
TEST REPORT

In support of the Application for Grant of Equipment Authorization of the WTFA for use on the Nokia MetroSite EDGE 800, and the WTPA for use on the Nokia MetroSite EDGE 1900 Base Transceiver Stations to FCC part 22 and part 24.

Report No RG612078/01

FCC ID: L7KWTPA01/ L7KWTF A01

December 2003

Equipment: Metrosite Edge Base Station using the WTPA and WTFA

FCC ID: L7KWTPA01 and L7KWTF A01

Specification: 47 CFR 2, 47 CFR 22 & 47 CFR 24

**Applicant and
Manufacturer:** Nokia UK Limited
Stanhope Road
Camberley
Surrey
GU13 3BW

**Manufacturer's
Representative:** Mr Andrew Parry

APPROVED BY



M JENKINS
Wireless Group Leader

DATED 19th December 2003


Start of Test: 25th July 2003
Completion of Test: 25th July 2003

DISTRIBUTION Nokia UK Limited Copy 1
TÜV Product Service Copy 2

Copy No

ENGINEERING STATEMENT

I ATTEST: the measurements shown in this report were made in accordance with the procedures indicated, and that the emissions from this equipment were found to be within the applicable limits. I assume full responsibility for the accuracy and completeness of these measurements. On the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 47 CFR 2.1051, 22.905 and 47 CFR 2.1049, 24.238(b) of the FCC Rules under normal use and maintenance.


R Henley



CONTENTS: -

	Page No.
Introduction	3
Test Location	3
Test Equipment and Ancillaries Used For Test	4
Description of Equipment Under Test Configuration	5
List of Performed Measurements	6
The list of measured parameters covering	
Subclause	Parameter to be measured
Section 1	
47 CFR 2.1049, 24.238(b)	Occupied Bandwidth (1900MHz) 7
47 CFR 2.1049	Occupied Bandwidth (850MHz) 7
Section 2	
47 CFR 2.1051, 22.905	Spurious Emissions at Antenna Terminals (850MHz) 12
Section 3	
47 CFR 2.1049, 24.238(b)	Spurious Emissions at Antenna Terminals (1900MHz) 34

For copyright details see Page 56 of 56



Introduction

The information contained within this report is intended to show verification of compliance of the Nokia Base Transmitter Station, Metrosite GSM 800 base station with WTFA, and Metrosite GSM 1900 Base Station with WTPA, to the requirements of 47 CFR 2.1051, 22.905 and 47 CFR 2.1049, 24.238(b).

Test Location

All testing was conducted at the premises of BABT, Segensworth Road, Fareham, Hants, PO15 5RH. Testing at BABT was carried out by BABT Personnel, R Henley, Test Engineer.



Test Equipment and Ancillaries Used For Test

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due
1	Signal Generator	ESG-4000A	Hewlett Packard	GB37040125	21 st Jan 03
2	Spectrum Analyser	FSEM	Rohde & Schwarz	827285/006	16 th Dec 03
3	Attenuator	47-10-34	Weinschel	BC 2506	13 th Sep 03

Table 1

Note(s)

- 1) All items are calibrated annually, except where labelled T/U (Traceability Unscheduled). These items are calibrated within the test configurations using calibrated equipment.
- 2) Throughout the test report the test equipment used for each test is referenced using the number indicated in the table above (1 to 3).



Description of Equipment Under Test Configuration

The BTS can be configured as either 800 or 1900 or a combination of both. Both 800 and 1900 TRX's support both GMSK and 8PSK modulation. The cabinet can house a maximum of four TRX's. The testing was performed on the TRX RF output connector.

Test Rationale

Block Edge Measurements

The power supply option was deemed to have no effect on the block edge measurement. Testing the Frequency Error at Voltage Variation would indicate any error due to supply voltage, which would cause the fundamental to fall outside the block edge. Both modulation schemes were tested.

The power level used for each block edge measurement is detailed with the relevant plot of the measurement.

The power levels used within the report are shown as those required by the operation software (DSP), the relationship between the shown power levels and the 'end user' power levels are as follows:

GMSK Modulation – End User Power levels of 0 to 15 are shown as Power Levels 0 to 15 within this report.

8PSK Modulation – End User Power levels of 0 to 9 are shown as Power Levels 16 to 25 within this report. (For example : power level 19 within this report equates to an End User power level of 3)

Channel Configuration

For the Block Edge testing, the tested channels have been changed to demonstrate compliance with the standard. This is reflected in the user guide for the EUT. To cover bottom, middle and top channels for each block and each test case would involve a huge amount of testing. Thus, to provide a practical representative set of results, the EUT was tested at bottom, middle and top of the entire 800 and PCS1900 band to demonstrate compliance with the standard.



The equipment under test is made up of the following component parts.

<u>Module</u>	<u>Kit Number</u>	<u>Serial Number</u>
<u>Cabinet</u>	058187A4-5 COPY	B020900045 COPY
<u>Transceivers</u>		
CTDA11	469691A ...X31	L1031174656
CTDA11	469691A ...X31	L1031174647
CTDA11	469691A ...X31	L1031174649
CTDA11	469691A ...X31	L1031174652
CTGA11	469690A ...X31	L1030958066
WTPA11	468231A ...X41	L1023721885
WTFA11	46854 ...X22	L1024047077
<u>Power Supplies</u>		
48V DC PSU / HVSD 12	468263 ...102	2A022500044
240 V PSU / CVSA 11	469712A ...101	9Q030500023
240 V PSU /CVSG 11	4697773A ...101	9Q030500014
<u>Digital Boards</u>		
Interface Unit /VIFA	11467208A ...103	4H021000567
Transmission Unit / FC-STM 1	00002795...01	4H032263876
<u>Fan</u>		
HVMF	MADC24B41M-X	L2011300002

Table 2

List of Performed Measurements using the configuration in Table 2

- i) Spurious Emissions at Antenna Terminals 47 CFR 2.1051, 22.905
- ii) Band Edge Measurements 47 CFR 24.238(b)



SECTION 1

**47 CFR 2.1049, 24.238(b)
Occupied Bandwidth
Testing relating to the WTFA and the WTPA**



Test Case: Occupied Bandwidth

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

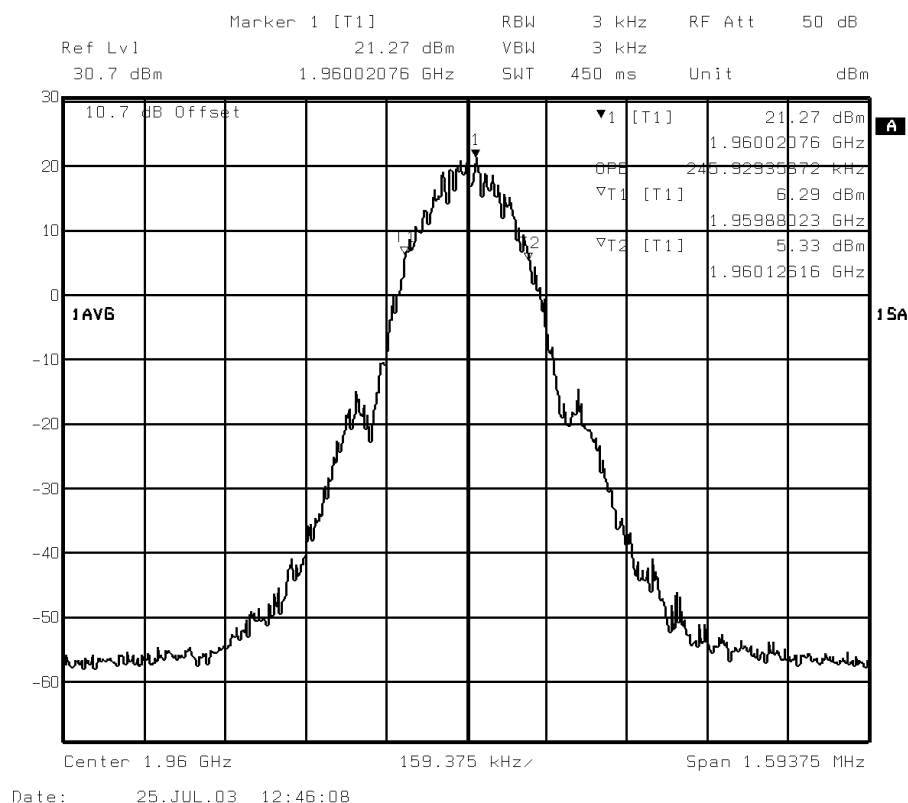
Measurement Method

The EUT was set to transmit at maximum power, modulated with all timeslots active. Using a resolution bandwidth of 3 kHz, a video bandwidth of 3 kHz and an average detector, the emission bandwidth was determined using the occupied power bandwidth function on the spectrum analyser.

The plot below shows the resultant occupied bandwidth plots from the Spectrum Analyser.

Occupied Bandwidth As Defined By 99% Power Contained Within The Fundamental

Maximum Power – GMSK 1900



Measured Occupied Bandwidth = 245.929353kHz

Test Equipment Used:

1, 2, 3

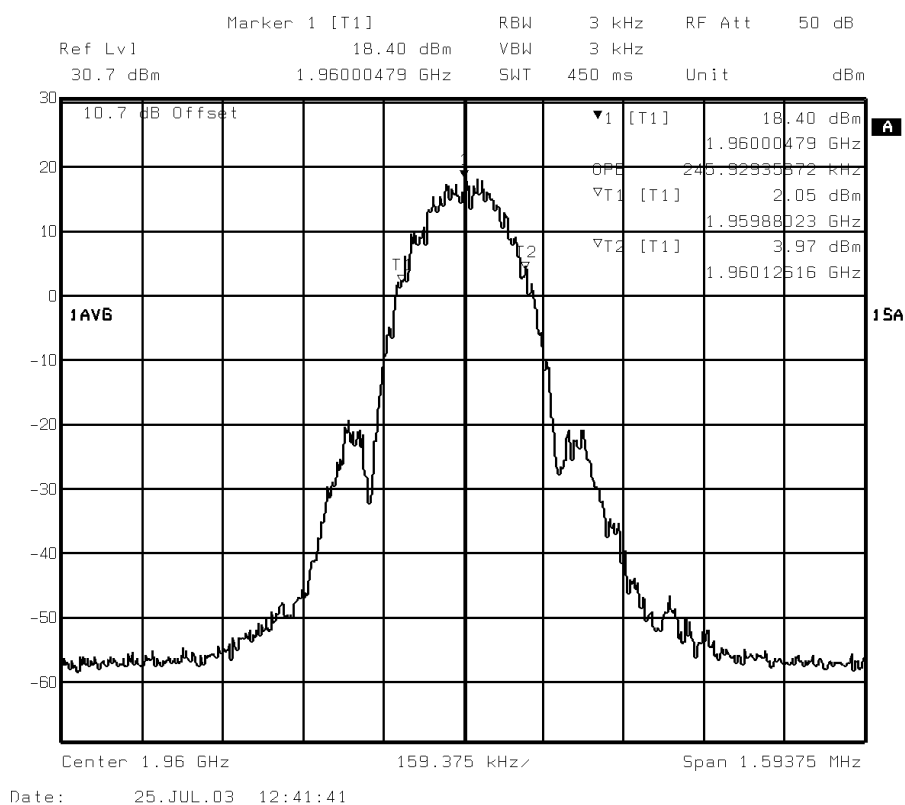


Test Case: Occupied Bandwidth

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Maximum Power – 8PSK 1900



Measured Occupied Bandwidth = 245.929353kHz

Test Equipment Used:

1, 2, 3

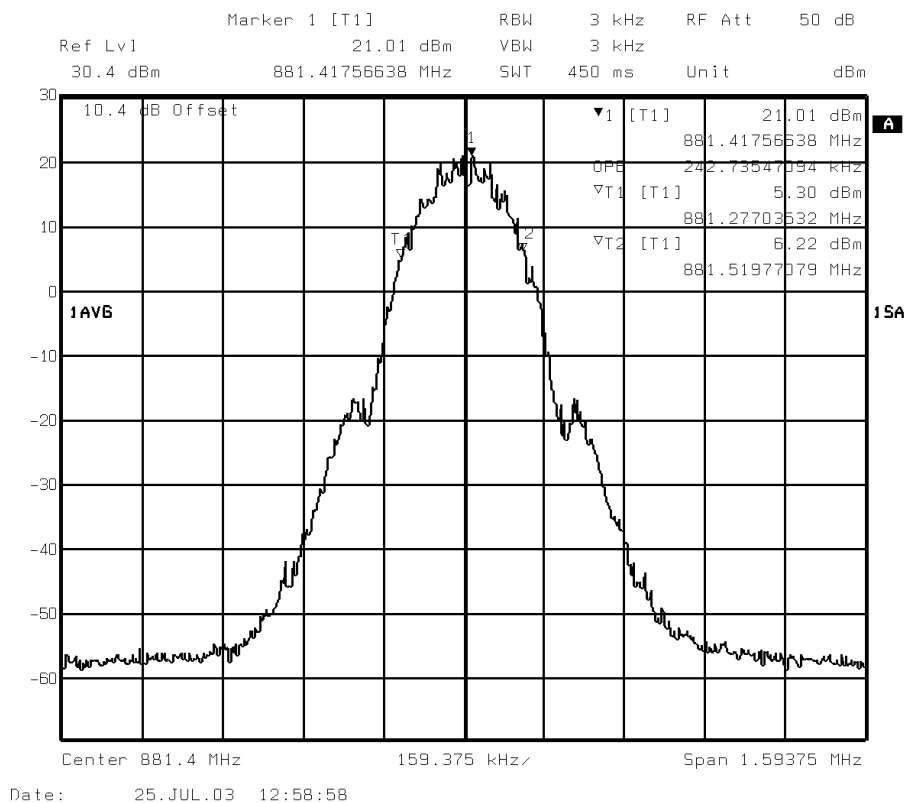


Test Case: Occupied Bandwidth

Test Date: 25th July 2003

Rule Parts: 2.1049

Maximum Power – GMSK 850



Measured Occupied Bandwidth = 242.735470kHz

Test Equipment Used:

1, 2, 3

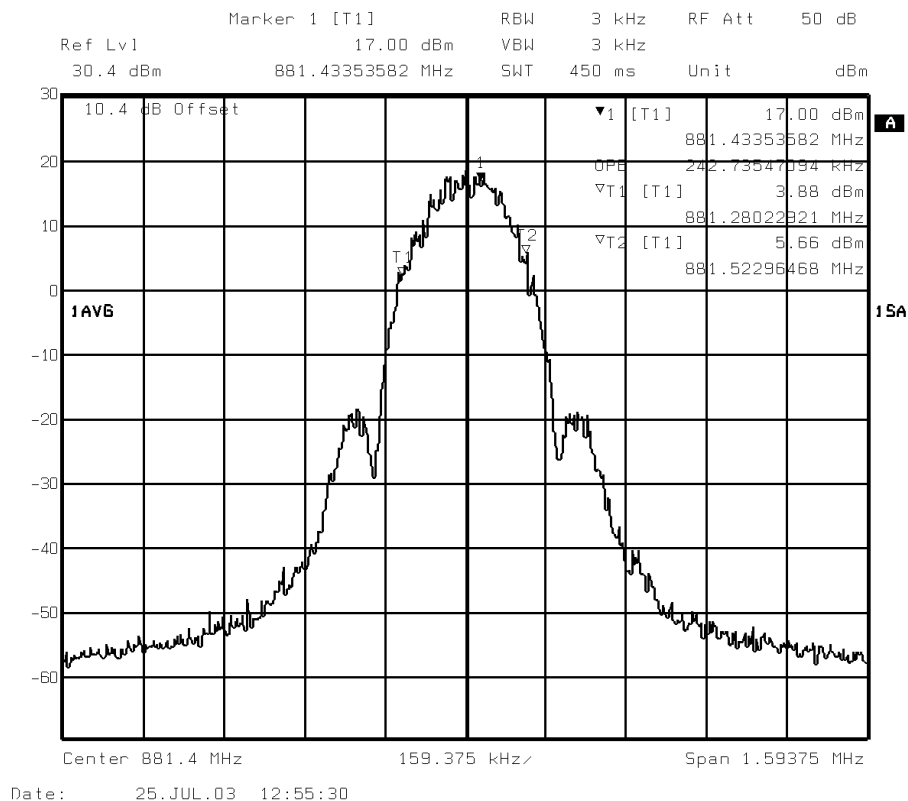


Test Case: Occupied Bandwidth

Test Date: 25th July 2003

Rule Parts: 2.1049

Maximum Power – 8PSK 850



Measured Occupied Bandwidth = 242.735470kHz

Remarks

From the Occupied Bandwidth plots shown above, it can be seen that for measurements at the Block Edges, use of a RBW of 3 kHz complies with the requirements of 2.1049 and 24.238(b) for using a RBW of at least 1% of the fundamental emission bandwidth.

The maximum measured occupied bandwidth of the 1900 and 850 results is 245kHz. Thus, 1% of 245kHz = 2.45kHz.

Test Equipment Used:

1, 2, 3



SECTION 2

**47 CFR 2.1051, 22.905 Spurious Emissions at Antenna Terminals
Testing relating to the WTFA**



Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1051, 22.905

Measurement Method

In accordance with 22.917(e), any emissions outside of the block edges shall be attenuated by at least $43 + 10 \log(P)$. The measurements are shown to ± 1 MHz from the block edges. The plots shown under the Spurious Emissions section covers the required range of 9kHz to 9GHz.

The reference power and path losses of all channels used for testing in each frequency block were measured. It was found that there was <0.5 dB variation in all channels, thus the worst case reference level offset was used throughout. Having entered the reference level offset, the limit line was displayed, showing the -13 dBm, $(43+10\log P)$, limit.

Table 3 shows the Frequency Blocks the EUT was tested against along with the tested channels.

Communication Channel Pair Blocks

Frequency Block (MHz)	Lower Block Edge Test Channels/Frequencies	Upper Block Edge Test Channels/Frequencies
A (869.040 – 879.990)	Channel : 128 Frequency : 869.20MHz	Channel : 181 Frequency : 879.80MHz
A (890.010 – 891.480)	Channel : 233 Frequency : 890.20MHz	Channel : 239 Frequency : 891.40MHz
B (880.020 – 889.980)	Channel : 183 Frequency : 880.20MHz	Channel : 231 Frequency : 889.80MHz
B (891.510 – 893.970)	Channel : 240 Frequency : 891.60MHz	Channel : 251 Frequency : 893.80MHz

Table 3

Remarks

The channels shown in the table above are the minimum and maximum channels that can be used in each block to maintain compliance. Channels used outside of those stated in the table exceed the specification limits, thus they cannot be used.

The measurement plots are shown on pages 10 to 33.

Table 4 contains details of the power levels and channel settings used during testing.



GSM 800

Channel Number	GMSK	Dsp settings 8PSK	End User 8PSK Levels
128	Power Level 3	Power Level 20	Power Level 4
181	Power Level 0	Power Level 16	Power Level 0
182	BLOCKED	BLOCKED	BLOCKED
183	Power Level 0	Power Level 16	Power Level 0
231	Power Level 0	Power Level 16	Power Level 0
232	BLOCKED	BLOCKED	BLOCKED
233	Power Level 0	Power Level 16	Power Level 0
239	Power Level 13	BLOCKED	BLOCKED
240	Power Level 13	BLOCKED	BLOCKED
251	Power Level 1	Power Level 16	Power Level 0

Table 4



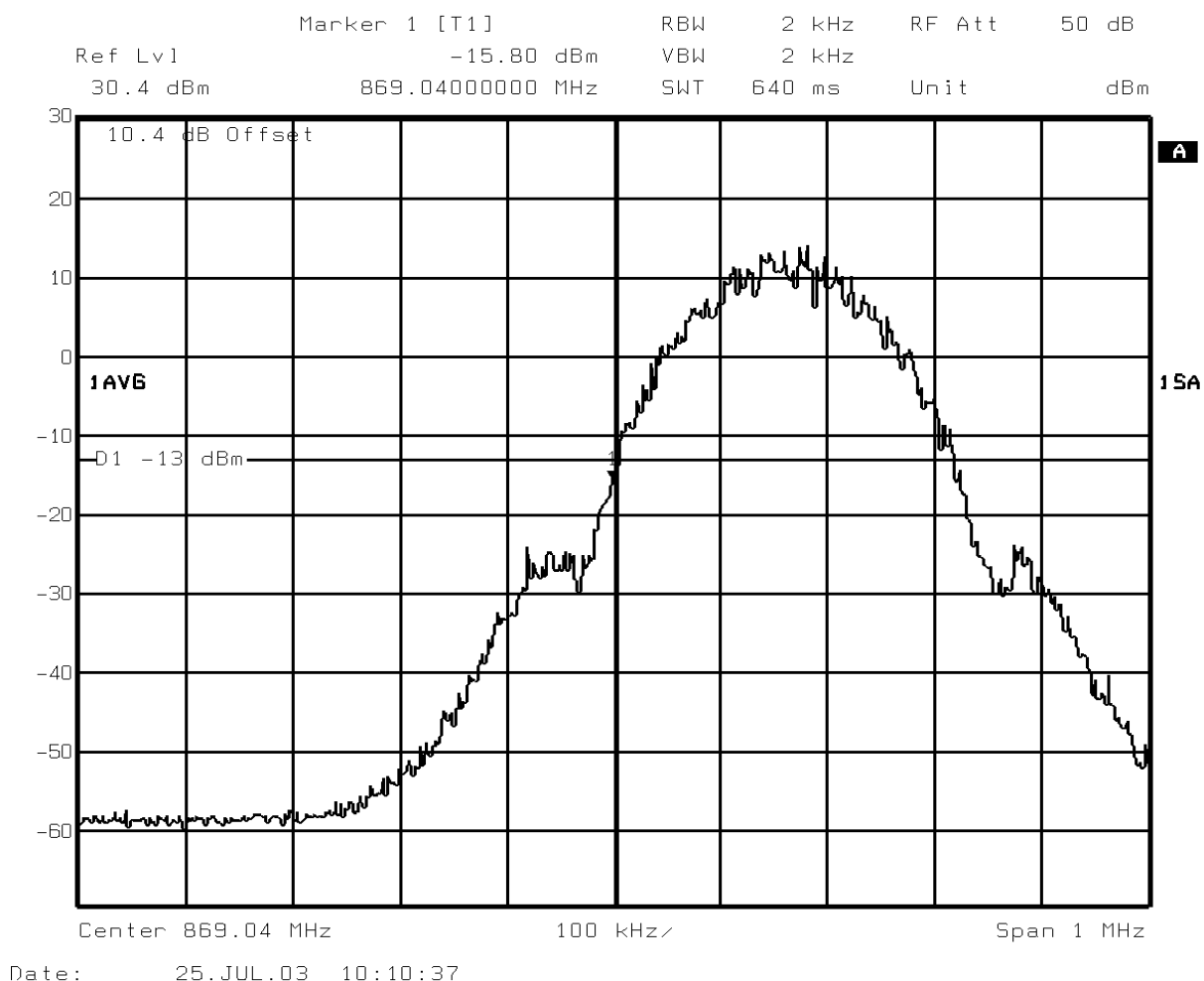
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 3 On Channel 128, (869.20MHz)
GMSK Modulation

Block A
869.040 – 879.990MHz



Test Equipment Used:
1, 2, 3



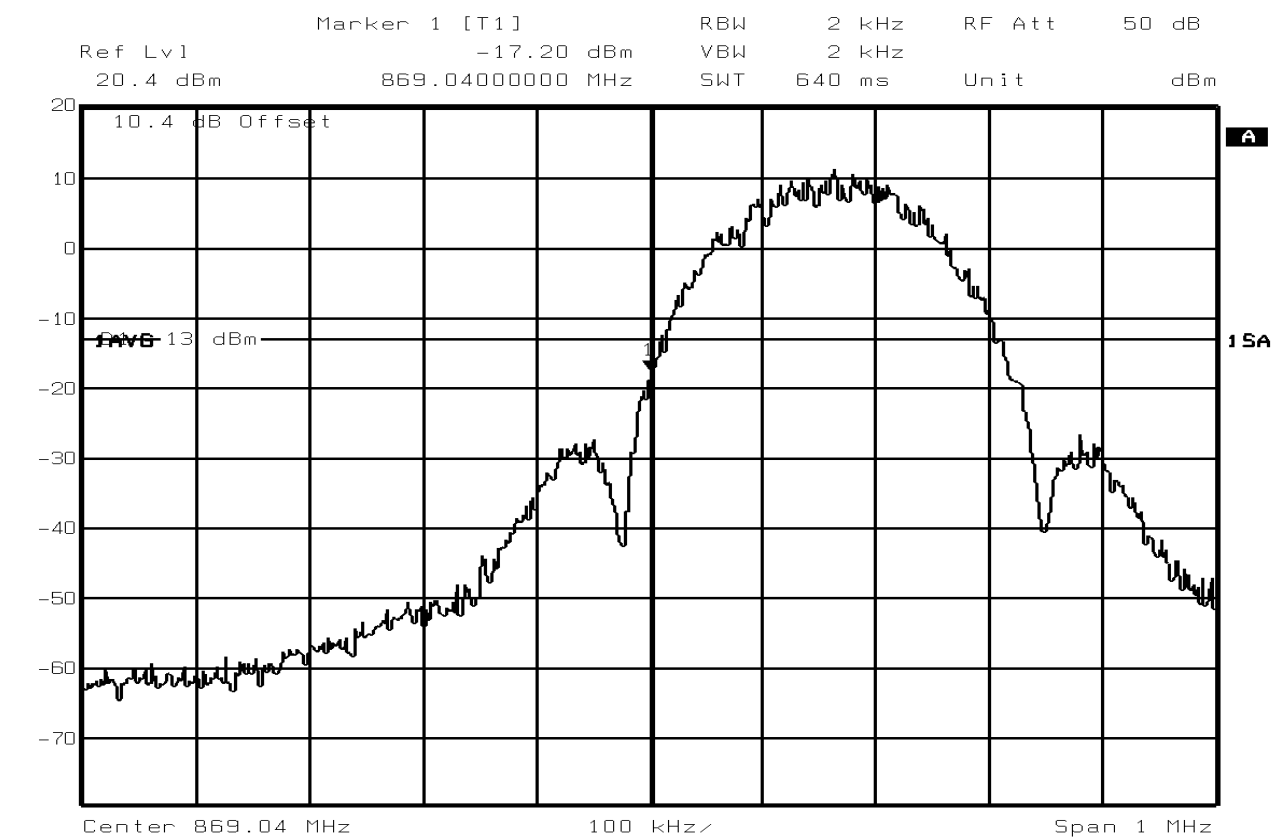
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 4 On Channel 128, (869.20MHz)
8-PSK Modulation

Block A
869.040 – 879.990MHz



Date: 25.JUL.03 10:49:29

Test Equipment Used:

1, 2, 3



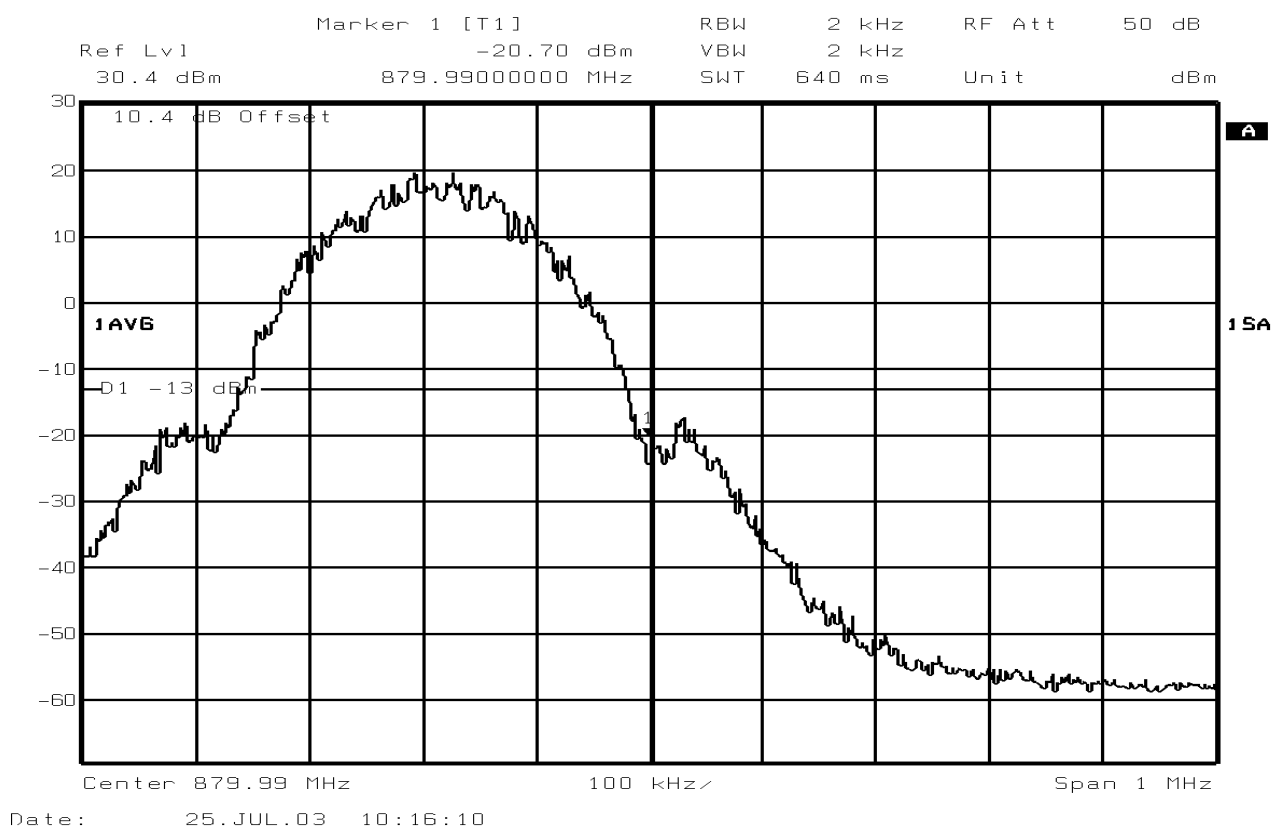
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 181, (879.80MHz)
GMSK Modulation

Block A
869.040 – 879.990MHz



Test Equipment Used:

1, 2, 3



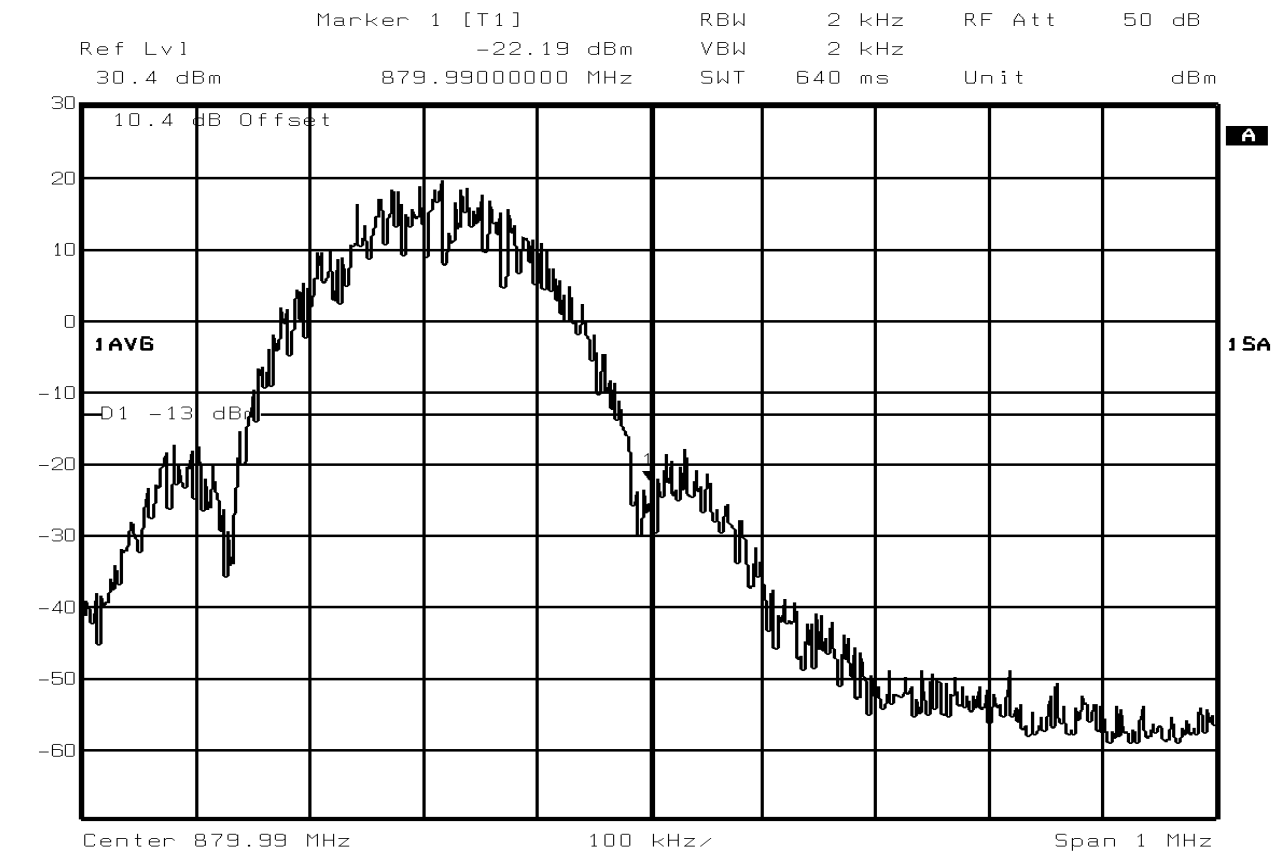
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 181, (879.80MHz)
8-PSK Modulation

Block A
869.040 – 879.990MHz



Date: 25.JUL.03 10:52:09

Test Equipment Used:

1, 2, 3



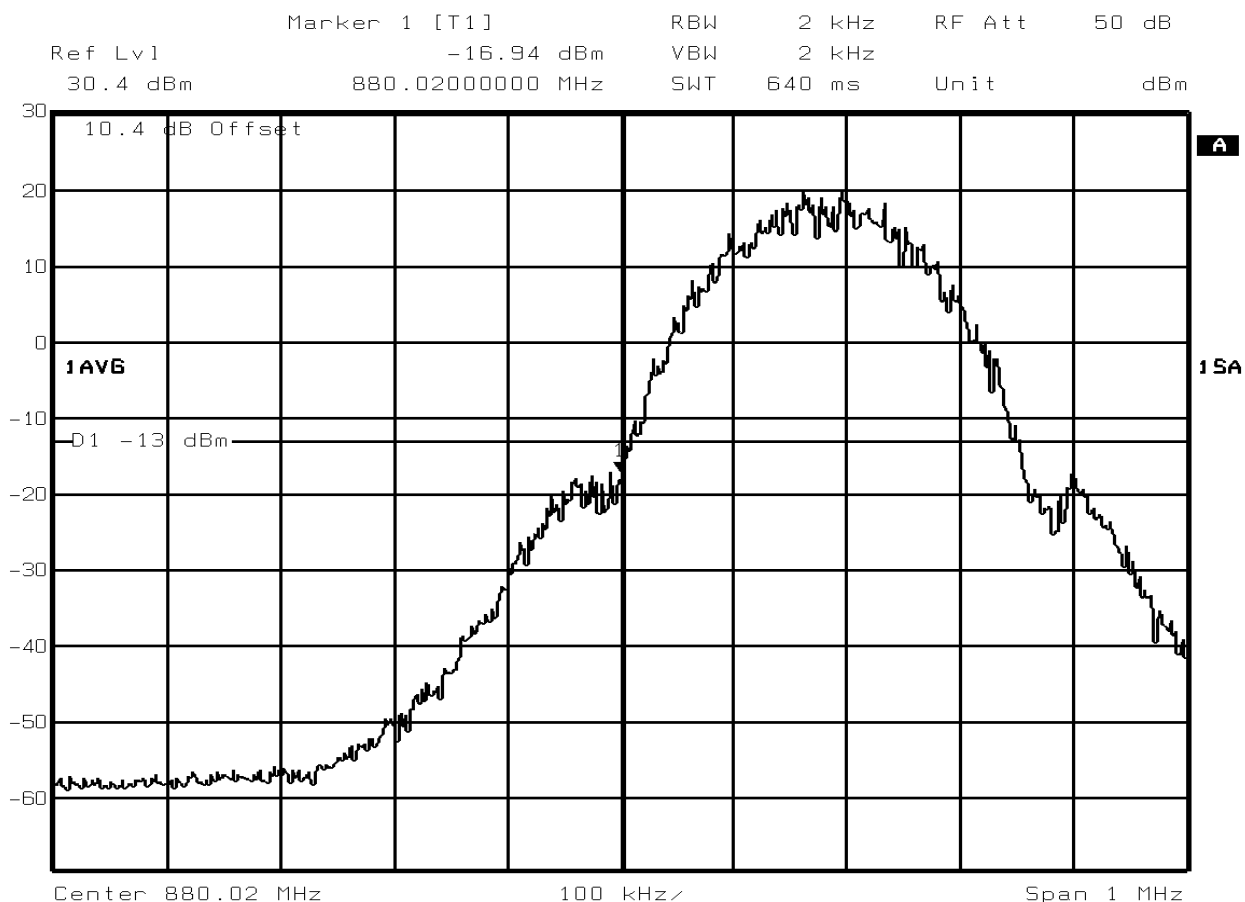
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 183, (880.20MHz)
GMSK Modulation

Block B
880.020 – 889.980 MHz



Date: 25.JUL.03 10:24:24

Test Equipment Used:

1, 2, 3



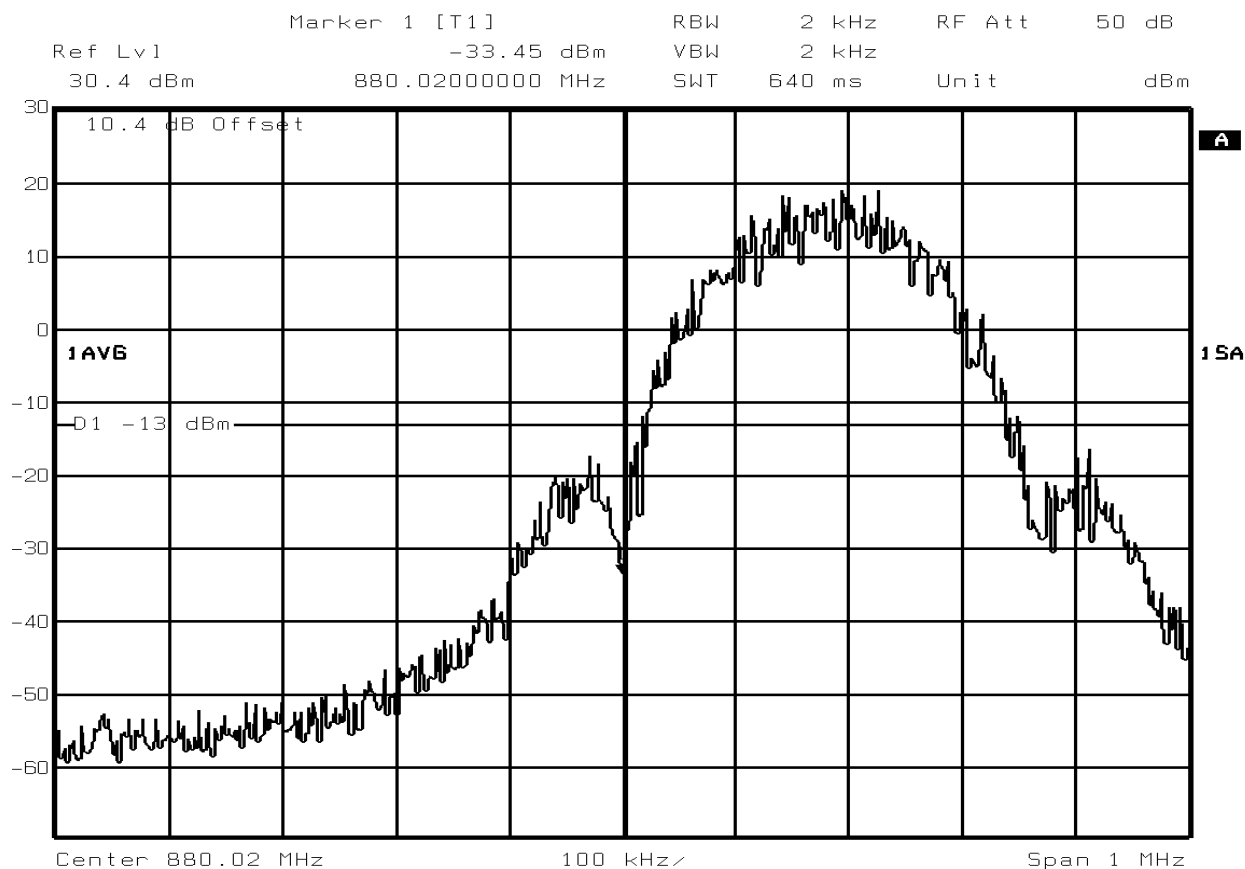
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 183, (880.20MHz)
8-PSK Modulation

Block B
880.020 – 889.980 MHz



Date: 25.JUL.03 10:54:27

Test Equipment Used:

1, 2, 3



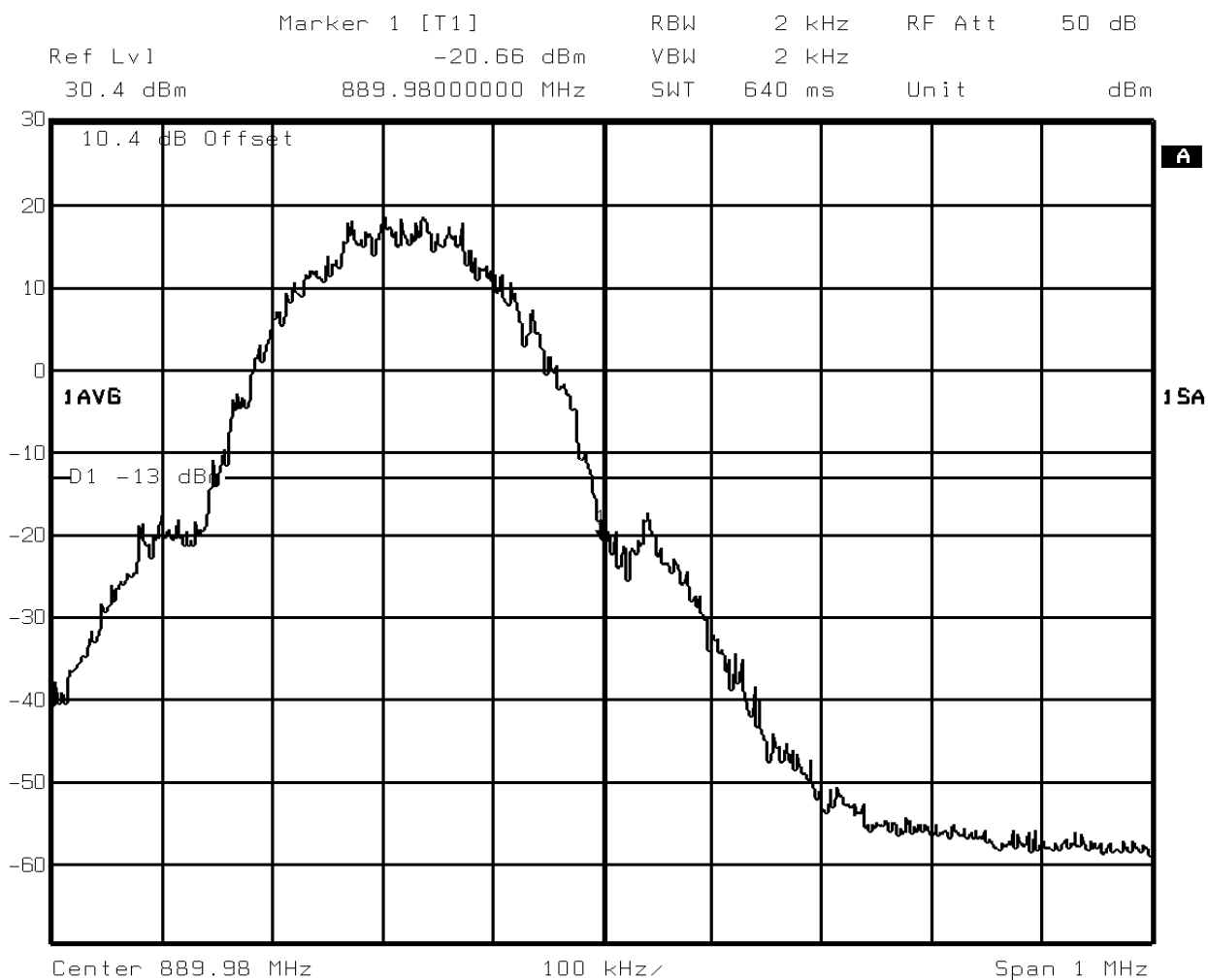
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 231, (889.80MHz)
GMSK Modulation

Block B
880.020 – 889.980 MHz



Date: 25.JUL.03 10:28:19

Test Equipment Used:

1, 2, 3



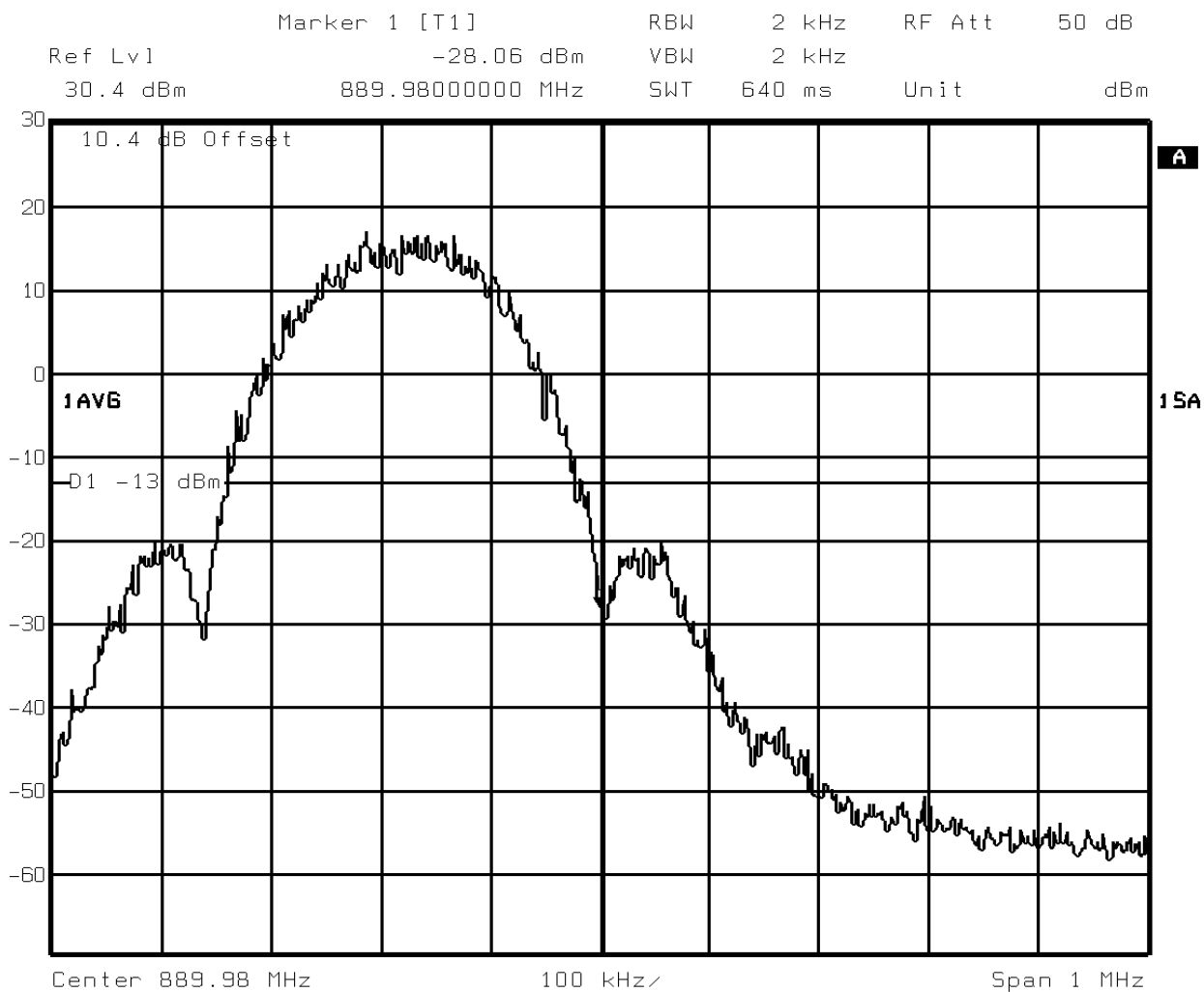
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 231, (889.80MHz)
8-PSK Modulation

Block B
880.020 – 889.980 MHz



Date: 25.JUL.03 10:56:07

Test Equipment Used:

1, 2, 3



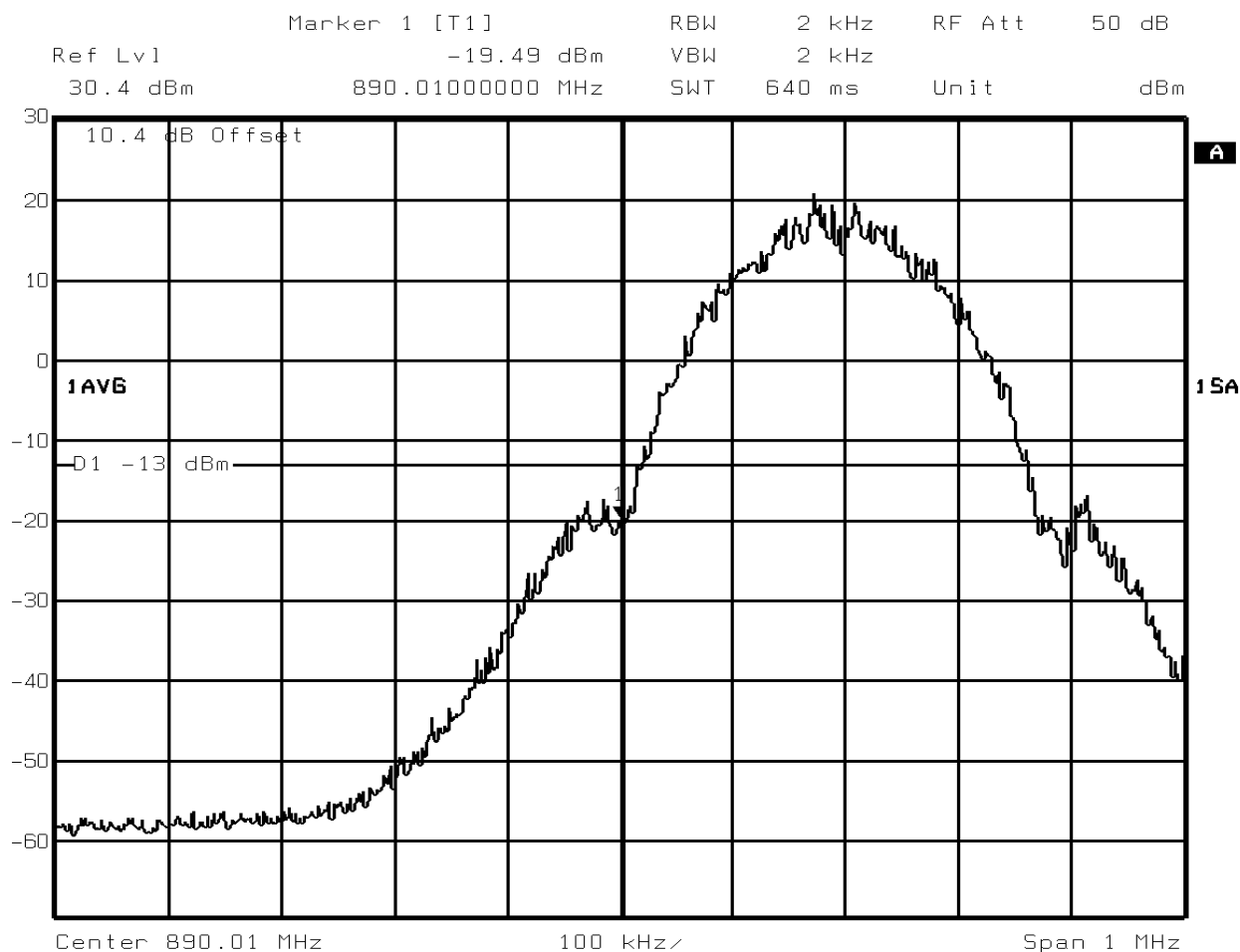
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level0 On Channel 233, (890.20MHz)
GMSK Modulation

Block A
890.010 – 891.480 MHz



Date: 25.JUL.03 10:32:09

Test Equipment Used:

1, 2, 3



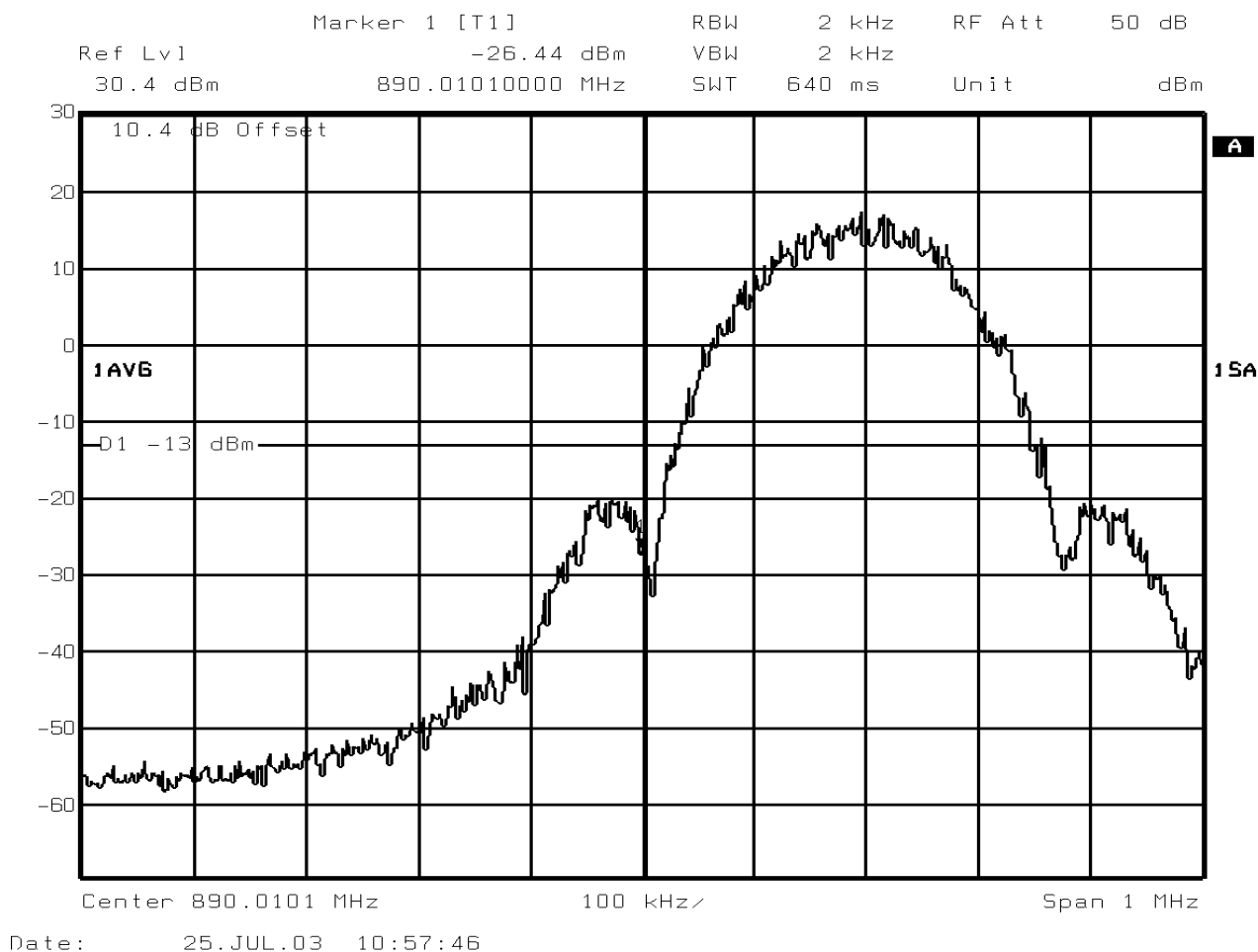
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 233, (890.20MHz)
8-PSK Modulation

Block A
890.010 – 891.480 MHz



Test Equipment Used:

1, 2, 3



Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

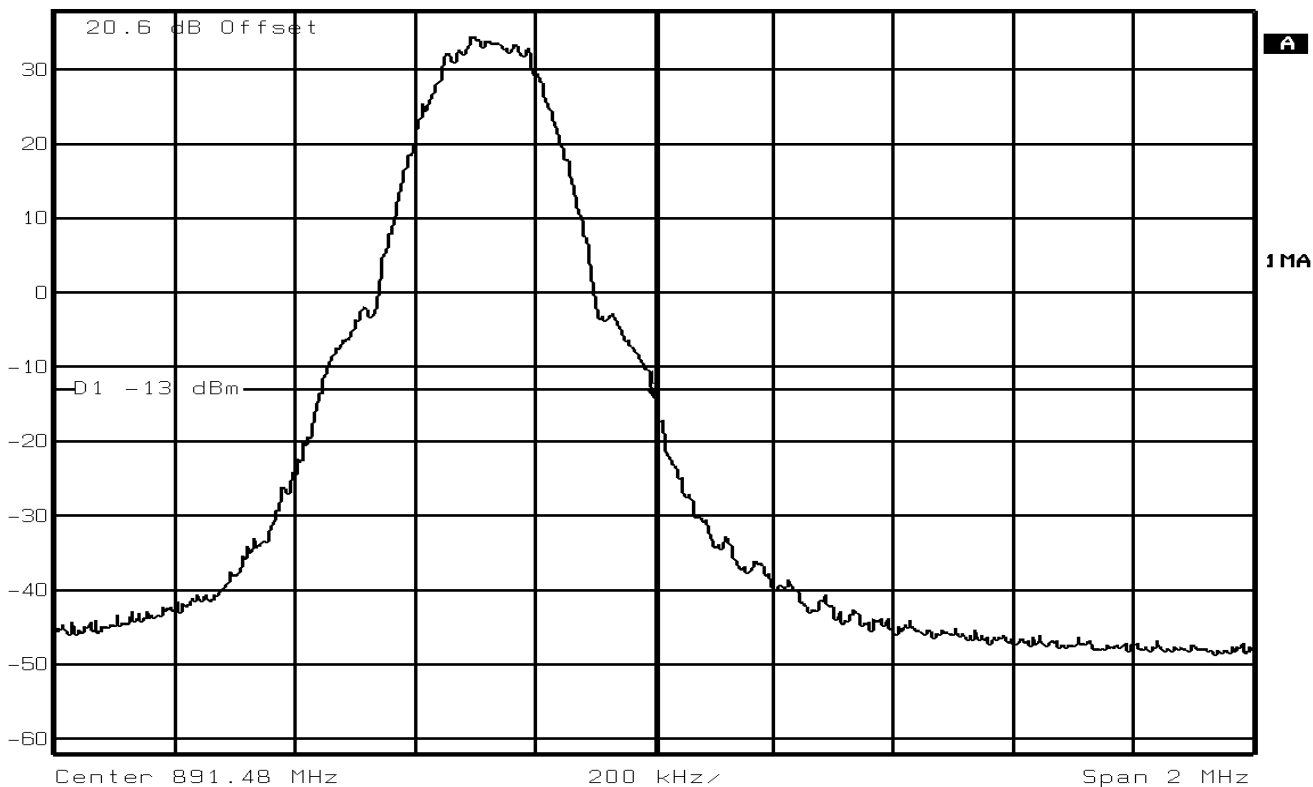
Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 13 On Channel 239, (891.40MHz)
GMSK Modulation

Block A
890.010 – 891.480 MHz

Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	30 dB
38 dBm	-14.19 dBm	VBW	30 kHz		
	891.48000000 MHz	SWT	500 ms	Unit	dBm



Date: 25.OCT.02 10:22:09

Test Equipment Used:

1, 2, 3



Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

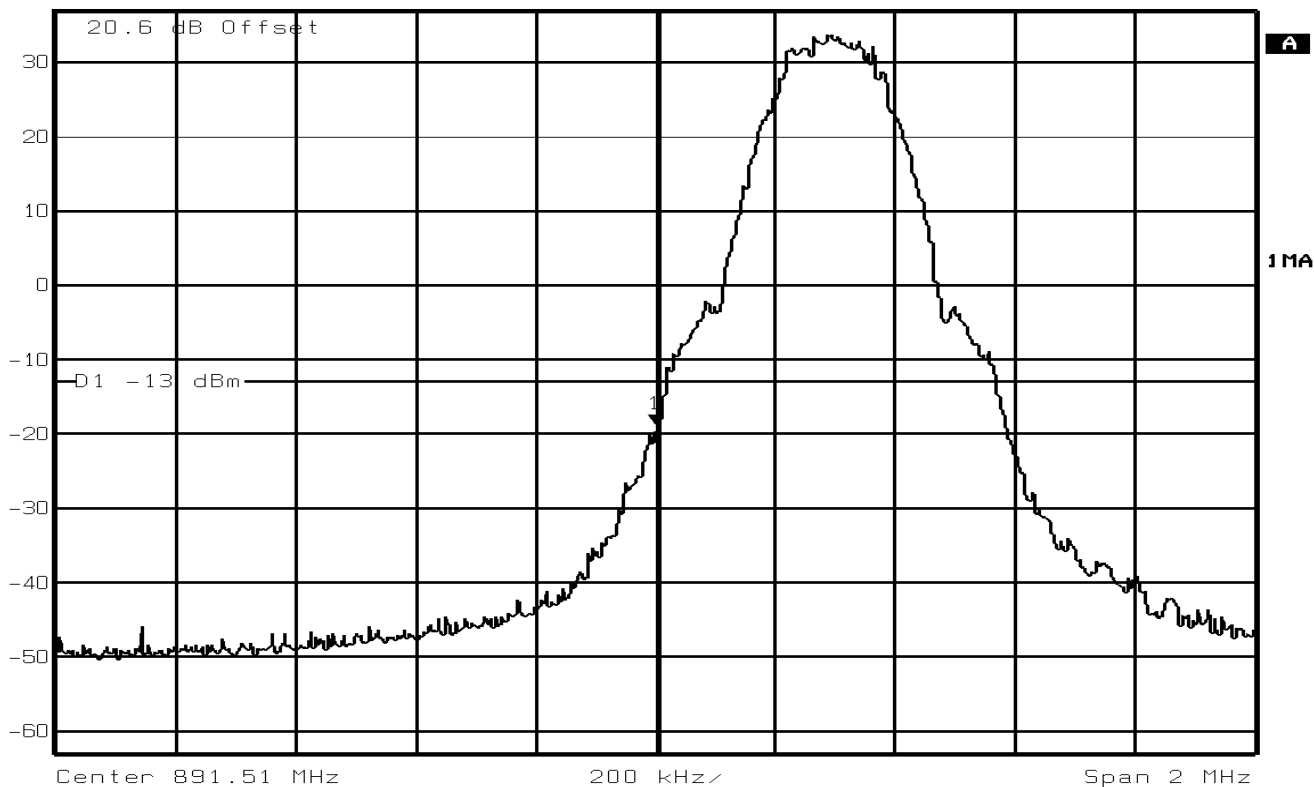
Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting on Power Level 13 On Channel 240, (891.60MHz)
GMSK Modulation

Block B
891.510 – 893.970 MHz

Marker 1 [T1]	RBW	10 kHz	RF Att	30 dB
Ref Lvl	-18.60 dBm	VBW	30 kHz	
37 dBm	891.51000000 MHz	SWT	500 ms	Unit dBm



Date: 25.OCT.02 10:54:55

Test Equipment Used:

1, 2, 3

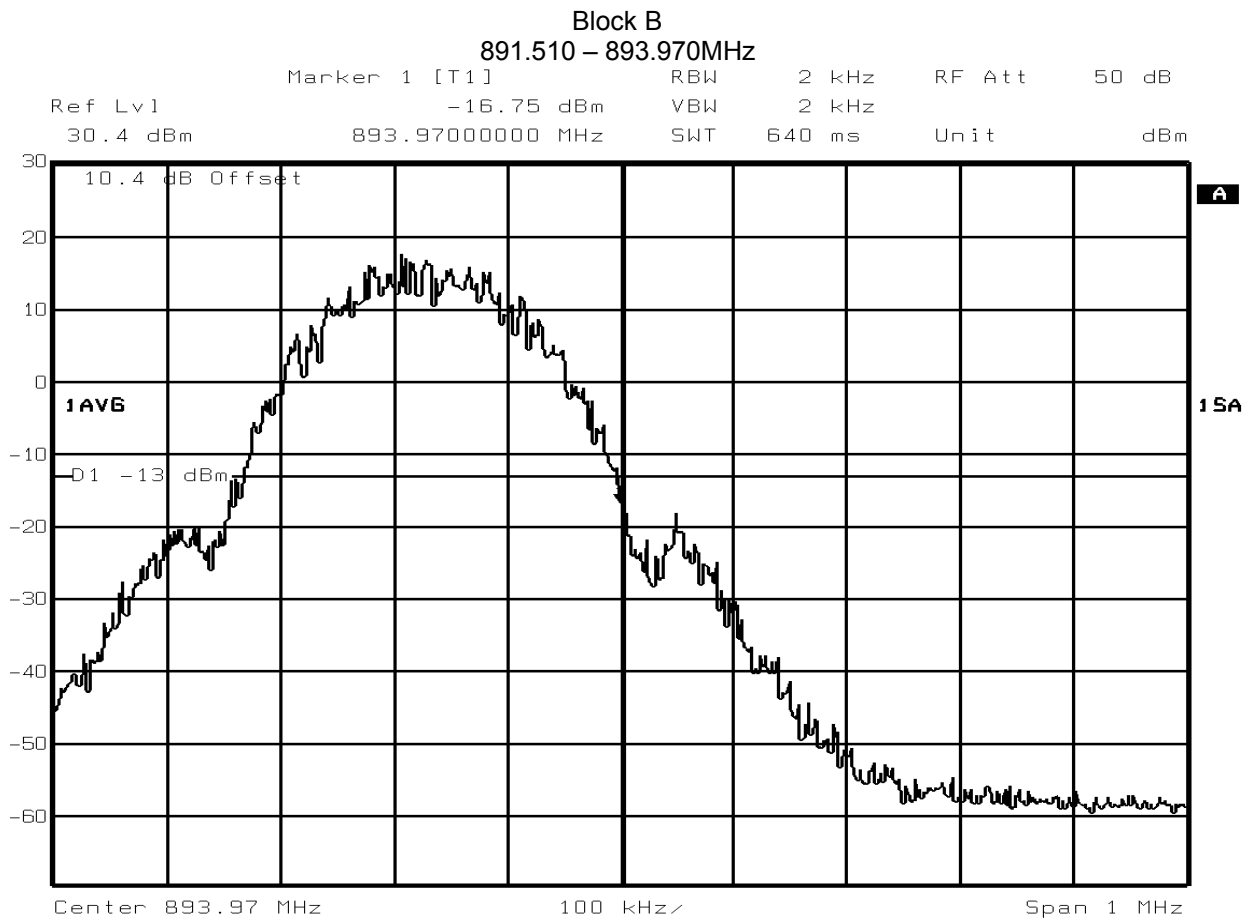


Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 1 On Channel 251, (893.80MHz)
GMSK Modulation



Date: 25.JUL.03 10:43:44

Test Equipment Used:

1, 2, 3



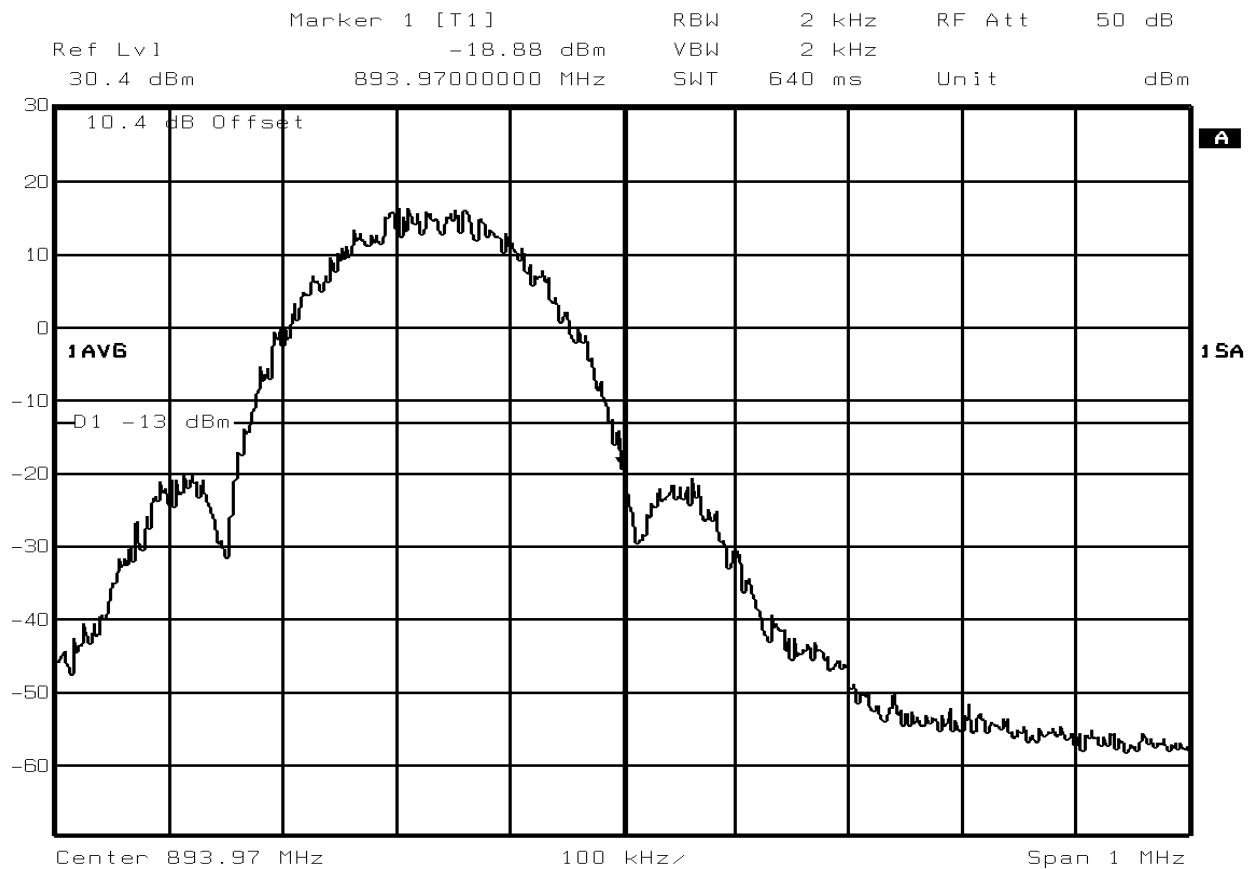
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 22.905

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 251, (893.80MHz)
8PSK Modulation

Block B
891.510 – 893.970MHz



Date: 25.JUL.03 11:02:10

Test Equipment Used:

1, 2, 3



SECTION 3

**47 CFR 2.1049, 24.238(b) Spurious Emissions at Antenna Terminals
Testing relating to the WTPA**



Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 17th March 2003

Rule Parts: 2.1049, 24.238(b)

Measurement Method

In accordance with Part 24.238, at least 1% of the 26dB bandwidth was used for the resolution and video bandwidths up to 1MHz away from the Block Edge. At greater than 1MHz away from block edge, the resolution and video bandwidths were increased to 1MHz.

The reference power and path losses of all channels used for testing in each frequency block were measured. It was found that there was <0.3dB variation in all channels, thus the worst case reference level offset was used throughout. Having entered the reference level offset, the limit line was displayed, showing the -13dBm, (43+10logP), limit.

Table 5 shows the Frequency Blocks the EUT was tested against along with the tested channels.

Communication Channel Pair Blocks

Frequency Block (MHz)	Lower Block Edge Test Channels/Frequencies	Upper Block Edge Test Channels/Frequencies
A (1930 – 1945)	Channel : 512 Frequency : 1930.2MHz	Channel : 585 Frequency : 1944.8MHz
B (1950 – 1965)	Channel : 612 Frequency : 1950.2MHz	Channel : 685 Frequency : 1964.8MHz
C (1975 – 1990)	Channel : 737 Frequency : 1975.2MHz	Channel : 810 Frequency : 1989.8MHz
D (1945 – 1950)	Channel : 587 Frequency : 1945.2MHz	Channel : 610 Frequency : 1949.8MHz
E (1965 – 1970)	Channel : 687 Frequency : 1965.2MHz	Channel : 710 Frequency : 1969.8MHz
F (1970 – 1975)	Channel : 712 Frequency : 1970.2MHz	Channel : 735 Frequency : 1974.8MHz

Table 5

Remarks

The channels shown in the table above are the minimum and maximum channels that can be used in each block to maintain compliance. Channels used outside of those stated in the table exceed the specification limits, thus they cannot be used.

The measurement plots are shown pages 37 to 60

Table 6 contains details of the power levels and channel settings used during testing.



GSM 1900

Channel Number	GMSK	Dsp settings 8PSK	End User 8PSK Levels
512	Power Level 0	Power Level 16	Power Level 0
585	Power Level 0	Power Level 16	Power Level 0
586	BLOCKED	BLOCKED	BLOCKED
587	Power Level 0	Power Level 16	Power Level 0
610	Power Level 0	Power Level 16	Power Level 0
611	BLOCKED	BLOCKED	BLOCKED
612	Power Level 0	Power Level 16	Power Level 0
685	Power Level 0	Power Level 16	Power Level 0
686	BLOCKED	BLOCKED	BLOCKED
687	Power Level 0	Power Level 16	Power Level 0
710	Power Level 0	Power Level 16	Power Level 0
711	BLOCKED	BLOCKED	BLOCKED
712	Power Level 0	Power Level 16	Power Level 0
735	Power Level 0	Power Level 16	Power Level 0
736	BLOCKED	BLOCKED	BLOCKED
737	Power Level 0	Power Level 16	Power Level 0
810	Power Level 0	Power Level 16	Power Level 0

Table 6



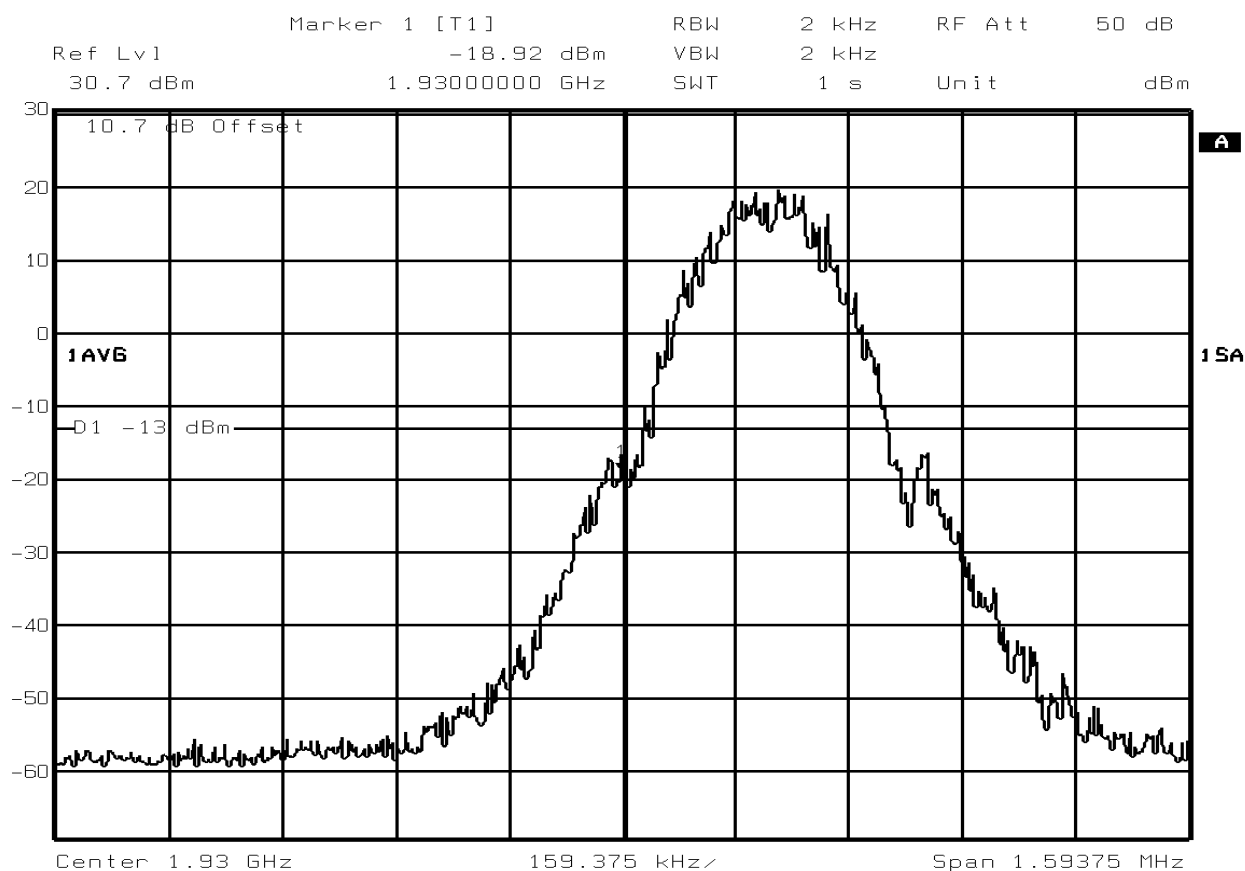
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 512, (1930.2MHz)
GMSK Modulation

Block A
1930 – 1945 MHz



Date: 25.JUL.03 11:21:39

Test Equipment Used:

1, 2, 3



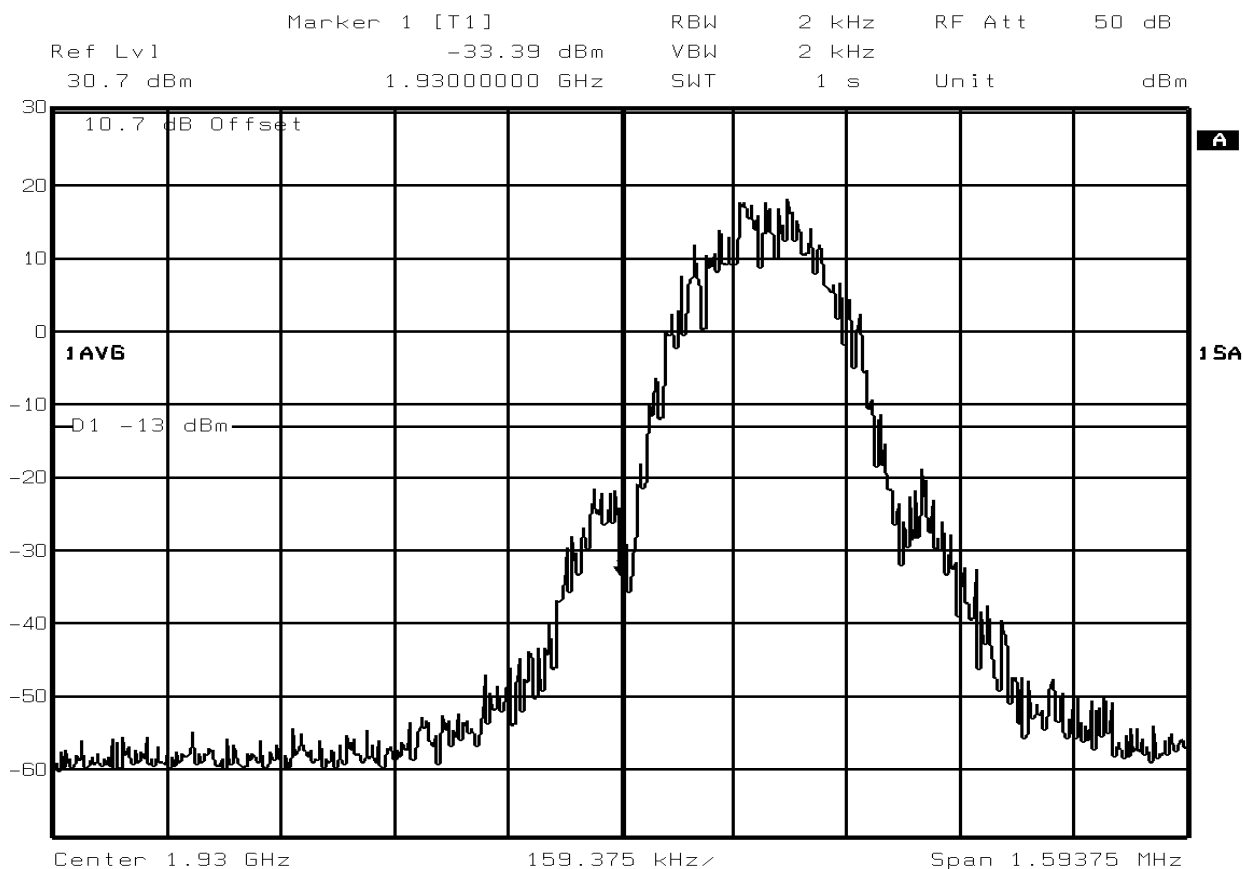
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 512, (1930.2MHz)
8-PSK Modulation

Block A
1930 – 1945 MHz



Date: 25.JUL.03 11:37:29

Test Equipment Used:

1, 2, 3



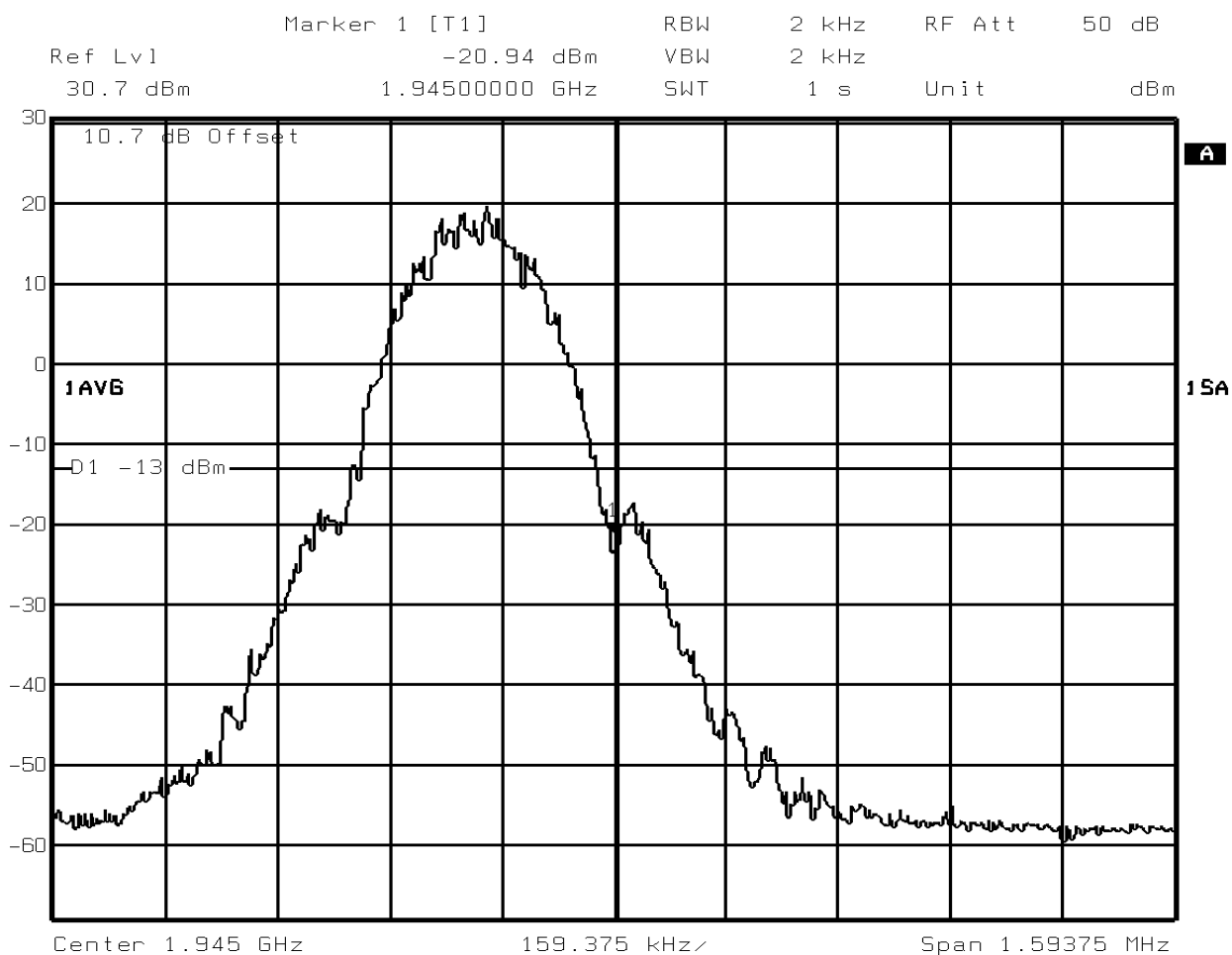
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 585, (1944.8MHz)
GMSK Modulation

Block A
1930 – 1945 MHz



Date: 25.JUL.03 11:16:06

Test Equipment Used:

1, 2, 3



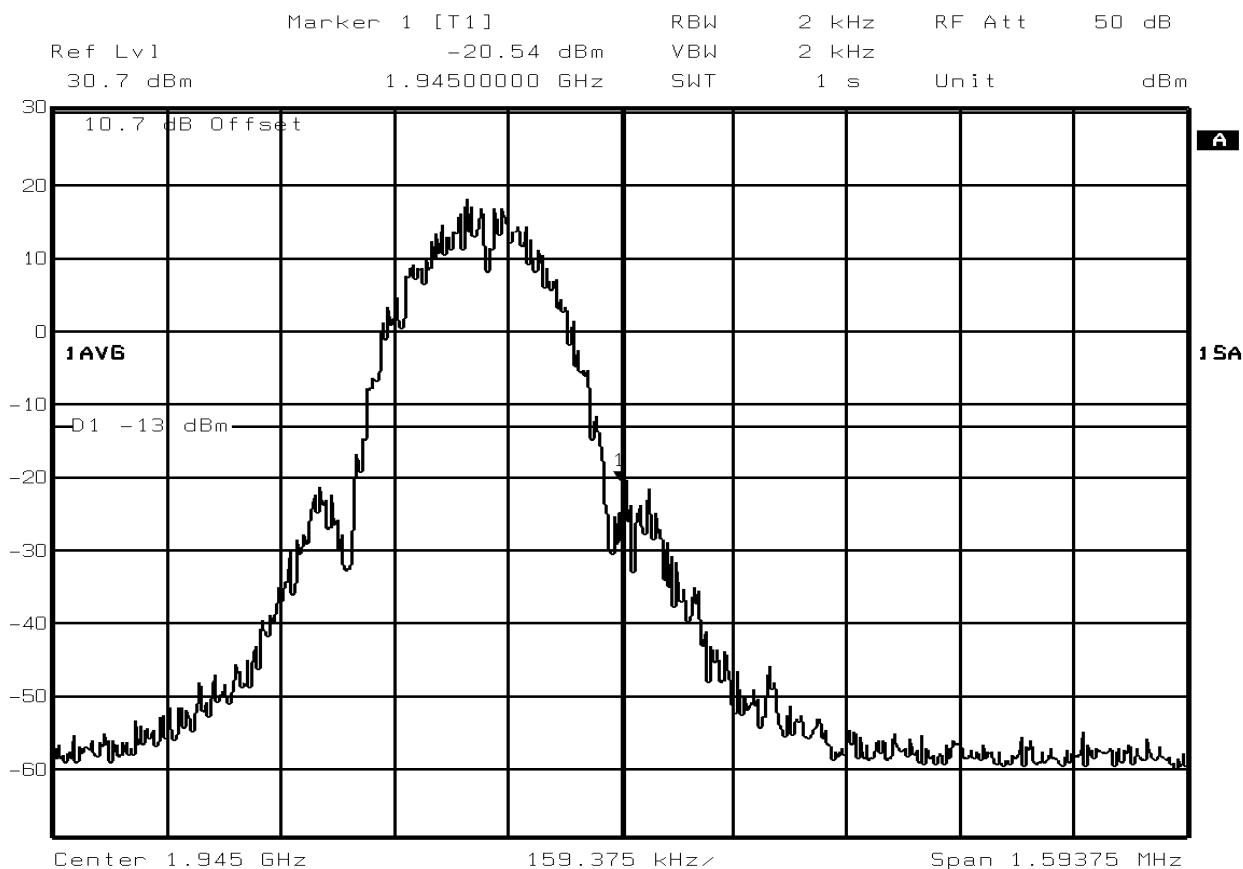
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 585, (1944.8MHz)
8-PSK Modulation

Block A
1930 – 1945 MHz



Date: 25.JUL.03 11:38:57

Test Equipment Used:

1, 2, 3

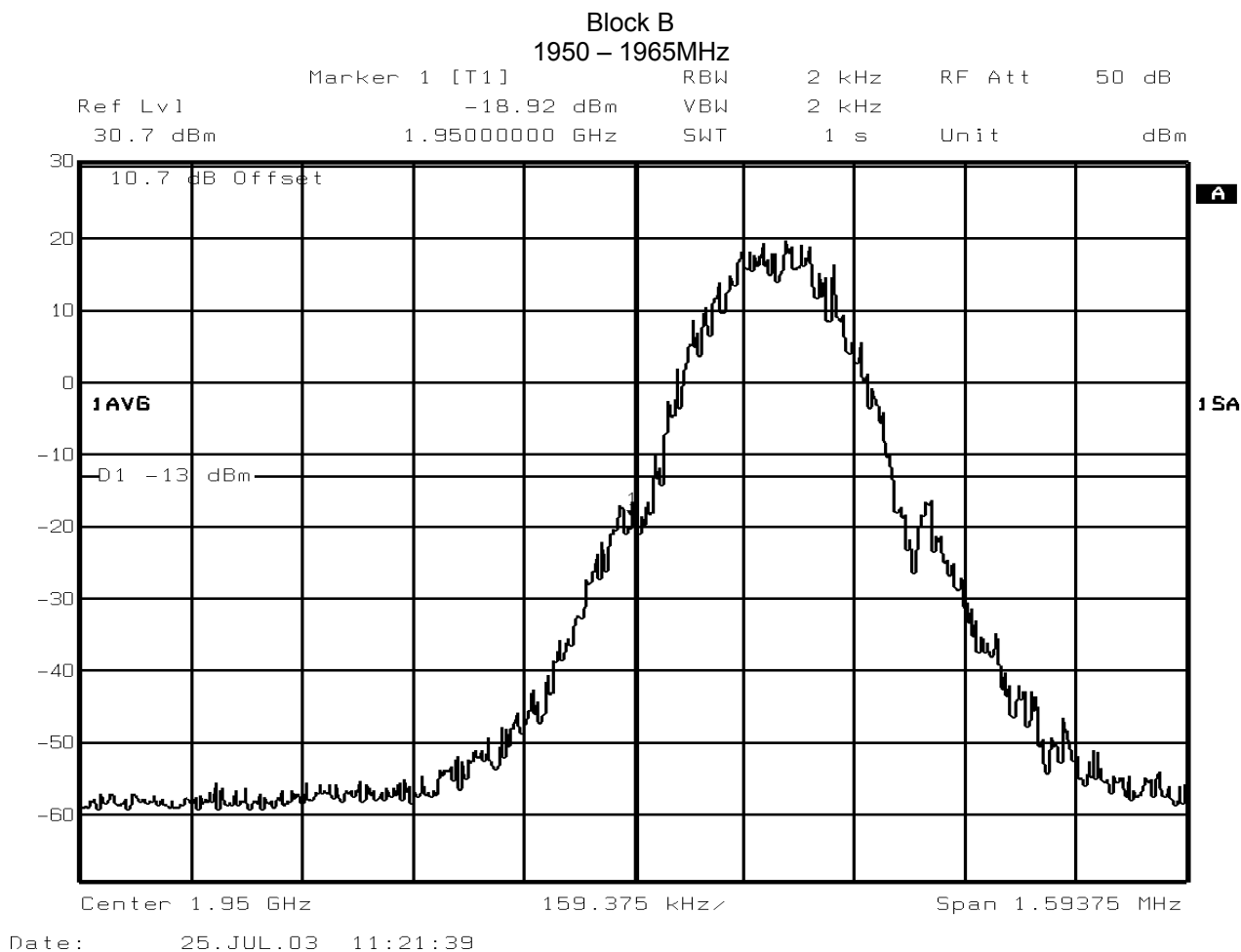


Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 612, (1950.2MHz)
GMSK Modulation



Test Equipment Used:

1, 2, 3



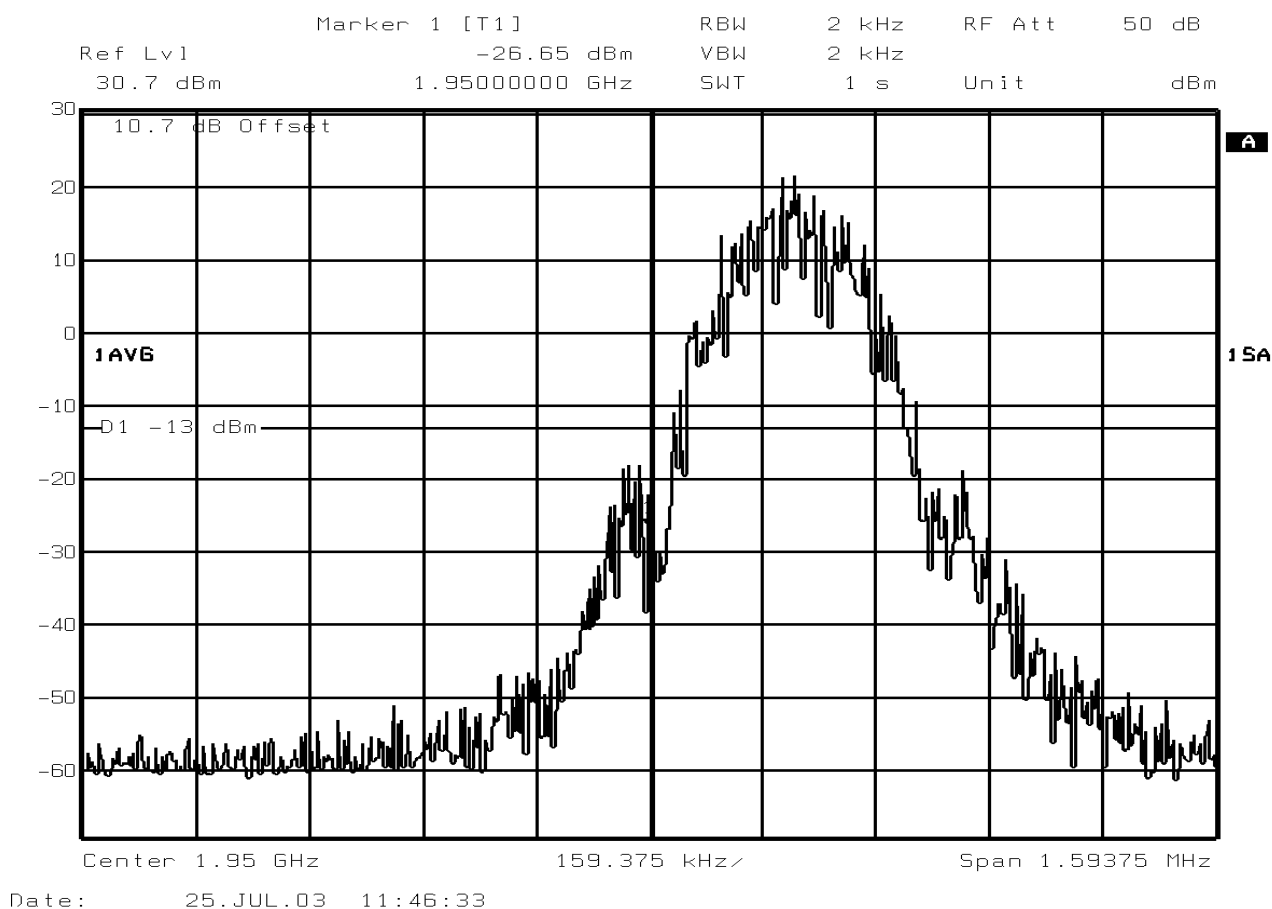
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 612, (1950.2MHz)
8-PSK Modulation

Block B
1950 – 1965MHz



Test Equipment Used:

1, 2, 3



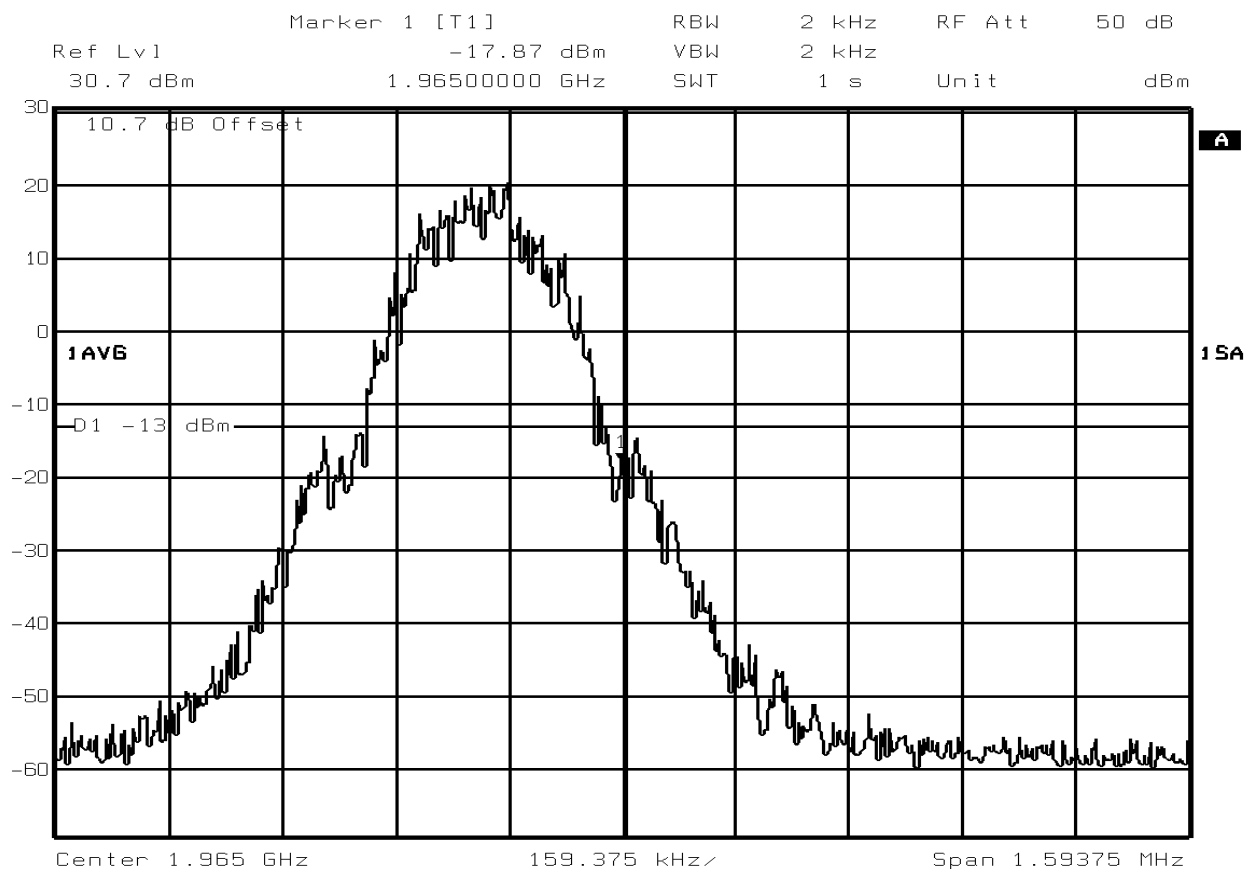
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 685, (1964.8MHz)
GMSK Modulation

Block B
1950 – 1965MHz



Date: 25.JUL.03 11:23:40

Test Equipment Used:

1, 2, 3



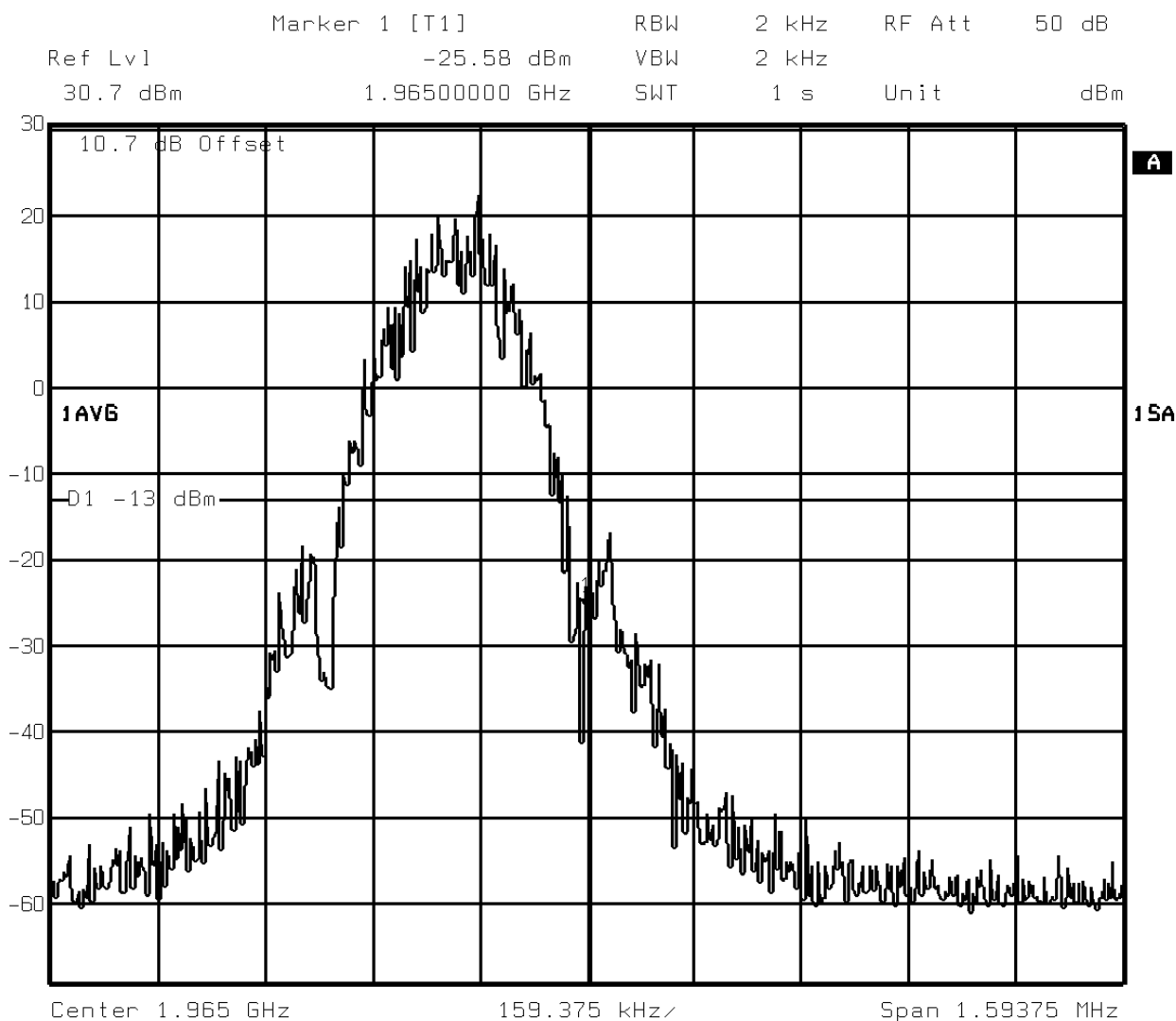
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 685, (1964.8MHz)
8-PSK Modulation

Block B
1950 – 1965MHz



Date: 25.JUL.03 11:48:04

Test Equipment Used:

1, 2, 3



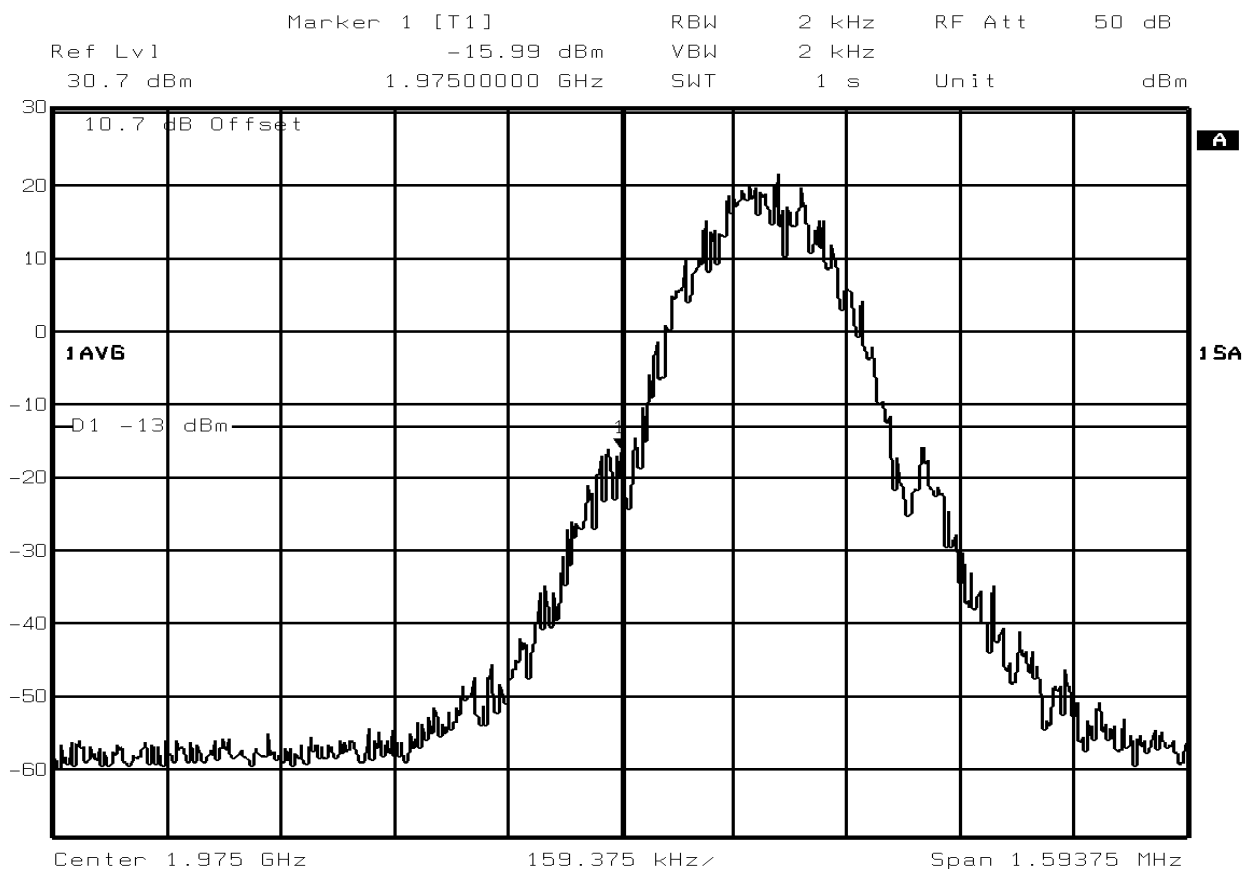
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 737, (1975.2MHz)
GMSK Modulation

Block C
1975 – 1990MHz



Date: 25.JUL.03 11:32:25

Test Equipment Used:

1, 2, 3



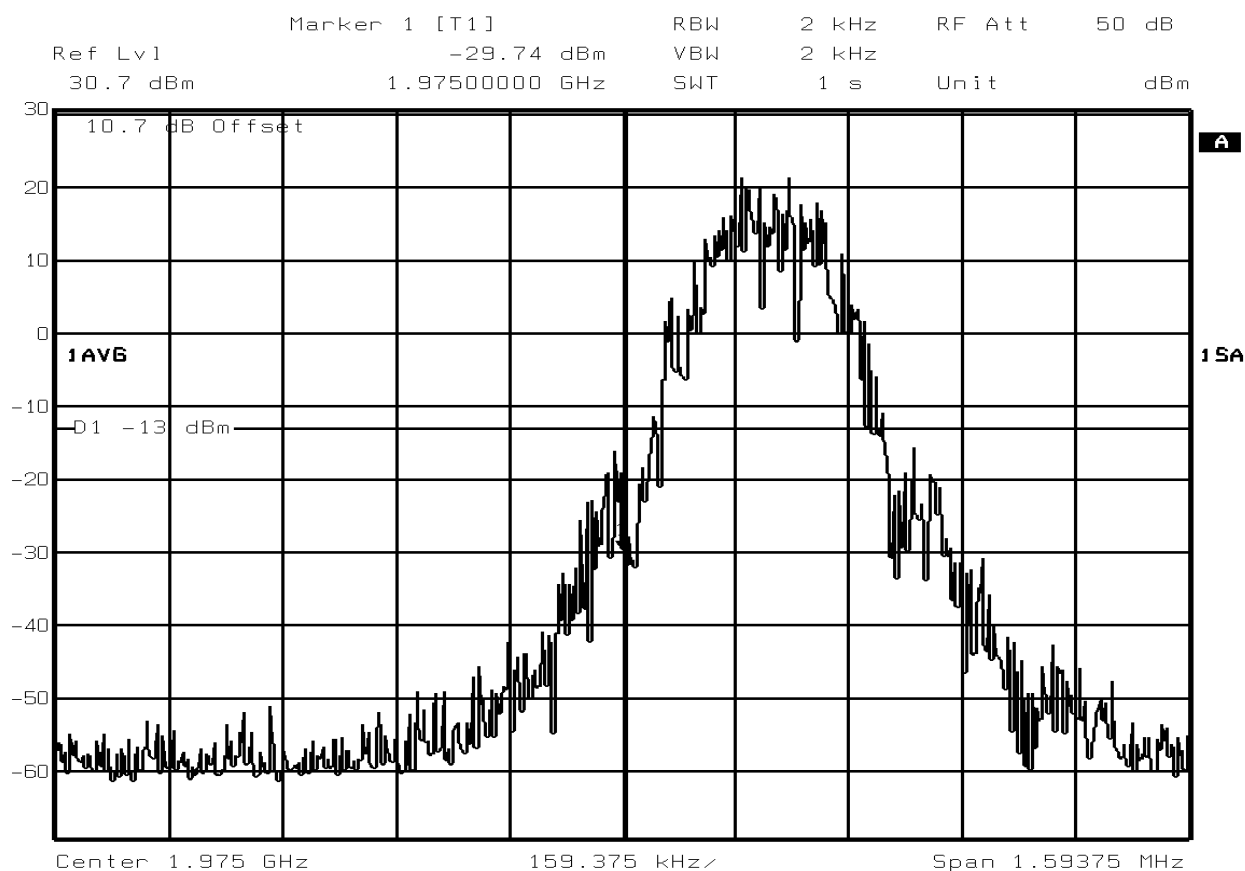
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 737, (1975.2MHz)
8-PSK Modulation

Block C
1975 – 1990MHz



Date: 25.JUL.03 11:59:38

Test Equipment Used:

1, 2, 3



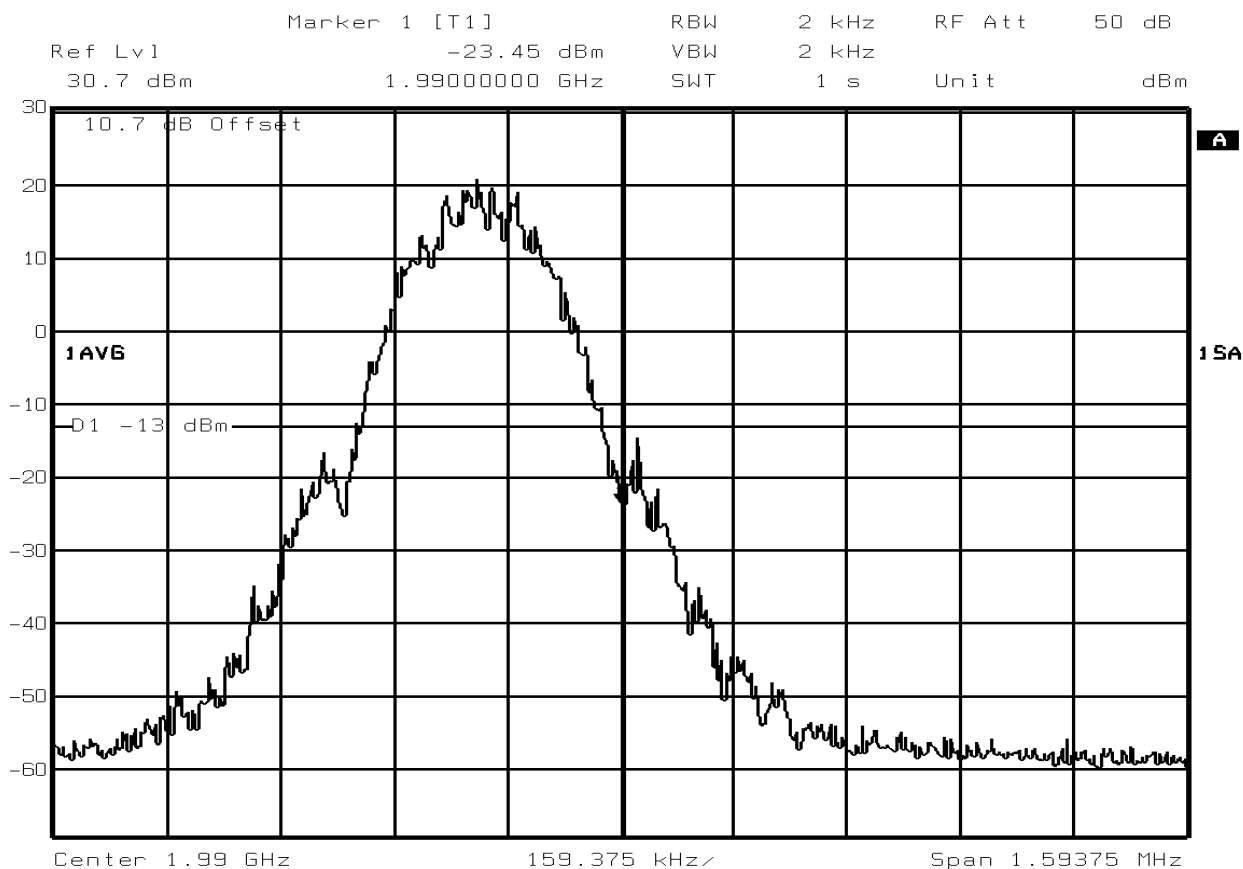
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 810, (1989.8MHz)
GMSK Modulation

Block C
1975 – 1990MHz



Date: 25.JUL.03 11:33:59

Test Equipment Used:

1, 2, 3



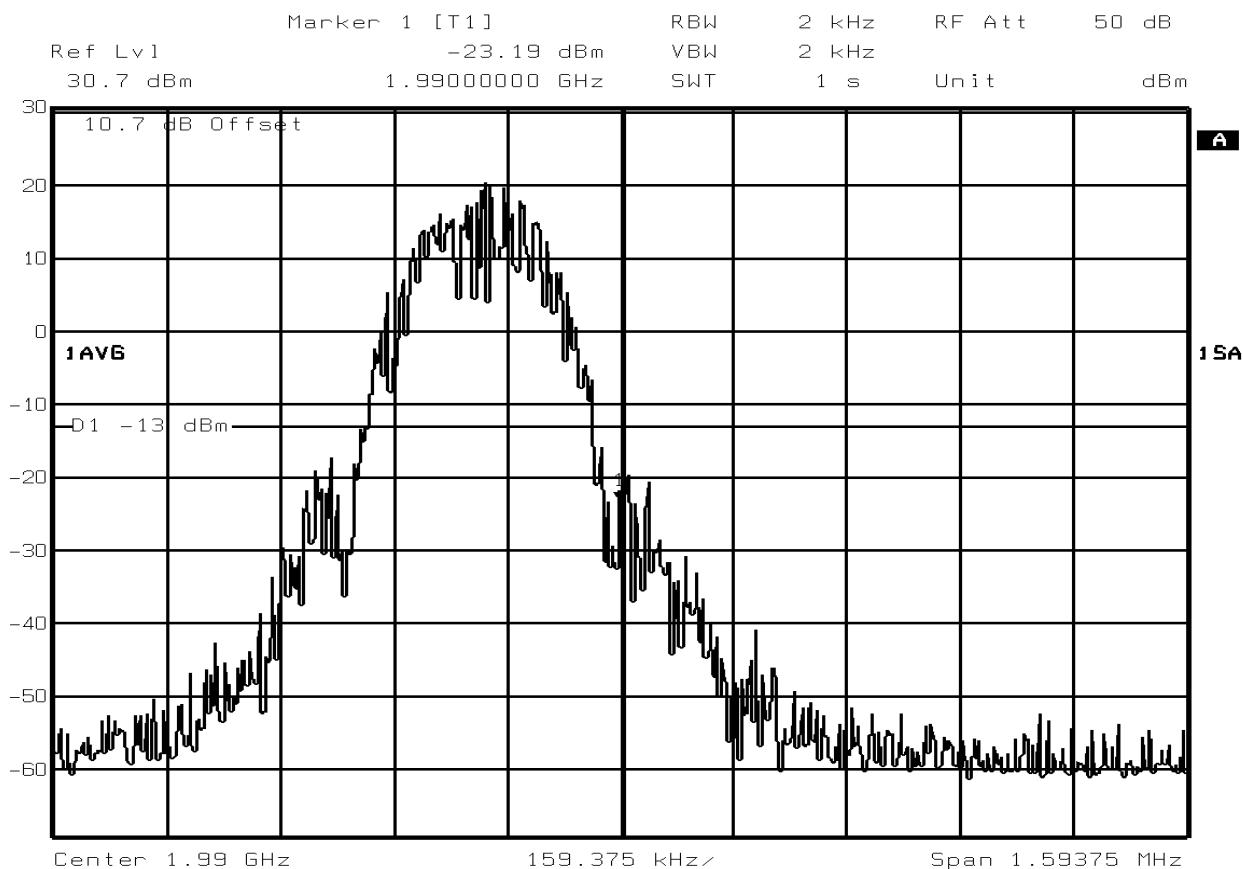
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 810, (1989.8MHz)
8-PSK Modulation

Block C
1975 – 1990MHz



Date: 25.JUL.03 12:01:00

Test Equipment Used:

1, 2, 3



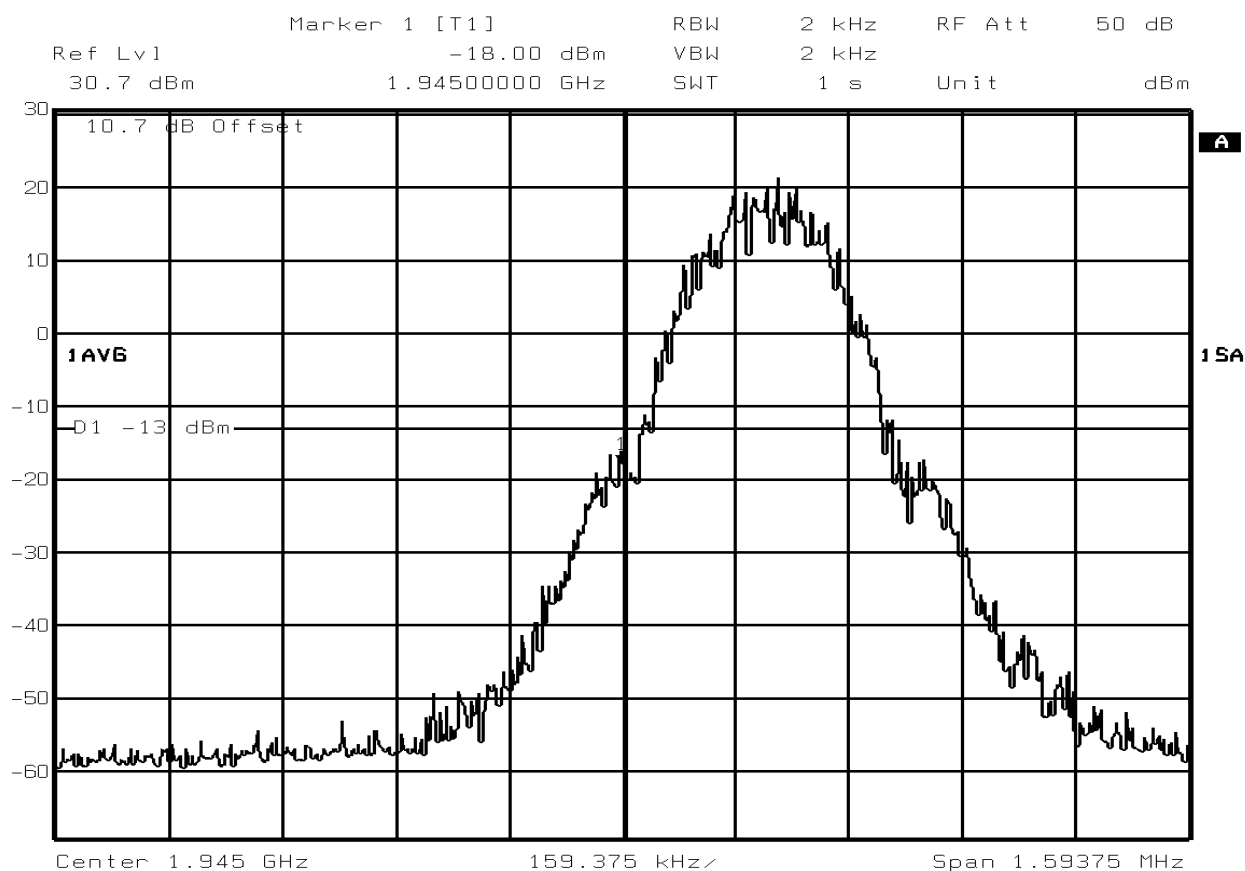
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 587, (1945.2MHz)
GMSK Modulation

Block D
1945 – 1950MHz



Date: 25.JUL.03 11:17:57

Test Equipment Used:

1, 2, 3



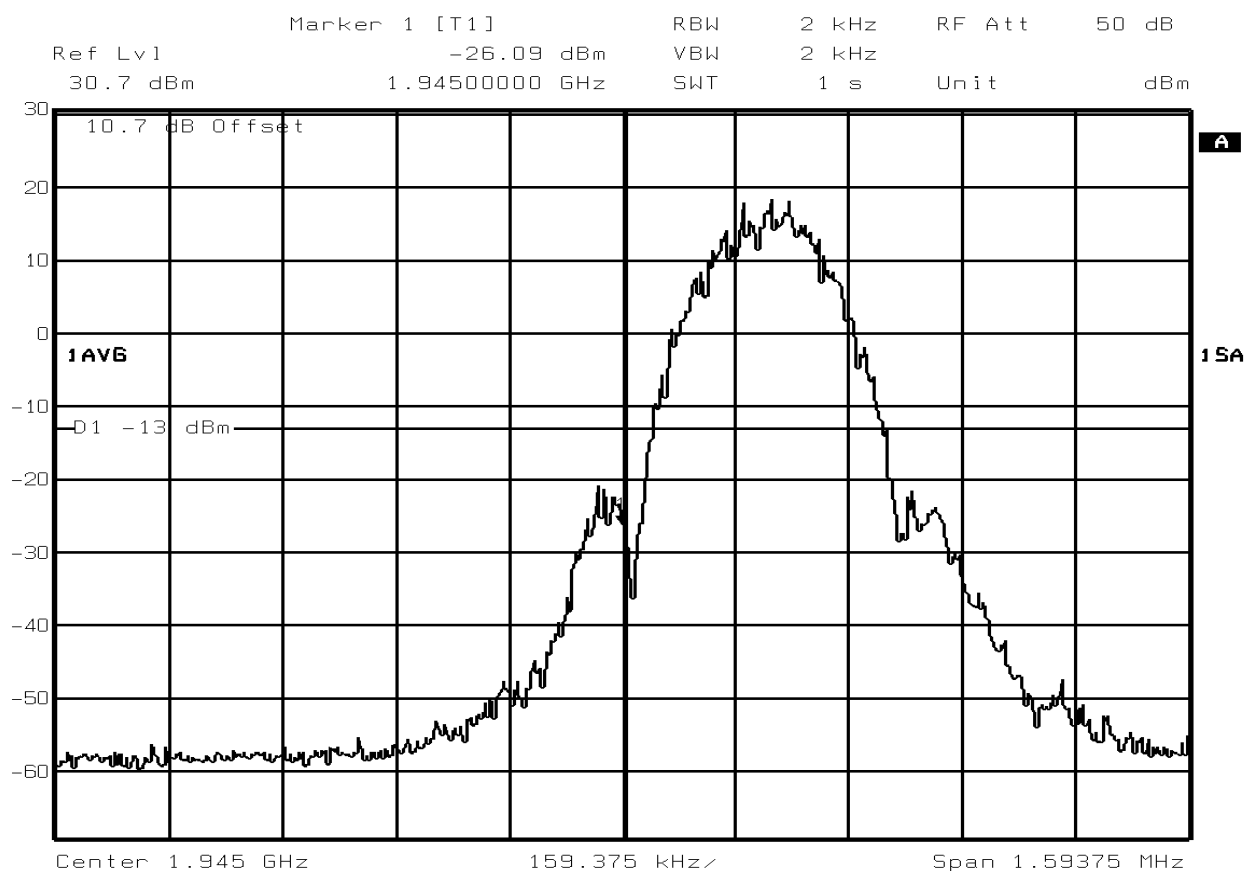
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 00 On Channel 587, (1945.2MHz)
8-PSK Modulation

Block D
1945 – 1950MHz



Date: 25.JUL.03 11:41:06

Test Equipment Used:

1, 2, 3



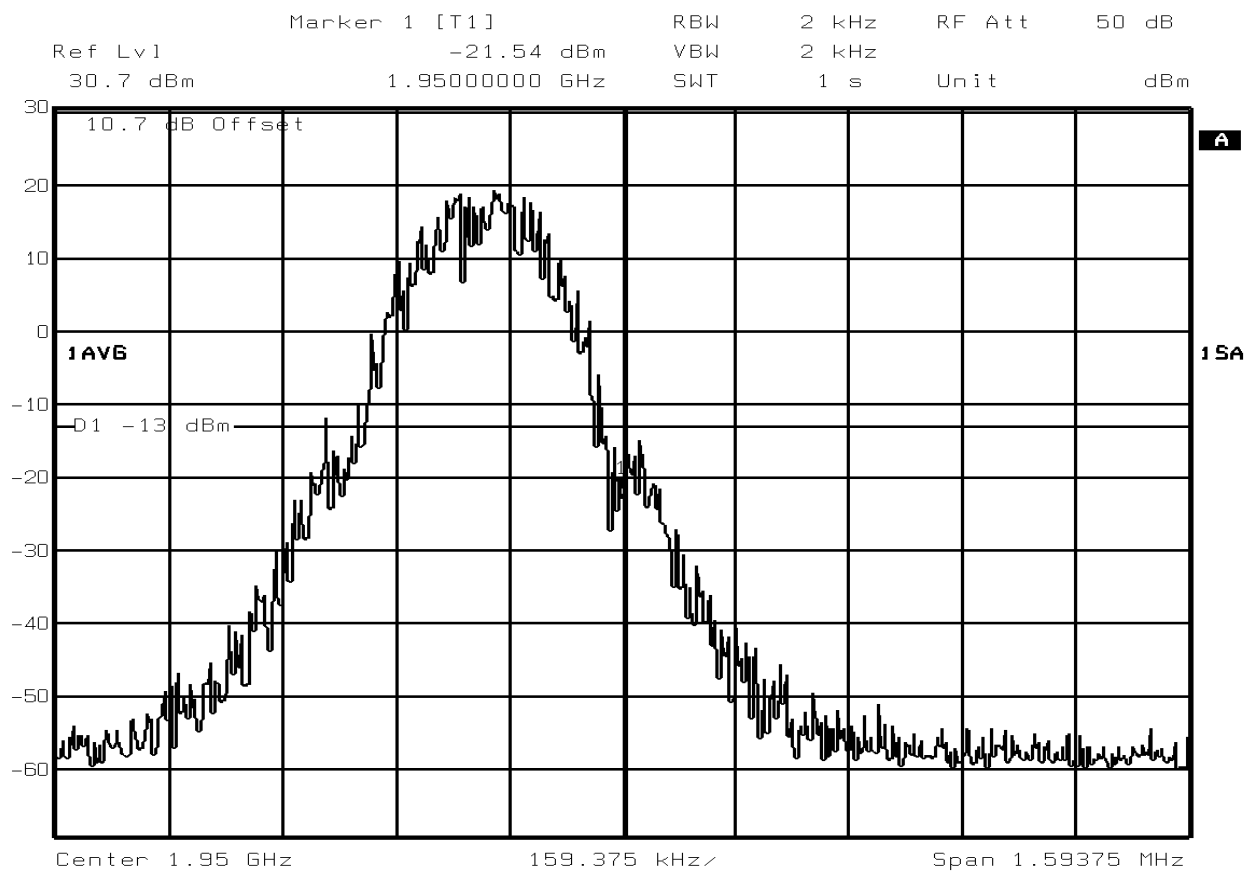
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 610, (1949.8MHz)
GMSK Modulation

Block D
1945 – 1950MHz



Date: 25.JUL.03 11:19:53

Test Equipment Used:

1, 2, 3



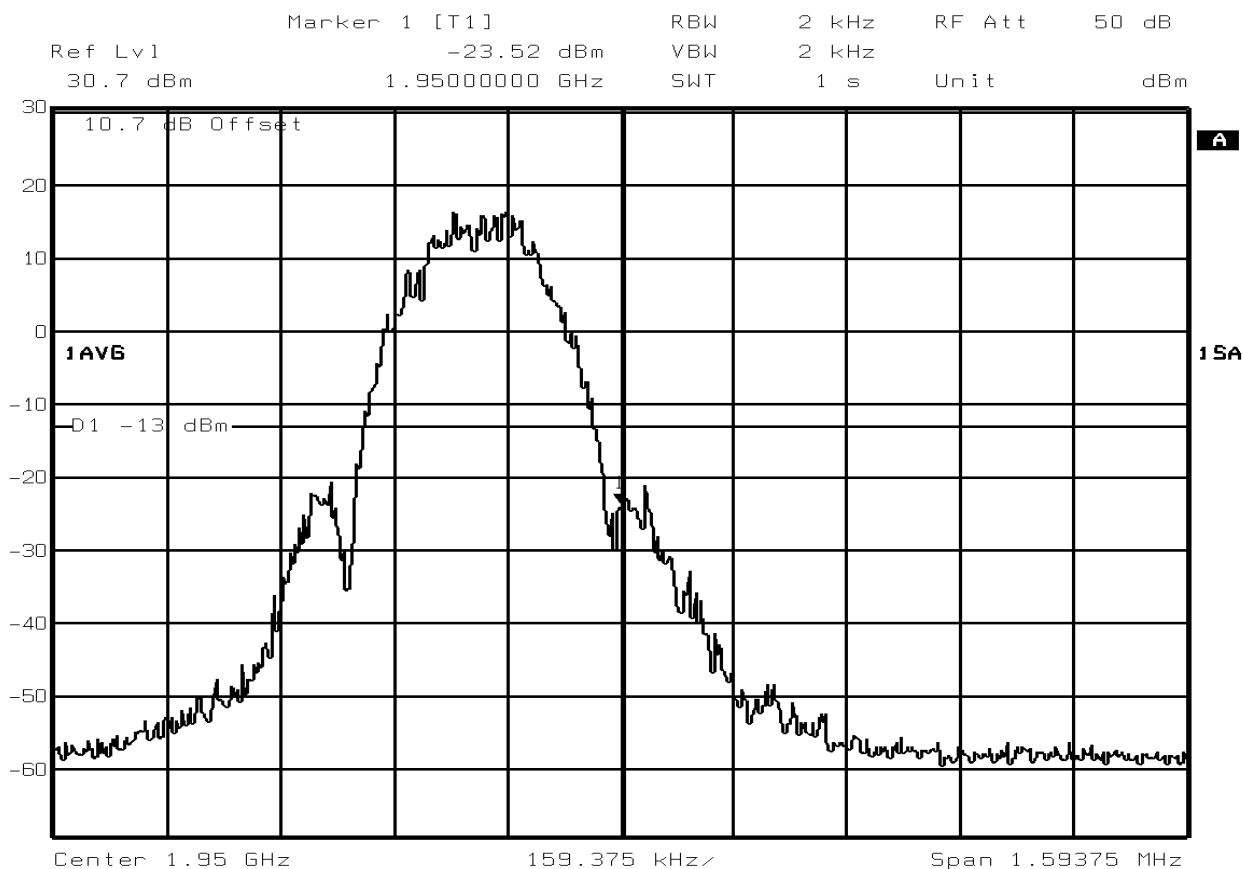
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 610, (1949.8MHz)
8-PSK Modulation

Block D
1945 – 1950MHz



Date: 25.JUL.03 11:42:56

Test Equipment Used:

1, 2, 3



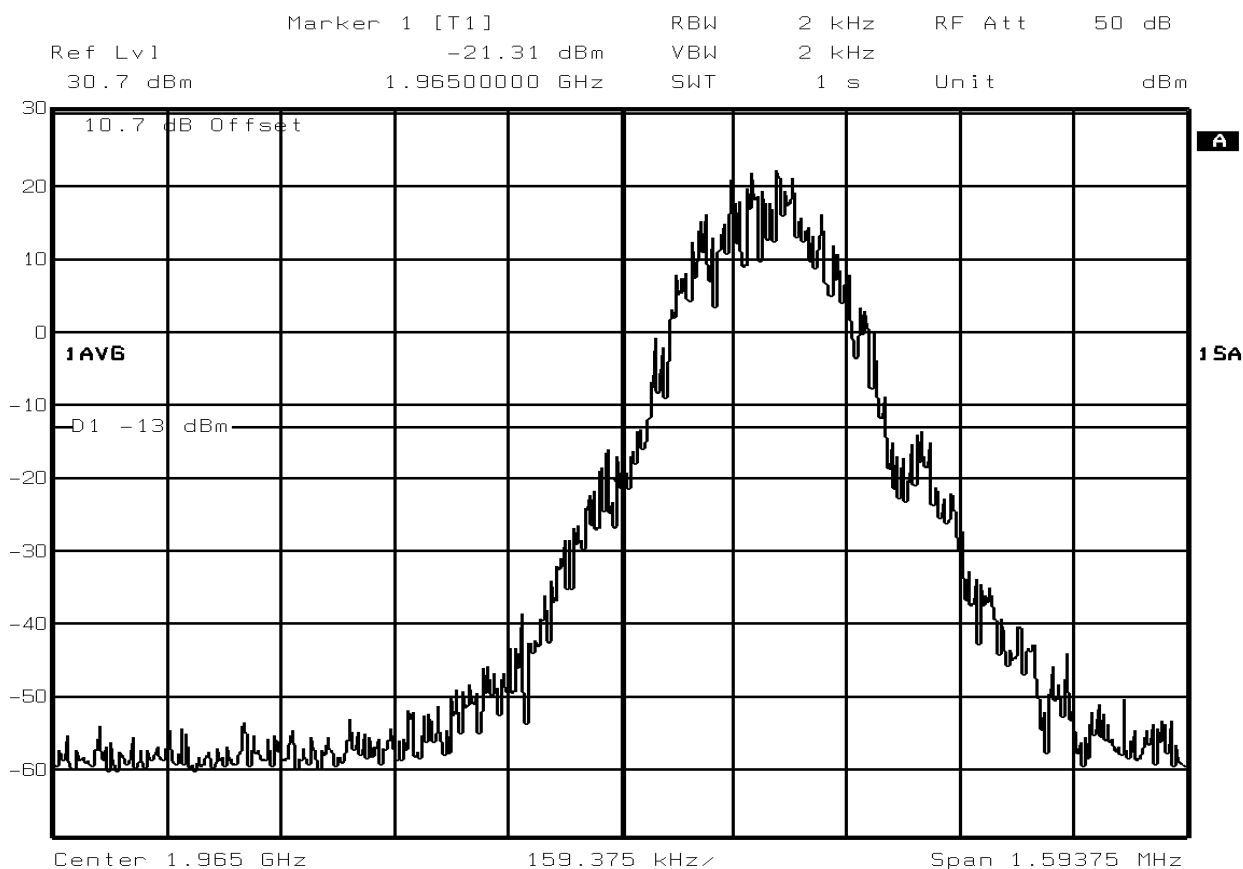
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 687, (1965.2MHz)
GMSK Modulation

Block E
1965 – 1970MHz



Date: 25.JUL.03 11:25:23

Test Equipment Used:

1, 2, 3



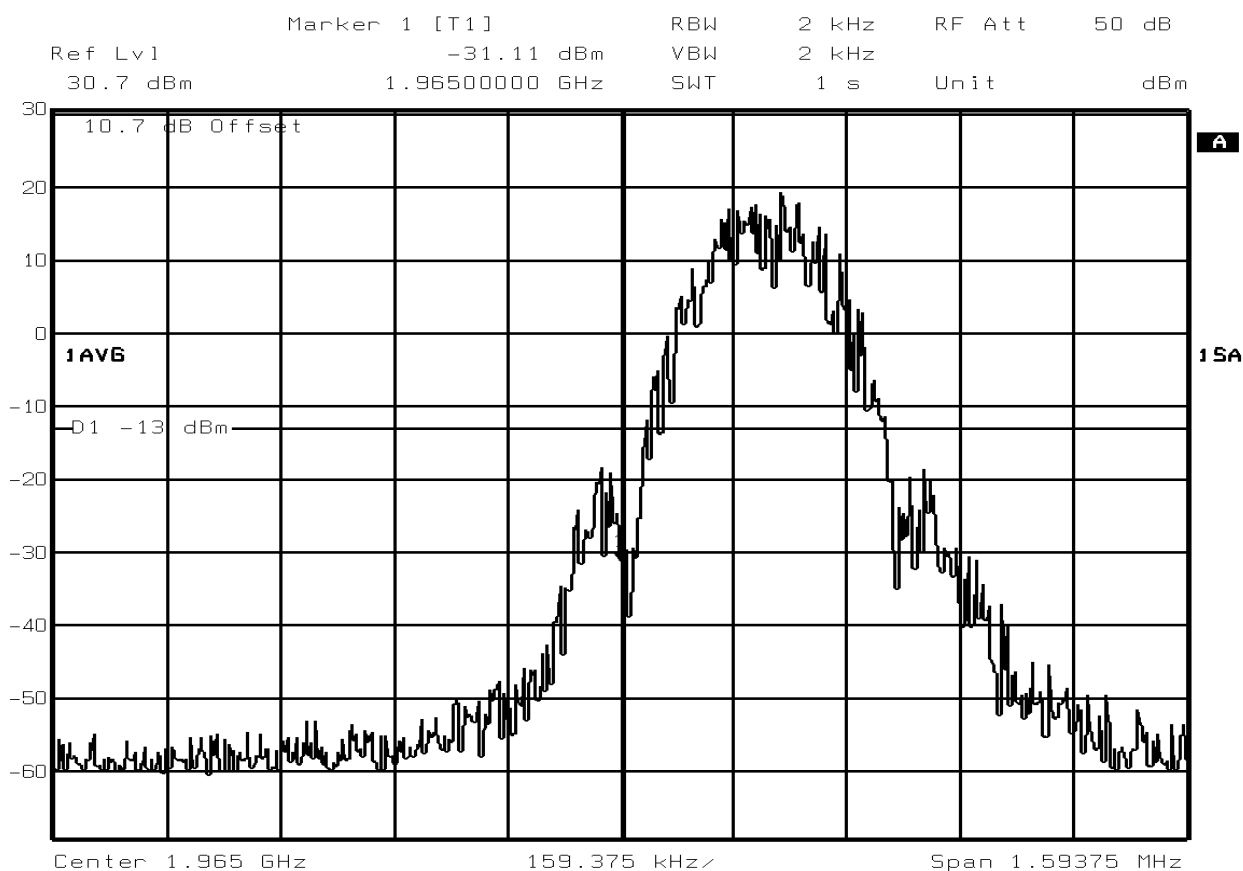
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 687, (1965.2MHz)
8-PSK Modulation

Block E
1965 – 1970MHz



Date: 25.JUL.03 11:50:46

Test Equipment Used:

1, 2, 3



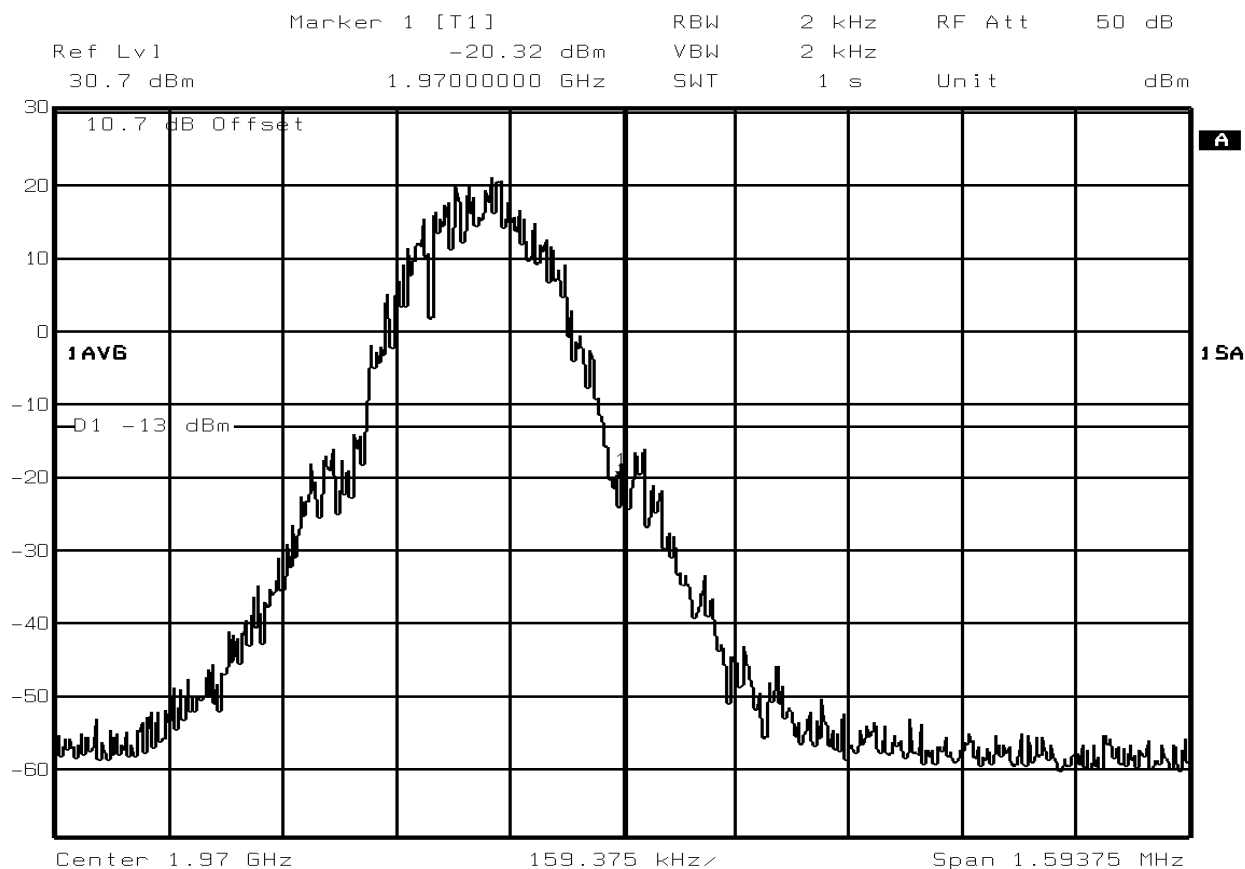
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 710, (1969.8MHz)
GMSK Modulation

Block E
1965 – 1970MHz



Date: 25.JUL.03 11:27:15

Test Equipment Used:

1, 2, 3



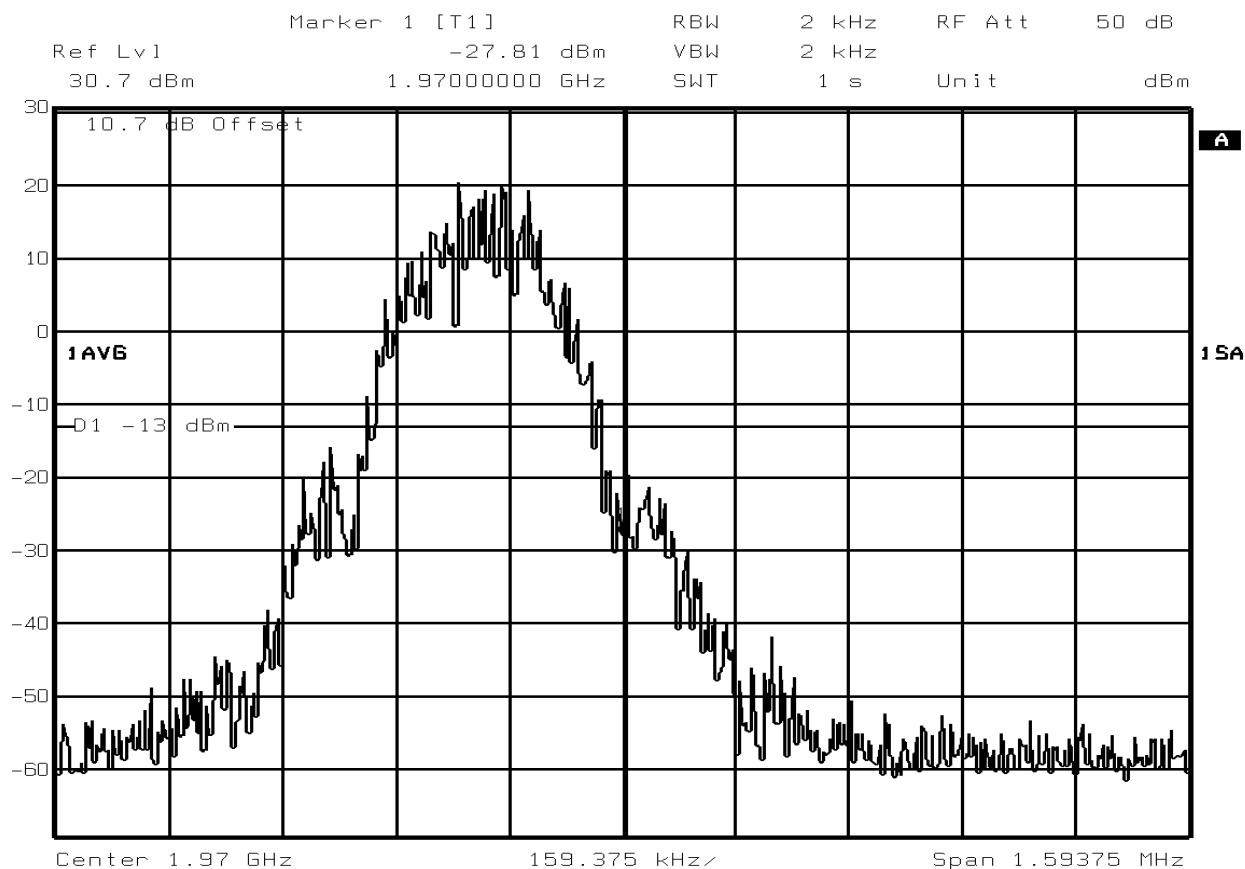
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 710, (1969.8MHz)
8-PSK Modulation

Block E
1965 – 1970MHz



Date: 25.JUL.03 11:52:59

Test Equipment Used:

1, 2, 3



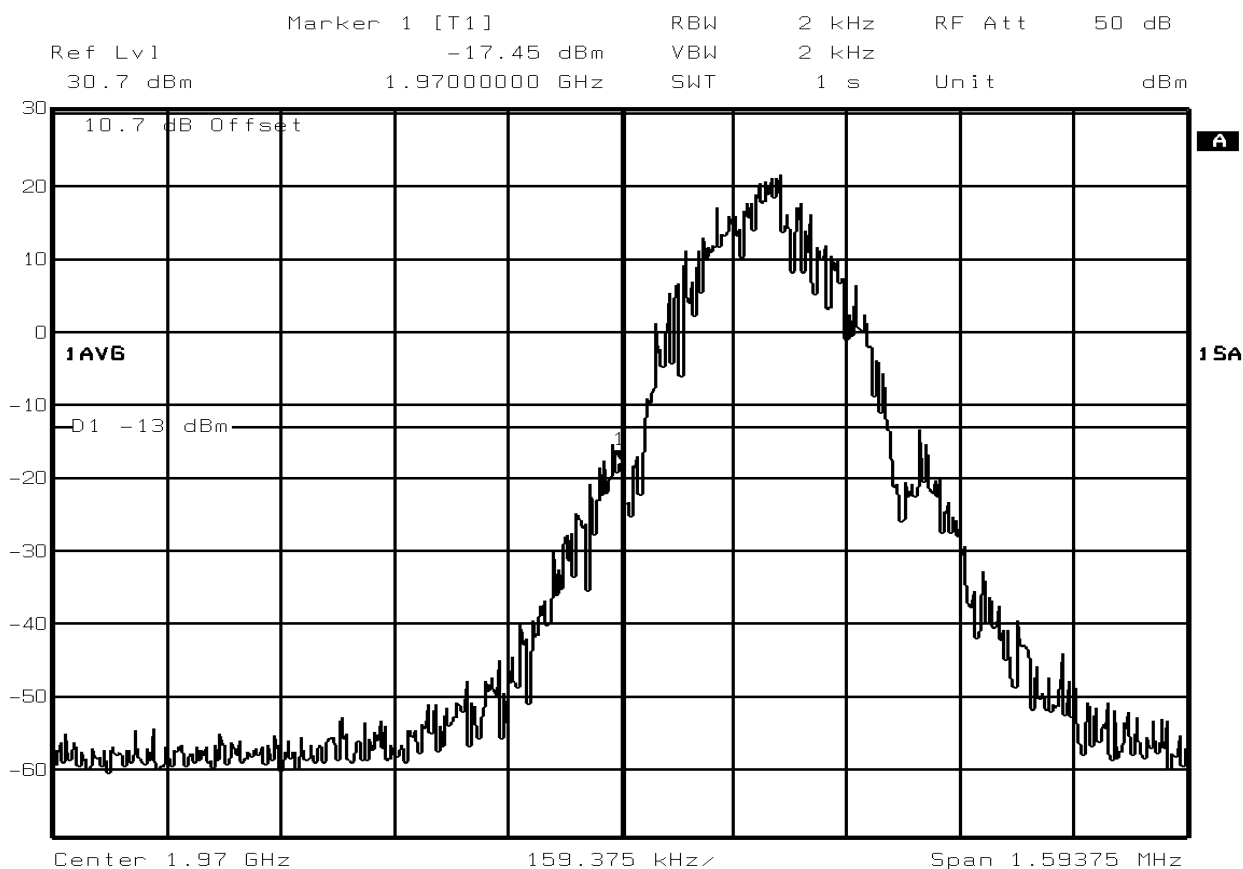
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 712, (1970.2MHz)
GMSK Modulation

Block F
1970 – 1975MHz



Date: 25.JUL.03 11:29:00

Test Equipment Used:

1, 2, 3



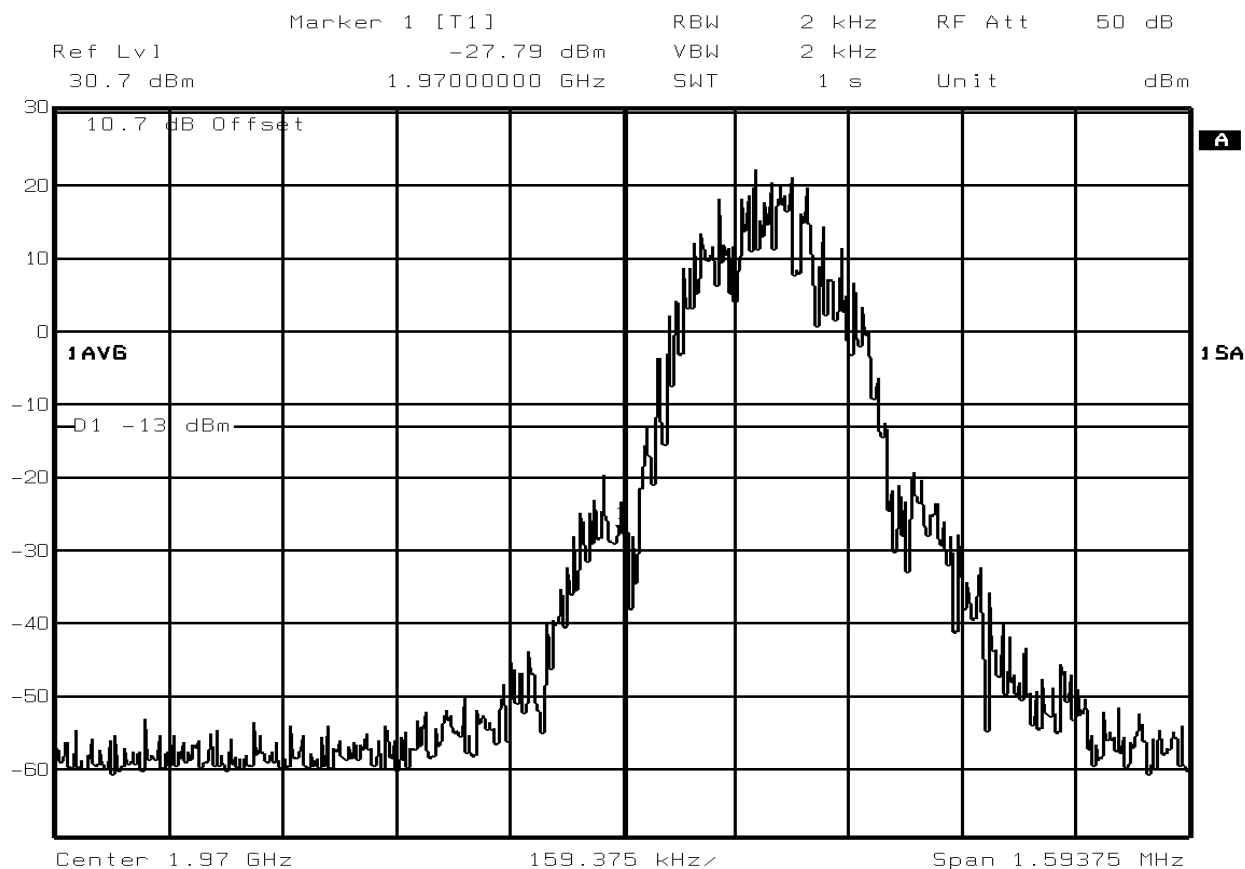
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 712, (1970.2MHz)
8-PSK Modulation

Block F
1970 – 1975MHz



Date: 25.JUL.03 11:54:46

Test Equipment Used:

1, 2, 3



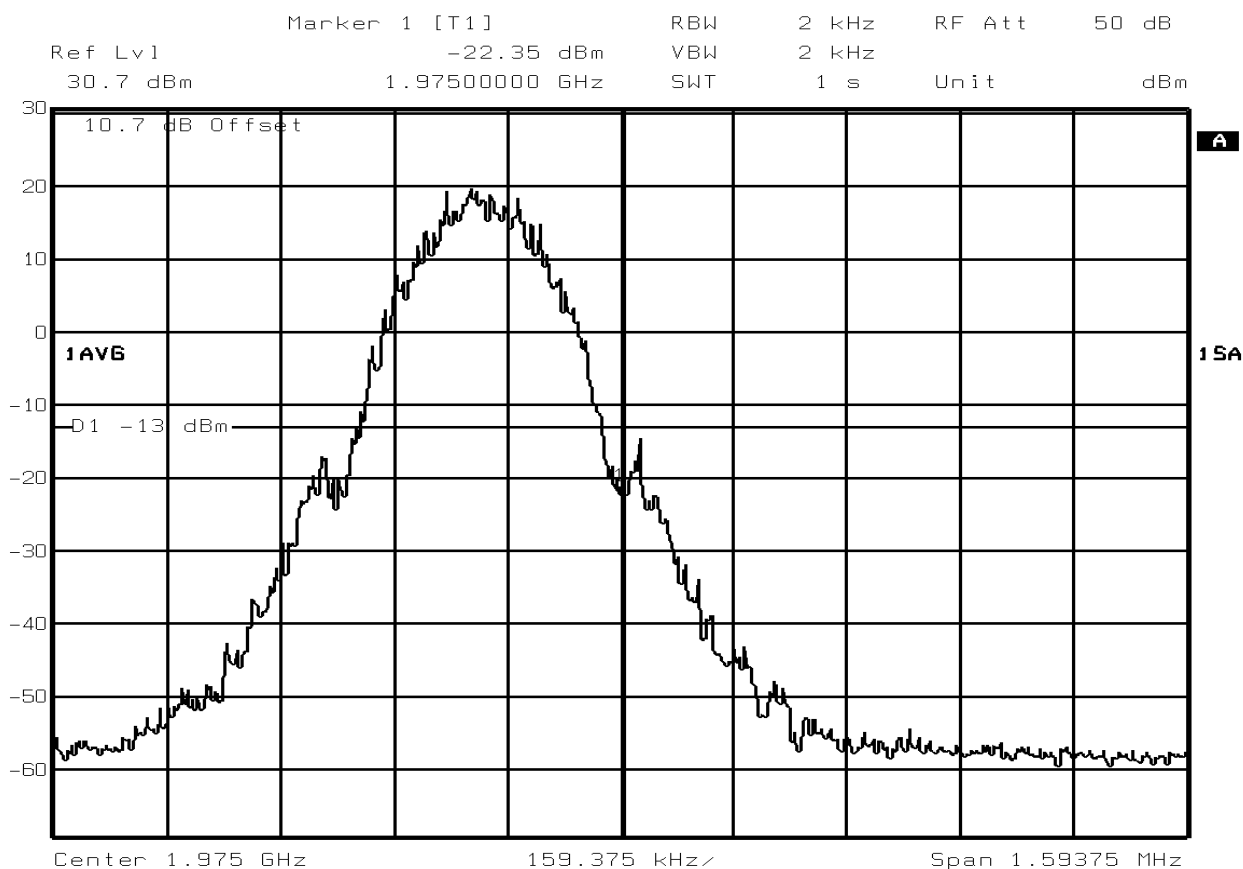
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 735, (1974.8MHz)
GMSK Modulation

Block F
1970 – 1975MHz



Date: 25.JUL.03 11:30:49

Test Equipment Used:

1, 2, 3



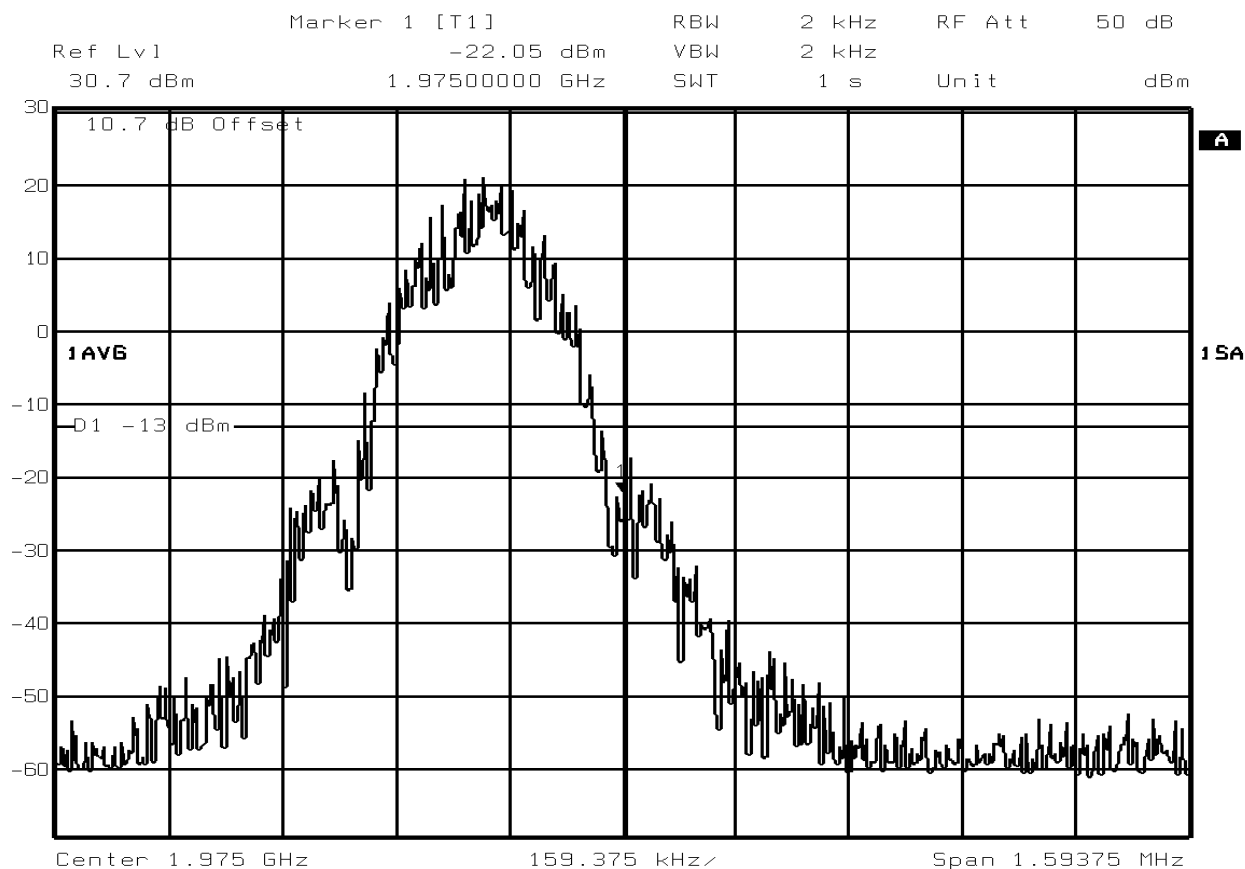
Test Case: Spurious Emissions At Antenna Terminals (+/-1MHz)

Test Date: 25th July 2003

Rule Parts: 2.1049, 24.238(b)

Block Edge Measurement With EUT Transmitting at Power Level 0 On Channel 735, (1974.8MHz)
8-PSK Modulation

Block F
1970 – 1975MHz



Date: 25.JUL.03 11:57:37

Test Equipment Used:

1, 2, 3



This report relates only to the actual item/items tested.

UKAS Accreditations do not cover opinions and interpretations and any expressed herein are outside the scope of any UKAS Accreditation.

Results of tests not yet included in our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

This report must not be reproduced without the written permission of TÜV Product Service Limited

© 2003 TÜV Product Service Limited