E1DT

E1/PRI Splitter/Buffer

INSTALLATION AND OPERATION

Applicable Products

E1DT - E1/PRI Splitter / Buffer

Part Numbers: E1DT-ASSY-0058
E1DT-ASSY-0059

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REVISION HISTORY

Issue	Date	Notes
4	Oct 2010	Contact details amended
3	21 Nov 2008	Updated
2	13 Feb 2008	Updated
1	2 Mar 2006	First Published

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1. INTRODUCTION

In this Section

Scope

This User Guide covers SomerData E1DT E1/PRI Splitter/Buffer.

User Guides

Printed copies can be supplied on request. Please contact your local supplier or SomerData for ordering details.

Electronic copies (Adobe Acrobat files) are included on the SomerData CD-ROM that is supplied with the original products.

Additional and updated copies of the CD-ROM can be supplied on request. Please contact your local supplier or SomerData for ordering details.

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2. PRODUCT DESCRIPTION

In this Section

Introduction

E1DT E1 Splitter/Buffer provides a means of monitoring and capturing traffic flowing in both directions of a 2Mbits/s E1/PRI (G.703/G.704) communications link.

The line connections are made through two RJ-45 connectors that are hard-wired in parallel. All line activity is passed-through the Splitter/Buffer. Monitoring and recording equipment can be connected or disconnected without disturbing the line.

Line signals are split and fed into high-impedance buffers that load the line signals by less than 0.1dB. Low-impedance outputs allow the monitoring equipment to be located up to 50m away from the line connection.

The design ensures that there is no interruption of the line signals when the Splitter/Buffer is unpowered.

LED indicators are provided for power (green) and signal (amber) presence at each monitor output connector.

E1DT operates from +6v to +12V DC power. UK and European AC power adapters are available as options.

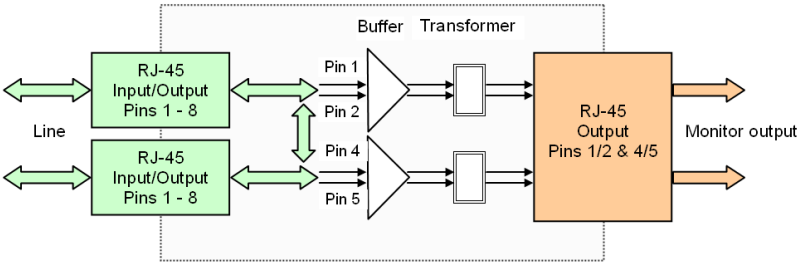
Available Versions

Two versions of E1DT are available.

E1DT-ASSY-0058

Provides the monitor outputs on a single RJ-45 connector (Stream A pins 1/2 and 4/5) for use with devices that monitor both Tx and RX on the same input connector.

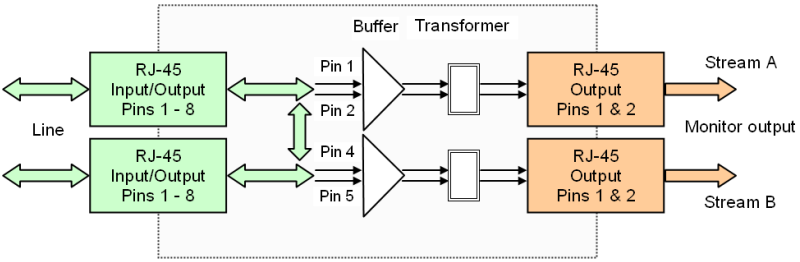
This version *is not* compatible with SomerData PC-VDR E1/PRI Recorders and R2D3 Data Capture Cards.



E1DT-ASSY-0059

Provides the monitor outputs on two RJ-45 connectors (pins 1 & 2) for use with devices that monitor Tx and RX on two input connectors.

This version *is* compatible with SomerData PC-VDR E1/PRI Recorders and R2D3 Data Capture Cards.



3. POWER CONNECTION

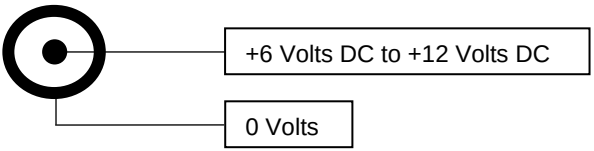
In this Section

Power Source

Recommended power source is a standard 6V, 9V or 12V regulated 100mA power supply with 2.1 mm (centre positive) low voltage connector.

An unregulated power supply can be used provided that the input voltage to E1DT does not exceed 12V.

UK and European AC power adapters are available as options.



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4. E1DT-ASSY-0058 SIGNAL CONNECTIONS

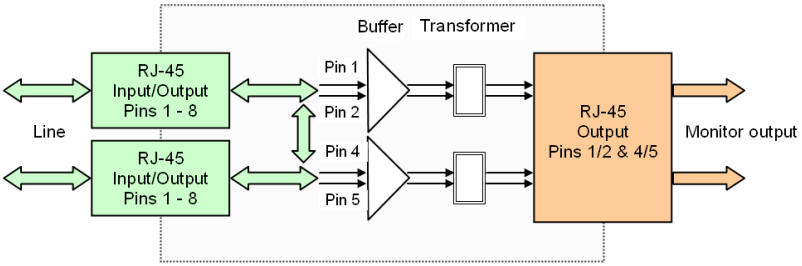
In this Section

Introduction

Both Tx and Rx monitor outputs are on a single RJ-45 connector (Stream A).

E1DT-ASSY-0058 *should not* be used with a SomerData PC-VDR E1/PRI Recorder or R2D3 E1/PRI Data Capture Card (see E1DT-ASSY-0059).

Connections should be made using standard CAT5 (1:1) cable.



Input/Output Connector Pinouts

Line Input/Output

Pin		Pin
1	–	1
2	–	2
3	–	3
4	–	4
5	–	5
6	–	6
7	–	7
8	–	8

Monitor Outputs

Pin	Stream A	
1	Output +ve	Tx direction
2	Output -ve	
3	Ground	
4	Output +ve	RX direction
5	Output -ve	
6	Not used	
7	Not used	
8	Not used	

This product is not approved for connection to public telecommunications systems. It is the User's responsibility to ensure that this equipment is used in compliance with appropriate legislation relating to connection with telecommunications networks.

5. E1DT-ASSY-0059 SIGNAL CONNECTIONS

In this Section

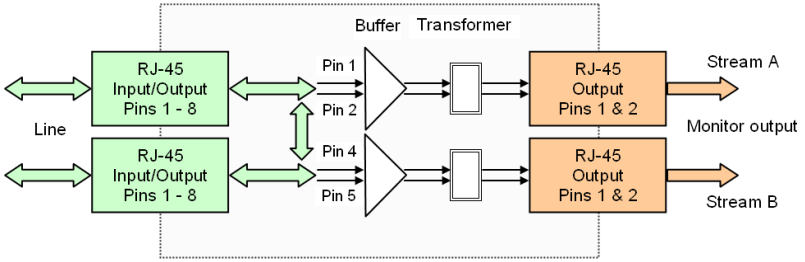
Introduction

Tx and Rx monitor outputs are on two RJ-45 connectors.

Stream A for the Line Tx bitstream and Steam B for the Line Rx bitstream.

Both bitstreams appear on the Tx pins of the monitor output connectors for compatibility with with SomerData PC-VDR E1/PRI Recorders and R2D3 E1/PRI Data Capture Cards.

Connections should be made using standard CAT5 (1:1) cable.



Input/Output Connector Pinouts

Line Input/Output		
		
Pin		**Pin**
1	–	1
2	–	2
3	–	3
4	–	4
5	–	5
6	–	6
7	–	7
8	–	8

Monitor Outputs		
		
Pin	**Stream A**	**Stream B**
1	Output +ve	Output +ve
2	Output -ve	Output -ve
3	Ground	Ground
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used
8	Not used	Not used

6. SPECIFICATIONS

In this Section

Line Interface

Signal
ITU G.703/G.704, 2,048 kbits/s

Line Code
HDB3

Data Type
Framed or Unframed

Signal Amplitude

Operating:	±3.00V ±10% nominal
Absolute Maximum:	-5V (lower limit) +5V (upper limit)

Line Connection
Two RJ-45 connectors hard-wired in parallel.

Optional BNC adapter cable available on request.

Line connection supports 120Ω balanced, 75Ω unbalanced or monitor connection.

Note that there are no terminating devices in the line interface.

Un-powered performance
Applies to the pass-though connection

Crosstalk
Better than -64dB

Residual output
Better than -35dB

Input signal loading
Less than 0.1dB

Buffer

Monitor Outputs (Stream A and Stream B)

E1DT-ASSY-0058
RJ-45 connector (Tx pins 1/2 and Rx pins 4/5)

E1DT-ASSY-0059
Two RJ-45 connectors (Tx pins 1/2) compatible with SomerData R2D3 E1/PRI Data Capture card

Input Impedance
1500Ω

Monitor Output Impedance
120Ω balanced

Monitor Output Level
Unloaded: 2 x Input Level
Loaded: Unity Gain

Monitor Output Signal Presence Indicators
LED indicator
±1.2V p-p signal detection threshold

Monitor Output Isolation
Transformer coupled
1500V RMS AC breakdown

Insertion Loss
Less than 0.2dB

Output to Input Gain Variation
Less than 0.1dB

Output Balance Error
-70db (typical)

Noise (no signal, loaded input)
Better than -63dB

Crosstalk (standard input)
Better than -47dB

Maximum Input Voltage
±3.5V

Output Drive Capability
Greater than 50 metres (120Ω load, Cat 5 cable)

Output Drive Attenuation
0.2dB per 10 metres

Un-powered Performance

Crosstalk
Better than -64dB

Residual output
Better than -35dB

Input signal loading
Less than 0.1dB

Power Requirements

Voltage

Operating:	+6 Volts DC to +12 Volts DC
Absolute Maximum:	-0.25V (lower limit)
	+15V (upper limit)

Current
Less than 100mA

Connector
Low voltage 2.1mm (centre positive)

Power-on Indication
LED indicator

AC Adapters
UK and European adapters are available as options

Environmental

Temperature
0°C to 70°C

Relative Humidity
5% to 95% non-condensing

Physical

Dimensions
55mm x 45mm x 25mm (ABS enclosure)

Weight
50gms

7. SUPPORT

In this Section

What to do if you have a problem

Firstly, please ensure that you have followed the installation, connection and operation instructions in the appropriate User Guide.

Also, check the Troubleshooting section (where appropriate) to eliminate common problems.

Servicing, Maintenance and Repairs

Please contact your supplier or SomerData for all questions relating to maintenance and repairs.

Any unauthorised attempt to open, modify or otherwise repair the product will invalidate the SomerData warranty and may result in the product being left in an irreparable condition.

If you need Support

For warranty, technical and application support issues, you should initially contact your supplier to check whether your SomerData product is covered by warranty, extended warranty or maintenance contract.

At SomerData, we will make our best efforts to provide prompt and friendly support by phone, fax and e-mail.

To diagnose a problem we will require you to provide a detailed description of the problem in the form of a Fault Report.

SomerData Contact Information

Address:	Somerdata Limited 1 Riverside Business Park St Annes Road Bristol BS4 4ED England	
Phone:	UK International	01179-634050 +44 1173-634050
Fax:	UK International	01173-302929 +44 1173-302929
E-Mail:	*support@somerdata.com*	
Website:	www.somerdata.com	

Support Requests

When contacting SomerData for support, please provide as much information as possible about the problem or issue for which you require assistance.

We will be able to deal with your request more efficiently if you provide the following details (where available) in your Fault Report:

- Part Number or Model Number
  (for example E1DT-ASSY-0059)
- Serial Number (for example 2008/19/926)
- Software Version (for example 2.0)
- Details of any symptoms or error messages
- Diagnostics information (if available)
- Sequence of events/actions or other circumstances that triggered the problem
- How you are able to identify that there is a problem
- How you have been able to measure, log or otherwise display the problem
- Details of the host PC (if appropriate) including: operating system; hardware configuration; other hardware devices (e.g. additional PCI cards); other software applications (e.g. analysis or processing programs) that are running at the same time
- Sample data files (if appropriate)

When we acknowledge your support request, you will be given a *Support Tracking Number* (STN), which should be quoted in all further correspondence relating to that specific support request.

Returns

Please do not return any products to SomerData without first contacting SomerData and obtaining a Return Merchandise Authorisation (RMA) Number.

This will ensure that the processing of any repair or upgrade is handled efficiently and in accordance with any agreed action.

If the SomerData product is under warranty, repairs are free-of charge. If not, there will be a repair charge, which will comprise an initial evaluation fee and quotation, followed by repair and parts (if authority is given to carry-out the repair).

Pack the item in its original packaging. If the original packaging is not available, it must be packed in such a way to avoid transit damage. Damage sustained in transit is not covered under warranty.

Returned goods should be accompanied by documentation that indicates the RMA Number along with a detailed fault report and contact details (name, organisation, phone, fax and e-mail).

Mark the RMA Number on the outside of the package.

Ship the item by insured, prepaid carrier to the above address.

Items being returned from outside the European Community *must* be accompanied by a Commercial Invoice. This should include a description of the goods, value for Customs Purposes and state that the goods are being temporarily returned to the UK for repair. SomerData will not accept liability for UK importation costs resulting from inadequate documentation.

End-of-Life Disposal

Your SomerData product may be returned to SomerData at the end of its life at the customer's expense under the EU proposed regulations on waste from electrical and electronic equipment legislation, provided that the product is free from radiation or biological contaminants and that no other legislation forbids the return.

Waste Electrical & Electronic Equipment (WEEE)

In the UK, Somerdata products may be recycled free of charge at any local authority recycling centre as long as the SomerData logo appears on the product and the following WEEE producer registration number is quoted: WEE/HA0074UR/PRO.

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8. WARRANTY

In this Section

Introduction

This section describes SomerData's Warranty Terms and Conditions.

Where the SomerData product has been supplied via an authorised Reseller, the Warranty and Support is between SomerData and its Reseller. Local Warranty and Support arrangements should be agreed between the Reseller and the Customer.

The following information is subject to change without notice.

Warranty: Terms and Conditions

SomerData warrants all goods supplied by it to be free from defects in material and workmanship, under normal use, care, storage and service, for a maximum period of twelve months from the date of delivery (per Incoterms 2000) by SomerData.

This warranty is limited to the repair or replacement, as SomerData may elect and at an establishment authorised by it, of such items as shall appear to SomerData, upon inspection to have been defective in material or workmanship.

All decisions relating to the validity and processing of Warranty claims shall be at the sole discretion of SomerData.

This warranty does not apply to normal maintenance service or to normal replacement of service goods.

Any claim under this warranty shall expire unless made in writing immediately after the appearance of a claimed defect.

This warranty excludes damage from incorrect installation, unauthorised modification, negligence, misuse or abuse or any item of equipment which has been serviced or worked on by anyone other than SomerData or its authorised representative.

SomerData will repair or replace, at its option, any product purchased from SomerData which, under normal conditions of use and service, proves to be defective in material or workmanship.

No charge will be made for labour or parts with respect to defects covered by this warranty, provided that the work is done by SomerData.

This warranty does not cover expenses incurred in the removal or reinstallation of any SomerData products, whether or not proven defective

Replacement or repairs furnished under this warranty are subject to the same terms and conditions of the original warranty.

9. NOTICES

In this Section

General Information

The information in this User Guide has been carefully checked and is believed to be accurate. However, SomerData assumes no responsibility for any inaccuracies that may be contained in this publication.

In no event will SomerData be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages.

In the interest of continued product development, SomerData reserves the right to make improvements in this publication and the products it describes at any time, without notice or obligation.

All product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.

Declaration of Conformity

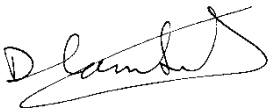
Name of Manufacturer:	Somerdata Ltd.
Address of Manufacturer:	Somerdata Ltd 1 Riverside Business Park Bristol BS4 4ED United Kingdom
Equipment description:	E1 Data Splitter/Buffer
Model:	E1DT-ASSY-0058 E1DT-ASSY-0059

Conforms to the following Product Specifications:

Safety: IEC 950

EMC: 89/336/EEC EN55022 Harmonised Standard

The product complies with the requirements of the Electromagnetic Compatibility Directive 89/336/EEC as amended and the Low Voltage Directive 73/23/EEC and carries the CE marking accordingly.

Signed: 

Position: Technical Director

Date: 1 October 2006

Somerdata and the Environment

Introduction

SomerData is committed to design and introduce products that conform to applicable environmental legislation and standards.

One of our missions is to integrate environmental stewardship into the business of providing quality products, services, and customer support at the best value.

In order to achieve this, SomerData has established a strategic team to focus on the importance of meeting our environmental obligations in the design, manufacture and support of our products.

We have developed a broad appreciation of the impact of these directives on our entire business model, from technical processes for materials, to finished goods manufacturing.

Current Compliance Activities

The Company's current environmental compliance commitment has been structured to meet the following European Union directives:

- Restriction of use of Hazardous Substances or RoHS Compliance (EU Directive 2002/95/EC)
- Waste Electrical & Electronic Equipment or WEEE Compliance (EU Directive 2002/96/EC)

Our goal is to meet or exceed compliance obligations of these EU directives.

Restriction of use of Hazardous Substances (RoHS)

Somerdata has also established a RoHS qualification process to help ensure that products meet stringent reliability and quality requirements, as well as regulatory compliance requirements.

The maximum allowable hazardous substance at a homogeneous material level under the EU RoHS Directive is shown in the following table.

From 1st July 2006 all SomerData manufactured products use lead-free soldering

Substances	Maximum Concentration Values (ppm)
Lead and its compounds	1000
Mercury and its compounds	1000
Hexavalent Chromium (Cr+6)	1000
Cadmium and its compounds	100
PolyBrominated Biphenyls (PBBs)	1000
PolyBrominated Diphenyl Ethers (PBDEs)	1000

10. INDEX