

TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test Of: Adaptive Broadband Ltd AB-ACCESS Subscriber Unit (SU)

To: FCC Part 15 Subpart E: 1998 (Unlicensed National Information Infrastructure Devices)

Test Report Serial No: RFI/EMCB1/RP38658A

This Test Report Is Issued Under The Authority Of Brian Watson Technical Director:	Checked By:
Tested By:	Release Version No: PDF04
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Issue Date: 13 December 2000	Test Date: 29 March 1999 to 02 April 1999

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1. Client Information

Company Name:	Adaptive Broadband Ltd
Address:	First Floor, Block C1 The Westbrook Centre Milton Road Cambridge CB4 1YQ Tel: +44-1223-713713 Fax: +44-1223-713714
Contact Name:	Mr P. Simpson Tel: +44-1223-713412 E-Mail: ps@adaptivebroadband.com

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2. Equipment Under Test (EUT)

The following information (with the exception of the Date of Receipt) has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name:	AB-ACCESS
Model Name or Number:	Subscriber Unit (SU)
Unique Type Identification:	UNII Pilot
Serial Number:	Pre-Production 001
Country of Manufacture:	UK
FCC ID Number:	Awaiting Certification from the FCC
Date of Receipt:	26 March 1999

Brand Name:	AB-ACCESS
Model Name or Number:	SU and AP 'Wall-Box'
Unique Type Identification:	RJ45
Serial Number:	Pre-Production 001
Country of Manufacture:	UK
FCC ID Number:	Awaiting Certification from the FCC
Date of Receipt:	26 March 1999

Brand Name:	Sinpro Electronic co. Ltd
Description	DC Power Supply Unit
Model Name or Number:	SPU50-9
Unique Type Identification:	None stated by client
Serial Number:	120671
Country of Manufacture:	Taiwan
FCC ID Number:	Awaiting Certification from the FCC
Date of Receipt:	26 March 1999

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2.2. Description Of EUT

AB-ACCESS is targeted at providing high speed wireless internet access in the recently assigned FCC U-NII bands between 5GHz and 6GHz. AB-ACCESS adopts a cellular structure consisting of base stations (Access Point [AP]) servicing many users. It is a fixed access, point to multipoint infrastructure. The product is targeted at the US market only.

Users are equipped with wall/roof-top/chimney mounted Subscriber Units (SU) that have a line sight link back to the AP. The SU is again fitted with a high gain, directional integral antenna having a 20 degree 3dB beamwidth. Power and data (bi-directional) are routed via braid and foiled screened, quad twisted pair, Cat-5 data cable from an internally mounted wall-box (similar in construction to a telephone outlet socket) up to the SU antenna unit. Power and data status is also routed via this cable. Power is provided to the wall-box via a standard FCC approved 48V DC supply. The wall-box provides Ethernet connectivity via the RJ45 socket to the users PC.

2.3. Modifications Incorporated In EUT

The EUT has been modified so that it can be driven from a PC test script enabling worst case conditions for FCC requirements to be evaluated and tested for compliance. This modification is purely a software driver. AB-ACCESS employs a rapid TDD (Time Divisions Duplex) air interface based on ATM (Asynchronous Transfer Mode) networking protocols - data is transmitted asynchronously on demand and as such there is no discernible duty from which 'averaged' measurements can be taken. The following test modes have been implemented:

Continuous Transmit – this enables worst case EIRP and PSD to be measured, the unit is set for maximum transmit power.

Continuous Receive – There may be some fundamental frequency components that exceed the switch receive test-mode, again the unit is set to maximum receive gain.

Bursted Receive - to measure worst radiated and conducted EMC in receive mode. A predetermined duty cycle will be used, the unit is set for maximum receive gain.

Maximum Transmit Power - this is worst case for switching transients creating spurious emissions – EMC radiated and conducted. As above, a predetermined duty cycle will be used, as before the unit is set for maximum transmits power.

Within each of these modes we can change the operating channel as desired by means of the PC controller.

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2.4. Additional Information Related To Testing

Power Supply Requirement:	115 V, 60 Hz AC Mains to PSU 48 VDC from PSU to EUT	
Current Rating	830mA	
Intended Operating Environment:	SU antenna units are mounted outside, operational range is -20 to +50 degrees Celsius. "Wall-box" units and PSUs are mounted internally to users buildings/office/home.	
Weight:	SU antenna unit 3.5 Kg max	
Dimensions:	SU = 260mm (h) x 250mm (w) x 80mm (d)	
Interface Ports:	'Wall-box' RJ45 socket – Ethernet / ATM available	
Type of Device	Fixed Access Wireless Internet System	
Antenna Details	Permanently Attached	
Occupied Bandwidth	17 MHz	
Type of Modulation	QPSK at 25Mbits/sec, raised cosine filter ($\alpha = 0.35$)	
Number of Tx Channels	15 Channels of 15 MHz, 5 channels in each U-NII Band	
Method of Frequency Generation	Synthesiser	
Category of Receiver	Superheterodyne	

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2.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	PC
Brand Name:	Dell
Model Name or Number:	Latitude
Serial Number:	DP/N0009321C - 12800 - 8BM2910 - ZL6D8
FCC ID Number:	None stated by client
Cable Length And Type:	6m Ethernet UTP
Connected to Port:	Wall-Box

Description:	PSU for PC
Brand Name:	Dell
Model Name or Number:	PA-2
Serial Number:	DP/N 0085391 REV A01
FCC ID Number:	None stated by client
Cable Length And Type:	1m DC
Connected to Port:	PC Input

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3. Test Specification, Methods And Procedures

3.1. Test Specification

Reference:	FCC Part 15 Subpart E: 1998
Title:	Code of Federal Regulations, Part 15 (47CFR15) Radio Frequency Devices: Digital Devices. Subpart E: Unlicensed National Information Infrastructure Devices
Comments:	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

3.2. Methods And Procedures

The methods and procedures used were as detailed in:

ANSI C63.2 (1987)

Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (1992)

Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)

Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)

Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16 (1987)

Title: Specification for Radio Interference measuring apparatus and measurement methods.

3.3. Definition Of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the Methods & Procedures section above. Appendix 1 contains a list of the test equipment used.

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4. Deviations From The Test Specification

None

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5. Operation Of The EUT During Testing

5.1. Operating Conditions

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The EUT was tested in a normal laboratory environment.

During testing, the EUT was powered by a 48 V DC Supply from the PSU. The PSU was powered from a 115 V, 60 Hz AC Mains supply.

5.2. Operating Modes

The EUT was tested in the following operating mode:

Continuous and Maximum Transmit Power for transmitter tests to FCC Part 15 Subpart E (15.407).

Continuous and bursted receive for receiver tests to FCC Part 15 Subpart B.

For both transmit and receive modes, tests were performed with the EUT set to the following channels for each of the 3 operating bands.

Bottom Band: 5.15 to 5.25 GHz: Bottom Channel (Channel 0) 5.17 GHz

Top Channel (Channel 4) 5.23 GHz

Middle Band: 5.25 to 5.35 GHz: Bottom Channel (Channel 5) 5.27 GHz

Top Channel (Channel 9) 5.33 GHz

Top Band: 5.725 to 5.825 GHz: Bottom Channel (Channel 10) 5.745 GHz

Top Channel (Channel 14) 5.805 GHz

The reason for choosing this mode was that it was defined by the client as being likely to be the worst case with regards EMC.

5.3. Configuration And Peripherals

The EUT was tested in the following configuration: The SU antenna unit is connected via S-FTP-Cat5 cable to the wall-box. The power was supplied from the PSU to the wall-box. Data was controlled from the support PC to the wall-box via UTP-Cat5 Ethernet cables.

The reason for choosing this configuration was that it was defined by the client as being likely to be the worst case with regards EMC and typical of an installation at a users home / office.

NB Section 2 of this report contains a full list of support equipment used and Appendix 3 contains a schematic diagram of the test configuration.

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6. Summary Of Test Results

6.1. Transmitter Tests

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Range Of Measurements	Specification Reference	Compliancy Status
AC Powerline Conducted Emissions, 450 kHz to 30 MHz	Section 15.407 (b5) of C.F.R. 47: 1998. (Section 15.207)	Complied
Effective Isotropic Radiated Power Levels, 5 GHz to 6 GHz	Section 15.407 (a) of C.F.R. 47: 1998.	Complied
Electric Field Strength Spurious Emissions, 30 MHz to 1000 MHz	Section 15.407 (b5) of C.F.R. 47: 1998 (Section 15.209)	Complied
Effective Isotropic Radiated Power Spurious Emissions, 1 GHz to 40 GHz	Section 15.407 (b1/2/3) of C.F.R. 47: 1998.	Complied
Frequency Stability -20°C to +50°C 85% to 115% VAC @ 20°C	Section 15.407 (g) of C.F.R. 47: 1997	Complied

6.2. Receiver Tests

Range Of Measurements	Specification Reference	Compliancy Status
AC Powerline Conducted Emissions, 450 kHz to 30 MHz	Section 15.107 Class B of C.F.R. 47: 1998.	Complied
Electric Field Strength Spurious Emissions, 30 MHz to 26000 MHz	Section 15.109 Class B of C.F.R. 47: 1998	Complied

6.3. Location Of Tests

All the measurements described in this report were performed at the premises of Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, England.

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7. Measurements, Examinations And Derived Results

7.1. General Comments

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- 7.1.1. This section contains test results only. Details of the test methods and procedures can be found in Appendix 2 of this report.
- 7.1.2. The measurement uncertainties stated were calculated in accordance with the requirements of NAMAS Document NIS 81 with a confidence level of 95%. Please refer to Section 8 for details of measurement uncertainties.

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7.2. Test Results For AC Mains Conducted Emissions: Receive Mode

7.2.1. Quasi-Peak Detector Measurements On Live And Neutral Lines

- 7.2.1.1. Measurements were performed to FCC Part 15.107 Class B (Unintentional Radiators)
- 7.2.1.2. Plots of the initial scans can be found in Appendix 4.
- 7.2.1.3. Preliminary conducted spurious emission scans were performed with the EUT set to all 6 channels stated in section 5.2. These preliminary scans showed similar emission levels for each of the channels. Therefore final conducted emission measurements were performed with the EUT set to Top Band Top Channel (Channel 14).
- 7.2.1.4. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector:

Top Band Top Channel (Channel 14)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.658	Live	36.0	48.0	12.0	Complied
0.658	Neutral	35.8	48.0	12.2	Complied
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	46.0	48.0	2.0	Complied
0.941	Neutral	46.8	48.0	1.2	Complied
2.632	Live	34.1	48.0	13.9	Complied
2.632	Neutral	33.6	48.0	14.4	Complied
7.405	Live	22.0	48.0	26.0	Complied
7.405	Neutral	24.0	48.0	24.0	Complied
19.539	Live	22.2	48.0	25.8	Complied
19.539	Neutral	25.2	48.0	22.8	Complied

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7.2.2. Test Results For AC Mains Conducted Emissions: Receive Mode (continued)

7.2.2.1. Further to section 7.2.1, additional measurements were performed on frequencies within 6dB of the limit with the EUT set to each of the other 5 operating channels.

Bottom Band Bottom Channel (Channel 0)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	46.7	48.0	1.3	Complied
0.941	Neutral	47.1	48.0	0.9	Complied

Bottom Band Top Channel (Channel 4)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.4	Complied
0.941	Live	46.7	48.0	1.3	Complied
0.941	Neutral	47.1	48.0	0.9	Complied

Middle Band Bottom Channel (Channel 5)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	46.7	48.0	1.3	Complied
0.941	Neutral	47.1	48.0	0.9	Complied

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7.2.3. Test Results For AC Mains Conducted Emissions: Receive Mode (continued)

Middle Band Top Channel (Channel 9)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.8	48.0	2.2	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	46.7	48.0	1.3	Complied
0.941	Neutral	47.1	48.0	0.9	Complied

Top Band Bottom Channel (Channel 10)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	46.7	48.0	1.3	Complied
0.941	Neutral	47.0	48.0	1.0	Complied

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7.3. Test Results For AC Mains Conducted Emissions: Transmit Mode

7.3.1. Quasi-Peak Detector Measurements On Live And Neutral Lines

- 7.3.1.1. Measurements were performed to FCC Part 15.207 (Intentional Radiators)
- 7.3.1.2. Plots of the initial scans can be found in Appendix 4.
- 7.3.1.3. Preliminary conducted spurious emission scans were performed with the EUT set to all 6 channels stated in section 5.2. These preliminary scans showed similar emission levels for each of the channels. Therefore final conducted emission measurements were performed with the EUT set to Top Band Top Channel (Channel 14).
- 7.3.1.4. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector:

Top Band Top Channel (Channel 14)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.658	Live	35.7	48.0	12.3	Complied
0.658	Neutral	36.4	48.0	11.6	Complied
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.4	48.0	1.6	Complied
0.941	Live	45.4	48.0	2.6	Complied
0.941	Neutral	45.9	48.0	2.1	Complied
2.632	Live	34.1	48.0	13.9	Complied
2.632	Neutral	32.3	48.0	15.7	Complied
7.405	Live	21.3	48.0	26.7	Complied
7.405	Neutral	29.5	48.0	18.5	Complied
19.539	Live	25.2	48.0	22.8	Complied
19.539	Neutral	28.1	48.0	19.9	Complied

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7.3.2. Test Results For AC Mains Conducted Emissions: Transmit Mode (continued)

7.3.2.1. Further to section 7.3.1, additional measurements were performed on frequencies within 6dB of the limit with the EUT set to each of the other 5 operating channels.

Bottom Band Bottom Channel (Channel 0)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.1	48.0	1.9	Complied
0.941	Live	45.5	48.0	2.5	Complied
0.941	Neutral	46.0	48.0	2.0	Complied

Bottom Band Top Channel (Channel 4)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.1	48.0	1.9	Complied
0.941	Live	45.5	48.0	2.5	Complied
0.941	Neutral	46.0	48.0	2.0	Complied

Middle Band Bottom Channel (Channel 5)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.1	48.0	1.9	Complied
0.941	Live	45.5	48.0	2.5	Complied
0.941	Neutral	46.0	48.0	2.0	Complied

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7.3.3. Test Results For AC Mains Conducted Emissions: Transmit Mode (continued)

Middle Band Top Channel (Channel 9)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.1	48.0	1.9	Complied
0.941	Live	45.5	48.0	2.5	Complied
0.941	Neutral	46.0	48.0	2.0	Complied

Top Band Bottom Channel (Channel 10)

Frequency (MHz)	Line	Q-P Level (dBmV)	Q-P Limit (dBmV)	Margin (dB)	Result
0.846	Live	45.9	48.0	2.1	Complied
0.846	Neutral	46.1	48.0	1.9	Complied
0.941	Live	45.5	48.0	2.5	Complied
0.941	Neutral	46.0	48.0	2.0	Complied

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7.4. Test Results For Radiated Emissions: Receive Mode

7.4.1. Electric Field Strength Measurements: 30 MHz to 1000 MHz

- 7.4.1.1. Measurements were performed to FCC Part 15.109 Class B (Unintentional Radiators)
- 7.4.1.2. The client has stated that the highest clock frequency for the EUT was 4.9025 GHz. Therefore tests were performed up to 26.0 GHz.
- 7.4.1.3. Preliminary radiated spurious emission scans were performed with the EUT set to all 6 channels stated in section 5.2. These preliminary scans showed similar emission levels for each of the channels. Therefore final radiated emission measurements were performed with the EUT set to Middle Band Top Channel (Channel 9).
- 7.4.1.4. Plots of the initial scans can be found in Appendix 4.
- 7.4.1.5. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector at a test distance of 3m (results incorporate antenna factors and cable losses):

Middle Band Top Channel (Channel 9)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
44.944	Vert.	28.0	40.0	12.0	Complied
50.000	Vert.	37.5	40.0	2.5	Complied
58.352	Vert.	17.9	40.0	22.1	Complied
66.826	Vert.	27.6	40.0	12.4	Complied
120.005	Vert.	25.5	43.5	18.0	Complied
133.651	Horiz.	23.5	43.5	20.0	Complied
150.000	Vert.	30.6	43.5	12.9	Complied
160.000	Vert.	27.2	43.5	16.3	Complied
168.023	Horiz.	33.0	43.5	10.5	Complied
200.000	Vert.	30.9	43.5	12.6	Complied
350.000	Vert.	43.7	46.0	2.3	Complied
400.000	Vert.	40.8	46.0	5.2	Complied
432.060	Vert.	39.5	46.0	6.5	Complied
480.169	Vert.	38.1	46.0	7.9	Complied

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7.4.2. Test Results For Radiated Emissions: Receive Mode (continued)

7.4.2.1. Further to section 7.6.1, additional measurements were performed on frequencies within 6dB of the limit with the EUT set to each of the 2 other operating channels.

Bottom Band Bottom Channel (Channel 0)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
50.000	Vert.	35.2	40.0	4.8	Complied
350.000	Vert.	44.9	46.0	1.1	Complied
400.000	Vert.	41.3	46.0	4.7	Complied

Top Band Top Channel (Channel 14)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
50.000	Vert.	35.0	40.0	5.0	Complied
350.000	Vert.	44.9	46.0	1.1	Complied
400.000	Vert.	41.4	46.0	4.6	Complied

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7.5. Test Results For Radiated Emissions: Receive Mode

7.5.1. Electric Field Strength Measurements: 1 GHz to 26 GHz

- 7.5.1.1. Measurements were performed to FCC Part 15.109 Class B (Unintentional Radiators).
- 7.5.1.2. The client has stated that the highest clock frequency for the EUT was 4.9025 GHz. Therefore tests were performed up to 26.0 GHz.
- 7.5.1.3. Preliminary radiated spurious emission scans were performed with the EUT set to all 6 channels stated in section 5.2. Final radiated emission measurements were performed only if the preliminary scan showed any spurious emissions to be within 10dB of the reference limit line.
- 7.5.1.4. At higher frequencies, due to the limitations of the dynamic range of the measuring receiver it was not possible to perform radiated emission preliminary scans and final measurements at the specified 3m test distance. Therefore the measuring antenna was moved to a test distance of 1m. The limit was extrapolated using the factor 20 log (d1/d2).
- 7.5.1.5. Plots of the initial scans can be found in Appendix 4.
- 7.5.1.6. The following tables list frequencies at which emissions were measured using Average and Peak detector functions at a test distance of 1m:

Middle Band Bottom Channel (Channel 5)

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dBmV/m)	Average Limit (dBmV/m)	Average Margin (dB)	Result
8.753014	Vert.	23.5	30.5	2.1	56.1	63.5	7.4	Complied
8.753014	Horiz.	15.8	30.5	2.1	48.4	63.5	15.1	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dBmV/m)	Peak Limit (dBmV/m)	Peak Margin (dB)	Result
8.753014	Vert.	27.7	30.5	2.1	60.3	83.5	23.2	Complied
8.753014	Horiz.	24.2	30.5	2.1	56.8	83.5	26.7	Complied

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7.5.2. Test Results For Radiated Emissions: Receive Mode (continued)

Middle Band Top Channel (Channel 9)

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dBmV/m)	Average Limit (dBmV/m)	Average Margin (dB)	Result
8.855013	Vert.	17.4	30.5	2.1	50.0	63.5	13.5	Complied
8.855013	Horiz.	14.2	30.5	2.1	46.8	63.5	16.7	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dBmV/m)	Peak Limit (dBmV/m)	Peak Margin (dB)	Result
8.855013	Vert.	25.6	30.5	2.1	58.2	83.5	25.3	Complied
8.855013	Horiz.	21.6	30.5	2.1	54.2	83.5	29.3	Complied

Bottom Band Bottom Channel (Channel 0)

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dBmV/m)	Average Limit (dBmV/m)	Average Margin (dB)	Result
16.588307	Vert.	13.3	33.6	3.9	50.8	63.5	12.7	Complied
16.588307	Horiz.	13.3	33.6	3.9	50.8	63.5	12.7	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dBmV/m)	Peak Limit (dBmV/m)	Peak Margin (dB)	Result
16.588307	Vert.	24.2	33.6	3.9	61.7	83.5	21.8	Complied
16.588307	Horiz.	24.2	33.6	3.9	61.7	83.5	21.8	Complied

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7.6. Test Results For Radiated Emissions: Transmit Mode

7.6.1. Electric Field Strength Measurements: 30 MHz to 1000 MHz

- 7.6.1.1. Measurements were performed to FCC Part 15.209 (Intentional Radiators)
- 7.6.1.2. Preliminary radiated spurious emission scans were performed with the EUT set to all 6 channels stated in section 5.2. These preliminary scans showed similar emission levels for each of the channels. Therefore final radiated emission measurements (below 1000 MHz) were performed with the EUT set to Top Band Top Channel (Channel 14).
- 7.6.1.3. Plots of the initial scans can be found in Appendix 4.
- 7.6.1.4. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector at a test distance of 3m (results incorporate antenna factors and cable losses):

Top Band Top Channel (Channel 14)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
46.006	Vert.	32.3	40.0	7.7	Complied
50.000	Vert.	34.4	40.0	5.6	Complied
61.413	Vert.	27.4	40.0	12.6	Complied
66.826	Vert.	29.5	40.0	10.5	Complied
100.000	Vert.	36.6	43.5	6.9	Complied
114.347	Horiz.	30.1	43.5	13.4	Complied
120.008	Vert.	24.0	43.5	19.5	Complied
133.652	Vert.	23.5	43.5	20.0	Complied
150.000	Vert.	31.1	43.5	12.4	Complied
160.000	Vert.	28.1	43.5	15.4	Complied
175.000	Vert.	34.2	43.5	9.3	Complied
200.000	Vert.	33.9	43.5	9.6	Complied
300.000	Vert.	40.0	46.0	6.0	Complied
325.000	Horiz.	23.8	46.0	22.2	Complied
350.000	Vert.	45.1	46.0	0.8	Complied
400.000	Vert.	39.6	46.0	6.4	Complied
425.000	Vert.	38.9	46.0	7.1	Complied
450.000	Vert.	37.4	46.0	8.6	Complied
475.000	Vert.	33.6	46.0	12.4	Complied

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7.6.2. Test Results For Radiated Emissions: Transmit Mode (continued)

7.6.2.1. Further to section 7.8.1, additional measurements were performed on frequencies within 6dB of the limit with the EUT set to each of the 2 other operating channels.

Bottom Band Bottom Channel (Channel 0)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
50.000	Vert.	35.6	40.0	4.4	Complied
350.000	Vert.	44.2	46.0	1.8	Complied
400.000	Vert.	41.9	46.0	4.1	Complied

Middle Band Top Channel (Channel 9)

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Q-P Limit (dBmV/m)	Margin (dB)	Result
50.000	Vert.	35.6	40.0	4.4	Complied
350.000	Vert.	45.7	46.0	0.3	Complied
400.000	Vert.	43.9	46.0	2.1	Complied

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7.7. Test Results For Radiated Emissions: Transmit Mode

7.7.1. Effective Isotropic Radiated Power Measurements: 5.0 GHz to 6.0 GHz.

- 7.7.1.1. Measurements were performed to FCC Part 15.407(a) (Unlicensed National Information Infrastructure Devices).
- 7.7.1.2. The client has stated that the EUT operated in the frequency ranges of 5.15 to 5.25 GHz, 5.25 to 5.35 GHz, and 5.725 to 5.825 GHz. Measurements were performed at both bottom and top channels within each band.
- 7.7.1.3. The EUT was configured with a permanently connected antenna. The client has stated that the directional gain of the antenna is 18dBi. EIRP measurements were performed to determine the output power levels of the EUT, and the limit was increased by 6dB to compensate for the antenna being connected. The specified limit includes the 6dB antenna gain.
- 7.7.1.4. It was possible to polarise the antenna incorporated within the EUT for both vertical and horizontal polarisation's. Therefore EIRP measurements were performed with the antenna polarised in both planes.
- 7.7.1.5. Results are shown for the EUT operating on each of the 6 channels stated in section 5.2. Measurements are shown for both transmit power levels and peak power spectral density. Plots showing the characteristics of the transmitter output can be seen in Appendix 4.
- 7.7.1.6. In addition to the measurements stated in section 7.10.1.5, additional results were calculated for the ratio of the peak excursion of the modulation envelope as stated in FCC Part 15.407(a[6]).

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Results: Peak Transmit Power Levels

Tx Band (GHz)	Channel	Tx Antenn a	Measured Peak EIRP (dBm)	Limit (dBm) (Includes 6dBi Antenna Gain for EIRP)	Bandwidth (MHz)	Plot No.	Result
5.15 – 5.25	Bottom (0)	Horiz.	15.41	22.29	16.9444	075	Complied
5.15 – 5.25	Bottom (0)	Vert.	14.35	22.29	16.9444	076	Complied
5.15 – 5.25	Top (4)	Vert.	15.59	22.29	16.8333	077	Complied
5.15 – 5.25	Top (4)	Horiz.	17.09	22.29	16.8333	078	Complied
5.25 – 5.35	Bottom (5)	Horiz.	23.99	29.26	16.8333	079	Complied
5.25 – 5.35	Bottom (5)	Vert.	26.00	29.26	16.8333	080	Complied
5.25 – 5.35	Top (9)	Vert.	25.14	29.20	16.6111	081	Complied
5.25 - 5.35	(Top (9)	Horiz.	24.12	29.22	16.6666	082	Complied
5.725 - 5.825	Bottom (10)	Horiz.	29.91	35.28	16.8888	083	Complied
5.725 - 5.825	Bottom (10)	Vert.	30.87	35.28	16.8888	084	Complied
5.725 - 5.825	Top (14)	Vert.	30.75	35.22	16.6666	085	Complied
5.725 - 5.825	Top (14)	Horiz.	29.58	35.22	16.6666	086	Complied

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Results: Peak Power Spectral Density (PPSD)

Tx Band (GHz)	Channel	Tx Antenna	Measured PPSD (EIRP) (dBm/MHz)	Limit (dBm/MHz) (Includes 6dBi Antenna Gain for EIRP)	Plot No.	Result
5.15 – 5.25	Bottom (0)	Horiz	9.2	10.0	075	Complied
5.15 – 5.25	Bottom (0)	Vert.	7.6	10.0	076	Complied
5.15 – 5.25	Top (4)	Vert.	7.2	10.0	077	Complied
5.15 – 5.25	Top (4)	Horiz.	8.3	10.0	078	Complied
5.25 - 5.35	Bottom (5)	Horiz.	16.4	17.0	079	Complied
5.25 - 5.35	Bottom (5)	Vert.	16.8	17.0	080	Complied
5.25 - 5.35	Top (9)	Vert.	16.8	17.0	081	Complied
5.25 - 5.35	Top (9)	Horiz.	15.8	17.0	082	Complied
5.725 – 5.825	Bottom (10)	Horiz.	22.0	23.0	083	Complied
5.725 – 5.825	Bottom (10)	Vert.	22.3	23.0	084	Complied
5.725 - 5.825	Top (14)	Vert.	22.6	23.0	085	Complied
5.725 - 5.825	Top (14)	Horiz.	21.9	23.0	086	Complied

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Results: Ratio of Peak Excursion of the Modulation Envelope

Tx Band (GHz)	Channel	Tx Ant	Measured Peak EIRP (dBm)	Measured PPSD (EIRP) (dBm/ MHz)	Ratio: Peak Excursion	Limit (dB)	Result
5.15 – 5.25	Bottom (0)	Horiz	15.41	9.2	6.21	13.0	Complied
5.15 – 5.25	Bottom (0)	Vert.	14.35	7.6	6.75	13.0	Complied
5.15 – 5.25	Top (4)	Vert.	15.59	7.2	8.39	13.0	Complied
5.15 – 5.25	Top (4)	Horiz.	17.09	8.3	8.79	13.0	Complied
5.25 - 5.35	Bottom (5)	Horiz.	23.99	16.4	7.59	13.0	Complied
5.25 – 5.35	Bottom (5)	Vert.	26.00	16.8	9.20	13.0	Complied
5.25 – 5.35	Top (9)	Vert.	25.14	16.8	8.34	13.0	Complied
5.25 – 5.35	Top (9)	Horiz.	24.12	15.8	8.32	13.0	Complied
5.725 - 5.825	Bottom (10)	Horiz.	29.91	22.0	7.91	13.0	Complied
5.725 - 5.825	Bottom (10)	Vert.	30.87	22.3	8.57	13.0	Complied
5.725 - 5.825	Top (14)	Vert.	30.75	22.6	8.15	13.0	Complied
5.725 - 5.825	Top (14)	Horiz.	29.58	21.9	7.68	13.0	Complied

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7.8. Test Results For Radiated Emissions: Transmit Mode

7.8.1. Effective Isotropic Radiated Power Spurious Measurements: 1.0 GHz to 40.0 GHz.

- 7.8.1.1. Measurements were performed to FCC Part 15.407(b) (Unlicensed National Information Infrastructure Devices).
- 7.8.1.2. The client has stated that the highest clock frequency for the EUT was 5.825 GHz. Therefore tests were performed up to 40.0 GHz.
- 7.8.1.3. Preliminary EIRP scans were performed with the EUT operating on each of the 6 channels stated in section 5.2. Plots showing the spurious (undesirable) emission levels can be seen in Appendix 4.
- 7.8.1.4. The EUT was configured with a permanently connected antenna. It was possible to polarise the antenna for both vertical and horizontal polarisation's. Therefore EIRP measurements were performed with the antenna polarised in both planes.

Results:

- 7.8.1.5. Preliminary scans were performed with the EUT operated on each of the 6 channels stated in section 5.2. It can be shown from the plots (Plots 087 to 158) that all emissions outside of the transmitter band edges are of at least 6dB from the reference limit line. Therefore no final measurements were performed.
- 7.8.1.6. All preliminary scans (Plots 087 to 158) can be seen in Appendix 4.

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7.9. Test Results For Frequency Stability: Transmit Mode

7.9.1. Measurements for frequency stability were performed in accordance with FCC Part 15.407 (g) of C.F.R. 47:1997.

- 7.9.2. Measurements were performed over the temperature range of -20°C to +50°C at the nominal operating voltage, and over an operating voltage of 85% to 115% at +20°C.
- 7.9.3. The client has specified that due to the transmission of broadband data centred around the nominal carrier frequency of the EUT, measurements of any 'drift' are virtually impossible. However valid measurements would be possible by observing the drift on the main local oscillator, which is 902.5 MHz below the nominal centre frequency. All oscillators within the EUT are referenced to a single source and so any drift can be easily quantified. Also due to the integrated nature of the antenna, and its associated gain/frequency response, any 'drift' can be observed whilst operating at the top frequency of the U-NII band (Channel 14).
- 7.9.4. Measurements for frequency drift were performed with the EUT operating on Channel 14. A plot (Plot 169) of the frequency stability was performed, with the EUT supply voltage, varied from 85% to 110%, and then up to 115%. At all times the ambient temperature was maintained at +20°C. A further plot (Plot 170) was performed to show the frequency stability of the EUT, with the ambient temperature varied from -20°C to +20°C, and then to +50°C. The supply voltage to the EUT remained at a constant 115V. The plots of both measurements can be seen in Appendix 4.

Results: Supply Variation

Nominal Operating Frequency	Frequency De	eviation @ +20	Limit (±10ppm)	Result	
	85% Supply Voltage	100% Supply Voltage	115% Supply Voltage		
4.9025 GHz	< 1 kHz	< 1 kHz	< 1 kHz	49 kHz	Complied

Results: Temperature Variation

Nominal Operating Frequency	Frequency De	eviation @ 115	Limit (±10ppm)	Result	
	-20°C	+20°C	+50°C		
4.9025 GHz	< 1 kHz	< 1 kHz	< 5 kHz	49 kHz	Complied

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8. Measurement Uncertainty

8.1. Company Policy, as based on the NAMAS Accreditation Standard, M10, paragraph 12.11 (o), states that Test Reports shall include estimated uncertainty of the calibration or test result (this information need only appear in test reports and test certificates where it is relevant to the validity or application of the test result, where a client's instructions so require or where uncertainty affects compliance to a specification or limit).

8.2. The global uncertainties have been calculated in accordance with NAMAS NIS 81 (Edition 1, May 1994) as follows:

Measurement Type	Range	Confidence Level	Calculated Uncertainty
Conducted Emissions	0.15 MHz to 30 MHz	95%	+/- 2.2 dB
Radiated Field Strength Emissions	30 MHz to 1000 MHz	95%	+/- 4.9 dB
Radiated Field Strength Emissions	1.0 GHz to 26.0 GHz	95%	+/- 4.0 dB
Effective Isotropic Radiated Power	1.0 GHz to 40.0 GHz	95%	+/- 4.0 dB
Frequency Stability	N/A	95%	+/- 4.2 dB

- 8.3. Measurement uncertainties have been applied in accordance with NAMAS document NIS 81 (edition 1, May 1994), and in the absence of any specification criteria, guidance, or code of practice, compliance has been judged on the basis of shared risk.
- 8.4. In the case of emissions tests, the measured value of the disturbance from the product sample shall be compared directly with the limits. If the measured value is equal to or less than the limit the product is deemed to pass the test.
- 8.5. In the case of immunity tests, the equipment is deemed to pass the test if it fulfils the stated performance criteria at the required or a higher severity level. The measurement uncertainty has been taken into account in the calibration procedures stated in the relevant basic standard.
- 8.6. The methods used to calculate the above uncertainties are in line with those used for calibration laboratories contained in NAMAS document NIS 3003 Edition 8 "The Expression of Uncertainty and Confidence in Measurement" May 1995, which align with international recommendations "Guide to the Expression of Uncertainty in Measurement" ISO/IEC/OIML/BIPM (Prepared by ISO/TAG 4: January 1993).

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Appendix 1. Test Equipment Used

nstrument		Manufacturer	Model	RFI No.			
Conducted Emissions:							
L.I.S.N. (1 ph.)	R	& S	ESH3-Z5	A004			
Pulse Limitter	R	& S	ESH3-Z32	A287			
Test Receiver	R	& S	ESMI	M069			
Plotter	Н.	P.	7440A	P001			
Radiated Electric Field Emissions							
Bilog Antenna	С	hase	CBL6111	A259			
3dB Attenuator	Na	arda	771003	A262			
Bilog Antenna	С	hase	CBL6111	A490			
Cable	R	osenberger	UFA210A-1- 1182-704704	C460			
Cable	R	osenberger	UFA210A-1- 1182-704704	C461			
Test Receiver	R	& S	ESVP	M002			
Spectrum Monitor	R	& S	EZM	M003			
Test Receiver	R	& S	ESMI	M069			
1.0 to 2.0 GHz Horn	E	aton	9188-2	A028			
2.0 to 4.0 GHz Horn	E	aton	91889-2	A031			
4.0 to 6.0 GHz Horn	FI	ann	12240-20	A428			
6.0 to 8.2 GHz Horn	Na	arda	642	A439			
8.2 to 12.5 GHz Horn	Na	arda	640	A437			
12.5 to 18.0 GHz Horn	FI	ann	18240-20	A430			
18.0 to 26.0 GHz Horn	FI	ann	20240-20	A436			

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Test Equipment Used (continued)

Effective Isotropic Radiated Power					
Test Receiver	R&S	ESMI	M069		
Cable	Rosenberger	UFA210A-1- 1182-704704	C460		
Cable	Rosenberger	UFA210A-1- 1182-704704	C461		
1.0 to 2.0 GHz Horn	Eaton	9188-2	A028		
2.0 to 4.0 GHz Horn	Eaton	91889-2	A031		
4.0 to 6.0 GHz Horn	Flann	12240-20	A428		
6.0 to 8.2 GHz Horn	Narda	642	A439		
8.2 to 12.5 GHz Horn	Narda	640	A437		
12.5 to 18.0 GHz Horn	Flann	18240-20	A430		
18.0 to 26.0 GHz Horn	Flann	20240-20	A436		
26.0 to 40.0 GHz Horn	Flann	22240-20	A435		
Harmonic Mixer	-	-	W152		
Frequency Stability					
Test Receiver	R&S	ESMI	M069		
Cable	Rosenberger	UFA210A-1- 1182-704704	C460		
4.0 to 6.0 GHz Horn	Flann	12240-20	A428		
Environmental Test Chamber	Prolan	PV427H75F 30HV	E007		

NB In accordance with NAMAS requirements, all the measurement equipment is on a calibration schedule.

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Appendix 2. Measurement Methods

A2.1. AC Mains Conducted Emissions: FCC Part 15

A2.1.1. AC mains conducted emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

- A2.1.2. The test was performed in a shielded enclosure with the equipment arranged as detailed in the standard on a wooden bench using the floor of the screened enclosure as the ground reference plane and with the EUT powered via a 115 V 60 Hz AC mains supply.
- A2.1.3. Initial measurements in the form of swept scans covering the entire measurement band were performed in order to identify frequencies on which the EUT was generating interference. In order to minimise the time taken for these swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidths (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.
- A2.1.4. Following the initial scans, a graph was produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were retested (at individual frequencies) using the appropriate detector function.
- A2.1.5. The test equipment settings for conducted emissions measurements were as follows:

Receiver Function	Initial Scan	Final Measurements
Detector Type:	Peak	Quasi-Peak (CISPR)*
Mode:	Max Hold	Not applicable
Bandwidth:	10 kHz	9 kHz
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

^{*} In some instances an Average detector function may also have been used.

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A2.2. Radiated Field Strength Emissions

A2.2.1. Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

A2.2.2. Initial measurements covering the entire measurement band in the form of swept scans in a shielded enclosure (for frequencies below 4 GHz) or on an open area test site (for frequencies above 4 GHz) were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which the EUT should be re-measured in full on the open area test site. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

- A2.2.3. The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m. Where (at higher frequencies) the noise floor was found to be of a higher level, a test distance of 1m was used. Following the initial scans, graphs were produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested on the open area test site, at the appropriate distance, using a measuring receivers with a Quasi-Peak detector (below 1000 MHz), where applicable, for measurements above 1000 MHz average and peak detectors were used.
- A2.2.4. For the main (final) measurements the EUT was arranged on a non-conducting table on an open area test site, as detailed in the specification.
- A2.2.5. All measurements on the open area test site were performed using broadband antennas.
- A2.2.6. On the open area test site, at each frequency where a signal was found, the levels were maximised by initially rotating the turntable through 360°. In addition, for frequencies below 1000 MHz, the antenna height was varied between 1 and 4 m. For frequencies above 1000 MHz, the antenna was fixed at a height of 1.5m. At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

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A2.2.7. The test equipment settings for radiated emissions measurements were as follows:

Receiver Function	Initial Scan Below 1GHz	Final Measurements Below 1GHz
Detector Type:	Peak	Quasi-Peak (CISPR)
Mode:	Max Hold	Not applicable
Bandwidth:	120 kHz	120 kHz
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

Receiver Function	Initial Scan Above 1GHz	Final Measurements Above 1 GHz
Detector Type:	Peak	Peak/Average
Mode:	Max Hold	Not applicable
Bandwidth:	1 MHz	1 MHz
Amplitude Range:	60 dB	20 dB (typical)
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

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A.2.3. Effective Isotropic Radiated Power Measurements: 5.0 GHz to 6.0 GHz.

- A.2.3.1. Effective Isotropic Radiated Power measurements were performed in accordance with the standard, against the appropriate limits on an open area test site.
- A.2.3.2. The EUT was set to transmit on the required channel at maximum transmit power. The channels stated in section 5.2 were tested. The EUT was configured with a permanently attached antenna. Therefore radiated power measurements were performed.
- A.2.3.3. The EUT was mounted on a non-metallic table at a 1 m test height. The receive (test) antenna was placed at a test distance of 2m. The EUT was set to operate at the required channel and the exact frequency recorded. A substitution measurement was then performed to determine the loss of the test set-up. (Details of the substitution method can be seen in Appendix A.2.6.).
- A.2.3.4. The level recorded for the substitution method was entered as a level offset in the measuring receiver. Initial measurements covering the entire measurement band were performed in the form of a swept scan. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (1MHz). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The EUT was rotated through 360° to maximise all emissions. The test was performed with the EUT integral antenna set for both horizontal and vertical polarisations. The test antenna was also set for both polarities.
- A.2.3.5. The measured Peak Transmit Power and the Power Spectral Density could then be determined.
- A.2.3.6. The EUT was set to the next channel and sections A.2.3.2. to A.2.3.5. were repeated.

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A.2.4. Effective Isotropic Radiated Power Spurious Measurements: 1.0 GHz to 40.0 GHz.

- A.2.4.1. Effective Isotropic Radiated Power Spurious measurements were performed in accordance with the standard, against the appropriate limits on an open area test site.
- A.2.4.2. The EUT was set to transmit on the required transmit channel at maximum transmit power. The channels stated in section 5.2 were tested. The EUT was configured with a permanently attached antenna. Therefore radiated power measurements were performed.
- A.2.4.3. The EUT was mounted on a non-metallic table at a 1.5m test height. The receive (test) antenna was placed at a test distance of 2m. For each of the frequency ranges performed, a substitution method was performed to determine the worst case loss of the test set-up. (Details of the substitution method can be seen in Appendix A.2.6.)
- A.2.4.4. The level recorded for the substitution method was entered as a level offset in the measuring receiver. Initial measurements covering the entire measurement band were performed in the form of a swept scan (For frequencies below 4 GHz, initial scans were performed in a shielded enclosure). In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (1MHz). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The EUT was rotated through 360° to maximise all emissions. The test was performed with the EUT integral antenna set for both horizontal and vertical polarisation. The test antenna was also set for both polarities.
- A.2.4.5. The maximum emission level obtained in dBm/MHz could then be determined. Any levels which were found to be within 6dB of the reference limit line were re-measured with a substitution measurement being performed.
- A.2.4.6. The EUT was set to the next channel and sections A.2.4.2. to A.2.4.5. were repeated.

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A2.5. Frequency Stability

- A.2.5.1. Measurements were performed to determine the frequency stability against the specified limits.
- A.2.5.2. An environmental test chamber was used to perform the resting required.
- A.2.5.3. The EUT was situated inside the environmental test chamber and the required temperature (starting from the lowest level) was allowed to settle prior to switching on the EUT.
- A.2.5.4. The EUT was switched on and the relevant frequency was recorded. The EUT was left switched on and measurements were performed after 2, 5 and 10 minutes.
- A2.5.5. Frequency and RF output power measurements were then made at intervals of one minute for a duration of 10 minutes whilst maintaining the required temperature.
- A2.5.6. The EUT was then switched off for a minimum of 30 minutes and the environmental chamber was allowed to stabilise at the next temperature. Points A2.5.3. to A2.5.5. were then repeated.
- A.2.5.7. The test chamber was then allowed to stabilise at +20°C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency recorded.

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A.2.6. Substitution Methods

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A.2.6.1. The equipment is configured as illustrated in Appendix 4.

A.2.6.2. The EUT is replaced by an in-band antenna connected to a signal generator tuned to the frequency of interest. A 10dB attenuator was connected to improve matching.

A.2.6.3. The transmit and receive antennas were vertically polarised at a fixed height of 1.5 metres.

A.2.6.4. The signal generator level is then adjusted to give a level equal to that obtained from the EUT.

A.2.6.5. The radiated power is given by the formula below.

True Signal level = Signal Generator Level - $\sum L + Ag$

where:

 $\sum L$ is the sum of the losses, i.e. cable loss.

Ag is the isotropic gain of the antenna.

A.2.6.6. The measurement shall be repeated for horizontal polarisation.

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Appendix 3. Test Configuration Drawings

This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\38658ETF03\EMICON	Test configuration for measurement of conducted emissions
DRG\38658ETF03\EMIRAD	Test configuration for measurement of radiated emissions
DRG\38658ETF03\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test
DRG\38658ETF03\002	Substitution measurement test set-up

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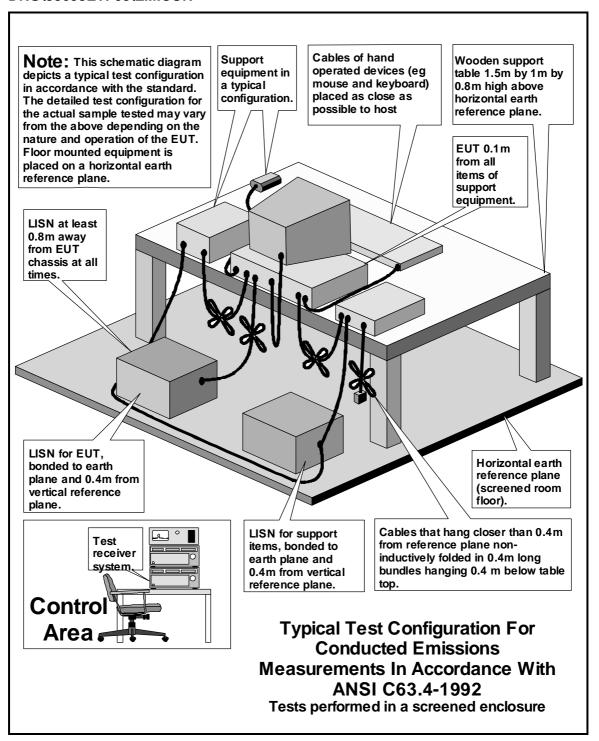
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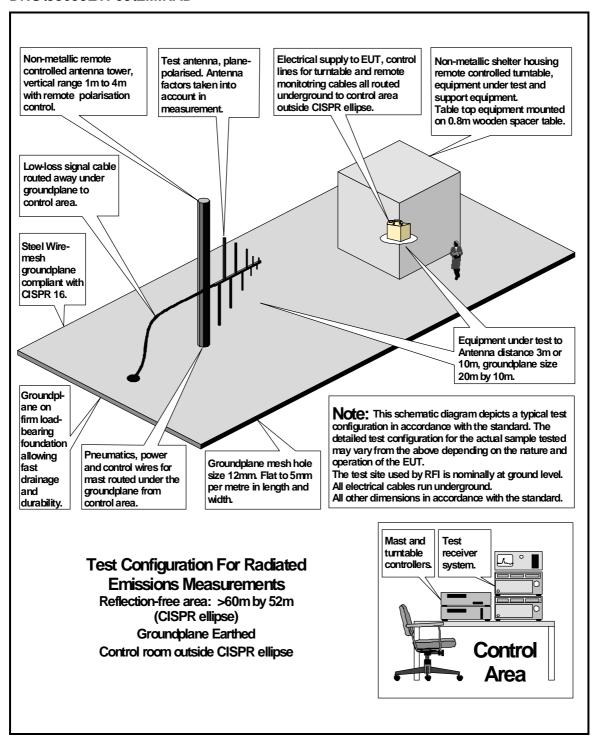
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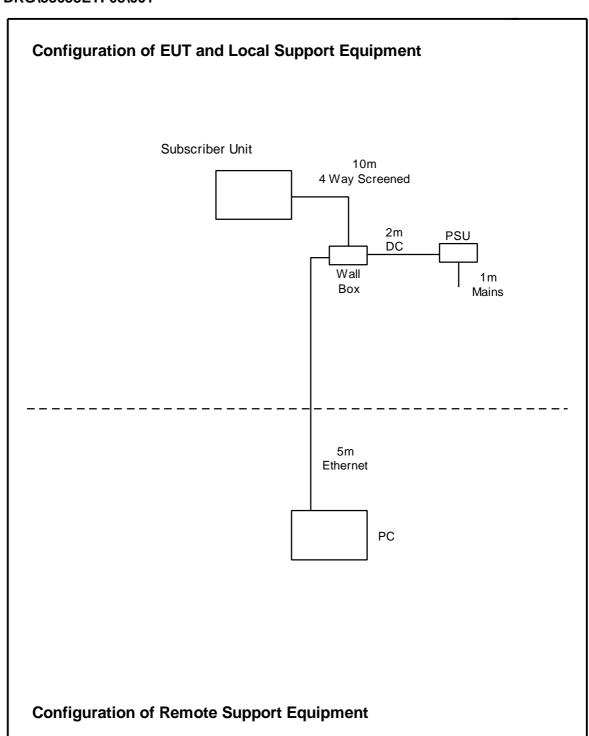
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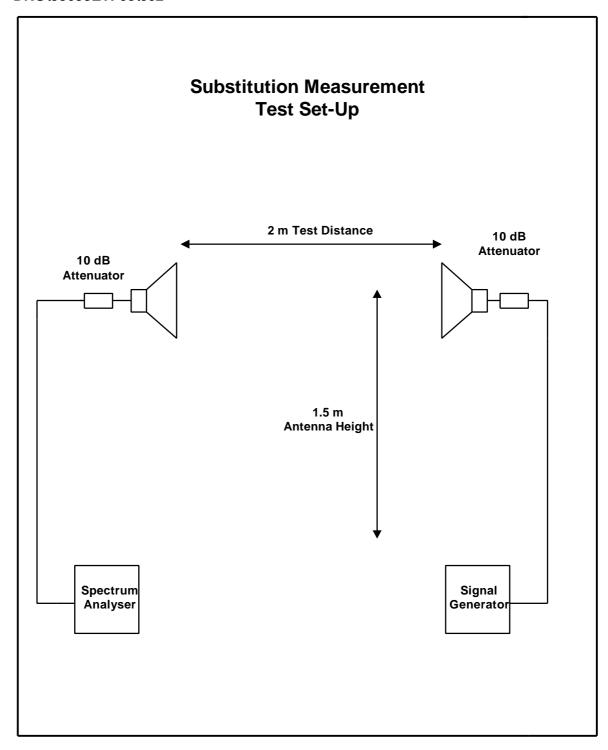
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Appendix 4. Graphical Test Results

This appendix contains the following graphs:

Graph Reference Number	Title
GPH\38658ETF03\001	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\\38658ETF03002	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\003	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03004	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\005	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\006	Scan of Radiated Electric Field: Transmit Mode: 30 to 1000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\007	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\008	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\009	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\010	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\011	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\012	Scan of Radiated Electric Field: Receive Mode: 30 to 1000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\013	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Live Line.
GPH\38658ETF03\014	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Live Line.
GPH\38658ETF03\015	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Live Line.
GPH\38658ETF03\016	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Live Line.
GPH\38658ETF03\017	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Live Line.
GPH\38658ETF03\018	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Live Line.

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Graph Reference Number	Title
GPH\38658ETF03\019	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Live Line.
GPH\38658ETF03\020	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Live Line.
GPH\38658ETF03\021	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Live Line.
GPH\38658ETF03\022	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Live Line.
GPH\38658ETF03\023	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Live Line.
GPH\38658ETF03\024	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Live Line.
GPH\38658ETF03\025	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Neutral Line.
GPH\38658ETF03\026	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Neutral Line.
GPH\38658ETF03\027	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\028	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\029	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\030	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\031	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\032	Scan of Radiated Electric Field: Receive Mode: 1000 to 2000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\033	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\034	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\035	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\036	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\037	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)

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Graph Reference Number	Title
GPH\38658ETF03\038	Scan of Radiated Electric Field: Receive Mode: 2000 to 4000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\039	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\040	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\041	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\042	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\043	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\044	Scan of Radiated Electric Field: Receive Mode: 4000 to 5000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\045	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\046	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\047	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\048	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\049	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\050	Scan of Radiated Electric Field: Receive Mode: 5000 to 6000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\051	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\052	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\053	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\054	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\055	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\056	Scan of Radiated Electric Field: Receive Mode: 6000 to 8200 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)

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Graph Reference Number	Title
GPH\38658ETF03\057	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\058	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\059	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\060	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\061	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\062	Scan of Radiated Electric Field: Receive Mode: 8200 to 12500 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\063	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\064	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\065	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\066	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\067	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\068	Scan of Radiated Electric Field: Receive Mode: 12500 to 18000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\069	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\070	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\071	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\072	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\073	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.725 to 5.85 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\074	Scan of Radiated Electric Field: Receive Mode: 18000 to 26000 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\075	Transmitter Power Level: EIRP. Tx Horizontal. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)

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GPH\38658ETF03\076	Transmitter Power Level: EIRP. Tx Vertical. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0)
GPH\38658ETF03\077	Transmitter Power Level: EIRP. Tx Vertical. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\078	Transmitter Power Level: EIRP. Tx Horizontal. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4)
GPH\38658ETF03\079	Transmitter Power Level: EIRP. Tx Horizontal. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\080	Transmitter Power Level: EIRP. Tx Vertical. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5)
GPH\38658ETF03\081	Transmitter Power Level: EIRP. Tx Vertical. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\082	Transmitter Power Level: EIRP. Tx Horizontal. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9)
GPH\38658ETF03\083	Transmitter Power Level: EIRP. Tx Horizontal. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\084	Transmitter Power Level: EIRP. Tx Vertical. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10)
GPH\38658ETF03\085	Transmitter Power Level: EIRP. Tx Vertical. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\086	Transmitter Power Level. Tx Horizontal. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14)
GPH\38658ETF03\087	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Tx Lower Band Edge. 5.0 to 5.25 GHz.
GPH\38658ETF03\088	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Tx Lower Band Edge. 5.0 to 5.25 GHz.
GPH\38658ETF03\089	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Tx Upper Band Edge. 5.25 to 6.0 GHz.
GPH\38658ETF03\090	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 4.0 to 5.0 GHz.
GPH\38658ETF03\091	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Tx Upper Band Edge. 5.1838 to 5.3088 GHz.
GPH\38658ETF03\092	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Tx Upper Band Edge. 5.1838 to 5.3088 GHz.

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Graph Reference Number	Title
GPH\38658ETF03\093	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Tx Lower Band Edge. 5.0 to 5.2 GHz.
GPH\38658ETF03\094	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 5.3 to 6.0 GHz.
GPH\38658ETF03\095	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 4.0 to 5.0 GHz.
GPH\38658ETF03\096	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Tx Lower Band Edge. 5.1783 to 5.3033 GHz.
GPH\38658ETF03\097	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Tx Lower Band Edge. 5.1783 to 5.3033 GHz.
GPH\38658ETF03\098	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 5.0 to 5.2 GHz.
GPH\38658ETF03\099	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Upper Band Edge. 5.3 to 6.0 GHz.
GPH\38658ETF03\100	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 4.0 to 5.0 GHz.
GPH\38658ETF03\101	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Upper Band Edge. 5.31124 to 5.37374 GHz.
GPH\38658ETF03\102	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Upper Band Edge. 5.31124 to 5.37374 GHz.
GPH\38658ETF03\103	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 5.36 to 6.0 GHz.
GPH\38658ETF03\104	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Lower Band Edge. 5.0 to 5.32 GHz.
GPH\38658ETF03\105	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 4.0 to 5.0 GHz.

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Graph Reference Number	Title
GPH\38658ETF03\106	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Bottom Band Edge. 5.70486 to 5.76736 GHz.
GPH\38658ETF03\107	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Bottom Band Edge. 5.70486 to 5.76736 GHz.
GPH\38658ETF03\108	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 5.0 to 5.715 GHz.
GPH\38658ETF03\109	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Upper Band Edge. 5.76 to 6.0 GHz.
GPH\38658ETF03\110	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 4.0 to 5.0 GHz.
GPH\38658ETF03\111	Spurious Radiated Emissions: EIRP. Tx Horizontal. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Upper Band Edge. 5.77909 to 5.84159 GHz.
GPH\38658ETF03\112	Spurious Radiated Emissions: EIRP. Tx Vertical. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Upper Band Edge. 5.77909 to 5.84159 GHz.
GPH\38658ETF03\113	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 5.835 to 6.0 GHz.
GPH\38658ETF03\114	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Lower Band Edge. 5.0 to 5.78 GHz.
GPH\38658ETF03\115	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 4.0 to 5.0 GHz.
GPH\38658ETF03\116	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 6.0 to 8.2 GHz.
GPH\38658ETF03\117	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 6.0 to 8.2 GHz.
GPH\38658ETF03\118	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 6.0 to 8.2 GHz.

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Graph Reference Number	Title
GPH\38658ETF03\119	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 6.0 to 8.2 GHz.
GPH\38658ETF03\120	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 6.0 to 8.2 GHz.
GPH\38658ETF03\121	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 6.0 to 8.2 GHz.
GPH\38658ETF03\122	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 8.2 to 12.5 GHz.
GPH\38658ETF03\123	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 8.2 to 12.5 GHz.
GPH\38658ETF03\124	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 8.2 to 12.5 GHz.
GPH\38658ETF03\125	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 8.2 to 12.5 GHz.
GPH\38658ETF03\126	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 8.2 to 12.5 GHz.
GPH\38658ETF03\127	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 8.2 to 12.5 GHz.
GPH\38658ETF03\128	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 12.5 to 18.0 GHz.
GPH\38658ETF03\129	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 12.5 to 18.0 GHz.
GPH\38658ETF03\130	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 12.5 to 18.0 GHz.
GPH\38658ETF03\131	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 12.5 to 18.0 GHz.

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Graph Reference Number	Title
GPH\38658ETF03\132	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 12.5 to 18.0 GHz.
GPH\38658ETF03\133	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 12.5 to 18.0 GHz.
GPH\38658ETF03\134	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 18.0 to 26.0 GHz.
GPH\38658ETF03\135	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 18.0 to 26.0 GHz.
GPH\38658ETF03\136	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 18.0 to 26.0 GHz.
GPH\38658ETF03\137	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 18.0 to 26.0 GHz.
GPH\38658ETF03\138	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 18.0 to 26.0 GHz.
GPH\38658ETF03\139	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 18.0 to 26.0 GHz.
GPH\38658ETF03\140	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 26.0 to 40.0 GHz.
GPH\38658ETF03\141	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 26.0 to 40.0 GHz.
GPH\38658ETF03\142	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 26.0 to 40.0 GHz.
GPH\38658ETF03\143	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 26.0 to 40.0 GHz.
GPH\38658ETF03\144	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 26.0 to 40.0 GHz.

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Graph Reference Number	Title
GPH\38658ETF03\145	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 26.0 to 40.0 GHz.
GPH\38658ETF03\146	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 2.0 to 4.0 GHz.
GPH\38658ETF03\147	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 2.0 to 4.0 GHz.
GPH\38658ETF03\148	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 2.0 to 4.0 GHz.
GPH\38658ETF03\149	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 2.0 to 4.0 GHz.
GPH\38658ETF03\150	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 2.0 to 4.0 GHz.
GPH\38658ETF03\151	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 2.0 to 4.0 GHz.
GPH\38658ETF03\152	No Plot
GPH\38658ETF03\153	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). 1.0 to 2.0 GHz.
GPH\38658ETF03\154	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). 1.0 to 2.0 GHz.
GPH\38658ETF03\155	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). 1.0 to 2.0 GHz.
GPH\38658ETF03\156	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). 1.0 to 2.0 GHz.
GPH\38658ETF03\157	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). 1.0 to 2.0 GHz.
GPH\38658ETF03\158	Spurious Radiated Emissions: EIRP. Tx Both Polarities. 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). 1.0 to 2.0 GHz.

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Graphical Test Results (continued)

Graph Reference Number	Title
GPH\38658ETF03\159	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Neutral Line.
GPH\38658ETF03\160	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Neutral Line.
GPH\38658ETF03\161	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Neutral Line.
GPH\38658ETF03\162	Scan of Conducted Emissions: Receive Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Top Channel. (Channel 14). Neutral Line.
GPH\38658ETF03\163	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Bottom Channel. (Channel 0). Neutral Line.
GPH\38658ETF03\164	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.15 to 5.25 GHz Band. Top Channel. (Channel 4). Neutral Line.
GPH\38658ETF03\165	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Bottom Channel. (Channel 5). Neutral Line.
GPH\38658ETF03\166	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.25 to 5.35 GHz Band. Top Channel. (Channel 9). Neutral Line.
GPH\38658ETF03\167	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.725 to 5.85 GHz Band. Top Channel. (Channel 14). Neutral Line.
GPH\38658ETF03\168	Scan of Conducted Emissions: Transmit Mode: 450 kHz to 30 MHz 5.725 to 5.825 GHz Band. Bottom Channel. (Channel 10). Neutral Line.
GPH\38658ETF03\169	Frequency Stability. Supply Variation.
GPH\38658ETF03\170	Frequency Stability. Temperature Variation.

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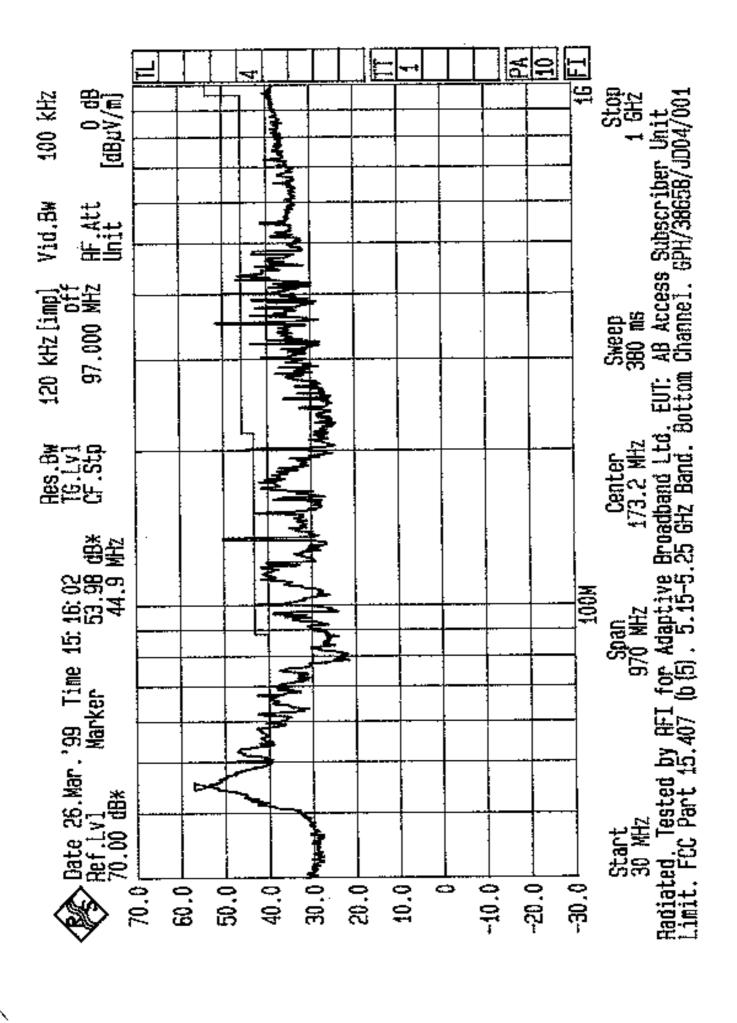
Test Of: Adaptive Broadband Ltd

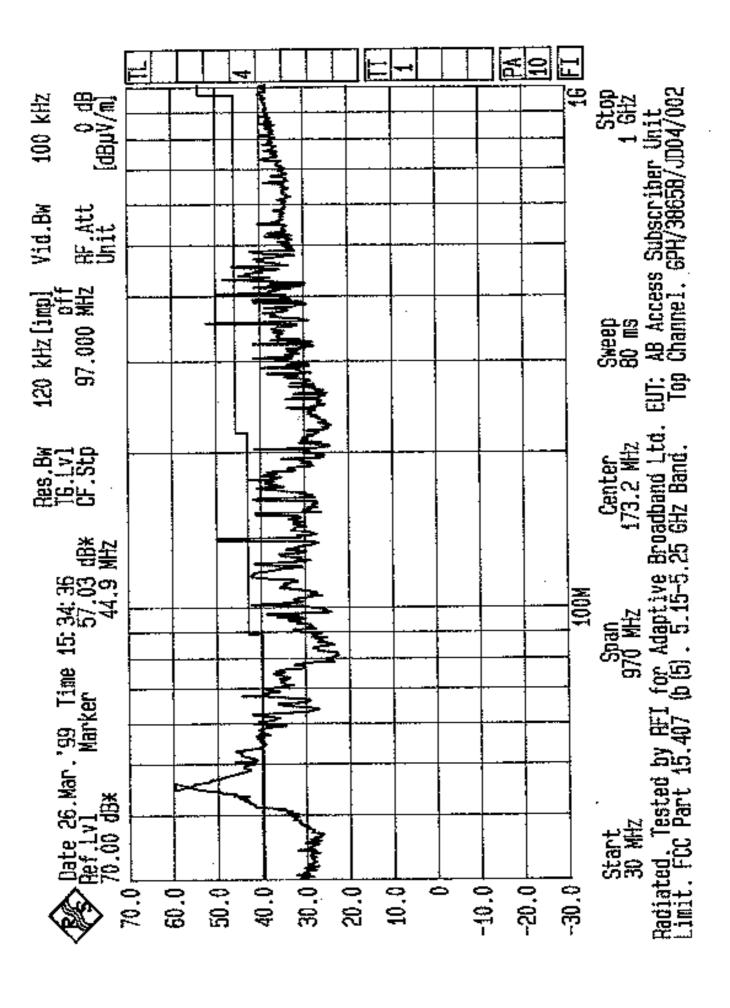
EMC Department

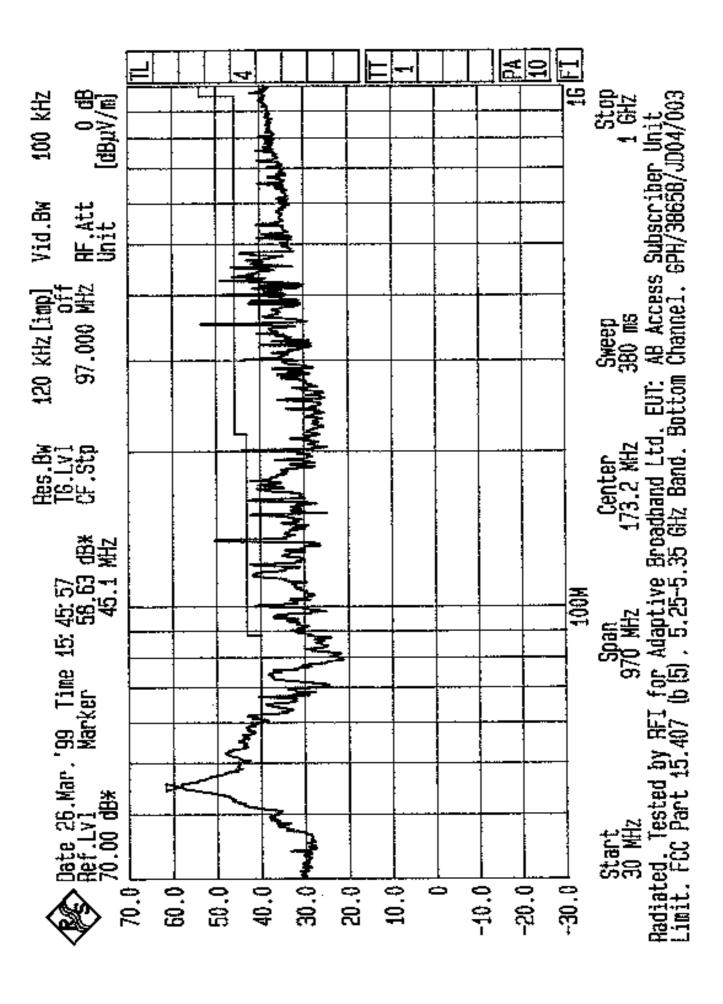
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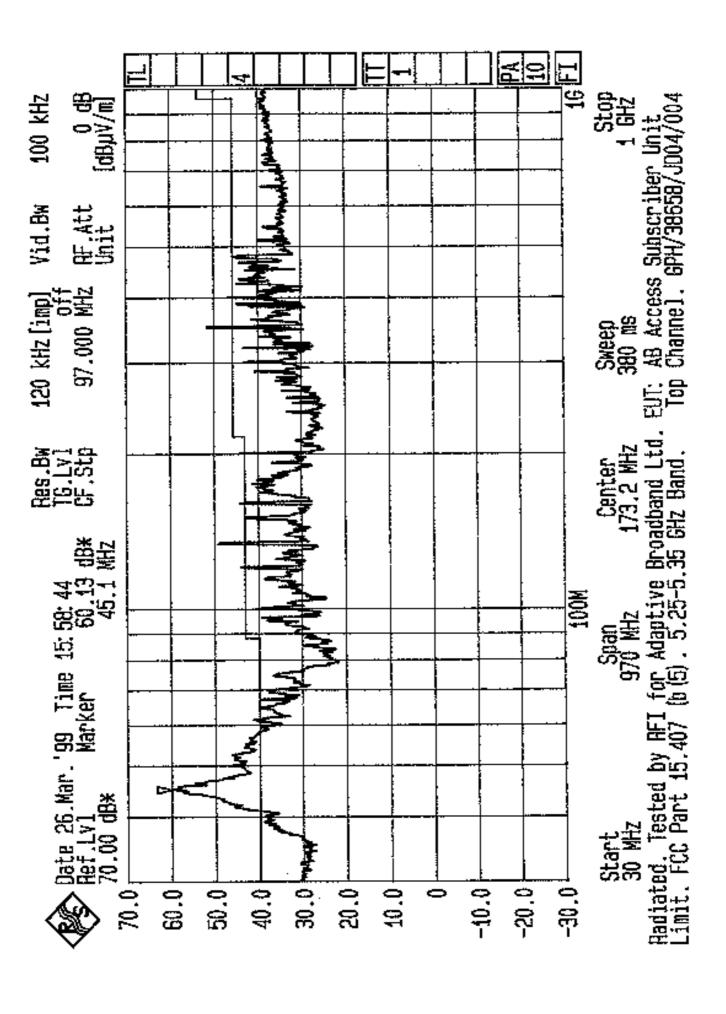
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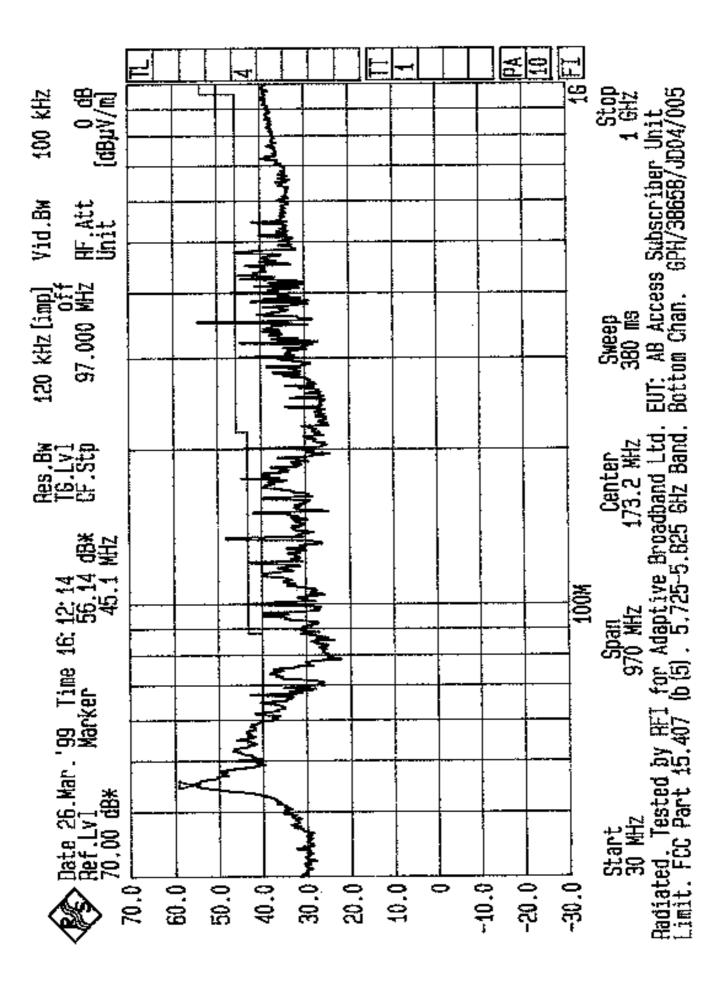
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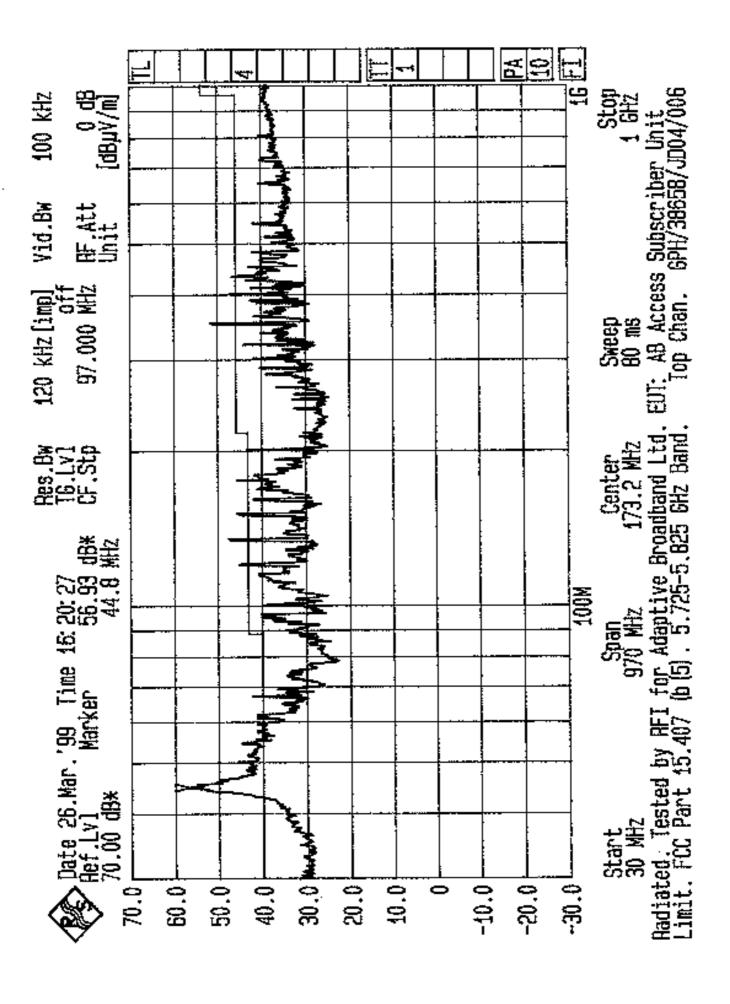


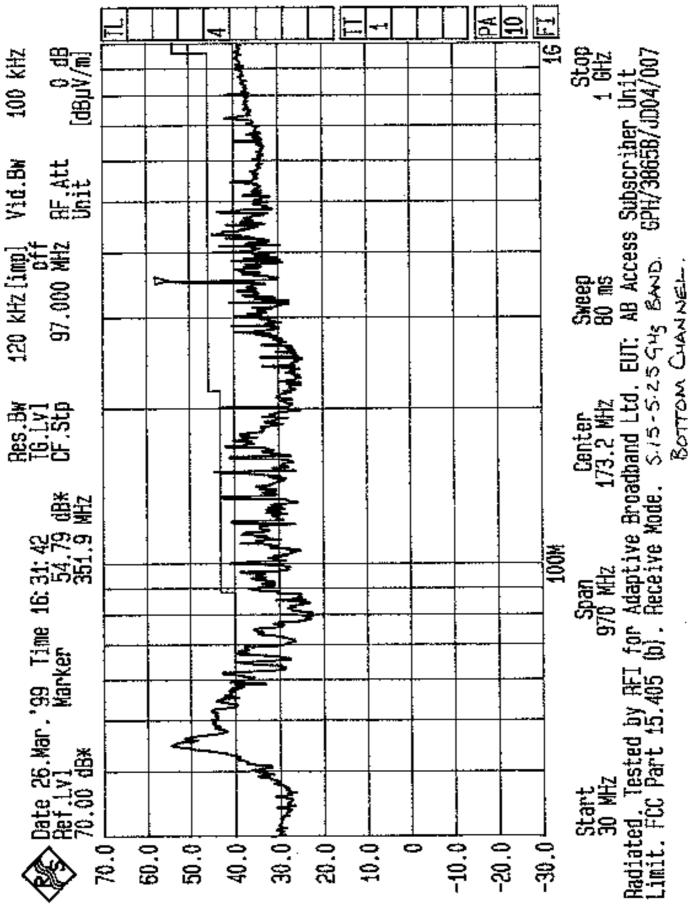


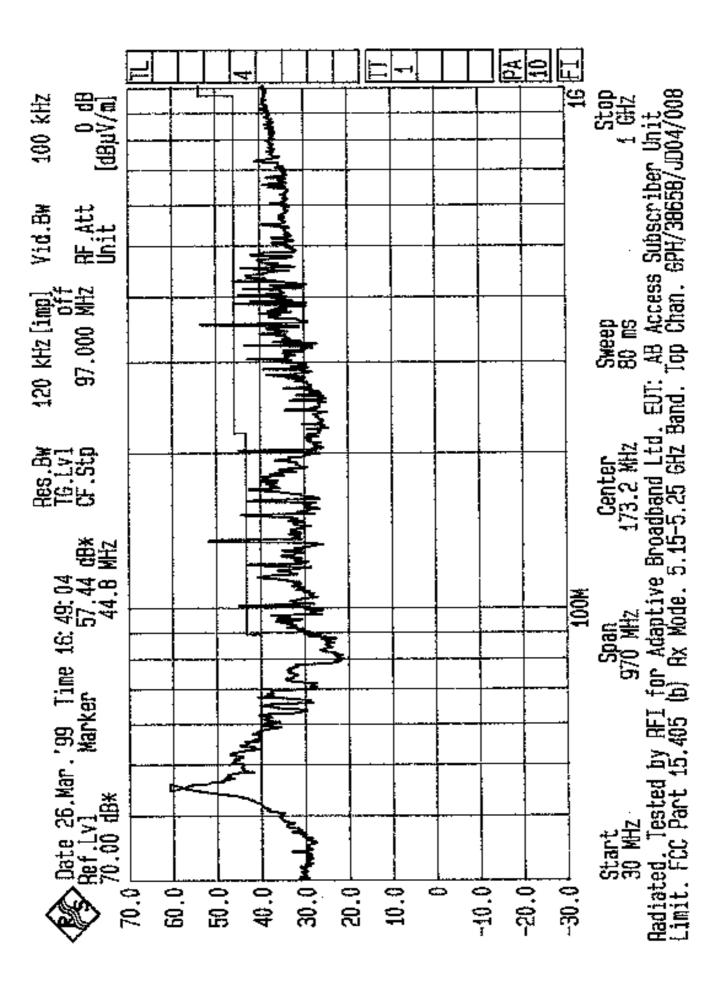


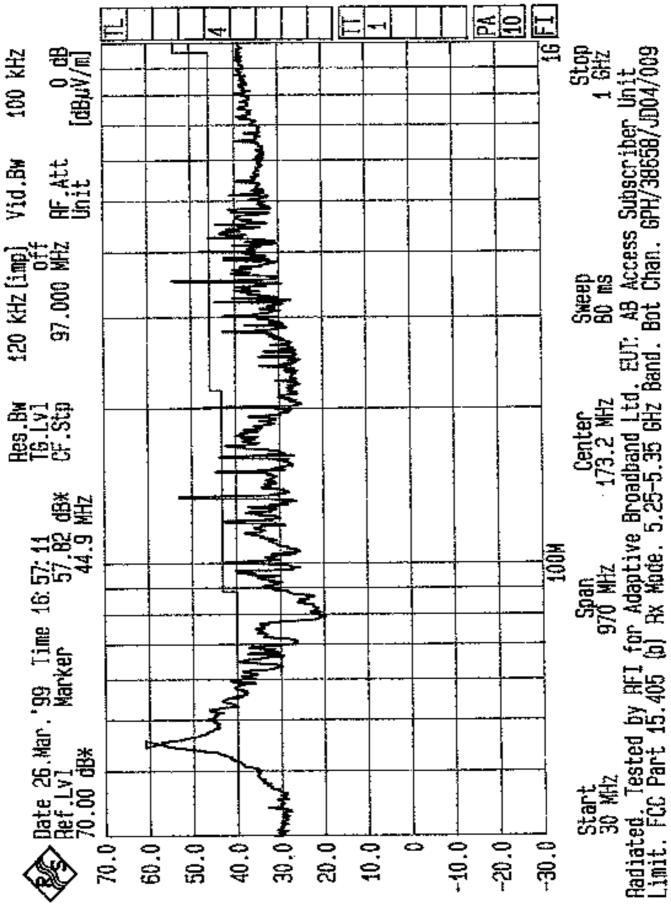


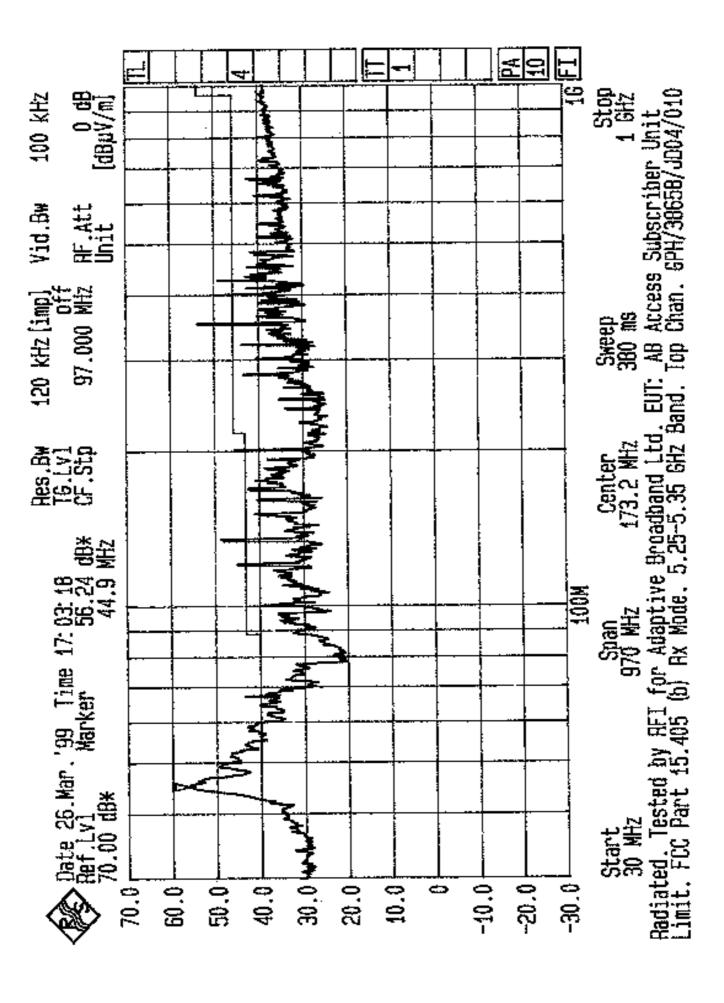


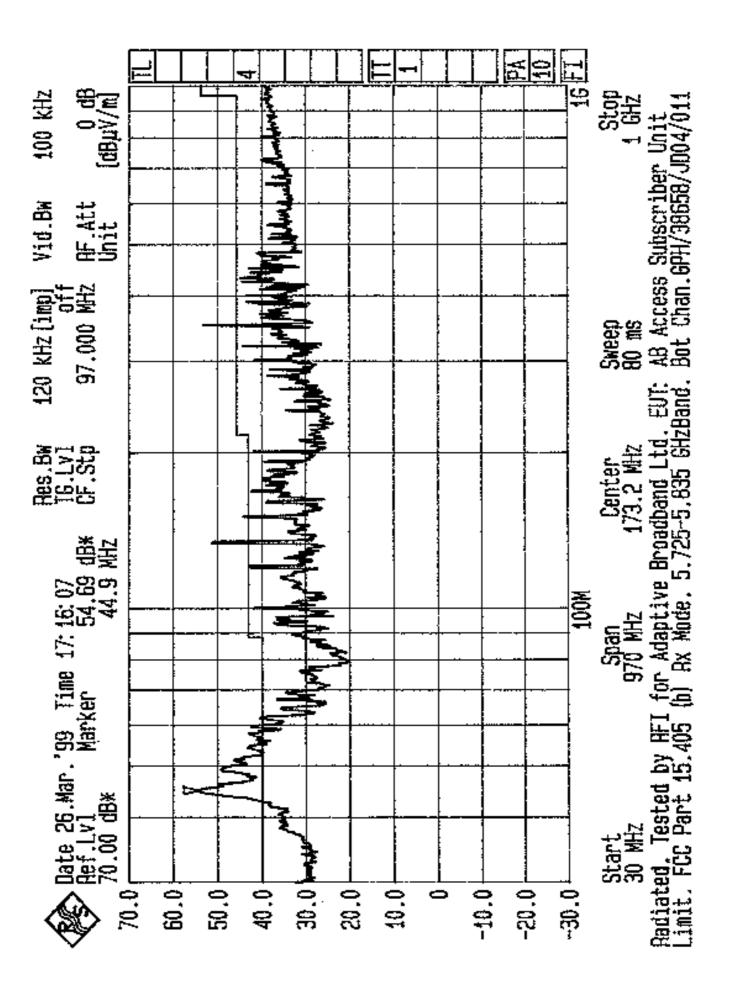


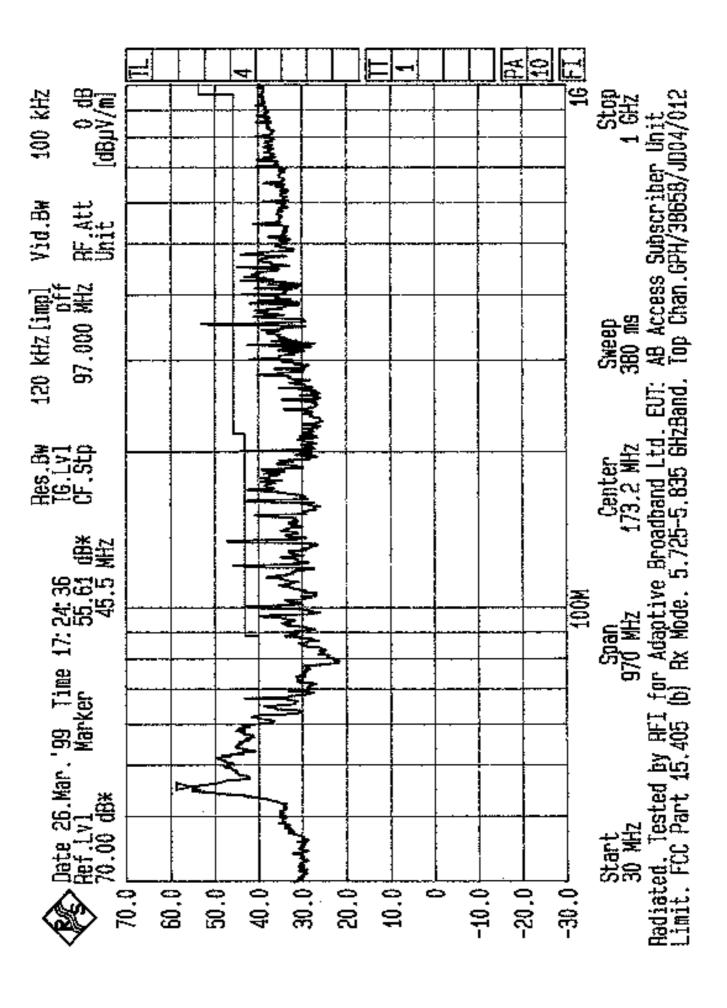


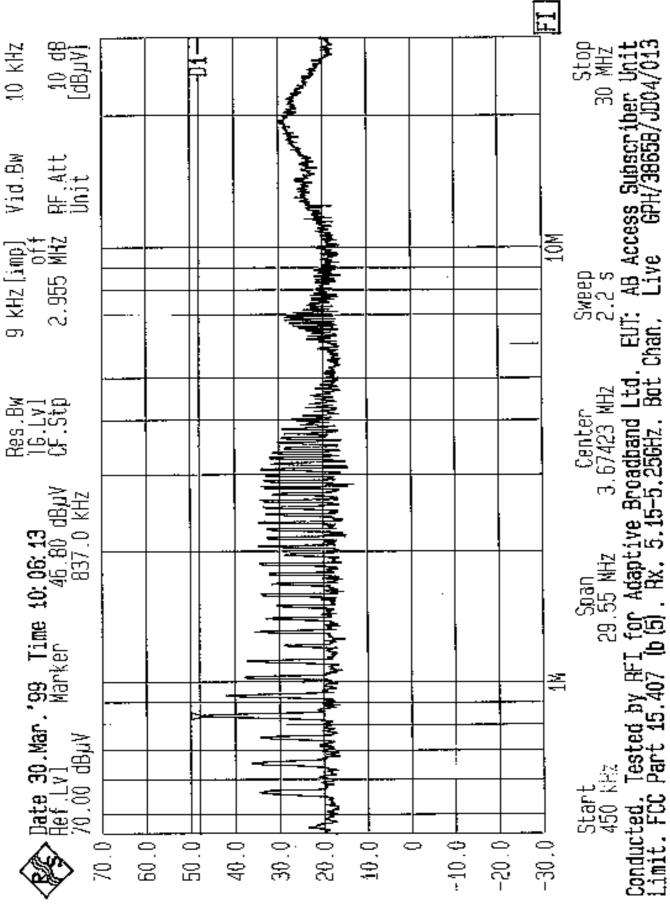


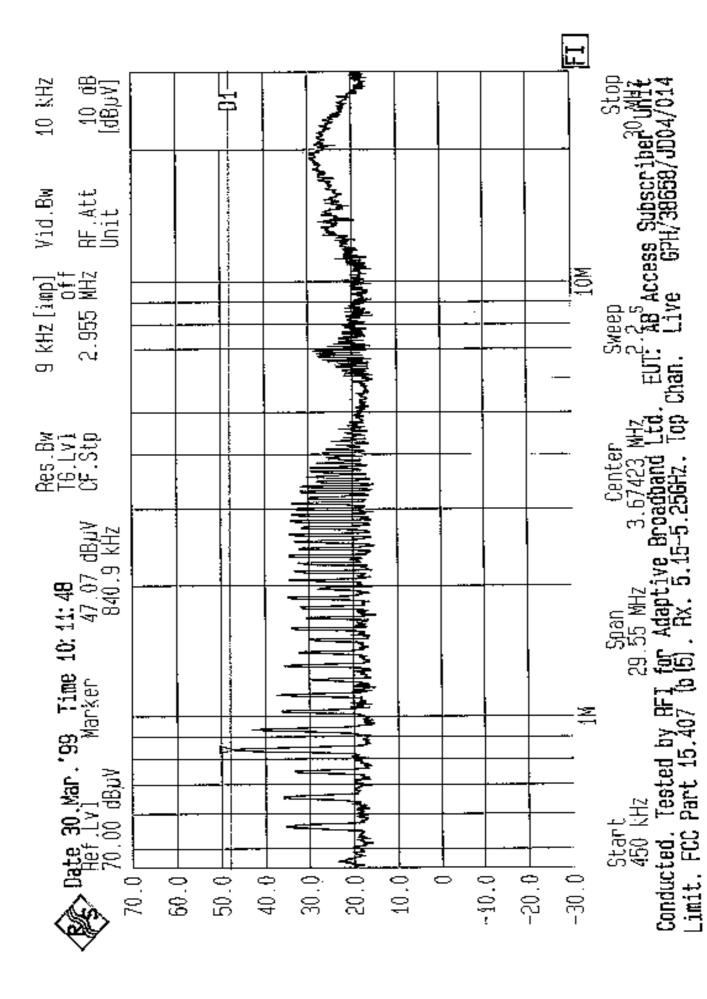


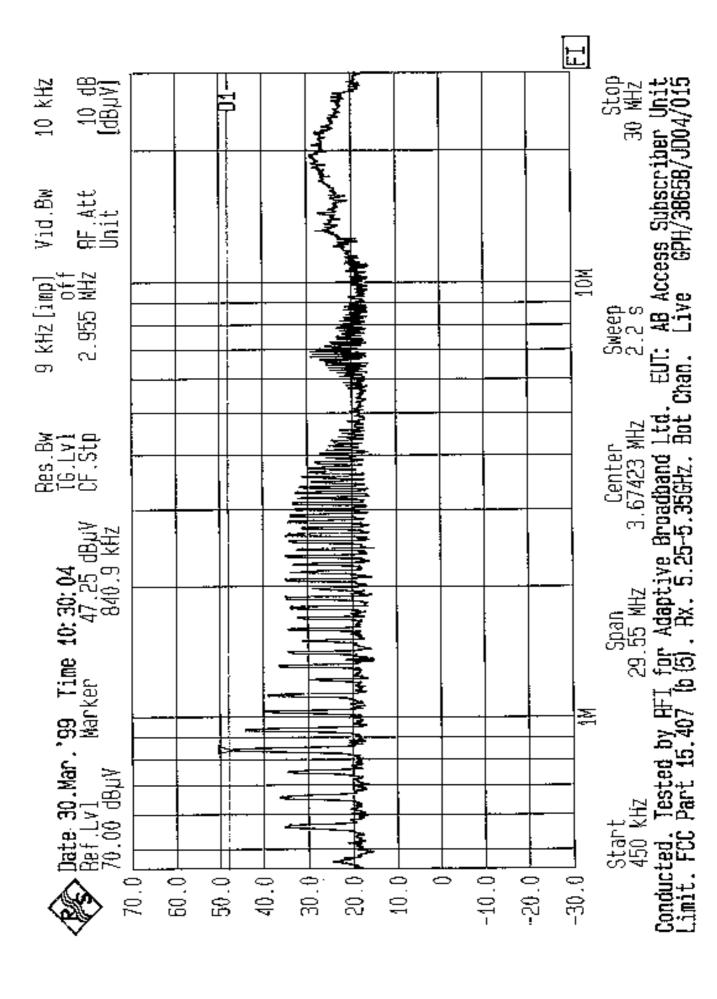


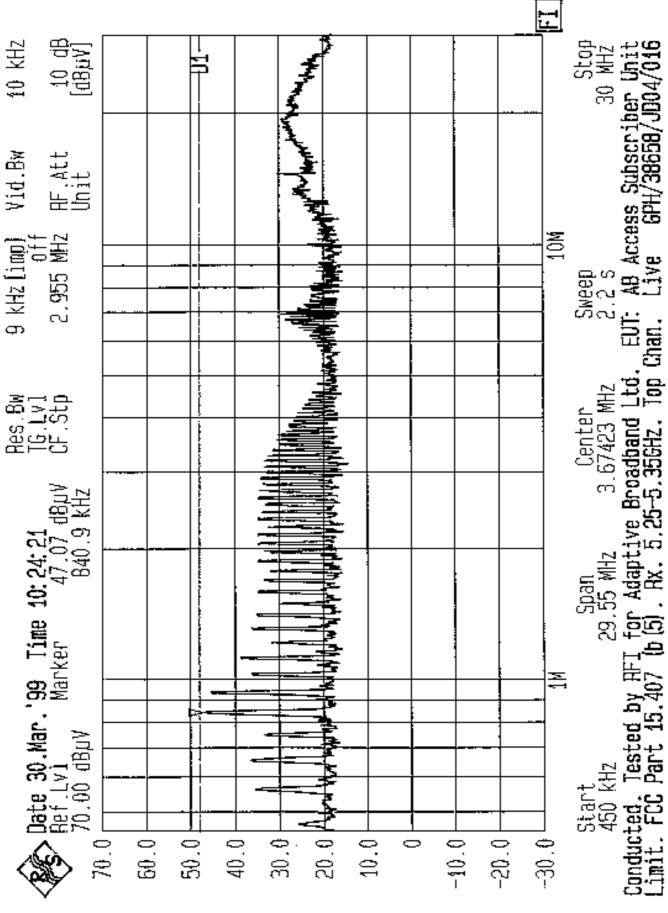


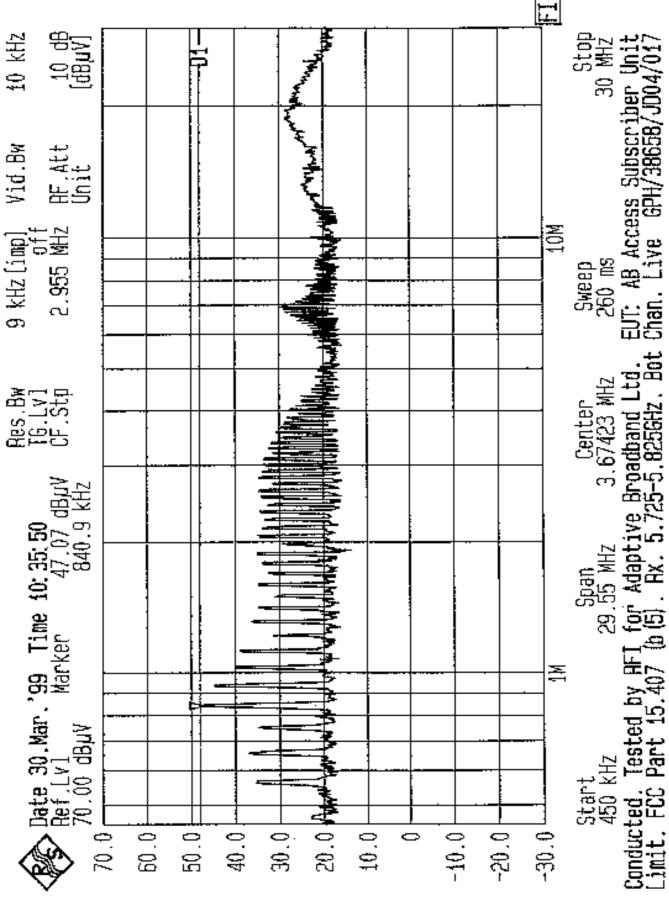


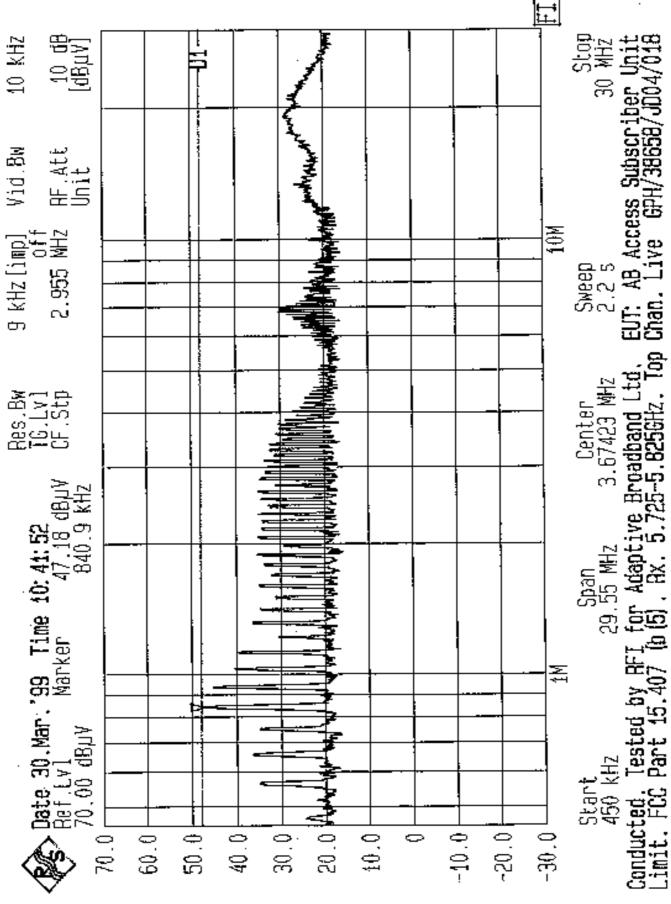


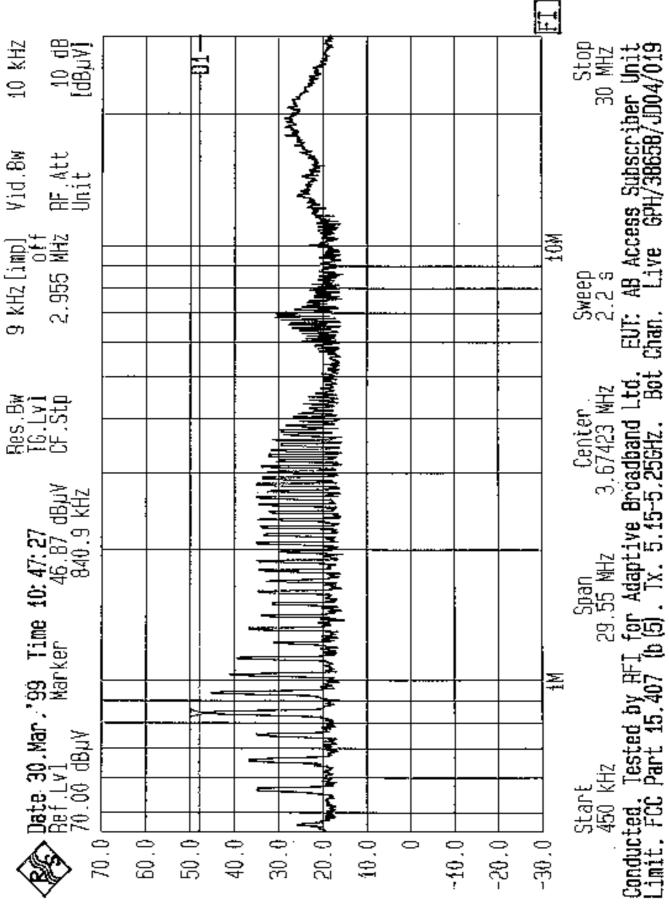


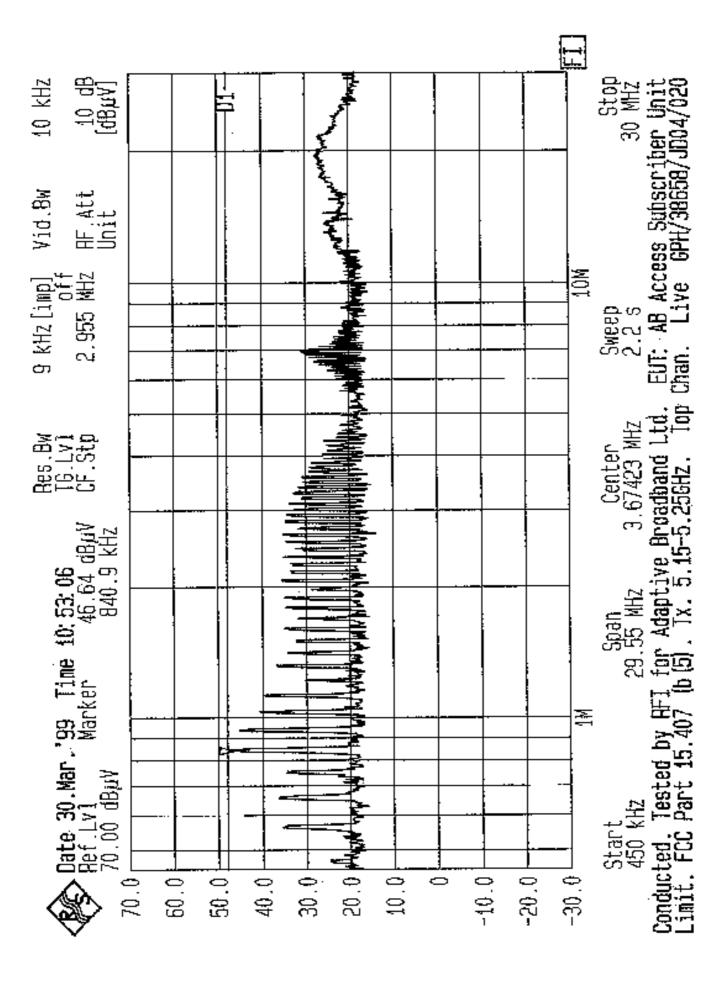


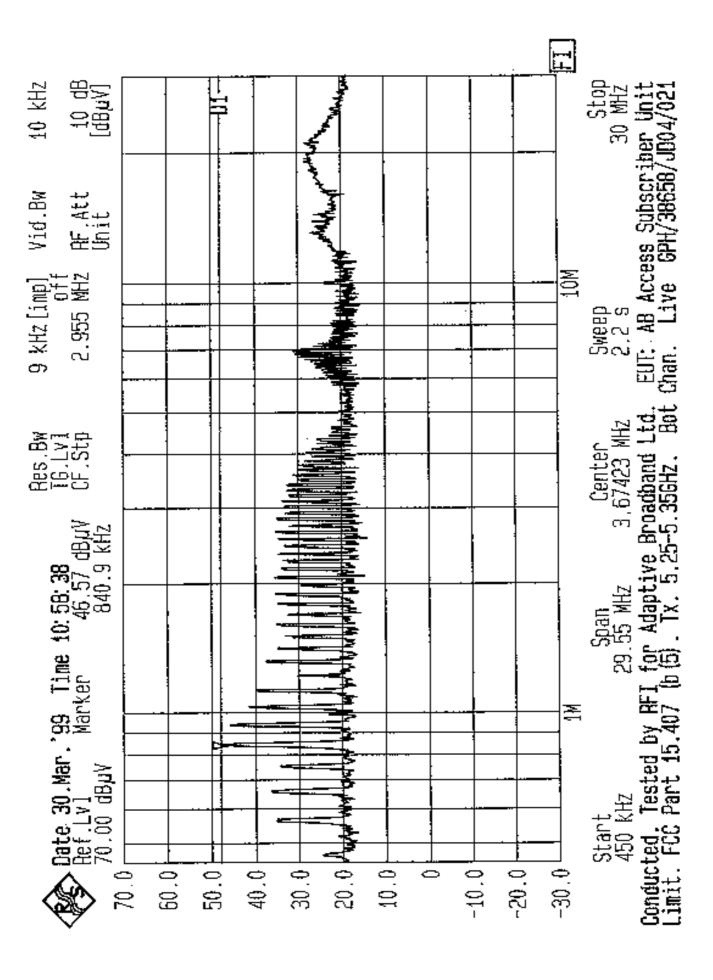


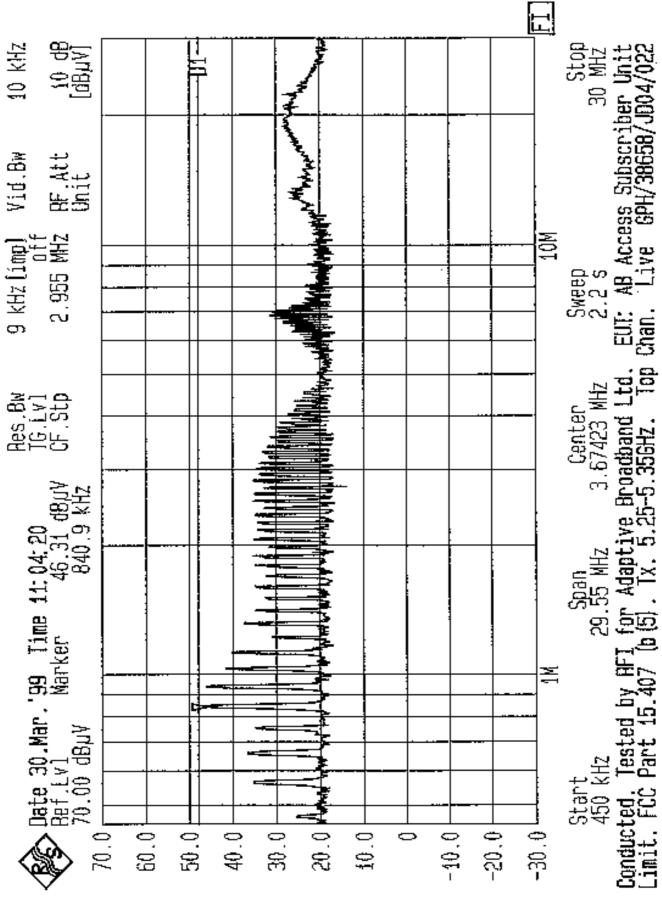


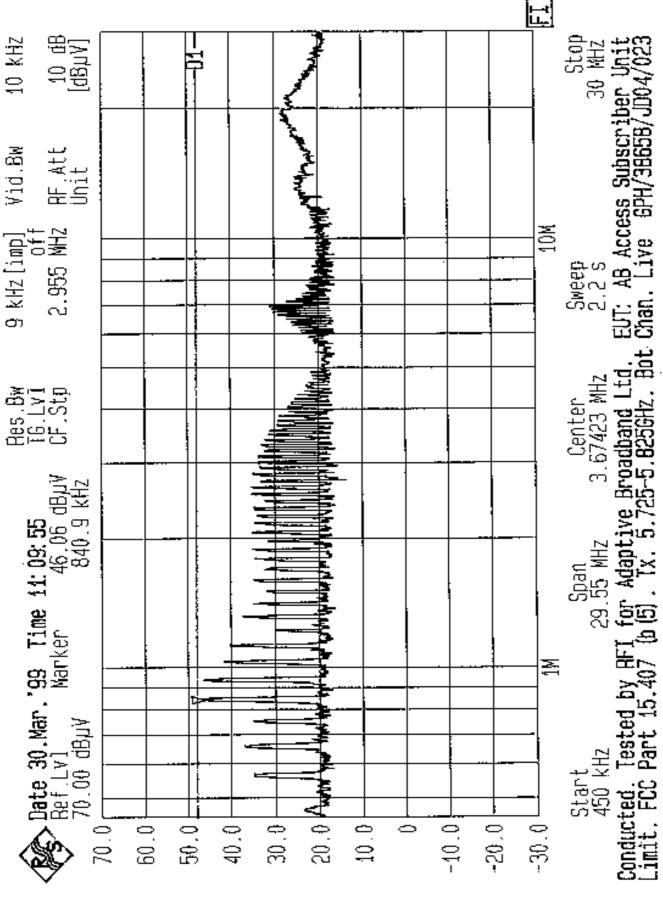


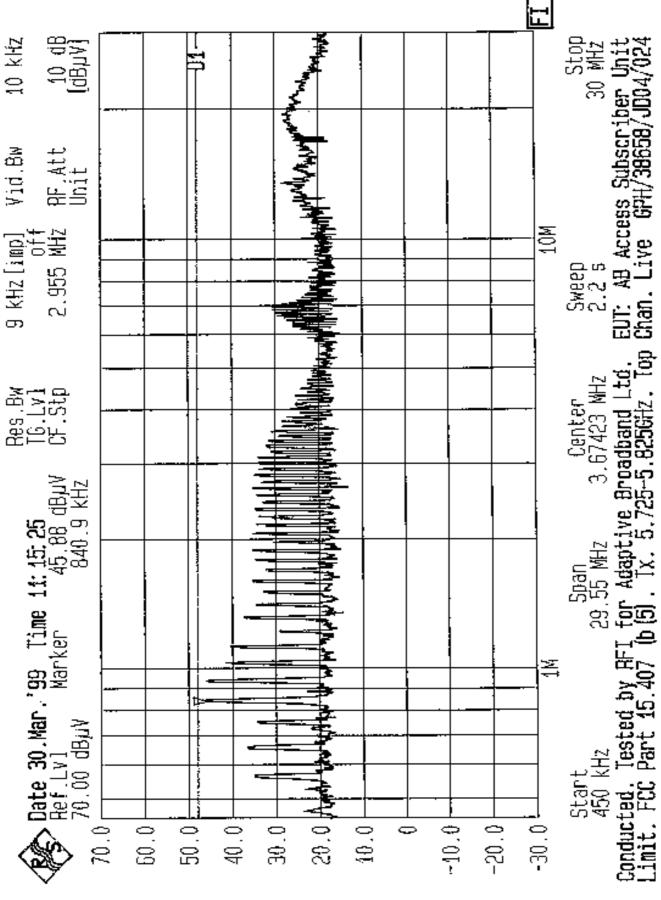


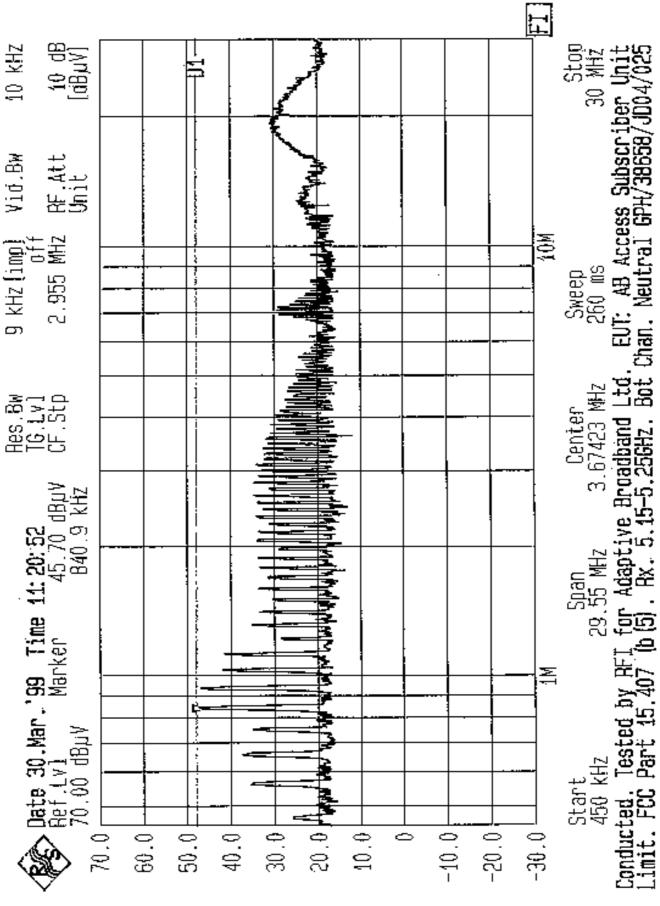


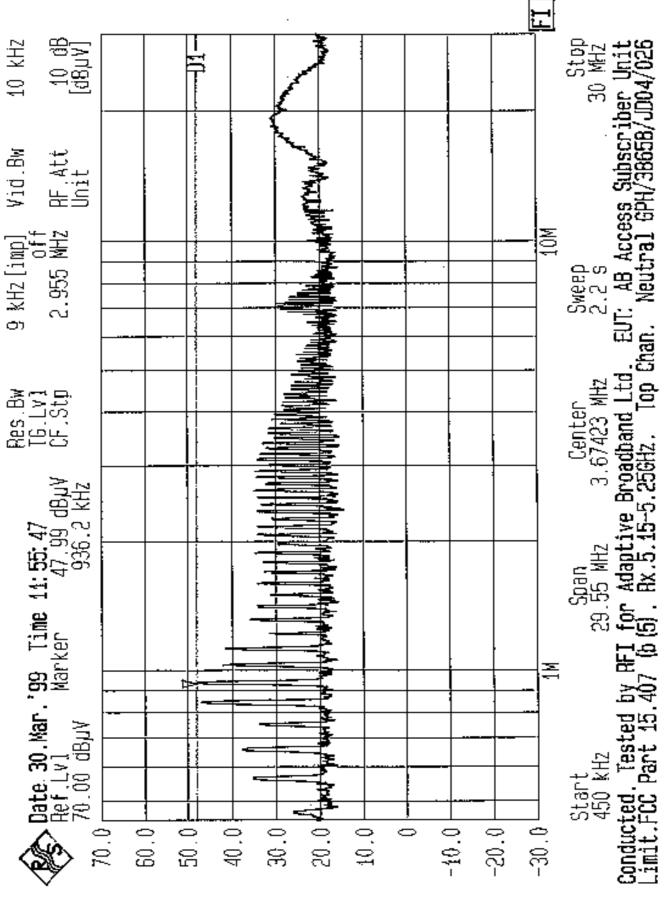


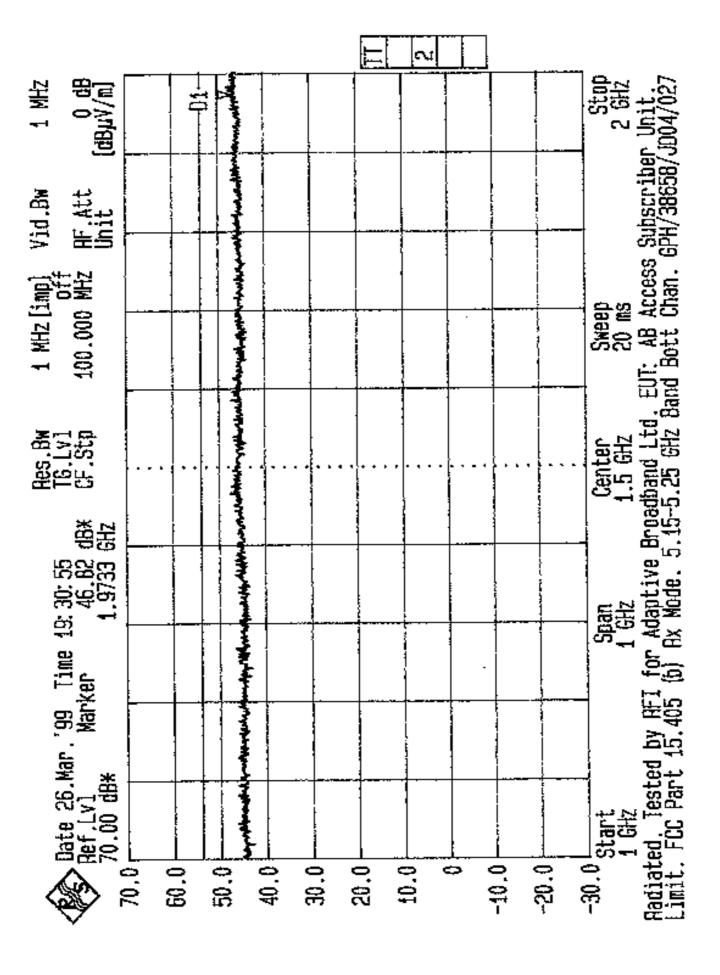


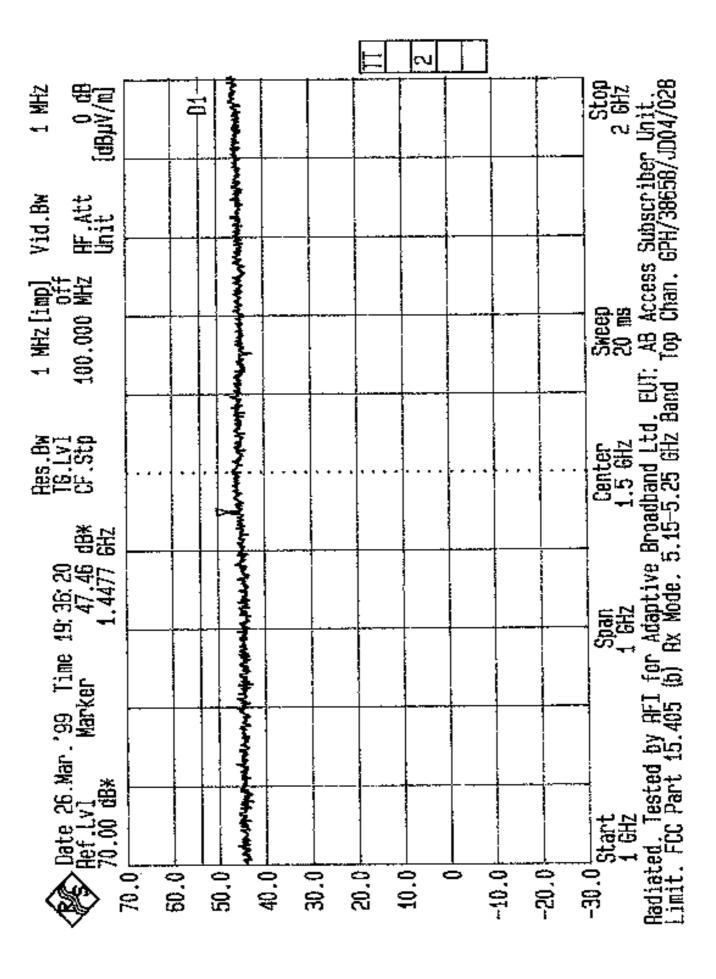


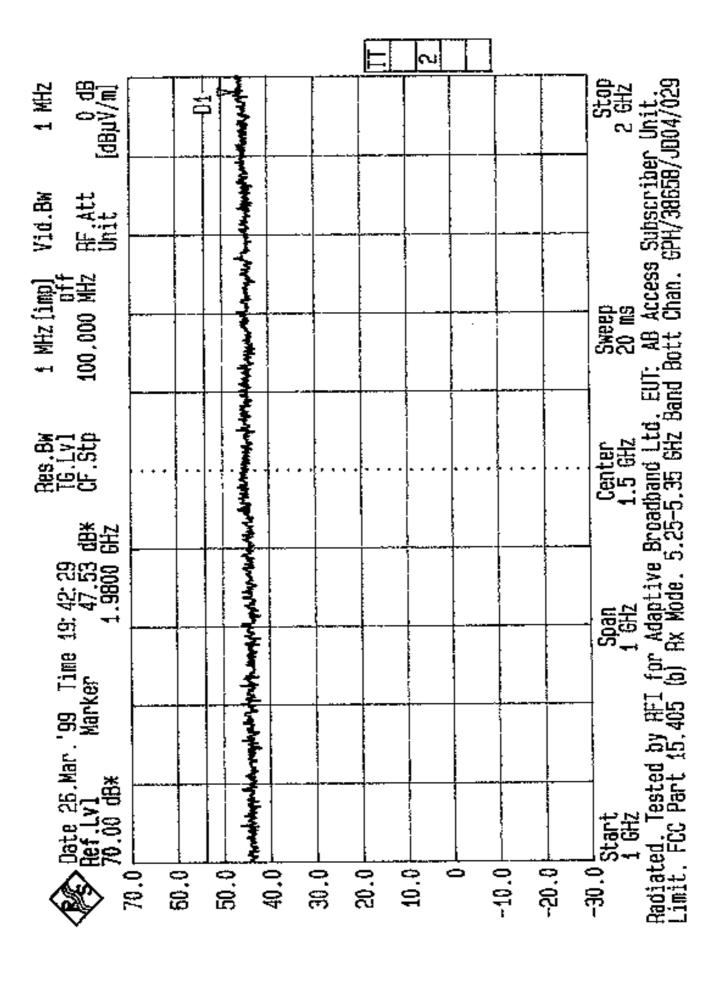


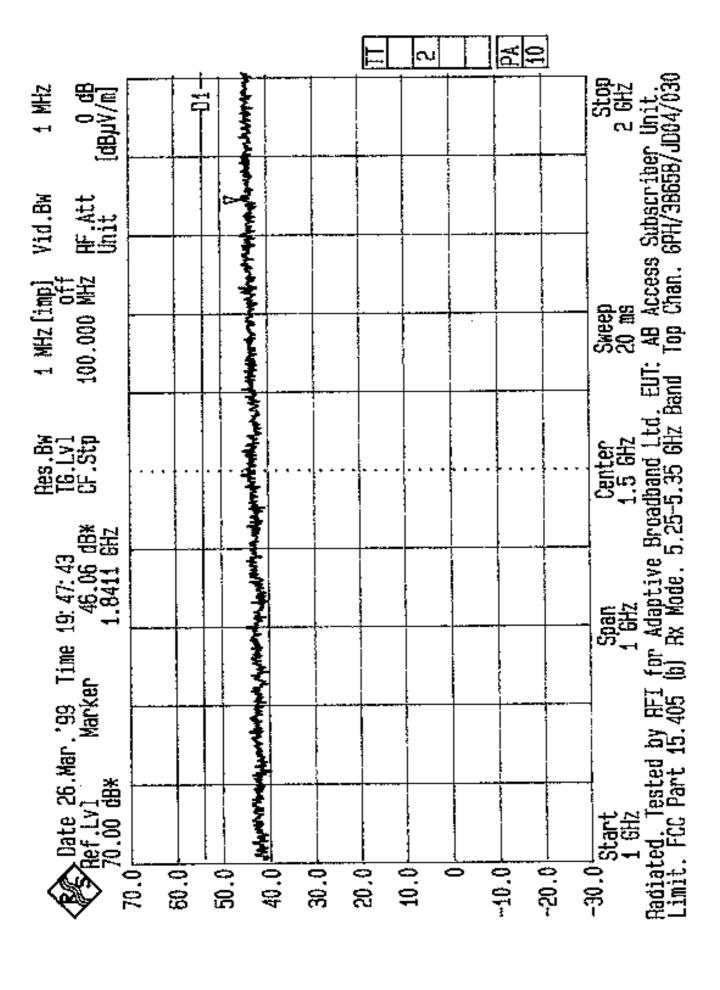


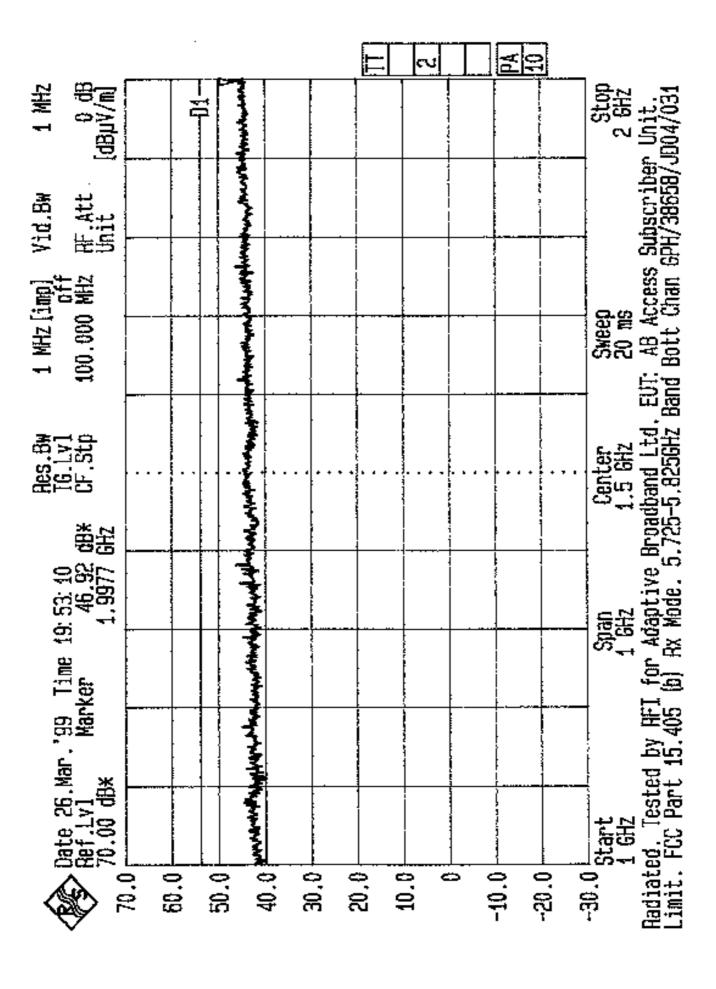


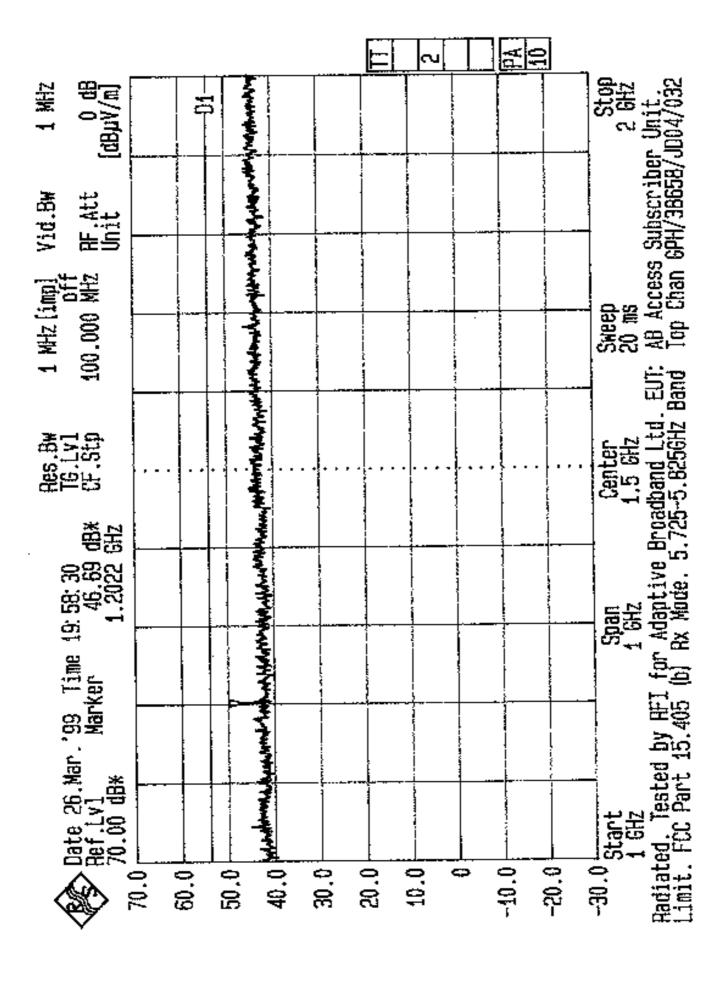


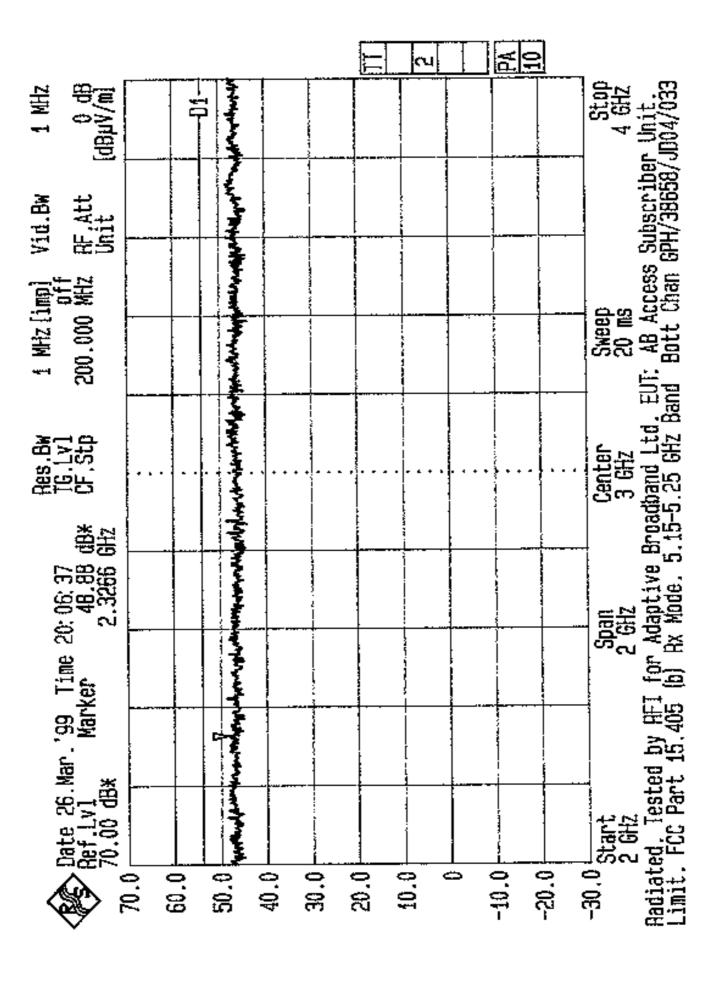


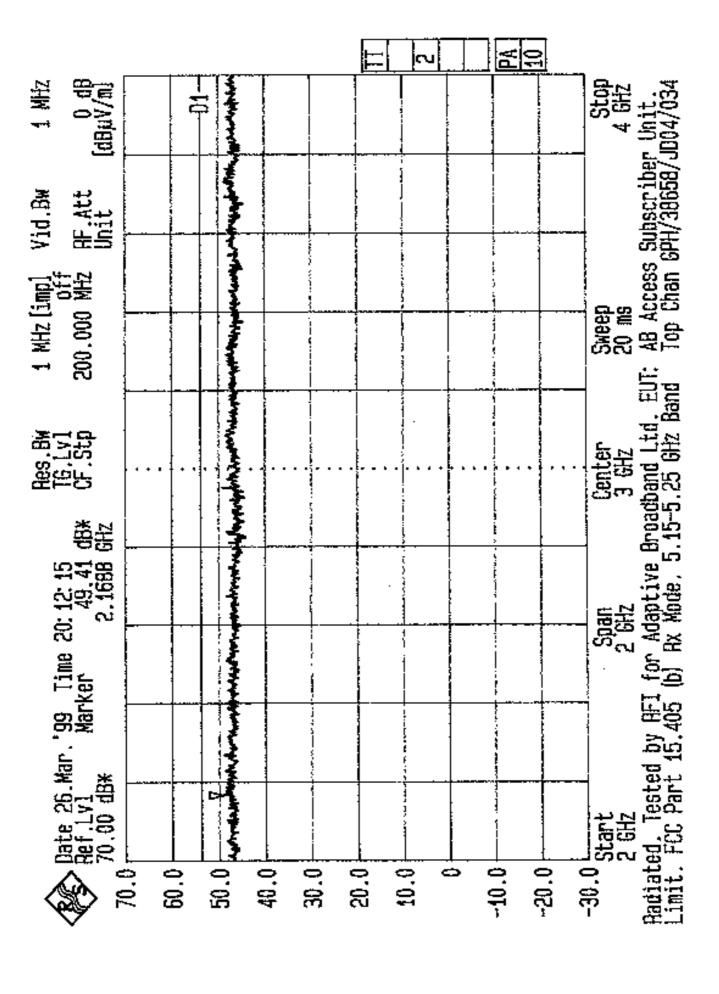


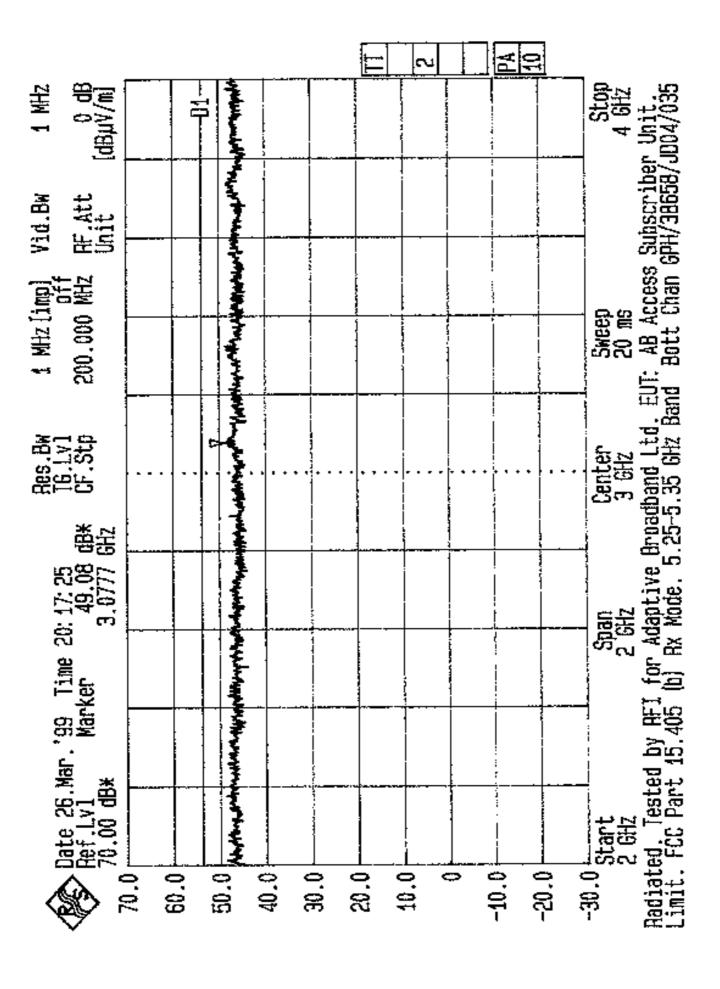


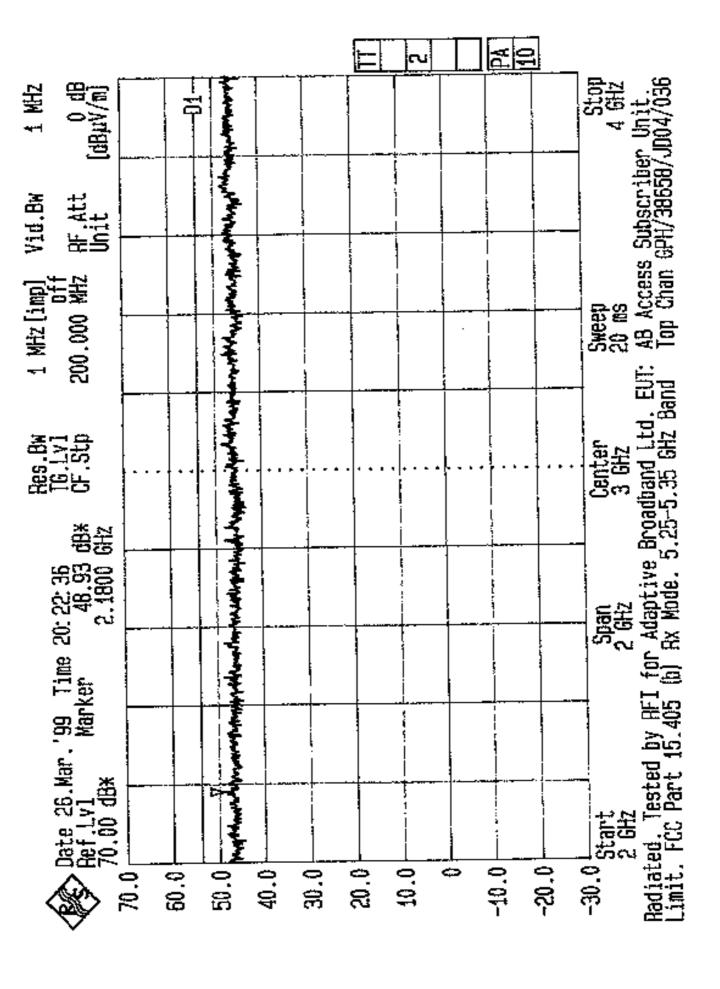


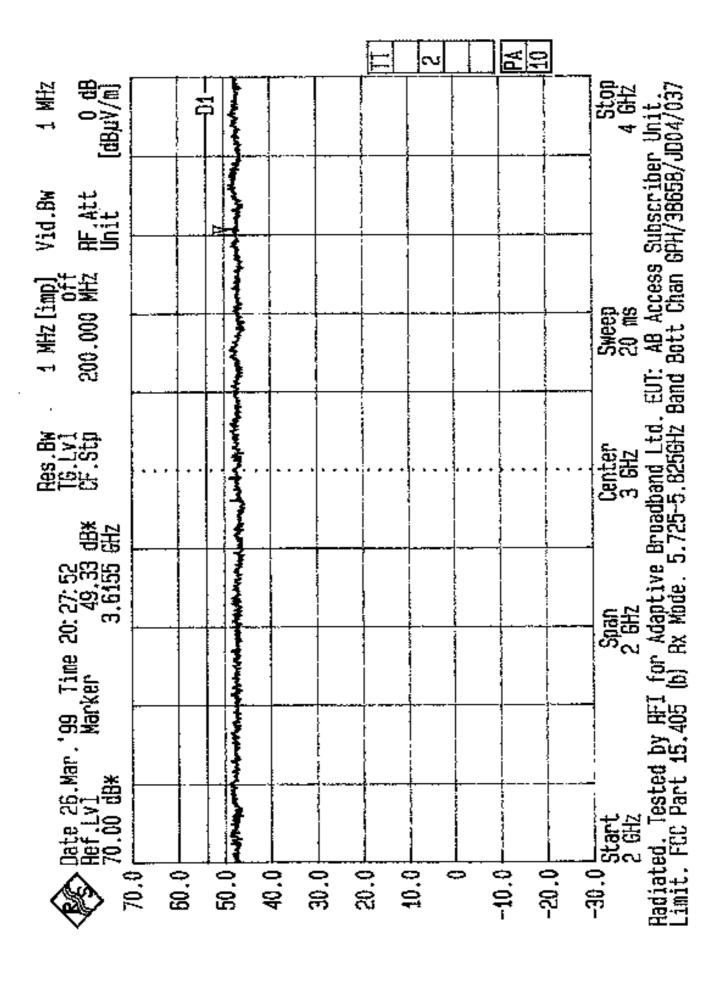


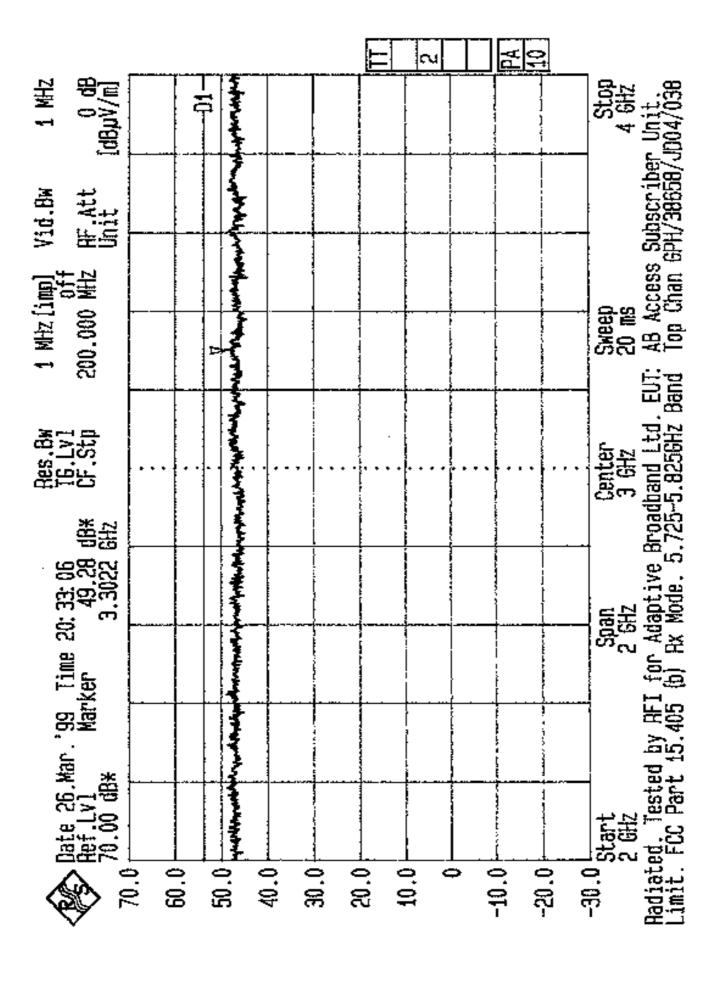




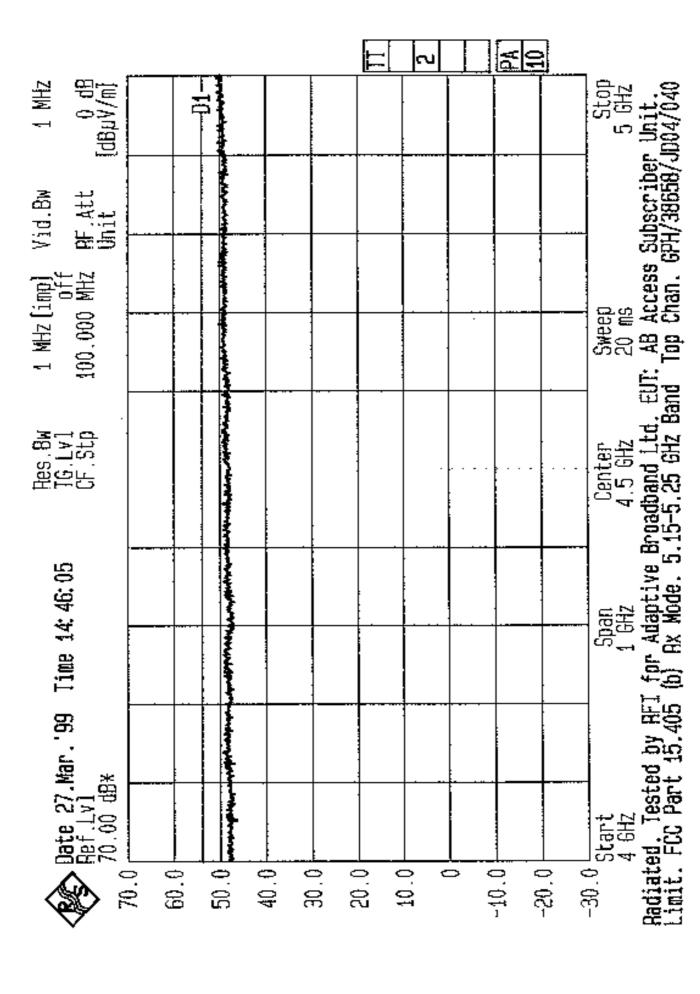


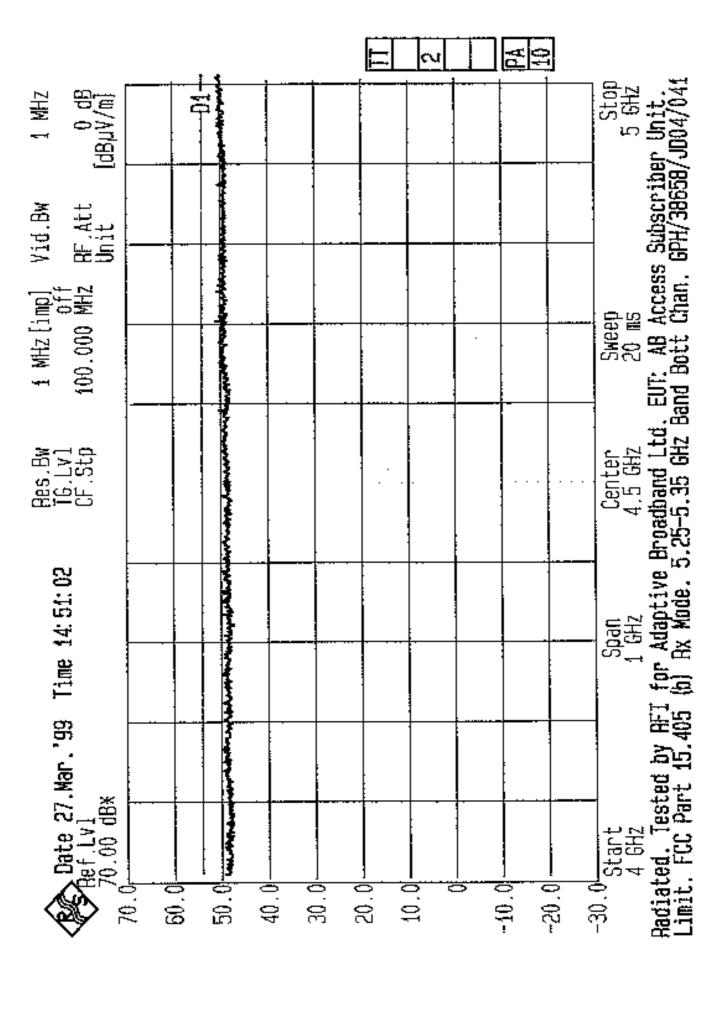


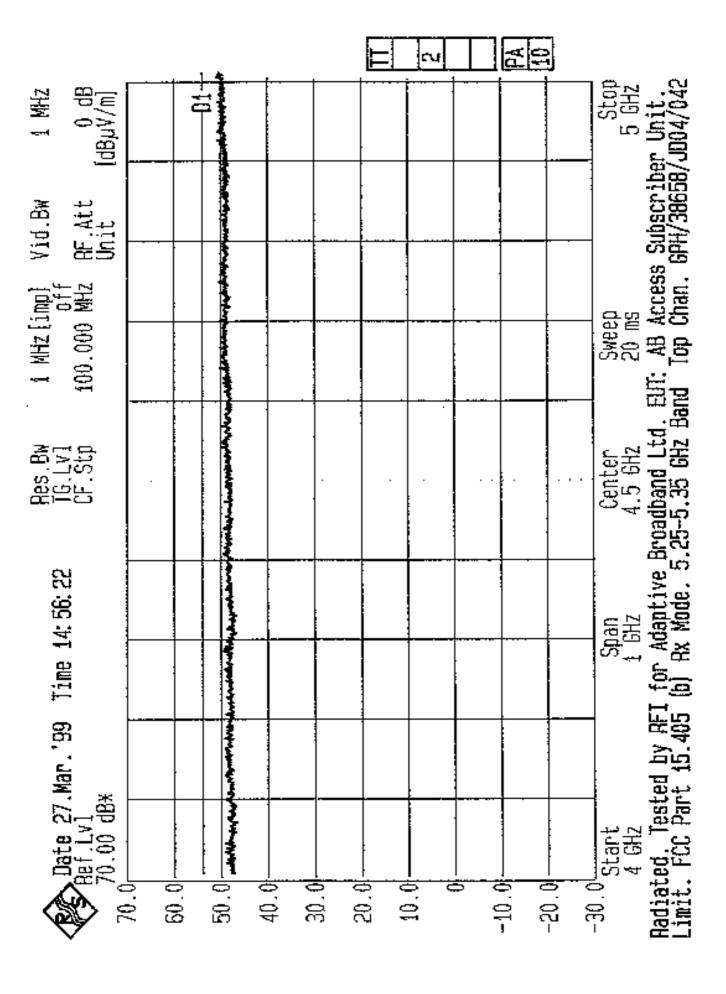




70.00 dB** 50.0 milit [dBµV/m] 50.0 milit [dBV
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n Center Sweep







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1 MHz 0 dB (dBµV/m)		10									5 6HZ 5 0Hz 1004/043
Vid.Bw BF.Att Unit		· · · · · · · · · · · · · · · · · · ·					ļ	-			Subscriber PH/38658/
1 MHz[imp] Off 100.000 MHz						<u> </u>					Sweep 20 ms 5 GHz AB Access Subscriber Unit. d Bot Chan GPH/38658/JD04/043
		-				<u> </u> 					Barri
Res.8w T6.Lvl CF.Stp			مالاستاساني والمارية								Center 4.5 GHz roadband Lto 725-5.825 GR
Time 15: 05: 02											Span GHz Adaptive Bl Ax Mode 5.
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> Date 27.Mar. 99 Pef.Lv] 70.00 dB*			Service of the servic			:					-30.0 Start 4 GHz A GHZ A GHZ Radiated. Tested by RFI for Adaptive Broadband Ltd. Limit. FCC Part 15.405 (b). Rx Mode 5.725-5.825 GHz
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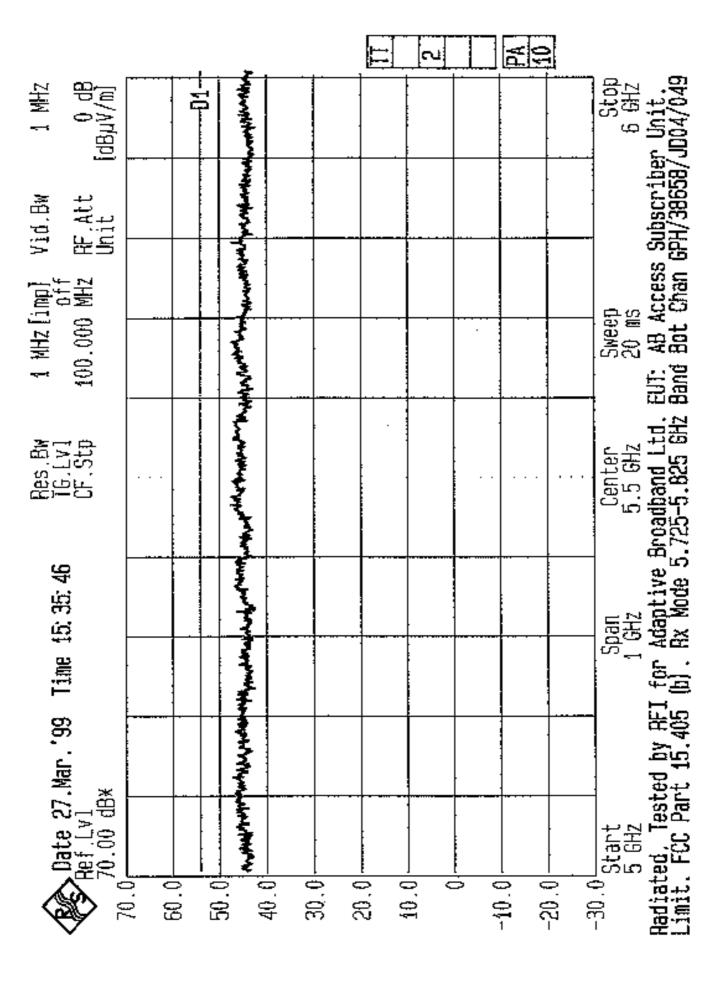
	Time 15. 10.00				 - -
70.00 d8*	10: 00 THE THE TO: 00	CF. Stp	100.000 MHZ	RF.Att Unit	(m/γμβb) (dΒμγ/πβ
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-30.0 Start	Span	Center	Sweep		Stop
4.0 662 Badiated Tested by AFT for Adantive Aroadhand Ltd.	l bAZ or Adantive f	4.0 642 Proadhand itd. F	co ms FIIT: AB Access Subscriber Unit.	Subscribe	5 Մուն թ Մո ւնք

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0 dB [dBjuV/m]			المراجا فالمادا والماداء								Stor 6 GHZ Unit
RF.Att Unit		-	المارام والماراء الماراء الماراء والماراء الماراء الما		:						bscriber 79859
			A STANSON STANSON				:				15 8890 100 400
100.000 MHZ			The same					·			Sweep 20 ms T. AB Ac
TG.Lvl CF.Stp			and the second section of the second sections and the second sections and the second sections are second sections as the second sections and the second sections are second sections as the second section sections are sections as the second section sections are sections as the second section section sections are sections as the second section								Stop Start Span Center Sweep Stop 6 Hz 5.5 6Hz Sweep 6 6Hz 6Hz Fig. Full Full Full Full For Adaptive Broadband Ltd. Full AB Access Subscriber Unit.
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Time 15:20:30			de de la					:			Sp. 16
lar. '99			Silvenish distribution							}	HE SA
Date 27.Mar. '99 Ref.Lvi			Tar Maria						"		Start 5 GHz
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B* DF.Stp 100.000 MHz RF.Att Unit Shan Center Sween							+		
Son Center Sweet	Bef.Lv] 70.00 dB			8 3	CF.Stp	100.000 M		F.Att Nit	0 dB [dΒμV/m]
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1 MHz 0 dB [dBjjV/m]		 بالبلائيرينونهما								Stop 6 GHZ Unit.
Vid.Bw RF.Att Unit		With State of the							<u> </u>	Subscribe
1 MHZ[imp] 0ff 100.000 MHZ		العشوبها مراجع المجلومة محادثة		 						Sweep 20 ms : AB Access
Bes.Bw TG.Lv] CF.Stp		ڛؿڹۼ؇ڰٵٵڰٷؿڛڛڣ؈ڰۺڛۼ؈ڰڛڝڝ؈ڡٷڰڛڰٷڰڰڛؿ _{ۼڛۿۿ} ؞؞؞ڟڹؠڟڰڡڰٷڰٷ؞ؽٷ؞؞ٷ؈ڝۼ؈ٷ؈ڎٷڰٷڰٷڰڰٷڰڰڰۿڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰڰ								Stop Start Span Center Sweep Stop 6Hz Sweep 5.5 6Hz 50 ms 6 6Hz 8 Access Subscriber Unit.
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Date 27.Mar. 99 Time 15:30:37 Ref.Lv1 70.00 d8*		جعوضهم بيها بطابها وجعده إجهها لنلا				:				art GHZ Tested by AFT
	70.0	. ≱	} ⊃,	<u> </u> ⊕: 06	50.0	10. ⊅. 0.	<u> </u>		0.05-	Start 5 GHz Badiated Tes



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1 MHZ 0 dB [dB,UV/m]		J.C	and the second street								Stop 6 GHZ Unit. 1004/050
Vid.Bw RF.Att Unit				: 					<u>.</u>		Sweep 20 ms 48 Access Subscriber Unit. d Top Chan GPH/38658/JD04/050
	: 		a Submerty Political								to Secondary Sec
1 MHz[imp] 0ff 100.000 MHz			***************************************								Swee 20 m EUT: AB / Band Top
Res.8w TG.Lvl CF.Stp			الماسية والمعيدة والمائية والمسيدة والمعيدة والمعادة								-30.0 Start 5 GHz Radiated. Tested by RFI for Adaptive Broadband Ltd. Elimit. FCC Part 15.405 (b). Rx Mode 5.725-5.825 GHz
i: 41: 10			والإفادي المواجعة					i	<u></u>		an Hiz Laptive B Mode 5.
Time 15: 41: 10			بألفالتسهمهلمنا						: 		I for Ad
Mar. 199 *			بدرخداد الإنجارية								ed by RF t 15,405
> Date 27.Mar. 99 > Ref.Lv] 70.00 dB*	·		A Shaper Lotte Alba								Start 5 GHz 9d. Testo FCC Part
	9.07	A 4	2. 6	40.0	30.05	0. 6	10.0	<u>→</u> •	-18.0	0.92	Radiated. Tes

Res. Bw 1 W 1 B. Lv1 CF. Stp 220.	Date 27.Mar. 39 Time 15.46.25	1 MHz[imp] Vid.Bw 1 MHz 0ff 220.000 MHz RF.Att 0 dB Unit [dBµv/m]	7	†d	عدموس فياسته ووريا والمدن والمعاودة المستعددول مرأوا والمدنون والمعاول والإيرام والموارك فروري والمعاودة و					weep 0 ms 8.2 GH
	*99 Time 15: 46: 25		 		ويعاميها سطيا ويزودوه يدأوان منيد ويسرور وموجودها				,	Center 5

TO . 00 dB × TO	1,00	טט, פיר	1; w	30 · 7 ii :	Res.Bw	1 MHZ [imp]	Vid.Bw	1 MHz
	Mef [v] 70.00 dB			97.31.50	19.54 19.54 19.54	220.000 WHz	BF,Att Unit	0 dB [dB,V/n]
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-20.02				!				i i
-30.0 Start Span Center Sweep Stop Stop 6 GHz 2.2 GHz 7.1 GHz 20 ms 8.2 GHz	Start 6 GHZ		2.5	an GHz	Center 7.1 GHz			Stop 8.2 6HZ

Hawiateu, Testeu by Hri Tur Audplive brodundny Ltu. Eul. Ab Actess Subscriber Unit. Limit. FCC Part 15.405 (b). Ax Mode 5.15-5.25 GHz Band Top Chan GPH/38658/JDO4/052

	(dBµV/m)		-0.1	addin silandiradiradiradiradiradiradiradiradiradira	•							Stop 8.2 GHZ
1 MHz [imp] Vid.Bw Off 220 GOO WHS AS ALE	su.uuu MM2 KF.Att Unit			المؤرس الأصابات الدورين الدورين الدورين المؤرد ورواية المرادية المؤرد والمؤرد								Stop Start Span Center Sweep Stop Stop 20 ms 8.2 GHz Tocked by DET for Adaptive Recading of FUT. AR Arress Subscriber Unit
Res.Bw TG.Lv1		:		يكدم لينها لدني هدواء معطاعة الإسلام يستداه يقاللهمة								Center 7.1 GHz
Time 15:56:27				المتدائية فيريون والمائية المرازات المتارات					:	:		Span 2.2 GHz
Date 27.Mar. 99	70.00 dB*	0.07	0.00	A Charles de la Contraction de	40.0	30.0	20.0	10.01 0.01		-10.0	-20.0	-30.0 Start 6 GHz

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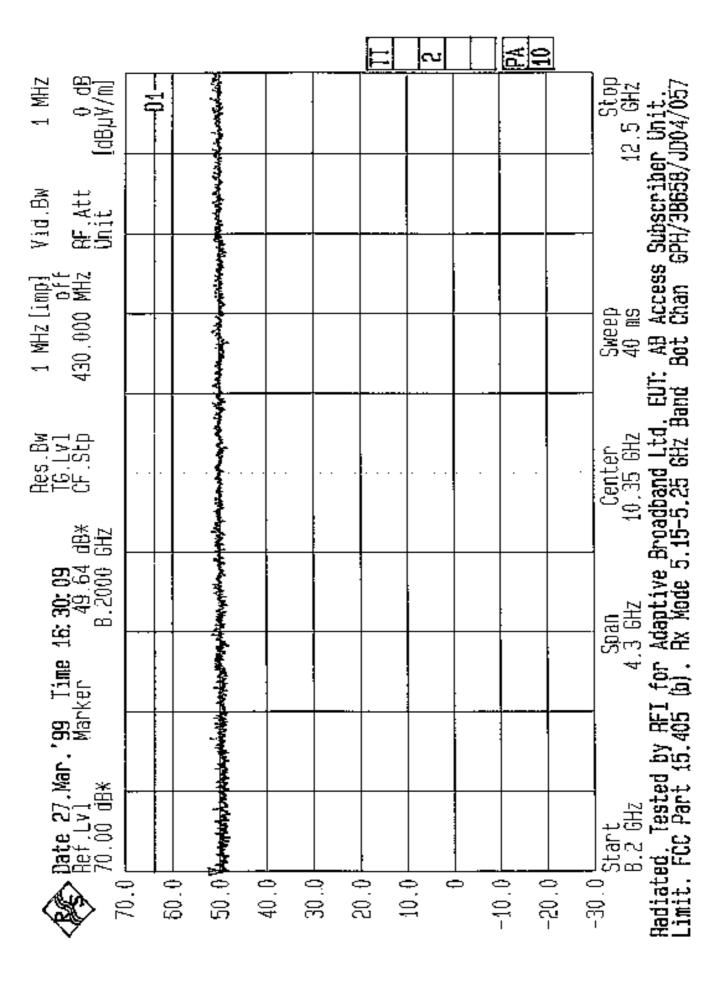
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10. Vd						
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0.0%					!	
20.0						
10.0			:			
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-20.0				1		
-30.0 Start	 		-30.0 Start Span Center Sweep Stop	Sweep	-	25.00 20.00

							~		₩.S	3	1
1 MHz 0 dB [dBµV/m]		11-11-	dangerer jackerytige								Stop 8.2 GHZ r Unit
Vid.Bw RF.Att Unit			عناباند بذفهها للانتابا								ubscriber
			الأسأور إستاياؤاله		E						Notess S
1 MHZ[imp] 0ff 220.000 MHZ			المربع المراجع								Sweep 20 ms EUT: AB Aci
Res.Bw TG.Lv1 CF.Stp			المعلقة المراسية والمراس والمراوية والمراسة والم				ī				an Center Sweep Broadband Ltd. EUT: AB Access Subscriber Unit.
Time 16:06:39			Contact Spirit S					ļ			an GHz Japtiye Br
			علان مالانم مهدا					<u> </u> 			요. 2. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
Mar.'99 *			جالات عربوالمواخية								ed by RF
> Date 27.Mar. 99 Ref.Lvl 70.00 dB*	:		and the second	!							-30.0 Start 6 GHz Radiated, Tested by RFI for Ad
	70.07	6. 0a	50.0	46.0	5 ₹3	£ 3.00 €	10°0	5	-10.0	-20.0	Radiate

LIMIT, FCC Part 13.403 (b). Ax Mode 3.723-3.623 6Az band but what because, yours, you

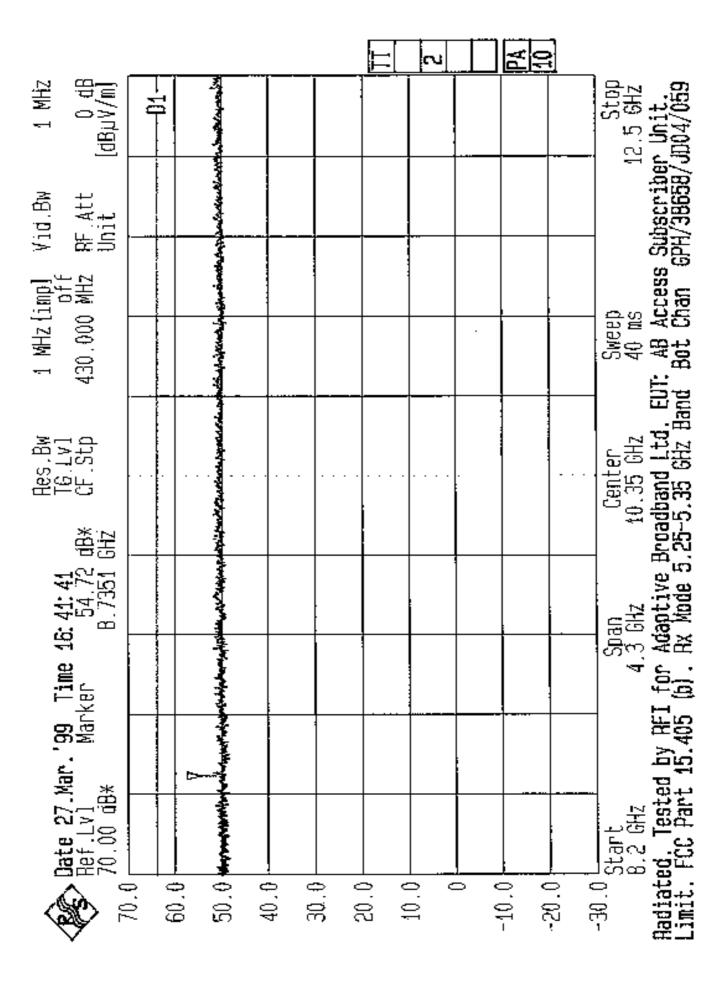
Unit (dB) V	
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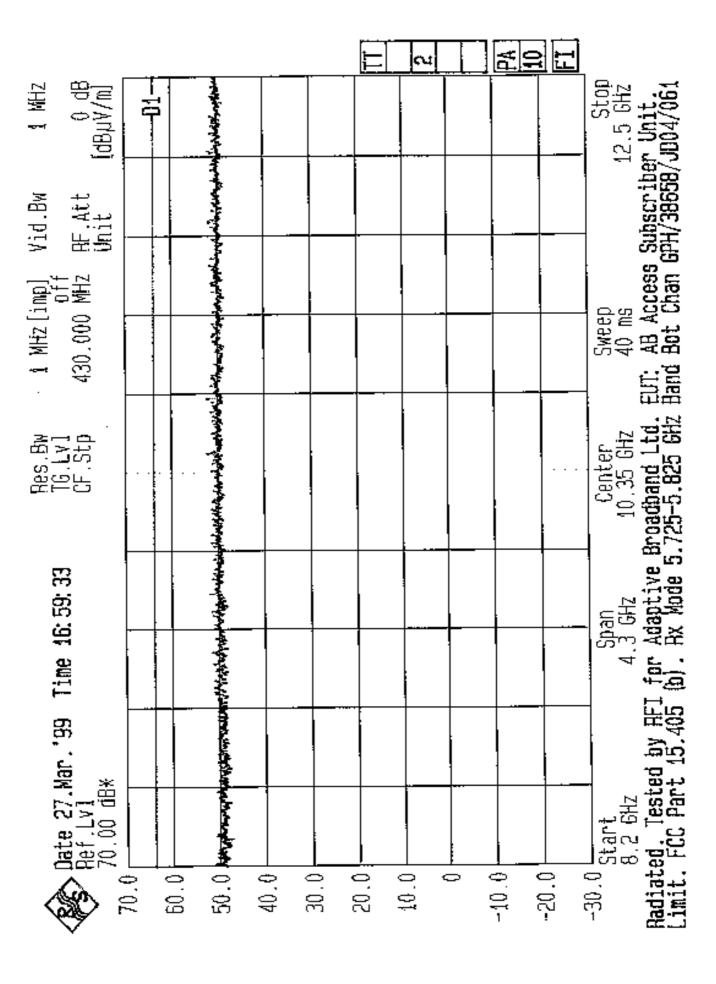
						7		A O		
1 MHz 0 dB [dBjJV/m]	—-D7—	بودا بمصياده واستال مداومهرا								Stop 12.5 GHZ ar Unit.
Vid.Bw RF.Att Unit		en de la company						:		Supscribe
1 MHz[imp] 0ff 430.000 MHz		iji ngayees kitagad gayatabag								Sweep 40 ms AB Access
Res.Bw TG.Lv1 CF.Stp 4		The state of the s								Center 10.35 GHz adband Ltd. EUT:
Time 16: 35: 27		Sales Colored Sa					1		<u> </u>	Stop Start Span Center Sweep Stop 8.2 GHz 40 ms 12.5 GHz Adaptive Broadband Ltd. EUT: AB Access Subscriber Unit.
Date 27.Mar. 99 7 Ref.Lv] 70.00 dB*		Addition of the last of the la								cart 2 GHz 1. Tested by RFI
		29.0	40.0	30.0	20.05	10.0F	<u></u>	-10.0 	0.05-	-30.05- St. 85. Badiated

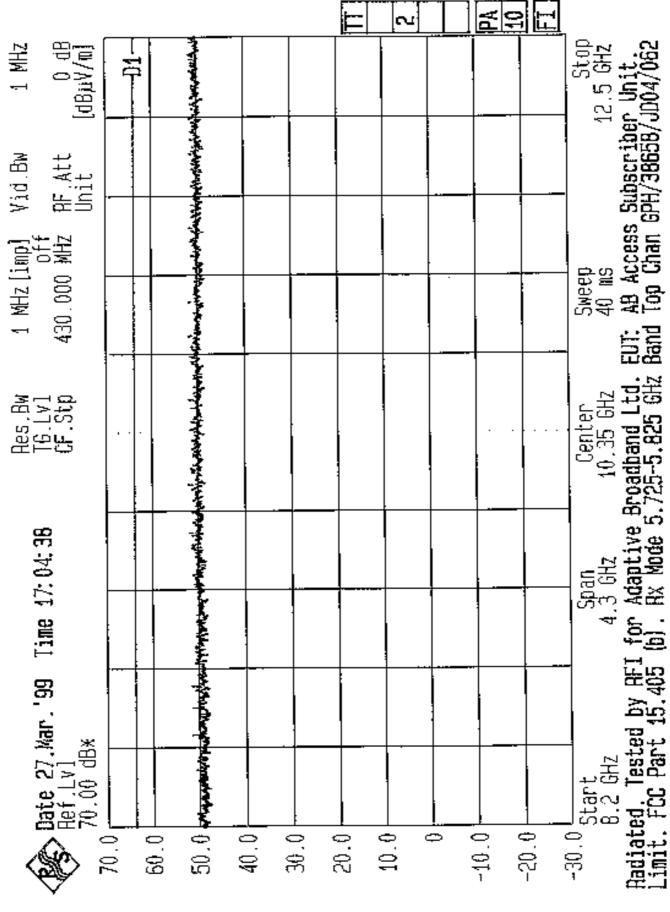
limit. FCC Part 15,405 (b). Ax Mode 5.15-5.25 GHz Band Top Chan GPH/38658/JDO4/058

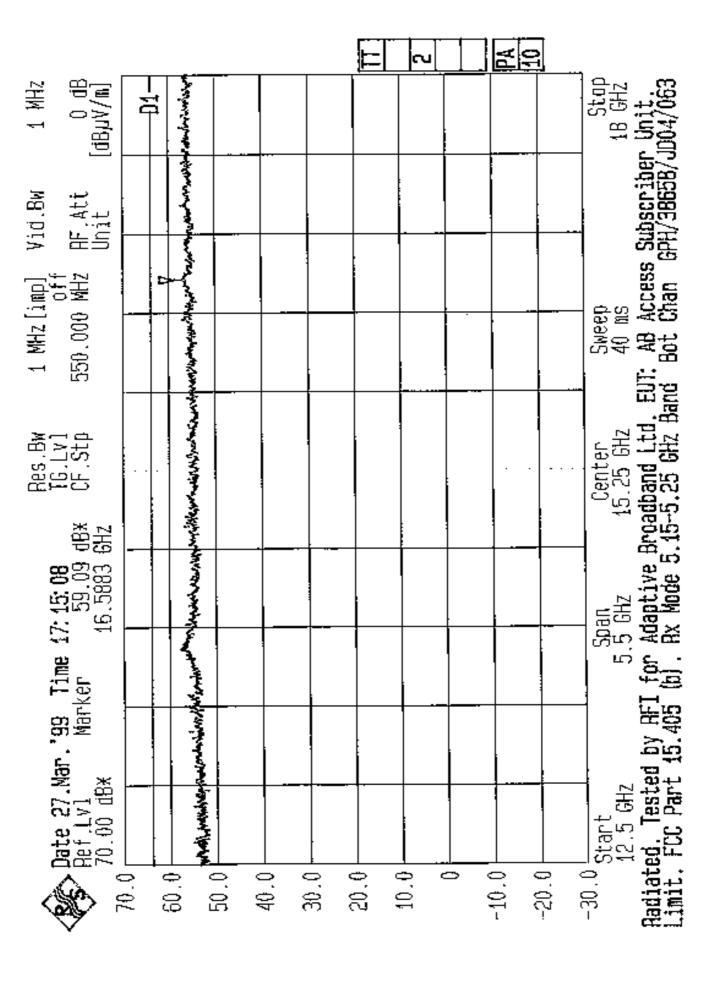


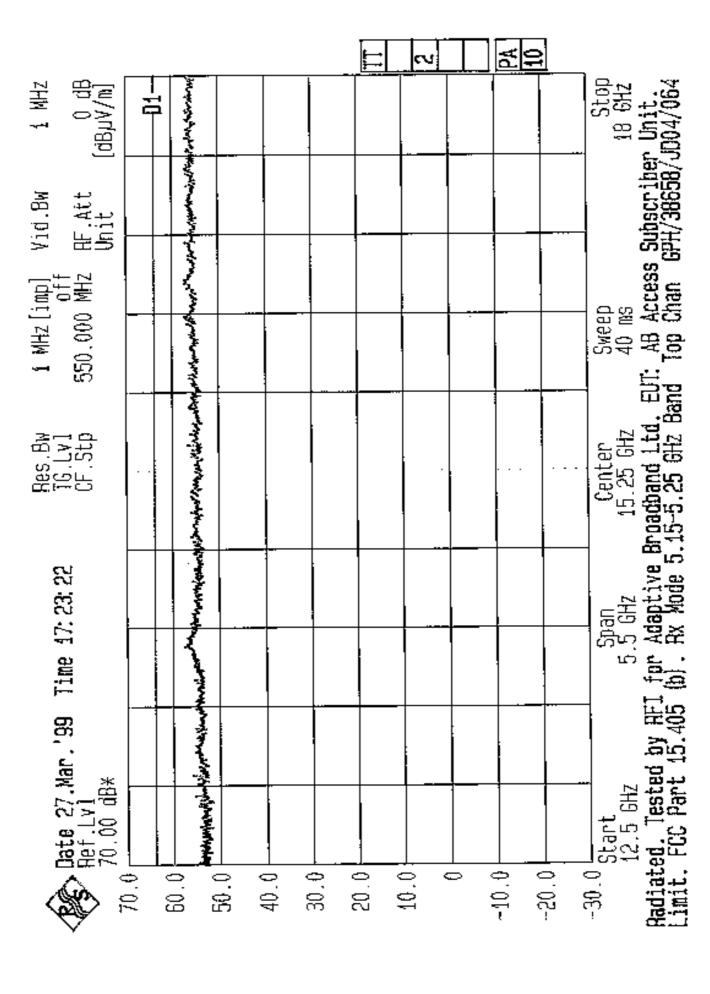
H2 B_GB B_GB	- IA	3		i		N		P 6		05 7
1 MHZ B dB [dBjJV/m]	T	7,7								Stop 12.5 GHz
vio.bw RF.Att Unit		مكمفيان خاطيعا والمياسيونا أداء							_	
1 MHZ (1MD) Off 430.000 MHZ										ch Se
1 MH,		- Anna pagamenta								Swe 40
Hes.ew 16.ev] CF.Stp		والمراجعة والمراجعة والمتحادثة								-30.0 Start Span Center Sweep Stop 8.2 GHz 4.3 GHz 10.35 GHz 40 ms 12.5 GHz
dB* 642		***								-
47: 09: 45 52. 46 8. 8545		in diskaretinen								7H9
Time 1 (er		بالكا وإدواء فيهما أحدثها]				:	<u>8</u>
Chate 27.Mar. 199 Time 1 Pef.Lvi 70.00 d8*		Approximation of the state of t								
Jate 27.1 Ref.Lv1 70.00 dB:		**************************************								-30.0 Start 8.2 GHz
	0.07	20.02	40.0	D, 6))) (0.01	J	10.0	- 20 · 0	5

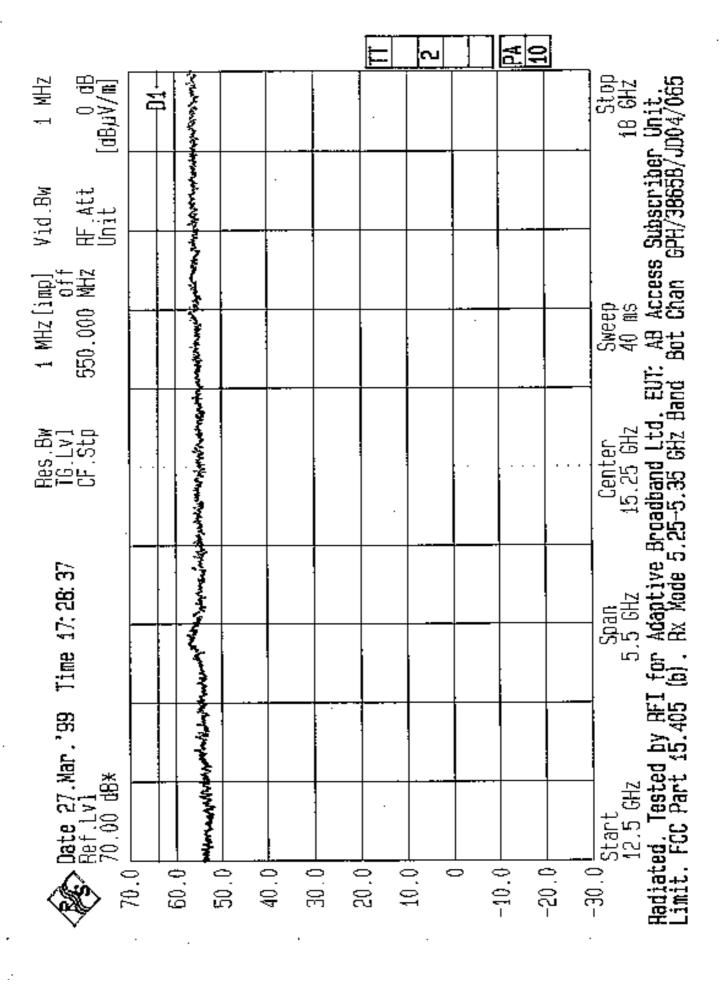
Limit. FCC Part 15,405 (b). Rx Mode 5.25-5.35 GHz Band Top Chan GPH/38658/JD04/060

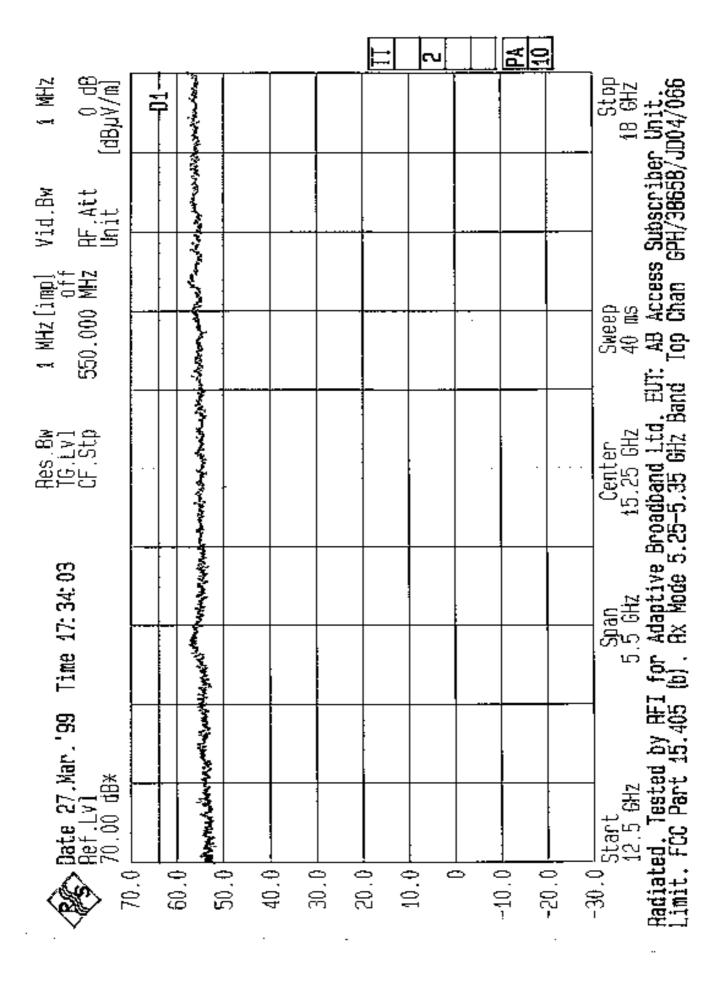






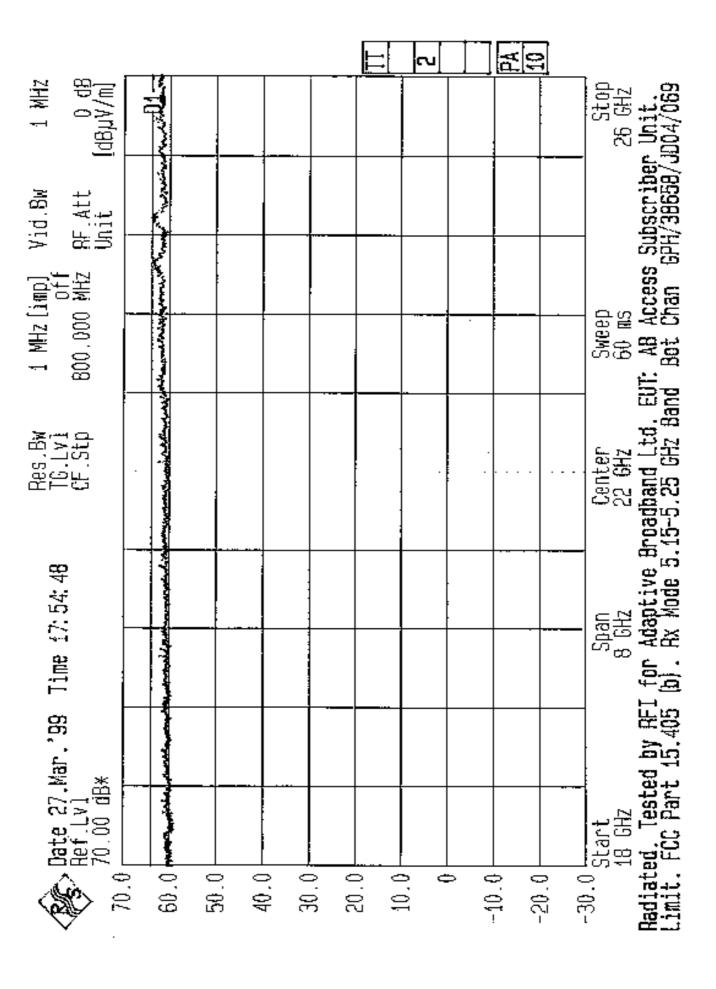


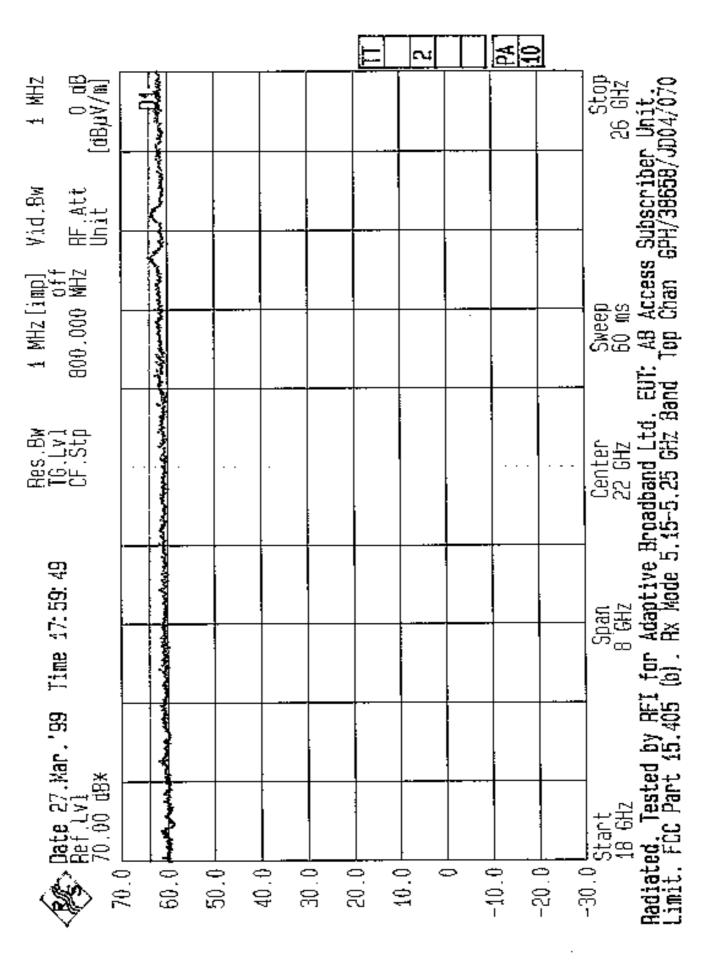


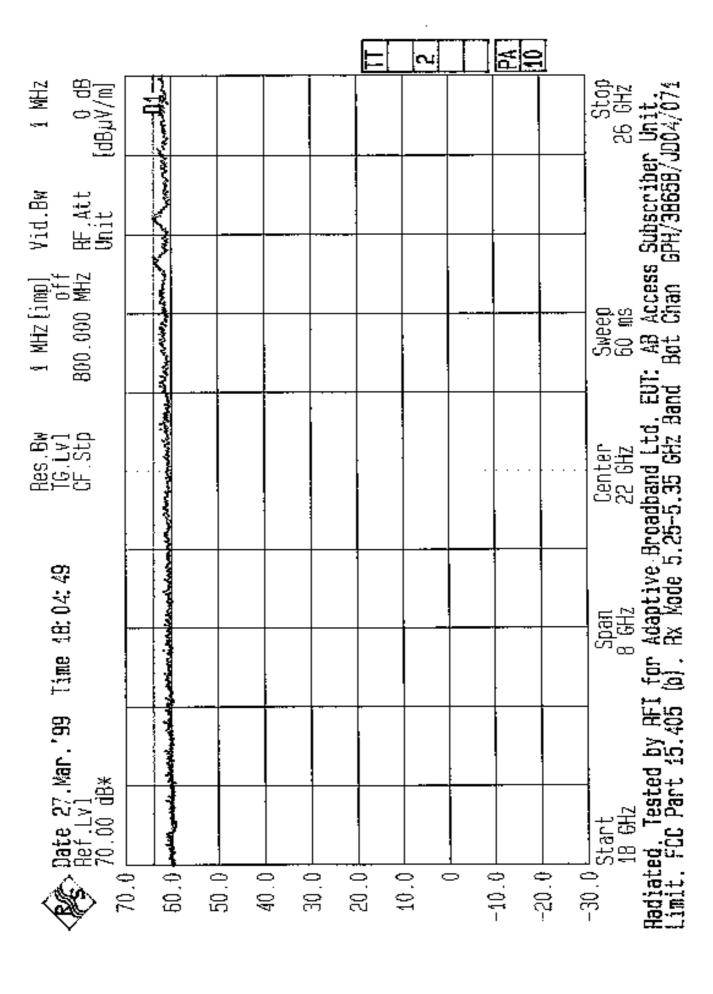


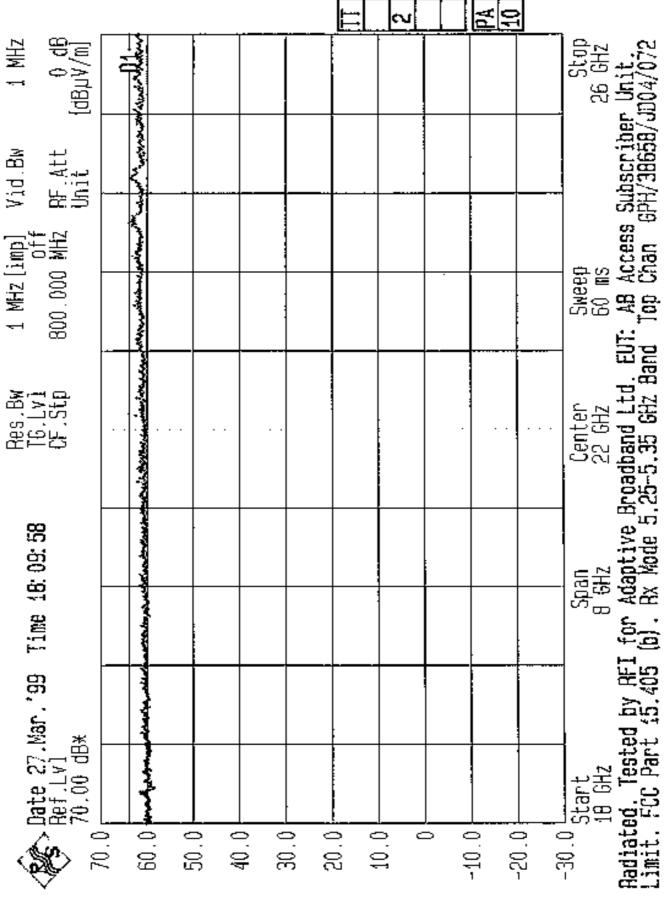
Z 89.		3					C.		K S		la ~
1 MHz 80 O @ dB m/Vii.8b]		بالمعامات والمارة									Sto 18 GHz Unit. D04/06
Vid.Bw RF.At t Unit		والمراب المعمول والمعارفية والمعارفية والمعارفية والمعارفة والمعار									Sweep 40 ms AB Access Subscriber Unit. i Bot Chan GPH/38658/JD04/067
		4									S. S.
[imp] Off OMKZ		مارين		_							Cress Cress
1 MHz[imp] 0ff 550.000 MHz		يورانها يفاقها بسيانية يما									Swee 40 m EUT: AB / Band Bot
Res.Bw 16.Lv1 CF.Stp		سليان المستري والمراجعة وا									-30.0 Start 12.5 GHz 5.5 GHz 15.25 GHz Radiated. Tested by HFI for Adaptive Broadband Ltd. Ellimit. FCC Part 15.405 (b). Ax Wode 5.725-5.825 GHz
39; 31		Marking Strategy Strategy						" -			SHZ SPT Aptive B
Time 17:		A STANSON STANSON									Span 5.5 GHz for Adapt: (b) . Bx Mor
far. 199		Part of the second section									d by HFI 15,405
> Date 27.Mar. '99 Ref.Lvl 70.00 d8*		المعالمة والمعارضة والمعار		<u>. </u>							Start 12.5 GHz ed. Teste FCC Part
	5 5	3 6	5 6	40.0	⇒ ; ₹, ;	0.03	10.0	÷ :	-14.0	-20.0	-30.0 Radiate

							2		A P		
1 MHz O dB [dBj.V/m]	-104	System and State of									Stop 18 GHZ Unit. D04/068
Vid.Bw RF.Att Unit		بالروايا يوارسان الماريق									Sweep 40 ms 40 ms AB Access Subscriber Unit. d Top Chan GPH/38658/JD04/068
		والمعطول المتاركة				: 					Access Standard
1 MHz [imp] 0ff 550.000 MHz	: : :	يبائينهن ووبرياه عاصواهما									Swee 40 II Band Top
885.8w 16.Lvi CF.Stp		المالي المستواري الموادية والمتارس المواجعة والمتارس المتارس ا									-30.0 Start 12.5 GHz Badiated. Tested by RFI for Adaptive Broadband Ltd. Elimit. FCC Part 15.405 (b). Ax Wode 5.725-5.825 GHz
e 17:48:21		1									Span 5.5 GHz r Adaptive Br . Ax Wode 5.
'99 Time		الماس بدراع أوريده فالا				<u> </u>			<u></u>		, RFI fo
S Date 27.Mar. 99 Ref Lv1 70.00 d8*		كناوات بهزارة أورايه عملايده يامدانه يهرمانه إبدائه بالمعاولة معاولة المهاد									GHZ Tested by Part 15
Pate Perf	2.0.0) 3	46.0) F 8	0.02	10.4	<u> </u>	-10.0	0.02-	Radiated.

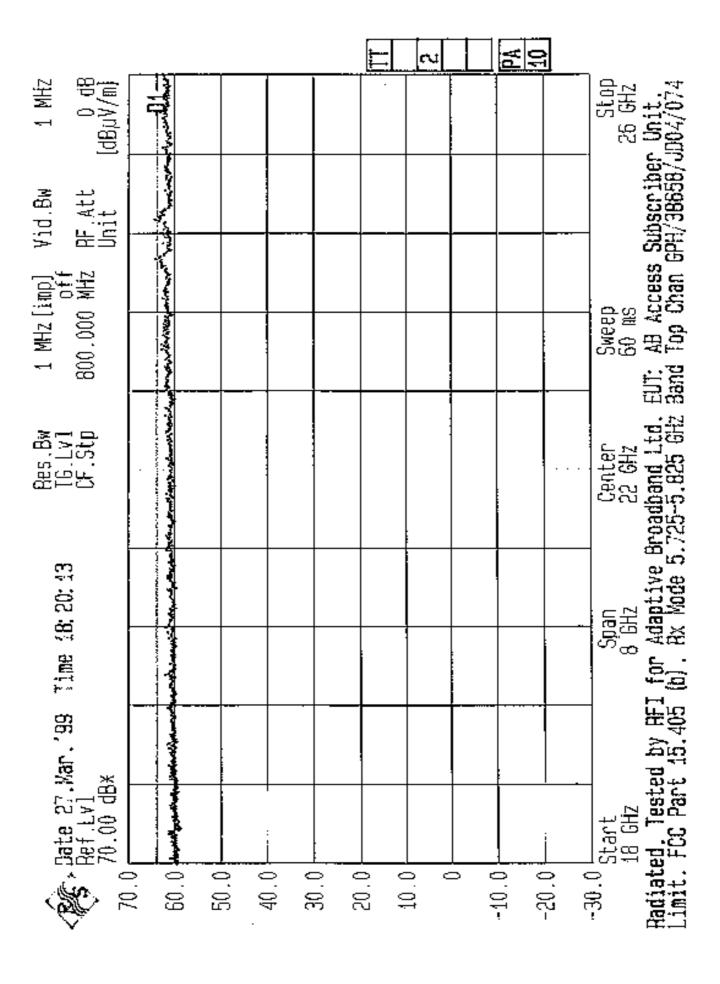


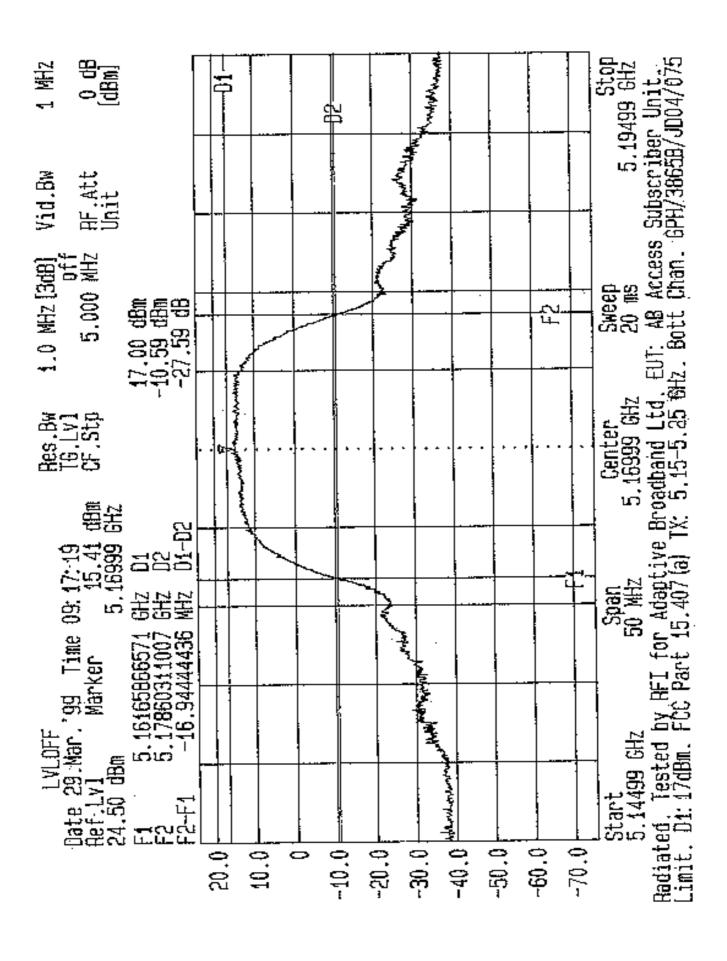


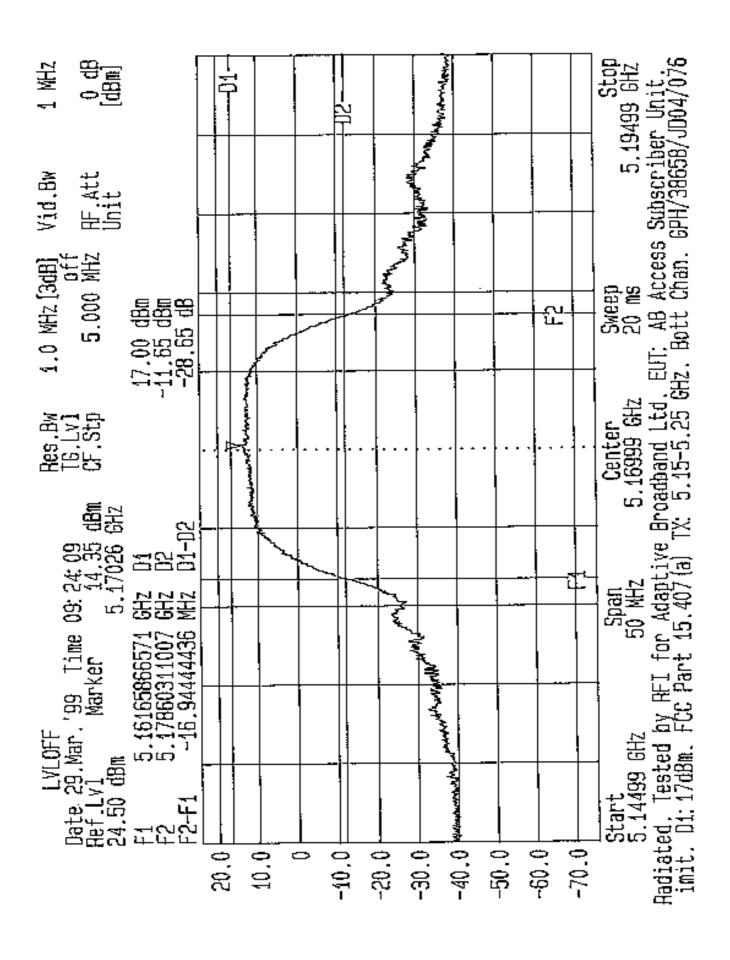


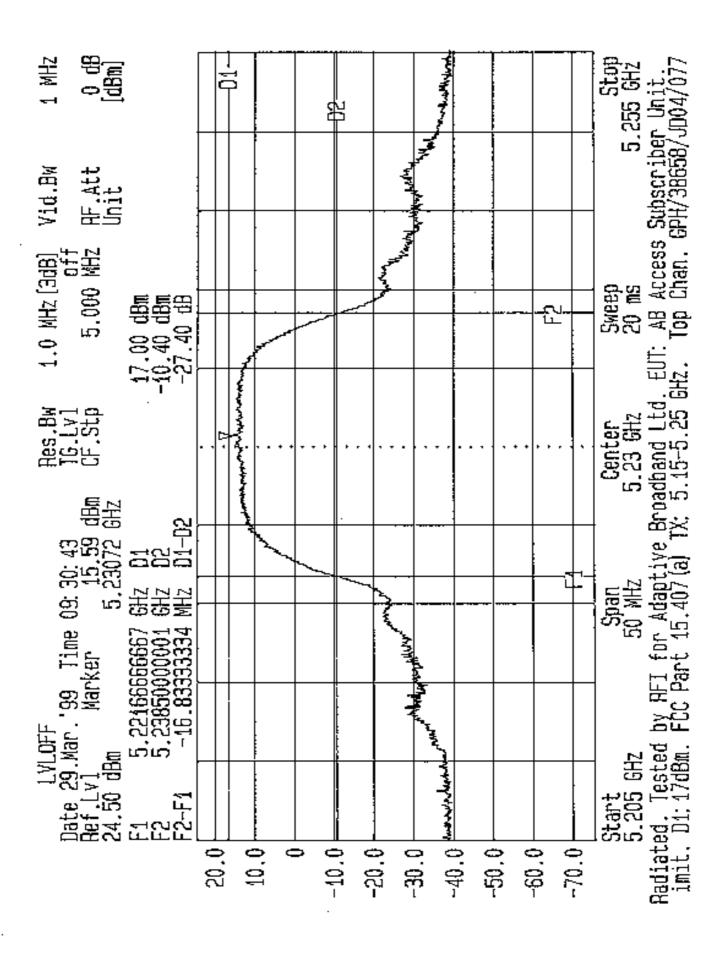


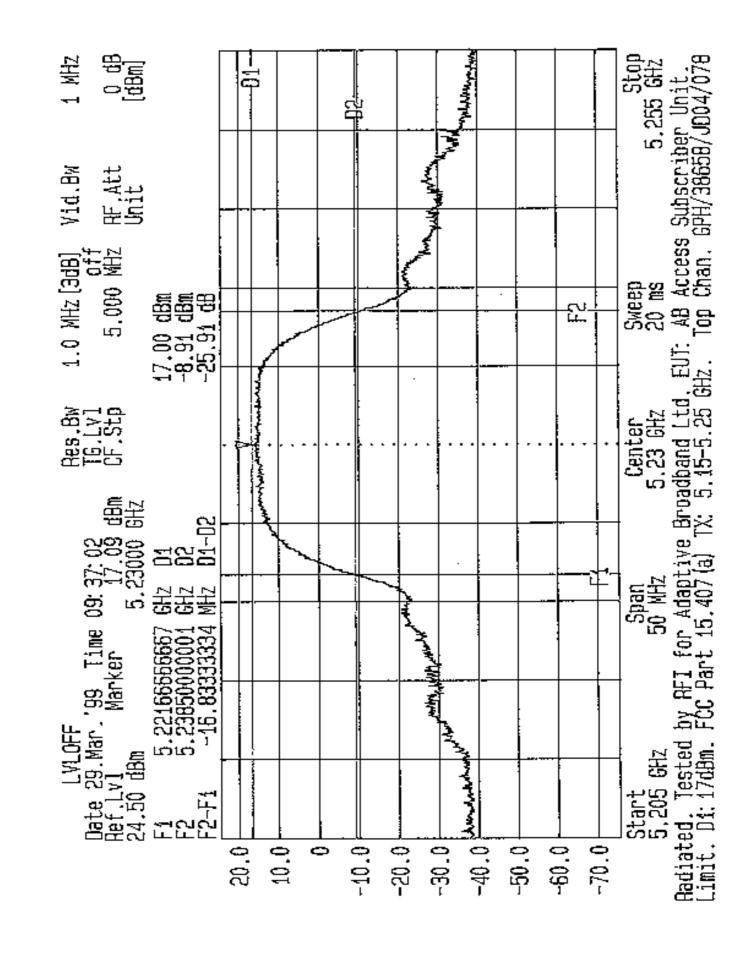
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1 MHZ 0 d8 [d8µV/m]	1										Stop 26 GHz Unit. JD04/073
Vid.Bw RF.Att Unit	350										Sweep 60 ms AB Access Subscriber Unit. Bot Chan GPH/38658/JD04/073
				-					<u>-</u> -		ep IIS Access S Chan 6P
1 MHz[imp] off 800.000 MHz	-										Sweep 60 ms EUT: AB Ac Band Bot C
Res.Bw TG.Lv] CF.Stp	A Section of the Control of the Cont										Center 22 GHz cadband Ltd. 25-5.825 GHz
Time 18:15:04											Span Center 8 GHz 22 GHz 725-5.405 (b). Rx Mode 5.725-5.825 GHz
Bef.Lvl 70.00 dB*											Start 18 GHz ed. Tested by RFI FCC Part 15.405
		200	20.02	40.0	30.0	20.0	10.0	-	-10.0	0.05-	-30.0 Start 18 6H Radiated. T Limit, FCC

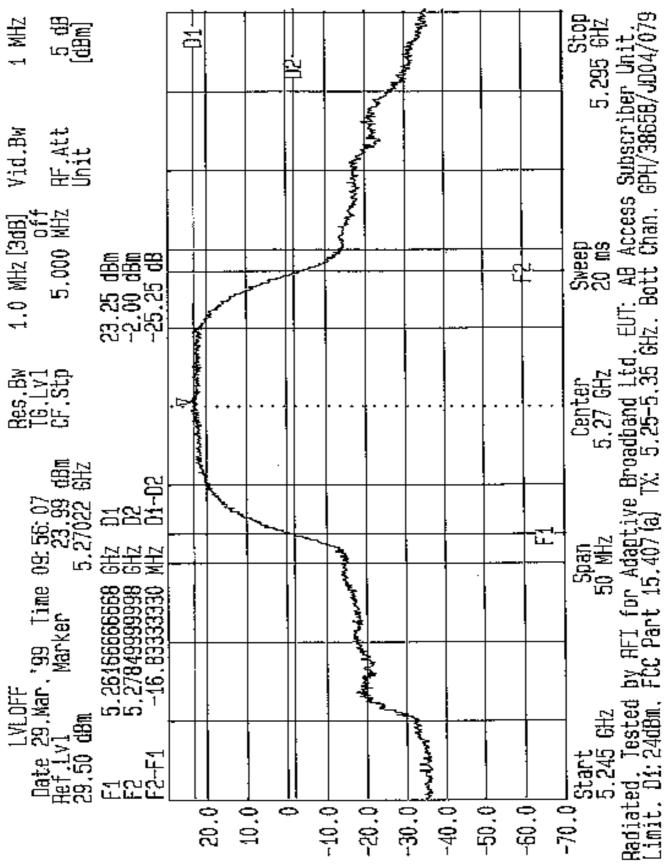


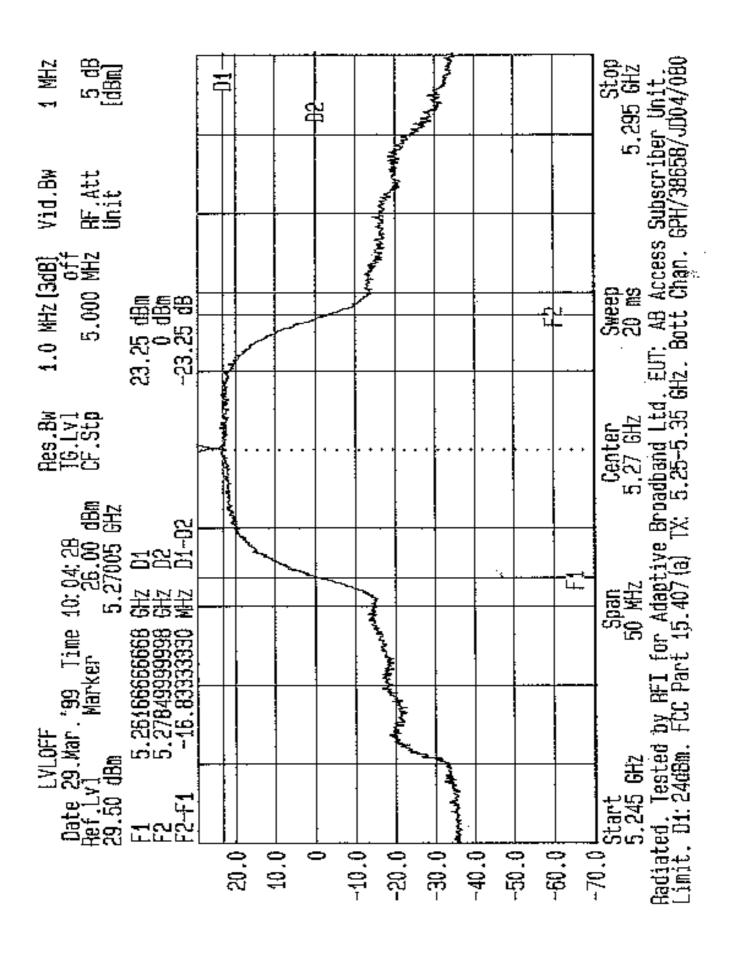


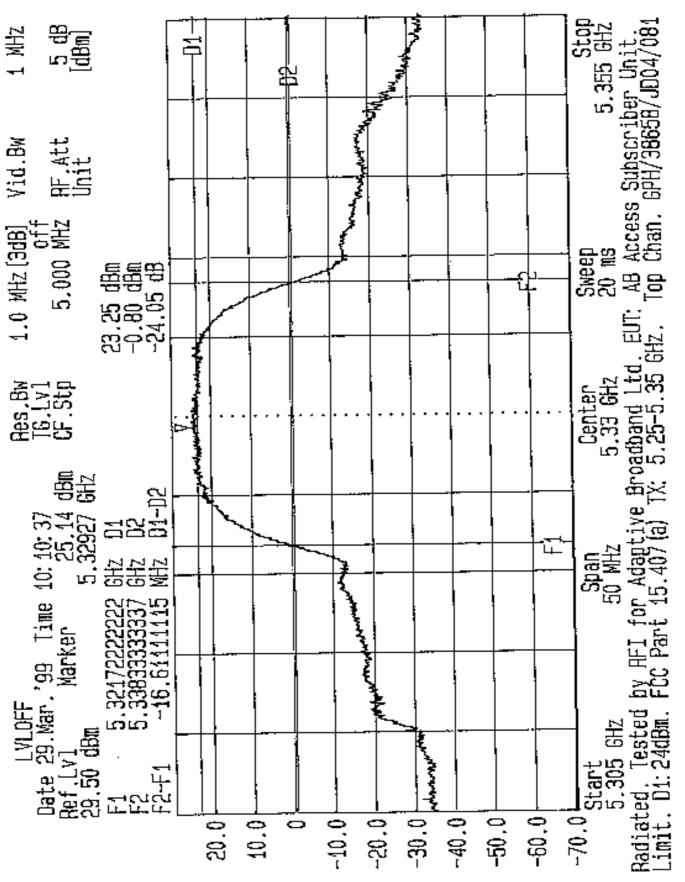


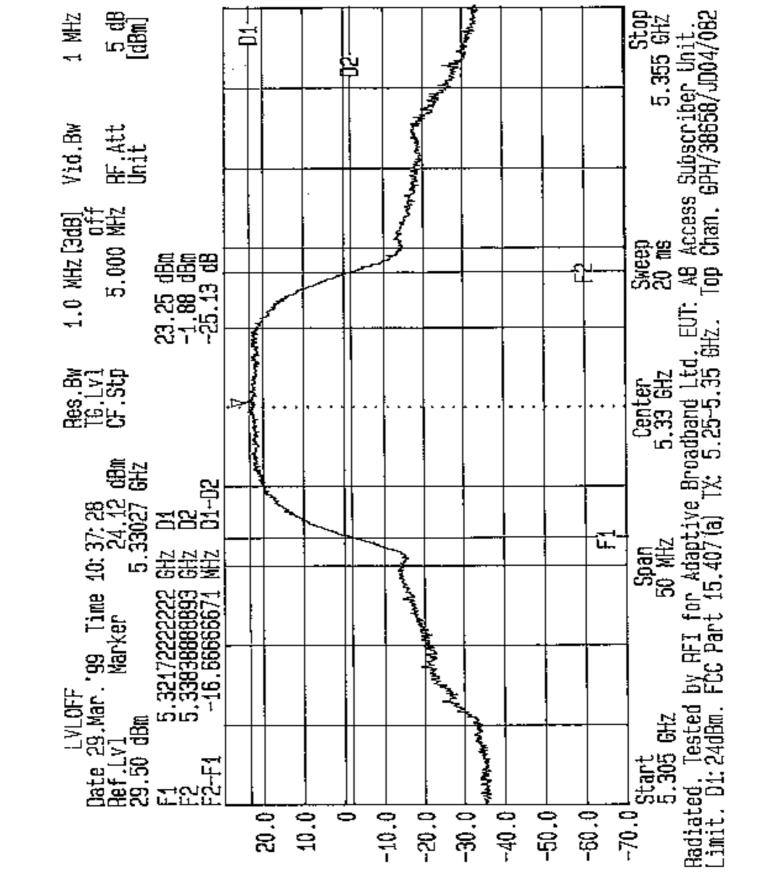


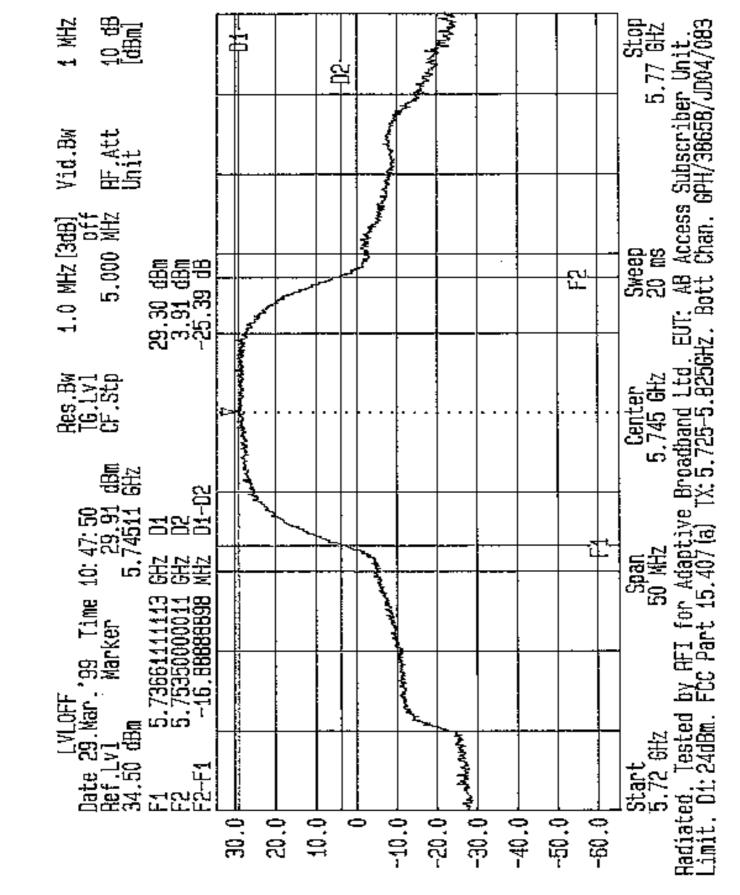


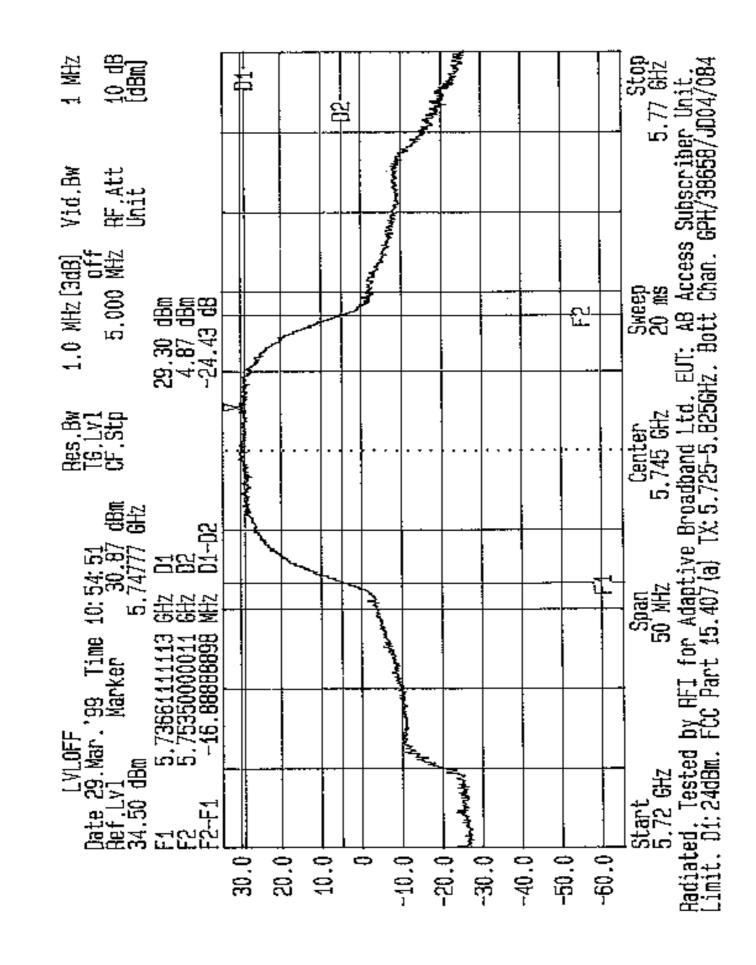


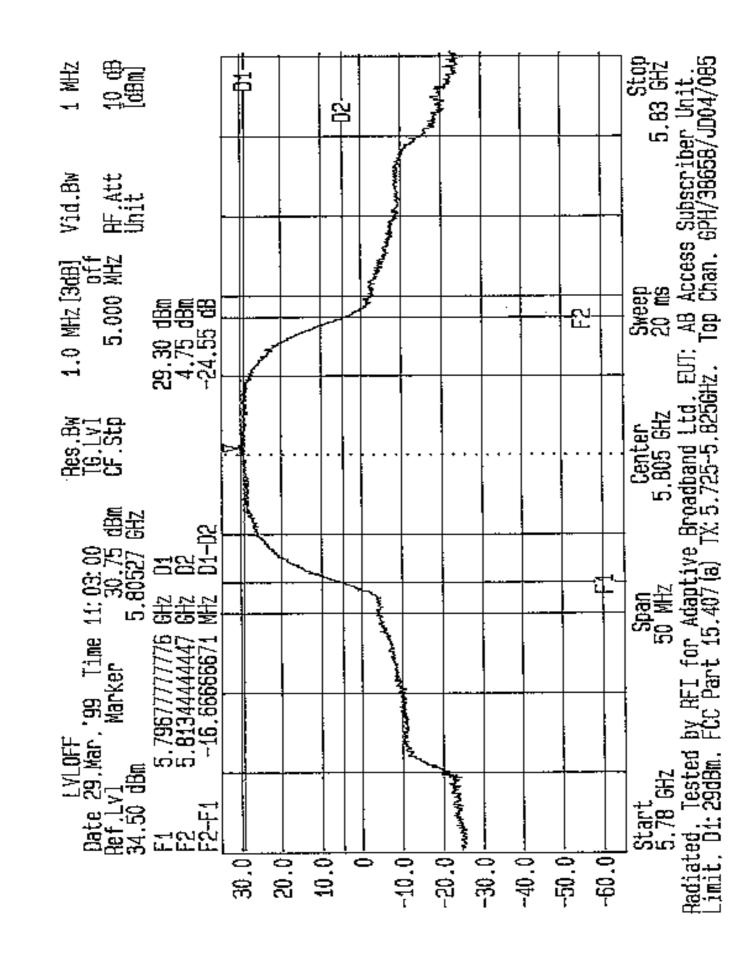


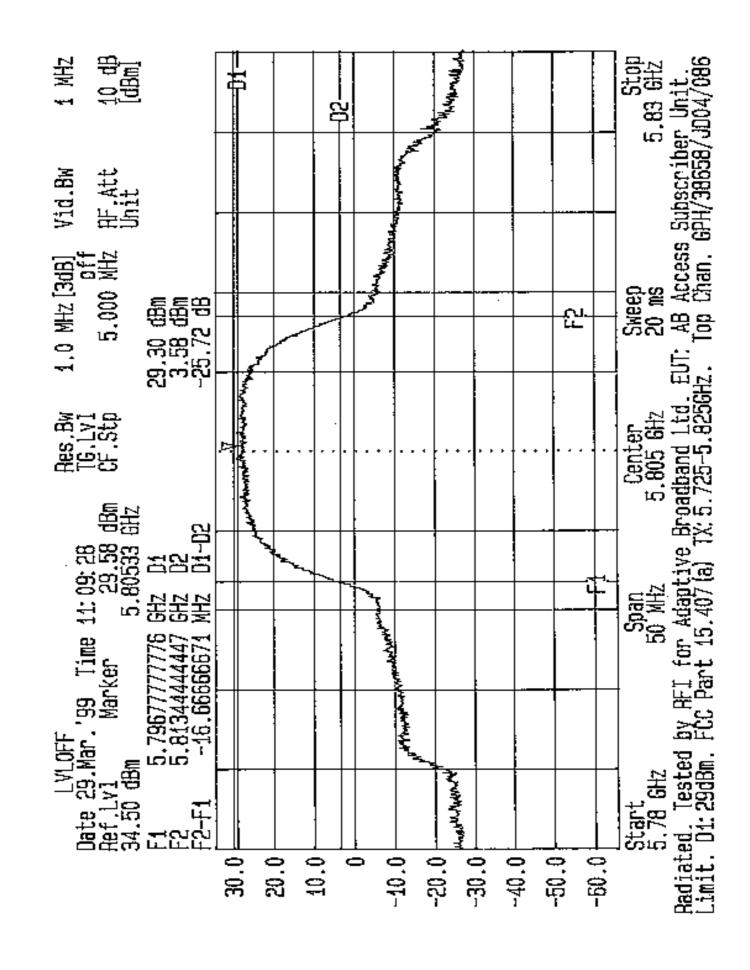


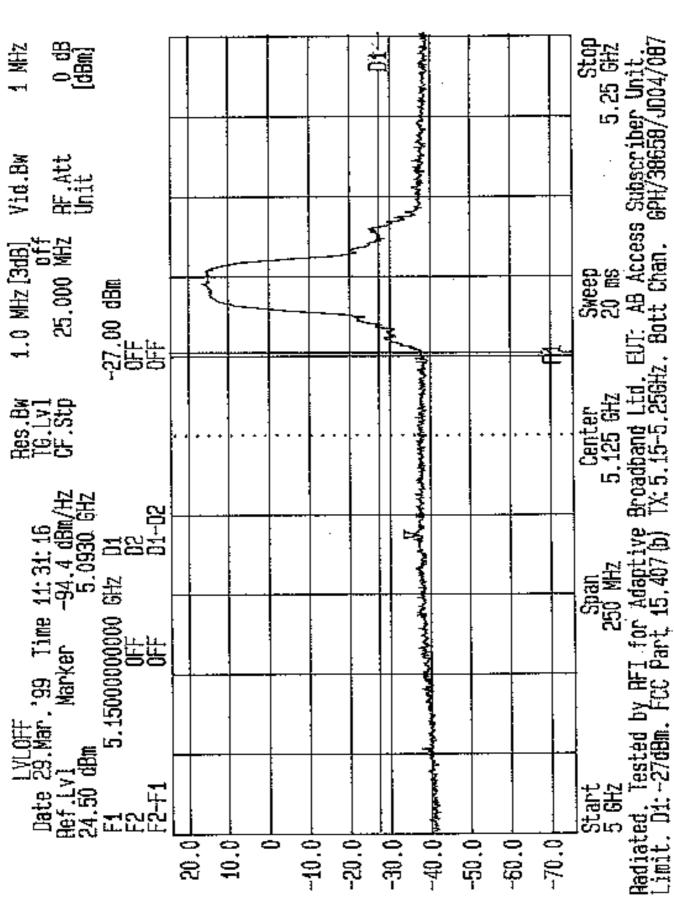


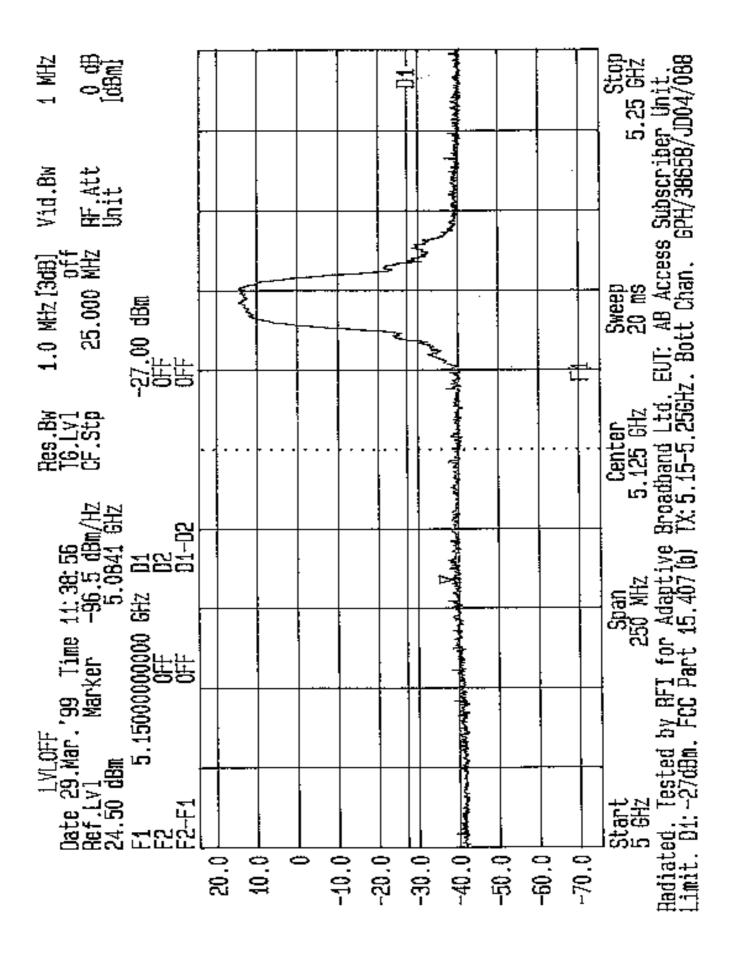


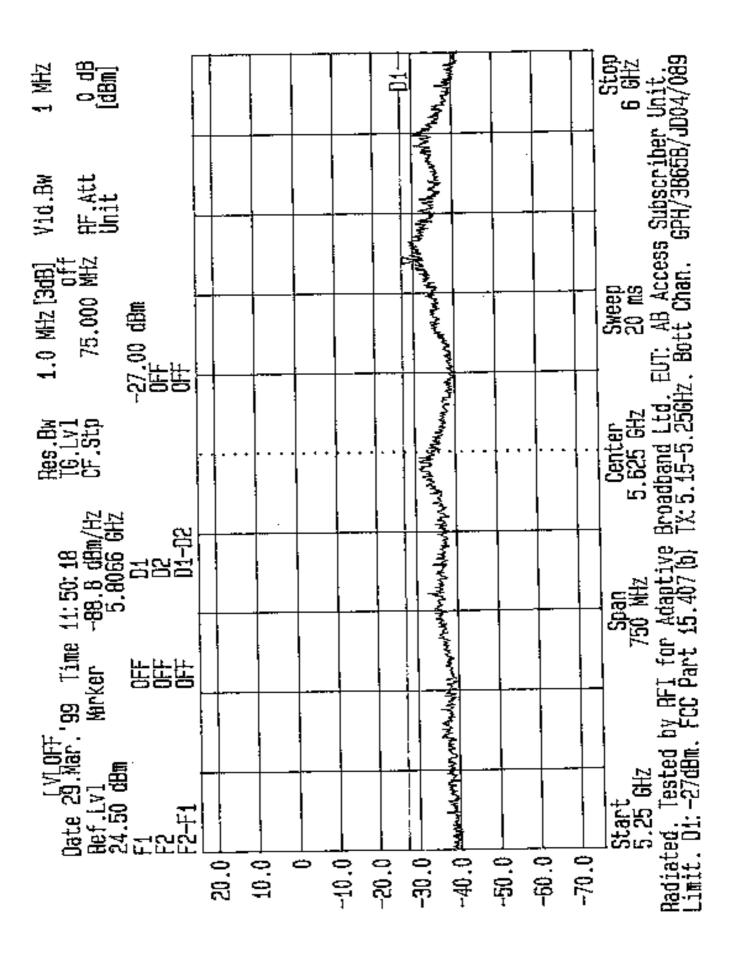


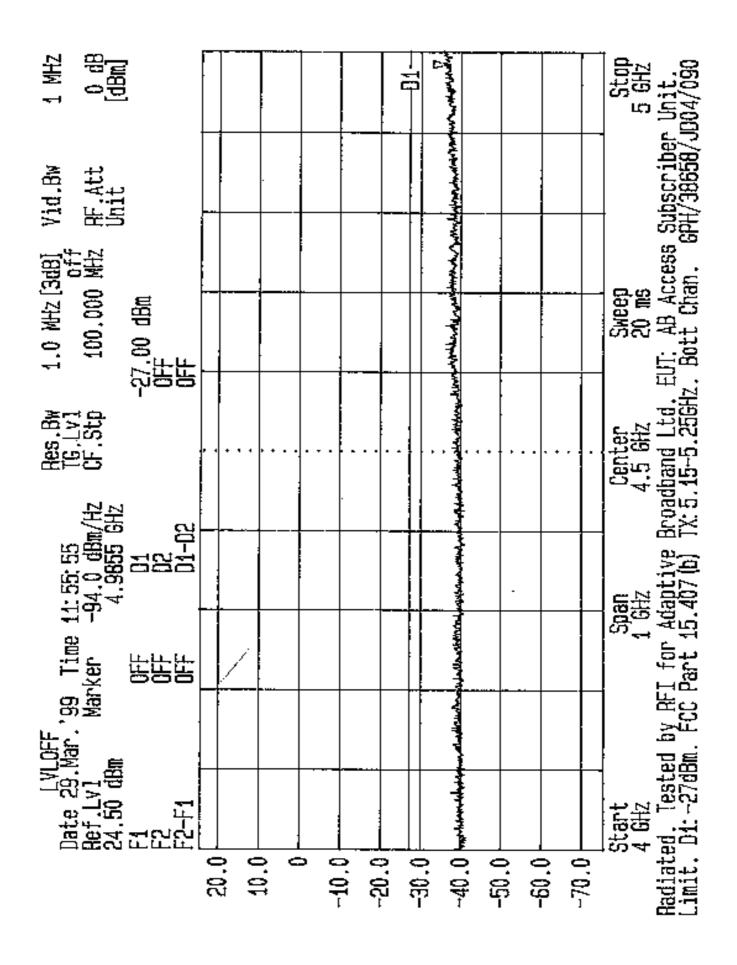


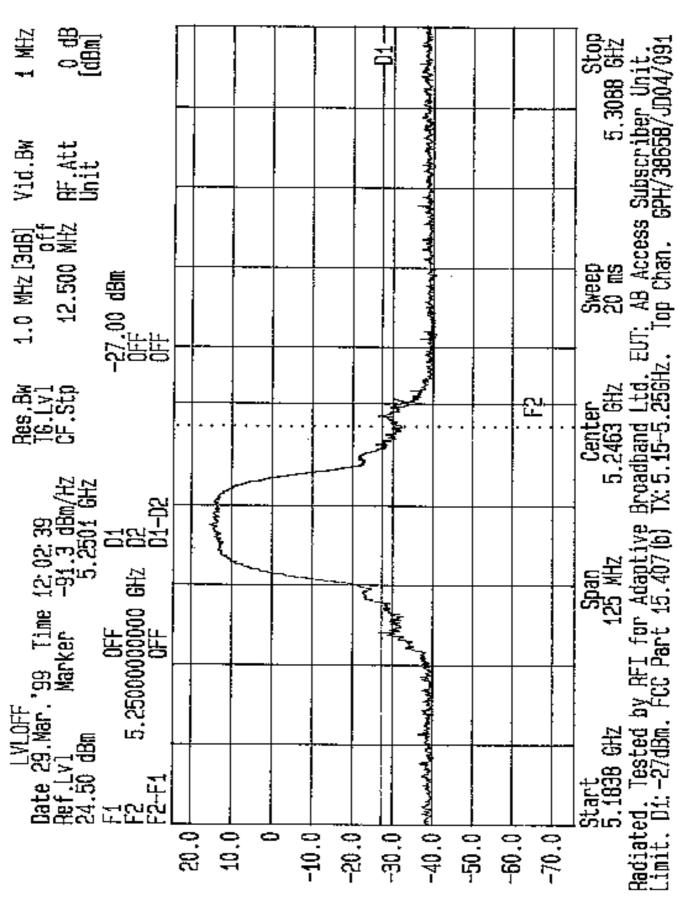


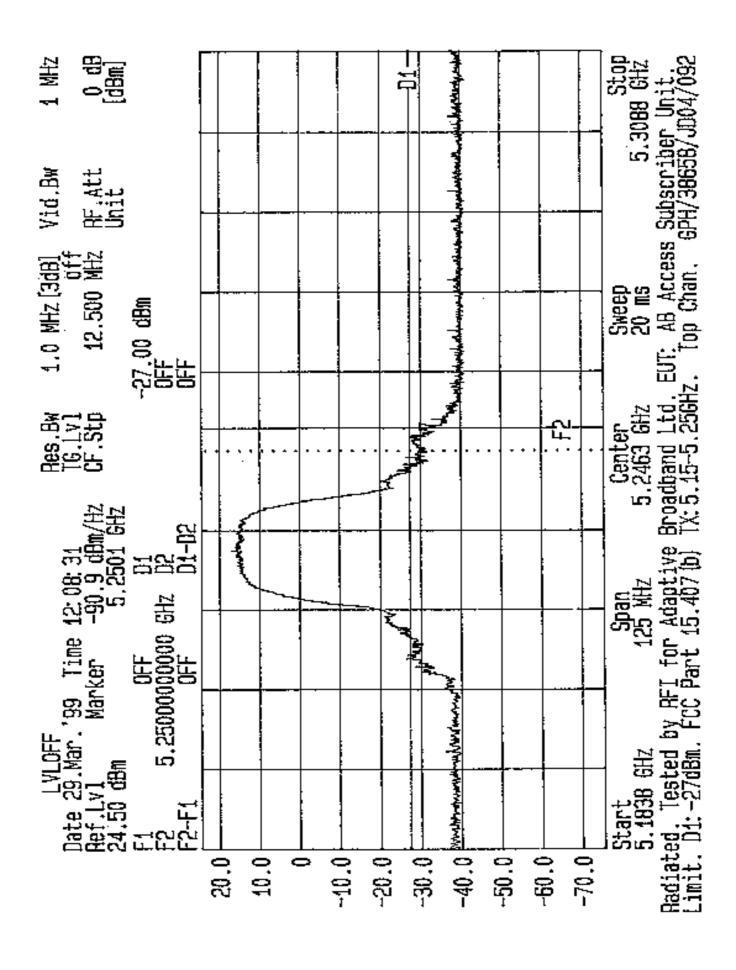




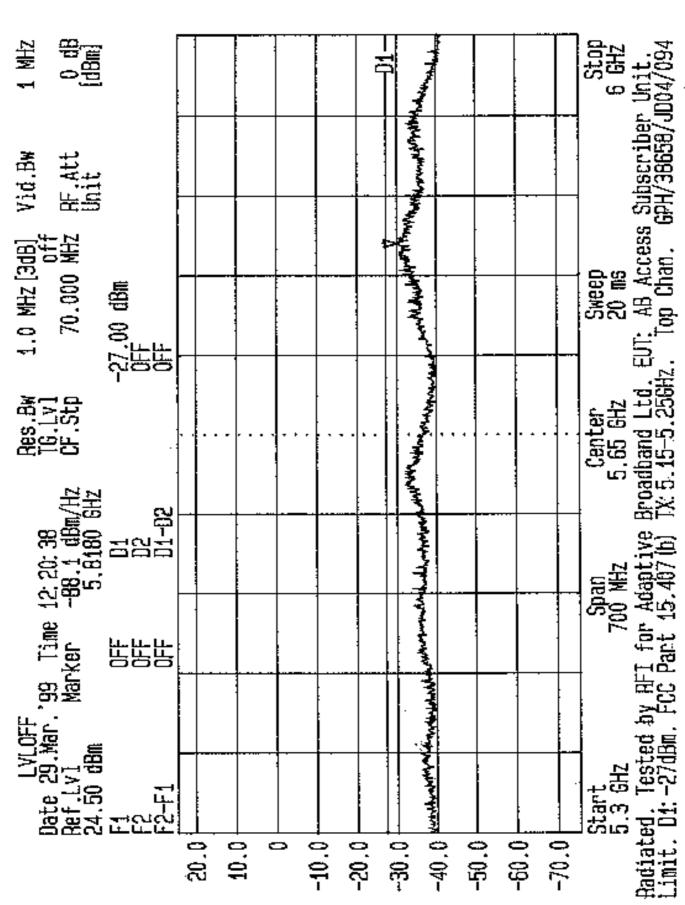




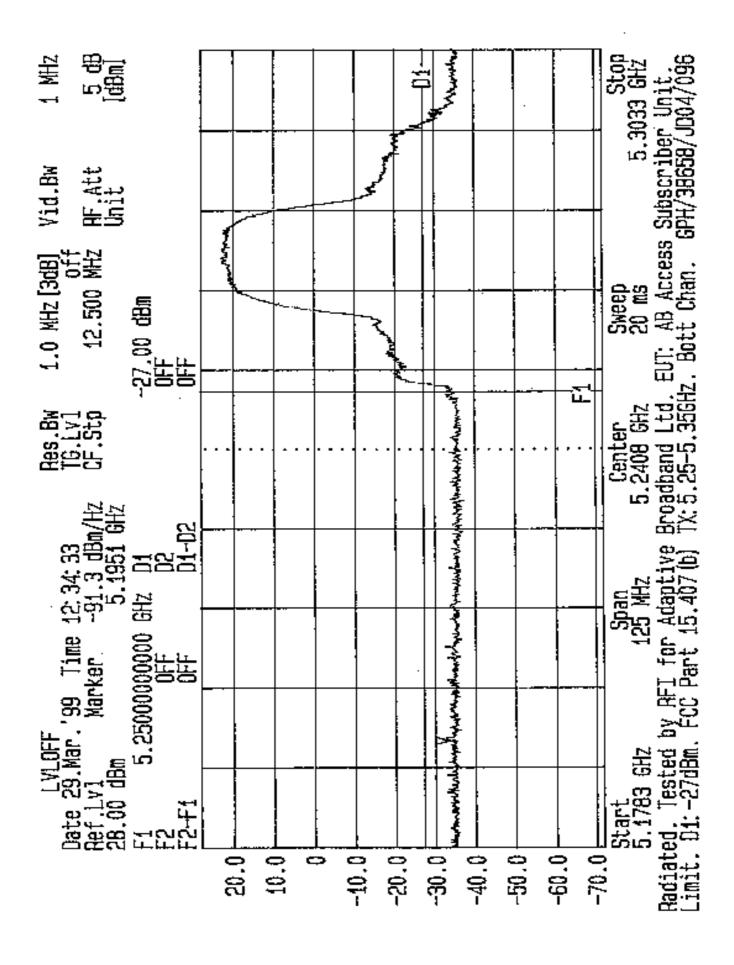


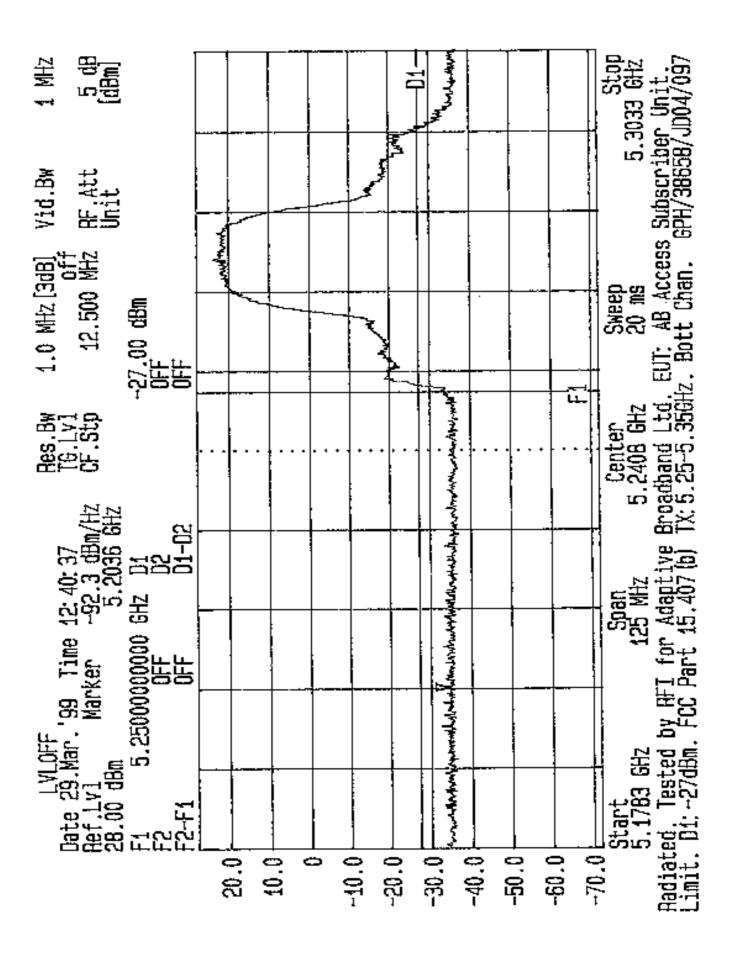


1 MHz 0 dB [dBm]			- 1-1-		Stop 5.2 GHz 7 Unit. JD04/093
Vid.Bw RF.Att Unit			Hilly Value of the		Subscribe 3PH/38658/
1.0 MHz [3dB] 20.000 MHZ -27.00 dBm			A de la constante de la consta	(1)	Sweep 20 ms EUT: AB Access Top Chan. (
Res. Bw TG. Ly1 CF. Stp			Action of the Control		Center 5.1 GHz dband Ltd. .15-5.256Hz
Acoretical Strategy (1984) 15					t Span Center Sweep Stop Stop PT 20 ms 5.1 GHz 20 ms 5.2 GHz Tested by RFI for Adaptive Broadband Ltd. EUT: AB Access Subscriber Unit27dBm. FCC Part 15.407(b) TX:5.15-5.25GHz. Top Chan. GPH/38658/JD04/093
LVLOFF Date 29.Mar.'99 Time 1 Ref.Lvl Marker 24.50 dBm F1 5.15000000000	9.0 10.0	-10.0	-40.0	90.06-	Start 5 GHz Radiated, Tested by Limit, D1:-27dBm, FC



1 MHz	0 de [48m]						-01	Harry - was fair				Stop 5 GHZ Unit	JJ04/ 030
Vid.Bw	F. Att							Andrew Rosel		.:		Subscriber	, /gcggg/, /L/, /c/
1.0 MHz [3dB]	宝	-27.00 dBm OFF OFF						And the second s				Center Sweep Stop 4.5 GHz 20 ms 5 GHz 5 Subscriber Unit.	z. iup undar. z
Res. 84		•	•	,						•••		Center 4.5 GHz dogng Ltd.	. 13-3, 2361
19. 96. 44	-95.2 dBm/Hz 4 8544 GHz	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							· · · · · · · · · · · · · · · · · · ·			Span 1 GHz , Adaptive Broa	c :YI (0) /0\;
Tima	arker F		· · ·					4		:		RFI for	ic Part 1:
LVEOFF	Jef.Lv] 74 50 dRm	71 72 72-51						delical and				Start 4 GHz ed. Tested by RFI for	U1: -2/00m. Ft
			20.0	10.0	5 6	0.01-	0.00	0.05	0.04-	200	3. 6	Start Start 4 GHJ Radiated, T	Limit.

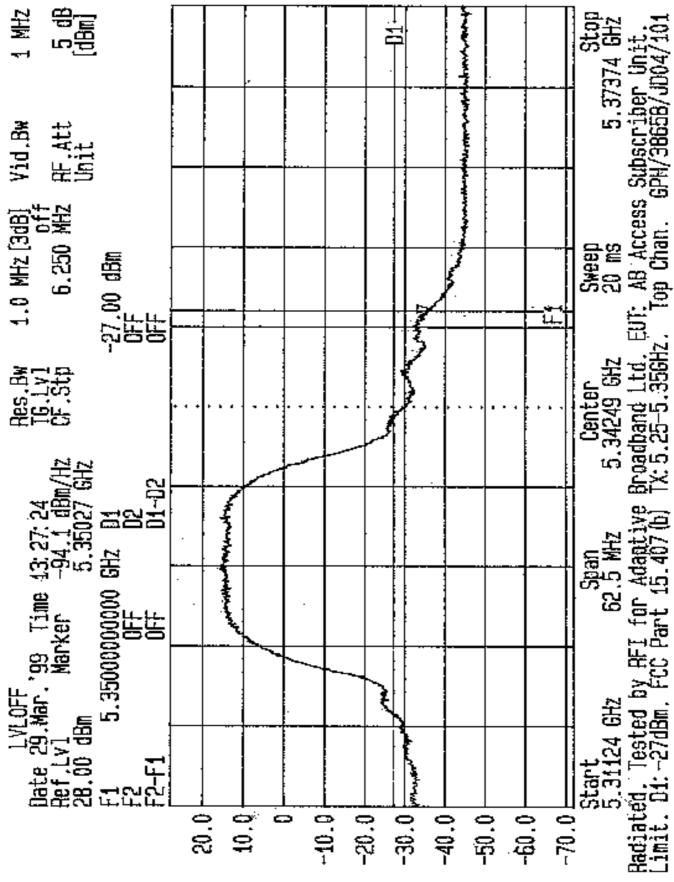


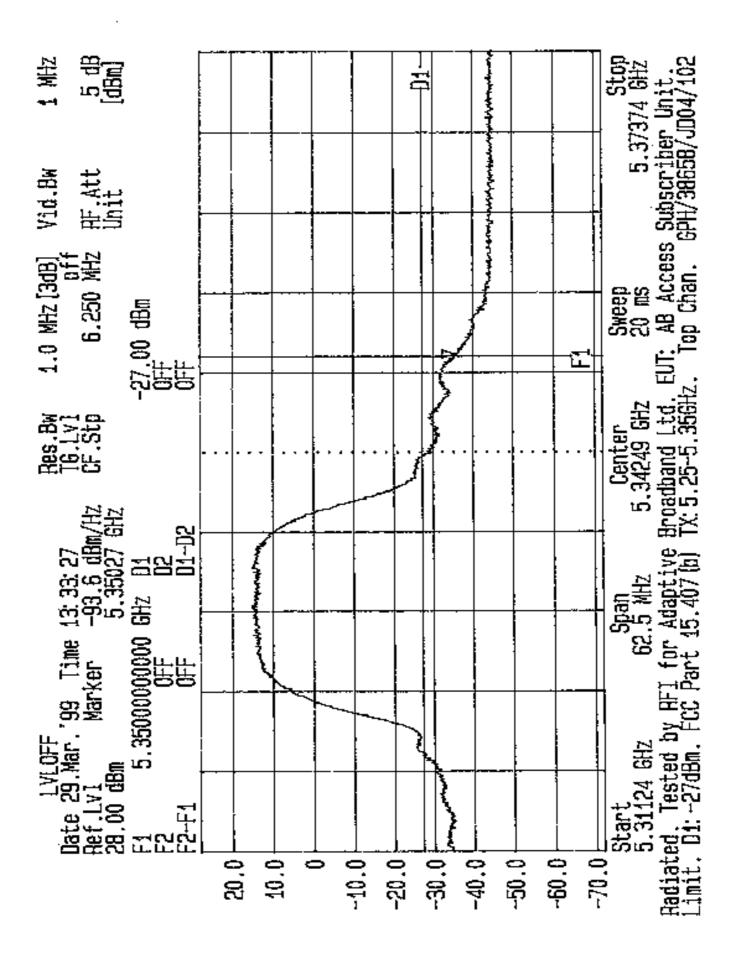


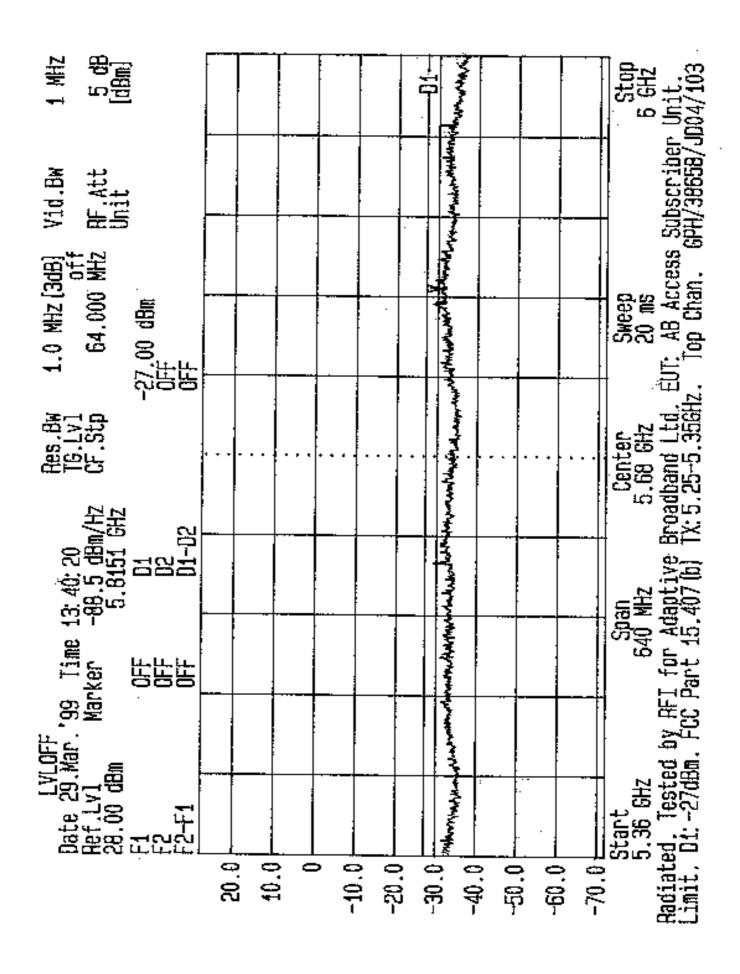
7 MHZ 2 GB [48]		Stop 5.2 GHz 101t.
Vid.Bw RF.Att Unit	<u> </u>	Subscriber PH/38658/
1.0 MHz [3d8] 0ff 20.000 MHz -27.00 dBm	Elentrated Strategy S	Center Sweep 5.1 GHz 20 ms 5.2 GHz Broadband Ltd. EUT: AB Access Subscriber Unit. TX: 5.25-5.35GHz. Bott Chan. GPH/38658/JD04/098
Bes.Bw T6.Lv1 CF.Stp	******	5.1 GHz dband Ltd. 25-5.35GH
12; 46: 35 -94, 1 dBm/Hz 5, 0404 GHz 12 11-02	Total de Very de proposition de la terranda de la constitución de la c	rt Hz Span 200 MHz Tested by RFI for Adaptive Broad: -27dBm. FCC Part 15,407 (b) TX: 5
Aanker Hanger Time Aanker Hanger Han	Print But and Add Valid	by RFI for
Date 29.Mar. Bef.Lvl 28.00 dBm F2-F1	20.0 10.0 -10.0 -20.0 -30.0	Start 5 GHz ed. Tested D1: -27dBm
•	20.0 10.0 -10.0 -20.0 -40.0	-50.0 -70.0 -70.0 Star 5 GH Limit. Di:

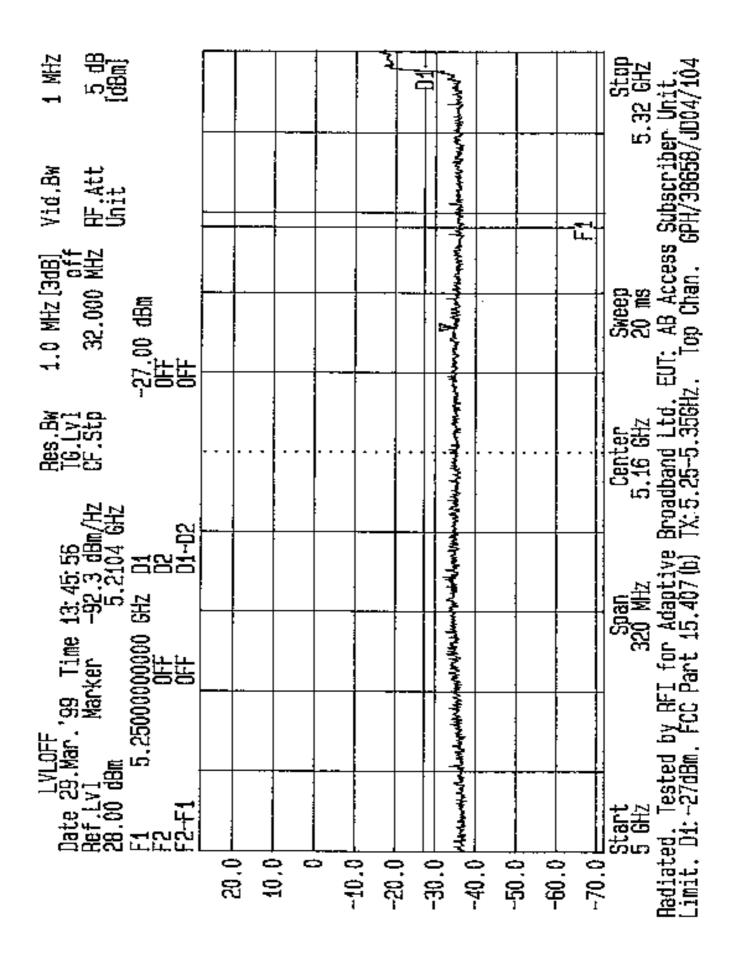
1 MH2 (GBB) (GBB)			Stop 6 GHZ Unit. J004/099
Vid.Bw AF.Att Unit		And the safety of the safety o	Subscribe PH/38658/
1.0 MHz [3dB] 0ff 70.000 MHz -27.00 dBm 0FF 0FF		- FO - Prophylist with the self of the sel	Center Sweep 5.65 GHz 20 ms 6 GHZ Broadband Ltd. EUT: AB Access Subscriber Unit. TX: 5.25-5.356Hz. Bott Chan. 6PH/38658/JD04/099
Res. Bw TF. LV1 CF. Stp CF. Stp		Part The State Springer of the State Springer Springer	Center 5.65 GHz dband Ltd. El 25-5.35GHz.
12, 52, 24 -29, 34, 69, 5, 8195 61, 61, 71 12-72		Profession of the Profession o	Span 700 MHz or Adaptive Broa t 15.407 (b) TX:5
- Time 12: rker 1000000 6H OFF		Variation of the state of the s	Soa 700 M FI for Ada
LVLOFF Date 29.Mar. '99 Time 1 Ref.Lvl Marker 28.00 dBm F1 5.3500000000 6 F2-F1 OFF		ورجه في راجمه مدارات المحالية المعارضة المحارث المارات	Fi cht GHz Tested by RFI for -27dBm. FCC Part 1
888 ECC 378 ECC	8. 9. 0. 0.		-70.0 Fi Start 5.3 GHz Radiated. Test Limit. Di: -270

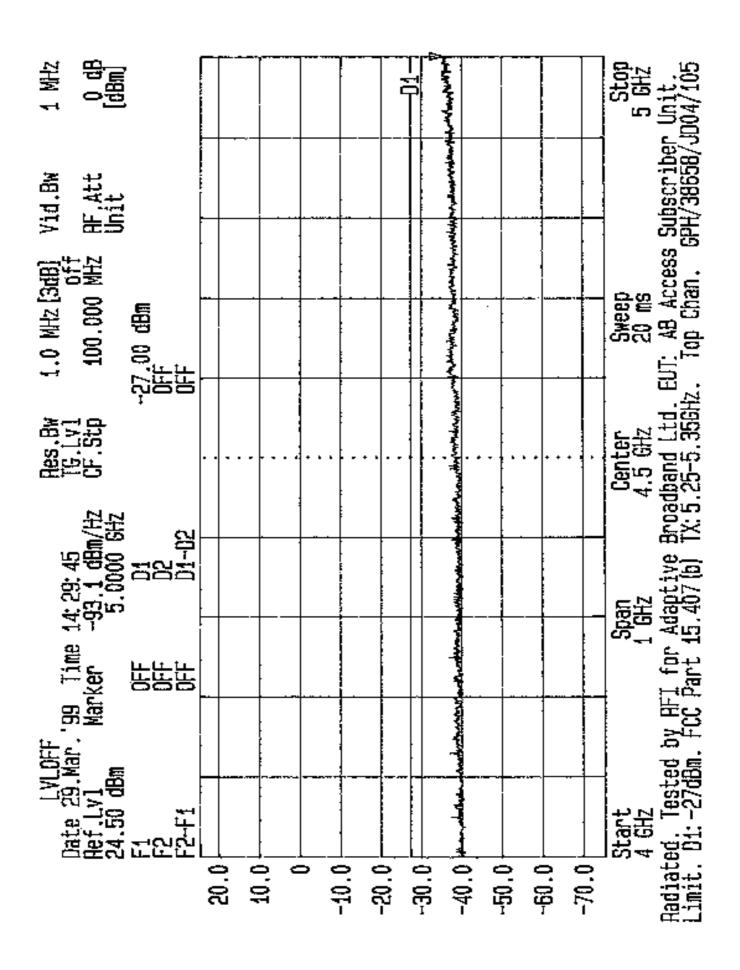
1 MHZ 5 dB [dBm]			Stop 5 GHZ Unit
Vid.Bw RF.Att Unit		And the second s	Subscriber PH/38658/
1.0 MHz [3dB] 0ff 100.000 MHz -27.00 dBm 0FF 0FF			Span Center Sweep 20 ms 5 GHz 4.5 GHz 20 ms 5 GHz 20 ms 5 GHz 45 GHz 20 ms 5 GHz 407 (b) TX: 5.25-5.35GHz. Bott Chan. GPH/38658/JD04/100
Res.Bw TG.Lv1 CF.Stp		الإسائل الماسية المساملة وساماته المساملة المسام	Center 4.5 GHz Brand Ltd. 25-5.35GH
12: 58: 38 -87.1 dBm/Hz 4.9977 GHz D1 D2 D1-D2		Perell for Line Pieches spinisher by Perell Strategy	opan GHz Adaptive Broad 5.407 (b) TX: 5.
99 Time Marker OFF OFF		- Parketti, adat, a	BFI for 1
LVLOFF Date 29.Mar.'99 Time 1 Ref.Lvl Marker 28.00 dBm F2 F2 F2-F1 OFF		And was the state of the state	Start 4 GHz ed. Tested by RFI for D1: -27dBm. FCC Part
	10.05		-70.0 Starl 4 GHZ Radiated. T

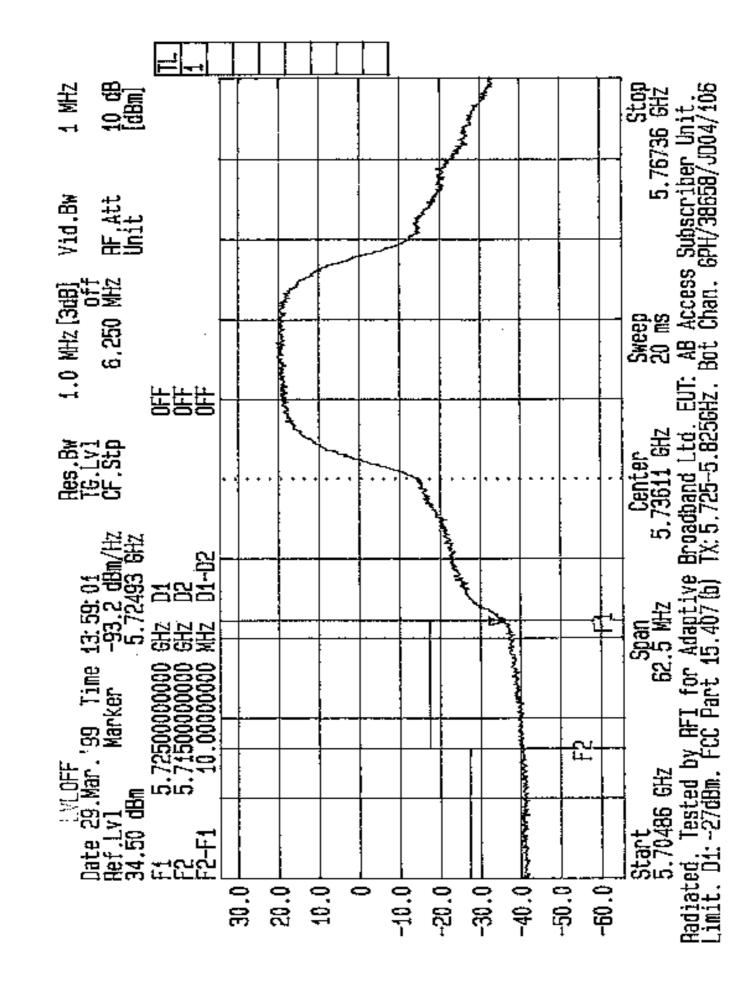


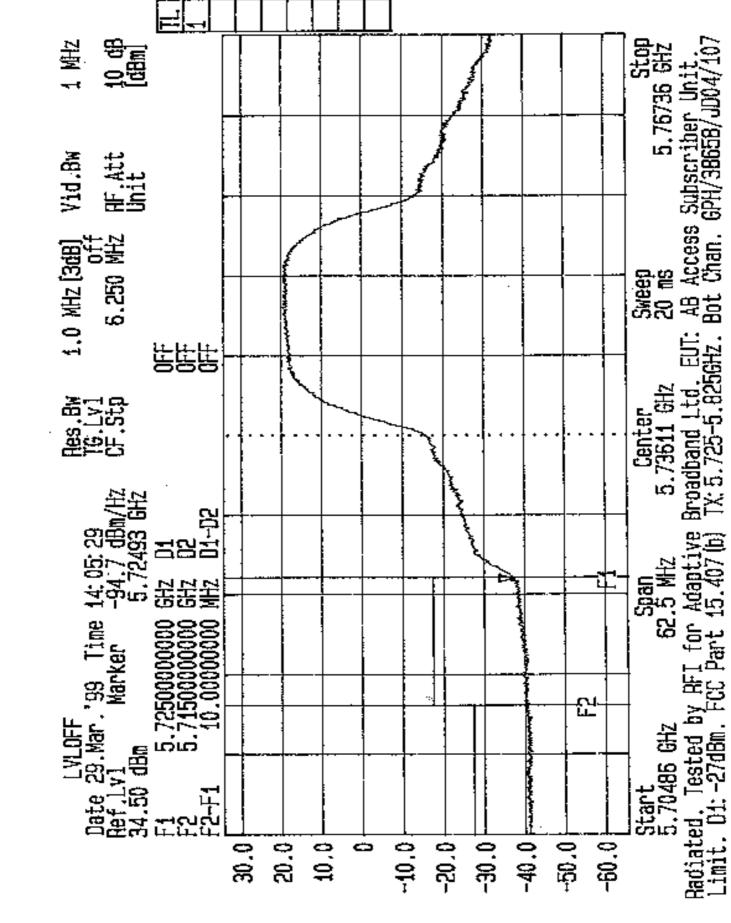


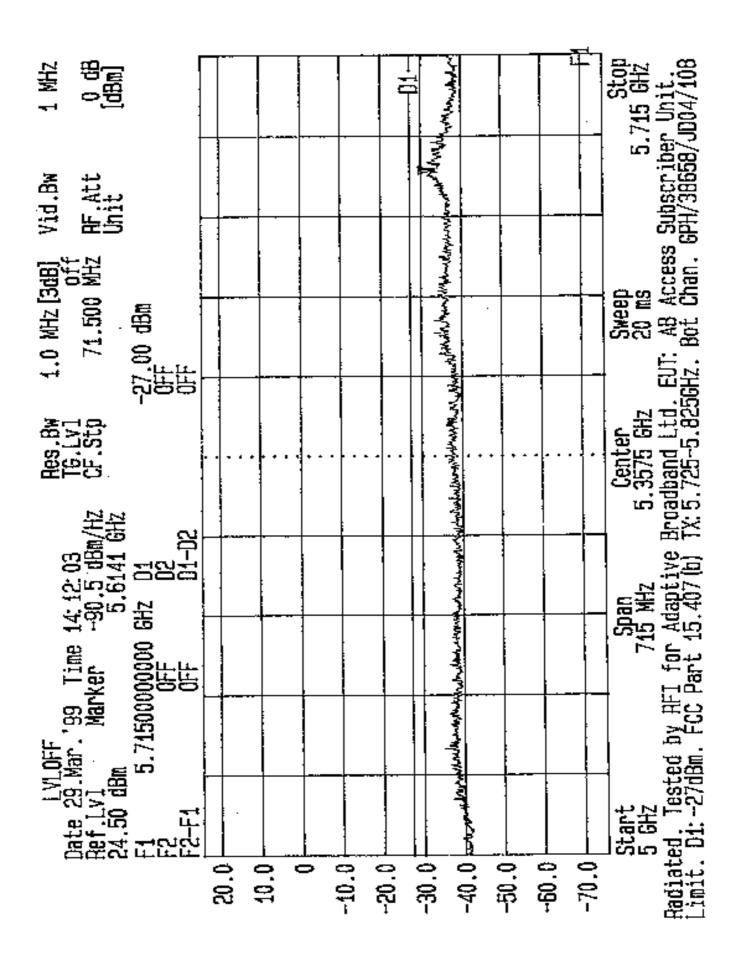


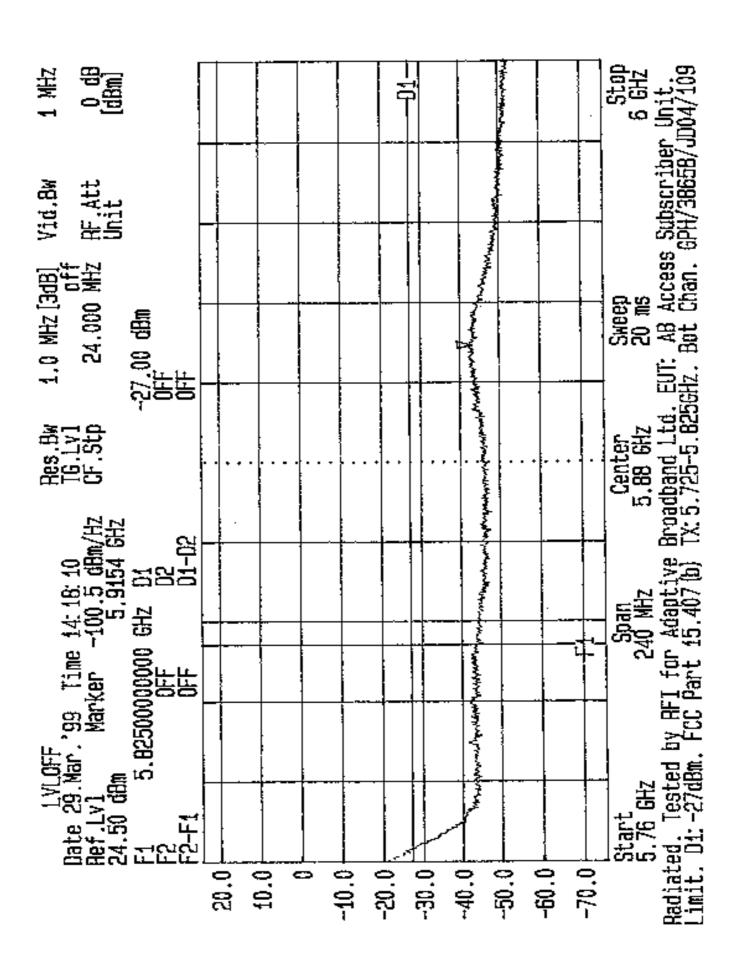


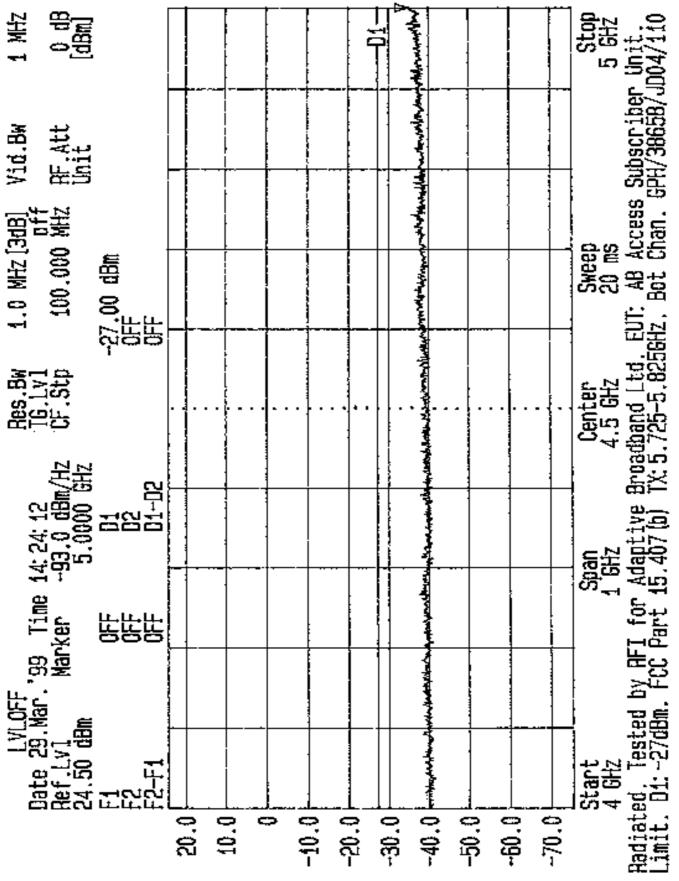


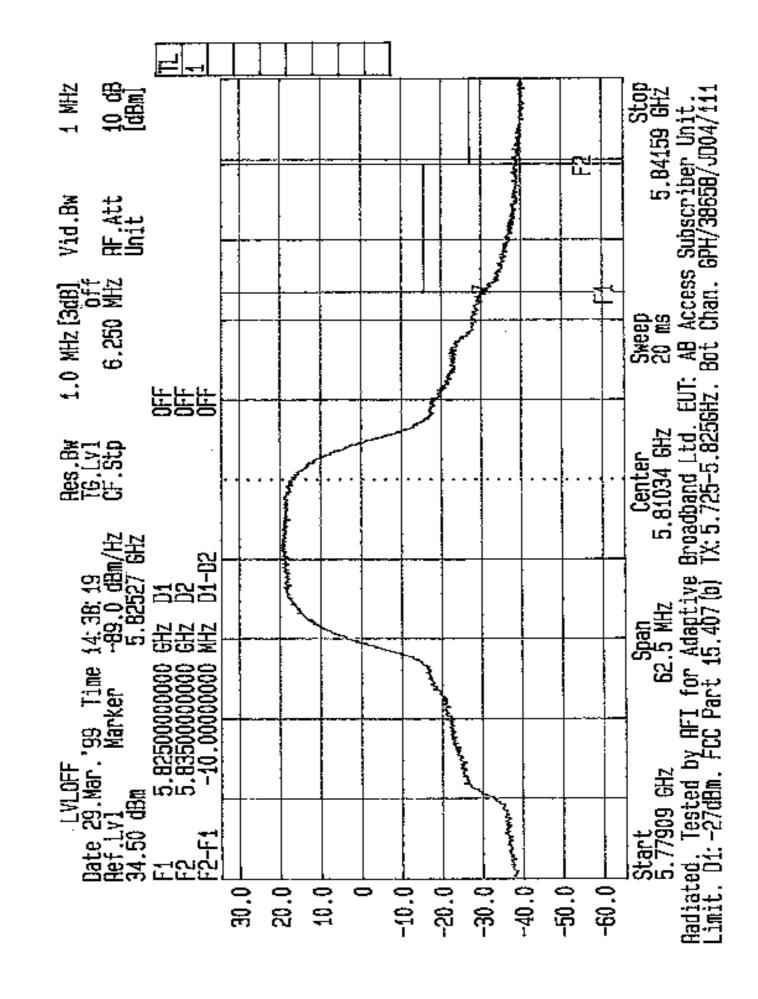


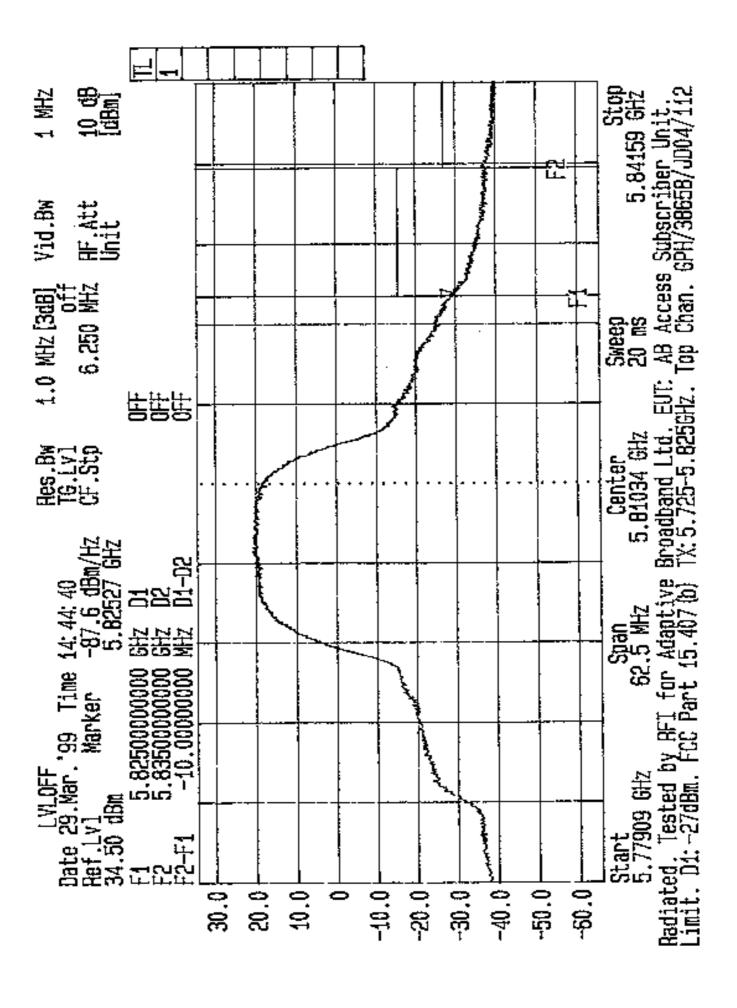


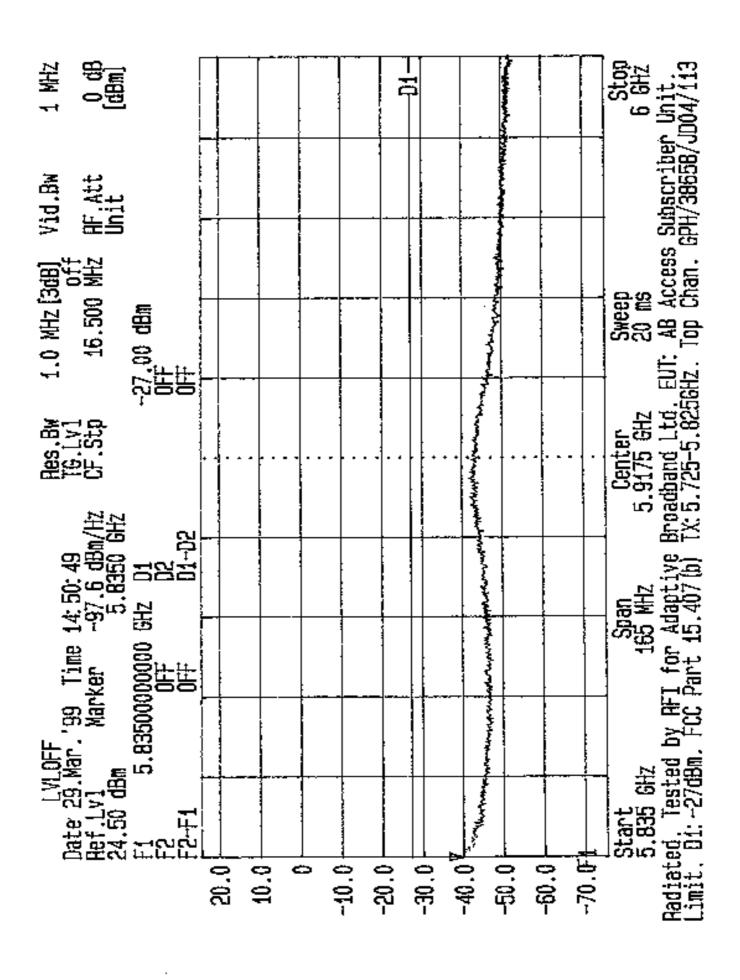


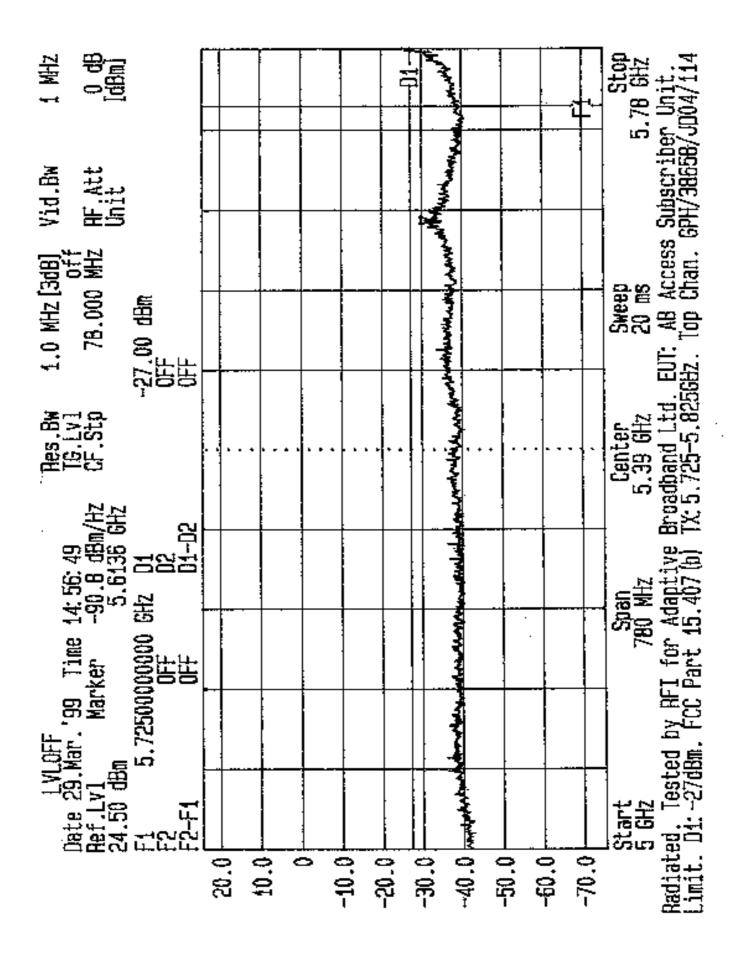


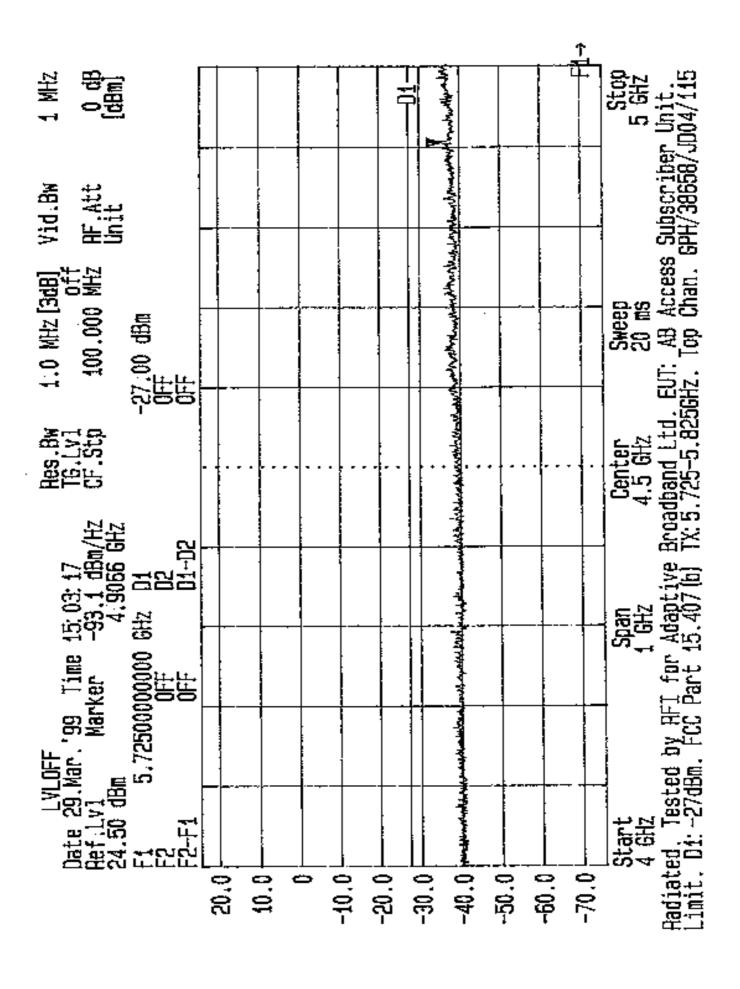


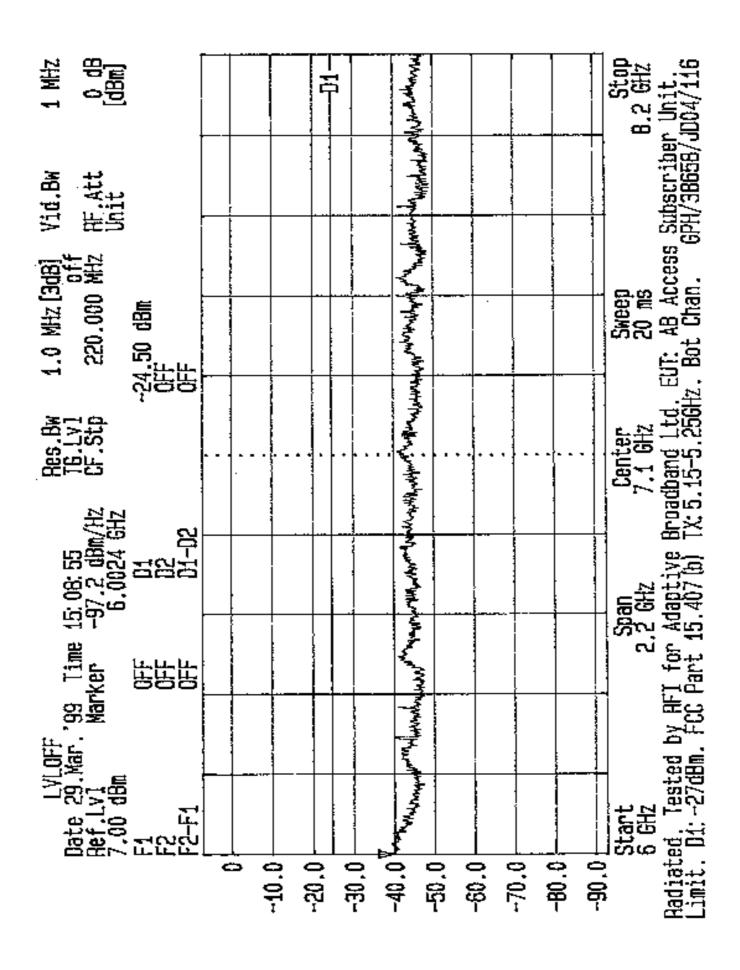


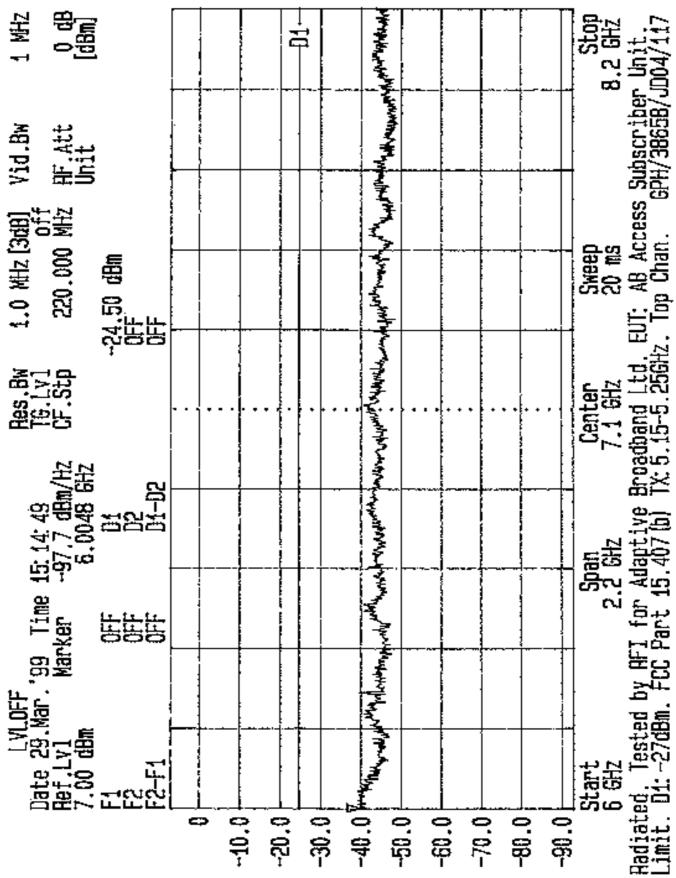


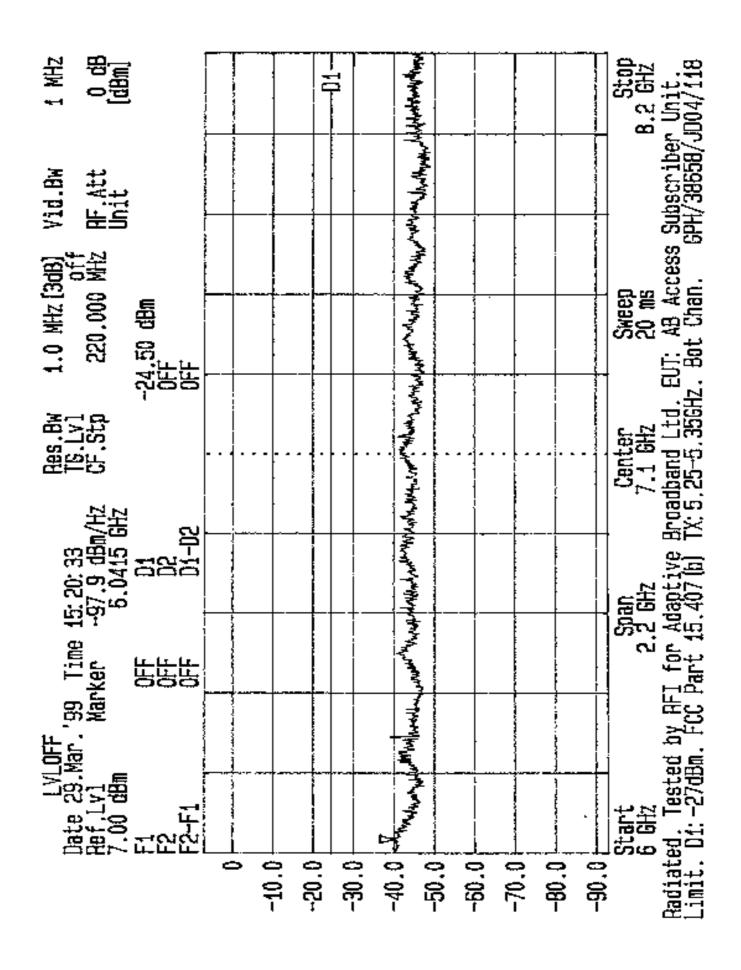


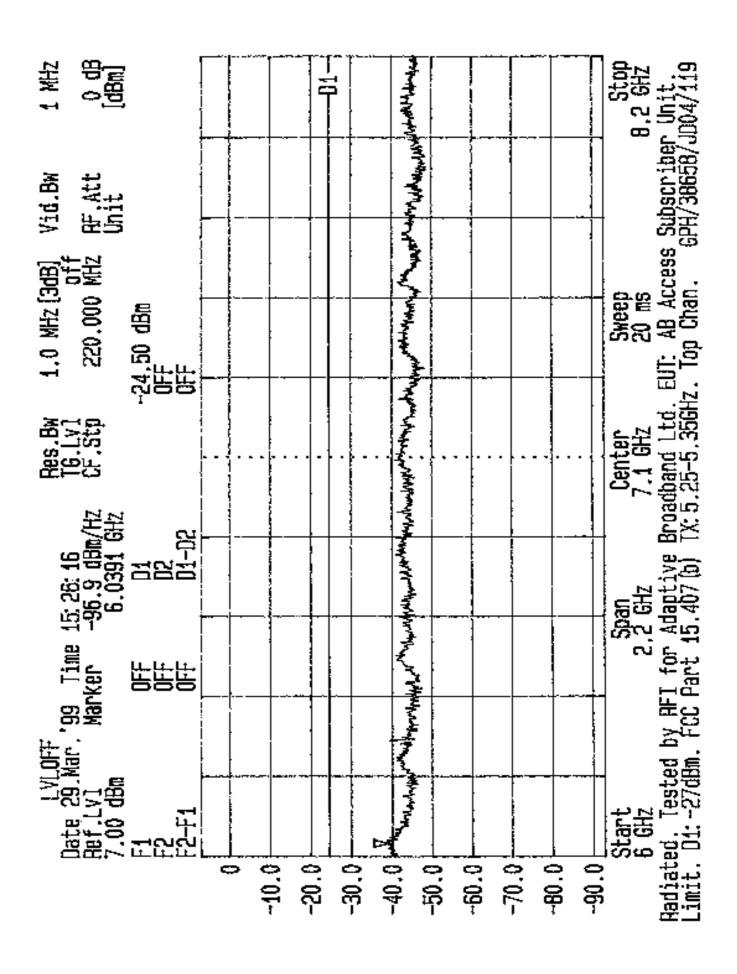


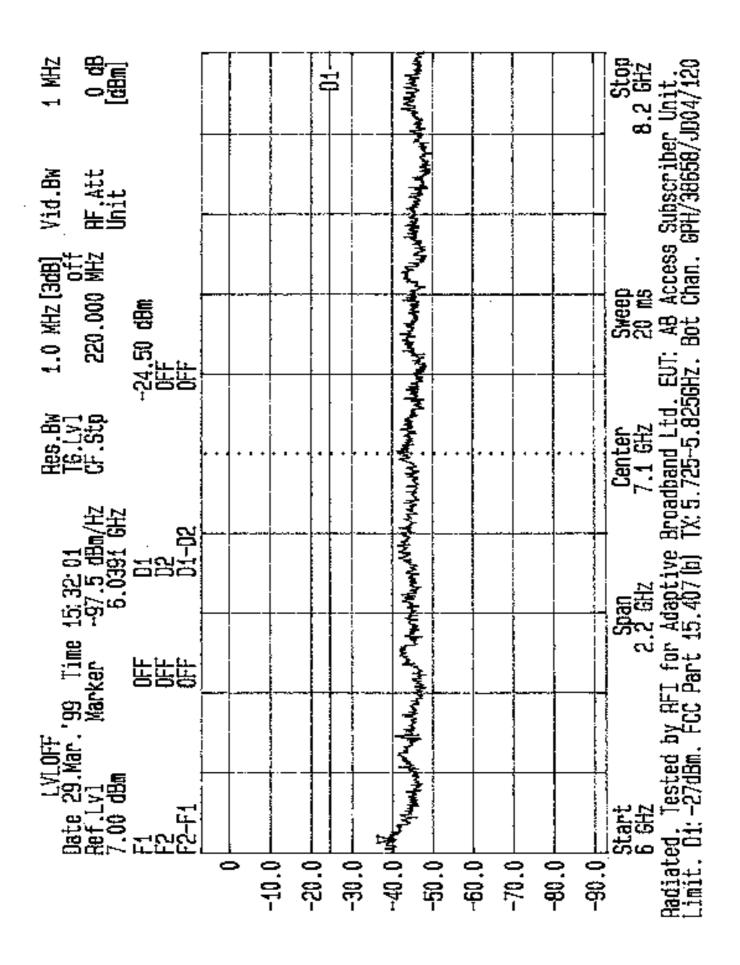


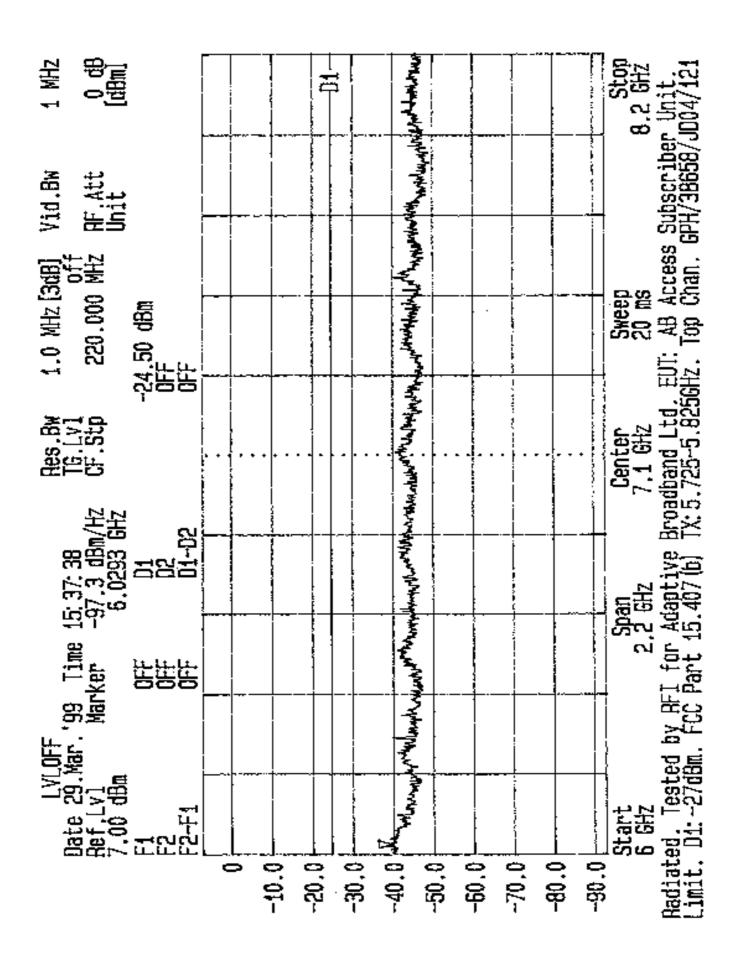


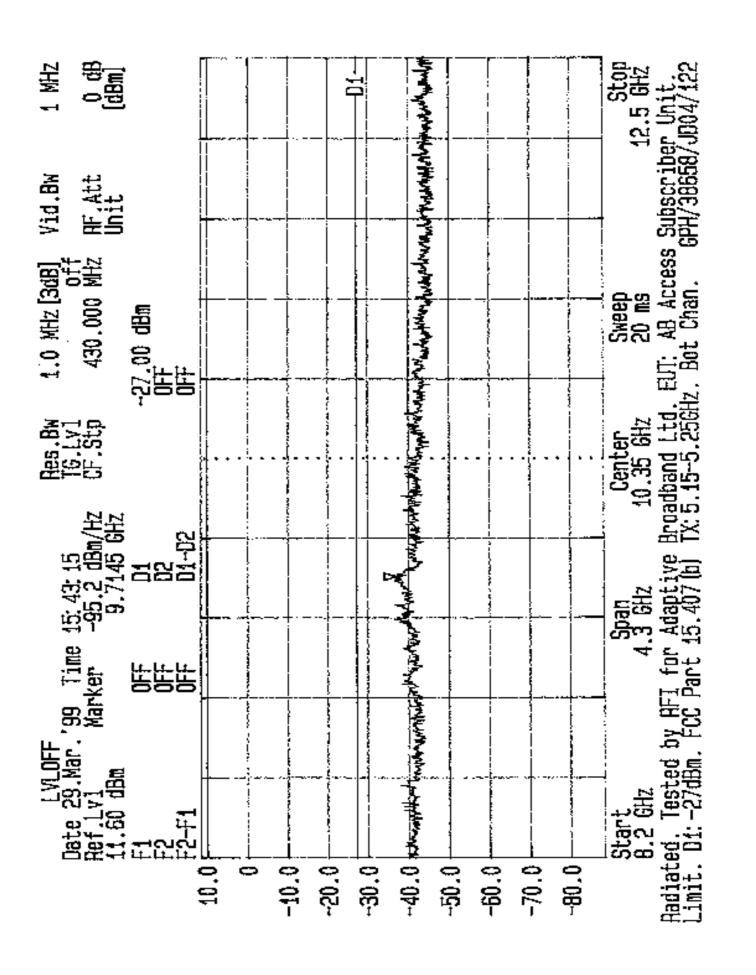


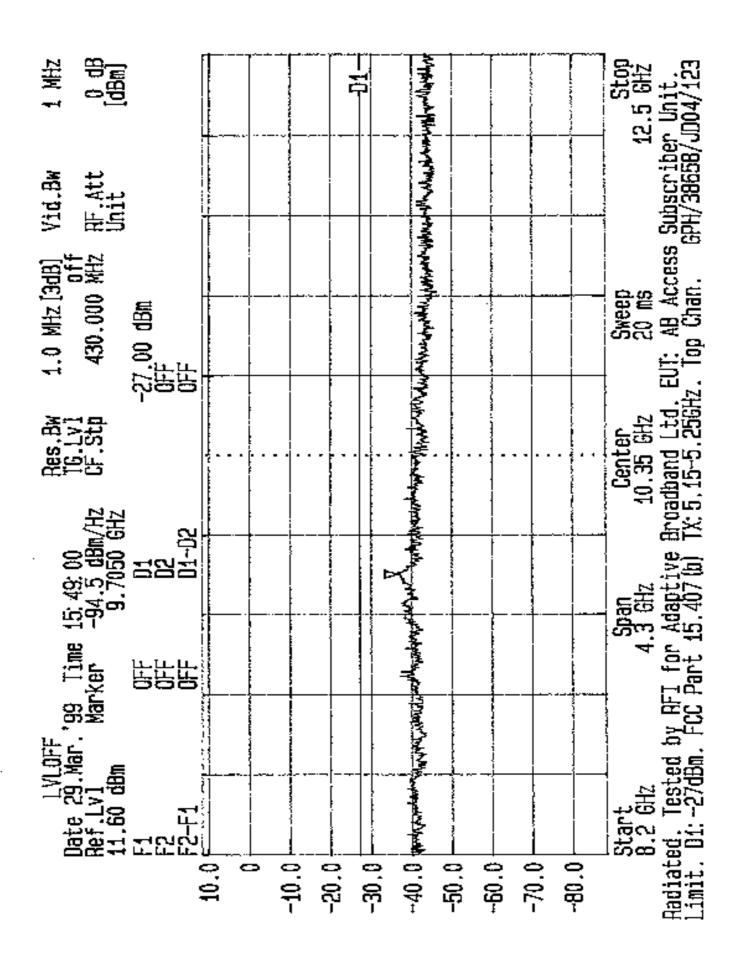


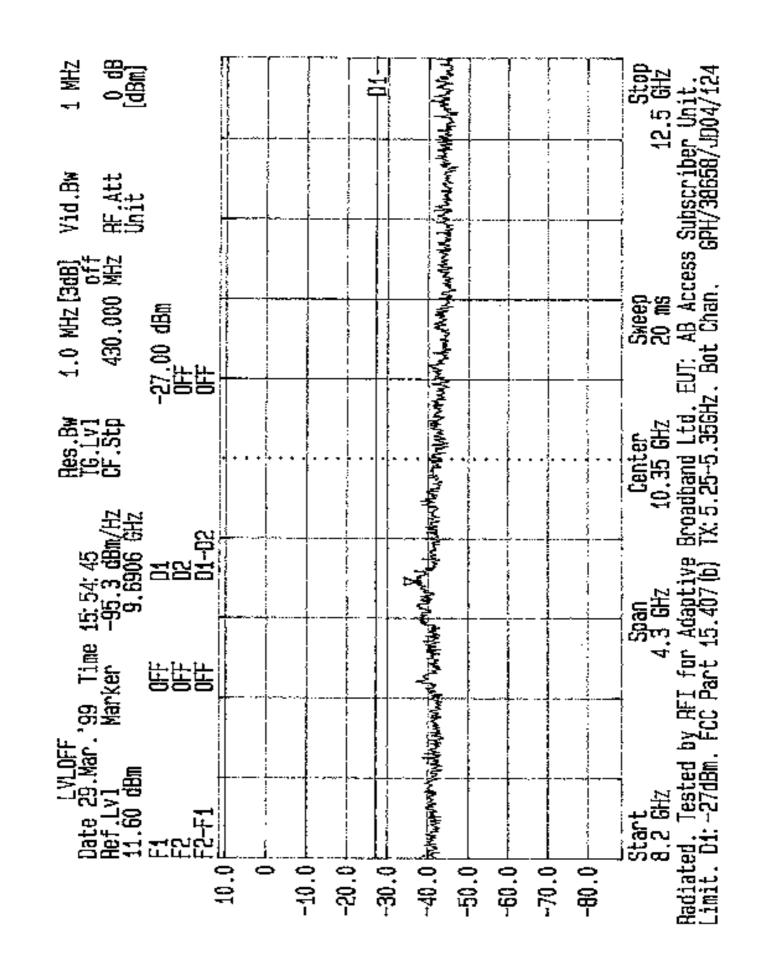


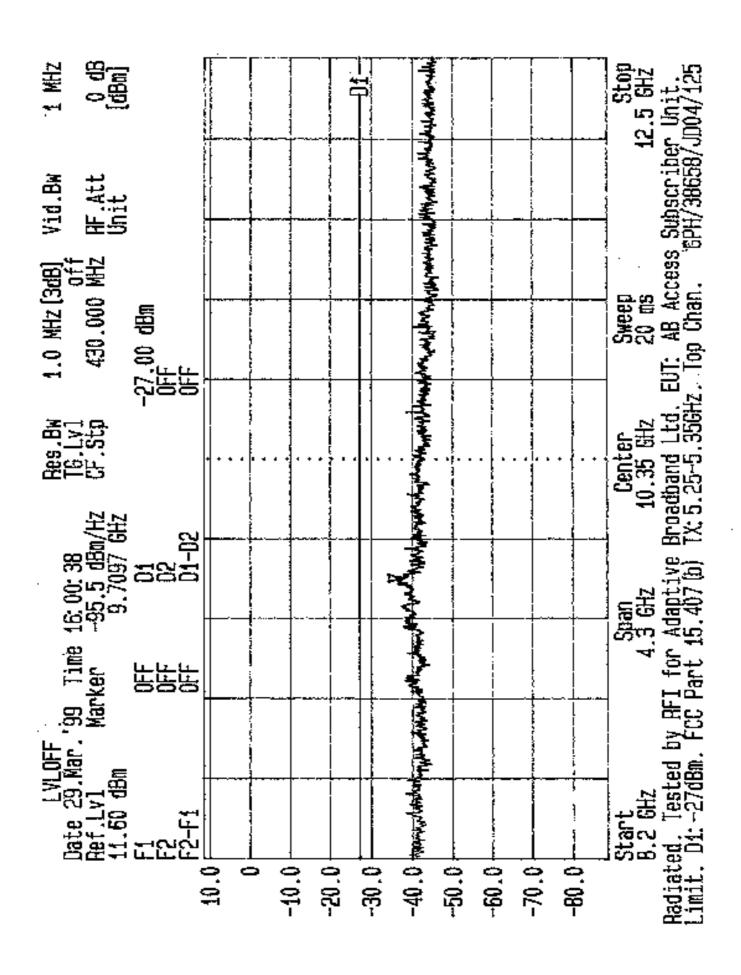


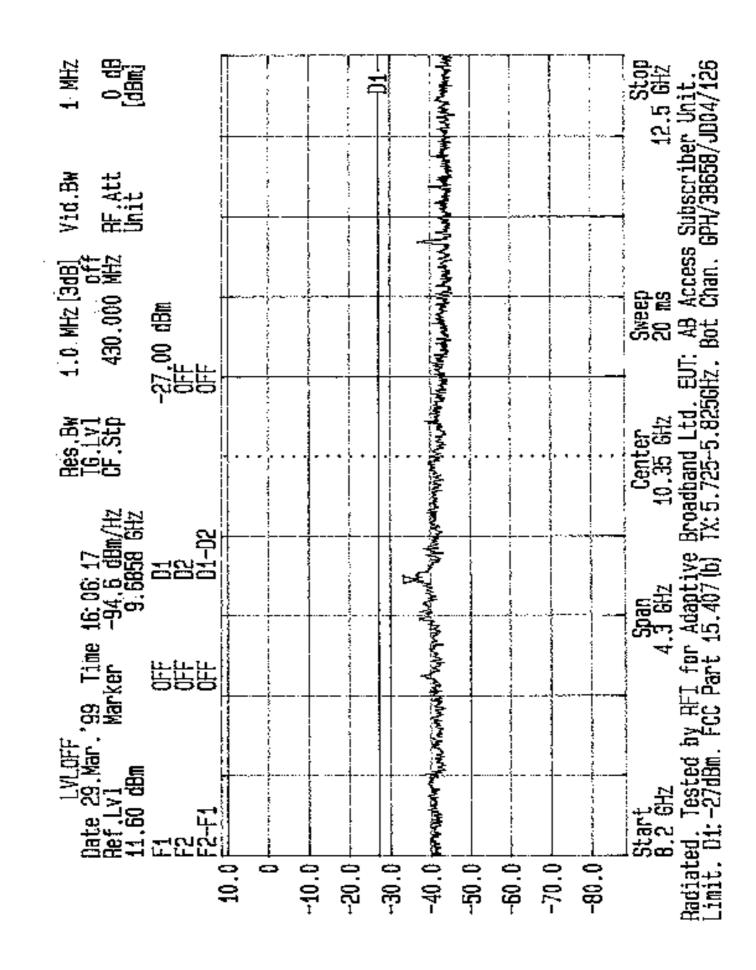


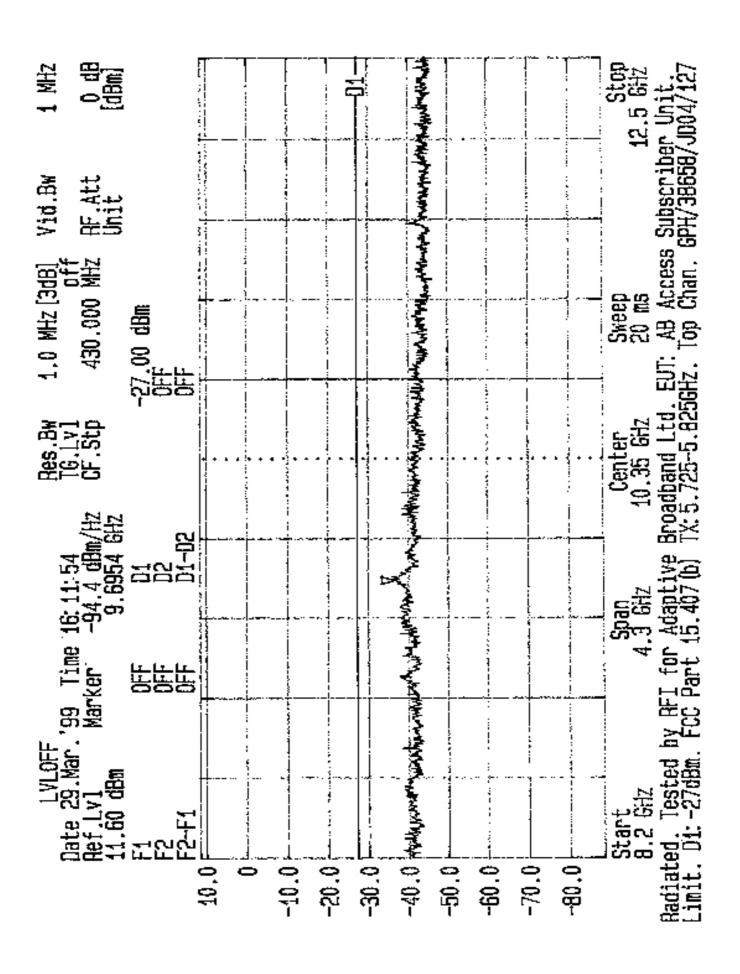


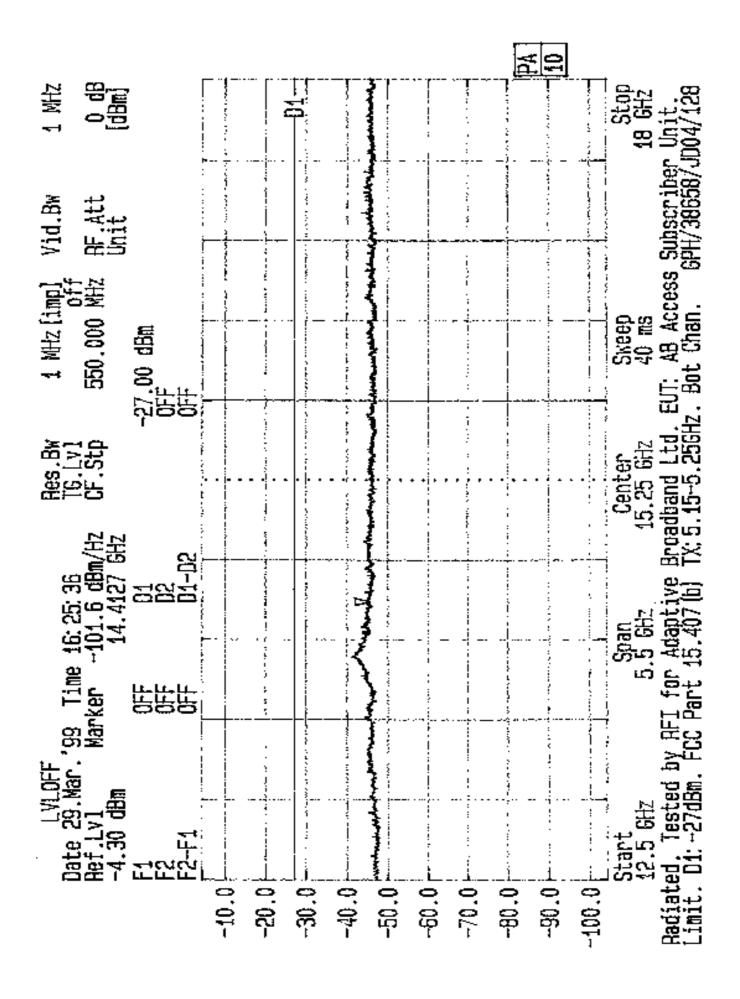


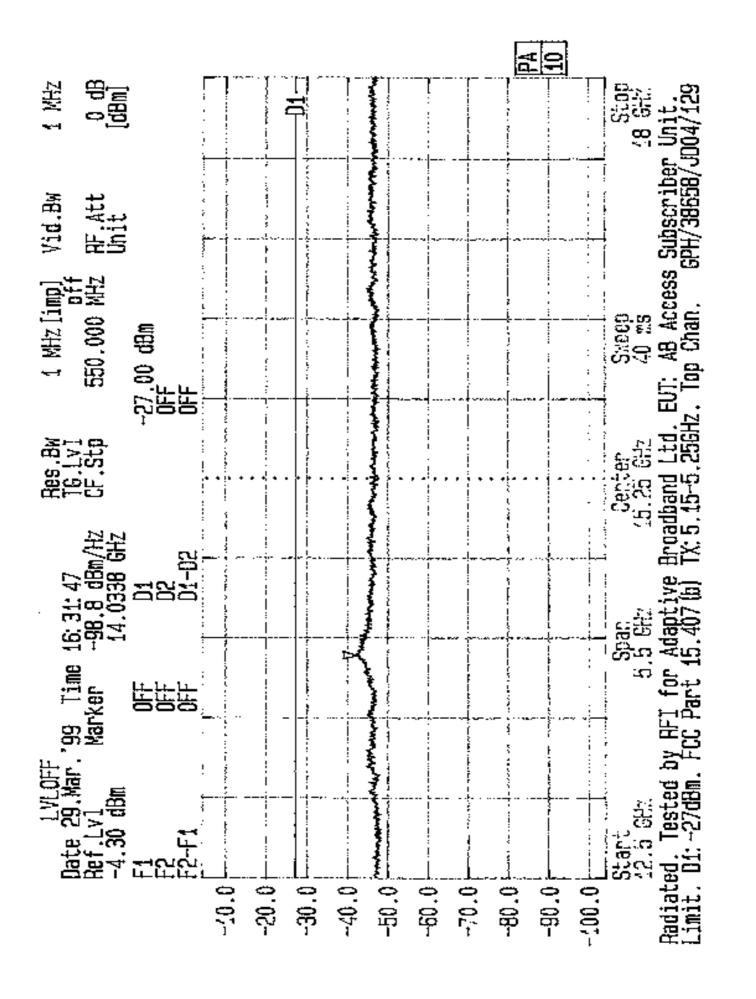


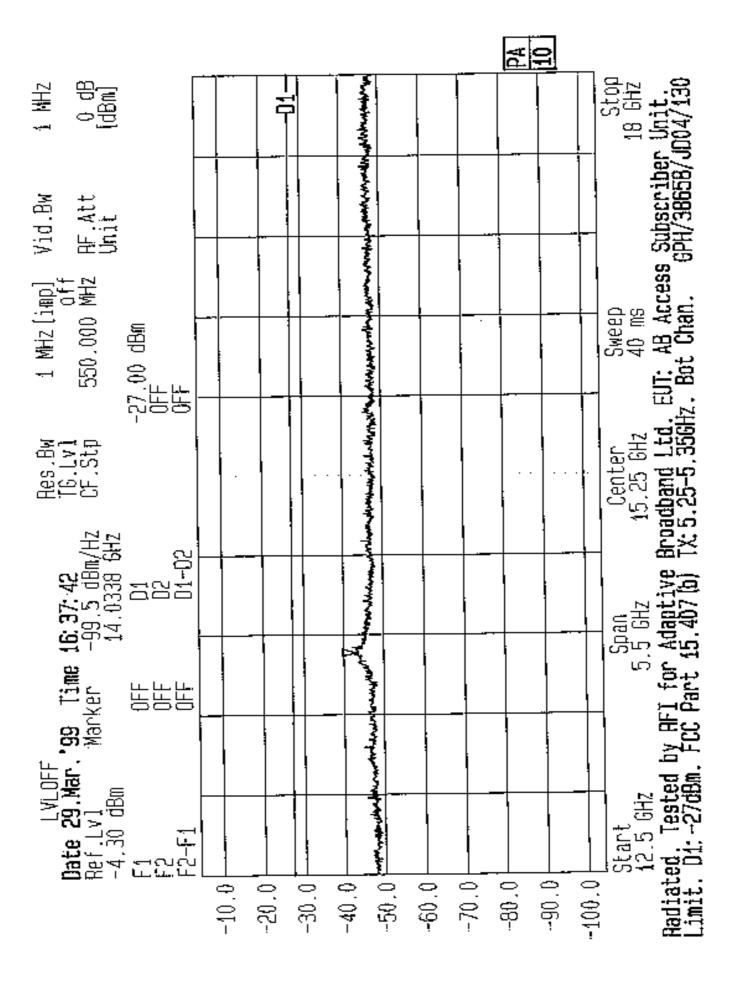


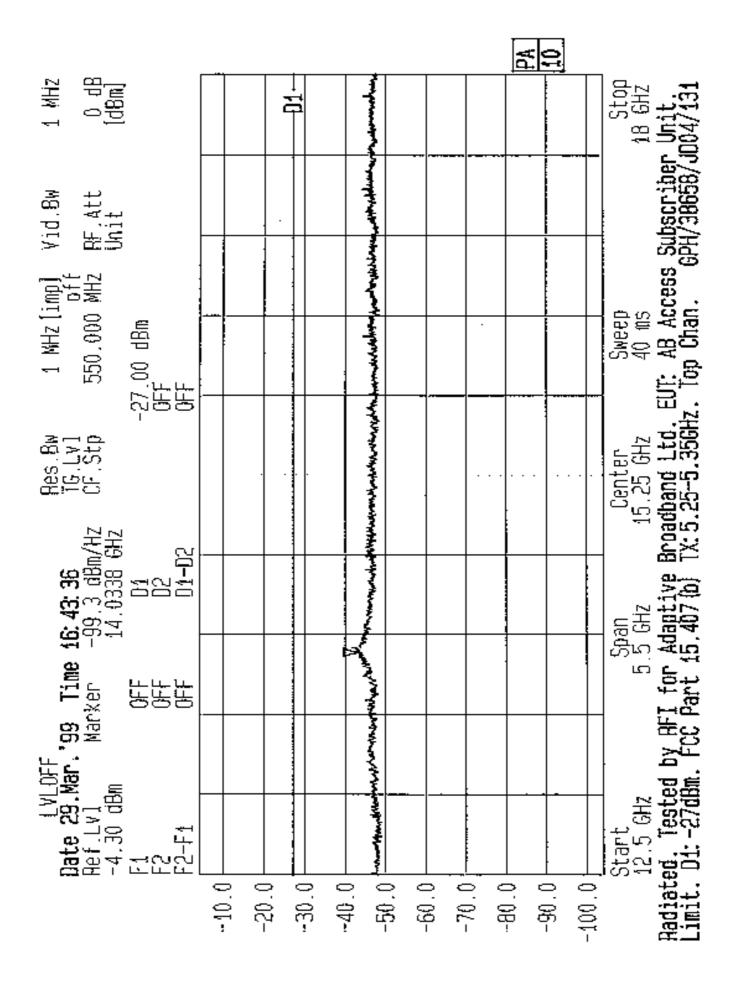


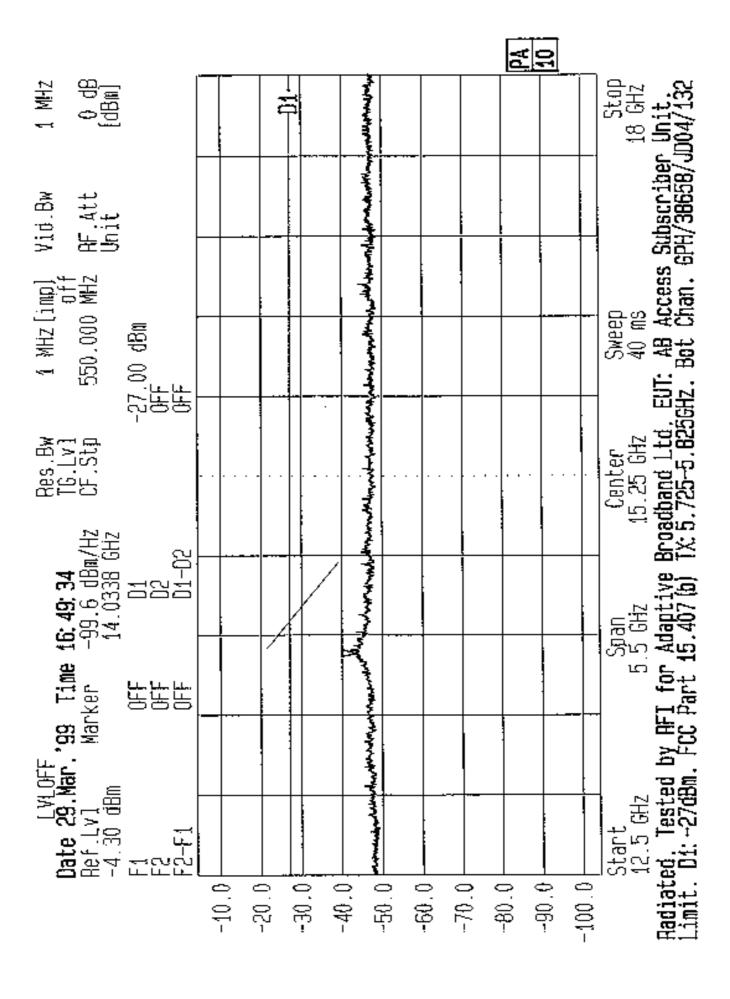


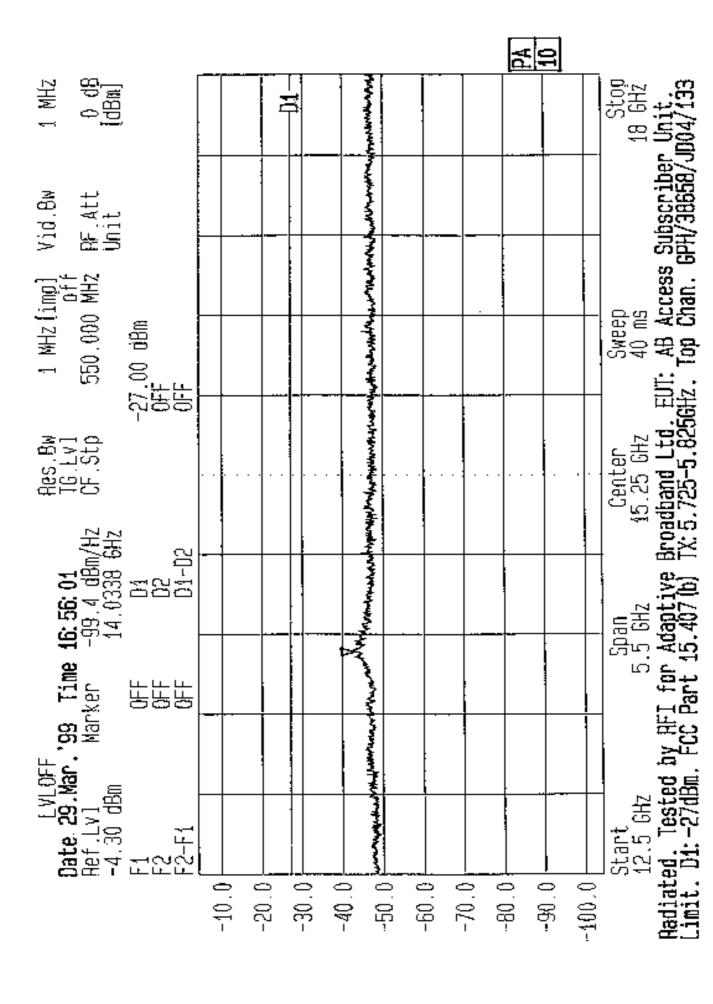


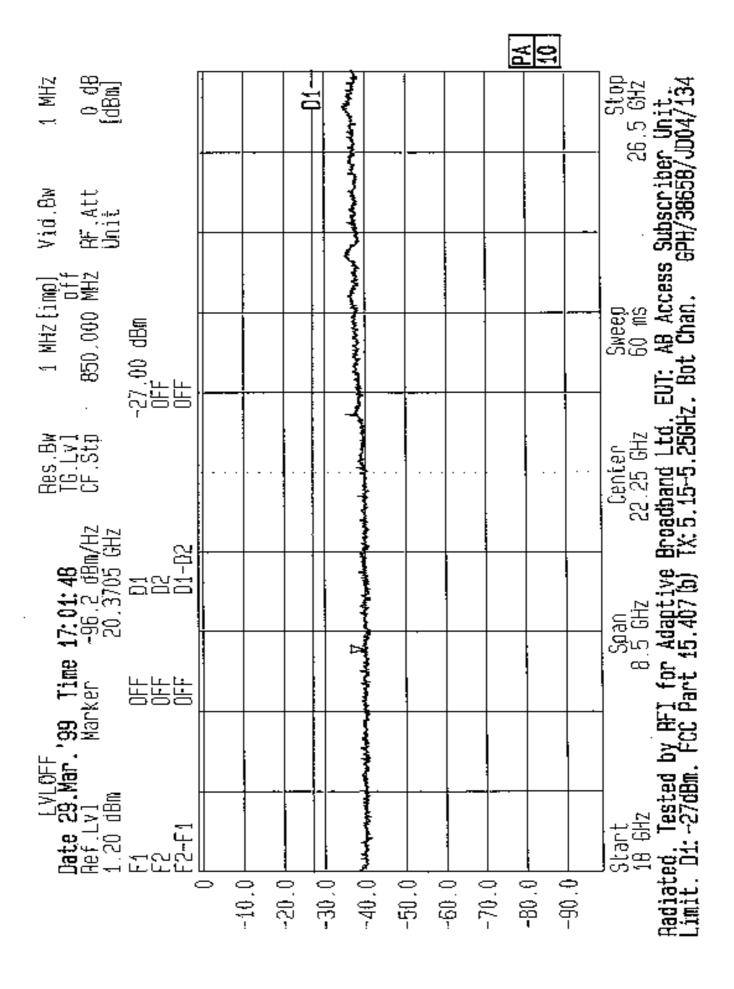


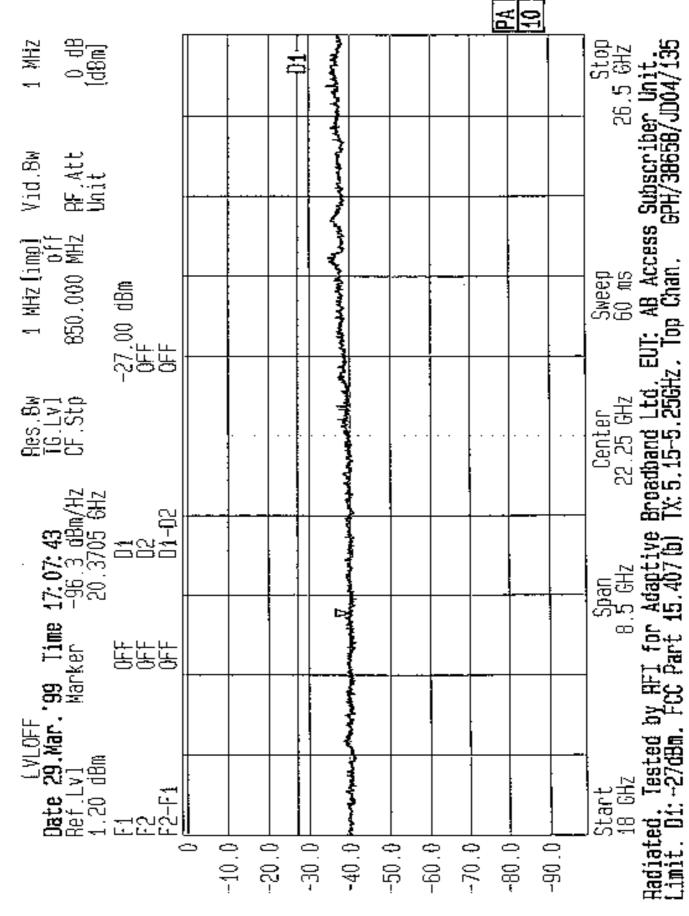


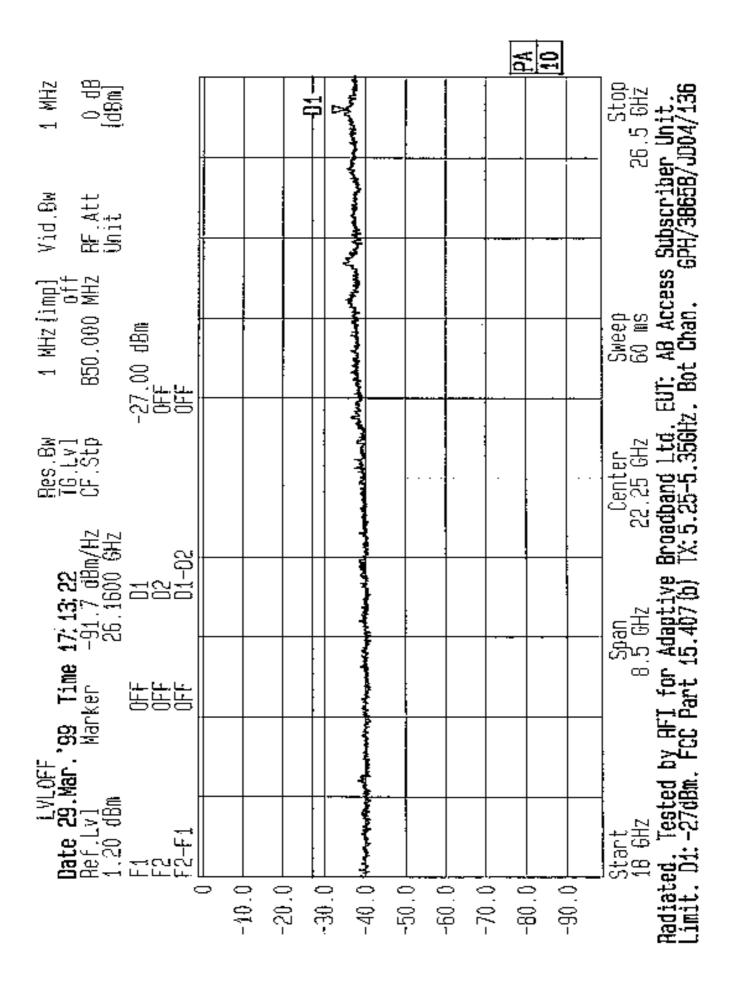


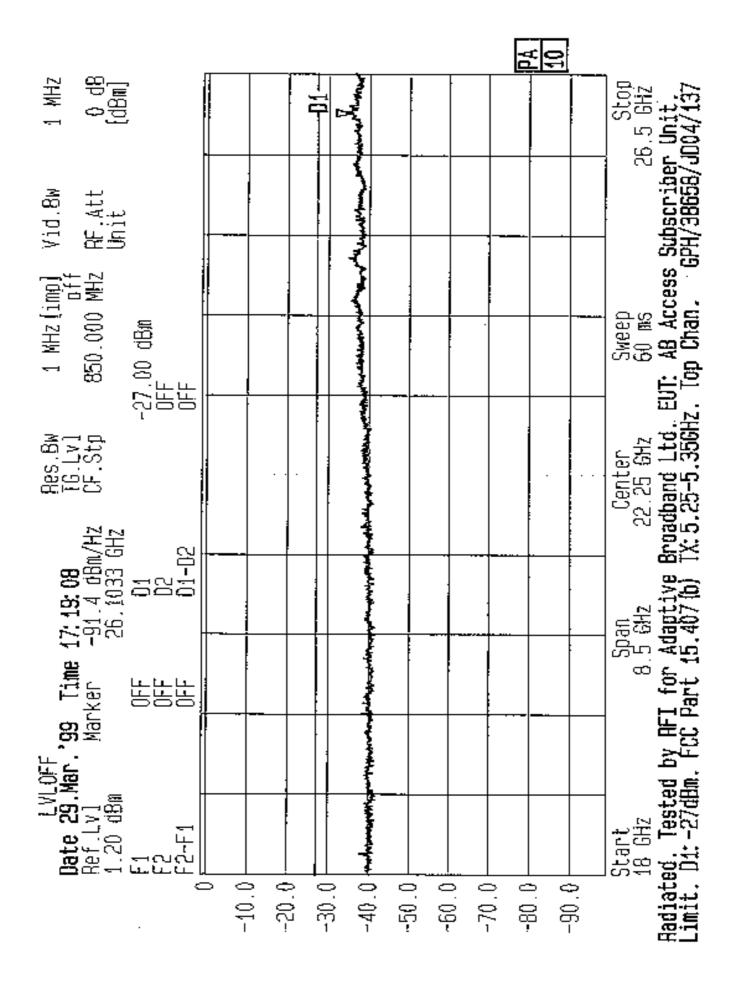


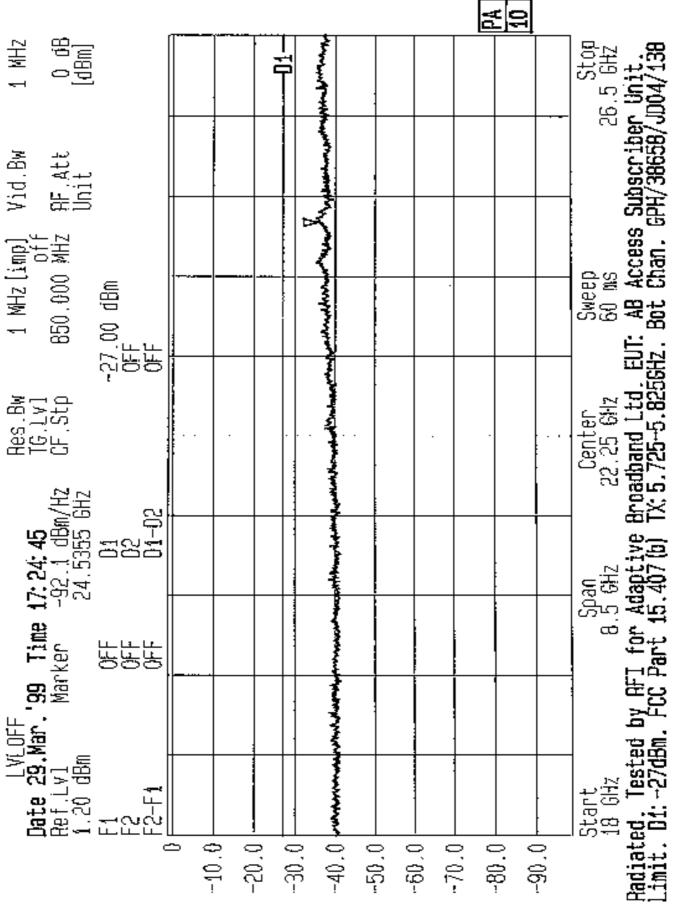


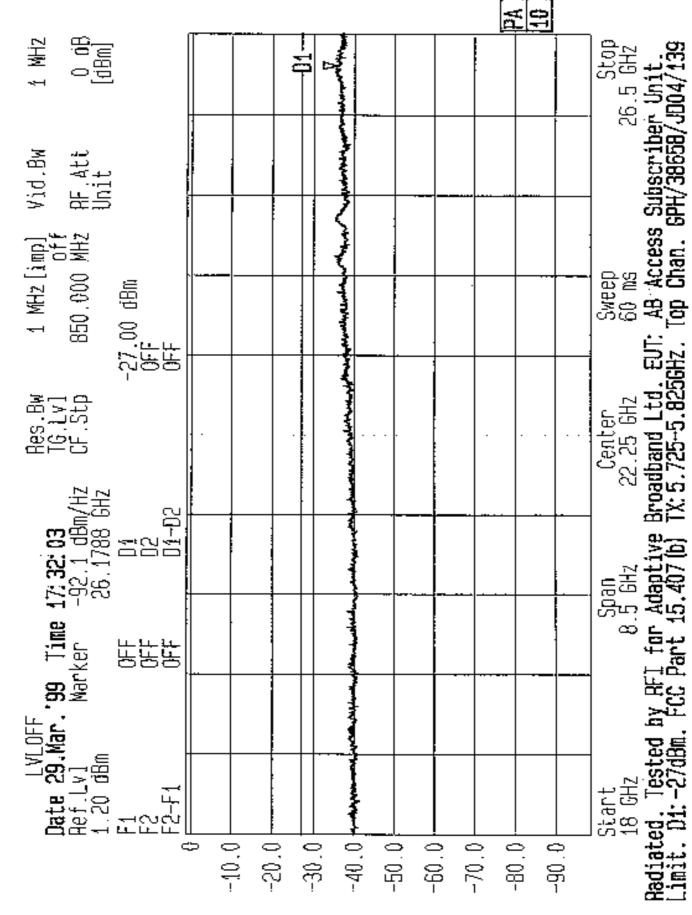












1 MHz 0 dB [dBm]		Stop 40 GHZ Unit. 004/140
Vid.Bw RF.Att Unit		3ubscriber 94/38658/J
		ep Ms Access (ian, Of
1.0 MHz [3dB] 1.350 GHz		Swe 60 EUT: AB . Bot Ch
Res.Bw CF.Stp		Center Sweep 33.25 GHz 60 ms Broadband Ltd. EUT: AB Access Subscriber Unit. TX: 5.15-5.25GHz. Bot Chan. 6PH/38658/JD04/140
4 Bm/Hz 0 GHz		문 :
14: 28: 34 -90.7 dBm/Hz 35.3350 GHz	Account of the control of the contro	an GHz Japtive (407 (b)
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JoFF Jan. 97 Bm		ad by RF am. FCC
LVLOFF Date 10.Jan. '87 Time 1 Ref.Lvl -20.00 dBm		Span 26.5 GHz 13.5 GHz Radiated, Tested by RFI for Adaptive Limit. D1:-27dBm. FCC Part 15.407(b)
	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Start 26.5 GHz Radiated, Tester Limit. D1:-27dBn

1 MHz	8 <u>8</u>	ř	Action and state						:			Stop 40 GHZ Unit. 004/141
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1.0 MHz [3dB]	1.350 GHz		and the state of t									Sweer 50 me UT: AB A Top Cha
Res.Bw	CF.Stp		War war in the	,								Center Sweep 33.25 GHz 60 ms 40 GHz Ab and Ltd. EUT: AB Access Subscriber Unit. TX: 5.15-5.25GHz. Top Chan. GPH/38658/JD04/141
	m/HZ GH2		\$.				_	ļ 	_	<u> </u>		17.55
. 22. 40	14, 53, 40 -91.0 dBm/Hz 39,8350 GHz		\frac{1}{4}	:		:						
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₩	Apert 10.04N. 0/ 11Me 1 Ref.Lvl Marker - -20.00 dBm		The state of the s									Start 26.5 GHz ed, Teste Di: -27db
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1 MHz	0 dB [dBm]		and the second second		•							Stop 40 GHZ Unit. JD04/142
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1.0 Mfz [3dB]	1.350 GHz		Control of the Contro									Heep Ms Access Chan. C
支 0.1	1.3		7				<u> </u>	:				EUT: AE
Res.Bw	CF.Stp		Secretary.] 		ļ 			Center 33,25 GHz Broadband Ltd 1X: 5,25-5,356
	147 GF72		\{	<u> </u>	<u> </u>			ļ 	_			<u>\$</u> .×
50 57	7. 49.7 dgm/hz -90.7 dgm/hz 35.3350 GHz		ATT STREET, MARK									Span 3.5 GHz Adaptive 15.407 (b)
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OFF 107			And None									art .5 GHz 13.5 GHz Tested by RFI for Adaptive 1: -27dBm. FCC Part 15.407(b)
LWL.	Ref.Lvl Marker - 20.00 dBm		Tarenta Marie									tart 6.5 GHz d, Teste Od: -27dB
4		 ર ર		- - - - - - - - - - - - - - - - - - -) C-	왕 	70.0/-	왕 - -	0.06-	-100.01	-110.0	-120.0 Start 26.5 GHz Radiated, Tested Limit. Di: -27dBm

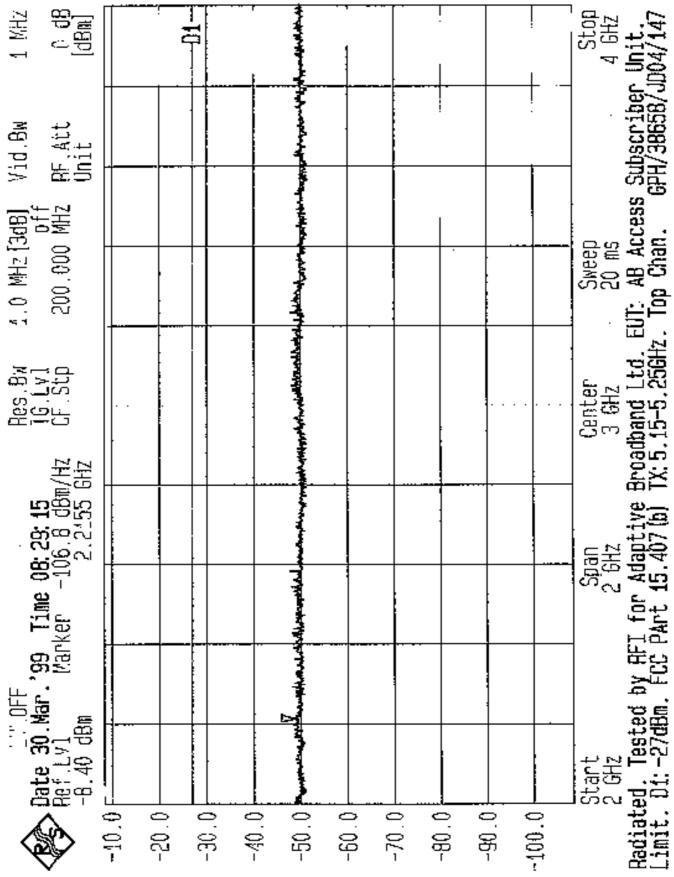
1 MHz	O dB [dBm]	Andrew Company		····							Stop 40 GHZ Unit 1004/143
Vid.Bw	RF,Att Unit	All and the county									Subscriber PH/38658/
[3 4 B]	1.350 GHz	To all the second					. =				S CCCSS In. 6
1.0 MHz [3dB]	1.35	-				·					Sweet Fig. AB /
Нез.Вм	CF.Stp	 - Appropriate Commence									Span Center Sweep Stop 40 GHZ 60 ms 40 GHZ Adaptive Broadband Ltd. EUT: AB Access Subscriber Unit. 15.407 (b) TX: 5.25-5.356Hz. Top Chan. GPH/38658/JD04/143
	JM/HZ GHZ GHZ	 4									Broad TX: 5.
. 45. 24.	-90.9 dBm/Hz -90.9 dBm/Hz 39.6850 GHz	J. Amrumaya.									an GHz aptive 407(b)
Timo 47	Ker	بإدامارا منسووس									13.5 13.5 Part 15.
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140 to 1	Ref.Lvl Marker20.00 dBm	Madagare or									itart 16.5 GHz d. Teste 11:-27d6
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1 MHz 0 dB [dBm]		Stop 40 GHZ Unit. 004/144
Vid.Bw AF.Att Unit		Stop Ms 40 GHZ Access Subscriber Unit. Chan. GPH/38658/JD04/144
		ep ns Access (Chan. G
1.0 MHz [3dB] 1.350 GHz		Swer EUT: AB
Res.Bw CF.Stp		Span Center Sweep .5 GHz 33.25 GHz 60 ms Adaptive Broadband Ltd. EUT: AB Ac 15.407 (b) TX: 5.725-5.825GHz. Bot Ch
		33. Broadb
14:50:19 -91.2 dBm/Hz 39.6850 GHz		Span 1.5 GHz Adaptive 15.407 (b)
Time 1/	April 1 April	13.5 13.5 1 for At Part 15
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LVLOFF Date 10.Jan.'87 Time 1 Ref.Lvl -20.00 dBm	To the state of th	tart 16.5 GHz 16.7 Geste 16. 7 Geste 16. 7 GB
	-10.06 -10.06 -10.06 -10.06 -10.06 -10.06	-120.0 Start 26.5 GHz Aadiated, Tested Limit. D1: -27dBm

14.55.11 Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz [3dB] Vid.Bw 1 MHz [3g.0400 GHz CF.Stp 1.350 GHz RF Att 0 dB	1.80
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3.5.9.0 9.0 9	** Time 14: 55: 11 Marker
	Wanker Wanker

LVLOFF	, . ; ,	Res. 8w	1.0 MHz[3dB]	Vid.Bw	1 MHz
ABO UBTE 30.Mar. 33 1 Hef.Lv] -8.40 dBm	11Me 06; 24; 19	CF.Stp	200.000 MHz	RF.∆tt Unit	0 dB [dBm]
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-100.0					
Start Span Center 2 GHz 3 GHz	Span 2 GHz	Center 3 GHz	Sweep 20 ms	Sweep 20 ms 4 GHz	Stop 4 GHZ
Radiated. Tested by AF	I for Adaptive	Proachand Ltd.	EUT: AB Access	Subscriber	Unit.

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Radiated. Tested by RFI for Adaptive Broadband Ltd. EUT: AB Access Subscriber Unit. Limit. D1: -27dBm. FCC Part 15.407(b) TX:5.15-5.25GHz. Top Chan. GPH/38658/JD04/154

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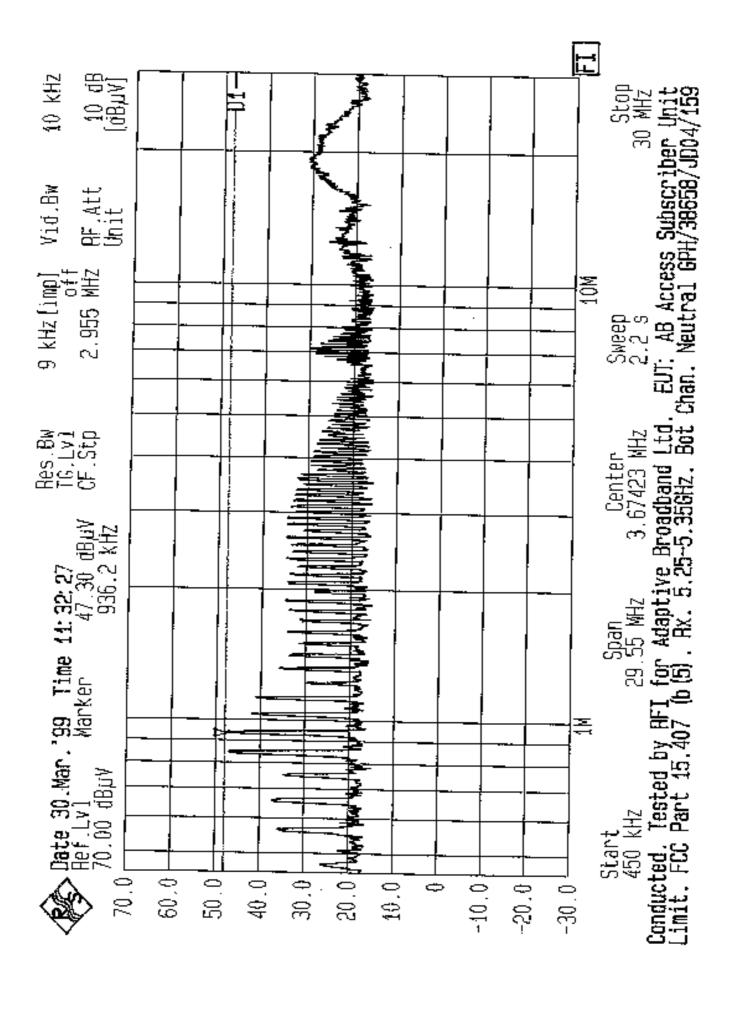
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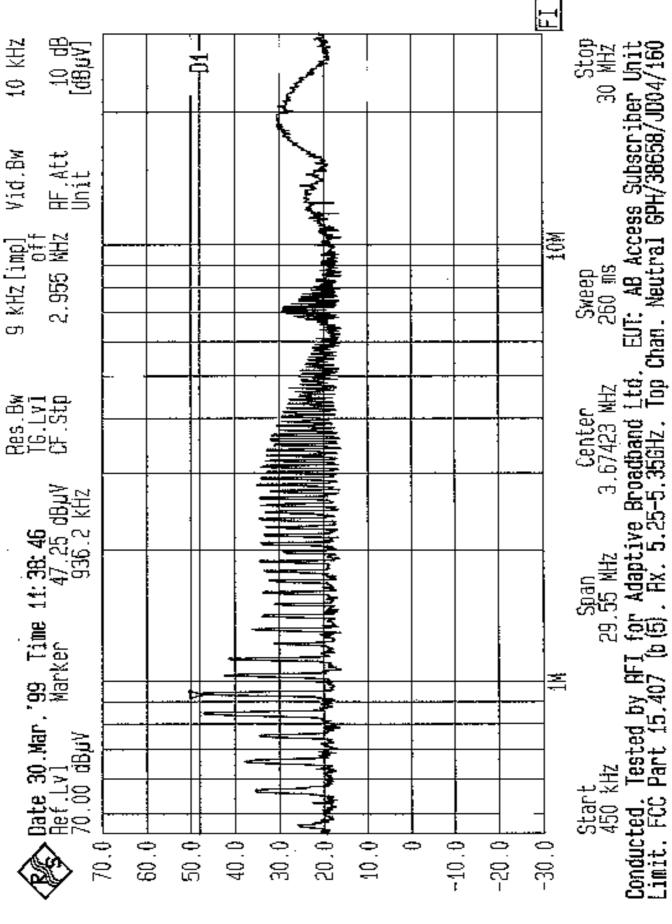
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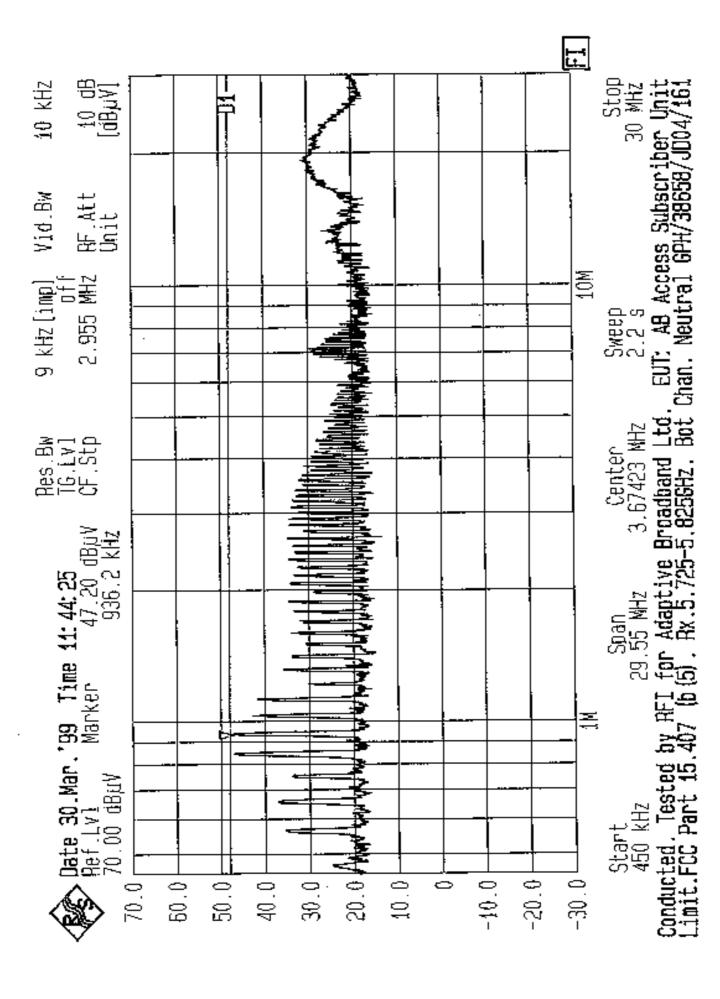
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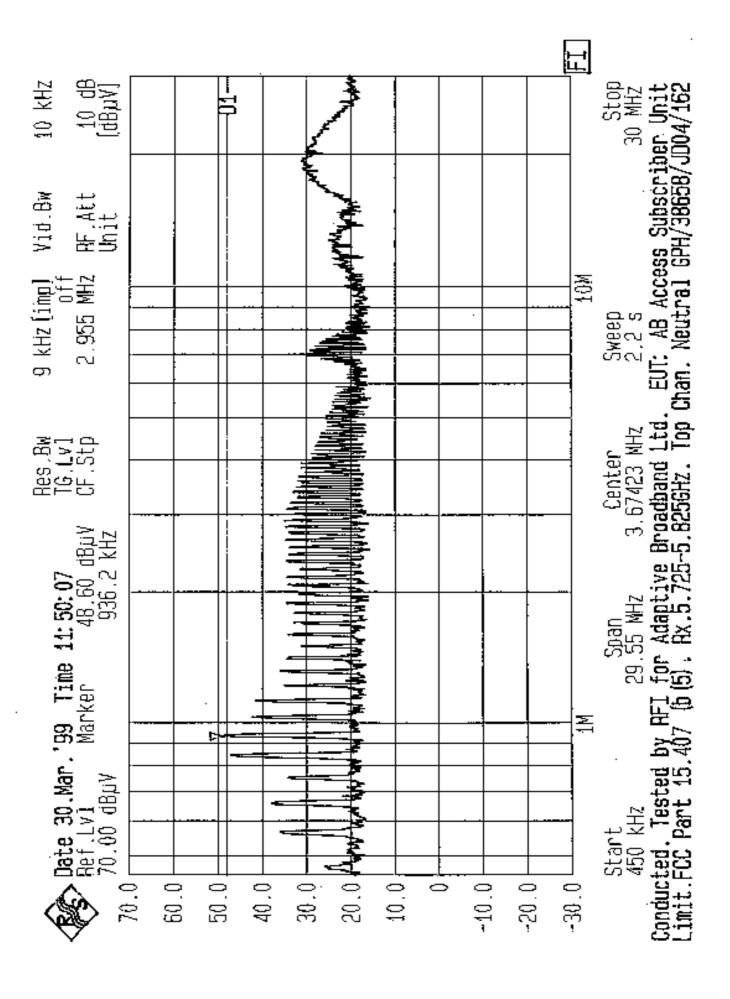
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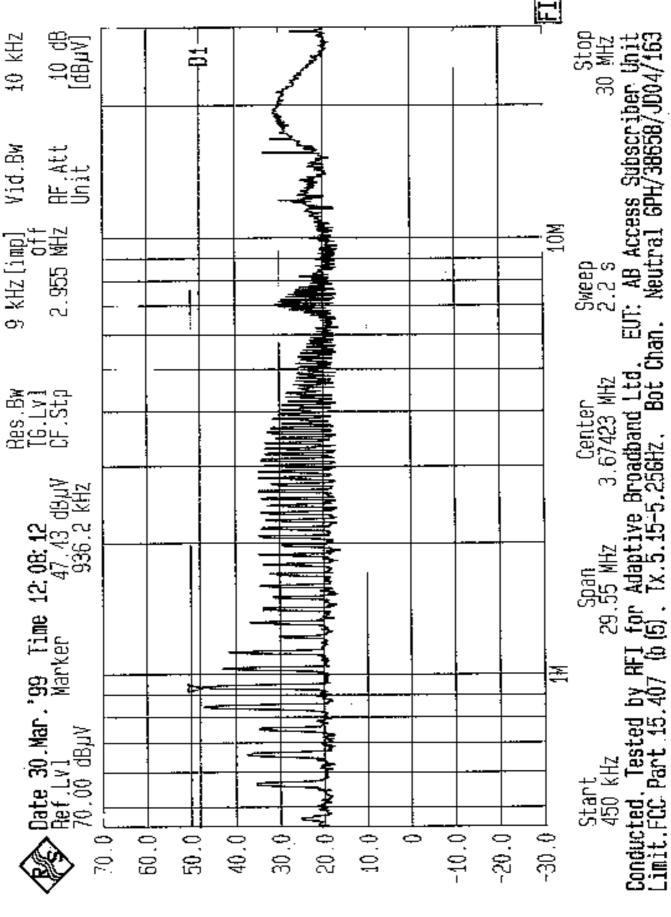
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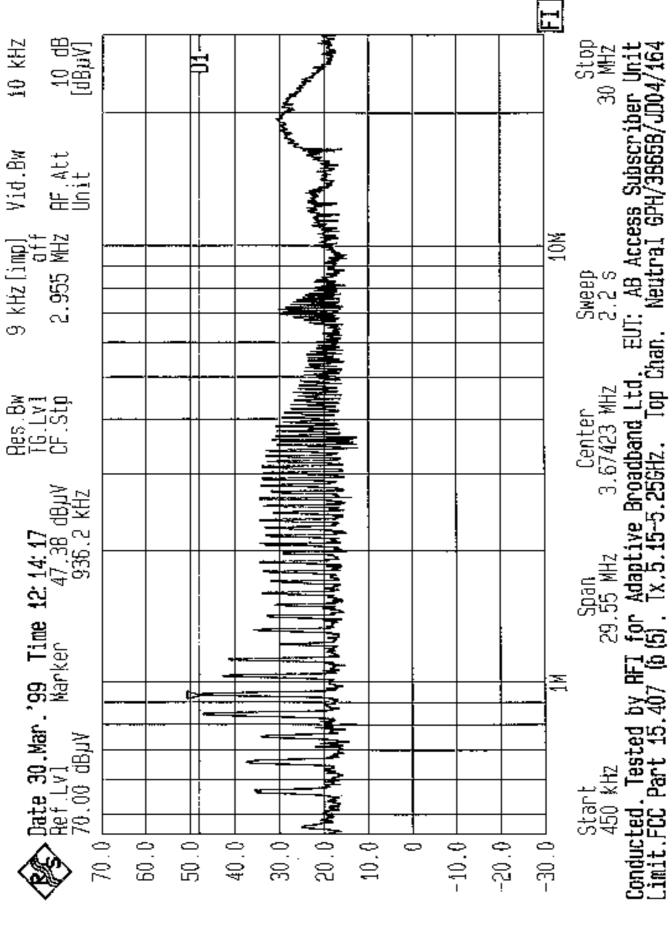


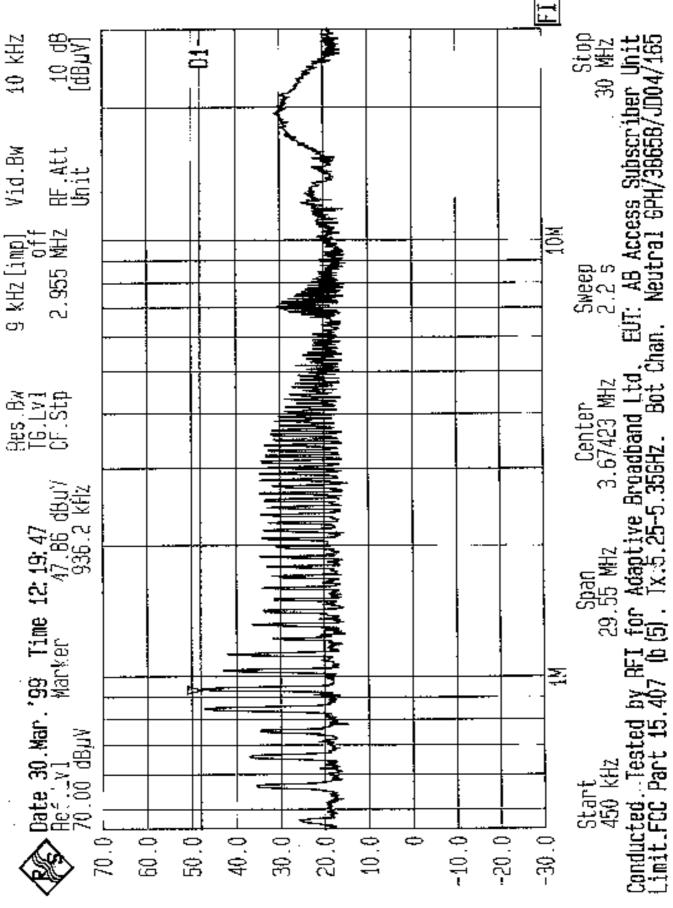


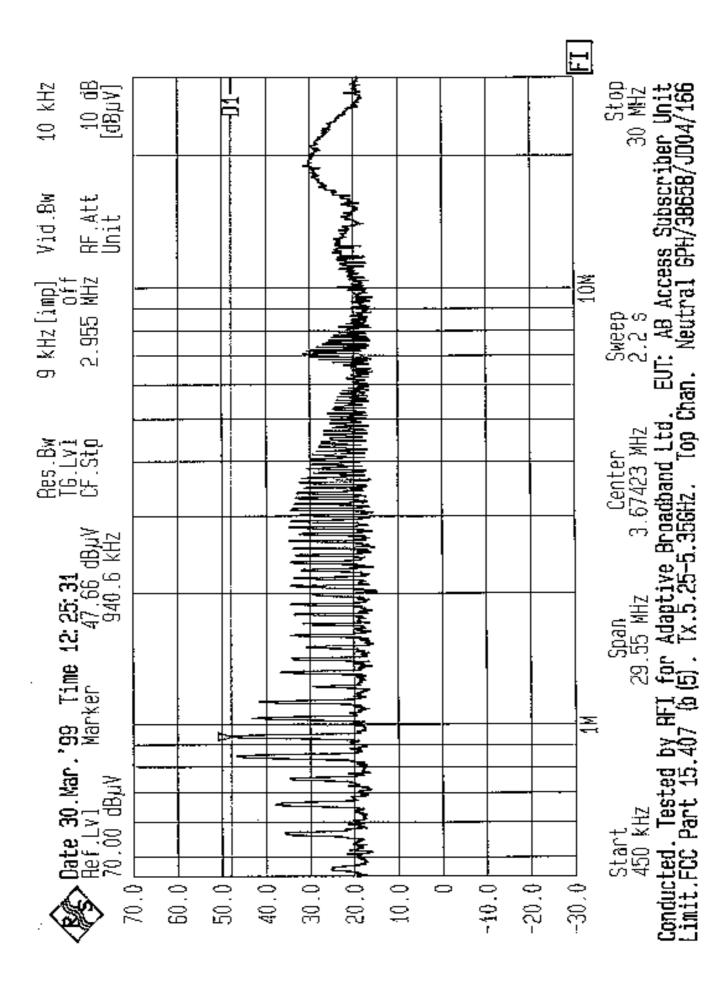


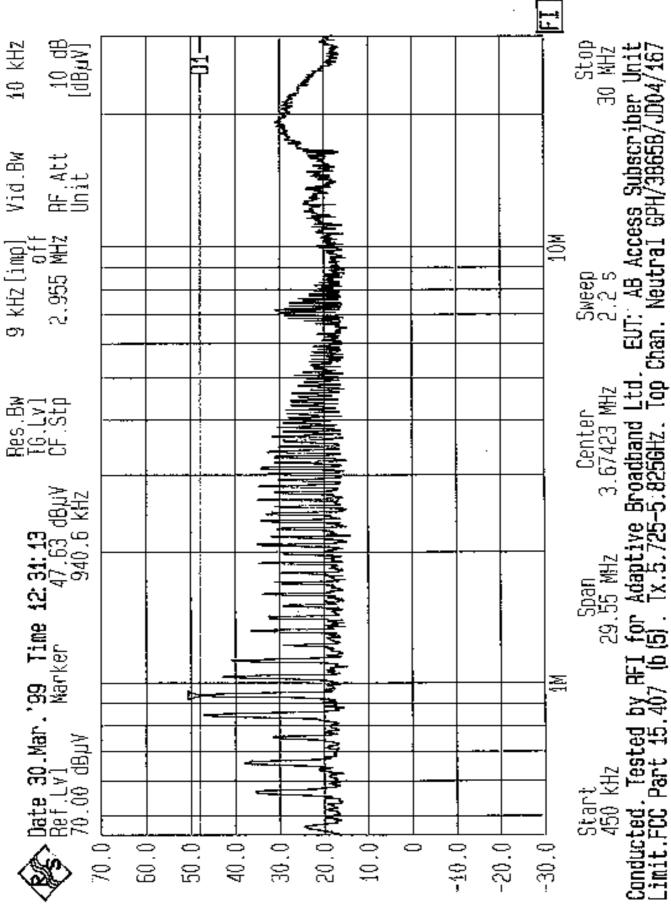


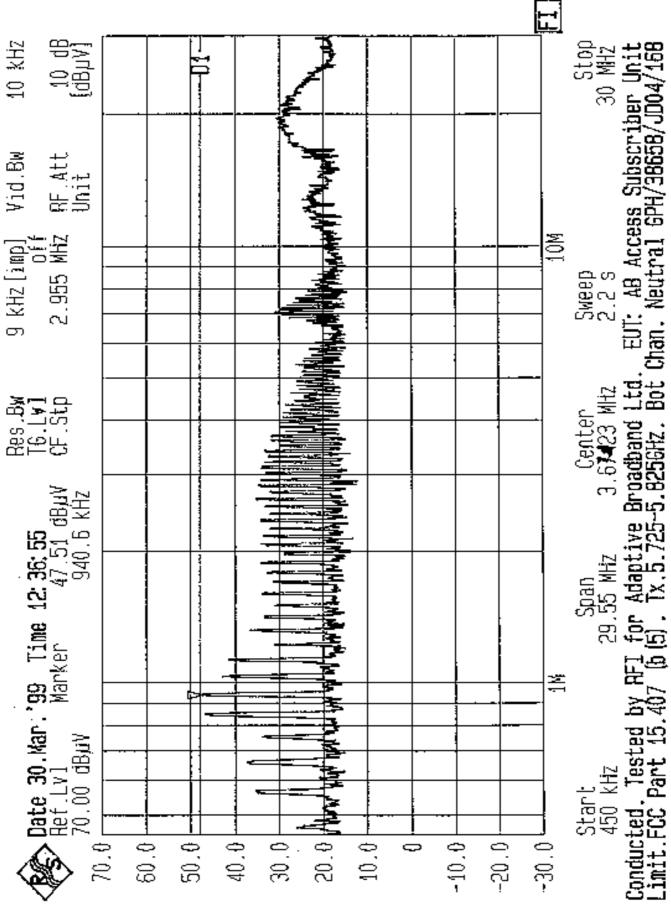


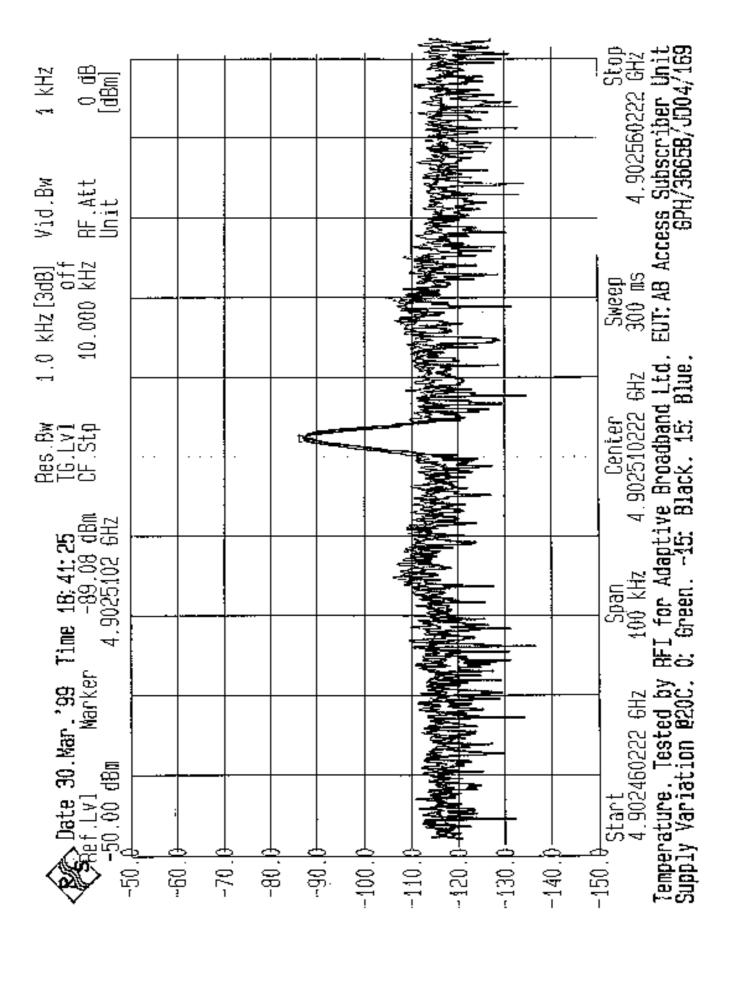


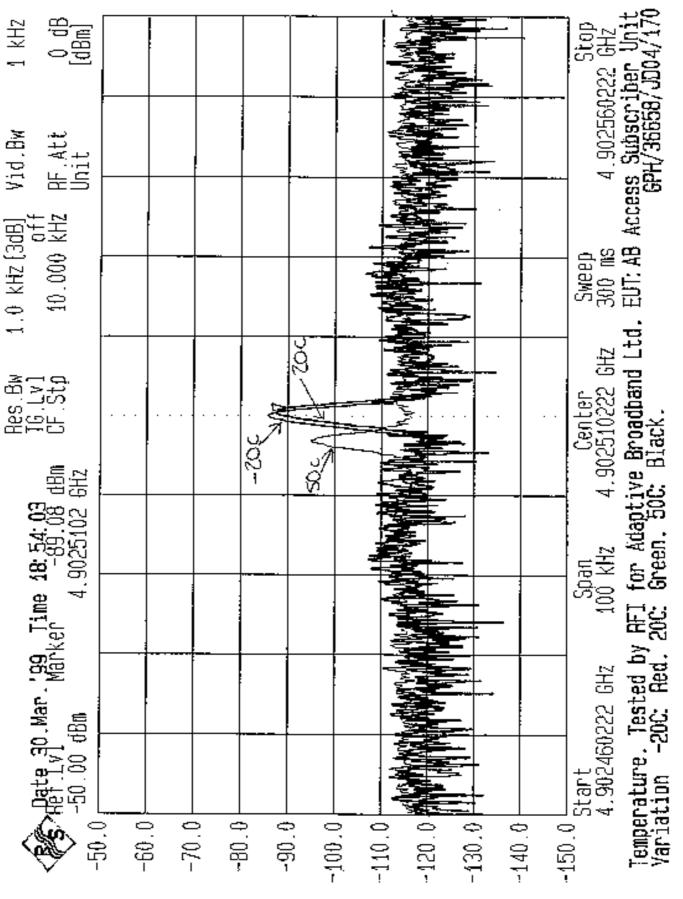












Temperature. Tested by RFI for Adaptive Broadband Ltd Variation -20C: Aed. 20C: Green. 50C: Black.

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EMC Department Page 59 of 59 Issue Date: 13 December 2000

Test Of: **Adaptive Broadband Ltd**

AB-ACCESS Subscriber Unit (SU)

To: F.C.C. Part 15 Subpart E: 1998

Appendix 5. Photographs of EUT

This appendix contains the following photographs:

Photo Reference Number	Title
PHT/38658JD04/001:	Conducted Emissions – Front View
PHT/38658JD04/002:	Conducted Emissions – Side View
PHT/38658JD04/003:	Radiated Emissions – Front View
PHT/38658JD04/004:	Radiated Emissions – Rear View

These pages are not included in the total number of pages for this report.

TEST REPORT

S.No: RFI/EMCB1/RP38658A

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Issue Date: 13 December 2000

Test Of: Adaptive Broadband Ltd

EMC Department

AB-ACCESS Subscriber Unit (SU)

To: F.C.C. Part 15 Subpart E: 1998

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TEST REPORT Photograph Section

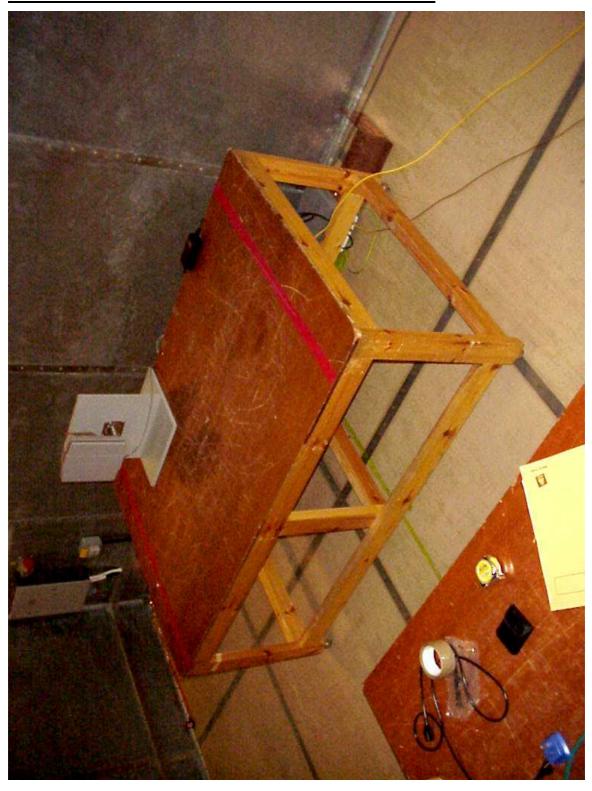
EMC Department

Test Of: Adaptive Broadband Ltd

AB-ACCESS Subscriber Unit (SU)

To: F.C.C. Part 15 Subpart E: 1998

PHT/38658JD04/001: Conducted Emissions - Front View



TEST REPORT Photograph Section

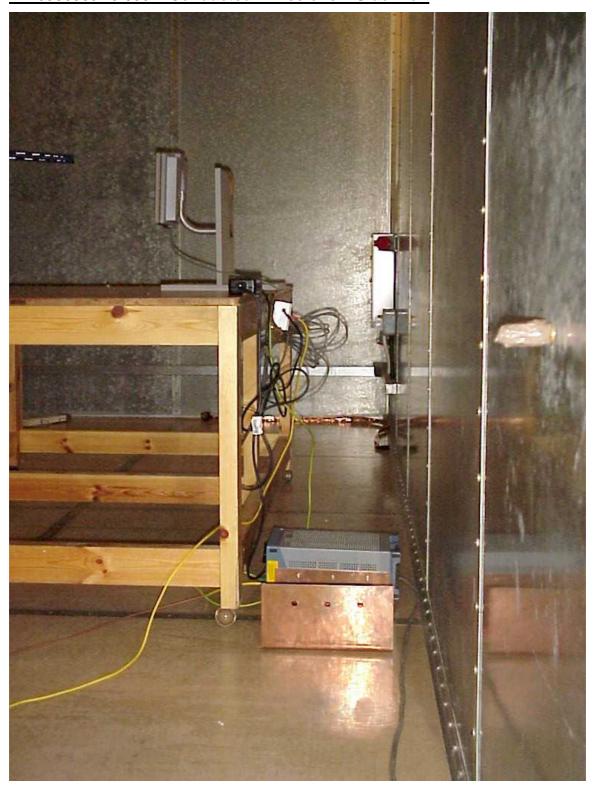
EMC Department

Test Of: Adaptive Broadband Ltd

AB-ACCESS Subscriber Unit (SU)

To: F.C.C. Part 15 Subpart E: 1998

PHT/38658JD04/002: Conducted Emissions - Side View



TEST REPORT Photograph Section

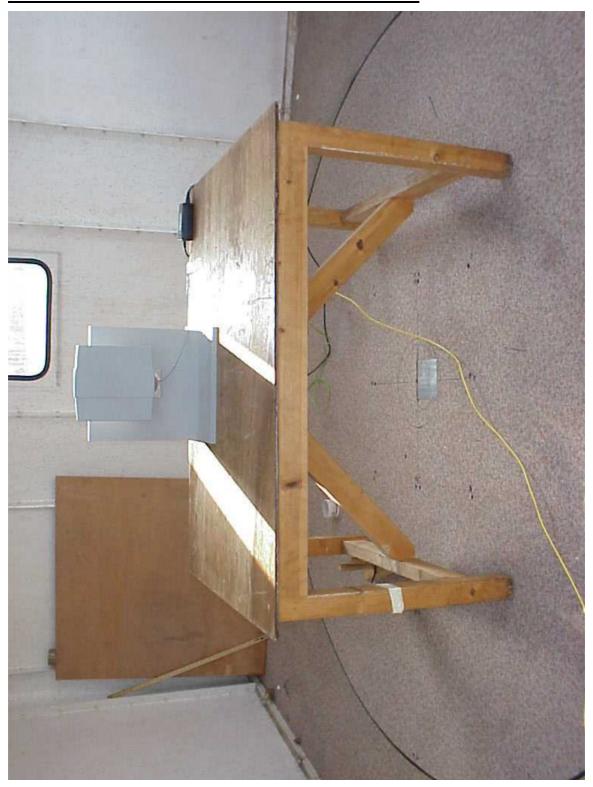
EMC Department

Test Of:

Adaptive Broadband Ltd
AB-ACCESS Subscriber Unit (SU)

F.C.C. Part 15 Subpart E: 1998 To:

PHT/38658JD04/003: Radiated Emissions – Front View



TEST REPORT Photograph Section

EMC Department

Test Of: Adaptive Broadband Ltd

AB-ACCESS Subscriber Unit (SU)

To: F.C.C. Part 15 Subpart E: 1998

PHT/38658JD04/004: Radiated Emissions - Rear View

