

# TEST GPON/4GE/2POTS/WIFI

## EXTRALINK TYTAN



### TYTAN GPON/4GE/2POTS/WIFI

- 802.11 B/G/N W-FI
- 4 X GIGABIT ETHERNET
- 2 X POTS PORT
- 1 X GPON OPTIC INTERFACE, FSAN G.984.2  
DOWNLINK 2.448 GBIT/S, UPLINK 1.244 GBIT/S  
SC SINGLE-MODE FIBER SPLIT RATIO: 1:128  
TRANSMISSION DISTANCE 30KM
- FULLY COMPATIBLE WITH ITL-T G.984
- OMCI AND TR069 FOR REMOTEMANAGEMENT
- WEB FOR LOCAL MANAGEMENT
- IGMP SNOOPING
- BROADCOM CHIPSET

Here we present subsequent tests of EXTRALINK devices from a new line of their products. This time we deal with **GPON/4GE/POTS/WIFI EXTRALINK**, named **TYTAN**.

First of all, GPON is the latest generation of PON network. Protocol used in the GPON standard is ITU-T G984. GPON standard differs from other PON standards that it achieves higher throughput and performance, using larger packets of variable wavelength.

GPON offers efficient encapsulation, using frame segmentation. It allows better quality of services which tend to lag e.g. voice transmission or video. GPON network provides the reliability and performance, which helps a lot in business solutions. It also enables the delivery of housing services like telephone, television and Internet, in a very attractive way.

**ONT GPON TYTAN FD614GW** is a CPE unit, which makes it ideal for FTTH/FTTO networks. It enables data transmission i.e. voice and video in HD. **TYTAN** operates on Broadcom chipset, which supports two POTS ports, four Gigabit Ethernet ports and Wi-Fi interface working in 802.11 n/b/g standard.

The test of **EXTRALINK TYTAN GPON/4GE/POTS/WIFI** has been mainly done in order to check its performance, functionality of hardware and software, and compatibility with the LMS platform.

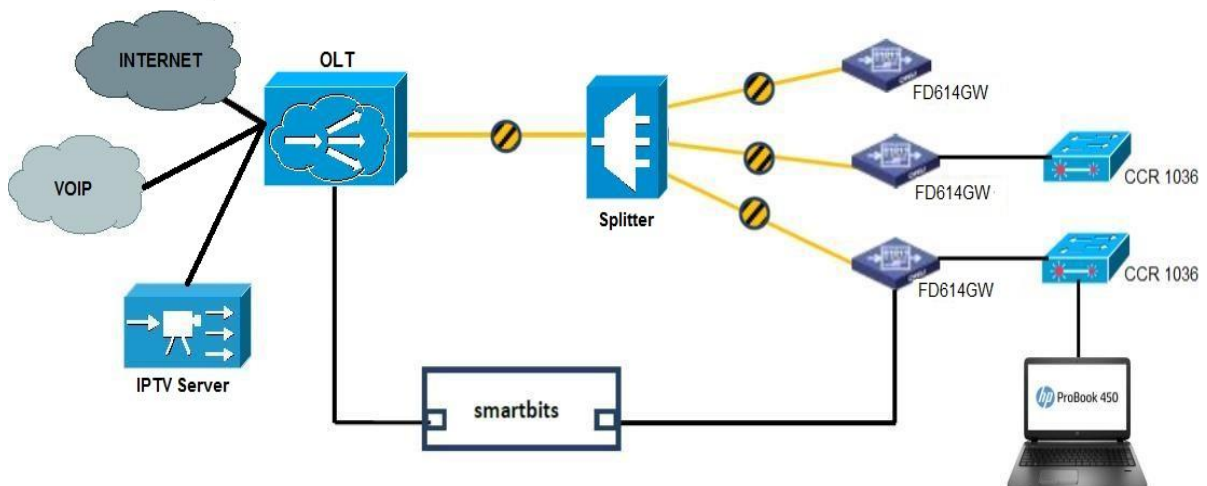
**All performed tests are consistent with the technical standards of GPON devices.**

## 1. The description of units, network diagram

Tests were carried out using the following equipment:

Device	Model/Version
OLT	ZTE C300
ONU	Extralink Tytan GPON FD614GW (4GE)
SPLITTER	EXTRALINK 1:8 PLC SPLITTER SC/UPC 900UM 1.5M
MIKROTIK ROUTERBOARD	CCR1036-12G-4S-RM
SMARTBITS	Smartwin8.51
LAPTOP	HP Pro Book 450 System: Windows 10

Network diagram:



## 2. Hardware productivity:

		Element tested	Condition	Result	Attempts	
<b>HARDWARE PRODUCTIVITY</b>	<b>ONU</b>	Throughput	Frame's length: 64,128,512,1024,1280,1518 Testtime: 15s	Frame's length 64: Uplink 350Mbps, Downlink 600Mbps, Other frame's length: Uplink 900Mbps, Downlink 950Mbps	2	Pass
		Packet loss rate	Frame's length: 64,512,1518, Flow set on 90% performance , Testtime: 1000s	Loss of packets- 0	2	Pass
		Time delay	Flow set on 90% performance Frame's length: 64,128,512,1024,1280,1518	Downlink below 500us , Uplink below 1.5ms	2	Pass
		Long-term packet loss rate	Flow set on max performance, Different frame's length, Testtime: 12h	Loss of packets- 0	2	Pass
		Hundred meters cable test	ONU I and measuring device connected by 100m cable Testtime: 12h	Loss of packets- 0	2	Pass
		20km fiber optic connection	Optical link between ONU and OLT I is 20km, Testtime: 12h	Loss of packets- 0	2	Pass
	<b>WiFi</b>	Output power	B Mode @11Mbps 18dBm G Mode @54Mbps 16dBm 11n Mode @HT20 16dBm	±2.0dB	2	Pass
		Frequency offset	CH1 ~ CH13	≤±20ppm	2	Pass
		Threshold	CH1 ~ CH13	5%	2	Pass
		Receive EVM	802.11b	-96dBm@1M, -93dBm@2M, -91dBm@5.5M-8 8dBm@11M	2	Pass
			802.11g	-90dBm@6M -89dBm@9M&12M -86dBm@18M -83dBm@24M -79@36M -75dBm@48M&54M	2	Pass

			802.11n	-96dBm@1M -88dBm@11M -90dBm@6M -75dBm@54M	2	Pass
--	--	--	---------	--	---	------

### 3. Hardware durability:

		Element tested	Condition	Result	Attempts	
<b>HARDWARE DURABILITY</b>	<b>Environment</b>	Low temperature	Low temperature: -10 °C , Different frame's length, Testtime: 24h	Normal start, Loss of packets- 0	2	Pass
		High temperature	High temperature 50°C , Different frame's length, Testtime: 24h	Loss of packets- 0	2	Pass
		Variable temperature	Temperature 0°C -50°C, change:1°C per minute Testtime: 13 cycles	Loss of packets- 0	2	Pass
	<b>Hardware</b>	Status of diodes	Adjusted to test conditions	diodes- normal	2	Pass
		Status of optical interface	Fiber connector- connected 20 times	Normal registration, no occurrence of reboot	2	Pass
		POWER button	switched on and off- 20 times	Normal start	2	Pass
		RESET button	Short 1s - reboot of the device, Long 10s - restoration of <b>factory defaults</b>	There is no problem with the reboot and restoration of <b>factory defaults</b>	2	Pass

### 4. Bandwidth test (Speed test)

Bandwidth was tested by using two **TYTAN GPON/4GE/POTS/WIFI**, two **Mikrotiks RouterBoard CCR1036-12G-4S-RM** and **OLT ZTE C300**. The measurements were carried out by using the Mikrotik Bandwidth Test mechanism and public bandwidth Speedtest (within obtaining real bandwidth).

### Mikrotik Bandwidth Test UDP receive

Bandwidth Test □ ×

Test To:  Start

Protocol:  udp  tcp Stop

Local UDP Tx Size:  Close

Remote UDP Tx Size:

Direction:  ▾

---

TCP Connection Count:

Local Tx Speed:  ▼ bps

Remote Tx Speed:  ▼ bps

Random Data

---

User:  ▲

Password:  ▼

---

Lost Packets:

Tx/Rx Current:

Tx/Rx 10s Average:

Tx/Rx Total Average:

Legend: Tx: (blue square), Rx: 926.6 Mbps (red square)

stopped

## Mikrotik Bandwidth Test UDP send

Bandwidth Test □ ×

Test To:  Start

Protocol:  udp  tcp Stop

Local UDP Tx Size:  Close

Remote UDP Tx Size:

Direction:  ▾

TCP Connection Count:

Local Tx Speed:  ▼ bps

Remote Tx Speed:  ▼ bps

Random Data

User:  ▲

Password:  ▼

Lost Packets:

Tx/Rx Current:

Tx/Rx 10s Average:

Tx/Rx Total Average:

Legend: Tx: 733.5 Mbps, Rx: 733.5 Mbps

stopped

## Mikrotik Bandwidth Test UDP both

Bandwidth Test (Running) □ ✕

Test To:

Protocol:  udp  tcp

Local UDP Tx Size:

Remote UDP Tx Size:

Direction:  ▼

---

TCP Connection Count:

Local Tx Speed:  ▼ bps

Remote Tx Speed:  ▼ bps

Random Data

---

User:  ▲

Password:  ▼

---

Lost Packets:

Tx/Rx Current:

Tx/Rx 10s Average:

Tx/Rx Total Average:

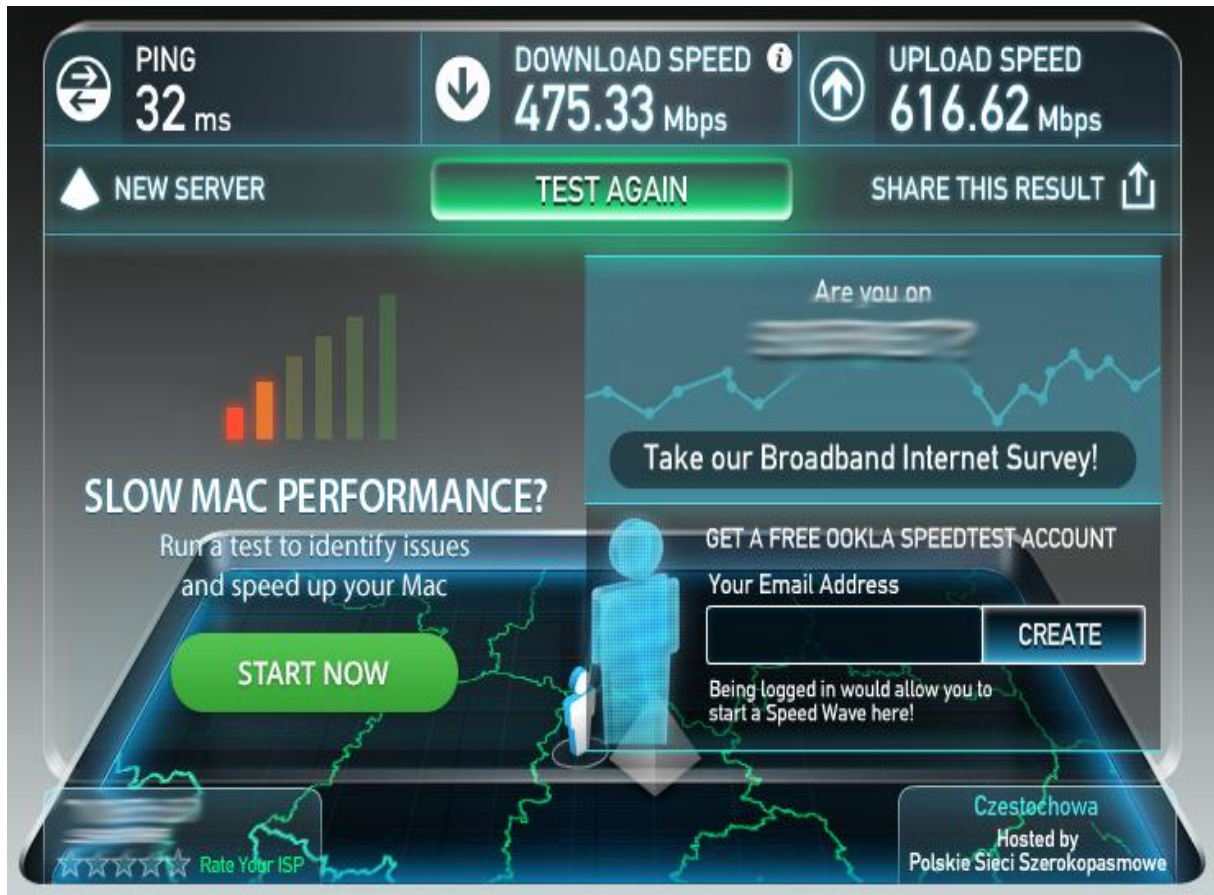
Legend:  
Tx: 714.9 Mbps  
Rx: 939.5 Mbps

running...



## Speedtest

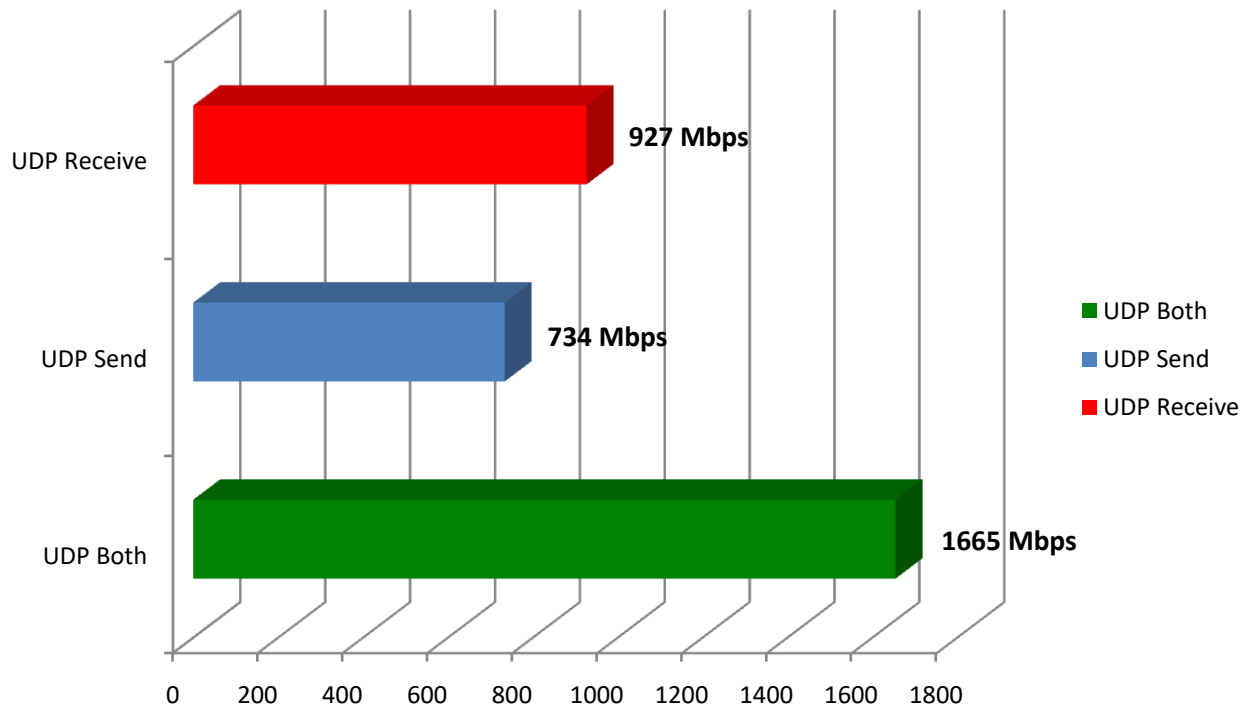
A practical test of the resulting bandwidth access to the Internet was carried out using widely available service OOKLA Speedtest.net.



The results are very satisfying. Achieved download speed is 500 Mbit/s with 600 Mbit/s of upload. Nowadays, this is a very good result. Any inaccuracy in the measurement of bandwidth and undervaluation of download/upload speed may result from the current server load, on which the measurements were made.

## Results

### Mikrotik Bandwidth UDP Test



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In the above chart **EXTRALINK TITANIUM GPON / 4GE / POTS / WIFI** stands for its great throughput performance. Virtually, one of four Gigabit Ethernet ports has been used 100%. This is very good achievement because the test has been carried out during rush-hour in the network.

### 5. Wireless performance

Wi-Fi network settings have been configured as follows: Poland, channel 7, channel width 20MHz, WPA2 encryption and isolation mode of connected client's was enabled.

- Enable Wireless
- Enable Wireless Hotspot2.0
- Hide Access Point
- Clients Isolation
- Disable WMM Advertise
- Enable Wireless Multicast Forwarding (WMF)

SSID

BSSID

Country

Country RegRev

Max Clients

**Wireless - Guest/Virtual Access Points**

Enabled	SSID	Hide Access Point	Clients Isolation	Disable WMM Advertise	Enable WMF	Max Clients	BSSID
<input type="checkbox"/>	<input type="text" value="CU_iTV_274c"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="16"/>	N/A
<input type="checkbox"/>	<input type="text" value="w/l0_Guest2"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="16"/>	N/A
<input type="checkbox"/>	<input type="text" value="w/l0_Guest3"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="16"/>	N/A

WPS and guest network were turned off, the other parameters remain default.

Band	2.4GHz		
Channel	7	Current: 7 (interference: acceptable)	
Auto Channel Timer(min)	0		
802.11n/EWC:	Auto		
Bandwidth	40MHz	Current: 20MHz	
Control Sideband	Lower	Current: N/A	
802.11n Rate	Auto		
802.11n Protection	Auto		
Support 802.11n Client Only	Off		
RIFS Advertisement	Auto		
OBSS Coexistence	Enable		
RX Chain Power Save	Disable	Power Save status	Full Power
RX Chain Power Save Quiet Time	10		
RX Chain Power Save PPS	10		
54g™ Rate	1 Mbps		
Multicast Rate	Auto		
Basic Rate	All		
Fragmentation Threshold	2346		
RTS Threshold	2347		
DTIM Interval	1		
Beacon Interval	100		
Global Max Clients	16		
XPress™ Technology	Disabled		
Transmit Power	100%		
WMM(Wi-Fi Multimedia)	Enabled		
WMM No Acknowledgement	Disabled		
WMM APSD	Enabled		
Beamforming Transmission (BFR):	Disabled		
Beamforming Reception (BFE):	Disabled		

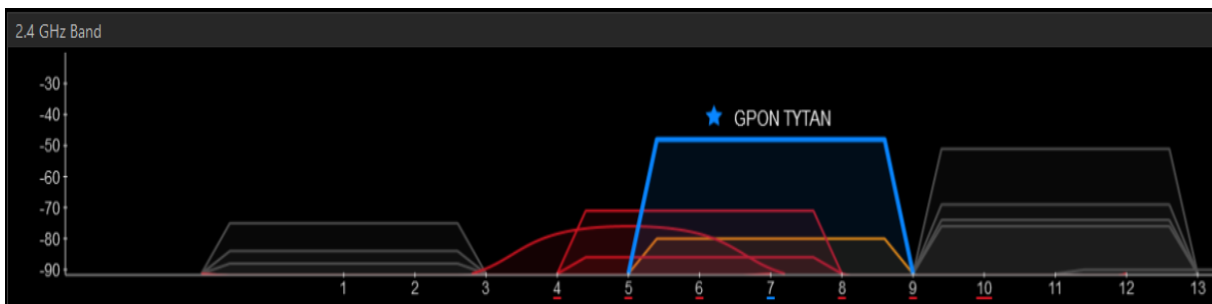
The test was carried out at a distance of 30m, in a high-density wireless local networks area (on different channels).

In order to show that tests are reliable router was placed behind two partition walls.

Here are the results:

## Spectrum Analyzer

	SSID	SIGNAL ▼	CHANNEL	SECURITY	MAC ADDRESS	802.11
★	GPON TYTAN	-48	7	WPA-Personal	E0:67:B3:4C:27:3A	n
		-51	11	WPA2-Personal		n
		-69	11	Open		g
		-71	6	WPA2-Personal		n
		-74	11	WPA2-Personal		n
		-75	1	WPA-Personal		g
		-76	11	Open		g
		-76	5	Open		b
		-80	7	WPA2-Personal		n
		-84	1	WPA2-Personal		n
		-86	6	WPA-Personal		g
		-88	1	WEP		g
		-90	13	WPA-Personal		g



★

# GPON TYTAN

7
43  
 Channel Link Score

MAC E0:67:B3:4C:27:3A

Security WPA-Personal

802.11 n

Max Rate 144

Co-Channel 1 Network

Overlapping 6

Signal -48 dBm

The graph shows signal strength in dBm over time. The y-axis ranges from -100 to -20 dBm. GPON TYTAN (blue solid line) maintains a signal strength around -48 dBm. A red dashed line shows a fluctuating signal around -60 dBm, and a yellow dashed line shows a signal around -80 dBm.

## OOAKLA Speedtest



As previously mentioned, the performance tests of WiFi network were carried out so as to resemble the real conditions. The measurements were made at a distance of 30m , in a situation where router was behind two partition walls (in order to show demanding conditions of using wireless network).

In addition, it is worth mentioning that the device receiving the signal was HP laptop equipped with a Ralink RT 3290 802.11bgn Wi-Fi adapter.

Despite the difficult conditions of using wireless network and extensive local networks working on similar channels, **EXTRALINK TITANIUM GPON / 4GE / POTS / WIFI** proved to be a very good product with great signal strength and a very decent results of obtained bandwidth (download / upload).

## 6. Compatibility with LMS plus system and CPE's registration on OLT

Each device connected to GPON network must be compatible with software of most OLT's available on the market and software intended for network managing. EXTRALINK TITANIUM GPON / 4GE / POTS / WIFI is compatible with both OLT ZTE C300 and integrated network management system **LMS** (LAN Management System) designed for Internet providers.

The fact that the process of CPE's connection to the network has been automatized is very helpful for the administrators and installers/technicians. You no longer have to write particular commands registering CPE on OLT- just click "detect ONU".



ZTEGC00D636E F680V3 ONU-1:2	olt1 port OLT: 17/1 : ONU id: 2	[Detect]
ZTEGC083D2C7 F601 ONU-1:20	olt1 port OLT: 17/1 : ONU id: 20	[Detect]
00000000 F680 ONU-1:64	olt1 port OLT: 17/1 : ONU id: 64	[Detect]
ZTEGC6F47869 F601 ONU-2:65	olt1 port OLT: 17/2 : ONU id: 65	[Detect]
(niezarejestrowane)	olt1 port OLT: 4/4 : ONU id: 1	[Detect]
DB24B34C272D (niezarejestrowane)	olt1 port OLT: 4/4 : ONU id: 2	[Detect]
ZTEGC12E2F16 F601 ONU-3:5	olt2 port OLT: 2/3 : ONU id: 5	[Detect]
ZTEGC129A7A3 universalOnuType ONU-4:3	olt2 port OLT: 2/4 : ONU id: 3	[Detect]
ZTEGC6F478D9 F601 ONU-5:21	olt2 port OLT: 2/6 : ONU id: 21	[Detect]
ZTEGC40D23E3 F601 ONU-1:7	olt2 port OLT: 4/1 : ONU id: 7	[Detect]
ZTEGC6F5525A F601 ONU-4:10	olt2 port OLT: 6/4 : ONU id: 10	[Detect]
ZTEGC40C1254 F680 ONU-1:1	olt2 port OLT: 8/1 : ONU id: 1	[Detect]
ZTEGC40EA6DE F601 ONU-1:21	olt2 port OLT: 8/1 : ONU id: 21	[Detect]

Then LMS automatically finds a new device and directly allows you to register ONU and start launching access to the Internet.

## Nowy GPON ONU

OLT: olt1 Port: 12/5

Nazwa: DB24B34C272D

Auto provisioning:

Profil usług:

Model:

Hasło: auto-learning

Opis ONU:

Numer seryjny:

Lokalizacja:

1.

2.

Klienci:

3.

4.

5.

Komputer:

Szukaj: | © 2001-2016 LMS Developers

LMS 1.11-git

Lanserver

Administracja

Klienci

Komputery

VoIP

Osprzęt sieciowy

TV

GPON ZTE

- » Lista OLT
- » Nowy OLT
- » Szukaj OLT
- » -----
- » Wykryj ONU
- » ONU auto provisioning
- » Lista ONU
- » Nowy ONU
- » Szukaj ONU
- » -----
- » Lista modeli ONU
- » Nowy model ONU
- » -----
- » Lista kanałów TV
- » Nowy kanał TV
- » -----
- » Konfiguracja

Sieci IP

Finanse

Dokumenty

Hosting

### GPON ONU DB24B34C272D (HG326UG)

DB24B34C272D (5395)

ONU ID: 33

Auto provisioning: tak

Profil usług: internet-bridge-hg

Model: HG326UG

Hasło: (rejestracja w oparciu o numer seryjny)

Opis ONU:

Numer seryjny: DB24B34C272D

Klienci: 1. ~~XXXXXXXXXX~~

Komputer: ~~XXXXXXXXXX~~

Gwarancja: brak

Historia poziomu sygnału odbieranego na ONU / OLT:  
wykresy sygnałów

Dane SNMP

Odśwież

Numer seryjny	DB24B34C272D
Model	HG326UG
Stan	working(3)
Powód deaktywacji	unknown(1)
Poziom sygnału odbieranego przez ONU	-25,38 dBm
Poziom sygnału nadawanego przez ONU	2,85 dBm
Poziom sygnału odbieranego przez OLT	-23,06 dBm
Odległość	5548
Temperatura PON	35 st. C
Wersja sprzętu	
Wersja oprogramowania	V1.1.3
Włączone od	2016-08-12 11:00:17

Dane pobrane w dniu 2016-08-12 11:37:18

Stan portów ONT (Ethernet):

Port	Stan administracyjny	Stan	Konfiguracja szybkości	Stan szybkości
1	unlock(1)	65535	auto(1)	65535

After you add the device, LMS system by using SNMP protocol enables you to get access to detailed information related to the connection parameters such



as, signal's level received by both ONU and OLT, distance, PON temperature and so on.

SNMP Information	
<input type="button" value="Refresh"/>	
Serial number	DB24B34C272D
Model	HG326UG
Condition	working(3)
Cause of disablement	unknown(1)
Signal's level received by ONU	-25,38 dBm
Signal's level transmitted by ONU	2,85 dBm
Signal's level received by OLT	-23,06 dBm
Distance	5548
PON temperature	35 st. C
Hardware's edition	
Software's edition	V1.1.3
Enabled from	2016-08-12 11:00:17

As you can see, LMS system finely supports new CPEs from the **EXTRALINK TYTAN GPON/4GE/POTS/WIFI** series, which greatly simplifies the work of administrators and installers.

Taking into consideration that in earlier editions of LMS there was no such support (every CPE has to be registered manually on ZTE OLT C300), it is a very useful solution.

The following example presents the manual process of registration:

```
olt1. .pl(config-if)#show pon onu uncfg
OltIndex      Model      Ver      SN
-----
gpon-olt_1/12/5  N/A      V1.1.3  DB24B34C272D
```

```

olt1(config-if)# onu 1 type HG326UG sn DB24B34C272D
olt1(config-if)#exit

olt1(config)#interface gpon-onu_1/12/5:1

olt1(config-if)#tcont 1 profile 100M

olt1(config-if)#gempport 1 unicast tcont 1

olt1(config-if)#service-port 1 user-vlan 1000 vlan 1000

olt1(config)#show running-config interface gpon-onu_1/12/5:1
Building configuration...
!
interface gpon-onu_1/12/5:1
  tcont 1 profile 100M
  gempport 1 unicast tcont 1 dir both
  switchport mode hybrid vport 1
  service-port 1 vport 1 user-vlan 1000 vlan 1000
!
end

olt1(config)#show onu r config gpon-onu_1/12/5:1
pon-onu-mng gpon-onu_1/12/5:1
!

olt1(config)#pon-onu-mng gpon-onu_1/2/1:1

olt1(gpon-onu-mng)#service internet gempport 1 vlan 1000

olt1(gpon-onu-mng)#exit|

olt1(config)#show gpon onu state
OnuIndex          Admin State  OMCC State   07 State     Phase State
-----
gpon-onu_1/12/5:1  enable      enable       operation    working

```

The registration of ONU, both via the LMS and directly from OLT, is very easy and intuitive. After properly configured WAN interface you can see the following information on CPE- **EXTRALINK TYTAN**.



## Device Info

### Summary

- WAN
- Statistics
- Route
- ARP
- DHCP
- Voice
- Optic
- Advanced Setup
- Wireless
- Voice
- Diagnostics
- Management
- Logout

## Device Info

Product Name	GPON HGU
Description	ONT411
MAC Address	e067b348194a
Serial Number	DB25b348194a
Hardware Version	V1.2
Software Version	V1.1.3
Type ID	V201X000
Build Timestamp	160630_1551
ONT Registration status	O5 (Operation state)
ONT ID	5
Voice Protocol	SIP
Uptime	0D 0H 37M 58S

This information reflects the current status of your WAN connection.

LAN IPv4 Address	192.168.100.1
Default Gateway	veip0.1
Primary DNS Server	202.96.128.166
Secondary DNS Server	202.96.134.133
LAN IPv6 ULA Address:	
Default IPv6 Gateway:	veip0.1

In conclusion, **EXTRALINK TITANIUM GPON / 4GE / 2POTS / WIFI** is the perfect CPE for use in FTTH / FTTO networks because:

- It is compatible with LMS system
- It has huge possibilities in wireless transferring of data (also by cable)
- It is in excellent price

## 7. Functionality (Web interface)

Web Interface in EXTRALINK TITANIUM GPON / 4GE / 2POTS / WIFI is very clear. Besides, various configuration settings are arranged in a very intuitive

way. The only thing that needs attention is the "Port Binding", herein referred to as "Interface Grouping".

Device Info

**Advanced Setup** 1

WAN

LAN

NAT

Firewall

Parental Control

Quality of Service

Routing

DNS

UPnP

DNS Proxy

**Interface Grouping** 2

Multicast

Wireless

Voice

Diagnostics

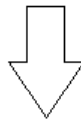
Management

Logout

## INTERFACE GROUPING

Group Name	Remove	WAN Interface	LAN Interface	DHCP Vendor IDs
Default		veip0.1	eth0.0	
			eth1.0	
			eth2.0	
			eth3.0	
			wlan0	
			wl0_Guest80FGGU wl0.1	
			wl0_Guest80FGGU wl0.2	
			wl0_Guest80FGGU wl0.3	

3



Group Name

WAN Interface

Grouped LAN Interfaces

Available LAN Interfaces

eth0.0

eth1.0

eth2.0

eth3.0

wlan0

wl0\_Guest80FGGU|wl0.1

wl0\_Guest80FGGU|wl0.2

wl0\_Guest80FGGU|wl0.3

->

<-

Automatically Add Clients With the following DHCP Vendor IDs



## PORT TRIGGERING

Use Interface

Application Name

Select an application

Custom application

Trigger Port Start	Trigger Port End	Trigger Protocol	Open Port Start	Open Port End	Open Protocol
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP

TCP/UDP  
TCP  
UDP

Apply/Save

## MAC FILTERING

Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click "Apply" to save and activate the filter.

Protocol Type

Destination MAC Address

Source MAC Address

Frame Direction

WAN Interfaces (Configured in Bridge

LAN<=>WAN  
LAN<=>WAN  
WAN=>LAN  
LAN=>WAN

Apply/Save

## URL FILTERING

Enter the URL address and port number then click "Apply/Save" to add the entry to the URL filter.

URL Address:

Port Number:  (Default 80 will be applied if leave blank.)

# ACCESS TIME RESTRICTION

username

Browser's MAC Address

Other MAC Address

Days of the week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Click to select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Start Blocking Time (hh:mm)

End Blocking Time (hh:mm)

# VOICE

Global parameters **Service Provider 0**

## Voice -- SIP configuration

Enter the SIP parameters and click Start/Stop to save the parameters and start/stop the voice application

Locale selection\* **POL - POLAND** (Note: Requires the SIP client to be stopped and then started to take affect)

SIP Domain name\*: **anteny24.pl**

Dialplan

```
[2-8]xxxxxxxx8|01[34578]xxxxxxxx|1[34578]xxxxxxxx|0[1-9]xxxxx
xxxxxxxxxxxx|10010|10011|116114|11[0249]|179090x+8|200|201|400x
xxxxxxxx|600xxxxxxxx|800xxxxxxxx|9xxxx|^xx. #|^xx. ^x. #|^#xx. #
|^#xx. ^x. #|^#xx. ^x. #|^#xx. ^#|^#xx. ^#|^#xx. ^x. ^x. #|^x. #|3x+8|12[
13]xx8|1000x+8|00x+8|^+x+8
```

Use SIP Proxy

SIP Proxy **sip.fc.pl**

SIP Proxy Port **5060**

Use SIP Outbound Proxy

SIP Outbound Proxy **sip.fc.pl**

SIP Outbound Proxy Port **5060**

Use SIP Registrar

SIP Registrar **sip.fc.pl**

SIP Registrar Port **5060**

SIP Account	0	1
Enabled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Extension	1001	2001
Display name		
Authentication name		
password		
Physical Terminal Assignment	<input checked="" type="checkbox"/> FXS 0 <input checked="" type="checkbox"/> FXS 1	<input checked="" type="checkbox"/> FXS 0 <input checked="" type="checkbox"/> FXS 1
Preferred ptme	20	20
Preferred codec 1	G.711ALaw	G.711ALaw
Preferred codec 2	G.711MuLaw	G.711MuLaw
Preferred codec 3	G.723.1	G.723.1
Preferred codec 4	G.726_24	G.726_24
Preferred codec 5	G.726_32	G.726_32
Preferred codec 6	G.729a	G.729a



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CONNECTING THE NEW TECHNOLOGY