

ECHO SOFTWARE V1.04 (Concatenation) USER DOCUMENTATION

EPROM Installation

NOTE: Static Precautions must be taken when fitting EPROMS.

NOTE: Ensure power cable is disconnected before removing cover from unit.

Fit EPROM 074E1_1A/1.04 to Echo baseboard in position U23
Fit EPROM 074E1_2A/1.04 to Echo baseboard in position U26

First Power Up (upgraded units only)

If the EPROMs have been upgraded and the unit had been previously configured, the Echo must be factory reset before use:

Factory Reset

WARNING: *This will reset all configuration information back to the factory default settings. If required, make a note of all relevant settings before resetting so that the configuration may be restored manually once the reset is complete.*

Connect a terminal to the unit supervisor port (9600,8,N,1). Press CTRL-R four times when the terminal selection screen is displayed. Press 'Y' to accept the factory reset. When the terminal selection screen re-appears, the Echo is ready for use.

V1.04 New Features

No more than four Nx64 channels can be supported on one Echo. V1.04 adds a new mode whereby further Echos can be concatenated together, allowing more than four Nx64 channels to be used on one E1 link. A PABX may still be supported using the D&I port of the final Echo in the chain.

Concatenating Echos

The new mode is found under **Mode** on the **D&I Channels** page. Initially this should be set to **NORMAL** for both units so that configuration may be carried out.

Configure the main link Echos as normal. Once configuration is complete, set the remote unit and local unit D&I **Mode** to **CONCATENATE ECHOS**. Note that this has to be done for both remote and local units.

Connect the concatenated Echo MAIN port to the D&I port of the main link units. The concatenated units should gain carrier and communicate with their corresponding partner as normal. Further concatenation may be added as required. Set the D&I mode on the last concatenated Echos to **NORMAL** otherwise the management information may confuse a connected PABX.

Example: Eight Echos concatenated (set local and remote):

```
Concatenated Echo 3: Set D&I Mode NORMAL
Concatenated Echo 2: Set D&I Mode CONCATENATE ECHOS
Concatenated Echo 1: Set D&I Mode CONCATENATE ECHOS
Main Link Echo      : Set D&I Mode CONCATENATE ECHOS
```

Configuration

Configuration changes to any Echo may be made normally, even when concatenated. Each unit will only communicate with its corresponding partner.

Remember that there are only 31 timeslots that can be used, no matter how many Echos are concatenated. Each timeslot must only be allocated once, the other units must be set to drop & insert this timeslot directly.

Example: Eight Echos in total giving 15 64Kbps channels, and a 15 channel PABX link:

Set the PABX timeslots:

```
PABX channels      SPPPPPPPPPPPPPPPPD-----
```

Set the Echo timeslots:

```
Concatenated Echo 3 SDDDDDDDDDDDDDDDDDD-----123
Concatenated Echo 2 SDDDDDDDDDDDDDDDDDD-----1234DDD
Concatenated Echo 1 SDDDDDDDDDDDDDDDDDD----1234DDDDDDD
Main Link Echo      SDDDDDDDDDDDDDDDDDD1234DDDDDDDDDDDD
```

NOTE: See how the timeslots may only be used once, slot 0 is always for synchronisation, slots 1-16 are used by the PABX, timeslots 17-20 are being used by the main link echo, timeslots 21-24 are being used by concatenated Echo 1, timeslots 25-28 are being used by concatenated Echo 2, and timeslots 29-31 are being used by concatenated Echo 3.

Alarms

To set the alarm to pass through all units special consideration needs to be taken as to how the Echo transports the alarm.

On the **Alarms** page:

Set **D&I Remote Alarm** to MAJOR/MINOR. If the Concatenated Echo sets the remote alarm bit (D&I port), this will be logged MAJOR/MINOR by the Echo. This will be reported to the remote Echo using the main link remote alarm bit.

Set **Remote Alarm** to MAJOR/MINOR. If the main link remote alarm bit is set this will be logged MAJOR/MINOR by the Echo. The Echo additionally sets the D&I port remote alarm bit i.e. reporting it to the concatenated Echo.

Additionally set **D&I Carrier Loss** to MAJOR/MINOR. The Echo will then report a concatenated Echo carrier loss to the remote unit.

Nx64 Control/Indicate Signal

Transparent signalling (Nx64 control and indicate signals) for concatenated units is not guaranteed. This is because all units are sharing the management bandwidth and collisions may occur between units. This does not mean that problems will occur when configuring units, just that some information may occasionally have to be re-sent. For statistical information this does not usually matter, but the signalling information between units may be disrupted, leading to timing problems. For this reason it is not recommended to use transparent signalling on concatenated units.

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