

SUPPLEMENTARY TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test Of: Adaptive Broadband Ltd. AB Access EXTENDER

To: FCC Part 15: Subpart E: 2000 (Unlicensed National Information Infrastructure Devices)

Supplementary Test Report Serial No.:

RFI/MICB1/SUP42151A

This Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director:	Checked By:			
Tested By:	Release Version No: PDF01			
Su				
Issue Date: 25 May 2001	Test Dates: 23 May 2001 and 24 May 2001			

This supplementary report has been issued to identify the EUT as a Point to Point device and show compliance to 15.209 Radiated emission limits, general requirements, and 15.205 Restricted bands of operation.

This supplementary test report is issued in Adobe Acrobat portable document format (PDF). It is only a valid copy of the report if it is being viewed in PDF format with the following security options not allowed: Changing the document, Selecting text and graphics, Adding or changing notes and form fields. Furthermore, the date of creation must match the issue date stated above. This supplementary test report may be copied in full.

Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, ENGLAND. Tel: +44 (0) 1256 851193 Fax: +44 (0) 1256 851192 Registered in England, No. 211 7901. Registered Office: Ewhurst Park, Ramsdell, Basingstoke, Hampshire RG26 5RQ



Park, Ramsdell, 626 5RQ

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 2 of 18 Issue Date: 25 May 2001

This page has been left intentionally blank.

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 3 of 18 Issue Date: 25 May 2001

CONTENTS

1.	Client Information	. 4
2.	Equipment Under Test (EUT)	. 5
3.	Test Results	. 9
Ap	opendix 1. Graphical Test Results	16

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

1. Client Information

Company Name:	Adaptive Broadband Ltd.
Address:	The Westbrook Centre Block 5 Milton Road Cambridge SB41 1YG.
Contact Name:	Mr A Crisp.

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

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 [™] EXTENDER
Model Name or Number:	Subscriber Unit
Unique Type Identification:	None stated by client
Serial Number:	None
Country of Manufacture:	USA
FCC ID Number:	Awaiting certification from FCC
Date of Receipt:	10 April 2001

Brand Name:	AB-Access [™] EXTENDER
Model Name or Number:	Power Supply
Unique Type Identification:	SSL40-3360
Serial Number:	None stated by client
Country of Manufacture:	China
FCC ID Number:	Awaiting certification from FCC
Date of Receipt:	10 April 2001

Brand Name:	AB-Access [™] EXTENDER
Model Name or Number:	AB-Access Extender Wall Box
Unique Type Identification:	1000008
Serial Number:	None stated by client
Country of Manufacture:	EU
FCC ID Number:	Awaiting certification from FCC
Date of Receipt:	10 April 2001

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

2.2. Description Of EUT

AB-Access [™] EXTENDER is targeted at providing high-speed wireless internet/video/data/voice access in the FCC UNII bands between 5.725 GHz and 5.825 GHz.

AB-Access TM EXTENDER adopts a point to point configuration, consisting of two AB-Access extender units. It is a fixed access, point to point infrastructure. The product is targeted for the US market only.

The Subscriber Unit (SU) is routed via a wall box to the network service provider's truncated infrastructure. The SU has an integral antenna with a 10 degree by 10 degree, 3dB beam width to receive/transmit the desired area of coverage. SU units can be installed around the periphery of a tall building or on a tower for optimum line of sight range. Power and data (bi-directional) are routed via braid and foil screened, quad twisted pair, CAT 5 data cable from the internally mounted wall box (similar in construction to a standard BT telephone outlet) up to the SU transceiver/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 power supply. The wall box provides either Ethernet or ATM connectivity via the industry standard RJ45 socket, to the service providers network and end customer systems.

2.3. Modifications Incorporated In EUT

The EUT incorporates the following modifications:

The AB-Access [™] EXTENDER unit has been modified so that it can be driven from a PC test script, enabling the worst case conditions for FCC requirements, to be evaluated and tested for compliance. There are no hardware modifications, as the modification is purely in the software driver. AB Access employs a rapid Time Division Duplex (TDD) air interface, based on Asynchronous Transfer Mode (ATM) networking protocols. Data is transmitted asynchronously on demand, so there is no discernible duty cycle from which averaged measurements can be taken.

The following test modes have been implemented:

- Continuous Transmit Mode (CTM) this configures the unit for its worst case mode, for EIRP measurements. The unit is set for maximum transmit power, to give the worst case for switching transients, which can cause spurious emissions whilst performing radiated and conducted emissions.
- Continuous Bursted Receive Mode (CBRM) this exercises the unit if there may be some fundamental frequency components that exceed the receive switch test mode. In this configuration the unit is set to maximum receive gain.

In either of these modes it is possible to change the operating channel and antenna polarisation as required, by means of the PC controller.

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 6 of 18 Issue Date: 25 May 2001

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 7 of 18 Issue Date: 25 May 2001

2.4. Additional Information Related To Equipment Under Test

Power Supply Requirement:	Nominal 115 V, 60 Hz AC Mains Supply 13 Amp (max) 48 V DC from PSU to EUT
Current Rating:	0.6 Amps
Highest Frequency used or generated within the EUT	5.805 GHz
Type of Device:	Point to Point wireless data system
Antenna Details:	Permanently attached. (Horizontal or Vertical)
Transmitter Duty:	Continuous
Occupied Bandwidth:	17 MHz
Transmit Frequency:	5.745 GHz to 5.805 GHz
Type of Modulation:	QPSK at 25 Mbits/sec, raised cosine filter (\propto = 0.35)
Number of Channels:	5 Channels of 15 MHz
Receiver Category:	Superhetrodyne Highest local oscillator frequency 4.9025 GHz
Antenna	Permanently attached. (Horizontal or Vertical)
Tuning Frequency:	5.745 GHz to 5.805 GHz
Method of frequency Generation:	Synthesizer
Intended Operating Environment:	AB-Access [™] EXTENDER unit transceivers/antennas are mounted outside with an operating range of -20°C to +50°C. The wall box and power supply are intended to be mounted internally in users building/office/or home.
Weight:	Master Unit = 6.25 Kg
	PSU = 0.2 Kg
	Wall Box = 0.05 Kg
Dimensions:	Master Unit = 0.37 x 0.40 x 0.10 metres
	PSU = 0.11 x 0.045 x 0.03 metres
	Wall Box = 0.085 x 0.085 x 0.040 metres
Interface Ports:	Wall Box RJ45 Socket - Ethernet or ATM
Cycle Time:	Not applicable

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 8 of 18 Issue Date: 25 May 2001

2.5. Support Equipment

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

Description:	Personal Computer
Model Name:	Dell
Model Number:	PPX
Serial Number:	4898T
Cable Length And Type:	10.0 metres Ethernet cable
Connected to Port:	Local Area Line (LAN) to port 4 on fast Ethernet switch

Description	Fast Ethernet Switch
Brand Name	Netgear
Model Name or Number	FS308
Serial Number	FS38G05015393
F.C.C. ID Number	None stated
Cable Length And Type	9 m Ethernet Crossover Cable
Connected to Port	Port 5 to RJ45 Port on the Wall Box of the EUT

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3. Test Results

3.1. Radiated Emissions: Bottom Channel EUT Antenna: Vertical Polarisation

3.1.1. Electric Field Strength Measurements

3.1.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.1.1.2. Plots of the initial scans can be found in Appendix 1.

3.1.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml/ /m)	Average Limit (dB ml //m)	Average Margin (dB)	Result
1.4255	Vert.	21.9	21.7	1.2	44.8	54.0	9.2	Complied
1.5000	Vert.	23.6	21.7	1.2	46.5	54.0	7.5	Complied
1.0511	Vert.	18.1	21.7	1.2	39.8	54.0	14.2	Complied
1.4500	Vert.	15.8	21.7	1.2	38.7	54.0	15.3	Complied

Highest Peak Level:

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dB ml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml/ /m)	Peak Limit (dB ml //m)	Peak Margin (dB)	Result
1.4255	Vert.	29.6	21.7	1.2	52.5	74.0	21.5	Complied
1.5000	Vert.	31.0	21.7	1.2	53.9	74.0	20.1	Complied
1.0511	Vert.	26.8	21.7	1.2	49.7	74.0	24.3	Complied
1.4500	Vert.	27.1	21.7	1.2	50.0	74.0	24.0	Complied

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 9 of 18 Issue Date: 25 May 2001

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.2. Radiated Emissions: Bottom Channel EUT Antenna Vertical Polarisation

3.2.1. Electric Field Strength Measurements

3.2.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.2.1.2. Plots of the initial scans can be found in Appendix 1.

3.2.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml/ /m)	Average Limit (dB ml //m)	Average Margin (dB)	Result
7.264	Vert.	12.81	31.0	2.0	45.81	54.0	8.19	Complied
7.264	Horiz.	19.46	31.0	2.0	52.46	54.0	1.54	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml/ /m)	Peak Limit (dB ml //m)	Peak Margin (dB)	Result
7.264	Vert.	23.07	31.0	2.0	56.07	74.0	17.93	Complied
7.264	Horiz.	25.78	31.0	2.0	58.78	74.0	15.22	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.3. Radiated Emissions: Middle Channel EUT Antenna Vertical Polarisation

3.3.1. Electric Field Strength Measurements

3.3.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.3.1.2. Plots of the initial scans can be found in Appendix 1.

3.3.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml/ /m)	Average Limit (dB ml //m)	Average Margin (dB)	Result
7.309	Vert.	17.53	31.0	2.0	50.53	54.0	3.47	Complied
7.309	Horiz.	18.27	31.0	2.0	51.27	54.0	2.73	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dB ml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml //m)	Peak Limit (dB ml/ /m)	Peak Margin (dB)	Result
7.309	Vert.	24.77	31.0	2.0	57.77	74.0	16.23	Complied
7.309	Horiz.	25.16	31.0	2.0	58.16	74.0	15.84	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.4. Radiated Emissions: Top Channel EUT Antenna Vertical Polarisation

3.4.1. Electric Field Strength Measurements

3.4.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.4.1.2. Plots of the initial scans can be found in Appendix 1.

3.4.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml// m)	Average Limit (dB ml// m)	Average Margin (dB)	Result
7.354	Vert.	16.11	31.0	2.0	49.11	54.0	4.89	Complied
7.354	Horiz.	13.82	31.0	2.0	46.82	54.0	7.18	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml/ /m)	Peak Limit (dB ml/ /m)	Peak Margin (dB)	Result
7.354	Vert.	24.49	31.0	2.0	57.49	74.0	16.51	Complied
7.354	Horiz.	23.51	31.0	2.0	56.51	74.0	17.49	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.5. Radiated Emissions: Top Channel EUT Antenna Horizontal Polarisation

3.5.1. Electric Field Strength Measurements

3.5.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.5.1.2. Plots of the initial scans can be found in Appendix 1.

3.5.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml/ /m)	Average Limit (dB ml //m)	Average Margin (dB)	Result
7.354	Vert.	12.40	31.0	2.0	45.40	54.0	8.60	Complied
7.354	Horiz.	12.76	31.0	2.0	45.76	54.0	8.24	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dB ml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml/ /m)	Peak Limit (dB ml //m)	Peak Margin (dB)	Result
7.354	Vert.	23.07	31.0	2.0	56.07	74.0	17.93	Complied
7.354	Horiz.	22.72	31.0	2.0	55.72	74.0	18.28	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.6. Radiated Emissions: Middle Channel EUT Antenna Horizontal Polarisation

3.6.1. Electric Field Strength Measurements

3.6.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.6.1.2. Plots of the initial scans can be found in Appendix1.

3.6.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBmV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml// m)	Average Limit (dB ml// m)	Average Margin (dB)	Result
7.309	Vert.	19.13	31.0	2.0	52.03	54.0	1.97	Complied
7.309	Horiz.	19.49	31.0	2.0	52.41	54.0	1.59	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dB ml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml //m)	Peak Limit (dB ml/ /m)	Peak Margin (dB)	Result
7.309	Vert.	25.71	31.0	2.0	58.71	74.0	15.29	Complied
7.309	Horiz.	26.02	31.0	2.0	59.02	74.0	14.98	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

3.7. Radiated Emissions: Bottom Channel EUT Antenna Horizontal Polarisation

3.7.1. Electric Field Strength Measurements

3.7.1.1. The client has stated that the highest clock frequency for the EUT was 5.805 GHz. Therefore tests were performed up to 40.0 GHz.

3.7.1.2. Plots of the initial scans can be found in Appendix 1.

3.7.1.3. The following tables list frequencies at which emissions were measured using Peak and Average detector functions:

Highest Average Level:

Frequency (GHz)	Antenna Polarity (H/V)	Average Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB ml// m)	Average Limit (dB ml //m)	Average Margin (dB)	Result
7.264	Vert.	14.62	31.0	2.0	47.62	54.0	6.38	Complied
7.264	Horiz.	19.41	31.0	2.0	52.41	54.0	1.59	Complied

Frequency (GHz)	Antenna Polarity (H/V)	Peak Detector level (dBml/)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB ml/ /m)	Peak Limit (dB ml //m)	Peak Margin (dB)	Result
7.264	Vert.	24.44	31.0	2.0	57.44	74.0	16.56	Complied
7.264	Horiz.	24.86	31.0	2.0	57.86	74.0	16.14	Complied

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

Appendix 1. Graphical Test Results

This appendix contains the following graphs:

Graph Reference Number	Title
GPH/42151JD01/4001	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Horizontal Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4002	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Horizontal Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4003	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Horizontal Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4004	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Vertical Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4005	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Vertical Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4006	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Vertical Polarisation (4 GHz to 6 GHz), Part 15.209
GPH/42151JD01/4007	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Vertical Polarisation (6 GHz to 8 GHz), Part 15.209
GPH/42151JD01/4008	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Vertical Polarisation (6 GHz to 8 GHz), Part 15.209
GPH/42151JD01/4009	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Vertical Polarisation (6 GHz to 8 GHz), Part 15.209
GPH/42151JD01/4010	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Horizontal Polarisation (6 GHz to 8 GHz), Part 15.209
GPH/42151JD01/4011	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Horizontal Polarisation (6 GHz to 8 GHz), Part 15.209
GPH/42151JD01/4012	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Horizontal Polarisation (6 GHz to 8 GHz), Part 15.209

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 17 of 18 Issue Date: 25 May 2001

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42151JD01/4013	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Horizontal Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4014	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Horizontal Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4015	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Horizontal Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4016	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Vertical Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4017	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Vertical Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4018	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Vertical Polarisation (8 GHz to 12 GHz), Part 15.209
GPH/42151JD01/4019	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Vertical Polarisation (12 GHz to 18 GHz), Part 15.209
GPH/42151JD01/4020	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Vertical Polarisation (12 GHz to 18 GHz), Part 15.209
GPH/42151JD01/4021	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Vertical Polarisation (12 GHz to 18 GHz), Part 15.209
GPH/42151JD01/4022	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Horizontal Polarisation (12 GHz to 18 GHz), Part 15.209
GPH/42151JD01/4023	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Horizontal Polarisation (12 GHz to 18 GHz), Part 15.209
GPH/42151JD01/4024	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Horizontal Polarisation (12 GHz to 18 GHz), Part 15.209

Conformance Testing Department

Test Of:Adaptive Broadband Ltd.
AB Access EXTENDERTo:FCC Part 15: Subpart E: 2000

SUPPLEMENTARY TEST REPORT S.No: RFI/MICB1/SUP42151A Page 18 of 18 Issue Date: 25 May 2001

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42151JD01/4025	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Horizontal Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4026	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Horizontal Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4027	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Horizontal Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4028	Radiated Emissions, Transmit Mode, Top Channel, EUT Antenna Vertical Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4029	Radiated Emissions, Transmit Mode, Middle Channel, EUT Antenna Vertical Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4030	Radiated Emissions, Transmit Mode, Bottom Channel, EUT Antenna Vertical Polarisation (18 GHz to 26.5 GHz), Part 15.209
GPH/42151JD01/4031	Radiated Emissions, Top, Middle and Bottom Channels, EUT Antenna Vertical and Horizontal Polarisation (26.5 GHz to 40 GHz), Part 15.209
GPH/42151JD01/4032	Radiated Emissions, Bottom Channel, EUT Antenna Vertical and Horizontal Polarisation (1 GHz to 2 GHz), Part 15.209
GPH/42151JD01/4033	Radiated Emissions, Middle Channel, EUT Antenna Vertical and Horizontal Polarisation (1 GHz to 2 GHz), Part 15.209
GPH/42151JD01/4034	Radiated Emissions, Top Channel, EUT Antenna Vertical and Horizontal Polarisation (1 GHz to 2 GHz), Part 15.209
GPH/42151JD01/4035	Radiated Emissions, Top, Middle and Bottom Channels, EUT Antenna Vertical and Horizontal Polarisation (2 GHz to 4 GHz), Part 15.209

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



•























					 			- Vd		
3 MHz 0 dB [dBμV]										Stop 12 GHz Ibpart E 001/4013
Vid.Bw RF,Att Unit								- - - -		Part 15 St PH/42151JU
mp] off MHz	after a Capital									0
1 MHz [i 400.000						<u> </u>				Sweep 40 ms T: SU 1a
Res.Bw TG.Lvl CF.Stp				• • • •		· · · ·				Center 10 GHz Broadband. EU el Horiz. Antenr
: 53: 50										Hz Hz daptive om Chann
Time 19			· · · · · · · · · · · · · · · · · · ·			:				Sparant Sparan
3. Мау. ' 01 іВµV	Second		· · · · · · · · · · · · · · · · · · ·							sted by R
Date 25 Ref.Lv1 57.00 c	100 A									Start 8 GHz ted. Te 15.209.
	50.0	40.0).) T).UL-		1.0c- 0.0t-	Radiat

4z -	87					1] 음 卢	ш
Ξ m	[dBµ]	Ĩ				-									12 12 15	ubpart
id.Bw	r.Att nit		And the second							 						art 15 S
imp] V off	MHZ															Ë
1 MHz [400.000				. <u></u>										Sweet 40 ms	IT: SU
Hes.Bw TG.Lvl	CF.Stp		مردي المراجع مرجعه فالمراجع المحمد محمد محمد المحمد محمد المحمد المحم محمد المحمد المحمد المحمد المحمد محمد محمد محمد محمد محمد محمد محمد									· · · · ·	• • •		Center 10 GHz	Broadband. EU
: 58: 31	·		mundely fill the state		<u> </u>					 						daptive
Time 19			-												Sp. 4	FI for A
3.Mav.'01	dBµV		And the second second second													ested by A
× Date 2	Bef.Lv 57.00			0	>	0		>				0			Start 8 GH7	ated. T
Ŕ	Ø		50.	07		30.	200	, v v	10.	-	-10	-20	06-	07-	ŕ	Radi





z 8	······			<u></u>]
3 MH 0 dl UdBµV	- [[12 GHz 12 GHz Ibpart (
id.Bw = Att nit									Int 15 Su
imp] V. MHZ NG	-yphotosius (sec								
1 MHz 400.000									T: SU
Res.Bw TG.Lvl CF.Stp				• • • • •		 • • • •	• • •	• • •	Center 10 GHz Broadband. EU
: 35: 47					····				Hz Hz daptive
Time 20									Spi Spi 4 G
23.Мау.'01 Lvl 0 dBµV									t Iz Tested by RI
Pate 57.0	20.0	40.0	30.0	20.0	10.0	0.01-		0.0L	adiated.

. . .

÷

									1								-1		
3 MHz 0 dB	[dBµŬ]	man way and																12 GHz 12 GHz 12 GHz 101/4018	
/id.Bw WF Att	hit	There and the second second																art 15 Su H/42151JC	
O MH7 F		ato have a second														··· · ··		d: S	
1 MHZ 400.00		Marcheory and																Swee T: SU Ina	
Hes.Bw TG.Lvl CF Stn	4	And the space of the stand of the Andrew	•••				· · · · · · · · · · · · · · · · · · ·	• •		• •	• •	• • •		• • •	•	• • •		Center 10 GHz Broadband. EU el Vert. Anten	
ie 20: 42: 51		Manager Manager and Manager																Span 4 GHz or Adaptive Bottom Chann	
'01 Tim		Service and service											:					y RFI f	
.Date 23.May.' Ref.Lvl	57.00 dBµV	Construction Apple and											· · · · · · · · · · · · · · · · · · ·					Start 8 GHz Led. Tested b 15.209.	
S	>	50.0	U UV	40.0	30.0		20.0	10.01	л. Л	0		-10.0		N. UZ-	-30.0		-40.0	Radiat Part	

		·		 ا		<hr/>	+ A		_
3 MHz 0 dB [dBuV]	10 								18 GHz 19 GHz 101/4019
Vid.Bw RF.Att Unit	to be where where								Part 15 St PH/42151.0
1 MHz[imp] 0ff 500.000 MHz									Sweep 40 ms SU 5
Hes.Bw TG.Lvl CF.Stp					* • • • •				Center 15 GHz dband. EUT: ert Antenni
: 52: 26 59.97 dBuV 4.0133 GHz	at Trutes approved								Hz Hz daptive Broa
01 Time 20 Marker 1	1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 -		· · ·						Spa 6 6 9 AFI for A
Jate 23.May. Bef.Lvl 34.00 dBµV	Al-understall all build build								Start 12 GHz 2d. Tested b
	60.0	0.0c	30.0	20.0	0.21	-10 0	-20.0	-30.0	Radiate

															~1	1-1		4 	
3 MHz	0 dB [dBµV]	10																	18 GHz 18 GHz 101/4020
Vid.Bw	RF.Att Unit																		Part 15 Su GPH/42151JC
[jmp] off	E E E E E E E E E E E E E E E E E E E		-																- G. Ø
1 MHz	600,000																		T: SU ma
Hes.Bw	Hz CF.Stp			* * *	••	• • •		• • •		• •	•	• •		• • •		• •			Center 15 GHz Broadband. EU el Vert. Anten
ን. ኳቫ. ኳቫ	60.07 df	A.						_											an SHz daptive Jle Chann
Time 2	ker																		FI for /
10, Ve	Nu Mar																		ed by R
late 23 1	Ref.Lv] 34.00 dBµ																		start 12 GHz 12 GHz 1.209.
Je Contraction of the second s		60 0 F	· · · · · · · · · · · · · · · · · · ·	50.0	0.01	40.0	30 05	>	20.05		10.0	6	0			10 06-		-30.0	Hadiate

3 MHz 0 dB [dB,UV]				Stop 18 GHz
Vid.Bw RF.Att Unit				
1 MHz [imp] 0ff 600.000 MHz				Sweep 40 ms
Res.Bw TG.Lvl CF.Stp			• • • • • • • • •	Center 15 GHz
70: 59: 20 60.70 dBµV 14.0133 GHz				Span 5 GHz
Vay.'Oi Time Marker uV				
Bef.Lv1 64.00 dBJ	50.0 50.0 30.0 20.0	10.0	10.0 20.0 30.0	Start 12 GHz



3 MHz 0 dB [dBuV]										Stop 18 GHz	101/4023
Vid.Bw HF.Att Unit											PH/42151JU
imp] off MHz											8
1 MHz [3 600.000										Sween 40 ms	T: SU Ta
Res.Bw TG.Lvl CF.Stp	in the second second second					• • • •		 		Center 15 GHz	idband. EU Horiz. Antenn
07: 01 60. 45 dBµV 4. 0466 GHz	we Kenned and and and									다. U	daptive Broa Le Channel H
1 Time 21: Marker 1	איריק אינייעינעריייעראינעריייער									Spa 6	/ HFI for A(TX Midd
late 23.May.'(lef.Lvl 14.00 dBµV	and the second									start 12 GHz	d. Tested by 1.209.
B	60.0	50.0	40.0	30.0	20 0-		0.0T	-10.0	 0.05-		Radiate Part 15

З MHz 0 dB [dbuv]		Stop 18 GHZ 101/4024
Vid.Bw RF.Att Unit		Part 15 Su PH/ 421510E
1 MHz[imp] 0ff 600.000 MHz		Sweep 40 ms 13 SU 13 SU
Hes.Bw TG.Lvl CF.Stp		Center 15 GHz adband. EU1 Horiz. Antenr
21: 20: 18 60.83 dBµV 14.0733 GHz		Span SPan GHz Adaptive Brc ttom Channel
9).'Of Time V		ed by RFI for TX Bo
Bate 23.N Bef.Lv1 64.00 dBu	50.0 50.0 50.0 70.0 70.0 10.0 10.0 10.0 20.0 10.0 10.0 10.0 10.0 10.0 10.0	Start Start 12 GHz diated. Test(rt 15.209.

												TT	-				4	M	10				
3 MHz	0 dB [dBµV]	τa	man han and																			6.5 GHz bpart E 001/4025	
Vid.Bw	RF.Att Unit	γ	Manyana and a second												- <u></u>							2 Part 15 Su 3PH/42151JD	
imp] off	MHZ		A. Marine															1					
120 kHz [850.000		and the second																			Sweet 3.8 Su 3.8 Su 3.8 Su 3.8 Su	
Res.Bw TG Ivl	uv CF.Stp Iz		and the second and the second	• • • • • • • • • • • • • • • • • • • •	• • •		· • •	• .		•	• •		• •			• •						Center 22.25 GHz roadband. EU 1 Horiz. Anten	
00.92 ·	69.56 dB) 4.5922 GF																					an GHz daptive B om Channe	
Time 22	ker 2																					9.50 8.5 1 for A TX Bott	
JU, NEW	Nar Vu		handr-smitheter																			ted by A	
Nate 23	Ref.Lvl 74.00 dB		- property and and a																			Start 18 GHz ed. Tes 5.209.	
(e	Ś	0 02	2.2/	000	0. 00	50.0		0 07	2.04	JA A		0 00		10 0	N . NT	0	>	-10 0	2. 01	-20.0	, , ,	Radiat Part 1	

.

					<u>ب</u> ا با		4	t și	·	
3 MHz 0 dB [dBuV]	T CI									5top 6.5 GHz bpart E
/id.Bw 1F.Att Init	And the second second									art 15 Su u//2454.00
z [imp] / 0ff 00 MHz F										S S D D D
120 kH 850.0										Swe 3.8 3.8 SU SU
Res.Bw TG.Lvl z CF.Stp	بالمسالية والمراجعة والمراجعة			 .		 • • • •				Center 22.25 GHz roadband. E
2: 37: 50 70.09 dBy 24.1672 GH										an GHz daptive B
Time 22 rker	the states and									8.50 8.5 FI for A
.May.'01 BµV	لياسهم يعاددونهما									sted by F
Bate 23 Ref.Lvl 74.00 df										Start 18 GHz ted. Tes
Ś	70.(60.(50		- 00 00	.01				Radia Part

										_							
3 MHz	0 dB [dBµV]		when when														6.5 GHz DPart E 01/4027
Vid.Bw	RF.Att Unit		and a second s		· ·					<u>.</u>							2 art 15 Su 7H/42151JD
imp] off	MHz	Δ	J. Maria														
120 kHz [850.000																Sweep 3.8 s 3.8 s 5U 3.8 s
Res. Bw TG I v1	uv cF.Stp łz			• •			 			•••	• •	• • •			•••	•	Center 22.25 GHz Proadband, EUT 1 Horiz, Antenn
77 • 17 •	69.38 dB		and and and a				-										n GHz daptive E Channe
Time 22	ker 2		- Anna and the marker														8.50 8.51 1 for A
Vav 101	μV Mar		and a second second														ted by Rf
Nate 23	Ref.Lv] 74.00 dB						 -										Start 18 GHz ed. Tesi 5.209.
A	Þ	0 02	2.07	60 D		50.0	40.0 0.0	30. U	20.00		10.0	C	>	-10.0	0 00-	LV.V	Radiat Part 1

1 1



	_									4 - <u></u>	
3 MHz 0 dB [dBuV]	L.C.										6.5 GHz b)1/2029
Vid.Bw HF.Att Unit	and and the first state of the second										art 15 Su 34/42155
[imp] off 0 MHz	And we want										d's Th
120 kHz 850.00	Anna hara			· · · · · · · · · · · · · · · · · · ·							T: SU SWee
Hes.Bw TG.Lv1 Lv CF.Stp Iz	an fastate stranger and an and			· • • • •	· • • • •	· · · · ·		• • • •			Center 22.25 GHz Poadaed 5. EU
2: 50: 14 69.46 dBµ 24.5355 GH						, ,	-				Jan GHz Adaptive B
i Time a	had a second a second										8.5 8.5 17 401
23. Мау. ⁺ 0: r1 dBµV	Alestine										ested by
S Date 2 Ref.Lv 74.00	0.	0. 0	<u> </u>				<u> </u>		. c		Start 18 GHz ated. T
	70	09		64 6	nr v		10			201	Jadi

			▶ ▶		
3 MHz db 0 dB UdB	T (1				6.5 GHz bpart E 01/4030
Vid.Bw RF.Att Unit					2 Part 15 Su PH/42151JD
[imp] Off MHz	- And Market				
120 kHz 850.00(1157-115-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				Swee 3.8 1: SU 3.8
Res.Bw TG.Lvl CF.Stp	languada takun berdu dalam Manu Manu			• • • • • • • • • • • •	Center 22.25 GHz adband. EU Vert. Antenr
02: 20 69.46 dBuV 4.6111 GHz					n Hz Japtive Bro
Time 23: Ker 2					FI for Ac TX Botto
.May.'01 Mar	- Alexandra - Alexandra				sted by R
Date 23. Ref.Lv1 74.00 dE	and the strength and the second se				Start 18 GHz ed. Tes 15.209.
Ś	70.0 60.0	0.06 30.0	20.0 10.0	-10.0 20.0	Part 1

1 MHz	0 dB [dBµ\\/µ{Bj		matheren								Stop 40 GHz uppart E 002/4031
Vid.Bw	RF.Att Unit		and the strength of the streng					- -			Part 15 S PH/421550
[3dB]) GHz		Sanghy Justynsky								с. с. с. с. с. с. с. с. с. с. с. с. с.
1.0 MHz[1.350										Sweel 50 m SU 50 m 50 m 50 m 50 m 50 m 50 m 50 m 50 m
Hes.Bw	CF.Stp						 			• • •	Center 3.25 GHz doand. EUT: cs: Vert 8
	dB* GHz		e-makerent								Broa Chance
00.00	40.88		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								an GHz daptive Dottom (
T1m0 ()			diration of the second								13.50 E and 55
	. Mark		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								
	Ref.Lv1 54.00 dB*		Mayor magness								Start 26.5 GHz ed. Teste 5.209. Top
		50.0	40.0	30.0	20.0	10.0	-10.0		- 30.0	-40.0	Radiat Part 1







		<u> </u>								 1				4) 		215/5/01
1 MHz	0 dB [dB,uV/m]			and the second second with the												Stop 4 GHz	ubpart E D01/4034
Vid.Bw	RF.Att Unit			and a surveyor and			-		•• ••••• •••								Part 15 S PH/42151J
und] off	MHz			ليعلوه المحافظ				and the second			.						у. G
1 MHz [j	200.000			area the second												Sweep 20 ms	SU. polarit
30	ġ																EUT: & hor
Hes. E	ĆF.St				•••		• • •		• • •		• • •	•••	•	• •		Center 3 GHz	adband. s; vert
	dB¥ GHZ			the second second	<u></u>					-							e Broi annel:
i 35: 40	. 43.50 3.9822			And a state of the state of the state			н 									ue 142	Adative tom che
ime (F				Amment and												2 ² 6	I for & Bot
I 10.	Marke			and a state of the			-										by RF 4iddle
4 Mav] 18*			www.the													ested Top, 1
Date 2.	Ref.LV. 60.00			www.wetwer		-	· a • <u> </u>	· · · · · · · · · · · · · · · · · · ·					0-5103			Start 2 GHz	ed. 1 5.209.
		0.00	50.0	40.0		n.05	20.0		> · >	0	-10 0	> • •	-20.0	0 05-		-40.0	Badiat(Part 15