



General

Operation Modes

Modem Termination (MT), Modem Passthrough (MPT)
Ethernet Termination (ET), Ethernet Passthrough (EPT)
PLM™ *Physical Loop Meter*

ATU-R Modem Chip Set

TI Texas Instruments

Standards Supported

ITU G.992.5 (ADSL2 Plus, Annex M, INP<=2)
ITU G.992.3 (ADSL2/G.DMT.bis, Annex L, Annex M, INP<=2)
ITU G.992.2 (G.Lite)
ITU G.992.1 (ADSL1/G.DMT)
ANSI T1.413 Issue 2
Annex A and Annex B (individual module)

Physical Interfaces

One RJ-11 WAN port and one RJ-45 LAN access port on PIM for MT/MPT/ET Modes
One RJ-45 LAN access port on CSA platform for EPT Mode
One bantam jack for PLM

LED Indicators

ADSL : Link, Active, Alarm and PPP
Ethernet : Link, Active, Speed
Loop : PLM (HV, ACT)
Module : On or Off

Control Information Window (CIW)

Control : Start/Stop and Reset the test
Timing : Indication of test start, remaining and elapsed time
States : Operation flow, testing progress status and result with pass or failed indications
Alarm/Event : Instant alarm/event reporting on any occurrence under test
LOG : All logging data including test results and can be save as testing report
Indicators : Protocol state indications

Modem Termination Mode

ADSL Control

- Modem Control

Modem open/close or retrain with trellis coding controlled
Programmable thresholds of link rate, SNRM in upstream/downstream and link up time

- Scheduling Test

Programmable start/stop of time scheduled to test
Real time alarm/event logs with time/date stamped
Up to 10 interval results can be saved to MMC card for storage and printing

Link Quality

- Link Up/Downstream Results

Linked Rate and Latency (Interleaved or Fast), Estimative Maximum Rate (Kbps), TX Power (dBm), Line attenuation (dB), SNR Margin (dB) and Capacity (%)

- Global Statistics

FEC, CRC, HEC, NCD, OCD, LOS and SEF
Last cycle or accumulated in upstream/downstream

DMT PSD Analysis

Bit per tone, SNR per tone, SNRM and QLN (Quiet Line Noise) per tone presented in tabular and graphics
Zoom in/out and Bin/KHz conversion features

IP Layer Test

[SW Option, PIM-13X-SILT]

- IP Net Client Access

RFC 1483/2684 LLC/VC Bridged/Routed encapsulation
RFC 2516 PPPoE, RFC 2364 PPPoA
RFC 1334 PAP/RFC 1994 CHAP PPP session authentication
RFC 1332 IPCP addressing
RFC 1577/2225 CLIPoA
MAC Encapsulated Routing (MER) mode supported
Static & RFC 1541 DHCP addressing supported
IP information provided with addressing, mask, gateway & DNS
NAT : All routed modes allows to enable or disable NAT according to user requirement
IGMP Host : Monitor multicast group membership on local LANs through the sending and receiving of IGMP packets
Programmable automatic IP Net Client test after DSL connection established
Up to 8 Multi-PVCs with ATM service category configurable (VBR, CBR, rt-VBR, nrt-VBR)

- IP Net Test

ICMP PING : Programmable packet size and no. of ping with the no. of ping sent/reply and RTD in max./avg./min.
Trace Route : Programmable timeout time in sec. with a list of IP host name/address traced, no. of hops and echo time
Host target input in either IP address or URL
Programmable automatic IP Test (PING or Trace Route) after IP connection established

ATM Layer Test

- ATM Client Access

VPI/VCI provisioned in manual or auto-scanning

- ATM Net Test/Statistics

F5 E2E/Segment OAM Loopback test
The number of OAM cell transmitted/received with loss and success/fail indication

Internet Service Test

[SW Option, PIM-13X-SIST]

- Web Browser

True HTTP Web browsing (Konqueror) with packets/bytes received

- FTP Up/Download Test

FTP server response, upload or download time, file size, throughput and packets/bytes/bytes received

LAN Traffic Statistics

Total Byte, Packet and Error Received
Utilization (%) and Unicasts/Broadcasts
CRC, Runt, Oversize, Jabber, Alignment and Collision
Last cycle or accumulated in upstream/downstream

ATM Traffic Statistics

AAL 5 frames, user cells, OAM loopback cells
Statistics accumulated for Upstream and Downstream

Modem Pass-Through Mode

ADSL Control

Same as Modem Termination Mode

Link Control

Same as Modem Termination Mode

DMT PSD Analysis

Same as Modem Termination Mode

WAN/LAN Passthrough Control

Same as IP Net Client Access with/without NAT for routing mode DHCP Server supported on LAN port

LAN Traffic Statistics

Same as Modem Termination Mode

ATM Traffic Statistics

Same as Modem Termination Mode

Ethernet Termination Mode

[SW Option, PIM-13X-SETM]

LAN Client Emulation

PPPoE, DHCP and Static IP supported
IP information provided with addressing, mask, gateway & DNS

IP Net Test

Same as Modem Termination Mode

Internet Service Test

Same as Modem Termination Mode

LAN Traffic Statistics

Same as Modem Termination Mode

Modem SNR Trace

[SW Option, PIM-13X-SSNR]

Modem SNR trace measurement presented in graphics
Customized feature, please consult factory for availability

Ethernet Pass-Through Mode

[SW Option, PIM-13X-SEPM]

LAN Traffic Statistics

Same as Modem Termination Mode

Power Saving

Hibernation

High efficiency of approx. 16 hours practicable time and quick start

Suspend

Approx. 8 hours practicable time with all tests running

PLM™ Physical Loop Meter

[HW Option, PIM-13X-SPLM]

	Unit	Range	Resolution	Accuracy	Leads
DVC	Volts	-250~250	0.1	1%+/-1V	T-R, T-G, R-G
ACV	Vrms	0~250	0.1	1%+/-1V	T-R, T-G, R-G
DC Current	mA	0~200	1	1%+/-1mA	
Capacitance	μ f	0~4	0.001	1%+/-1mA	T-R, T-G, R-G
Resistance	Ohms	0~4000	1	2%+/-1 digit	T-R, T-G, R-G
High Insulation (Leakage) Res.	M Ohms	1~1000		2%+/-1 digit	T-R, T-G, R-G
Kick Test	Measuring the Voltage and Resistance on T-R, T-G, R-G continuously				
RFL	Locate a Resistance Fault on a single conductor				
Open/Short Meter	Measuring the Open (capacitance)/Short (Resistance) location calculated in distance based/w wire gauge, cable type, temperature				

Ordering Information

ADSL Triple Play PIM and Options

PIM-13A-ADSLA	ADSL Triple Play PIM (Platform Interface Module) Annex A Standard features
PIM-13B-ADSLB	ADSL Triple Play PIM (Platform Interface Module) Annex B Standard features

Standard Accessories

256MB MMC Card, ADSL (PIM-ACC-CAB-WAN), LAN Cat 6 (PIM-ACC-CAB-LAN) and CSA platform/PIM_ User Guide (Preloaded on MMC)

Software Options

PIM-13X-SETM	Ethernet Termination Mode
PIM-13X-SEPM	Ethernet Passthrough Mode
PIM-13X-SSNR	Customized Modem SNR Trace Test
PIM-13X-SALT	ATM Layer Test
PIM-13X-SILT	IP Layer Test
PIM-13X-SIST	Internet Service Test HTTP Web Browser/FTP Performance Test
PIM-13X-STPA-IPTV	IPTV Expert Analysis (PIM-13X-SEPM Option Required)
PIM-13X-STPA-IPTV-STB	IPTV STB Simulation
PIM-13X-STPA-IPTV-STREAM	IPTV Stream Player Option selected with Modem Termination/Ethernet Termination modes ONLY
PIM-13X-STPA-VOIP	VOIP Expert Analysis (PIM-13X-SEPM Option Required)
PIM-13X-STPA-VOIP-SIP	VOIP SIP Phone Simulation
PIM-13X-STPA-DATA	Ethernet IP Analysis



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