

## Chapter B

# Ring Communications Inc.

## Digital Exchange Controller

# DXC901



# CHAPTER B

## TABLE OF CONTENTS

DXC901 - DIGITAL EXCHANGE CONTROLLER .....	B5
INTRODUCTION .....	B5
OPERATIONAL DESCRIPTION .....	B5
INSTALLATION .....	B6
Card Position .....	B6
Network Wiring Connections .....	B7
Hardware/Software Compatibility .....	B7
Setting Network and Device Address .....	B7
Defaulting the DXC901 Configuration Memory .....	B8
INDICATOR DESCRIPTION L.E.D.'s .....	B8
SWITCHES .....	B8
SAR Parameter Definitions .....	B13
Options List Description .....	B21
Editing the SAR on the Screen .....	B22
Message Definitions .....	B23
BACKUP .....	B24
RESTORE .....	B24



## **DXC901 - DIGITAL EXCHANGE CONTROLLER**

### **INTRODUCTION**

The Digital Exchange Controller (DXC901) interfaces the *Ring Master* CB901 Central Exchange to *Ring Communications' Crisis Alert System*. The Network is designed to the EIA-RS485 standard and can support 8 nodes on a total of 30 separate networks. Each device has a specific node address in the range of 0-7, and each CB901 central has a specific network address from 1 to 30.

A DXC901 installed on the Network with one or more Digital Network Adapters (DNA100) and/or Digital Annunciator Displays (DAD104) provides supervision and call annunciation of preprogrammed substations. The DXC901 requires one node address on the network, usually node 0.

### **OPERATIONAL DESCRIPTION**

Interface to the CB901 intercom central exchange is accomplished by monitoring the CB901 subscriber bus. During initialization the DXC901 will compare the real address on the bus with a programmed table of stations (see NETWORK CONFIGURATION of Chapter C - DNA100). When a match occurs, the DXC901 will write the information into a table in RAM. When the initialization is complete the DXC901 will block initiative and supervise the stations for calls, faults, and alarms. The DXC901 constantly monitors the supervised stations for any type of fault, call, or alarm initiation. Any activity from the supervised stations causes the DXC901 to transmit a message on the network to the nodes programmed to monitor those stations. The node interprets the message and displays or prints the appropriate information. The operator of the node can handle the information by entering single keystrokes - all dialing is handled by the DXC901.

Events are sent out from the DXC901 to all nodes responsible for displaying the information. By pressing the answer key at the node associated with the display line, data is sent back to the DXC901 which dials the associated intercom call number to obtain voice contact between the supervised substation and the master station associated with the display node.

A CALL from a substation is generated by a positive voltage on pin 1 of the substation audio/signaling pair lasting for a duration of 0.9 to 1.1 secs. When a CALL from a substation is detected by the DXC901, the calling station can be connected to a Program Channel, if programmed, by the DXC901's DTMF dialer. A ring tone, loop tape or digital announcer connected to the appropriate program channel can give the caller a positive audible acknowledgment of the call placed. This action along with the illumination of the LED can meet the requirements of the Americans with Disabilities Act (A.D.A.).

An ALARM from a substation is generated by a positive voltage on pin 1 of the substation audio/signaling pair lasting for a duration of at least 1.1 secs. When an ALARM from a substation is detected by the DXC901, the calling station can be connected to a Program Channel, if programmed, by the DXC901's DTMF dialer. A ring tone, loop tape or digital announcer connected to the appropriate program channel can give the caller a positive audible acknowledgment of the call placed. This action along with the illumination of the LED can meet the requirements of the Americans with Disabilities Act (A.D.A.).

A FAULT can be caused by a short or open on the substation audio pair or a loss of power. A FAULT will not cause Program Channel activation.

Privacy on a Master station with annunciator display (Subscriber type 2) is used for controlling the Night Transfer feature. Privacy = Transfer mode. The transfer status is sent to all nodes in the system. The Annunciator in Transfer mode will still get calls but the time delay for the call to the next Annunciator is now set to 0 (the next Annunciator will therefore get calls immediately). Multiple levels of transfer is possible.

All answered calls can be placed in PARK: a state in which any other node can retrieve the call (similar to hold).

The DXC901 also monitors the system battery charge voltage. The threshold is factory preset to 25VDC. Loss of charge voltage will turn off the charge indicator.

A PWRFAIL may be sent to the DAD104 for acknowledge and to the event log printer. This feature is handled by subscriber address FF in the DXC901 and may be programmed from the DNA100 in the same manner as substation:

Set Subscriber type to 0

Set Subscriber dial number to match the stage number (Stage 1 = 0001, stage = 0002 etc.)

Set Location to " Stage 1 DXC901"

Set Call Priority

Set Annunciator address

Set Printer address

## **INSTALLATION**

### **NOTE**

**Install and test the CB901 central exchange before starting the DXC901 installation. See CB901-1 installation manual for additional information.**

#### *Card Position :*

In a CB901-1 configuration the DXC901 is installed in card position 13 in the DP979, and the NFE1626 (program distribution card DP977) will be installed in slot 12. The NMF6012 cable supplied with the DP977 must be modified by removing one connector position and installing the NMF6012 cable between positions 10-12 only.

For CB901-2 and CB901-M with single master Digital Network Controller (DNC) the DXC901 is installed in slot 12 and the NFE1626 in slot 11. Two connectors are cut from the NMF6012 so that when installed it only covers positions 10 and 11. (See Chapter E - DXB901)

### **Network Wiring Connections : Figure 21**

A BF925 subscriber card strap is used for connections to the DXC901. The BF925 is installed in back of the DXC901 in the same manner as subscriber connections on plug P2. When the BF925 is installed in the central, connect a twisted pair (24 AWG solid wire) for the network to pins 8A (DATA+) and 8B (DATA-). Then connect -12 VDC from the negative side of a spare fuse location to pin 1A,B. Use a full pair for this connection. The +12 VDC side of this fuse should be used for the network RJ45 test jack at the central. See **Figure 21**.

If using remote power supplies at the network nodes, the network will require reference to earth ground. To provide this, connect the -12 VDC output of the power supply to the earth ground terminal on the power supply, or make a grounding connection from the negative side of the battery directly to building ground. (Follow all applicable local codes.)

For programming and/or testing and troubleshooting purposes, an 8-pin modular jack (*Ring* part number - KB171, RJ45 type) must be installed at the CB901 central as a node tap. It is recommended to connect the DATA pair from the central to a connection point that allows the network pair to all other devices to be disconnected from the central for trouble shooting, leaving only the central equipment and the test jack. Connect +12 VDC from the positive side of the spare subscriber fuse where the DXC901 ground point is connected to pin 2 of the modular jack and -12 VDC from the negative terminal of the same fuse location to pin 7 of the modular jack. Use a full pair for the power connections whenever possible, and do not use this fuse for any other devices. Each device must have an individual power pair.

The total length of the twisted pair network cable must not exceed 7000 feet.

### **Hardware/Software Compatibility**

The DXC901 software version is printed on the EPROM label installed on the PCB. When replacing or upgrading the DXC901 it is not necessary to reprogram the configuration.

The DXC901 is compatible with all software versions of TRIDEX processor, NFE1683.

### **Setting Network and Device Address - SW2**

DIP switch SW2 is used to set the address of the DXC901. See SETTING NETWORK ADDRESS of Chapter A - NETWORK for a full description for setting addresses, as well as, an addressing chart. The DXC901 is usually defined as node zero.

## **NOTE**

**If any DIP switches are changed while the DXC901 is operating, it must be RESET or powered off and back on, in order for the changes to become valid.**

**Defaulting the DXC901 Configuration Memory**

The first time a DXC901 is powered on it requires defaulting to remove existing test program configurations from memory. To default a DXC901 use the following procedure:

1. Set all positions of DIP SW2 to on.
2. Push reset on DXC901. When the MASTER LED flashes, the memory is blank.
3. Reposition the DIP switches for the correct node and network address, and press the DXC901 reset button.

The DXC901 is now ready for the desired site configuration. (See NETWORK CONFIGURATION of Chapter C - DNA100.)

Failure to default the DXC901 may result in undesirable operation at start up or in the future.

**INDICATOR DESCRIPTION L.E.D.'s : Figure 11.**

- DTMF - Flashes when the DXC901 is sending tones during dialing.
- TONE ACK - Flashes when a valid digit has been dialed by the DXC901.
- CHARGE - Lights steady if power supply is charging batteries. Will be off if charge voltage drops.
- BLANK - For future use.
- RECEIVE - Receive data from the Network. Will flash when data is transmitted from another device on the network. If the Master LED is on, the RX LED will flash when other devices respond to scanning from the Master. When the Master LED is off, the RX LED should flash constantly.
- TRANSMIT - Transmit data to the Network. Will flash when the DXC901 sends data out on the Network. If the Master LED is on, the TX LED will flash constantly. When the Master LED is off, TX will only flash when transmitting to other devices.
- MASTER - Illuminates when the DXC901 is a master on the network. There can only be one master on each network. On power up, each device waits for a response from a master. If no response is received, then this device will take over as a master. Therefore, the first device powered up will be the master.
- RUN - On steadily approximately 1 second after reset. Indicates DXC901 local microprocessor is running.

**SWITCHES : Figure 11.**

- SW1 - Reset. Creates a reset for the DXC901, and will send display updates to all nodes.
- SW2 - Selects Node and Network address.



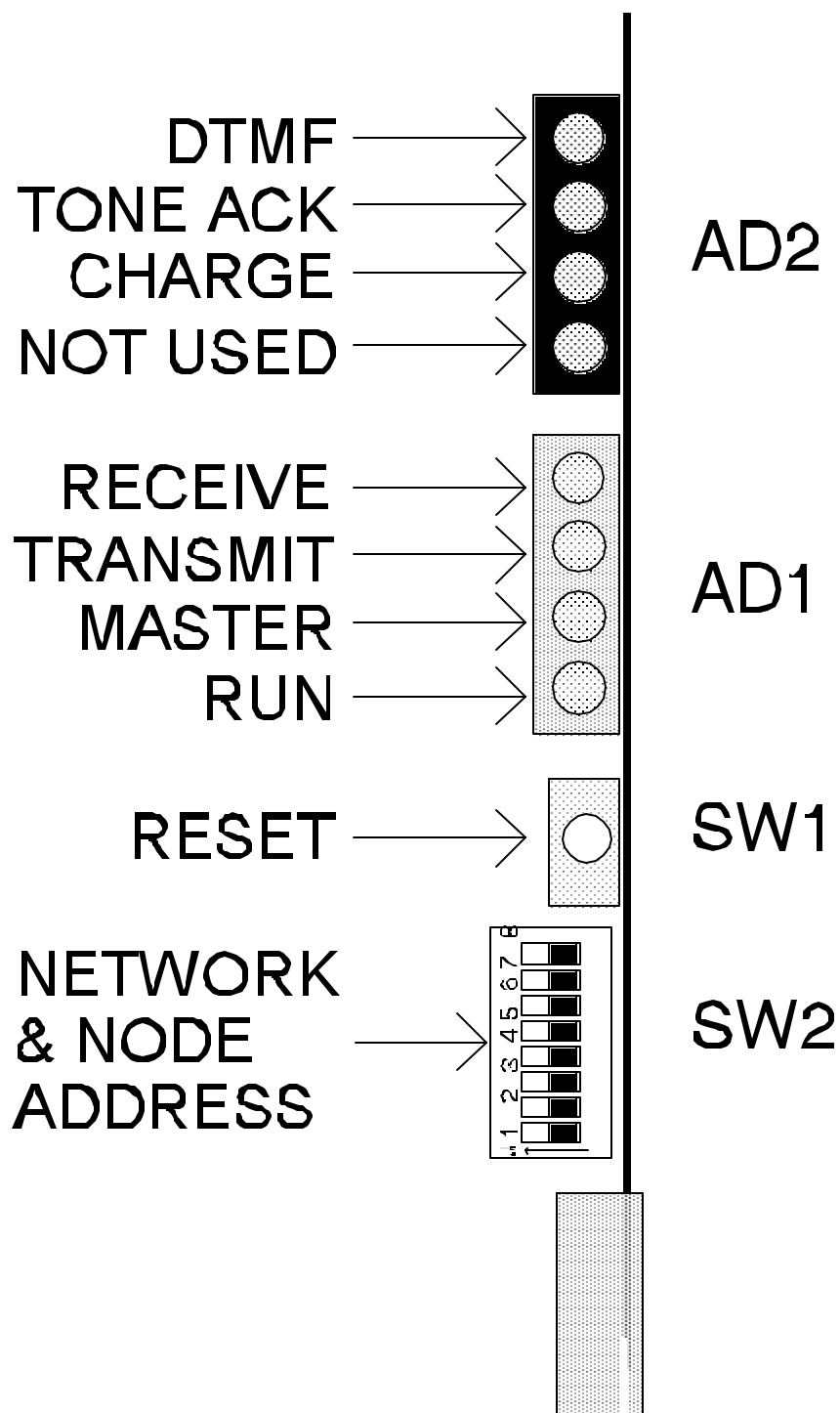


Figure B1 - DXC901 Indicators and Switches

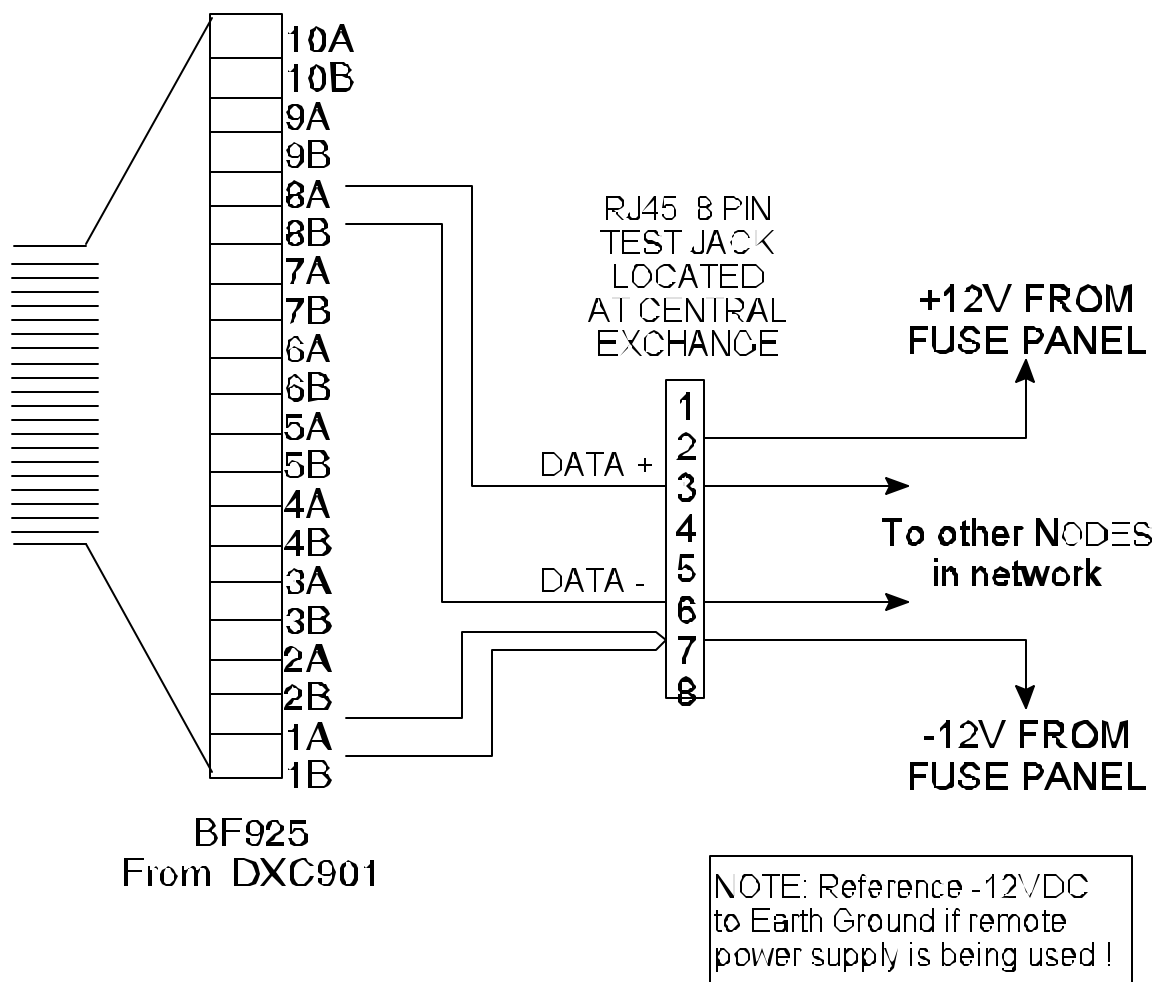
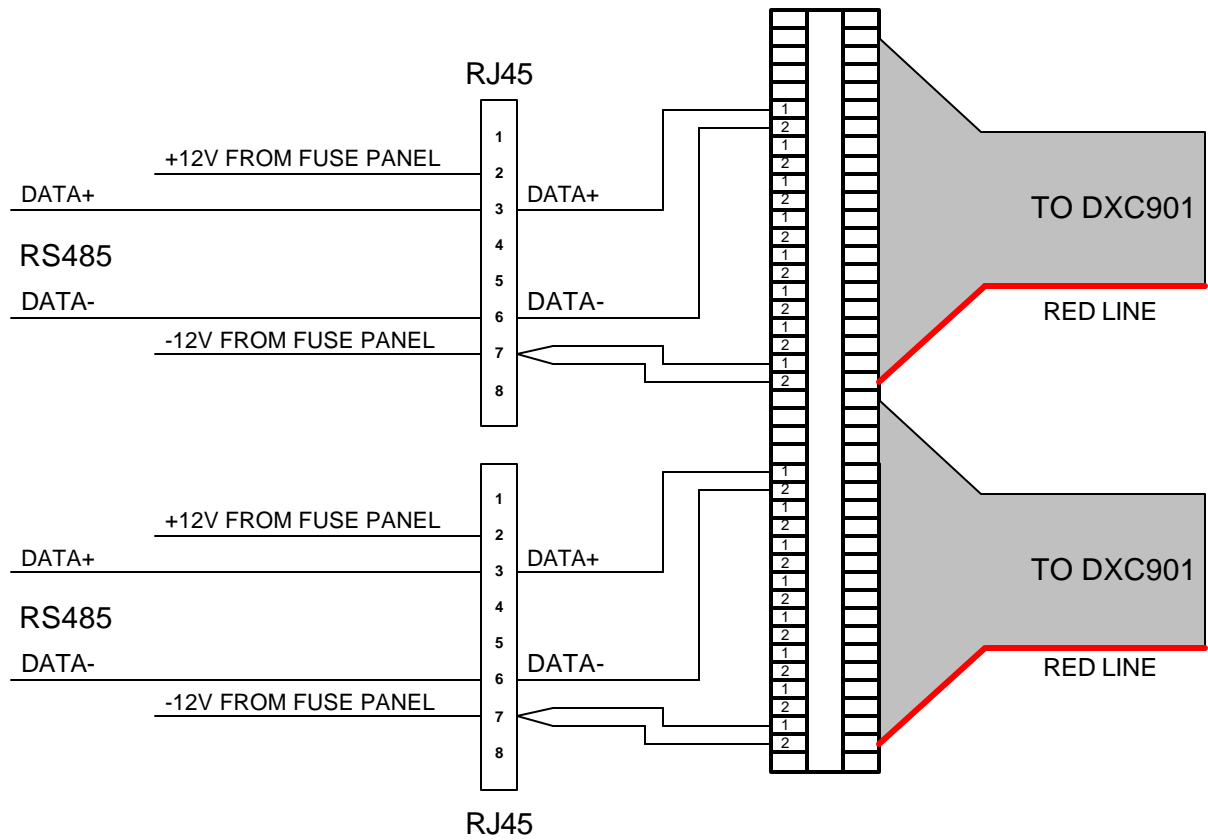


Figure B2 - Network Wiring

### DXC901 USING BF927 CABLE

The top or bottom may be used for hookup



**NETWORK CONFIGURATION** (See **Figure B3**)

CONFIGURATION is used for programming the DXC901 or the DXA100. The configuration programming is stored in nonvolatile RAM in the DXC901 or DXA100. This is the way the network recognizes how to handle and manipulate events from substations on the Tridex system.

Since Crisis Alert and Tridex Intercom are two separate stand alone systems working as one, there has to be an interpreter to allow Tridex to communicate with Crisis and vice versa. The Digital Exchange Controller (DXC901 in a CB901 system) is the device that interfaces the Crisis System to the Tridex Intercom. It is necessary to program the DXC901 so that when an event is initiated from the substations, the Crisis System will know how to handle it. The DXC901 monitors the I/T bus and can identify activity in the intercom system. Based on the DXC901's programming, these activities can be ignored or intercepted and handled in accordance with it's programming. The DXC901 can dial on behalf of any station in the system. For example a master station dialing a substation, or a substation dialing program distribution.

The DXC901/DXA100 has a list of information for each subscriber in the Intercom Central it is installed in. This list is referred to as the Subscriber Address Record (**SAR**). The **SAR** contains all pertinent information regarding the station and how Crisis Alert is to handle any activity. It also tells the DXC901/DXA100 what number to dial for that station when required.

When entering CONFIGURATION, the **SAR** template and the option list will be displayed. The program waits for a selection of one of these options. Only the first letter of the option name must be entered followed by carriage return (ENTER key).

The rest of this section makes reference only to the DXC901 however, it also applies to the DXA100.

**NOTE**

**When in CONFIGURATION mode the incoming call audible indication CANNOT be heard. Do not leave the main operating CRT in CONFIGURATION mode during normal operation.**

```

                                CONFIGURATION
=====
DXC NETWORK ADDRESS: [ ]
Number of dial digits: [ ]      Annunciator 1 address: [ ]
                                Call forward delay: [ ]
Subscriber address: [ ]        Annunciator 2 address: [ ]
Subscriber type: [ ]           Call forward delay: [ ]
Subscriber dial number: [ ]    Annunciator 3 address: [ ]
                                Call forward delay: [ ]
Location: [ ]                  Annunciator 4 address: [ ]
                                Call forward delay: [ ]
Alarm Priority: [ ]            Annunciator 5 address: [ ]
Call Priority: [ ]             Call forward delay: [ ]
Program channel in Que: [ ]   Annunciator 6 address: [ ]
Video Switcher address: [ ]   Call forward delay: [ ]
Printer address: [ ]          Annunciator 7 address: [ ]
Recorder dial number: [ ]     Call forward delay: [ ]
Recorder delay : [ ]          Annunciator 8 address: [ ]

F=find  P=prev  N=next  A=amend  E=exit
Which option do you require ?
    
```

**Figure B4 - Subscriber Address Record template**

**SAR Parameter Definitions - See Figure B3**

**Figure B3** shows what the SAR template looks like and what information is stored in the DXC901 for each station SUBSCRIBER ADDRESS of the Tridex Intercom. The template is a snapshot of the SAR stored in the DXC901. There is one SAR for each subscriber position in the central exchange that the DXC901 is installed in. The SAR can be looked at or edited on this template.

Each parameter of the SAR is defined in the following list.

- NOTE:        HEX                    =        Hexadecimal numbers, base 16.
- DEC                    =        Decimal numbers, base 10.
- ALPHANUMERIC        =        Letters and numbers.

**DXC NETWORK ADDRESS : [HEX number, range 08-F8]**

The network address of the DXC901 being programmed. It is from this DXC901 that you will be able to look at or edit the SAR that will be seen on this template. The DXC901 being configured is installed in the Central Exchange that you want this DXC901 to monitor.

**SUBSCRIBER ADDRESS** : [HEX number, range 00-FF]

The HEX line equipment position in the CB901 central exchange whose SAR is being reviewed or modified in the DXC901. It is this subscriber's SAR that is going to be viewed or edited. It is a HEX number and must be in the range of 00 through FF.

**NUMBER OF DIAL DIGITS** : [DEC number, range 2-5]

This parameter **MUST** match the number of digits of the call numbers in the CB901 central exchange. This is a global (system-wide) parameter and will accept only decimal numeric entry. By changing it for one subscriber, it will be changed for all subscribers. This will tell the DXC901 how many digits it has to dial if it is dialing for a master or substation.

- 2 = 2 Digit dialing
- 3 = 3 Digit dialing
- 4 = 4 Digit dialing
- 5 = 5 Digit dialing - **The first digit must always be 1, with the remaining 4 digits being programmed.**

You can change the number of dial digits when editing any **SAR** by pressing the back-space key when the cursor is on the SUBSCRIBER ADDRESS. You must then proceed through the remainder of parameters of the **SAR** until the message *All correct (y/n)?* appears. Answering Yes will write the record to memory; the changes will become effective immediately.

The number of dial digits only has to be set once.

**SUBSCRIBER TYPE** : [DEC number, range 0-6]

This parameter indicates what kind of action the DXC901 is going to perform if it see's activity on the line equipment location called out in the SUBSCRIBER ADDRESS above. The SUBSCRIBER TYPE can be a decimal number in the range of 0 through 3 as explained below:

- 0 = Ordinary master-station (not supervised by DXC901). If the DXC901 see's activity, it will ignore it and allow Tridex to handle the activity as a normal intercom station.
- 1 = Supervised sub-station on Crisis system. If the DXC901 see's activity, it will intercept the activity so Tridex doesn't see it. The DXC901 will then perform operations based on the rest of the parameters in this **SAR**. (See **Figure B4** for an example of a typical SUBSCRIBER TYPE 1 configuration).
- 2 = Station associated with an annunciator display (DAD104 / DNA100 CRT on the Crisis system). Each annunciator display **MUST** have a station near it in order to have voice communication when answering incoming events. The SUBSCRIBER ADDRESS whose SUBSCRIBER TYPE is 2, will be used as the

calling station for the annunciator display whose network address is found in ANNUNCIATOR 1 ADDRESS. The DXC901 will dial on behalf of this SAR's SUBSCRIBER ADDRESS if the ANNUNCIATOR 1 ADDRESS attempts to answer one of it's incoming events. (See **Figure B5** & **Figure B6** for examples of typical SUBSCRIBER TYPE 2 configurations).

- 3 = Sub-Master, a master station with Supervision, Alarm, Call, Fault capability in the Crisis system, and regular master station intercom dialing. The DXC901 will treat this station like a SUBSCRIBER TYPE 1 with the exception that it will allow the station to dial if the DC Shift is within the parameters below for dialing. (See **Figure C11** for a typical SUBSCRIBER TYPE 3 configuration).

A SUBSCRIBER TYPE 3 Sub-Master is one that will provide the following DC Shift Length on the 1 and 2 voice pair used by DXC901 to determine what event is occurring at the Sub-Master:

<u>EVENT</u>	<u>DC SHIFT LENGTH</u>
DIALING	< 0.9 seconds
CALL	between 0.9 and 1.1 seconds
ALARM	> 1.1 seconds

- 4 = Supervised substation using an input for CALL, an input for Music Channel Step, and an input for Volume Step. The DXC901 will treat this station like a SUBSCRIBER TYPE 1 with the exception that it will dial a "1" or a "2" on behalf of the substation if the DC Shift is within the parameters below.

A SUBSCRIBER TYPE 4 Substation is one that will provide the following DC Shift Length on the 1 and 2 voice pair used by DXC901 to determine what event is occurring at the Substation:

<u>EVENT</u>	<u>DC SHIFT LENGTH</u>
DIALS "1"	100 milliseconds ± 50 milliseconds
DIALS "2"	200 milliseconds ± 50 milliseconds
CALL	1 second ± 100 milliseconds
ALARM	> 1.1 seconds

In Tridex SVT, program Direct Dialing 949 for button number 1, and Direct Dialing 948 for button number 2 for this particular substation. Program direct dial table number 1 for both channels in the SVT programming. 948 is the facility code to step through Program Distribution Channel Volumes. 949 is the facility code to step through Program Distribution Channels. The Program Distribution Mode must be set to Mode A in order for this to work. (See SVT PROGRAMMING MANUAL for detailed explanations on DIRECT

DIALING, PROGRAM DISTRIBUTION, FEATURE ACCESS AND ALARM CHANNELS.)

Program Channel Step and Volume Step may be done with a single input as long as the input provides a 100ms DC Shift when the substation is idle and provides a 200ms DC Shift when the substation is busy (the station is turned on). The operation will be as follows:

Once SVT has been programmed, if the input is activated while the station is idle, then a "1" will be dialed for the substation. Direct Dialing will force a "949" which will step to the next Program Distribution Channel at a Volume of 1 (turning on the substation). If the input is activated at this point, the station is considered busy, and a "2" will be dialed for the substation. Direct Dialing will force a "948" step to the next Volume level of the present Program Distribution Channel. The volume will continuously be stepped by activating the input until the Volume wraps around turning the Program Distribution Channel off. At that point the next activation of the input will turn on the next available Program Distribution Channel at Volume 1. Each successive activation of the input will continue this loop until the Program Distribution Channel wraps itself around back to the first available Program Distribution Channel and start all over again.

- 5 = Direct Dial subscriber port. When DC shift is detected this port will dial the call number programmed in RECORDER DIAL NUMBER. When DC shift is removed the connection is cancelled.
- 6 = Method C elevator substation. When permanent DC shift is detected an alarm is sent to the annunciator panel. The alarm is cleared when the station is called back from the annunciator or from a master-station dialing the station (the elevator station must remove DC shift when called).
- 7 = Supervised sub-station with two buttons (Call and Alarm). The Alarm button will send ALARM to annunciators starting at annunciator address 1 and can transfer to address 2-8 with optional delay. The Call button will send CALL to annunciator address 8 and can transfer to address 7-1 with optional delay. FAULT will follow the ALARM transfer.

7

## NOTE

**A SUBSCRIBER TYPE 1, 3, 4 or 6 station cannot use the privacy feature. If the station is in privacy, it will show up as a FAULT on the annunciator display(s).**

**SUBSCRIBER DIAL NUMBER :** *[DEC number, range 0010-9999]*



The actual decimal number used to dial this subscriber. When an event is answered, the DXC901 will dial this number for the station associated with the annunciator to start a two way conversation. It must match the dial number in the CB901 central exchange for the SUBSCRIBER ADDRESS in the **SAR** in the range of 0010 through 9999. Leading zeros in a two or three digit number must be inserted, however, they will be ignored by the DXC901 when dialing. In a five digit dialing plan the DXC901 will always dial a 1 first and then the four digits inserted in this field.

**LOCATION :** *[ALPHANUMERIC, max 30 characters]*

The LOCATION is the text description of the intercom station at this SUBSCRIBER ADDRESS in the **SAR**. This description is used when the supervised station places events to annunciators identifying where the event is coming from. The location text is also used for the ACTIVITY LOG PRINTER and consists of an alphanumeric text string 30 characters long.

## NOTE

**Only the first eight characters will be displayed on a DAD104. For ease of reading the DAD104 display, the first character should be a space. All 30 characters will be displayed on a DNA100 Status Display Screen and on the Activity Log Printer.**

**ALARM PRIORITY :** *[DEC number, range 1-9]*

ALARM PRIORITY indicates the level of preference for events defined as alarms originating from this station. One is the highest priority and nine is the lowest. Priority is not used for stations associated with annunciators and non-supervised stations. If Alarm Events are not wanted then set the priority to 0 to disable the alarm feature,

**CALL PRIORITY :** *[DEC number, range 1-9]*

CALL PRIORITY indicates the level of preference for events defined as calls originating from this station. One is the highest priority and nine is the lowest. Priority is not used for stations associated with annunciators and non-supervised stations.

**PROGRAM CHANNEL IN QUE :** *[DEC number, 2 digits, range 0-8, 0-4]*

When a event is detected from a supervised station you can program which, if any, program channel will be heard until answered and at what volume. This parameter consists of 2 digits, the first digit is the desired program channel, 1-8, in the CB901, and the second digit is the volume level, 1-4. If no PROGRAM CHANNEL IN QUE is desired use 00. The DXC901 will dial "98" and then these two numbers on behalf of the substation to turn on program distribution.

**VIDEO SWITCHER ADDRESS** : [HEX number, range 00-FF]

This is the network address of the DNA100 connected to the video switcher. It is used to connect a camera at the location of this SUBSCRIBER ADDRESS to the video monitor at the annunciator display who answers the event.

**PRINTER ADDRESS** : [HEX number, range 00-FF]

This is the network address of the DNA100 connected to a printer. It is used to log activity for this intercom station.

The DXC901, SUBSCRIBER ADDRESS \$FF, can also be logged to the printer this way.

PRINTER ADDRESS is a HEX number in the range of 08 through FF. Address 00 is used if the printer is not defined or no activity of this subscriber is to be printed.

**RECORDER DIAL NUMBER** : [DEC number, range 0000-9999]

A voice recorder may be used to record audio on calls that are received on the DAD104. The recorder is connected to a subscriber address. The call number of the recorder is dialed as a conference call whenever the DAD accepts a call. Each DAD104 may have a dedicated recorder. If the dial number is 0000 then this feature is not used.

**RECORDER DELAY** : [DEC number, range 00-99]

The amount of time, in tenths of a second before the recorder is dialed up in conference. This delay is needed for the connection on the DAD to complete before the conference is dialed. The number 16 will delay 1.6 seconds and that seems to be the minimum time required. If the warning tone is shortened (in SVT) then a shorter delay is possible.

**ANNUNCIATOR X ADDRESS (X=1-8)**: [HEX number, range 00,08-F8]

If the SUBSCRIBER TYPE is 1 or 3, this is the network address of the annunciator display(s) that supervise and receive events from the SUBSCRIBER ADDRESS of the **SAR**. For each SUBSCRIBER ADDRESS you can send events to a maximum of 8 ANNUNCIATOR ADDRESSES. When the DXC901 sees activity on the SUBSCRIBER ADDRESS, it will send the events to the annunciator display's Network Address located in these parameter fields of the SUBSCRIBER ADDRESS' **SAR** in order from top to bottom (ANNUNCIATOR ADDRESS 1 through 8) along with any delays programmed as described below until it reaches the first ANNUNCIATOR ADDRESS of 00. ANNUNCIATOR ADDRESS is a HEX number in the range of 00, 08 through FF.

If and only if, the SUBSCRIBER TYPE is 2, then the ANNUNCIATOR 1 ADDRESS is the network address of the annunciator associated with the station at the SUBSCRIBER ADDRESS in the **SAR**. Simply put if there is no station associated with the annunciator display, how can an annunciator display answer an event with voice communication? When defining an associated annunciator's station's **SAR** parameters, all other ANNUNCIATOR ADDRESS (2-8) parameters must be set to 00. (See **Figure B5** & **Figure B6** for examples)

**CALL FORWARD DELAY** : [DEC number, range 00-99]

The amount of time, in tenths of a minute (6 seconds), an event will be delayed before being

transmitted to the next ANNUNCIATOR ADDRESS. No delay indicated by 00 allows the next ANNUNCIATOR ADDRESS to receive the event without delay. It is possible for example to have a delay from ANNUNCIATOR 1 to ANNUNCIATOR 2 and then have no delay from 2 to 3 and so on.

Examples of Call forward delay:

00 = no delay

01 = 6 second delay

10 = 1 minute delay

15 = 1 minute, 30 second delay

This delay will be ignored if the Annunciator is in Night Transfer mode (Privacy).

### **POWER FAIL MONITORING OF CB901**

The DXC901 monitors the system battery charge voltage. The threshold is factory preset to 25VDC. A PWRFAIL may be sent to the DAD104 for acknowledge and to the event log printer. This feature is handled by subscriber address FF in the DXC901 and may be programmed from the DNA100 in the same manner as substation:

Set Subscriber type to 0

Set Subscriber dial number to match the stage number (Stage 1 = 0001, stage = 0002 etc.)

Set Location to " Stage 1 DXC901"

Set Call Priority

Set Annunciator1 address for the receiver of the Alarm

Set Printer address

```

                                CONFIGURATION
=====
DXC NETWORK ADDRESS: [08]
Number of dial digits: [3]      Annunciator 1 address: [0A]
                                Call forward delay:      [00]
Subscriber address: [05]      Annunciator 2 address: [0C]
Subscriber type: [1]          Call forward delay:      [03]
Subscriber dial number: [0105] Annunciator 3 address: [0B]
                                Call forward delay:      [00]
Location: [VISITORS ENTRANCE ] Annunciator 4 address: [00]
                                Call forward delay:      [00]
Alarm Priority: [0]           Annunciator 5 address: [00]
Call Priority: [2]            Call forward delay:      [00]
Program channel in Que: [84]  Annunciator 6 address: [00]
Video Switcher address: [0F]  Call forward delay:      [00]
Printer Address: [0E]         Annunciator 7 address: [00]
Recorder dial number: [0000]  Call forward delay:      [00]
Recorder delay: [00]         Annunciator 8 address: [00]

F=find P=prev N=next A=amend E=exit
Which option do you require ?
    
```

**Figure B5 - SUBSCRIBER TYPE 1 example**

```

                                CONFIGURATION
=====
DXC NETWORK ADDRESS: [08]
Number of dial digits: [3]      Annunciator 1 address: [0A]
                                Call forward delay:      [00]
Subscriber address: [01]      Annunciator 2 address: [0C]
Subscriber type: [2]          Call forward delay:      [03]
Subscriber dial number: [0101] Annunciator 3 address: [0B]
                                Call forward delay:      [00]
Location: [MASTER STATION 101 DAD104 ] Annunciator 4 address: [00]
                                Call forward delay:      [00]
Alarm Priority: [0]           Annunciator 5 address: [00]
Call Priority: [0]            Call forward delay:      [00]
Program channel in Que: [00]  Annunciator 6 address: [00]
Video Switcher address: [00]  Call forward delay:      [00]
Printer Address: [0E]         Annunciator 7 address: [00]
Recorder dial number: [0214]  Call forward delay:      [00]
Recorder delay: [16]         Annunciator 8 address: [00]

F=find P=prev N=next A=amend E=exit
Which option do you require ?
    
```

**Figure B6 - SUBSCRIBER TYPE 2 W/ACTIVITY LOG PRINTER example**

```

                                CONFIGURATION
=====
DXC NETWORK ADDRESS: [08]
Number of dial digits: [3]      Annunciator 1 address: [0A]
                                Call forward delay:      [00]
Subscriber address: [FF]      Annunciator 2 address: [00]
Subscriber type: [1]          Call forward delay:      [00]
Subscriber dial number: [0001] Annunciator 3 address: [00]
                                Call forward delay:      [00]
Location: [Digital Exchange Controller ] Annunciator 4 address: [00]
                                Call forward delay:      [00]
Alarm Priority: [0]           Annunciator 5 address: [00]
Call Priority: [0]            Call forward delay:      [00]
Program channel in Que: [00]  Annunciator 6 address: [00]
Video Switcher address: [00]  Call forward delay:      [00]
Printer Address: [0E]         Annunciator 7 address: [00]
Recorder dial number: [0000]  Call forward delay:      [00]
Recorder delay: [00]          Annunciator 8 address: [00]

F=find P=prev N=next A=amend E=exit
Which option do you require ?
    
```

**Figure B7 - DXC setup to display status and ACTIVITY LOG PRINTER**

**Options List Description**

**f=find** The **find** option is used to find all of the parameters of the **SAR** for a specific SUBSCRIBER ADDRESS in the DXC901. In order for the **find** to execute, it requires input of two parameters as keys in the search:

**DXC NETWORK ADDRESS** of the DXC901, default = 08, network 1 node 0.

**SUBSCRIBER ADDRESS** of the station in HEX, default = 00, first subscriber in the system.

When these two parameters are entered the program will prompt *All correct (y/n) ?*. If you now respond with 'n' then the two parameters may be changed. If you respond with 'y' then a request is sent to the DXC901 for a READ of all information in the **SAR** for this subscriber. When all information is received it is displayed on the screen in the template.

**p=prev** The **previous** option is selected to READ the **SAR** from the previous hex SUBSCRIBER ADDRESS in the DXC901.

**n=next** The **next** option is used to READ the **SAR** from the next hex SUBSCRIBER ADDRESS in the DXC901.

**e=exit** The **exit** option is used to exit the CONFIGURATION template and return to the MAIN

MENU screen.

**a=amend** The **amend** option can be selected after a subscriber's **SAR** is read using **find**, **previous**, or **next**. **Amend** is used to change or edit the parameters in the selected **SAR**. When finished amending, the program will prompt *All correct (y/n) ?* If the response is 'n' then all parameters may be corrected. If the response is 'y', then a request is sent to the DXC901 for a WRITE of all information for this subscriber's **SAR** to nonvolatile memory. The **SAR** is then read back from memory and redisplayed. If the **SAR** is in use or BUSY then an error message is displayed and the WRITE request will be aborted and must be attempted again when the **SAR** is free.

### **Editing the SAR on the Screen**

The editing of parameters uses a type-over method. Each parameter will test for valid input characters and will cause the terminal to beep if a wrong character type is entered, for example, entering an alpha character into a numeric field will produce an error beep. The error beep also occurs if the number of valid characters in a parameter field is exceeded.

Typing mistakes are corrected by the back-space key. If the back-space key is pushed on the first character position of a parameter then the parameter is unchanged and the cursor moves to the previous parameter. When a parameter has been edited, press carriage return (ENTER) to proceed to the next parameter. The carriage return may be pressed on any character position in the parameter after editing or if no changes to that parameter are needed.

The **↑** and **↓** (UP and DOWN) arrows are used to move the cursor to the previous or next parameter field. The **→** and **←** (RIGHT and LEFT) arrows are used to move the cursor within a parameter field without changing or deleting the characters. If changing just one parameter you must hit carriage return (ENTER) to step through the other parameters to get to the *All correct (y/n) ?* prompt.

## **NOTE**

**The left arrow may not work on all terminals or emulations, it may operate as a back-space (destructive) or not at all.**

**Message Definitions :**

All messages, both informative and error, will be displayed in the lower left portion of the screen. Informative messages are displayed briefly to provide the user with acknowledgment of input received and processed. Error messages are provided when a function is not processed and are left displayed until the next operation request. Errors can be generated by improper input or operational problems in the Network

**ERROR : Option not valid**

This error is produced when an undefined option is selected.

**ERROR : No record selected**

The options **amend**, **next**, and **previous** require a record for a subscriber to have been read onto the template. Use the **f (find)** option to read a record on to the template and then try again.

**ERROR : No Queue Elements available**

The internal operation of the DNA100 requires Queue Elements to send and receive messages on the network. There is a finite number of queue elements available and if they are all in use then this error message is displayed. This is a SERIOUS error and the DNA100 must be reset. If the error returns replace the DNA100 and check NETWORK MONITOR for other possible causes.

**ERROR : No response from the NETWORK ADDRESS**

Displayed if there is no communication with the DXC901 being programmed (the DXC901 must respond to a command within six seconds). Verify that the DXC NETWORK ADDRESS parameter matches the DXC901 being programmed and check NETWORK MONITOR to see that the nodes are active.

**MESSAGE: Cannot write record (Record busy)**

When amending a record that is BUSY, the DXC901 will not allow changes although it will allow the record to be read. Check the status display for when this station is not in use and try amending the record when the station returns to idle.

**MESSAGE : Accessing Record**

This is an informative message displayed briefly when reading or writing data in the DXC901.

**NOTE**

**The network is very fast and a request for a subscriber address on the local network may take less than one second making this message disappear before you are able to read it.**

**BACKUP (USING PROCOMM PLUS FOR DOS)**

By using a Personal Computer we can take a backup of all data programmed into the CRISIS ALERT system and save it on a diskette or hard drive.

The following information will describe the procedure for backing up the CRISIS system.

**1. "ENTER NETWORK ADDRESS FOR BACKUP"**

Enter the address of the DXC901 for the network you wish to backup, e.g. 08.

2. Press enter.

3. "*READY DOWNLOAD FILE, PRESS ENTER*" will appear on the screen.

At this point **DO NOT PRESS ENTER YET!!**

4. Press PGDN key. Select ASCII protocol from the displayed menu.

5. Press enter.

6. The P.C. will ask you to name a file into which you want to download the data. (You may specify a directory and/or a drive, e.g. a diskette in drive a:\).

7. Press enter.

8. Press enter. The data will scroll over the screen during download.

9. When downloading is finished "*END OF TRANSFER*" will be displayed. Press ESC to close the file.

10. Press enter.

11. The download is now completed. At this time another network file may be backed up or you may hit ESC to return to Main Menu.

**RESTORE**

The following information will describe the procedure for uploading the CRISIS data from a diskette or hard drive to the DXC901.

1. Press PGUP.

2. Select ASCII protocol from the displayed menu.

3. Press enter. The P.C. will ask you to name the file you wish to upload.

4. Press enter. The data will scroll over the screen during upload.

5. When uploading is finished (*END OF TRANSFER*) press ESC to close the file.

6. Press enter.

7. Press ESC to return to Main Menu.



# DXC901 NOTES

