DRSS-1080

Digital Signal Splitter

INSTALLATION AND OPERATION

Applicable Products

DRSS Signal Splitter for 2048kbits/s ITU G.703 bitstreams

Part Numbers: DRSS-ASSY-0019
E1SS-1080
DRSS-1080

Document Reference

DRSS-MAN-R119

Publication Date

17 August 2007

Published by

Somerdata Ltd.
1 Riverside Business Park
St Annes Road
Bristol
BS4 4ED
UK

Sales & Customer Support

Phone: +44 (0)1179 634050
Fax: +44 (0)1173 302929
E-Mail: *sales@somerdata.com*
support@somerdata.com
Website: *www.somerdata.com*

somerdata
specialist surveillance and datacomms solutions

DECLARATION OF CONFORMITY

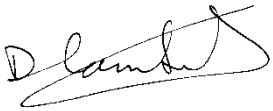
Name of Manufacturer:	Somerdata Ltd.
Address of Manufacturer:	Somerdata Ltd 1 Riverside Business Park Bristol BS4 4ED United Kingdom
Equipment description:	Digital Signal Splitter
Model:	DRSS-1080/ E1SS-1080

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: 19th July 2007

NOTICES

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.

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 suport 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 Substance 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 used 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

Waste Electrical & Electronic Equipment (WEEE)

Somerdata products may be recycled free of charge in the UK 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.

Revision History

Issue	Date	Notes
2	July 2011	Part number change, contact address update
1	17 Aug 2007	Initial Issue

CONTENTS

This page intentionally blank

1. INTRODUCTION

In this Section

What's in this User Guide

This User Guide covers SomerData's DRSS-1080/E1SS-1080 Digital Signal Splitter for 2048kbits/s ITU G.703 bitstreams.

Section 2 – *PRODUCT DESCRIPTION* gives an overview of your unit's capabilities and features.

Section 3 – *INPUT/OUTPUT CONNECTIONS* provides details of connectors and pinouts.

Section 4 – *CONTROLS AND INDICATORS* provides details of connectors and pinouts.

Section 5 – *OPERATION* describes switch and indicator functions, signal input / output paths and diagnostics.

Section 6 – *SPECIFICATIONS* describes the unit's technical parameters.

Section 7 – *SUPPORT* describes the procedure and contact details for obtaining customer support on this product.

Section 8 – *INDEX*

User Guide Availability

Printed copies of Hardware and Software User Guides are supplied with the original products.

Additional printed copies, including the Programmer's Reference Guide 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.

The electronic User Guide library, which also includes product data sheets, can be accessed by browsing the *Documents*\ folder for the required document.

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

2. PRODUCT DESCRIPTION

In this Section

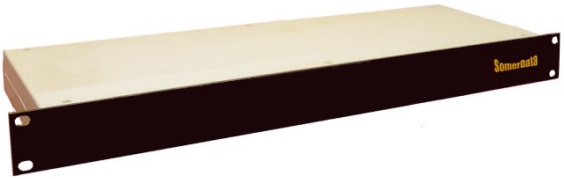
Introduction

The DRSS/E1SS product range comprises a 1:8 Splitter, 4:1 Switch and programmable 4 x 4 Router for 2048kbits/s ITU G.703 bitstreams.

Typical applications include the distribution, monitoring and recording of DAB & DMB Multiplex bitstreams, E1 G.703 bitstream duplication for backup or monitoring..

All DRSS/E1SS models support DAB/DMB ETI and STI bitstreams that are compatible with ITU G.703.

The units are AC powered and supplied in 1U rackmount cases.



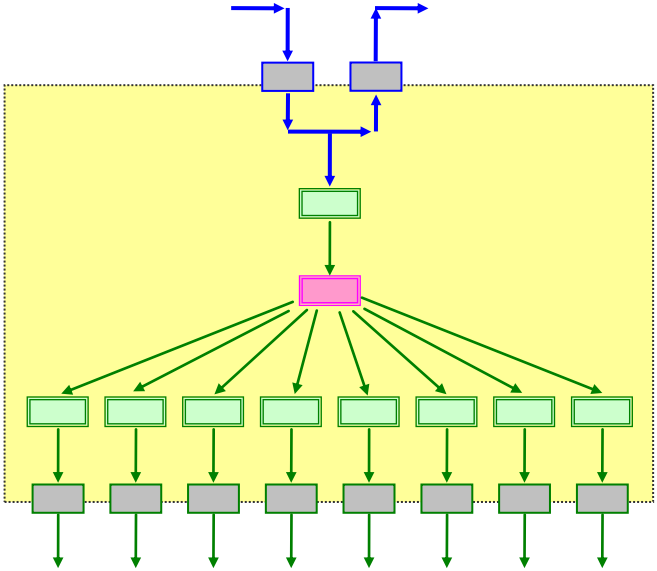
1 x 8 Splitter

DRSS/E1SS *Splitter* provides a means of non-intrusively monitoring or recording DAB Ensemble Transport Interface (ETI) bitstreams without loading the original signals.

The source bitstream connection is made through one of two BNC connectors that are hard-wired in parallel. This means that the source bitstream passes-through the Splitter without any in-line curcuitry or delay.

Monitoring and recording equipment can be connected or disconnected, or power can be removed from the unit, without disturbing the source bitstream.

Front panel LED indicators provide status display of power and source stream input signal presence.



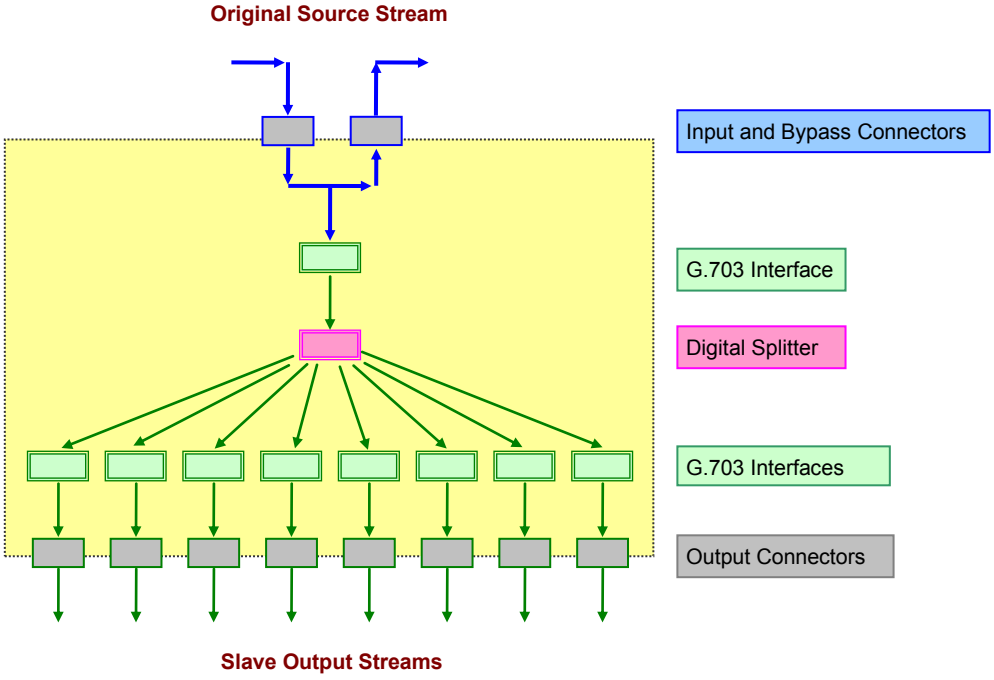
3. INPUT/OUTPUT CONNECTIONS

In this Section

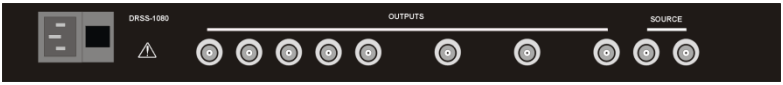
Introduction

Input and Output connections are via BNC connectors on the unit's rear panel.

Signal Input/Output Signal Paths



Rear Panel



BNC

Source

Original stream - two connectors allow for a pass-through connection.

If there is no pass-through connection, the supplied external 75 Ω terminator must be fitted to the unused Source connector.

Output

Slave streams - eight identical output streams are replicas of the Source stream.

3-pin IEC

AC Power

This page intentionally blank

4. CONTROLS AND INDICATORS

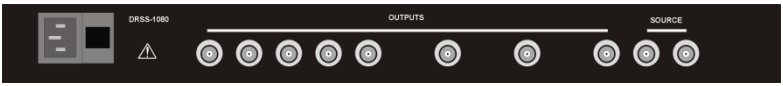
In this Section

Introduction

Front panel LED indicators provide status display of power and input signal presence.

Front Panel

Rear Panel



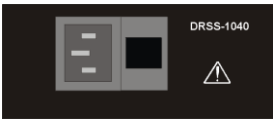
Power

Green Power on (both indicators must be lit)

Signal

Green Input signal detected

AC Power Switch



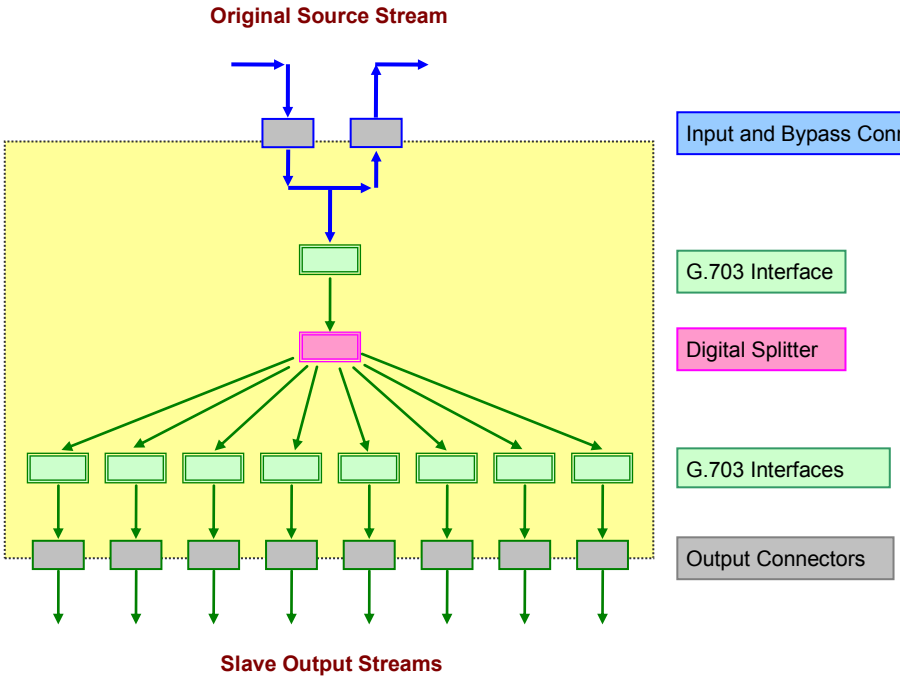
The AC Power switch is located adjacent to the AC power inlet on the rear panel.

5. OPERATION

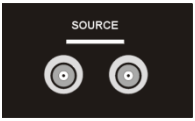
In this Section

Introduction

SIgnal connections are made through BNC connectors.



Source Stream



Two parallel connectors are provided for the original (source) Stream.

One connector can be used as the input and the other as a pass-through output.

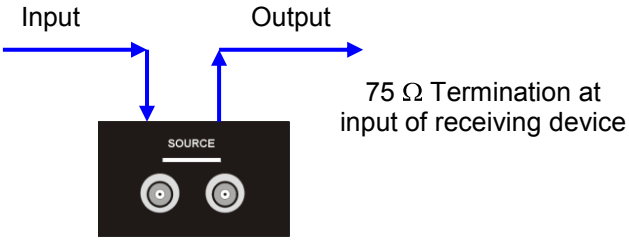
The design ensures that there is no interruption of the source bitstream when the Splitter is unpowered.

Termination

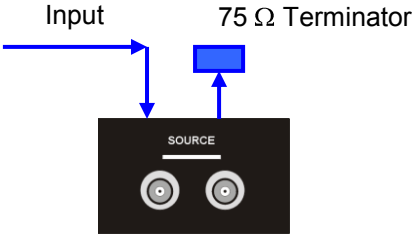
For compatibility with ITU G.703 specifications, streams should be terminated with a 75 Ω load.

The input is internally terminated with 40 kΩ, hence the need to use the supplied external 75 Ω terminator on the unused Source connector when a down-stream device is not connected.

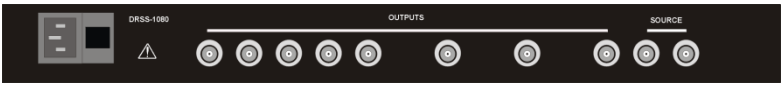
Pass-Through



Local Termination



Outputs



Slave output streams can be connected or disconnected without disturbing the source bitstream.

Output Termination

For compatibility with ITU G.703 specifications, streams should be terminated with a 75 Ω load.

6. SPECIFICATIONS

In this Section

Input Stream

Signal Interface

2,048 kbits/s ETI or STI compatible with ITU G.703

Line Code

HDB3

Input Impedance

40 kΩ without supplied external terminator

75 Ω with supplied external terminator fitted to the parallel (bypass) connector

Signal Amplitude

Operating:	±2.37V ±10% nominal to -12dB
Absolute Maximum:	-5V (lower limit) +5V (upper limit)

Pulse width

230 ns to 260 ns

Input jitter tolerance

14UI @ 750Hz

0.4UI, 10kHz to 100kHz

Input Isolation

Transformer coupled

1500V RMS AC breakdown

Connectors

Two BNC connectors hard-wired in parallel.

All signal connections should all be made with 75 Ω coaxial cable. A recommended cable type is RG179B/U.

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

Output Streams

Signal Interface
2,048 kbits/s ETI or STI compatible with ITU G.703

Line Code
HDB3

Output Impedance
75 Ω

Pulse width
244 ns nominal

Output jitter attenuation
10dB/decade from 10Hz

Meets the requirements of ITU G.736 and I.431

Input to Output Delay

Minimum:	1 µs
Maximum:	16 µs
Typical:	8 µs

Output Isolation
Transformer coupled

1500V RMS AC breakdown

Connectors
Eight BNC connectors carry identical output streams

All signal connections should all be made with 75 Ω coaxial cable. A recommended cable type is RG179B/U.

Physical

Chassis
1U rackmount case

Dimensions
482 mm (w) x 44 mm (h) x 105 mm (d)

Weight
1.6kg

Environmental

Temperature
0°C to 70°C

Relative Humidity
5% to 95% non-condensing

Power

Supply
85V –264V, 47Hz - 63Hz, universal input

Connector
IEC 3-pin

This page intentionally blank

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.

However, please do not expect us to be magicians or mind-readers!

Diagnosing a problem will require your co-operation and we expect you to provide a detailed description of the problem in the form of a detailed Fault Report.

SomerData Contact Information

Address:	Somerdata Limited 1 Riverside Business Park St Annes Road Bristol BS4 4ED UK	
Phone:	UK	01179 634050
	International	+44 11 79 63 40 50
Fax:	UK	01173 302929
	International	+44 11 73 30 29 29
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 DRSS-ASSY-0019)
- Serial Number (for example 2007/42/5)
- 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

SomerData products may be returned to SomerData at the end of its life at the customer's expense, provided that the product is free from radiation or biological contaminants and that no other legislation forbids the return.

Waste of Electrical & Electronic Equipment (WEEE)

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.

This page intentionally blank

8. INDEX