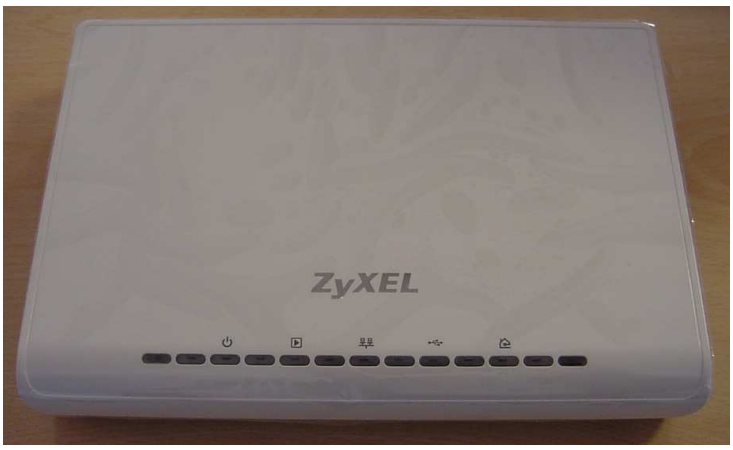
TEST REPORT

Home Plug AV Interoperability Phase2 Certification



Customer	Equipment Under Test	Test package	LAN Ref. File
ZYXEL	**DMA-1100P**	HP - Phase 2 - R0-08	LAN08AF011

Initiation	Date	Description of modification	Ed.
Julien DELORME		Creation	00

	Realised by	Checked by	Approved by
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Date	March 28, 2008	March 28, 2008	March 28, 2008
Sign			

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1 REPORT SUMMARY

HomePlug AV Interoperability Phase 2 Tests were performed on ZYXEL DMA-1100P.

The performance achieved in UDP and TCP were above the required limits. The overall verdict is **PASS**.

This equipment will be added to the Homeplug AV Interop Phase 2 - List Of CPEs that have passed successfully the Interoperability metrics.

2 REFERENCE DOCUMENTS

[1] HomePlug AV Certification Request & Checklist. Version 0.0.3 December 18, 2007. C&I Test Process. Homeplug Confidential.

[2] Certification Process . Compliance and Interoperability. Version 1.0.6. January 17, 2008. Homeplug Confidential.

[3] C&I Test Plan - Phase 2 Certification Interoperability Certification Test plan Version 0.0.8 July 10, 2007

[4] http://www.homeplug.org/members/certification_program/av_cert_lan_direct/

3 INTRODUCTION

3.1 TEST LABORATORY

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3.2 AUTHORS

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3.3 GENERAL

This report contains the results of the tests performed by LAN with respect to the specifications defined in section 2. These specifications are focused on fixed bit rate tests based on a subset of the HomePlug Interoperability Testing - Phase 2 - R0-08. document [3].

This report contains an assessment of the apparatus carried out on samples submitted to the laboratory. The results in this report relate only to the items tested and were obtained in the period between the initial receipt of samples and the issue of the report.

It should be noted that technical modifications on the apparatus or any other network equipment may deeply influence the modem performance.

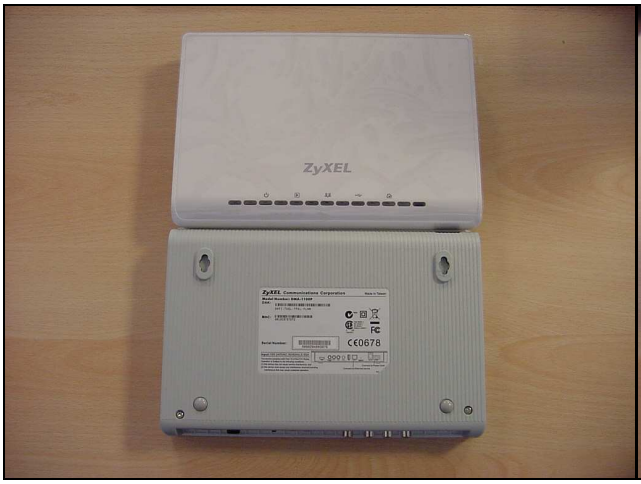
All tests were performed under the following environmental conditions:

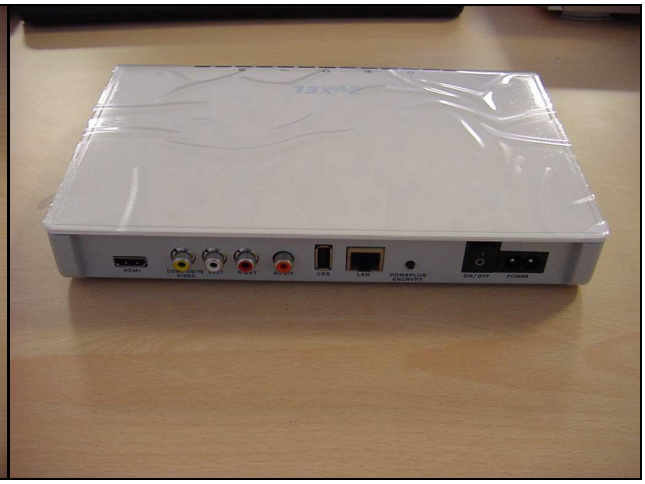
Temperature range	20.5	-	29.5	℃
Humidity range	16	-	43	%

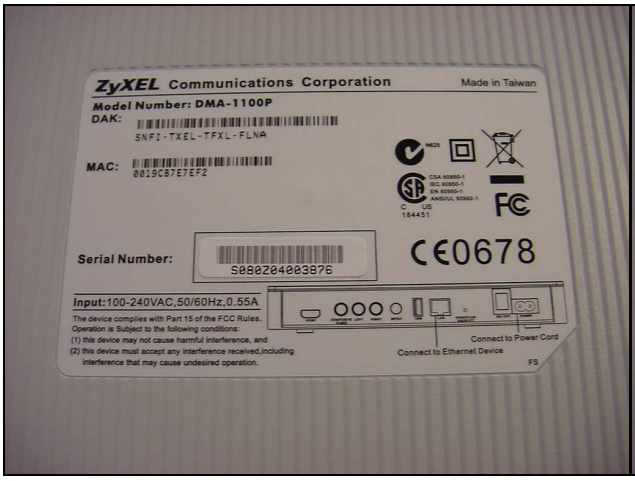
4 ASSESSED PRODUCT

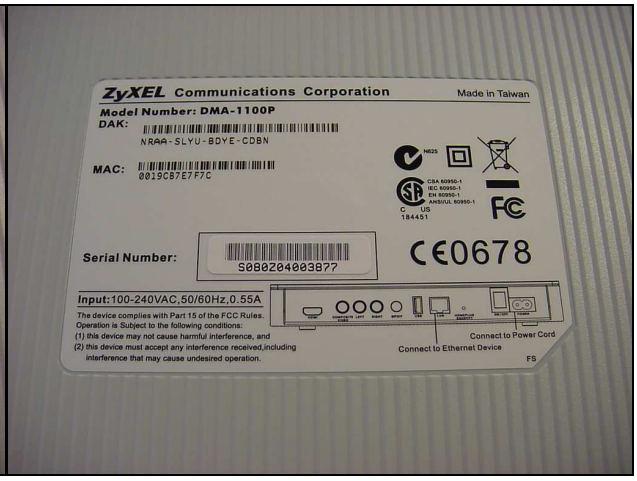
4.1 IDENTIFICATION PRESENT ON PRODUCT

Manufacturer's Name: Zyxel
Trade name/mark/model: **DMA-1100P**









4.2 IDENTIFYING DECLARATIONS

4.2.1 CPE General Information

CPE General Information	
Vendor information (product name and revision)	**Zyxel**
Industry Standards Supported	**DMA-1100P**
Chipset (Vendor, HW and Firmware)	INT6300
HW version	Mac : 00:19:cb:7e:7e:f2 (1) 00:19:cb:7e:7f:7c (2)
FW version	MAC-3-0-3052-1120-20070816-FINAL-B
Modem form (interfaces)	ETH/US cord

4.3 TESTED SAMPLES

Sample no.	Description	Serial no.
1	Zyxel **DMA-1100P**	S080Z04003876
2	Zyxel **DMA-1100P**	S080Z04003877

4.4 LIST OF 3RD PARTY PRODUCTS USED FOR INTEROPERABILITY TEST

Sample Id.	Chipset Reference
Q1	INT6000
U1	INT6000
AL1	INT6000
J1	INT6300
AW1	INT6000
AS1	INT6000
AU1	INT6300
AZ2	INT6300

These samples were taken from the list of CPEs that have successfully passed the HomePlug Phase 2 Interoperability metrics.

5 TEST CAMPAIGN INFORMATION

5.1 TEST PLAN

The apparatus (EUT) was assessed against the specification given in document [3]

5.2 LIST OF COMPLEMENTARY TESTS PERRFORMED OR UPDATED SINCE LAST EDITION REPORT

None.

5.3 TEST CAMPAIGN DATES

Date of test start : March 20th 2008
Date of test end : March 28th, 2008

6 TEST EQUIPMENT DETAILS

6.1 TEST EQUIPMENT USED

The apparatus (EUT) was assessed using the following test equipment.

PC1 (Chariot Console+Performance EndPoint)	
Name	PC1
Manufacturer's Name:	DELL
Operating System:	MICROSOFT WINDOWS XP version 2002 Service Pack 2
Software:	IXIA CHARIOT v6.50, BuildLevel : 70 IXIA EndPoint for IXOS IXIA v6.50.24.144 APTIXIA v2.20.0.195
Model:	INTEL(R) PENTIUM(R) D 3400MHz, 1GB of RAM
Other:	Connected to STA1, IP : 192.168.1.1

PC1 (Performance EndPoint)	
Name	PC2
Manufacturer's Name:	HP
Operating System:	MICROSOFT WINDOWS XP version 2002 Service Pack 2
Software:	IXIA EndPoint for IXOS IXIA v6.50.24.144
Model:	INTEL(R) PENTIUM(R) 2800GHz, 504 MB of RAM
Other:	Connected to STA2, IP : 192.168.1.2

7 OBSERVATIONS

7.1 MODIFICATIONS PERFORMED DURING ASSESSMENT

None.

7.2 TECHNICAL JUDGEMENTS

The performance achieved in UDP and TCP were above the required limits.

The overall verdict is **PASS**.

7.3 DEVIATIONS FROM LABORATORY TEST PROCEDURES

None.

7.4 EUT BEHAVIOUR

All the tests detailed in this report have been performed without detecting any abnormal apparatus behaviour.

7.5 DETAILS OF NON-COMPLIANCES

None.

7.6 ADDITIONAL OBSERVATIONS

None.

8 RESULTS SUMMARY

This section contains the following results summaries.

These results apply to the apparatus as submitted.

Model ID	sample ID	Brand	OEM by OUI	Model	Revision / Version	Voltage / Plug Format	comments	reception date	Sender	PASS / FAIL
BC	BC1	ZYXEL	ZYXEL	DMA-1100P	INT6300-MAC-3-0-3052-1120-20070816-FINAL-B	110-240V / 50/60 Hz - ETH/US cord	Serial : S080Z04003876	10/03/2008	ZYXEL	PASS
	BC2	ZYXEL	ZYXEL	DMA-1100P	INT6300-MAC-3-0-3052-1120-20070816-FINAL-B	110-240V / 50/60 Hz - ETH/US cord	Serial : S080Z04003877	10/03/2008	ZYXEL	

9 DETAILED RESULTS

The following abbreviations are used in the 'Results' column:

TCP	**TCP : aggregated applied datarate : 63 Mbps (31.5 Mbps in both direction)**
UDP	**UDP : aggregated applied datarate : 63 Mbps (31.5 Mbps in both direction)**
TCP : **UDP :** **PHY :**	Yellow colour indicates the test results of 2 identical products (same brand & model) tested with each other. **PHY :** gives the coded PHY rates displayed by Intellon Device Manager (typical values should be : 150 / 150) between 2 submitted units. Local un

CCO is STA1 in UDP tests
CCO is STA2 in TCP tests

9.1 INTEROP TESTING (UDP / TCP)

9.1.1 Average Throughput (>62.2 Mbps)

Interop Testing (UDP / TCP)
Average Throughput (>62.2 Mbps)

STA1 \ STA2	Q1	U1	AL1	J1	AW1	AS1	AU1	AZ2	BC1
Q1									62.423
U1									62.329
AL1									62.388
J1									62.409
AW1									62.437
AS1									62.335
AU1									62.379
AZ2									62.328
BC1	63.013	63.005	63.005	63.013	63.018	63.006	62.924	63.014	UDP : 63,017 TCP : 62,249 150 / 150

9.1.2 Average Latency (<100ms)

Interop Testing (UDP / TCP)

Average Latency (<100ms)

STA2 / STA1	Q1	U1	AL1	J1	AW1	AS1	AU1	AZ2	BC1
Q1									
U1									
AL1									
J1									
AW1									
AS1									
AU1									
AZ2									
BC1	27	12	21	17	13	20	10	23	12

9.1.3 Average Packet Loss (<1%)

Interop Testing (UDP / TCP)
Average Packet Loss (<1%)

STA2 / STA1	Q1	U1	AL1	J1	AW1	AS1	AU1	AZ2	BC1
Q1									
U1									
AL1									
J1									
AW1									
AS1									
AU1									
AZ2									
BC1	0	0	0	0	0	0	0.174	0	0

9.1.4 Average Jitter (<50ms)

Interop Testing (UDP / TCP)
Average Jitter (<50ms)

STA2 / STA1	Q1	U1	AL1	J1	AW1	AS1	AU1	AZ2	BC1
Q1									
U1									
AL1									
J1									
AW1									
AS1									
AU1									
AZ2									
BC1	1.6	1.358	1.325	1.425	1.633	1.467	1.458	1.575	1.45