

# S-RPT

## 2/4-Wire SHDSL/SHDSL.bis Repeater



S-RPT with Plastic Enclosure



S-RPT with IP-67 Metal Enclosure

- TC-PAM 16/32 coding
- Duplex data transmission over one or two symmetrical pairs at up to 2.048 Mbps (SHDSL)/5.7 Mbps (SHDSL.bis)
- Multiple configuration options
- IP-67 weatherproof metal enclosure for outdoor installation
- Remote power feeding

Managed repeater  
for SHDSL/SHDSL.bis  
range extension

S-RPT is a compact 2/4-wire SHDSL/SHDSL.bis repeater, extending the range of data transmission over copper pair between two standard SHDSL/SHDSL.bis modems. Additional repeaters can be chained to increase the distance even more.

Based on the latest DSL technology, S-RPT provides superior distance and speed using TC-PAM 16/32 encoding, which offers a narrower power spectrum than 2B1Q and other technologies.

The xDSL ports comply with ITU-T G.991.2, ETSI TS 101524 standards, and operate at bit rates from 192 to 8192 kbps, depending on the modem and type of interface (2-wire/4-wire).



# S-RPT

## 2/4-Wire SHDSL/SHDSL.bis Repeater

S-RPT is available in two different compact enclosure versions:

- Tabletop version for indoor use (2-wire only)
- IP-67 weatherproof housing, for outdoor installation or mounting (2-wire and 4-wire).

The basic S-RPT version operates with RAD's ASMi-52 and ASMi-52L modems. A special version employs the SHDSL.bis technology to enable synchronization with the ASMi-54 and ASMi-54L modems.

Each S-RPT repeater fully regenerates the received modem signal, so that a chain of many repeaters can be deployed on a single line, without introducing jitter and wander problems. For connection to central and remote modems, S-RPT provides unshielded interfaces terminated in RJ-45 connectors (plastic enclosure) or 8-pin terminal block (metal enclosure).

S-RPT has two xDSL interfaces: xDSL1 and xDSL2. Either of them can be a Network (N-side) or Customer (C-side) xDSL interface. The N-side xDSL interface operates in slave mode, while the C-side xDSL interface operates in master mode. The N-side faces the Central Office (CO), while the C-side faces the Customer Premises (CP).

S-RPT performs analog loop tests towards the Customer Premises Equipment (CPE), via direct management only, and digital loop tests towards the central SHDSL modem.

The unit is managed locally from an RS-232 terminal or through Telnet via the Ethernet port, or remotely via standard Embedded Operation Channel (EOC) commands from the Central Office (CO) SHDSL equipment (ASMi-52/52L only).

Performance and alarm monitoring is available with Web browser via the Ethernet port.

Using standard EOC messages, the CO SHDSL equipment (ASMi-52/52L) can display alarms and the number of S-RPTs installed on the line. It can also remotely initiate loopbacks toward the CO.

S-RPT can receive power locally using a 48 VDC power supply or remotely over the SHDSL line from a power feeding hub such as RAD's PFH-4.

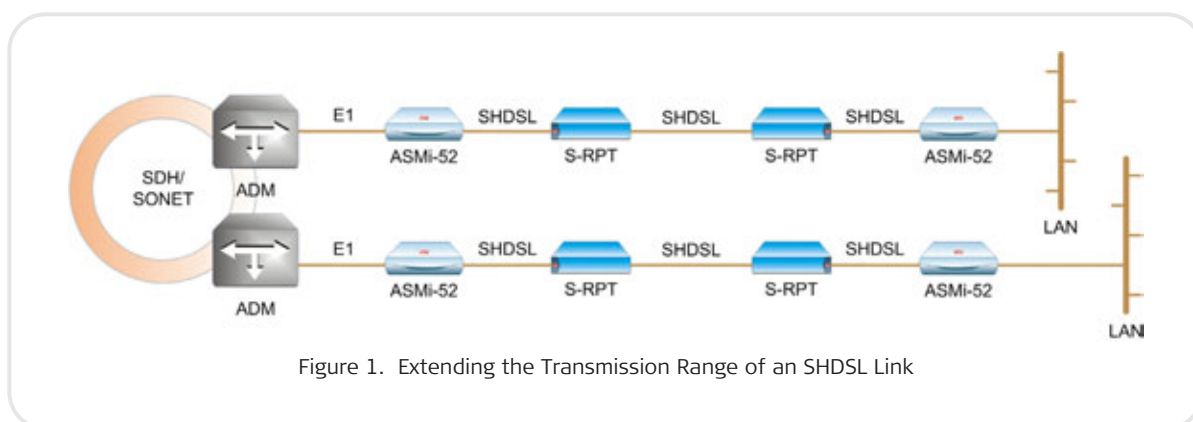


Figure 1. Extending the Transmission Range of an SHDSL Link

## Specifications

### LINE INTERFACE

#### Line Type

Symmetrical PSD

2/4-wires unconditioned dedicated line  
(twisted pair)

#### Compliance

ITU-T G.991.2, ETSI TS 101524

#### Line Coding

16/32 TC-PAM

#### Line Rate

S-RPT

4-wire: 384 to 4096 kbps

2-wire: 192 to 2048 kbps

S-RPT/BIS

4-wire: 384 to 8192 kbps

2-wire: 192 to 5696 kbps

#### Impedance

135Ω

#### xDSL Connectors

Plastic enclosure: 2 x RJ-45

Metal IP67 enclosure: 8-pin terminal block

### MONITOR (CONTROL) PORT

#### Interface

V.24/RS-232

#### Type

DCE

#### Format

8 bit, no parity, 1 stop bit, no linefeed  
with carriage return

XON/XOFF enabled

#### Data Rate

9.6, 19.2, 115.2 kbps

#### Connector

Plastic enclosure: 9-pin, D-type, female  
(EIA/TIA 574)

Metal enclosure: 8-pin, RJ-45

### INDICATORS

**Front Panel (plastic enclosure)/Interior**  
(metal enclosure)

DSL 1 (green/red) -

Green: both sides of the line (N-side,  
C-side) are active

Red: one or both side of the line  
(N-side , C-side) are inactive

DSL 2 (green/red, operates in 4-wire  
versions only) -

Green: both sides of the line (N-side,  
C-side) are active

Red: one or both side of the line  
(N-side , C-side) are inactive

ETH (green) -

Management link is On

**Rear Panel (2-Wire plastic enclosure only)**

xDSL 1,2 (green/red) -

Green: Line is active

Red: Line is inactive.

Ethernet (green/yellow) -

Green: management link is On

Yellow: there is activity on the  
management link

### MANAGEMENT

#### Local Management

Direct connection of ASCII local terminal  
or terminal emulation

Telnet via ETH port

#### Remote Management

EOC messages from the CO ASMi-52/52L  
modem

### POWER SUPPLY

#### Local

Plastic enclosure: 48 VDC (36 to 72 VDC)  
over a 4-pin Molex mini-fit, safety  
approved connector

Metal enclosure: 48 VDC (36 to 72 VDC)  
over a 2-pin terminal block

#### Remote

38 to 200 VDC over xDSL line

### GENERAL

#### Physical

Plastic enclosure (2-wire only):

Height: 50 mm (2.0 in)

Width: 220 mm (8.7 in)

Depth: 155 mm (6.1 in)

Weight: 0.5 kg (1.1 lb)

Metal enclosure (IP-67) (2-wire and  
4-wire):

Height: 65 mm (2.6 in)

Width: 310 mm (12.2 in)

Depth: 166 mm (6.5 in)

Weight: 3 kg (6.6 lb)

#### Environment

Temperature: -5° to 45°C (23° to 113°F)

Humidity: 5% to 85%, non-condensing



Figure 2. PFH-4 Feeding Power Remotely to S-RPT

**S-RPT****2/4-Wire SHDSL/SHDSL.bis Repeater****Ordering****S-RPT/\*/\$**

2-wire SHDSL/SHDSL.bis repeater

**S-RPT-4W/\$**

4-wire SHDSL/SHDSL.bis repeater, metal enclosure

*Legend*

\* Enclosure (Default=plastic)

**IP67** Metal enclosure

\$ SHDSL.bis support (Default=no)

**BIS** Interoperability with ASMi-54**SUPPLIED ACCESSORIES**

AC to 48 VDC power adapter (European orders only)

**CBL-RJ45-DB9/S-RPT**

Control cable for metal enclosure

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