

# 3638-80 Quad Circuit & 3638-81 Dual Circuit ISDN Installation Guide

## GENERAL DESCRIPTION

### Document Purpose

This document provides general, installation and testing information for the 360-80 ICB ISDN unit. This document covers model number 3638-80 (Quad Circuit ISDN unit) and model number 3638-81 (Dual Circuit ISDN unit).

### Equipment Function

The ISDN unit is part of the 360-80 Intelligent Channel Bank (ICB). This unit provides a means to extend 2B+D U-interface ISDN channels from an ISDN switch to a remote location over T1/E1 facilities. Each circuit on this unit requires three DS0 timeslots for the full 2B+D service.

### Equipment Location/Mounting

The 3638-80 plugs into any full-size slot of any Charles Industries 360-80 ICB. The 3638-81 plugs into the half-size slot of the Charles Industries 360-80 ICB.

### Control Interface

This unit is managed through the craft port or the Network Management Software (NMS), which controls the provisioning of the unit and obtains status information from the unit. Provisioning is described in the Optioning section of this document. For operation, see the craft port or NMS documentation.

This unit will maintain its default provisioning until that provisioning is altered through the control interface. If this unit's provisioning is changed, it will maintain the new provisioning even if power is lost. If replaced with a new unit, the new unit will default to the same provisioning as was set for the prior unit. If this unit is installed in a location that was used by a different type of unit, this unit will use its own default provisioning.

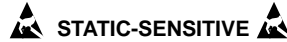
## INSPECTION

### Inspect for Damages

Inspect the equipment thoroughly upon delivery. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company.

### Equipment Identification

Charles Industries' equipment is identified by a model and issue number imprinted on the front panel or located elsewhere on the equipment. Each time a major engineering design change is made on the equipment, the issue number is advanced by 1 and imprinted on subsequent units manufactured. Therefore, be sure to include both the model number and its issue number when making inquiries about the equipment.



**To prevent electrostatic charges from damaging static-sensitive units:**

**Use approved static-preventive measures (such as static-conductive wrist straps and static-dissipative mats) at all times whenever touching units outside of their original, shipped, protective packaging.**

**Do not ship or store units near strong electrostatic, electromagnetic, or magnetic fields.**

**Always use the original static-protective packaging for shipping or storage.**

## INSTALLATION

### Installing a New Unit

Step	Action
1.	If not already installed, install the rear panel, screwing it to the appropriate mounting locations on the shelf using the provided hardware.
2.	Insert the unit into the shelf, making sure that the unit is aligned with the card guides inside the shelf.
3.	Slide the unit fully in to the shelf.
4.	Once the unit is fully inserted, tighten the securing screw on the front panel of the unit.

Step	Action
5.	Wire the unit per the wiring information in the wiring section.  The unit will perform a self-test to ensure that it is compatible with the network management software on the system.
6.	After the self-test is performed, check the software provisioning of the card using either the front panel craft interface on the front of the controller unit or the network management interface on the rear of the controller (see the section on network management for more information on the operation of this interface).

### Installing a Replacement Unit

If you are replacing a unit that is already in service, insure that the unit is the same as the unit being replaced.

Step	Action
1.	Remove the wiring connectors from the front and rear of the unit.
2.	Unscrew the front panel securing screw to release the unit from the shelf.
3.	Using the card ejector, remove the unit from the shelf.
4.	Follow the procedure for installing a new unit.

### Attaching the Rear Panel

The rear panel of the unit should be installed after the all units are installed in the shelf, but before wiring begins.

### Wiring the Unit

When the ISDN unit is installed in a Charles Industries ICB, it makes electrical connection to associated common equipment through a prewired backplane provided as part of the ICB.

Connect the 2W loop to the T&R leads of the channel unit connector. Refer to the ICB documentation for more information.

Connection of the composite clock is made via the rear panel jack. When required, these connections should be made to the ICB composite clock input pins. Refer to the 360-80 shelf and TCU documentation for more information on these connections.

**Table 1. Pin Chart for Male 50 pin (25 pair) TELCO Connector**

Circuit #	Pin	
Circuit 1	Pin 1 = R	Pin 26 = T
Circuit 2	Pin 3 = R	Pin 28 = T
Circuit 3	Pin 5 = R	Pin 30 = T
Circuit 4	Pin 7 = R	Pin 32 = T

### Status Indicators

The front panel has 1 set of three LEDs per circuit which show the status of each circuit.

**Table 2. LED States**

Label	Status	Description
LOS	ON	Loss of U-interface or TR-397 framing
	OFF	Normal operation
ALM	ON	Loss of synchronization at far end
	OFF	No alarms (normal operation)
LP	ON	Loopback active
	OFF	Loopback not active

## PROVISIONING

This unit comes from the factory with default provisioning. This provisioning can be altered through the Network Management interface. When this unit is inserted in to a previously provisioned slot, if the card type matches, the unit will change its provisioning options to match the previously provisioned unit. If the unit type does not match the unit will assume its default provisioning. The provisioning options are as follows:

Option	Choices	Default
Per circuit configuration	2B+D, 1B+D, D	2B+D
Per circuit time-slots used	T1=1-24, None E1=1-15, 17-31, None	3638-80: Sequence* 3638-81:T1= None E1=Sequence
Per circuit mode	LT, NT	LT
Per circuit loop-back type (NT mode)	Local, LULT, NT1, None	None
Per circuit sealing current (LT mode)	On, Off	On
Composite clock source for output	circuit, None	None

\*Sequence indicates that the default circuit uses 3 time slots. Therefore, if plugged in to the slot for channels 1-12, circuit 1 would use time slots 1-3, circuit 2 would use time slots 4-6, and so on up to circuit 6 which would use time slots 10-12.

## TESTING

Request for loopbacks are sent to the appropriate device by the EOC channel in the maintenance channel. The setting of the loopback provisioning determines the device to be looped back. Up to four intermediate devices may be commanded to loop back in the network-to-customer direction.

The NT1 can be commanded to loop back regardless of the number of intermediate devices. The unit provisioning selects between loop and carrier sides and selects the desired B channel to be tested (B1 or B2). LED indicators on the front panel report any error status.

*Note: When the ISDN unit is performing a loopback, the loopback occurs internal to the U-interface transceiver.*

### Loopback Testing

The ISDN unit responds to B1, B2, and 2B+D loopbacks initiated through the embedded operation channel (EOC) from either an ISDN switch or another upstream device.

The ISDN unit can provide a loopback and provide monitoring capabilities of the unit's performance. Selecting LPBK through provisioning provides a bidirectional loopback for the selected B channel. Performance monitoring indicates the status of either the 2-wire loop or the T1/E1 carrier. Performance monitoring is nonintrusive to B1, B2, and the D channel, and therefore non-service-affecting. Other tests performed on a specific B channel will not interrupt service on the remaining channels.

*Note: Tests to additional network addresses may be performed by changing the unit provisioning to the desired address.*

## TECHNICAL ASSISTANCE

If technical assistance is required, contact Charles Industries' Technical Service Center at:

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800-607-8500  
847-806-8556 (FAX)

techserv@charlesindustries.com (e-mail)