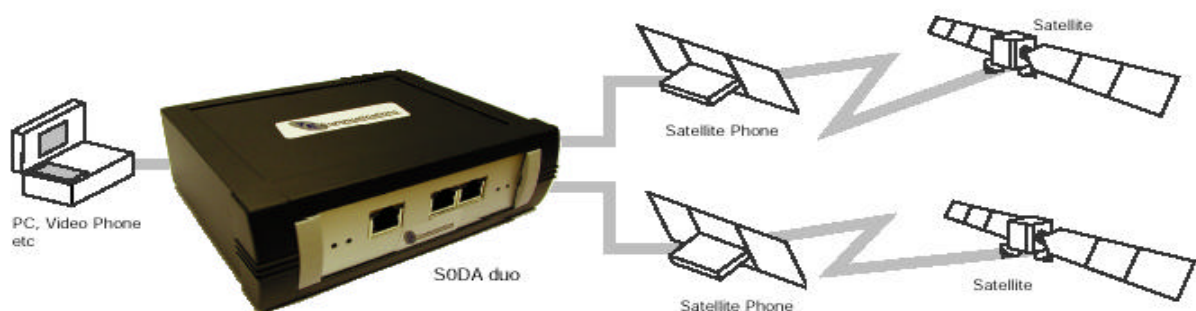


# ***S0DA duo ISDN Splitter/Combiner for Inmarsat GAN (M4)***

## ***User Manual***



**One into two will go!  
7E's S0DA duo – 128kbps from your existing GAN**

## **SODA duo: Introduction**

The 7E Communications ISDN splitter/combiner provides the ideal solution for those situations where 64kbps simply isn't fast enough. Used in conjunction with a 128kbps ISDN application, such as a 128kbps videophone or TCP/IP using MLPPP. The *SODA duo* splits the two ISDN-2 B-channels that are normally carried on a single interface on to separate interfaces for connection to a pair of 64kbps Inmarsat GAN terminals.

As with all 7E products, simplicity and reliability are the keywords and the *SODA duo* is no exception. Thanks to its 'plug & play' connectivity the unit can be used in conjunction with most 128kbps Euro ISDN devices. For devices supporting suitable multiple ISDN interfaces and bonding protocols, a number of *SODA duos* can be used to reach the maximum data rate.

Compatibility with all Inmarsat GAN terminals tested to date makes the *SODA duo* the perfect solution for existing users looking to upgrade to 128kbps without buying a new all in one terminal. Not only can you save on size and weight but because you have two terminals, you have redundancy against terminal failure.

The *SODA duo* is available in two versions,

### **AC only:**

This version is powered by an external power source, typically an AC adapter, which provides 5V for the duo and  $\pm 20V$  for the PS1 (phantom power) output to supply connected ISDN devices.

### **PS1:**

This version is powered from the ISDN socket of the Inmarsat GAN terminal connected to interface one. Using this source (known as PS1) to run the duo reduces the power available to supply any connected devices so the duo switches from normal to restricted mode PS1 (see page 4).

However this is not normally a problem as most the most common PS1 powered ISDN devices are desktop feature phones, which are unlikely to be the intended application for duo users.

The PS1 version retains the power inlet connector, so the AC power supply may be connected, in which case the duo switches over to this source.

## SODA duo: Connections

### Front Panel

#### S0-bus ports

##### From User:

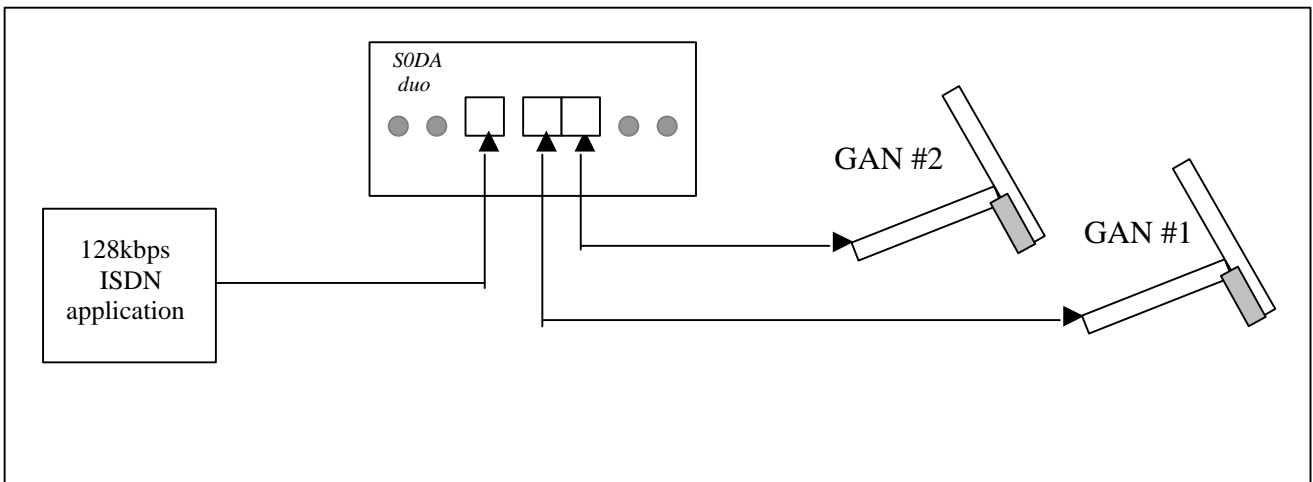
Plug your ISDN device in here

##### To Network (1)

Connect your first Inmarsat GAN terminal to this port, we suggest for identification purposes using coloured cables, possibly the red one supplied.

##### To Network (2)

Connect your second Inmarsat GAN terminal to this port, we suggest for identification purposes using coloured cables, possibly the green one supplied.



### Rear Panel

#### Power

Input socket for the AC power adapter, which supplies 5VDC to run the duo and  $\pm 20V$  for the PS1 Normal mode phantom power output to supply connected ISDN devices.

Whilst the  $\pm 20V$  is not necessary for the operation of the unit, any alternative 5VDC supply must be fully regulated and be approved by 7E Communications Ltd, some resellers can supply a suitable battery pack.

#### Programming Port

This port is used to connect the SODA duo to the serial port of a PC for software updates; or diagnostics, the necessary instructions will be supplied when required. In normal operation this is neither connected or of practical use.

## **SODA duo: Indicators**

The *SODA duo* is fitted with a number of indicators, which aside from the Power Indicator, show the state of each 64kbps channel.

**Power** Indicators for both 5VDC (the supply voltage) and the internally generated 3.3V power busses are provided on the front panel. If the duo is operating normally both will be illuminated.

**PS1** Indicates that phantom power is being supplied to the user S0-bus, this can be either restricted if the duo is itself deriving power from the Inmarsat GAN connected to Network port 1 or Normal if it is being powered via the AC adapter or some other external source.

Each of the three S0-Busses is provided with two bi-colour indicators

**PH** “Physical Handshake”, shows that a basic hardware connection with an active attached device has been achieved.

This indicator will be amber if no call is in progress on Channel 1 and Green if one is, obviously if a call is in progress PH must have been achieved.

**DL** “Data Link”, shows that the device connected to the S0-bus is communicated with the *SODA duo*, this may not happen until the first call attempt, but many devices keep the Data Link going after the call is completed so it may not go out.

This indicator will be amber if no call is in progress on Channel 2 and Green if one is, obviously if a call is in progress DL must have been achieved.

**B1** Lights green when a call is in progress on B1.

**B2** Lights green when a call is in progress on B2.

## **S0DA duo: Technical Notes**

### **Configuration:**

- a) if the interface on the terminal is configurable it must be set to Euro-ISDN, S-interface.
- b) Timing (clocking) for the user ISDN device is derived from “To Network (1)”, “To Network (2)” is synchronized by 7E’s tried and tested plesiochronous buffer technology. Like all satellite circuits, the buffers either in the *S0DA duo*, Inmarsat terminal or LES must eventually slip or re-sync, unless they are very large with the consequent effect on delay. Any channel bonding protocol used must therefore be capable of accommodating this data loss. Bonding 1 as used by many inverse multiplexors and video conference units at 192kbps and above is NOT suitable.
- c) Power for the PS1 powered *S0DA duo* is derived from “To Network (1)” unless the unit is being powered via the rear panel connector.

### **What is PS1?**

PS1 is the term used to describe the phantom power supplied from an S0-bus to any connected equipment. Whilst it is not actually necessary for any connected equipment to operate, most Inmarsat GAN terminals such as the Nera WorldCommunicator supply it and the S0DA duo (PS1) uses it as a power source.

If present there are two modes

Normal: 1W at 24-42.5VDC

Intended mainly to power connected devices, of practical use for feature phones.

Restricted: 380mW at 32 to 42.5VDC, this is indicated by the polarity being reversed.

Intended to power an emergency basic telephone, of little use for anything else.

Note: A very few devices e.g. the Gandalf 5242i check for the presence of a PS1, voltage even though they do not require it for operation.

## **S0DA duo: Contents**

Your S0DA duo package will consist of,

All models:

- 1 off S0DA duo
- 2 off 3m ISDN cables to connect the S0DA duo to two Inmarsat GAN terminals
- 1 off User manual

AC only model, or PS1 model with optional AC adaptor

- 1 off AC power adaptor
- 1 off Local AC cord (country specific)

7E Communications in line with EC & EPA guidelines, has adopted a packaging re-cycling policy, accordingly, as the best way to re-cycle packaging is to use it a second time, your S0DA duo (and AC adaptor) will be supplied in the case vendors original box.

## **S0DA duo: Specification**

### **ISDN connection**

*ITU-T I.430  
RJ45 socket*

### **Protocol**

*Layer 2 Q.921 ETSI Euro-ISDN  
Layer 3 Q.931 ETSI Euro-ISDN*

### **Inmarsat GAN terminal connection**

*2 RJ45 sockets*

### **Power Supply**

*5 &  $\pm 20V$  DC via AC adapter, 100-240V, 50/60Hz  
or  
+35V via Inmarsat GAN connection*

### **PS1 (AC only version)**

*35V 1W*

### **Size & Weight**

*50mm x 162 mm x 130 mm, 600g*

### **Temperature: Operating, [Storage]**

*0 to +40°C, [-20 to +50°C]*

### **Relative humidity**

*90% non-condensing*

*Specification subject to change without notice*