

Open Transport Network (OTN)

$U_{P0/E}/U_{P0}$ INTERFACE CARDS

Introduction

Thanks to its design, OTN can handle nearly all existing communication standards for voice, data, LAN and video. The UP0-P and UP0-T interface cards can be used for $U_{P0/E}$ or U_{P0} connections (selectable on the card by means of a strapping). The UP0-P and UP0-T interface cards are only two of the many interfaces presently available for OTN. For more information, contact the address overleaf.

Description

$U_{P0/E}$ and U_{P0} are 2-wire 2B+D interfaces used in a PBX environment. These terminal interfaces offer two 64 kbps B-channels for voice or data and a 16 kbps D-channel for signalling. U_{P0} is a Siemens' HICOM and OMNI PBX's digital telephone protocol. On HICOM PBX's, also $U_{P0/E}$ is available. Both PBXs support different types of terminal equipment with the relevant interface. The $U_{P0/E}/U_{P0}$ interface can be easily converted into the standard 4-wire S_0 interface using an S_0 adaptor card for digital telephones, or a PNT (Private Network Terminator).

In this way, standard ISDN S_0 terminal equipment can be connected.

An important advantage of the OTN $U_{P0/E}/U_{P0}$ interface is its capability to overcome distance limitations often encountered in an ISDN environment.

By using the OTN, the limitation of the distance between the PBX and the terminal equipment is completely eliminated. The distance between the terminal equipment and the U_{P0} -T card, and the distance between the PBX and the UP0-P card is limited to the specification of the distance without using OTN.

Two cards are required to connect a digital terminal to a PBX over the OTN: the UP0-P interfacing with the PBX, and the UP0-T interfacing the 2B+D terminal equipment. Terminal equipment is connected via a 50-pin champ connector on the front panel. In case the $U_{P0/E}/U_{P0}$ telephone sets require a -48 V power supply, a -48V module is installed in the OTN node.



Features

Supports all HICOM and OMNI U_{P0} terminal equipment

Supports all HICOM $U_{P0/E}$ terminal equipment and features such as master-slave combinations, adapters, etc.

Six circuits per interface card

"Circuit active / terminal present" indication to the OTN Management System (OMS)

Calls are not dropped after OTN reconfiguration

For OTN-150/600 and OTN-X3M networks



Operation

Every 250 μ s, a $U_{P0/E}/U_{P0}$ frame containing 36 significant bits is sent in both directions on the link between the PBX and OTN (UP0-P) and on the terminal side (UP0-T).

In this way, a 144 kbps (2B+D) link is established. Before the $U_{P0/E}/U_{P0}$ frames are put onto the optical ring, a conversion is made into IOM frames using the IBC (ISDN Burst Controller) chip. This IOM (ISDN Oriented Modular framing) frame format is often used for communications between layer 1 ISDN components. The IBC chip also handles bit and frame synchronisation.

Signalling information is exchanged between the $U_{P0/E}/U_{P0}$ ports on both sides. For example, when the UP0-P card detects a loss of the -48 V line voltage coming from the PBX, this information is passed on to the corresponding UP0-T card. Upon receipt of this information, the UP0-T card will disconnect the line voltage to the terminal. Due to the IOM framing, 224 kbps are required for each $U_{P0/E}/U_{P0}$ connection.

Applications

Digital telephones offer superior functionality compared to analog telephone sets. This extra functionality is often required for particular voice application, e.g.:

Dispatching

Dispatchers need to know who's trying to call at any time. Digital telephones provide calling name/number display service. "Conference calling", "selective calling" or "all call" functionality are also often required. These services can be activated via the PBX' digital telephone.

Remote operators

Digital telephones form a cost effective alternative to the well-known attendant/operator console. Using the OTN, operators can be distributed over the premises without any loss of functionality.

Specifications

Compatibility

The $U_{P0/E}/U_{P0}$ interface cards S30824-Q41-X and S30824-Q42-X are compatible with the U_{P0} interface cards FB-52400-A and -B0A. Connections can be set up between e.g. an UP0-P (FB-52400-A) and an UP0-T (S30824-Q42-X) card.

CE marking

EMC directive 2004/108/EC
LVD directive 2006/95/EC

Circuits

6 circuits per interface card

Data rate

144 kbit/s (2B+D)

Bandwidth on OTN

7 bits/port = 224 kbps

Connectors

50 pin Champ shielded/unshielded

Status and control information

Card active
Card type
Circuit active
-48 V present
Circuit reset
Card reset

On-board indications per circuit

Circuit active
-48 V present

Transmission

TCM (Time Compression Multiplexing) or "Ping-Pong"

Card size

Double Eurocard
200 x 233.4 mm

Weight

UP0-P Approx. 475 g
UP0-T Approx. 490 g

Reliability (MTBF) at 25°C (77°F)

U_{P0-P} 19 years
 U_{P0-T} 17 years

CSTA applications

In CSTA (Computer Supported Telephony Application), users are typically equipped with an enhanced digital telephone and a PC. On these platforms, a sophisticated interactive application is implemented. By using the OTN, these users can be located at any distance from the PBX and computer infrastructure. A $U_{P0/E}/U_{P0}$ interface for the telephone and an Ethernet interface for the PC is sufficient.

$U_{P0/E}/U_{P0}$ interface cards UP0-P and UP0-T do not support DECT.

Ordering information

Cards

UP0-P S30824-Q41-X
UP0-T S30824-Q42-X
The UP0-P and UP0-T cards can be installed in the N22 and N215 nodes for OTN-150/600, and in the N42, N42C and N415 nodes for OTN-X3M

OMS software release

- V2.2 and up (OTN-150/600)
- V4.0 and up (OTN-X3M)

