

# APPLICATION NOTE

## Backhauling Nx64kbps Service

### With V.35 or RS449 Modems, over an E1 2.048Mbps Link with a V.35 or RS449 Router Interface

Satellite Division



#### Application Summary

With the explosive world-wide growth of the Internet, satellites are increasingly being used to provide service to the more remote regions of the world. One of the most predominant speeds is 1.544Mbps or T1. Whilst this might be a Globally recognised speed for a satellite service, this is not the case on the ground. For terrestrially based connections T1 is predominantly used in North America.

As the Internet grew it became apparent that it was Nodal in nature. Main exchanges were predominantly US based and well known as the best place to peer your Internet traffic. Network Access Points such as MAE-WEST, MAE EAST and LINX carry a large proportion of the traffic. These nodes were nowhere near the main Carrier Earth Stations such as Pennant Point, USA (Teleglobe), and Goonhilly Down, UK (BT) for example.

Leased lines were required to connect the Earth Station and the Internet Node together. In Europe the equivalent of T1 is 2.048Mbps or E1. When bringing down a T1 satellite service in Europe, it may need to be back-hauled from the Earth Station to the nearest NAP over an E1 line.

The serial output of a Satellite Modem cannot be cabled more than 10 metres in most instances. The DC3000 and DC3200 provide a cost effective solution to back-hauling a T1 Satellite Service over an E1 infrastructure.



## About the DC3000 & DC3200

Metrodata's Global Connectivity Range includes one of the most extensive E1 product portfolios of any manufacturer. The DC3000 & DC3200 provide a new level of price/performance in connecting Satellite Modems and Router to an E1 G.703 2.048Mbps leased line.

### T1 Over E1 Solution Kit

The DC3000/DC3200 spans the gap between the synchronous interface of the router or satellite modem, and the E1 Leased Line on a fractional basis of Nx64kbps per timeslot. The DC3000 offers an X.21/RS449 DCE interface to the Satellite Modem and therefore requires a Crossover cable at this end. At the other end the DC3000 is DTE, and requires a straight cable to connect to the Router.

The DC3000/DC3200 is configured by setting dip switches on the rear panel.

### Interfacing to the Satellite Modems

The next issue to resolve is the interface to the Satellite Modulators and Demodulators, and almost certainly the Redundancy switch. Using HSSI this is quite simple, though the line driving distance can be prohibitive.

One answer is to use ASI on the Satellite Modems which allows you a much greater line driving distance. Contact us for more information on how to use ASI Satellite Modems.

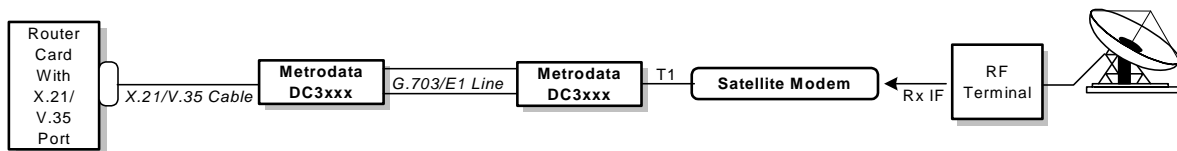


Figure 1: Back-hauling 1.5Mbps Over an E1 Link

## Contact Us

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## Ordering Information

Power Supply	100 – 250 VAC	-48V DC
DC3000 – T1 Over E1 RS449 / X.21 Modem	80-05-230	80-21-230
DC3200 – T1 Over E1 V.35 Modem	80-05-232	80-21-232

For a technical specification please see the product data sheet

