Measurement of RF Interference from a Model FGR-HT Wireless Data Transceiver Using Digital Modulation

For : Freewave Technologies
Boulder, CO

P.O. No. : 21548
Date Received : August 11, 2005
Date Tested : August 11, 2004 through August 25, 2005
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EMC Test Engineer, ATL-0152-E
Specification : FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 for Intentional Radiators Using Digital Modulation Operating within the 902MHz to 928MHz band.

Test Report By :

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THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ELITE ELECTRONIC ENGINEERING INCORPORATED.

Measurements of RF Emissions from a

Model FGR-HT Wireless Data Transceiver Using Digital Modulation

1.0 INTRODUCTION:

1.1 Description of Test Item - This document represents the results of the series of radio interference measurements performed on a model FGR-HT Wireless Data Transceiver, serial number 884-0006, (here in after referred to as the test item). The test item is a wireless data transceiver which uses digital modulation. It transmits in the 902MHz to 928MHz band and uses an external antenna. Two antennas were submitted with the test item, a 5dB gain Omni antenna and an 8dB gain Yagi antenna. The test item was manufactured and submitted for testing by Freewave Technologies located in Boulder, CO.

1.2 Purpose - The test series was performed to determine if the test item meets selected portions of the conducted and radiated RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.247 for Intentional Radiators. Testing was performed in accordance with ANSI C63.4-2003.

1.3 Deviations, Additions and Exclusions - There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 Applicable Documents - The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart C, dated 1 October 2004
- FCC 558074, New Guidelines on Measurements for Digital Transmission Systems in Section 15.247
- ANSI C63.4-2003, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"

1.5 Subcontractor Identification - This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code: 100278-0 and the American Association for Laboratory Accreditation (A2LA): A2LA Lab Code: 1786.01.

1.6 Laboratory Conditions The temperature at the time of the test was 22°C and the relative humidity was 57%.

2.0 TEST ITEM SETUP AND OPERATION:

The test item is a Wireless Data Transceiver, Part No. FGR-HT. A 5 dBi gain Omni-directional antenna and an 8dBi gain Yagi antenna were supplied with the test item. The Yagi antenna was submitted with a 30 foot long cable which had 2.2 dB of loss in the 902 to 928MHz range. A block diagram of the test item setup is shown as Figure 1.

2.1 Power Input - A 12VDC power supply was used to power the test item.

2.2 Grounding - The test item was ungrounded during the test.

2.3 Support Equipment - A Toshiba laptop computer was used to put the test item in different test modes by using HyperTerminal. The laptop computer was connected to the test item via a RS232 cable.

2.4 Interconnect Cables - The test item was connected to the laptop computer via a 2-meter long RS232 cable for initial set up only. It was removed for the tests.

2.5 Operational Mode - For all tests, the test item was transmitting at Channel 1 (903.168MHz), Channel 20 (914.8416MHz) or Channel 39 (926.5152). The test item was capable of transmitting either a narrowband mode or a wideband mode.

3.0 TEST EQUIPMENT:

3.1 Test Equipment List - A list of the test equipment used can be found on Table I. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

3.2 Calibration Traceability Test equipment is maintained and calibrated on a regular basis. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

4.0 REQUIREMENTS, PROCEDURES AND RESULTS:

4.1 Power line Conducted Emissions

4.1.1 Requirements - Since the test item was powered by 12VDC from a power supply, no conducted emissions tests were performed.

4.2 Antenna Conducted Emissions

4.2.1 Requirements - Per section 15.247(c), in any 100 kHz bandwidth outside of the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power based on either an RF conducted or a radiated emissions measurement. Attenuation below the general limits

specified in 15.209(a) is not required.

4.2.2 Procedures - The antenna port of the test item was connected to a spectrum analyzer through two 20dB attenuators. The resolution bandwidth was set to 100 kHz with a video bandwidth of 1MHz. Conducted emissions plots were made from 30MHz to 10GHz with the test item transmitting at Channel 1 (903.168MHz), Channel 20 (914.8416MHz) or Channel 39 (926.5152) in both wideband and narrowband mode. The display line on the plots represents the 20dB down point from the transmit frequency.

4.2.3 Results - The antenna conducted emissions plots are shown on data pages 14 through 25. As can be seen by the data, the test item did meet the antenna conducted emissions limits of 15.247(c).

4.3 Radiated Measurements

4.3.1 Spurious Radiated Emissions

4.3.1.1 Requirement – Per section 15.247(c), radiated emissions which fall in the restricted bands, as defined in 15.205(a), must comply with the radiated emissions limits specified in 15.209(a).

Paragraph 15.209(a) has the following radiated emissions limits:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	2400/F(kHz)	30
1.705 - 30	30	3
30.0 - 88.0	100	3
88.0 - 216.0	150	3
216.0 - 960.0	200	3
Above 960	500	3

4.3.1.2 Procedures - Preliminary radiated measurements from 30MHz to 10GHz were performed in a 32ft. x 20ft. x 14ft. high shielded enclosure. The shielded enclosure prevents emissions from other sources such as radio and TV stations from interfering with the measurements. All power lines and signal lines entering the enclosure pass through filters on the enclosure wall. The power line filters prevent extraneous signals from entering the enclosure on these leads.

Final radiated measurements were performed on the following:

-all significant radiated emissions detected in the preliminary tests which were in the restricted bands listed in 15.205(a).
-the harmonics of the transmit frequency which fall in the restricted bands of 15.205(a).

All final radiated emissions measurements were manually performed in a 32ft. x 20ft. x 14ft. high shielded enclosure. Measurements below 1GHz were made using a quasi-peak detector and a bilog antenna. Measurements above 1GHz were made using an average detector and a double ridged waveguide antenna. A high-pass filter was used to block the fundamental frequency and avoid saturation. A duty cycle factor of -14.0dB was added to the measured levels. The duty cycle factor was based on software that limited the transmissions to 20%.

To ensure that maximum emission levels were measured, the following steps were taken:

1) The test item was rotated so that all of its sides were exposed to the receiving antenna.
2) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
3) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.

4.3.1.3 Results - Photographs of the test item setup are presented as Figure 2. The preliminary radiated emissions plots from 30MHz to 10GHz are presented on data pages 26 through 37. The final radiated emissions data from is presented on data page 38 through 49. As can be seen by the data, the test item did meet the emissions limits of 15.247(c).

4.3 Power Spectral Density

4.3.1 Requirements - Per section 15.247(d), for digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

4.3.2 Procedures - The antenna port of the transmitter was connected to a spectrum analyzer through two 20dB attenuators. Per FCC 558074, an emission peak was located in the passband. The resolution bandwidth was set to 3kHz with a video bandwidth of 10kHz. The sweep time was set to automatic. The test item was placed in constant transmit mode. The spectrum analyzer was set to make 100 trace averages in power averaging mode. A power spectral density plot was made with the test item transmitting at Channel 1 (903.168MHz), Channel 20 (914.8416MHz) or Channel 39 (926.5152) in both wideband and narrowband mode.

4.3.3 Results - A power spectral density plot is shown on data pages 50 through 55. The display line on the plot represents the 8dBm limit.

4.4 Bandwidth Measurements

4.4.1 Requirements - Per section 15.247(a)(2), for digitally modulated systems, the minimum 6dB bandwidth shall be at least 500kHz.

4.4.2 Procedures - The antenna port of the transmitter was connected to a spectrum analyzer through two 20dB attenuators. The resolution bandwidth was set to 100kHz with a video bandwidth of 100kHz and the span was set to either 2.5MHz for narrowband mode or 5.0MHz wideband mode. A bandwidth plot was made for the test item transmitting at Channel 1 (903.168MHz), Channel 20 (914.8416MHz) or Channel 39 (926.5152) in both wideband and narrowband mode. The markers on the plots represent the 6dB down points from the transmit frequency.

4.4.3 Results - A bandwidth plot is shown on data pages 56 through 61. As can be seen by the data, the test item did meet the minimum 6dB bandwidth requirements.

4.5 Power Output

4.5.1 Requirements - Per section 15.247(b)(3), for digitally modulated systems, the maximum peak output power shall not exceed 1 watt (30dBm).

4.5.2 Procedures - The antenna port of the transmitter was connected to a spectrum analyzer through two 20dB attenuators. The resolution bandwidth was set to 3MHz with a video bandwidth of 3MHz.

4.5.3 Results - Power output data are shown on data pages 62 through 67. The maximum measured peak power output was 29.4dBm. As can be seen by the data, the test item did meet the maximum peak output power requirements of 15.247(b)(3).

5.0 CONCLUSIONS:

It was determined that the Freewave Technologies Wireless Data Transceiver, Part No. FGR-HT, Serial No. 883-0006, did fully meet the conducted and radiated requirements of the FCC "Code of Federal Regulations" Title 47, Part 15.247, Subpart C, Section 15.205 et seq. for Intentional Radiators, when tested per ANSI C63.4-2003.

6.0 CERTIFICATION:

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specifications.

The data presented in this test report pertains to the test item at the test. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

7.0 ENDORSEMENT DISCLAIMER:

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

TABLE I: TEST EQUIPMENT LIST

ELITE ELECTRONIC ENG. INC. Page: 1

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Cal Inv	Due Date
Equipment Type: ACCESSORIES, MISCELLANEOUS								
XPQ0	HIGH PASS FILTER	K & L	4IH30-1804/T 001		1.8-10GHz	07/19/05	12	07/19/06
XZG0	ATTENUATOR/SWITCH DRIVER	HEWLETT PACKARD	11713A	3439A02724	---		N/A	
Equipment Type: AMPLIFIERS								
APK4	PREAMPLIFIER OPT H02	HEWLETT PACKARD	8449B	3008A00329	1-26.5GHZ	01/27/05	12	01/27/06
Equipment Type: ANTENNAS								
NWF0	RIDGED WAVE GUIDE	EMCO	3105	2035	1-12.4GHZ	09/05/04	12	09/05/05
Equipment Type: ATTENUATORS								
T2D0	20DB, 25W ATTENUATOR (DCC-	WEINSCHEL	46-20-43	AV5813	DC-18GHZ	12/02/04	12	12/02/05
T2DJ	25W 20DB ATTENUATOR	WEINSCHEL	46-20-34	BS0923	DC-18GHZ	10/09/04	12	10/09/05
Equipment Type: CONTROLLERS								
CMA0	MULTI-DEVICE CONTROLLER	EMCO	2090	9701-1213	---		N/A	
Equipment Type: RECEIVERS								
RACA	RF PRESELECTOR	HEWLETT PACKARD	85685A	2926A00980	20HZ-2GHZ	02/05/05	12	02/05/06
RAEC	SPECTRUM ANALYZER	HEWLETT PACKARD	8566B	3014A06690	100HZ-22GHZ	02/02/05	12	02/02/06
RAF5	QUASIPEAK ADAPTOR W/ RECEI	HEWLETT PACKARD	85650A	2043A00151	0.01-1000MHZ	01/31/05	12	01/31/06
RBB0	EMI TEST RECEIVER 20HZ TO	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	03/21/05	12	03/21/06

Cal. Interval: Listed in Months I/O: Initial Only N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

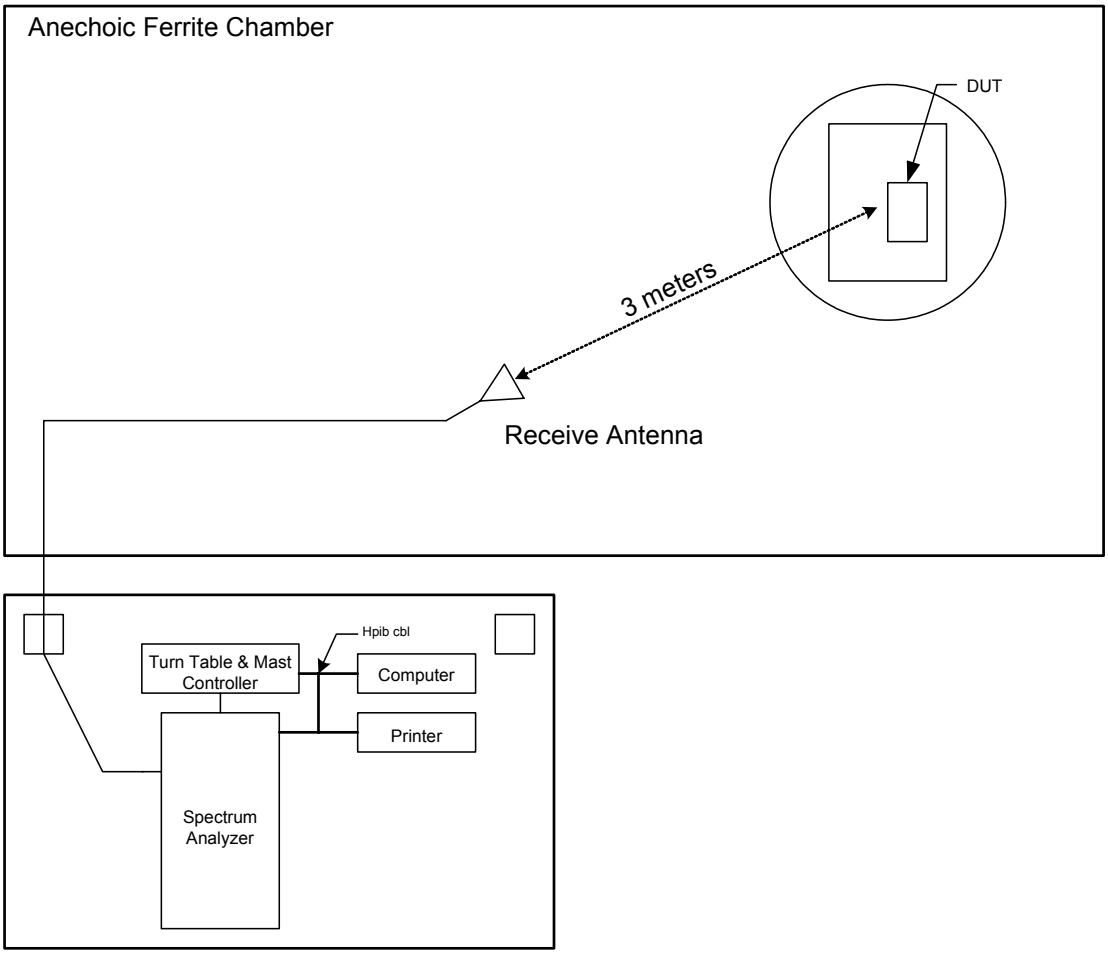
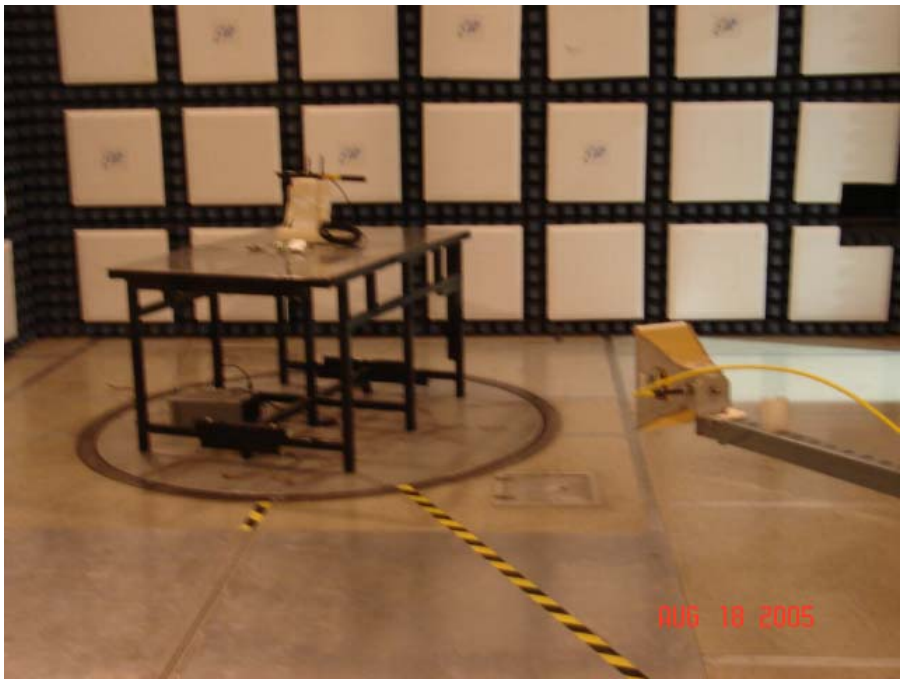
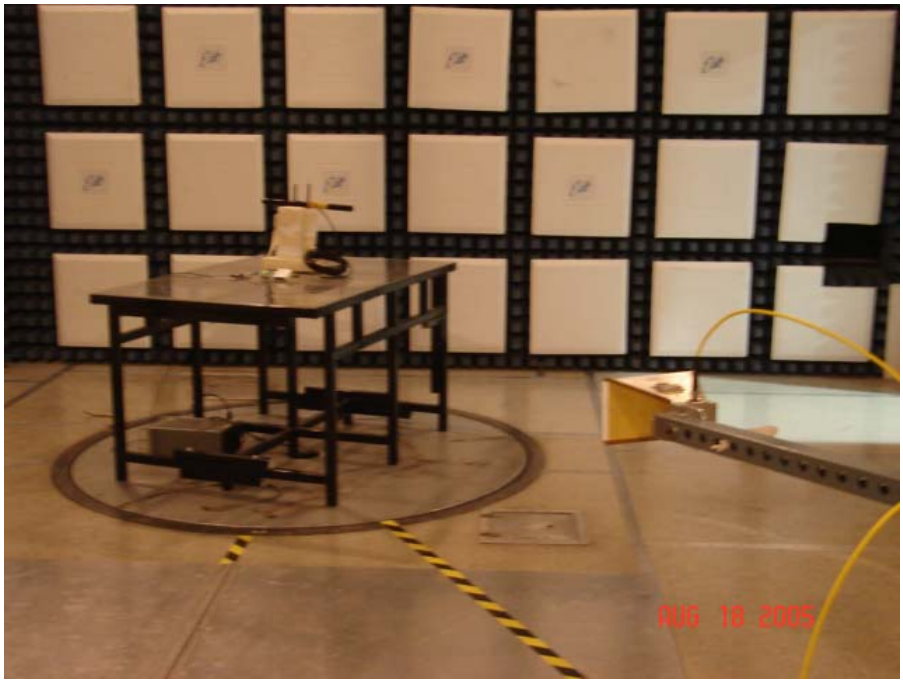


FIGURE 1 BLOCKDIAGRAM OF TEST SETUP

Figure 2a

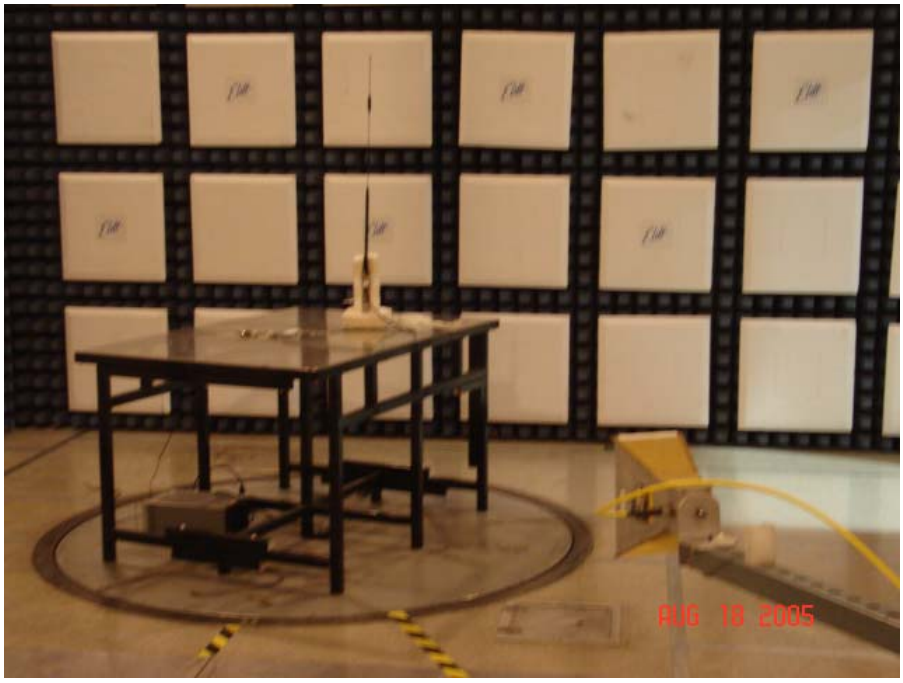


Test Setup for Radiated Emissions with the Yagi Antenna- Horizontal Polarization



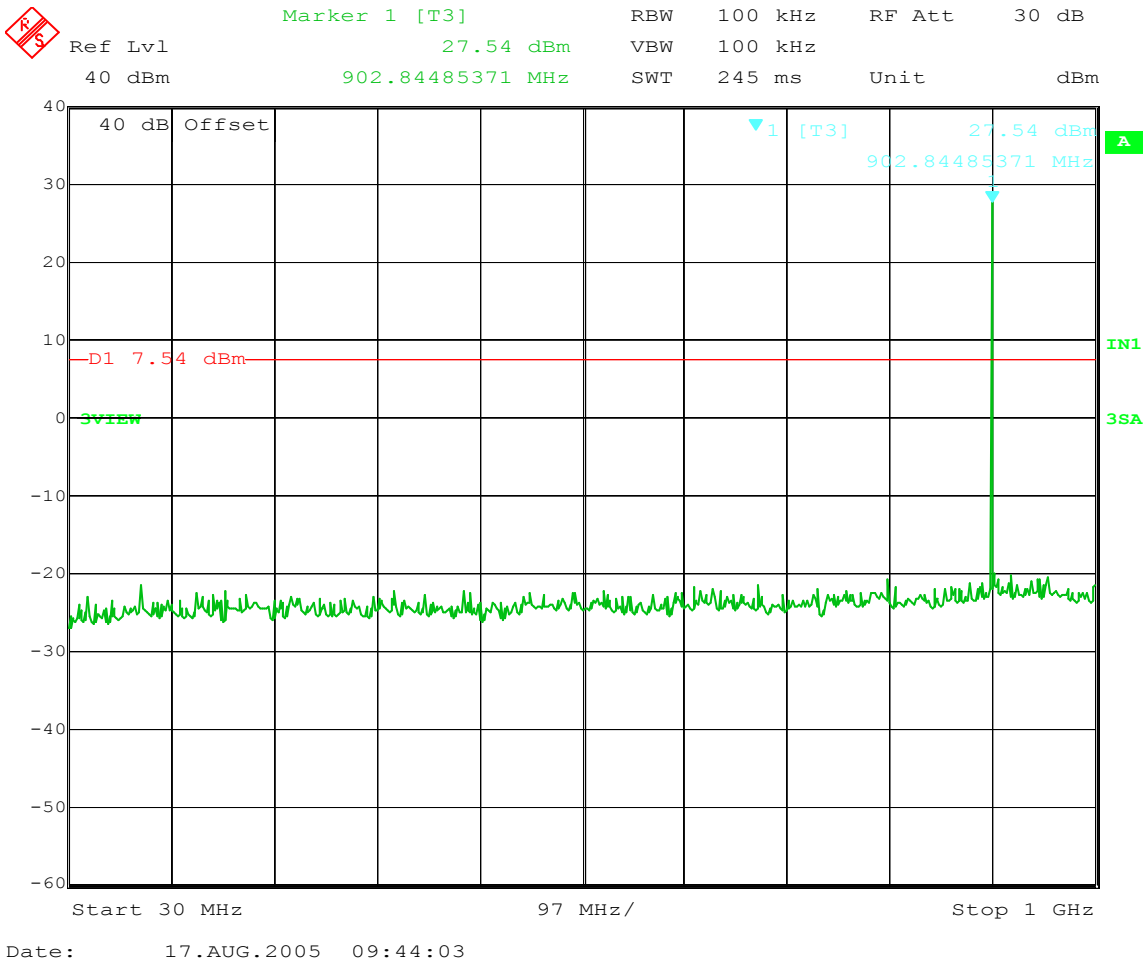
Test Setup for Radiated Emissions with the Yagi Antenna - Vertical Polarization

Figure 2b



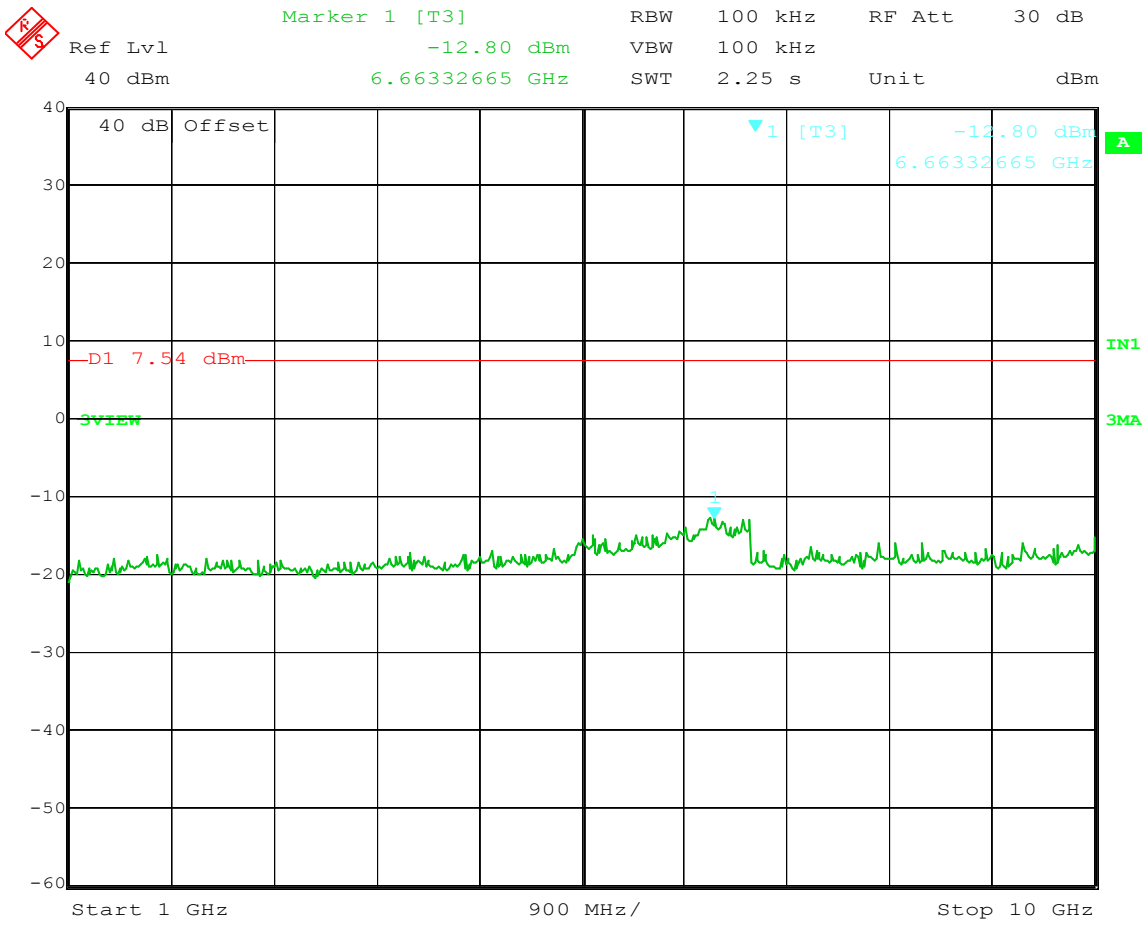
Test Setup for Radiated Emissions with the Omni Antenna - Horizontal Polarization

Test Setup for Radiated Emissions with the Omni Antenna - Vertical Polarization



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 1 (Narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

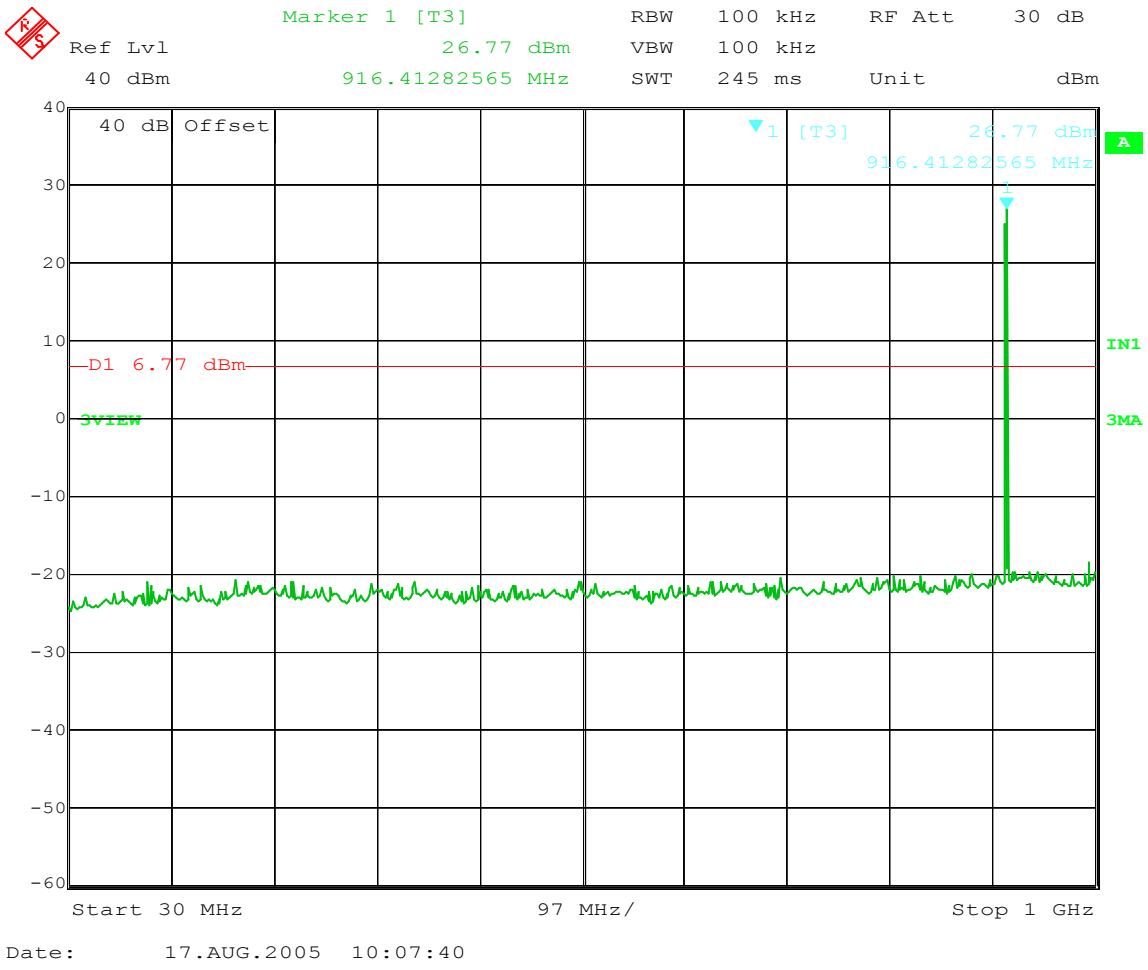
NOTES



Date: 17.AUG.2005 09:58:52

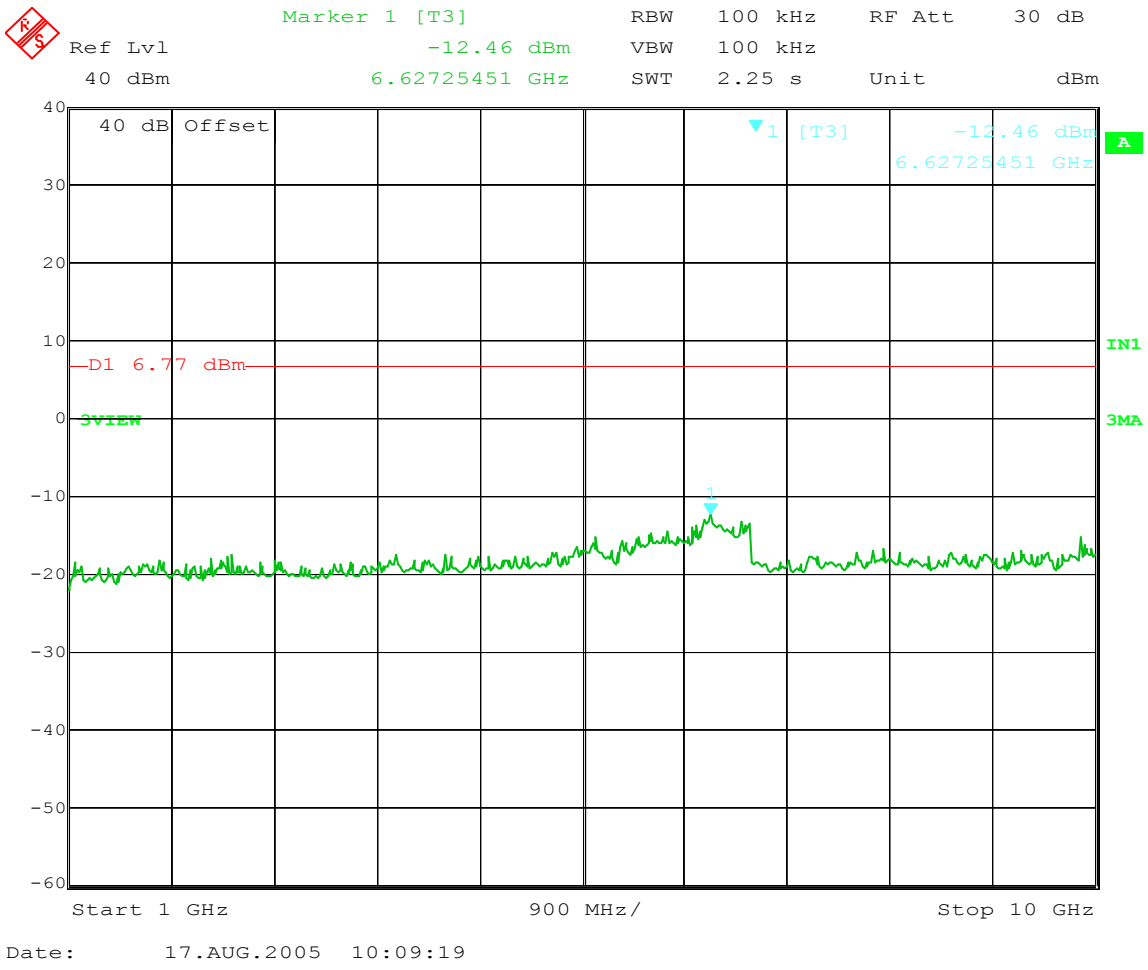
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 1 (Narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



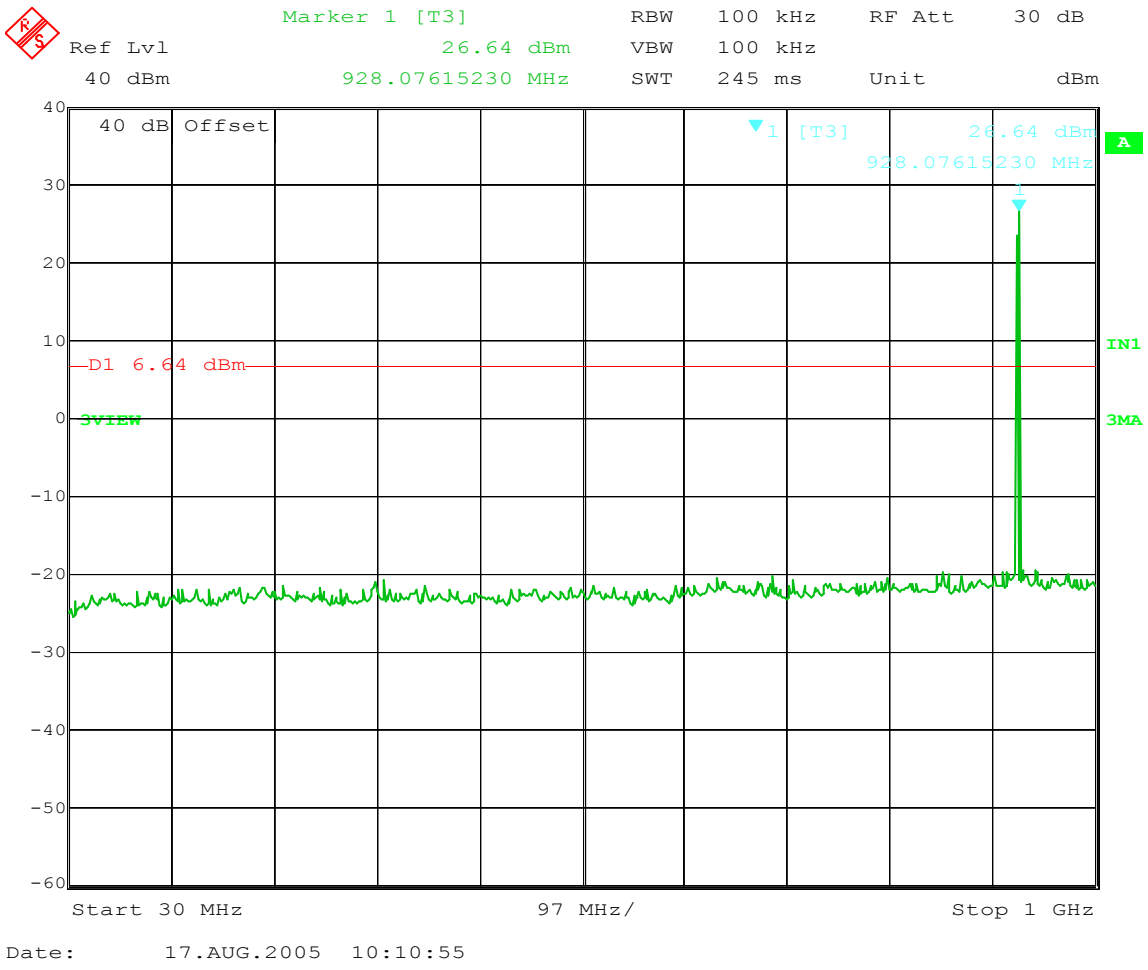
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 20 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 20 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
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TEST PARAMETERS : Channel 39 (narrow)
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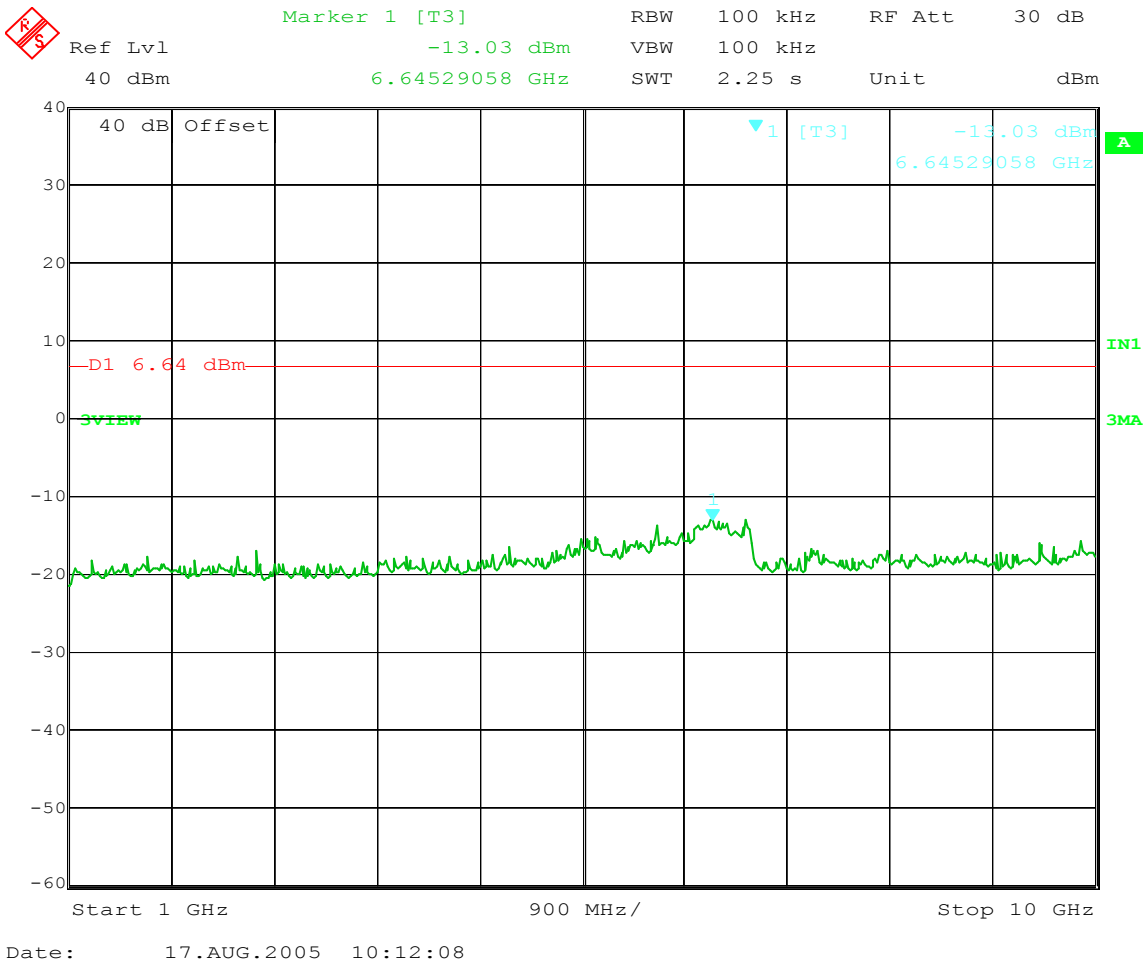
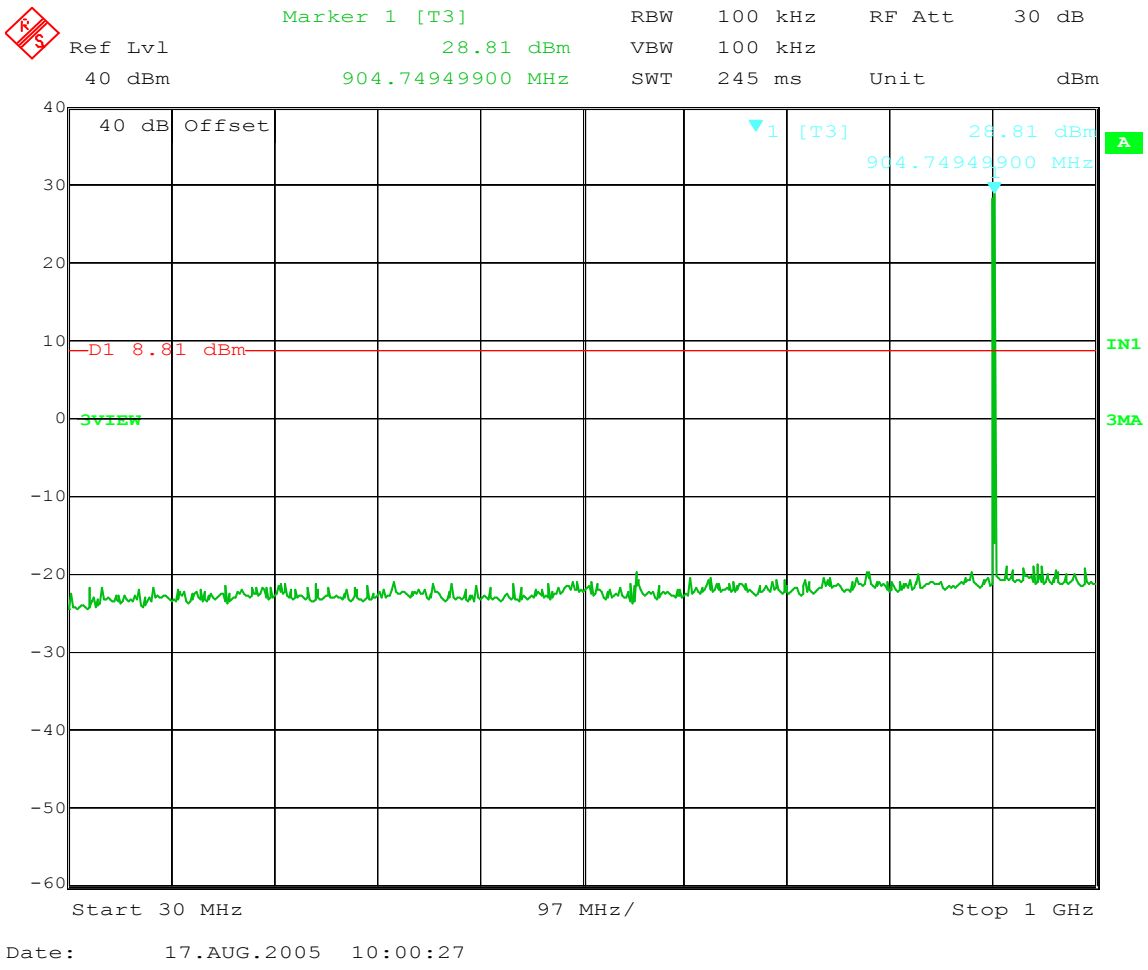
EQUIPMENT USED : RBB0

NOTES



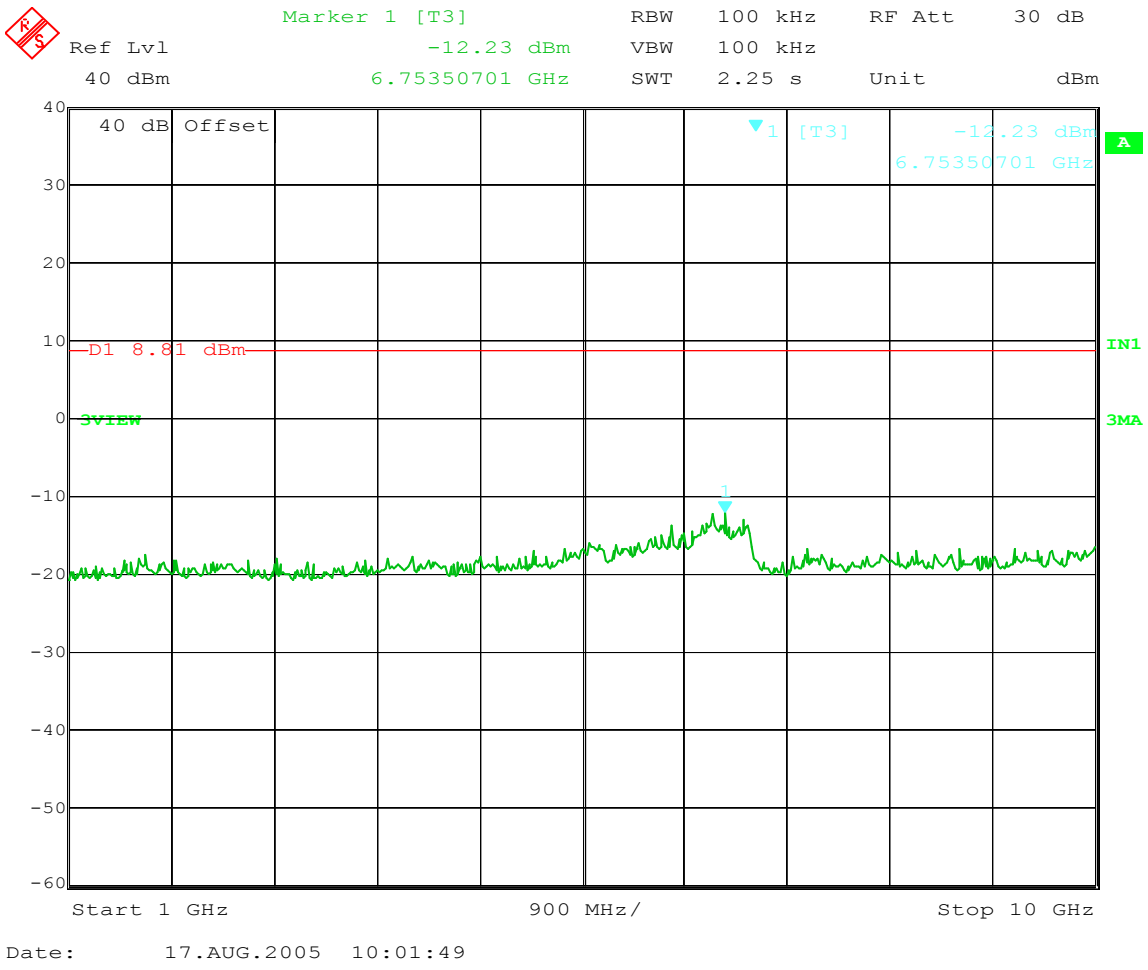
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 39 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



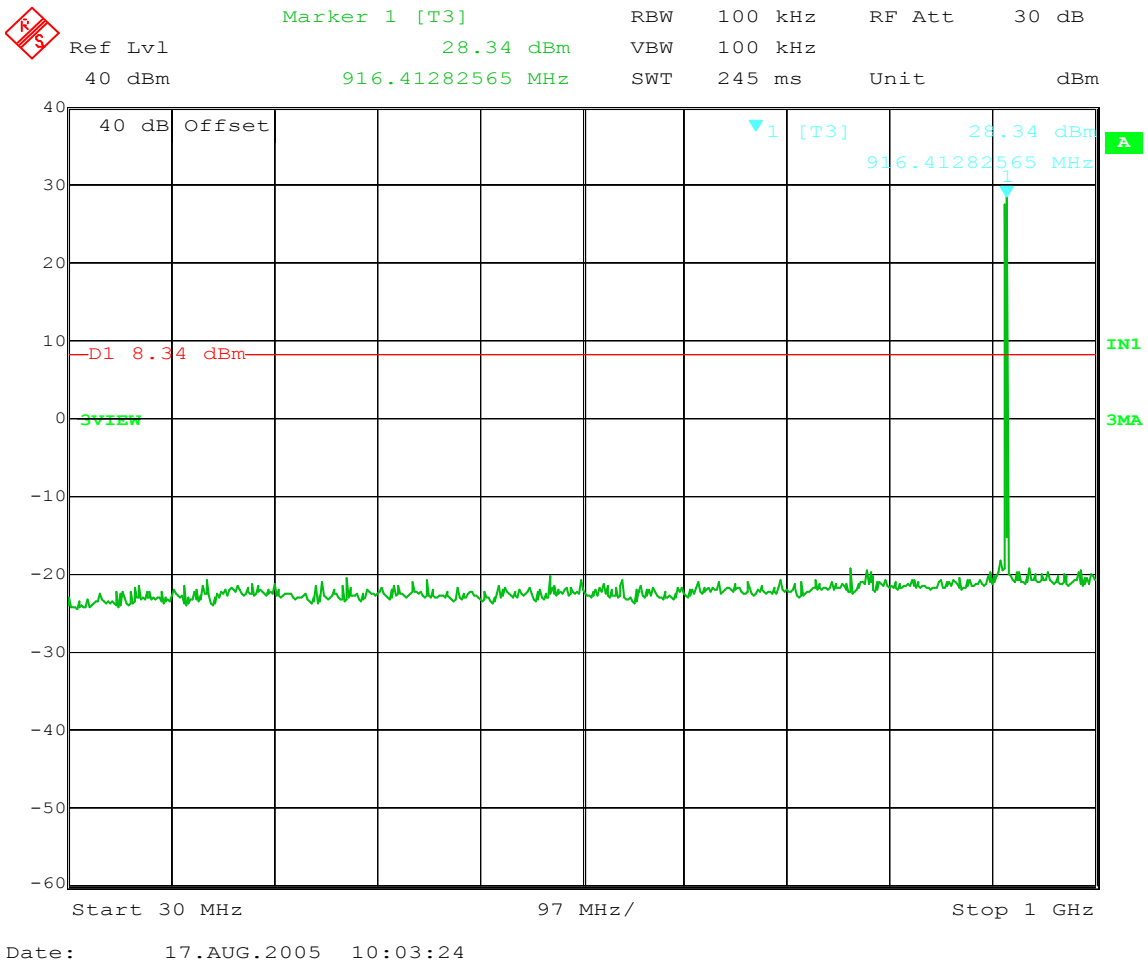
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 1 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 1 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 20 (wide)
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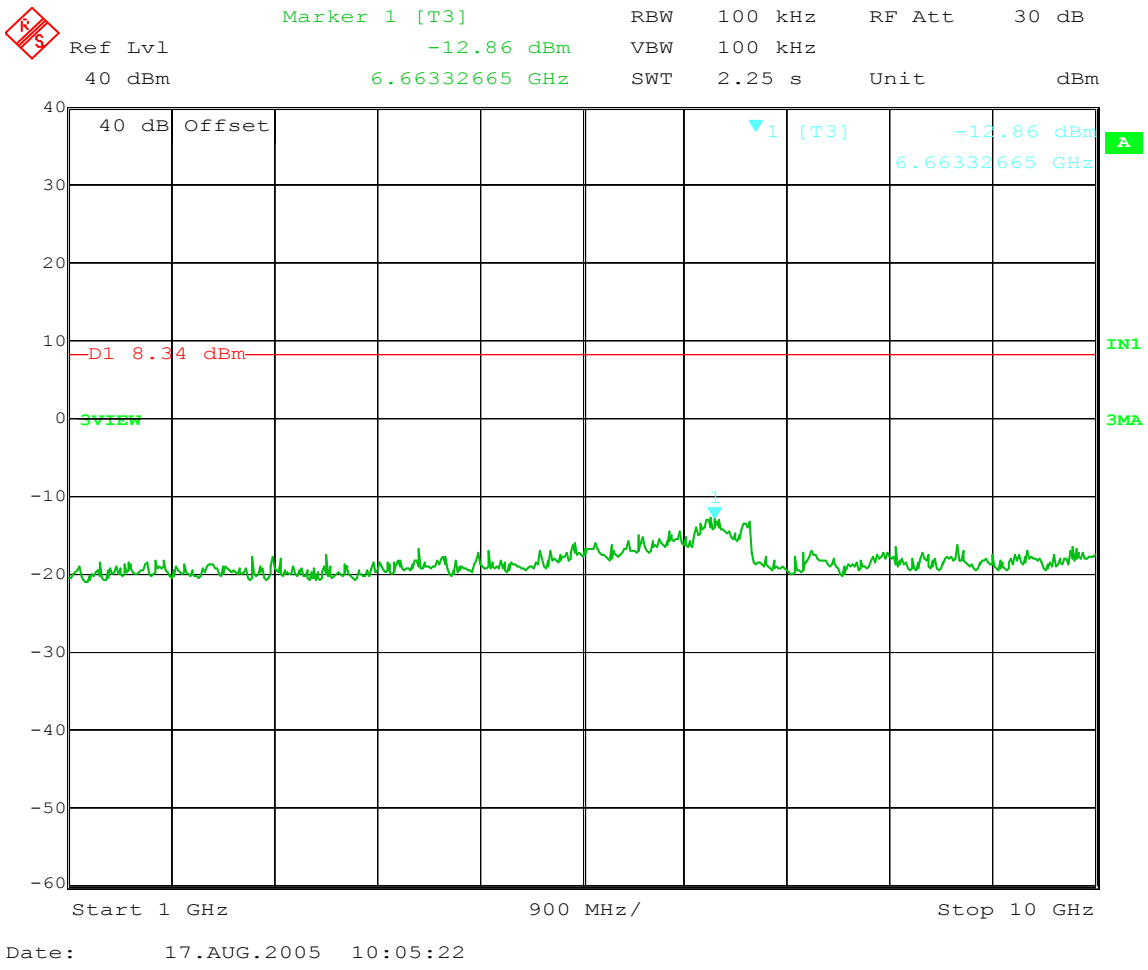
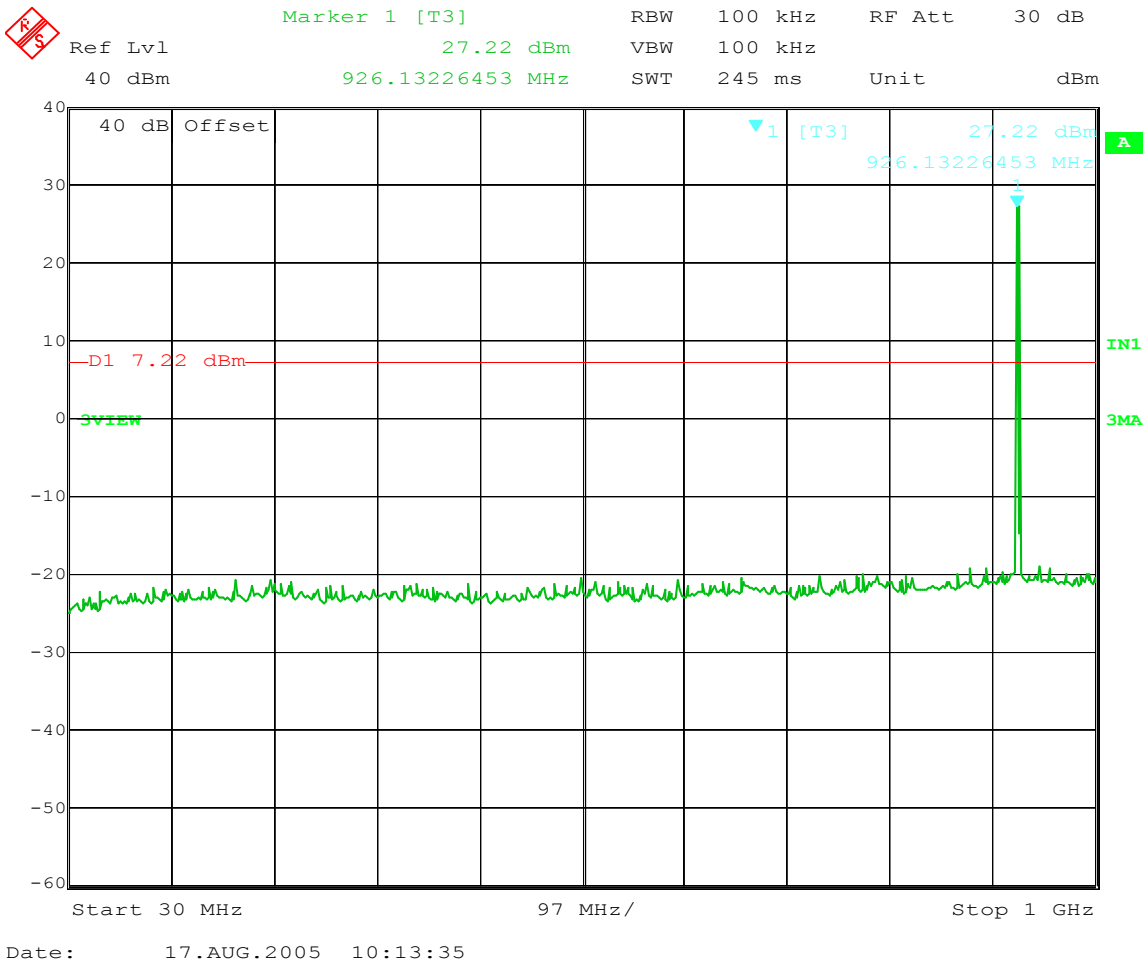
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 20 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
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TEST PARAMETERS : Channel 39 (wide)
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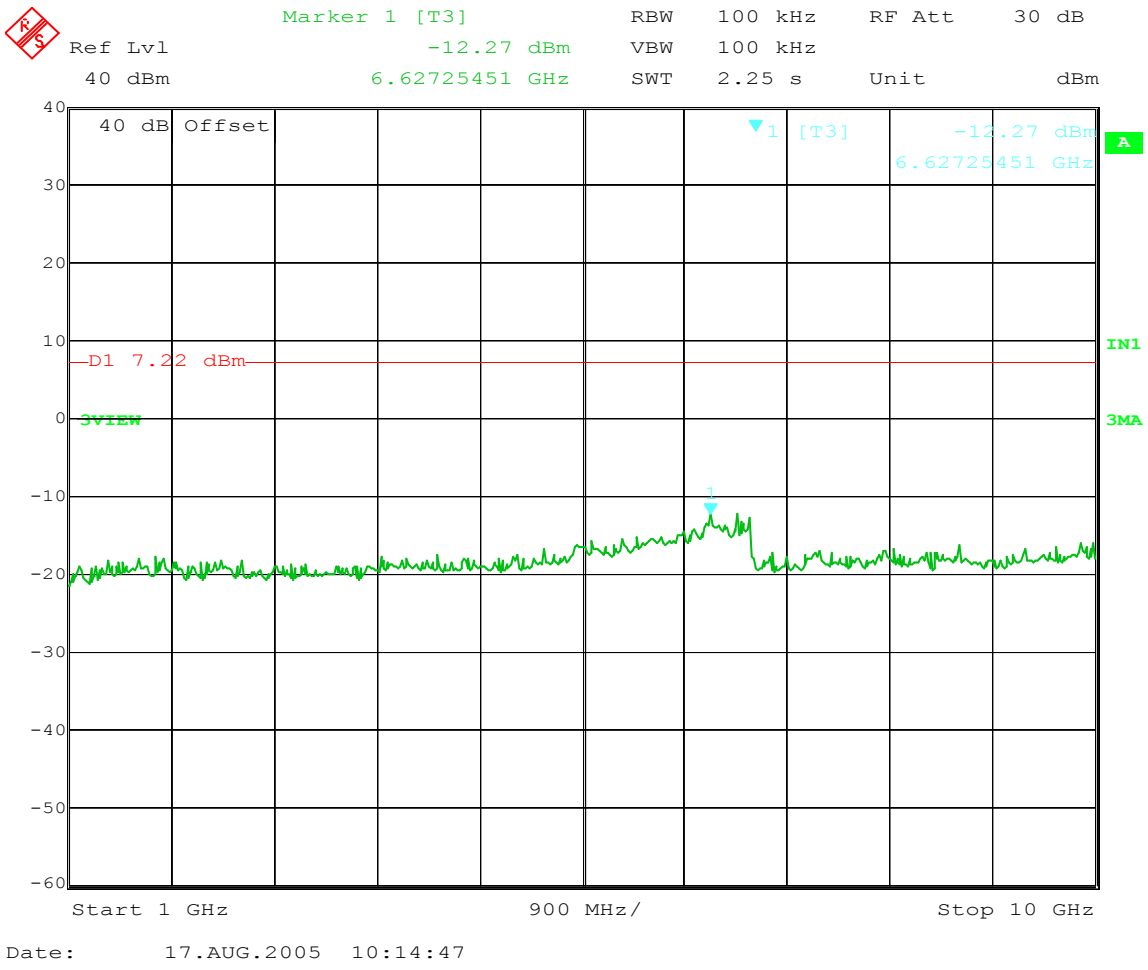
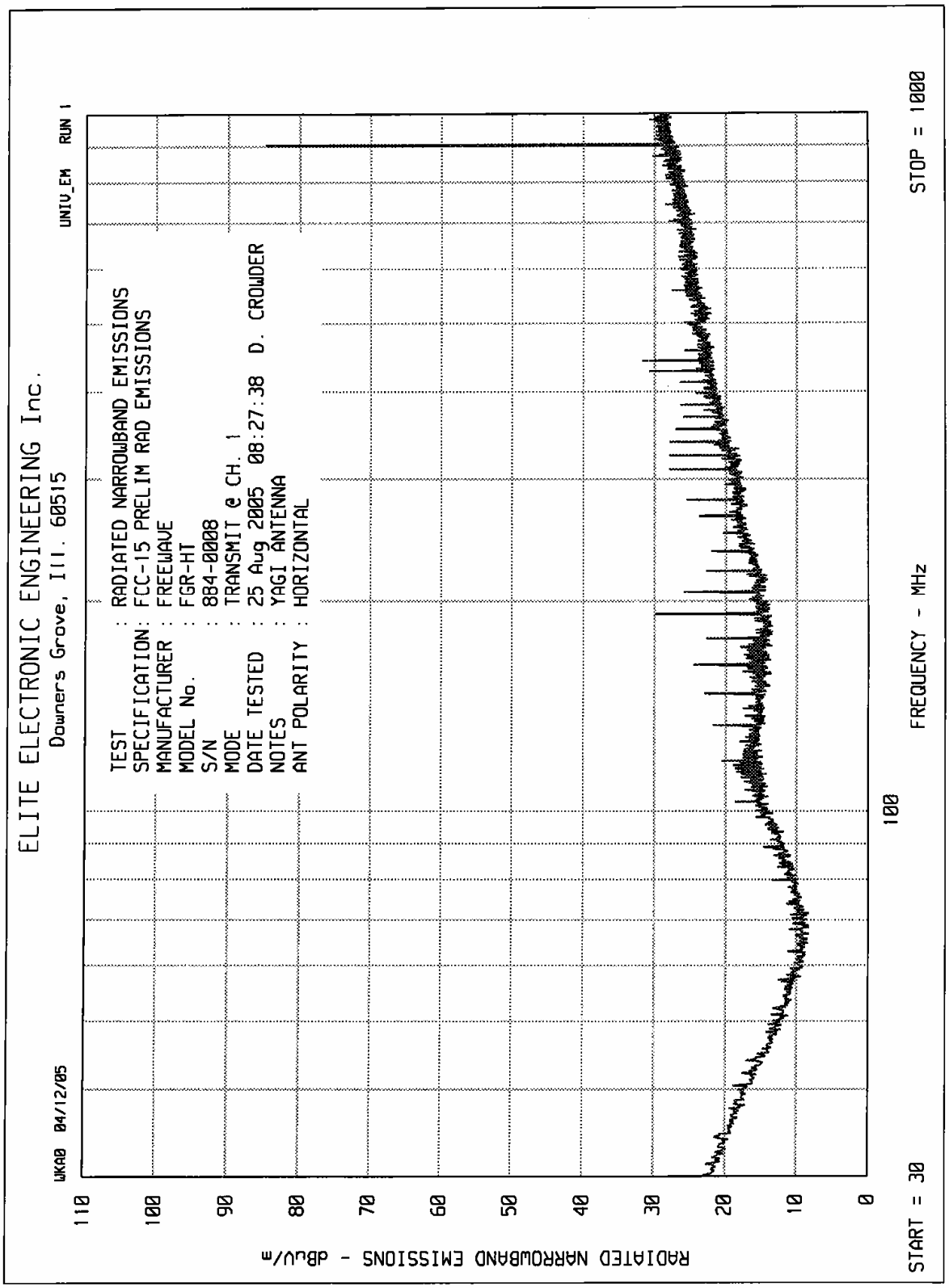
EQUIPMENT USED : RBB0

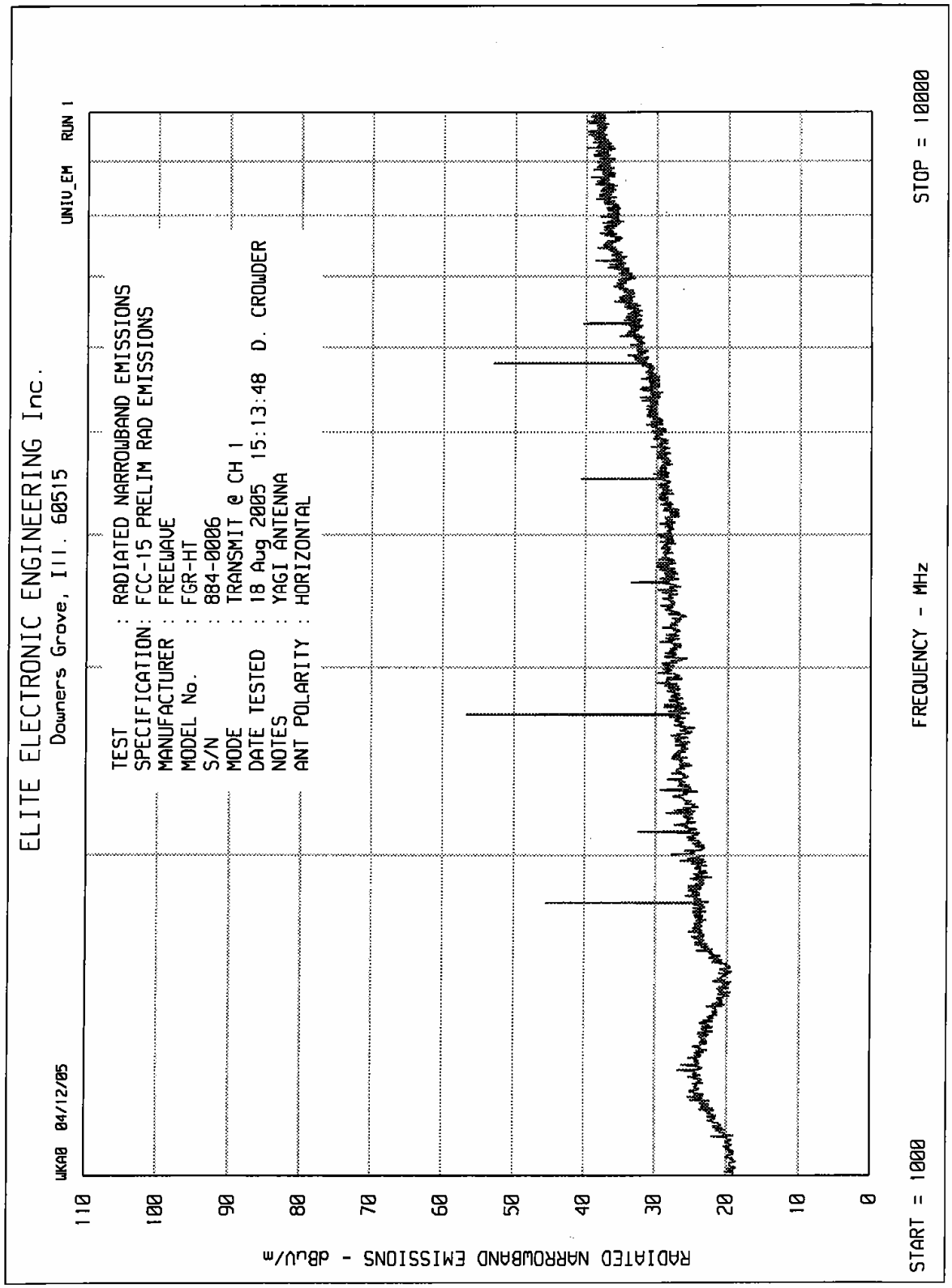
NOTES

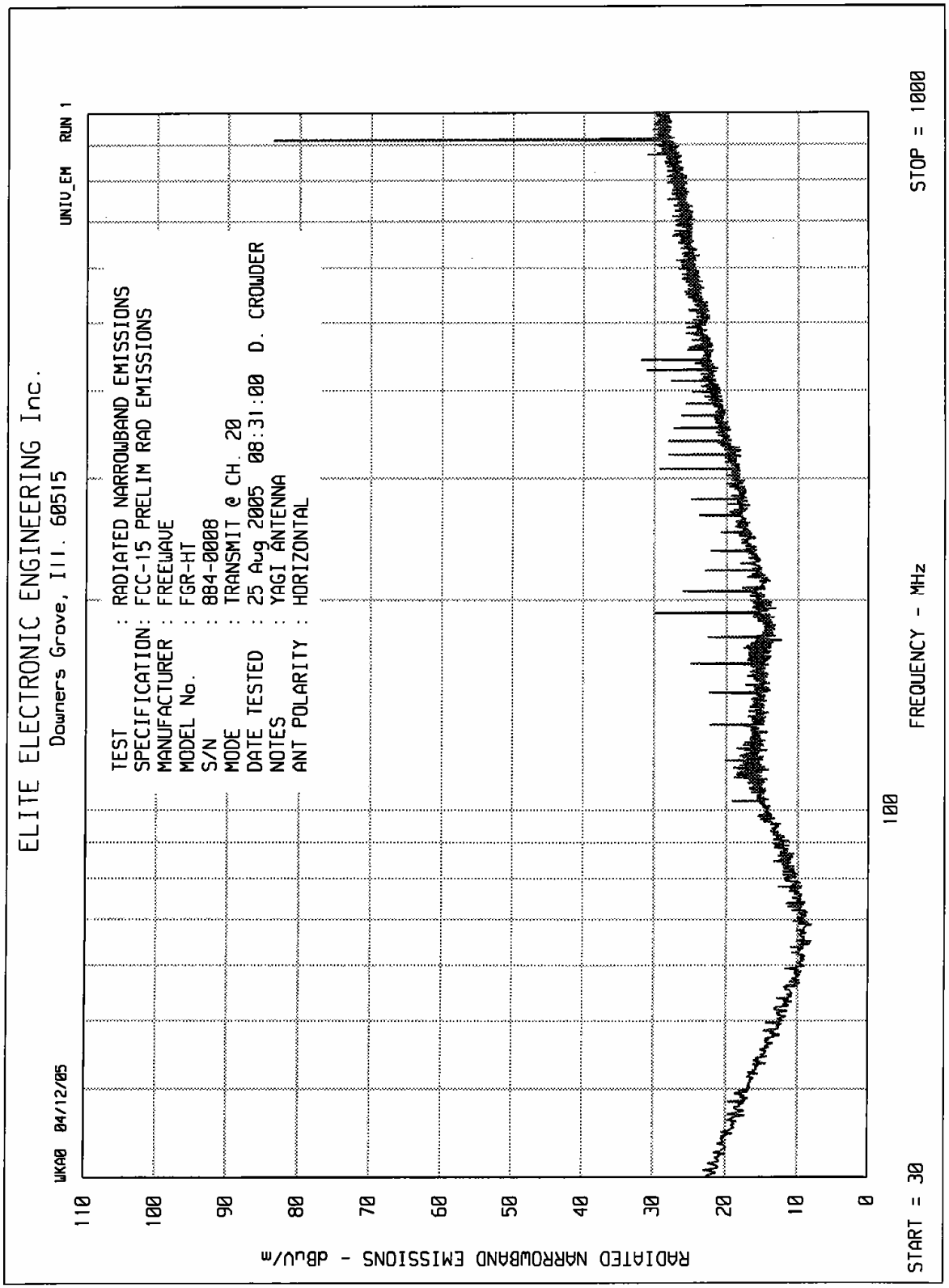


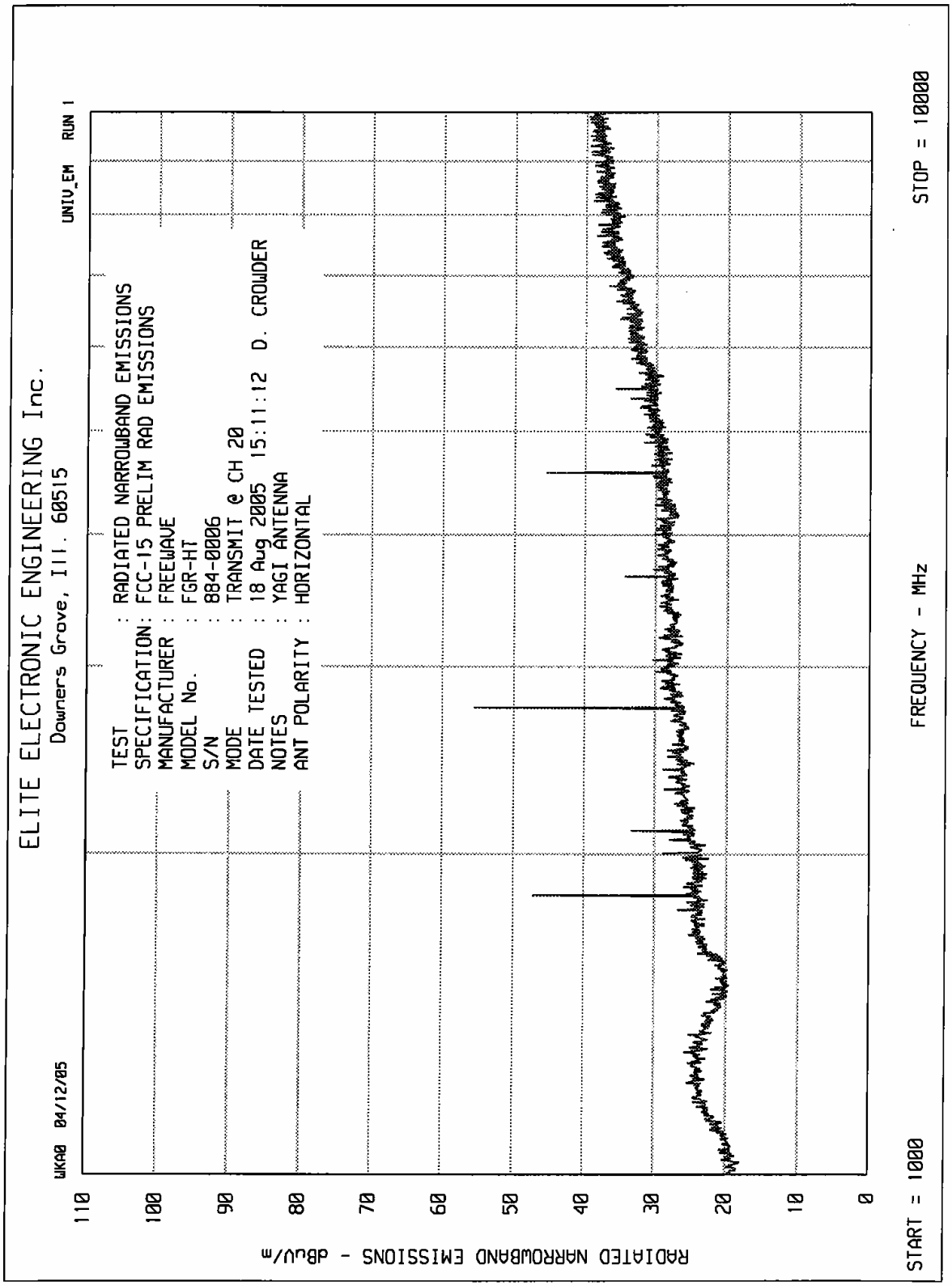
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Antenna Conducted Emissions
TEST PARAMETERS : Channel 39 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

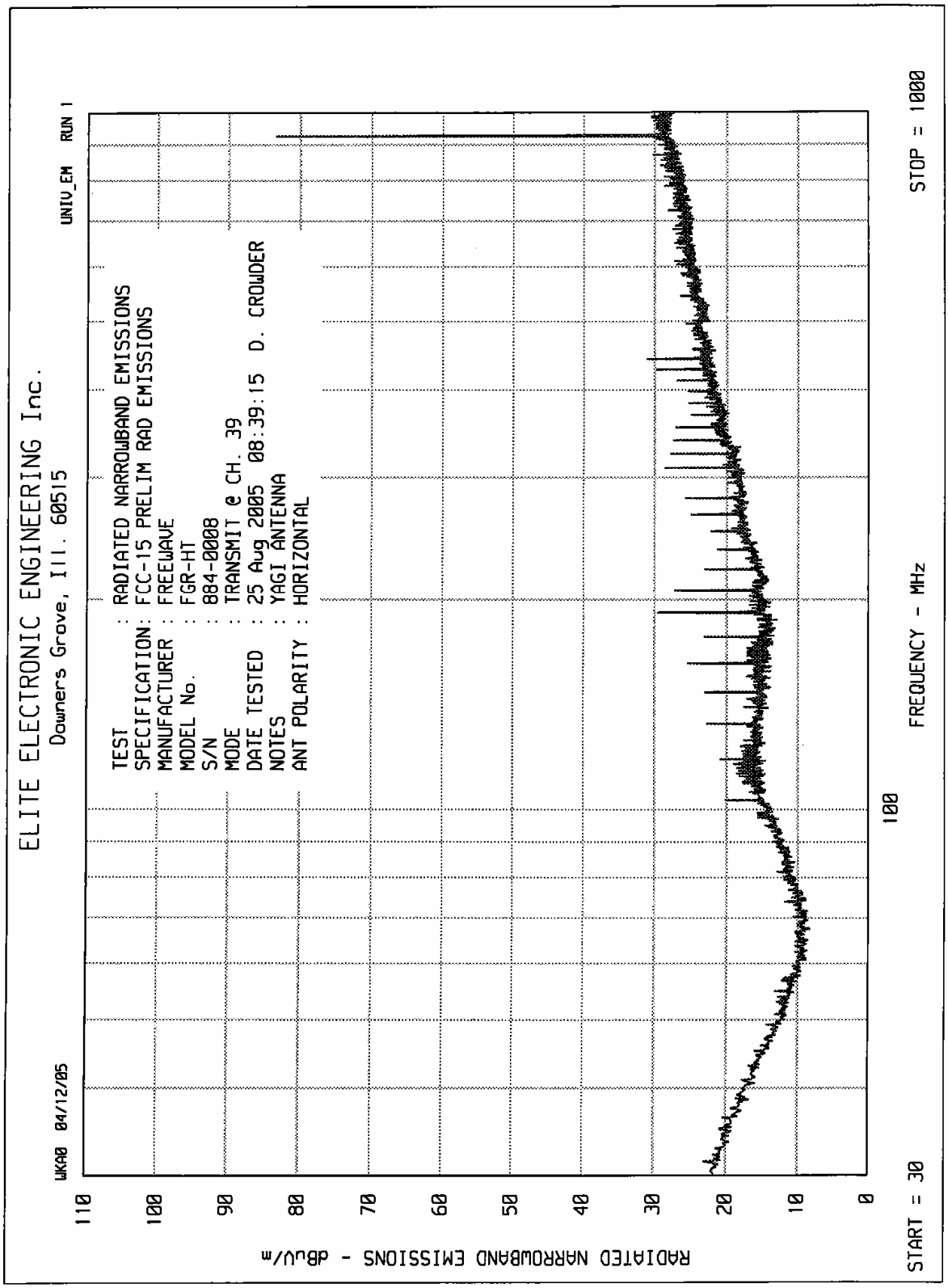
NOTES

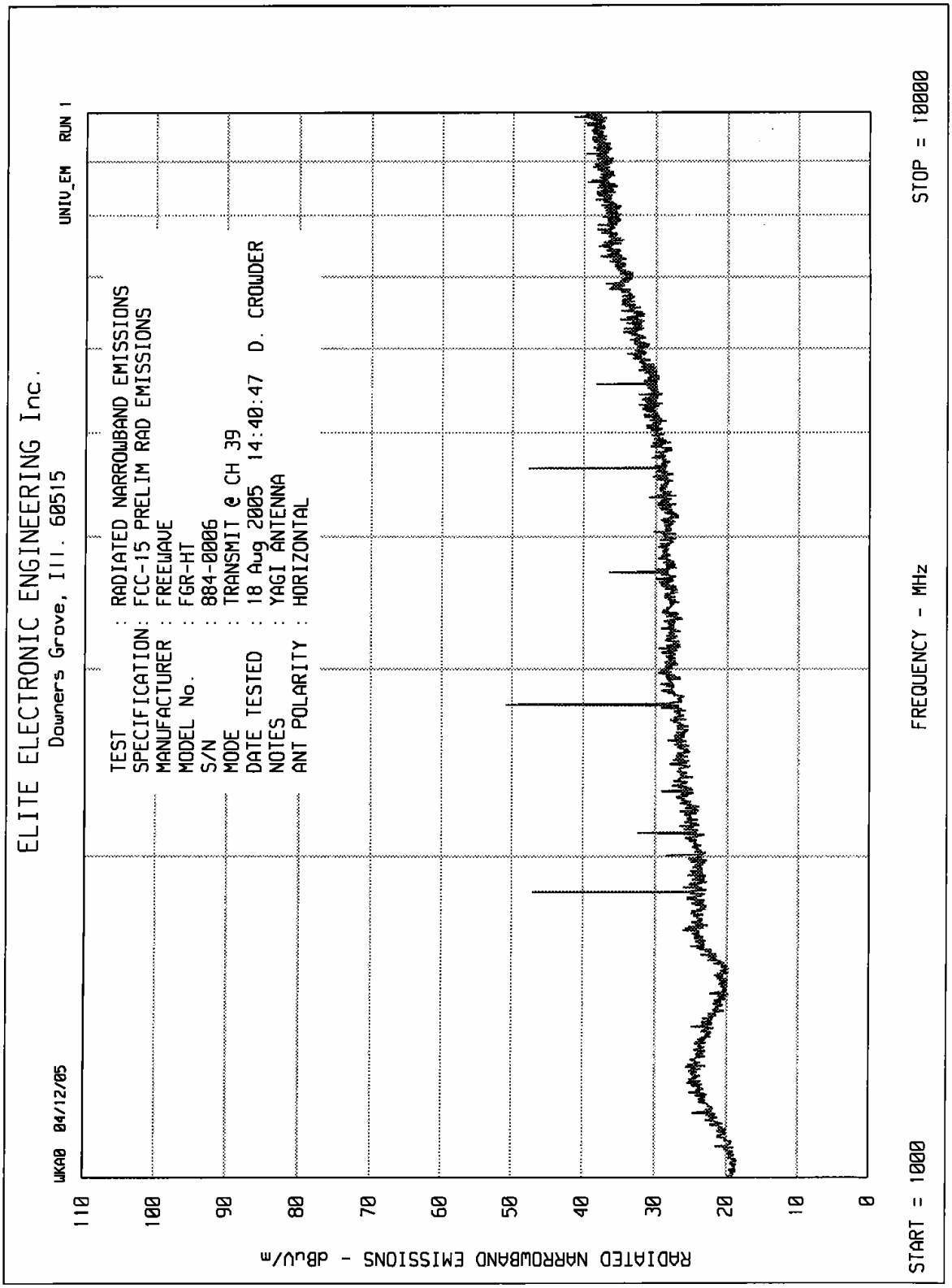

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 1
DATE TESTED : 25 Aug 2005 08:27:38 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
STOP = 1000
FREQUENCY - MHz

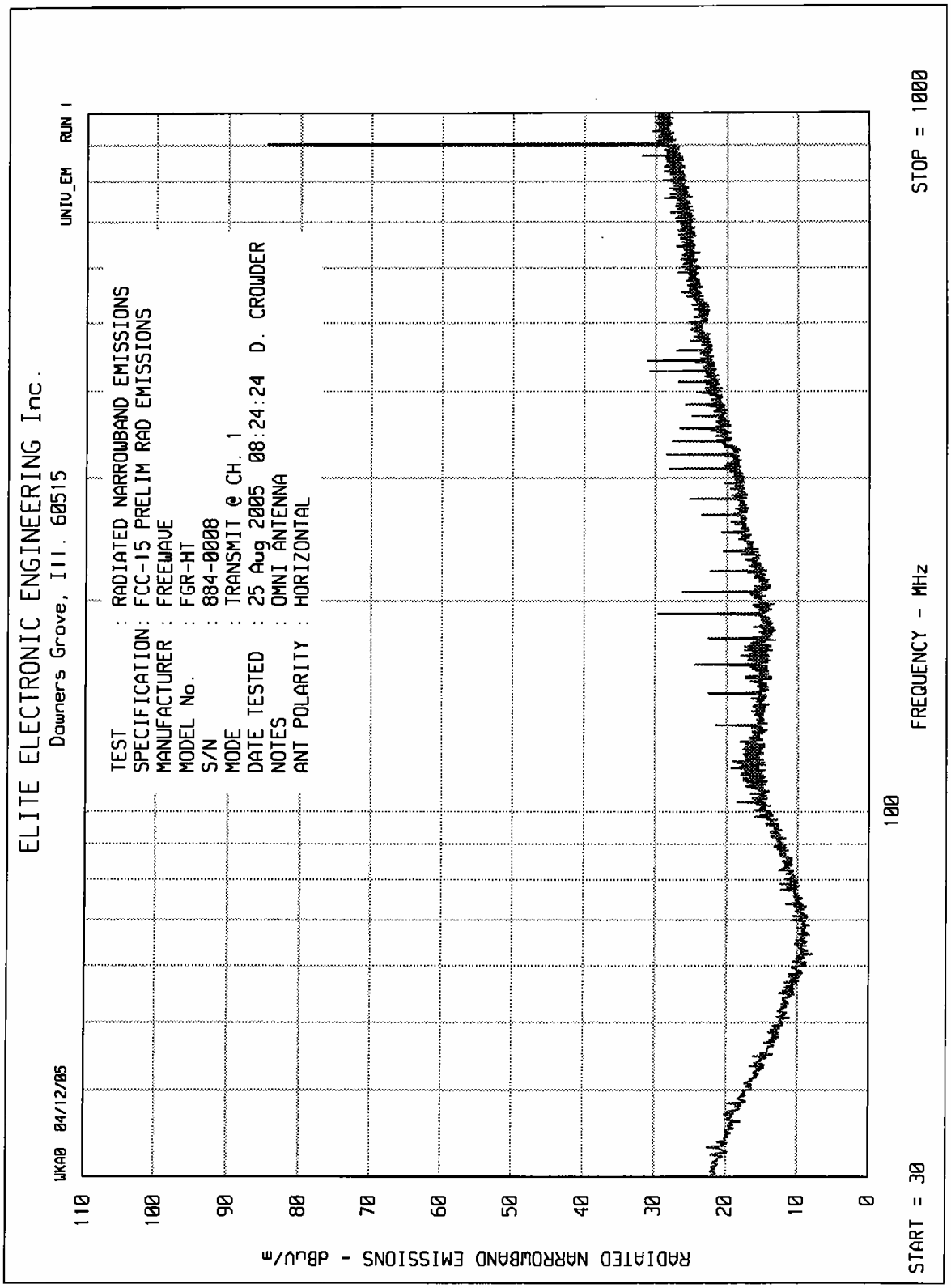

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 1
DATE TESTED : 18 Aug 2005 15:13:48 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000

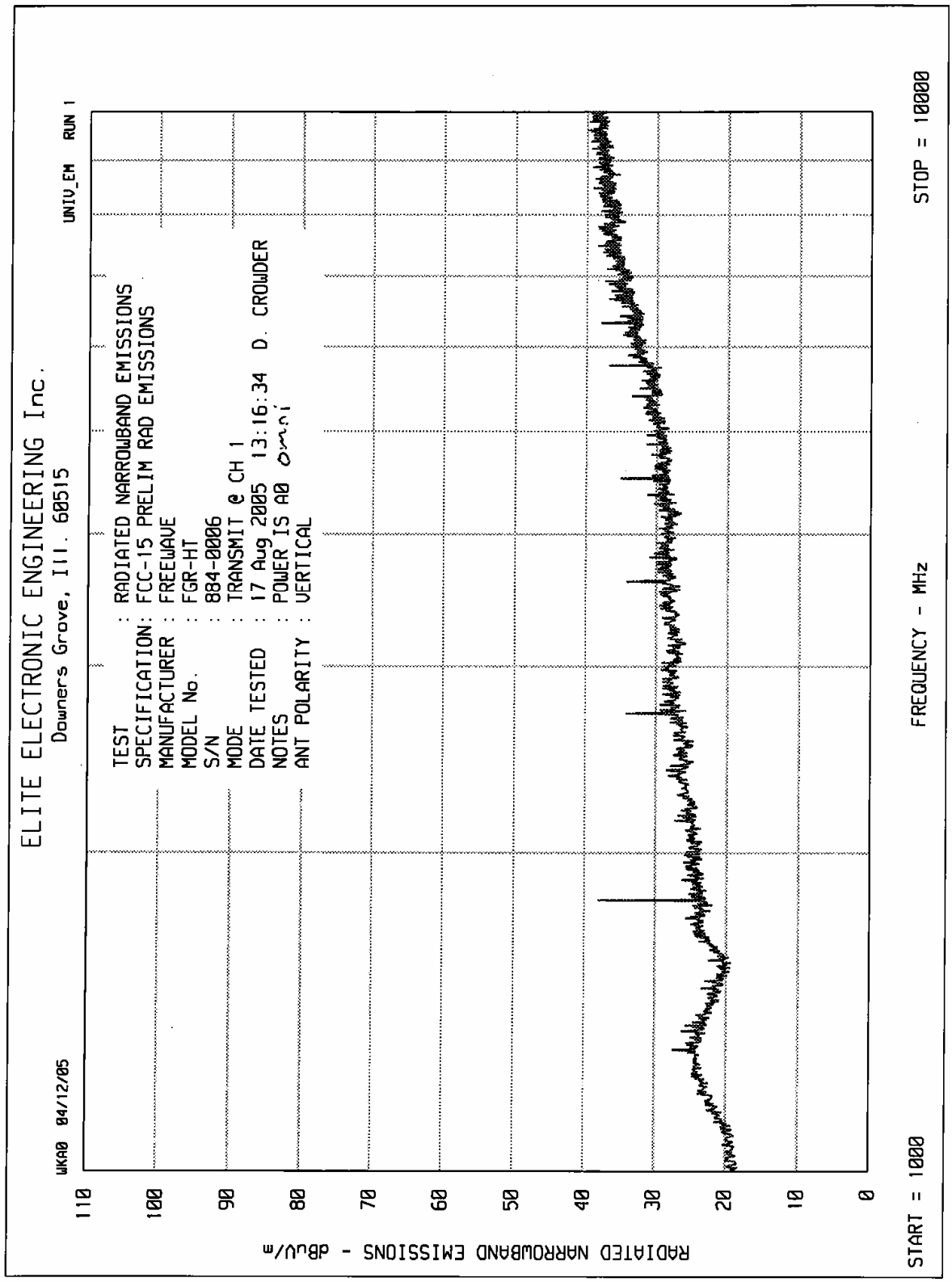

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 20
DATE TESTED : 25 Aug 2005 08:31:00 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000

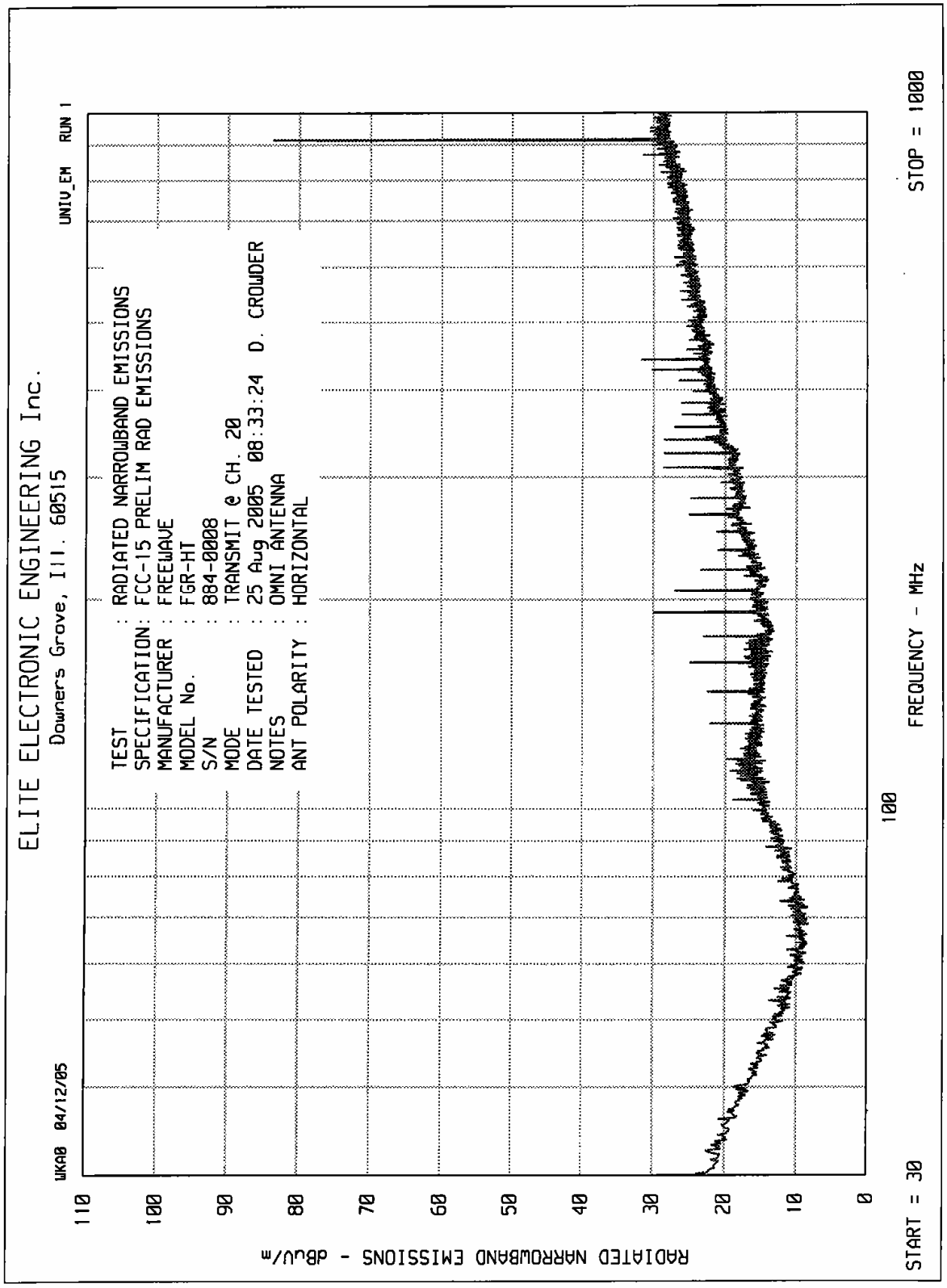

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 20
DATE TESTED : 18 Aug 2005 15:11:12 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000

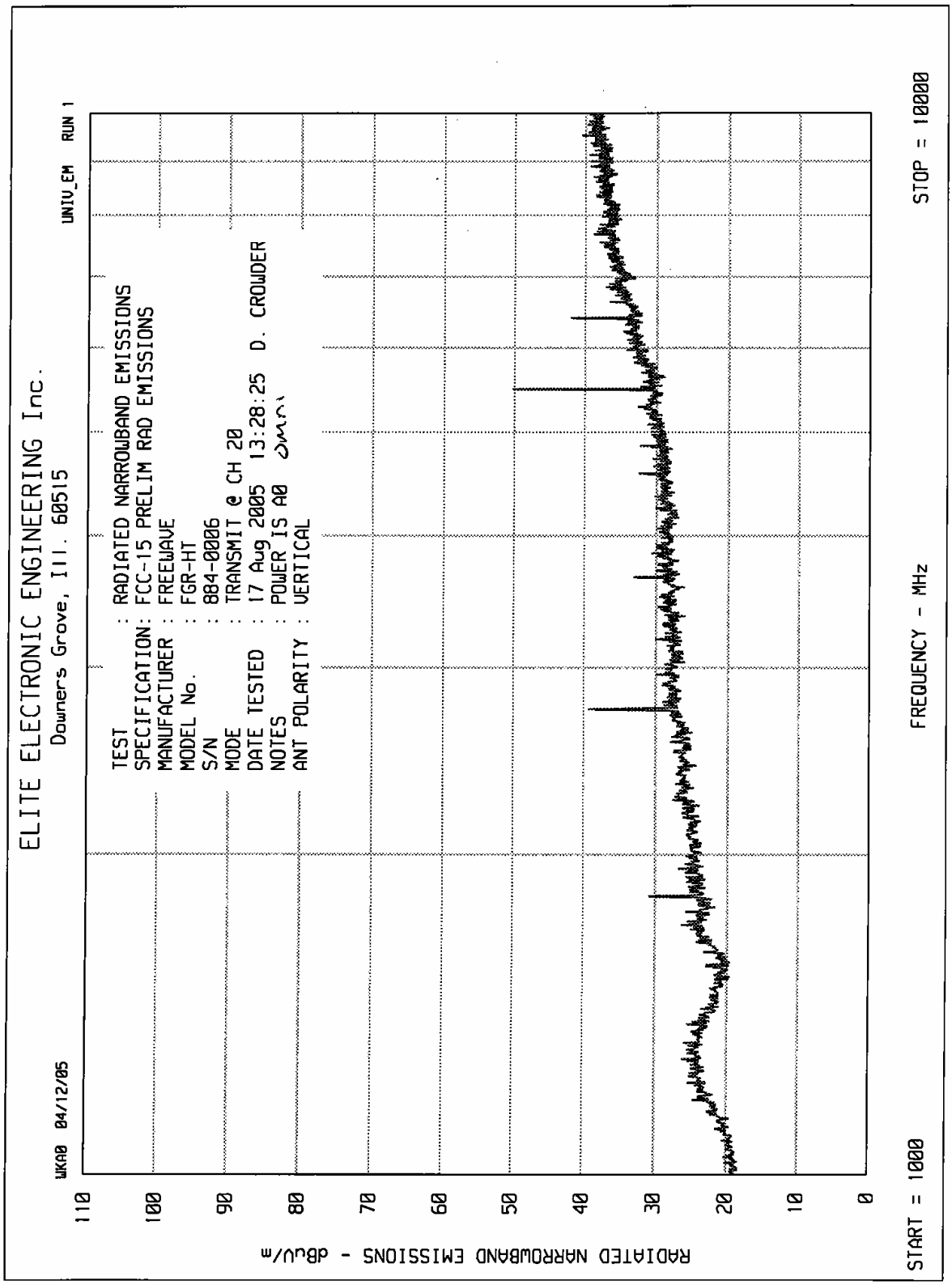

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 39
DATE TESTED : 25 Aug 2005 08:39:15 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000

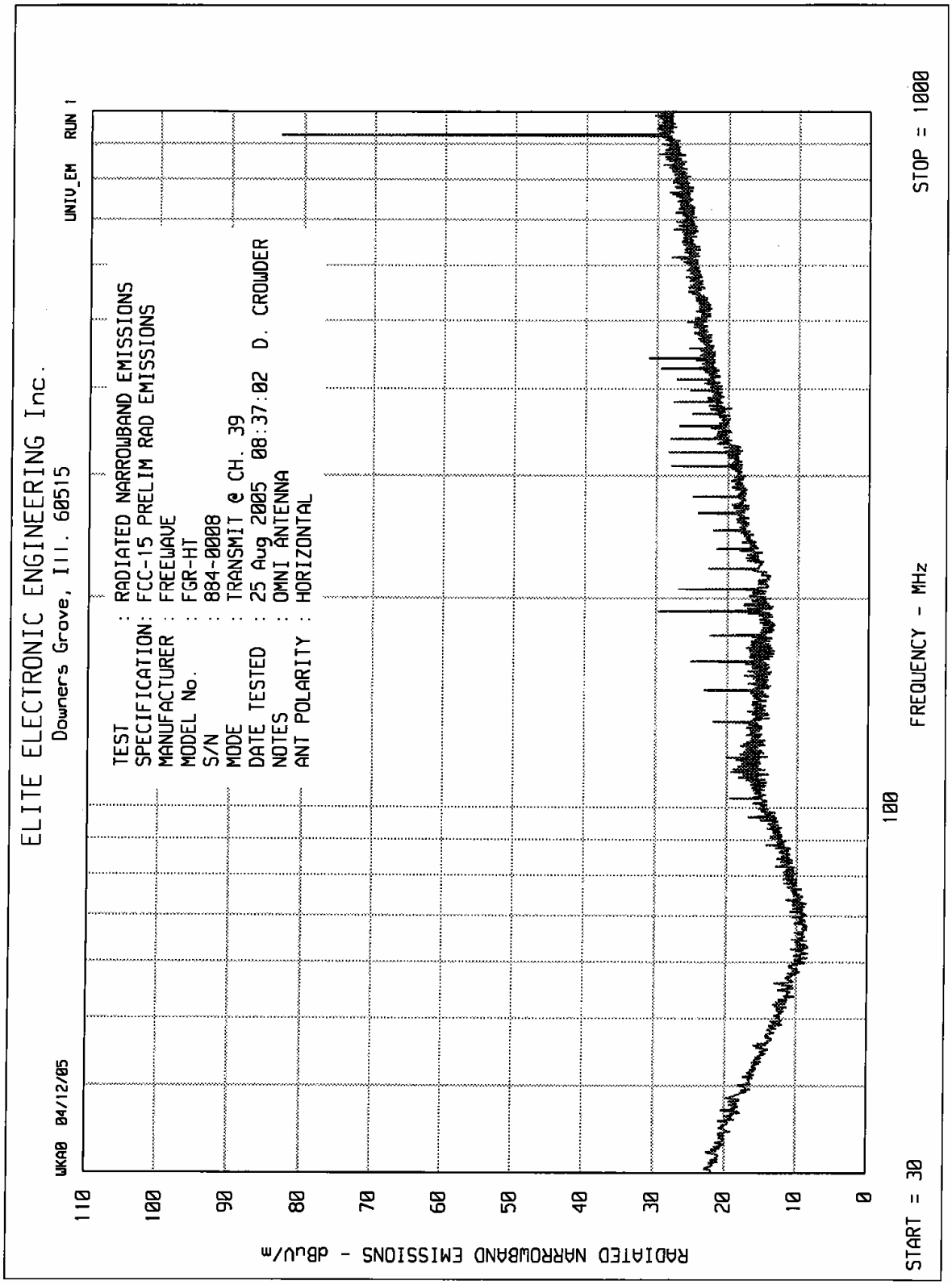

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 39
DATE TESTED : 18 Aug 2005 14:40:47 D. CROWDER
NOTES : YAGI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000

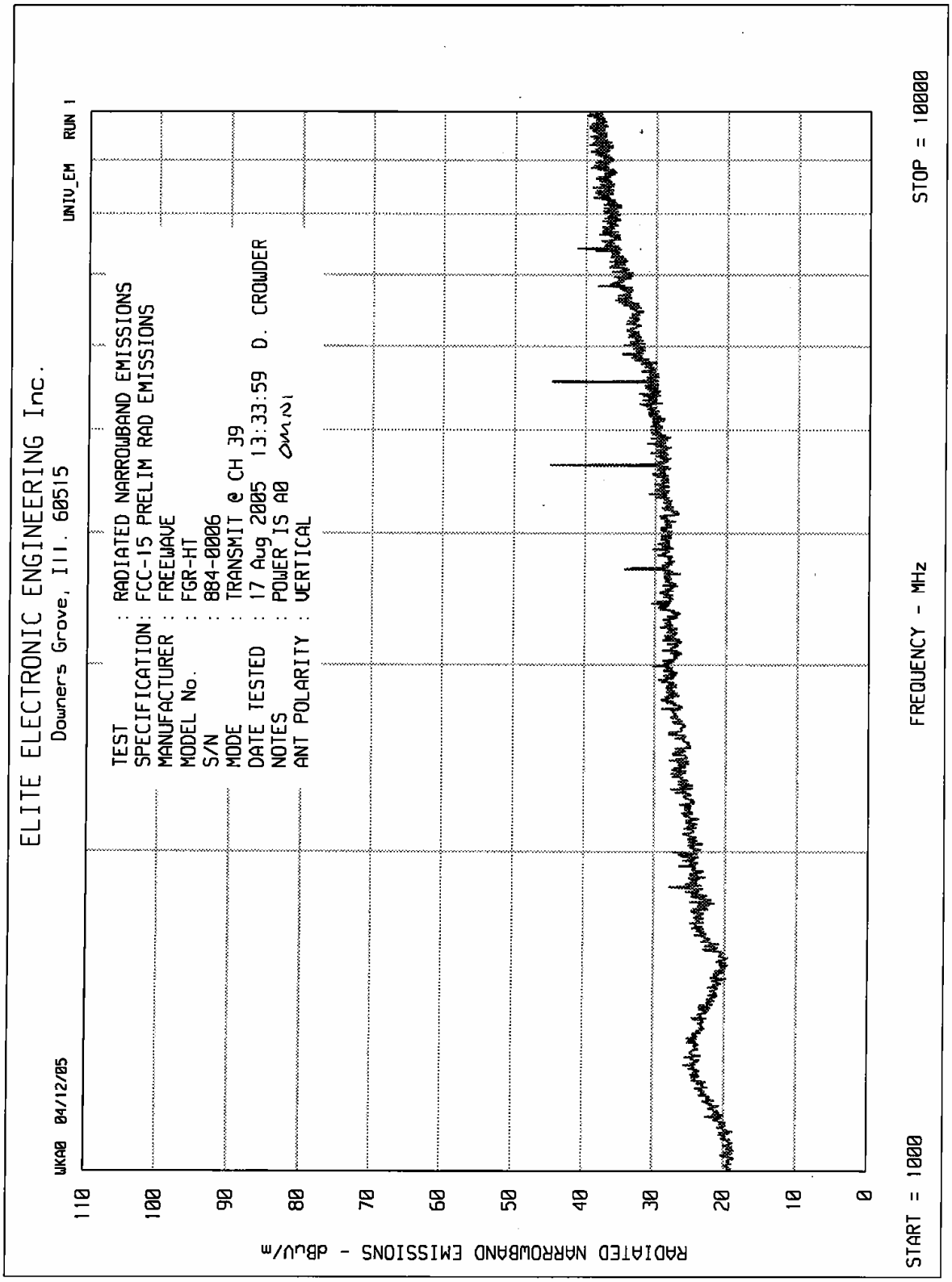

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 1
DATE TESTED : 25 Aug 2005 08:24:24 D. CROWDER
NOTES : OMNI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 1
DATE TESTED : 17 Aug 2005 13:16:34 D. CROWDER
NOTES : POWER IS A0 omni
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKAB 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 20
DATE TESTED : 25 Aug 2005 08:33:24 D. CROWDER
NOTES : OMNI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UKA0 04/12/05
UNIV_EM RUN 1
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 20
DATE TESTED : 17 Aug 2005 13:28:25 D. CROWDER
NOTES : POWER IS A0 dBm
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0008
MODE : TRANSMIT @ CH. 39
DATE TESTED : 25 Aug 2005 08:37:02 D. CROWDER
NOTES : OMNI ANTENNA
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 04/12/05
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC-15 PRELIM RAD EMISSIONS
MANUFACTURER : FREEWAVE
MODEL No. : FGR-HT
S/N : 884-0006
MODE : TRANSMIT @ CH 39
DATE TESTED : 17 Aug 2005 13:33:59 D. CROWDER
NOTES : POWER IS A0 omni
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 1
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2709.5	H	55.1		31.8	3.5	14.0	33.4	43.0	141.3	500
	V	58.3		31.8	3.5	14.0	33.4	46.2	204.2	500
3612.7	H	59.0		32.7	4.0	14.0	33.0	48.7	272.3	500
	V	45.5		32.7	4.0	14.0	33.0	35.2	57.5	500
4515.8	H	46.4		33.0	4.5	14.0	32.2	37.7	76.7	500
	V	47.8		33.0	4.5	14.0	32.2	39.1	90.2	500
5419.01	H	41.3		35.1	5.0	14.0	34.4	33.0	44.7	500
	V	39.1		35.1	5.0	14.0	34.4	30.8	34.7	500
8128.5	H	29.1	AMBIENT	37.7	7.2	14.0	31.7	28.3	26.0	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
9031.68	H	29.3	AMBIENT	38.1	7.5	14.0	34.9	26.0	20.0	500
	V	29.2	AMBIENT	38.1	7.5	14.0	34.9	25.9	19.7	500

CHECKED BY:
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 1
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2709.5	H	55.1		31.8	3.5	33.4	57.0	707.9	5000
	V	58.3		31.8	3.5	33.4	60.2	1023.3	5000
3612.7	H	59.0		32.7	4.0	33.0	62.7	1364.6	5000
	V	45.5		32.7	4.0	33.0	49.2	288.4	5000
4515.8	H	46.4		33.0	4.5	32.2	51.7	384.6	5000
	V	47.8		33.0	4.5	32.2	53.1	451.9	5000
5419.0									
1	H	41.3		35.1	5.0	34.4	47.0	223.9	5000
	V	39.1		35.1	5.0	34.4	44.8	173.8	5000
8128.5	H	29.1	AMBIENT	37.7	7.2	31.7	42.3	130.3	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
9031.6									
8	H	29.3	AMBIENT	38.1	7.5	34.9	40.0	100.0	5000
	V	29.2	AMBIENT	38.1	7.5	34.9	39.9	98.9	5000

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 20
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2744.5	H	62.7		31.8	3.5	14.0	33.4	50.6	338.8	500
	V	56.8		31.8	3.5	14.0	33.4	44.7	171.8	500
3659.4	H	46.4		32.7	4.0	14.0	33.0	36.1	63.8	500
	V	45.1		32.7	4.0	14.0	33.0	34.8	55.0	500
4574.2	H	53.3		33.0	4.5	14.0	32.2	44.6	169.8	500
	V	50.6		33.0	4.5	14.0	32.2	41.9	124.5	500
7318.7										
3	H	29.0	AMBIENT	38.0	6.8	14.0	31.5	28.3	25.9	500
	V	29.7	AMBIENT	38.0	6.8	14.0	31.5	29.0	28.0	500
8233.6	H	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
9148.4										
2	H	30.0	AMBIENT	38.1	7.5	14.0	34.9	26.7	21.6	500
	V	30.5	AMBIENT	38.1	7.5	14.0	34.9	27.2	22.9	500

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 20
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2744.5	H	62.7		31.8	3.5	33.4	64.6	1698.2	5000
	V	56.8		31.8	3.5	33.4	58.7	861.0	5000
3659.4	H	46.4		32.7	4.0	33.0	50.1	319.9	5000
	V	45.1		32.7	4.0	33.0	48.8	275.4	5000
4574.2	H	53.3		33.0	4.5	32.2	58.6	851.1	5000
	V	50.6		33.0	4.5	32.2	55.9	623.7	5000
7318.7									
3	H	29.0	AMBIENT	38.0	6.8	31.5	42.3	129.6	5000
	V	29.7	AMBIENT	38.0	6.8	31.5	43.0	140.4	5000
8233.6	H	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
9148.4									
2	H	30.0	AMBIENT	38.1	7.5	34.9	40.7	108.4	5000
	V	30.5	AMBIENT	38.1	7.5	34.9	41.2	114.8	5000

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 39
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2779.5	H	58.9		31.8	3.5	14.0	33.4	46.8	218.8	500
	V	53.7		31.8	3.5	14.0	33.4	41.6	120.2	500
3706.1	H	44.9		32.7	4.0	14.0	33.0	34.6	53.7	500
	V	46.5		32.7	4.0	14.0	33.0	36.2	64.6	500
4632.6	H	51.0		33.0	4.5	14.0	32.2	42.3	130.3	500
	V	51.4		33.0	4.5	14.0	32.2	42.7	136.5	500
7412.12	H	29.0	AMBIENT	38.0	6.8	14.0	31.5	28.3	25.9	500
	V	29.7	AMBIENT	38.0	6.8	14.0	31.5	29.0	28.0	500
8338.6	H	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 39
: YAGI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2779.5	H	58.9		31.8	3.5	33.4	60.8	1096.5	5000
	V	53.7		31.8	3.5	33.4	55.6	602.6	5000
3706.1	H	44.9		32.7	4.0	33.0	48.6	269.2	5000
	V	46.5		32.7	4.0	33.0	50.2	323.6	5000
4632.6	H	51.0		33.0	4.5	32.2	56.3	653.1	5000
	V	51.4		33.0	4.5	32.2	56.7	683.9	5000
7412.1									
2	H	29.0	AMBIENT	38.0	6.8	31.5	42.3	129.6	5000
	V	29.7	AMBIENT	38.0	6.8	31.5	43.0	140.4	5000
8338.6	H	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 1
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2709.5	H	59.1		31.8	3.5	14.0	33.4	47.0	223.9	500
	V	57.0		31.8	3.5	14.0	33.4	44.9	175.8	500
3612.7	H	45.6		32.7	4.0	14.0	33.0	35.3	58.2	500
	V	44.7		32.7	4.0	14.0	33.0	34.4	52.5	500
4515.8	H	48.6		33.0	4.5	14.0	32.2	39.9	98.9	500
	V	49.9		33.0	4.5	14.0	32.2	41.2	114.8	500
5419.01	H	44.9		35.1	5.0	14.0	34.4	36.6	67.6	500
	V	49.1		35.1	5.0	14.0	34.4	40.8	109.6	500
8128.5	H	29.1	AMBIENT	37.7	7.2	14.0	31.7	28.3	26.0	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
9031.68	H	29.3	AMBIENT	38.1	7.5	14.0	34.9	26.0	20.0	500
	V	29.2	AMBIENT	38.1	7.5	14.0	34.9	25.9	19.7	500

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 1
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2709.5	H	59.1		31.8	3.5	33.4	61.0	1122.0	5000
	V	57.0		31.8	3.5	33.4	58.9	881.0	5000
3612.7	H	45.6		32.7	4.0	33.0	49.3	291.7	5000
	V	44.7		32.7	4.0	33.0	48.4	263.0	5000
4515.8	H	48.6		33.0	4.5	32.2	53.9	495.5	5000
	V	49.9		33.0	4.5	32.2	55.2	575.4	5000
5419.0 1	H	44.9		35.1	5.0	34.4	50.6	338.8	5000
	V	49.1		35.1	5.0	34.4	54.8	549.5	5000
8128.5	H	29.1	AMBIENT	37.7	7.2	31.7	42.3	130.3	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
9031.6 8	H	29.3	AMBIENT	38.1	7.5	34.9	40.0	100.0	5000
	V	29.2	AMBIENT	38.1	7.5	34.9	39.9	98.9	5000

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 20
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2744.5	H	58.0		31.8	3.5	14.0	33.4	45.9	197.2	500
	V	54.4		31.8	3.5	14.0	33.4	42.3	130.3	500
3659.4	H	48.3		32.7	4.0	14.0	33.0	38.0	79.4	500
	V	42.2		32.7	4.0	14.0	33.0	31.9	39.4	500
4574.2	H	52.1		33.0	4.5	14.0	32.2	43.4	147.9	500
	V	50.1		33.0	4.5	14.0	32.2	41.4	117.5	500
7318.7										
3	H	29.0	AMBIENT	38.0	6.8	14.0	31.5	28.3	25.9	500
	V	29.7	AMBIENT	38.0	6.8	14.0	31.5	29.0	28.0	500
8233.6	H	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
9148.4										
2	H	30.0	AMBIENT	38.1	7.5	14.0	34.9	26.7	21.6	500
	V	30.5	AMBIENT	38.1	7.5	14.0	34.9	27.2	22.9	500

CHECKED BY: _____
Daniel E. Crowder

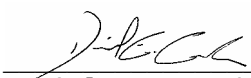
MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 20
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2744.5	H	58.0		31.8	3.5	33.4	59.9	988.6	5000
	V	54.4		31.8	3.5	33.4	56.3	653.1	5000
3659.4	H	48.3		32.7	4.0	33.0	52.0	398.1	5000
	V	42.2		32.7	4.0	33.0	45.9	197.2	5000
4574.2	H	52.1		33.0	4.5	32.2	57.4	741.3	5000
	V	50.1		33.0	4.5	32.2	55.4	588.8	5000
7318.7									
3	H	29.0	AMBIENT	38.0	6.8	31.5	42.3	129.6	5000
	V	29.7	AMBIENT	38.0	6.8	31.5	43.0	140.4	5000
8233.6	H	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
9148.4									
2	H	30.0	AMBIENT	38.1	7.5	34.9	40.7	108.4	5000
	V	30.5	AMBIENT	38.1	7.5	34.9	41.2	114.8	5000

CHECKED BY: _____
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 39
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

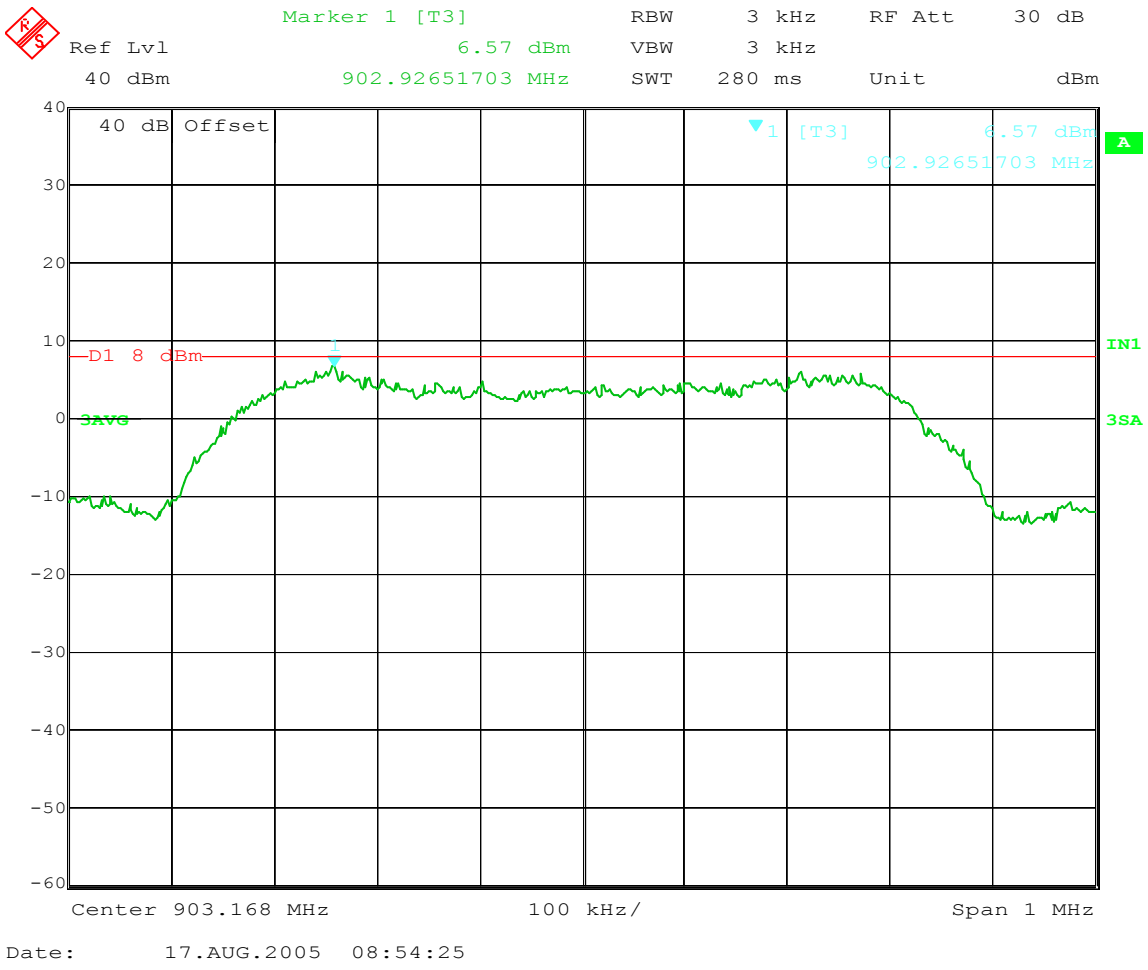
FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	DUTY CYCLE dB	PRE AMP dB	AVG TOTAL dBuV/m	AVG TOTAL uV/m	AVG LIMIT uV
2779.5	H	53.0		31.8	3.5	14.0	33.4	40.9	110.9	500
	V	47.2		31.8	3.5	14.0	33.4	35.1	56.9	500
3706.1	H	53.9		32.7	4.0	14.0	33.0	43.6	151.4	500
	V	47.1		32.7	4.0	14.0	33.0	36.8	69.2	500
4632.6	H	53.6		33.0	4.5	14.0	32.2	44.9	175.8	500
	V	47.4		33.0	4.5	14.0	32.2	38.7	86.1	500
7412.12	H	29.0	AMBIENT	38.0	6.8	14.0	31.5	28.3	25.9	500
	V	29.7	AMBIENT	38.0	6.8	14.0	31.5	29.0	28.0	500
8338.6	H	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500
	V	29.5	AMBIENT	37.7	7.2	14.0	31.7	28.7	27.2	500

CHECKED BY: 
Daniel E. Crowder

MANUFACTURER : FREEWAVE TECHNOLOGIES
MODEL : FGR-HT
S/N : 884-0006
SPECIFICATION : 15.247 RADIATED SPURIOUS EMISSIONS
DATE : AUGUST 19, 2005
NOTES : TRANSMIT AT CH. 39
: OMNI ANTENNA
: TEST DISTANCE IS 3 METERS

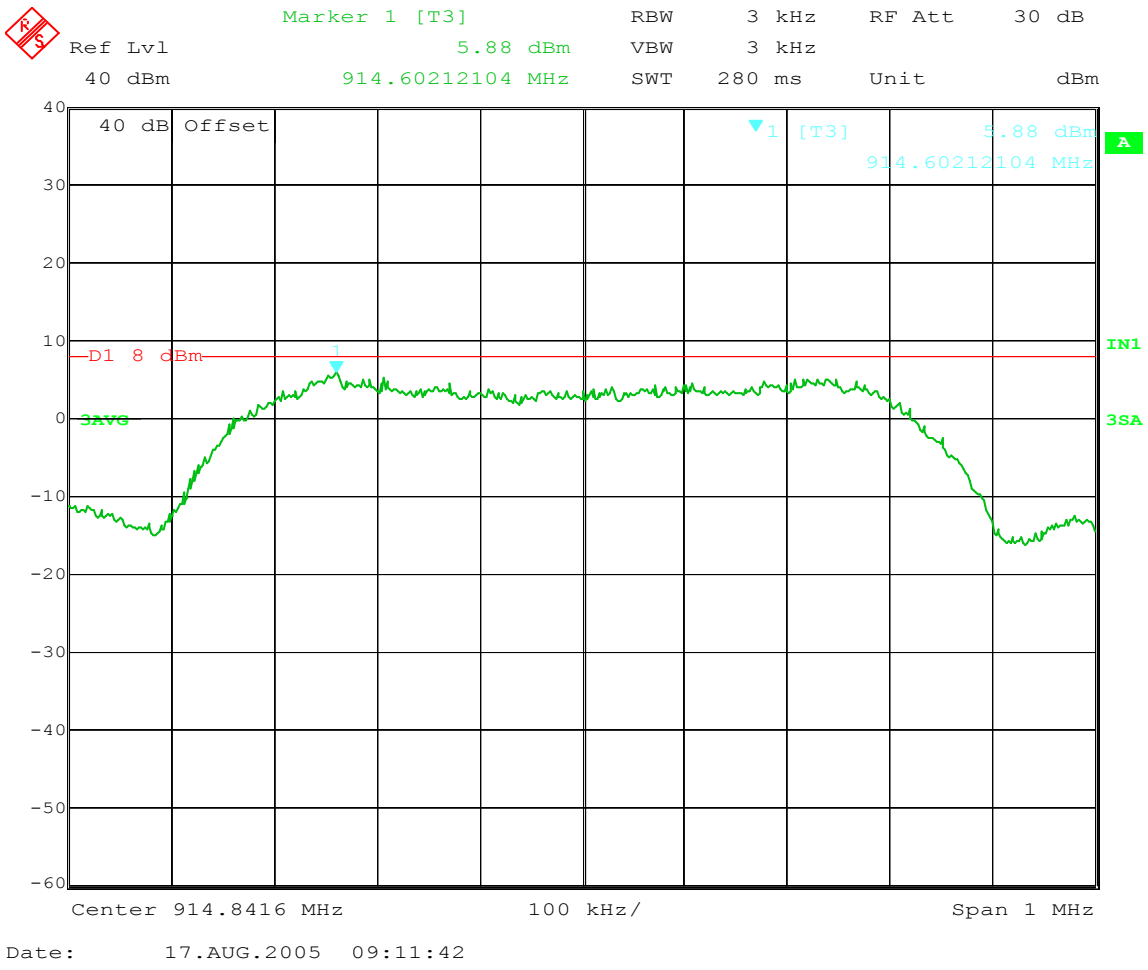
FREQ. (MHz)	ANT POL	MTR RDG dBuV	AMBIENT	ANT FAC dB	CABLE LOSS dB	PRE AMP dB	PEAK TOTAL dBuV/m	PEAK TOTAL uV/m	PEAK LIMIT uV
2779.5	H	53.0		31.8	3.5	33.4	54.9	555.9	5000
	V	47.2		31.8	3.5	33.4	49.1	285.1	5000
3706.1	H	53.9		32.7	4.0	33.0	57.6	758.6	5000
	V	47.1		32.7	4.0	33.0	50.8	346.7	5000
4632.6	H	53.6		33.0	4.5	32.2	58.9	881.0	5000
	V	47.4		33.0	4.5	32.2	52.7	431.5	5000
2779.5	H	53.0		31.8	3.5	33.4	54.9	555.9	5000
	V	47.2		31.8	3.5	33.4	49.1	285.1	5000
7412.12	H	29.0	AMBIENT	38.0	6.8	31.5	42.3	129.6	5000
	V	29.7	AMBIENT	38.0	6.8	31.5	43.0	140.4	5000
8338.6	H	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000
	V	29.5	AMBIENT	37.7	7.2	31.7	42.7	136.5	5000

CHECKED BY: _____
Daniel E. Crowder



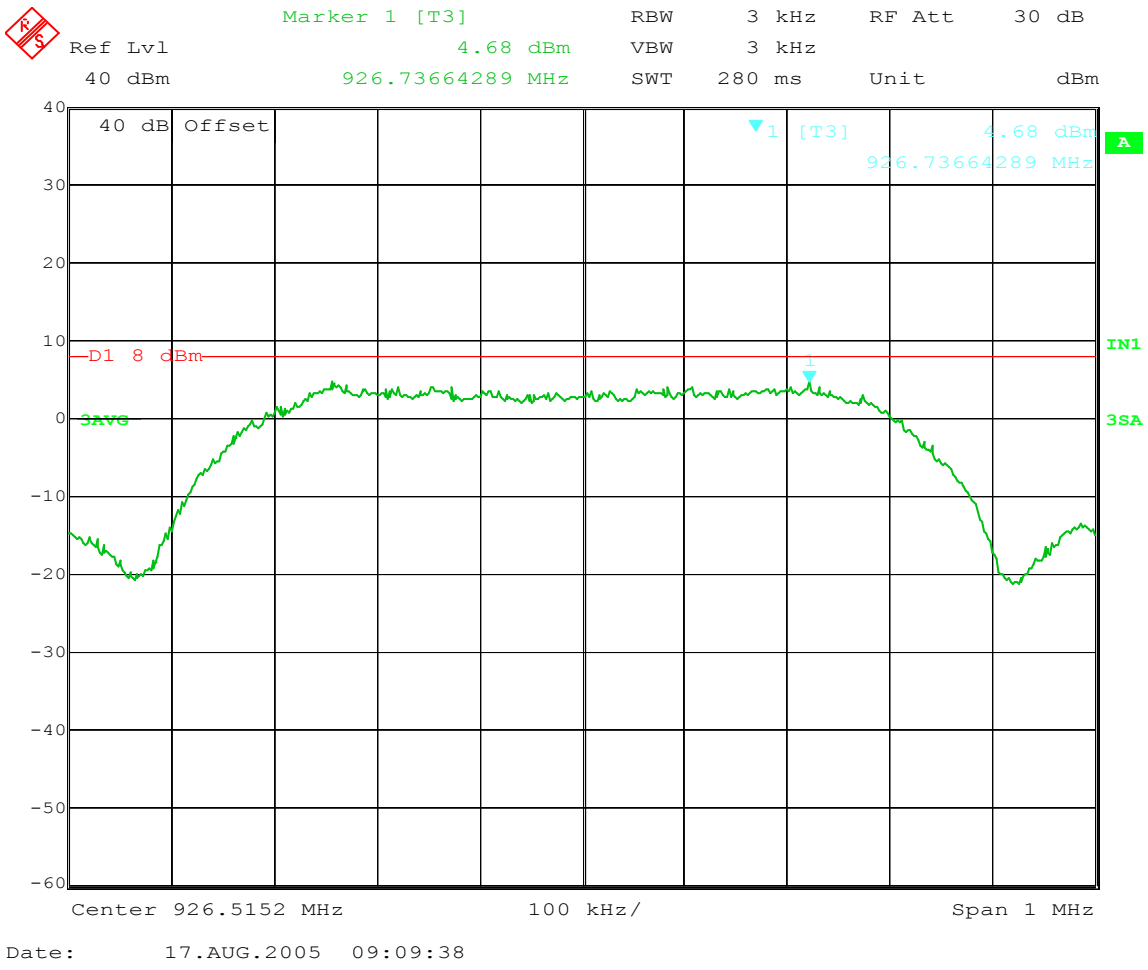
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 1 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



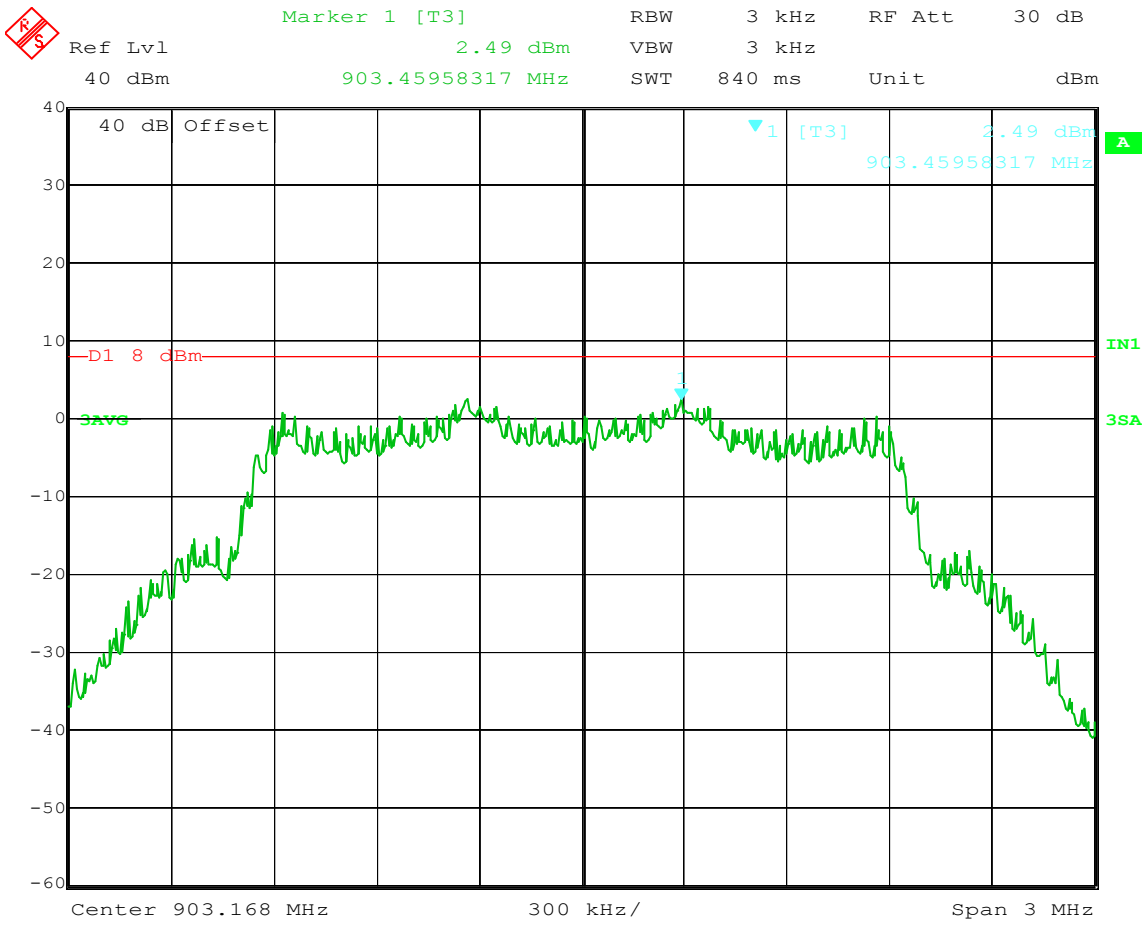
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 20 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 39 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

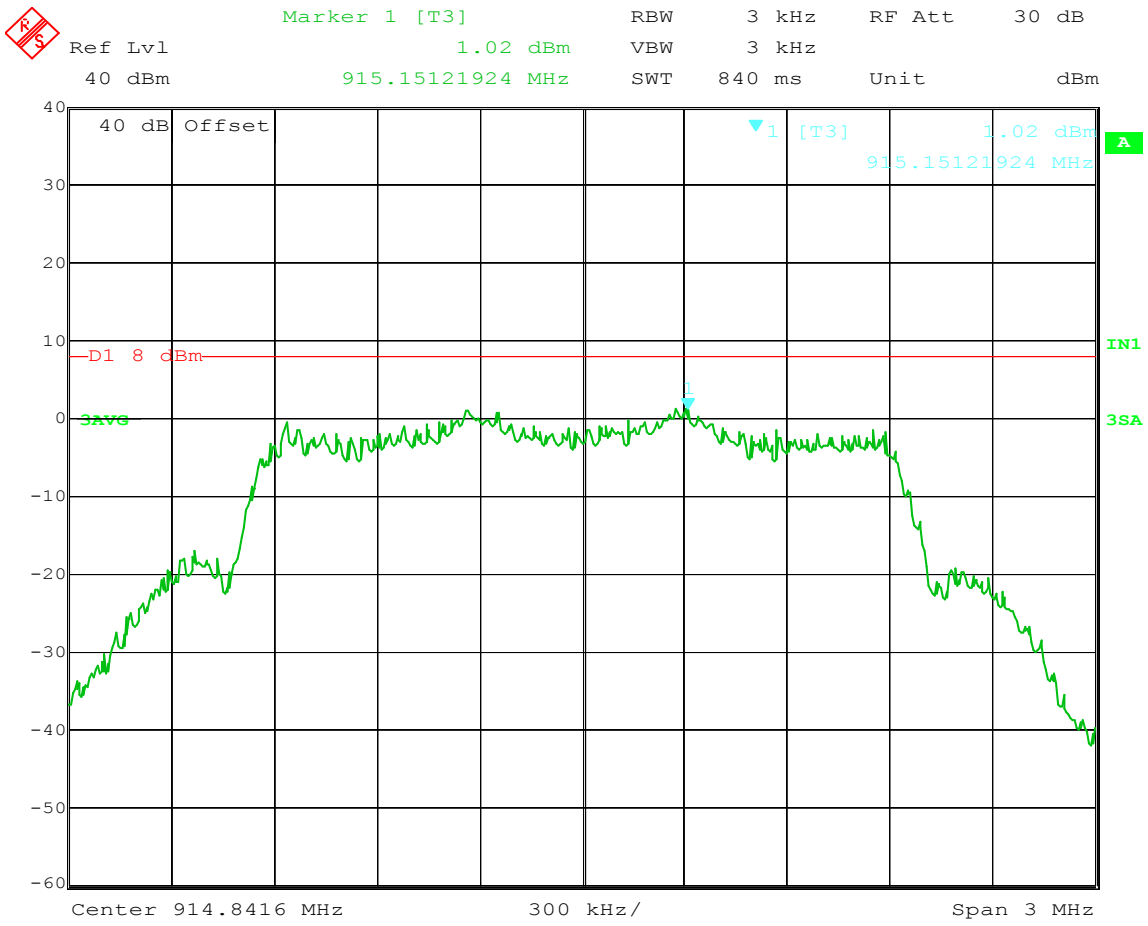
NOTES



Date: 17.AUG.2005 08:51:19

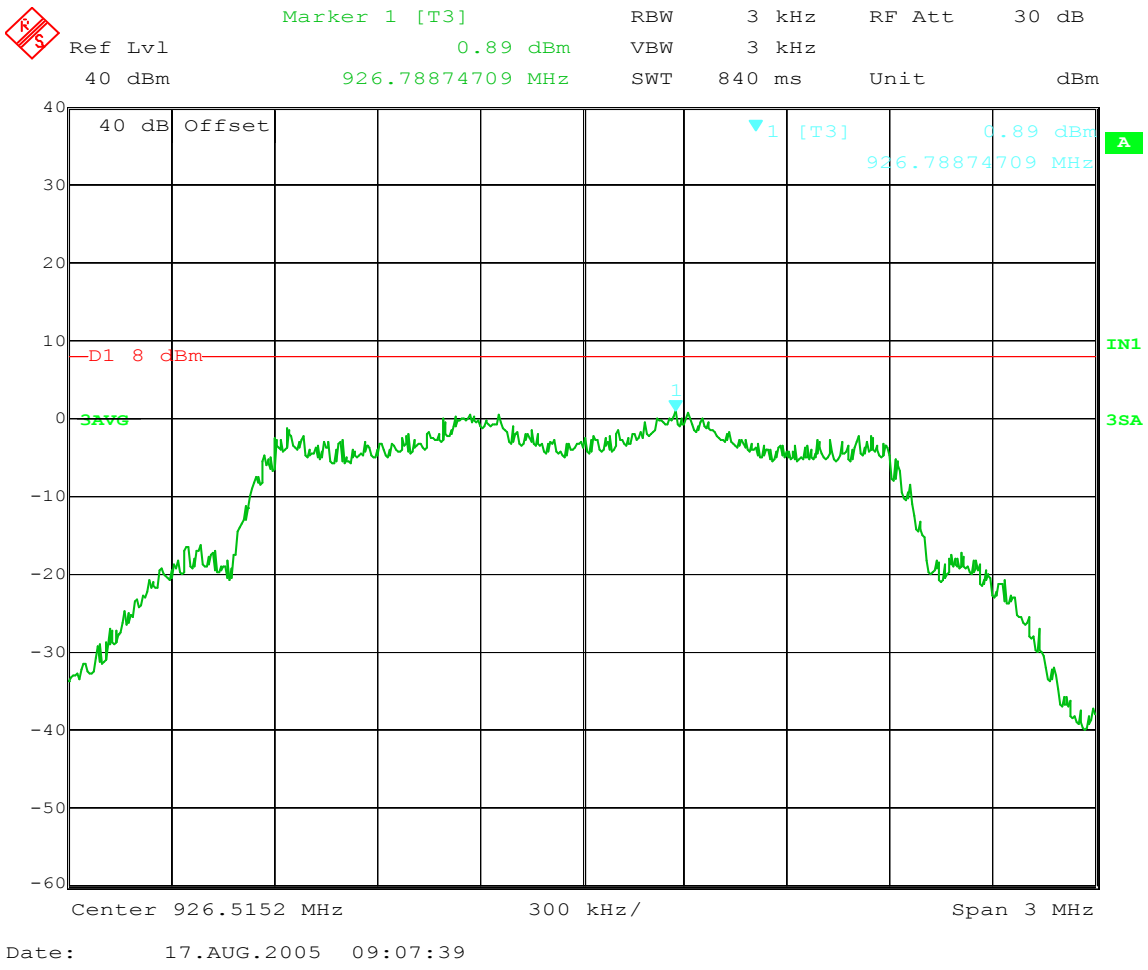
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 1 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



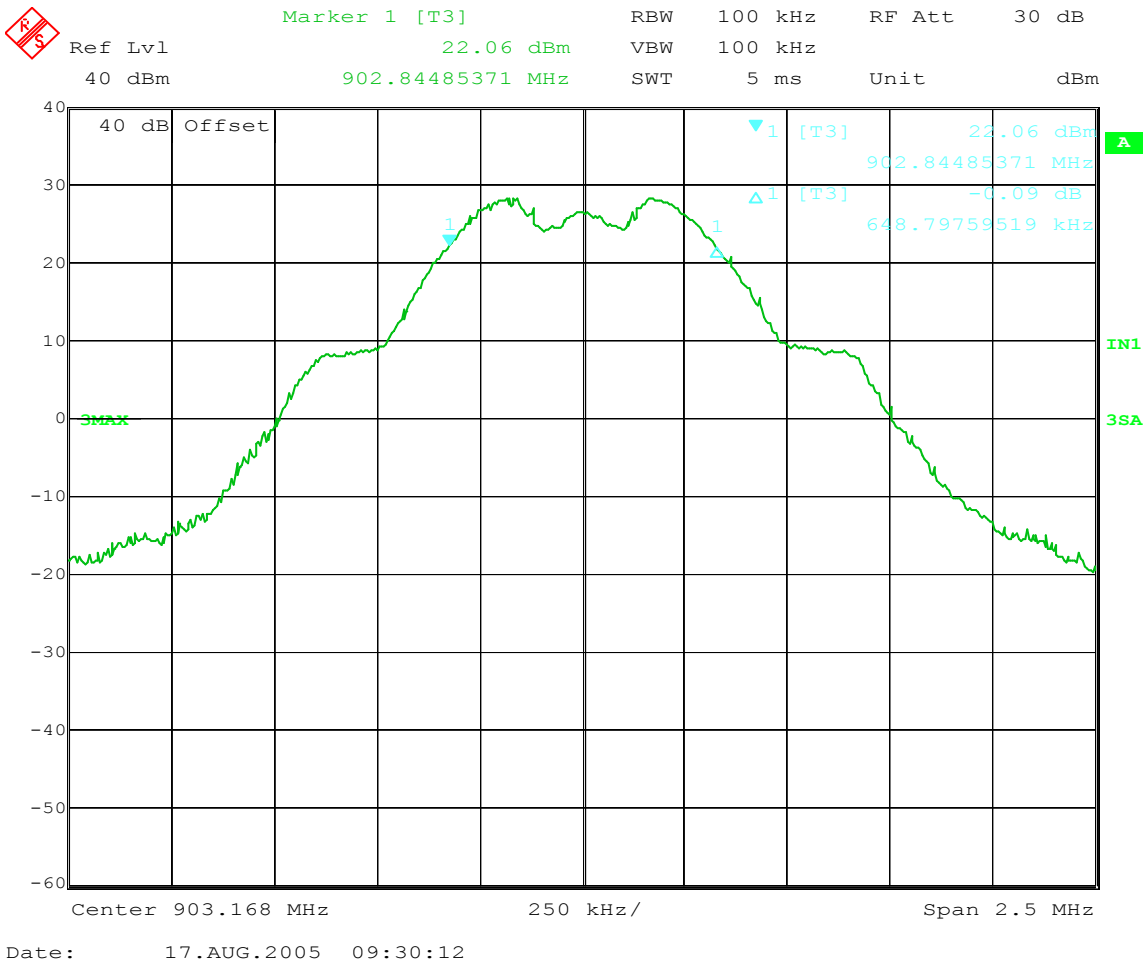
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 20 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



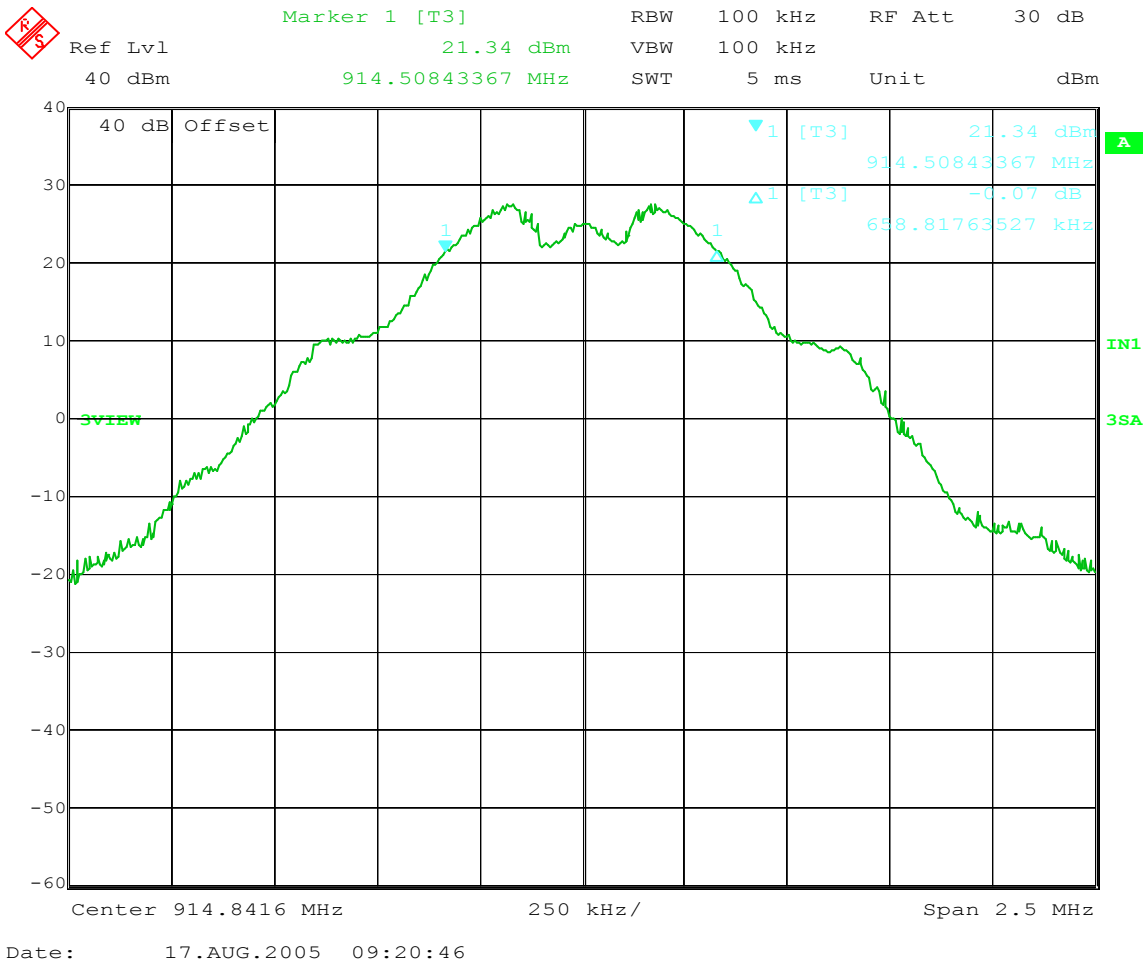
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Spectral Density
TEST PARAMETERS : Channel 39 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



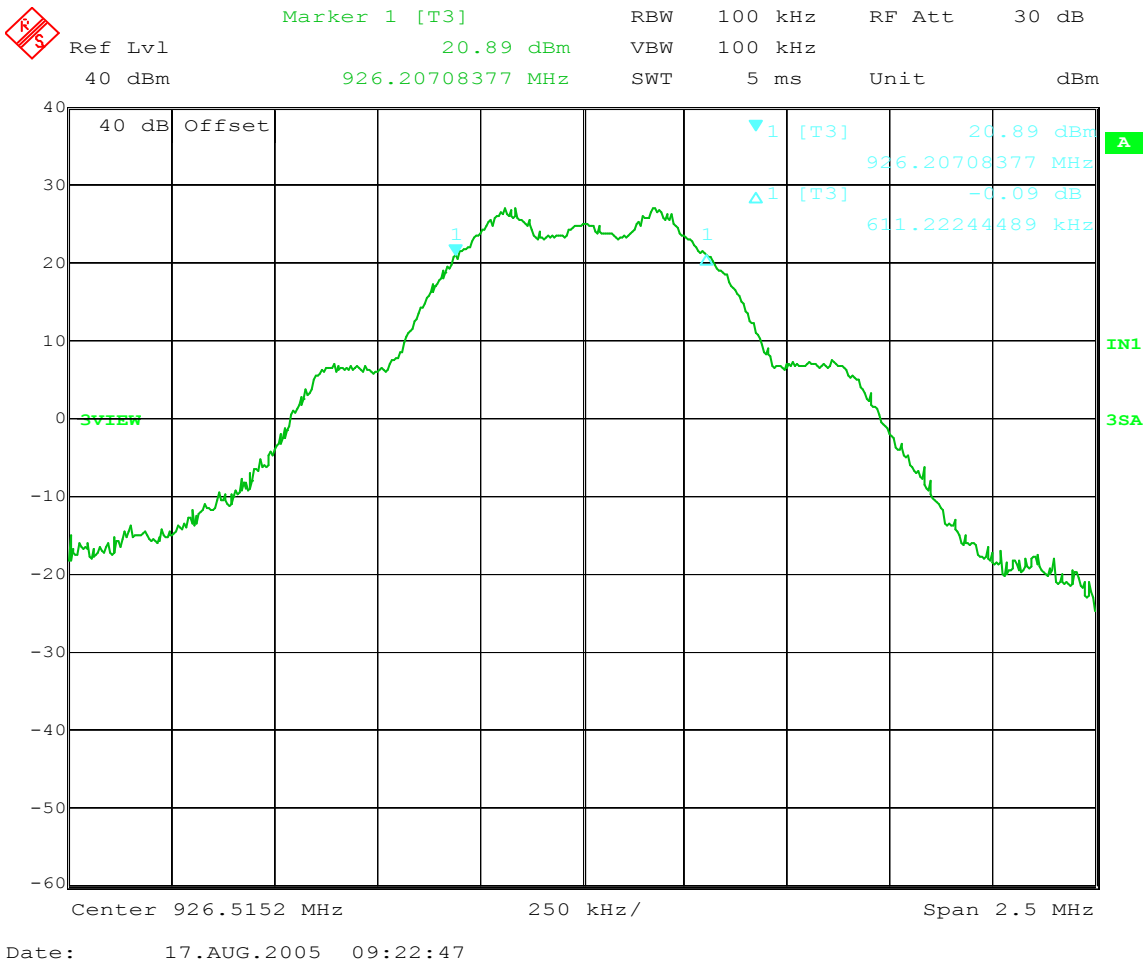
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 1 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



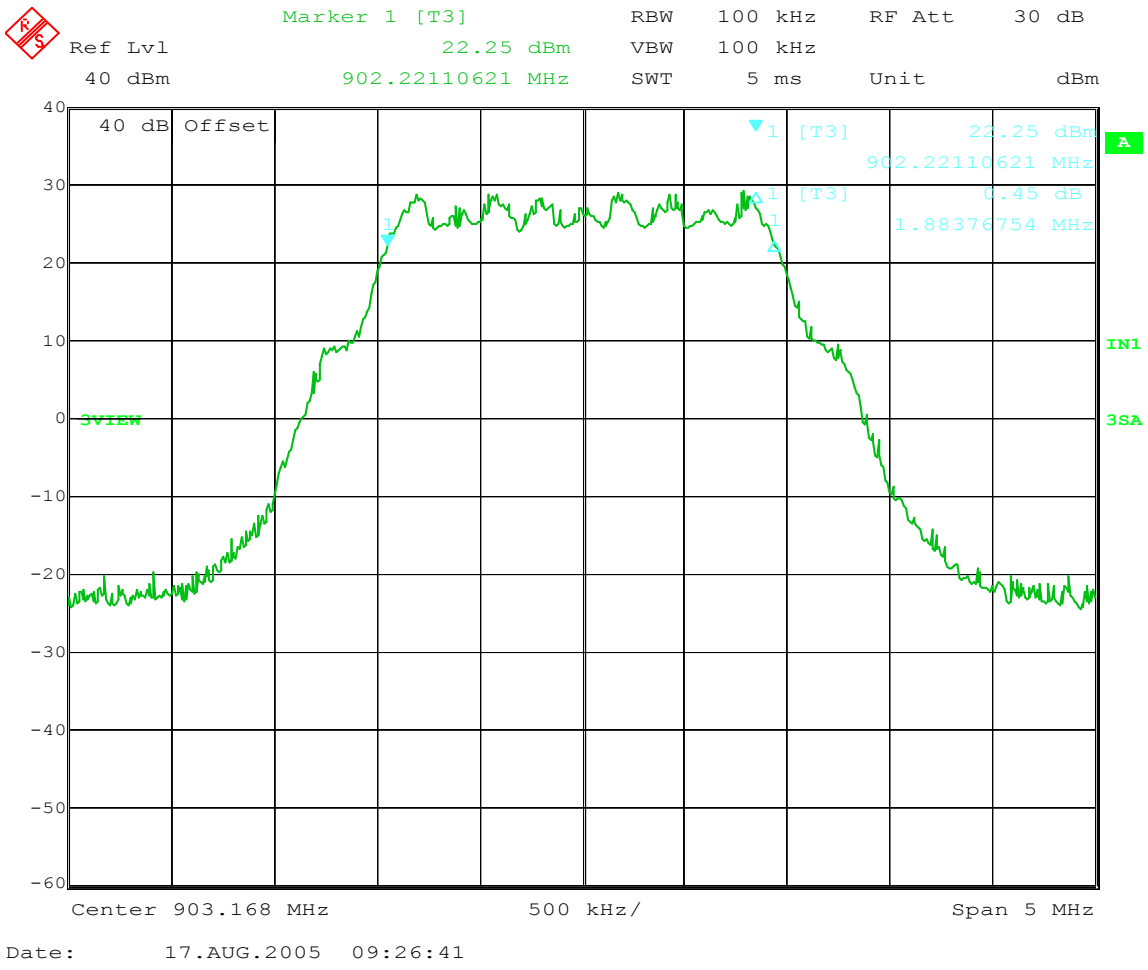
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 20 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



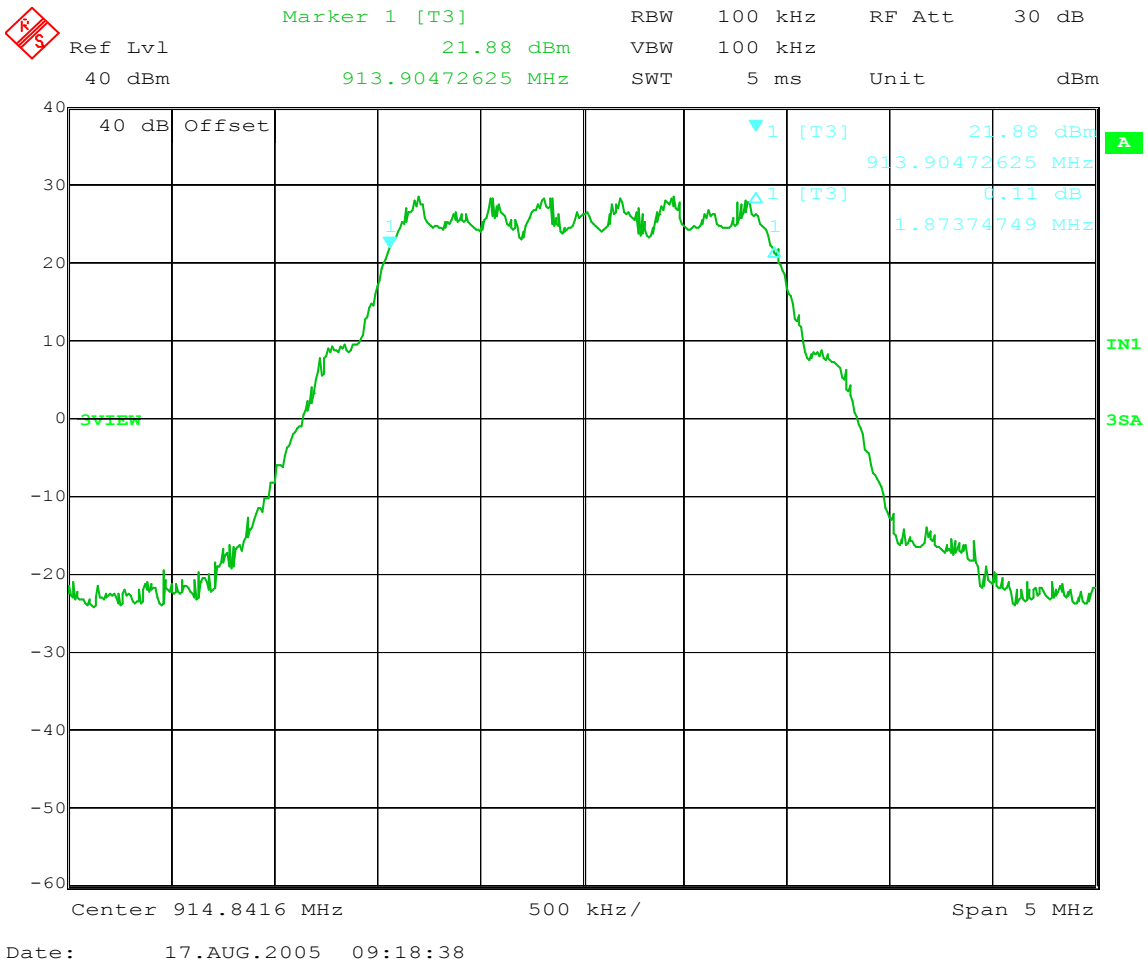
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 39 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



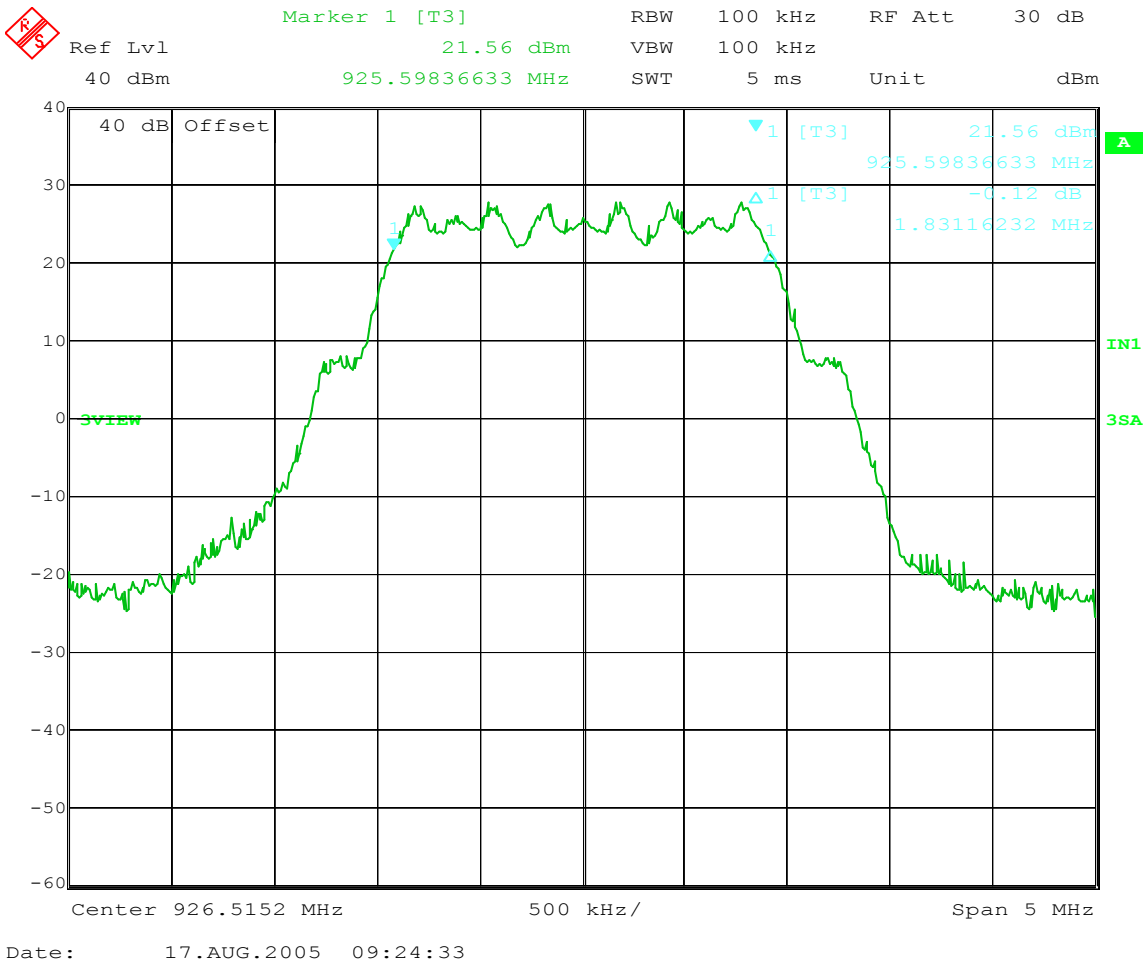
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 1 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



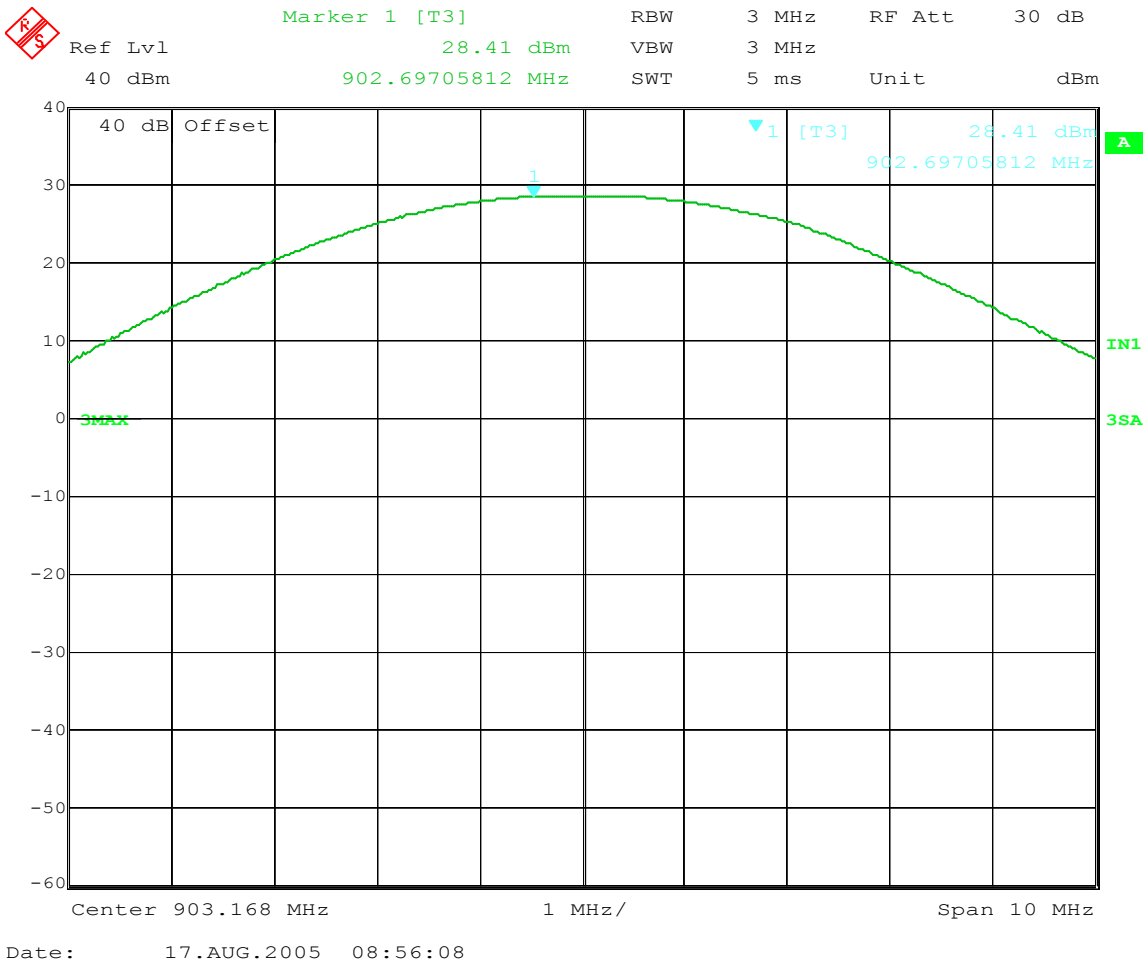
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 20 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



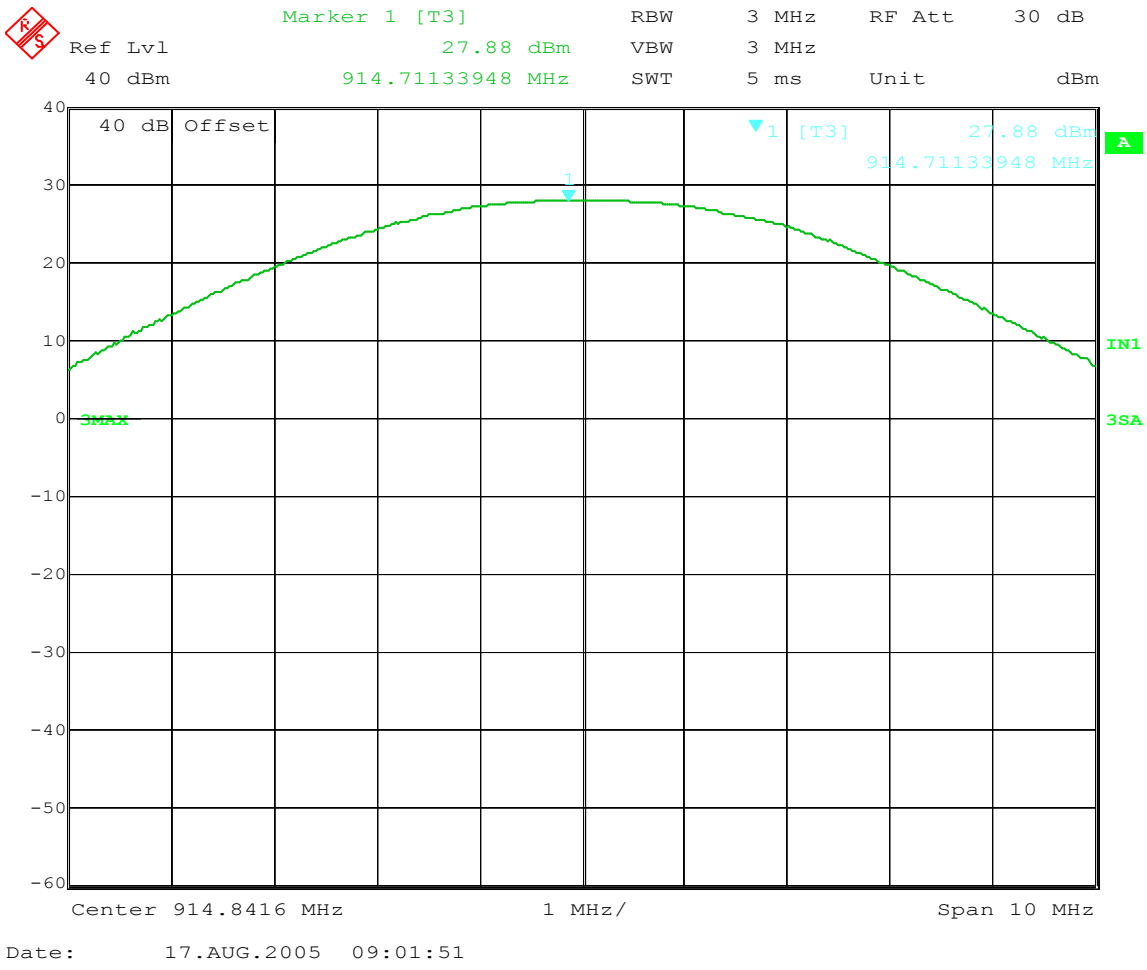
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Bandwidth
TEST PARAMETERS : Channel 39 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



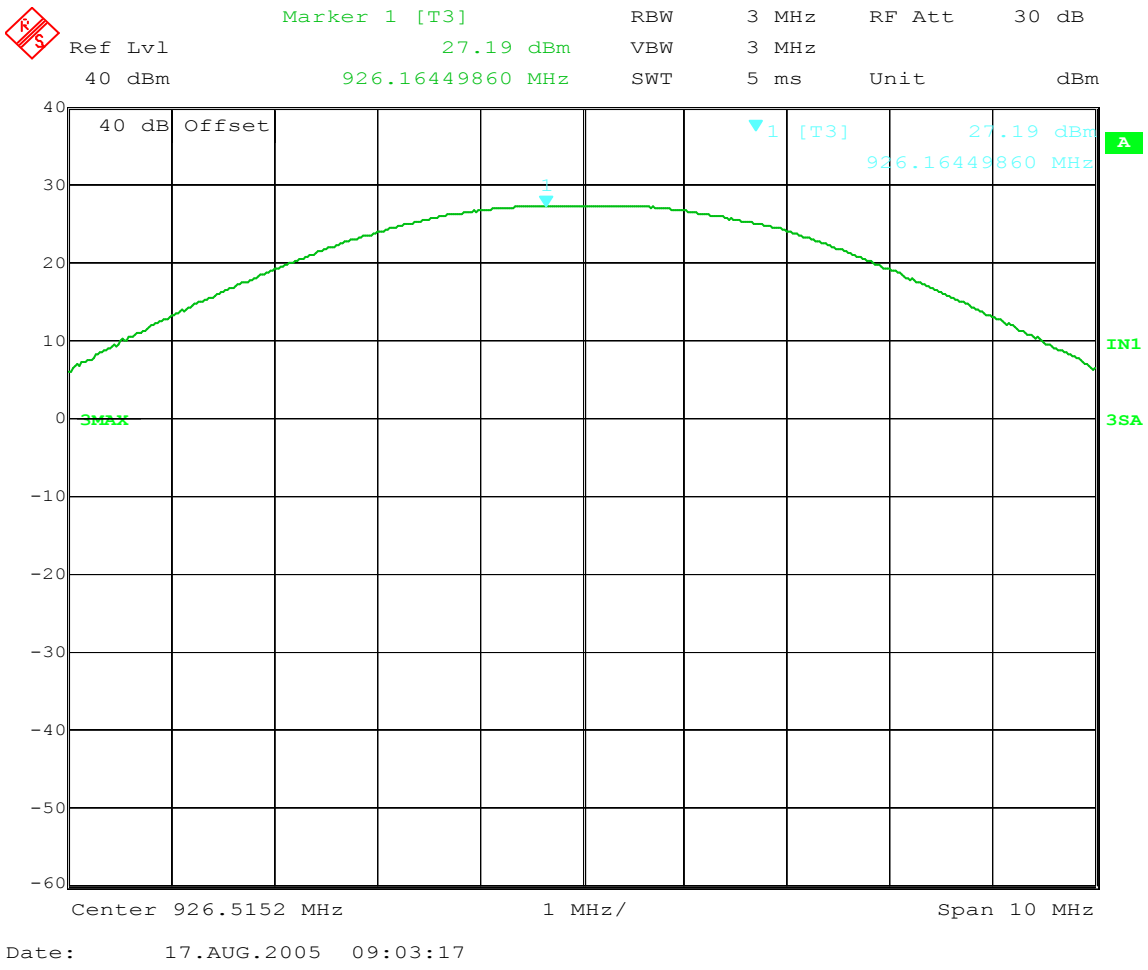
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 1 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



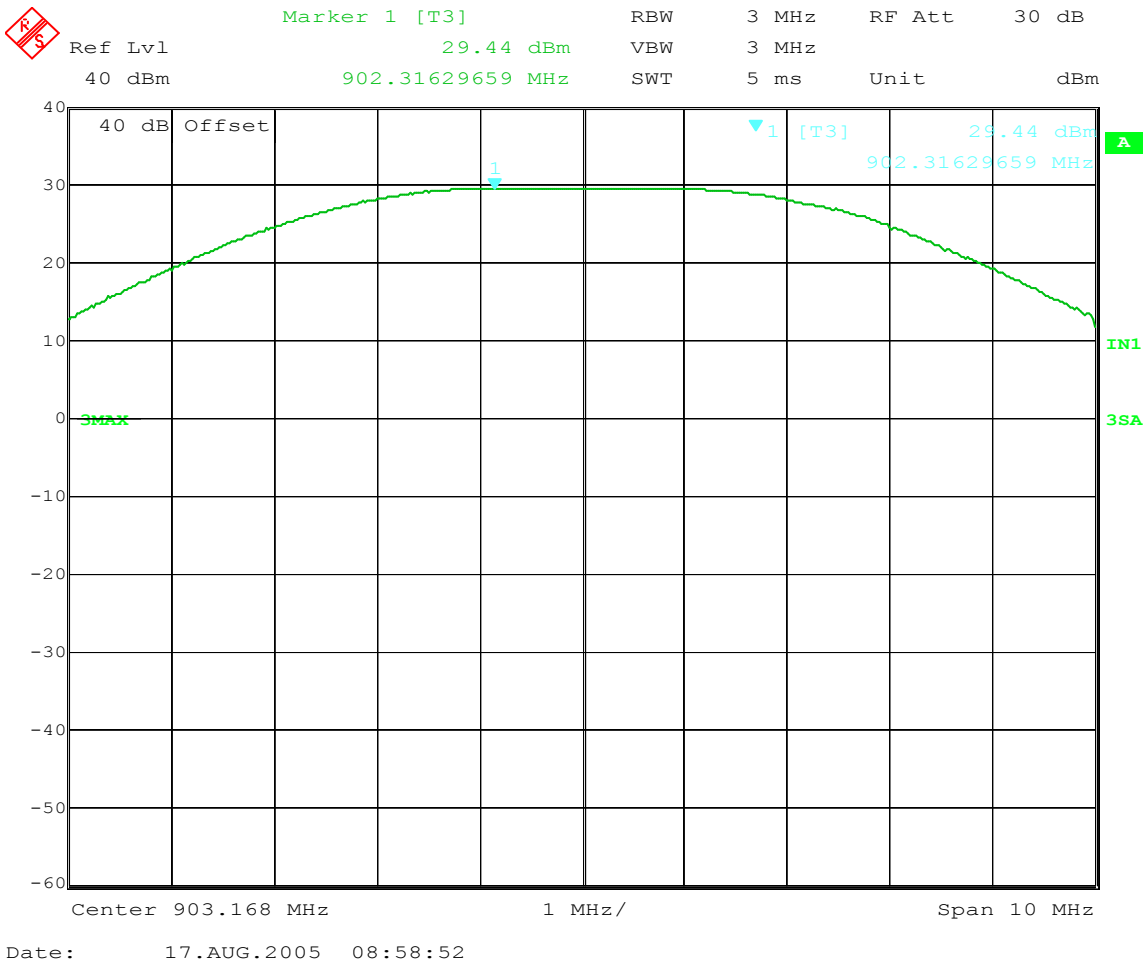
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 20 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



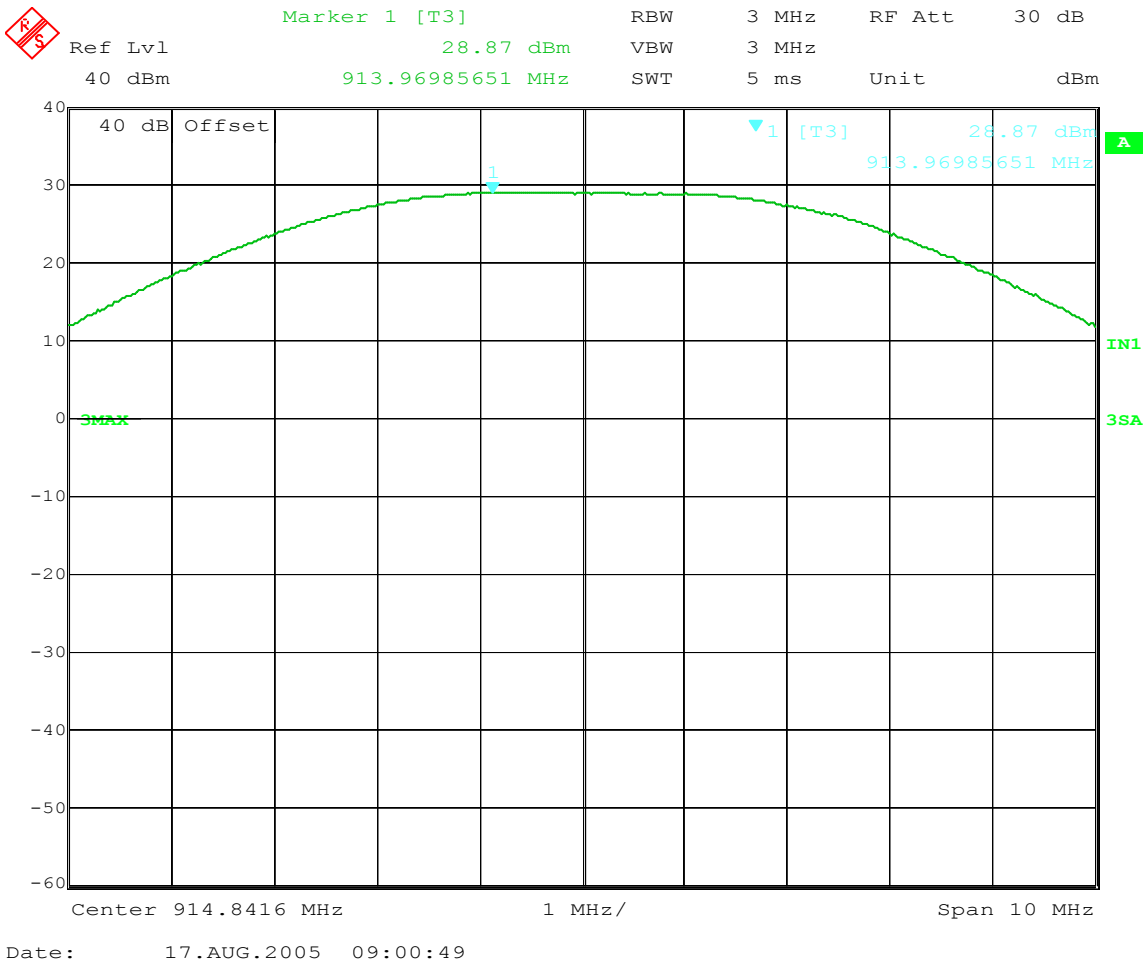
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 39 (narrow)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



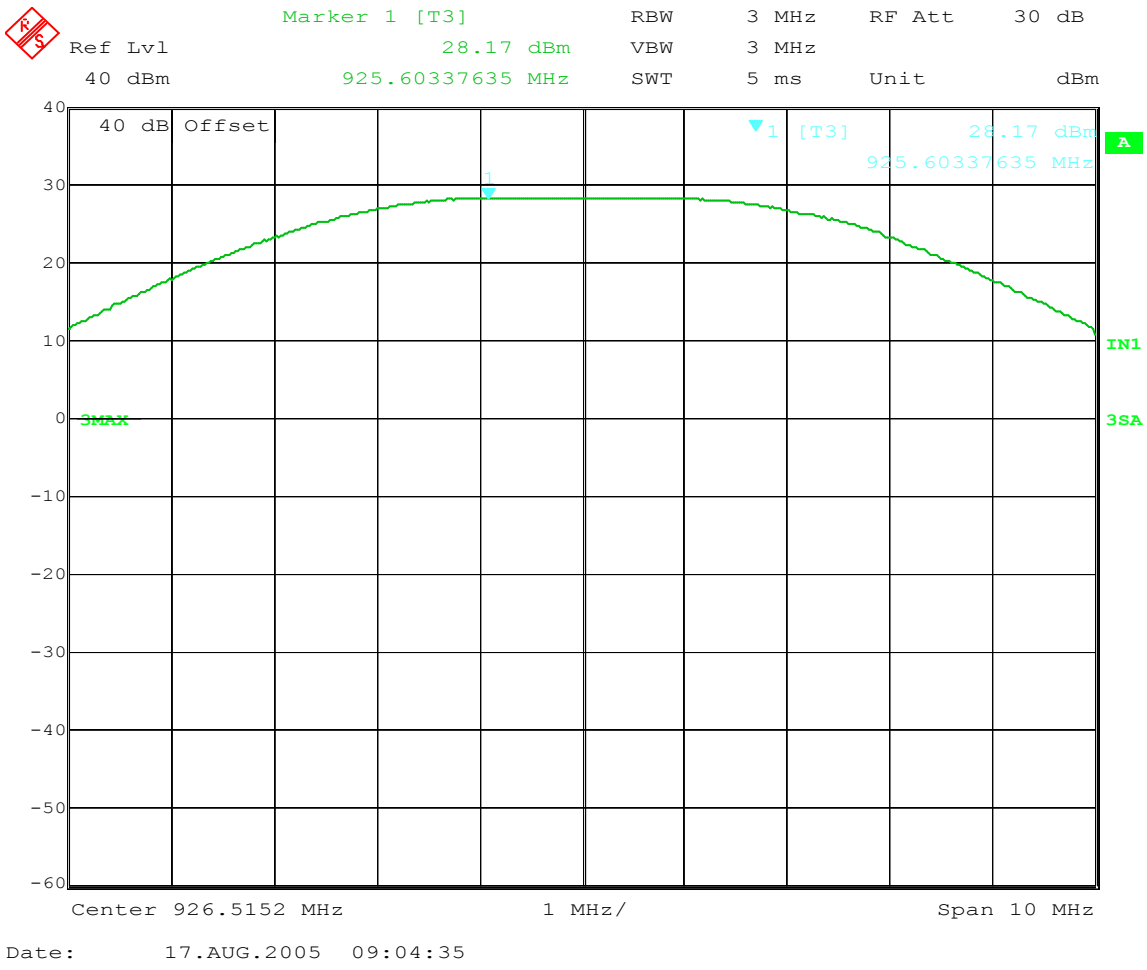
MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 1 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 20 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES



MANUFACTURER : FreeWave Technologies
MODEL NUMBER : FGR-HT
SERIAL NUMBER : 884-0006
TEST MODE : Power Output
TEST PARAMETERS : Channel 39 (wide)
NOTES : Power = A0
EQUIPMENT USED : RBB0

NOTES