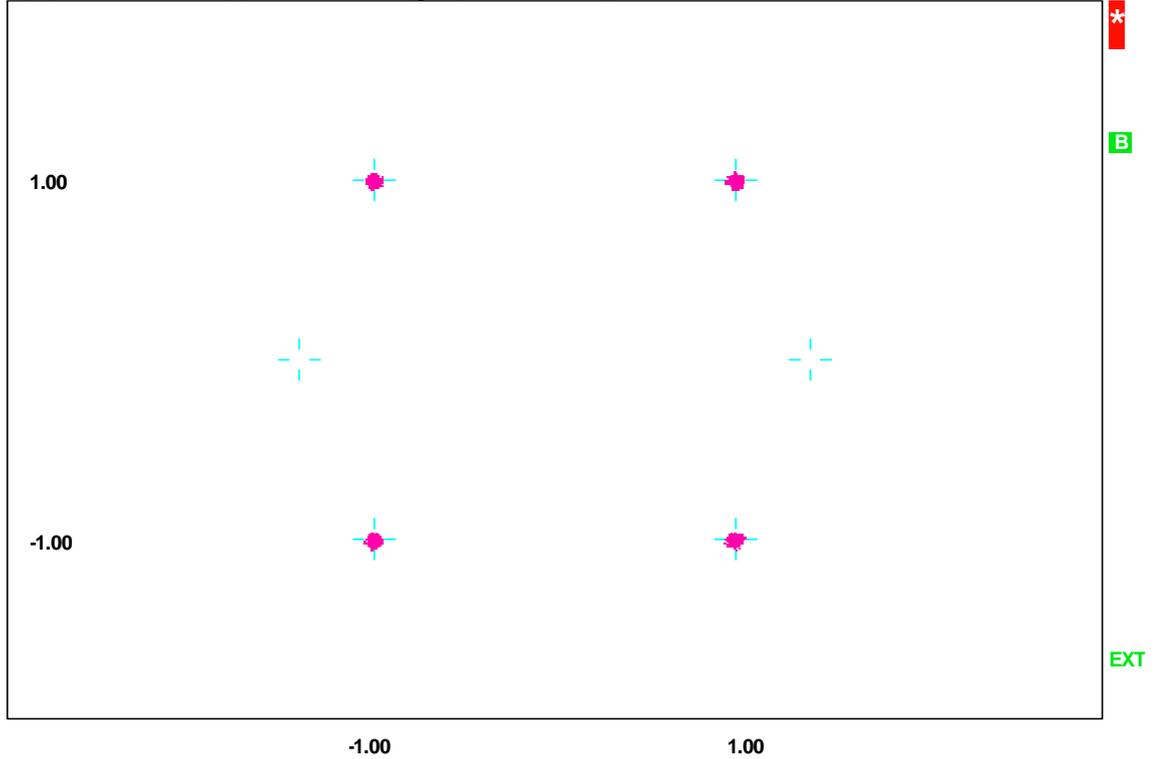
2.2.2 Test Mode of QPSK 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 7.1 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Modulation: All Burst: All Symbol: All Carrier: All



Running ...

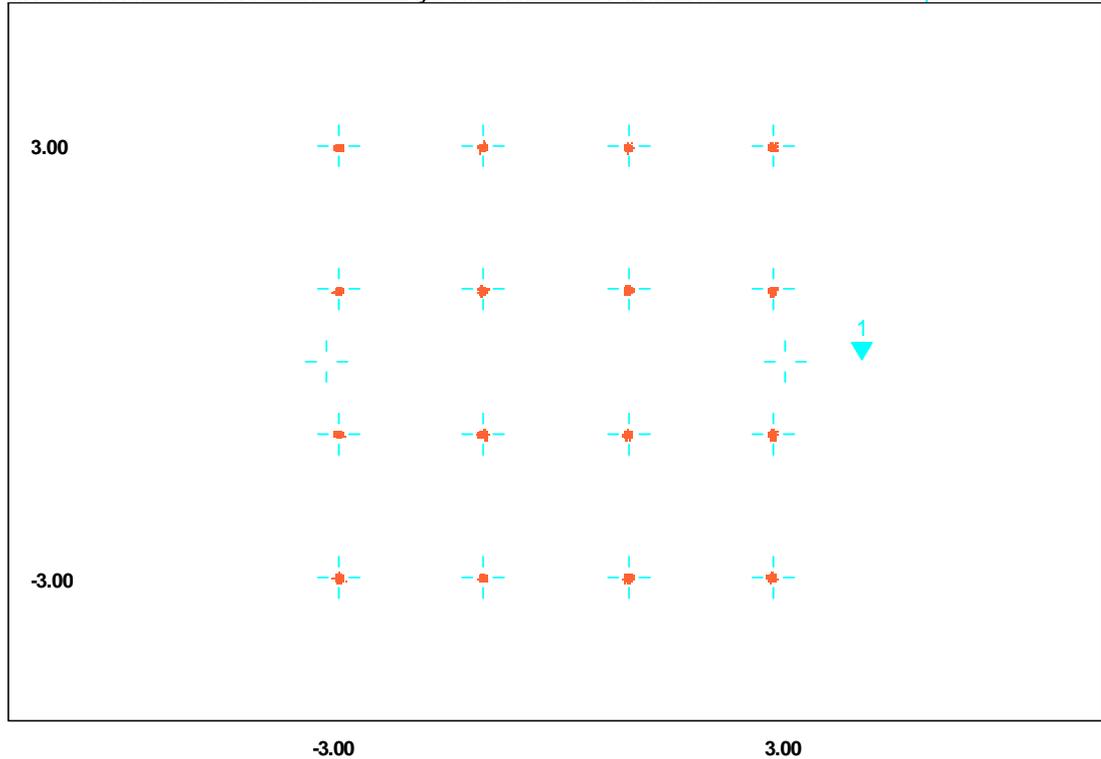
Date: 27.SEP.2007 14:35:19

2.2.3 Test Mode of 16QAM 1/2

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0062
Inphase 4.2268



Running ...

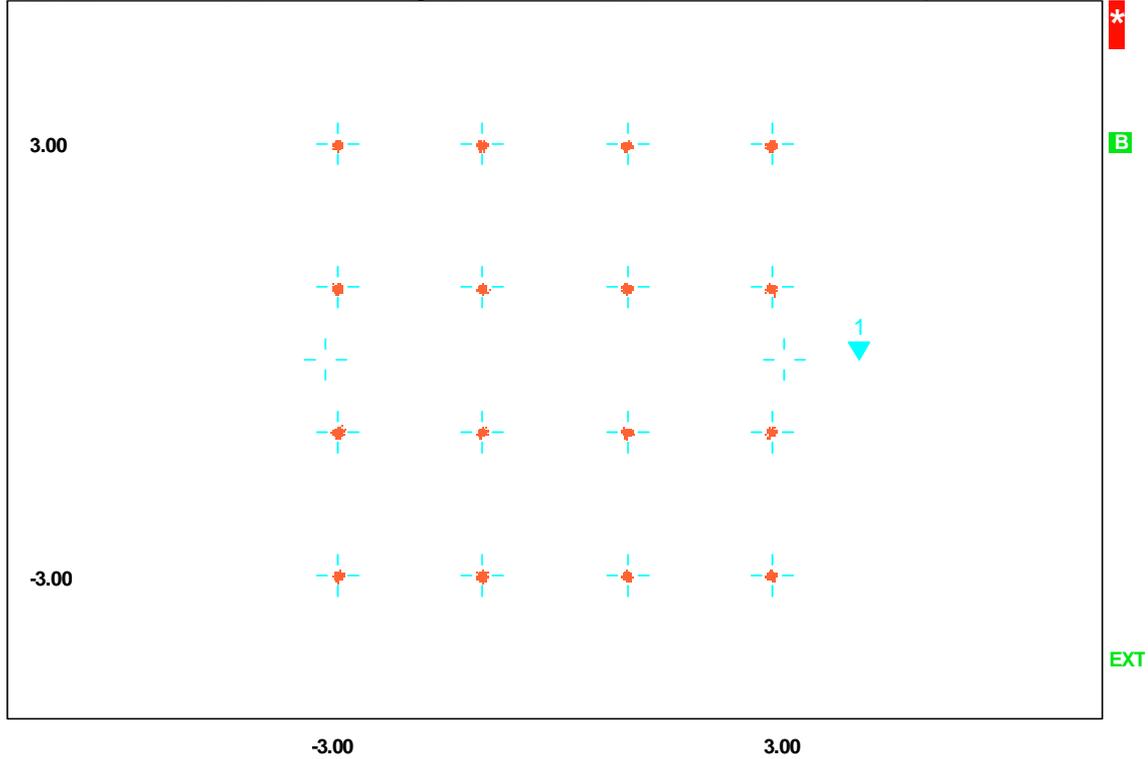
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2.2.4 Test Mode of 16QAM 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellationvs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature - 0.014
Inphase 4.2092



Running ...

Date: 20.SEP.2007 16:44:55

2.2.5 Test Mode of 64QAM 1/2

Channel middle: 2585 MHz

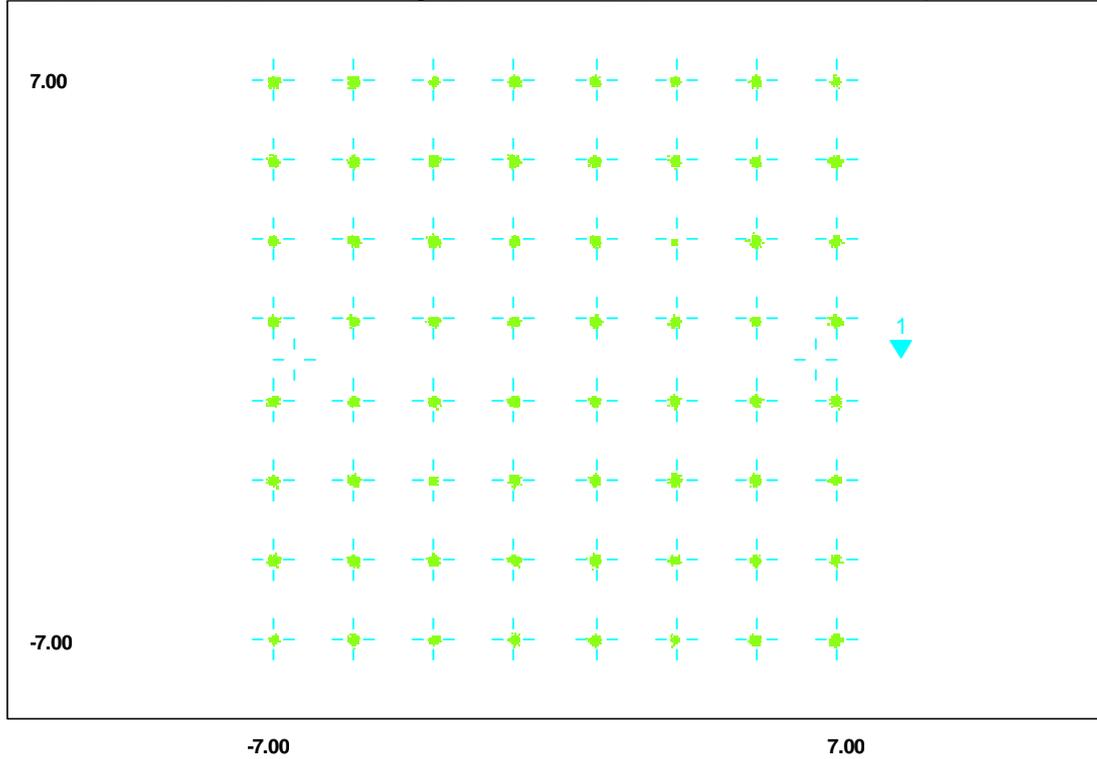
IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellationvs Symbol

Modulation: All Burst: All Symbol: All Carrier: All

Marker1 Quadrature 0.0241

Inphase 8.6174



Running ...

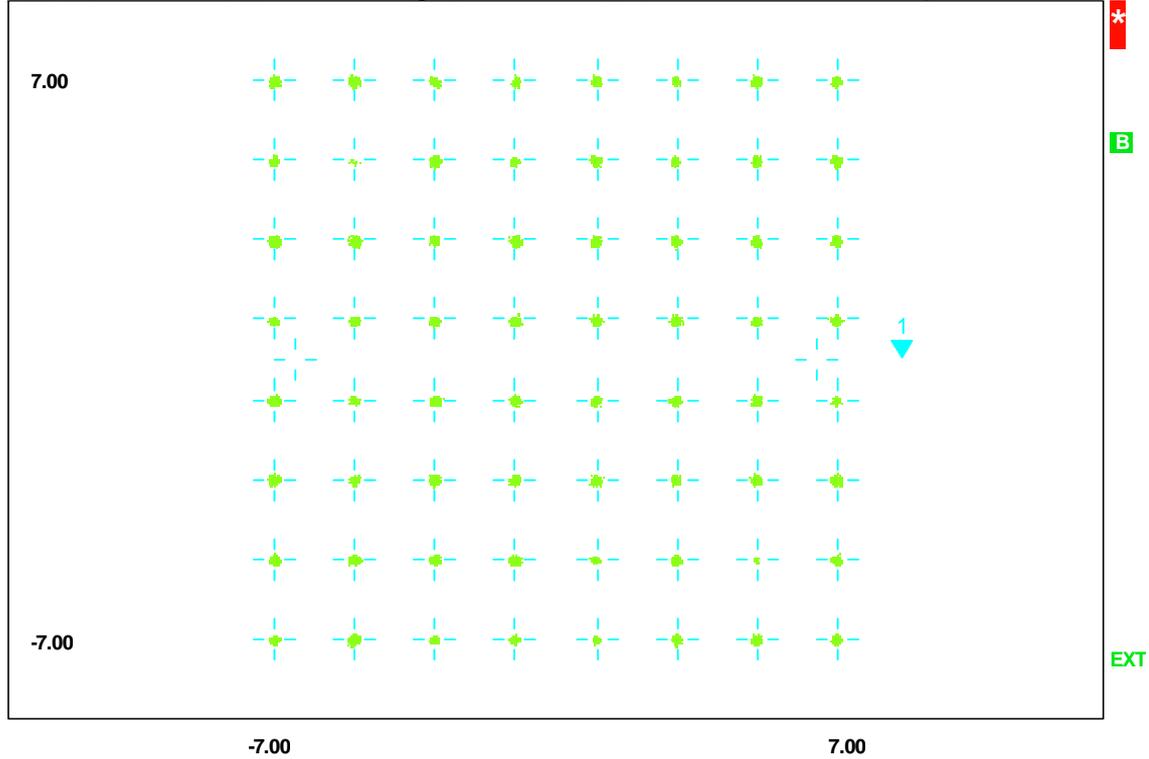
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2.2.6 Test Mode of 64QAM 2/3

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellationvs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.026
Inphase 8.5869



Running ...

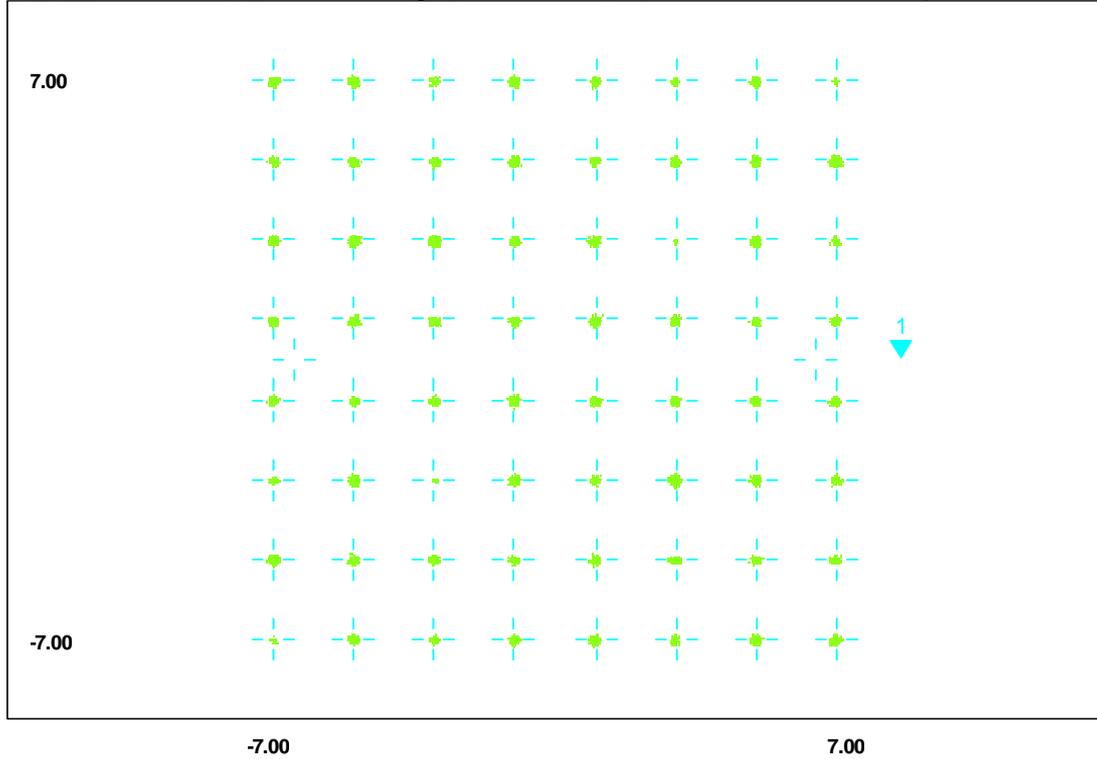
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2.2.7 Test Mode of 64QAM 3/4

Channel middle: 2585 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.585 GHz	Signal Level Setting: 6.7 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellationvs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0233
Inphase 8.622



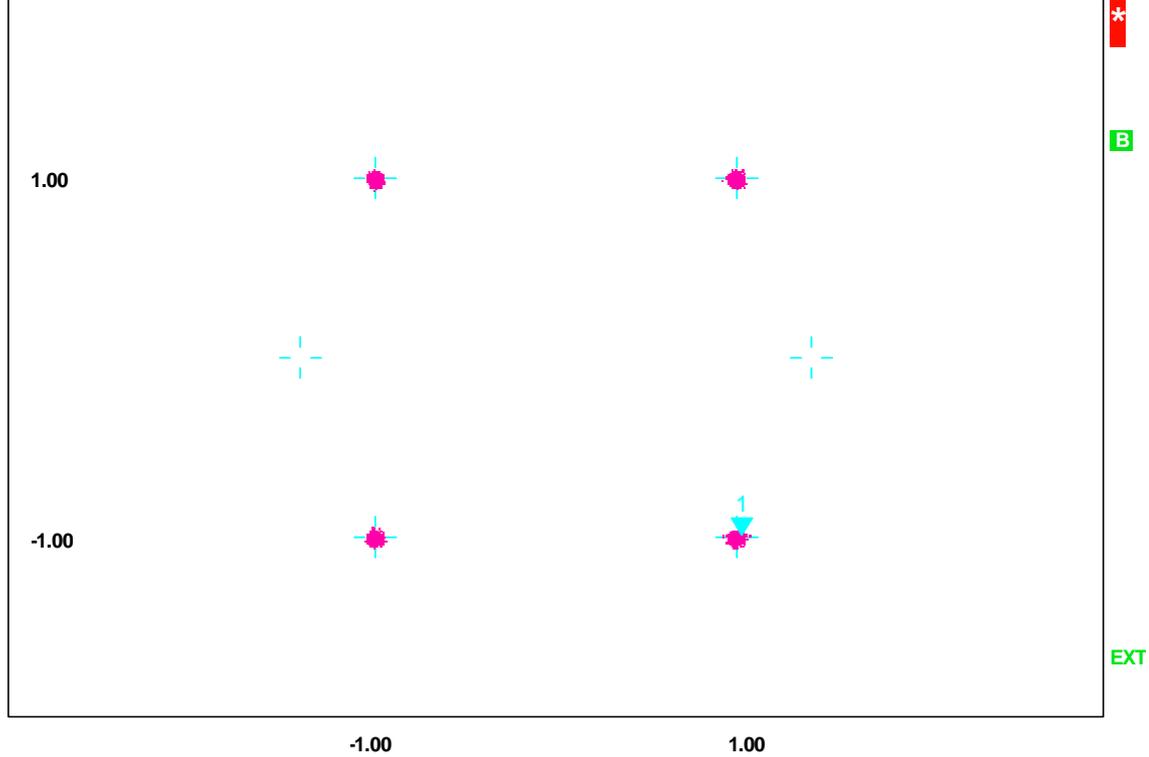
Running ...

Date: 20.SEP.2007 17:01:45

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 3.6 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
 Modulation: All Burst: All Symbol: All Carrier: All
 Marker1 Quadrature - 0.9904
 Inphase 1.0255



Running ...

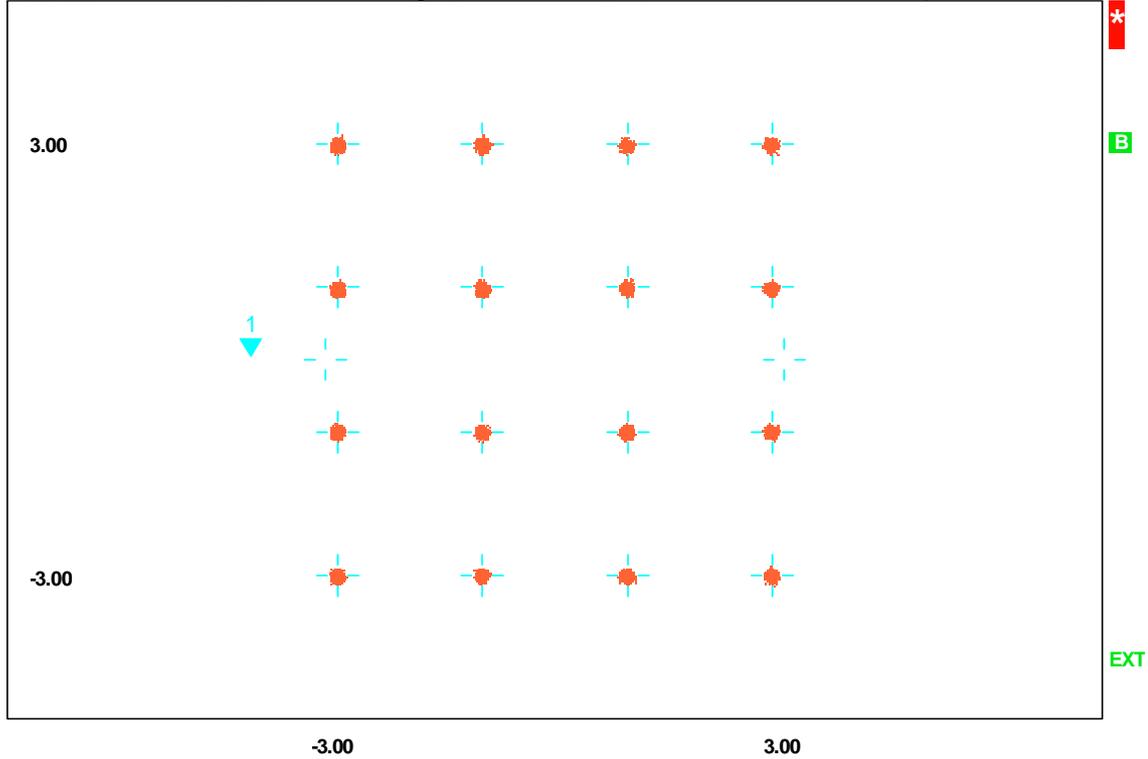
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2.3.3 Test Mode of 16QAM 1/2

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 5.3 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0257
Inphase -4.2053



Running ...

Date: 5.OCT.2007 11:00:22

2.3.4 Test Mode of 16QAM 3/4

Channel middle: 2635 MHz

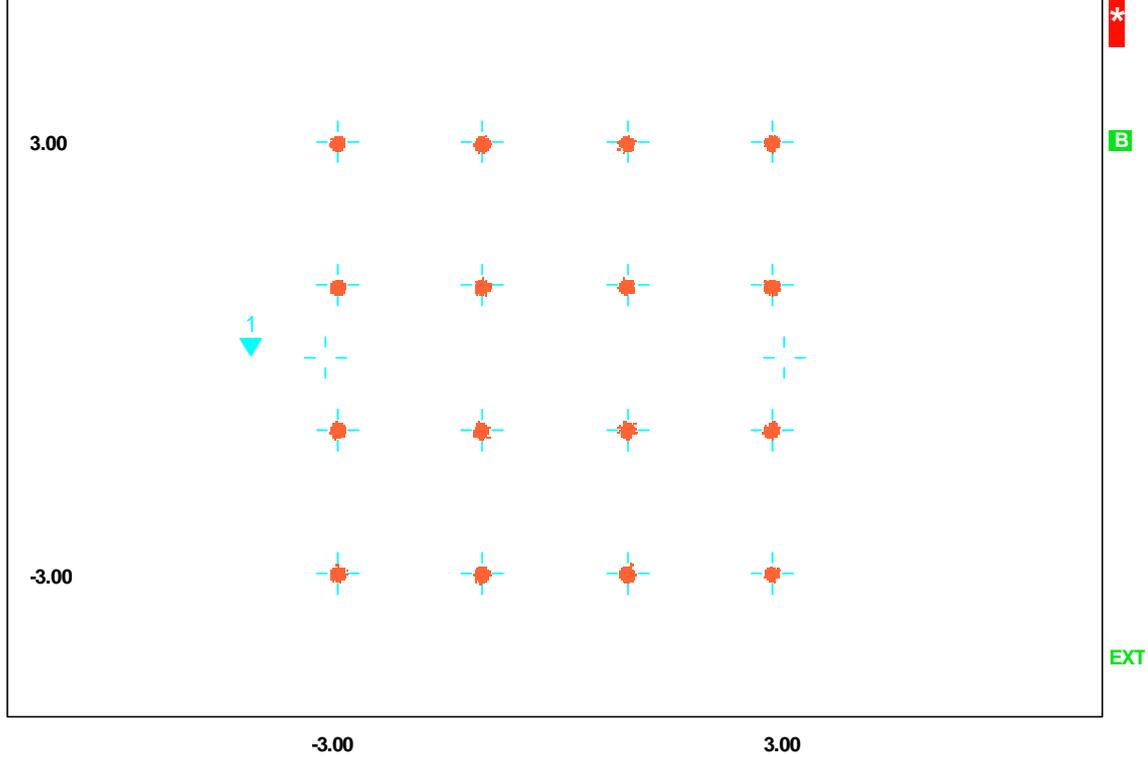
IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 5.3 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol

Modulation: All Burst: All Symbol: All Carrier: All

Marker1 Quadrature 0.0206

Inphase -4.209



Running ...

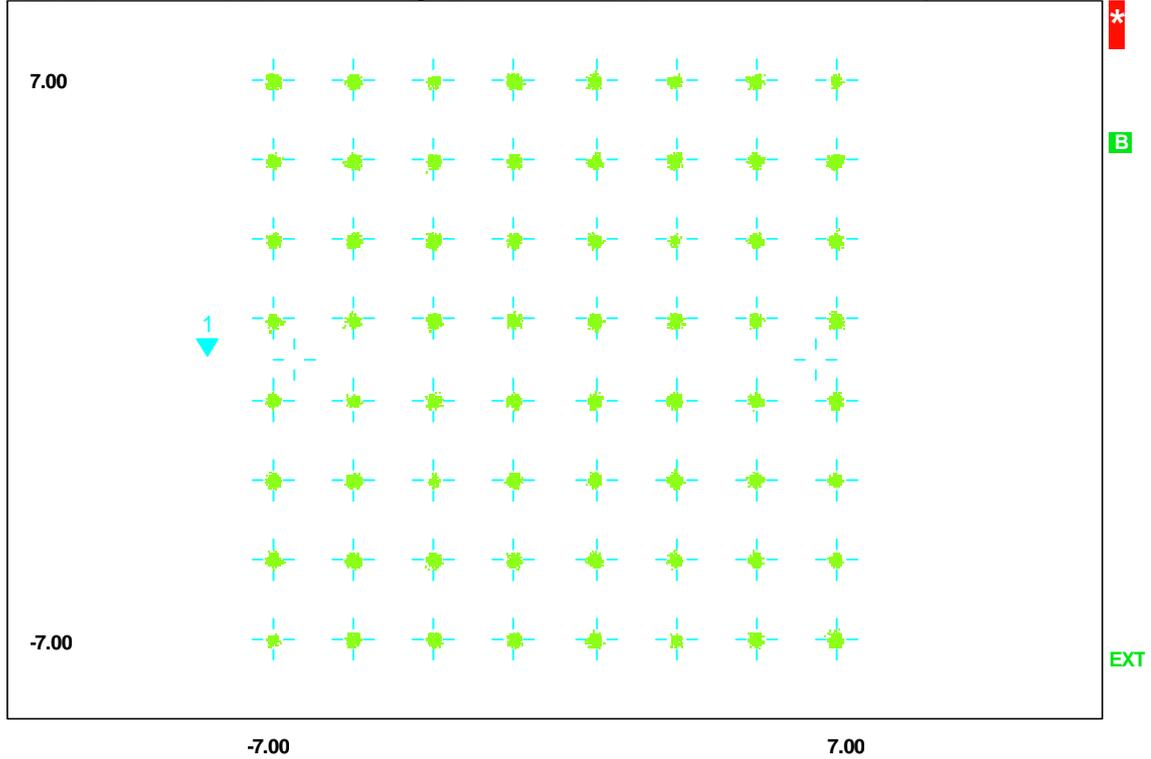
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2.3.5 Test Mode of 64QAM 1/2

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 5.3 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
 Modulation: All Burst: All Symbol: All Carrier: All
 Marker1 Quadrature 0.0821
 Inphase -8.6442



Measurement Aborted

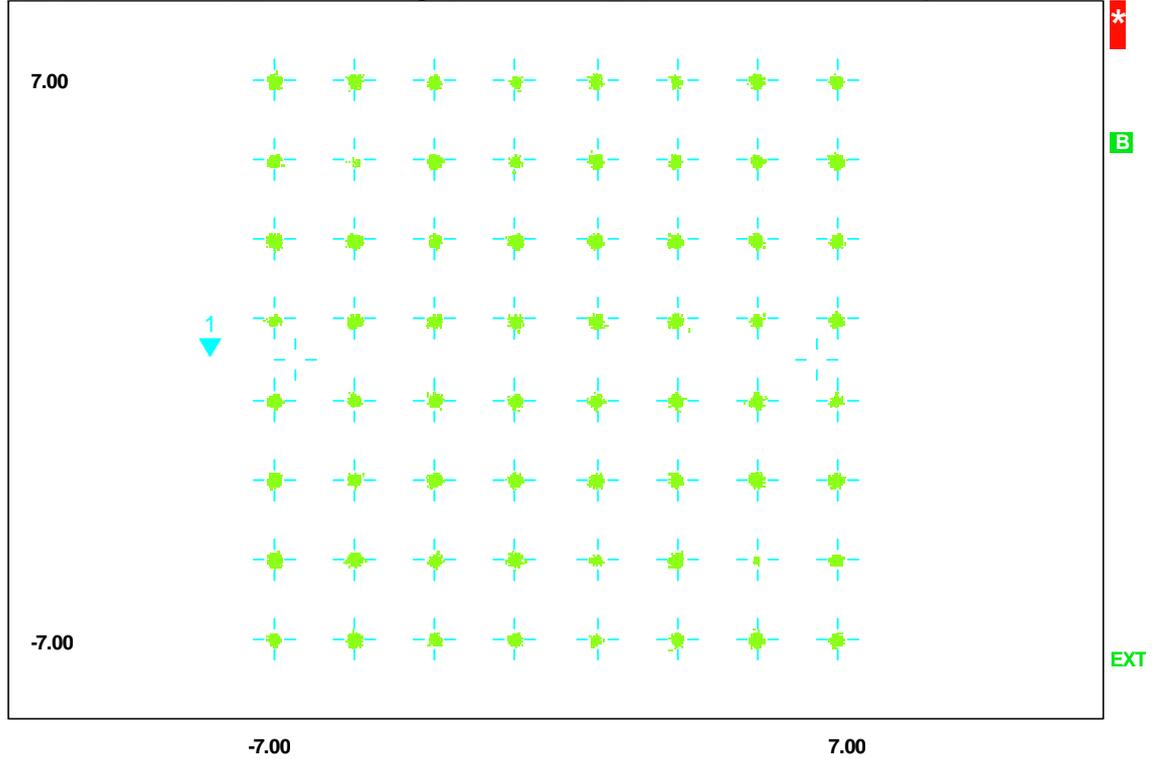
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2.3.6 Test Mode of 64QAM 2/3

Channel middle: 2635 MHz

IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 5.3 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellation vs Symbol
Modulation: All Burst: All Symbol: All Carrier: All
Marker1 Quadrature 0.0638
Inphase -8.587



Running ...

Date: 5.OCT.2007 11:03:55

2.3.7 Test Mode of 64QAM 3/4

Channel middle: 2635 MHz

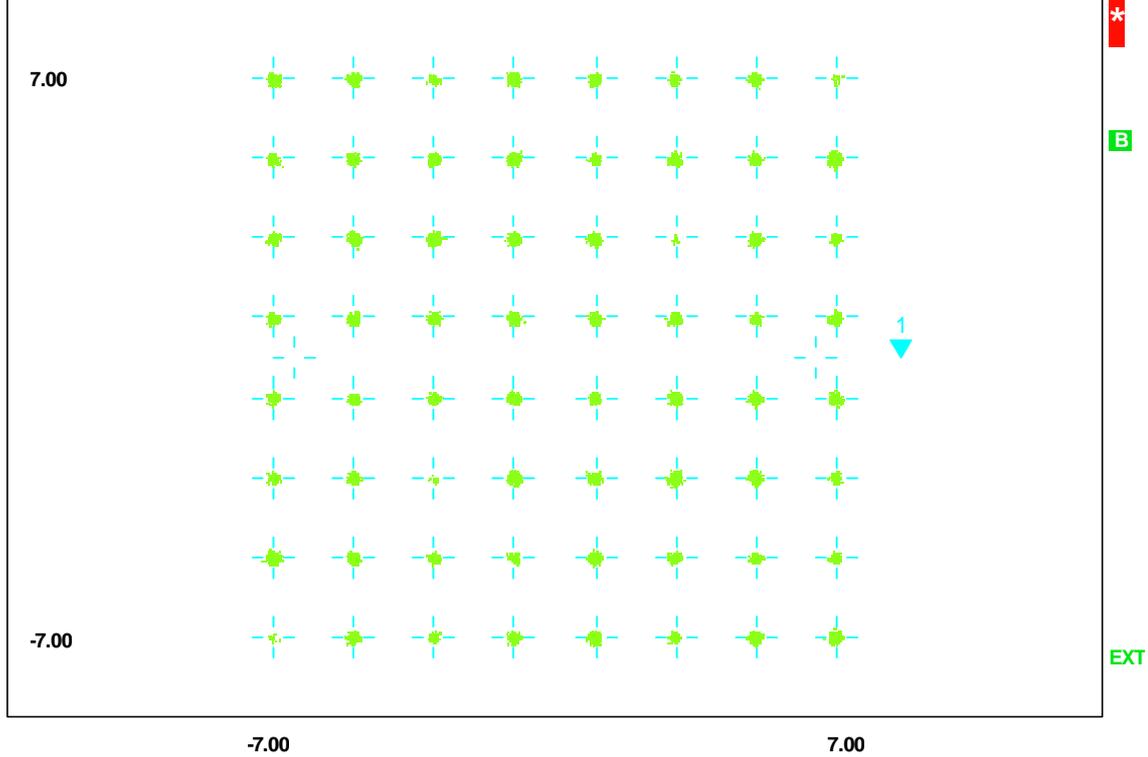
IEEE 802.16e-2005 OFDMA			
Frequency: 2.635 GHz	Signal Level Setting: 4 dBm	External Att: 0 dB	
N_{FFT} : 1024	Sweep Mode: Continuous	Trigger Mode/Offset: Free Run	
Zone/Seg: DL-PUSC, ID=A, Seg=0	Modulation: ALL	Zone Offset/Length: 1/28 Symbols	

Constellationvs Symbol

Modulation: All Burst: All Symbol: All Carrier: All

Marker1 Quadrature - 0.0086

Inphase 8.6113



Running ...

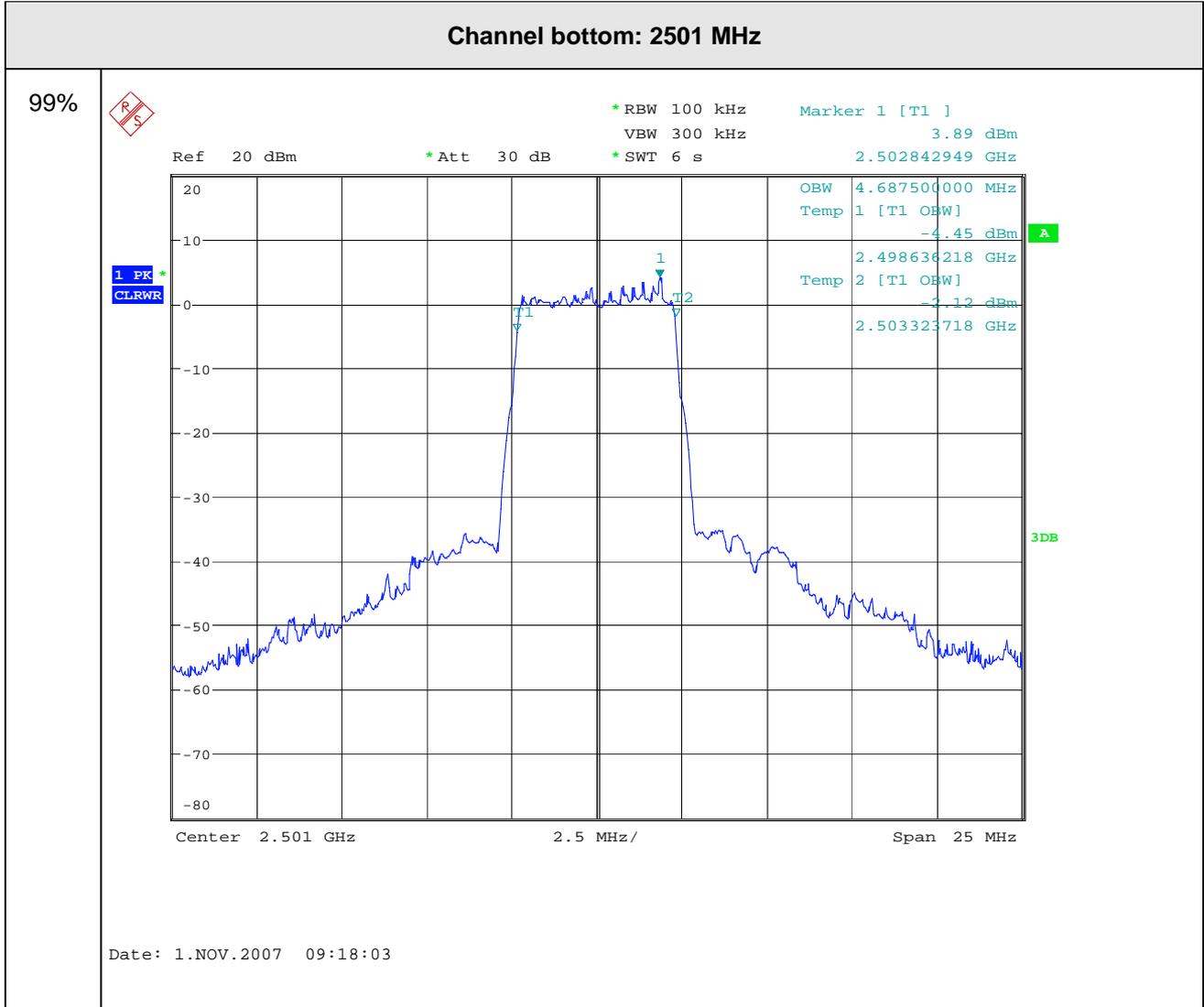
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Appendix B Occupied Bandwidth

1 **5 MHz Bandwidth**

1.1 **2.5 GHz low block**

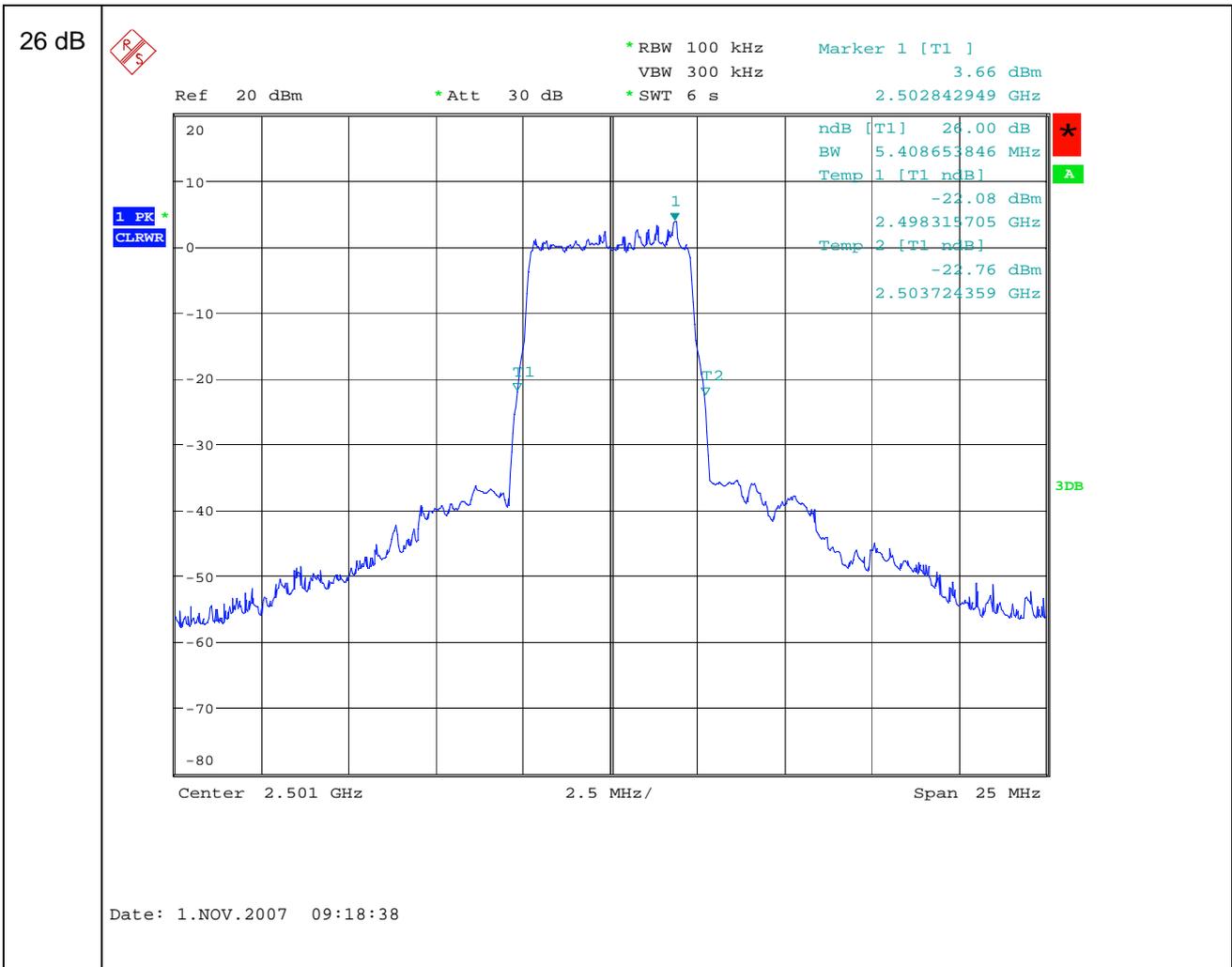
1.1.1 **Test Mode of QPSK 1/2**

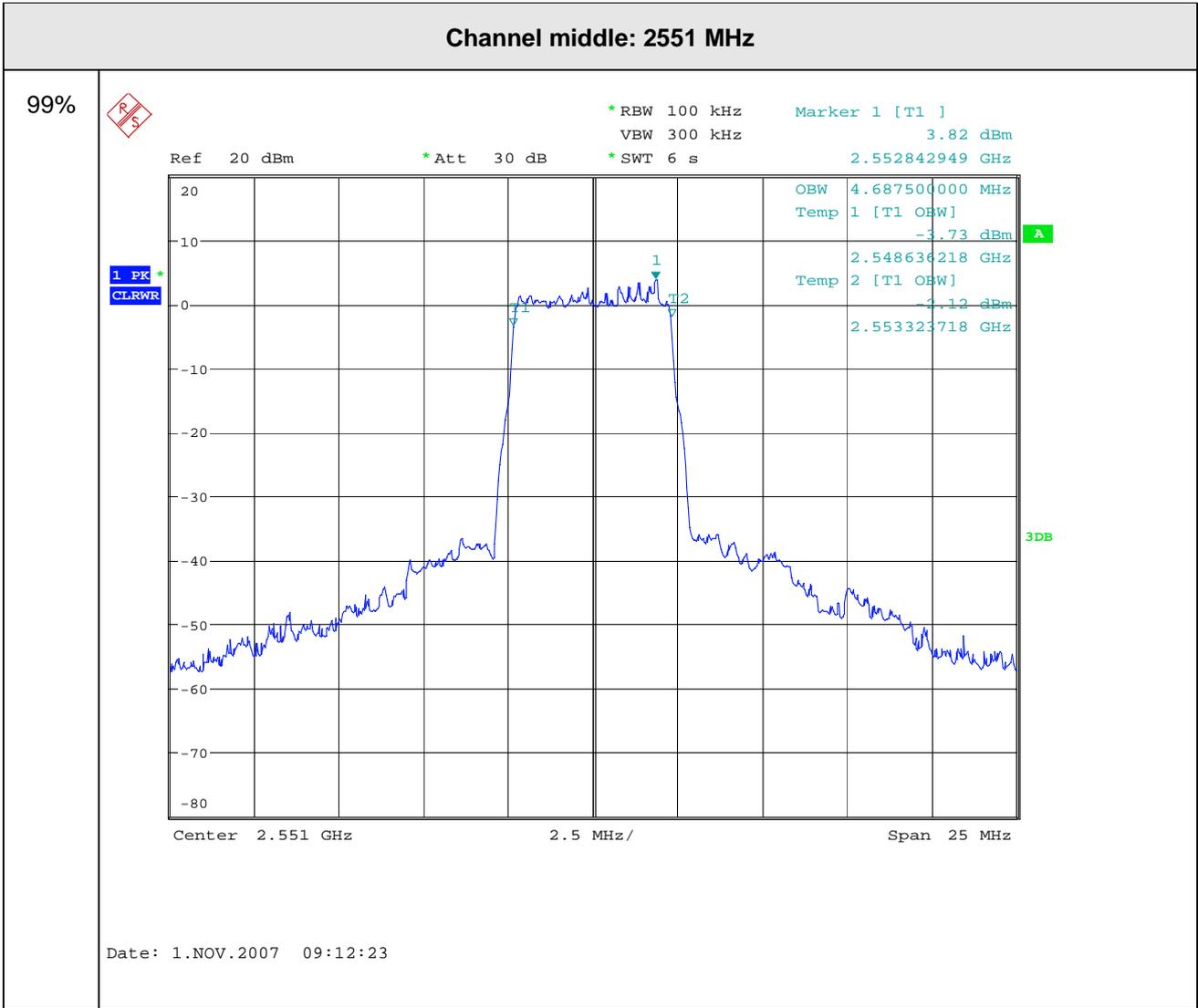




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

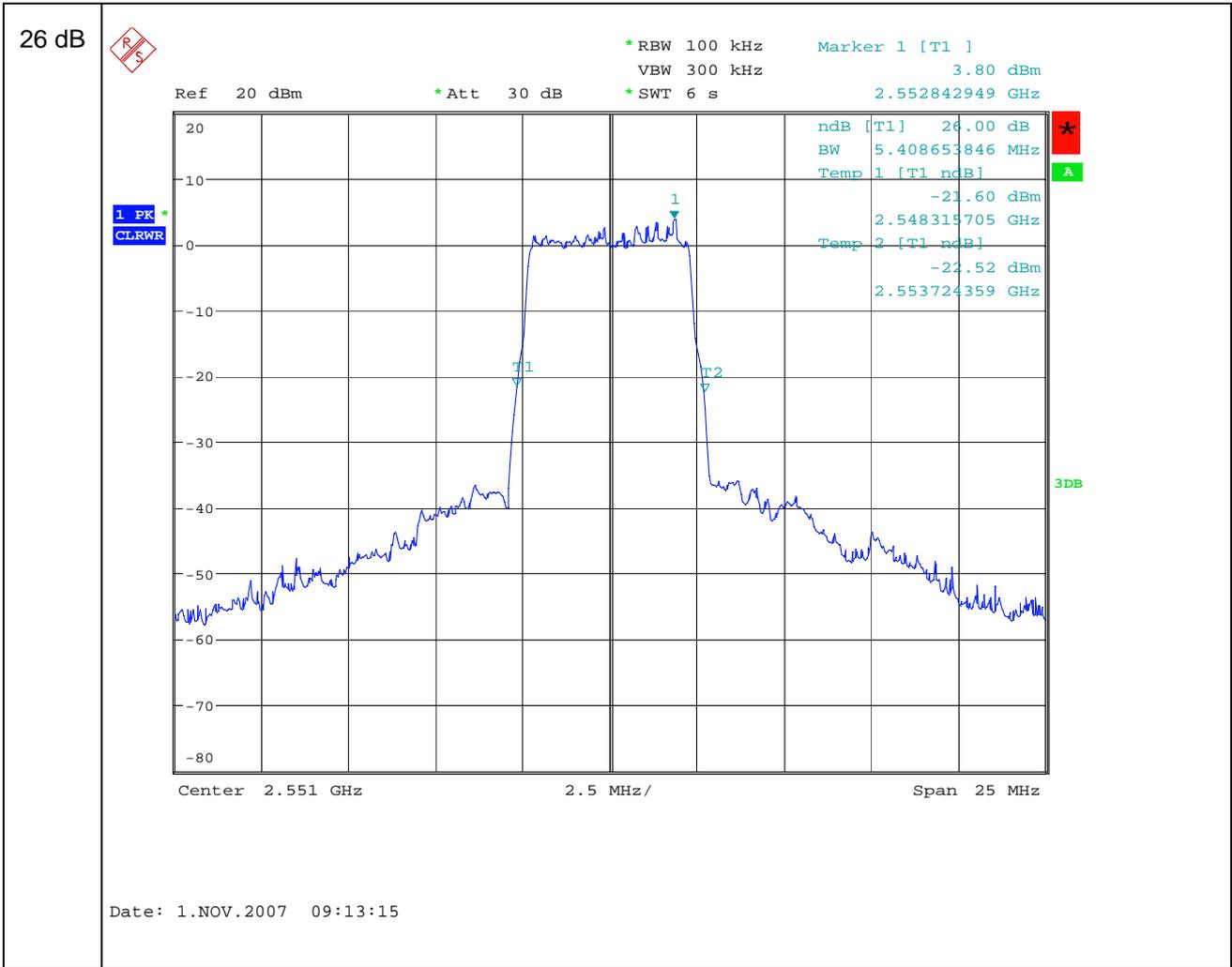


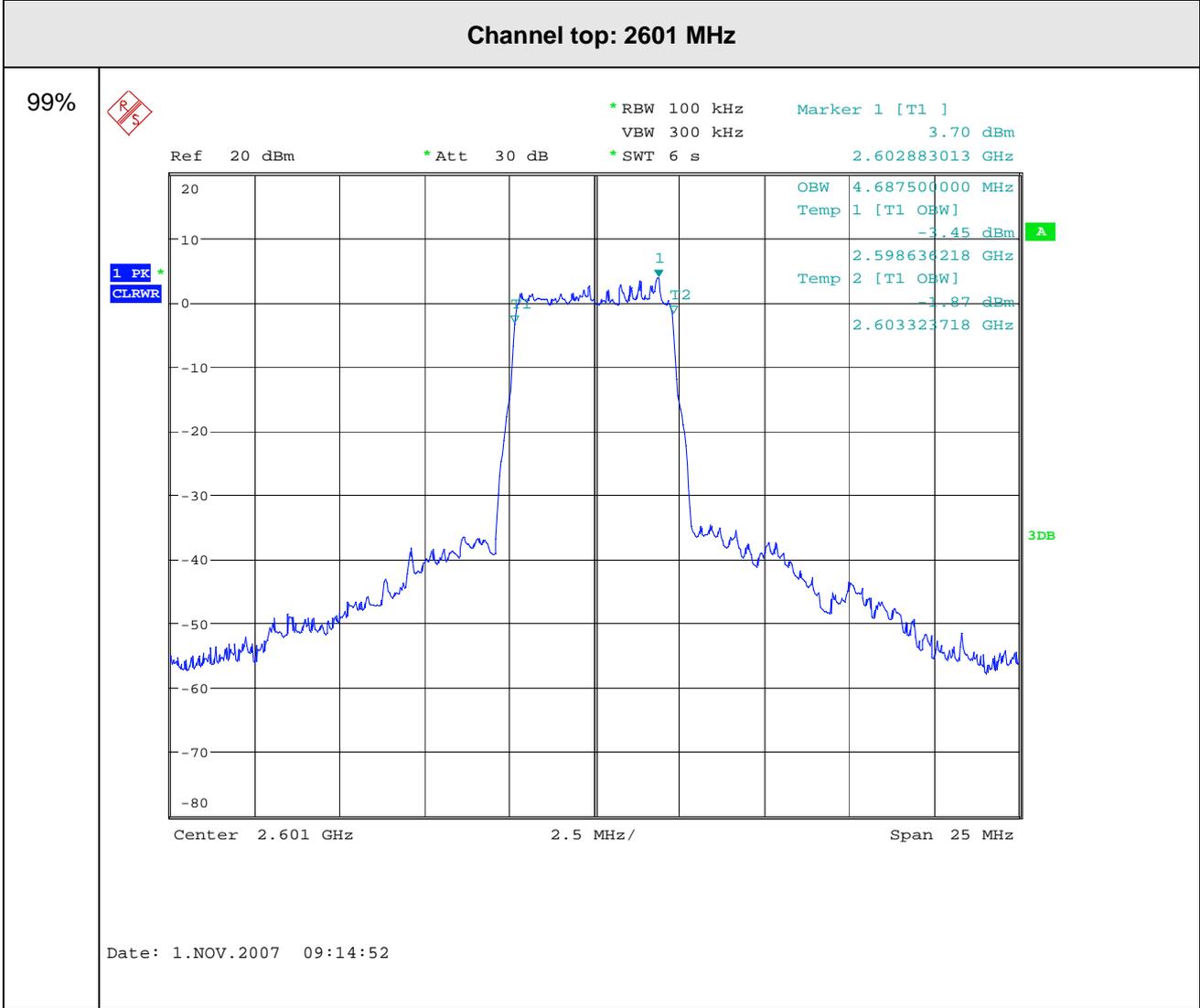


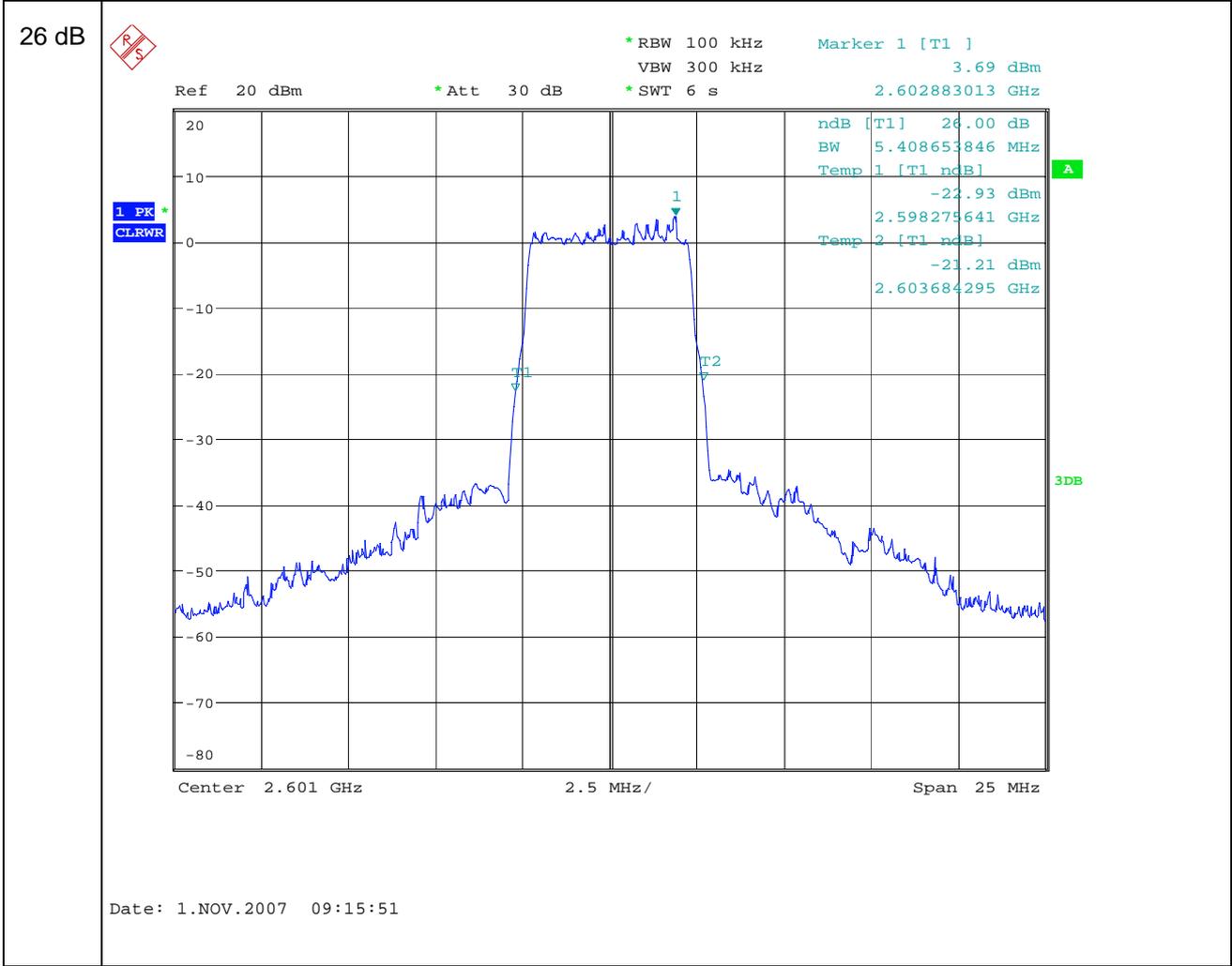


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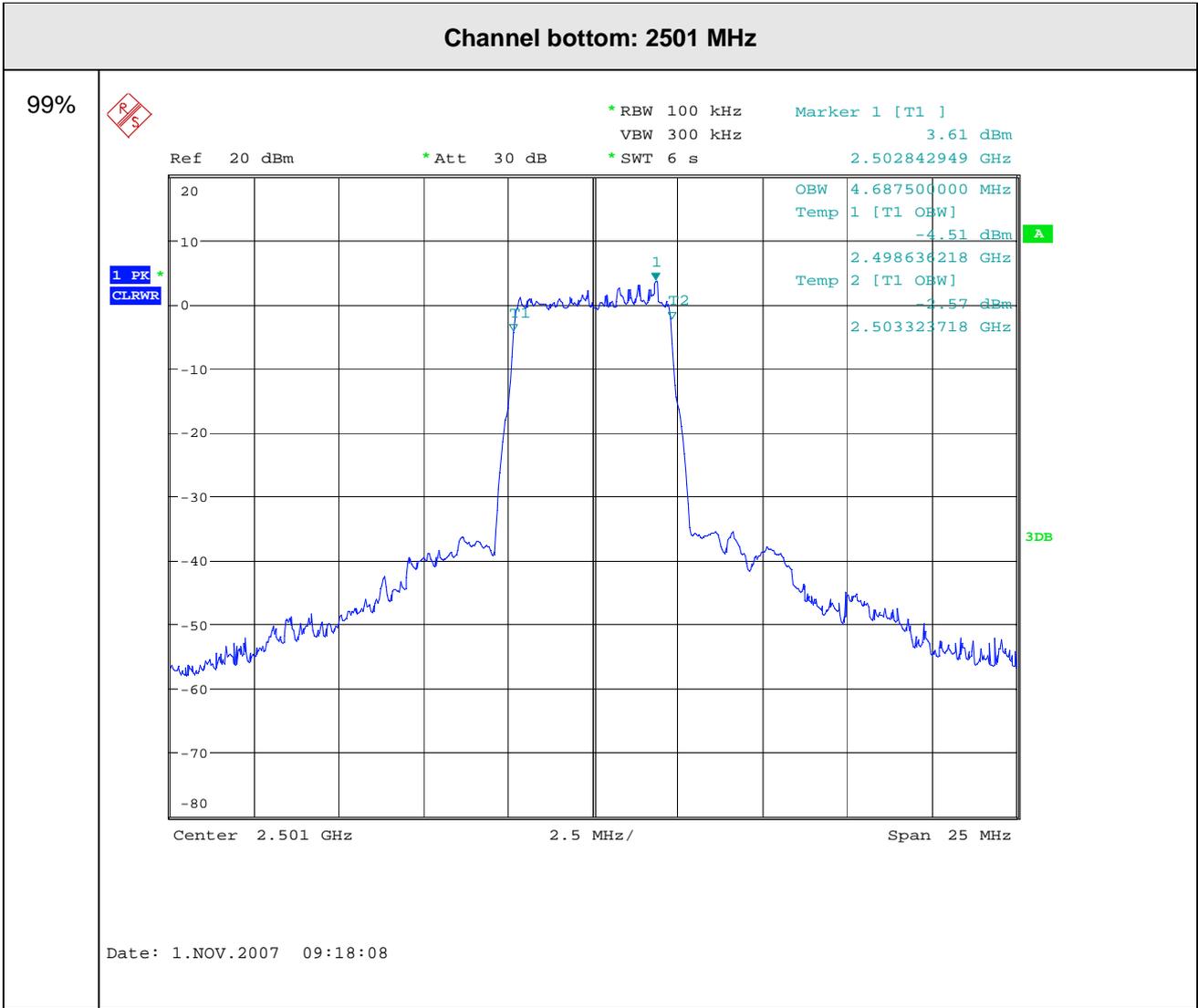
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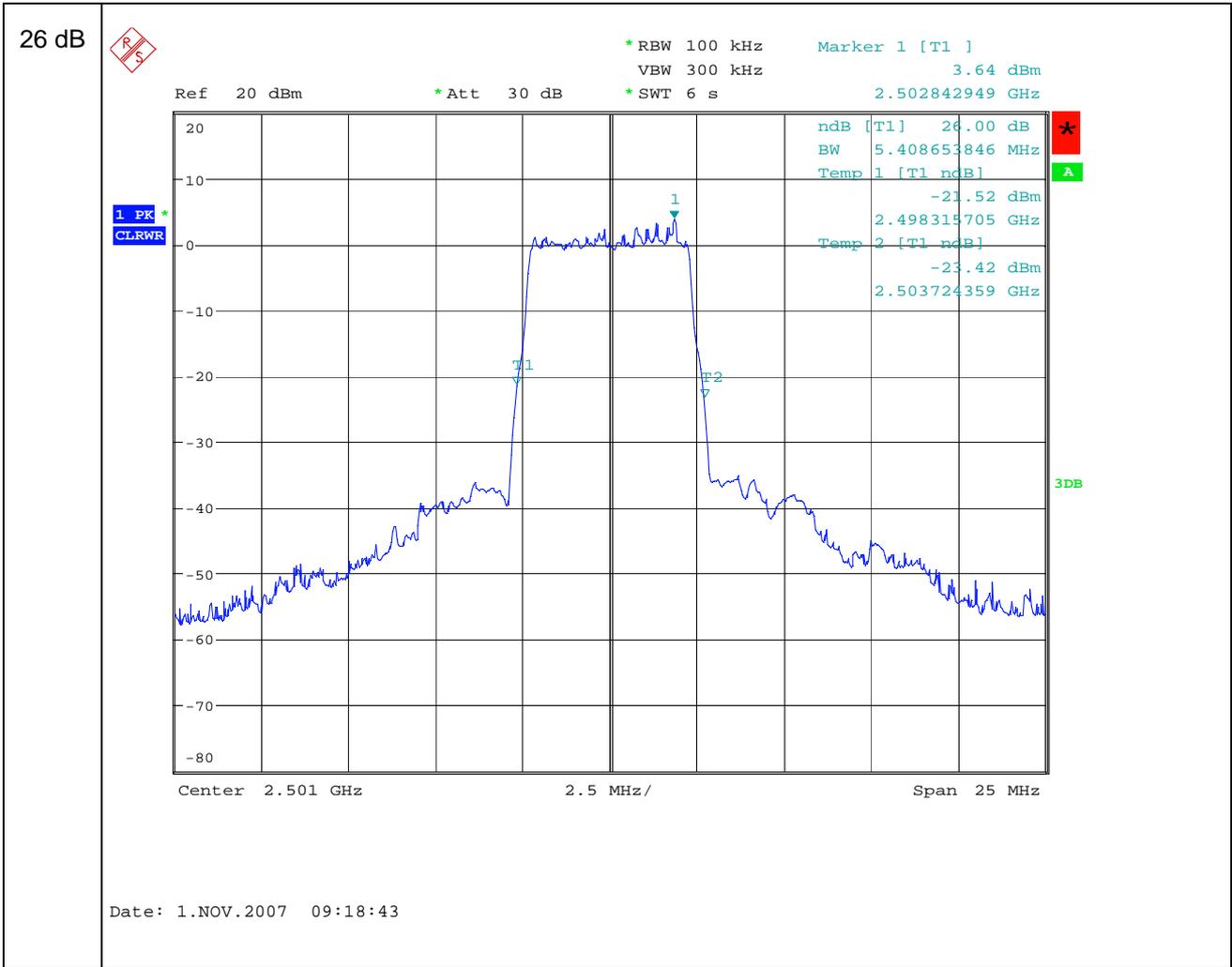
1.1.2 Test Mode of QPSK 3/4





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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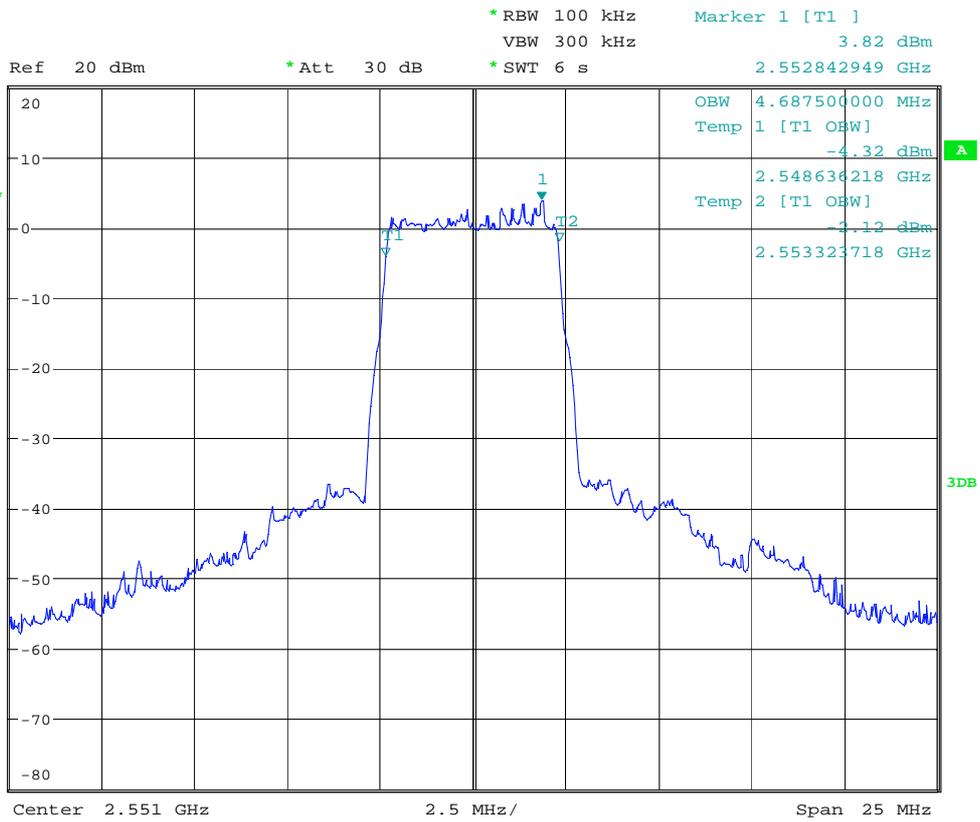


Channel middle: 2551 MHz

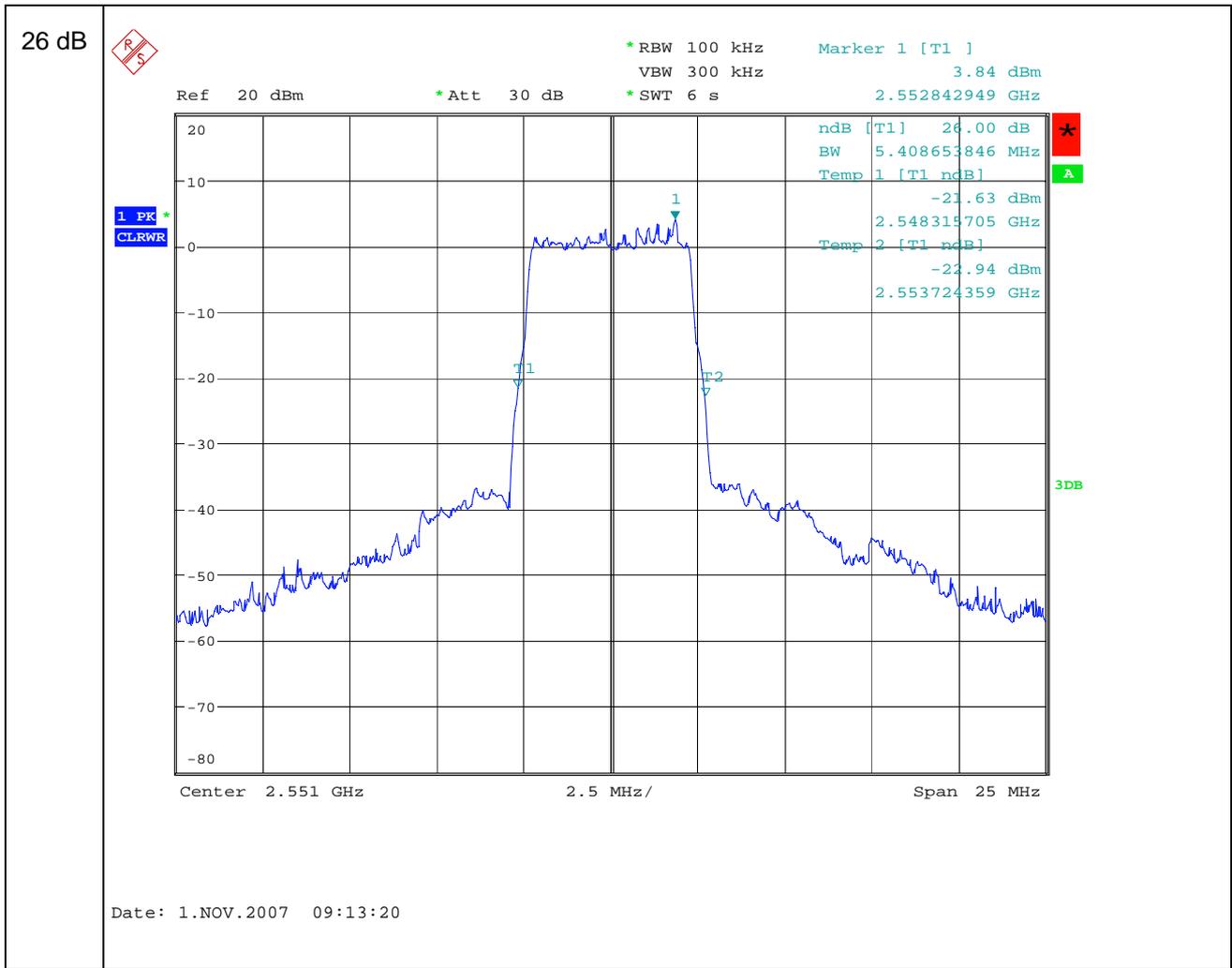
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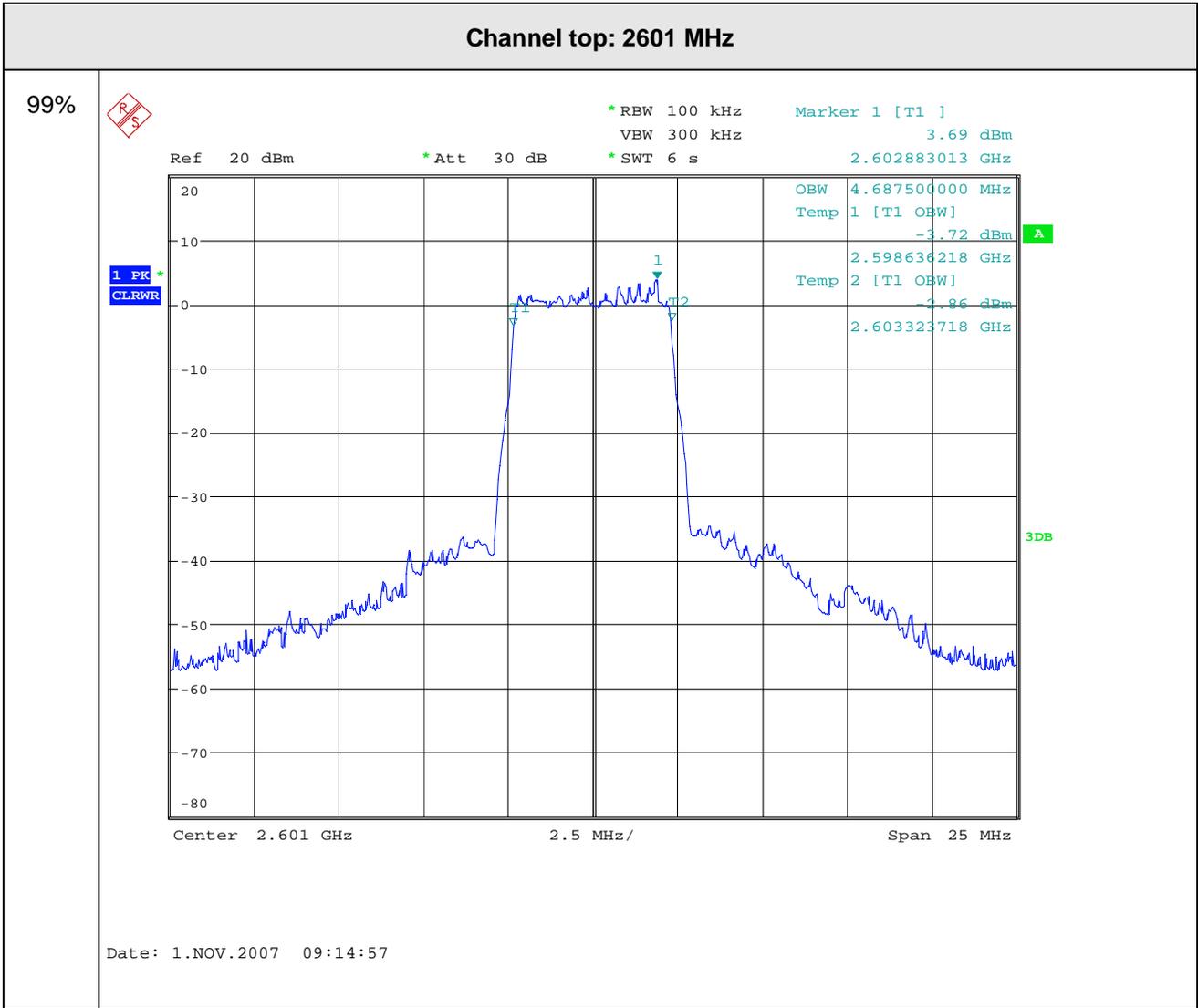


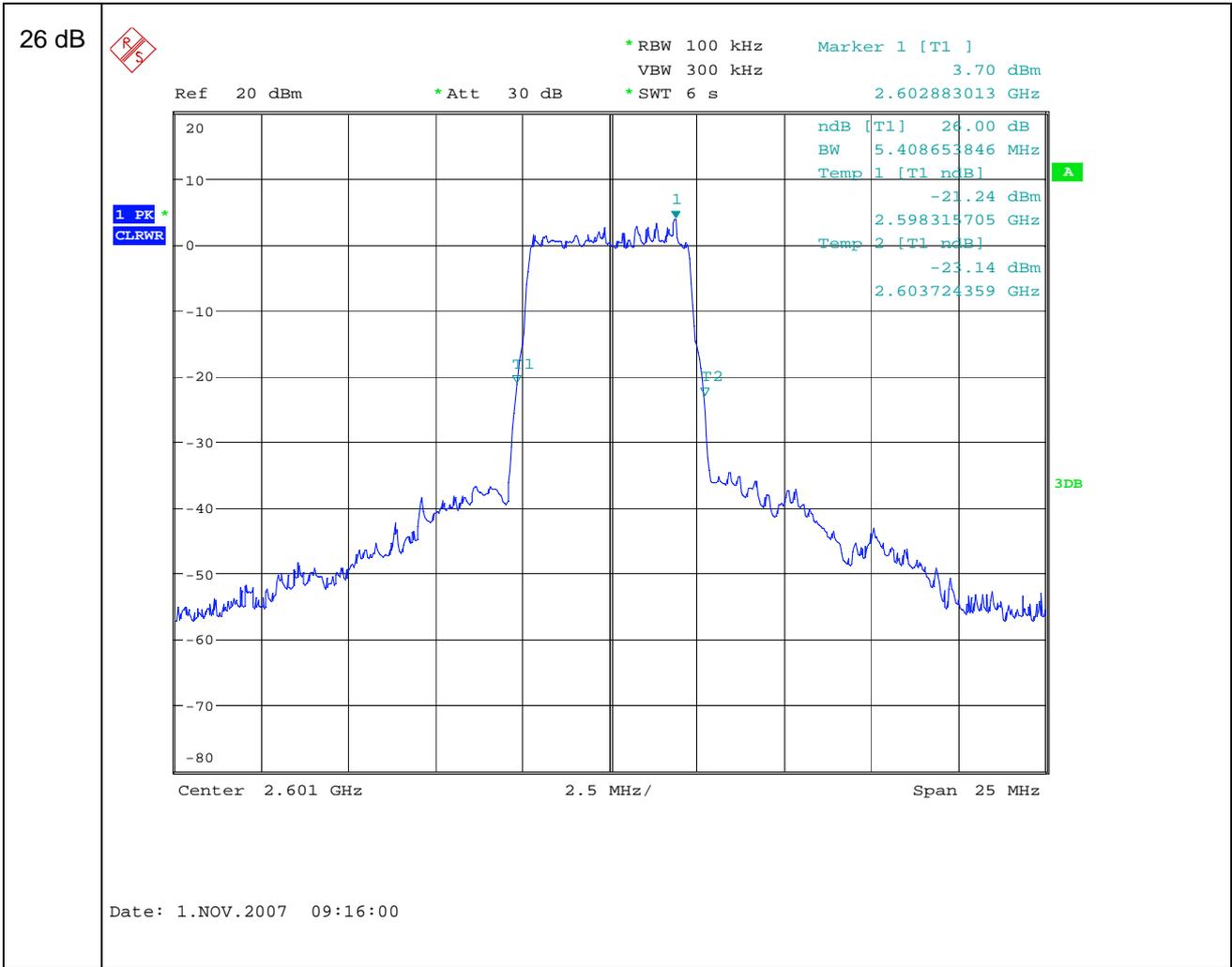
1 PK *
CLRWR



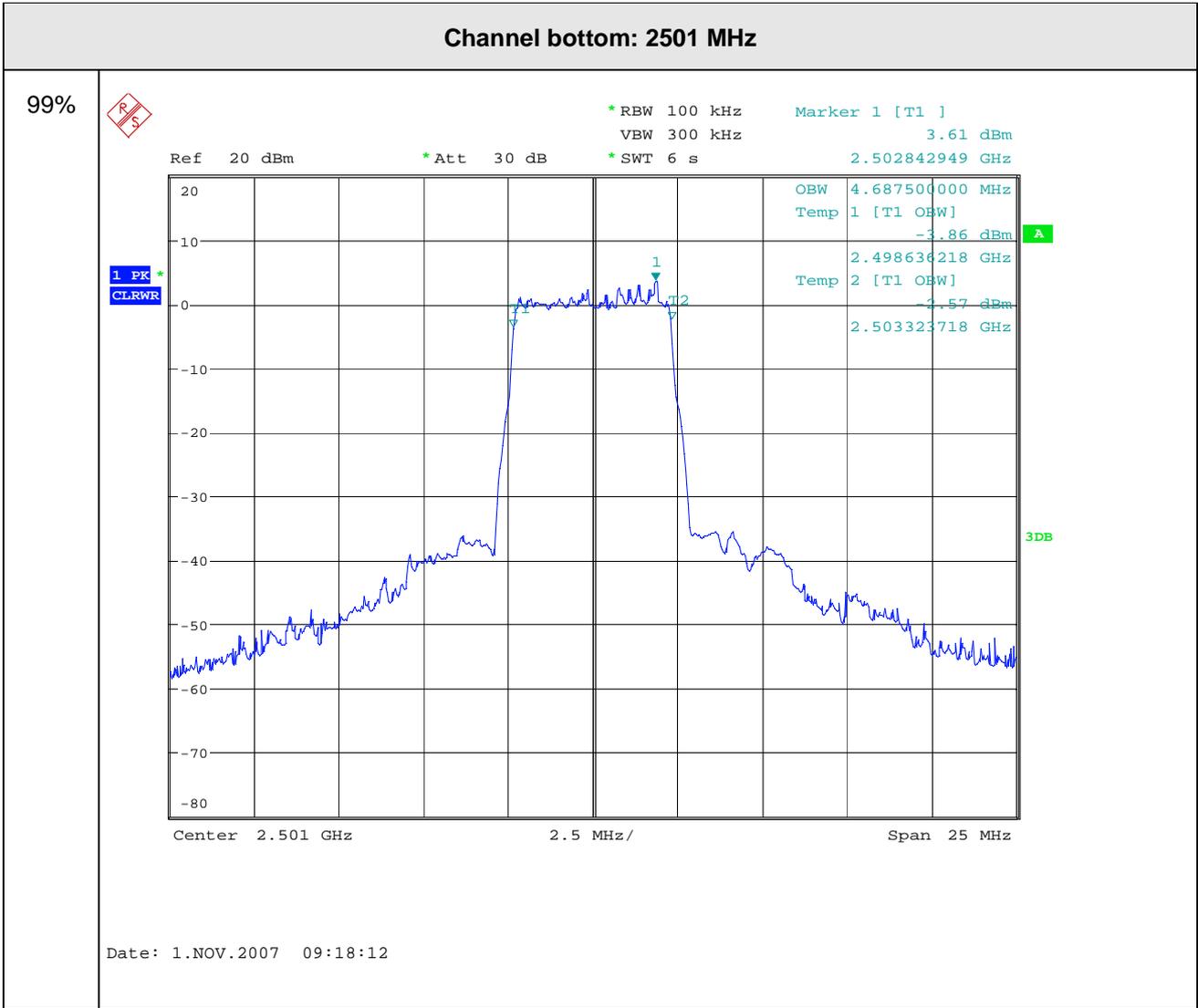
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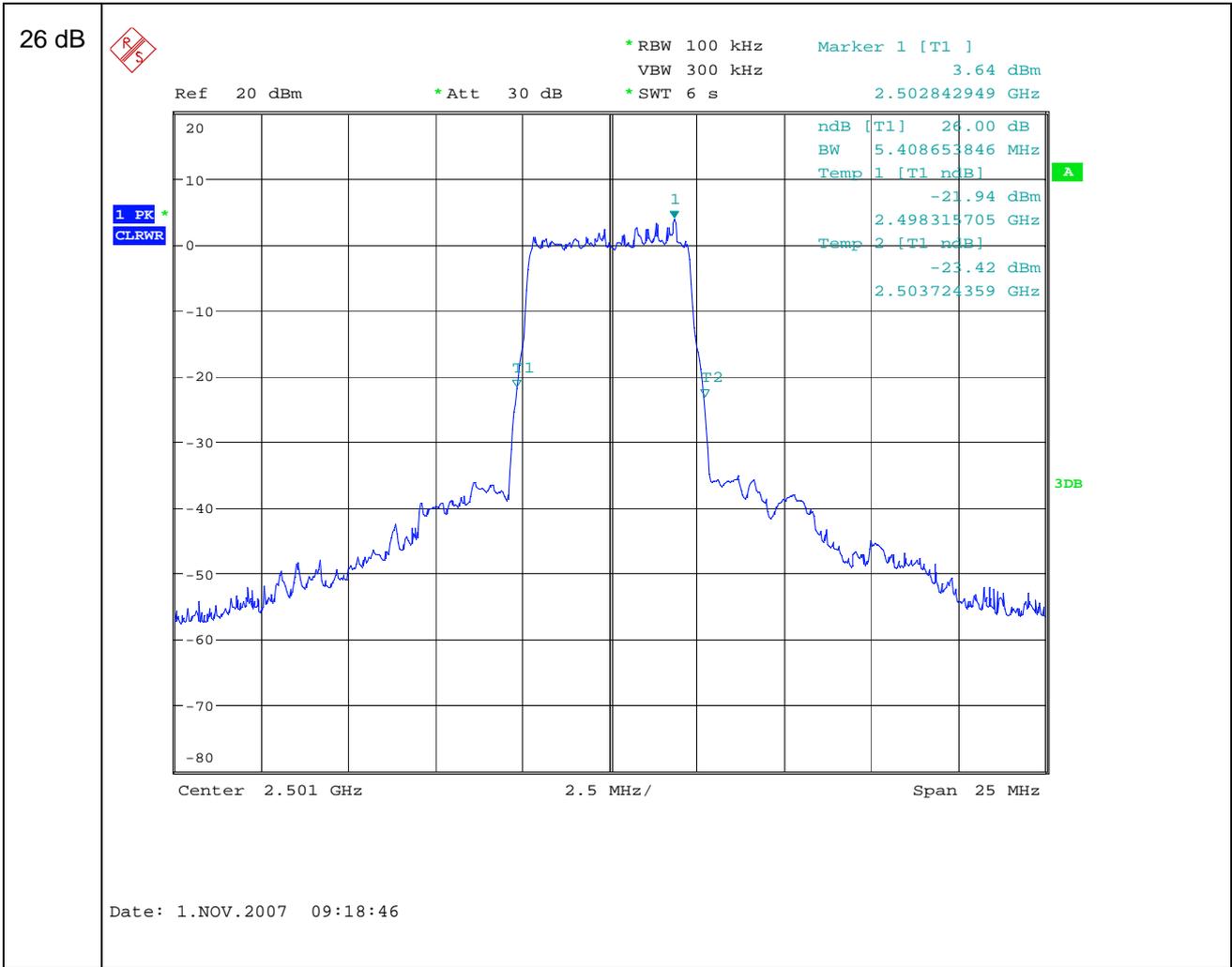
1.1.3 Test Mode of 16QAM 1/2

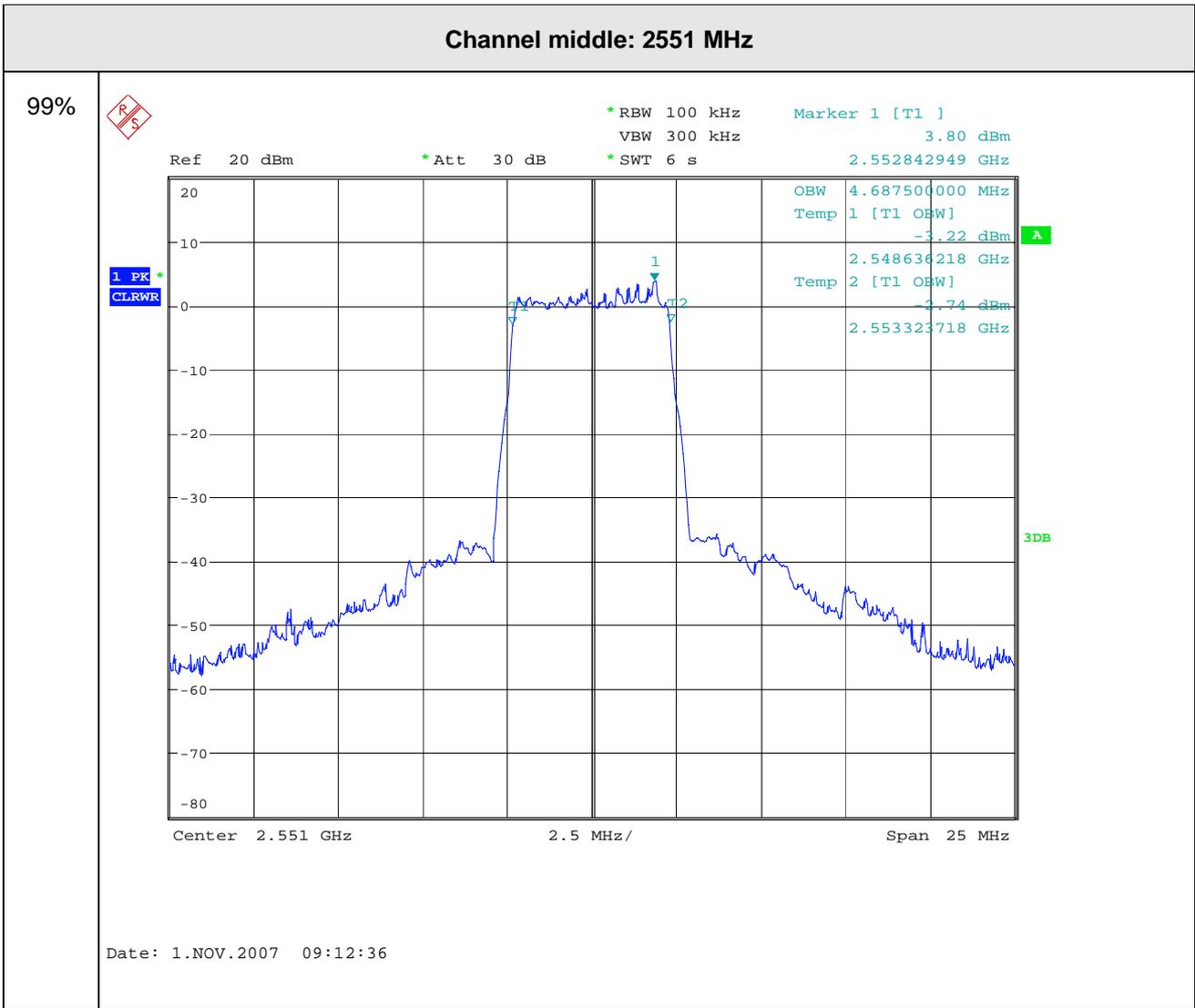


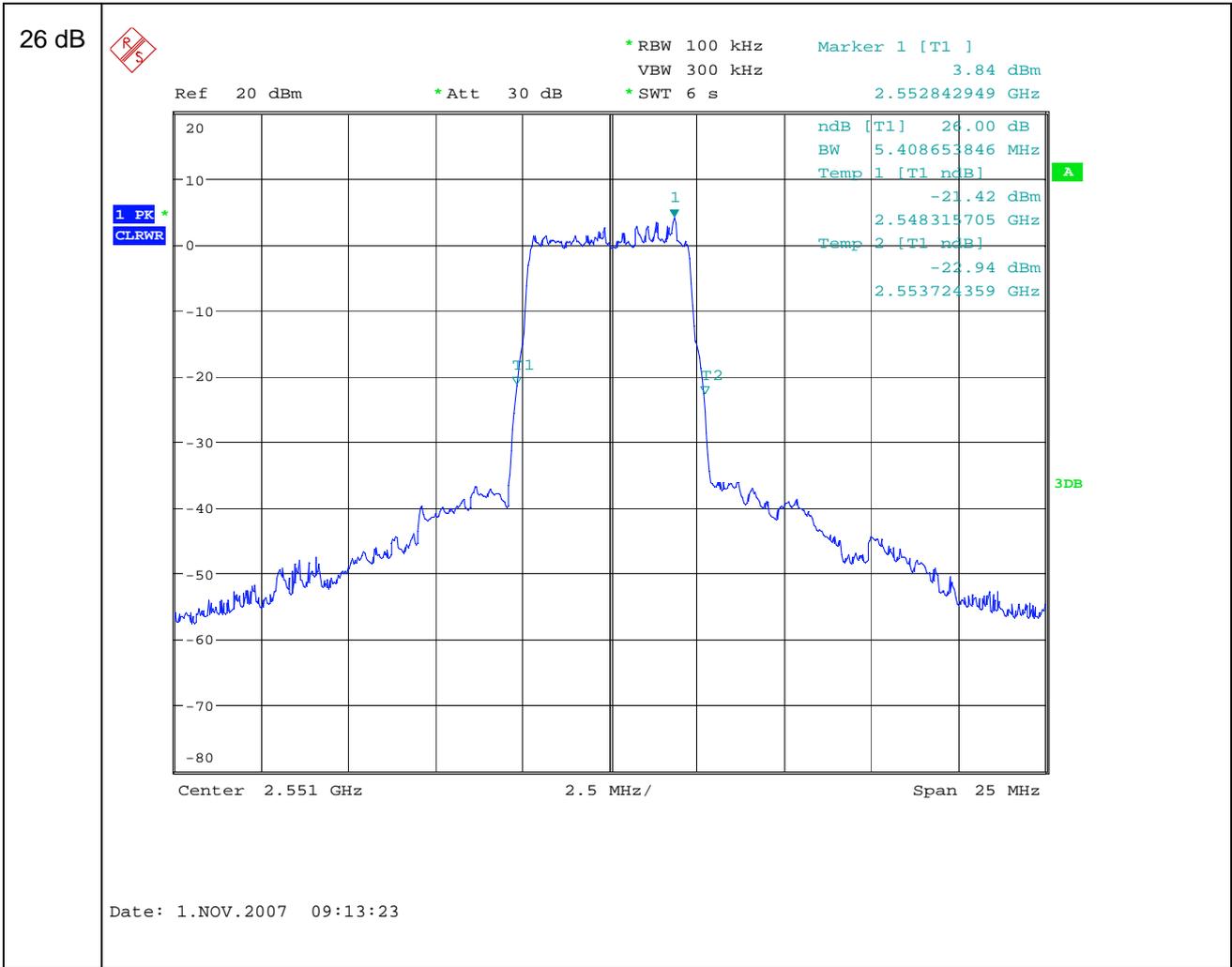


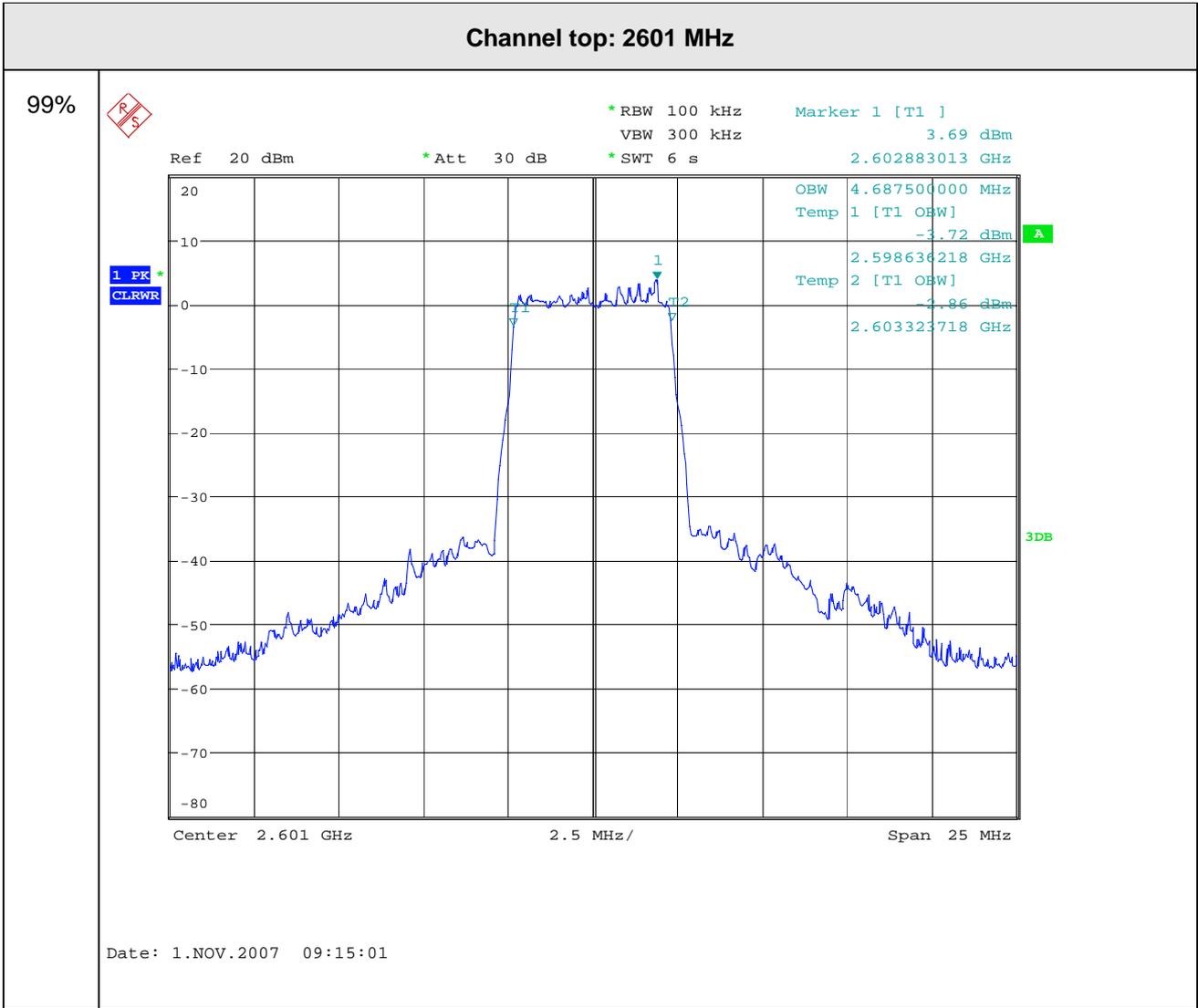
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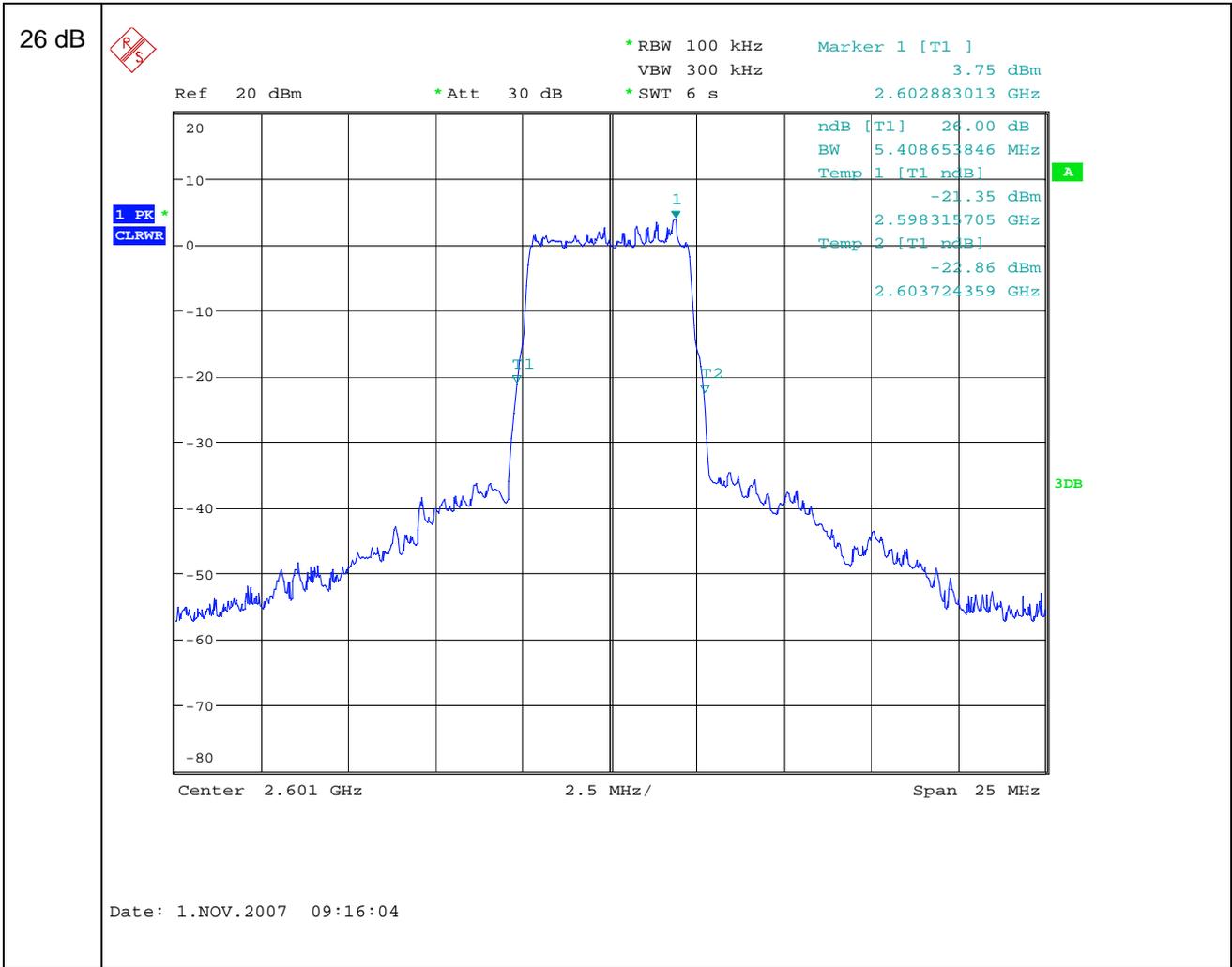
M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G



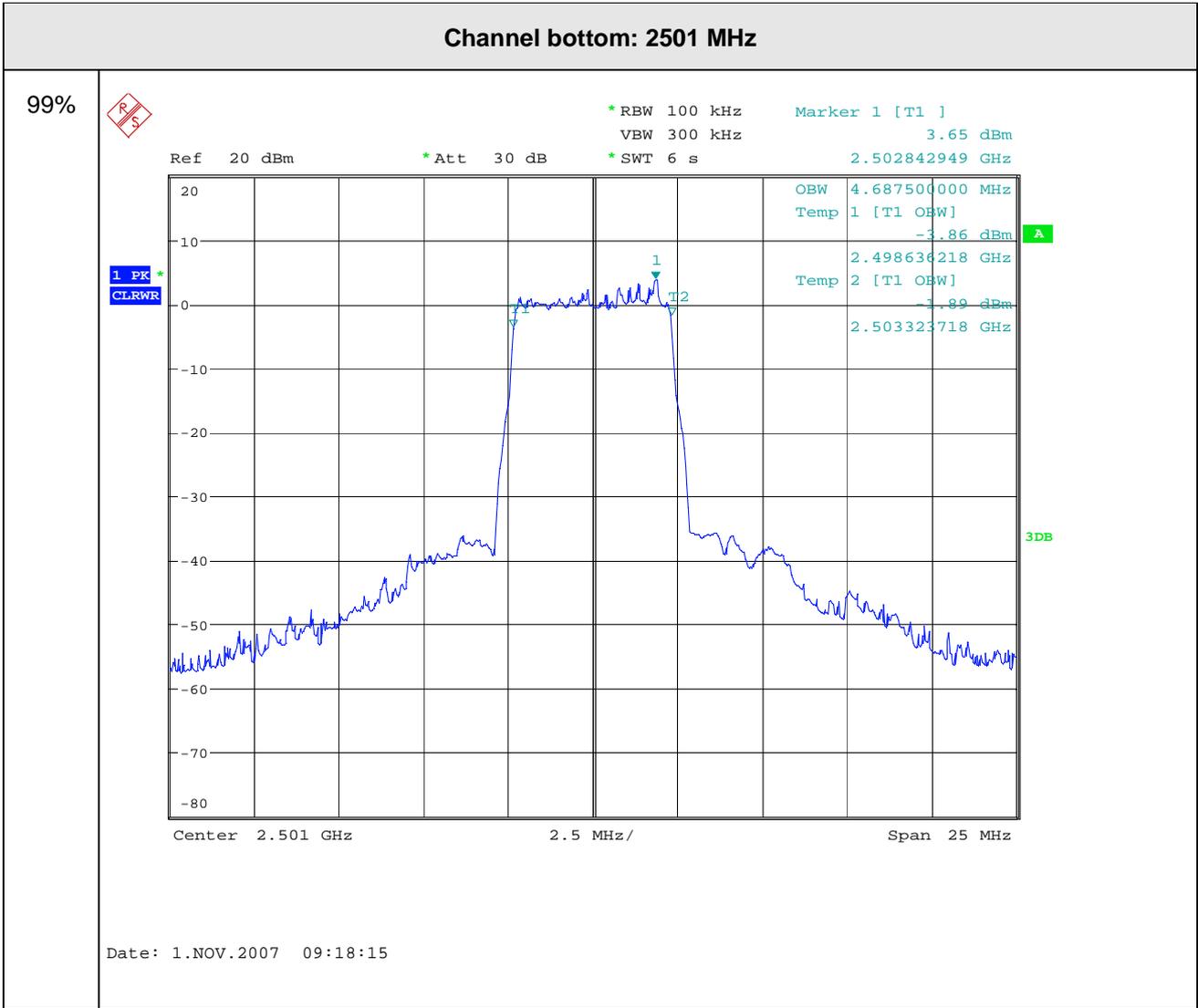








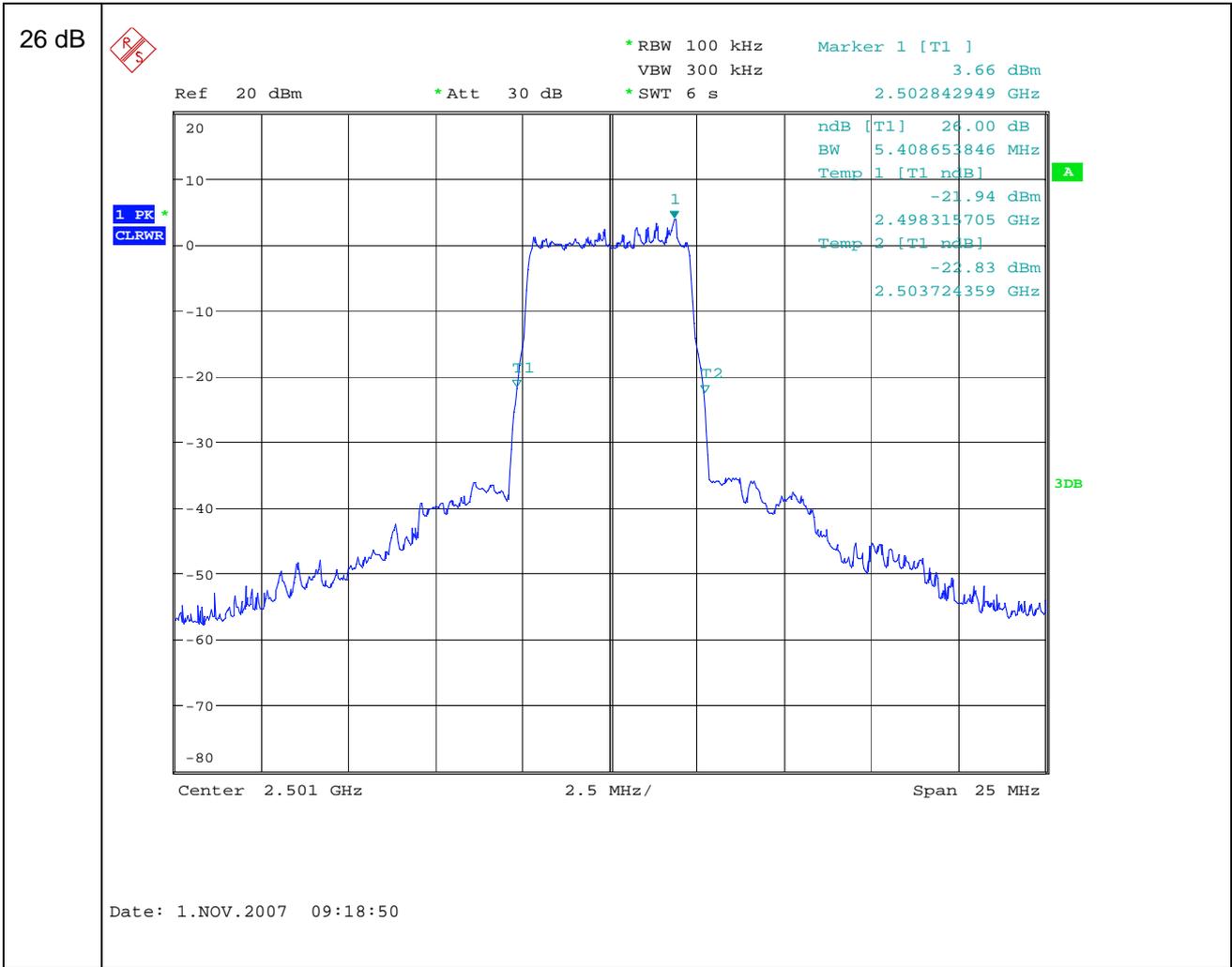
1.1.4 Test Mode of 16QAM 3/4

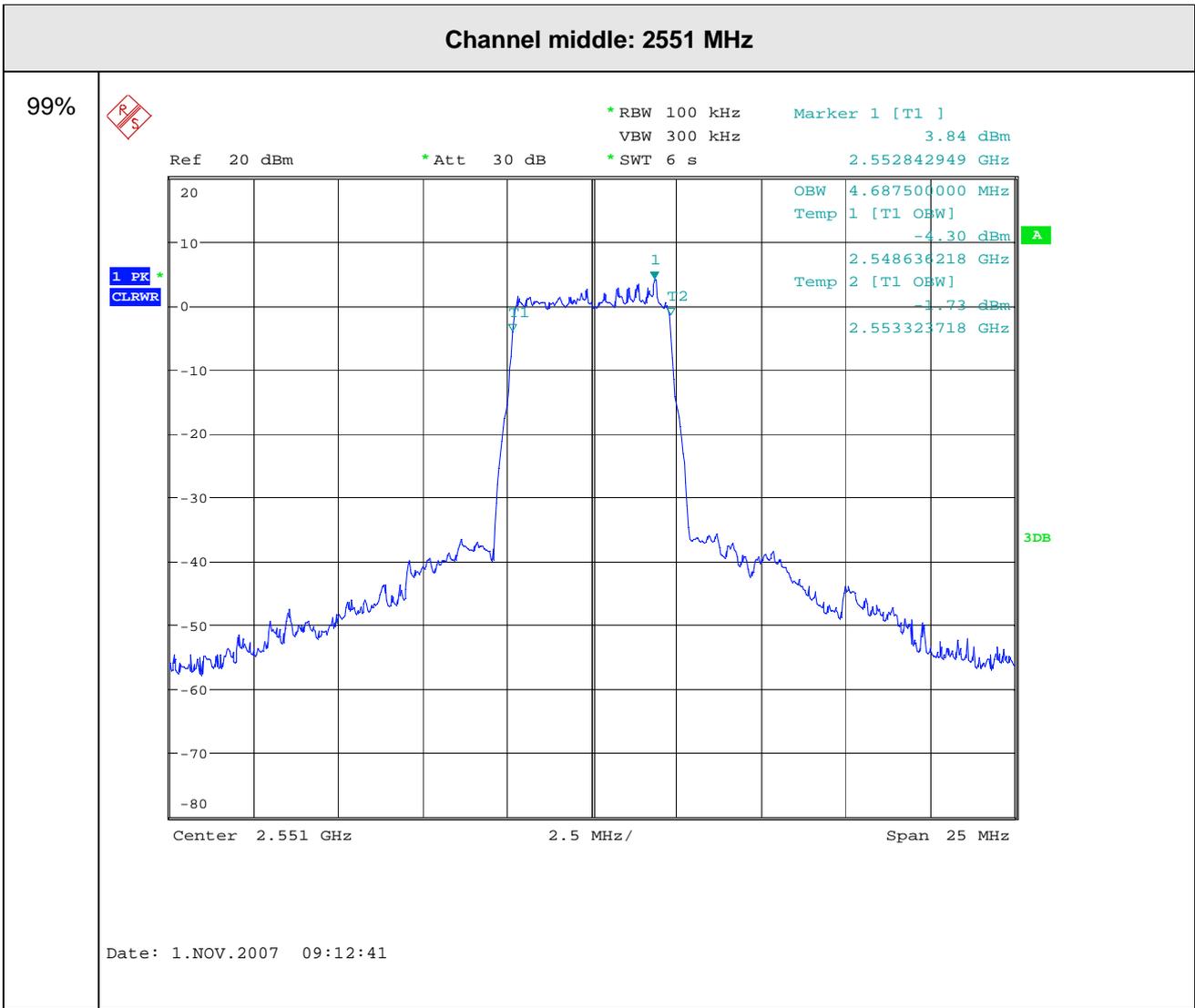


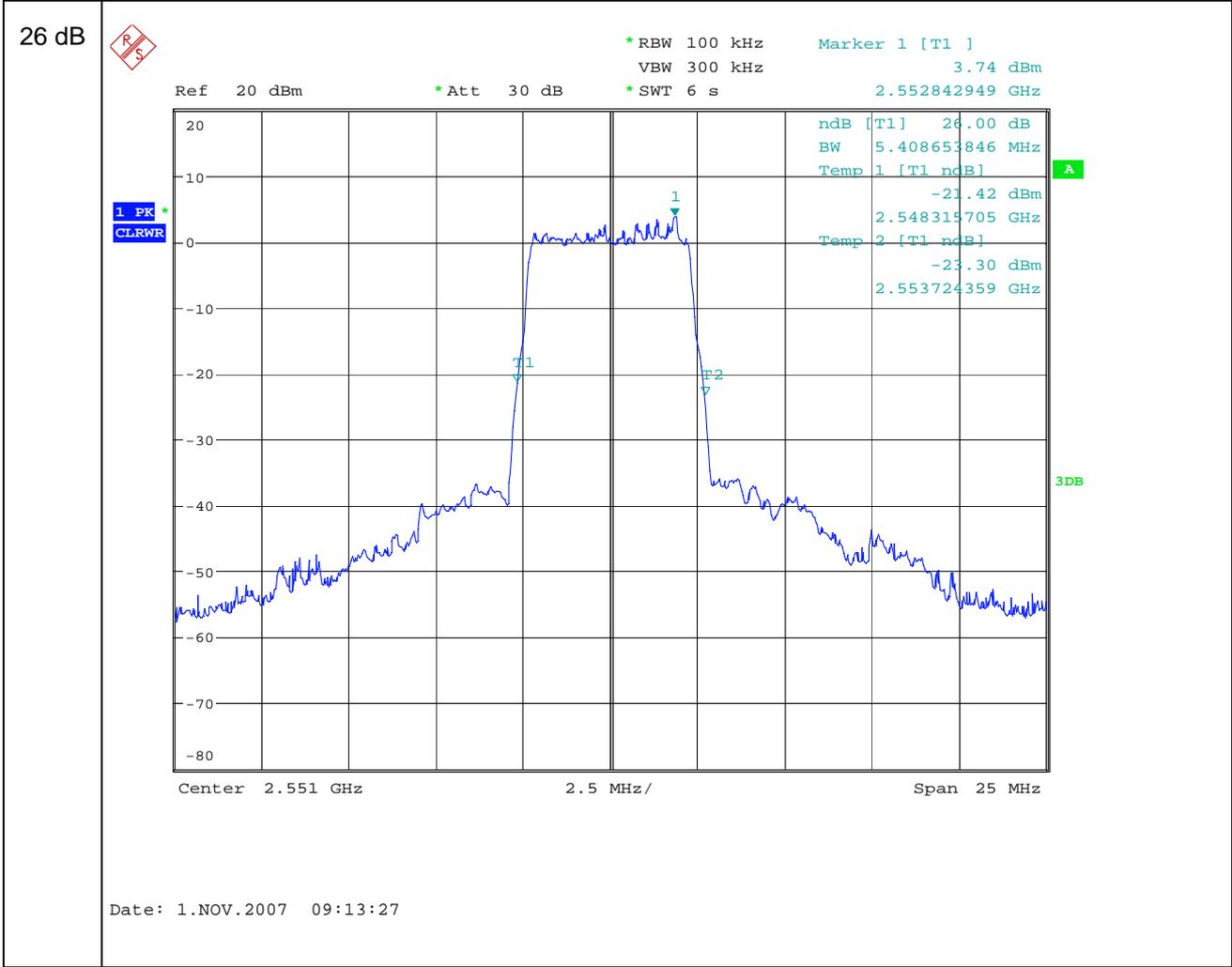


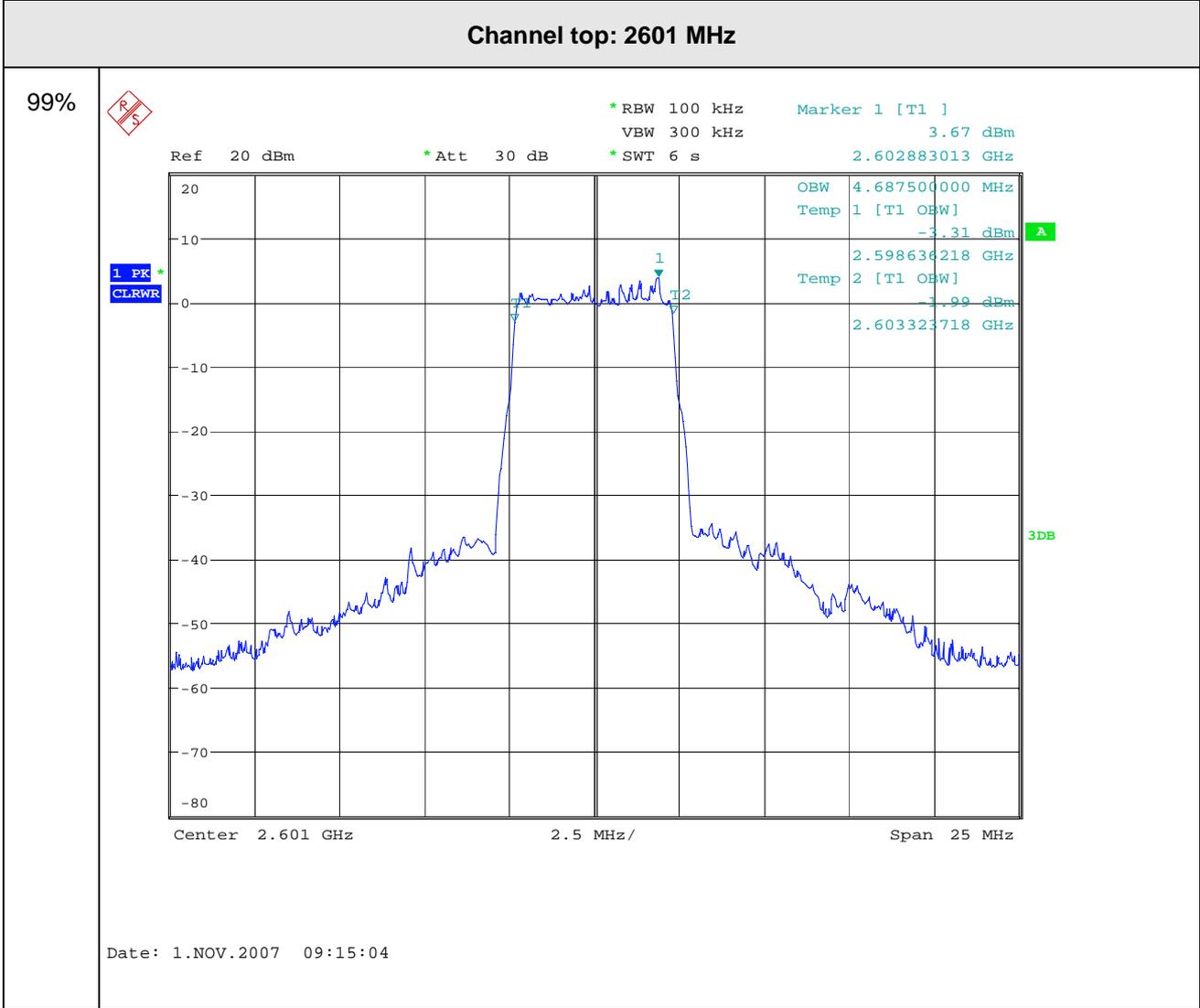
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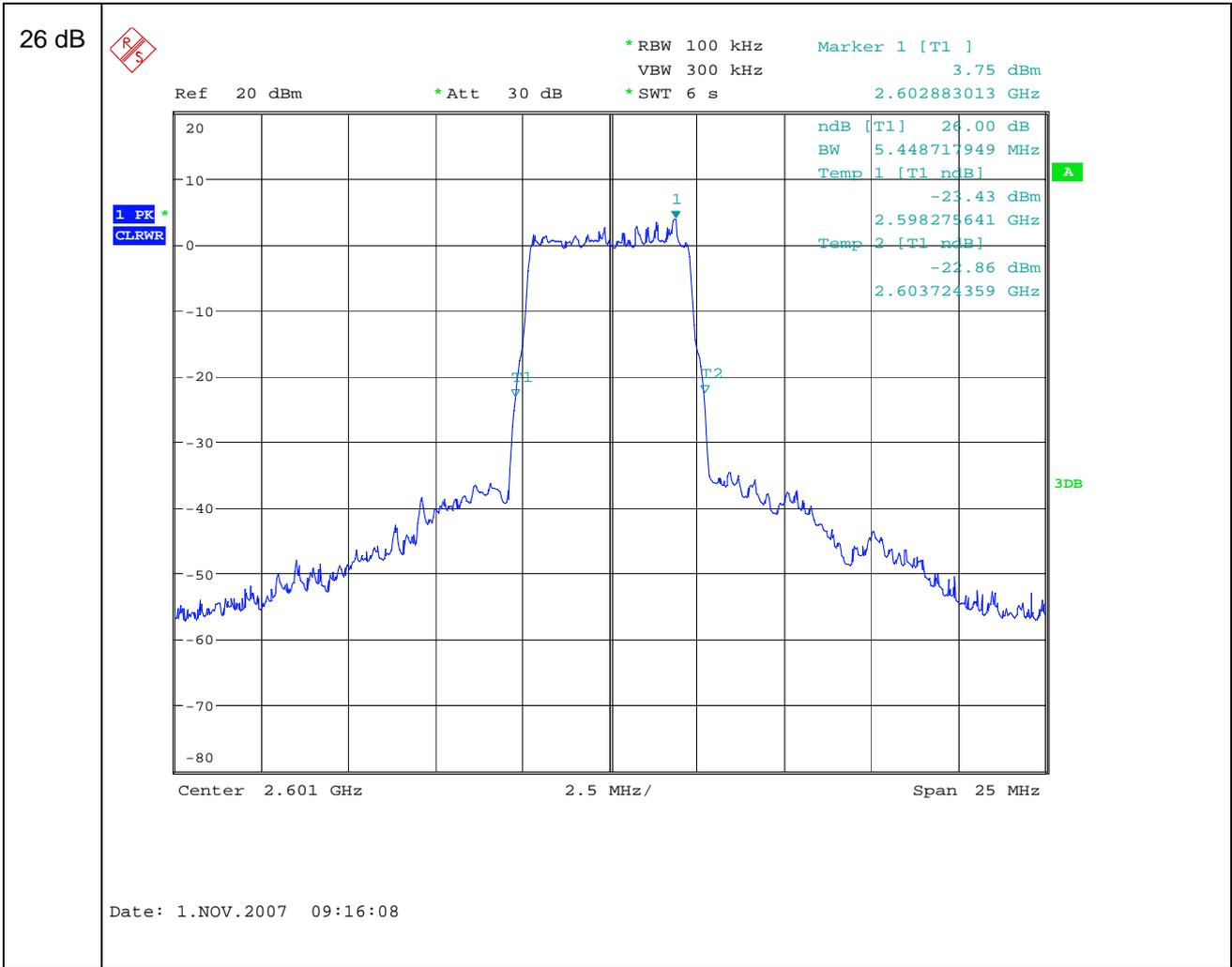
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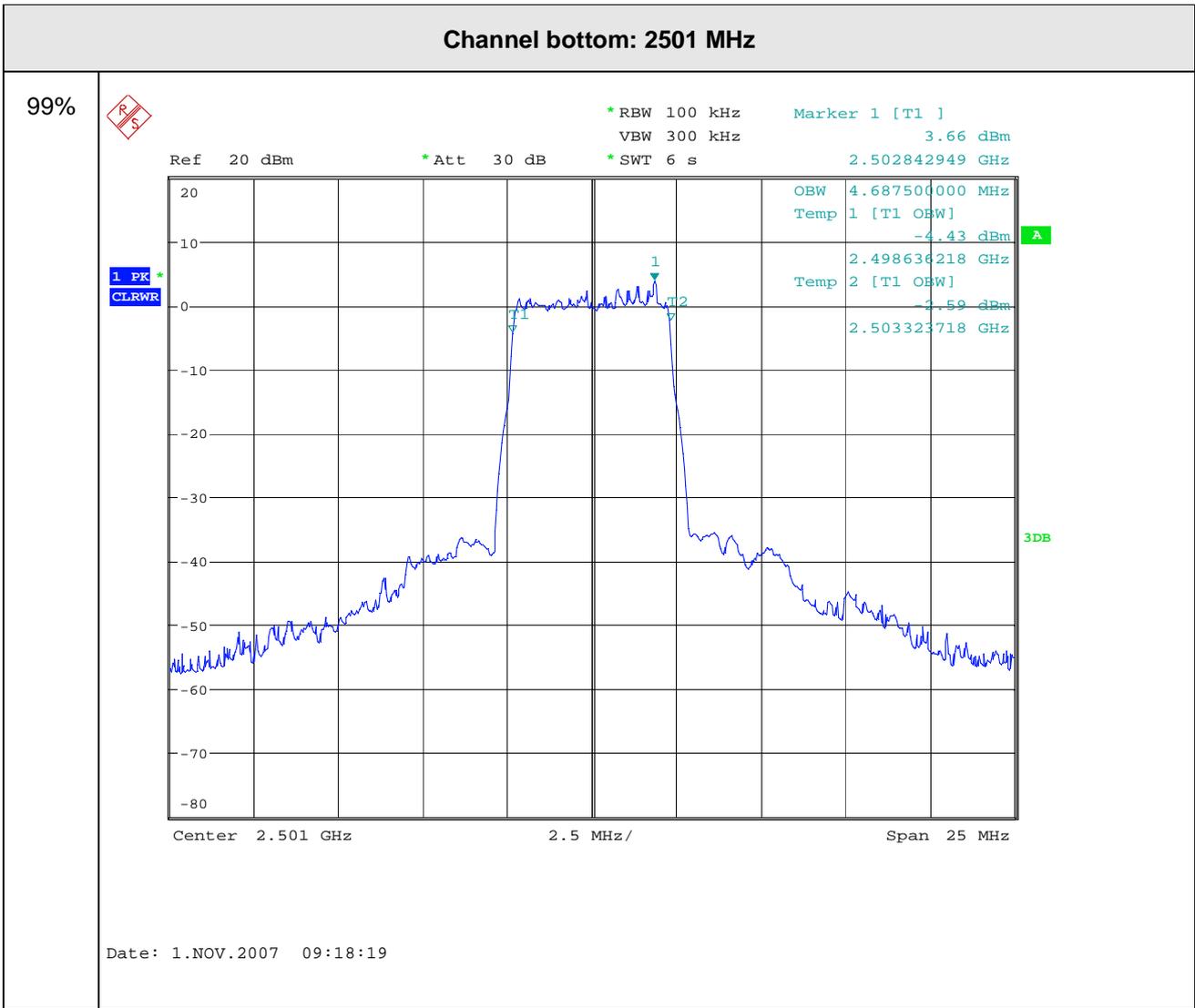








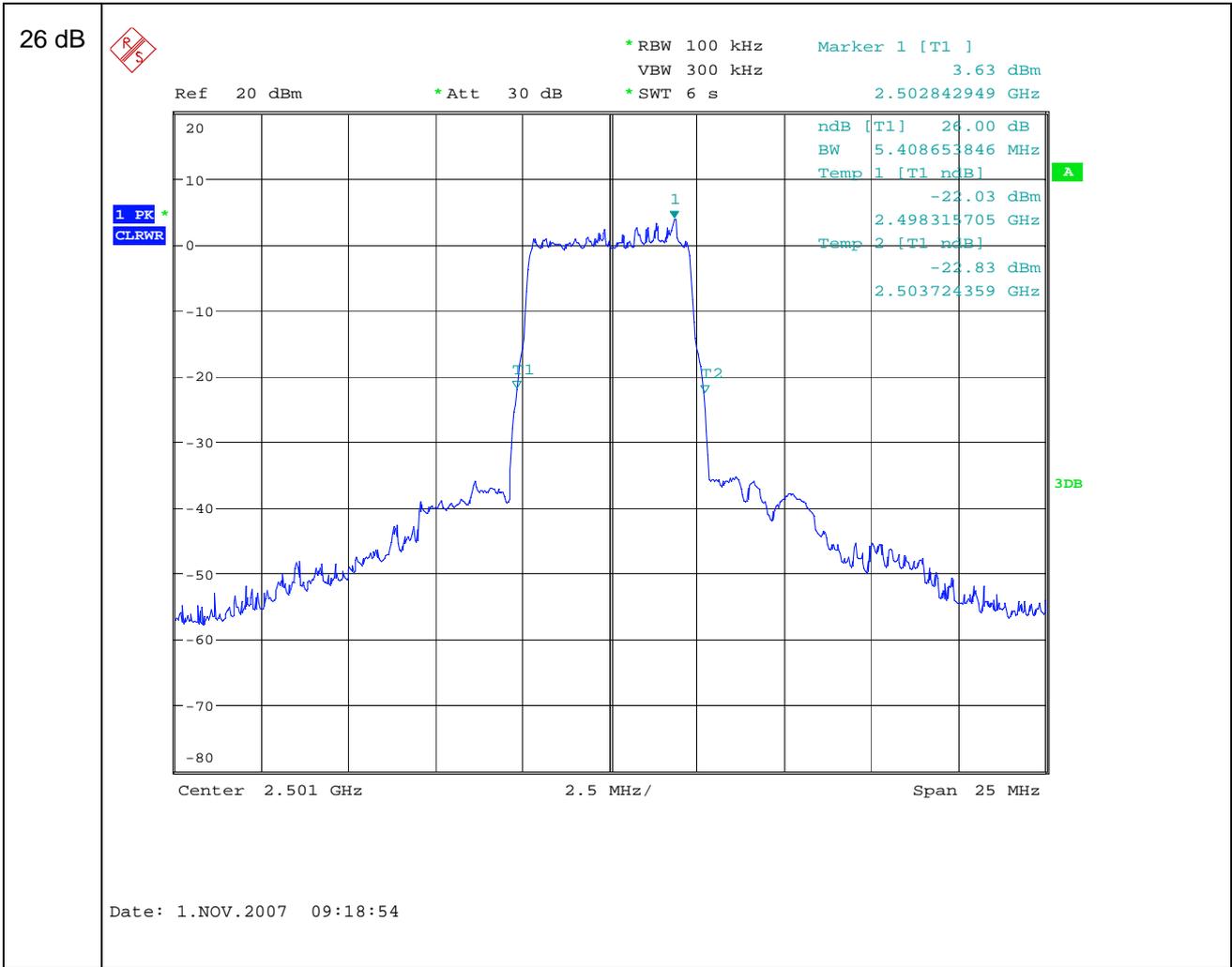
1.1.5 Test Mode of 64QAM 1/2

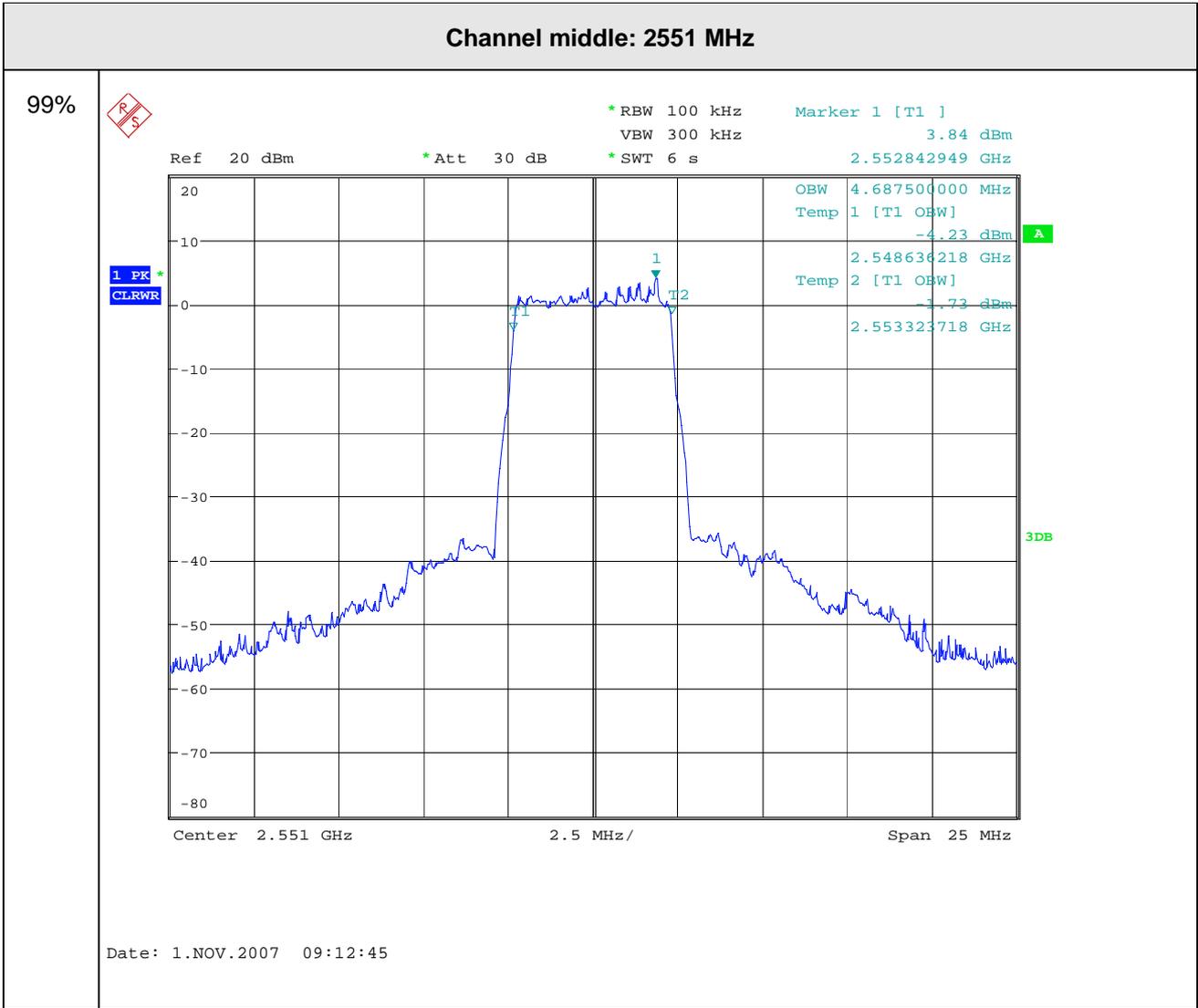




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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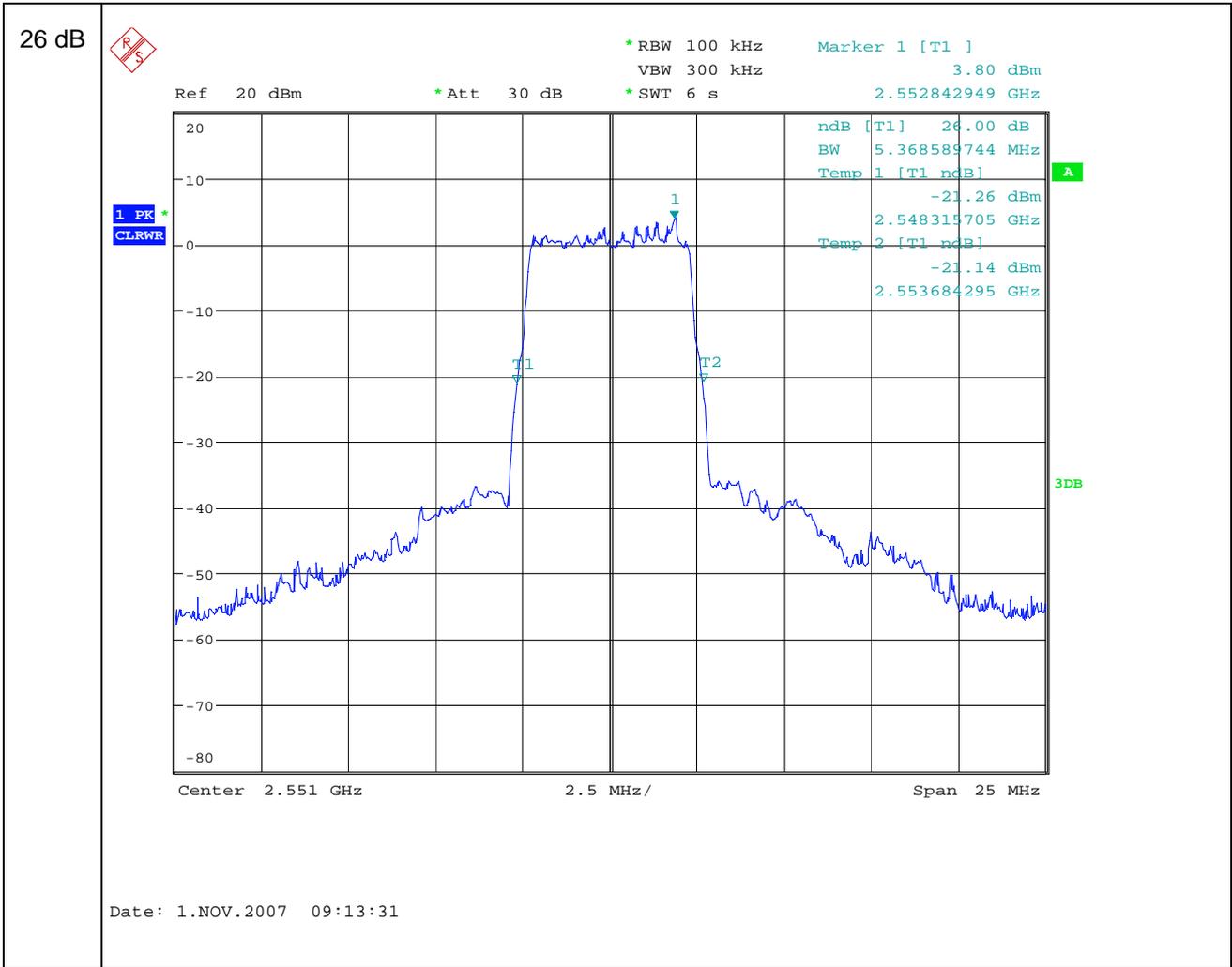


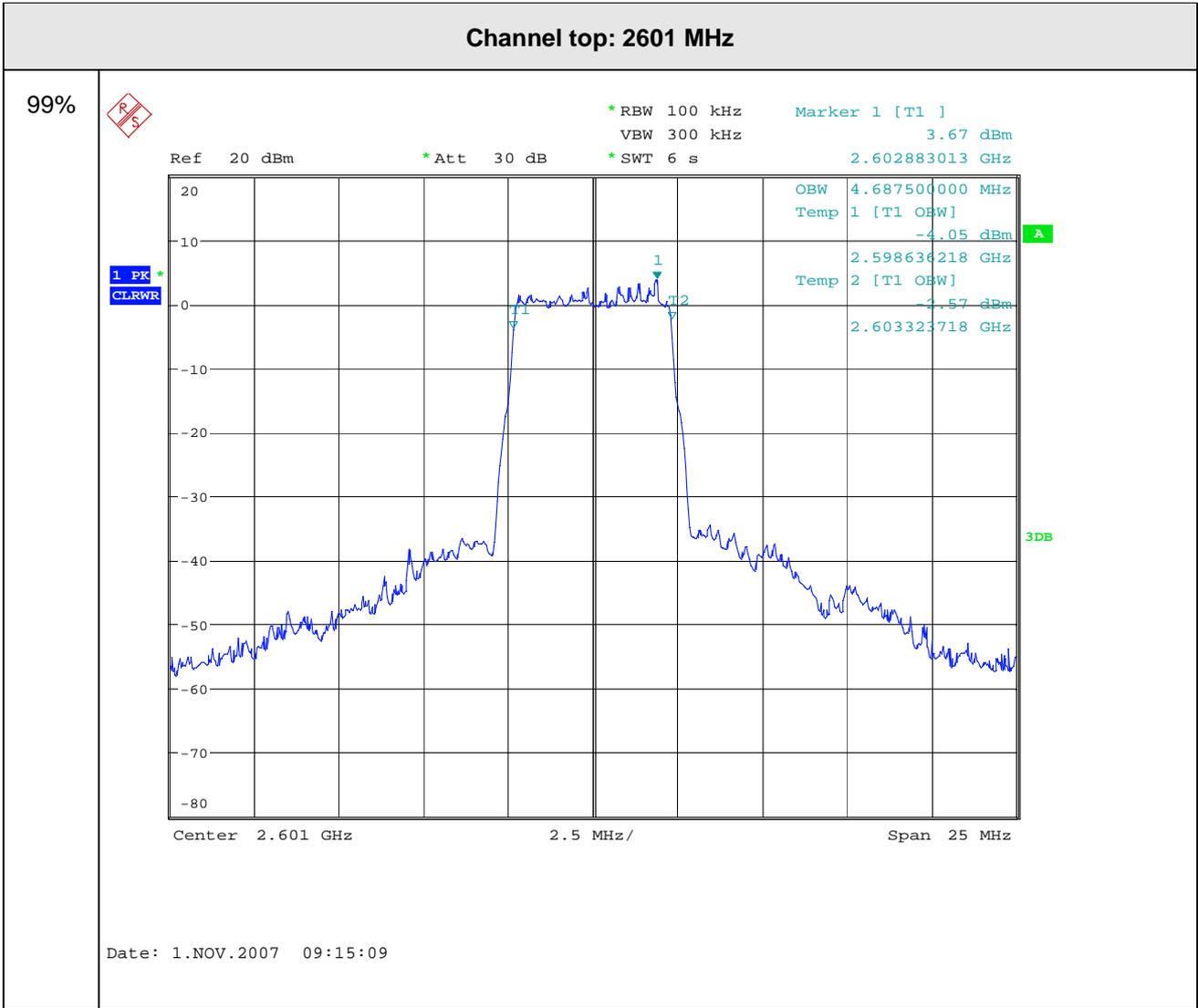


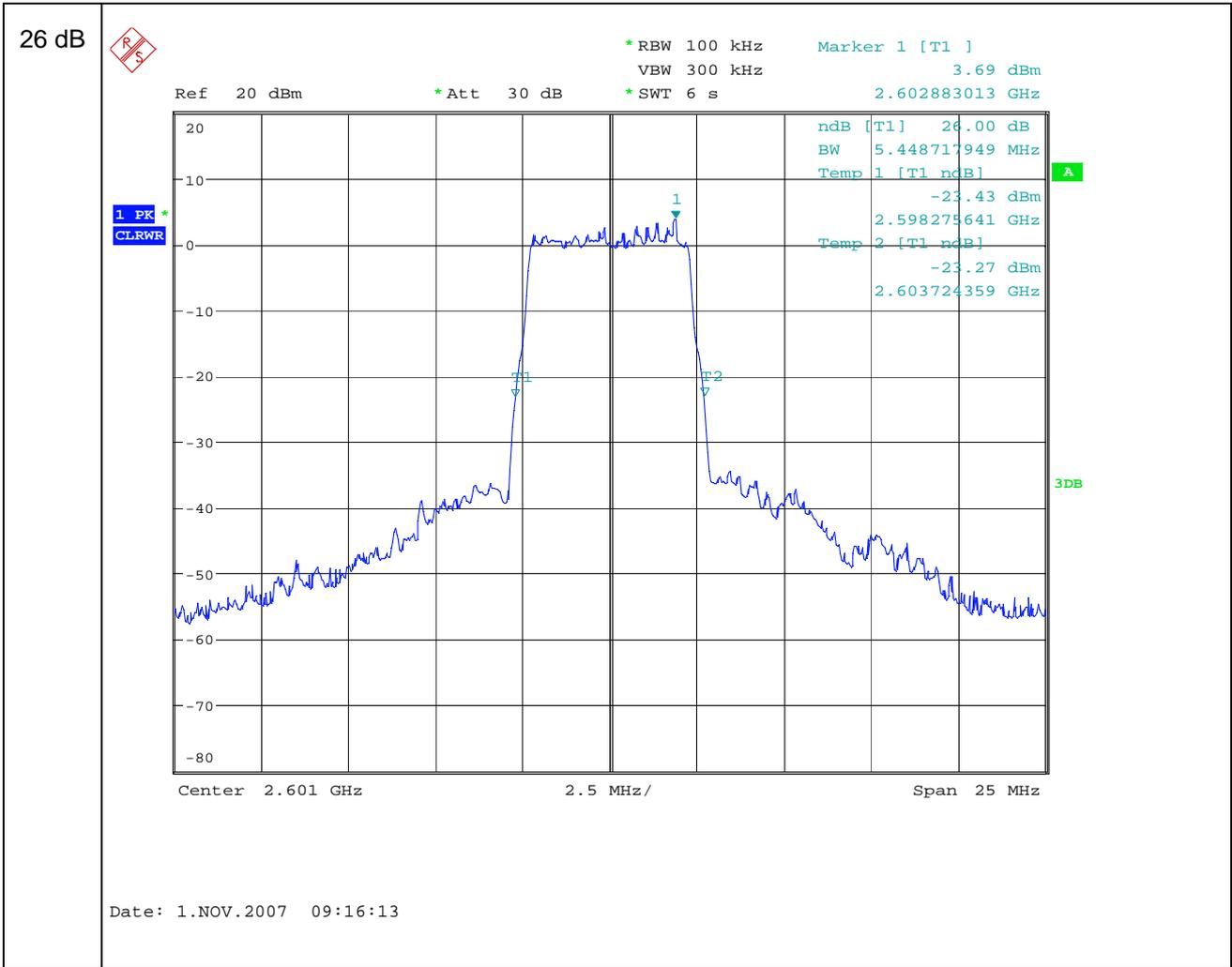


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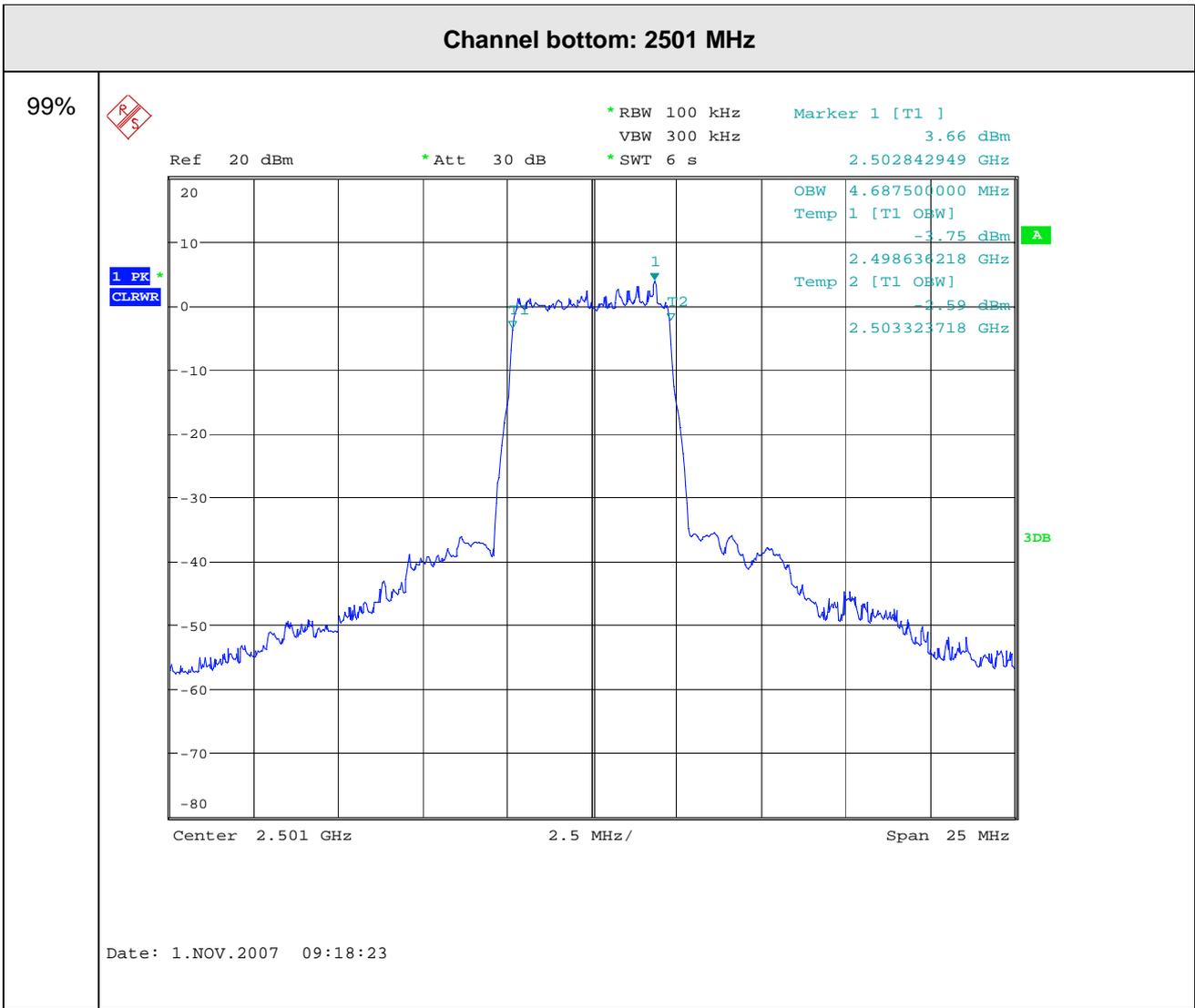
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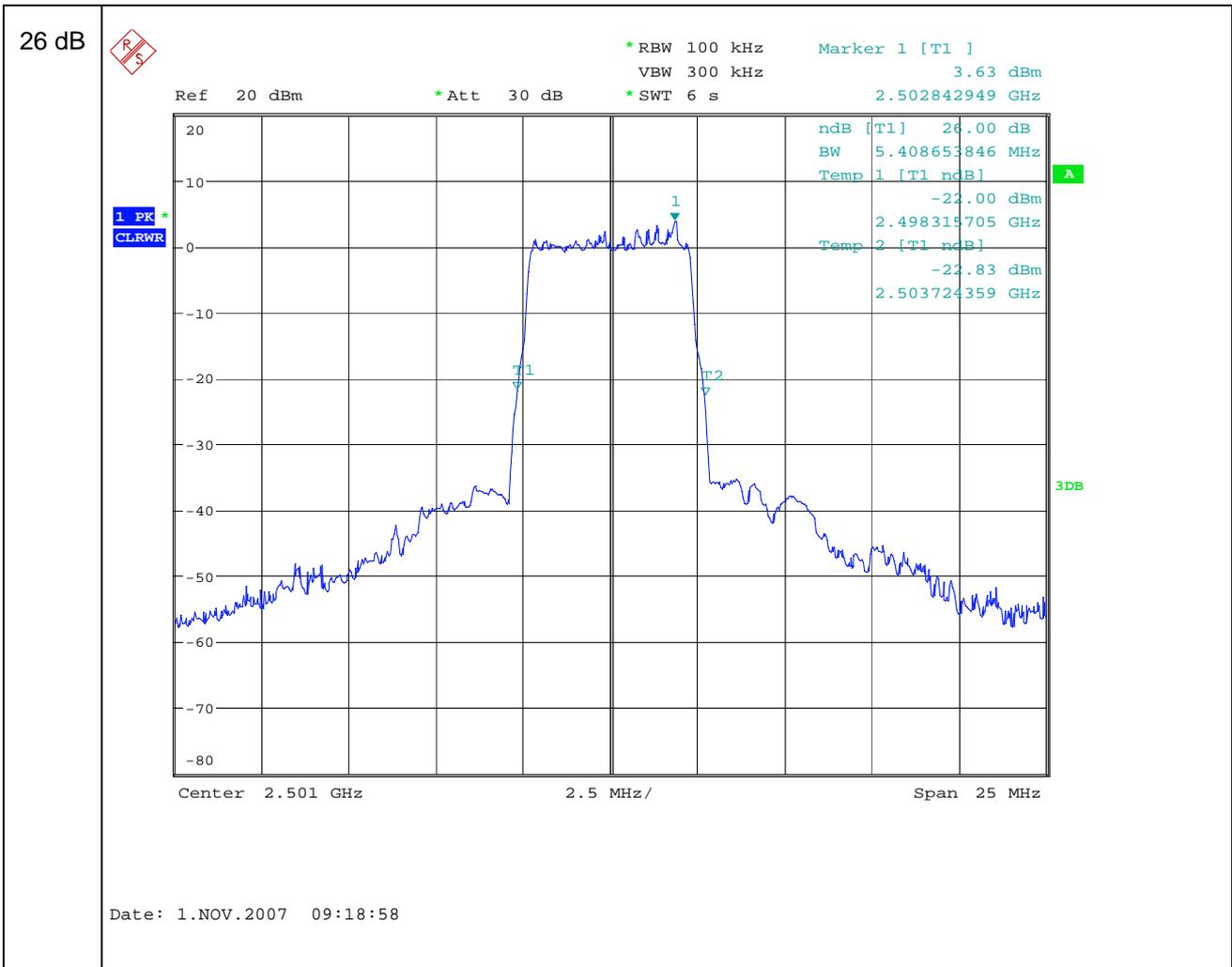
1.1.6 Test Mode of 64QAM 2/3

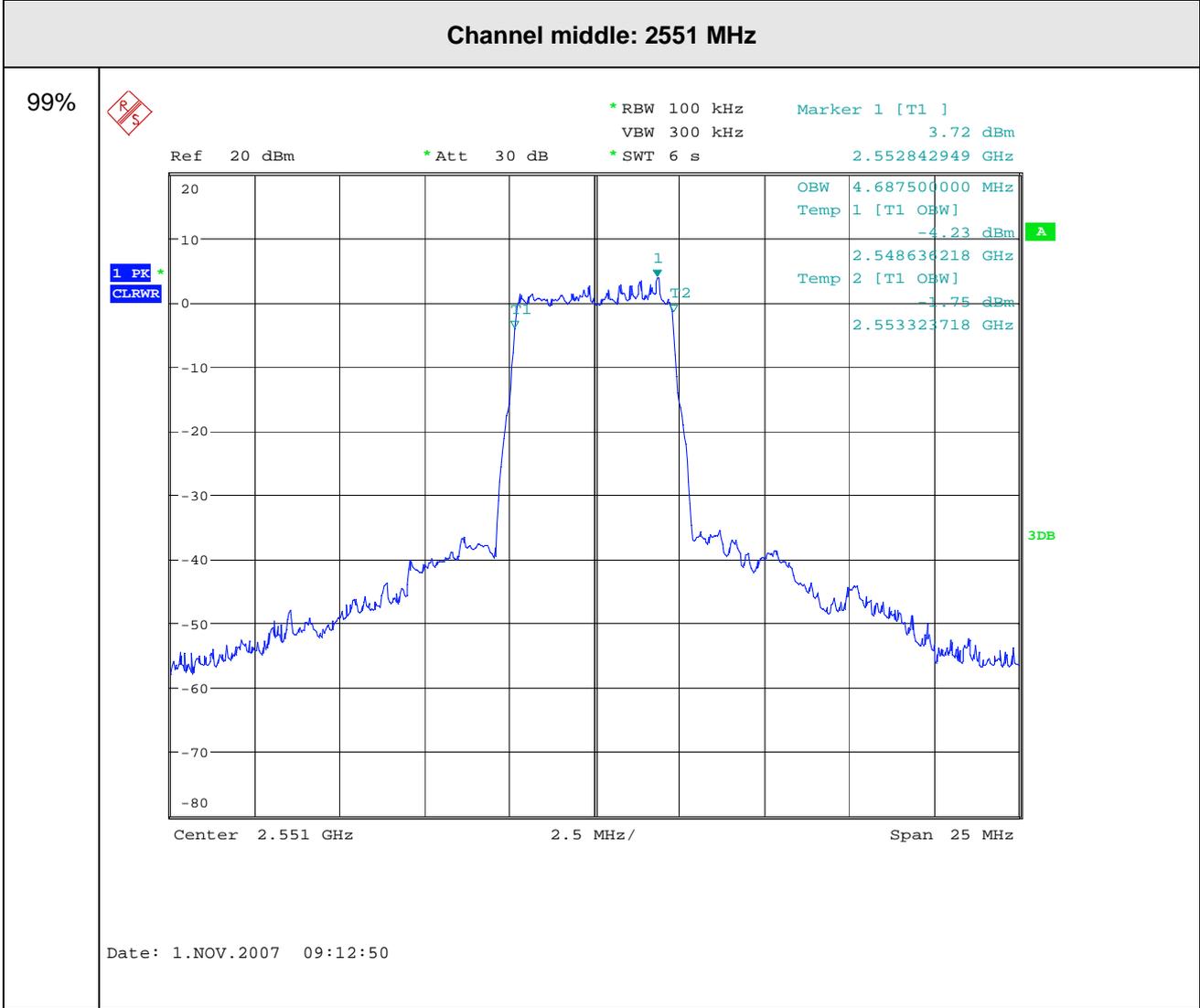




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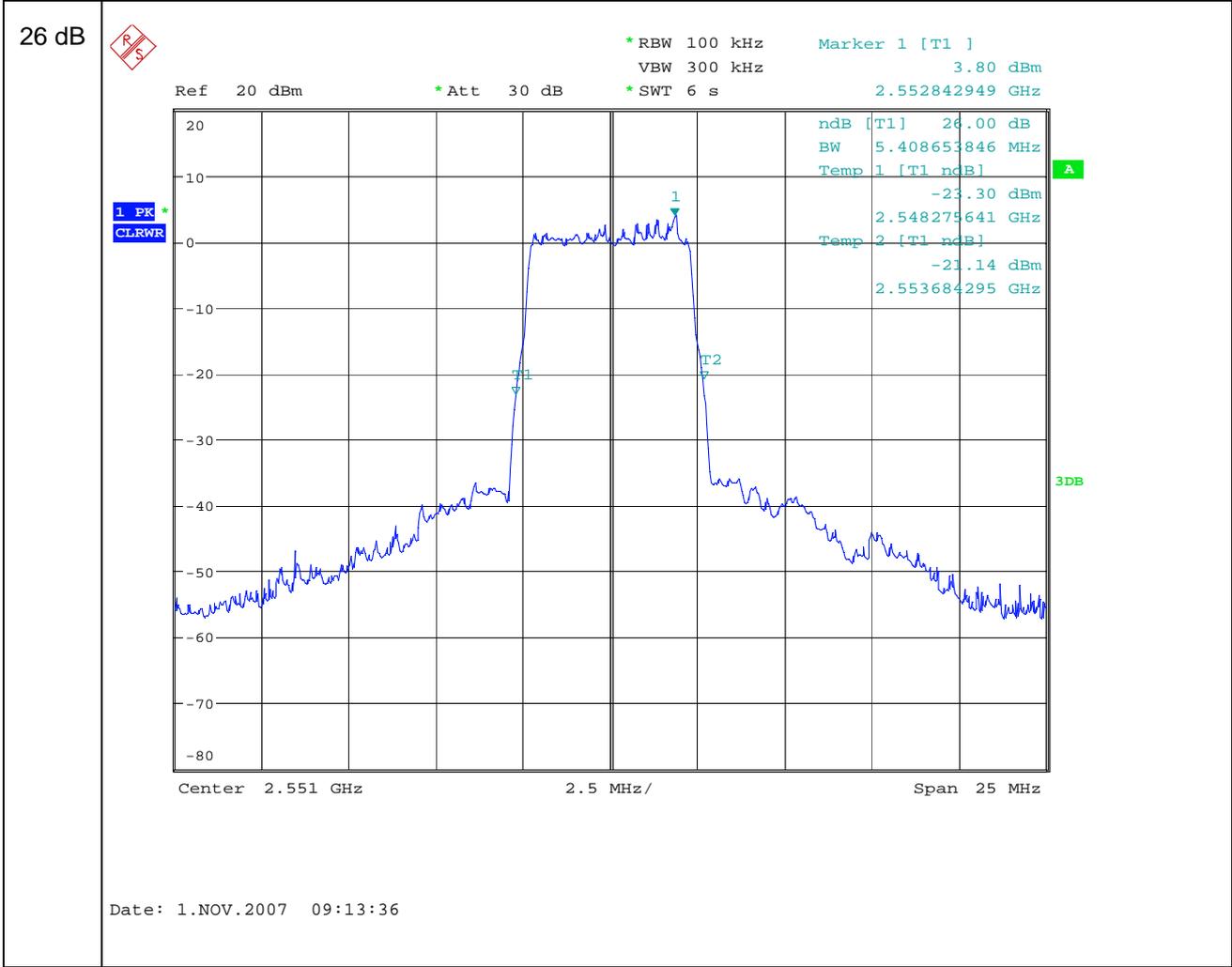


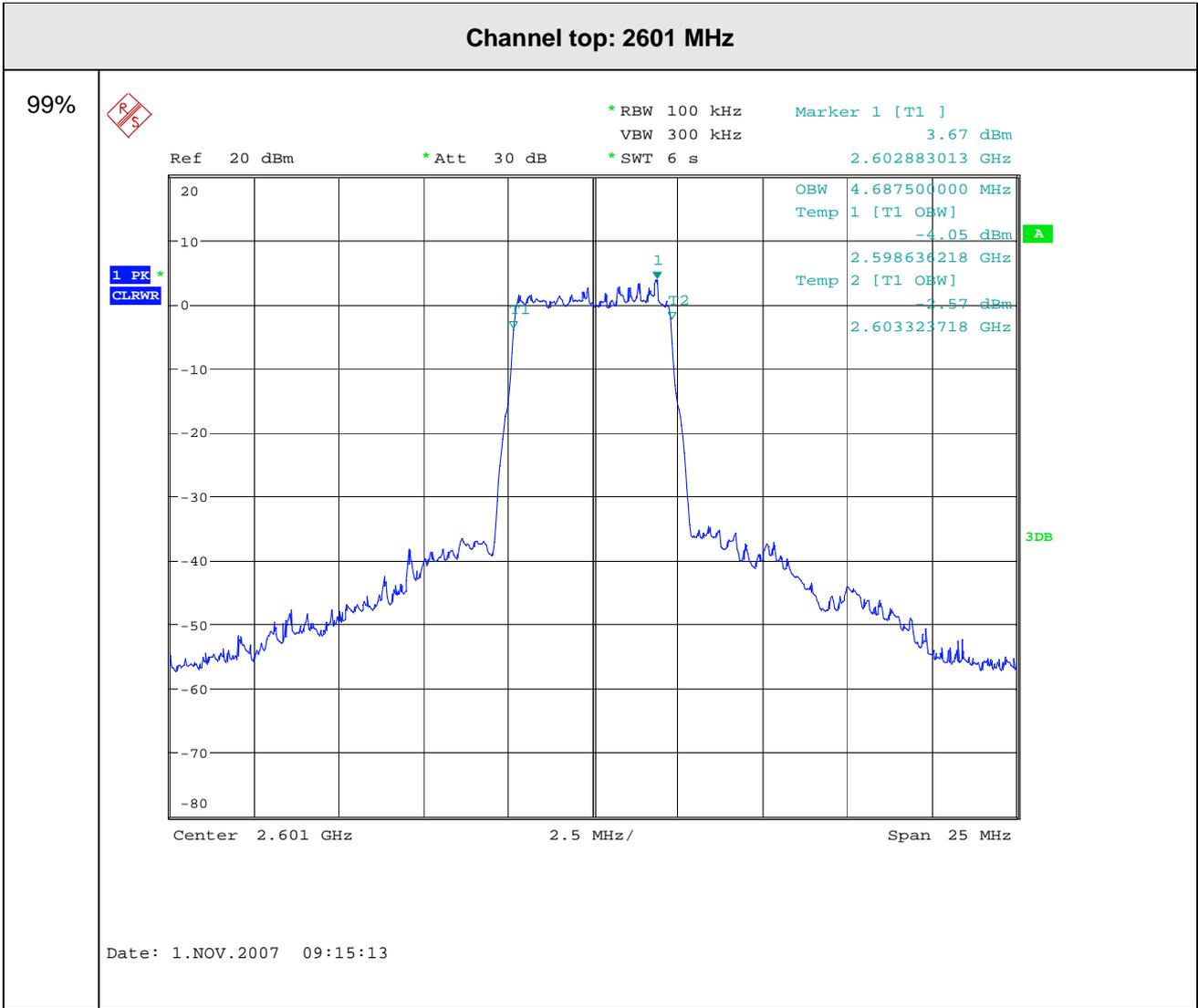


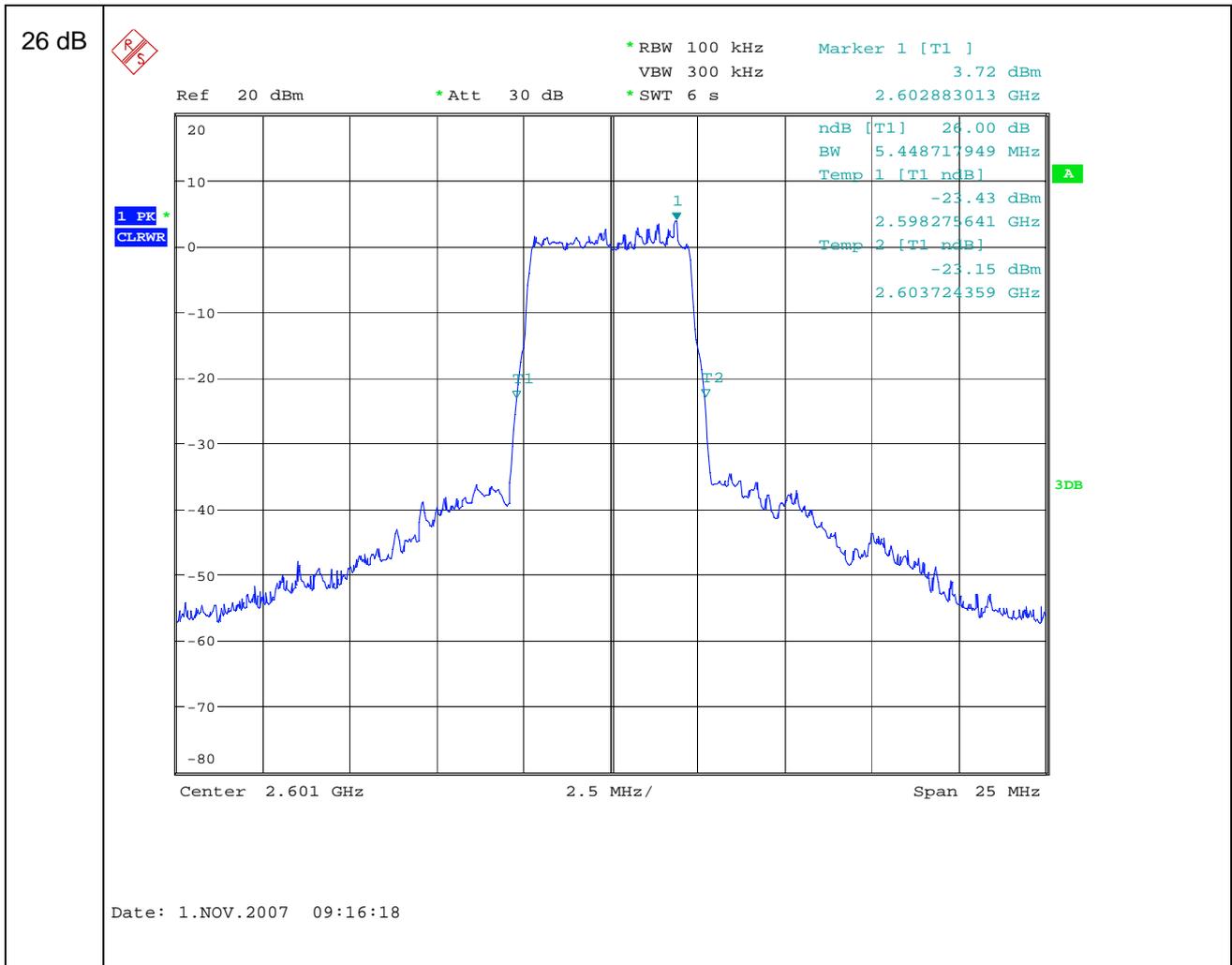


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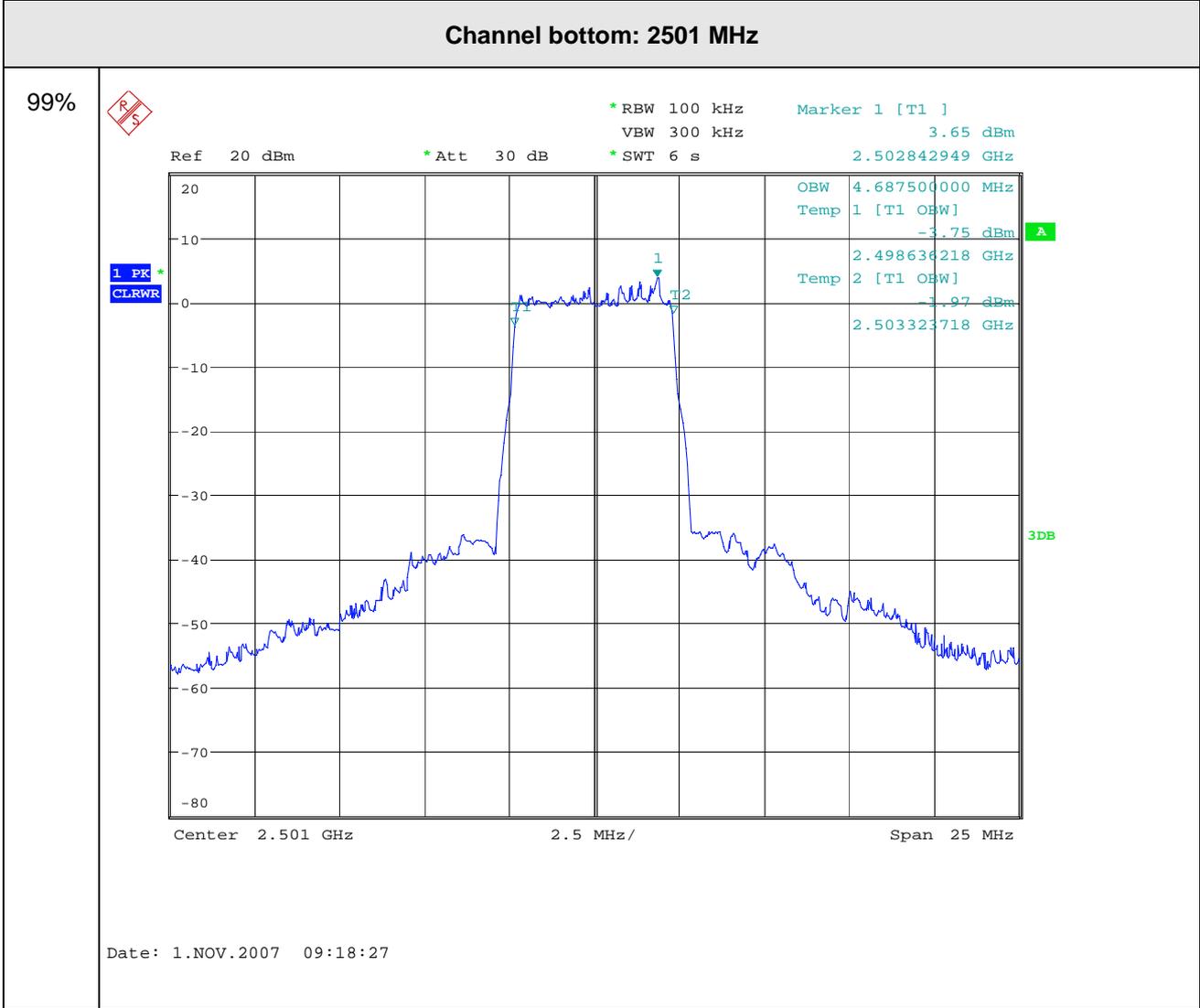
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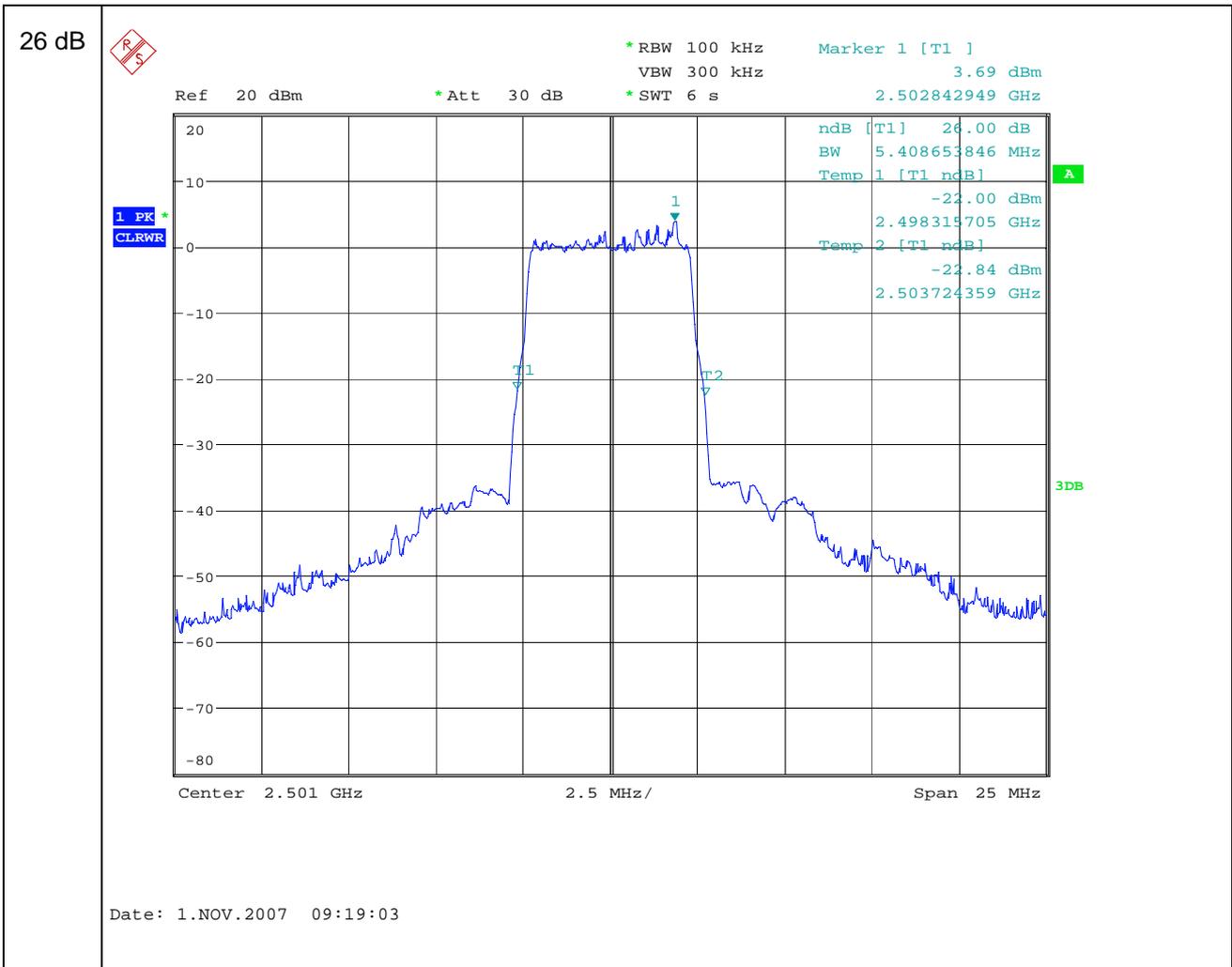
1.1.7 Test Mode of 64QAM 3/4

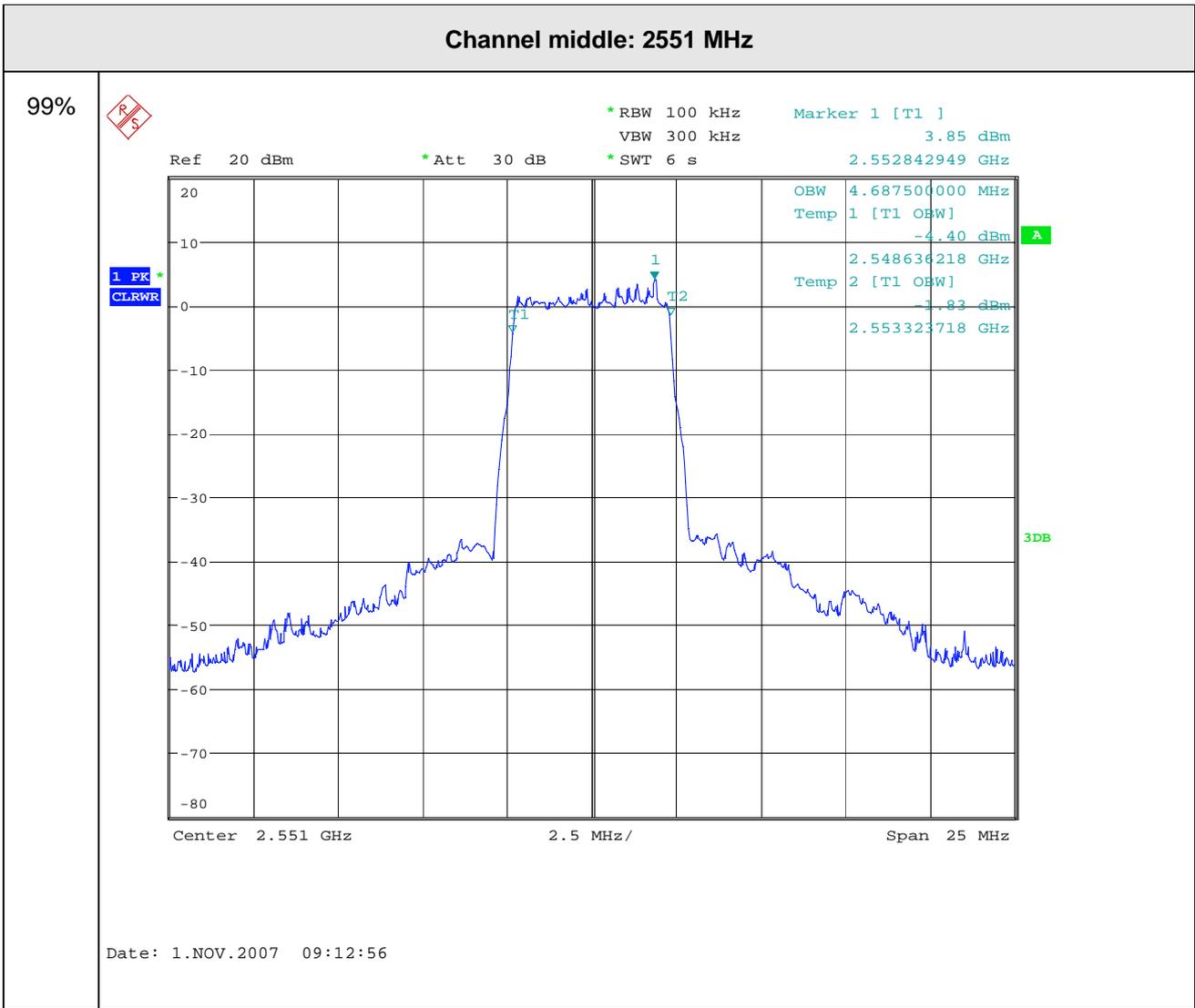




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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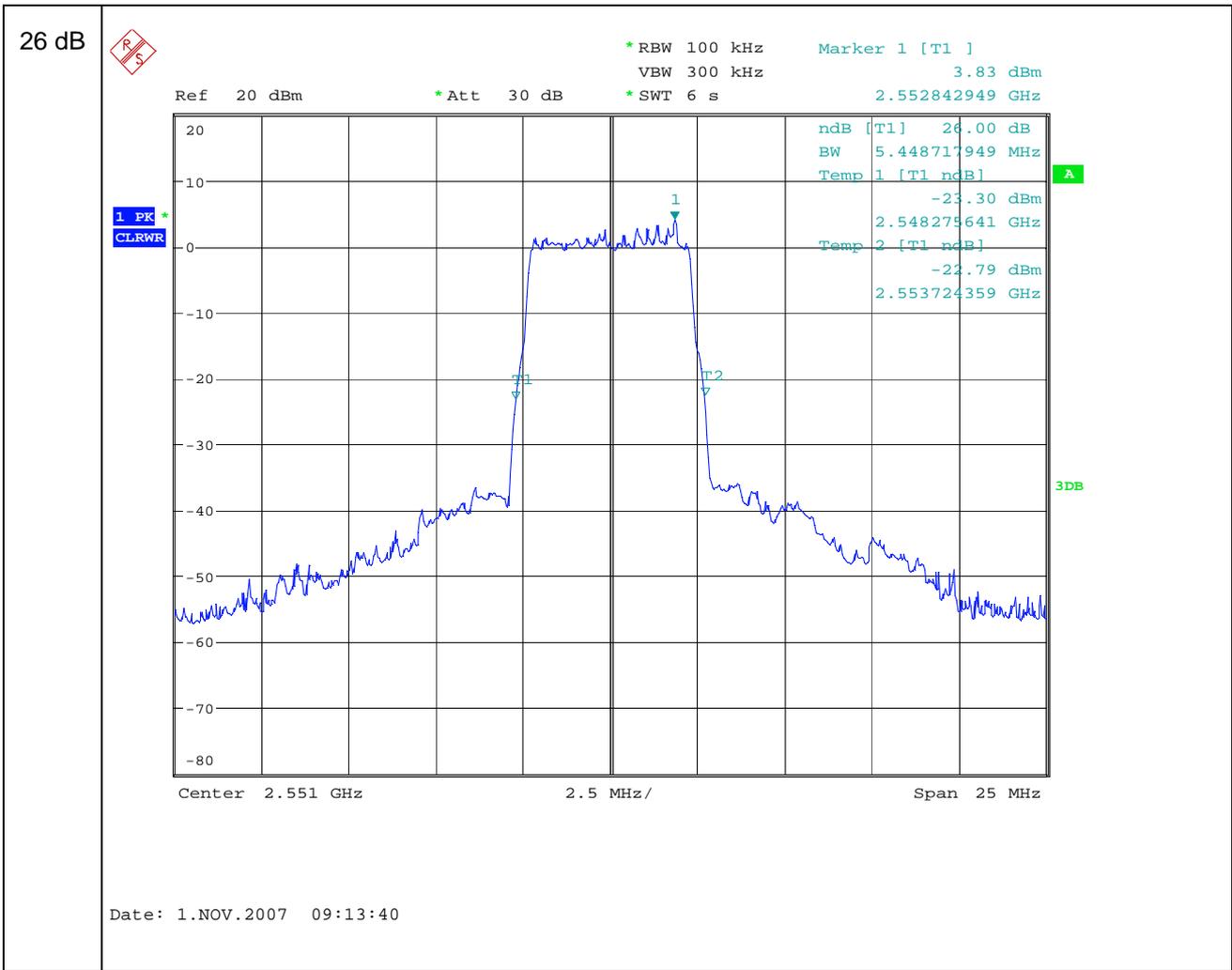


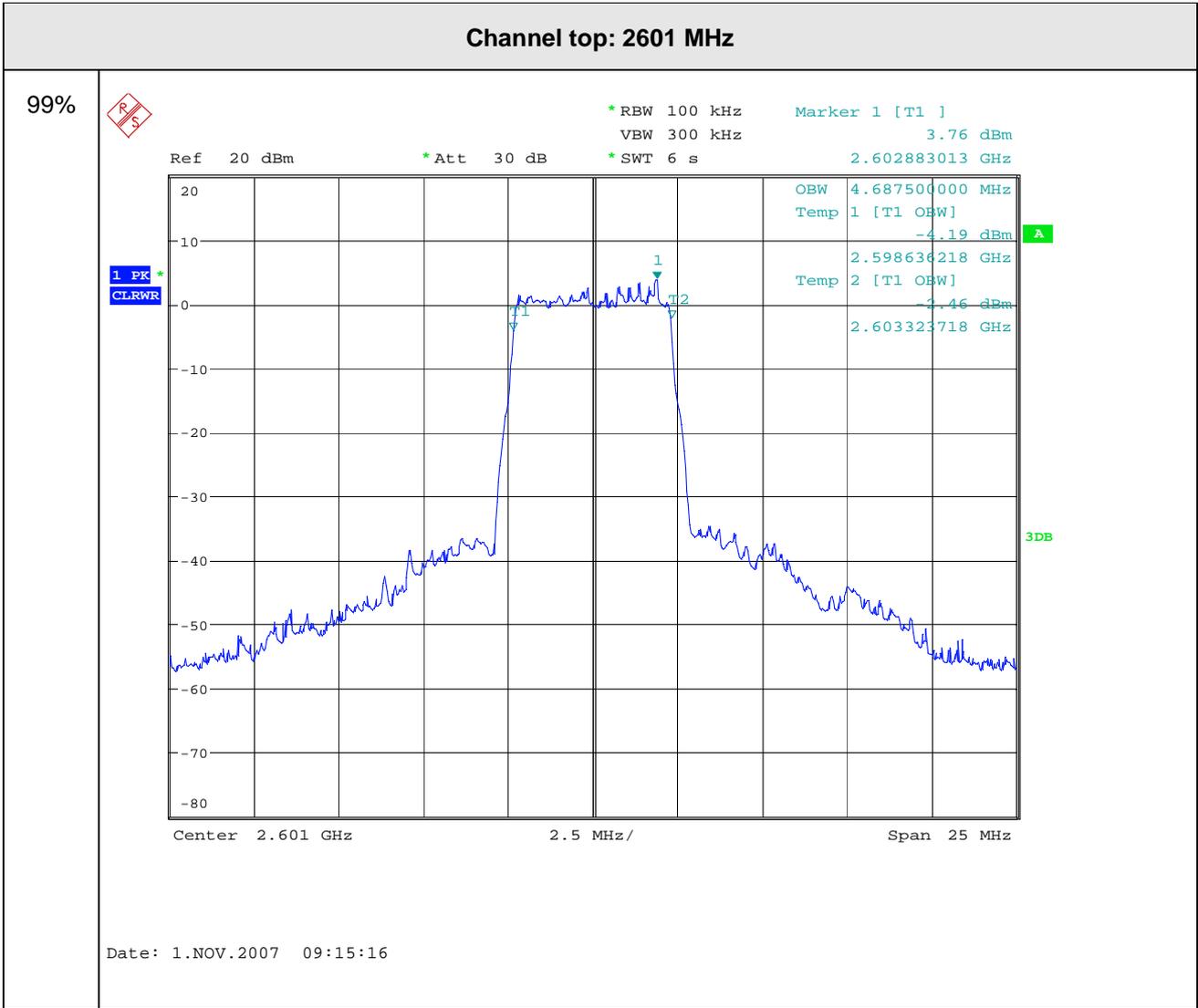




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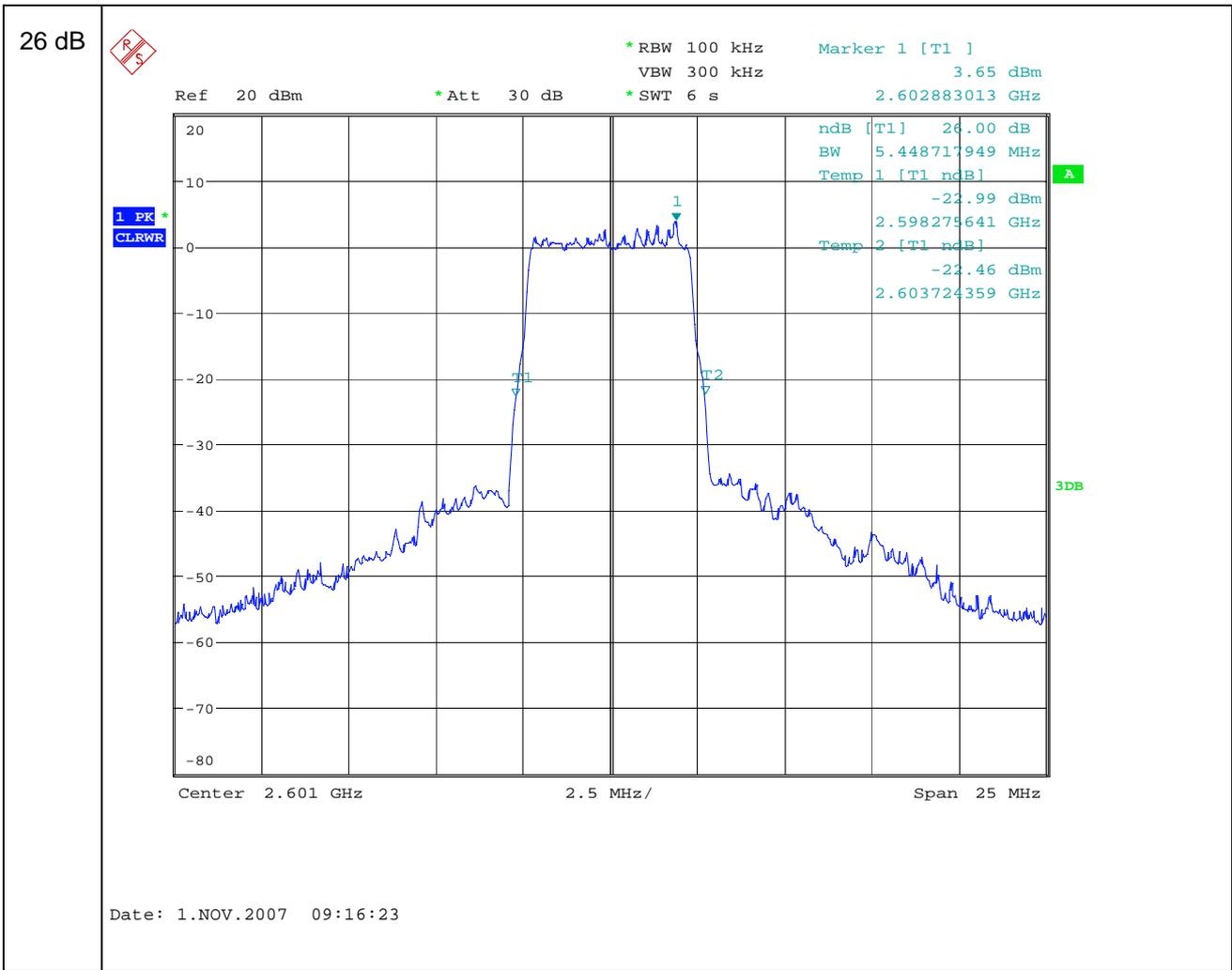






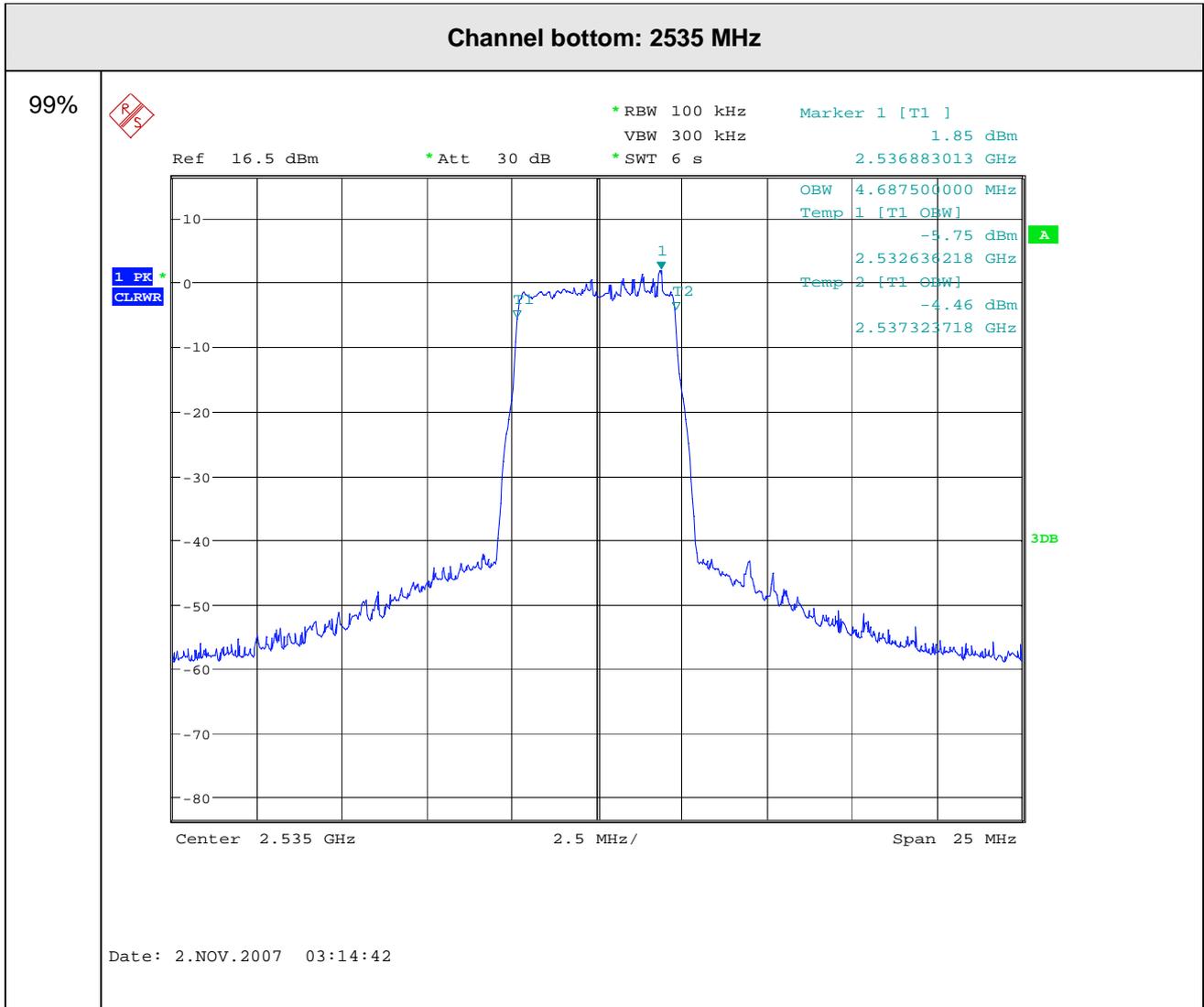
FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G



1.2 2.5 GHz middle block

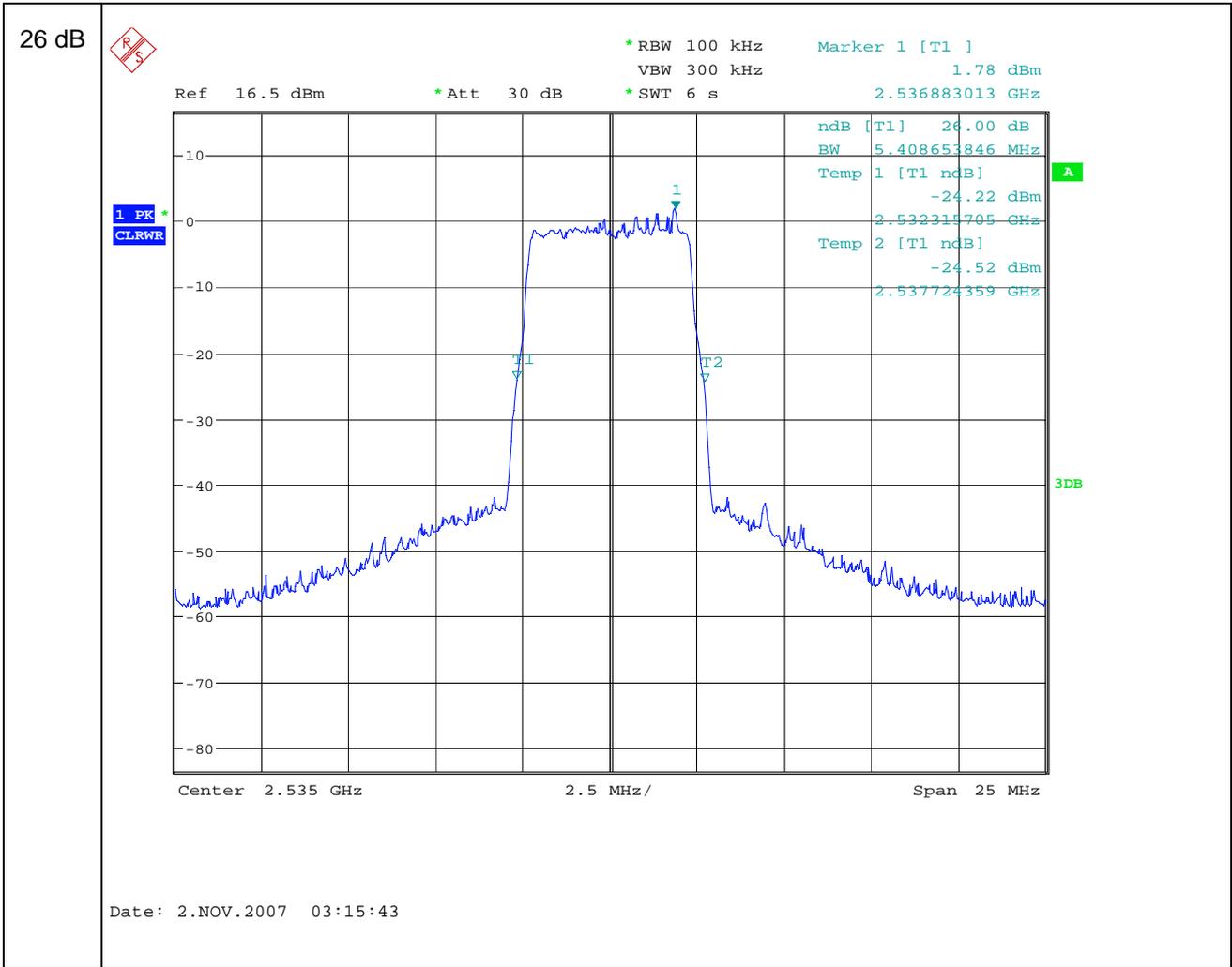
1.2.1 Test Mode of QPSK 1/2

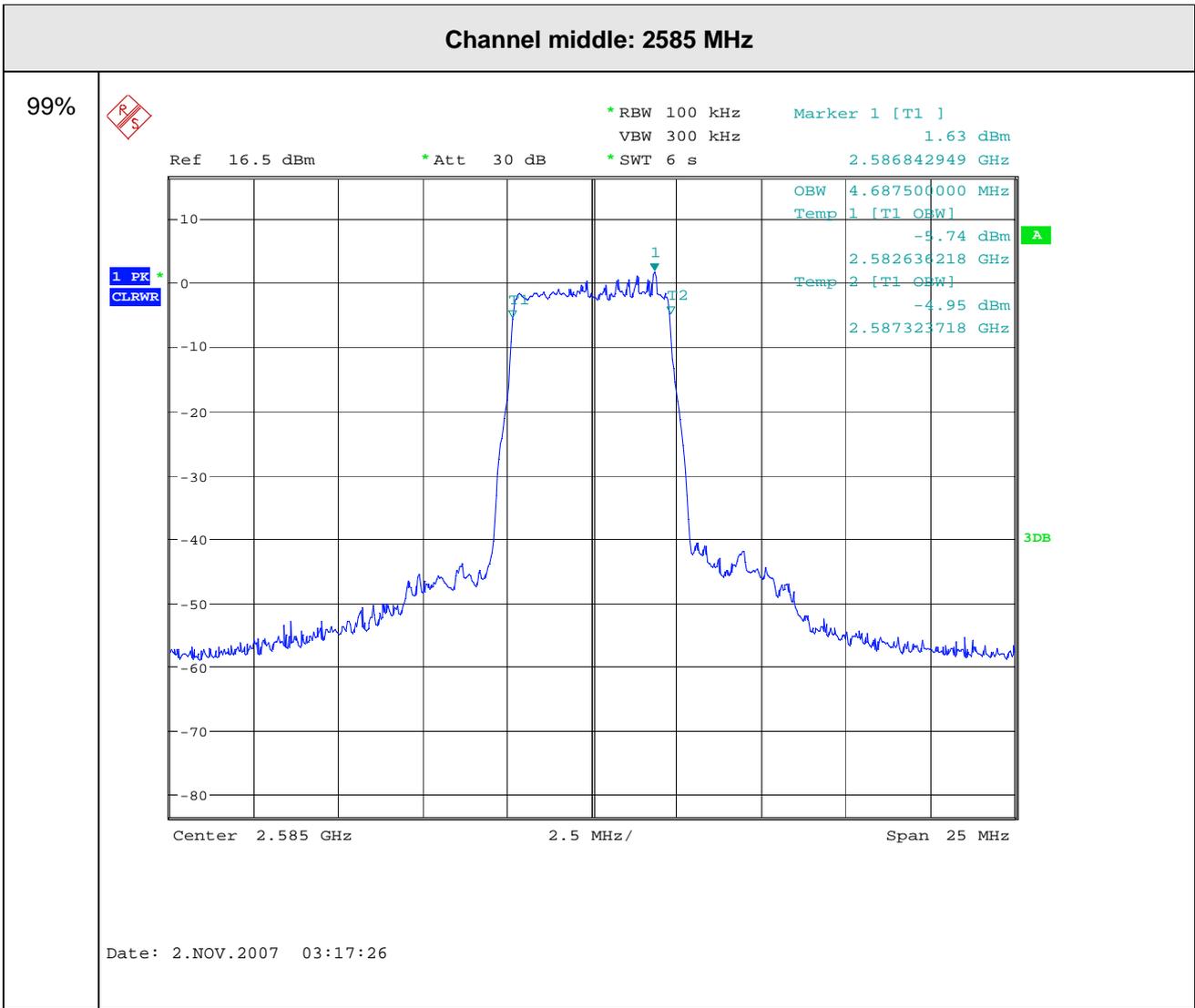




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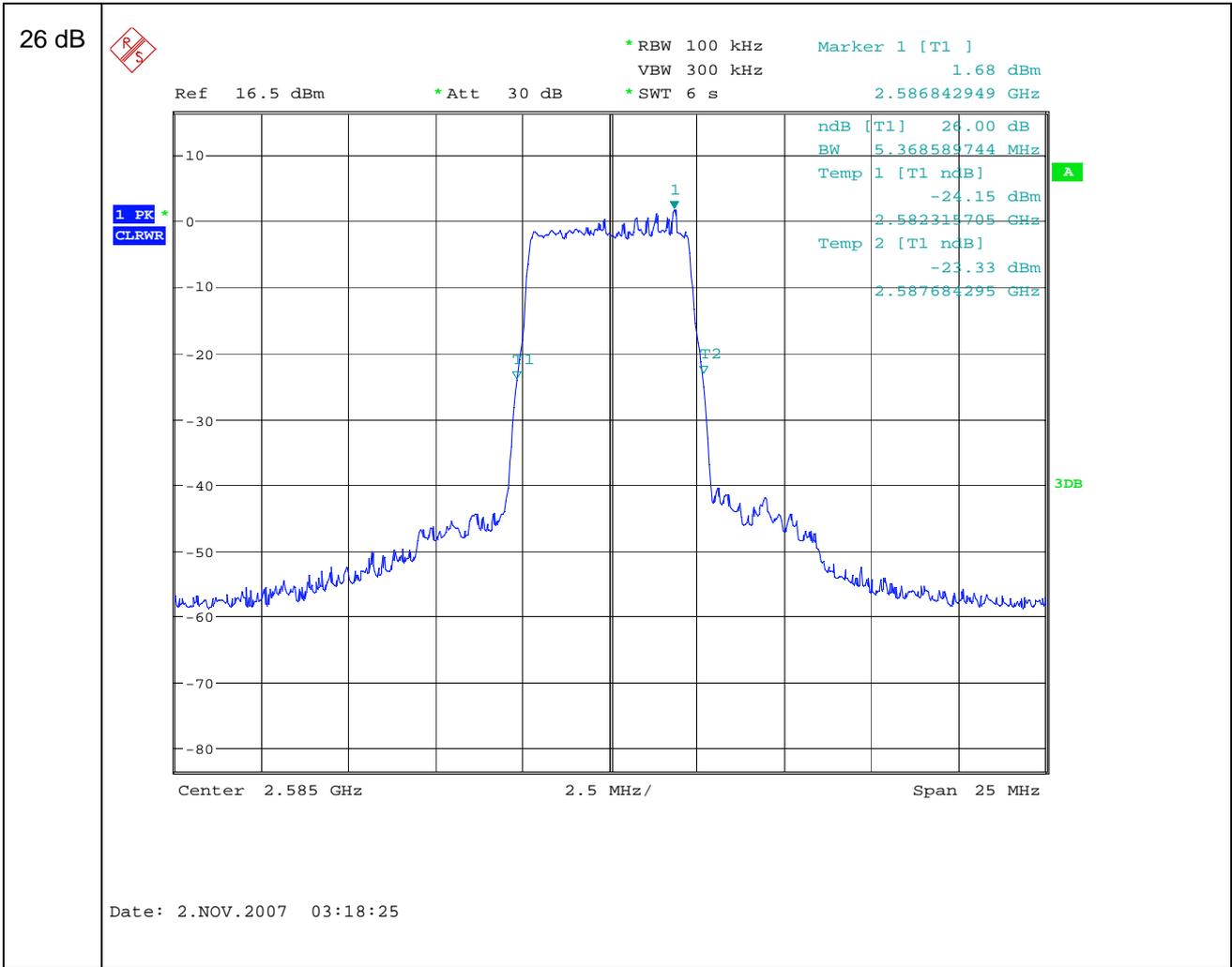


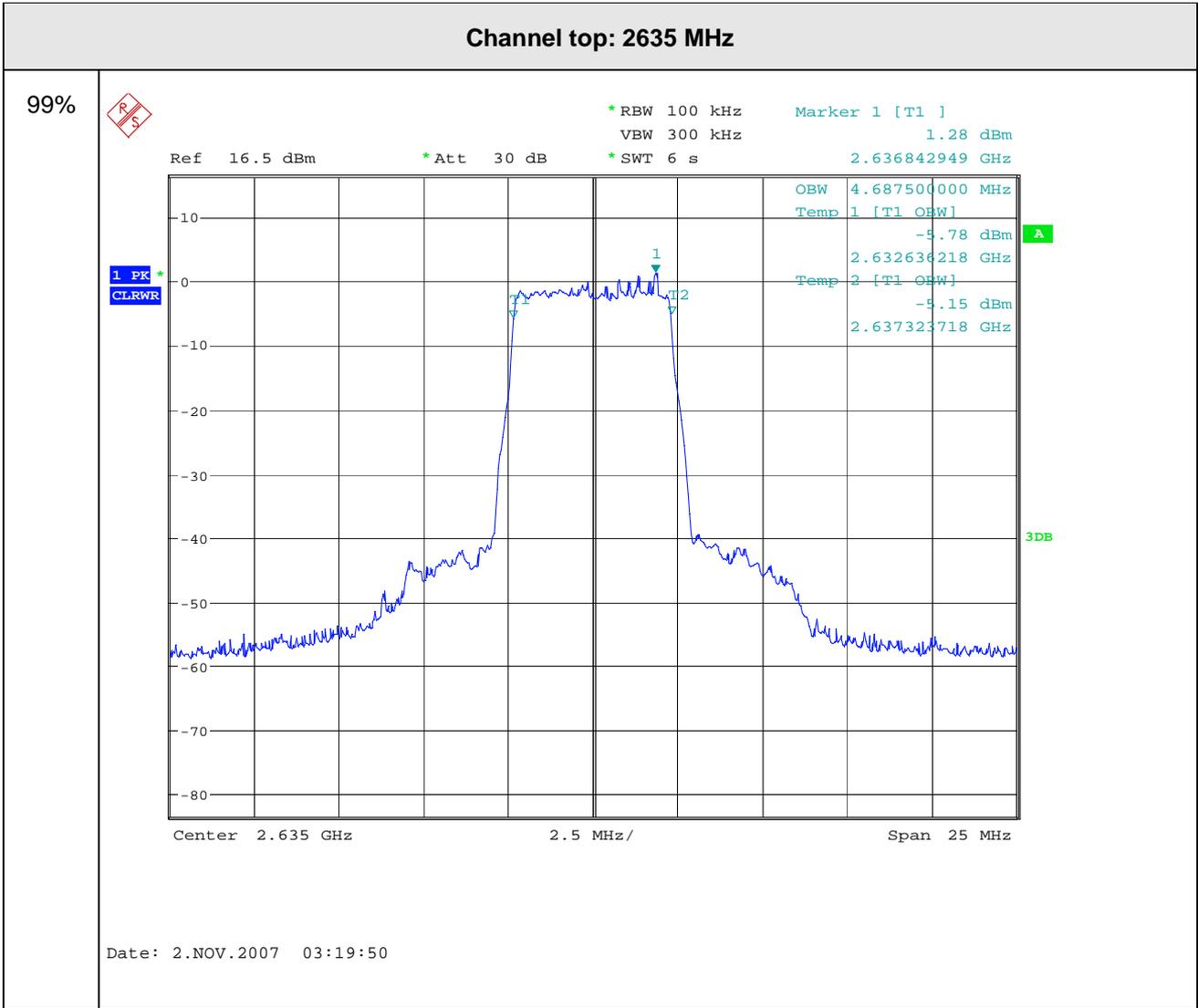


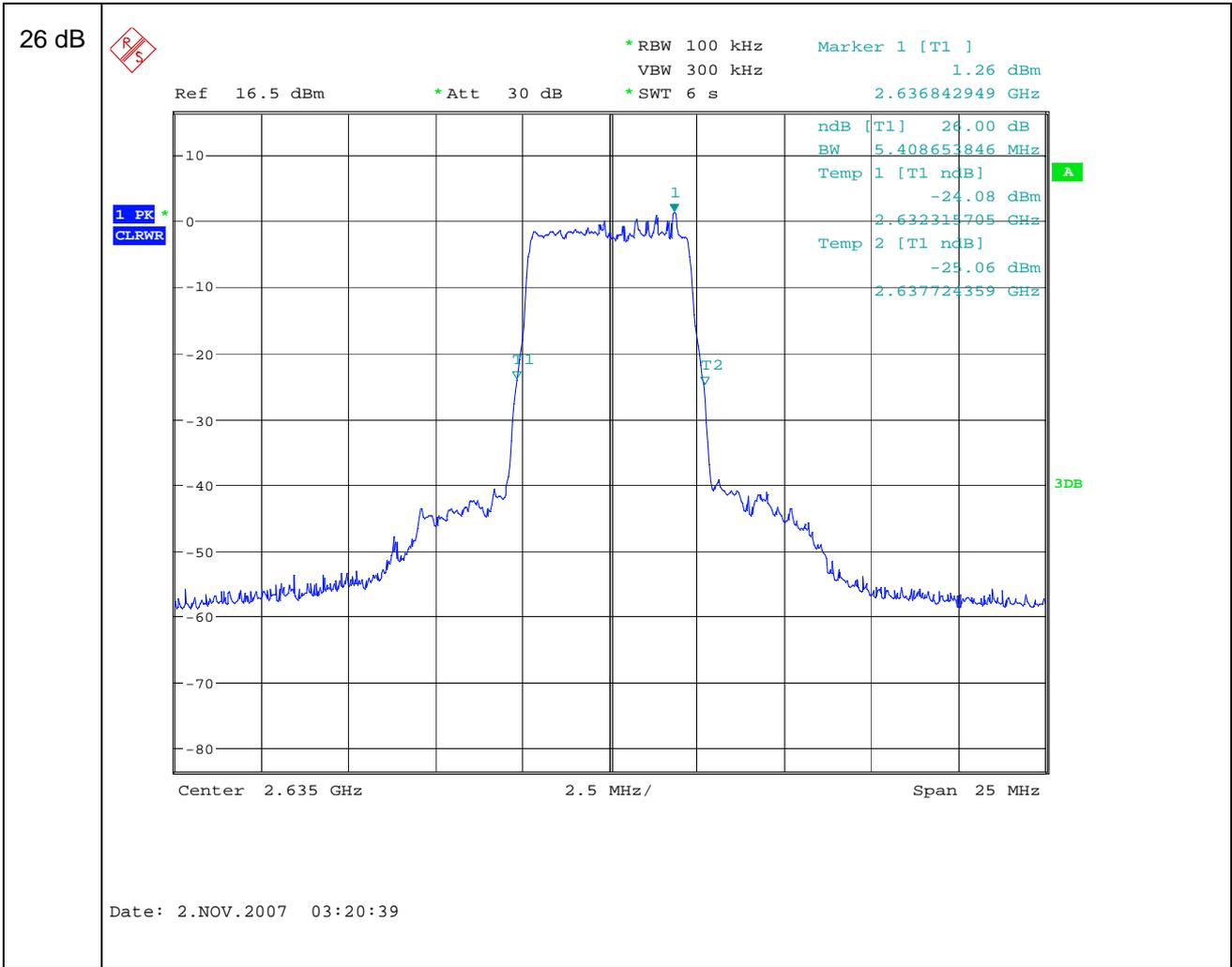


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

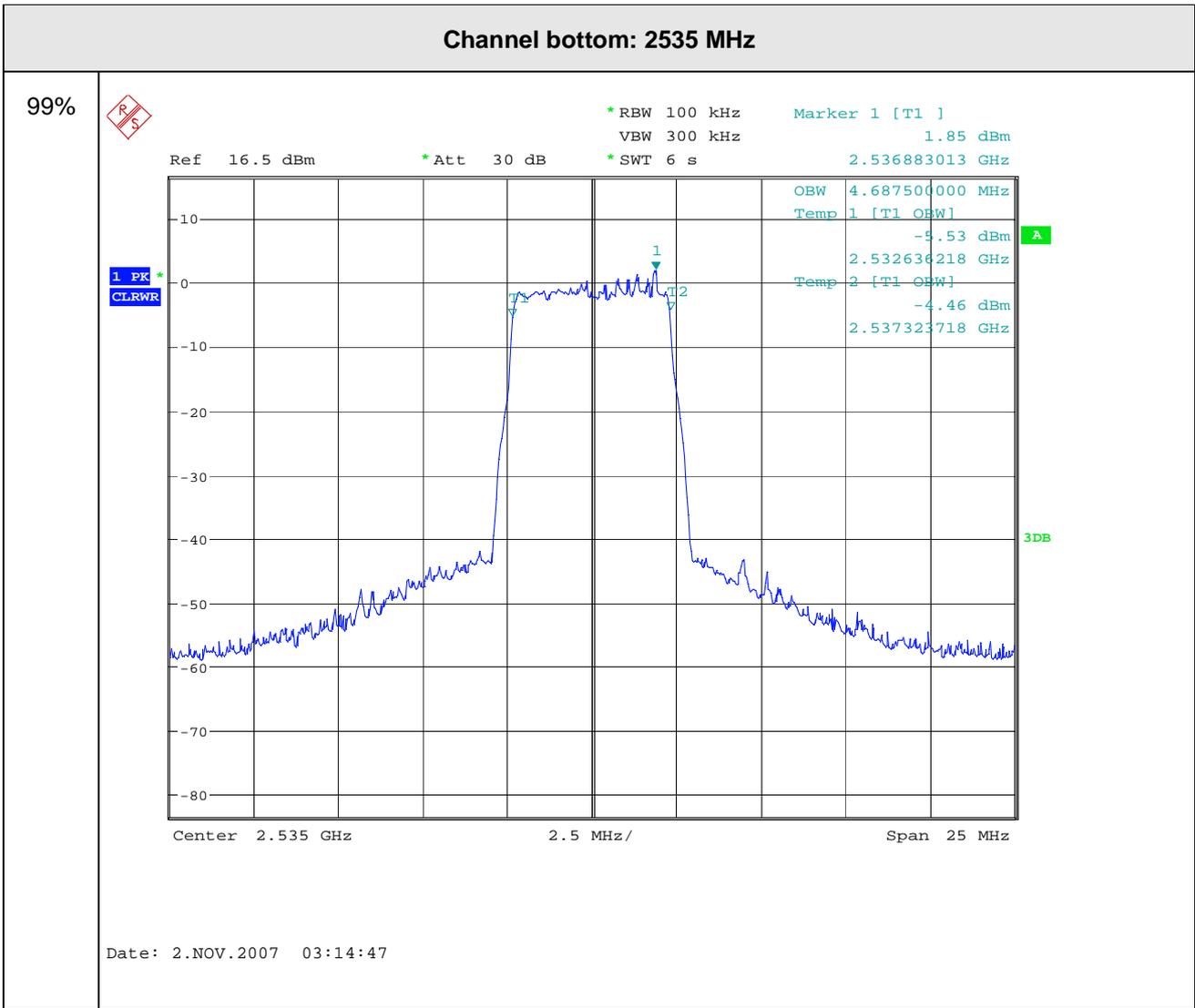
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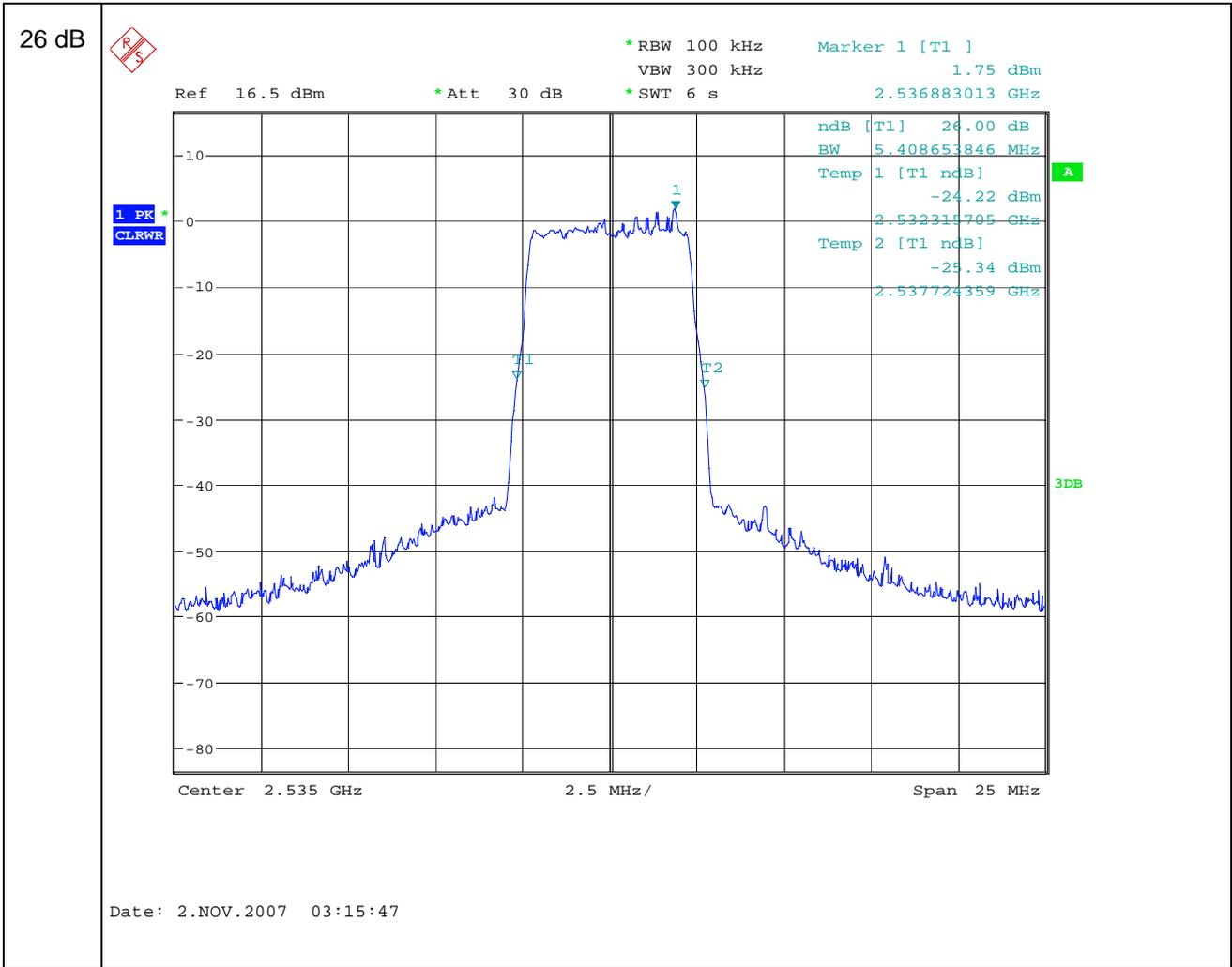
1.2.2 Test Mode of QPSK3/4

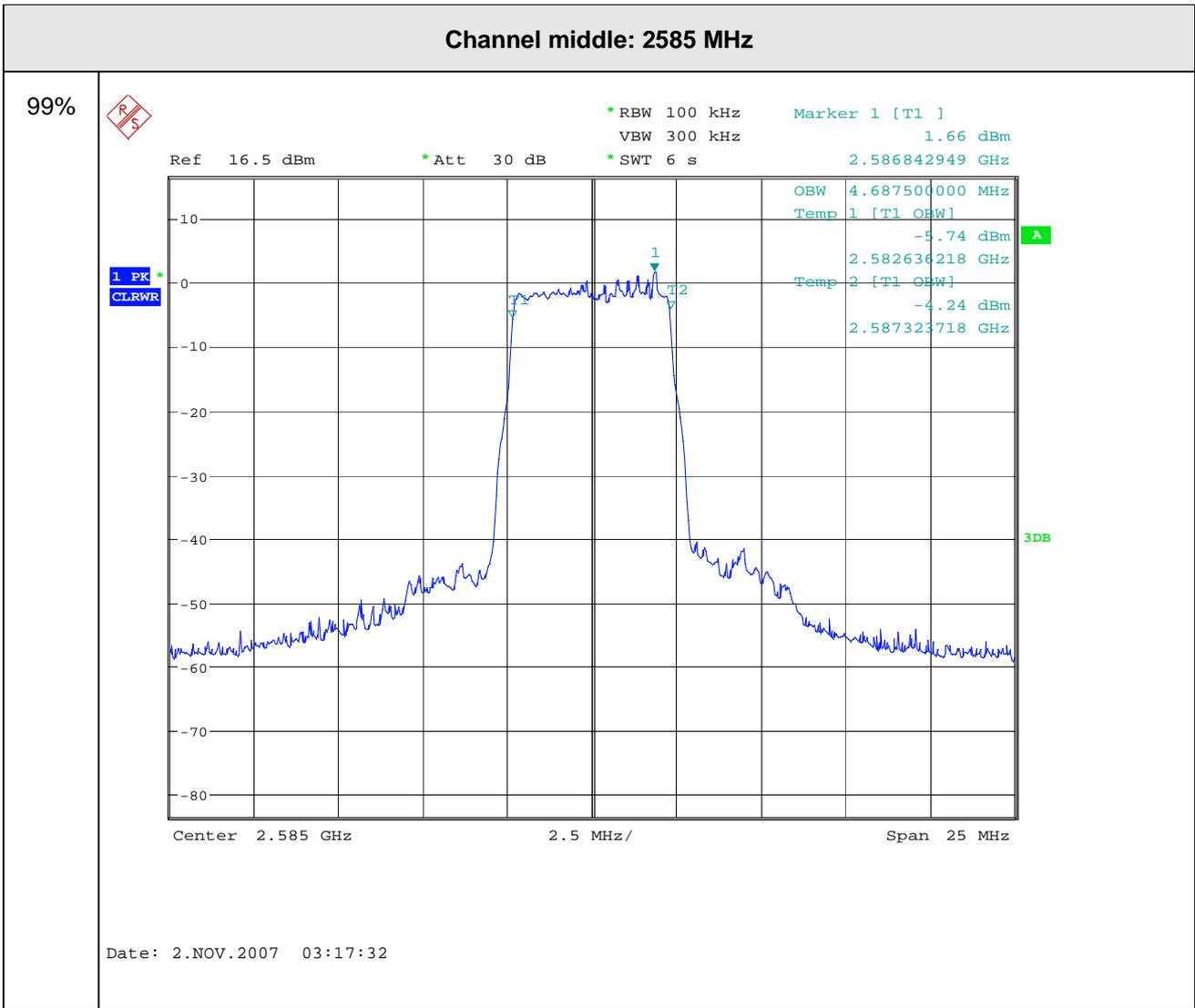




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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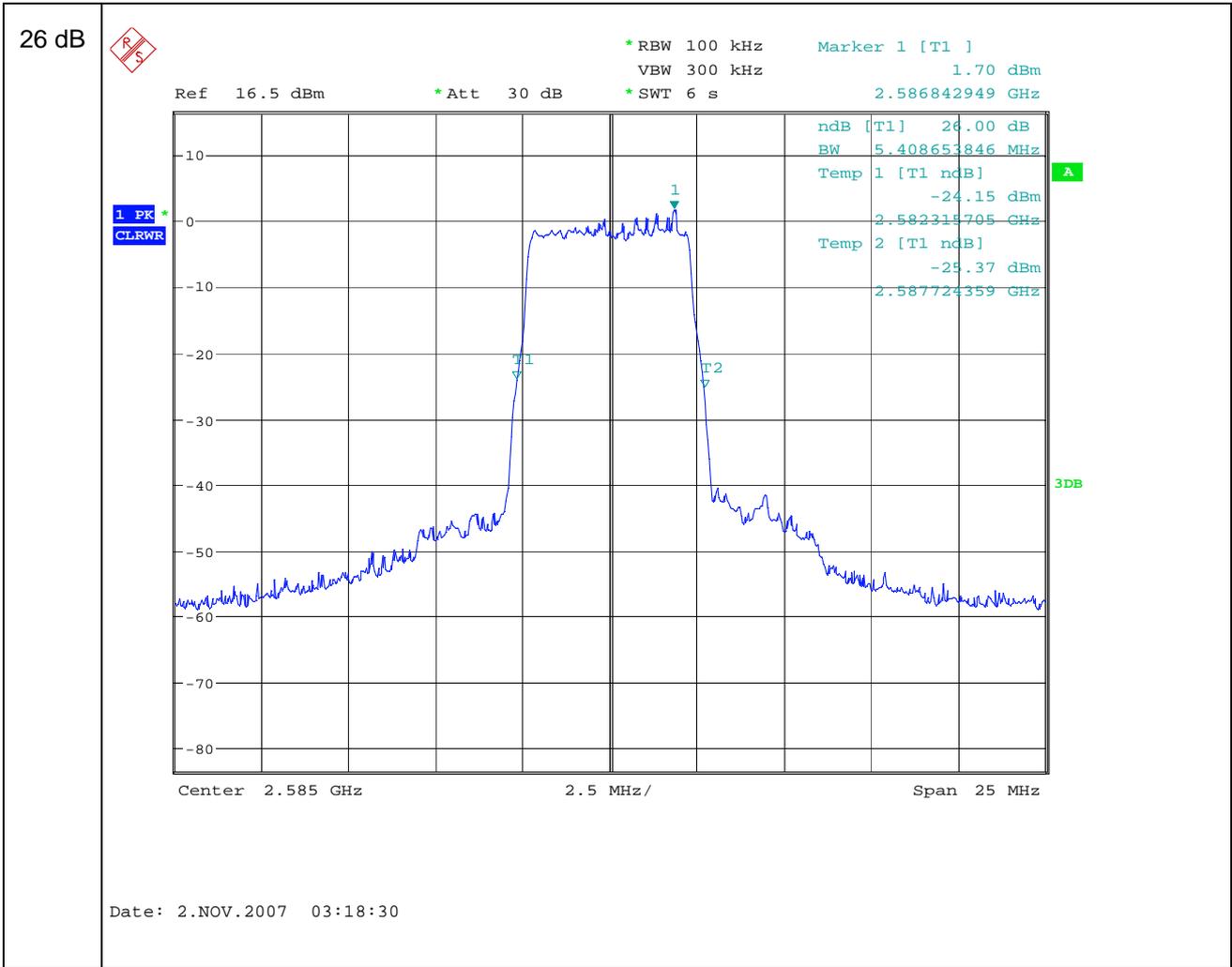


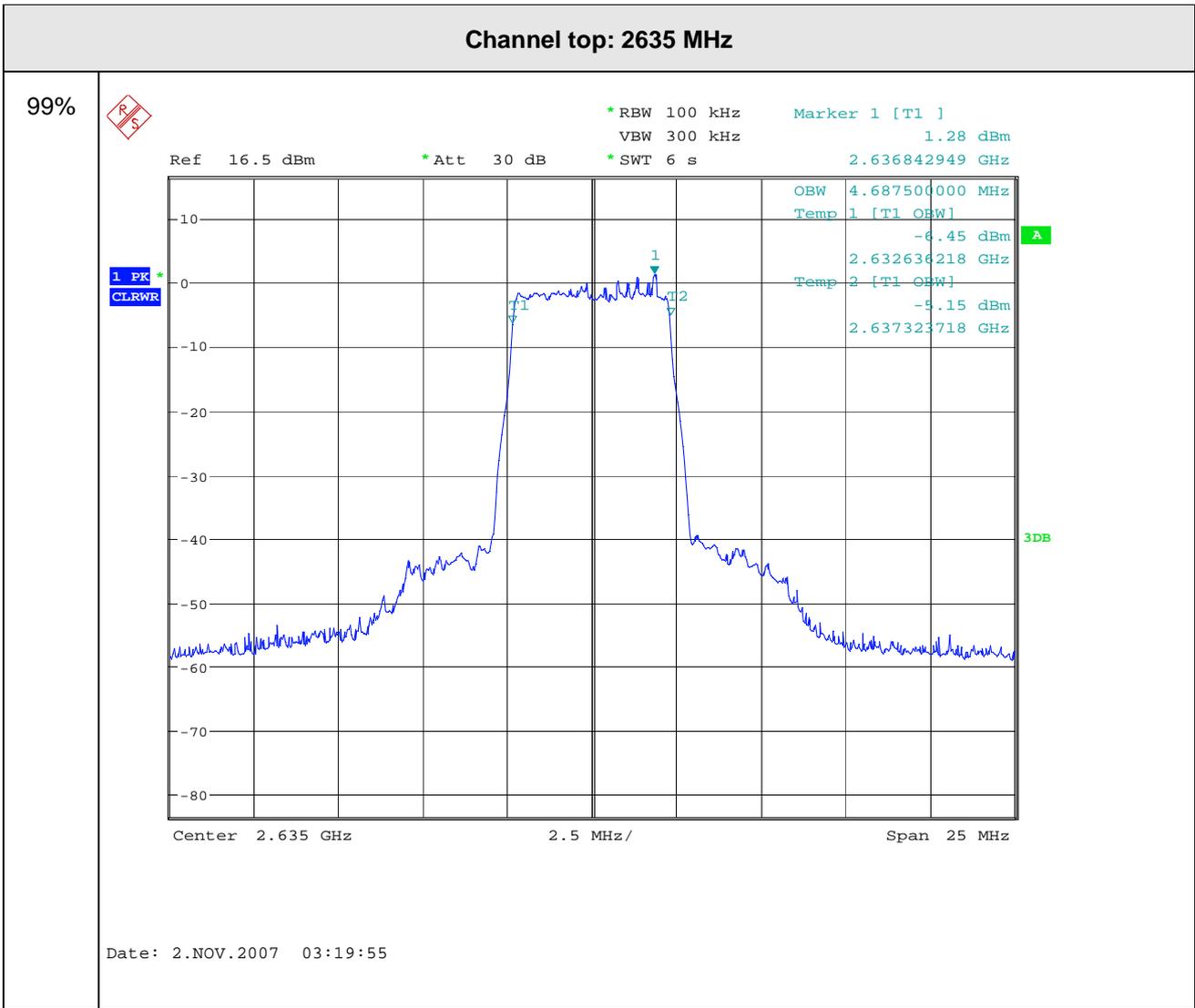


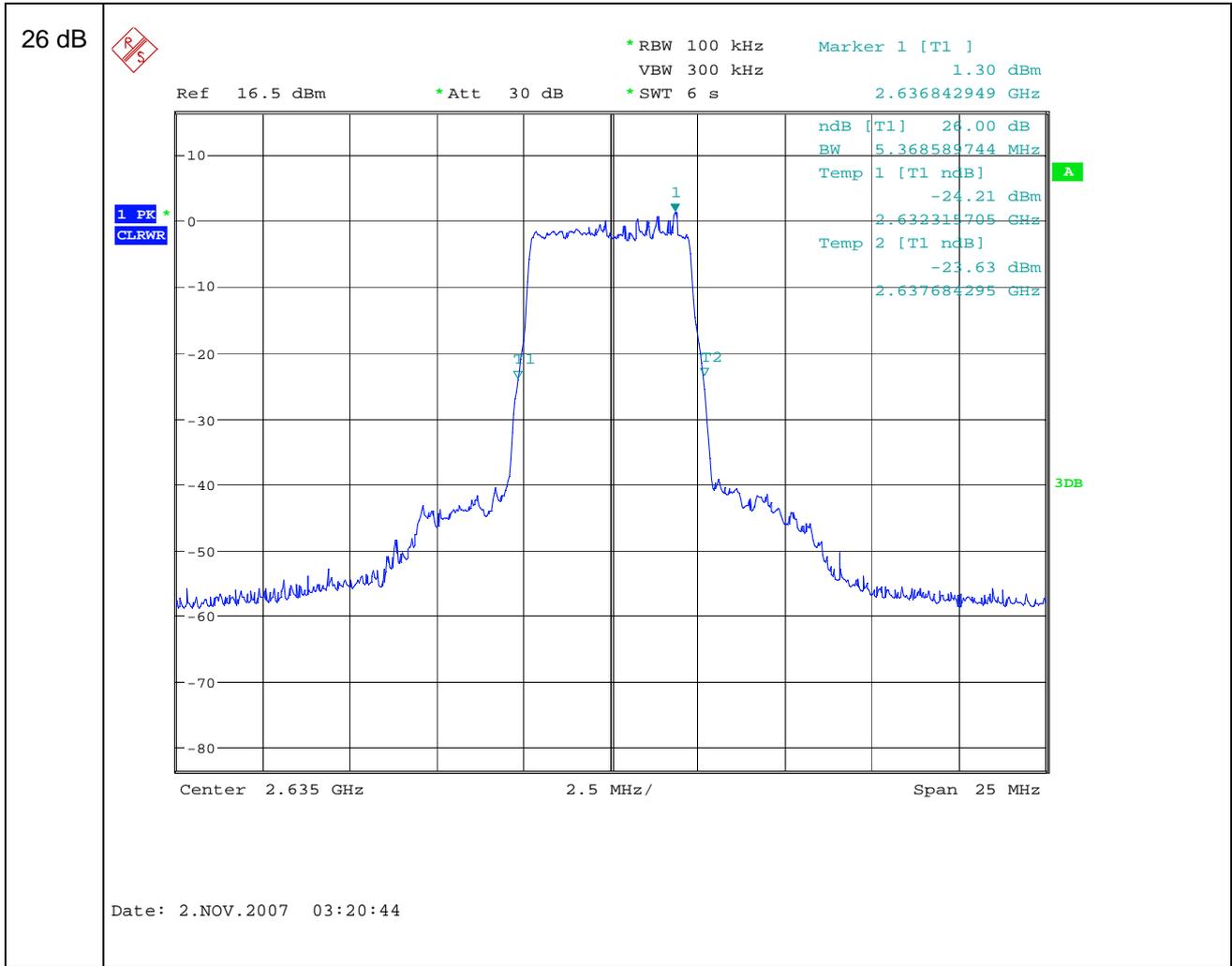


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

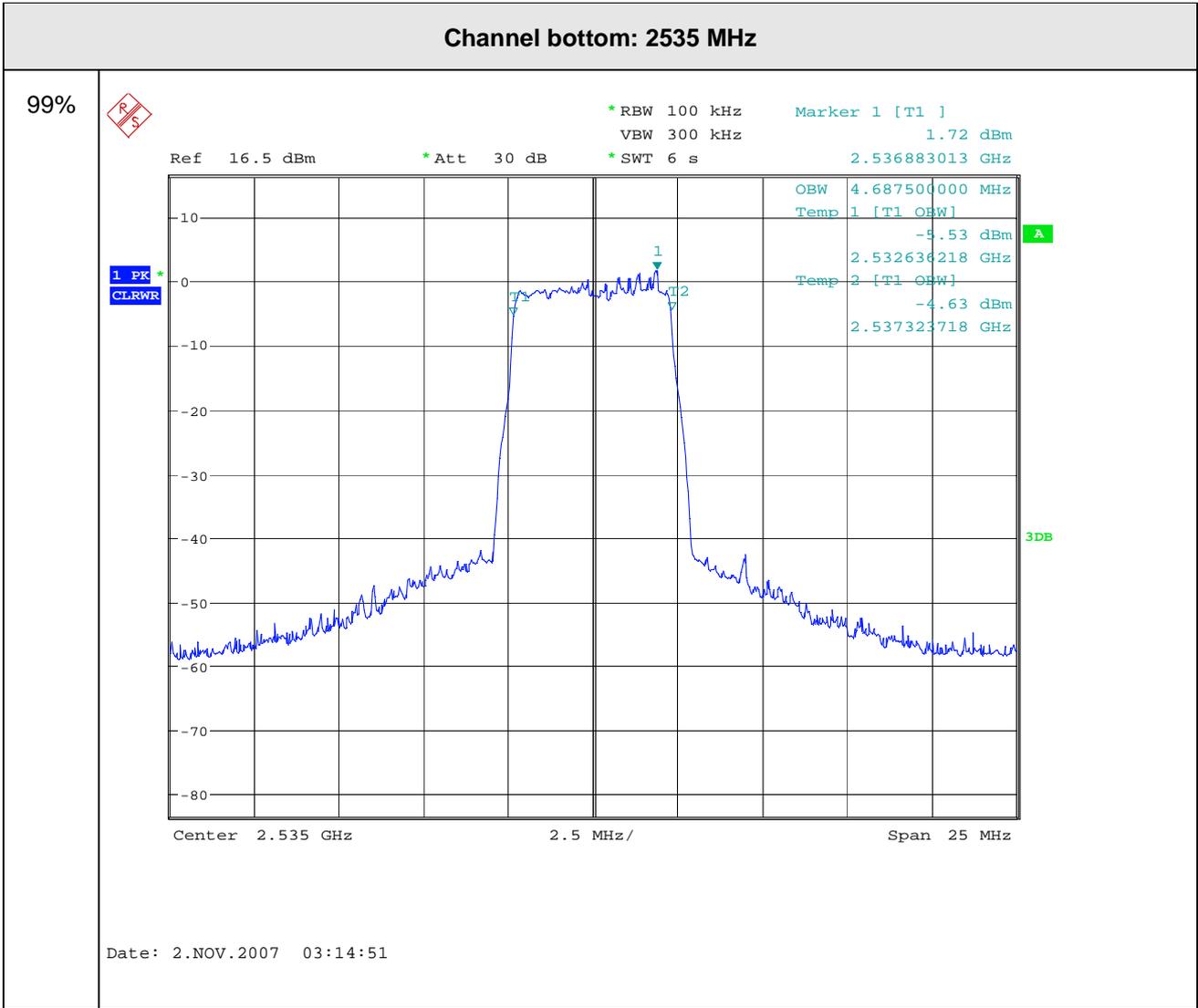
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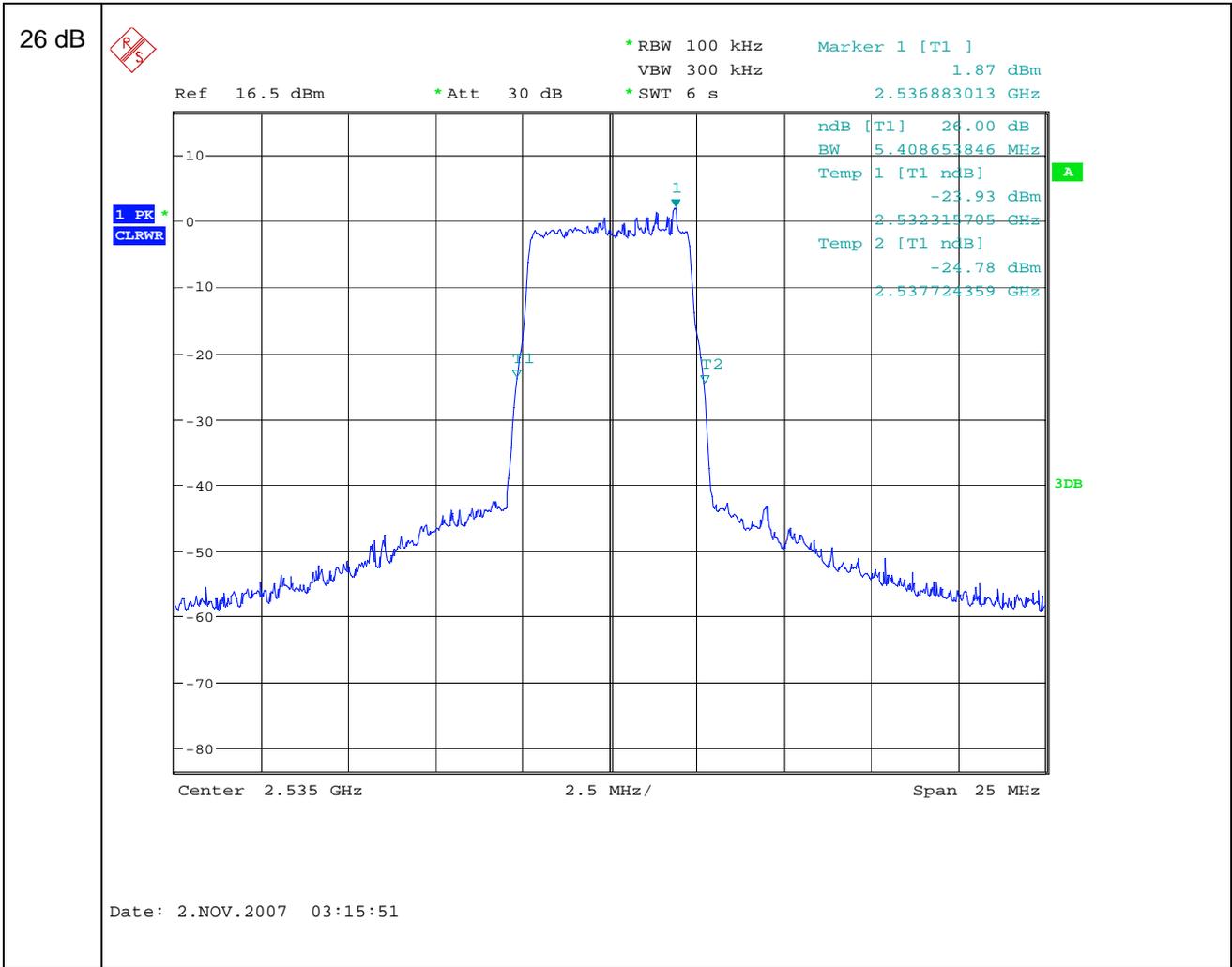
1.2.3 Test Mode of 16QAM 1/2

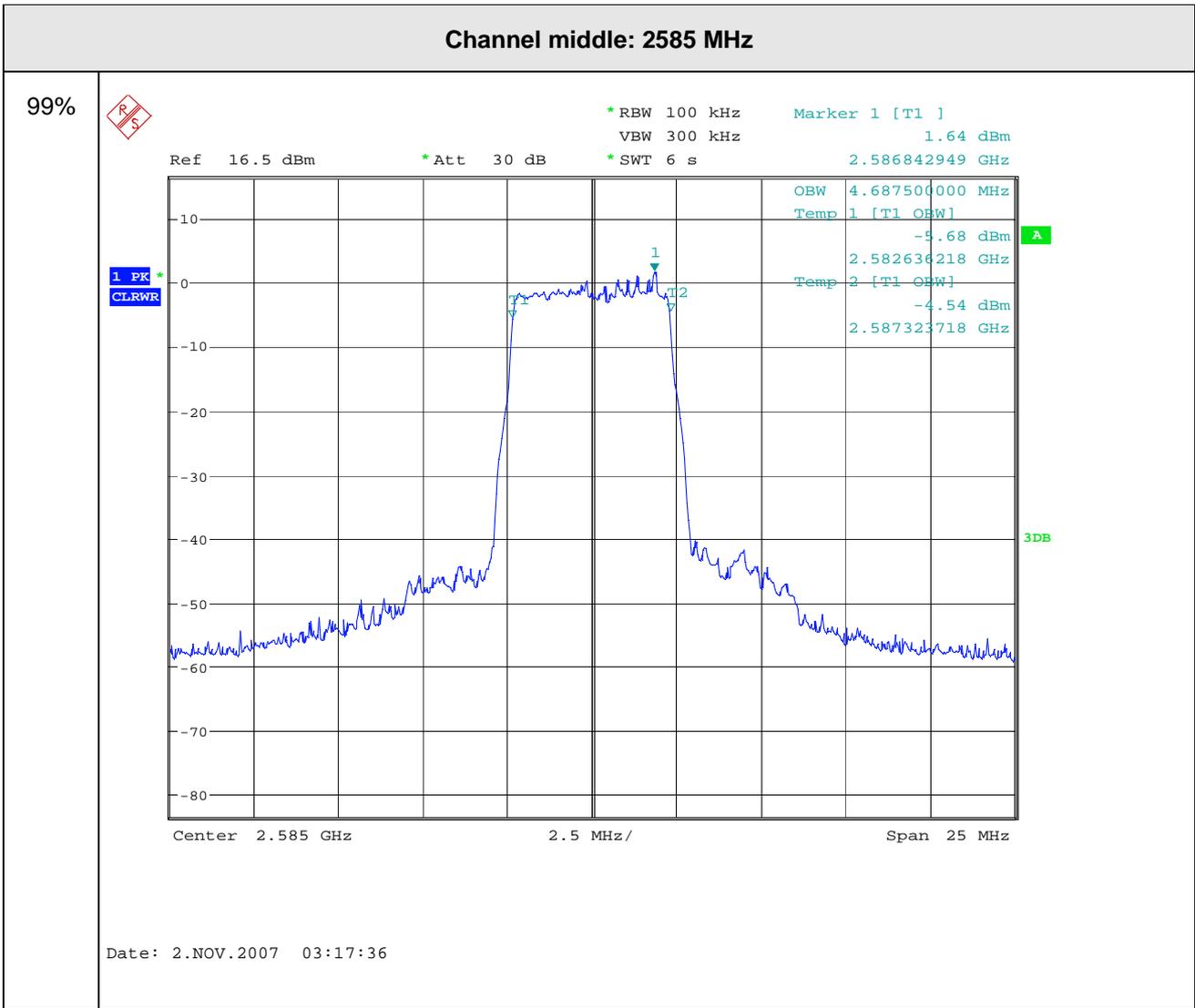




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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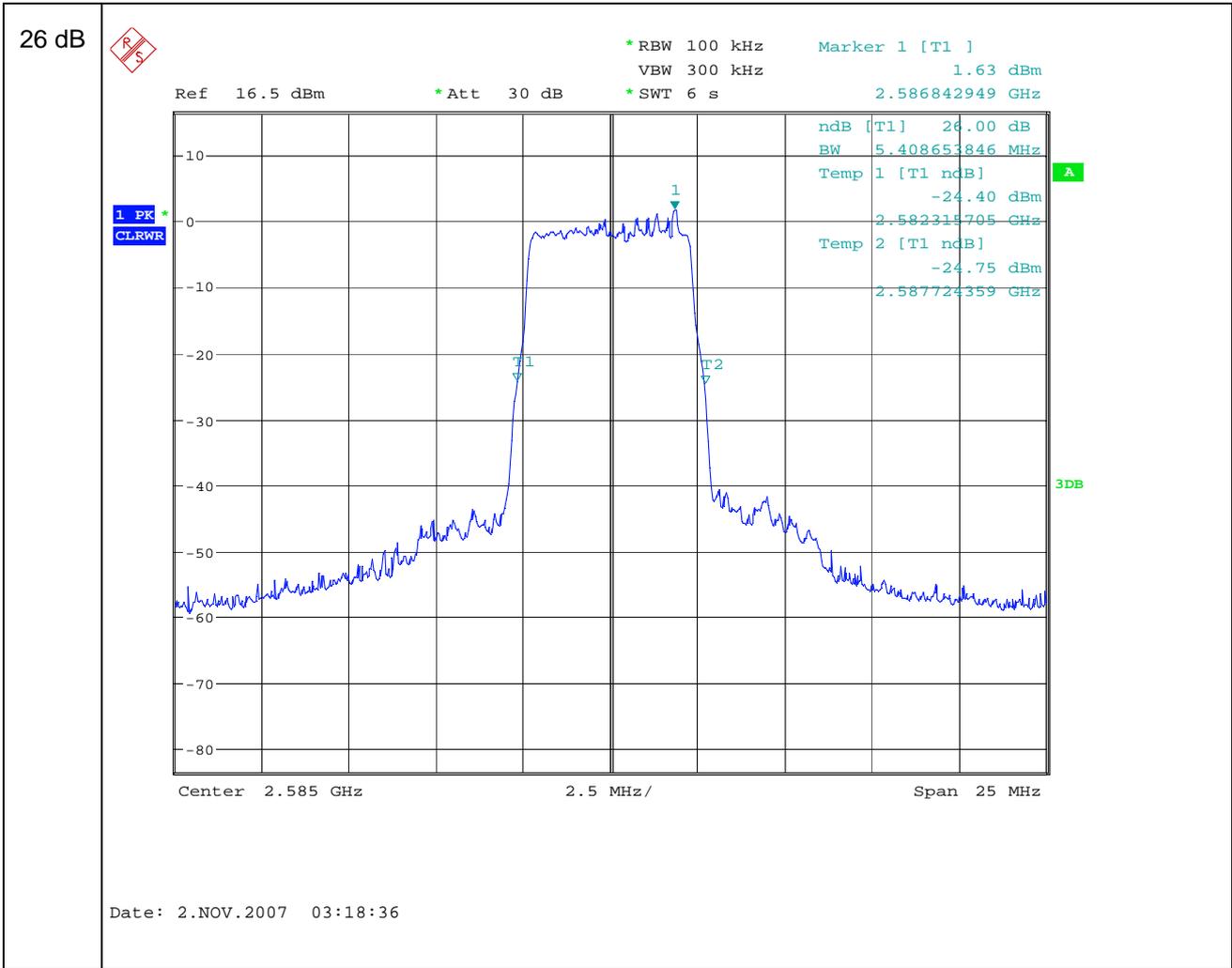


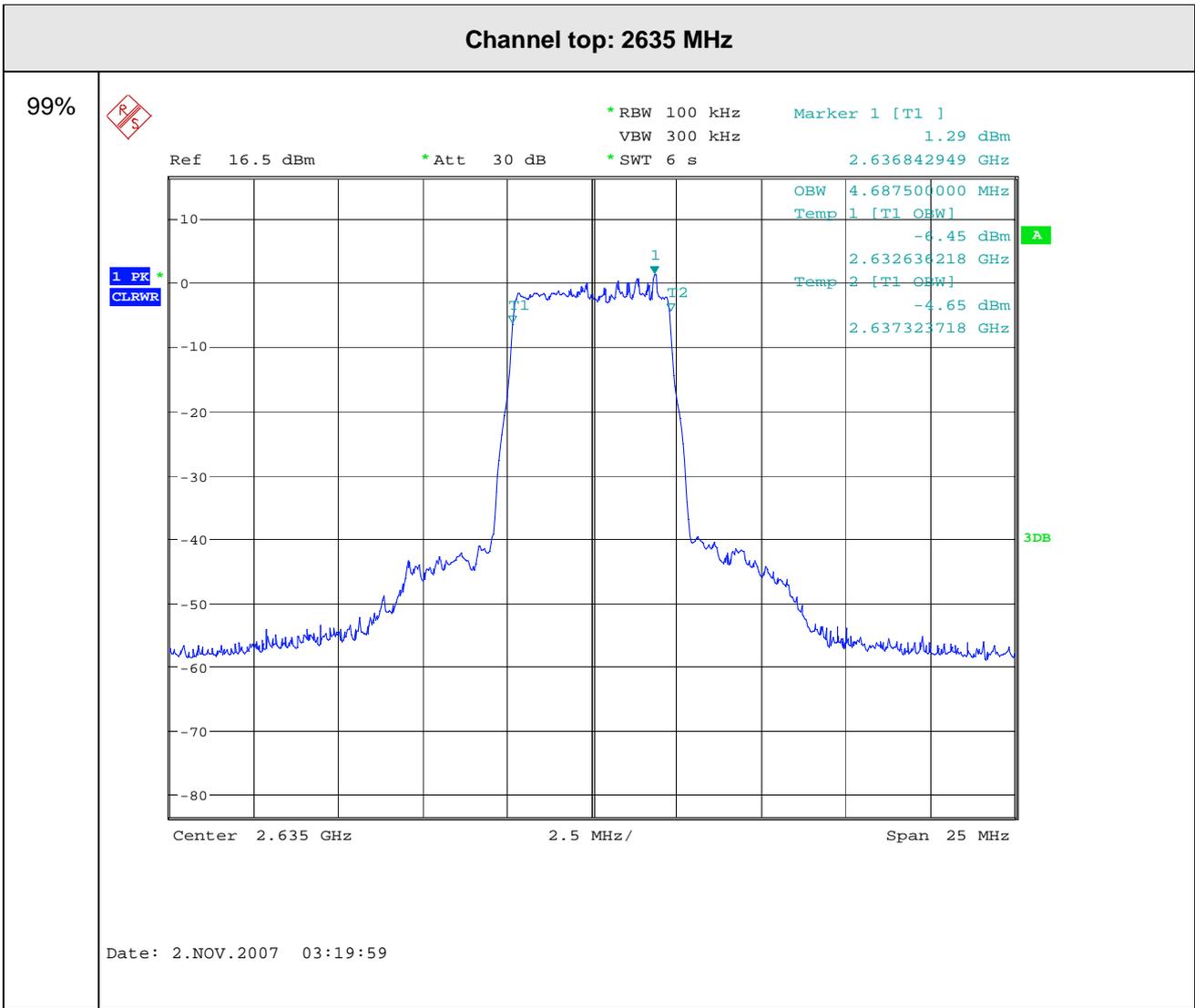


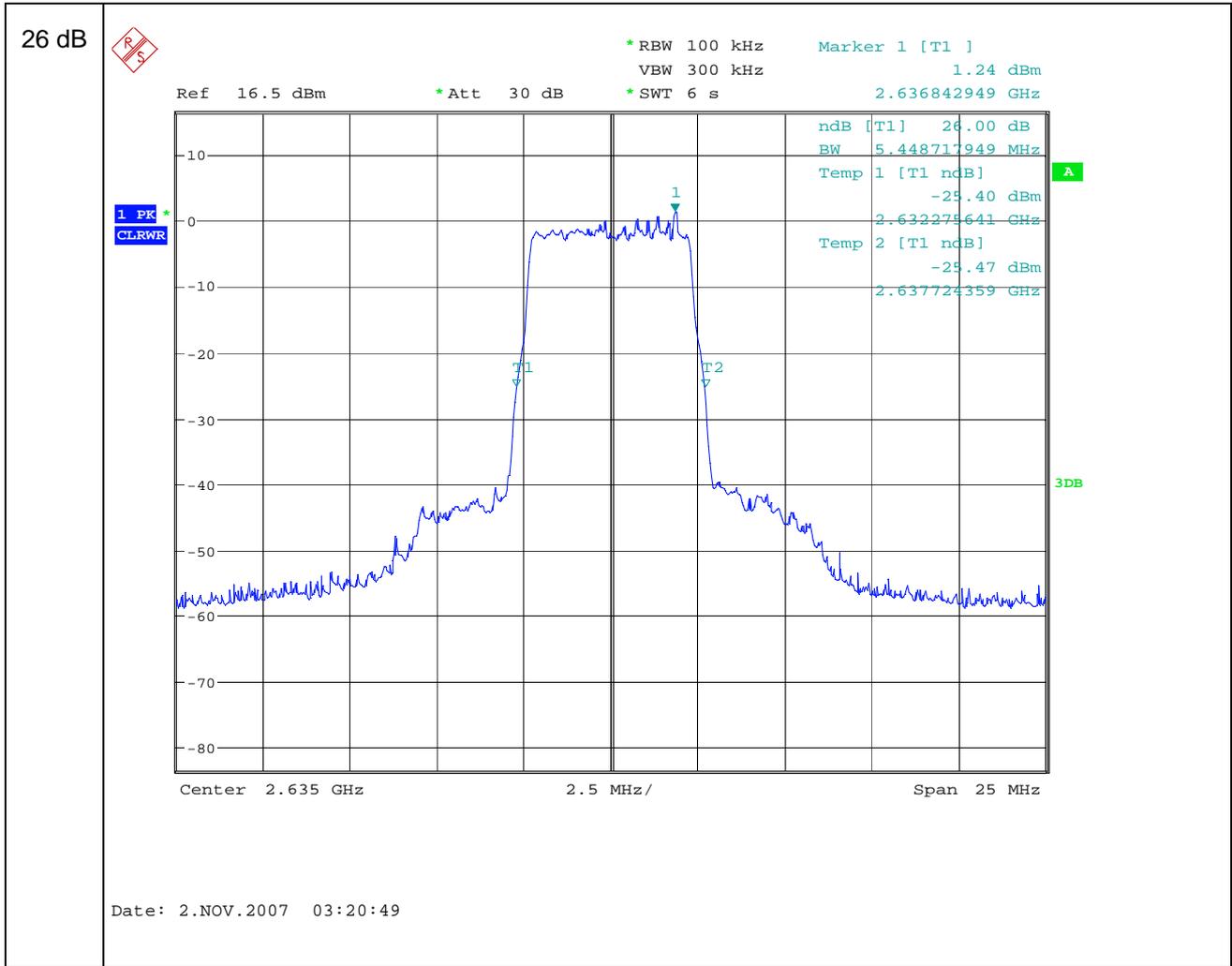


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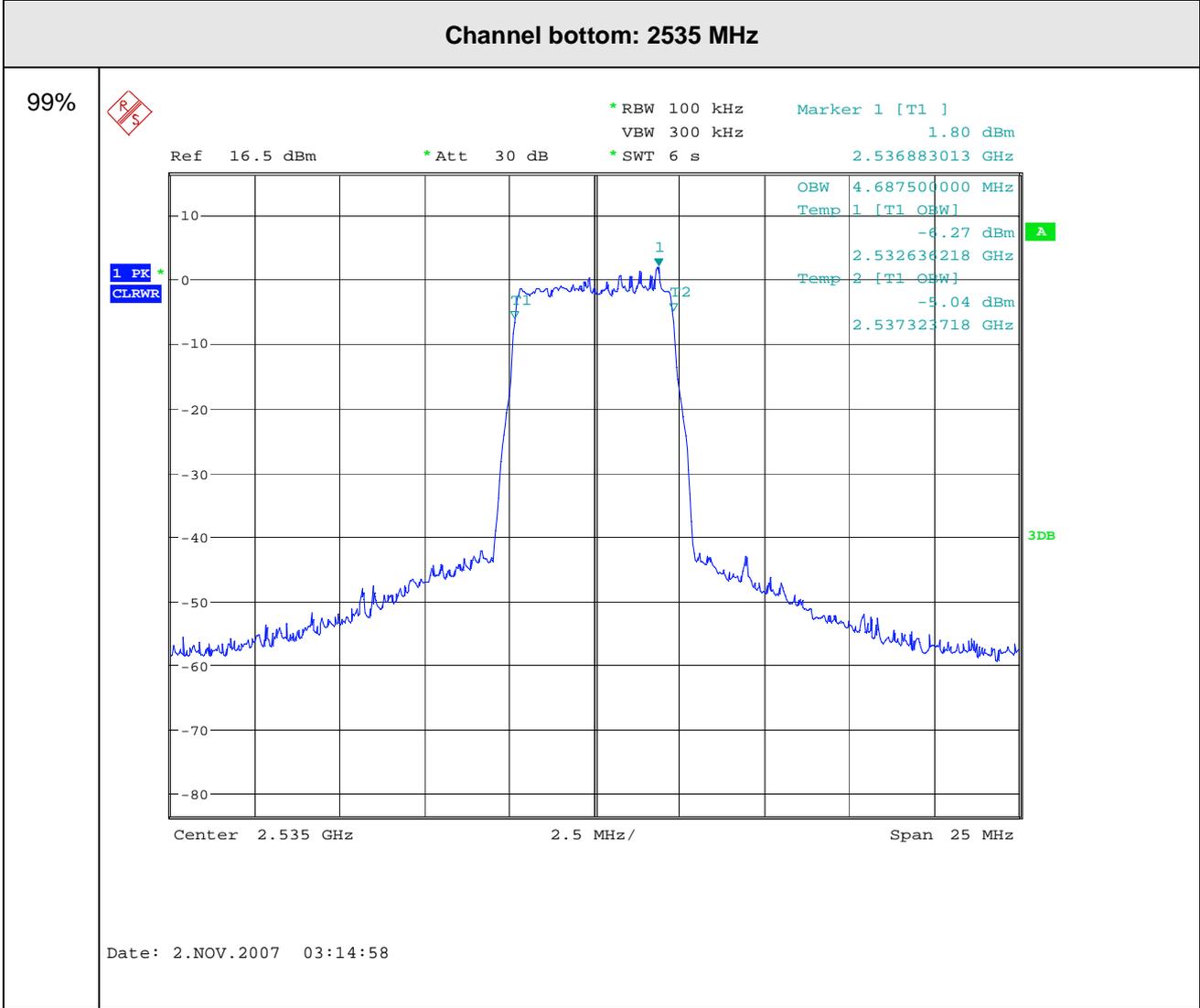
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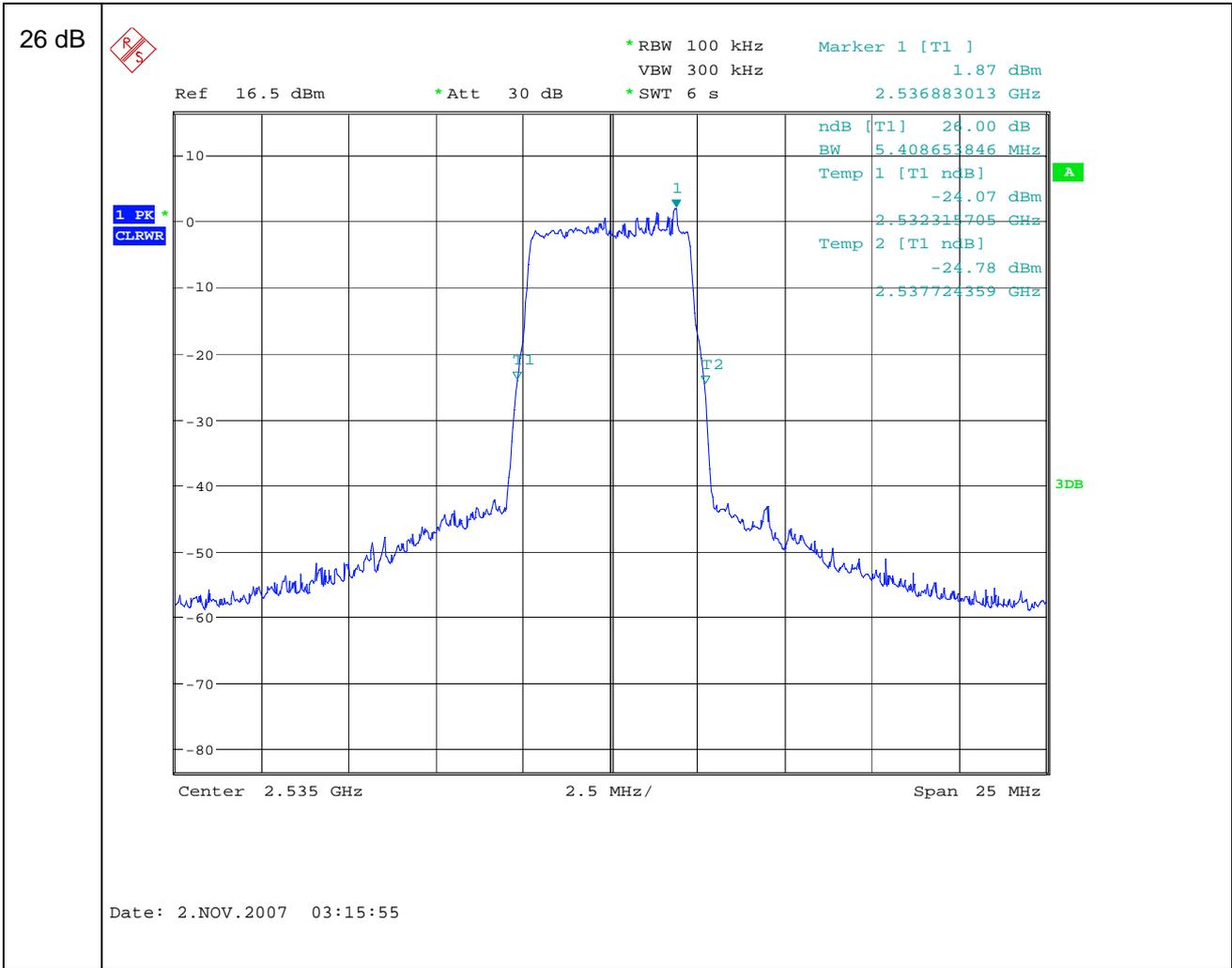
1.2.4 Test Mode of 16QAM 3/4

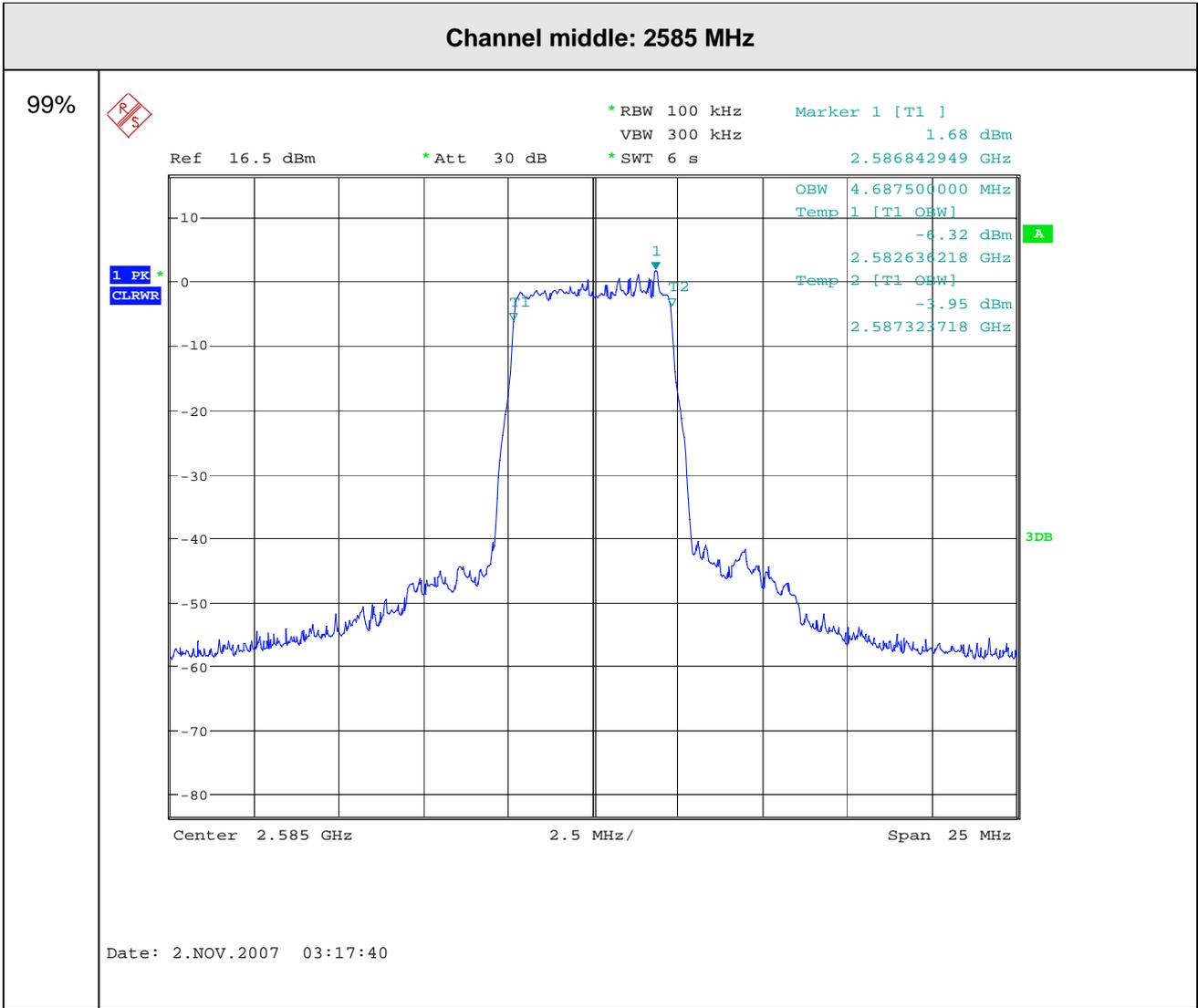




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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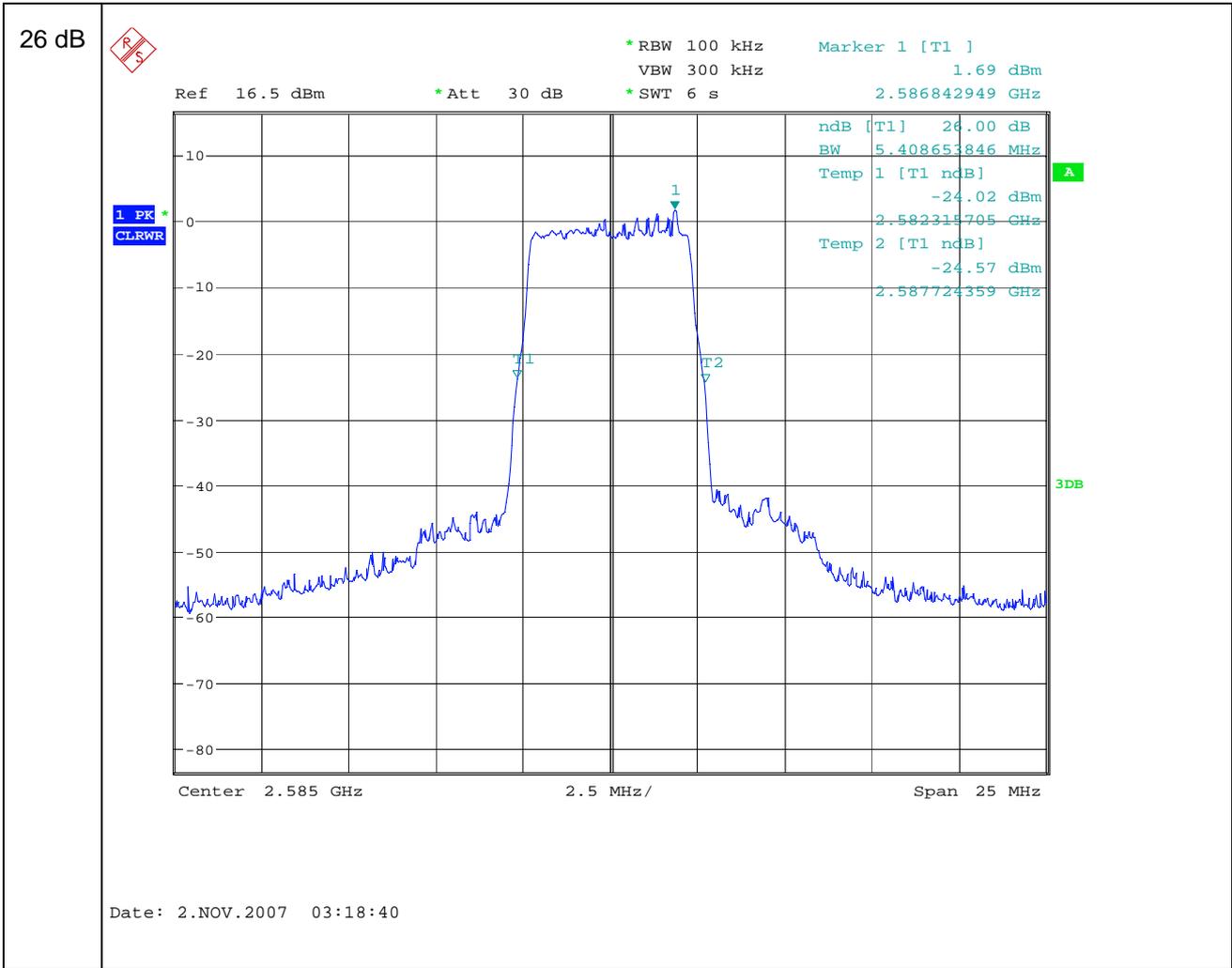


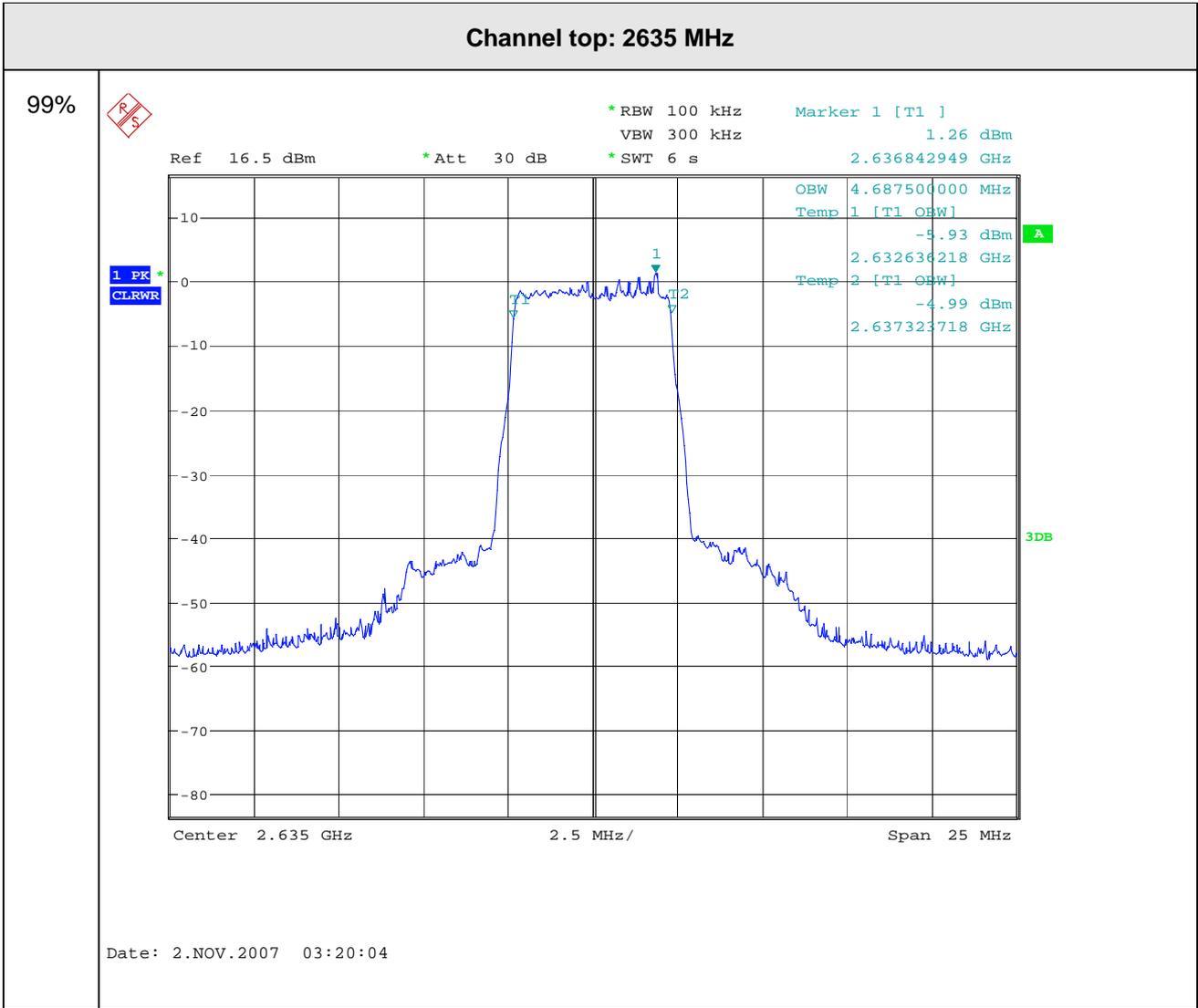


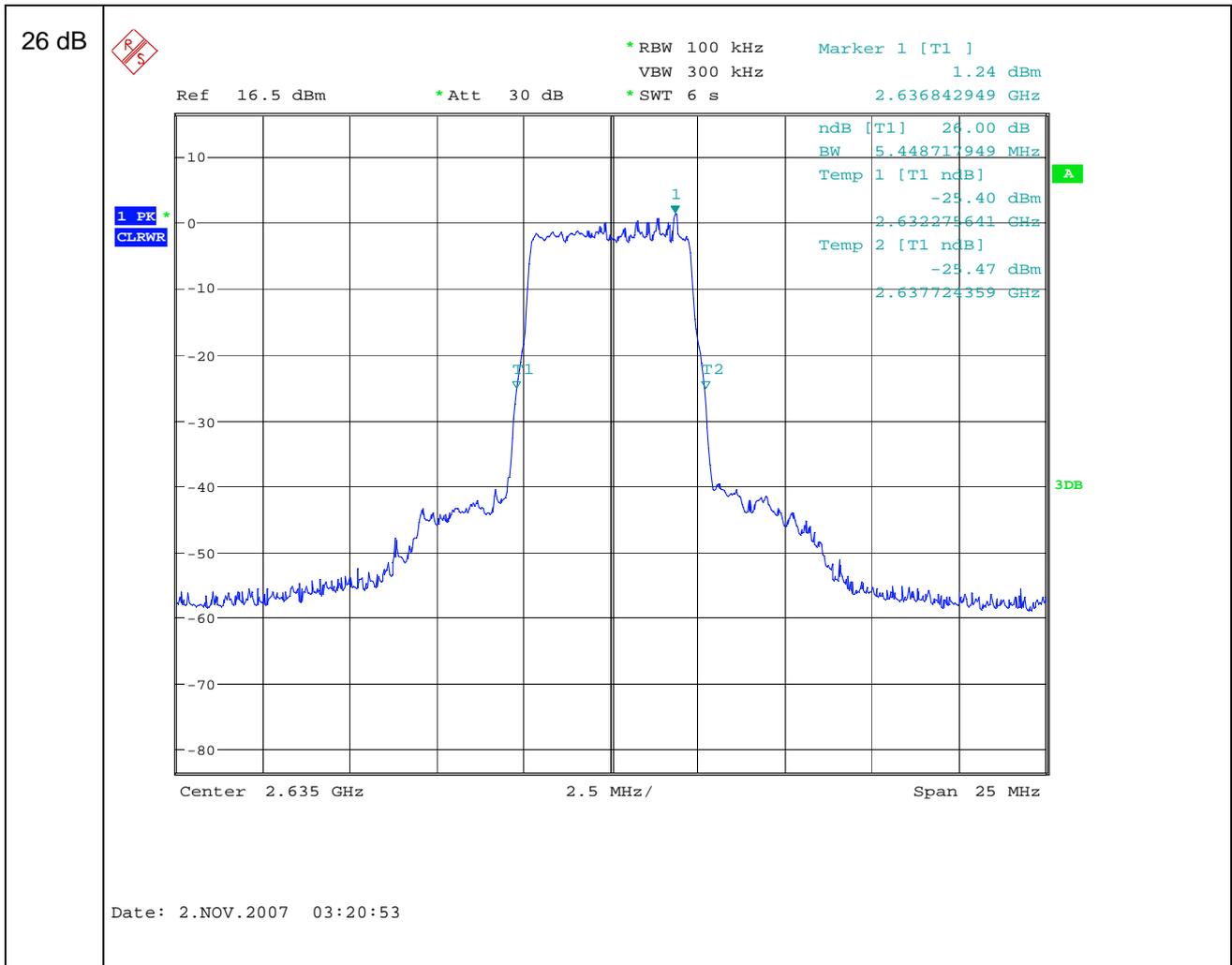


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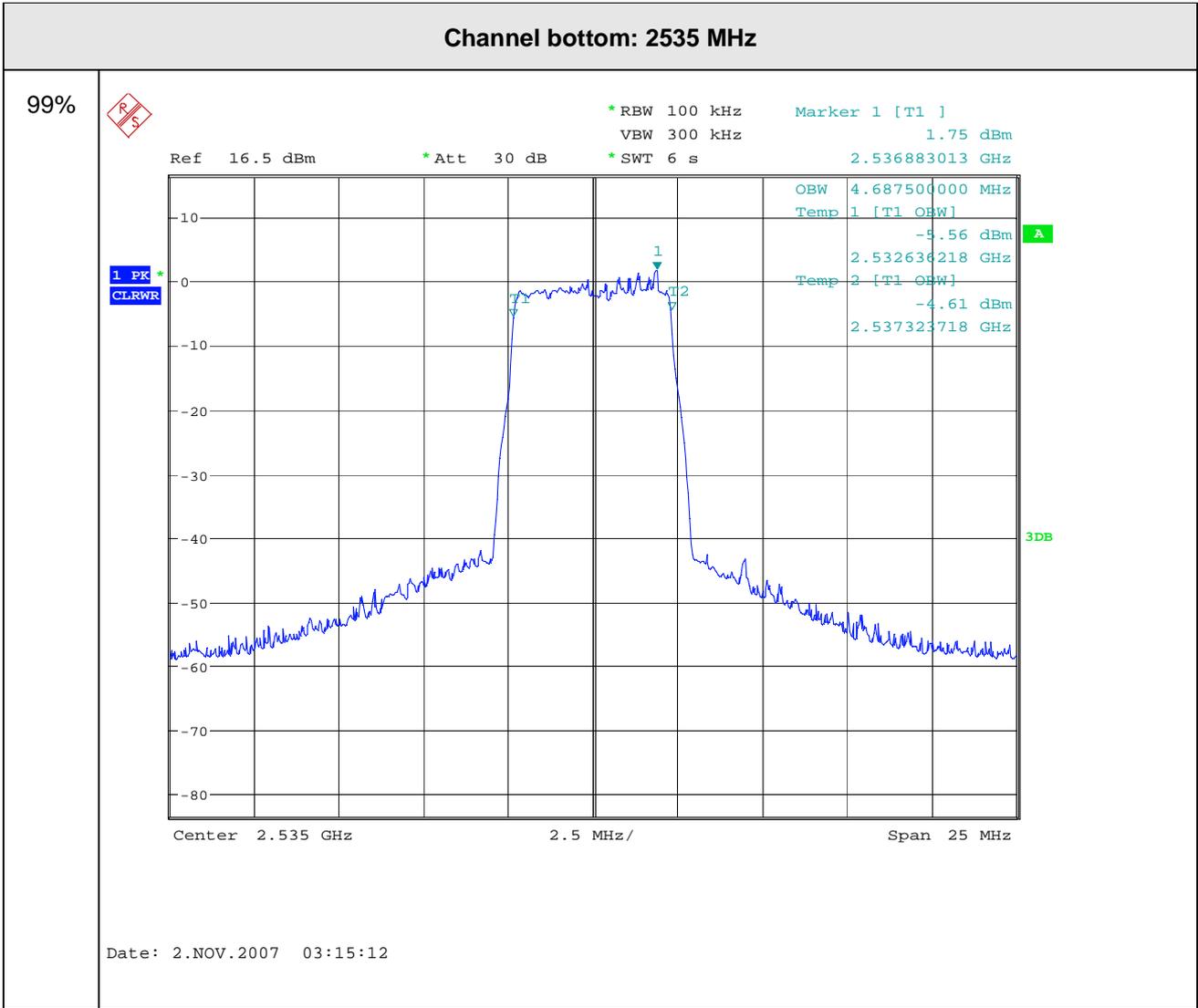
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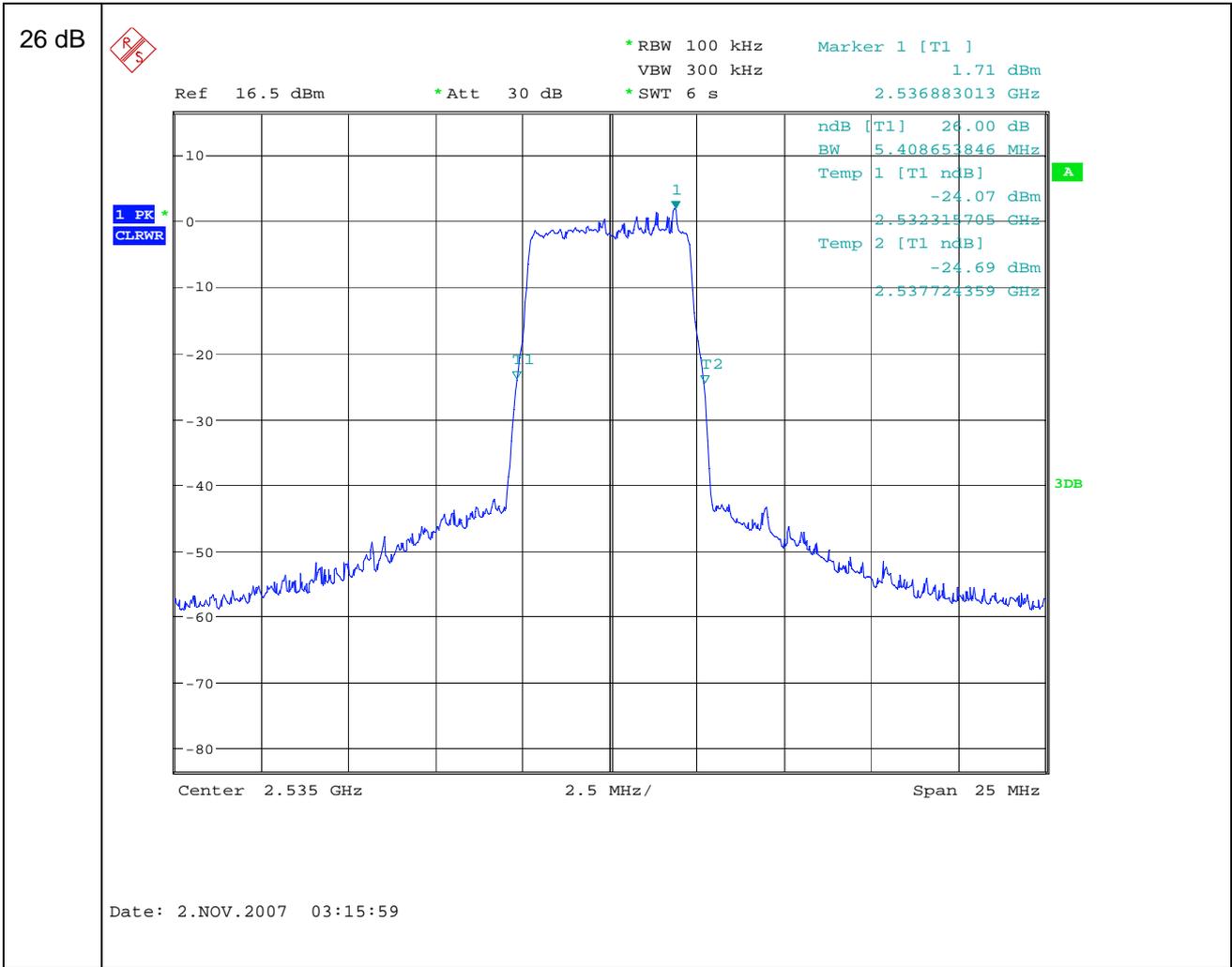
1.2.5 Test Mode of 64QAM 1/2

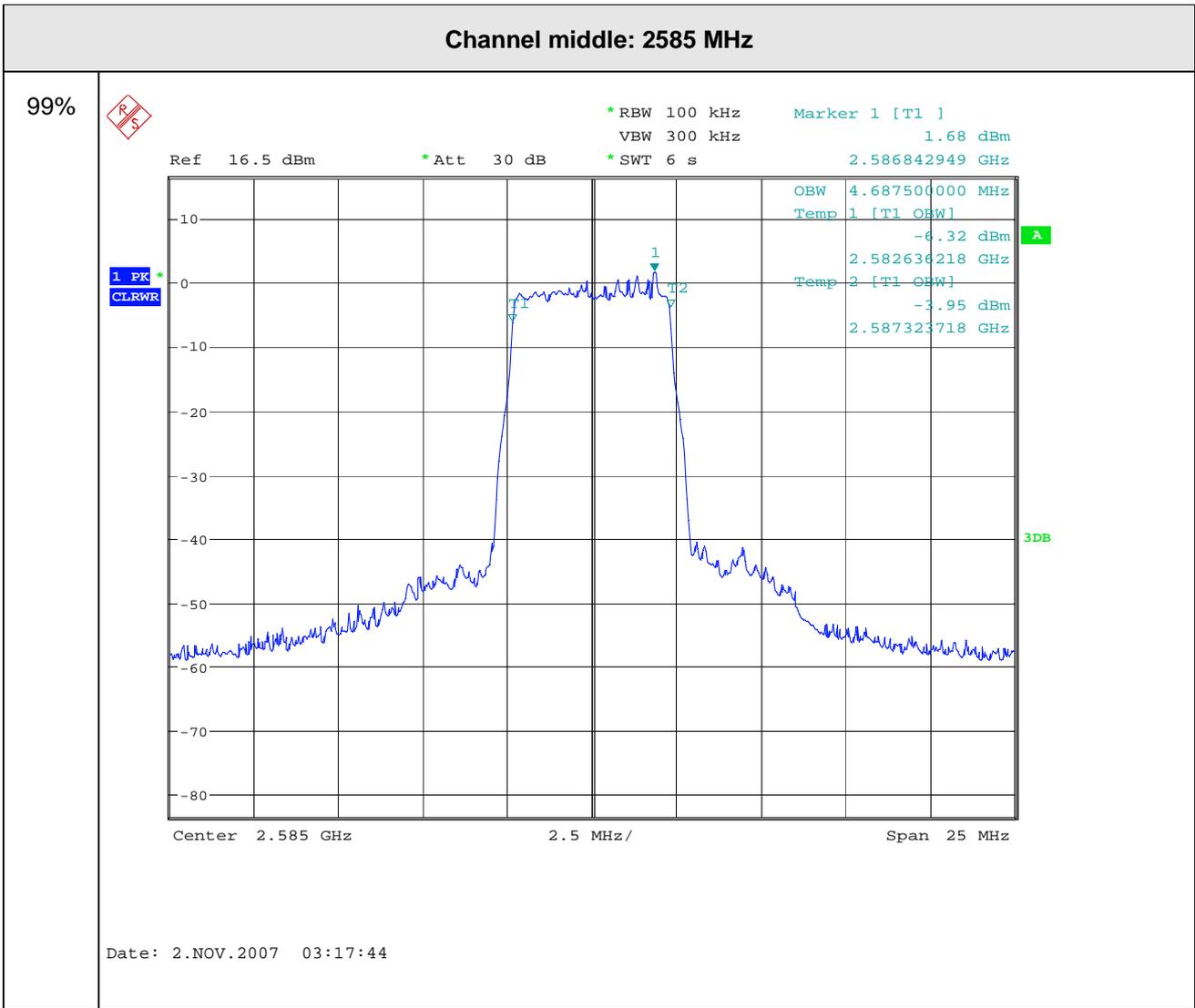




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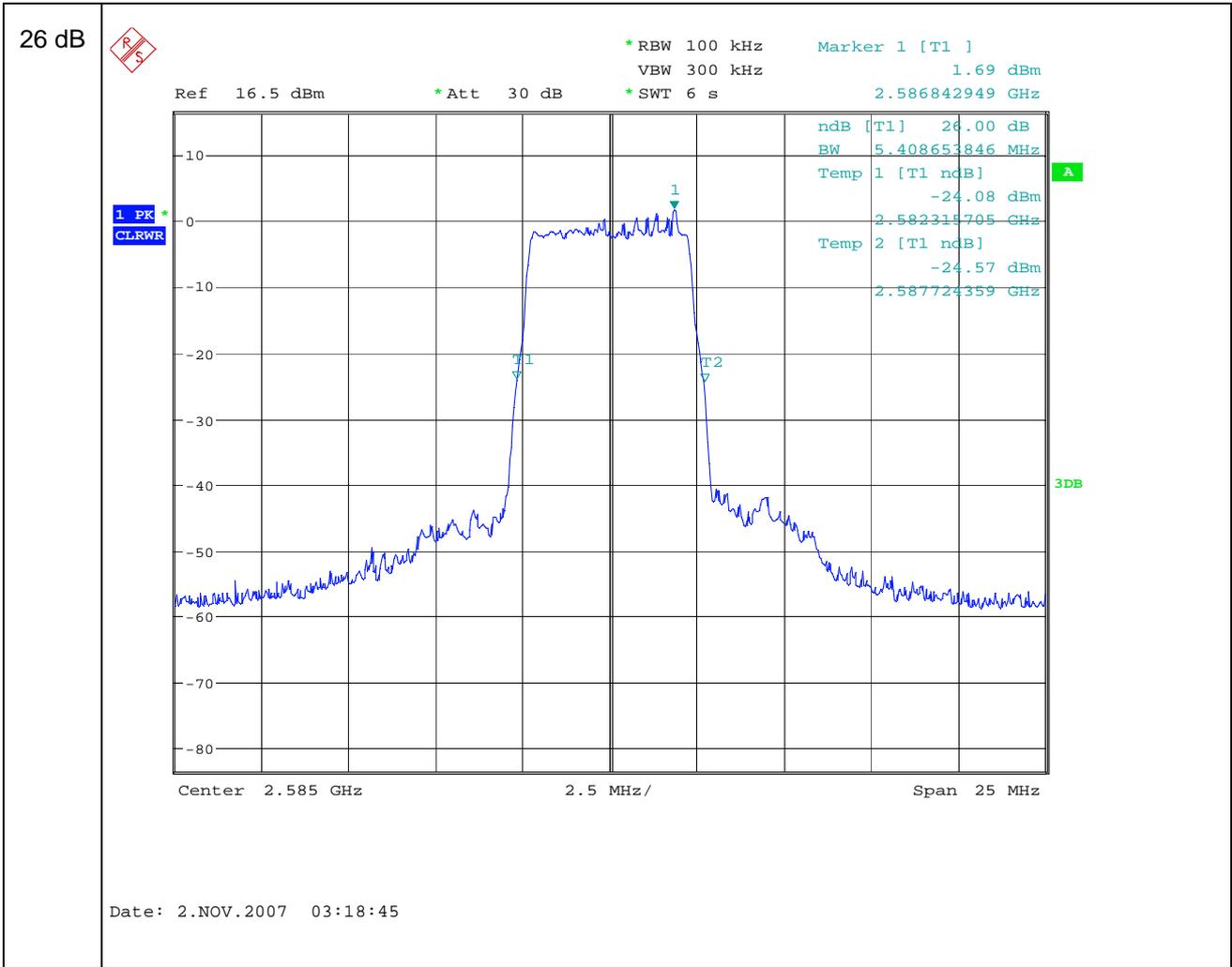


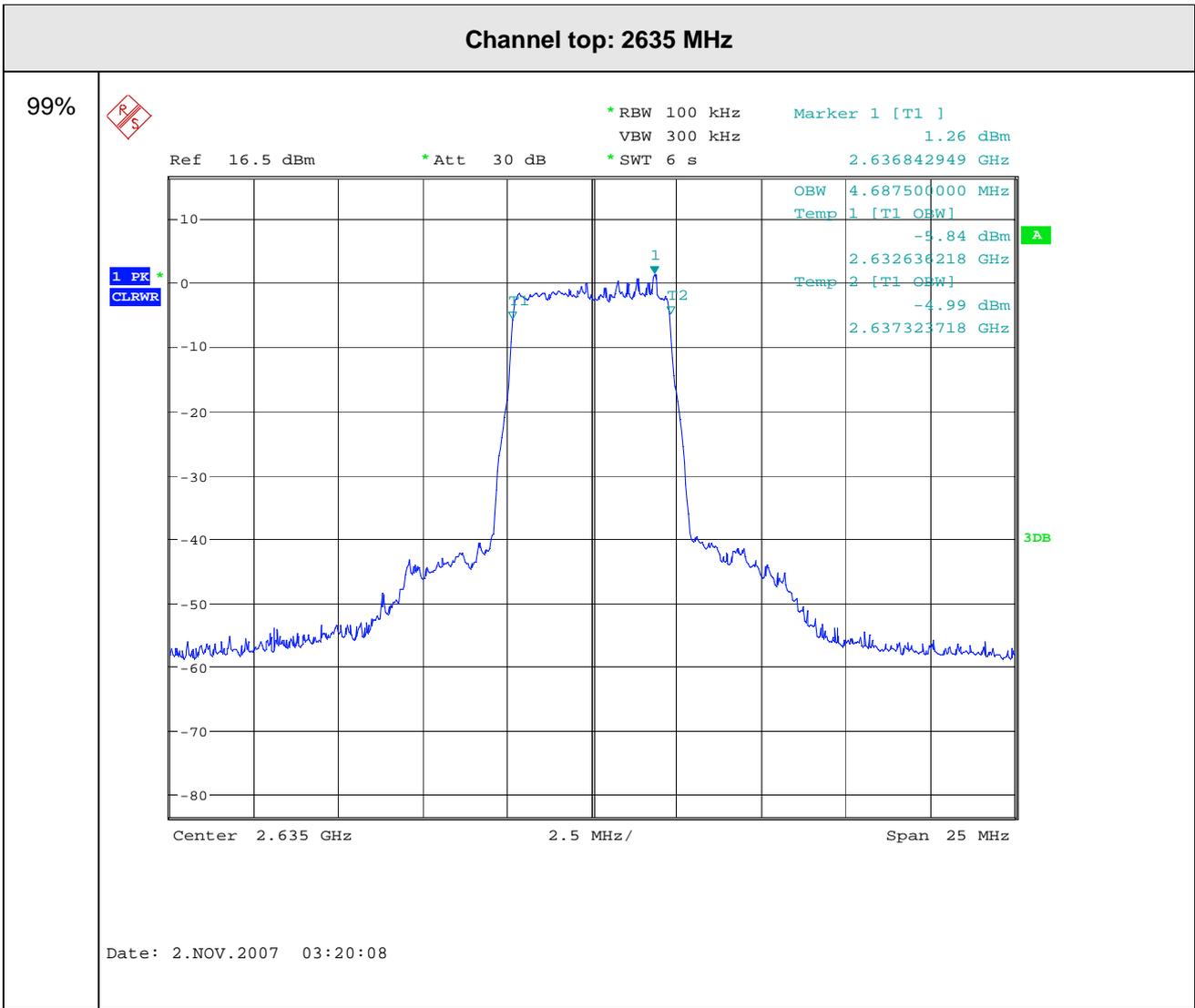


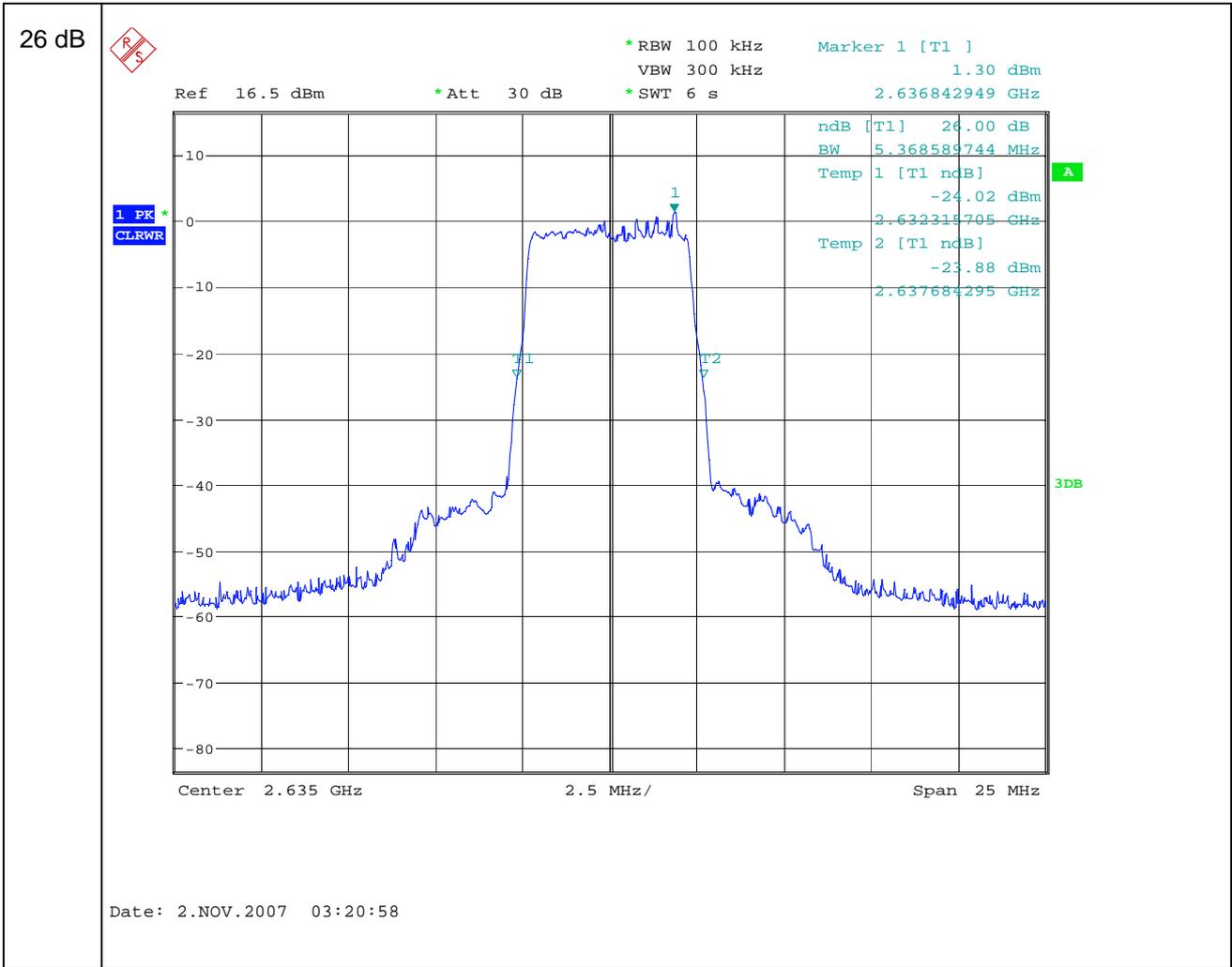


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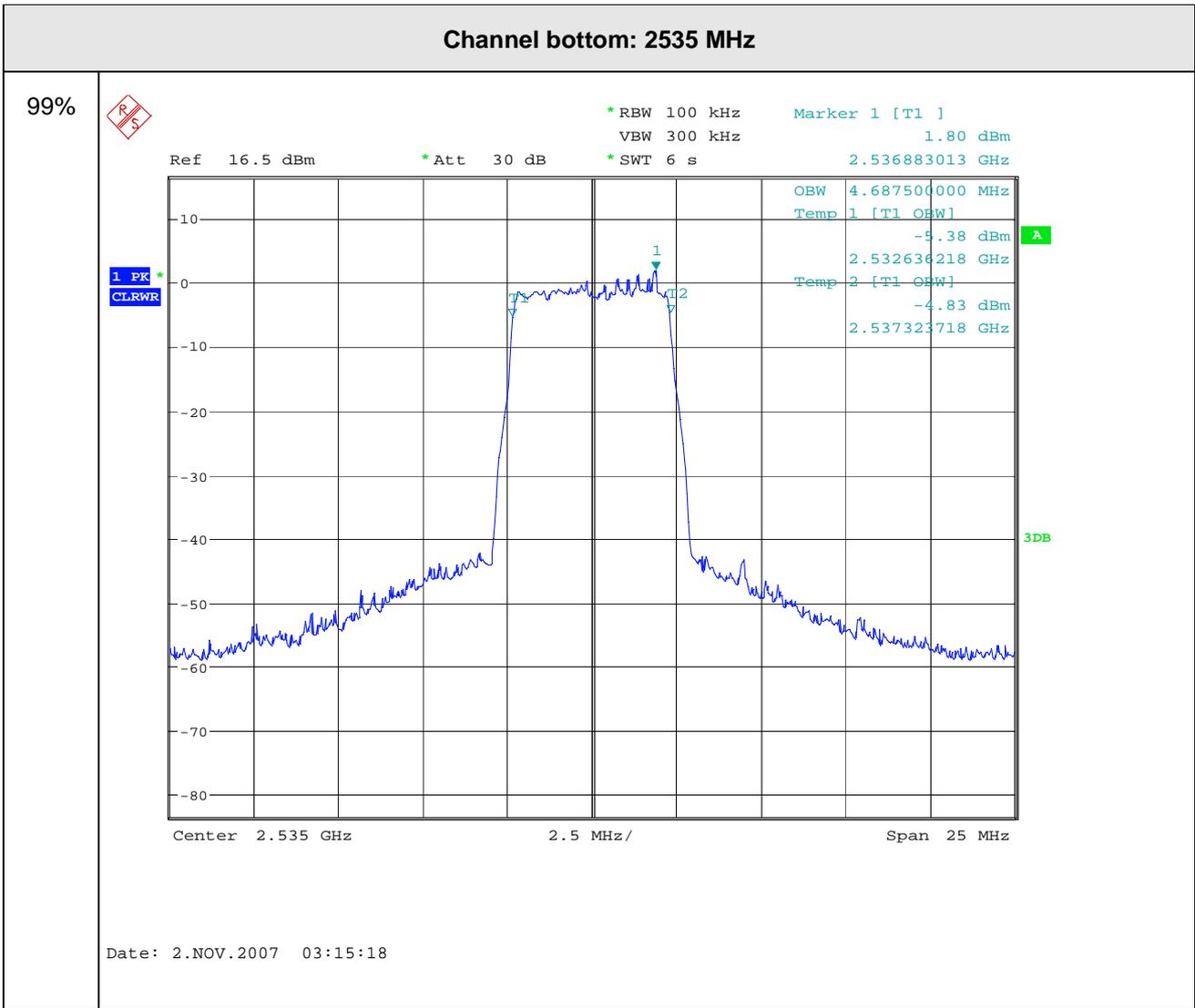
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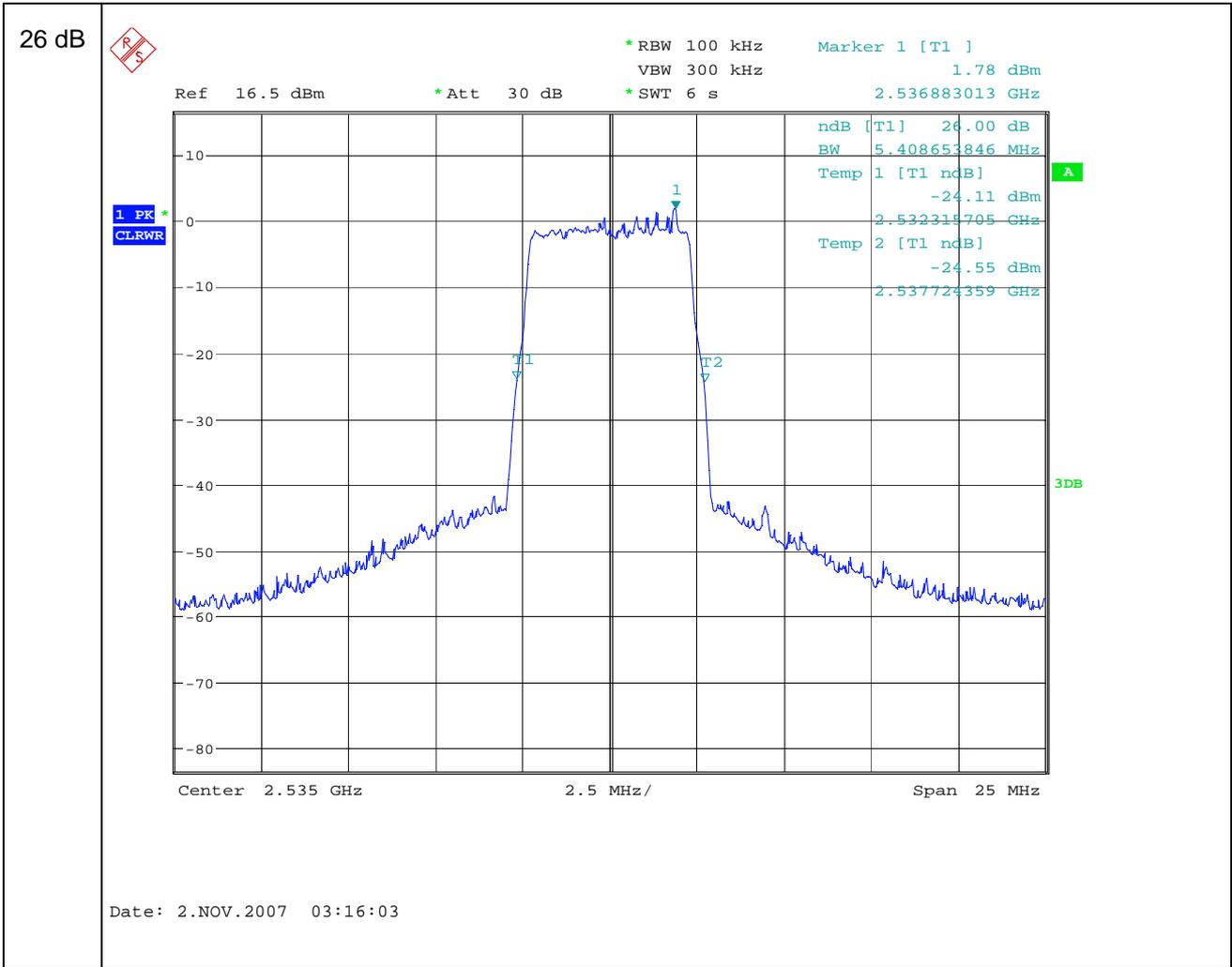
1.2.6 Test Mode of 64QAM 2/3

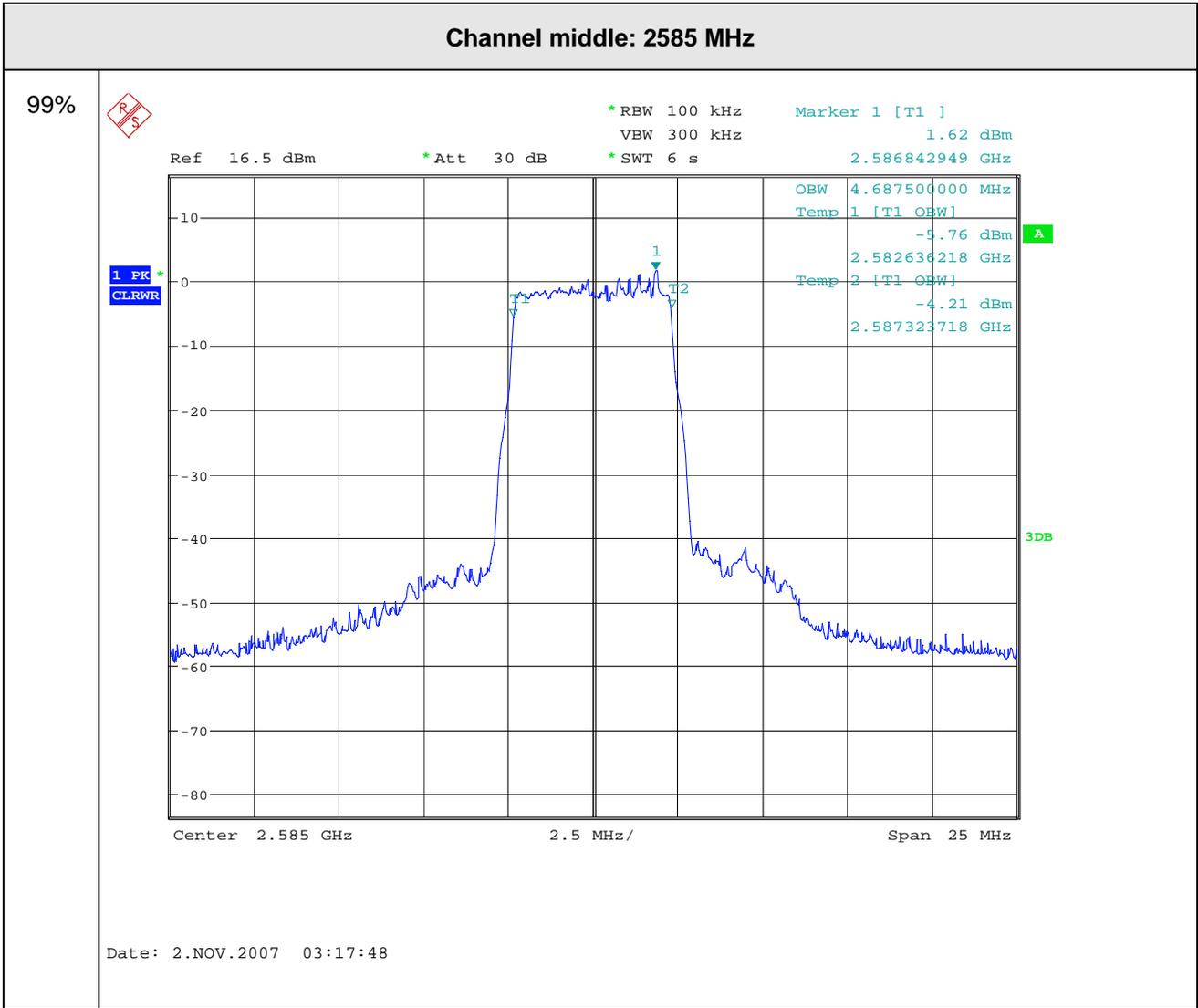




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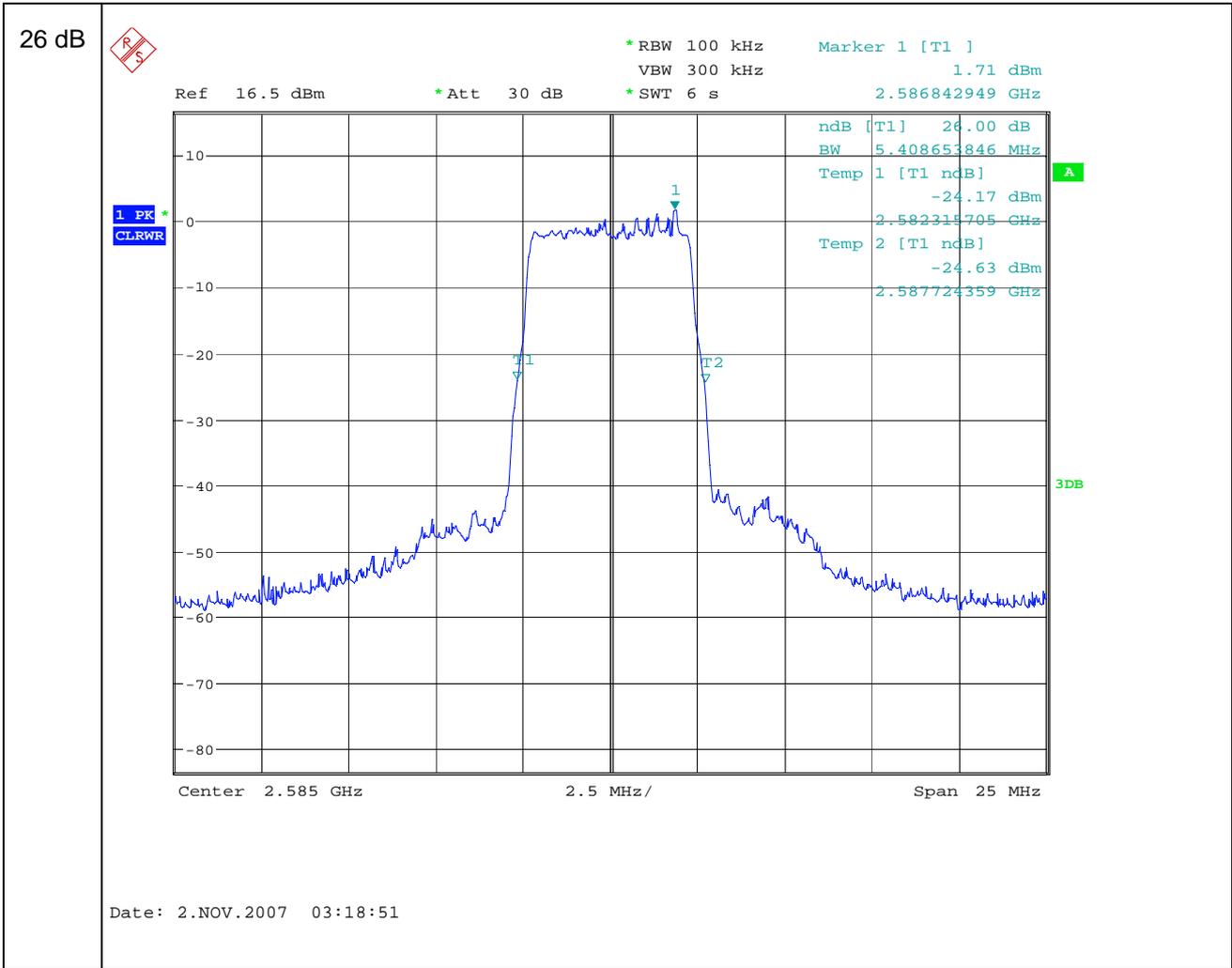


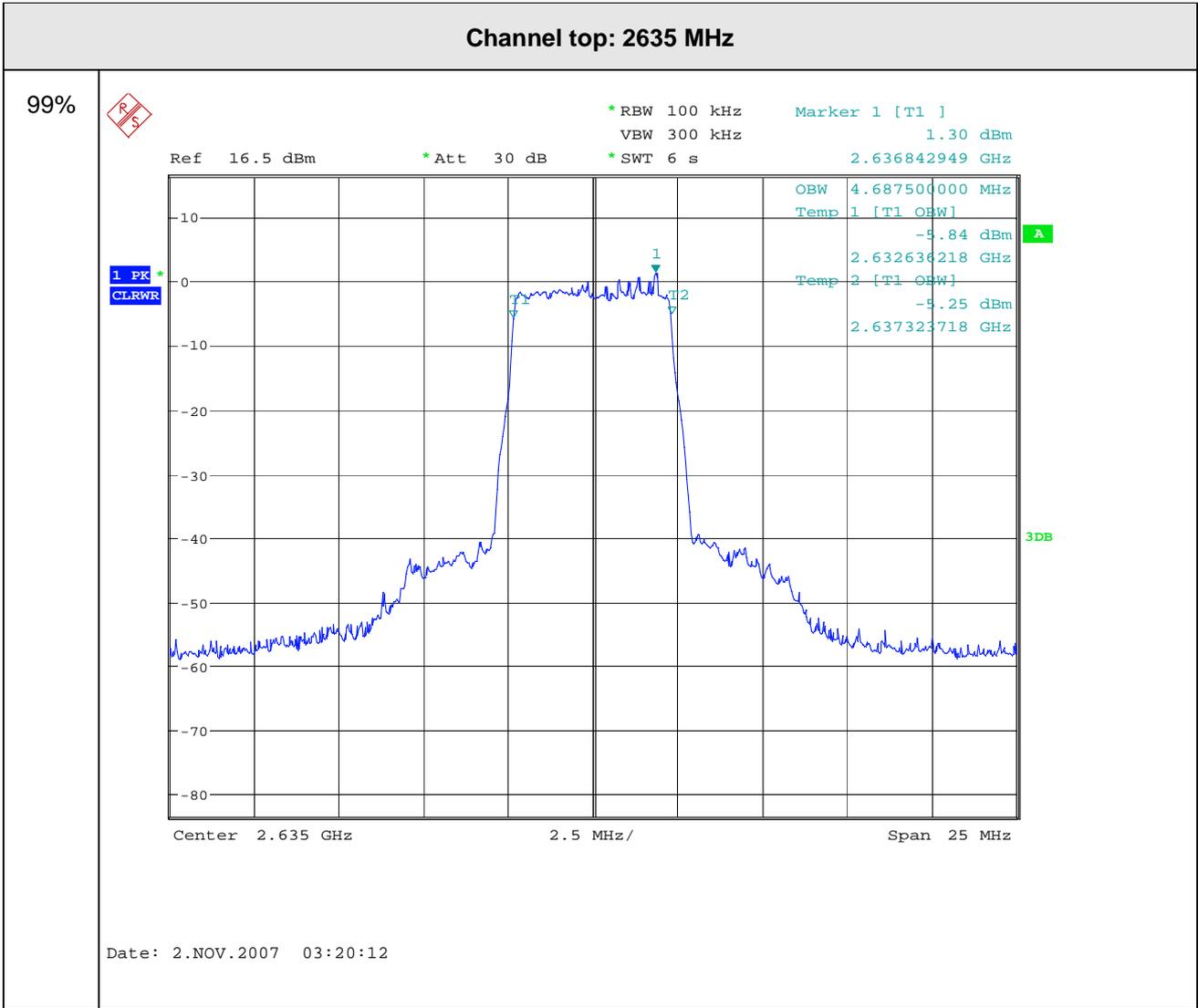


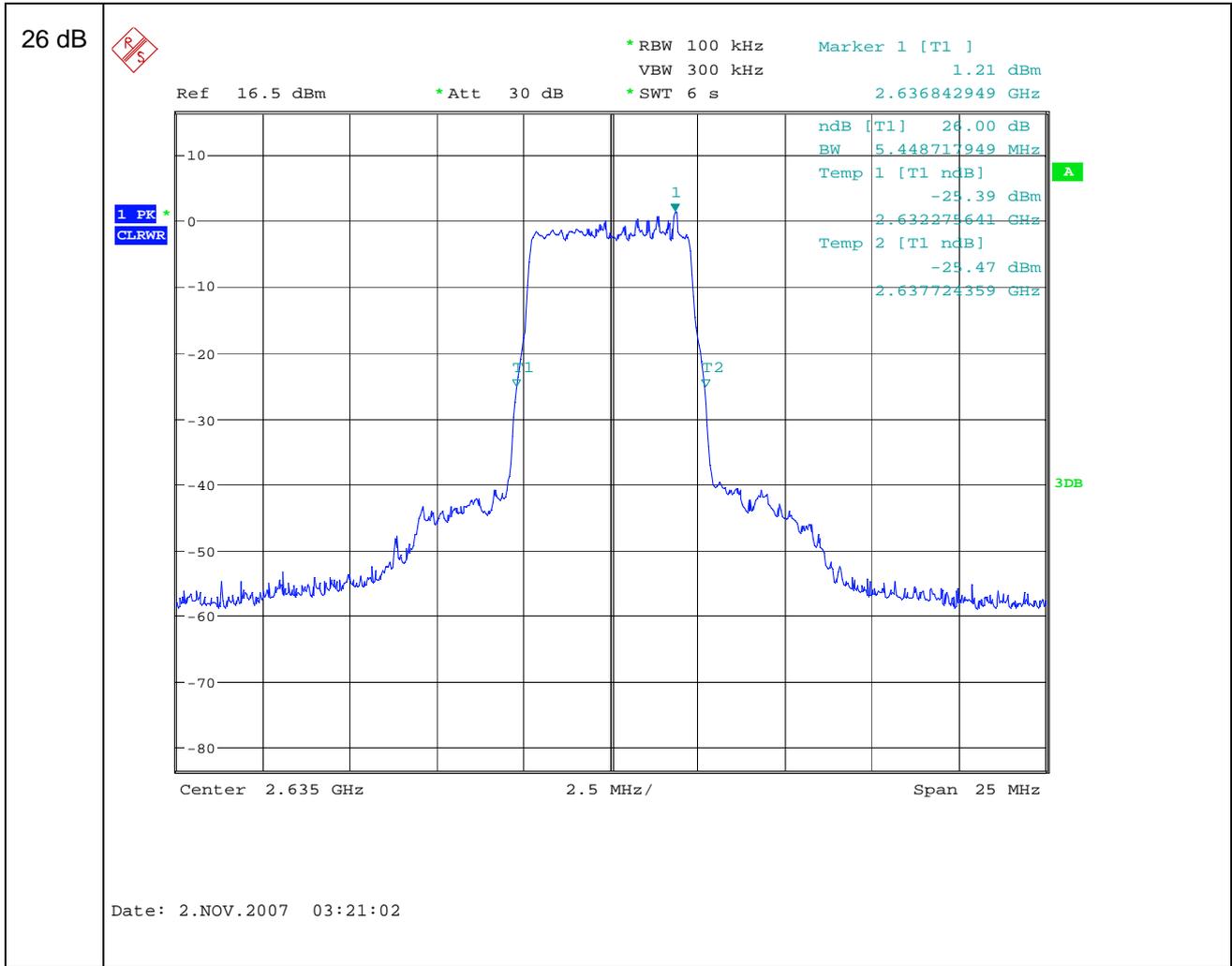


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

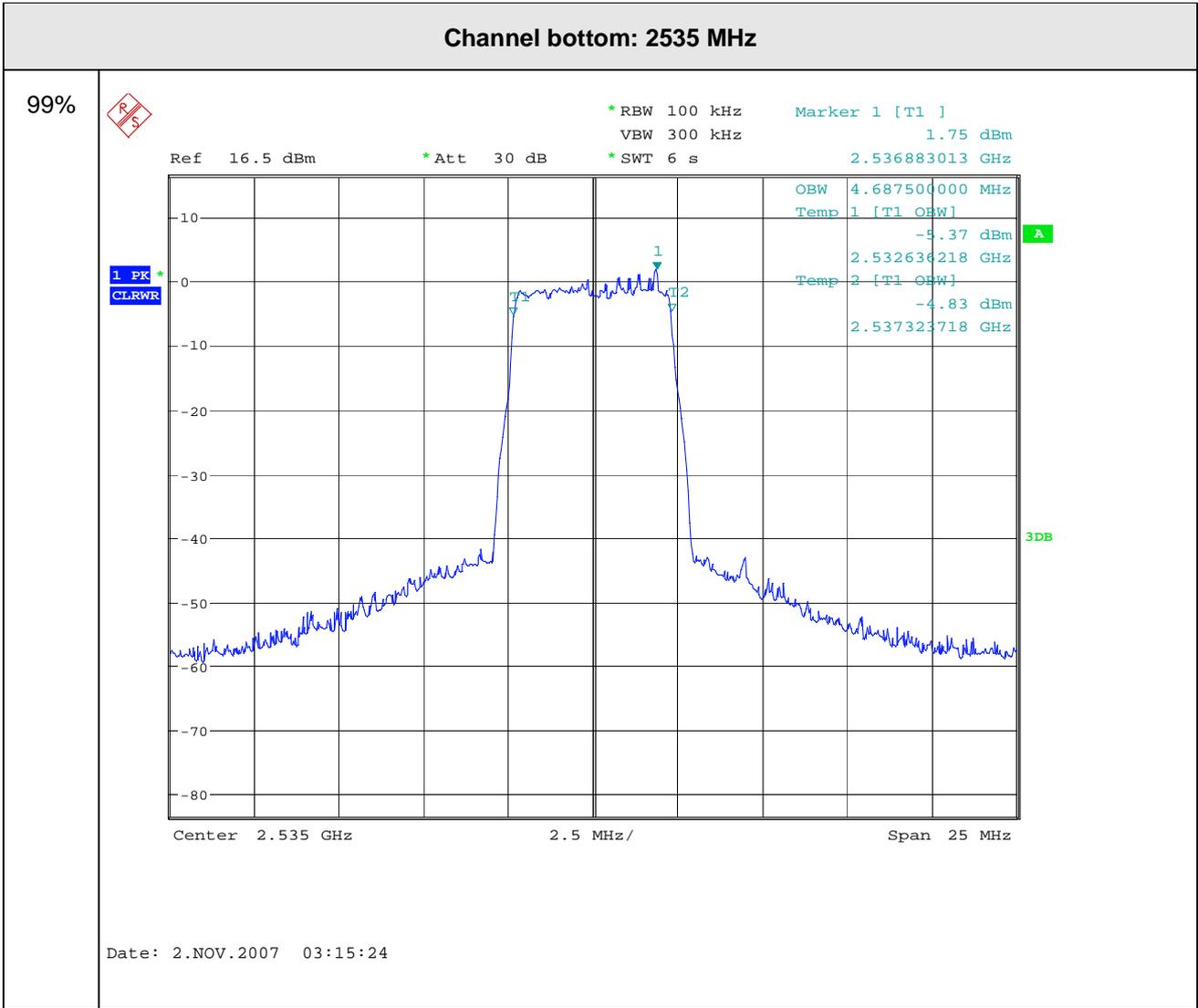
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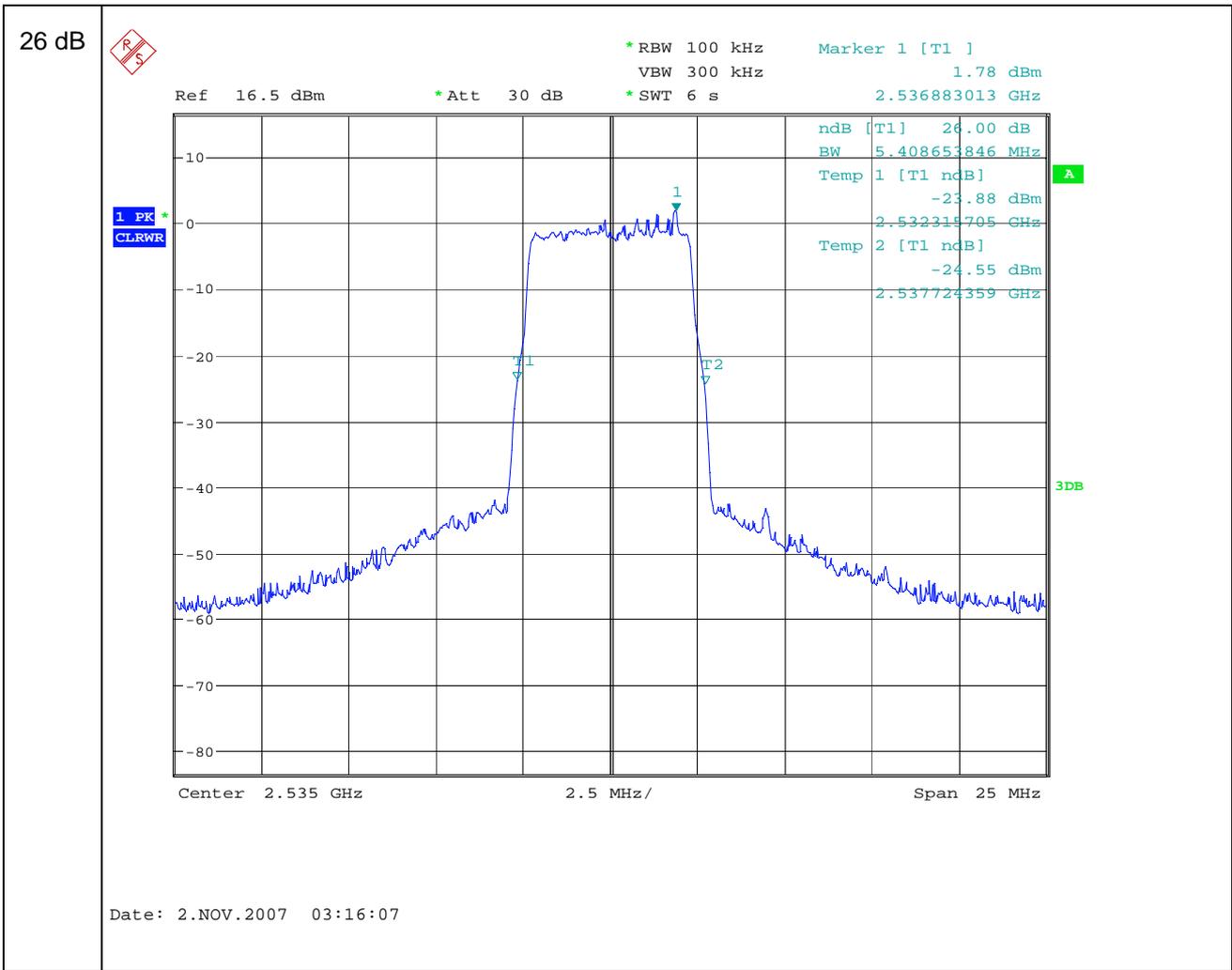
1.2.7 Test Mode of 64QAM 3/4

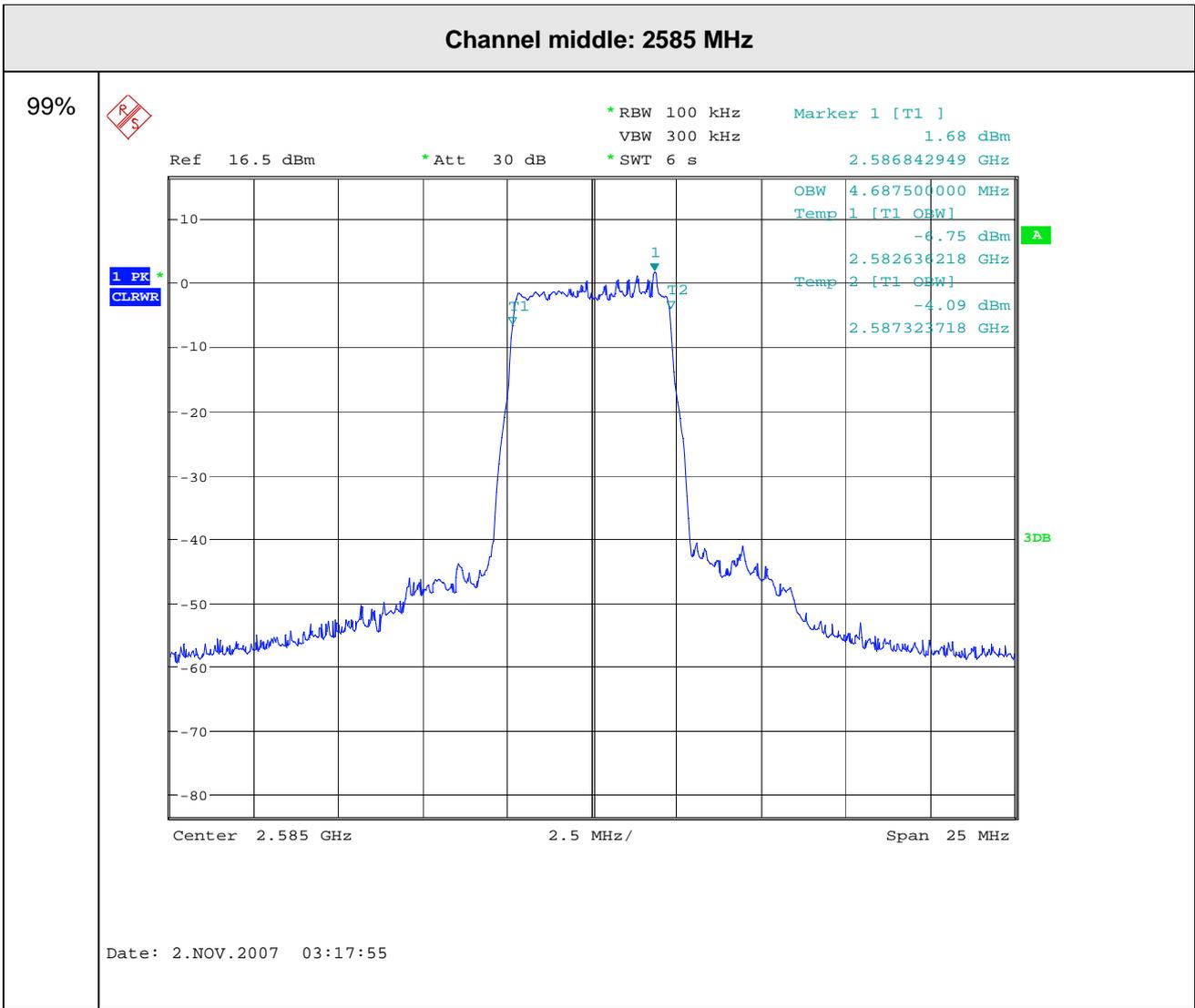


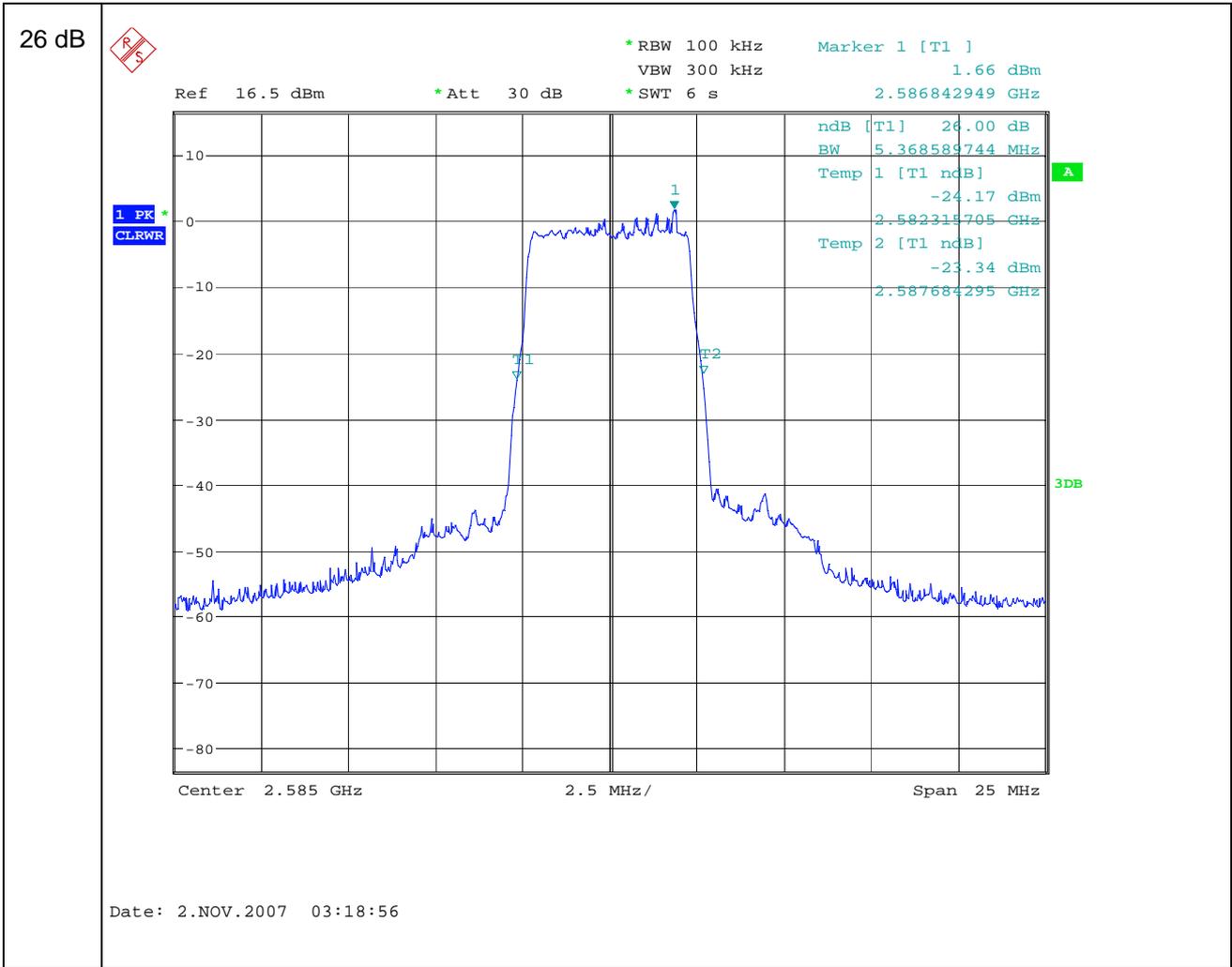


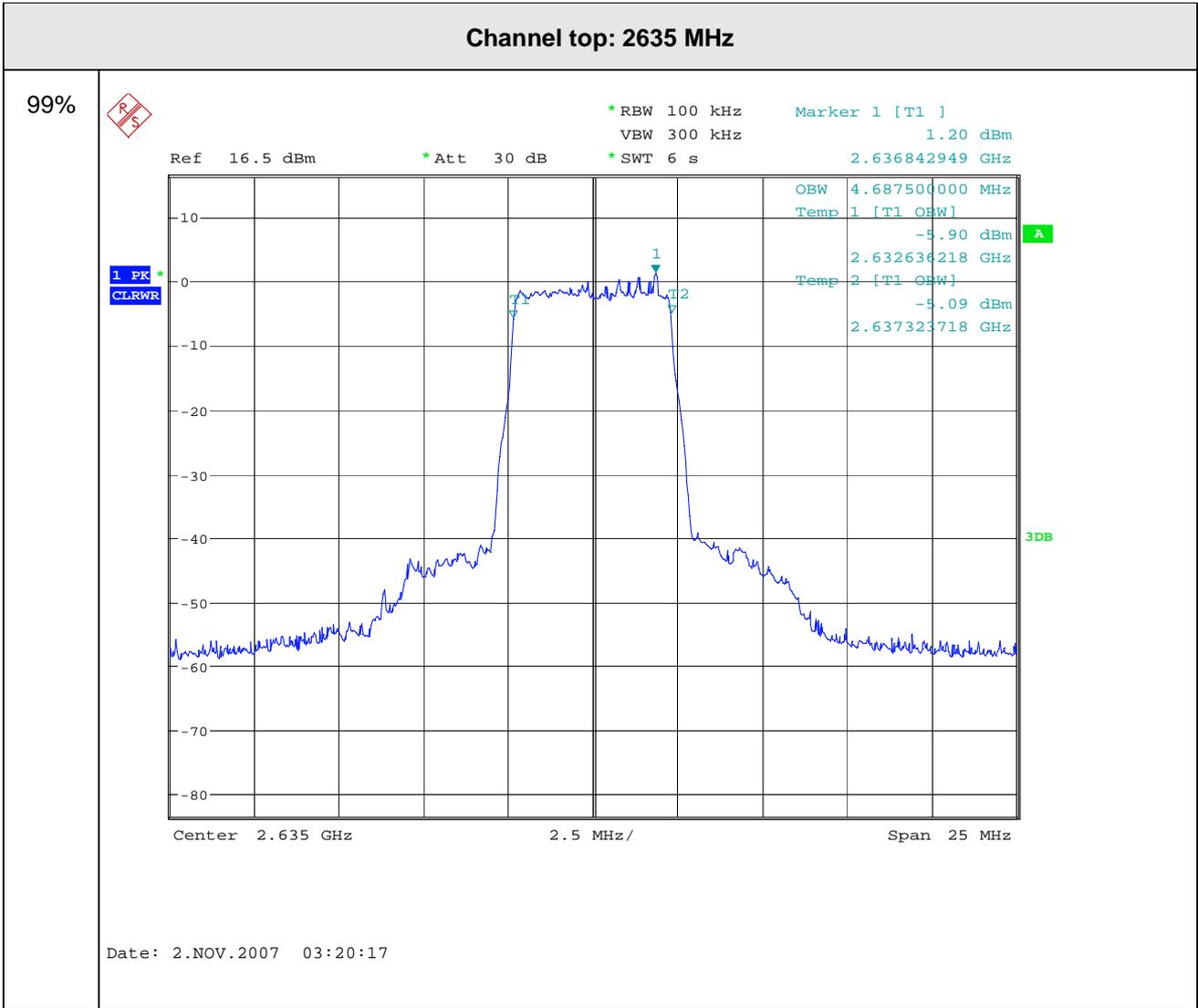
FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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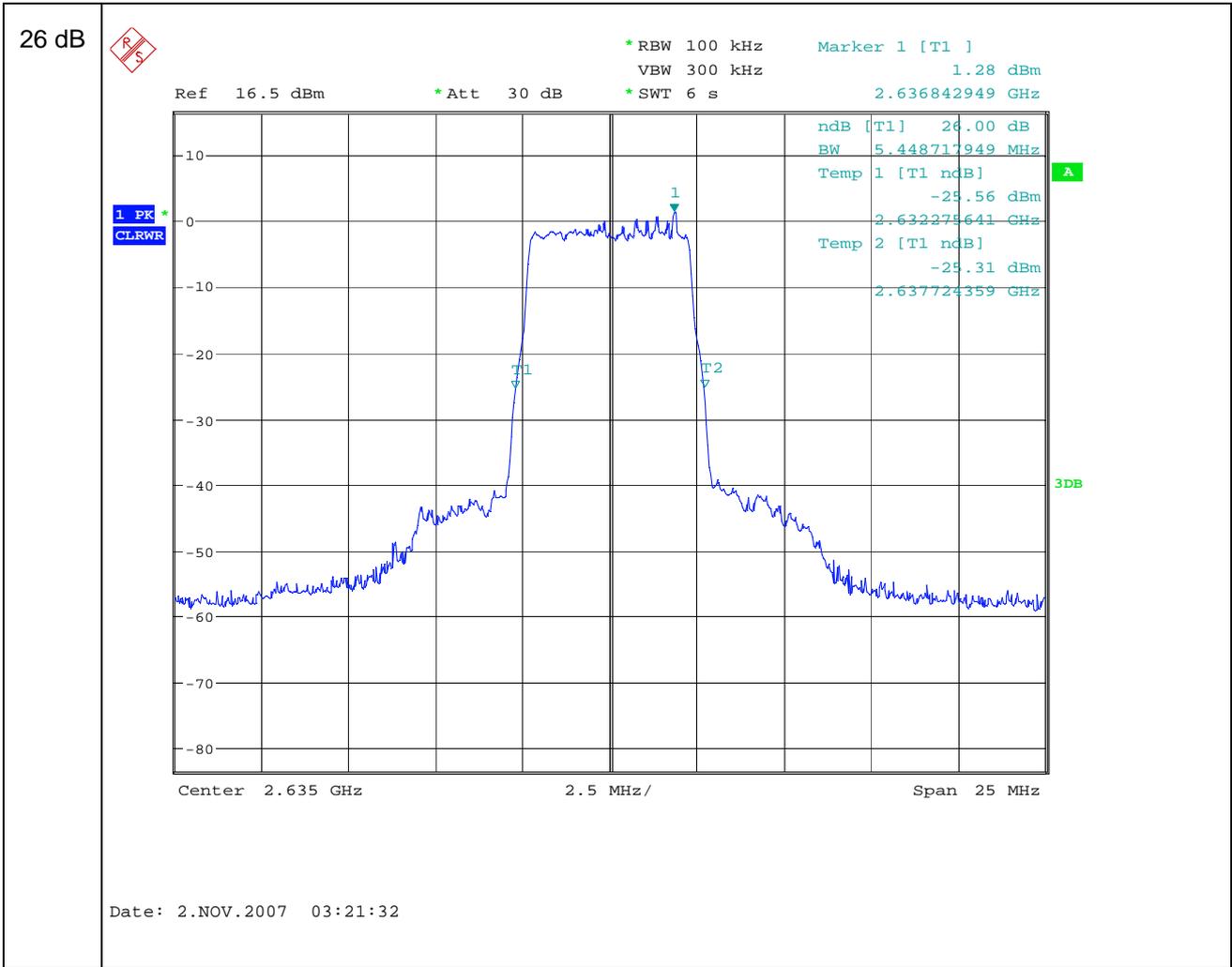






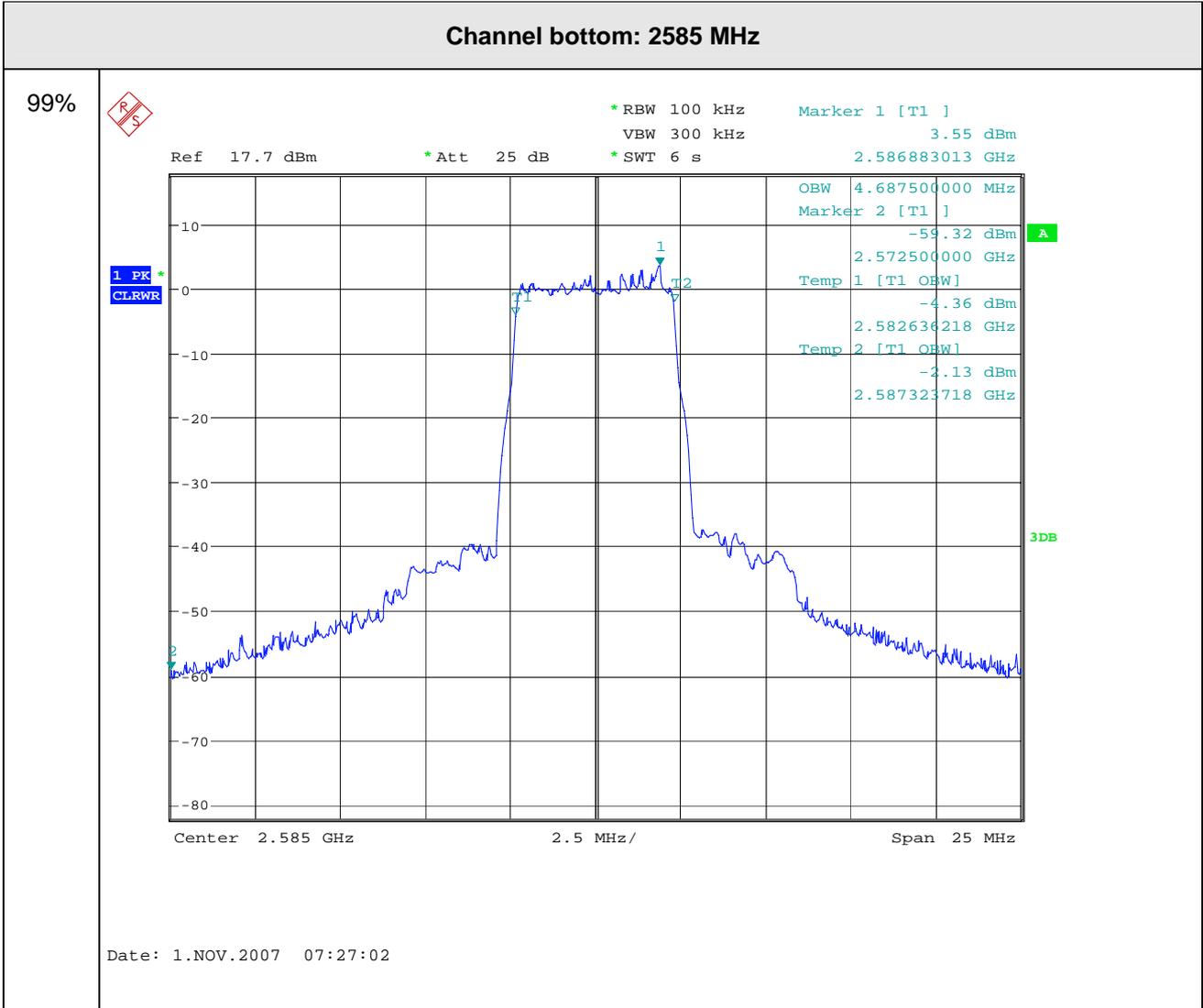
FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G



1.3 2.5 GHz high block

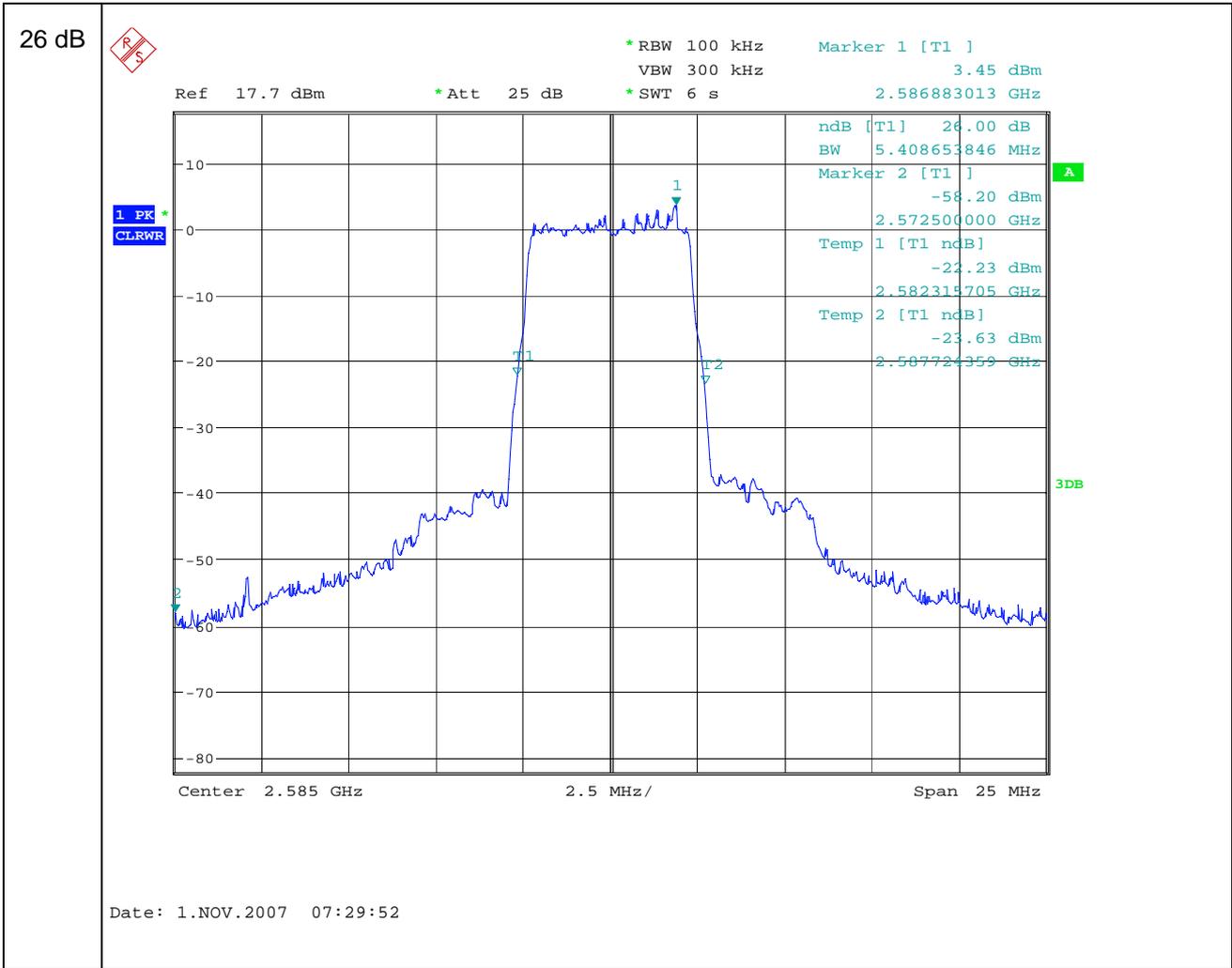
1.3.1 Test Mode of QPSK 1/2

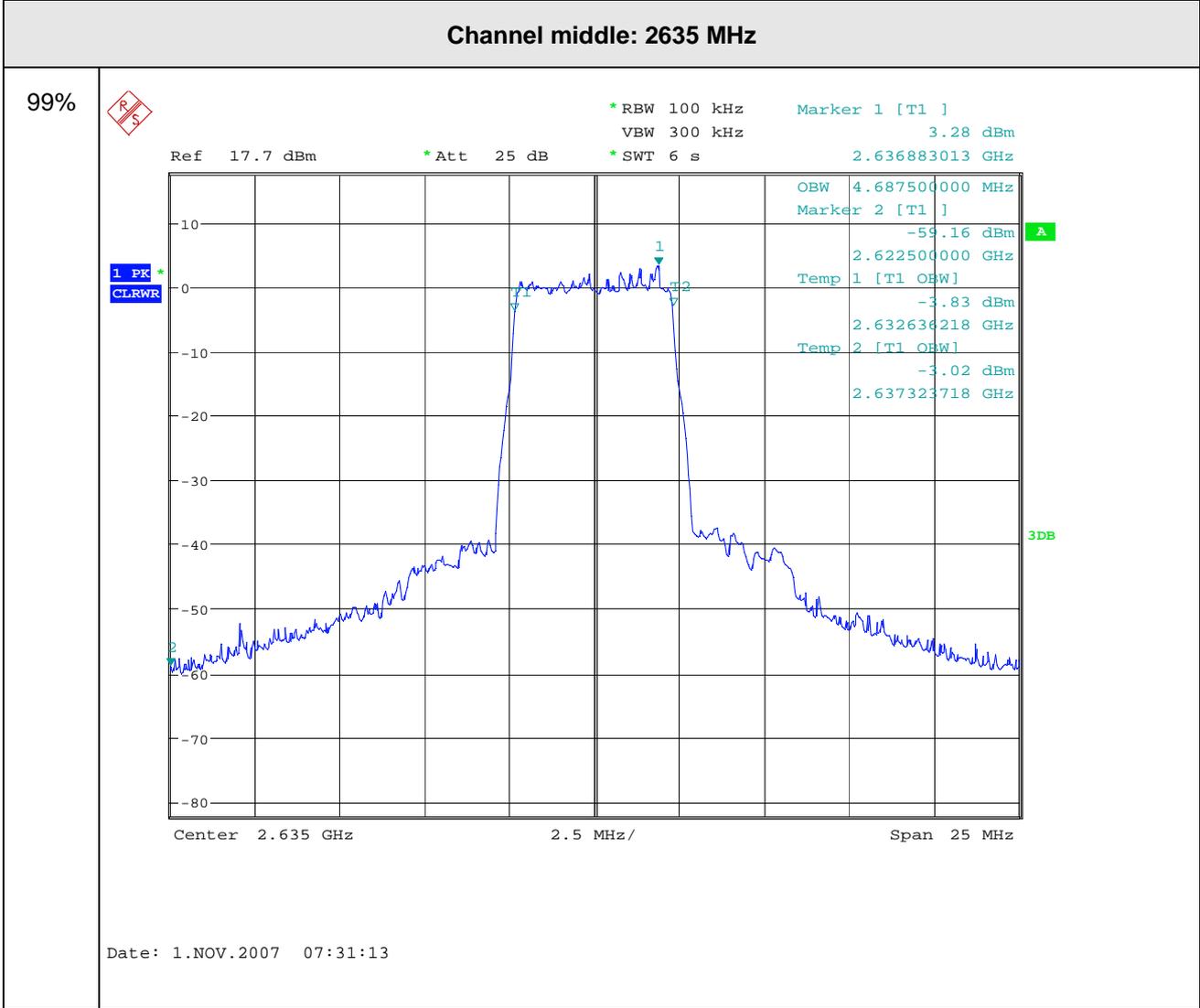


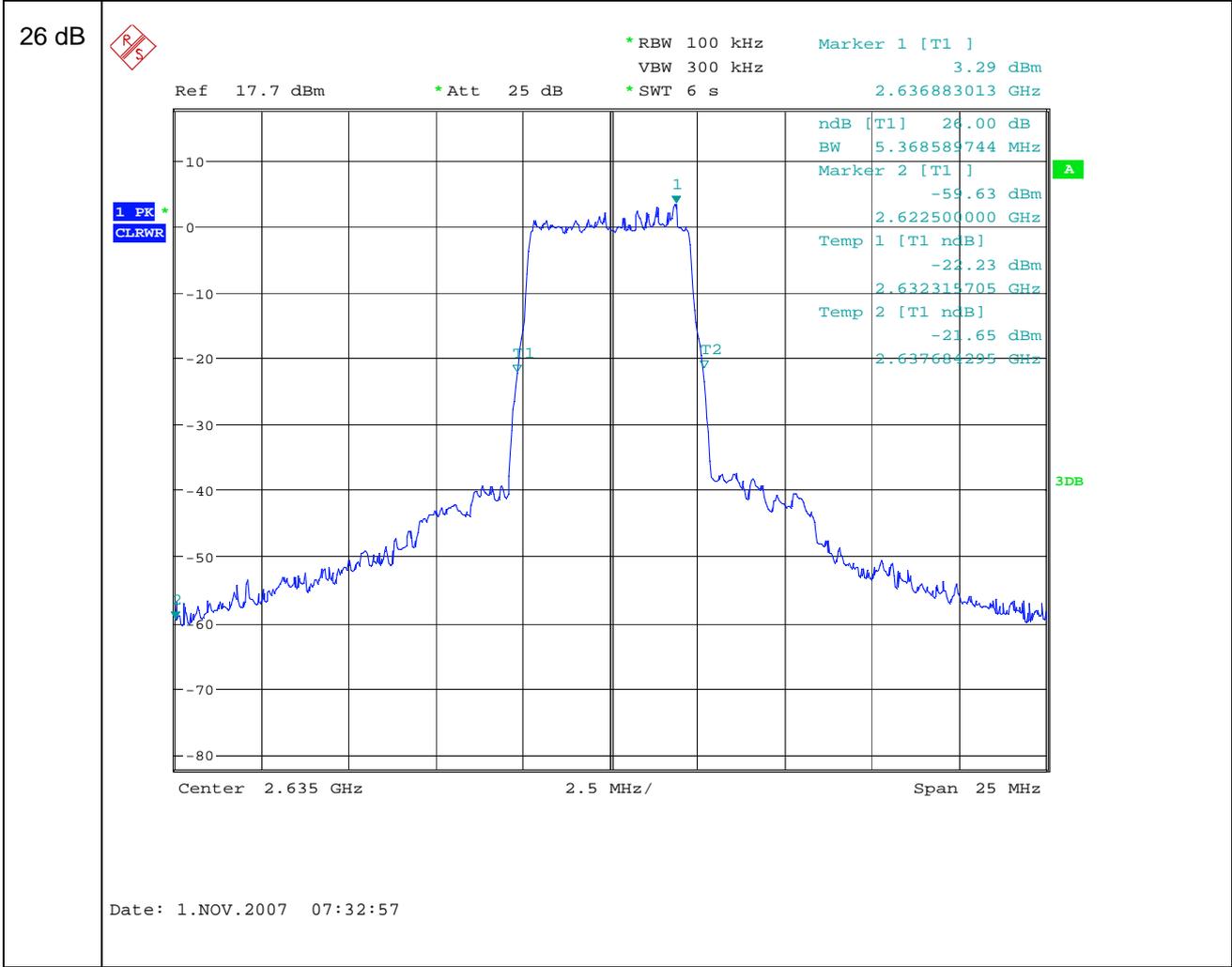


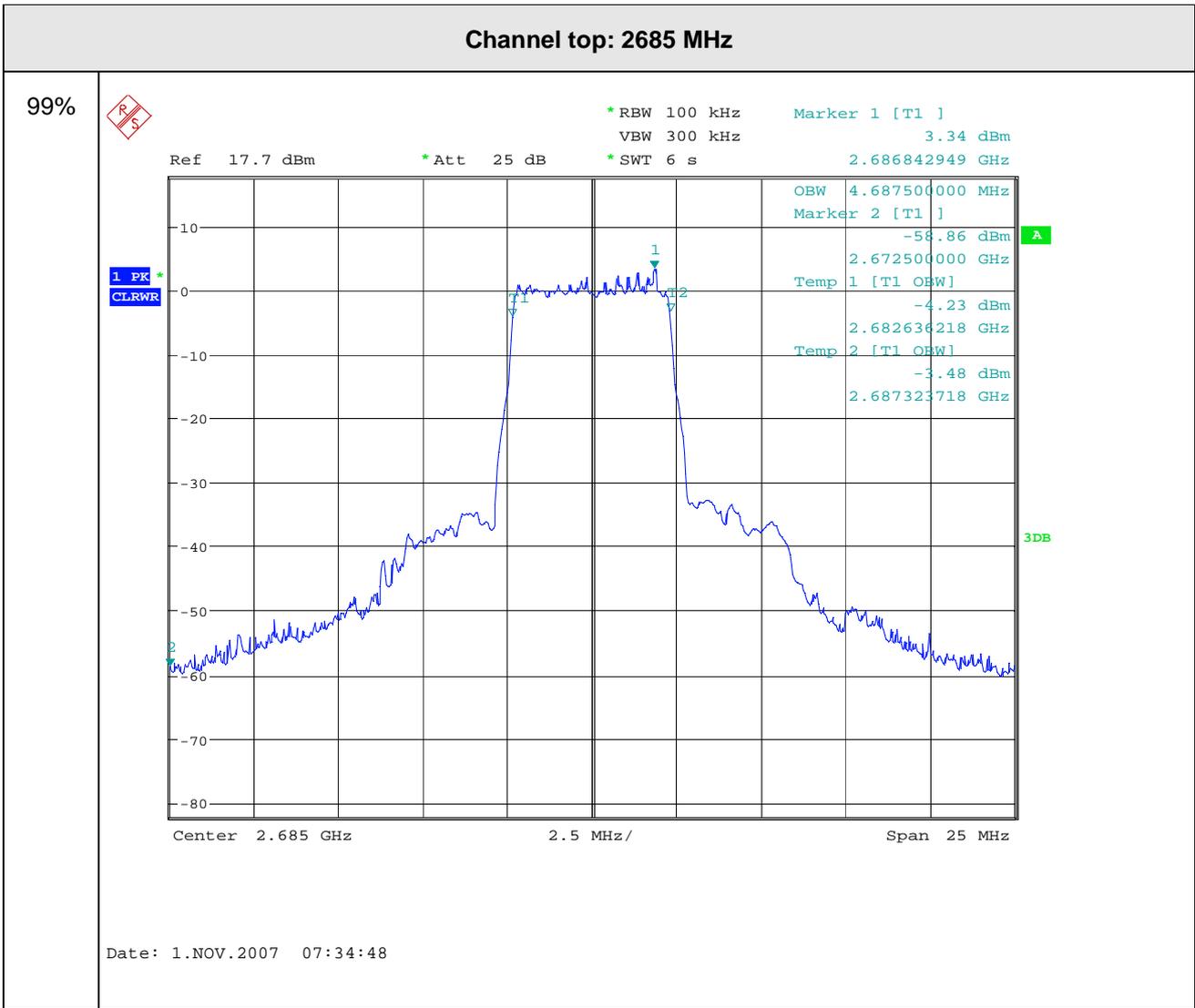
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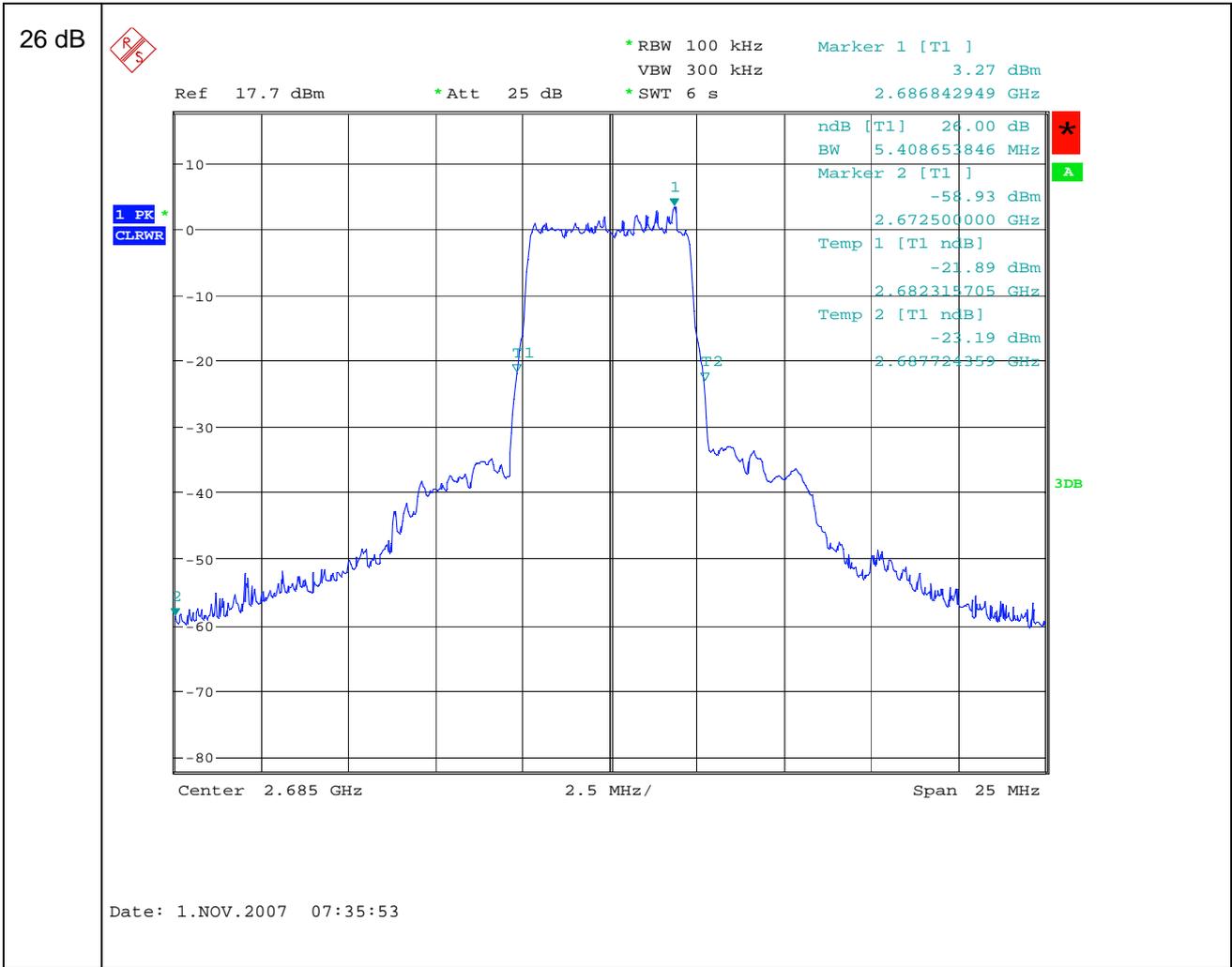
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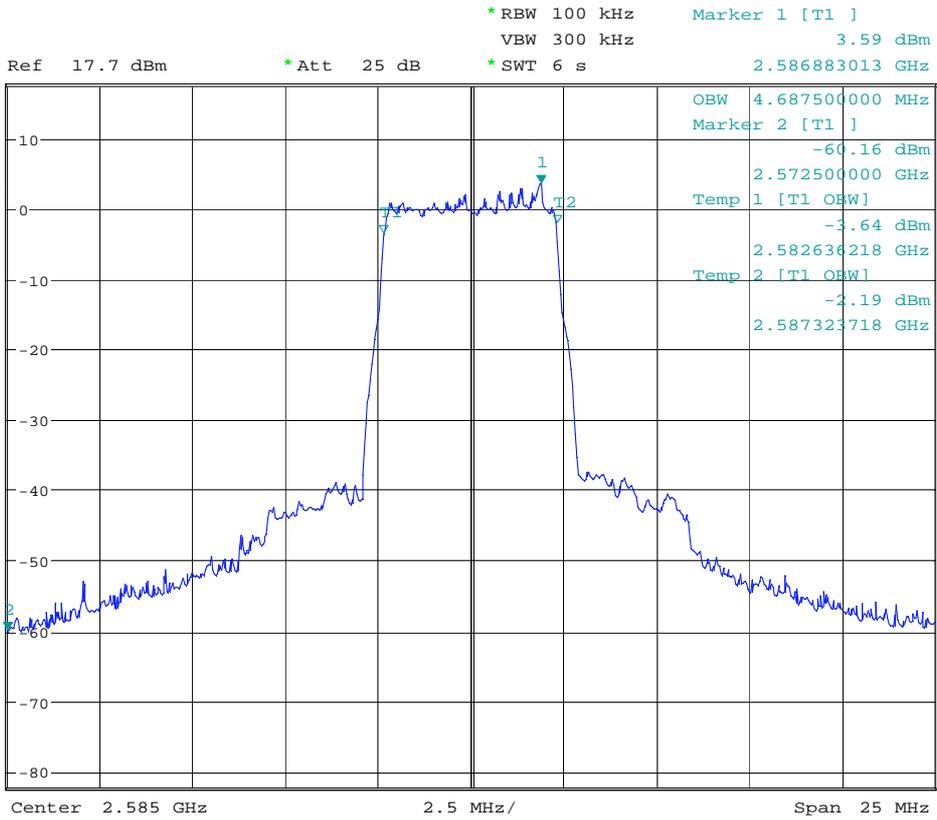
1.3.2 Test Mode of QPSK3/4

Channel bottom: 2585 MHz

99%



1 PK *
CLRWR

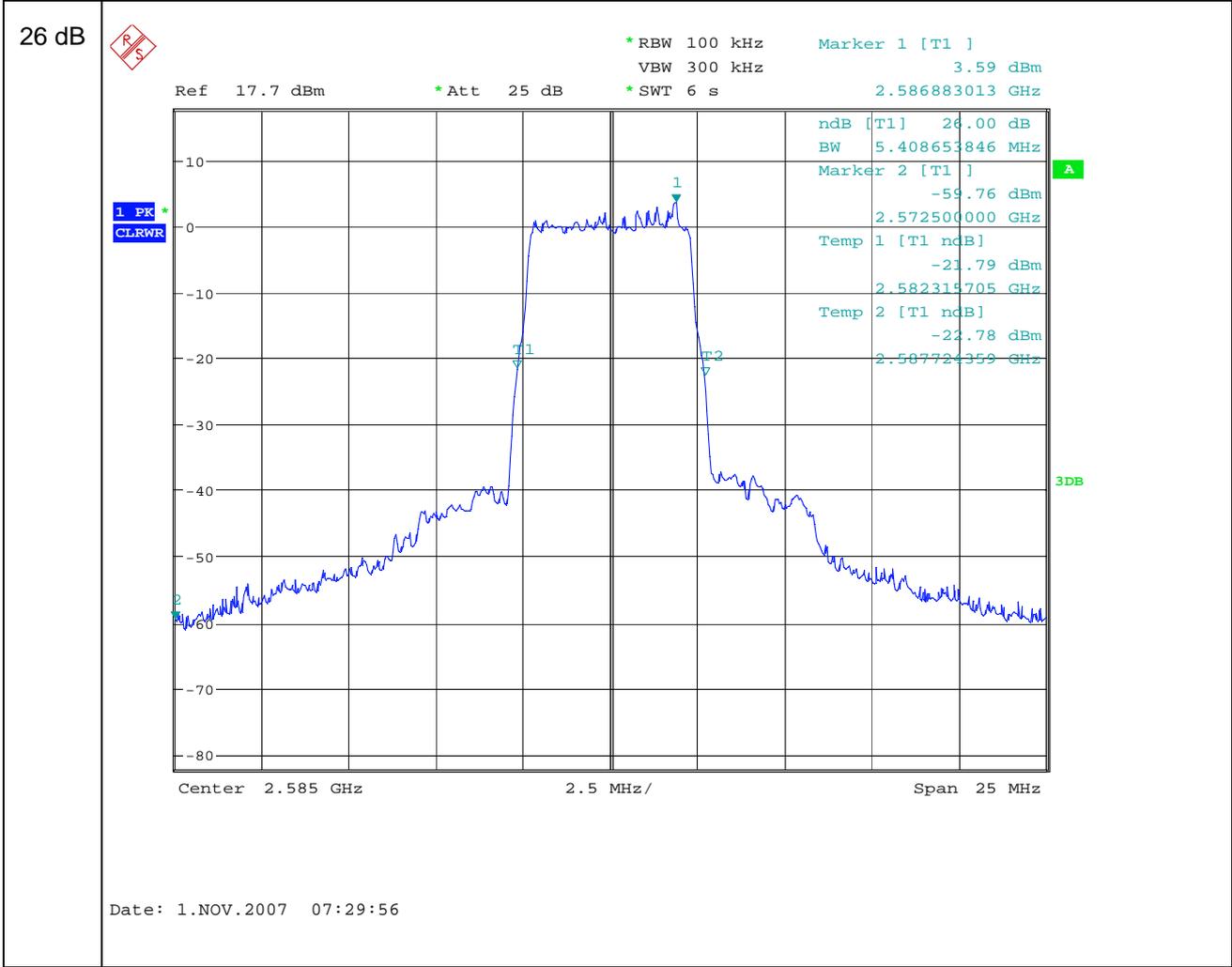


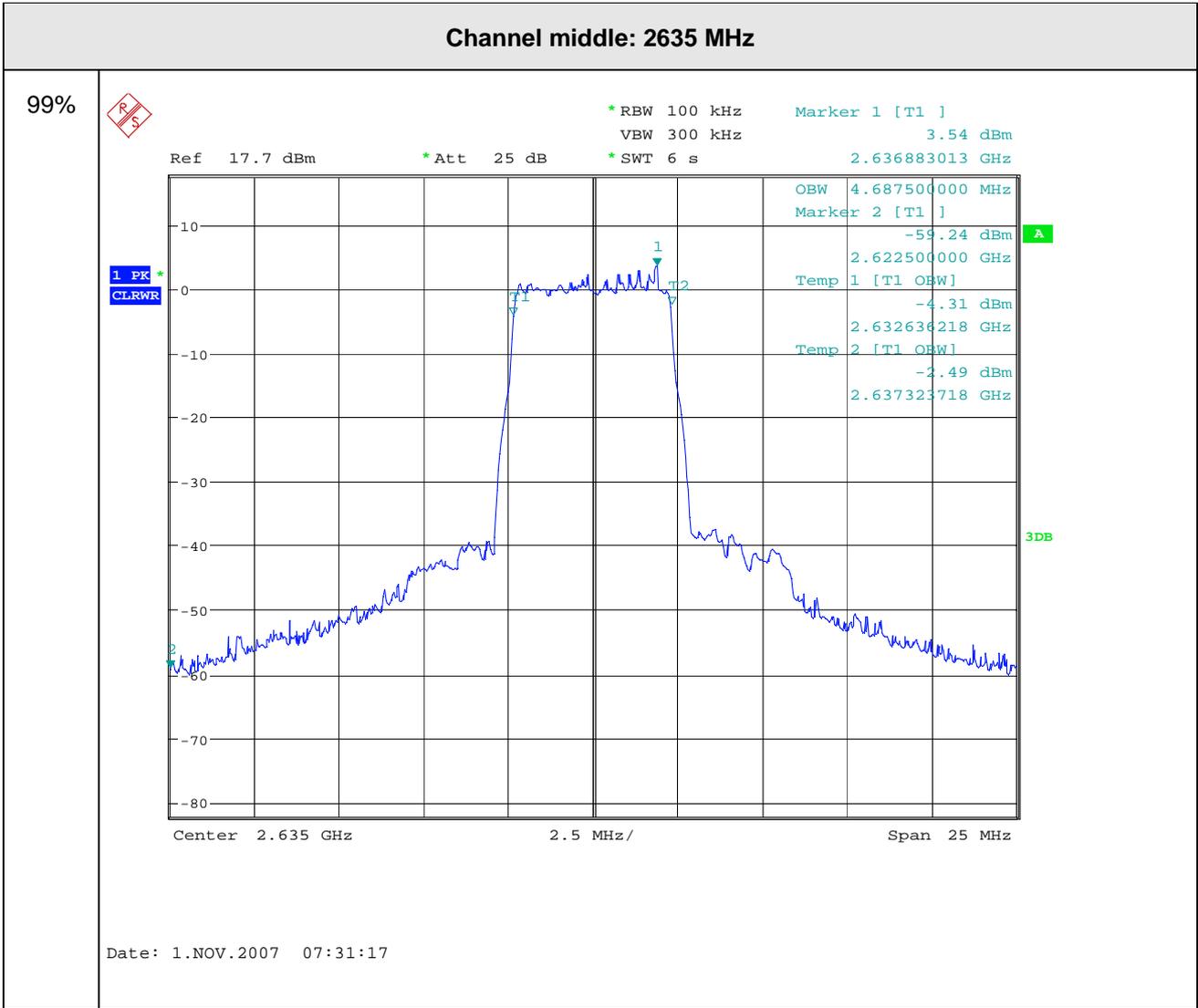
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FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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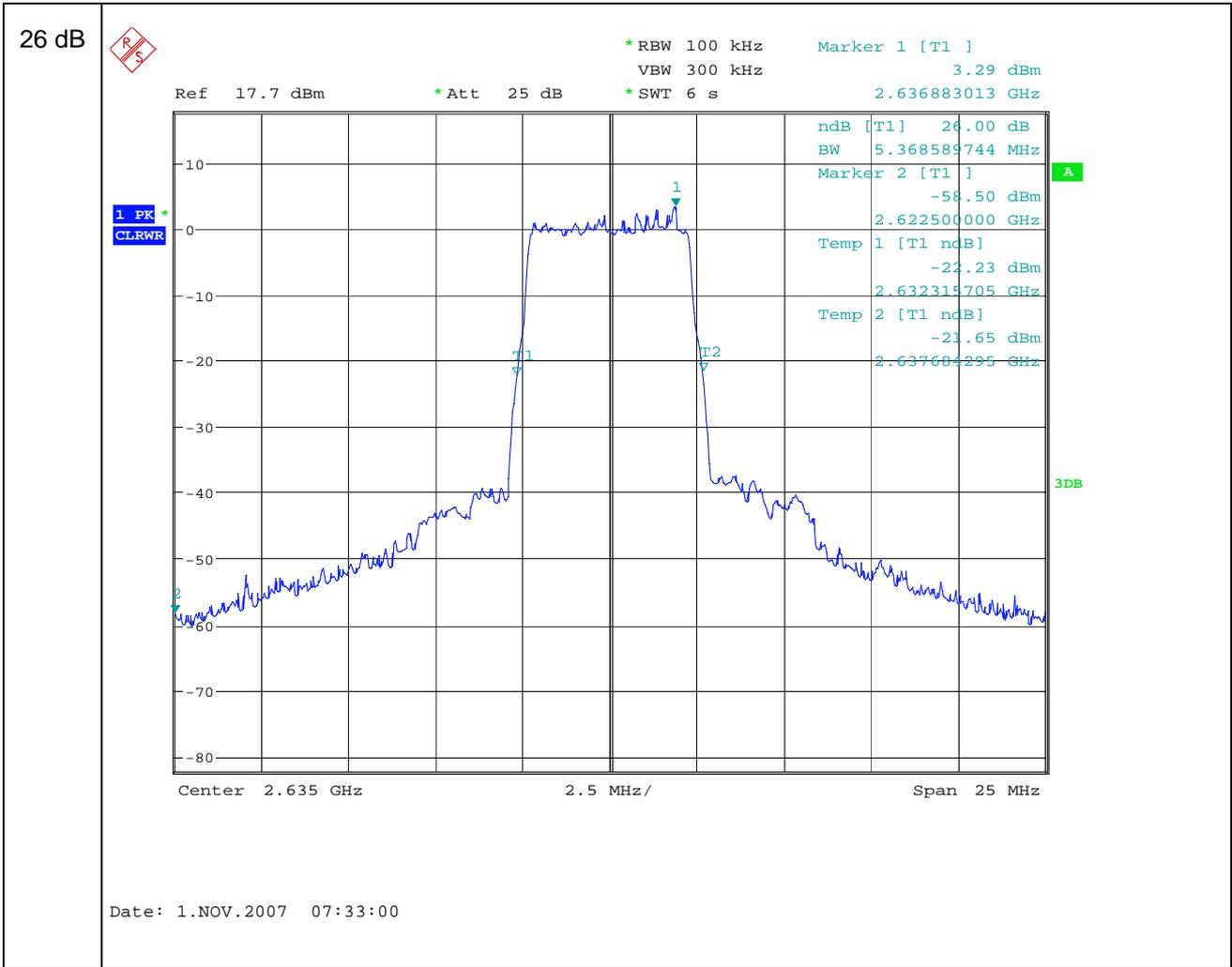


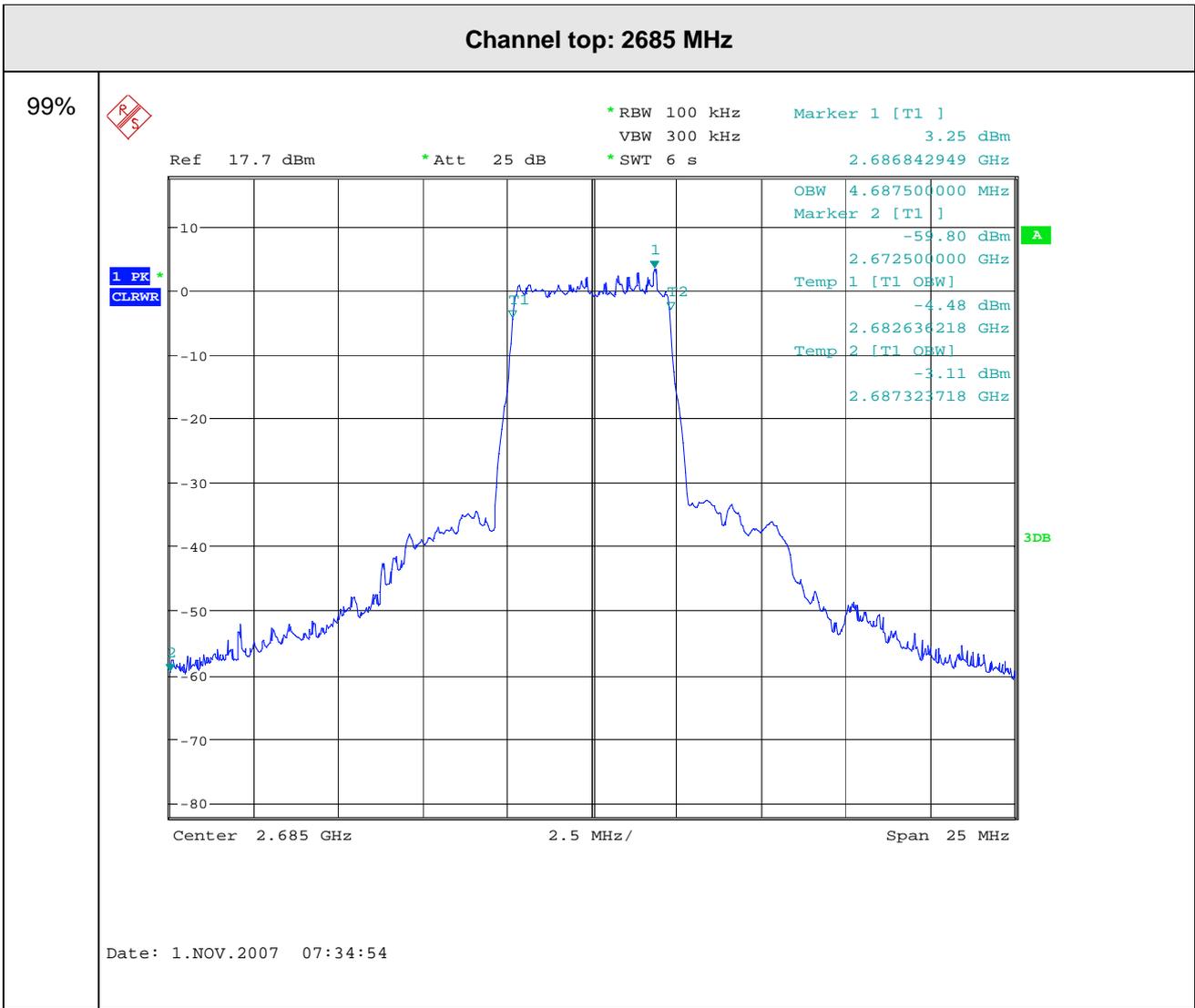


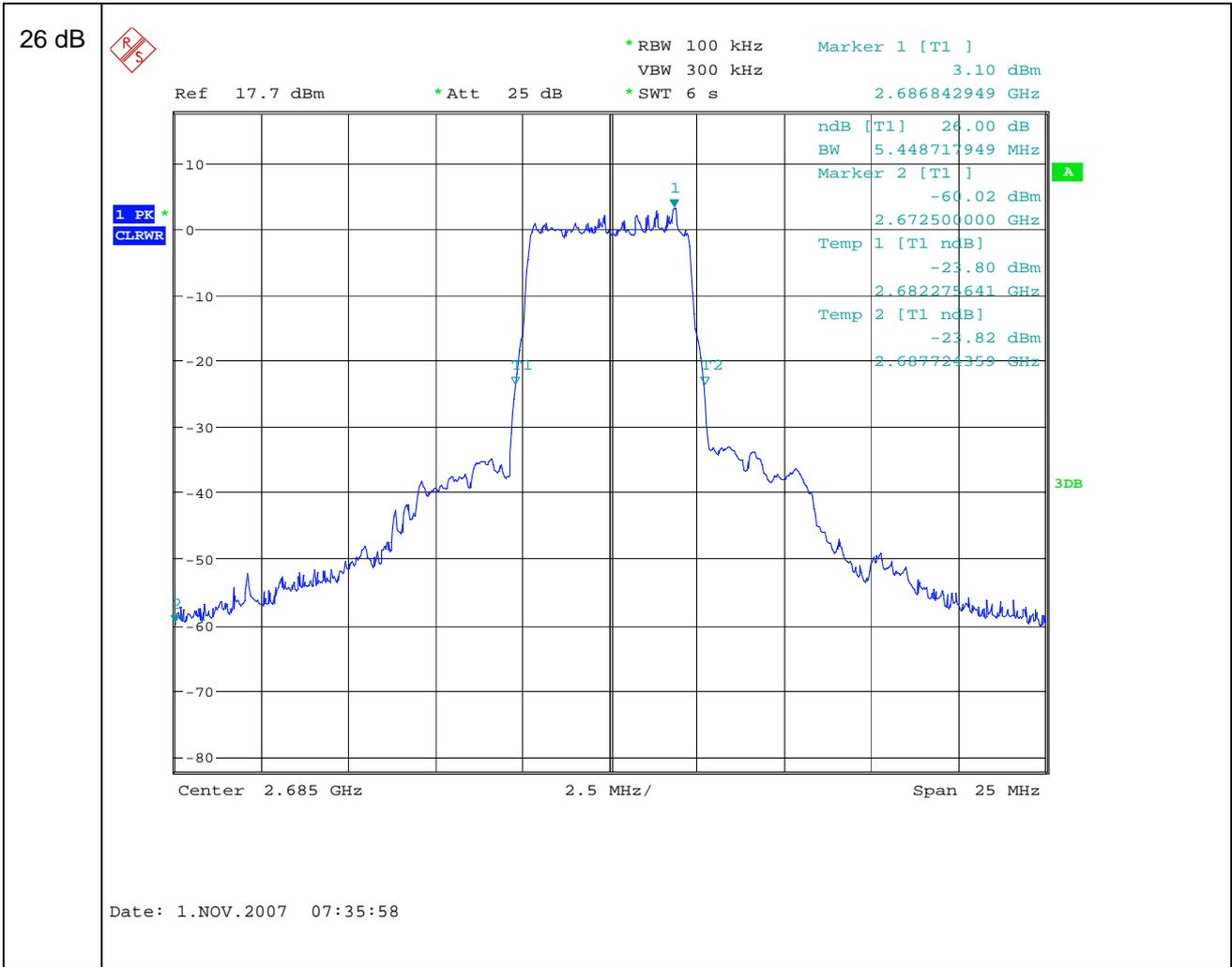


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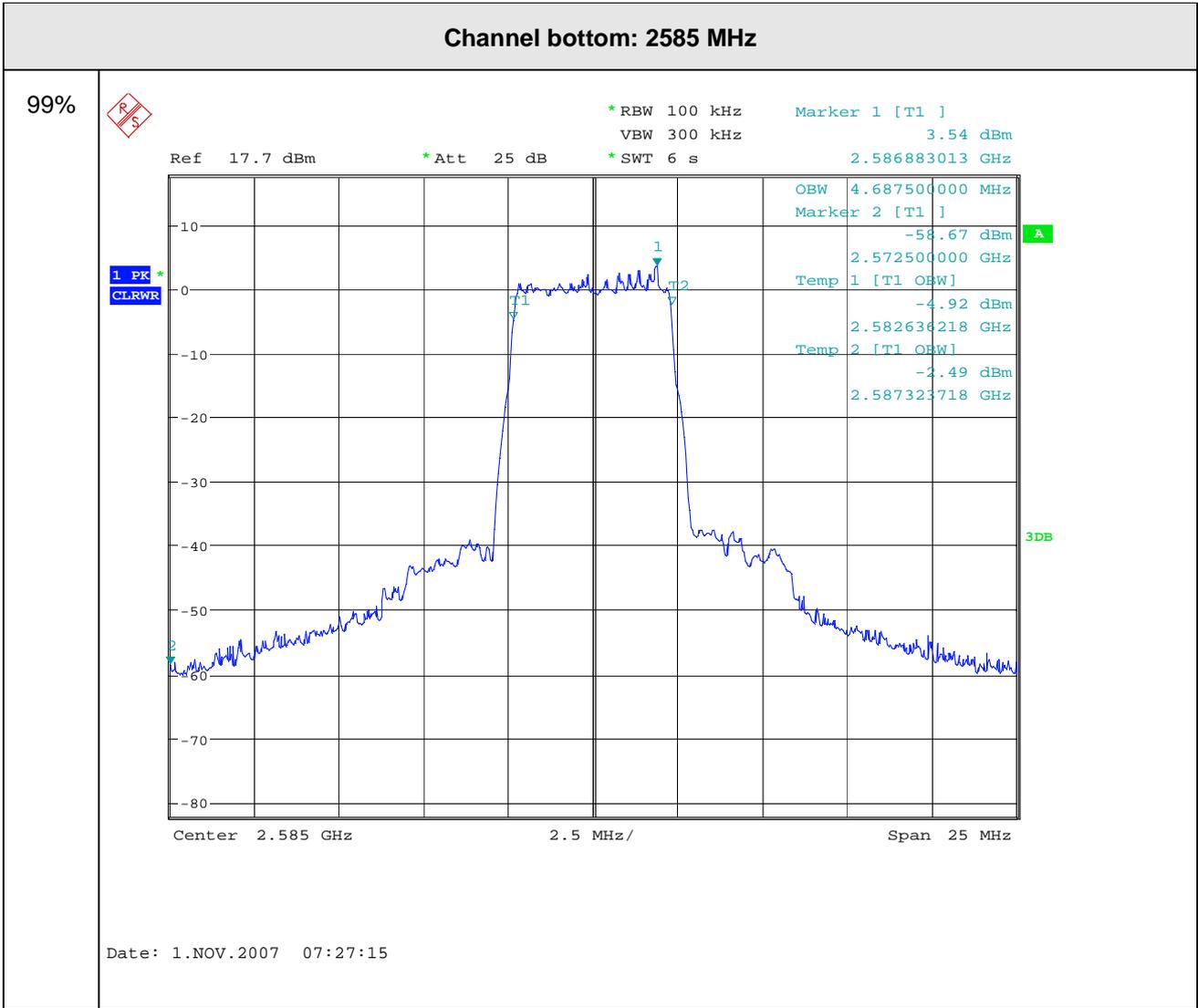
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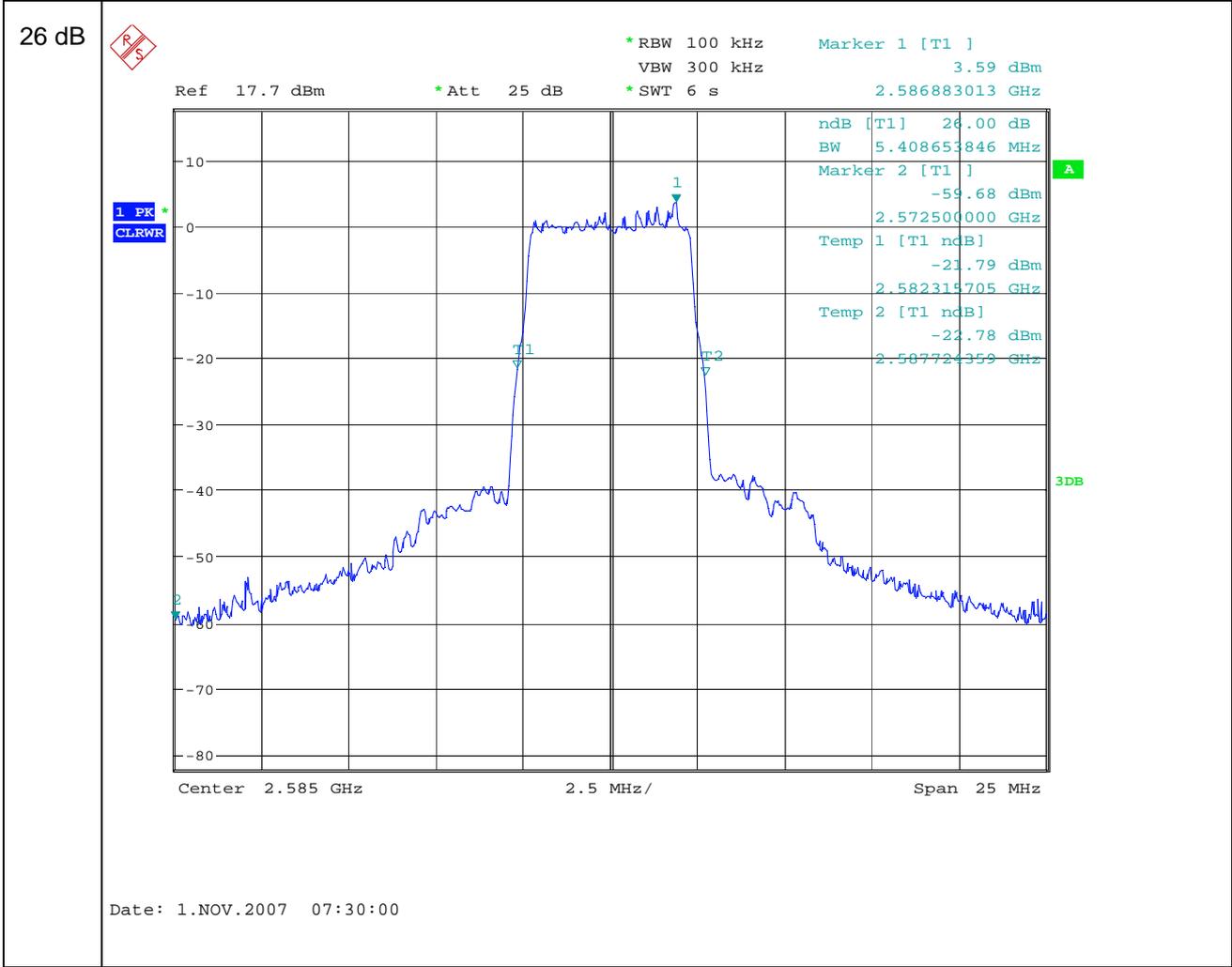
1.3.3 Test Mode of 16QAM 1/2

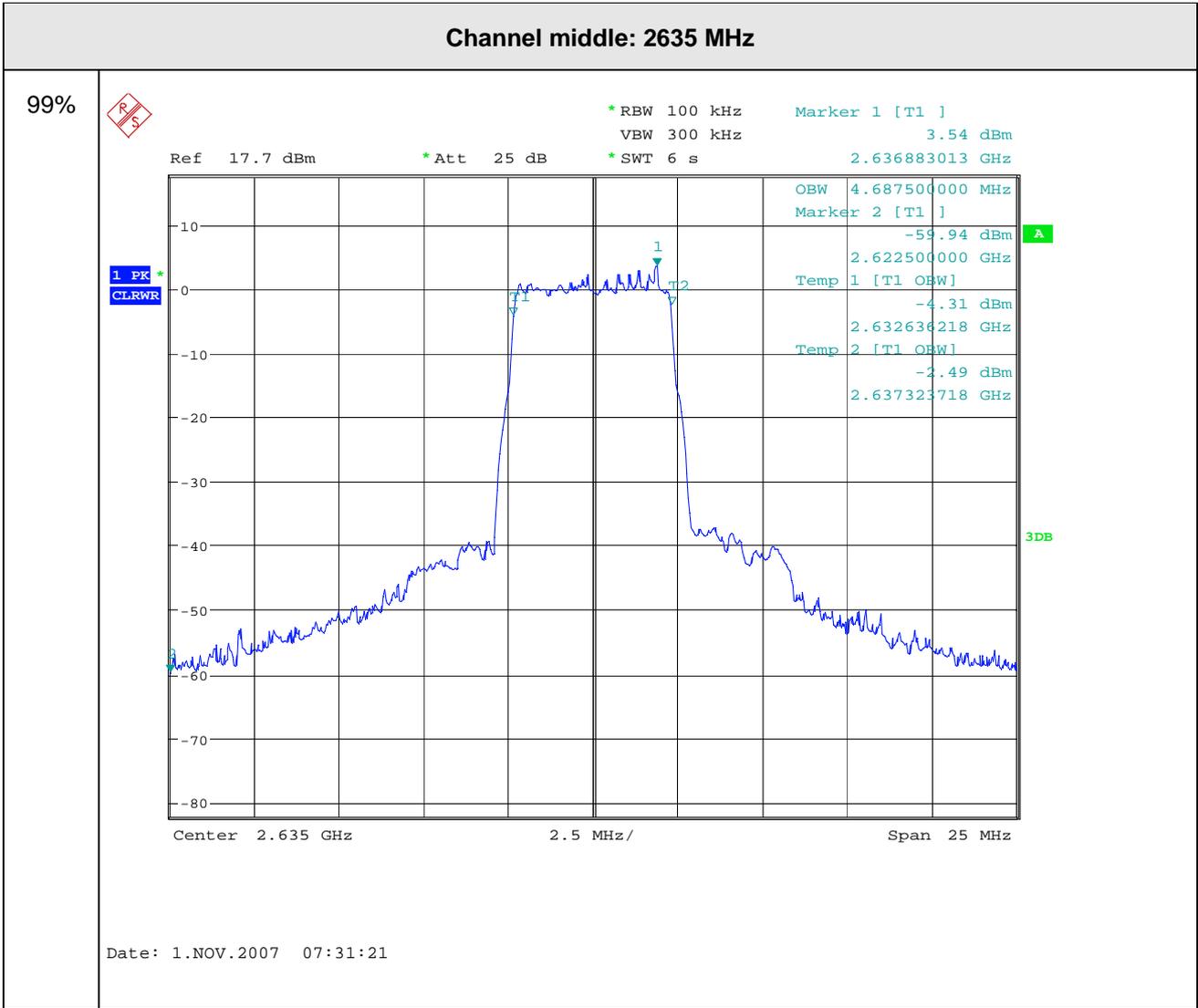




FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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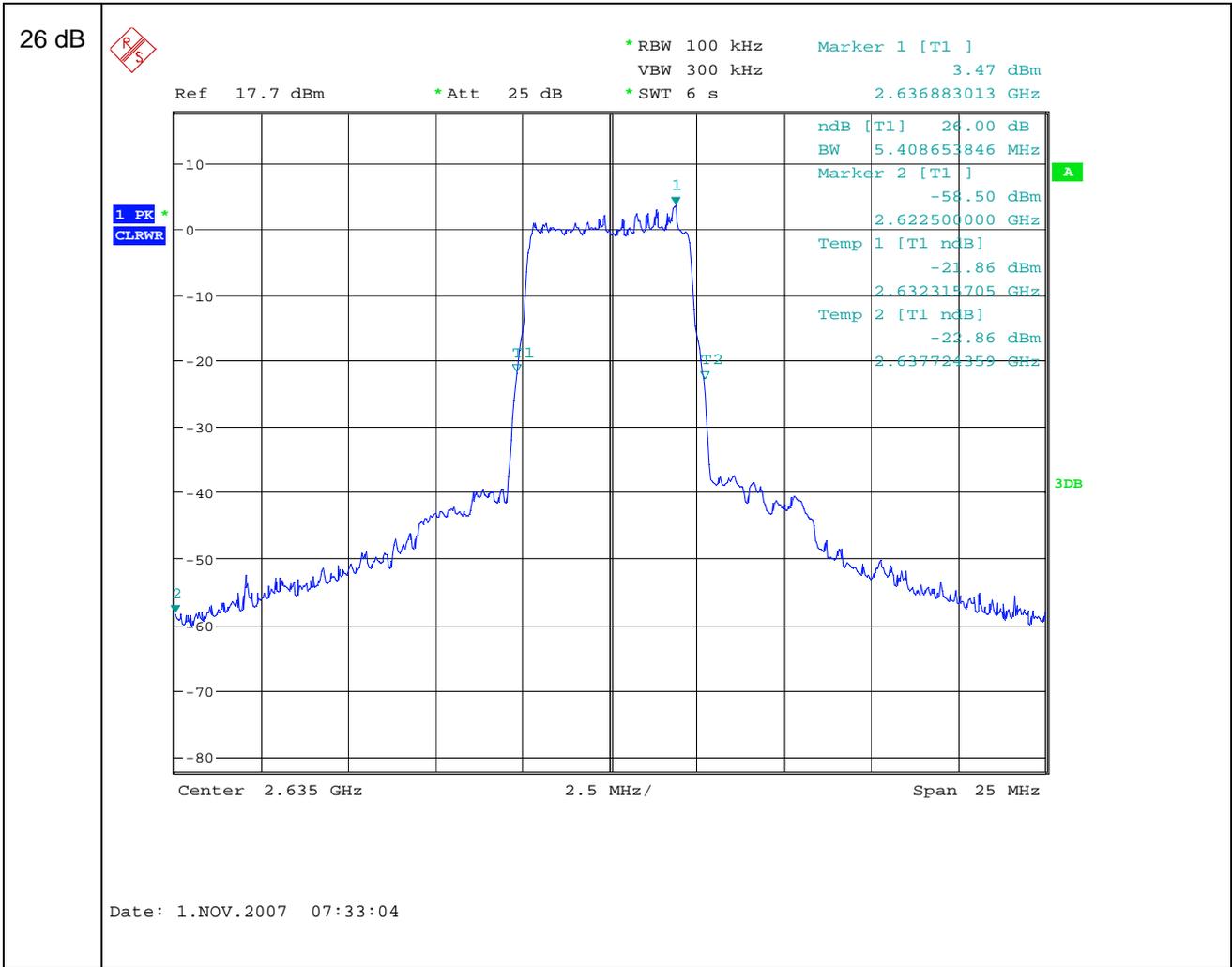


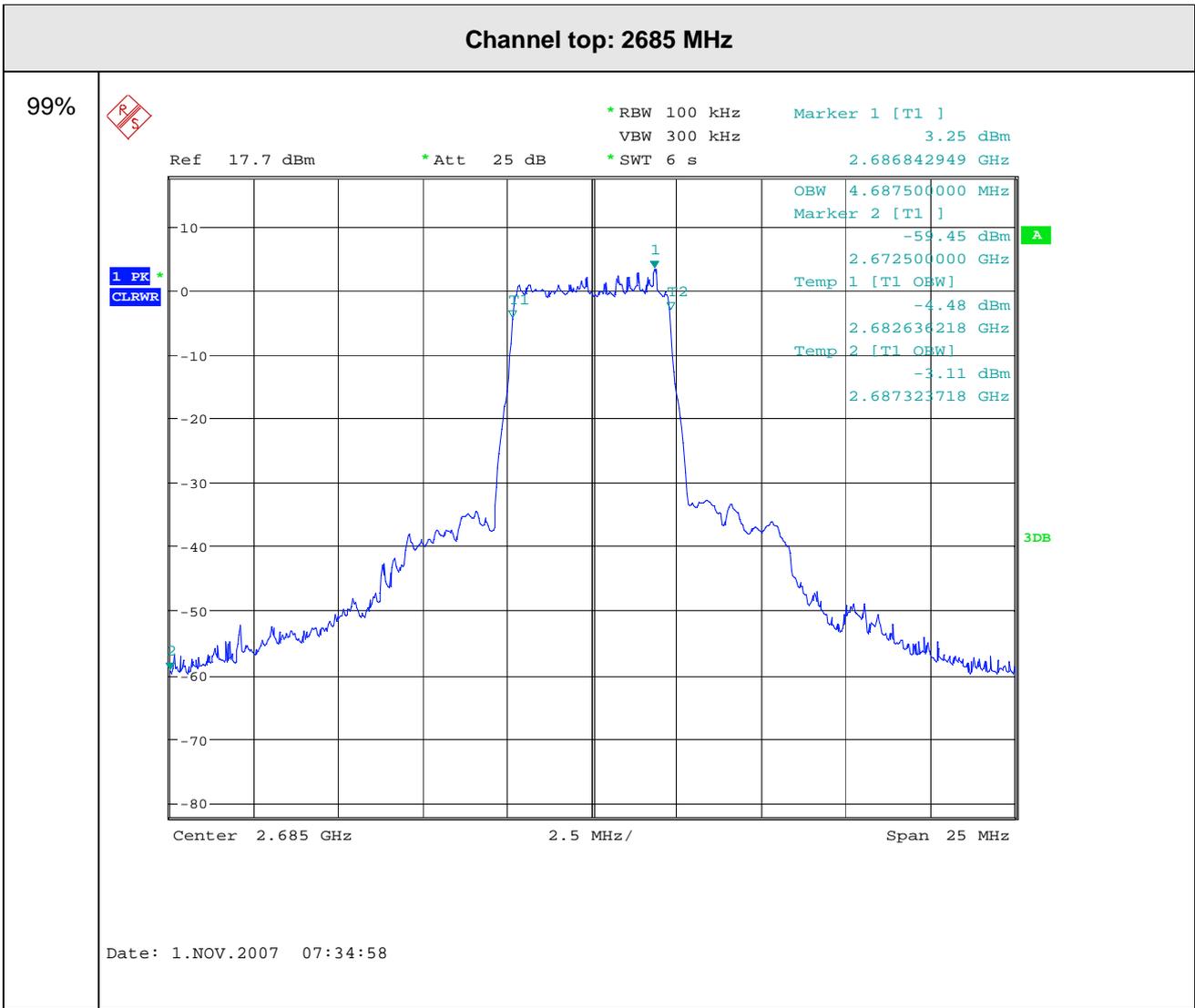


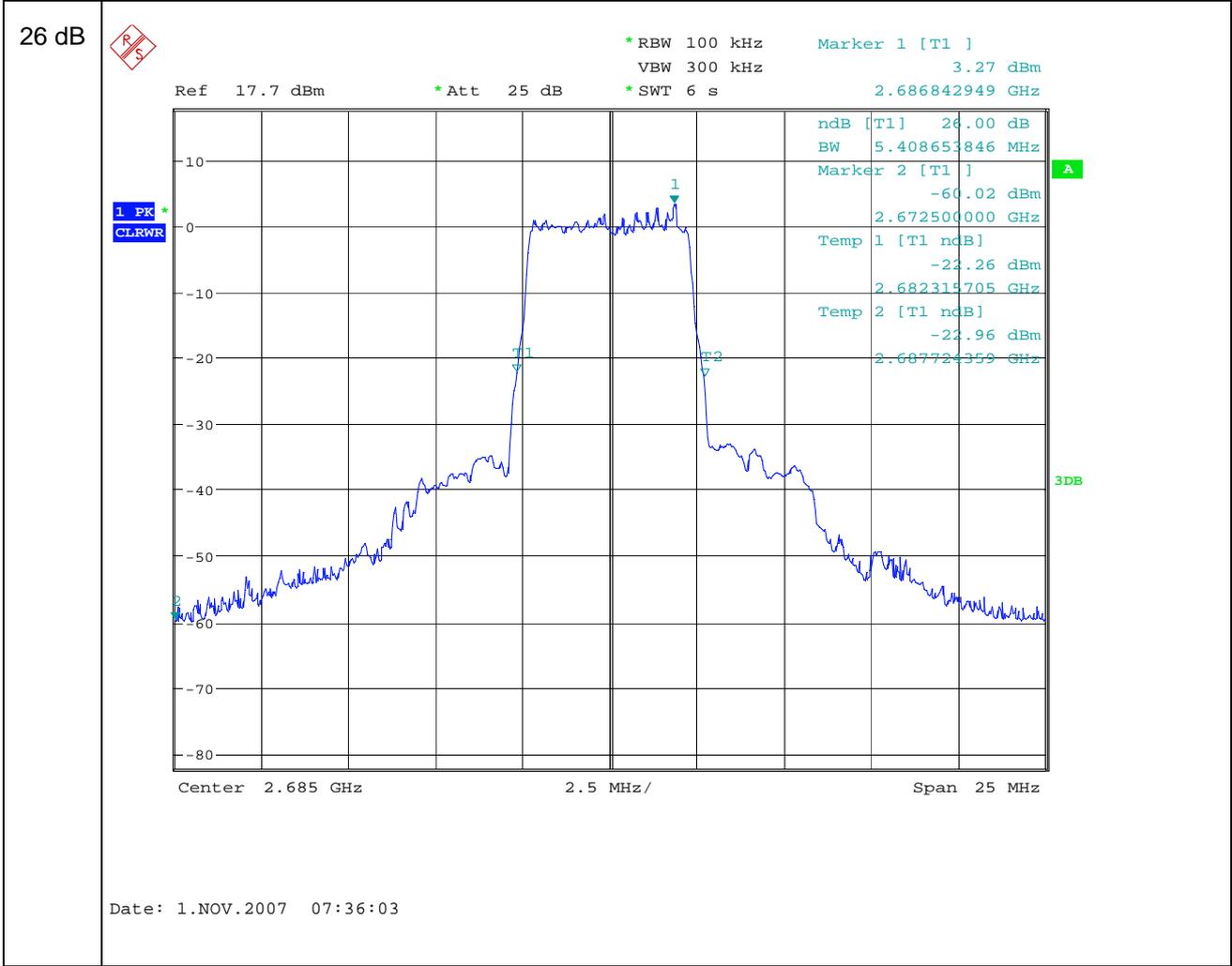


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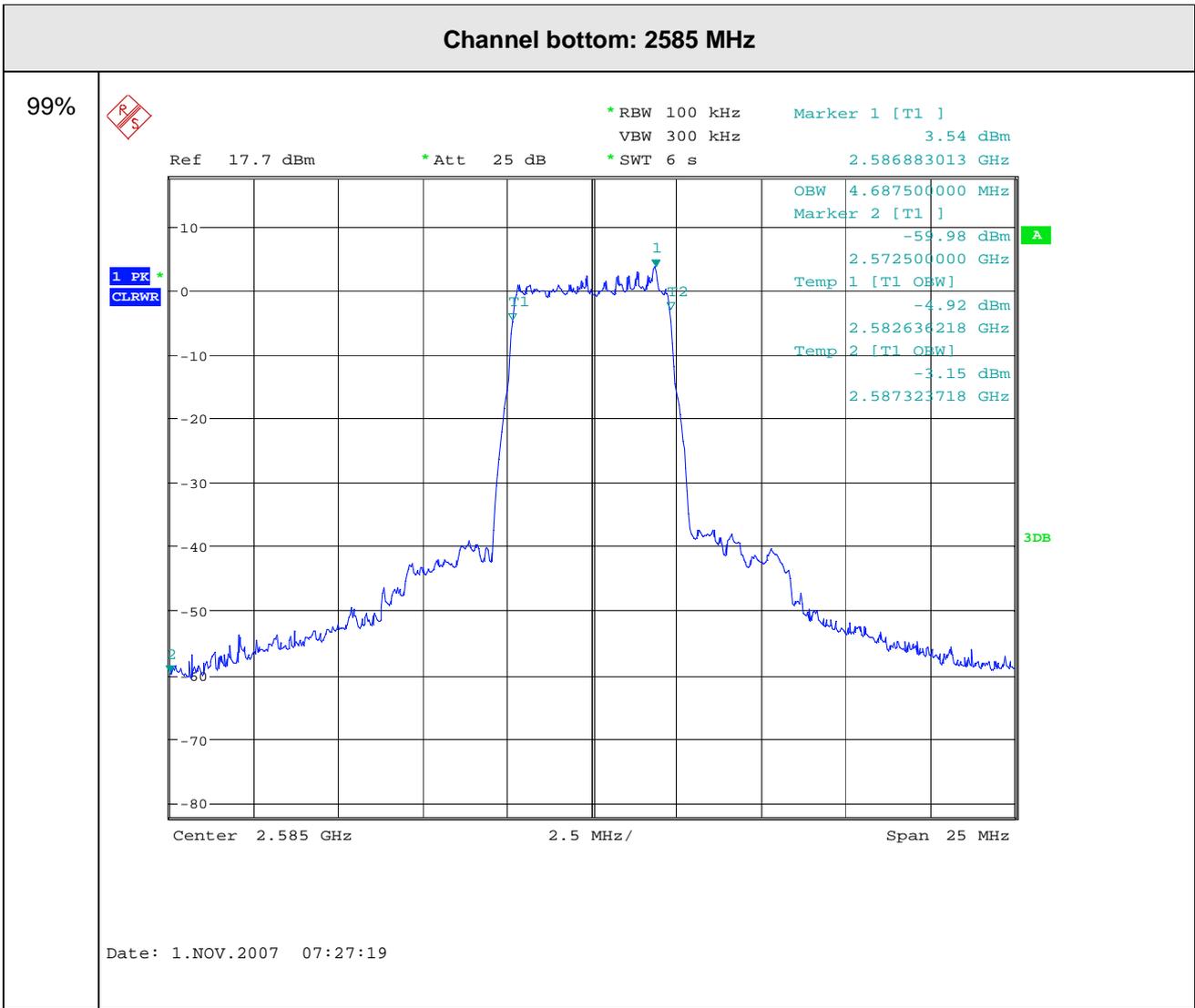
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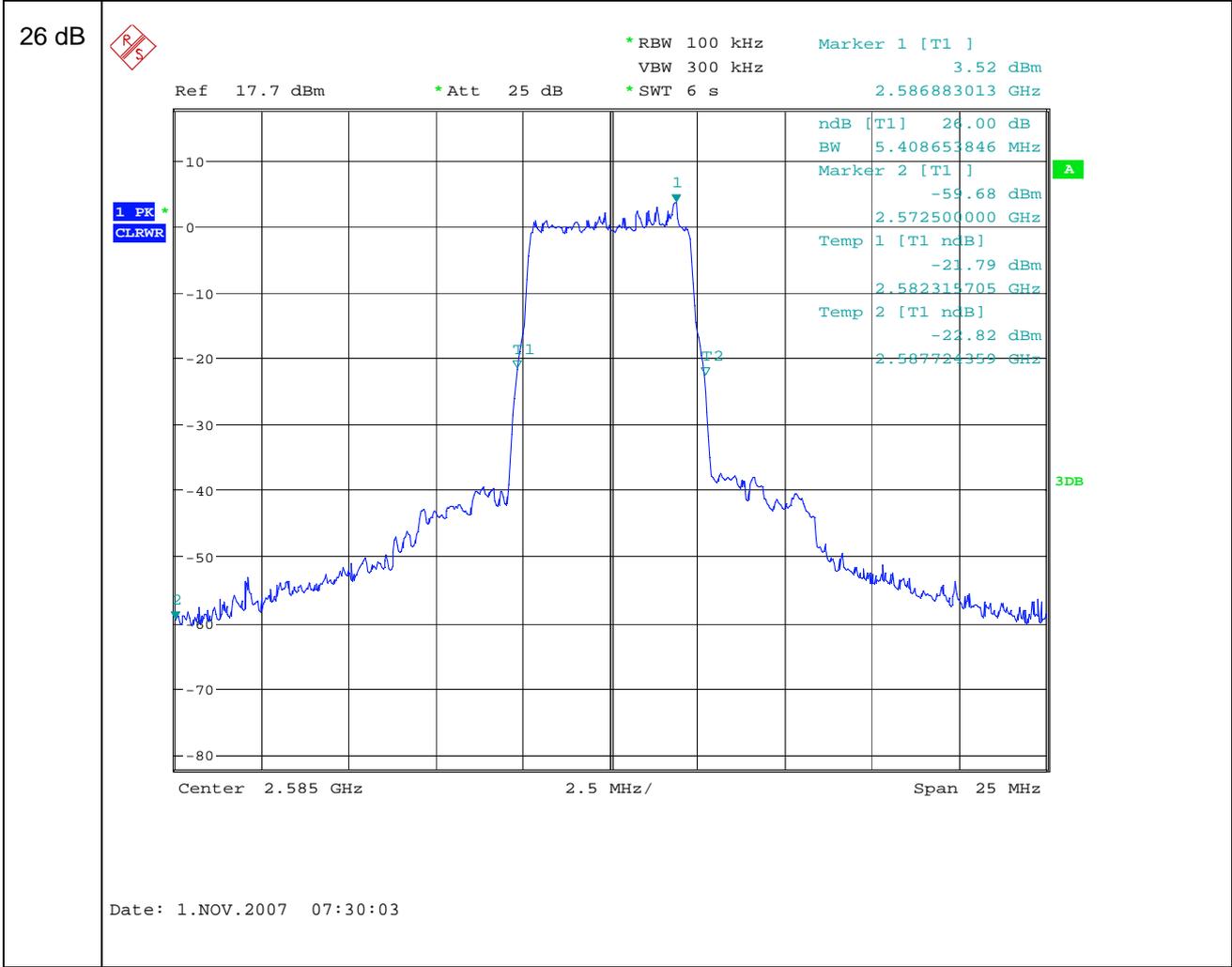


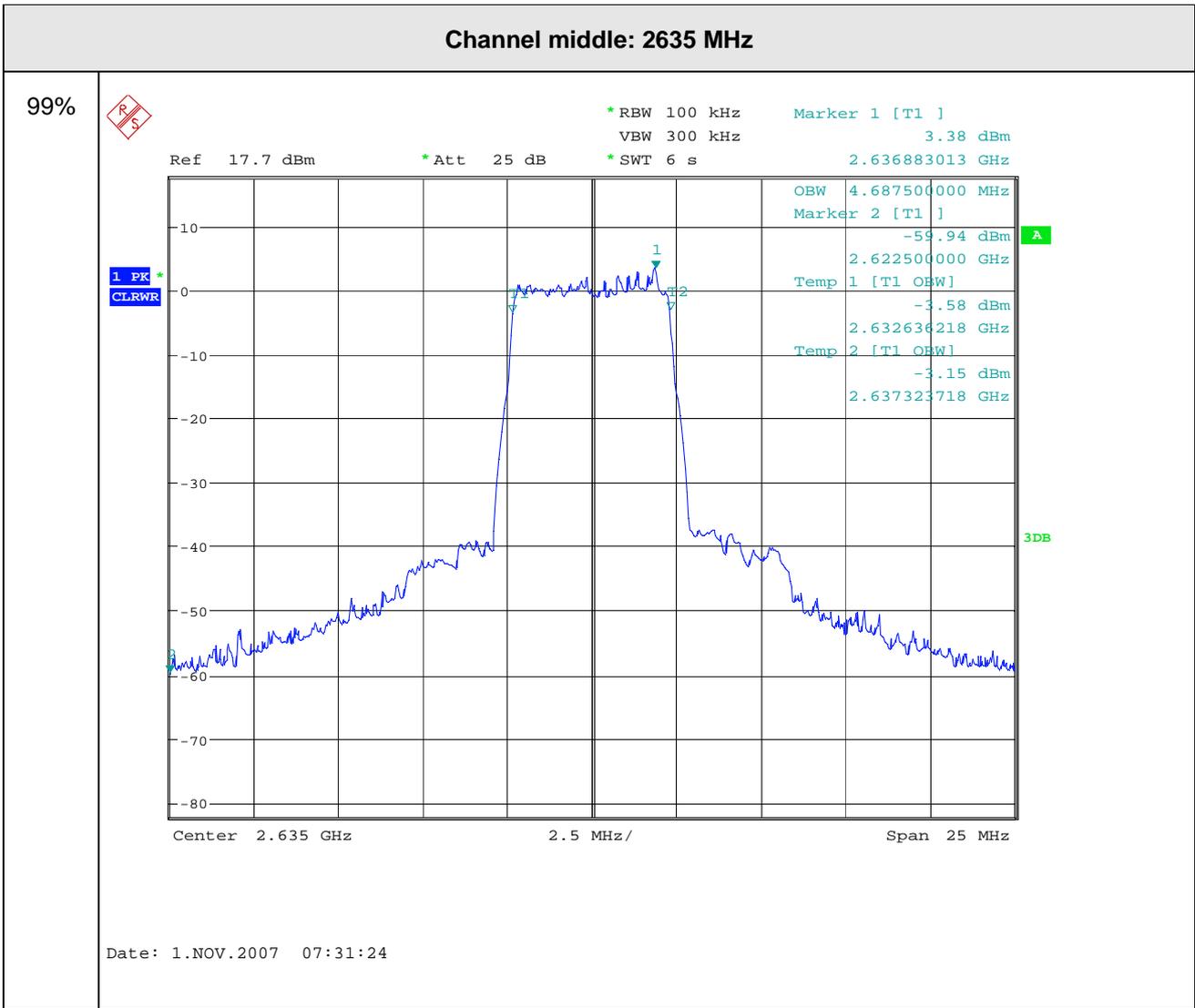




1.3.4 Test Mode of 16QAM 3/4



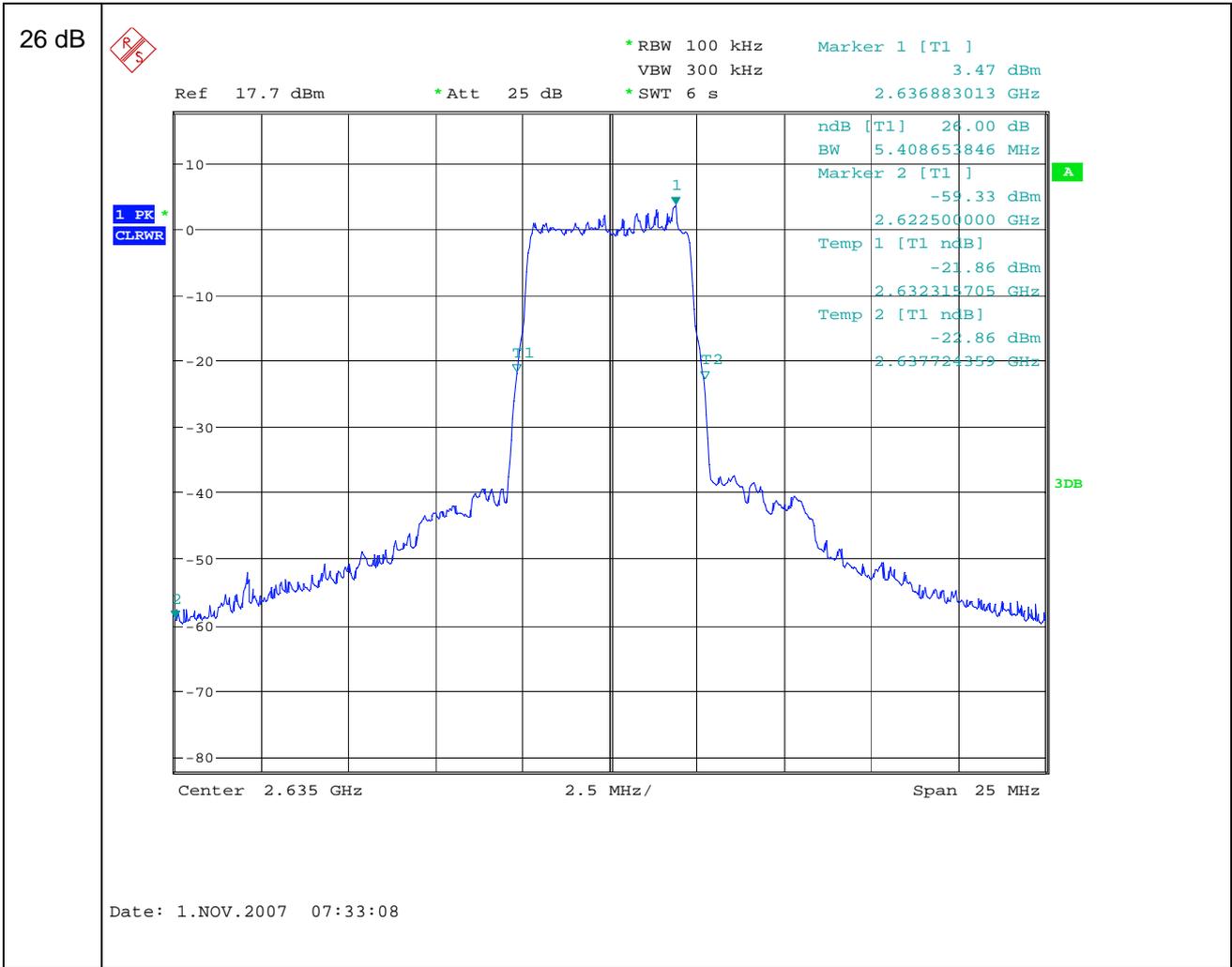


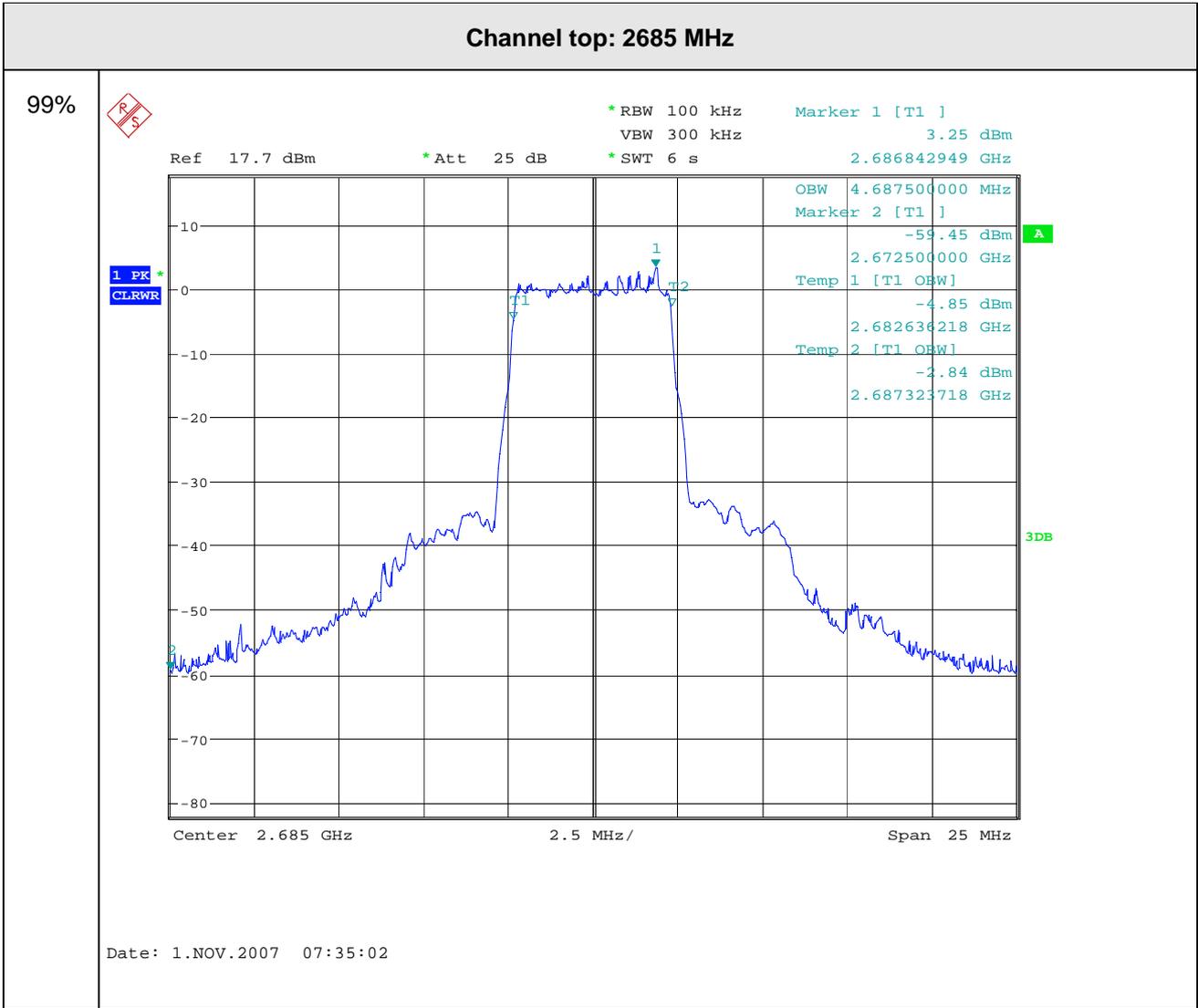


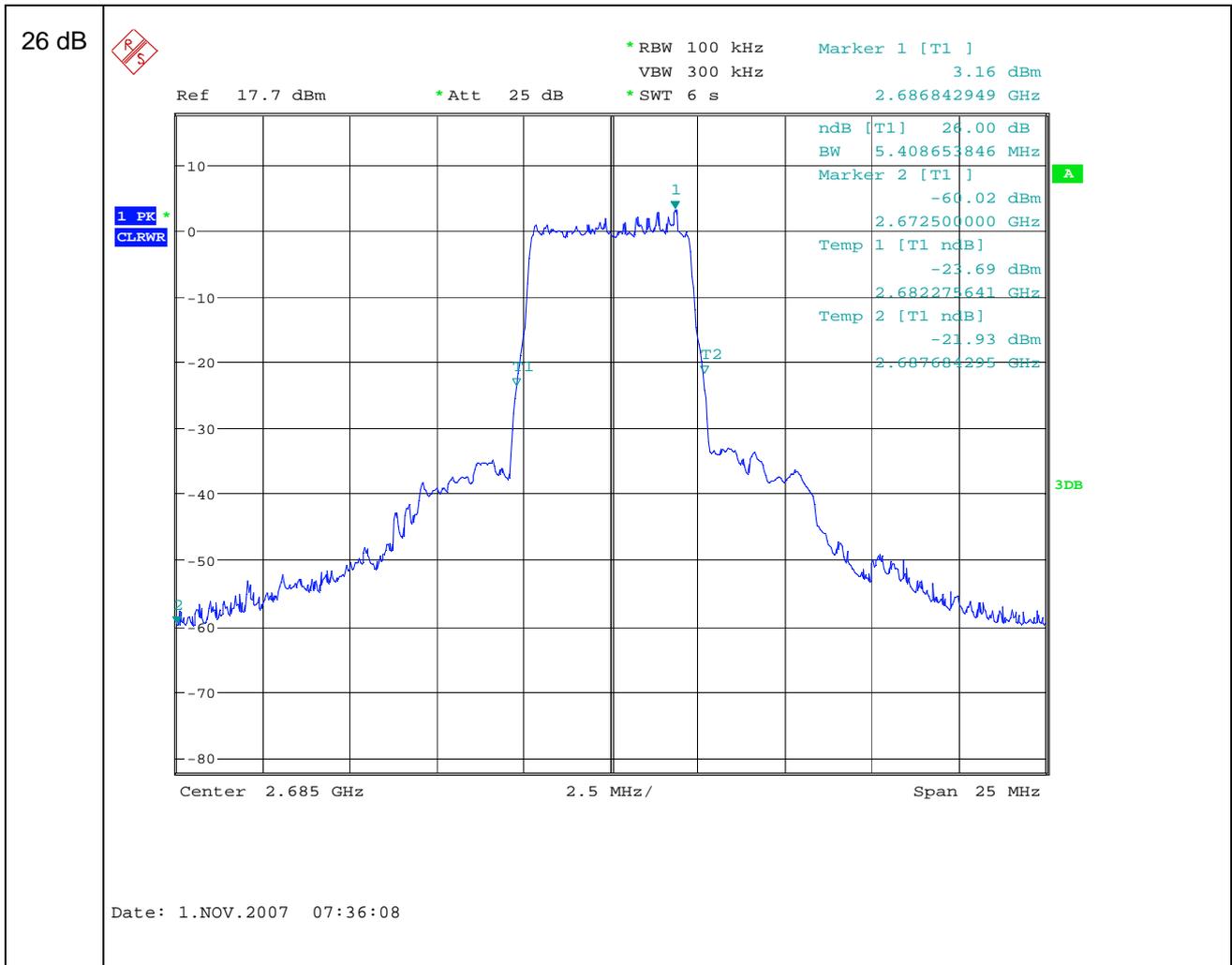


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

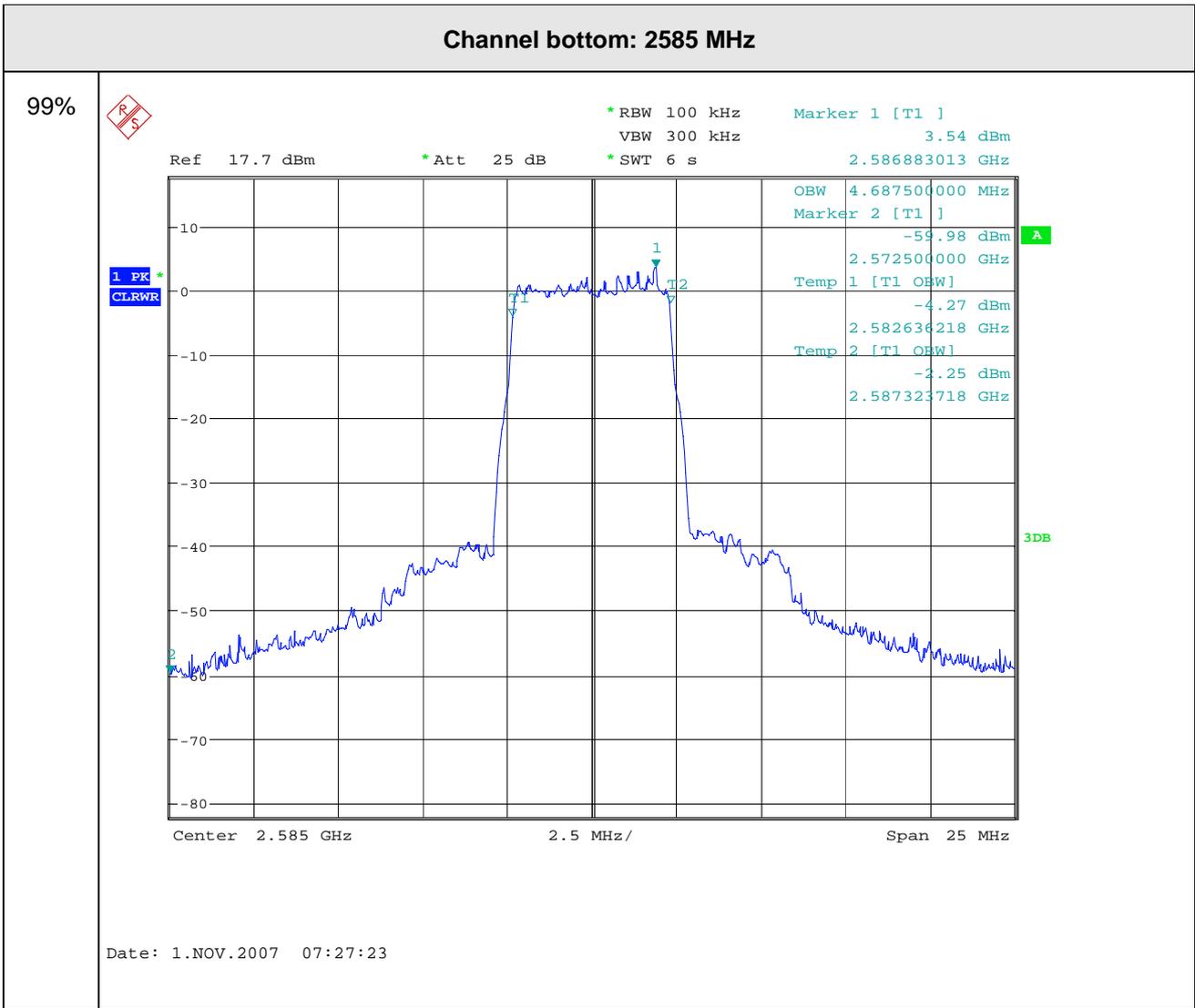
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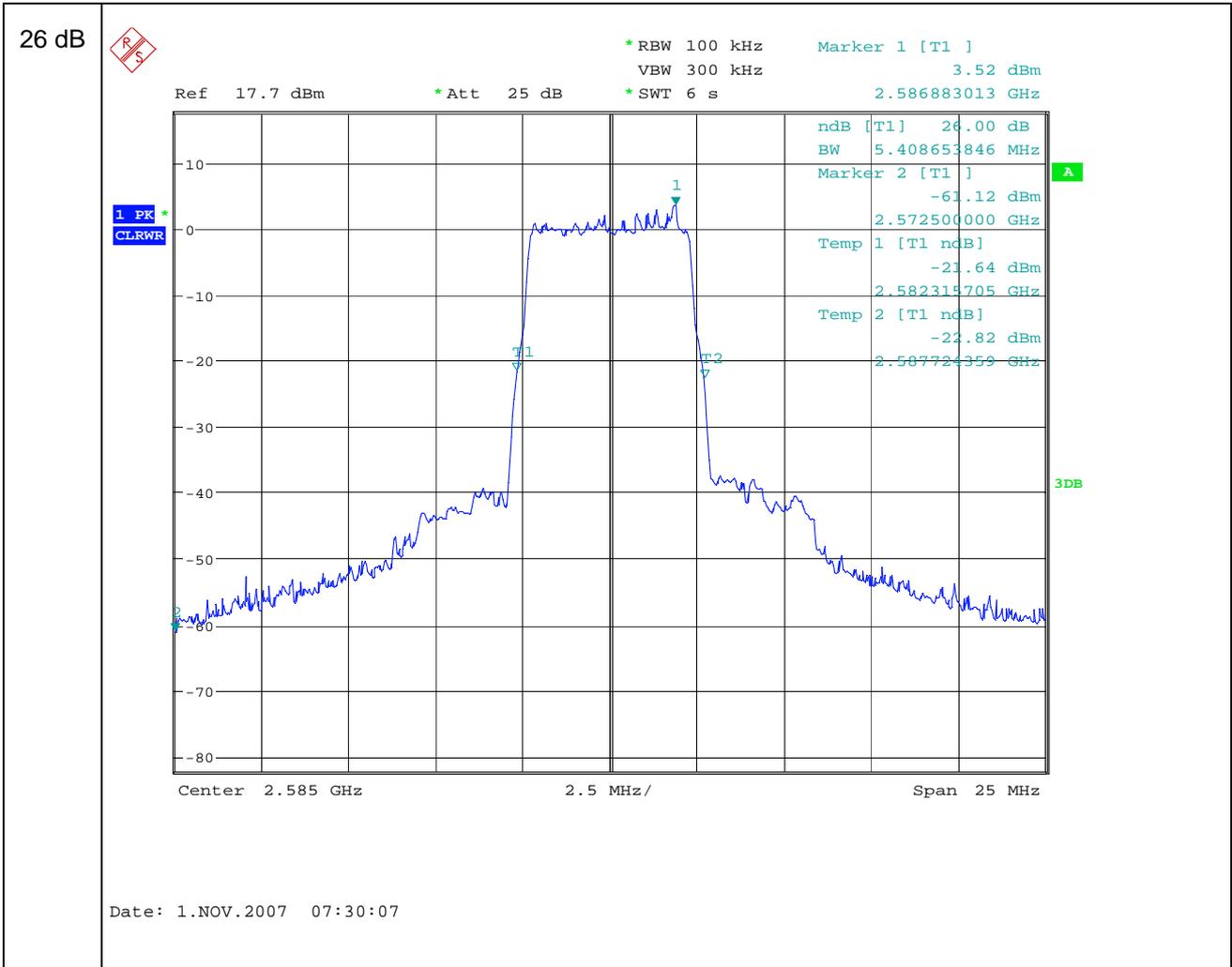
1.3.5 Test Mode of 64QAM 1/2





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

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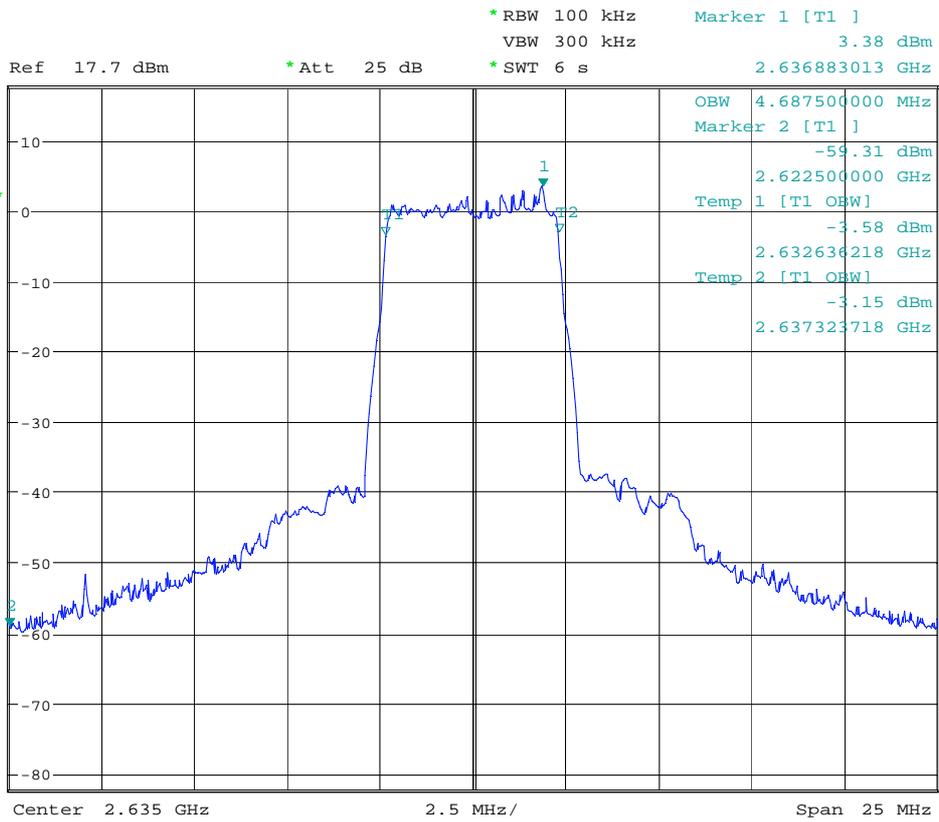


Channel middle: 2635 MHz

99%



1 PK *
CLRWR

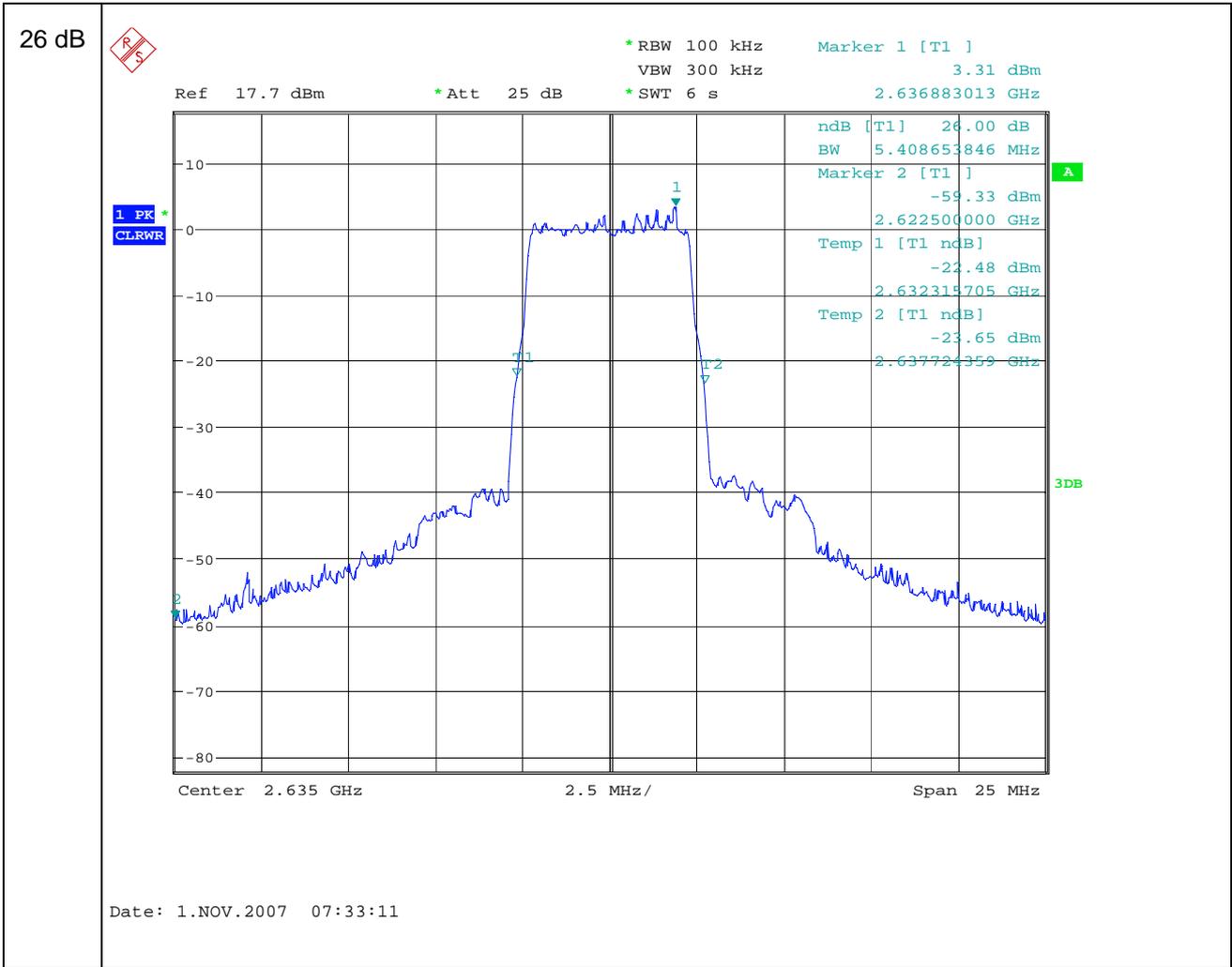


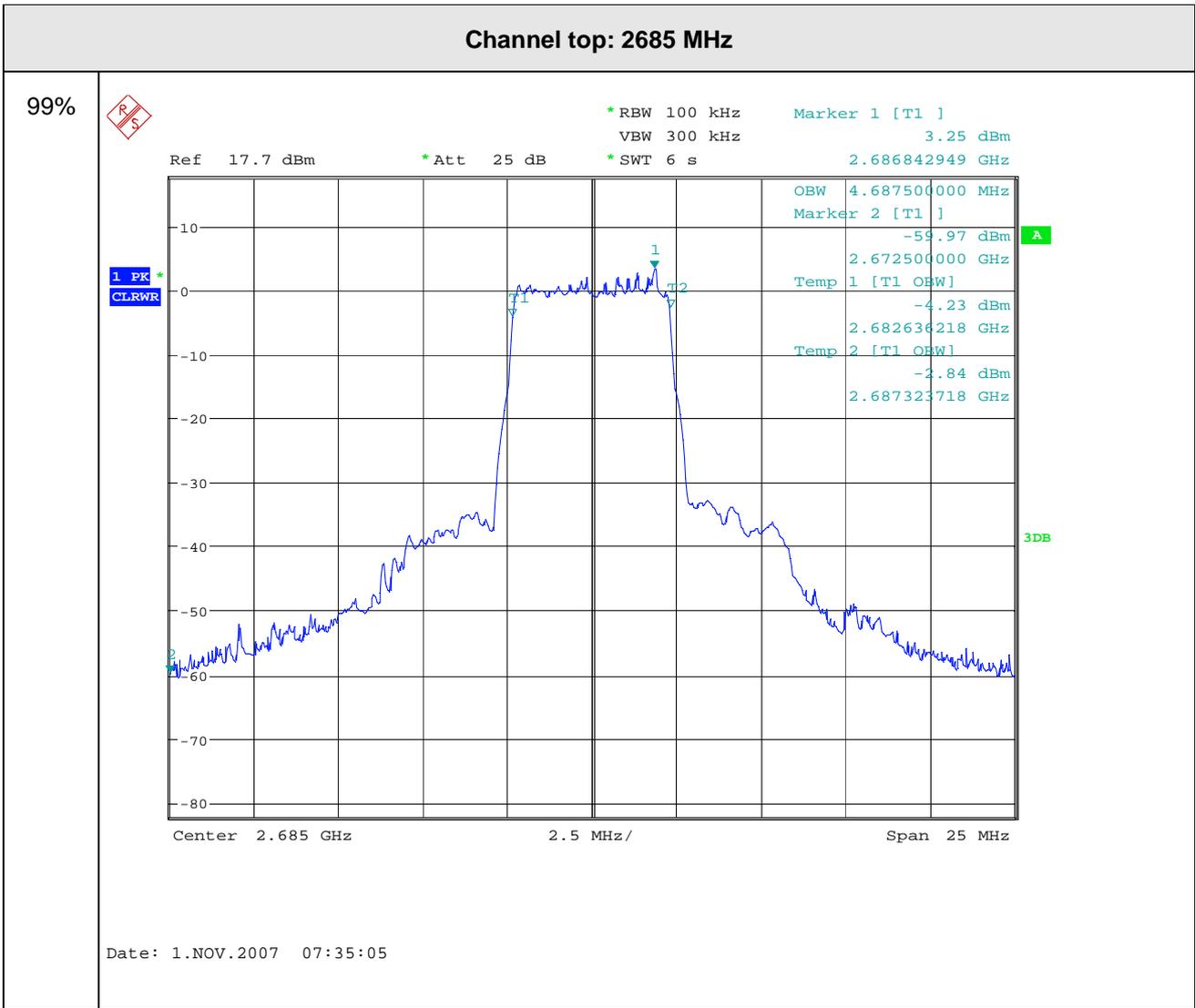
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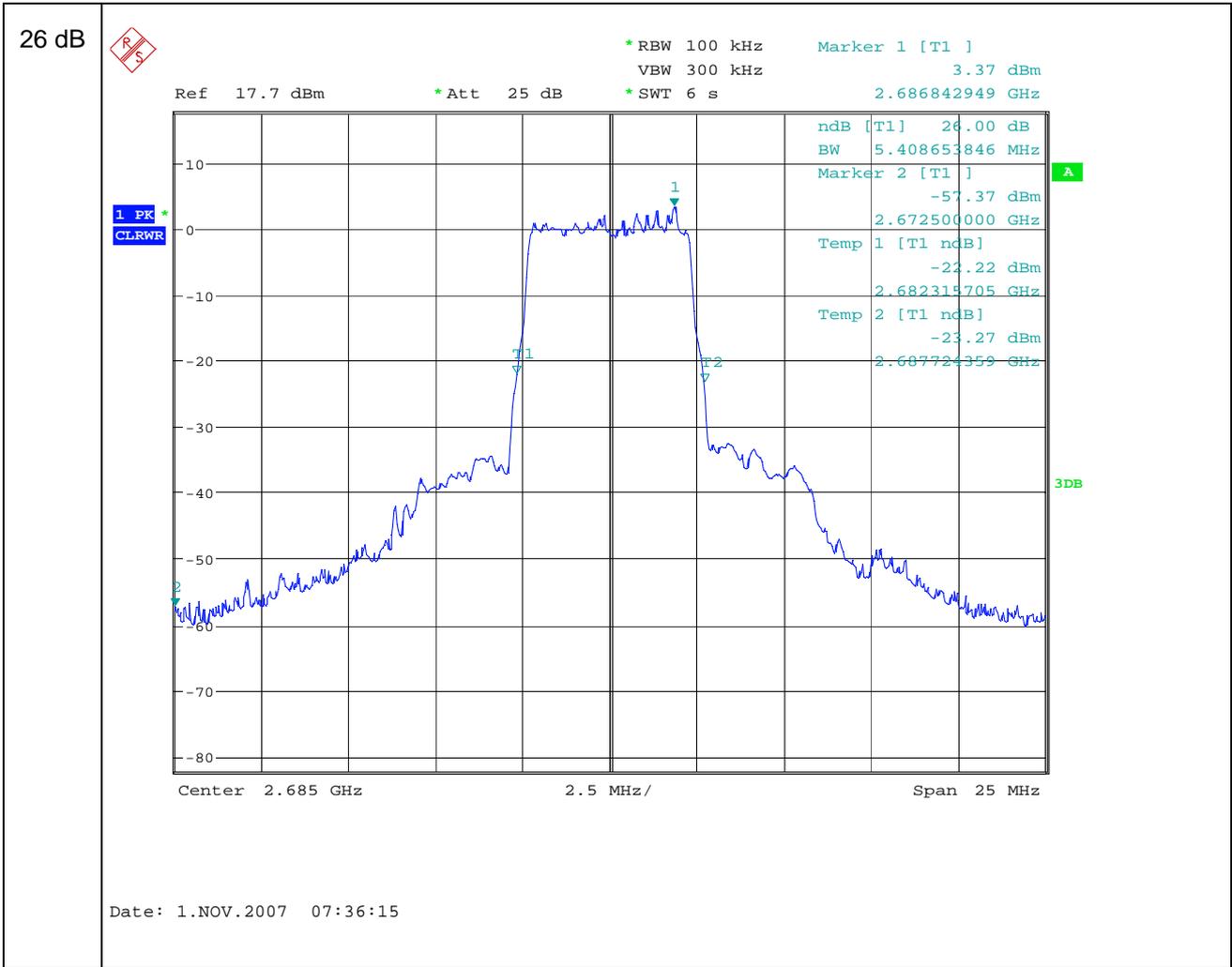


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

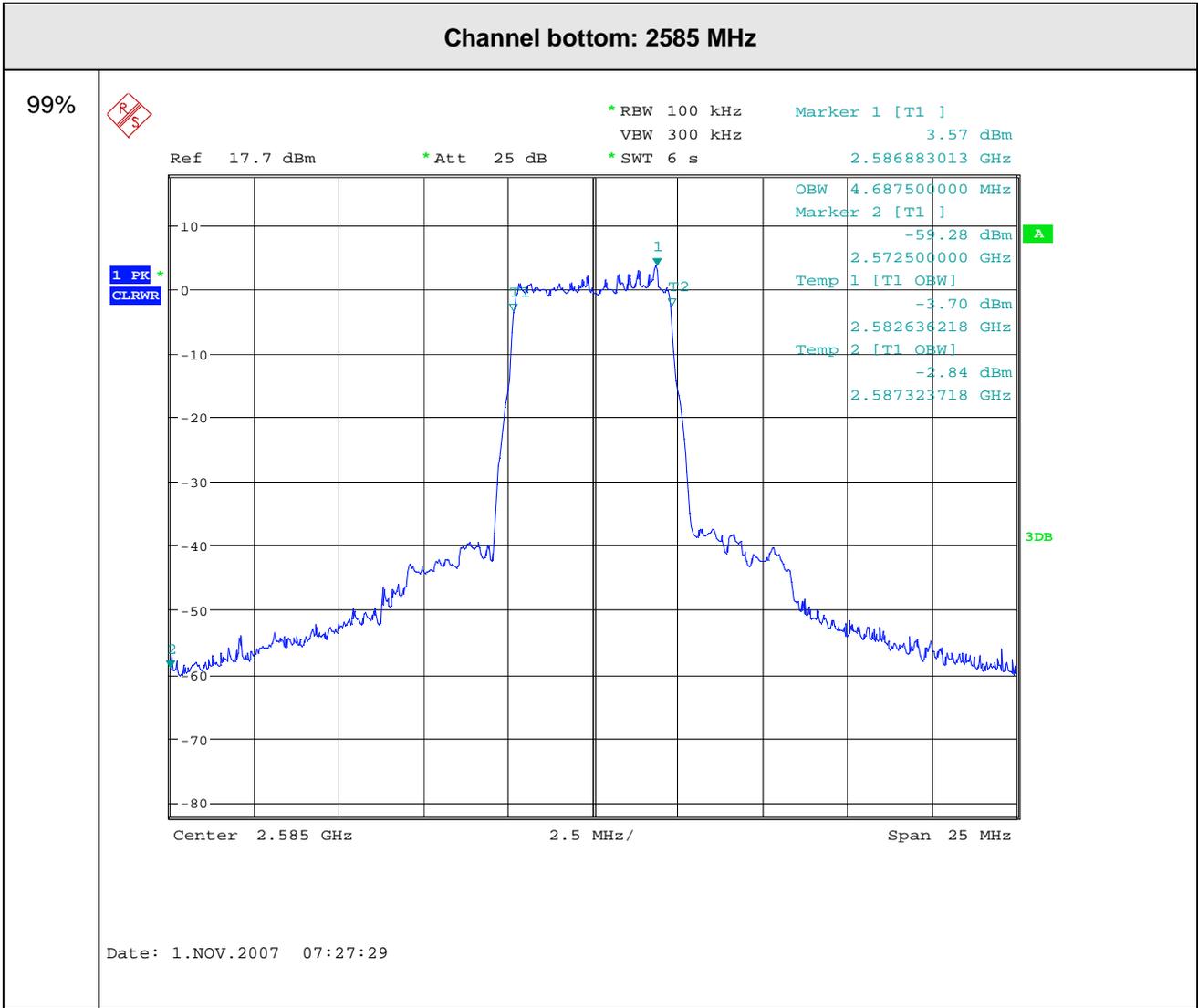
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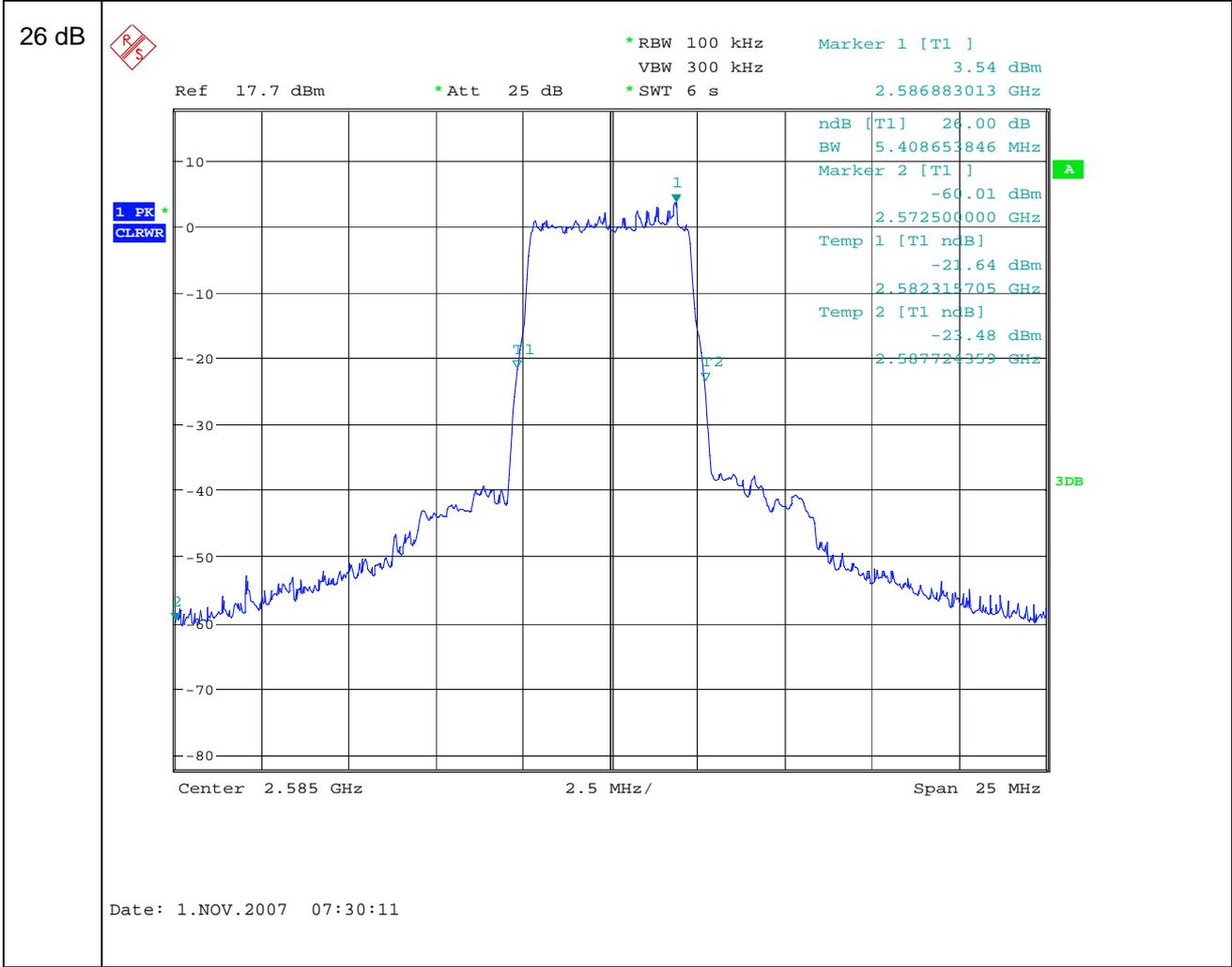


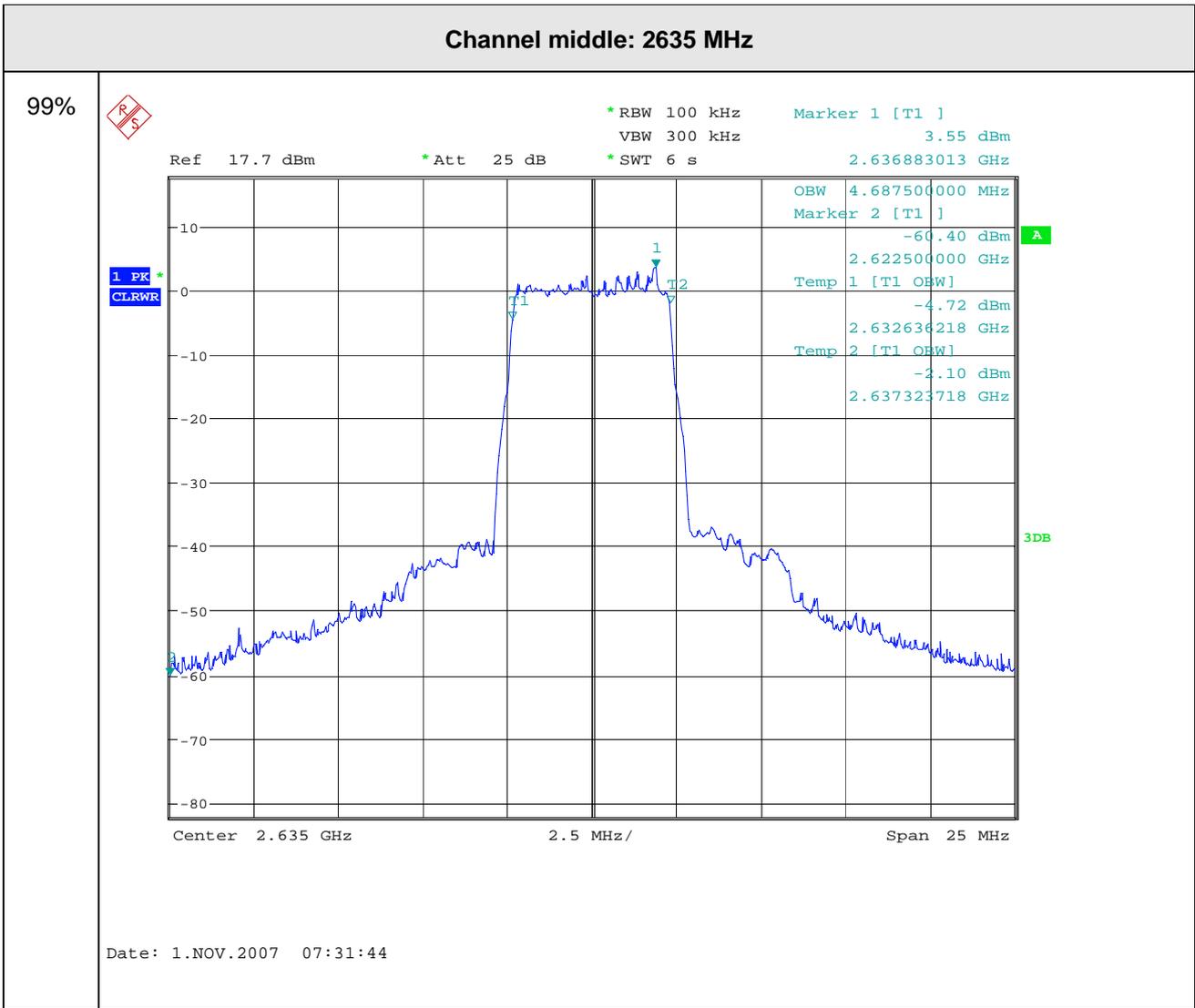


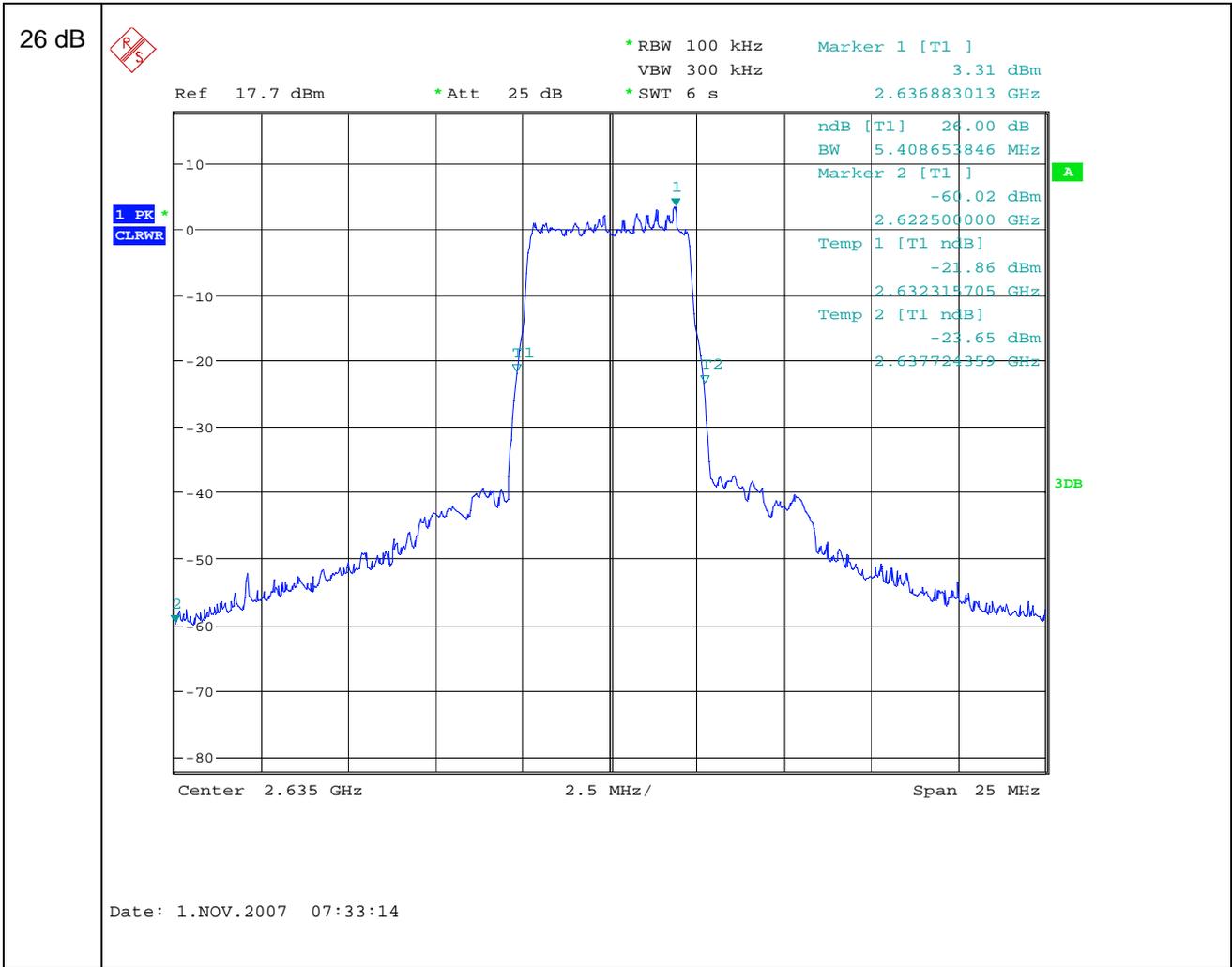


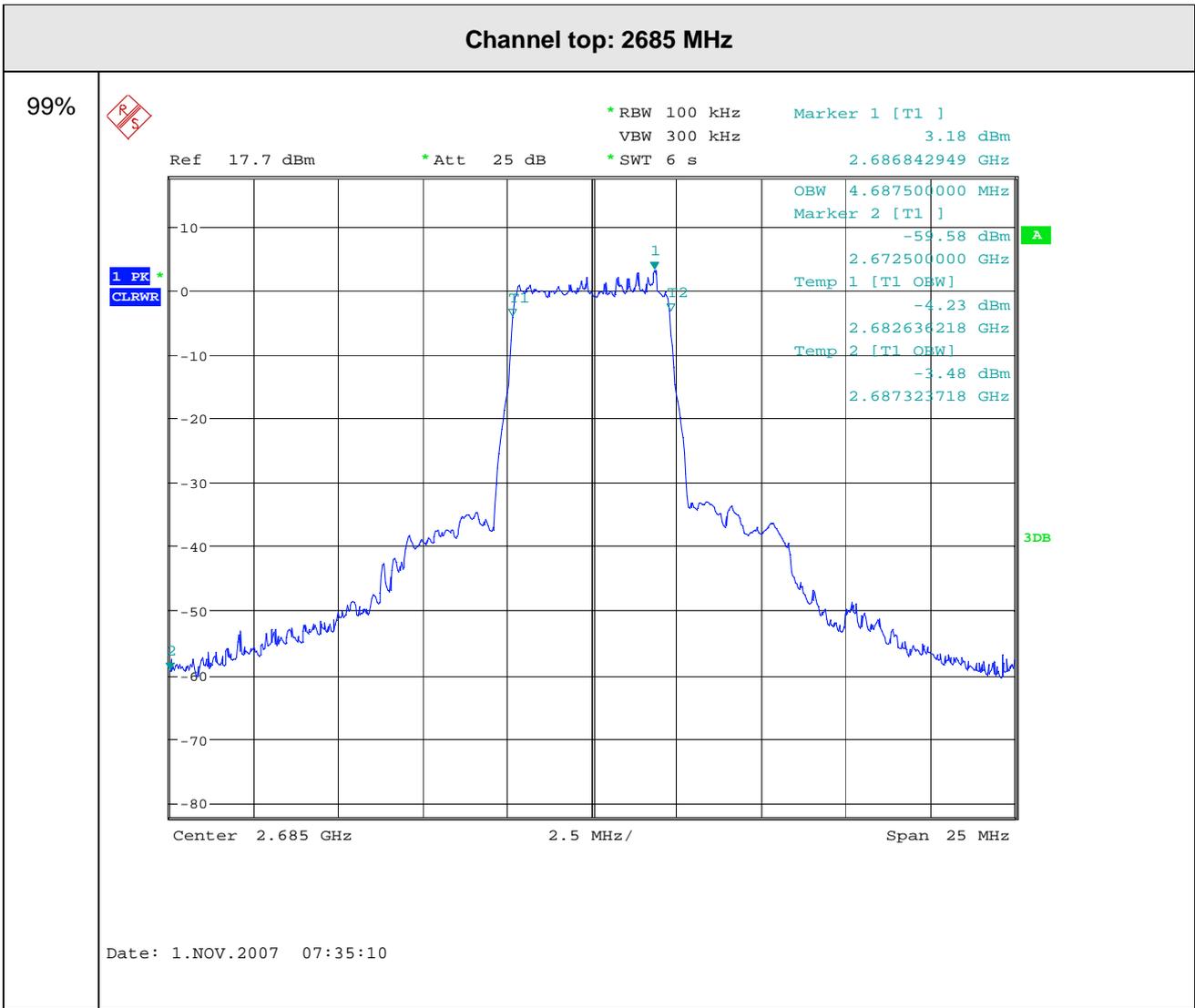
1.3.6 Test Mode of 64QAM 2/3

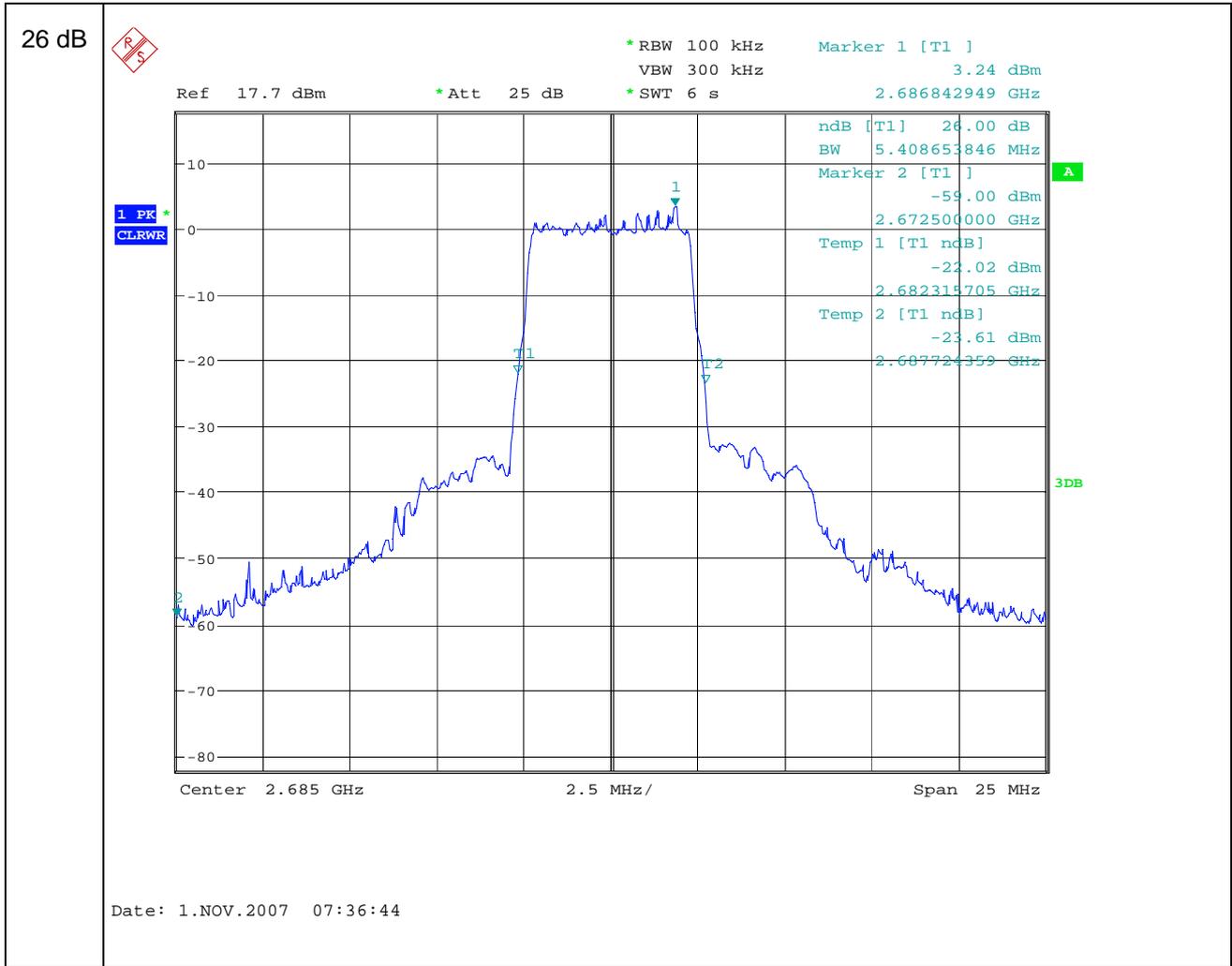




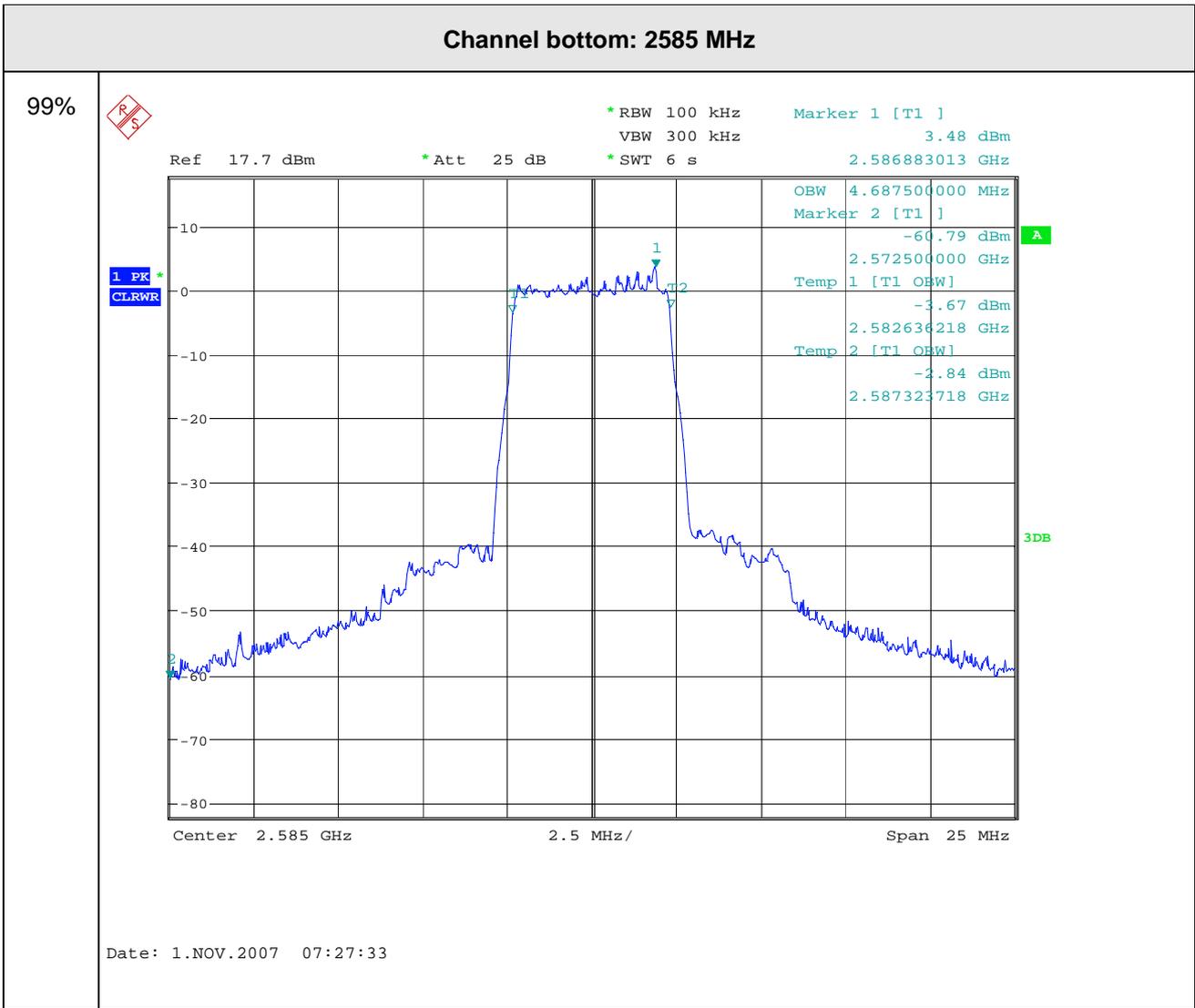








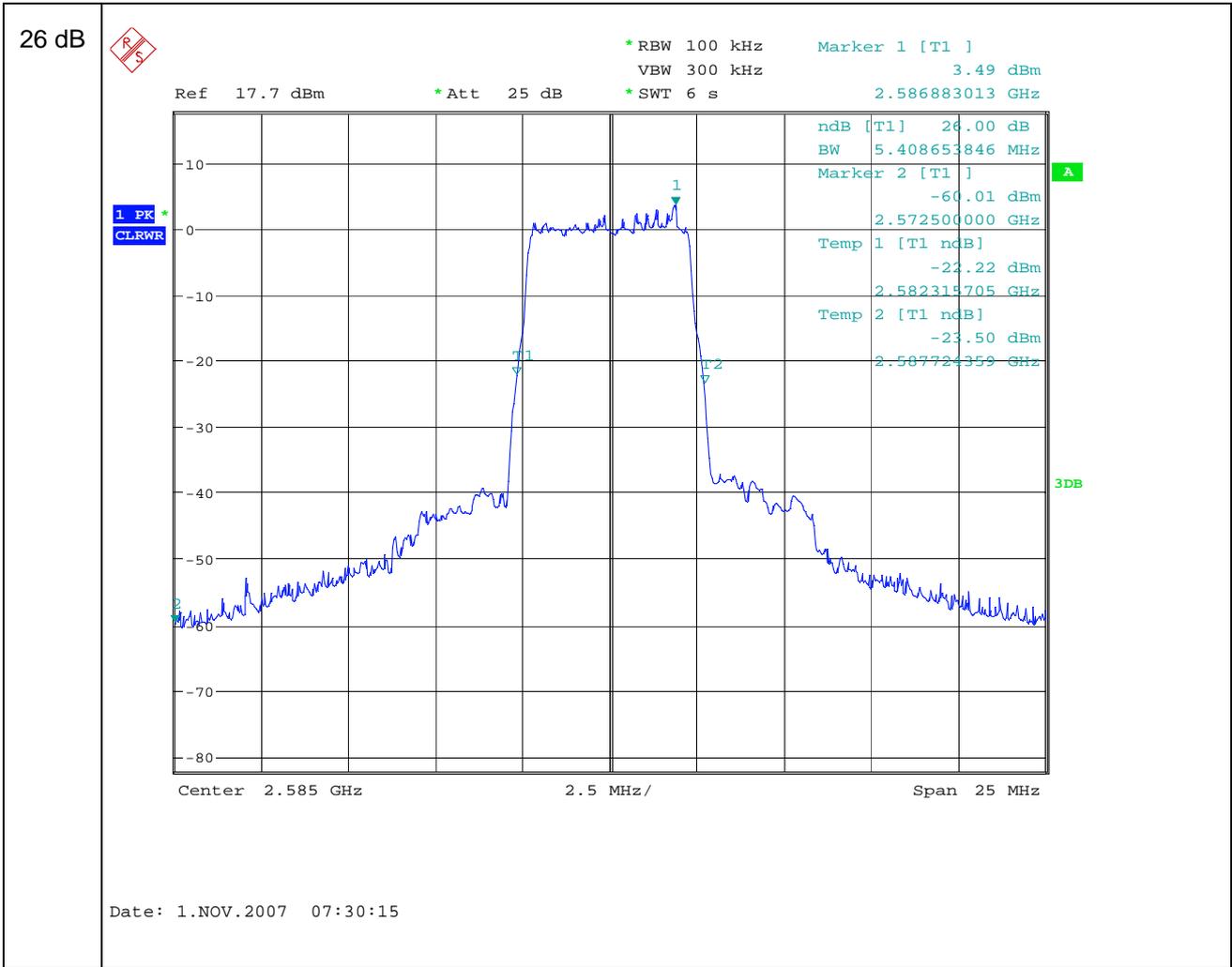
1.3.7 Test Mode of 64QAM 3/4





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G



Channel middle: 2635 MHz

99%



*RBW 100 kHz Marker 1 [T1] 3.43 dBm
 VBW 300 kHz
 *SWT 6 s 2.636883013 GHz

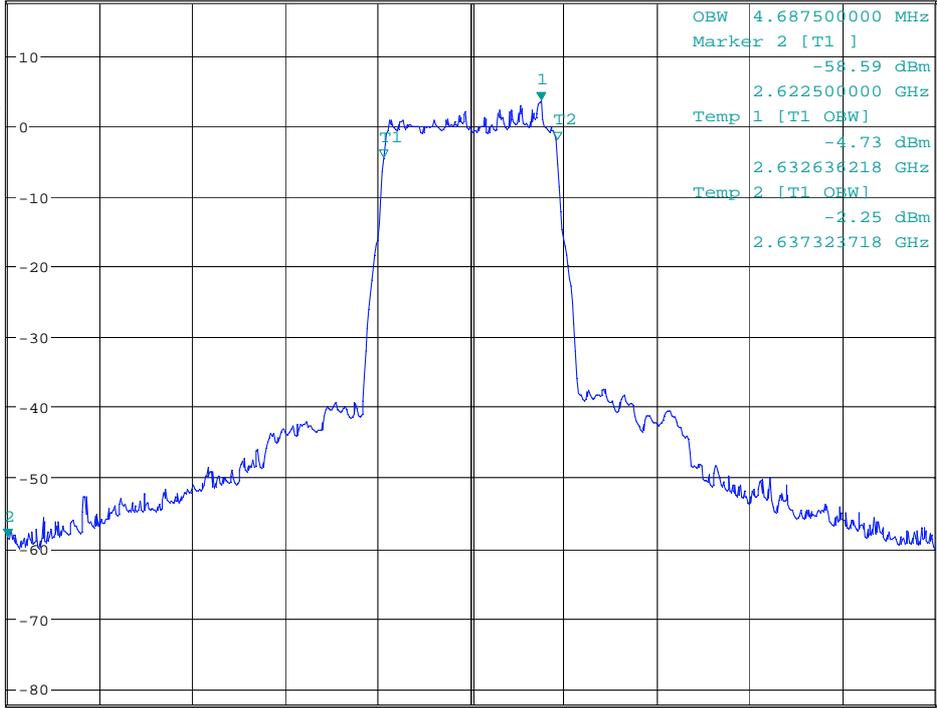
Ref 17.7 dBm

*Att 25 dB

*SWT 6 s

2.636883013 GHz

1 PK *
CLRWR



3DB

Center 2.635 GHz

2.5 MHz/

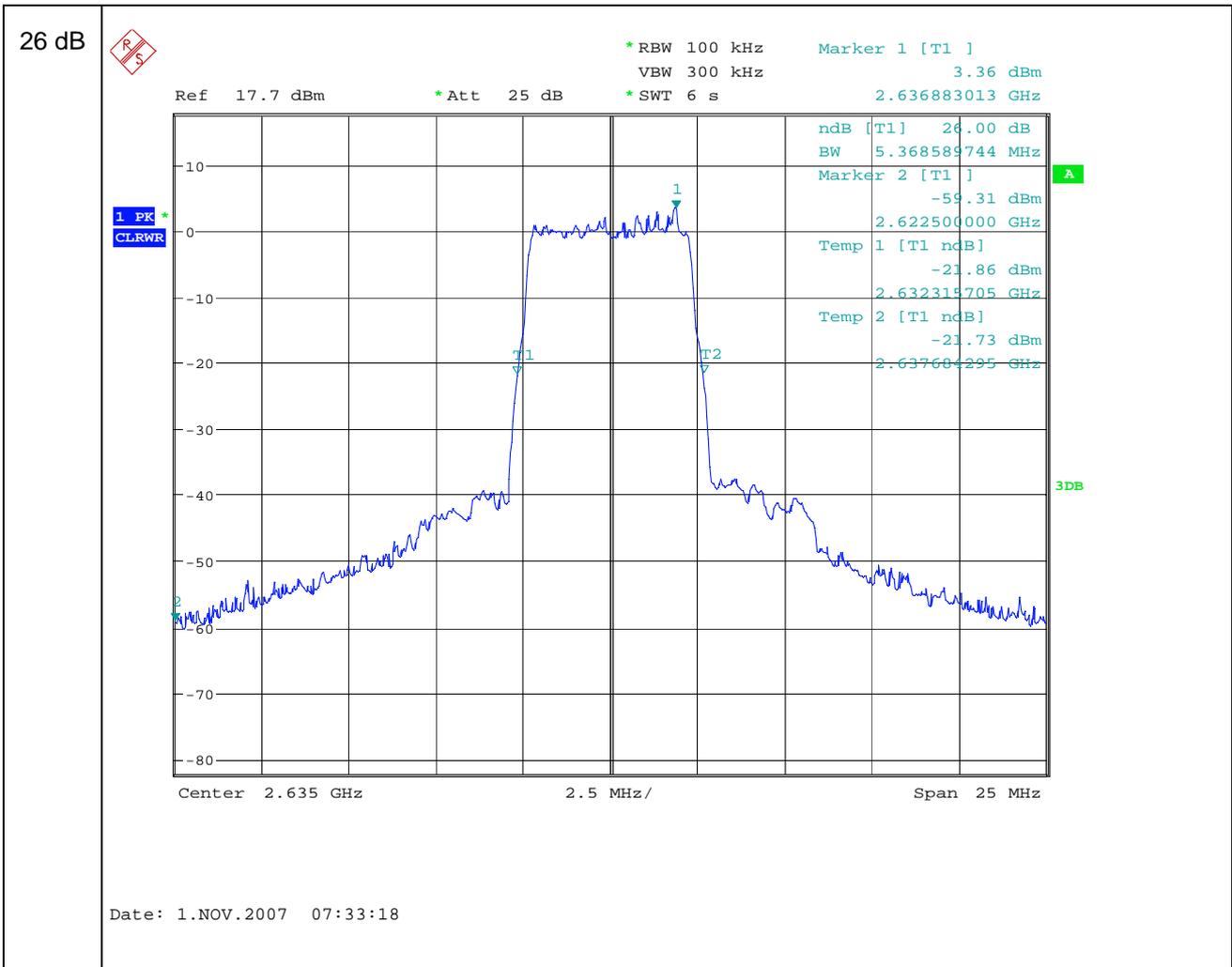
Span 25 MHz

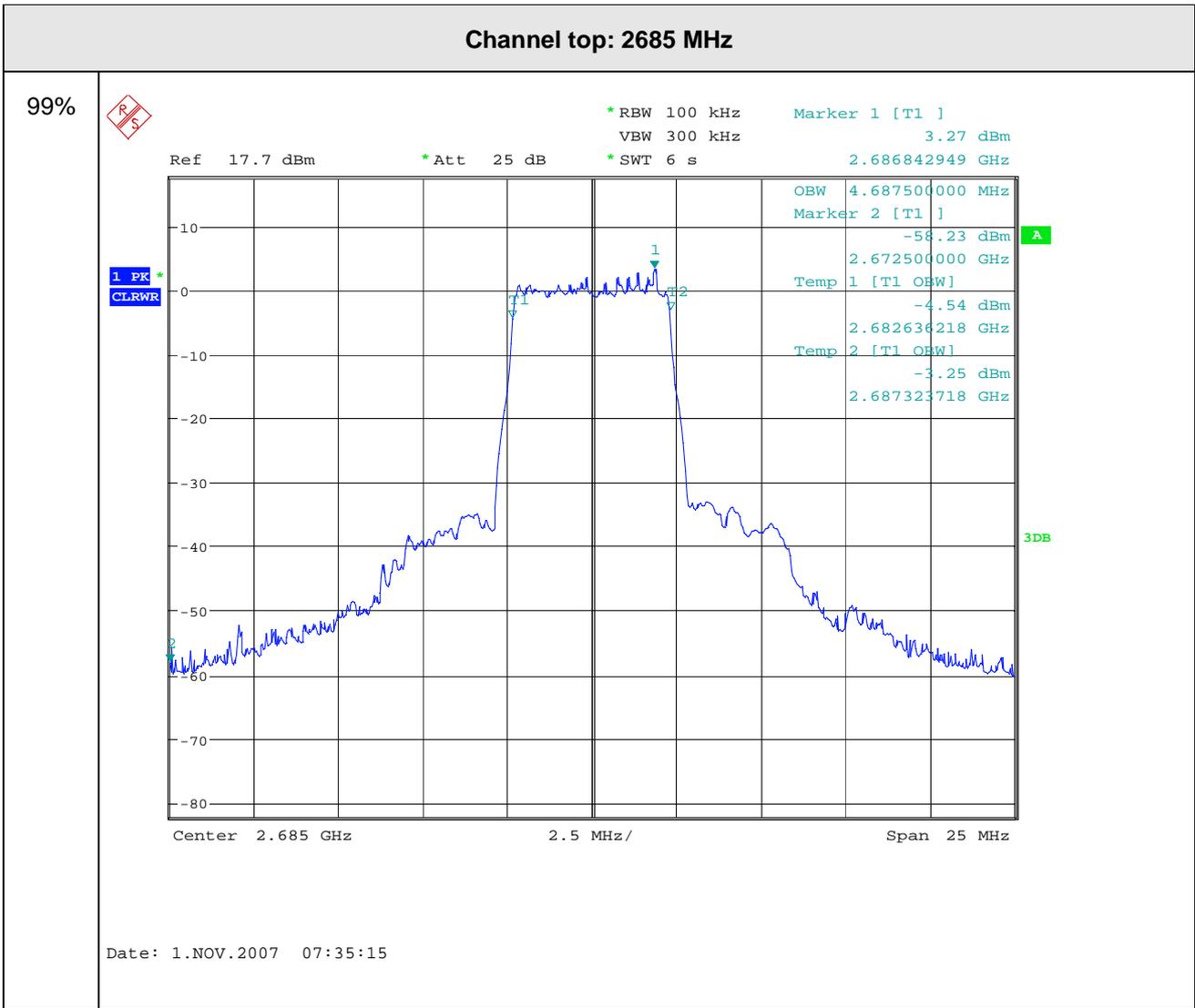
Date: 1.NOV.2007 07:32:15

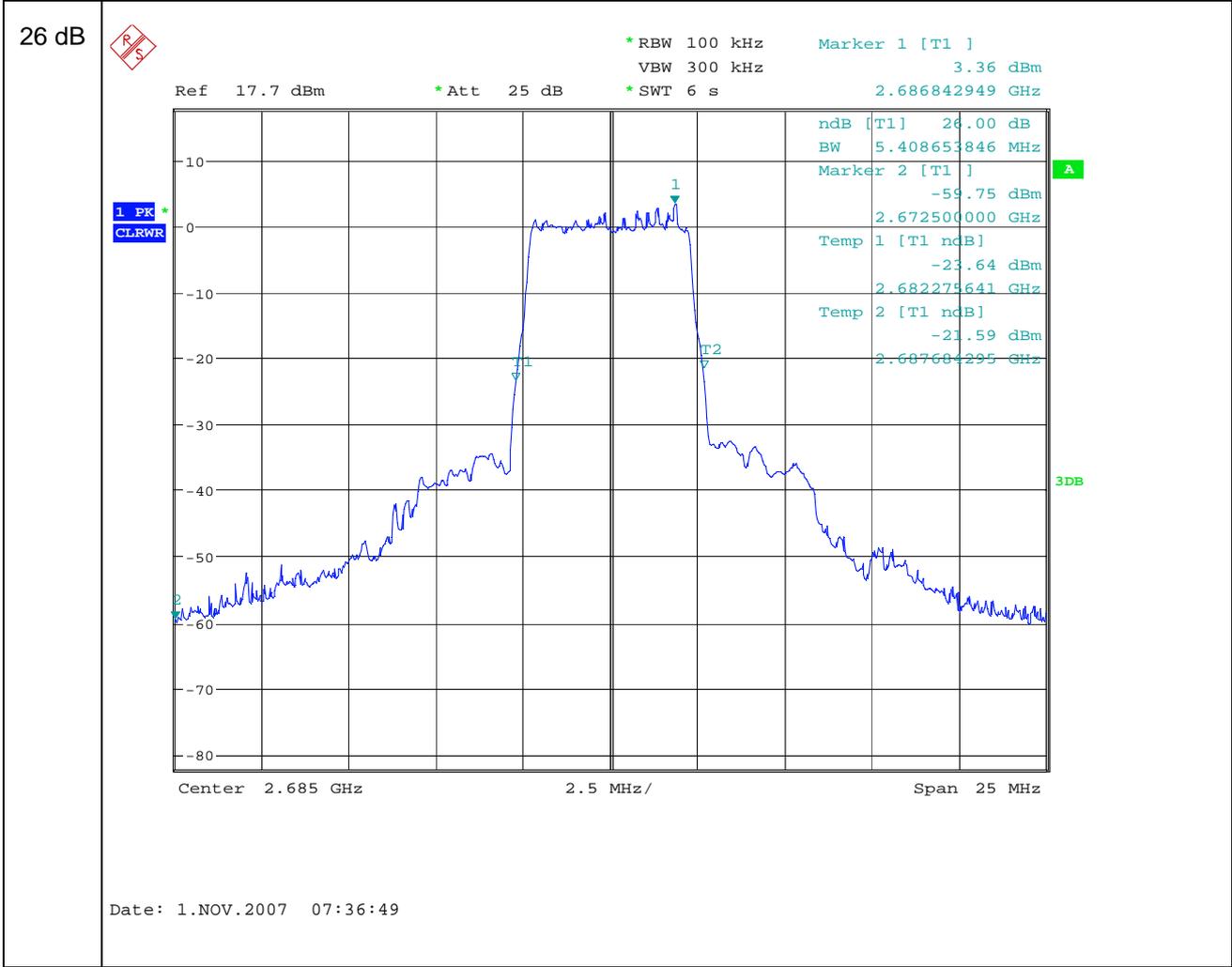


FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G



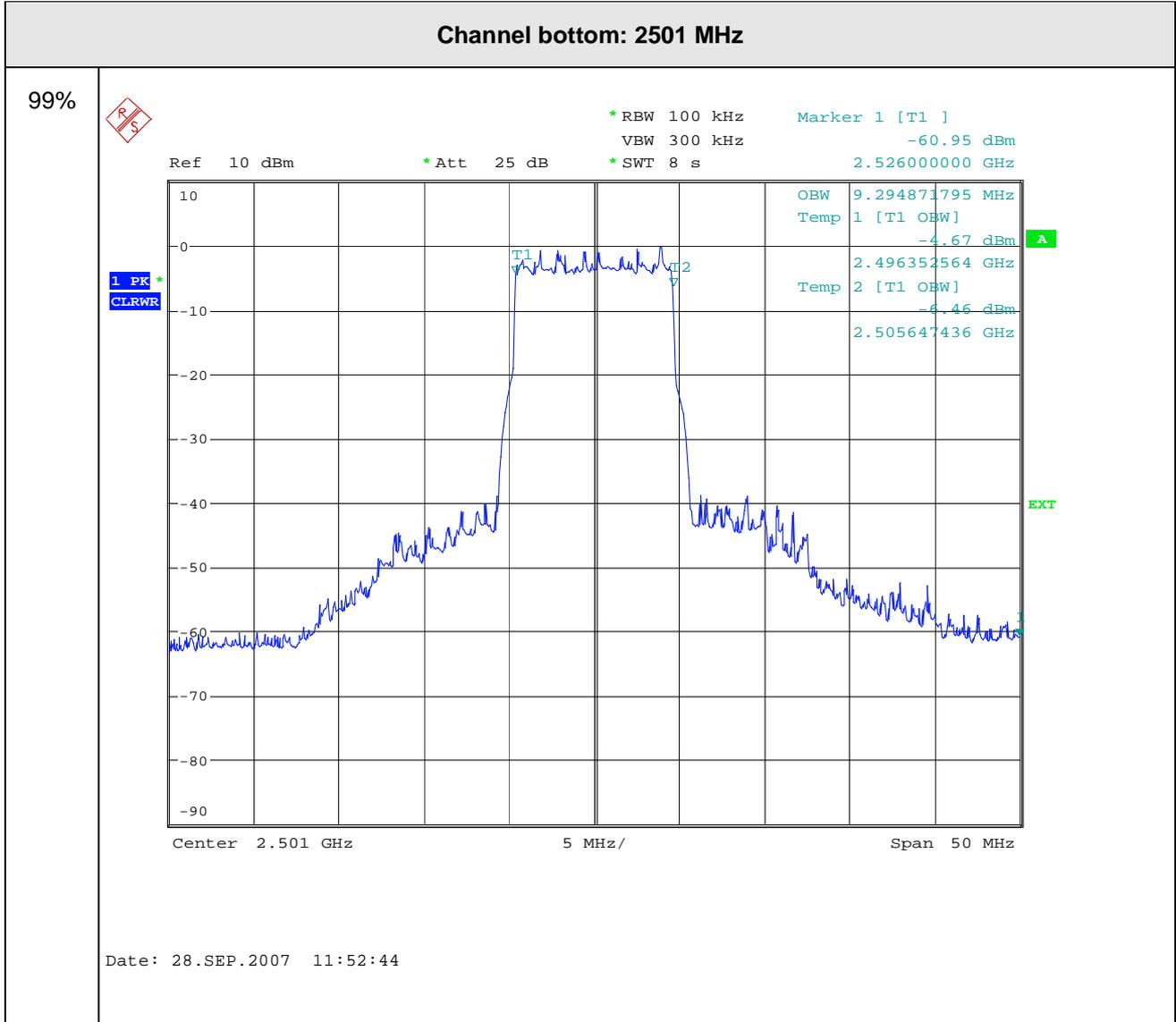




2 10 MHz Bandwidth

2.1 2.5 GHz low block

2.1.1 Test Mode of QPSK 1/2





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

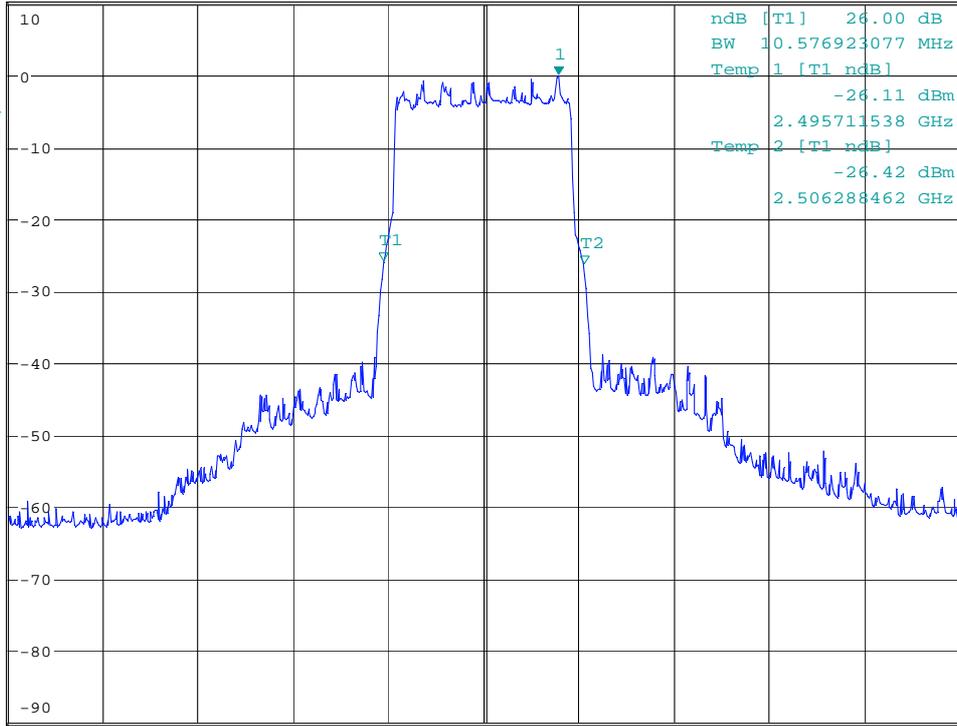


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.19 dBm
 *SWT 8 s 2.504926282 GHz

Ref 10 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.501 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 11:53:49

Channel middle: 2551 MHz

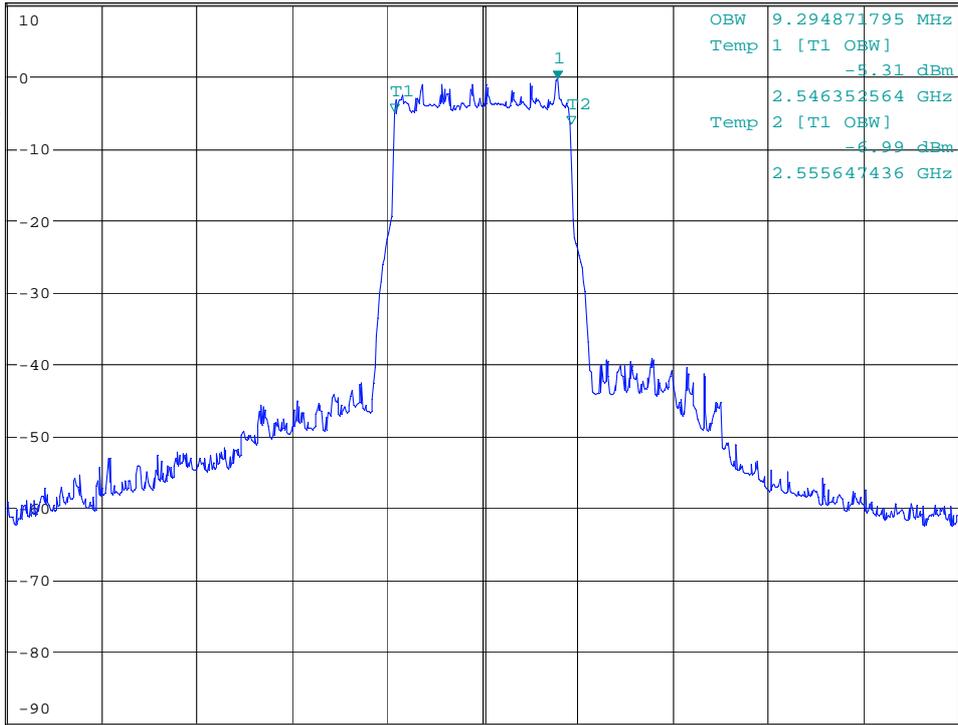
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.51 dBm
 *Att 25 dB *SWT 8 s 2.554926282 GHz

Ref 10 dBm

1 PK *
CLRWR



Center 2.551 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 11:55:32

Channel top: 2601 MHz

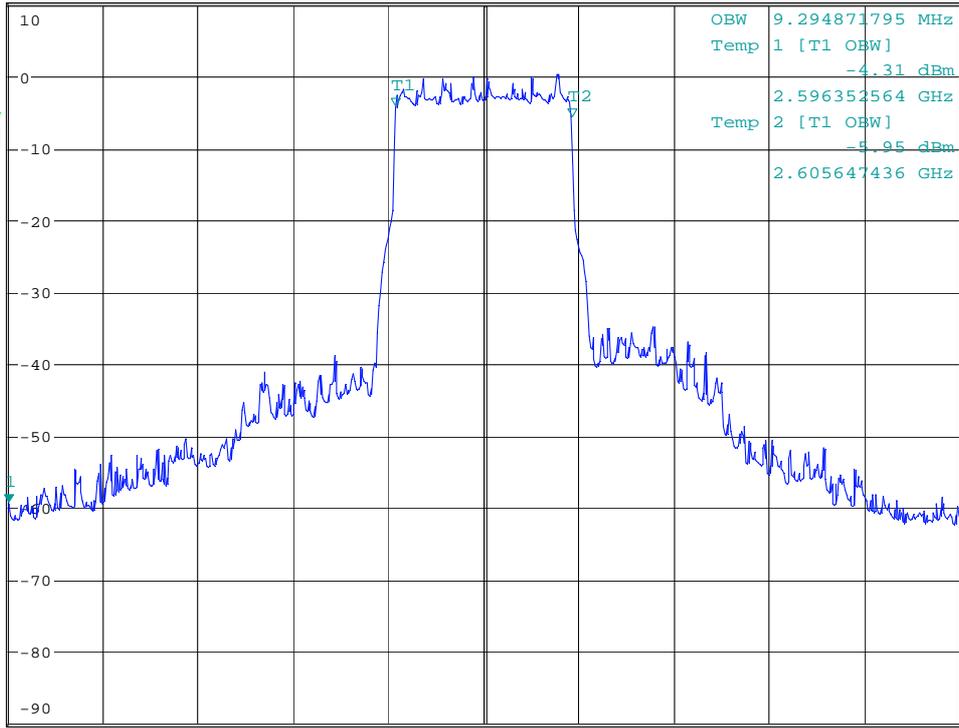
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.37 dBm
 *Att 25 dB *SWT 8 s 2.576000000 GHz

Ref 10 dBm

1 PK *
CLRWR

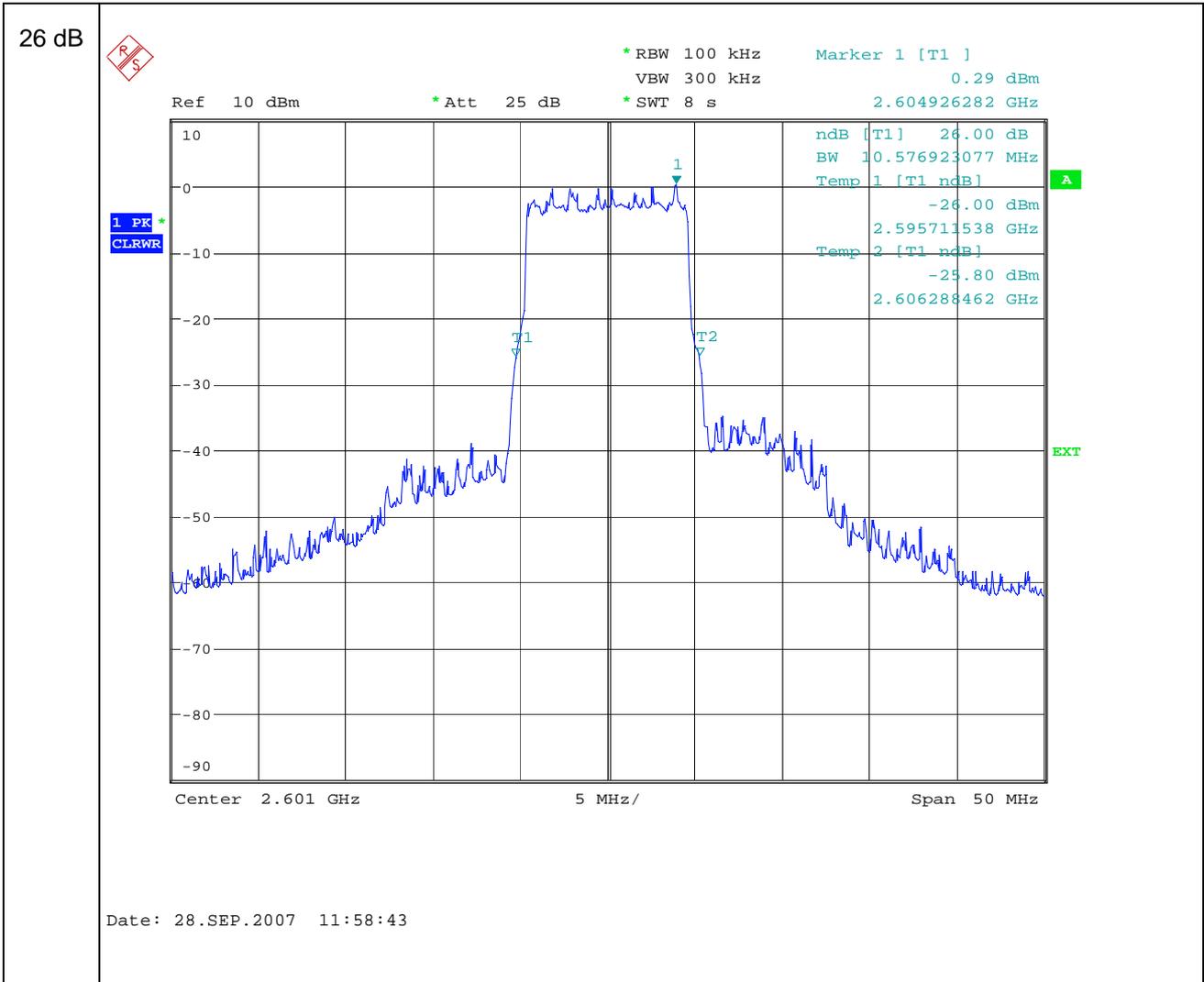


Center 2.601 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 11:58:20



2.1.2 Test Mode of QPSK 3/4

Channel bottom: 2501 MHz

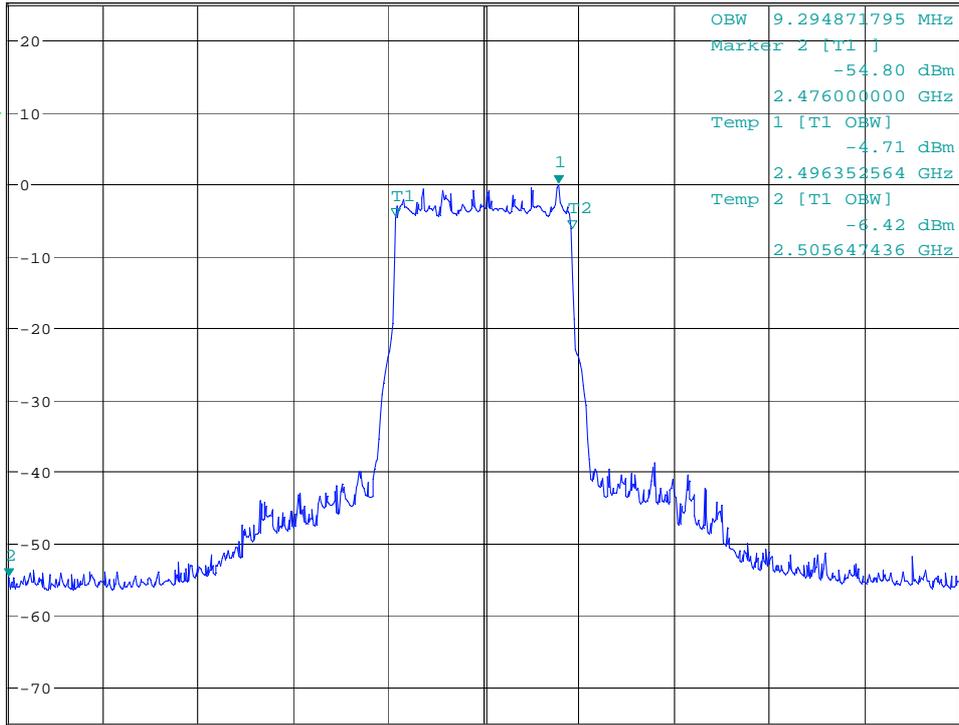
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -0.13 dBm
* Att 20 dB * SWT 6.8 s 2.504926282 GHz

Ref 25 dBm

1 PK *
CLRWR

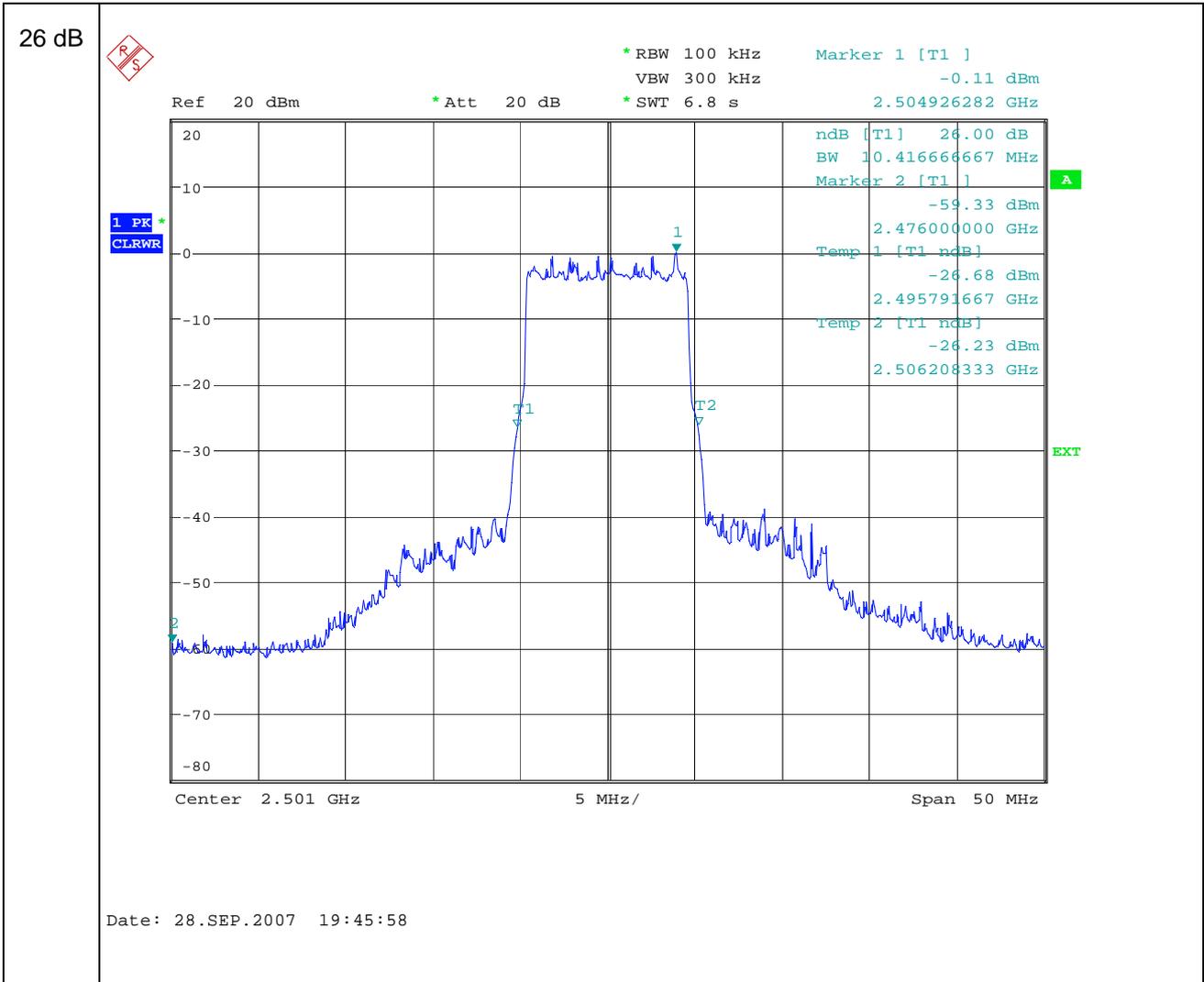


A

EXT

Center 2.501 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 19:40:44



Channel middle: 2551 MHz

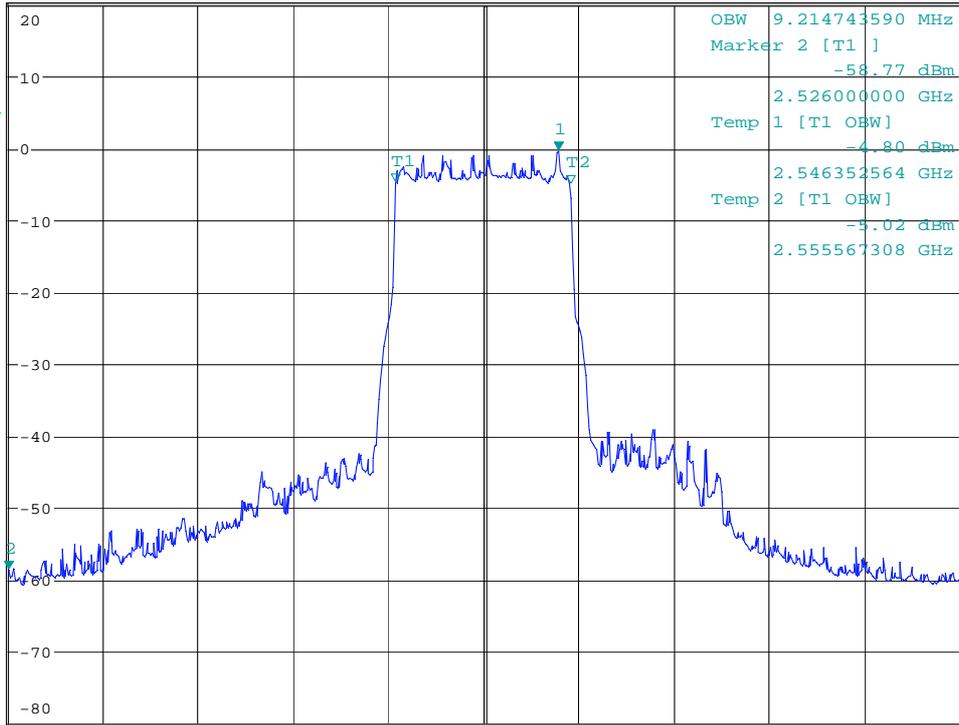
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -0.51 dBm
*Att 20 dB *SWT 6.8 s 2.554926282 GHz

Ref 20 dBm

1 PK *
CLRWR



Center 2.551 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 19:48:38



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

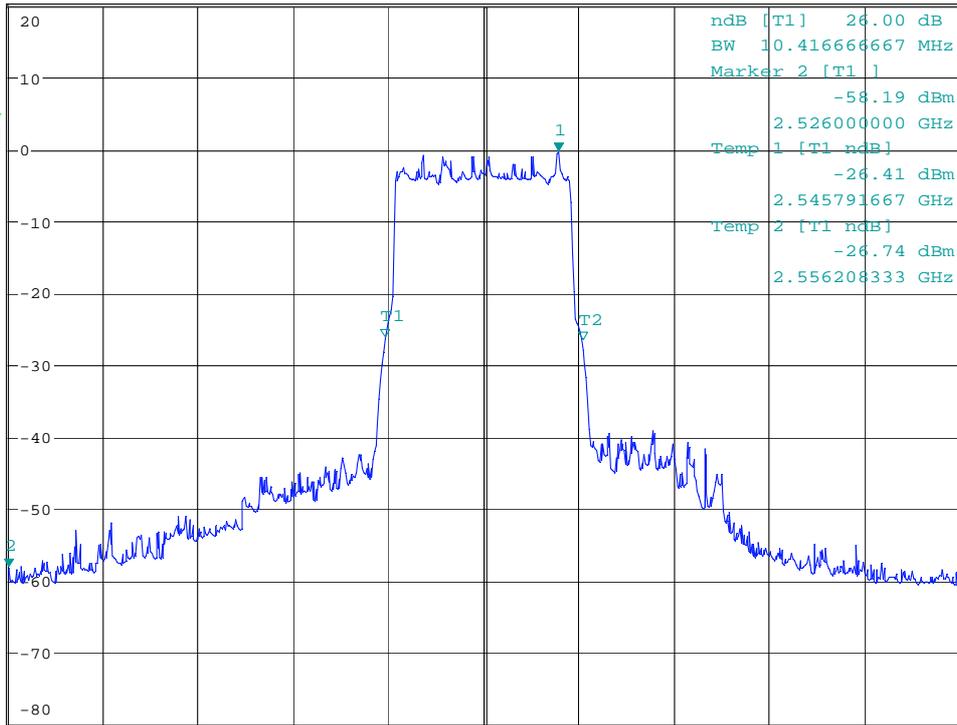


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.49 dBm
 *SWT 6.8 s 2.554926282 GHz

Ref 20 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 19:48:04

Channel top: 2601 MHz

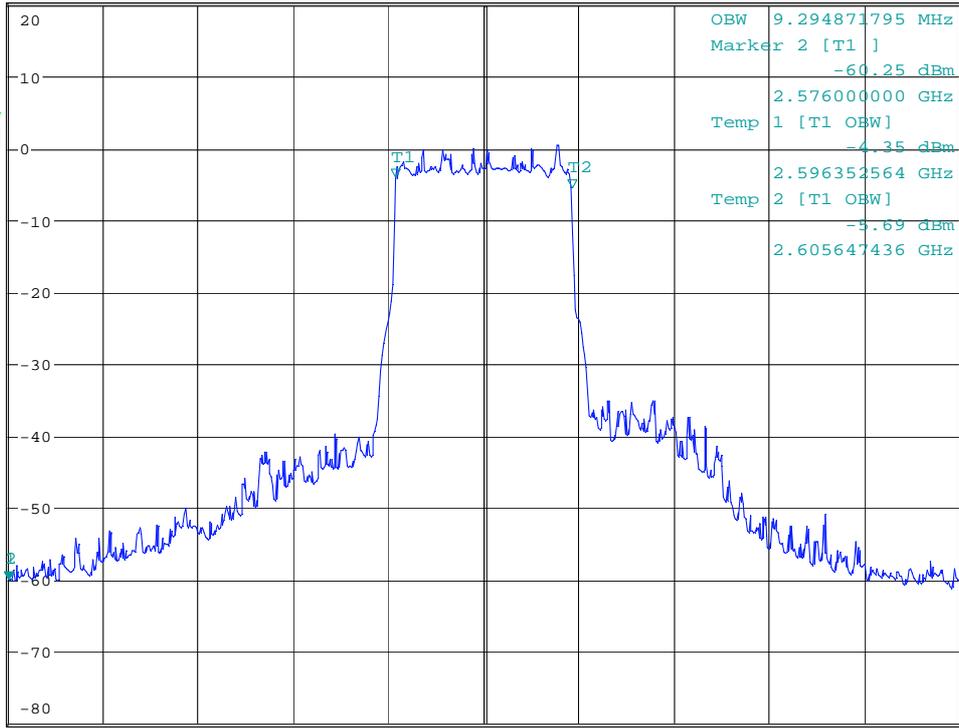
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -60.25 dBm
*Att 20 dB *SWT 6.8 s 2.576000000 GHz

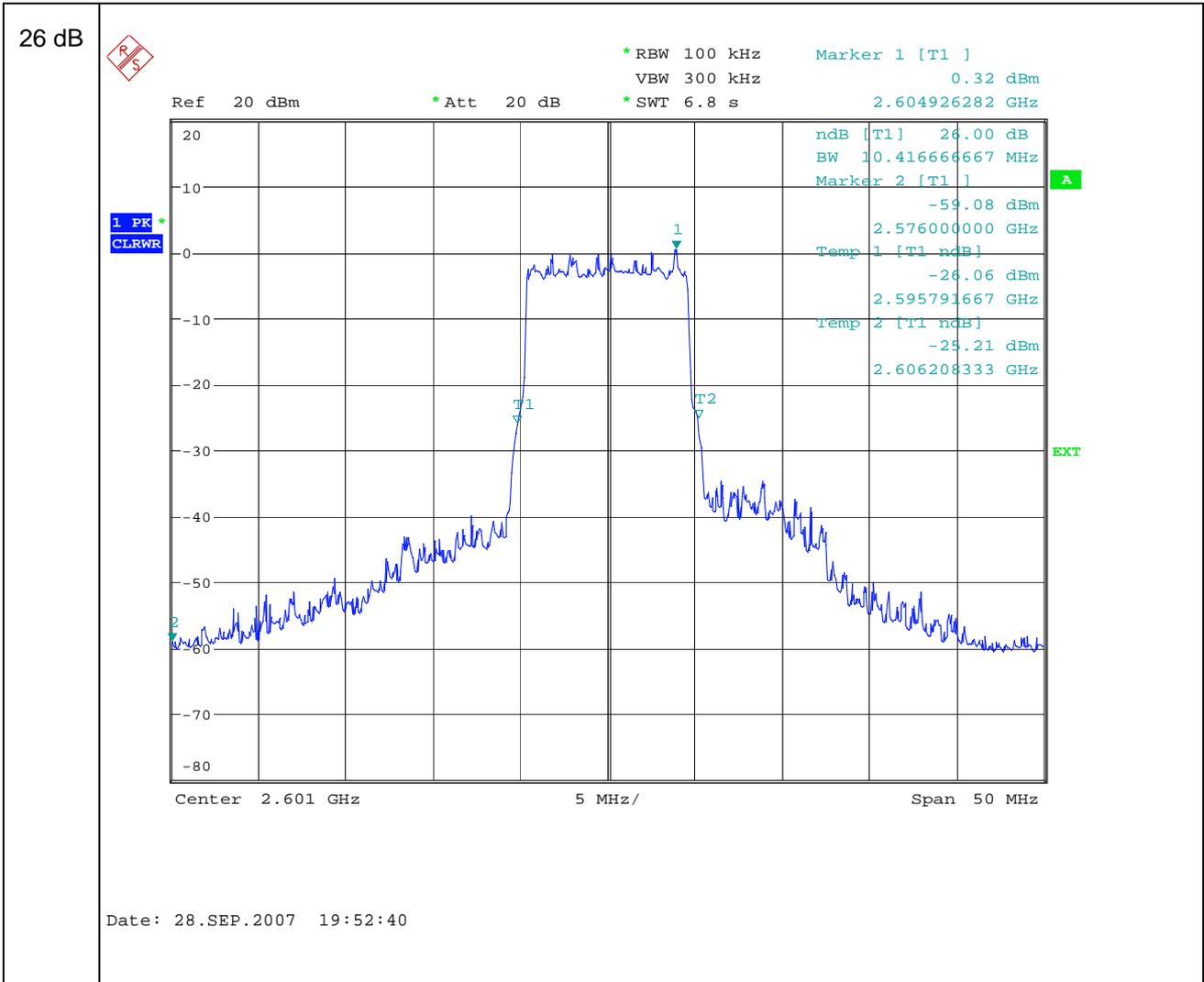
Ref 20 dBm

1 PK *
CLRWR



Center 2.601 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 19:52:23



2.1.3 Test Mode of 16QAM 1/2

Channel bottom: 2501 MHz

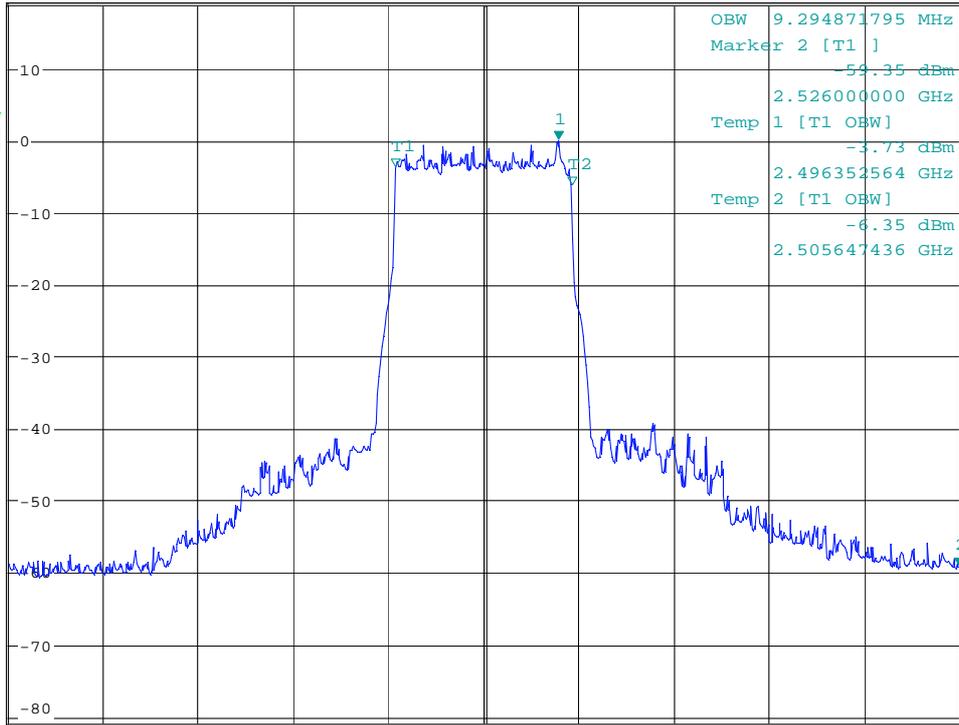
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -0.08 dBm
* Att 25 dB * SWT 6 s 2.504926282 GHz

Ref 19 dBm

1 PK *
CLRWR



Center 2.501 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 19:59:46



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

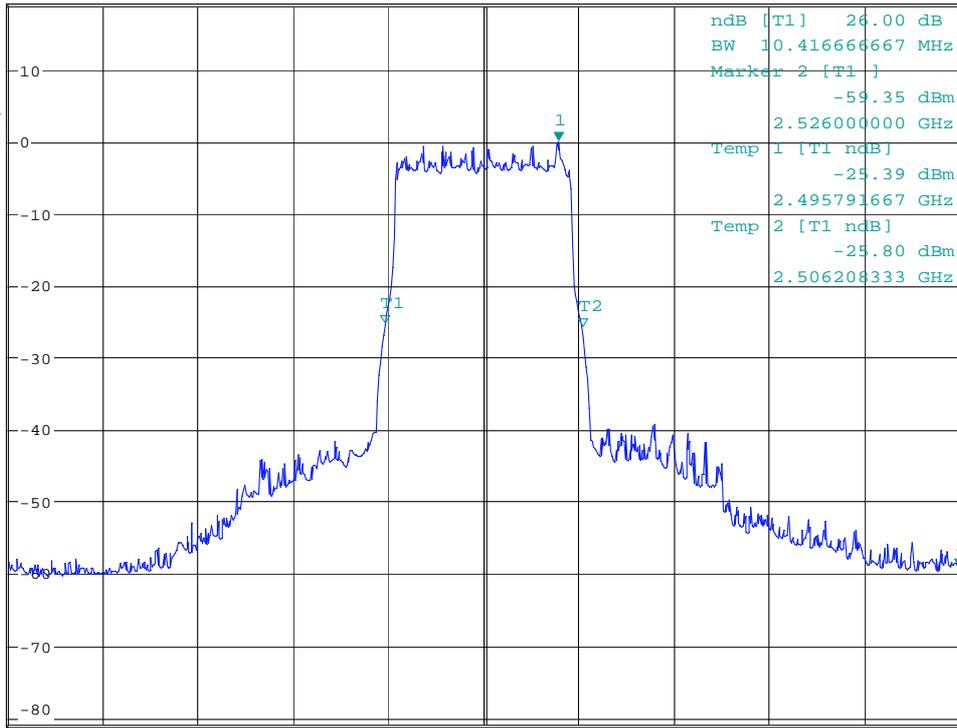


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.08 dBm
 *SWT 6 s 2.504926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.501 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 19:59:21

Channel middle: 2551 MHz

99%

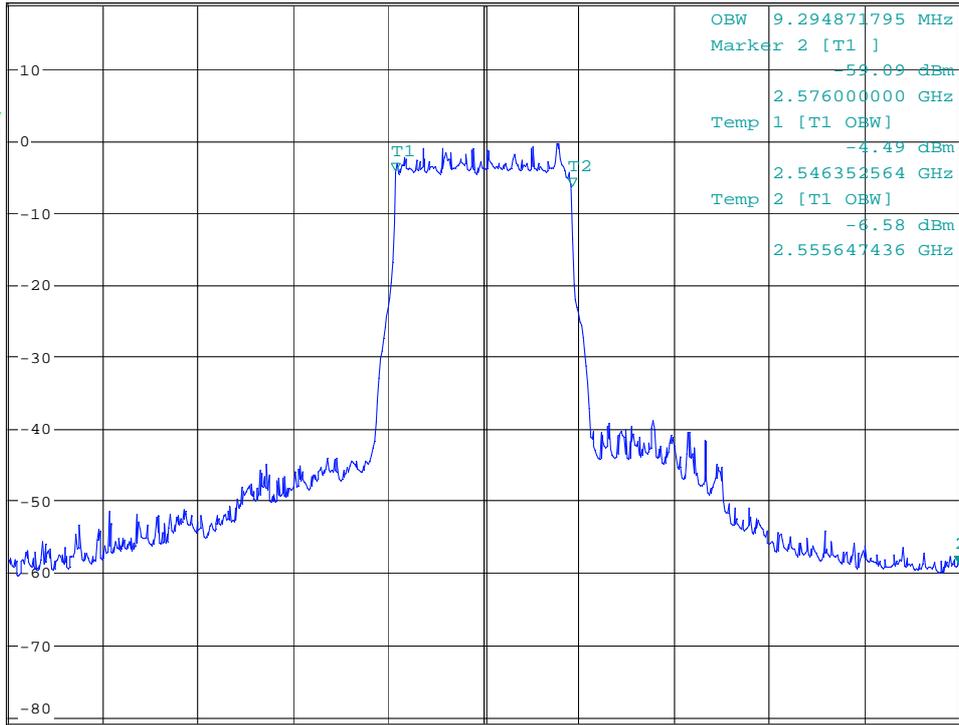


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.09 dBm
 *SWT 6 s 2.576000000 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 19:57:24



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

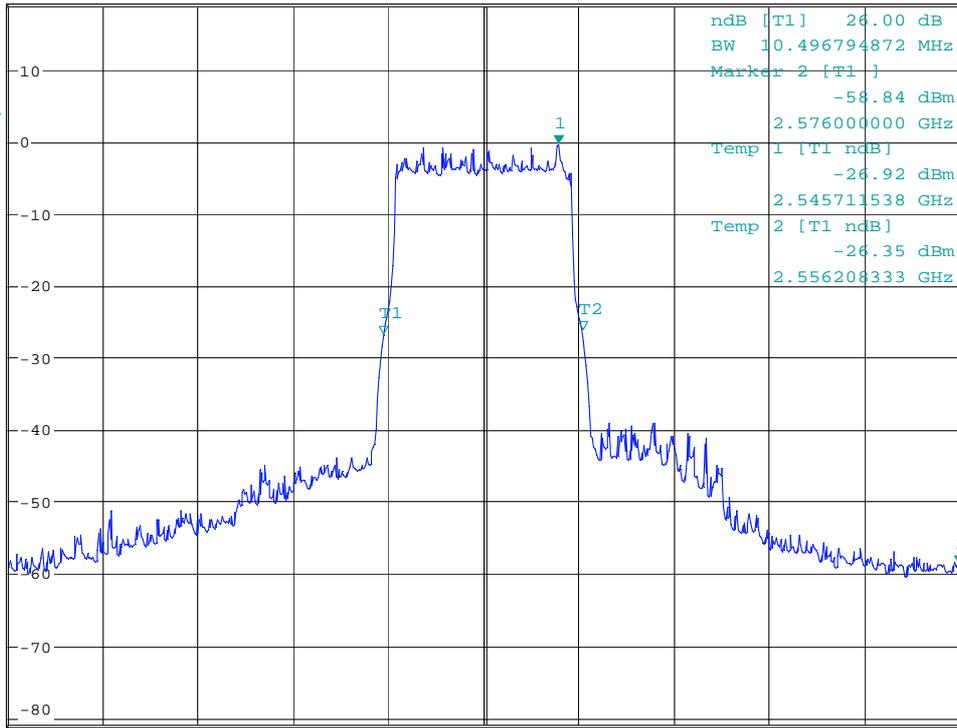


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.41 dBm
 *SWT 6 s 2.554926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 19:58:01

Channel top: 2601 MHz

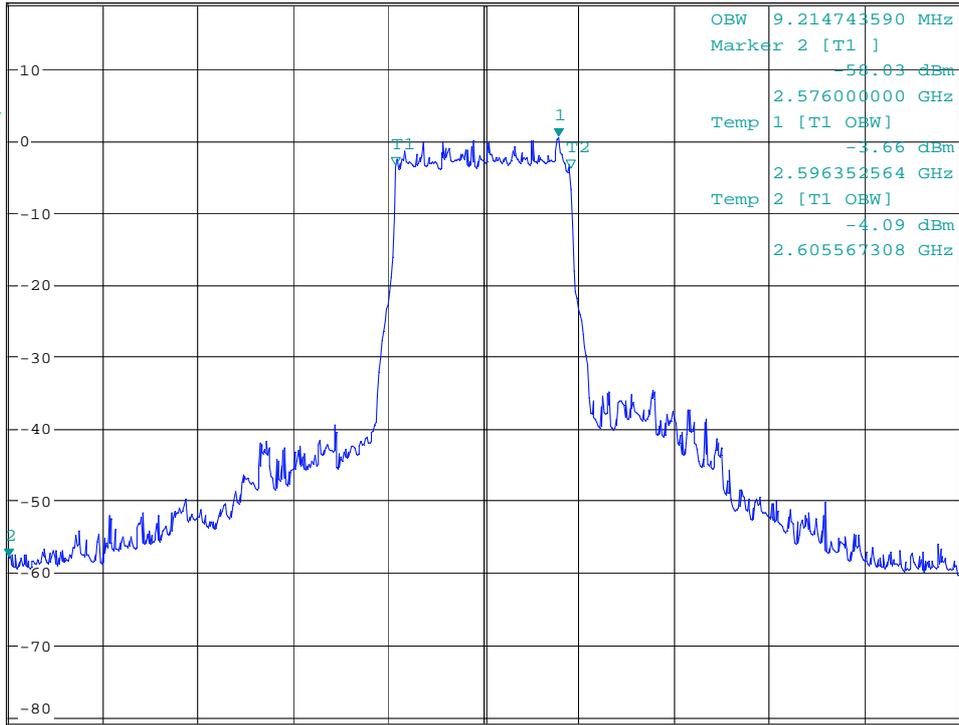
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz 0.47 dBm
 *Att 25 dB *SWT 6 s 2.604926282 GHz

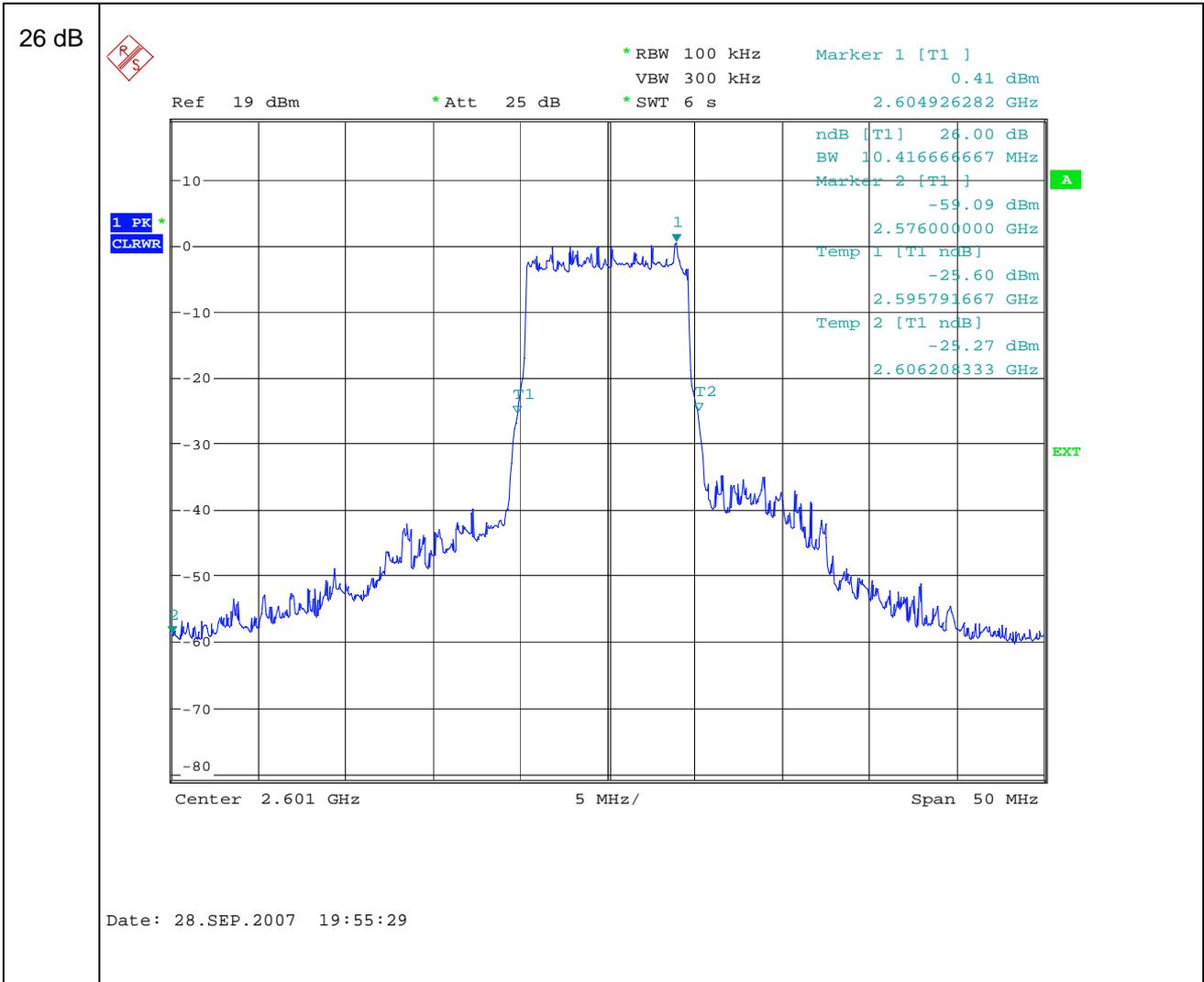
Ref 19 dBm

1 PK *
CLRWR



Center 2.601 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 19:56:22



2.1.4 Test Mode of 16QAM 3/4

Channel bottom: 2501 MHz

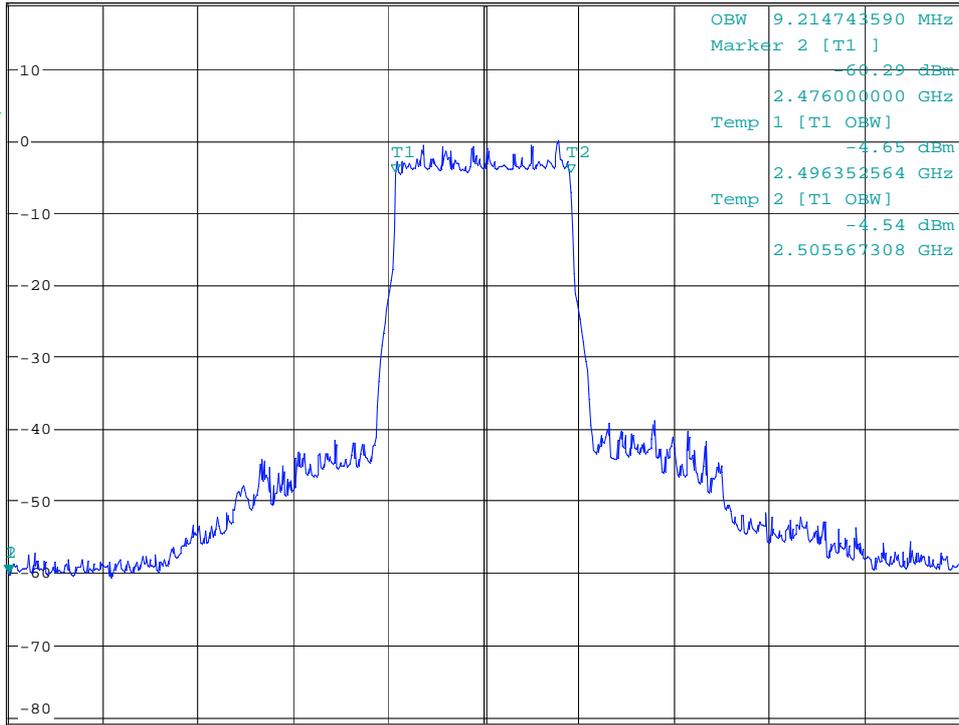
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -60.29 dBm
 *Att 25 dB *SWT 6 s 2.476000000 GHz

Ref 19 dBm

1 PK *
CLRWR



Center 2.501 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:03:27



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

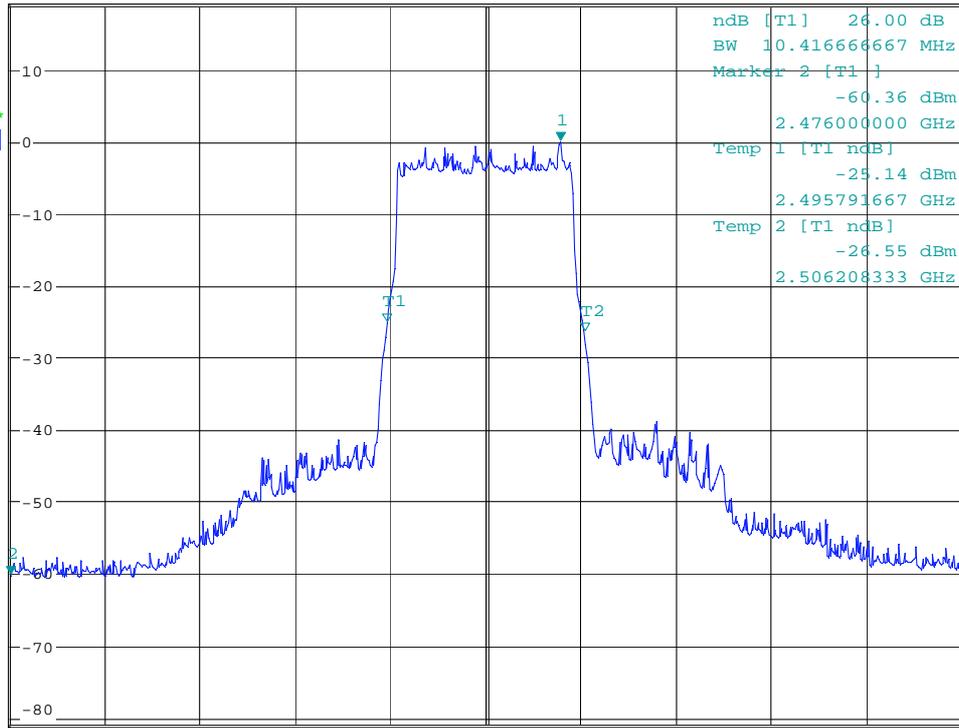


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.07 dBm
 *SWT 6 s 2.504926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.501 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:04:56

Channel middle: 2551 MHz

99%

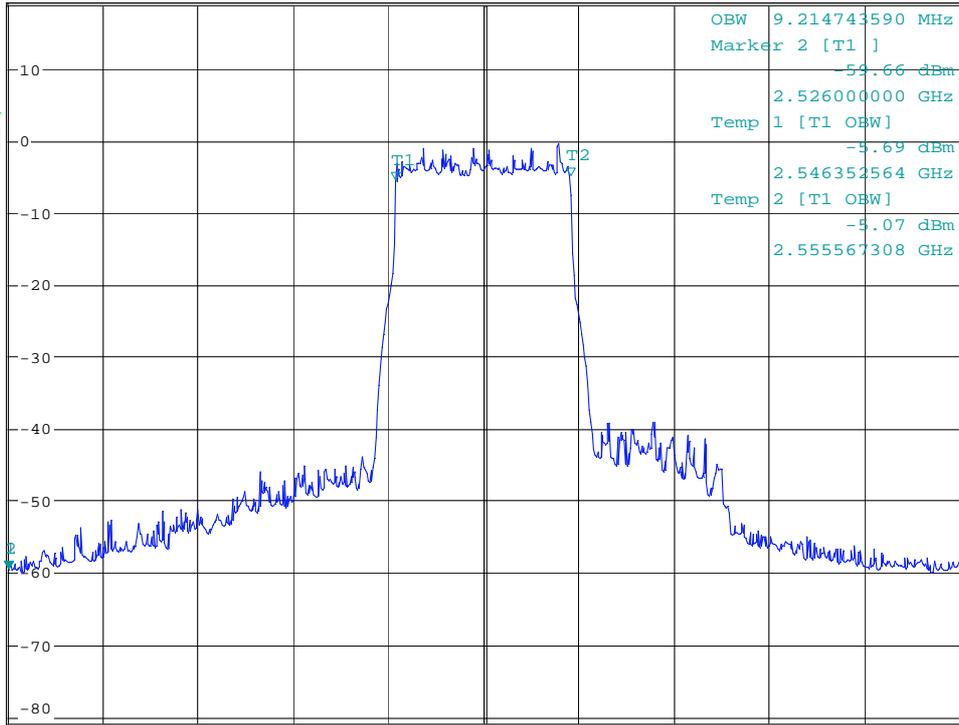


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.66 dBm
 *SWT 6 s 2.526000000 GHz

Ref 19 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:07:25



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

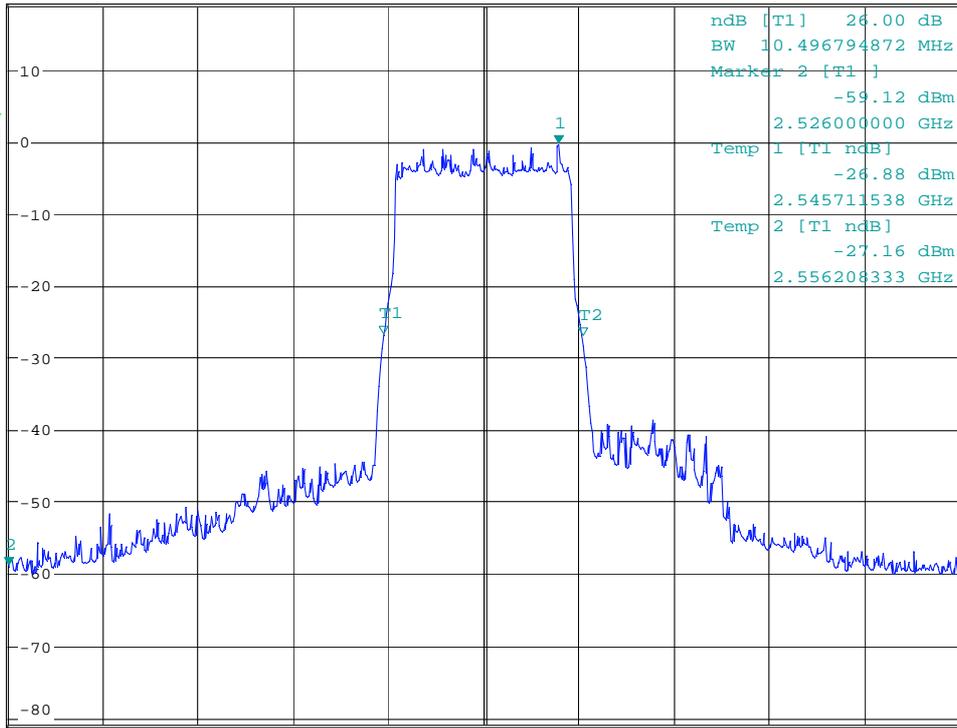


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.43 dBm
 *SWT 6 s 2.554926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:10:03

Channel top: 2601 MHz

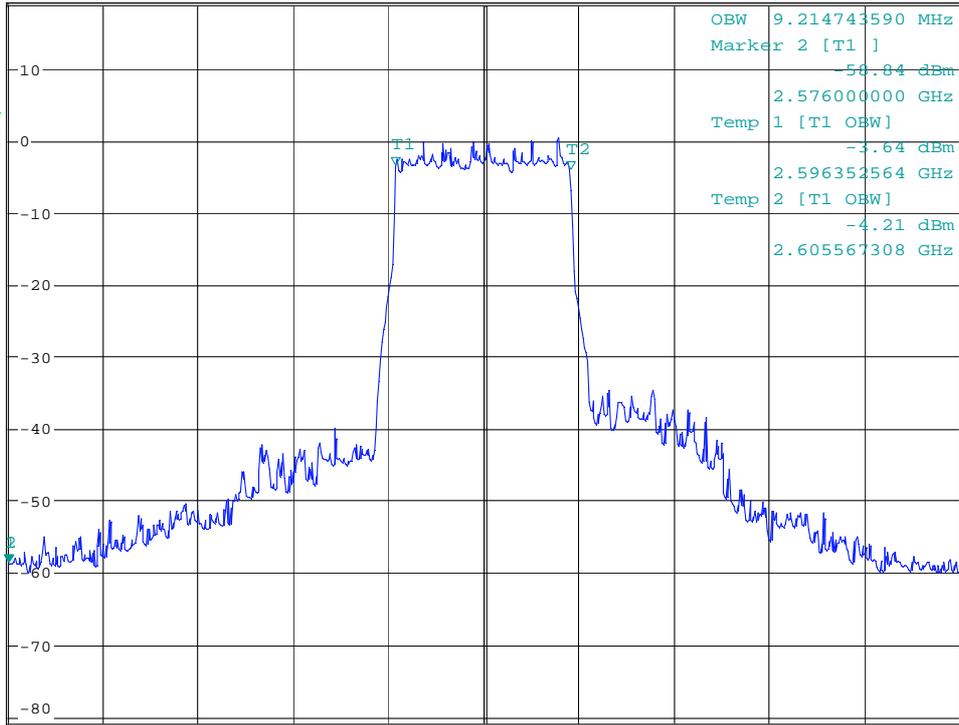
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -58.84 dBm
 *Att 25 dB *SWT 6 s 2.576000000 GHz

Ref 19 dBm

1 PK *
CLRWR



Center 2.601 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:13:07

Channel bottom: 2501 MHz

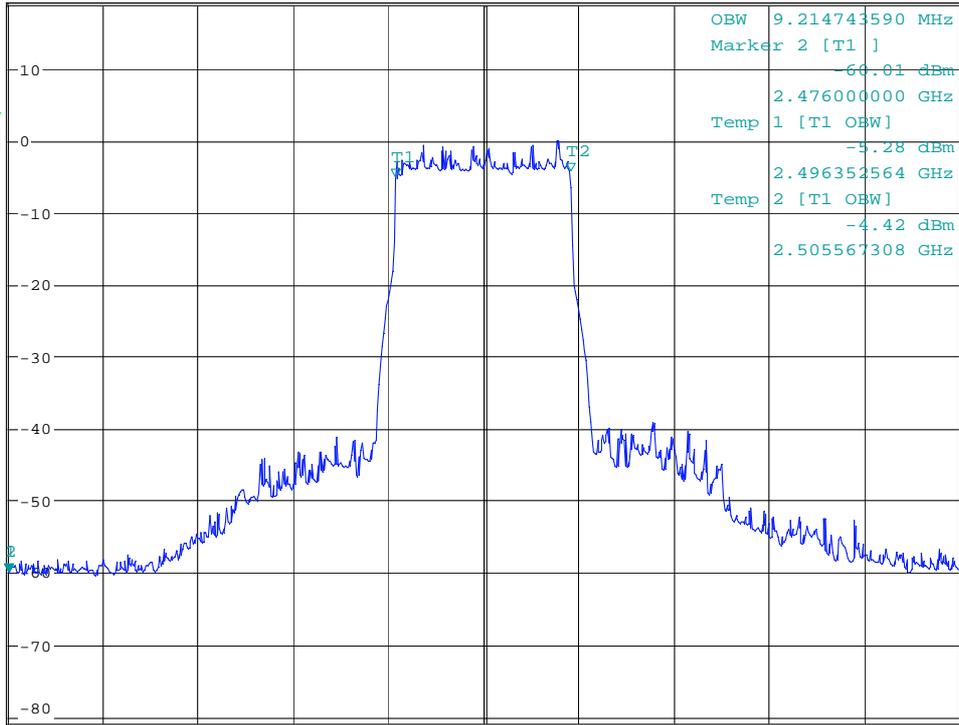
99%



* RBW 100 kHz
* Att 25 dB
* SWT 6 s
Marker 1 [T1]
-60.01 dBm
2.476000000 GHz

Ref 19 dBm

1 PK *
CLRWR



Center 2.501 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:03:52



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

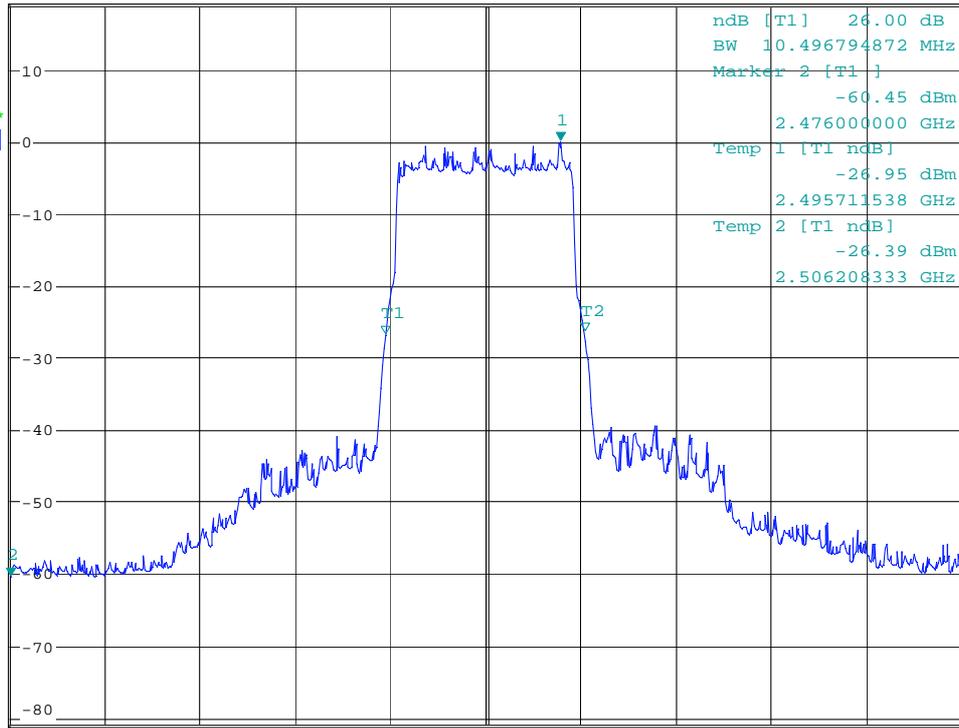


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.05 dBm
 *SWT 6 s 2.504926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.501 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:05:05

Channel middle: 2551 MHz

99%

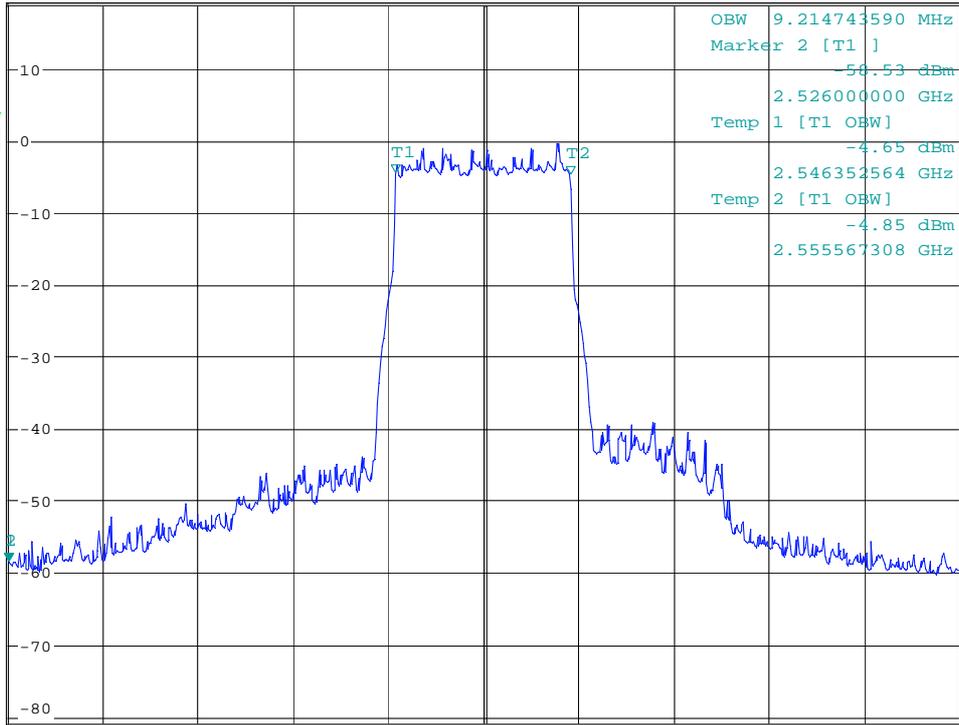


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -58.53 dBm
 *SWT 6 s 2.526000000 GHz

Ref 19 dBm

*Att 25 dB

1 PK *
CLRWR

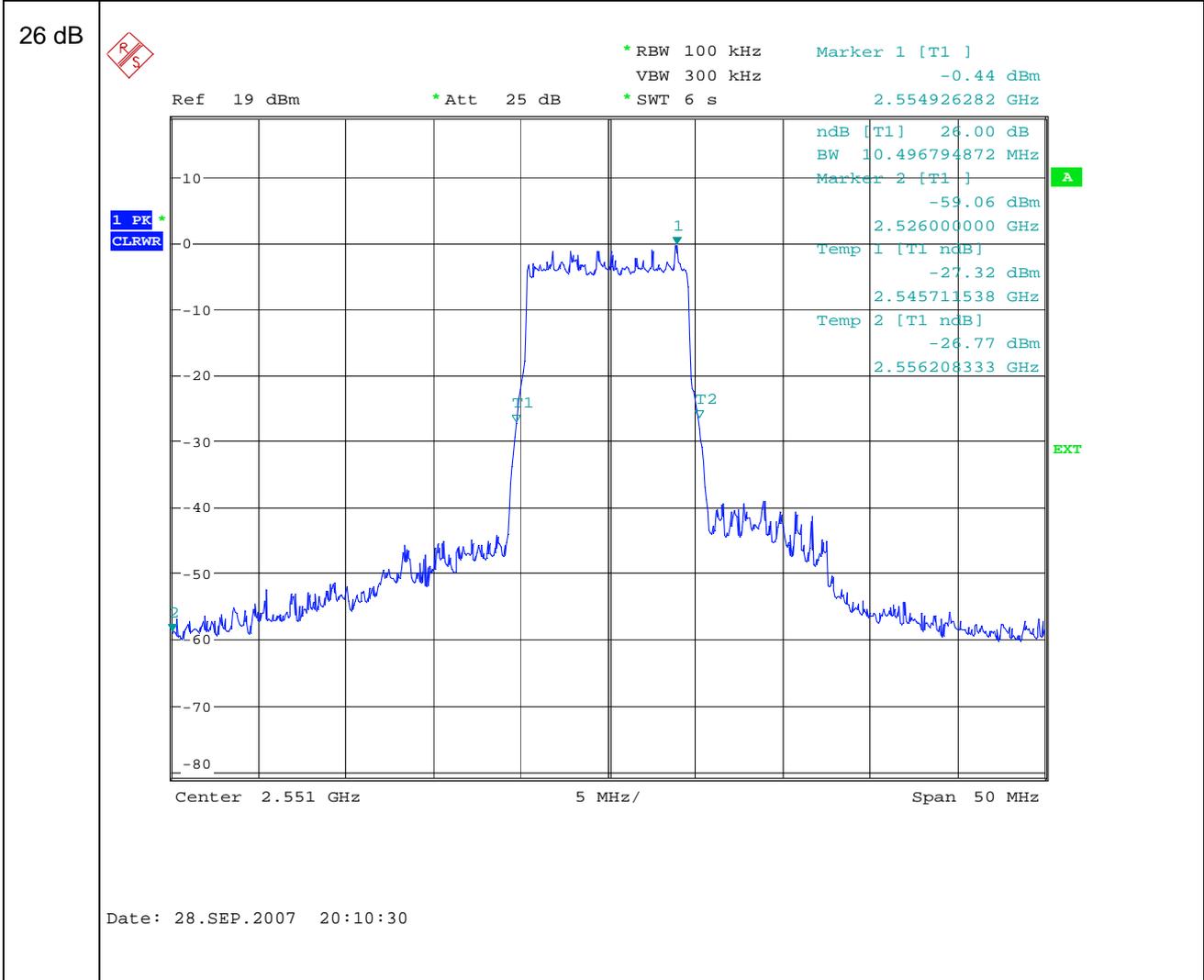


Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:07:41



Channel top: 2601 MHz

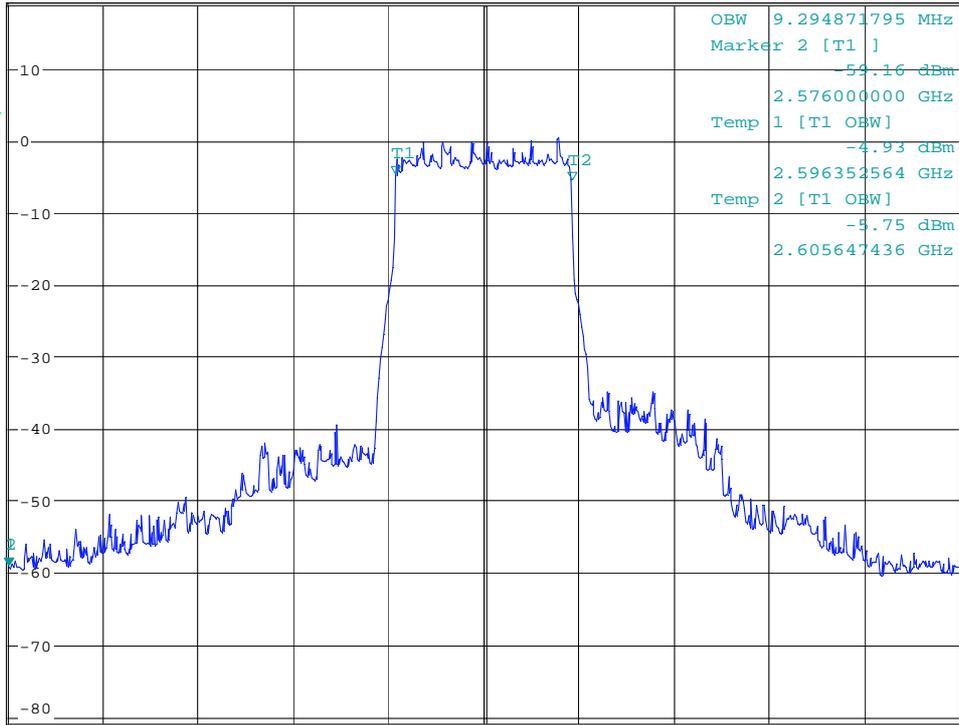
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.16 dBm
 *Att 25 dB 2.576000000 GHz
 *SWT 6 s

Ref 19 dBm

1 PK*
CLRWR



Center 2.601 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:13:29

Channel bottom: 2501 MHz

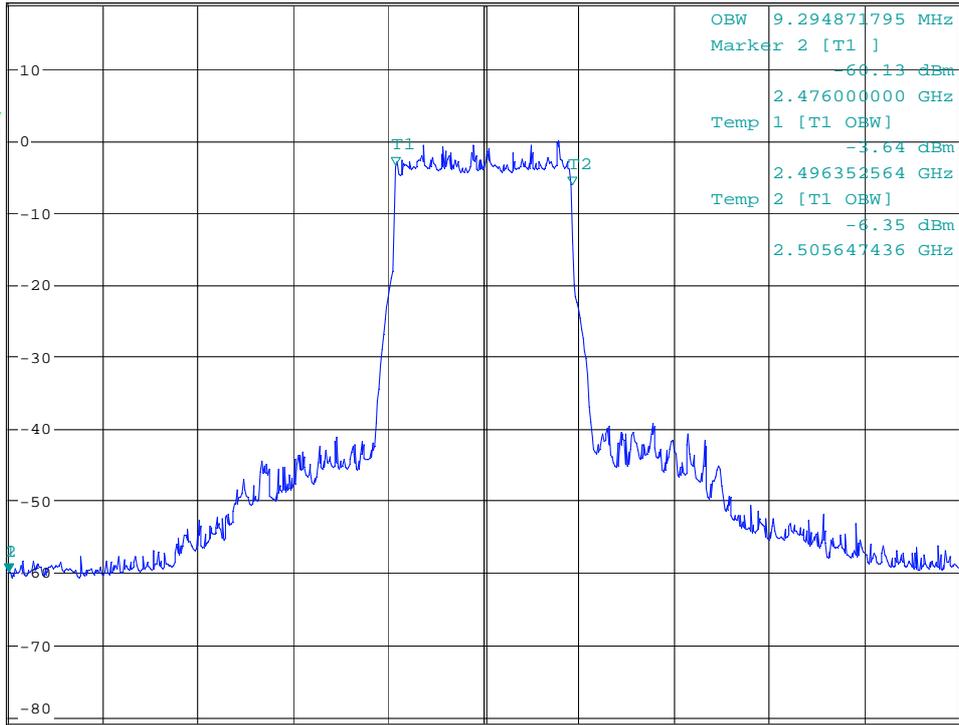
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -60.13 dBm
 *Att 25 dB 2.476000000 GHz
 *SWT 6 s

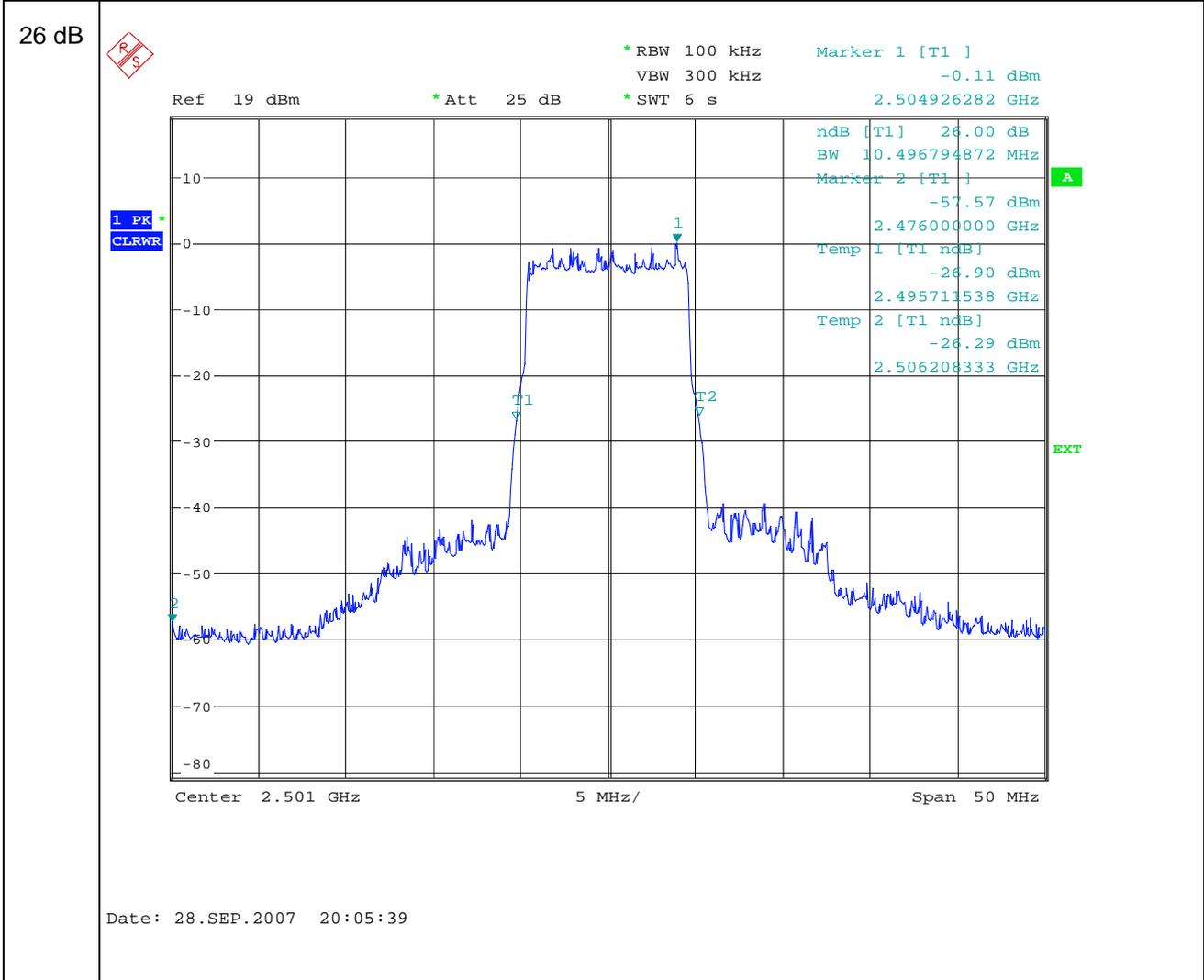
Ref 19 dBm

1 PK *
CLRWR



Center 2.501 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:04:19



Channel middle: 2551 MHz

99%

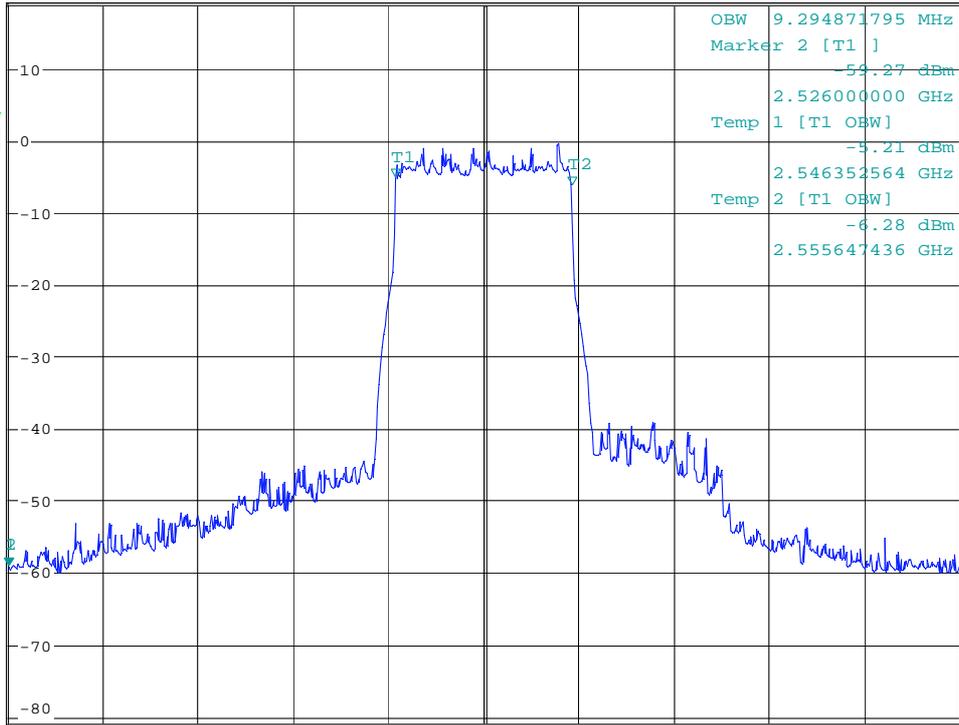


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.27 dBm
 *SWT 6 s 2.526000000 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:07:59



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

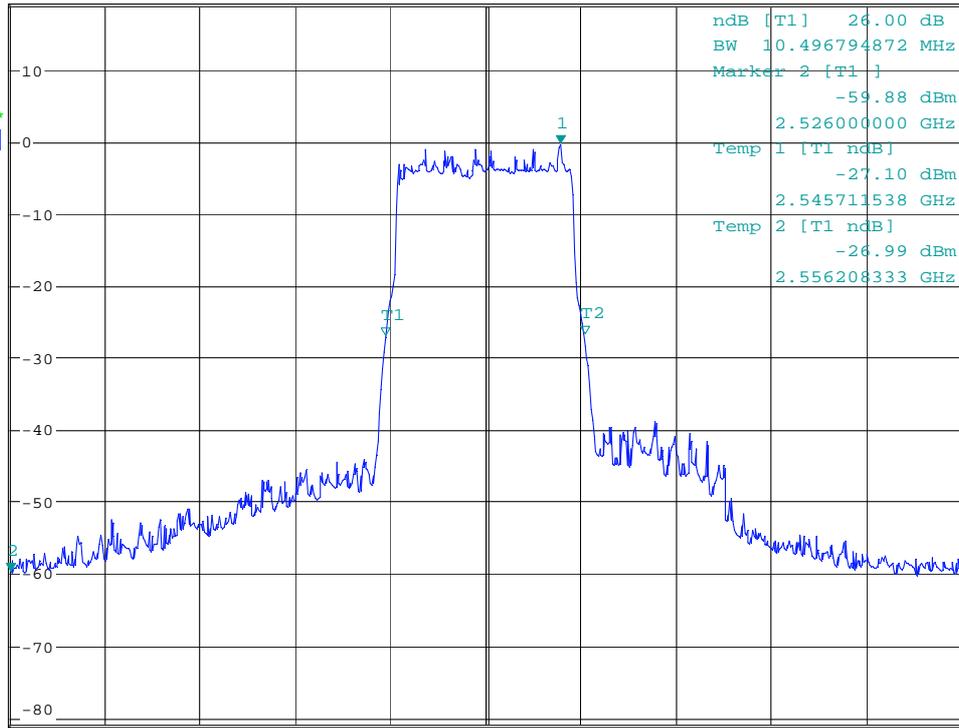


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -0.47 dBm
 *SWT 6 s 2.554926282 GHz

Ref 19 dBm

*Att 25 dB

1 PK*
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:11:21

Channel top: 2601 MHz

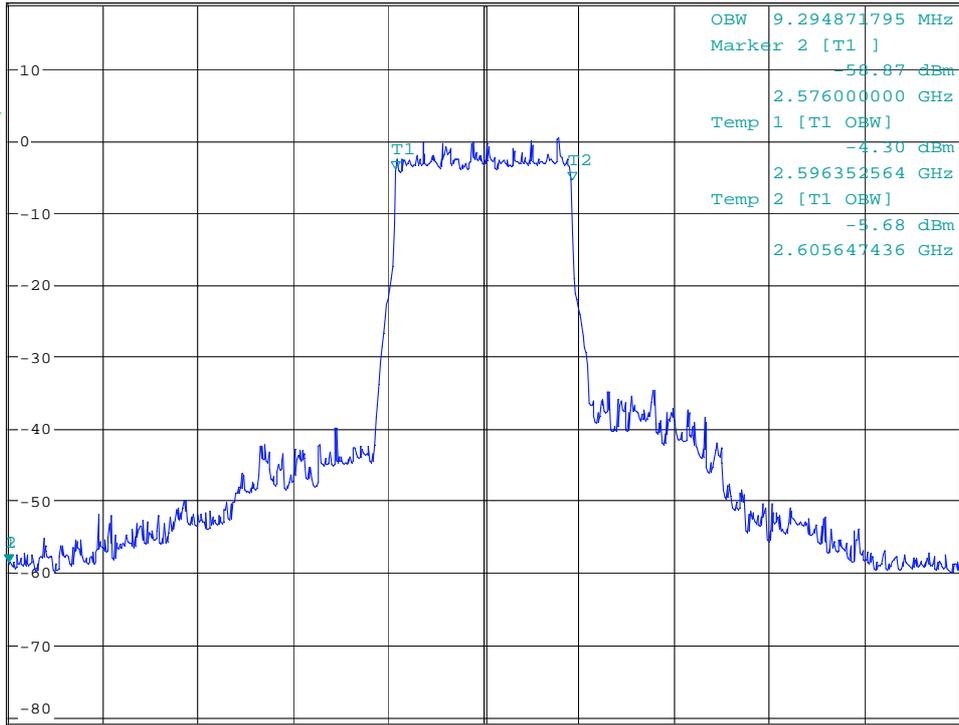
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -58.87 dBm
 *Att 25 dB *SWT 6 s 2.576000000 GHz

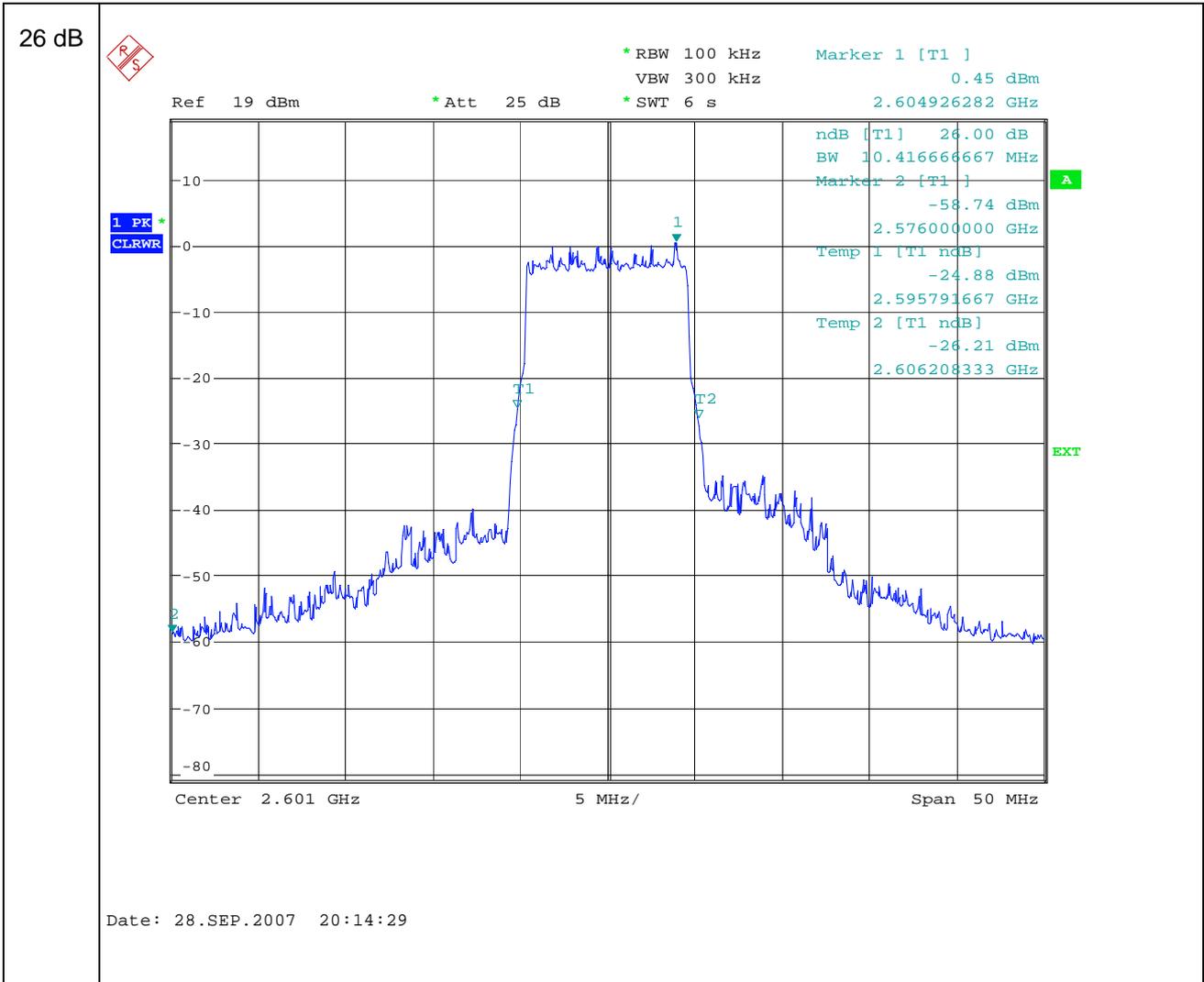
Ref 19 dBm

1 PK *
CLRWR



Center 2.601 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:13:39



2.1.7 Test Mode of 64QAM 3/4

Channel bottom: 2501 MHz

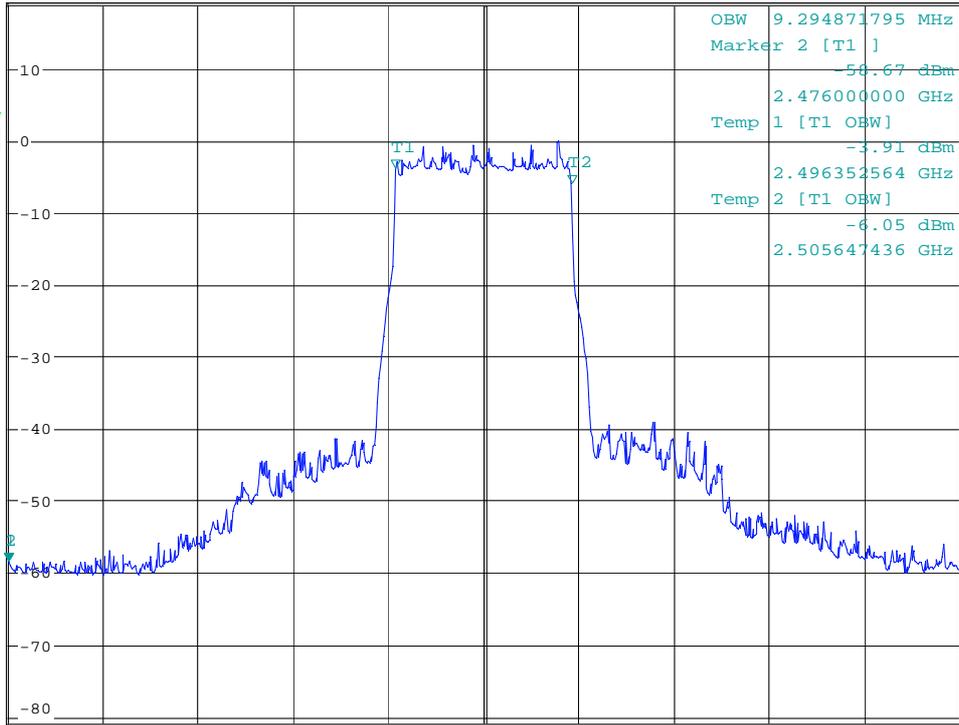
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -58.67 dBm
* Att 25 dB * SWT 6 s 2.476000000 GHz

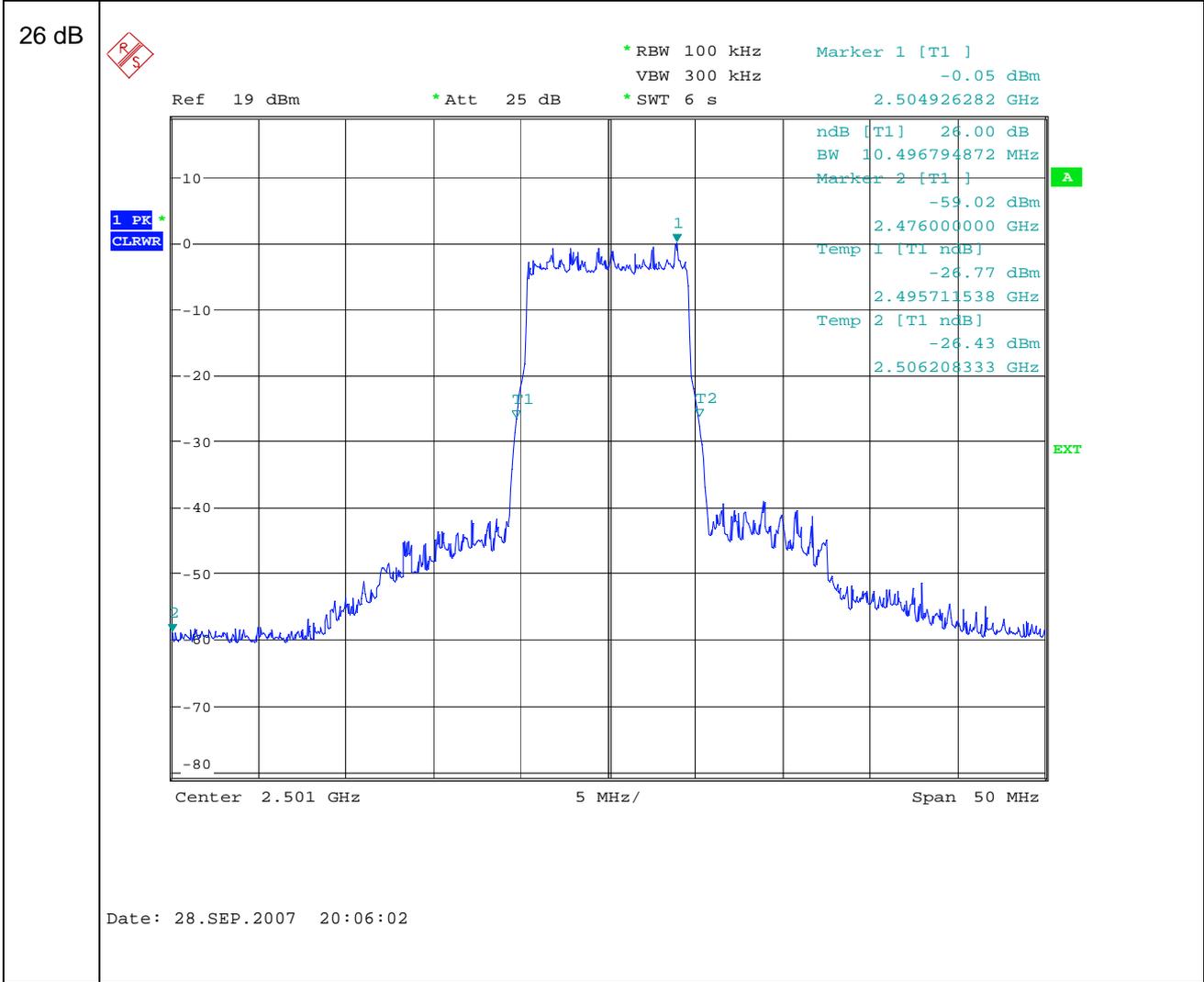
Ref 19 dBm

1 PK *
CLRWR



Center 2.501 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:04:36



Channel middle: 2551 MHz

99%

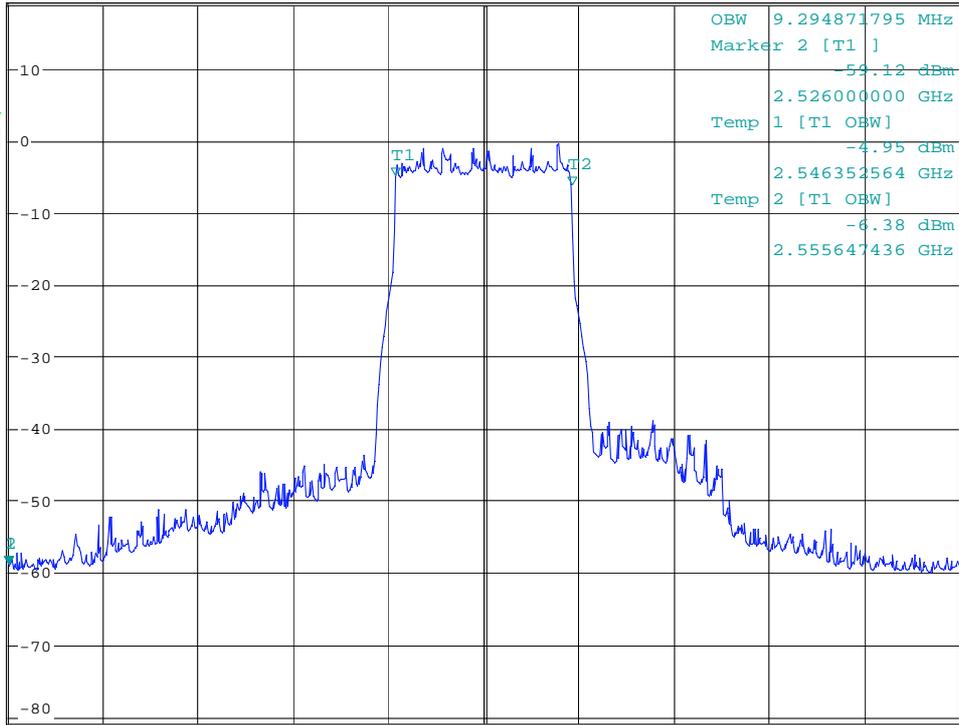


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -59.12 dBm
 *SWT 6 s 2.526000000 GHz

Ref 19 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.551 GHz

5 MHz/

Span 50 MHz

Date: 28.SEP.2007 20:08:08

Channel top: 2601 MHz

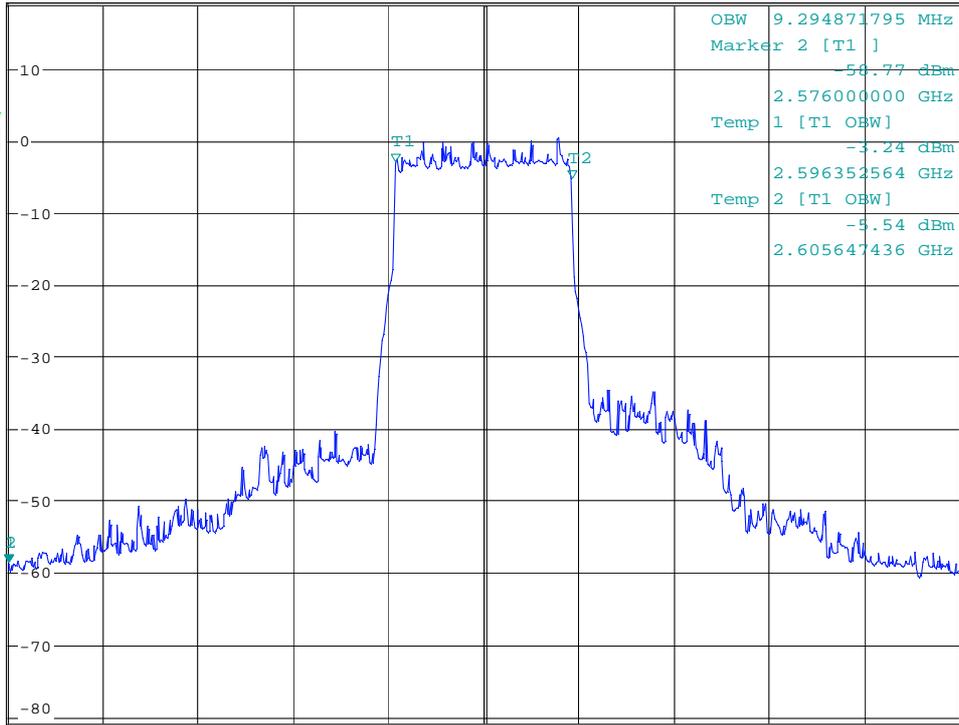
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -58.77 dBm
 *Att 25 dB *SWT 6 s 2.576000000 GHz

Ref 19 dBm

1 PK *
CLRWR



Center 2.601 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:13:47



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

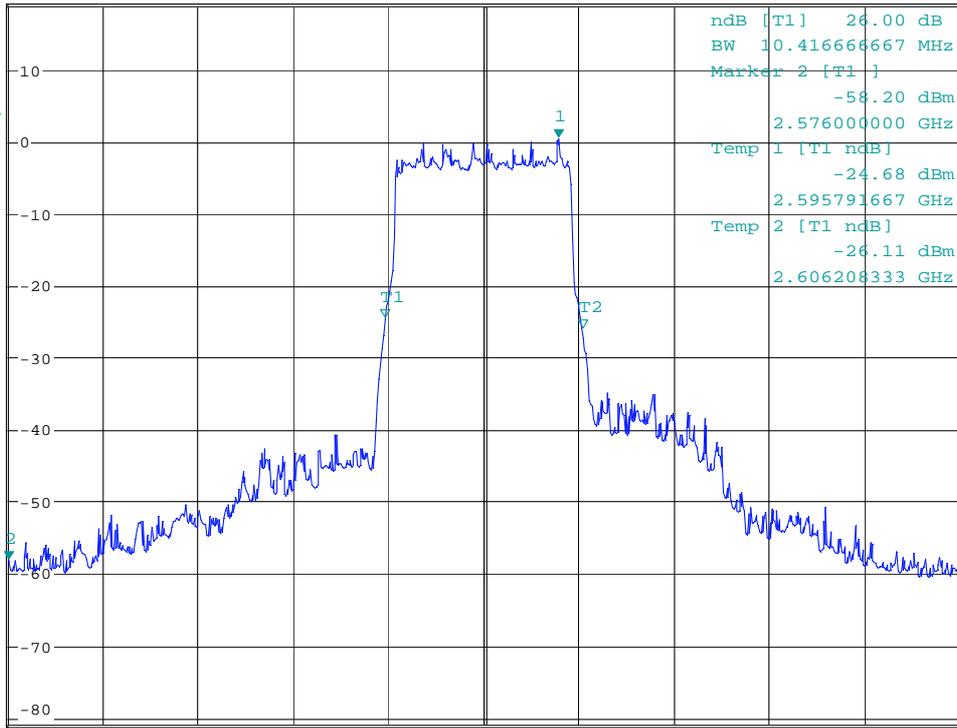
26 dB



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz 0.37 dBm
 *Att 25 dB 2.604926282 GHz
 *SWT 6 s

Ref 19 dBm

1 PK*
CLRWR



Center 2.601 GHz 5 MHz/ Span 50 MHz

Date: 28.SEP.2007 20:14:44



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

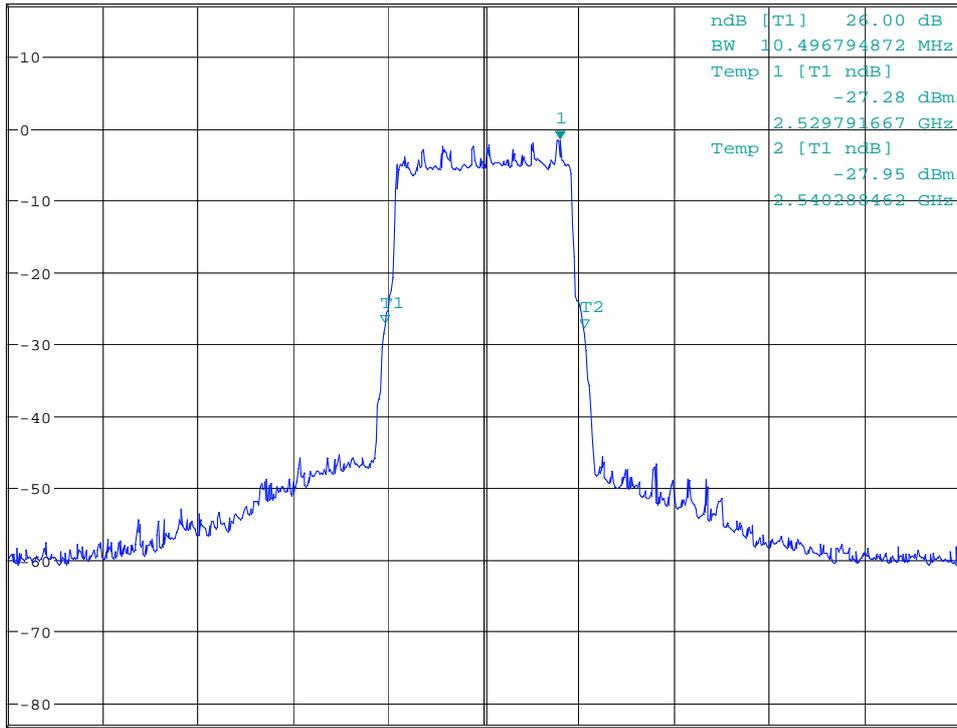


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.63 dBm
 SWT 20 ms 2.539006410 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:57:58

Channel middle: 2585 MHz

99%

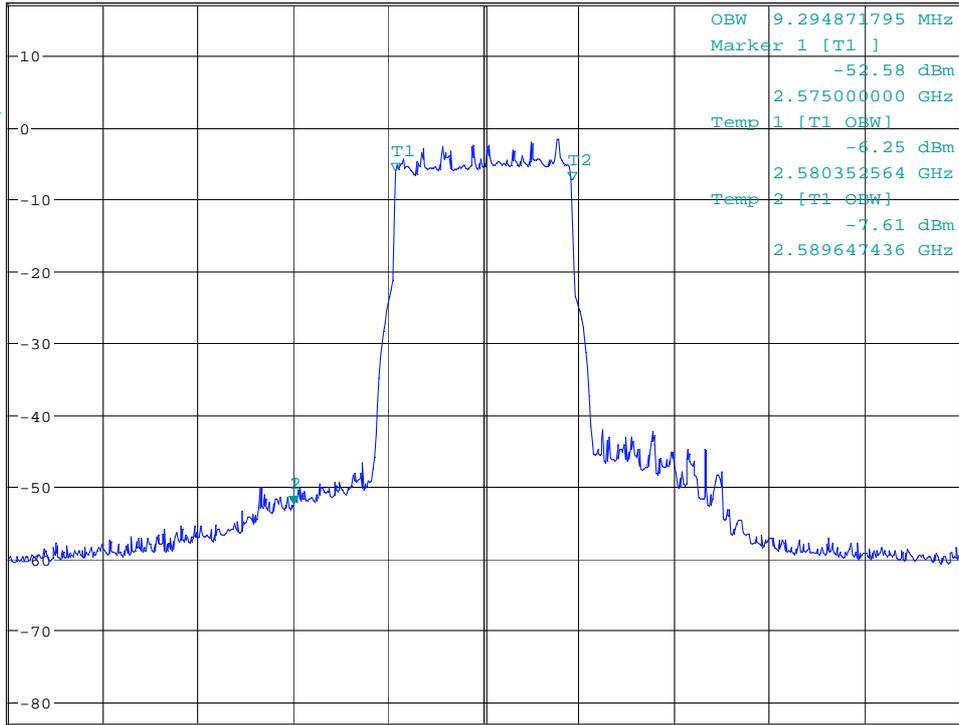


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -52.58 dBm
 *SWT 20 s 2.575000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



A

SGL

EXT

Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 20.SEP.2007 18:07:59



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

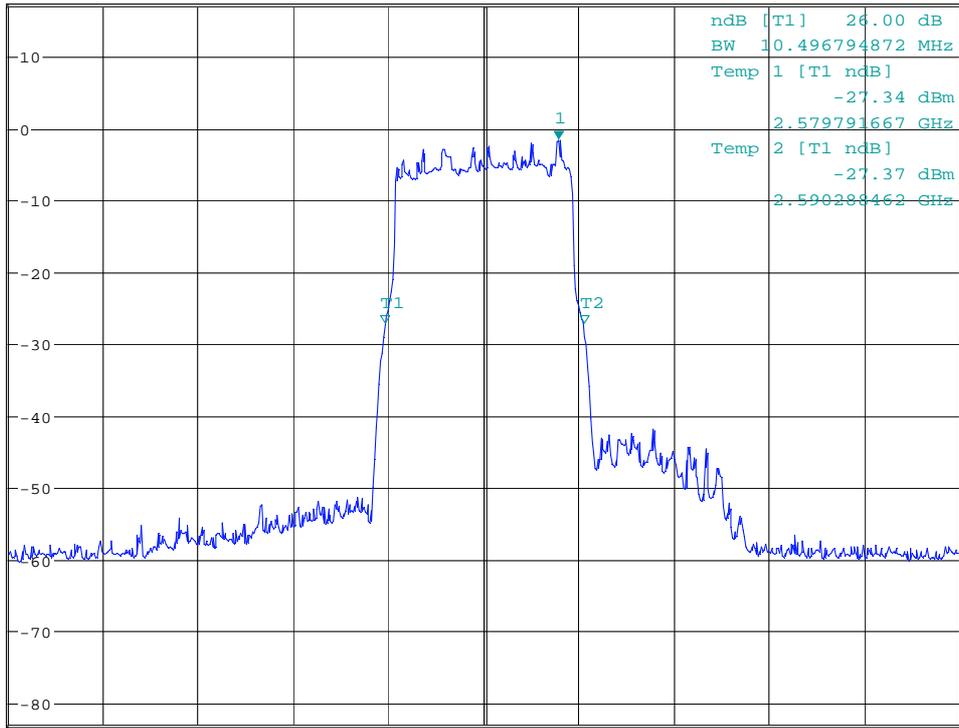


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.74 dBm
 SWT 20 ms 2.588926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:14:08

Channel top: 2635 MHz

99%

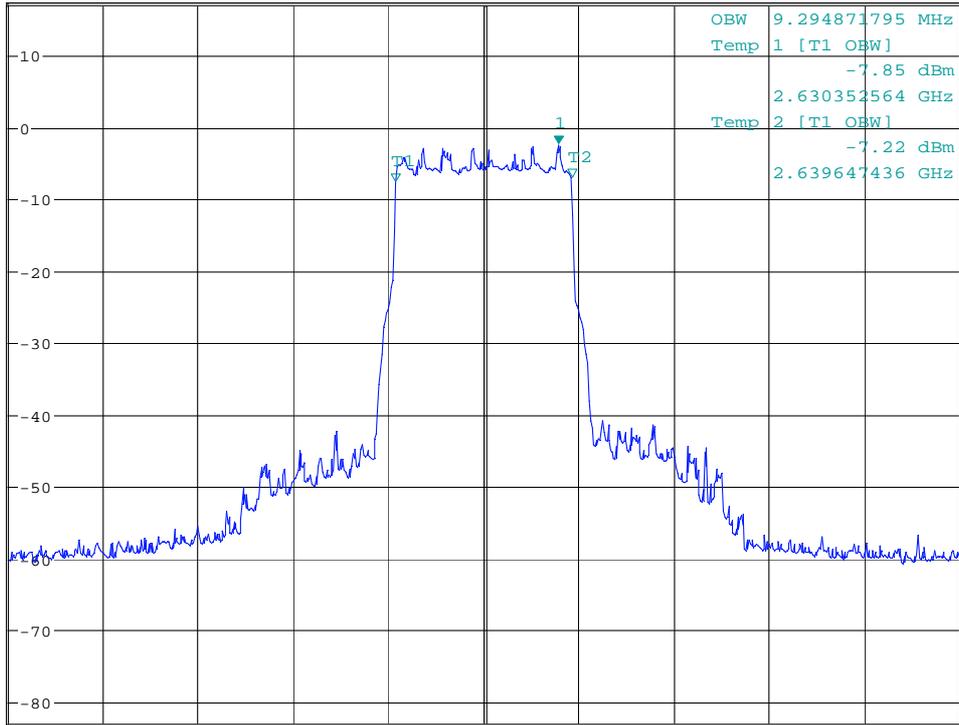


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.61 dBm
 SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH

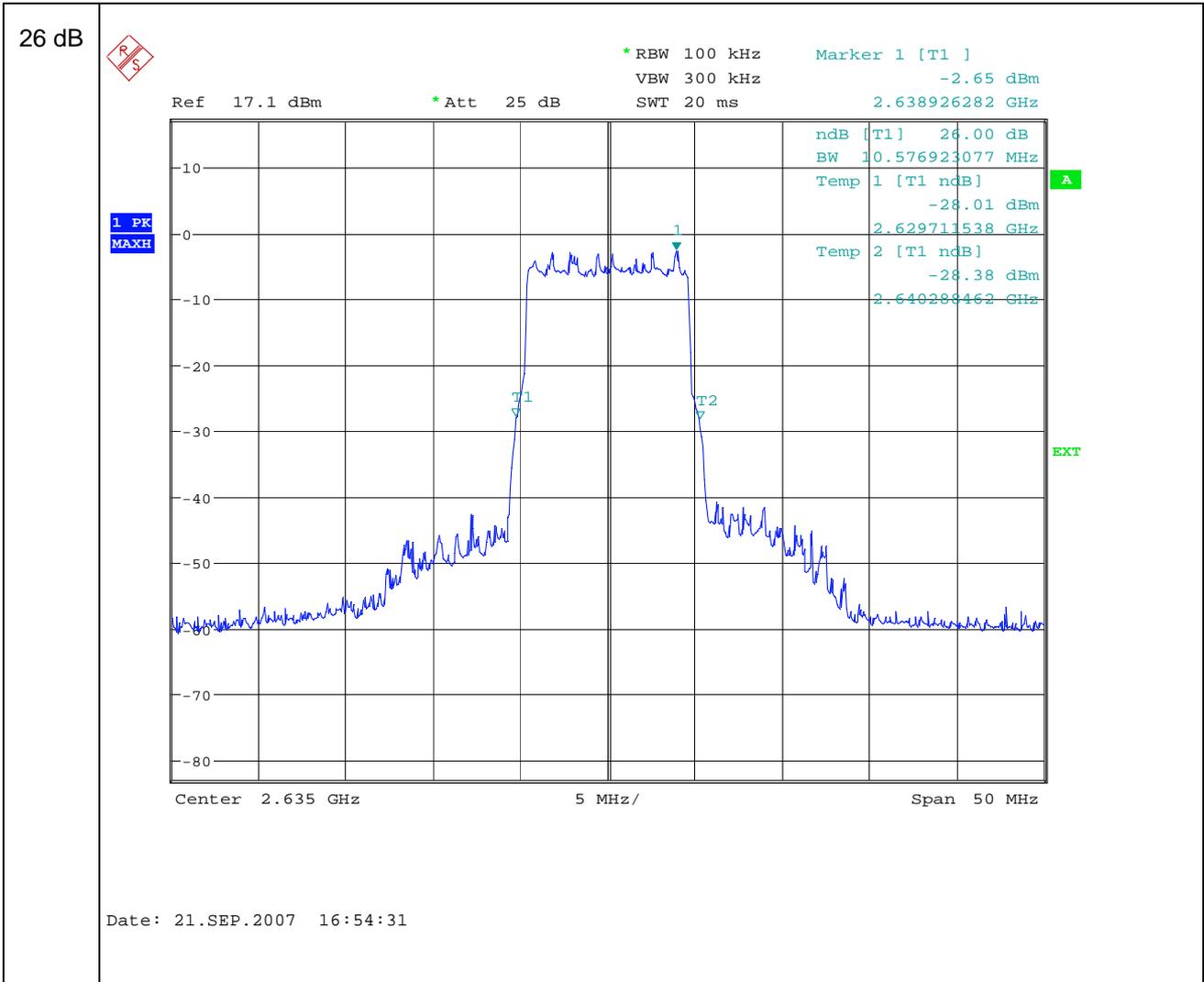


Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:02:19



2.2.2 Test Mode of QPSK3/4

Channel bottom: 2535 MHz

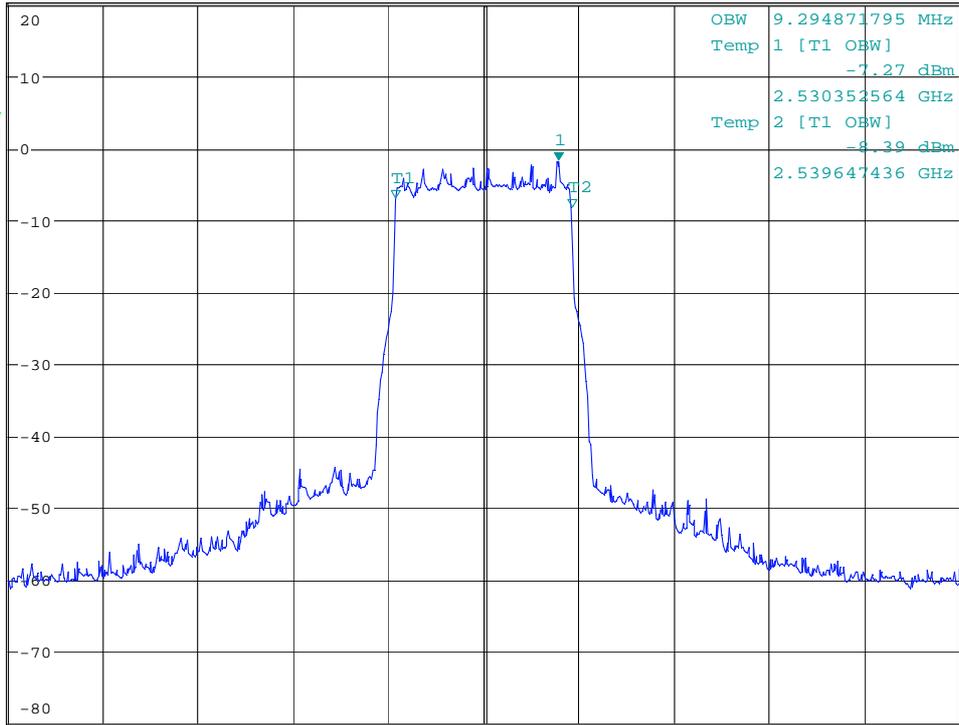
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.88 dBm
 *Att 20 dB *SWT 8 s 2.538926282 GHz

Ref 20 dBm

1 PK *
CLRWR

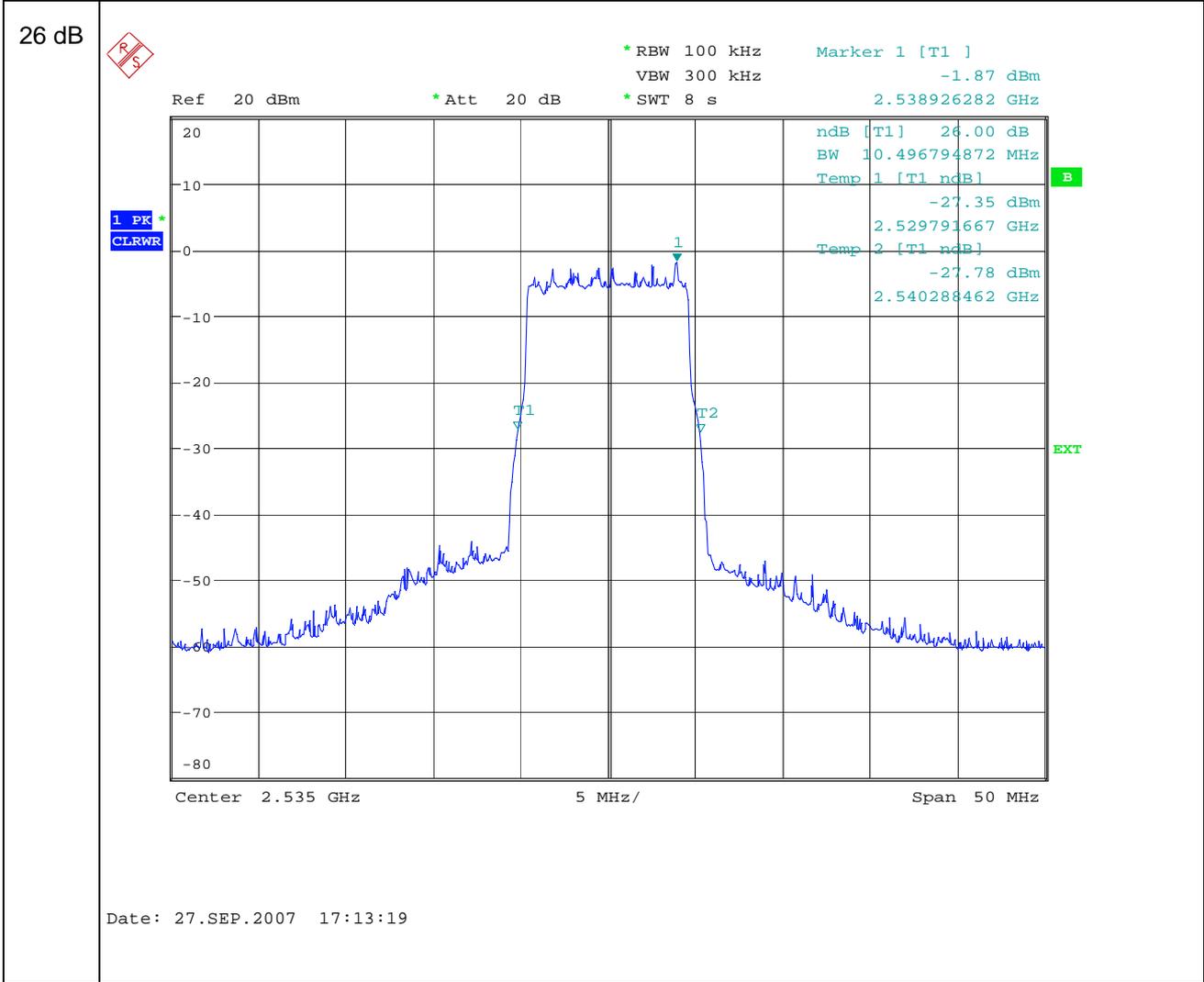


B

EXT

Center 2.535 GHz 5 MHz/ Span 50 MHz

Date: 27.SEP.2007 17:14:34



Channel middle: 2585 MHz

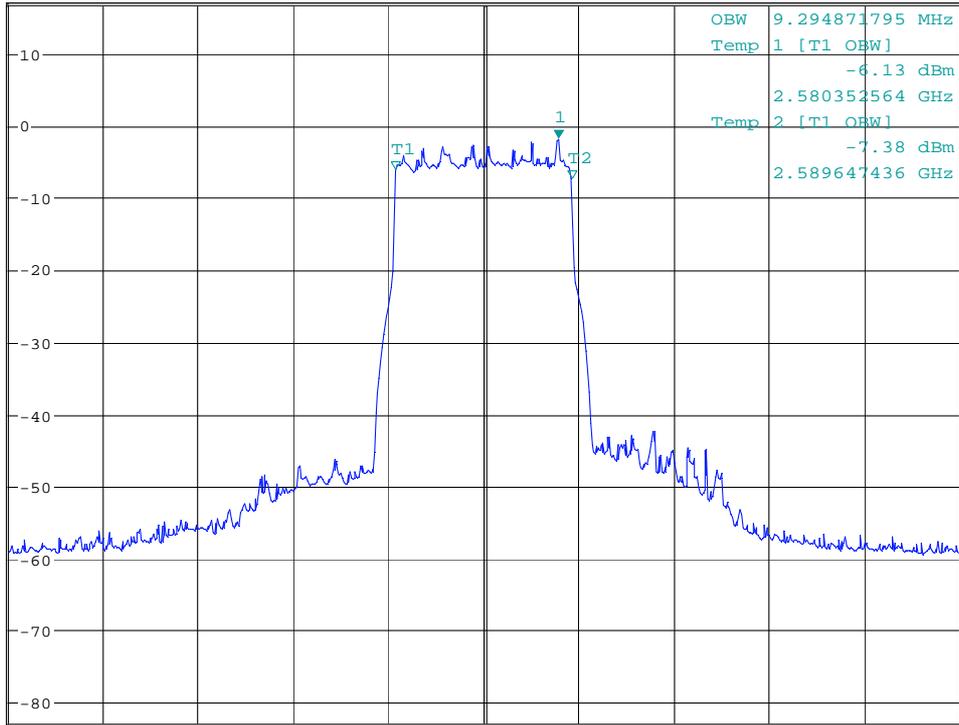
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.90 dBm
 *Att 25 dB *SWT 1 s 2.588926282 GHz

Ref 17 dBm

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 27.SEP.2007 15:49:07



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

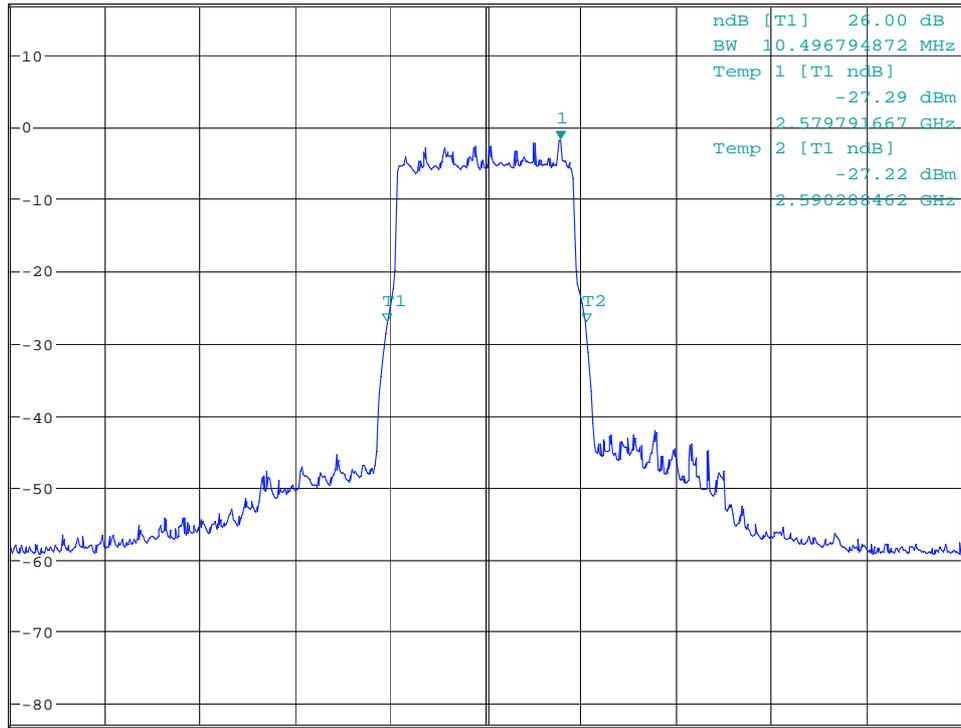


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.83 dBm
 *SWT 1 s 2.588926282 GHz

Ref 17 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 27.SEP.2007 15:53:32

Channel top: 2635 MHz

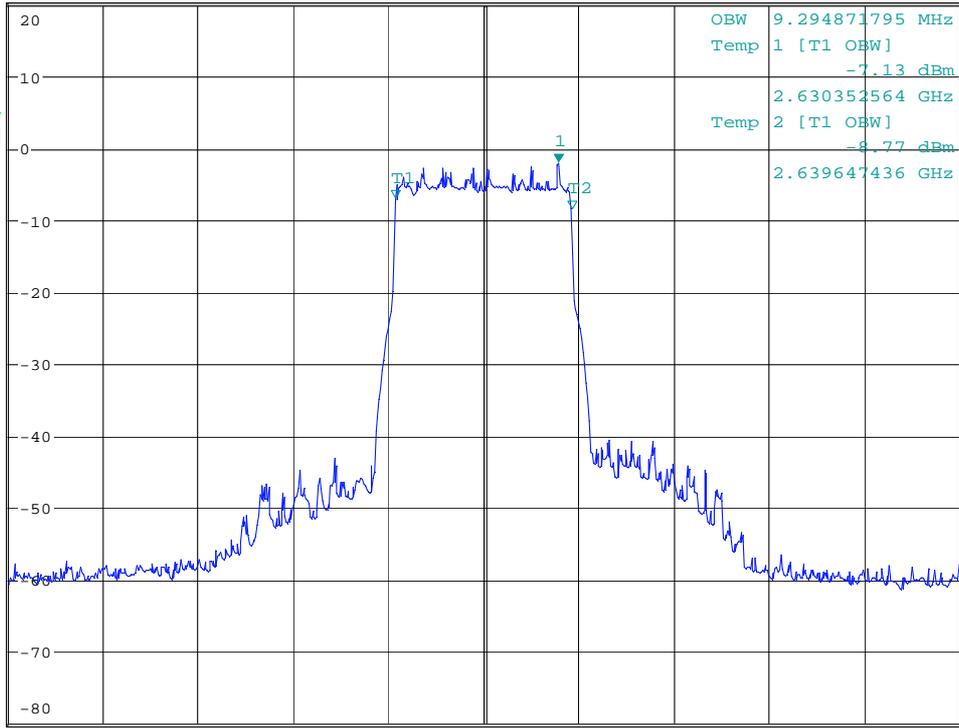
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.24 dBm
 *Att 20 dB *SWT 8 s 2.638926282 GHz

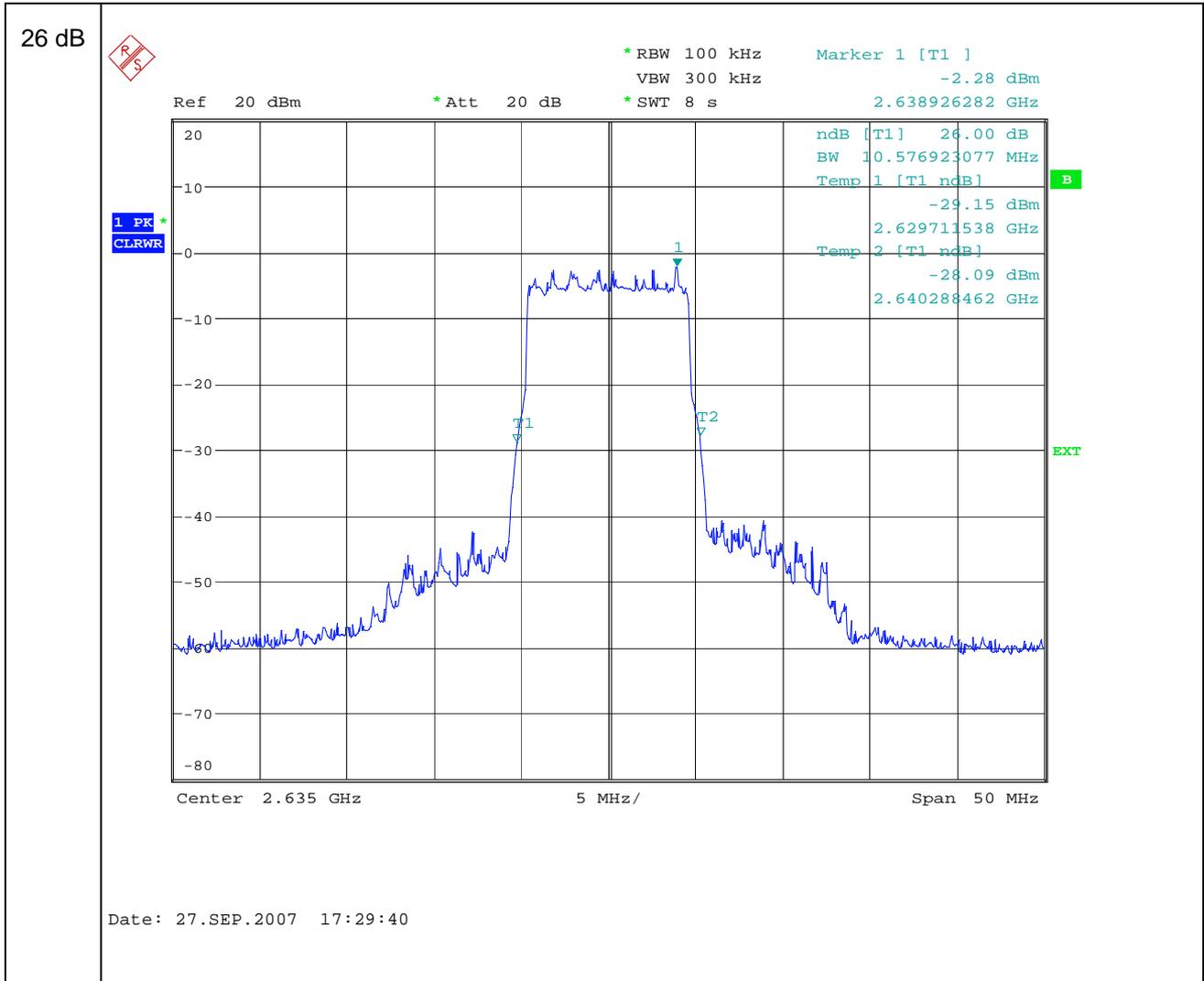
Ref 20 dBm

1 PK *
CLRWR



Center 2.635 GHz 5 MHz/ Span 50 MHz

Date: 27.SEP.2007 17:27:36



2.2.3 Test Mode of 16QAM 1/2

Channel bottom: 2535 MHz

99%

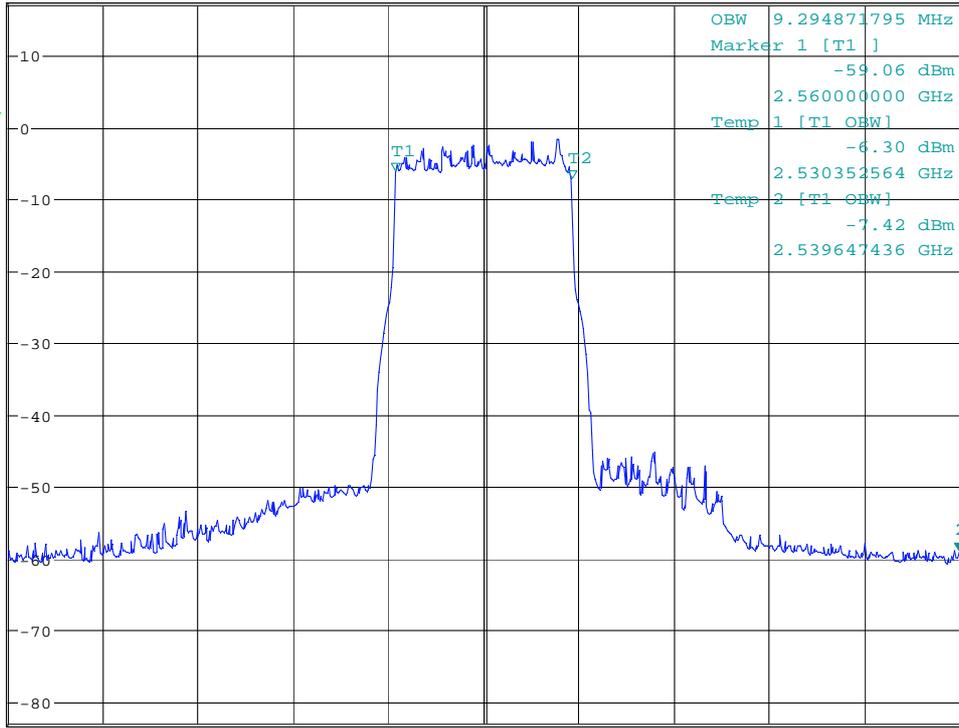


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -59.06 dBm
 *SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 14:12:12



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

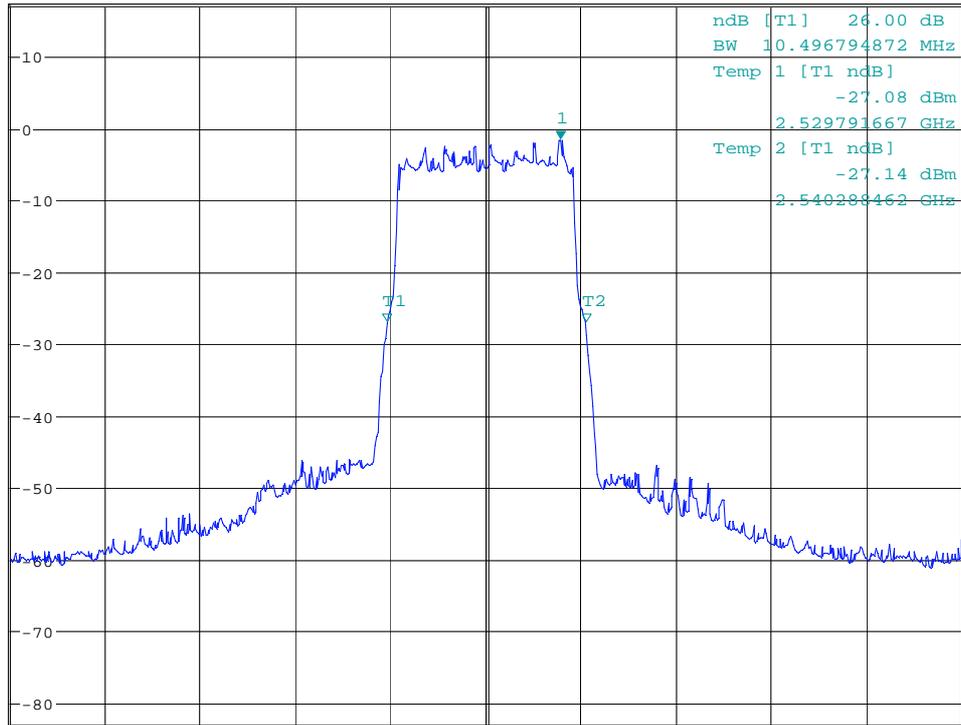


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.63 dBm
 SWT 20 ms 2.538926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:55:29

Channel middle: 2585 MHz

99%

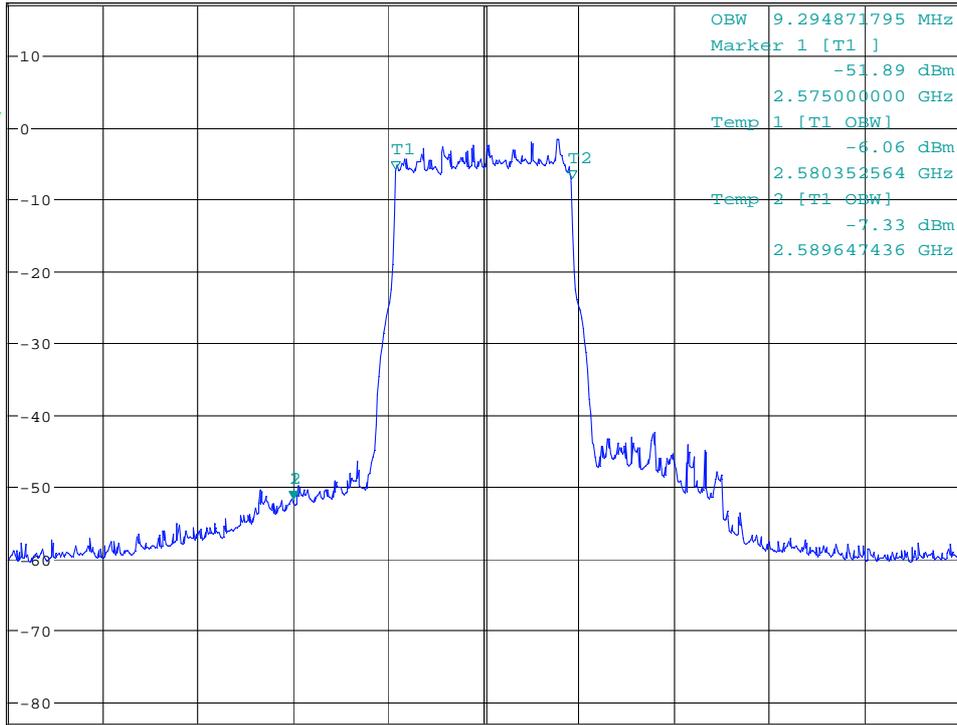


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -51.89 dBm
 *SWT 20 s 2.575000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



A
SGL

EXT

Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 20.SEP.2007 18:14:48



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

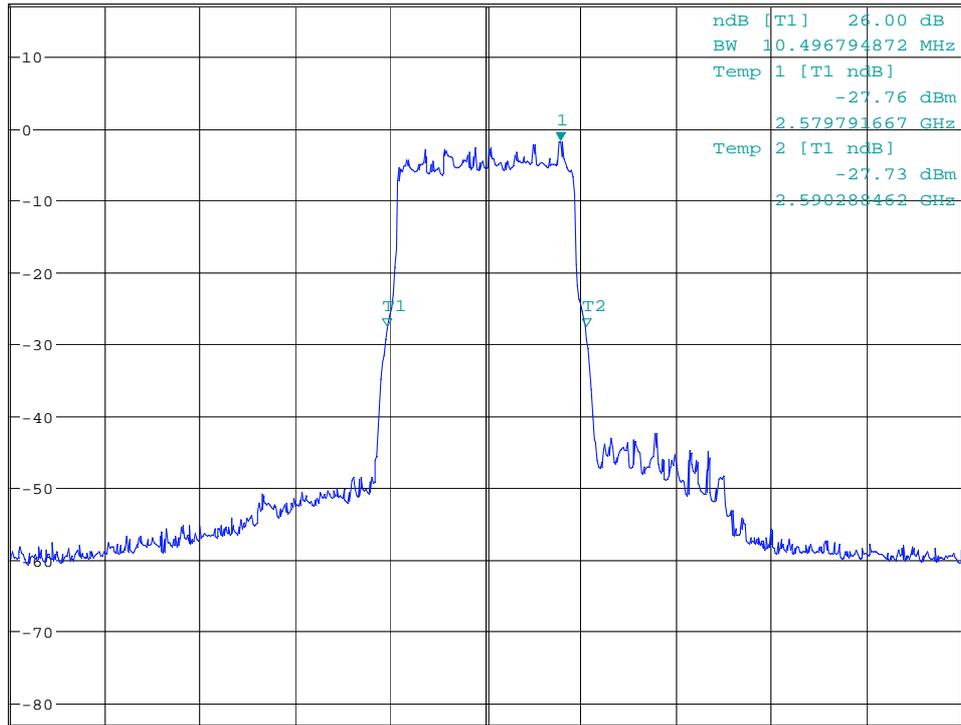


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.82 dBm
 SWT 20 ms 2.588926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:20:54

Channel top: 2635 MHz

99%

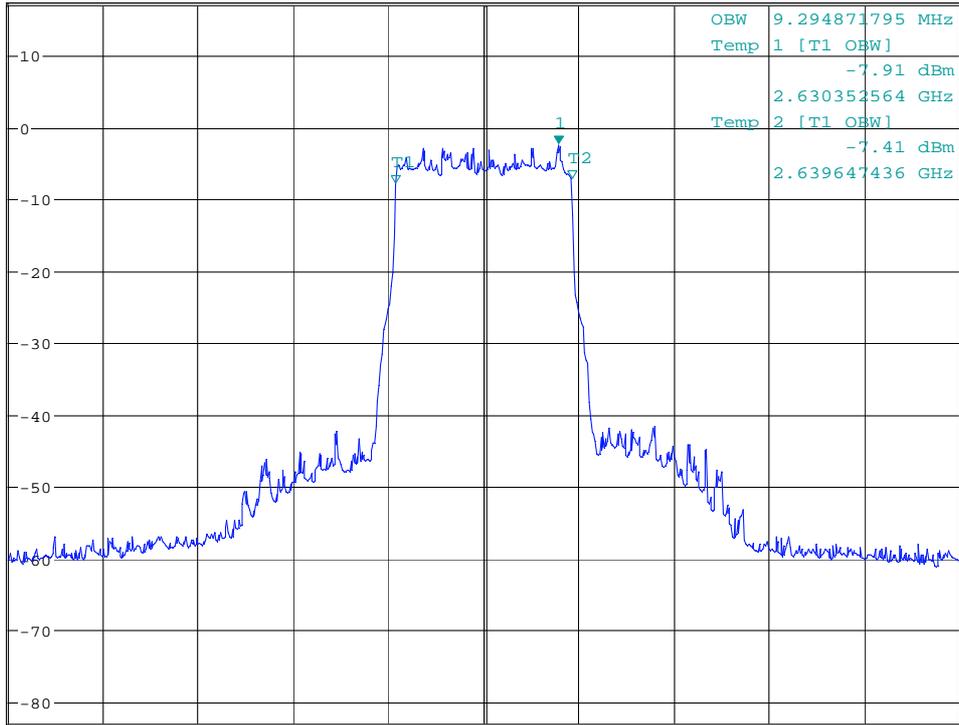


*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -2.61 dBm
SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:04:34

Channel bottom: 2535 MHz

99%

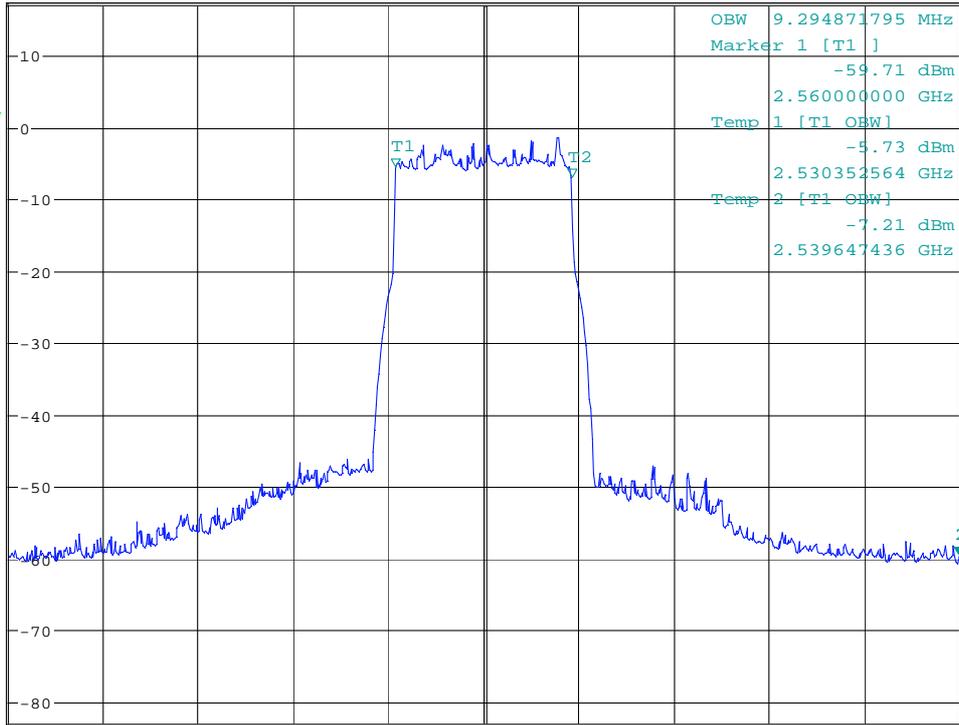


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -59.71 dBm
 *SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 14:19:28



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

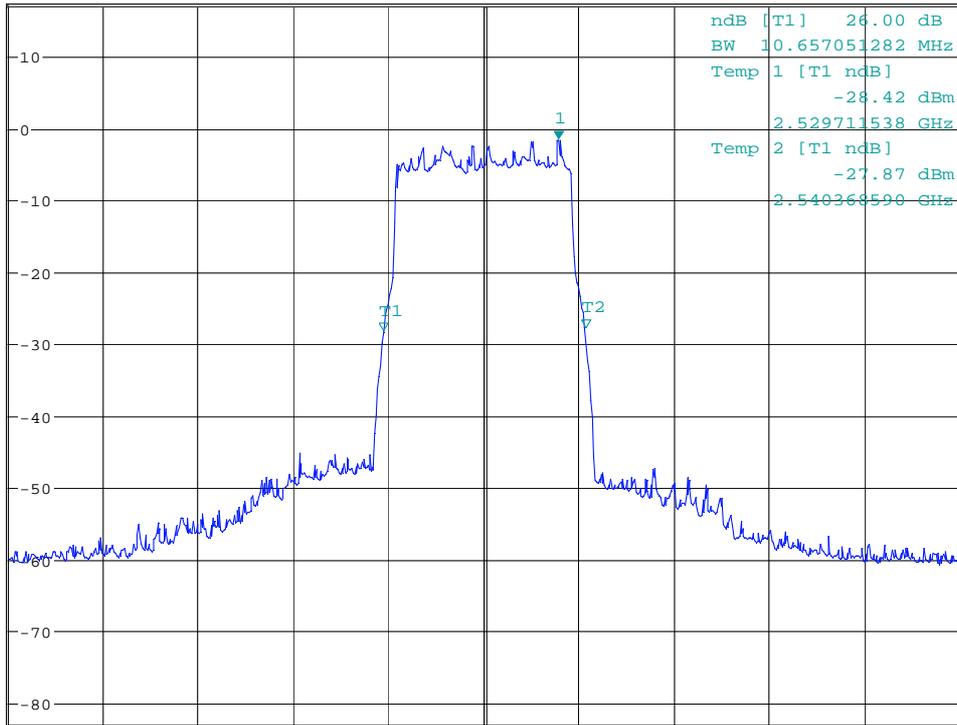


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.62 dBm
 SWT 20 ms 2.538926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:52:58

Channel middle: 2585 MHz

99%

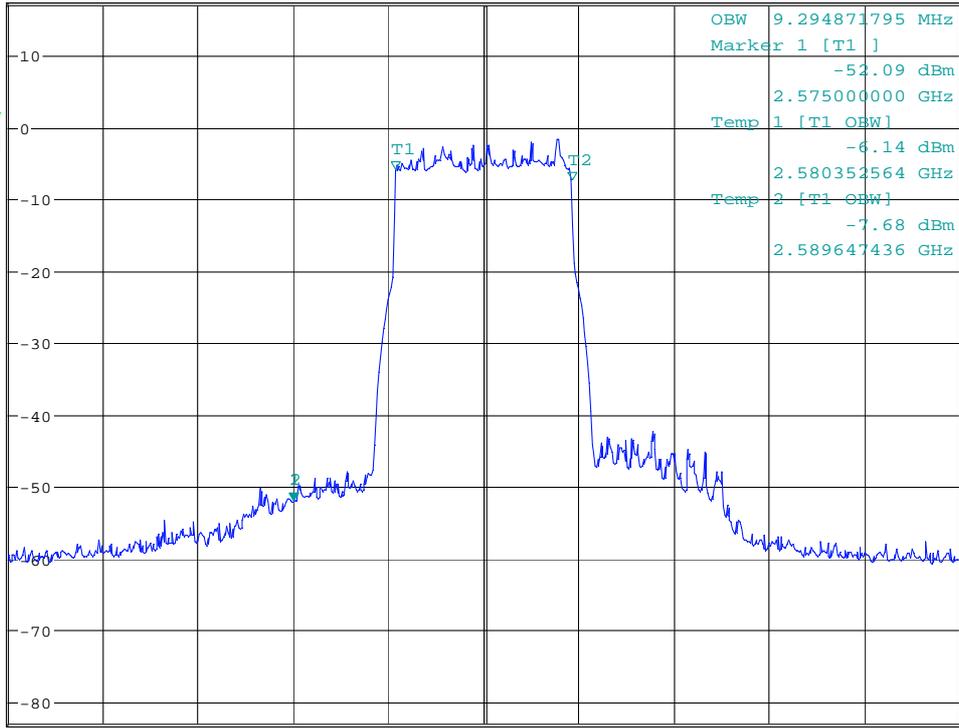


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -52.09 dBm
 *SWT 20 s 2.575000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 20.SEP.2007 18:17:40



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

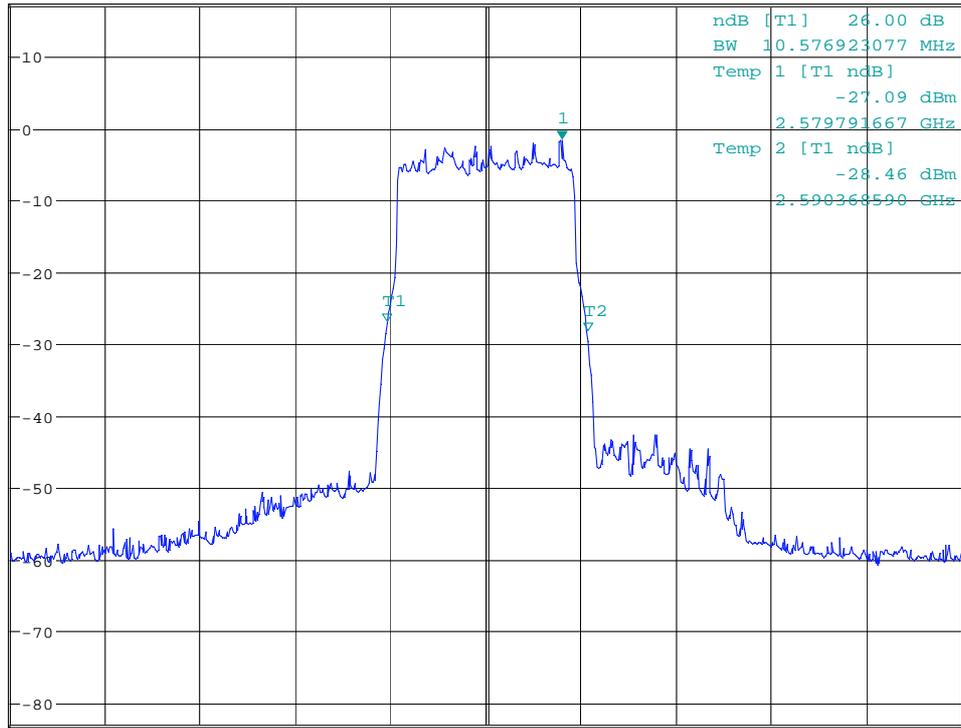


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.74 dBm
 SWT 20 ms 2.589006410 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:23:28

Channel top: 2635 MHz

99%

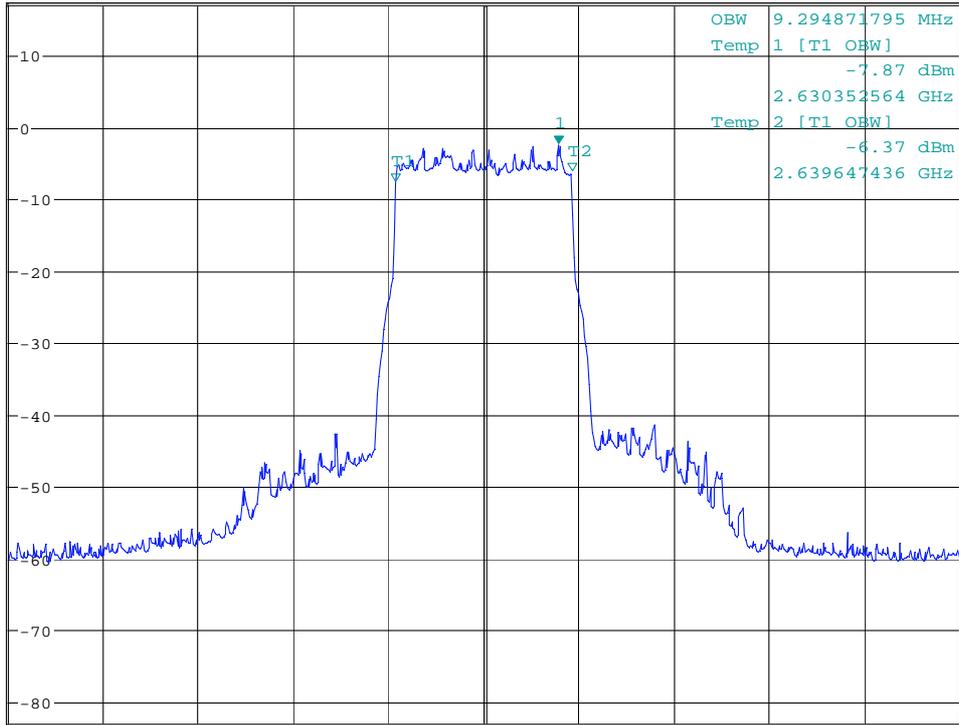


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.62 dBm
 SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:06:21

Channel bottom: 2535 MHz

99%

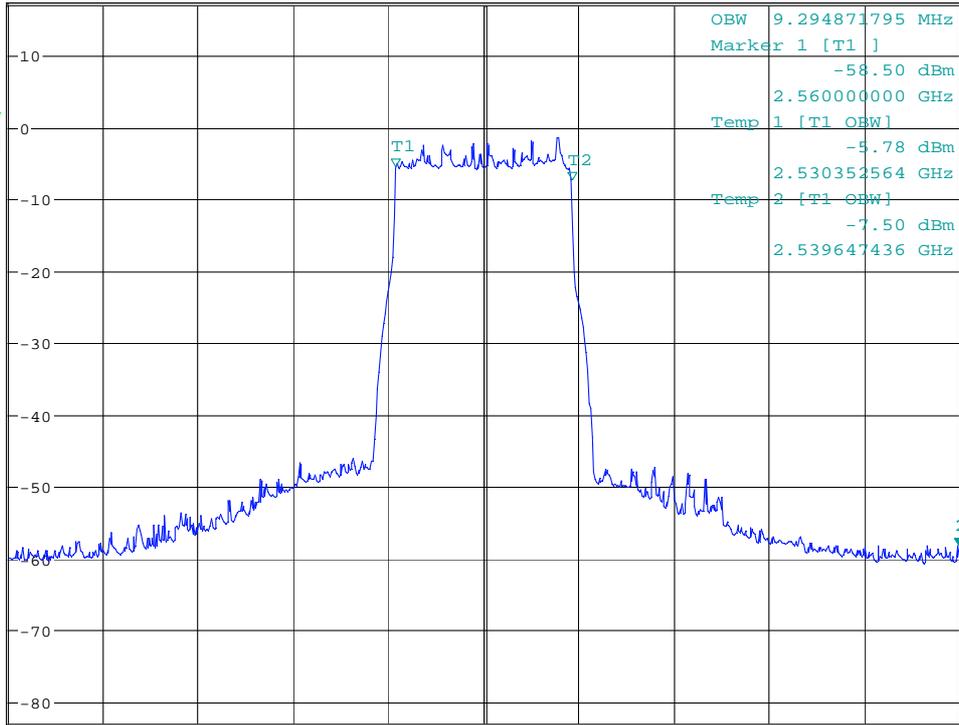


*RBW 100 kHz Marker 2 [T1]
*VBW 300 kHz -58.50 dBm
*SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



A

SGL

EXT

Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 14:21:05



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

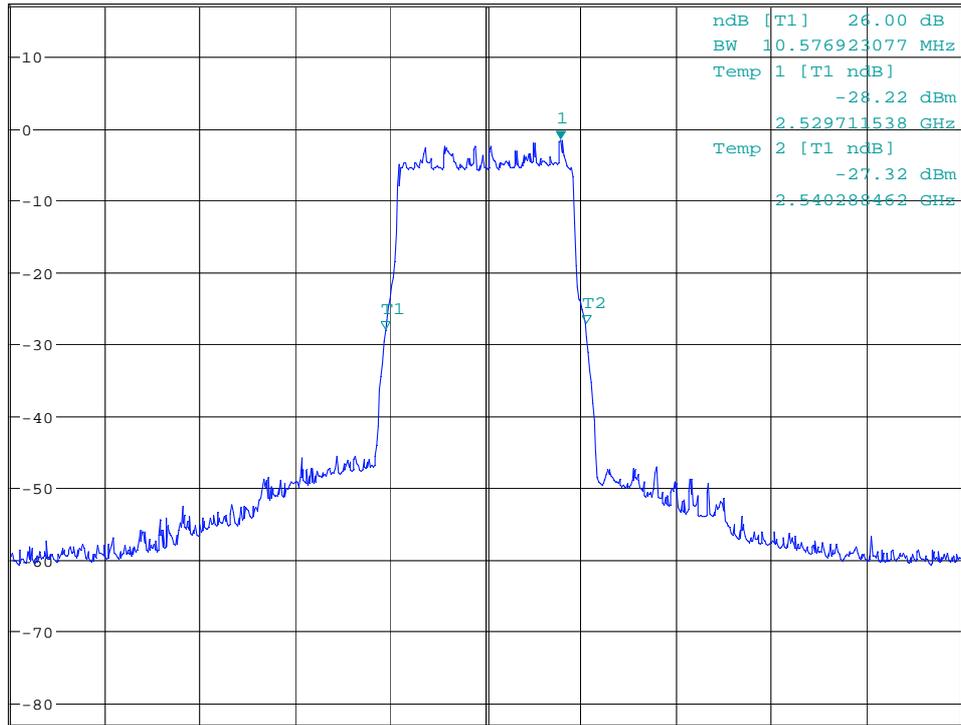


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.65 dBm
 SWT 20 ms 2.538926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:49:12

Channel middle: 2585 MHz

99%

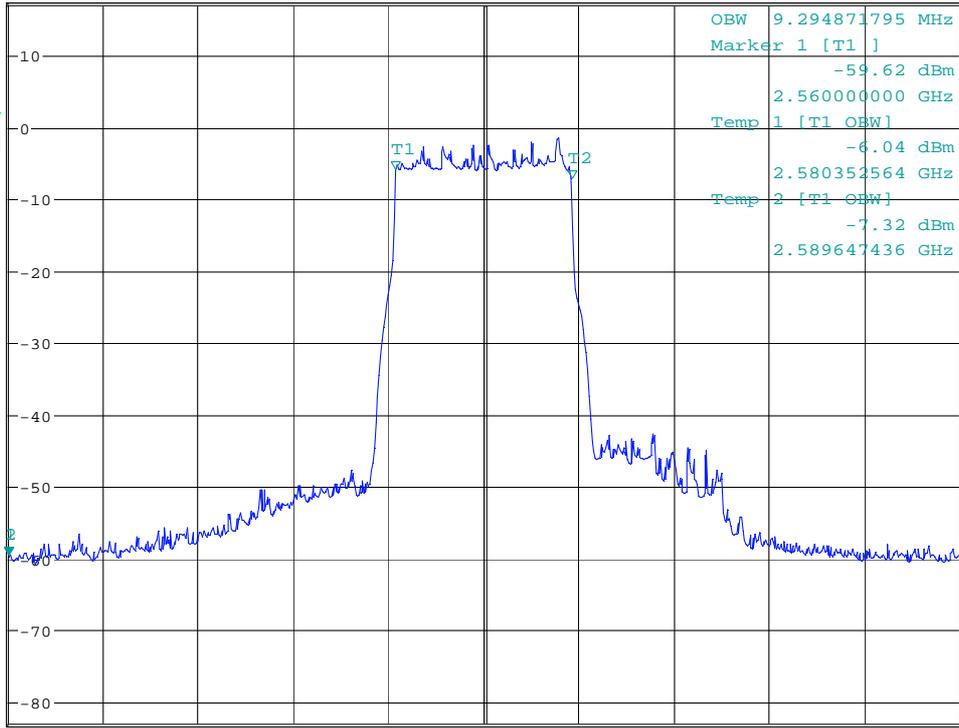


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -59.62 dBm
 *SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



A
SGL

EXT

Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 20.SEP.2007 18:23:42



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

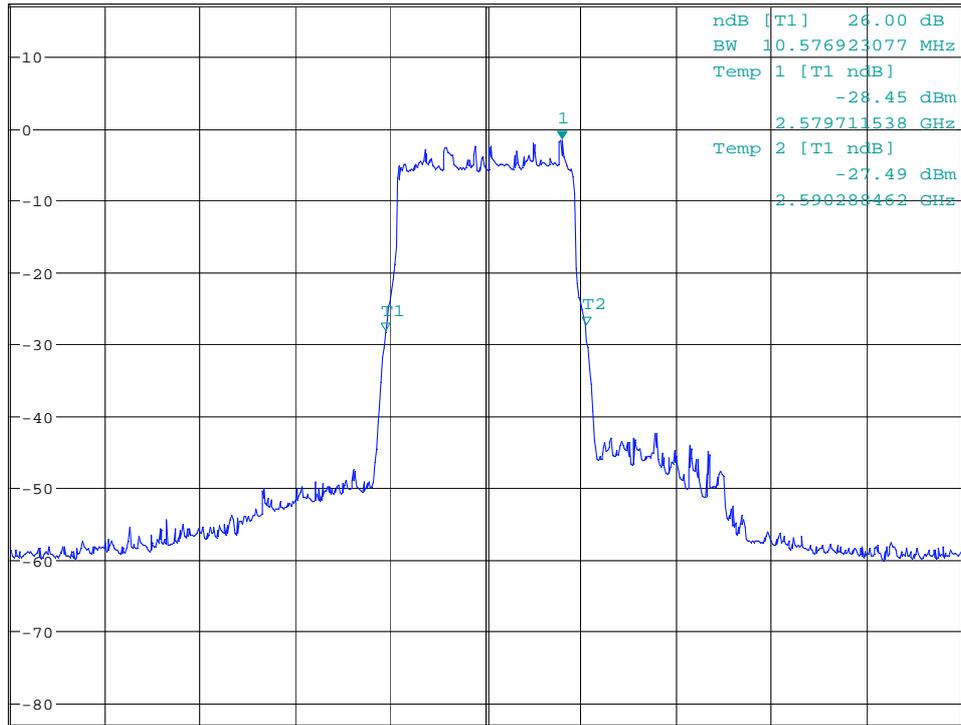


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.72 dBm
 SWT 20 ms 2.589006410 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:29:05

Channel top: 2635 MHz

99%

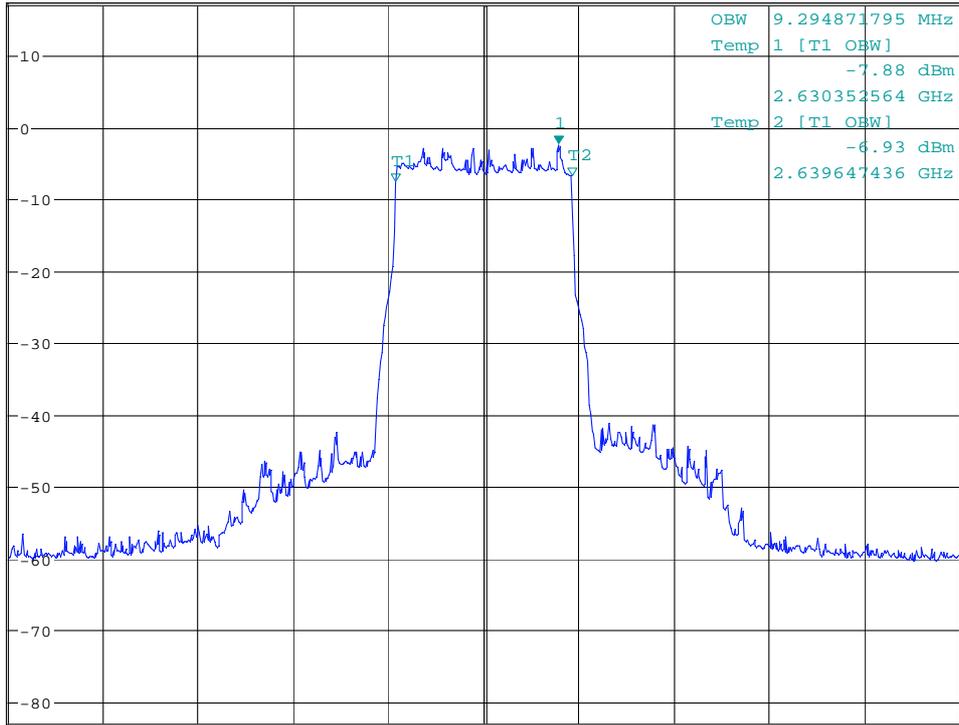


*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -2.61 dBm
SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH

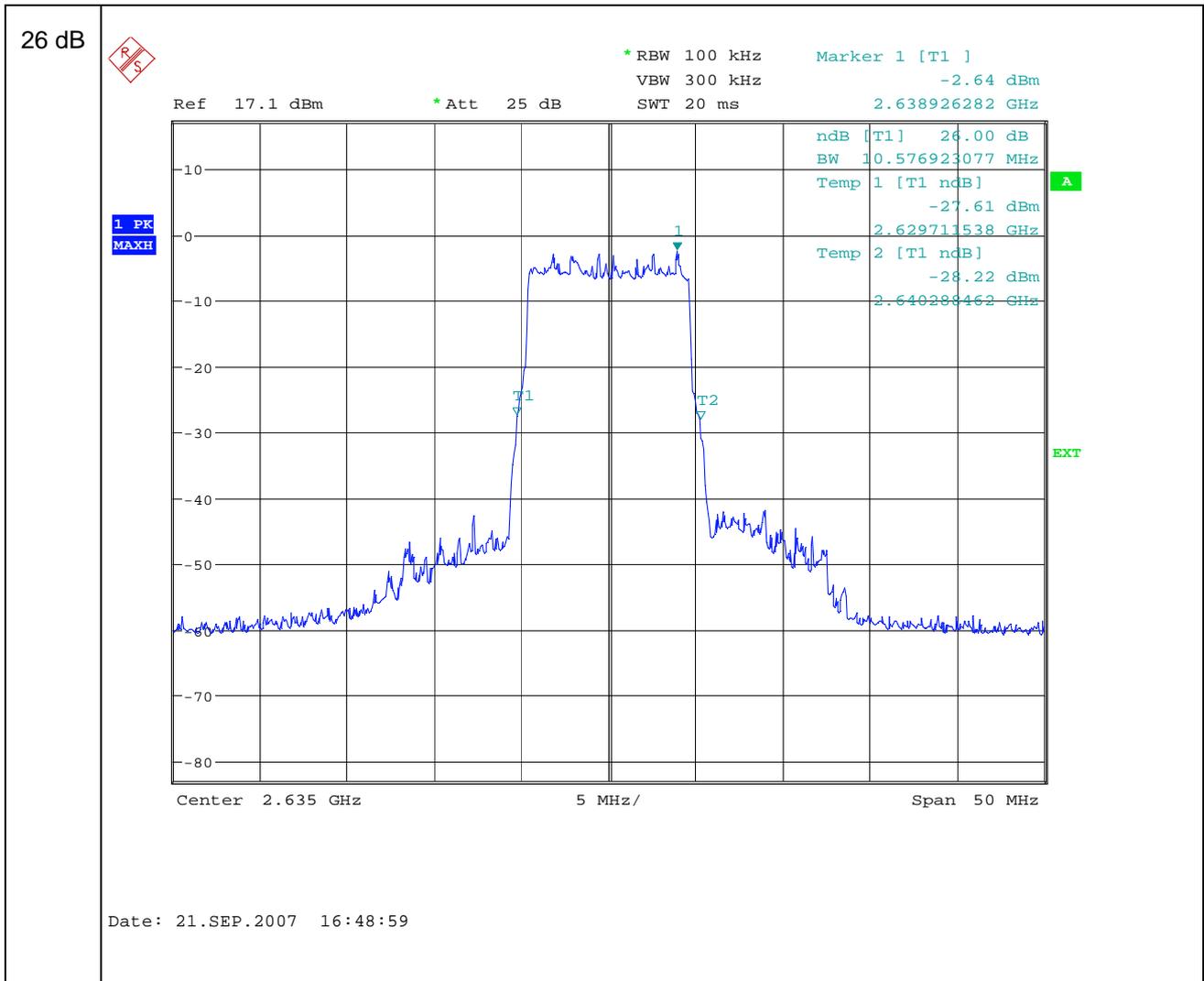


Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:08:32



2.2.6 Test Mode of 64QAM 2/3

Channel bottom: 2535 MHz

99%

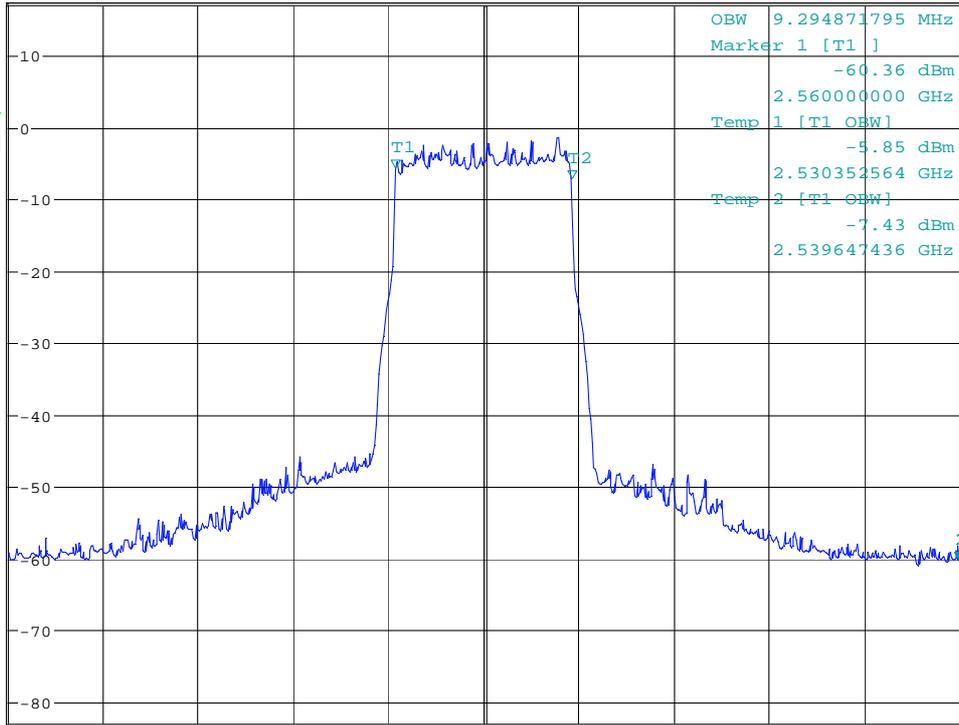


*RBW 100 kHz Marker 2 [T1]
*VBW 300 kHz -60.36 dBm
*SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 14:22:44



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

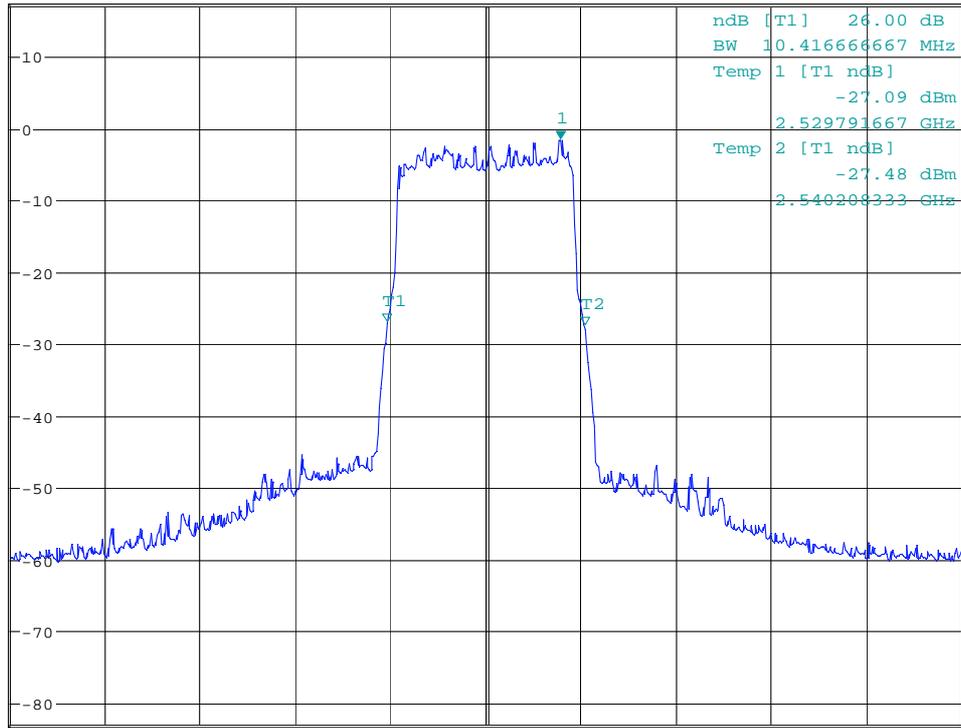


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.70 dBm
 SWT 20 ms 2.538926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:43:54



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

Channel middle: 2585 MHz

99%

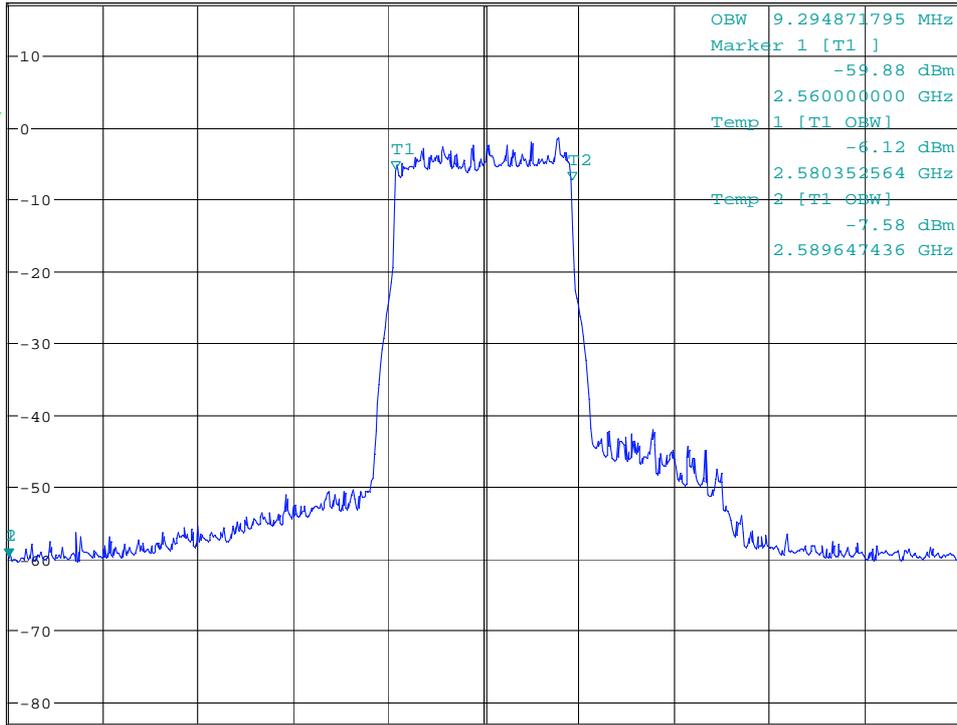


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -59.88 dBm
 *SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



A

SGL

EXT

Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 11:43:45



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

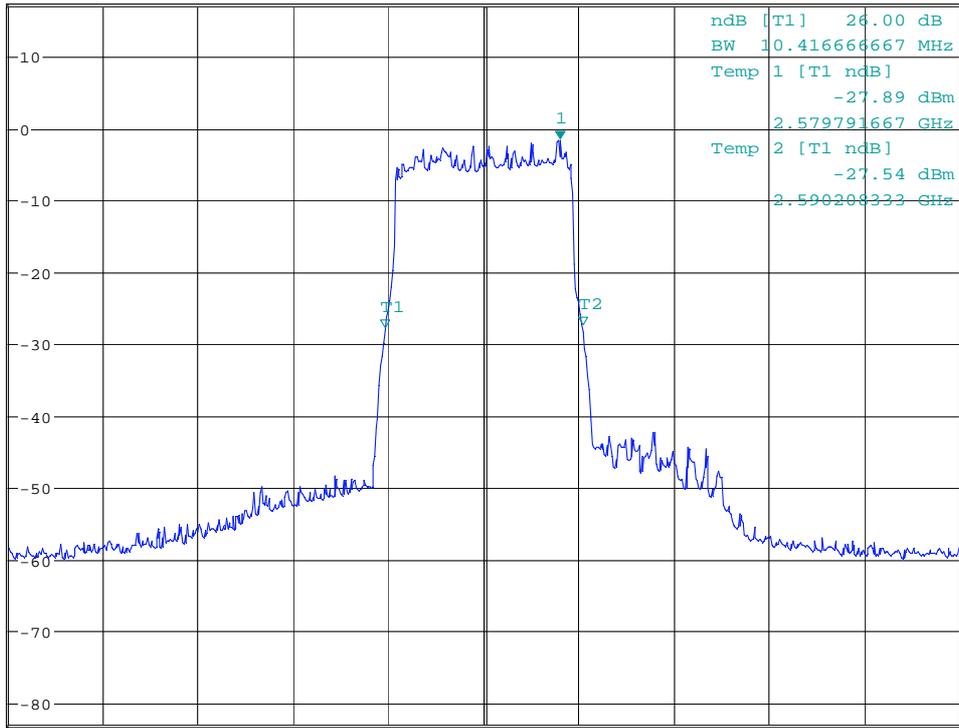


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.75 dBm
 SWT 20 ms 2.589006410 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:34:27

Channel top: 2635 MHz

99%

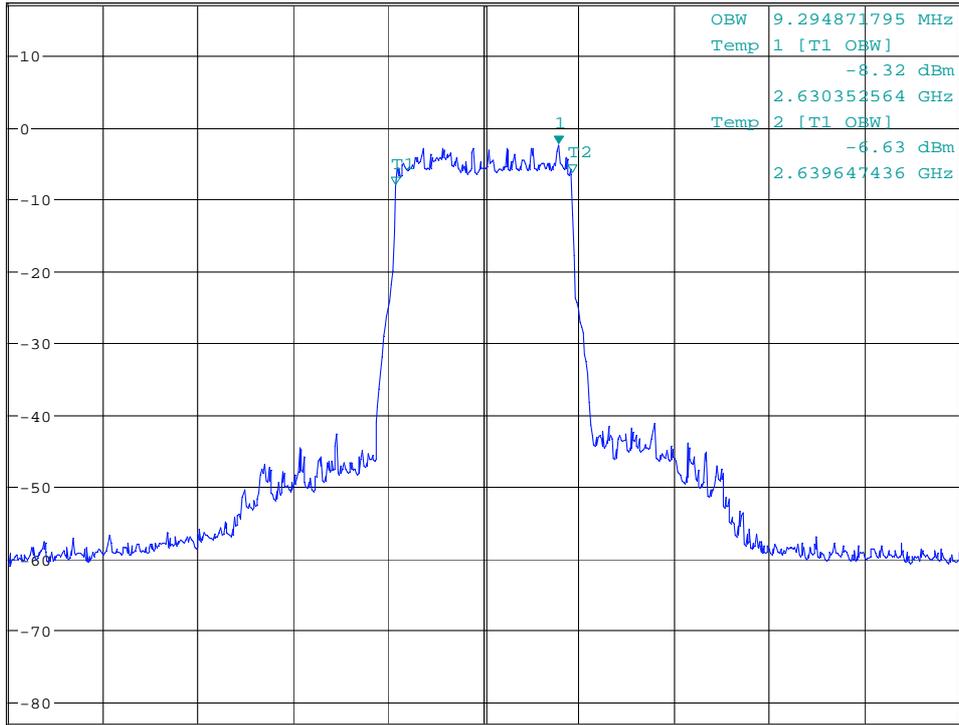


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.63 dBm
 SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH

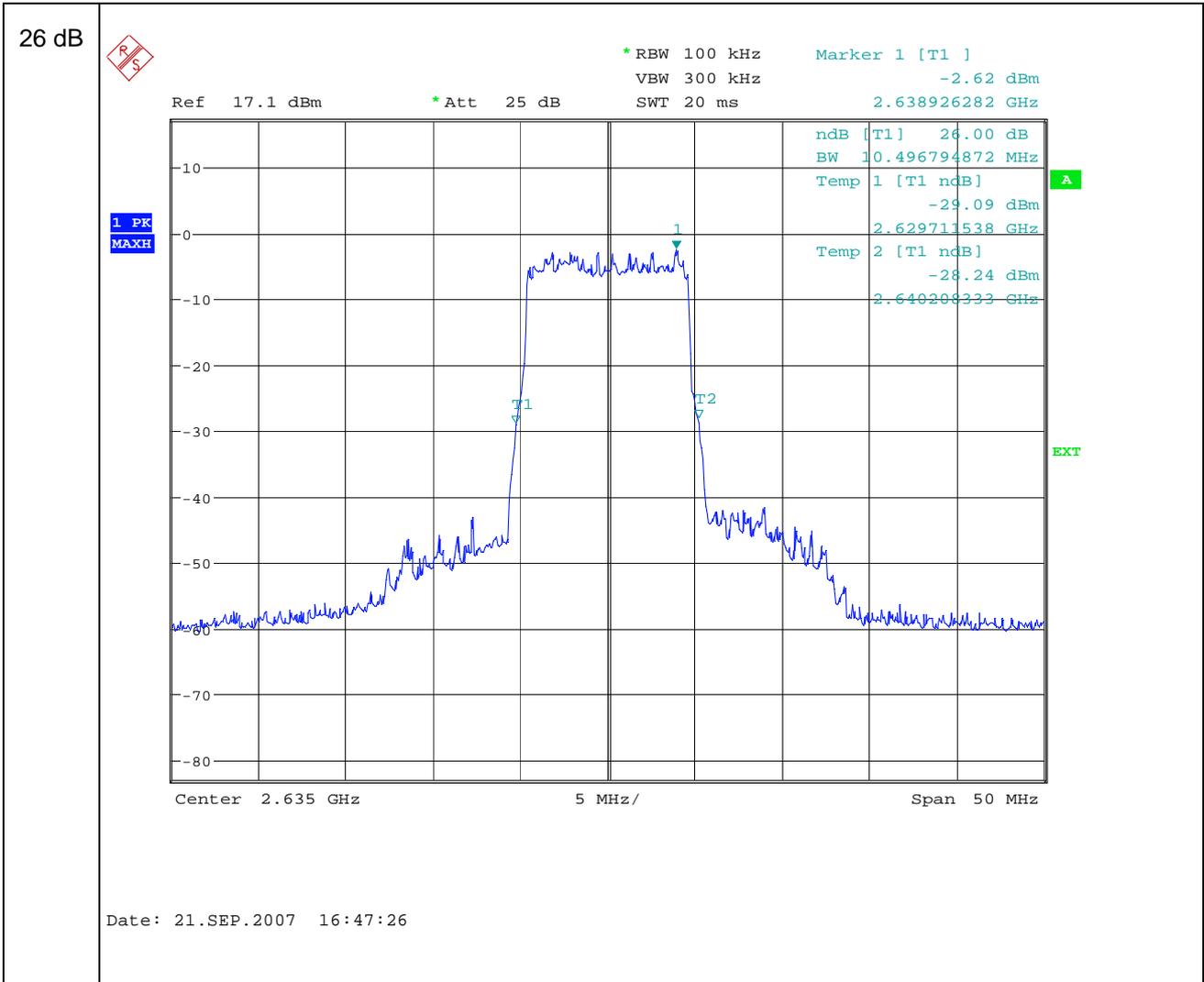


Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:10:45



2.2.7 Test Mode of 64QAM 3/4

Channel bottom: 2535 MHz

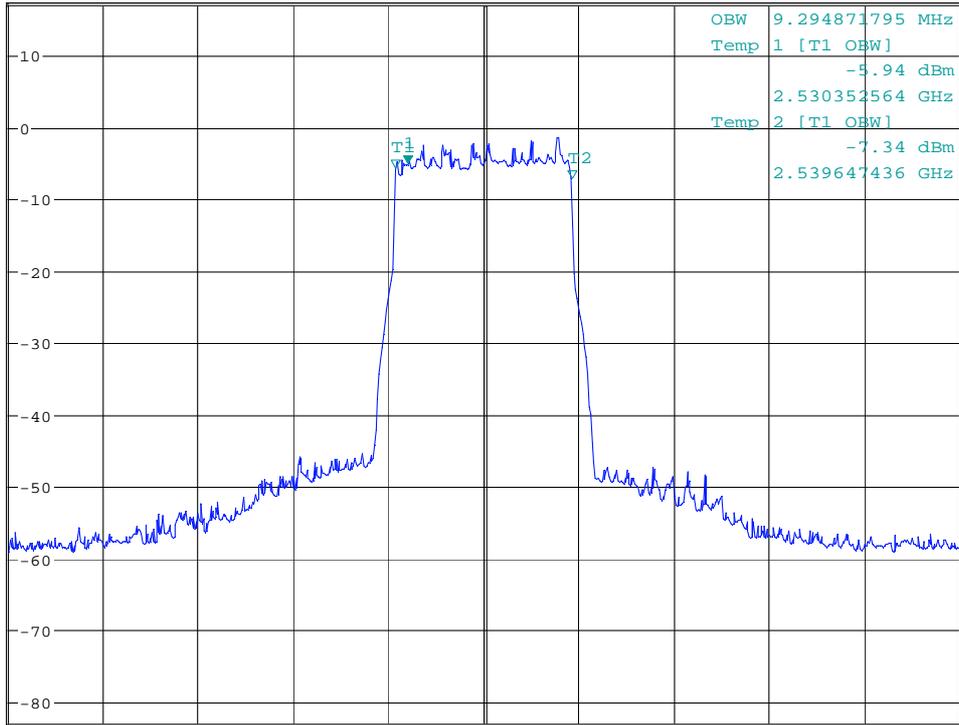
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -5.32 dBm
 *Att 25 dB *SWT 20 s 2.530993590 GHz

Ref 17.1 dBm

1 PK
MAXH



Center 2.535 GHz 5 MHz/ Span 50 MHz

Date: 21.SEP.2007 15:29:48



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

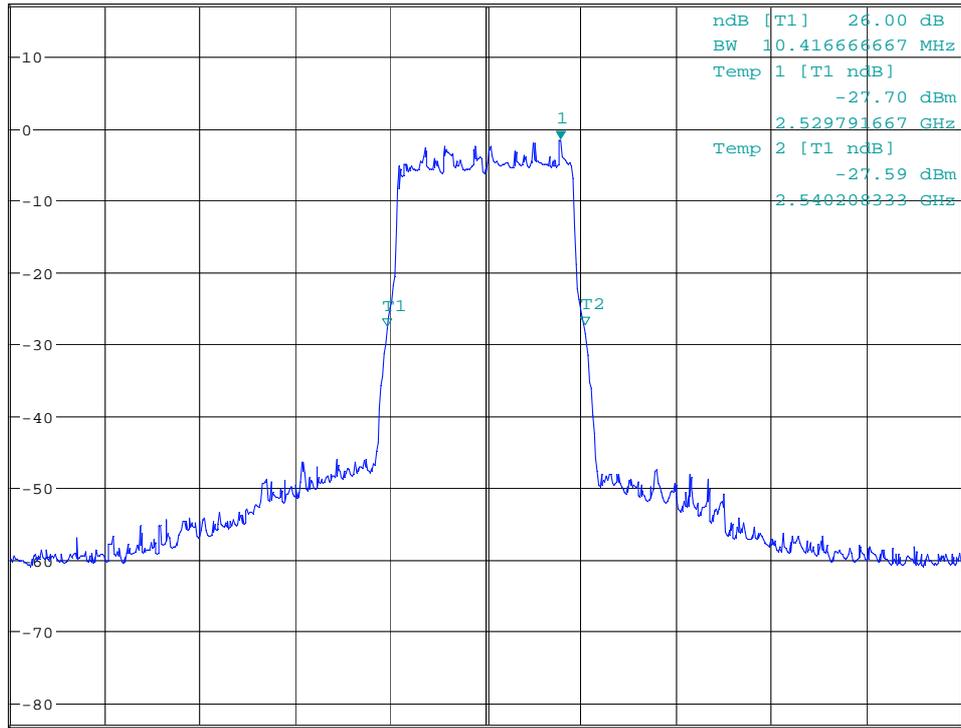


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.66 dBm
 SWT 20 ms 2.538926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.535 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 15:46:01

Channel middle: 2585 MHz

99%

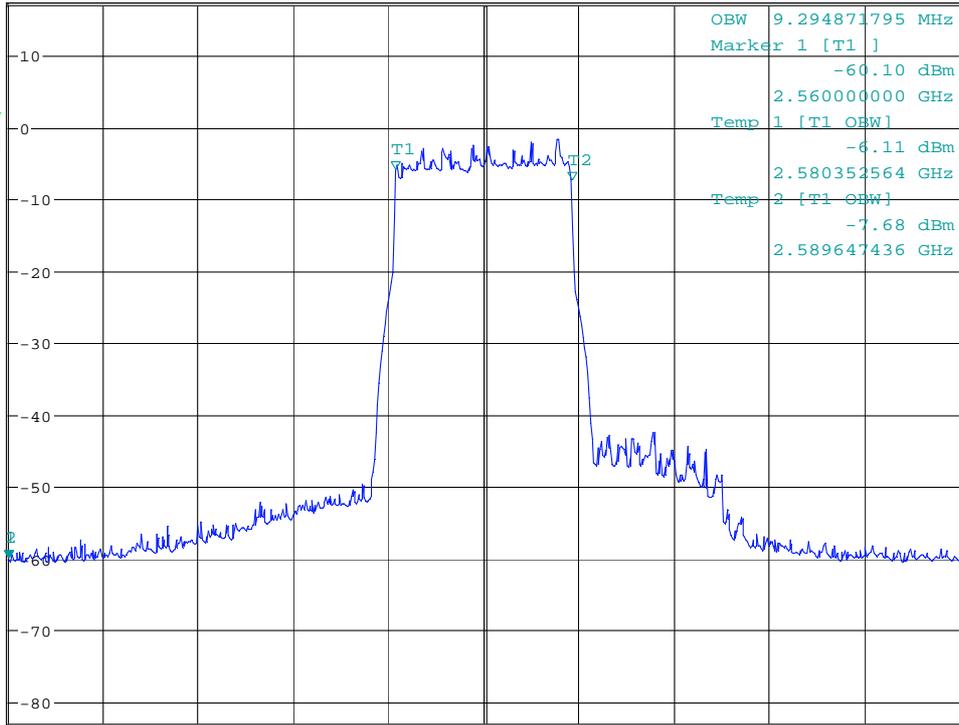


*RBW 100 kHz Marker 2 [T1]
 *VBW 300 kHz -60.10 dBm
 *SWT 20 s 2.560000000 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK *
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 11:46:47



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

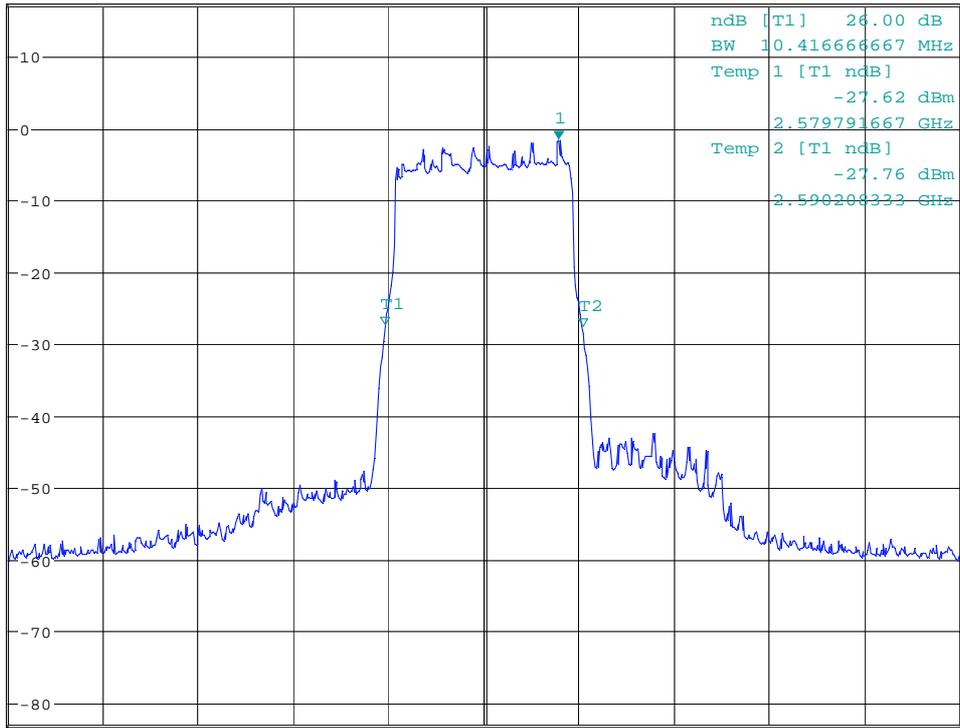
M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB



1 PK
MAXH

*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -1.77 dBm
 Ref 17.1 dBm *Att 25 dB SWT 20 ms 2.588926282 GHz



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 21.SEP.2007 16:39:26

Channel top: 2635 MHz

99%

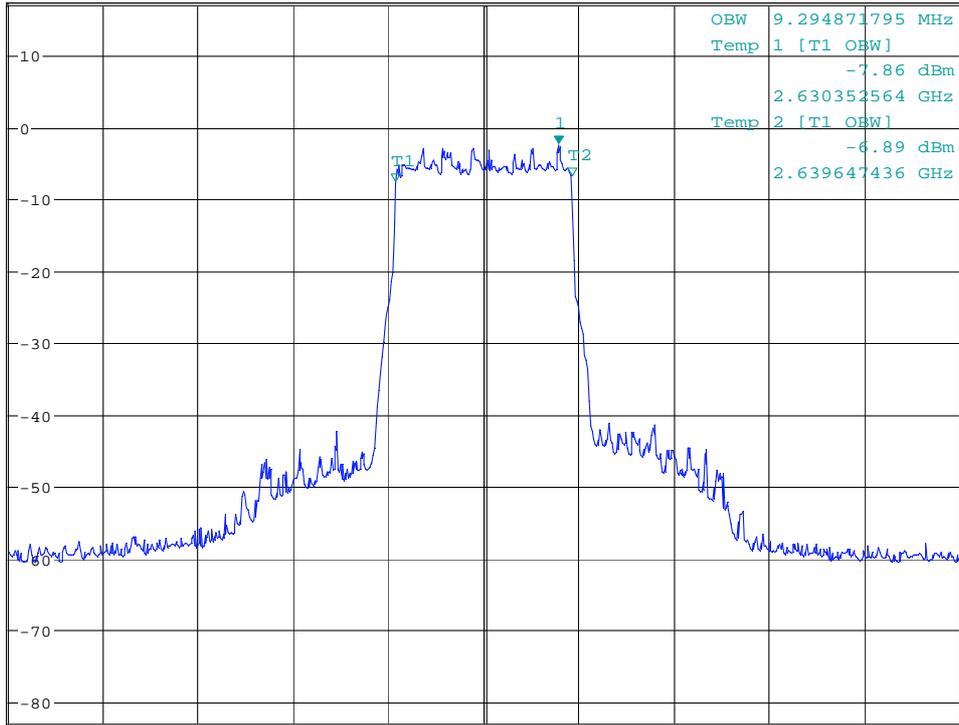


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.64 dBm
 SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 21.SEP.2007 17:12:57



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

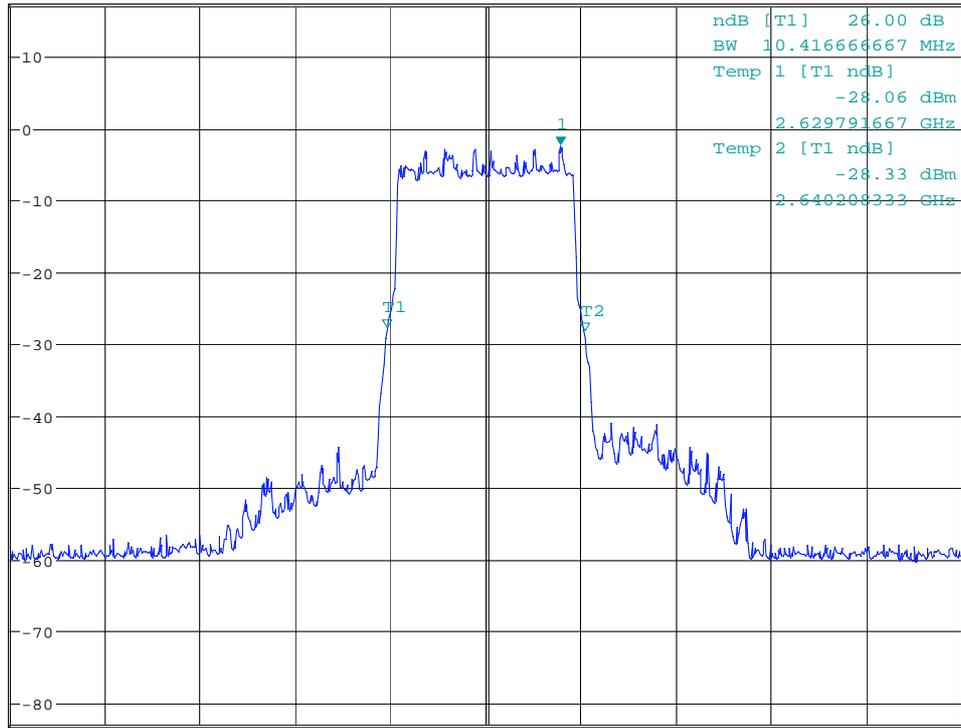


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.62 dBm
 SWT 20 ms 2.638926282 GHz

Ref 17.1 dBm

*Att 25 dB

1 PK
MAXH



Center 2.635 GHz

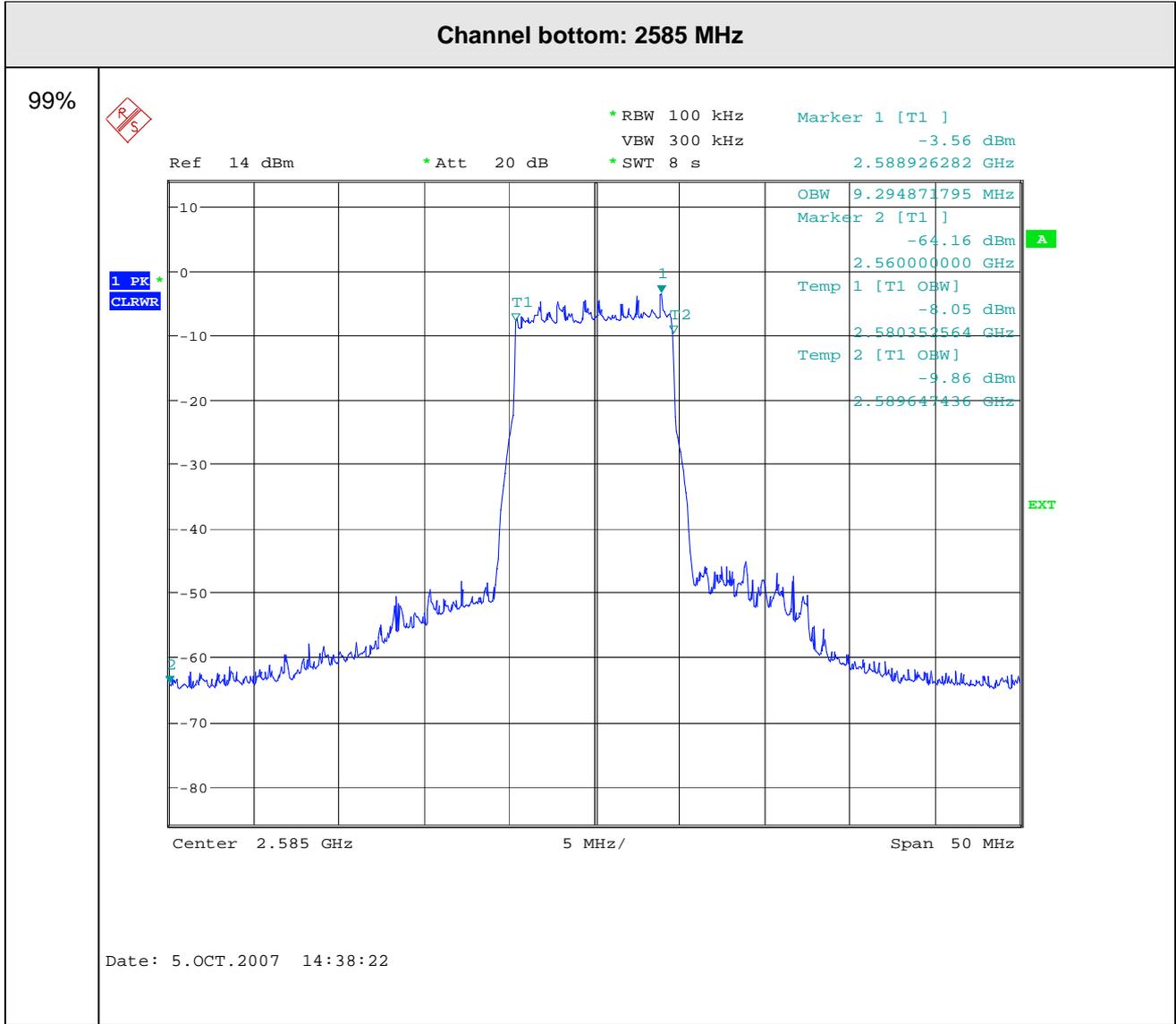
5 MHz/

Span 50 MHz

Date: 21.SEP.2007 16:45:29

2.3 2.5 GHz high block

2.3.1 Test Mode of QPSK 1/2





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

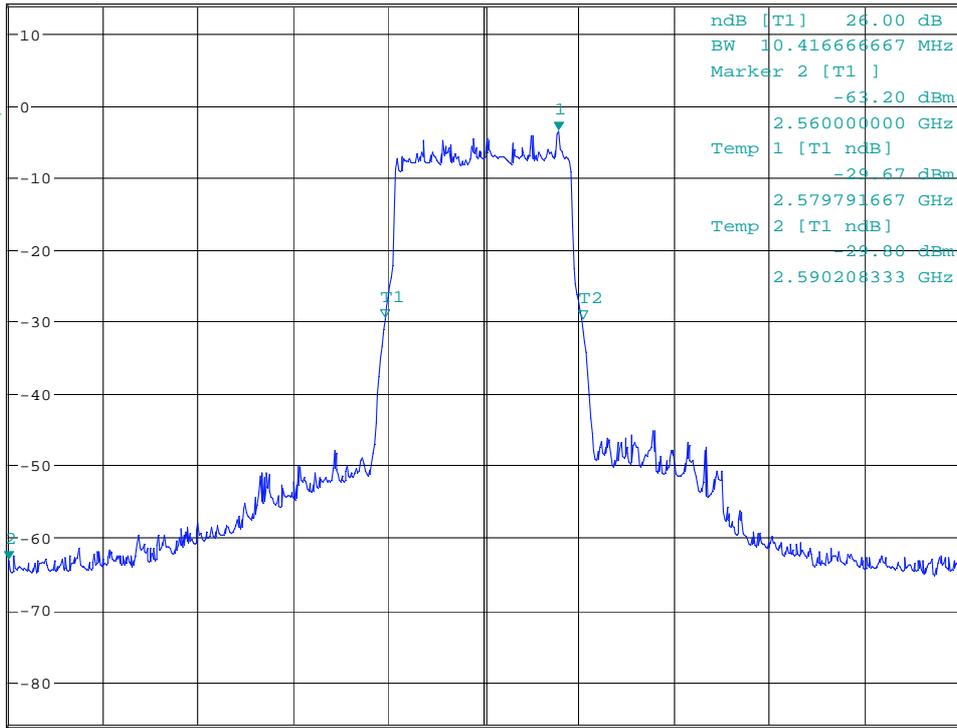


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.64 dBm
 *SWT 8 s 2.588926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:40:23



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

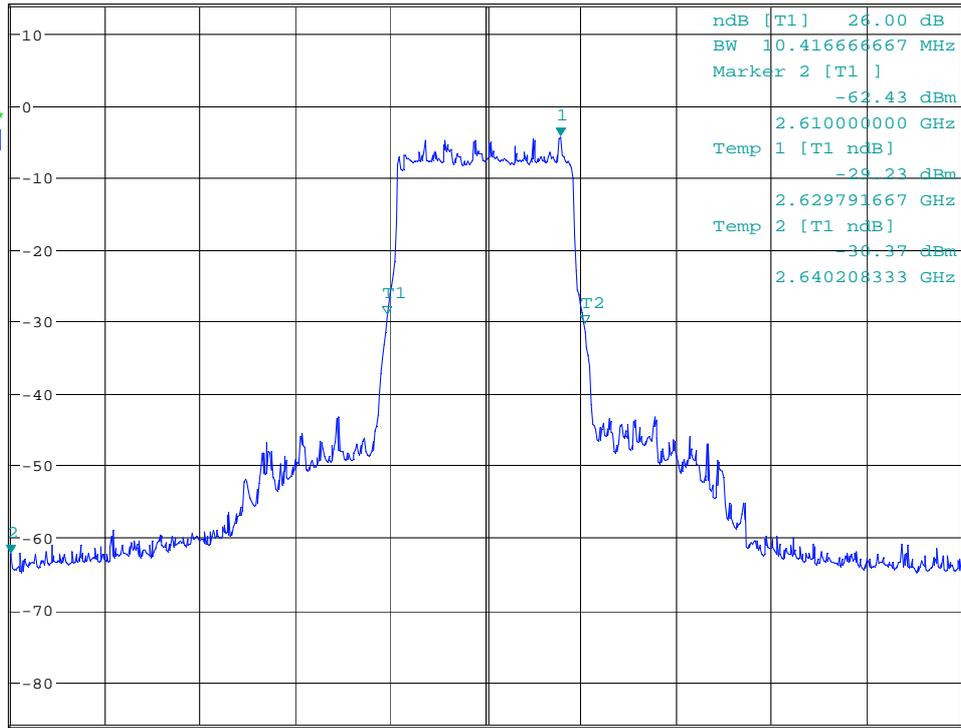


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.36 dBm
 *SWT 8 s 2.638926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK *
CLRWR



A

EXT

Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:44:54

Channel top: 2685 MHz

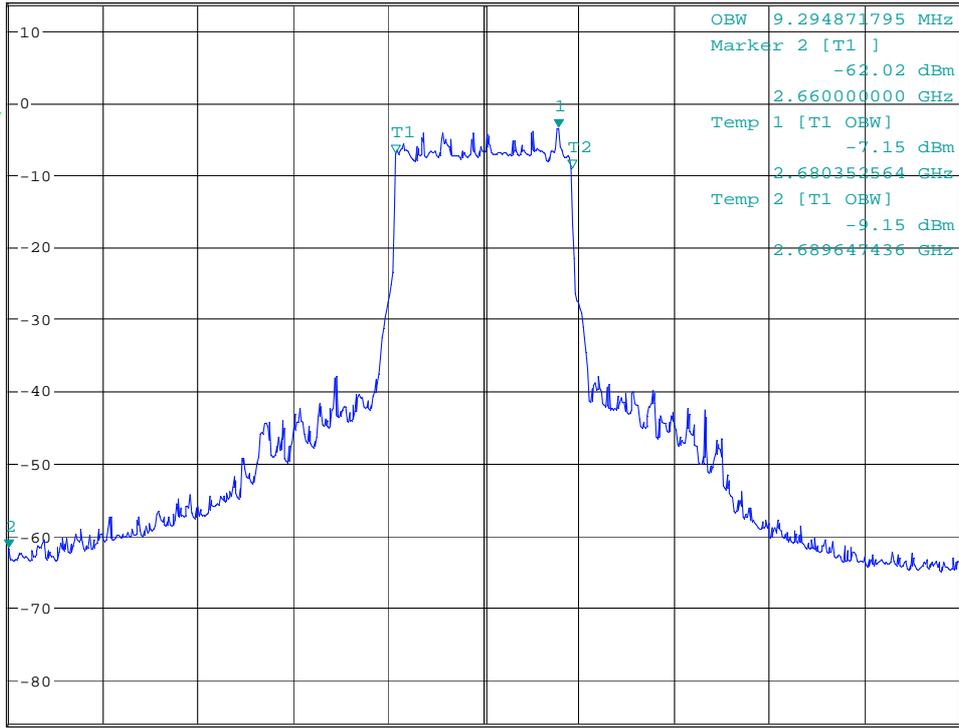
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.43 dBm
 *Att 20 dB *SWT 8 s 2.688926282 GHz

Ref 13.8 dBm

1 PK *
 CLRWR

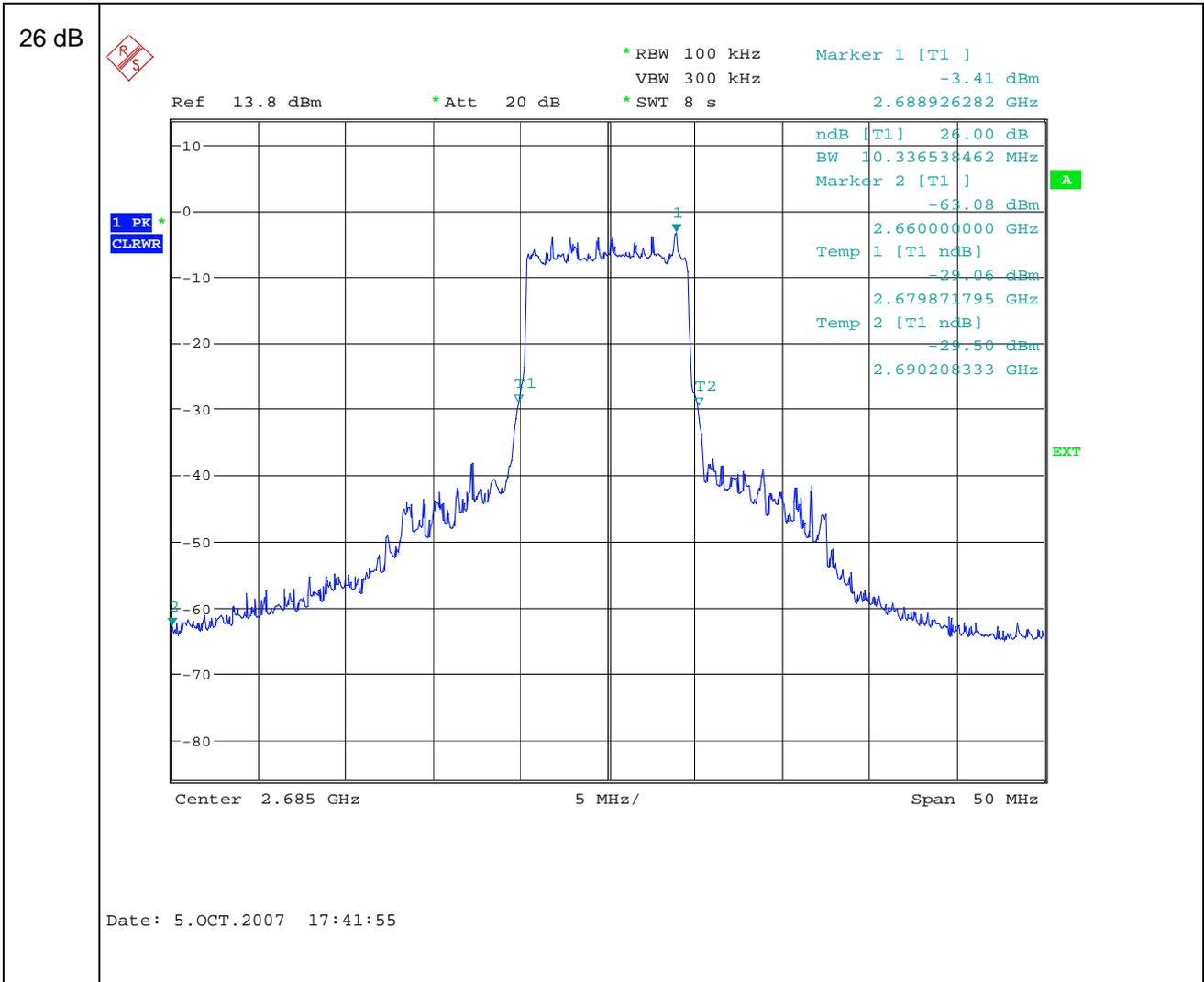


A

EXT

Center 2.685 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 17:40:19



2.3.2 Test Mode of QPSK3/4

Channel bottom: 2585 MHz

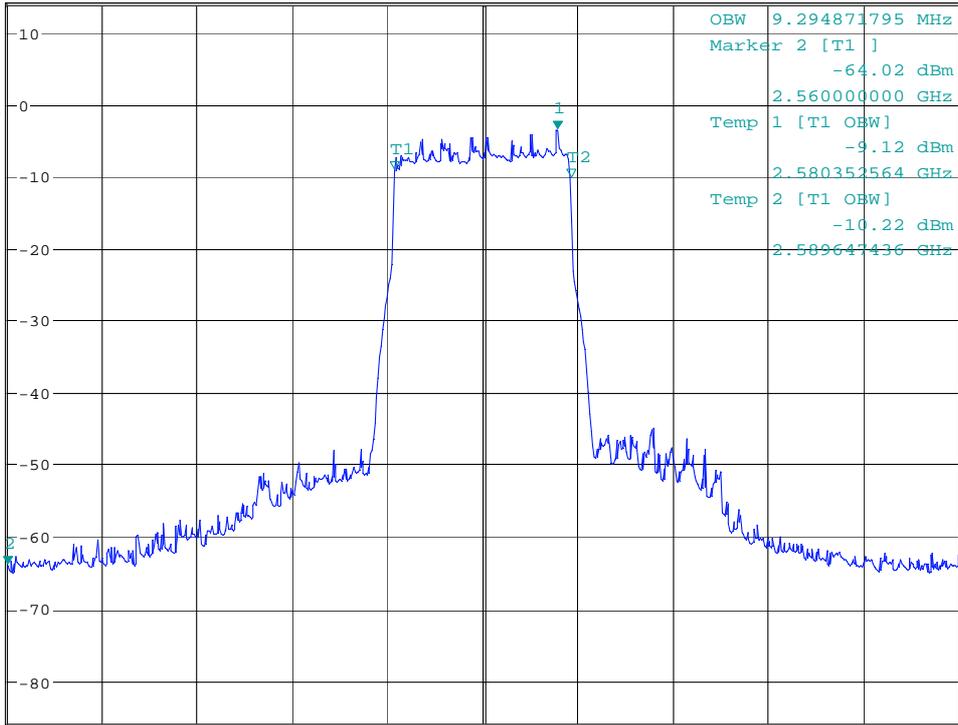
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.55 dBm
*Att 20 dB *SWT 8 s 2.588926282 GHz

Ref 14 dBm

1 PK *
CLRWR



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:38:32



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

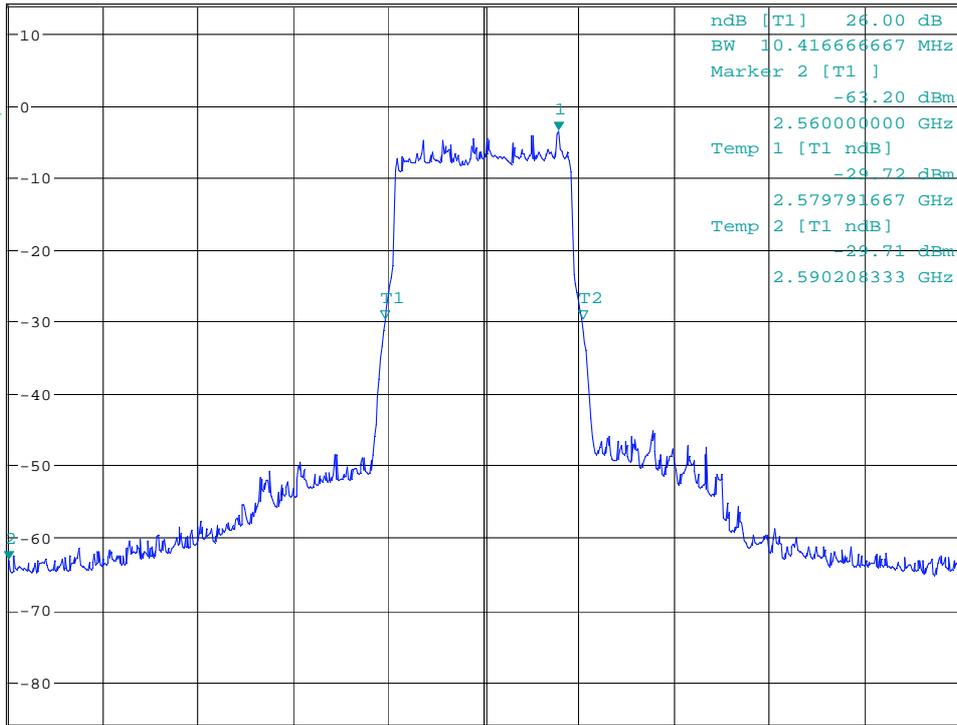


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.65 dBm
 *SWT 8 s 2.588926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK *
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:40:30

Channel middle: 2635 MHz

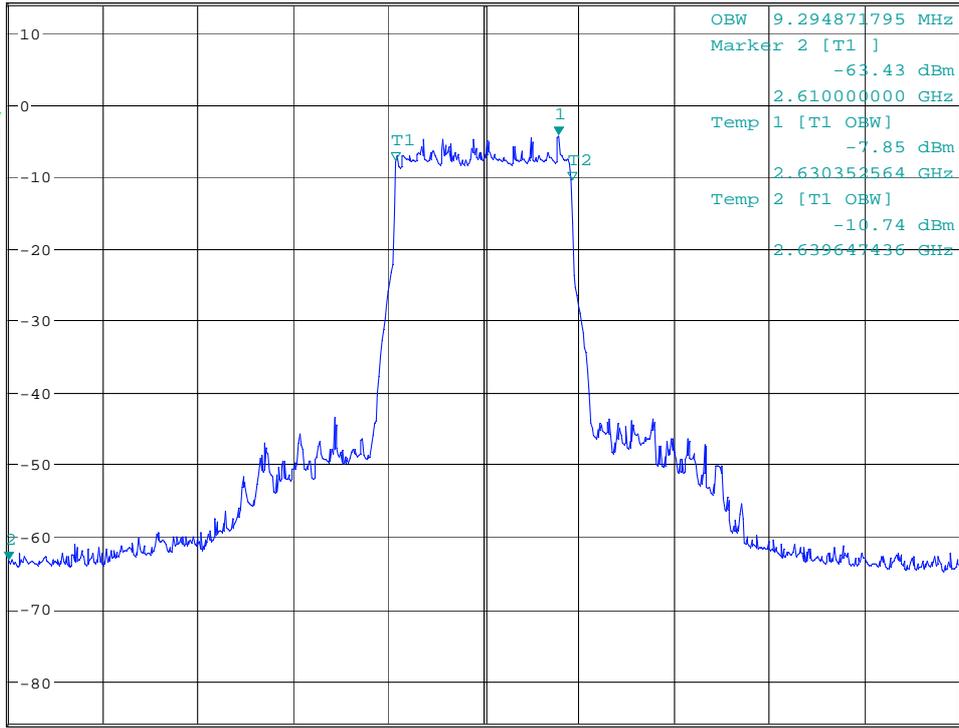
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -4.40 dBm
*Att 20 dB *SWT 8 s 2.638926282 GHz

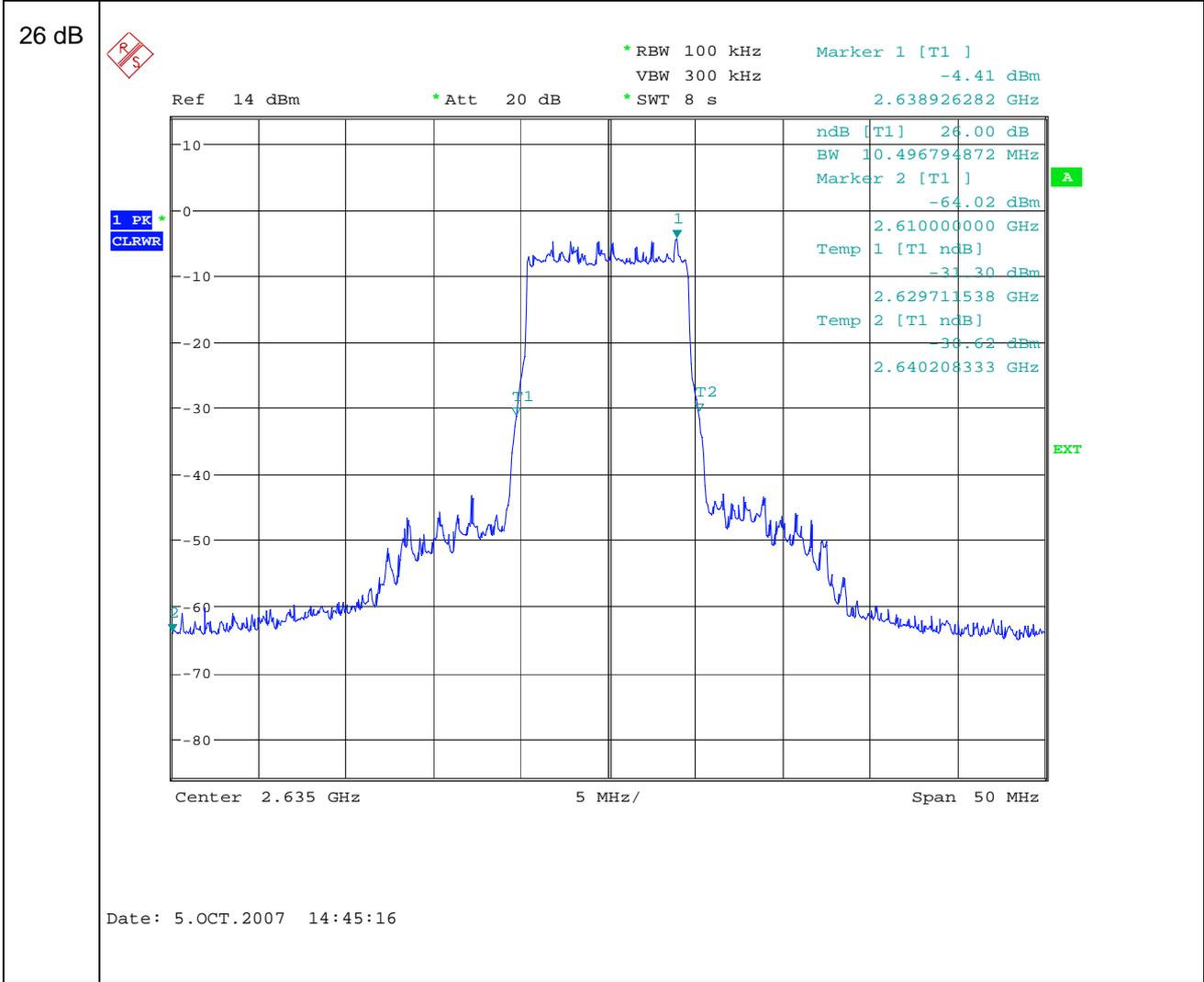
Ref 14 dBm

1 PK *
CLRWR



Center 2.635 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:43:08



Channel top: 2685 MHz

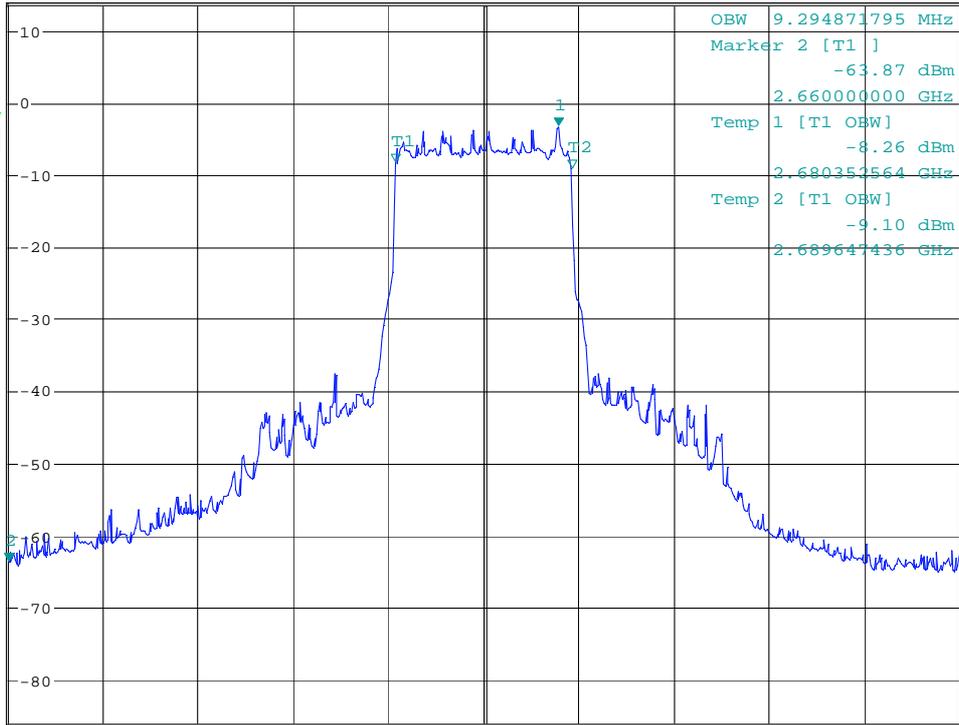
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.25 dBm
*Att 20 dB *SWT 8 s 2.688926282 GHz

Ref 13.8 dBm

1 PK *
CLRWR

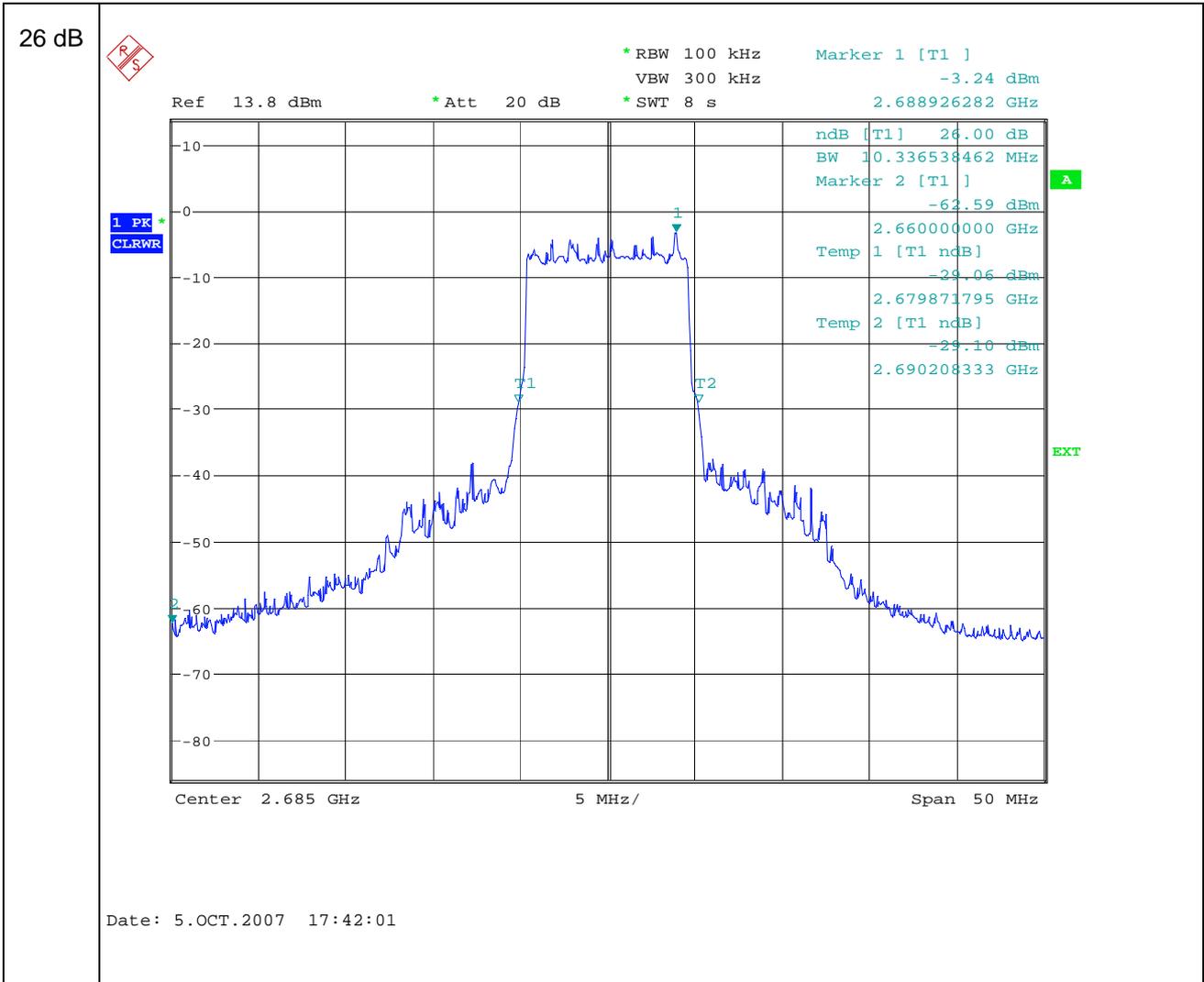


Center 2.685 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 17:40:27



2.3.3 Test Mode of 16QAM 1/2

Channel bottom: 2585 MHz

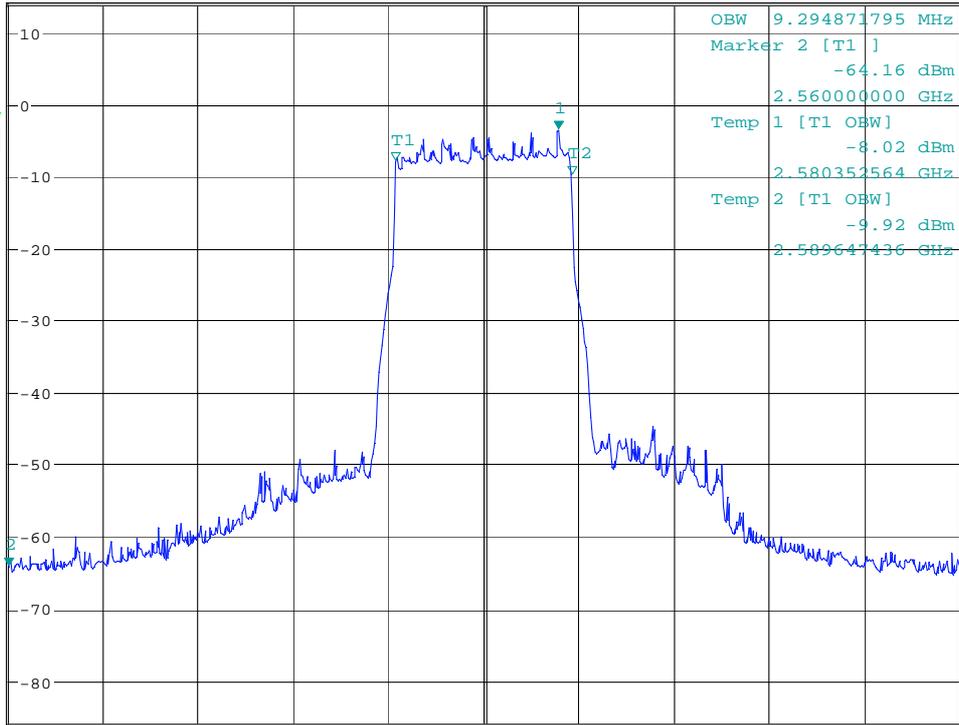
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.57 dBm
 *Att 20 dB 2.588926282 GHz
 *SWT 8 s

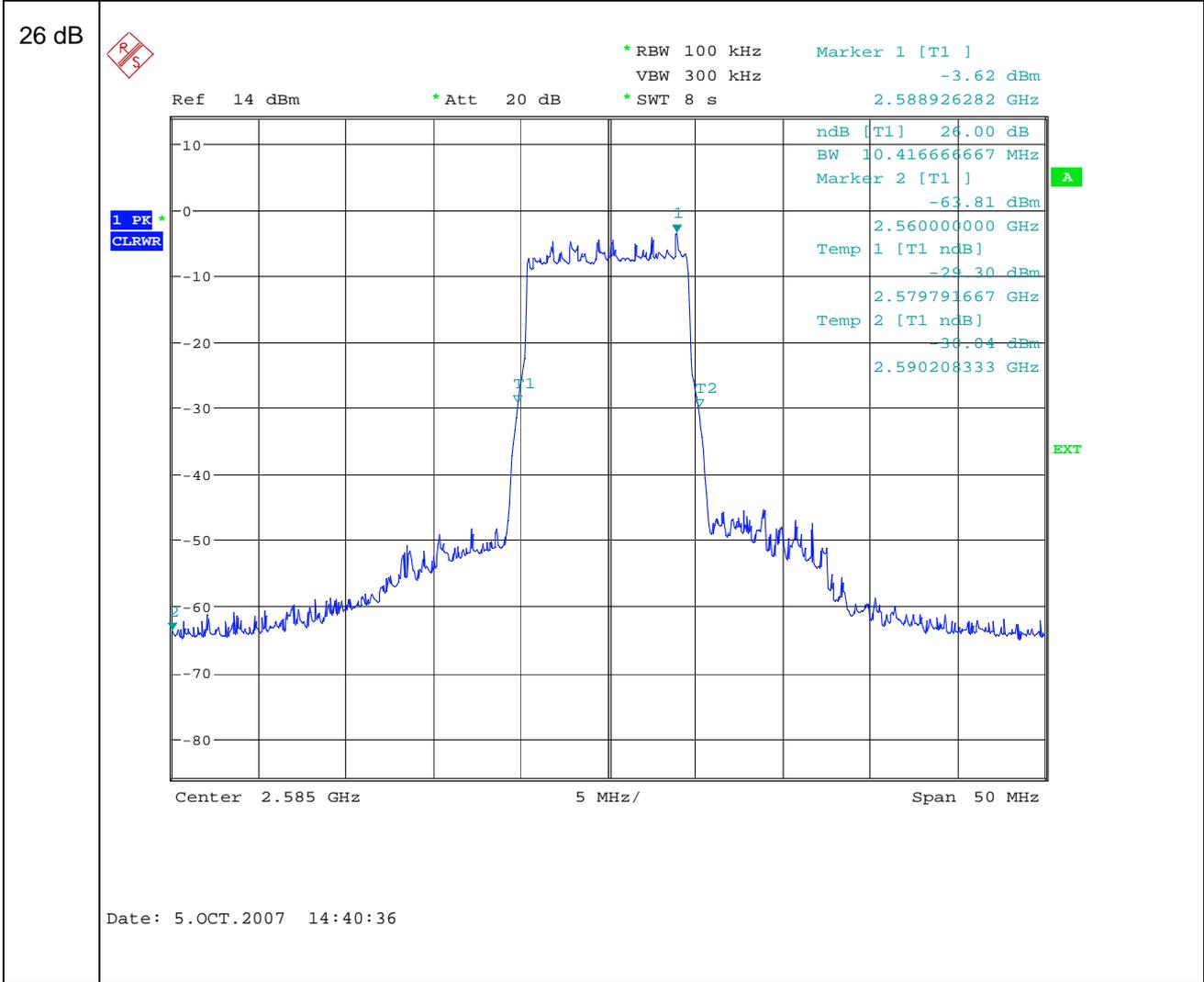
Ref 14 dBm

1 PK *
CLRWR



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:38:39



Channel middle: 2635 MHz

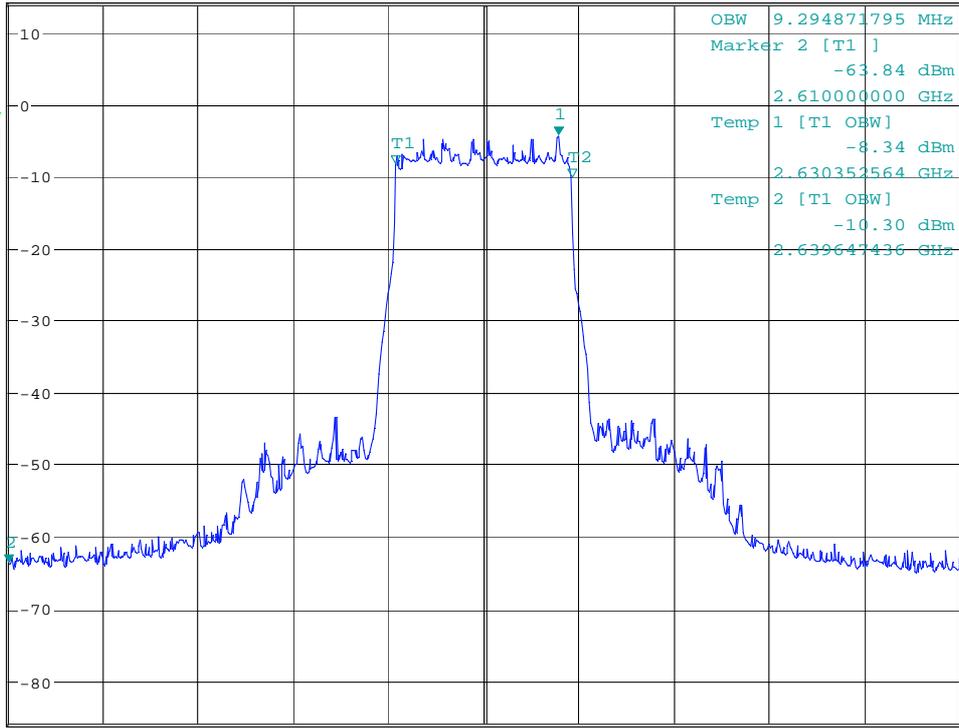
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.43 dBm
 *Att 20 dB *SWT 8 s 2.638926282 GHz

Ref 14 dBm

1 PK *
CLRWR



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:43:16



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

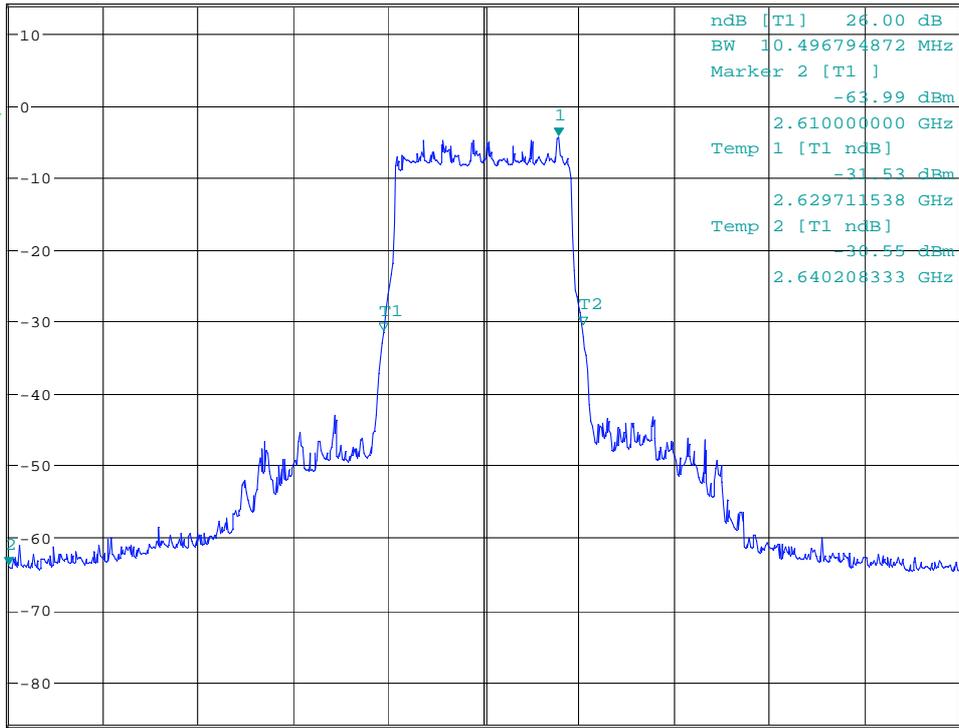


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.46 dBm
 *SWT 8 s 2.638926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:45:24

Channel top: 2685 MHz

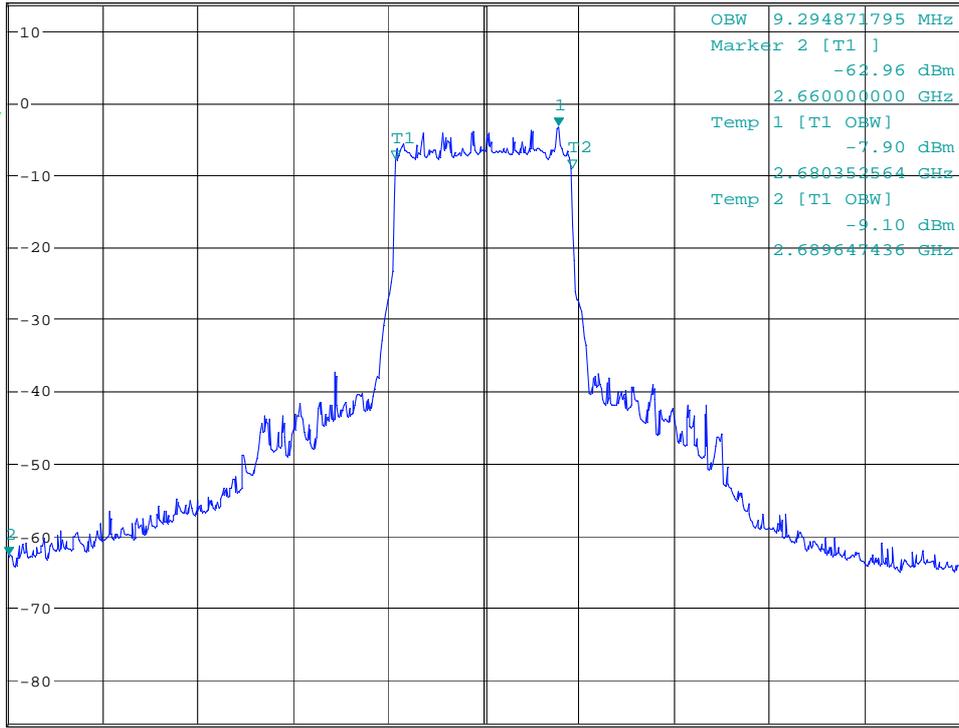
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.25 dBm
 *Att 20 dB *SWT 8 s 2.688926282 GHz

Ref 13.8 dBm

1 PK *
 CLRWR



Center 2.685 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 17:40:33

Channel bottom: 2585 MHz

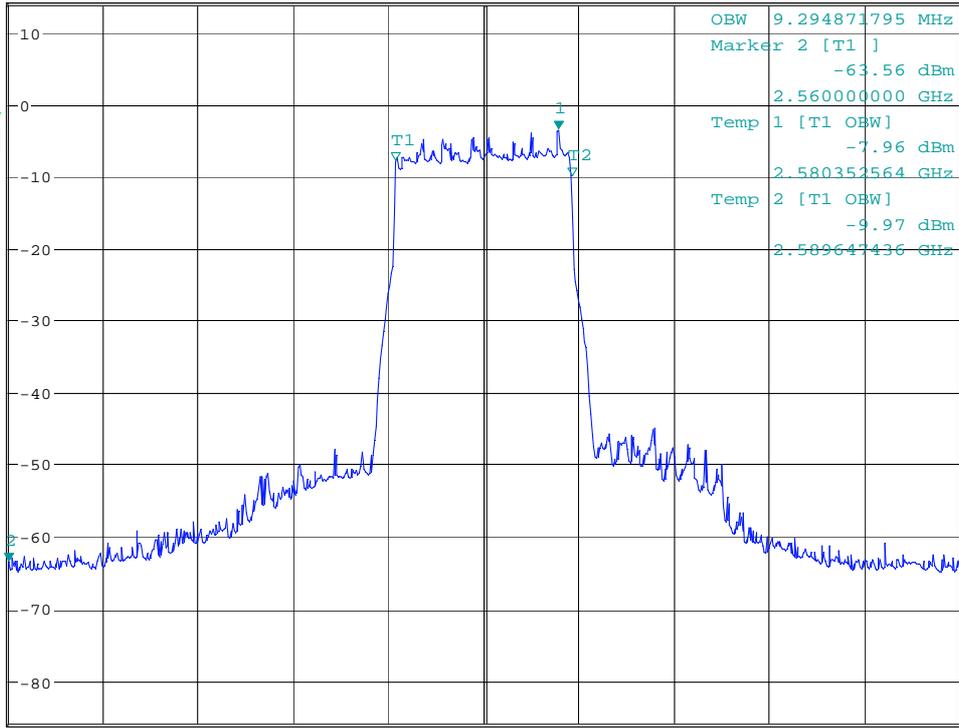
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.56 dBm
 *Att 20 dB 2.588926282 GHz
 *SWT 8 s

Ref 14 dBm

1 PK *
CLRWR



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:38:47



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

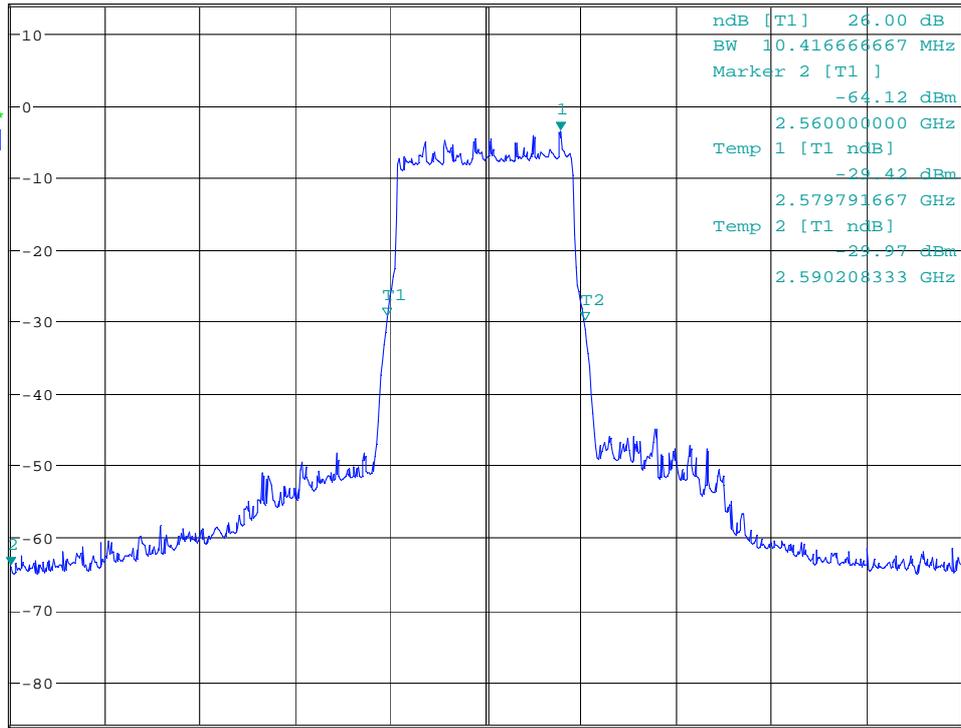


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.60 dBm
 *SWT 8 s 2.588926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



A

EXT

Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:40:44

Channel middle: 2635 MHz

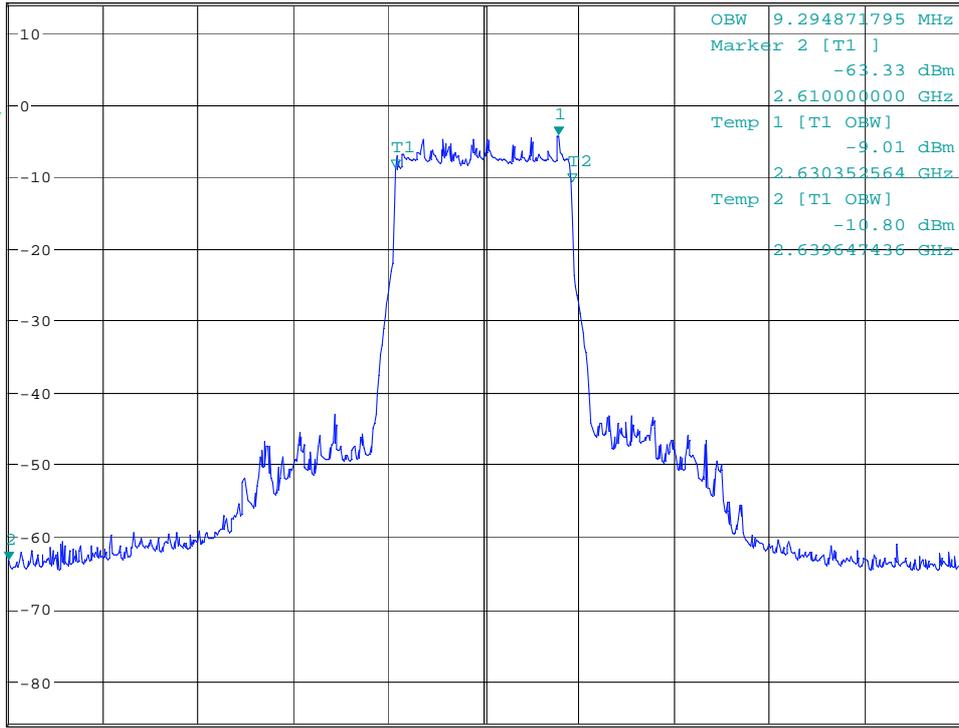
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -4.31 dBm
* Att 20 dB * SWT 8 s 2.638926282 GHz

Ref 14 dBm

1 PK *
CLRWR



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:43:24

Channel top: 2685 MHz

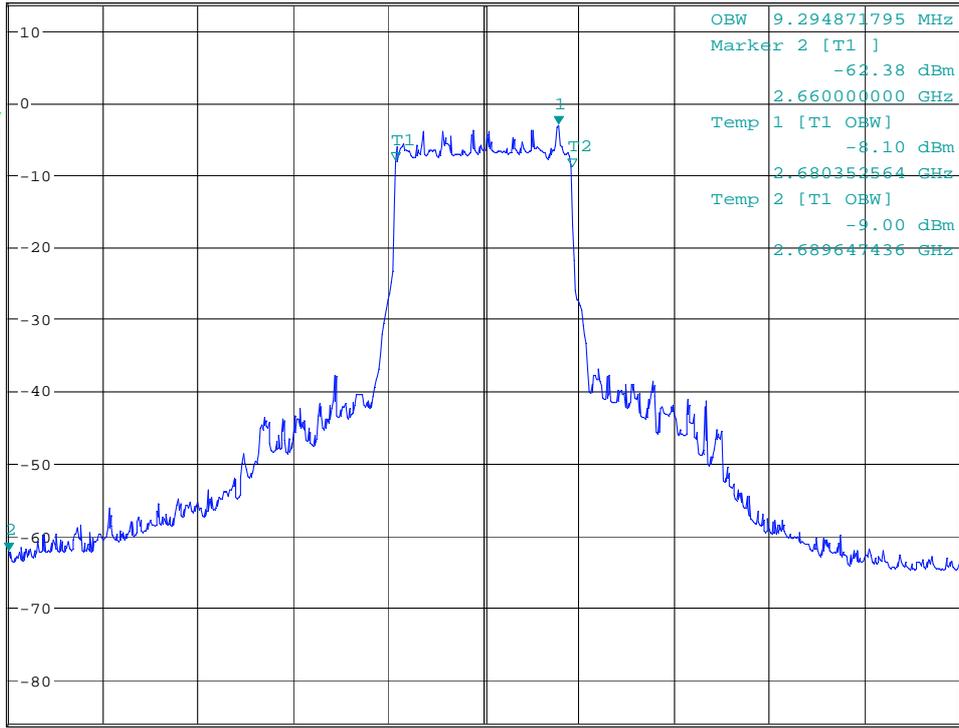
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.13 dBm
*Att 20 dB *SWT 8 s 2.688926282 GHz

Ref 13.8 dBm

1 PK *
CLRWR



OBW 9.294871795 MHz
Marker 2 [T1]
-62.38 dBm
2.660000000 GHz
Temp 1 [T1 OBW]
-8.10 dBm
2.680352564 GHz
Temp 2 [T1 OBW]
-9.00 dBm
2.689647436 GHz

A

EXT

Center 2.685 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 17:40:45

Channel bottom: 2585 MHz

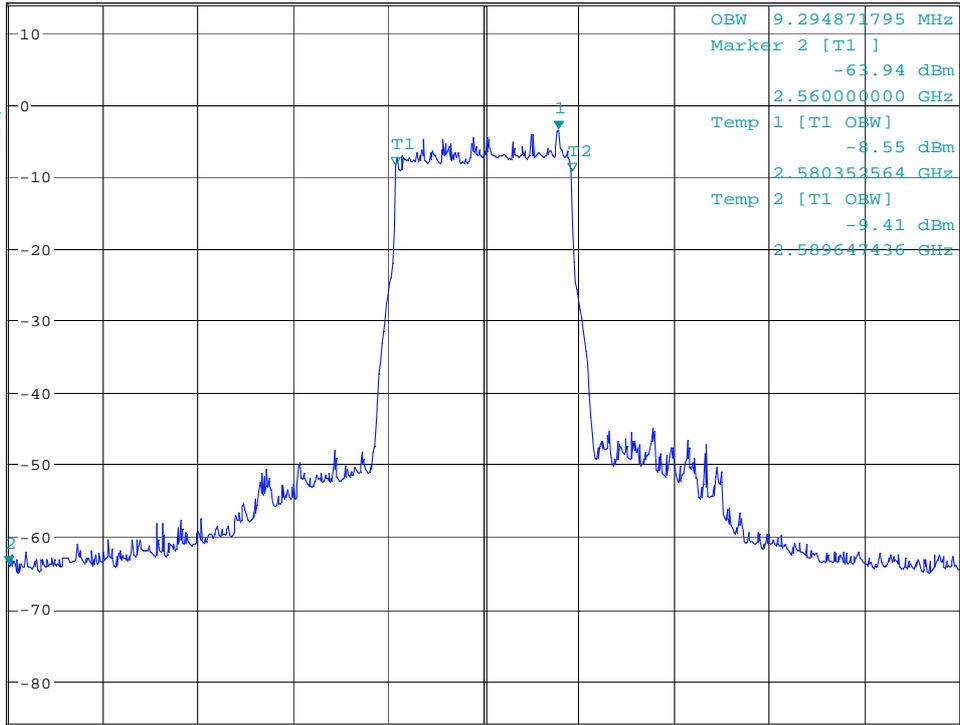
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.58 dBm
 *Att 20 dB *SWT 8 s 2.588926282 GHz

Ref 14 dBm

1 PK *
CLRWR



A

EXT

Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:38:56



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

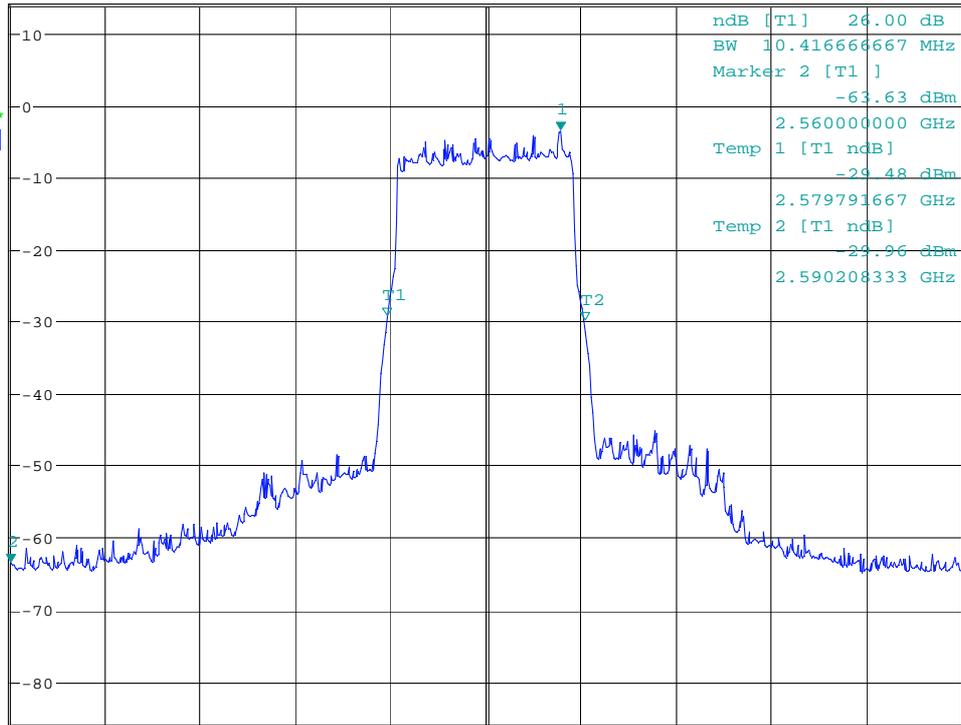


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.60 dBm
 *SWT 8 s 2.588926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:40:52

Channel middle: 2635 MHz

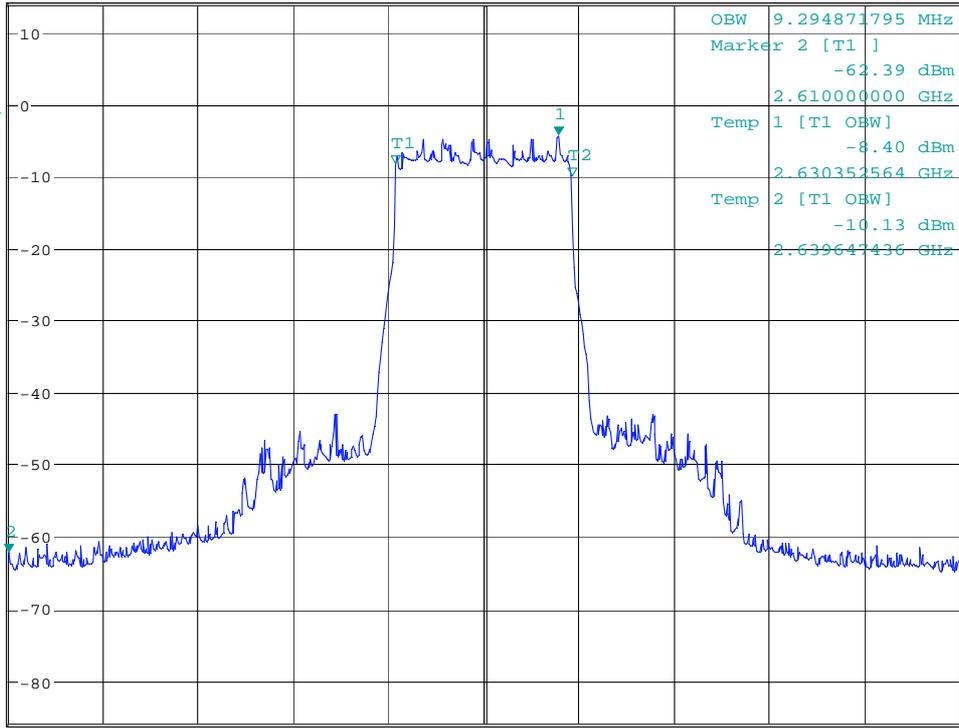
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.33 dBm
 *Att 20 dB *SWT 8 s 2.638926282 GHz

Ref 14 dBm

1 PK *
CLRWR



A

EXT

Center 2.635 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:43:32



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

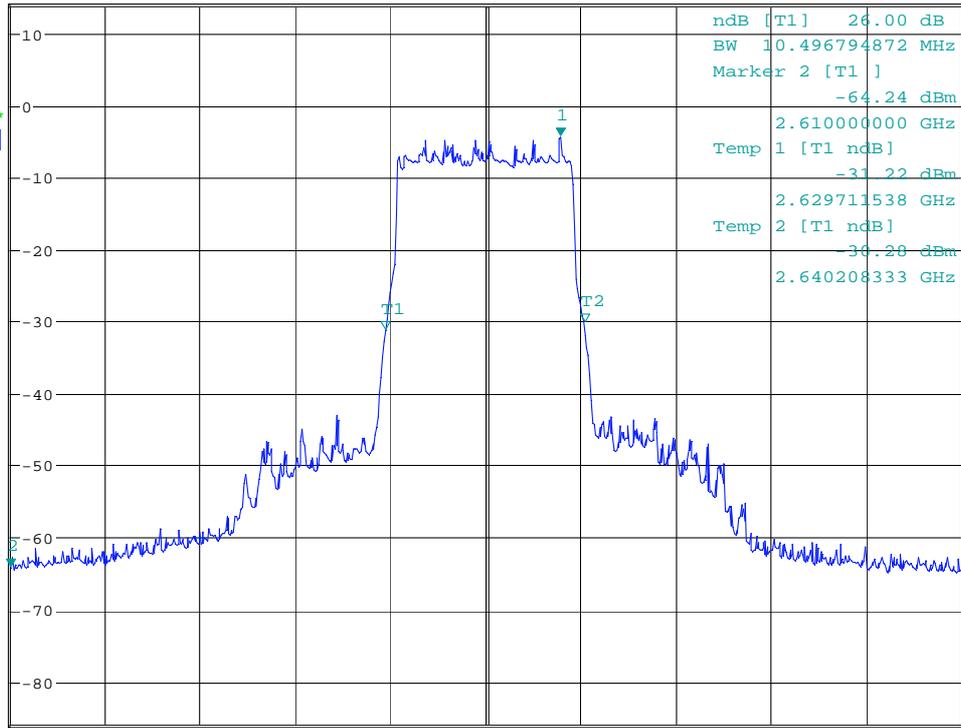


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.44 dBm
 *SWT 8 s 2.638926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK *
CLRWR



Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:45:52

Channel top: 2685 MHz

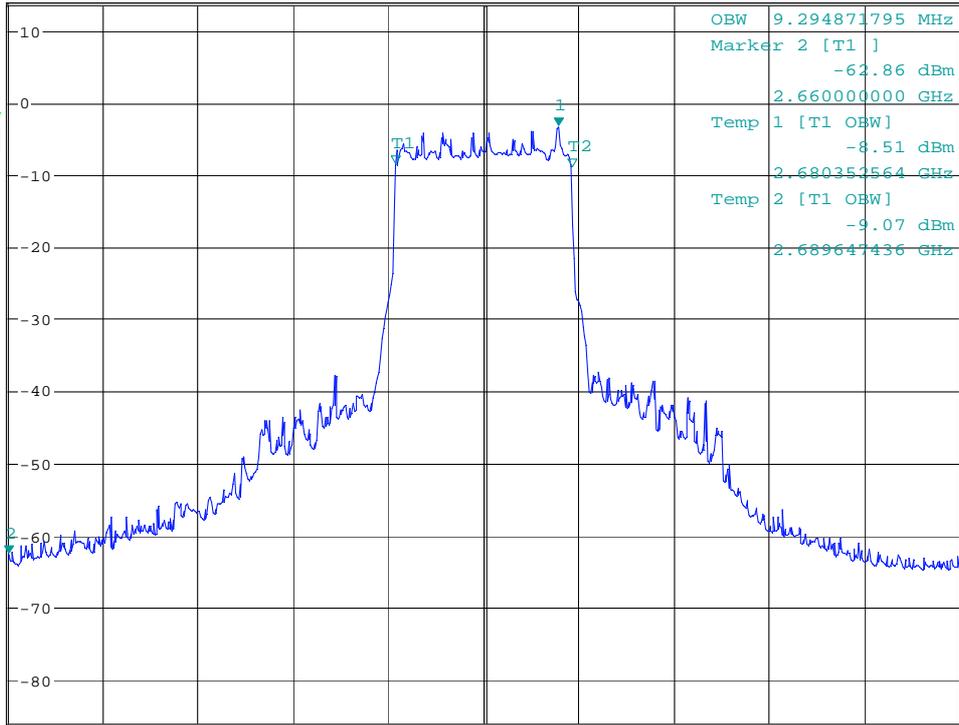
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.27 dBm
* Att 20 dB * SWT 8 s 2.688926282 GHz

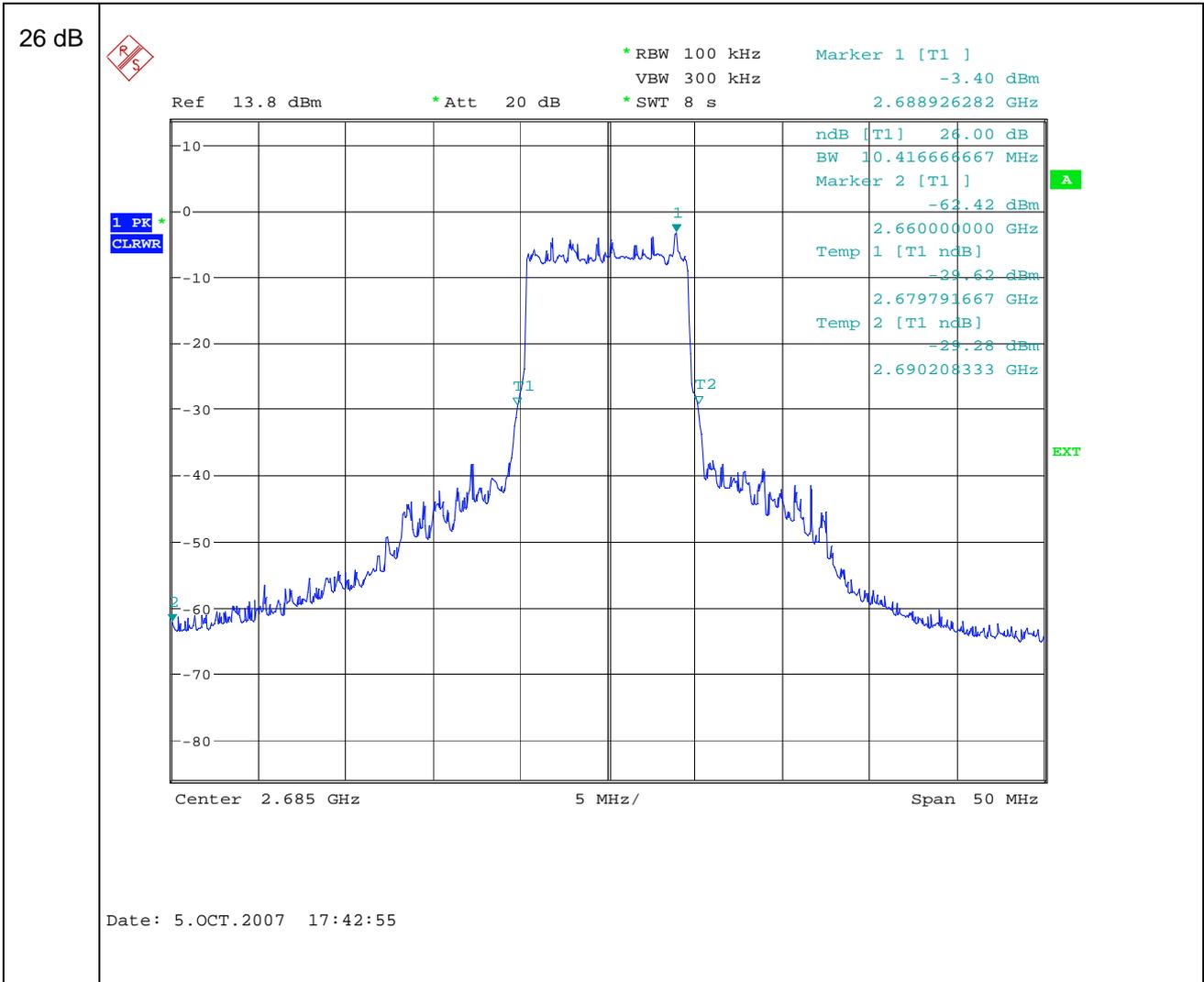
Ref 13.8 dBm

1 PK *
CLRWR



Center 2.685 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 17:40:59



2.3.6 Test Mode of 64QAM 2/3

Channel bottom: 2585 MHz

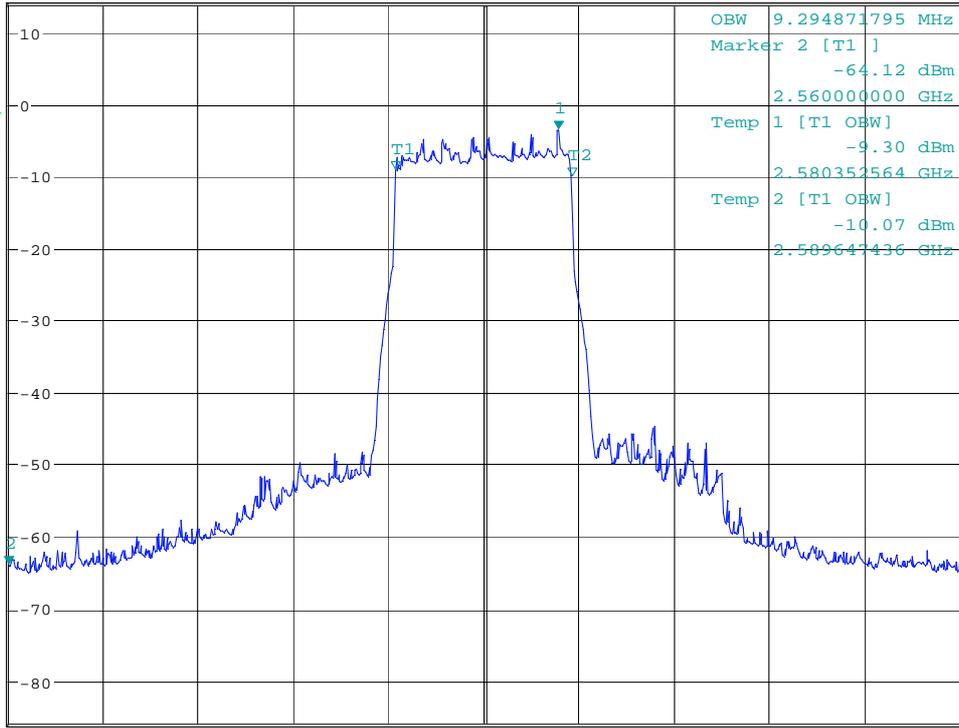
99%



* RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.57 dBm
* Att 20 dB * SWT 8 s 2.588926282 GHz

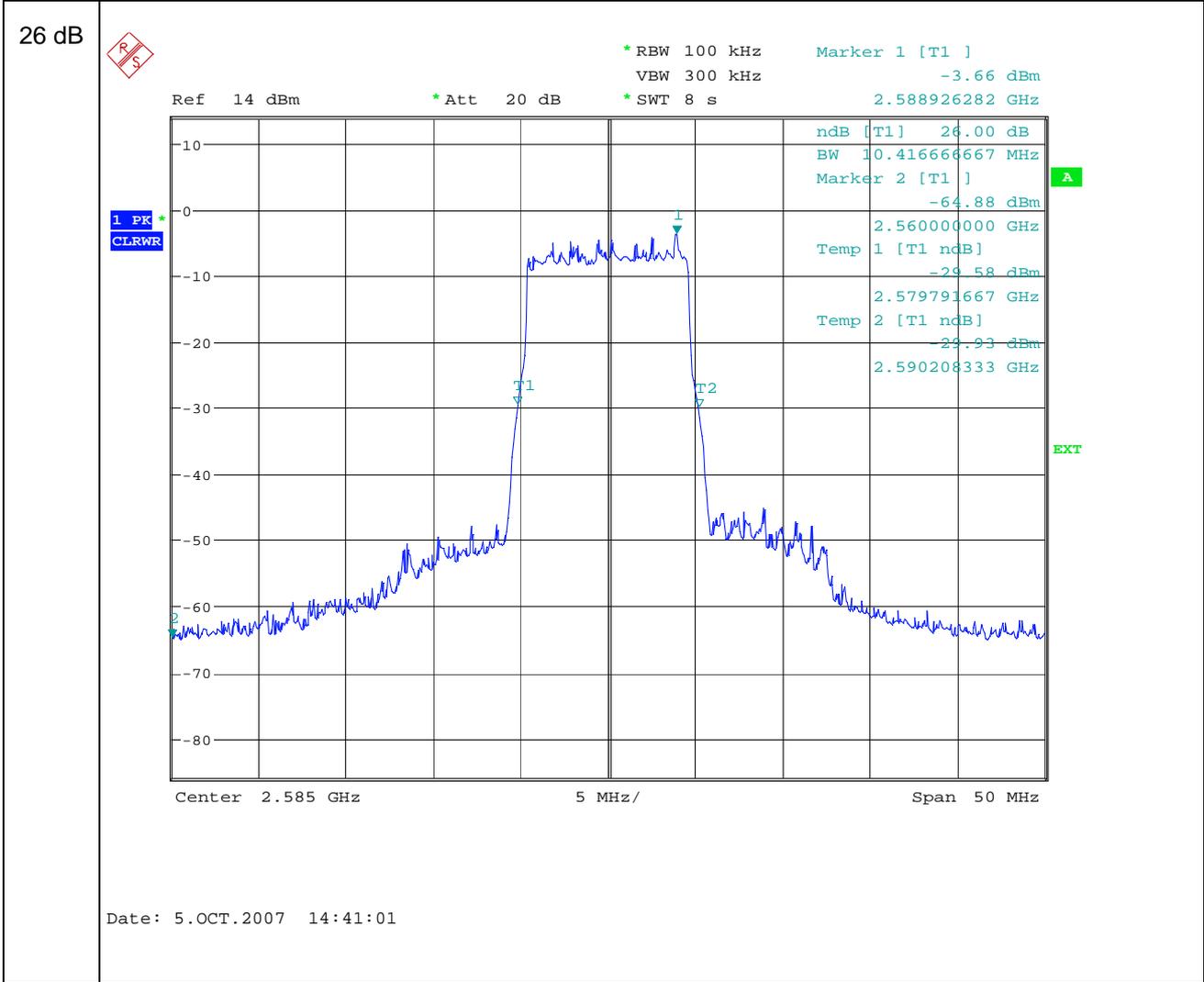
Ref 14 dBm

1 PK *
CLRWR



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:39:04





FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

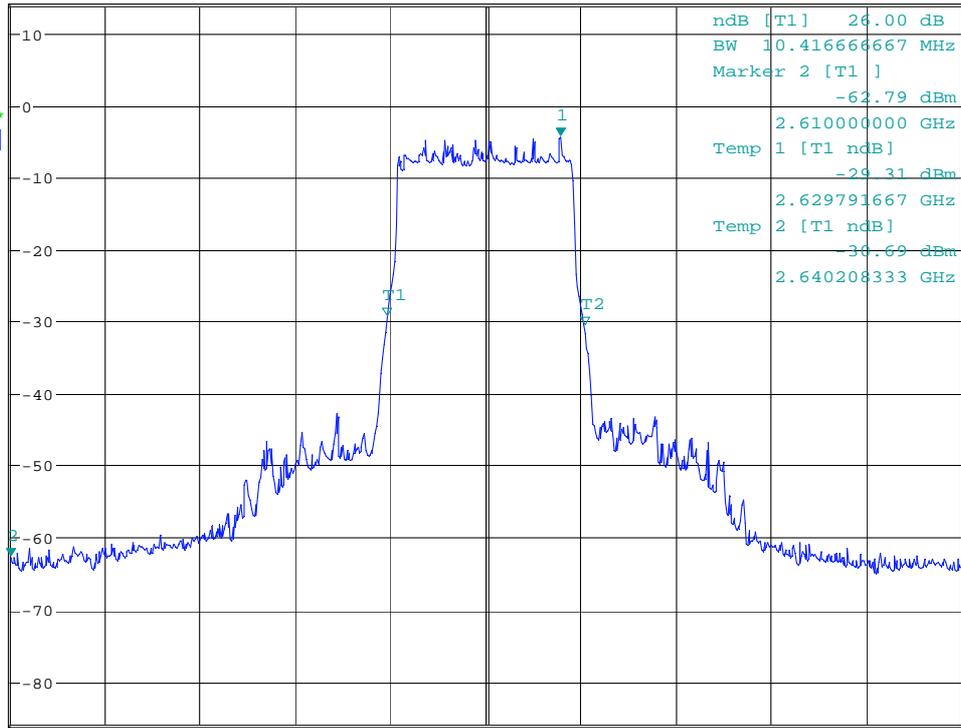


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.37 dBm
 *SWT 8 s 2.638926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK *
CLRWR



A

EXT

Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:46:00

Channel top: 2685 MHz

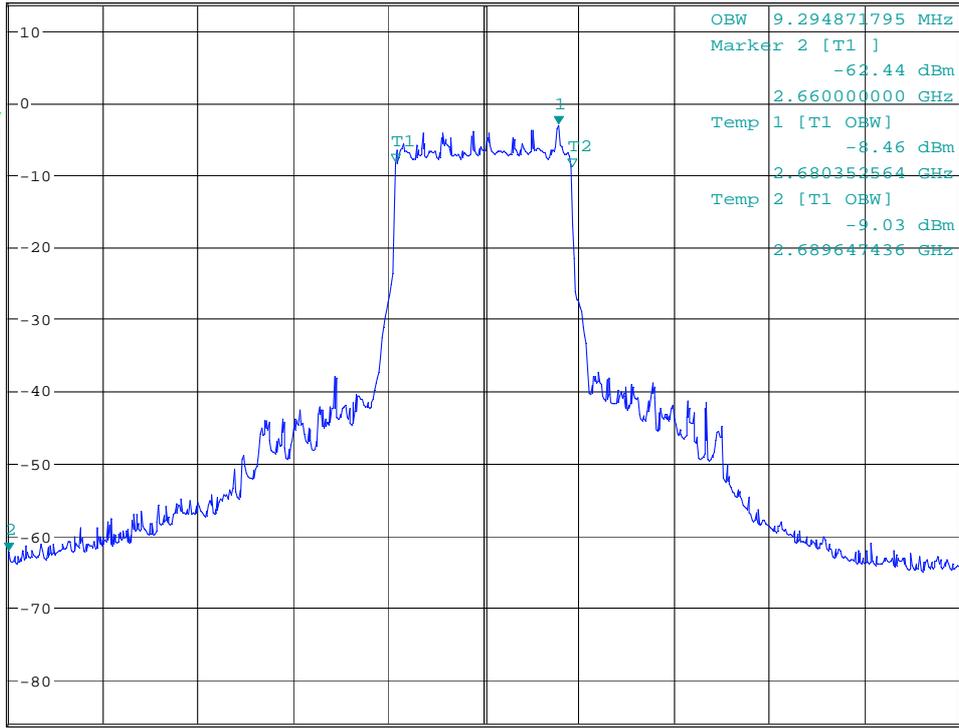
99%



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz -3.20 dBm
*Att 20 dB *SWT 8 s 2.688926282 GHz

Ref 13.8 dBm

1 PK *
CLRWR



OBW 9.294871795 MHz
Marker 2 [T1]
-62.44 dBm
2.660000000 GHz
Temp 1 [T1 OBW]
-8.46 dBm
2.680352564 GHz
Temp 2 [T1 OBW]
-9.03 dBm
2.689647436 GHz

A

EXT

Center 2.685 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 17:41:13

Channel bottom: 2585 MHz

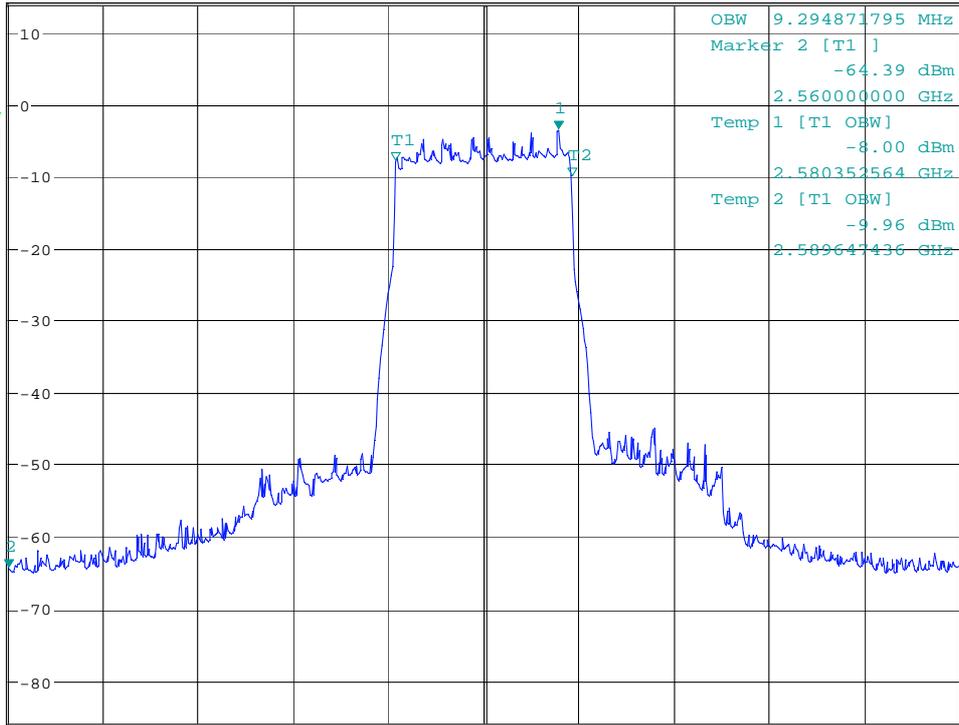
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.59 dBm
 *Att 20 dB 2.588926282 GHz
 *SWT 8 s

Ref 14 dBm

1 PK *
CLRWR



Center 2.585 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:39:16



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

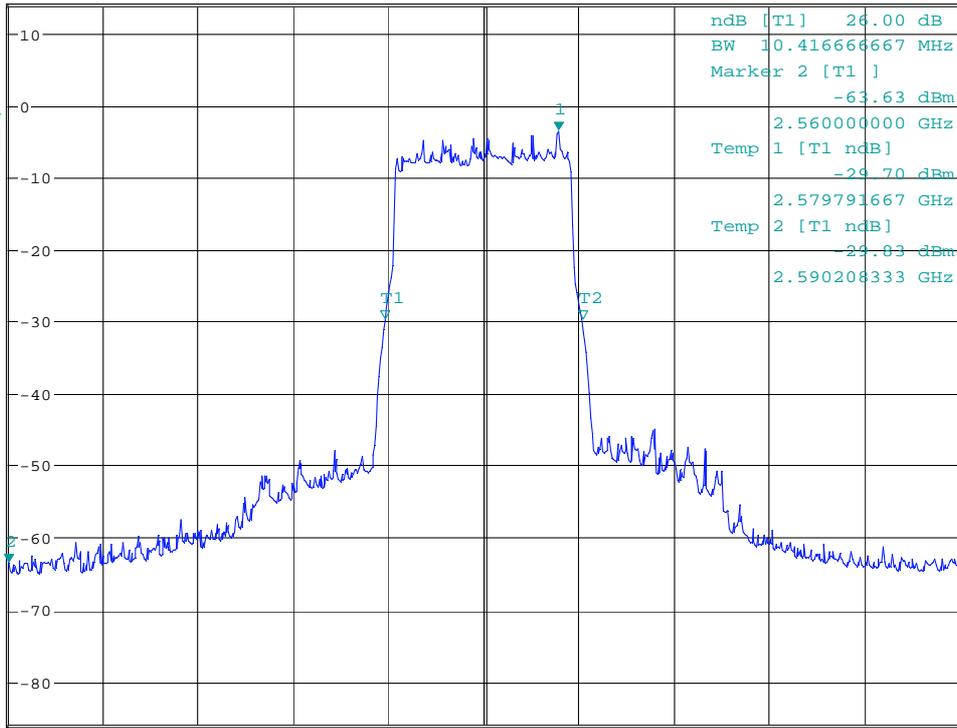


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -3.65 dBm
 *SWT 8 s 2.588926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



Center 2.585 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:41:11

Channel middle: 2635 MHz

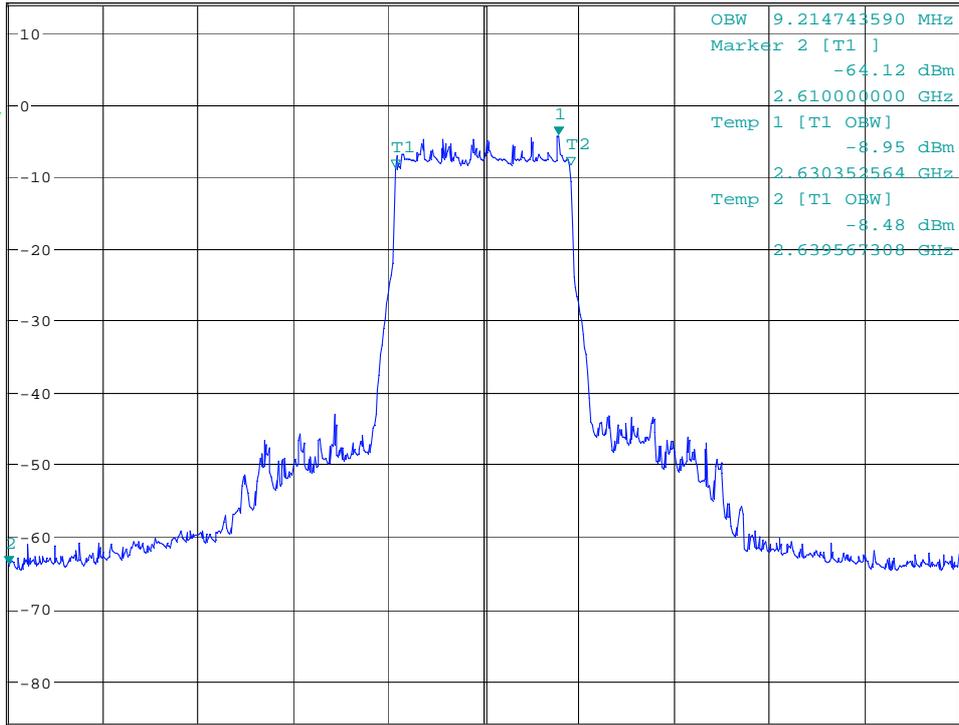
99%



*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.35 dBm
 *Att 20 dB *SWT 8 s 2.638926282 GHz

Ref 14 dBm

1 PK *
CLRWR



Center 2.635 GHz 5 MHz/ Span 50 MHz

Date: 5.OCT.2007 14:43:48



FCC Test Report of DISTRIBUTED SITE REMOTE RADIO UNIT

M/N: RRU3701C, FCC ID: QISRRU3701C-2.5G

26 dB

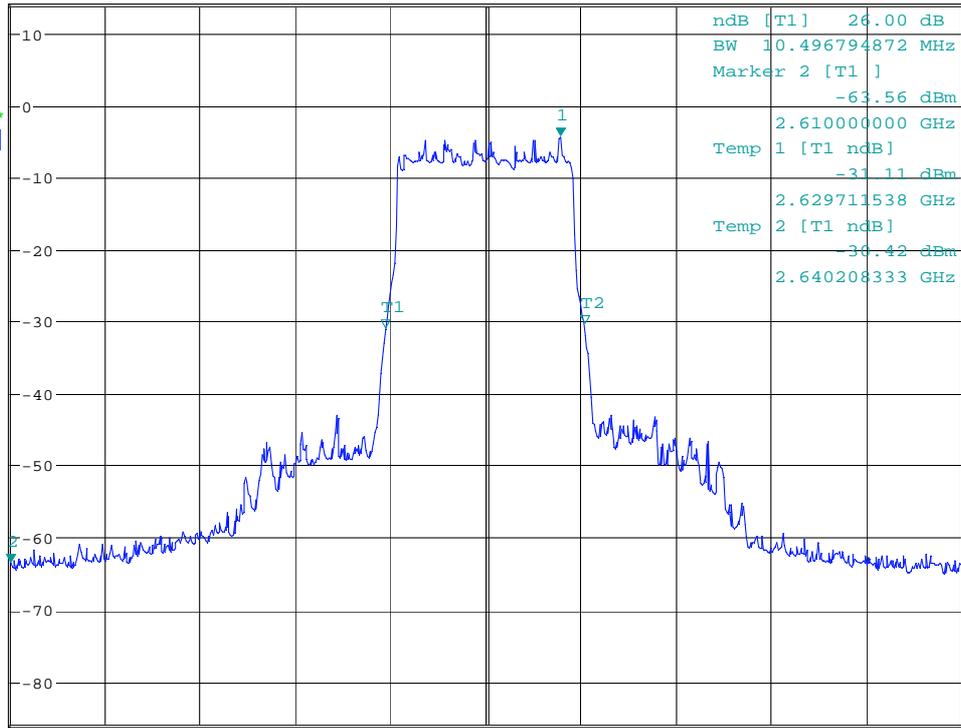


*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -4.37 dBm
 *SWT 8 s 2.638926282 GHz

Ref 14 dBm

*Att 20 dB

1 PK*
CLRWR



A

EXT

Center 2.635 GHz

5 MHz/

Span 50 MHz

Date: 5.OCT.2007 14:46:17