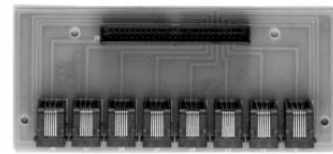
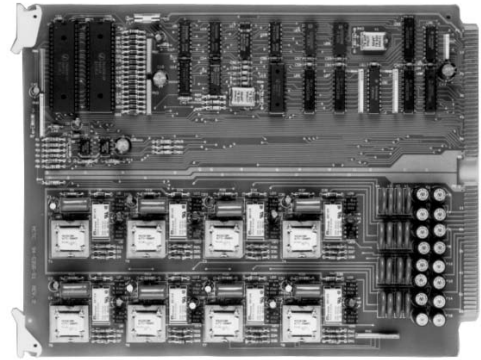


# MULTICOM® 2000 ADMINISTRATIVE COMMUNICATION SYSTEM

## Telephone System Interface

### Model MCTC



#### Features

- Adds up to eight outside telephone lines to MULTICOM 2000 System
- Interfaces with 90-volt ring loop-start telephone lines
- Incoming calls ring user-selected day and night administrative telephones
- Direct Inward System Access capabilities with and without password protection
- Outgoing calls from any enhanced staff or administrative telephone (programmable access levels)

#### Description

The Model MCTC Telephone System Interface is an accessory designed to add up to eight outside telephone lines, complete with DISA access features, to the Bogen MULTICOM 2000 System. Up to two MCTC accessories can be installed per system. The accessory consists of two circuit cards and an interconnecting ribbon cable. The interface card installs easily in one of the slots of the cardframe. The connector card has eight modular plugs and uses standard modular telephone cord to connect to any telephone system supplying a 90-volt ring signal and loop detect (such as a PBX station port).

The MCTC interface operates similar to the MCSC (station card), in that it provides eight unique stations which function as trunk ports to connect the system to outside lines. Each station detects the 90-volt ring signal of the incoming call and rings a user-selected day or night enhanced staff or administrative telephone. When the telephone handset is lifted, the MCTC establishes a loop connection between the telephone and the outside line. Following a call, the interface responds to a disconnect pulse and disconnects the call. The first line on the MCTC can also be programmed to disconnect on a reorder tone, enabling it to operate with certain phone systems.

The architectural number assigned to the calling station shows on the administrative telephone's display panel during an incoming call (a unique ring tone is also heard at the administrative telephone). Incoming calls can be call-forwarded, conferenced, and transferred within the system.

The Direct Inward System Access feature (DISA) lets personnel control system functions from off premise telephones. The DISA feature may also include password protection.

Outgoing calls can be made at any enhanced staff or administrative telephone, provided it has been programmed for access to this feature. Access can be restricted to making local calls, or unrestricted, permitting local and out-of-area calls. Outgoing calls are initiated by dialing a 2-digit access number (menu guided on the administrative telephone), and are assigned by means of a circular hunt, ensuring balanced use of the lines. If a line is available, the calling telephone receives an outside dial tone. If a line is not available (or if access is not allowed), the telephone receives a busy signal.

The interface card contains all relays and isolation transformers needed to interface with the telephone lines. Optical isolators are used to detect the ring voltage. Varistors, diodes, transorbs, and fuses are used to protect the card and the system from harmful transients that may be present on the lines.

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**Architect  
and Engineer  
Specifications**

The telephone system interface shall be a Bogen Model MCTC, designed for use with the Bogen MULTICOM 2000 Administrative Communication System. The interface shall provide up to eight (8) station ports which shall function as trunk ports for the purpose of connecting the MULTICOM 2000 system to an outside telephone system. The interface shall operate with telephone systems supplying a 90-volt ring signal and loop detection.

Up to two MCTC interface systems can be installed per system. Each interface system shall consist of the following components:

- 1) Bogen Model MCTC circuit card
- 2) Bogen Model MCOC connector card
- 3) Bogen Model MCOCA ribbon cable

The MCTC circuit card shall occupy one slot of the MULTICOM 2000 card frame. It provides the relays and isolation transformers required to interface with the telephone system. The MCOC connector card shall be mounted to an outside panel of the cardframe and shall provide eight (8) modular jacks for connection to the telephone system. The MCOCA ribbon cable shall interconnect the MCOC card with the card cage backplane. Modular telephone cable, terminated with standard modular plugs shall be used to connect to the telephone system.

Each station port shall use optical isolators to detect the 90-volt ring signal from the telephone line. When the ring signal is detected, the station shall ring one user-selected enhanced staff or administrative telephone during system "day" hours and one during system "night" hours. In the case of an administrative telephone, a unique ring signal shall sound and the architectural number assigned to the station port shall appear on the telephone's display panel. When the ringing telephone is answered, the station shall establish a loop connection between the telephone and the outside line.

Following a call, the MCTC shall recognize the disconnect pulse provided by the telephone company. The first line in the system shall also recognize a reorder tone for disconnect.

A Direct Inward System Access Feature shall be provided. This feature may be password protected for use by authorized personnel only. Facilities shall also be provided to call-forward an incoming call. It shall also be possible to add a third party to the line (conference call), or to transfer calls.

Outgoing calls shall be possible from any enhanced staff or administrative telephone; however, facilities shall be provided to deny or restrict access. A 2-button sequence (menu-guided on the administrative telephone's display panel) shall be used to initiate an outside call. Stations with restricted access shall be able to place local calls only. Stations with unrestricted access shall be able to place local and out-of-area calls.

A circular hunt shall be used to assign outgoing calls to the outside lines, to ensure balanced use of the lines. An outside dial tone shall be returned when access to the line is achieved. A busy tone shall be returned if a connection is not achieved or not allowed.

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