SHDSL switch XSLAN+

ETHERNET EXTENDER OVER KILOMETRES WITH 1 to 4 COPPER PAIRS

XSLAN+4400

XSLAN+2XXX

XSLAN+1XXX
XSLAN+140

The SHDSL XSLAN+ switch enables two distant Ethernet networks to be connected using one to four telephone grade twisted pairs.

Over one twisted pair (0,9 mm diameter) , the data rate reaches 5.7 Mb/s up to 3.7 Km or up to 15 Mb/s on a shorter distance.

A full range of products is offered :

The XSLAN+140 is a plug & play model configured with a few DIP switches.

The XSLAN+4400 is a four SHDSL interfaces line concentrator.

The XSLAN+ 2XXX is a two shdsl interfaces product to multiply the data rate or for daisy chain networks.

All that range of products - except the XSLAN+140 - provide VLANs, SNMP, QoS and, optionally, two built-in serial gateways.

XSLAN+ range is made for demanding applications; they feature extendend T° range, low consumption, total galvanic isolation (except models including RS232 or RS485 interfaces), double power supply input.

Key features

- 5,7 Mb/s over 3,7 Km (1 pair diam. 0,9 mm)
- 22,8 Mb/s over 3,7 Km (4 pairs diam. 0,9 mm)
- 1 simple «plug & play» product
- 4 SHDSL lines concentrator
- VLAN
- SNMP
- Quality of Service DiffServ
- 2 or 4 ethernet 10/100 BT ports
- IPV4 & IPV6
- 2 serial ports (option)
- Operating T° : -20°C / +60°C

Applications

- Utilities, water, energy, Transport, building automation...
- Vidéo, VoIP...

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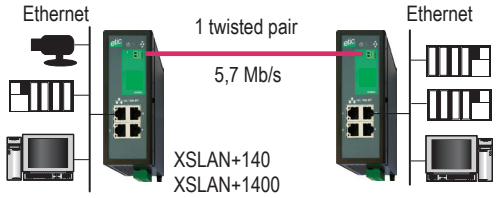
XSLAN+ SHDSL switch

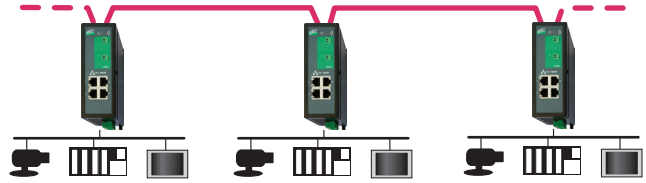
XSLAN+140 : A «plug & play» product

Only 8 DIP swiches are required to set-up the XSLAN+140.
If necessary, a simple diagnostic html server is available to check the data rate and the connection quality.



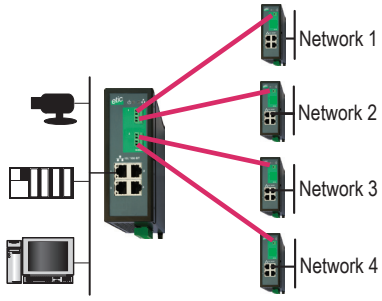
XSLAN+2xxx : «Daisy chain networks»

The XSLAN+2400 features two SHDSL interfaces to build a daisy chain network.

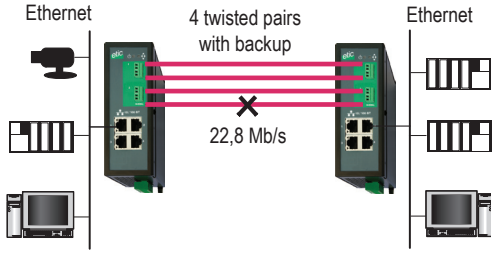


XSLAN+4400 : a four lines concentrator

The XSLAN+4400 features four SHDSL interfaces; it is the right solution to connect up to four remote Ethernet networks through copper pairs



Four twisted pairs to increase the data rate up to 60 Mb/s and improve the availability



Up to 5,7 Mb/s through one pair and even 15 Mb/s on short distance

The data rate reaches 5.7 Mb/s over 3.7 Km (wire diam. 0.9 mm).
But it reaches 15 Mb/s if the distance is shorter than 0.7 Km (wire diam. 0.9 mm).

Twisted pairs or power conductors

The XSLAN+ can be used not only with copper twisted pairs but also with power conductors up to 1.7 mm (2.5 mm2).

VLANs

Each port including the Ethernet 10/100 ports, the SHDSL ports and also the serial gateways and the Html server) can be assigned to a particular VLAN.

DifServ Quality of Service to make video, VoIP and industrial protocol transmission easy over the same pair

The bandwidth can be divided in four priority classes. The services (protocol + port number) which have to be transmitted can be distributed between that classes according to their priority level.It is possible for instance to reserve a narrow bandwidth with a high priority level to industrial protocols or to VoIP and a large one with lower priority to video transmission.

Optional RS232-RS485 serial gateways

Optionally, two built-in serial gateways can be provided.
Data can be encapsulated either into TCP or UDP (towards one or several destinations).

SHDSL switch XSLAN+

General characteristics

Dimensions	136 x 47 x 142 mm (h, l, p)
Installation	35 mm DIN rail
Protection	IP20
CEM	■ ESD : EN61000-4-2 : 6 KV contact discharge ■ RF field : EN61000-4-3 : 10V/m < 2 GHz ■ Fast transient : EN61000-4-4 ■ Surge V. : EN61000-4-5 : 4KV line / earth
Safety	EN 60950 - UL1950,
Banned Substances	2002/95/CE ROHS european union directive
Operating T°	-20°C /+ 60°C
Humidity	5 to 95 % non condensing

Supply voltage

Connector	2 positions screw terminal block
Supply voltage	■ XSLAN+140, 1400, 2400, 4400: 10 to 60 DC ■ XSLAN+1230, 2230, 4230: 10 to 60 DC ■ XSLAN+1220, 2220, 4220: 10 to 30 VDC
Consumption	■ XSLAN+1XXX 200 mA at 24 VDC ■ XSLAN+2XXX 270 mA at 24 VDC ■ XSLAN+4XXX 375 mA at 24 VDC
Security	■ Double supply voltage input (Except xslan+140) ■ Reverse polarity protection
Isolation	■ Total galvanic isolation (Except models wth RS232 or RS485)

SHDSL transmission

Medium	1 to 4 twisted pair (2 wires)
Wire diameter	■ 0.4 mm to 1 mm ■ 1,5 mm2 ou 2,5 mm2 wires not twisted can be used with decreased performance
Connector	Screw terminal block
Isolation	Transformers
Modulation	SHDSL bis UIT-T G.991.2 (2005)
Data rate	■ 192 Kb/s to 5,7 Mb/s (compliant) ■ Up to 15 Mb/s (proprietary)
Lattency	3 ms through an SHDSL line

Distance versus data rate through one pair

Indicative values

Data rate	192Kb/s	1,15Mb/s	2,3Mb/s	5,7 Mb/s
Distance (Ø 0.9 mm)	13 Km	8 Km	6 Km	3,7 Km
Distance (Ø 0.4 mm)	7 Km	4 Km	3 Km	2 Km

Distance versus data rate through one pair

Indicative values

Data rate	6,7 Mb/s	10 Mb/s	12 Mb/s	15 Mb/s
Distance (Ø 0.9 mm)	2,5 Km	1,5 Km	1 Km	0,7 Km
Distance (Ø 0.4 mm)	1,3 Km	0,9 Km	0,6 Km	0,4 Km

Ethernet

Ethernet 10/100 BT	■ 10-100 Mb/s auto MDI / MDIX ■ 2 or 4 RJ45
Ethernet SHDSL	802.3ah : 2BaseTL
VLAN	■ IEEE 802.1Q compliant ■ Serial gateway & html server in a VLAN
MAC @	Destination MAC @ filtering

IP functions

IP @	IP V4 & IPV6
SNMP	■ SNMP V2 RFC1213 MIB II ■ HDSL2-SHDSL-LINE-MIB ■ HOST-RESOURCES-MIB ■ IF-MIB IP-MIB ■ BRIDGE-MIB
QoS	■ 4 priority levels ■ DiffServ compliant
IP routing	■ Static routes ■ RIP V1 et V2 ■ Broadcast filtering

Serial gateway (Option)

Serial ports	■ 2 serial ports ■ RS232 or RS485 2 wires
RS232 connector	RJ45
RS485 connector	2 positions srew block
Data rate	■ 1200 to 115 200 b/s ■ Parity N/O/E ■ 7 or 8 bits, 1 or 2 Stop
Serial Gateway	■ Raw TCP client & server ■ UDP unicast or towards broadcast list ■ Multicast ■ Telnet ■ Modbus master & slave ■ Unitelway slave.

Digital input / output

Output	■ 1 isolated output 0,5 A / 24 VDC max ■ Operating alarm
Input	■ 1 input ■ Logical 0 < 1VDC - Logical 1 > 3 VDC

Configuration & System

Configuration	■ XSLAN+140 : DIP switches ■ Others : Html server
Diagnostic	Html server
Date & time	NTP Client & server
Firmware upgrade	■ http or TFTP modes ■ Local or remote secure upgrade
Log	■ Date and time stamp ■ Events : Connections, product restart, alarm

XSLAN+ SHDSL switch

XSLAN+	140	1400	1220	1230	2400	2220	2230	4400
SHDSL ports	1	1	1	1	2	2	2	4
* Data rate 1 pair diam. 0,9 mm 3,7 km - Mb/s	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7
* Data rate 1 pair diam. 0,9 mm 0,7 km - Mb/s	15	15	15	15	15	15	15	15
* Data rate 2 or 4 pairs - diam. 0,9 mm 3,7 km - Mb/s	-	-	-	-	11,4 (2 pairs)	11,4 (2 pairs)	11,4 (2 pairs)	22,8 (4 pairs)
* Data rate 2 or 4 pairs - diam. 0,9 mm 0,7 km - Mb/s	-	-	-	-	30 2 pairs)	30 (2 pairs)	30 (2 pairs)	60 (4 pairs)
2 or 4 ports SHDSL ports concentrator	-	-	-	-	•	•	•	•
Backup	-	-	-	-	•	•	•	•
Ethernet 10 / 100BT ports	4	4	2	2	4	2	2	4
Serial ports (total)	0	0	2	2	0	2	2	0
RS232	0	0	1	2	0	1	2	0
RS485	0	0	1	0	0	1	0	0
Double supply voltage input		•	•	•	•	•	•	•
Total galvanic isolation	•	•			•			•
DIP switches configuration	•							
Html server configuration		•	•	•	•	•	•	•
Html server Diagnostic	•	•	•	•	•	•	•	•
SNMP		•	•	•	•	•	•	•
IP routing & DiffServ QoS		•	•	•	•	•	•	•
VLAN		•	•	•	•	•	•	•

* Indicative values

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