Installation Guide
DFT 150/175

DM

DVSI

DFT-0150
INSTALLATION GUIDE

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Microcom Systems, Inc.

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Gandalf Digital Communications Ltd.

Safety

Read Instructions - All the safety and operating instructions should be read before the unit is operated.

Retain instructions - The safety and operating instructions should be retained for future reference.

Heed warnings - All warnings on the unit and in the operating instructions should be adhered to.

Follow instructions - All operating and user instructions should be followed.

Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

Water and Moisture - Do not use this unit near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket or mount recommended by the manufacturer, or sold with the product. Any mounting of the unit should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

Ventilation - Openings in the enclosure are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided.

Power Sources - This unit should be operated only from the type of power source indicated on the manufacturer's label. If you are not sure of the type of the power supply you plan to use consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to operating instructions.

Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
Alternately this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding- type plug.

Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

Overloading - Do not overload outlets and extension cords as this can result in a fire or electric shock.

Object and Liquid Entry - Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage of other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:

(a)When the power-supply cord or plug is damaged.

(b)If liquid has been spilled, or objects have fallen into the unit.

(c)If the unit has been exposed to rain or water.

(d)If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

(e)If the unit has been dropped or the cabinet has been damaged.

(f)When the unit exhibits a distinct change in performance this indicates a need for service.

Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer. A replacement lithium battery is available from Dedicated Micros Ltd.

Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded.

UNPACKING - The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

WARNING - TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of this equipment that there are dangerous voltages within the enclosure which may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Regulatory Notes

FCC AND DOC INFORMATION

(U.S.A. and Canadian Models Only)

WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful intereference when the equipment is operated in a commercial enviroment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC20402, Stock No. 004-000-00345-4.
This reminder is provided to call the CATV system installer's attention to Art. 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CE Mark

This product is marked with the CE symbol and indicates compliance with the European Community EMC directive 89/336/EEC.

This mark indicates that this product meets the following technical standards.

- EN 55022 1987 - "Limits and Methods of Measurement of Radio Interference Characteristics of information Technology Equipment".

- BSEN 50082-1 - "Electromagnetic compatibility - Generic immunity standard Part 1: Residential, commercial, and light industry".

- IEC 801-2 1984, IEC 801-2 1991 - "Electromagnetic compatibility for industrial process measurement and control equipment Part 2: Electrostatic discharge requirements".

- IEC 801-3 1984 - "Electromagnetic compatibility for industrial-process measurement and control equipment Part 3: Radiated electromagnetic field requirements".

- IEC 801-4 1988 - "Electromagnetic compatibility for industrial-process measurement and control equipment Part 4: Electrical fast transient/burst requirements".

A " Declaration of Conformity " in accordance with the above standards has been made and is recorded at: Dedicated Micros Ltd., Pendlebury, Manchester, England.

Table of Contents

1   Introduction

DVST is the generic name for a range of products designed to store and transmit digital pictures at a higher quality and speed than previously possible.

1.1   DFT-0150 Transmitter

The DFT-0150 (Digital Fast Transmission) transmitter will process the images from up to sixteen cameras for transmission or reception over ISDN or PSTN telephone lines.

1.2   Telemetry

The DFT 0150 can control telemetry cameras at the local site using built in telemetry equipment.

1.3   Event monitoring (Alarms)

The internal alarm verification system for DFT0150 transmitter allows the unit to monitor and act on external events. This can freeze a picture from the camera that corresponds to a specific alarm input. The unit will then transmit this picture to the receiving station where the operator can acknowledge the event and take relevant action.

This versatile alarm interface is a light duty 16 input / 2 output unit.

1.4   Audio option

Audio transmission is available allowing two way, half duplex, (one way at a time) communication. (Transmission medium must be 19200baud or faster)

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2 Unpacking the unit

2.1 Items in packing

The unit should be carefully unpacked and the packing materials retained. Check that all the contents on the following checklist are present:

- ❑ DVST Unit
- ❑ Power Lead with molded IEC connector
- ❑ Rack mount conversion kit
- ❑ Installation Guide

2.2 Packing the DVST

If the DVST is to be returned for repair or transported to another location the original packing should be used.

The unit should first be wrapped in the polythene bag. The preformed end pieces are then placed at either side of the unit which can then be placed inside the cardboard box. The box should be firmly sealed using appropriate tape.

If the unit is to be returned for repair ensure a valid returns note is clearly written

on the side of the box.

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3   Operation

3.1   Callback

The callback feature allows an operator at a monitoring station to call a DFT0100 transmitter on site and configure the unit to automatically call them back, ensuring that the telephone call is charged to the transmitting and not the receiving site.

On sending a callback request, the monitoring station disconnects and waits for the transmitting site to call back. With callback enabled, connection time is approximately twice that of normal connection time.

3.2   Alarms Feature

The alarm system for the DFT0150 transmitter allows the unit to freeze the pictures from cameras that correspond with the alarm inputs that have been triggered. These pictures are then transmitted to a receiving station where they can be acknowledged and the relevant action taken.

On an alarm the transmitter will automatically call the telephone number stored in telephone entry 0.

If this number is busy then it will call the number stored in telephone entry 1. The maximum number of telephone entries can be set between 1 and 16.

If the fall back numbers are busy the transmitter will automatically keep calling between telephone entries 0 and 1 until one becomes free. However the user can configure the DFT0150 to automatically call upto four numbers unitl one becomes free.

Depending on how the transmitter has been configured, incoming alarms are handled in different ways.

3.3 Freeze All Alarms

Each alarm activation stores the corresponding camera image and transmits the frozen image to the receiver.

The frozen pictures with a record of the time, date and camera number will be stored in memory until the alarms have been acknowledged.

3.4 No Frozen Images

No frozen images are sent on alarm. If several alarms ocour to trigger the machine to dial, one shot from each will be sent in quick succession without any operator control.

Any alarms present whilst on line will be indicated on the receive unit display baseline.

3.5 Offline Frozen Alarm

The first alarm activation stores the corresponding camera image and transmits the frozen image to the receiver.

3.6 Track Last Alarm

With this mode no frozen images are sent.

If several alarms ocour to trigger the machine to dial, one shot from each alarm will be sent in quick succession without any operator control, following an intruder. Any alarms present whilst on line will be displayed full screen and un frozen.

4   Installation

The DVST Transmitter is supplied as a wall mounted unit.

4.1   Rear Panel connections

The DVST Transciever uses BNC connectors for all video inputs and outputs. Other data connections are made via standard D type connectors. The optional keyboard is connected by a 9 pin D type female plug.
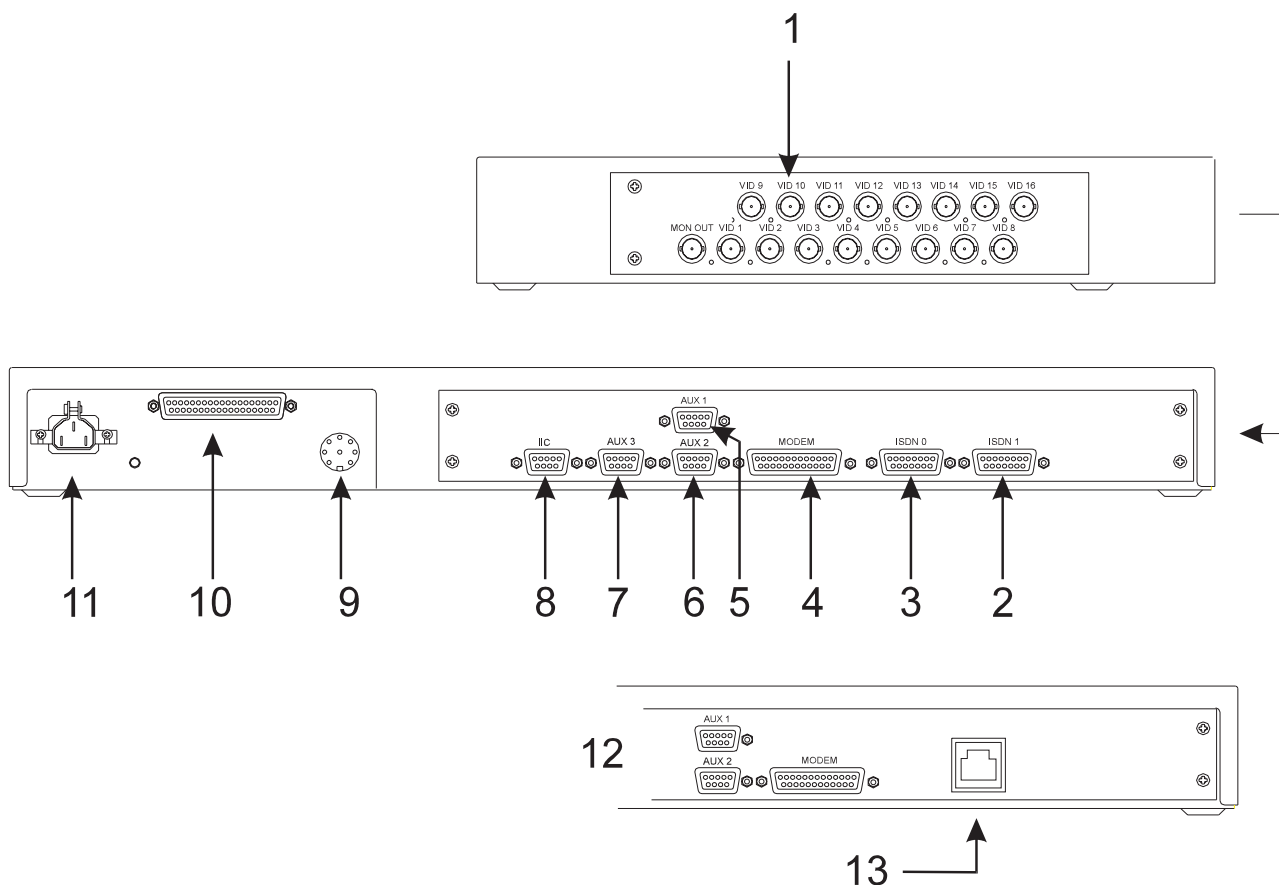
Fig: 1 Rear panel layout

WARNING: DO NOT CONNECT THE UNIT TO OTHER EQUIPMENT WITH POWER ON.

Key to Fig: 1

1	Cmaera Inputs	**4**	Modem	**7**	AUX3	**10**	Alarm Inputs	**13**	ISDN
2	ISDN 1	**5**	AUX 1	**8**	IIc Socket	**11**	Power Connection		Connection
3	ISDN 0	**6**	AUX 2	**9**	Telemetry Out	**12**	Integral Dataflext TA Unit		

4.2   Power Inputs

The DVST Transmitter is powered via a standard mains IEC cable which plugs into the rear panel. Power cable retaining clip prevents the cable from dropping out.

The power supply is self adjusting to the mains input and can accept a voltage from 90 to 260 volts.

Mains supply frequency can be either 50 or 60 cycles.

4.3   37 Way Alarm Connections
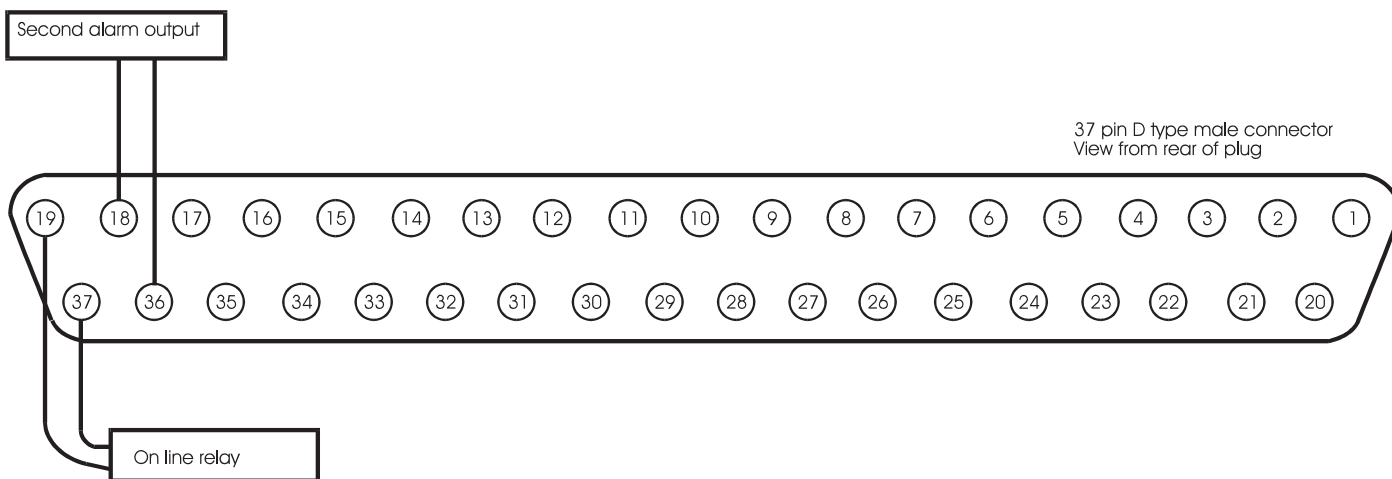
Fig: 2 Alarm input/output connections

5   Setup

5.1   What you require

Setup of the DVST DFT-0150 is undertaken using a PC (Personal Computer) connected to the AUX0 port on the front panel.
To set up the DVST using a PC you will need the following:

A personal computer with an RS232 port.
A connection cable between the serial port of the computer and the serial port (AUX3) of the DVST unit. (Details are in the cable section of this manual)
A suitable communications program for your PC that can operate at 9,600 baud. i.e. Procomm.

5.2   Setup using a PC

Procedure:

Turn off the power supply to the DVST and the PC.
Connect the two units together using a serial cable.
Power up both DVST and the PC then start the communication program.
Make sure that the speed and protocol of the communications program are as follows:

Baud Rate=9,600
Parity=None
Data Bits=8
Stop Bits=1

Local setup mode can be entered by typing " **+++<ret>**" or for MCI commands **<ESC>** M\Setup on the keyboard. The DVST commands will appear on the screen of the PC.

If a password has been set the screen will go blank and the prompt **PASSWORD>** will appear on the screen and a valid password must be entered followed by pressing the <ENTER> key. If this entered correctly the prompt **CMD>** will appear on screen. More details on the operation of passwords appear later in this manual.

Typing HELP and pressing the <ENTER> or return key will list all the available DVST commands. These are listed with brief descriptions to assist users familiar with set up of the DVST. All these commands are explained in detail within the manual, and have been grouped in a logical order to make set up of the DVST easy.

Typing VIEW and then pressing <ENTER> will list the present settings of the DVST. To exit the SETUP mode type QUIT then <ENTER>.The DVST will then return to normal operation.

5.3   Remote Setup

Remote DVST units can also be set up in the same manner as a local DVST. The same procedure should be followed when the DVST is on line to a remote unit. When the SETUP key is pressed the screen will go blank and the command prompt **REM>** will appear on screen.

Proceed as for the local system.

Note: A PC cannot initiate remote set up with the "**+++**" command.

5.4   DVST Commands

Most commands are typed in direct and terminated by pressing the <ENTER> key on a PC.

HELP   *Lists all commands available.*

Note: Paragraphs 4.6 onwards detail the command information listed by the help option and have been grouped together in the logical order that should be used when setting up a DVST system.

QUIT   *Exits the SETUP mode.*

This returns the DVST to normal operation. If a MODEM is connected and the DVST is set to MODEM=ON the initialisation strings will be sent to the MODEM.

RESET   *Resets DVST to factory defaults*

This command is used to completely reset the DVST system.
(All values are reset to their default values.)

Note: These values are stored in an integrated circuit called an EEPROM. This is not dependent on a battery backup and will retain its settings indefinitely without a power supply.

VIEW   *Display current DVST settings*

This will display all the current DVST settings.

5.5   Define Camera Inputs

MAX=nn   *Sets maximum number of cameras*
(default, 8)

Range is 1 to 16.

Correct settings of this ensures that any receiving station does not spend time trying to collect invalid camera inputs.

COL=nn   *Set camera to Colour*
MON=nn   *Set camera to Monochrome*
(default, all cameras set to colour)

Format is COL=01, COL=05 etc.
Format is MON=06, MON=15 etc.
It is important that camera inputs are correctly defined as colour or monochrome.

CAMnn=   *Set camera title nn to ...*
(default, Camera 01=CAMERA 01 etc.)

Format is CAM01=FRONT DOOR

5.6   Auxiliary Port 3

The auxiliary port 3 on the DVST can be used for programming the DVST with a PC or for generating printer reports. Protocol is RS232 8 characters, no parity, one stop bit, default at 9,600 baud.

AUX=   *Set AUX port usage:*
TERM, PRINT, MCI, DTMF, ENG, NULL
(default, ENG)

TERM is for terminal operation, control by PC.
PRINT operates as a printer connection.
MCI is for machine control interface.
DTMF is used to echo telemetry codes at the port.
ENG is used to display debug.
NULL turns the port off.

Note: Altering this command from a PC is valid, but after changing the setting the PC it will no longer communicate with the DVST. The reason is that the port has now been assigned a different task. .

5.7   Define Auxiliary Ports 1,2, 3

The auxiliary ports 1, 2, 3 on the DVST can be configured to operate with additional equipment i.e. printers, telemetry equipment and PC based conrol systems (MCI).

PORT=

Set PORT usage,
(Each field entry is separated by a space. If the commands are entered correctly the new settings will be displayed):
<AUX PORT> <BAUD RATE> <PARITY>
<DATA BITS> <STOP BITS> <FORMAT>
(default settings)
AUX1 N 8 1 38400   PKT
AUX2 N 8 1 38400   DATA
AUX3 N 8 1 9600   ENG

AUX PORTAUX1, AUX2, AUX3
BAUD RATE1200, 2400, 4800, 9600, 19200, 38400
PARITYN (None) O (Odd) E (Even)
DATA BITS5, 6, 7, or 8
STOP BITS1 or 2
FORMAT

Aux1DATACharacter based data operation
PKTPacket based operation
BLKBlock data operation
NULLTurn off port

Aux2DATACharacter based data operation
NULLTurn off port

Aux3TERMTerminal operation
PRINTSerial printer connection
MCIMachine control interface
DTMFSend telemetry codes to port
ENGDisplay debug messages
NULLTurn off port

Example

PORT = Aux3<space>9600<space>N<space>8<space>1<space>Term <return>

---

6   Demonstration Mode

This is provided to allow two DVST units to be connected back to back without the need for connection to MODEMs or Terminal Adapters.

A special demonstration cable is used, details of this are explained later in the chapter.

6.1   Demonstration mode

DEMO=   *Turn the demonstration mode **ON / OFF***

Turns the demonstration mode on or off. The demonstration mode is quit if the power to the DVST is turned off.

Note: ISDN must be set to Direct Mode

6.2   Demo Cable

This cable allows two DVST units to be connected back to back without the need for connection to MODEMs or Terminal Adapters.
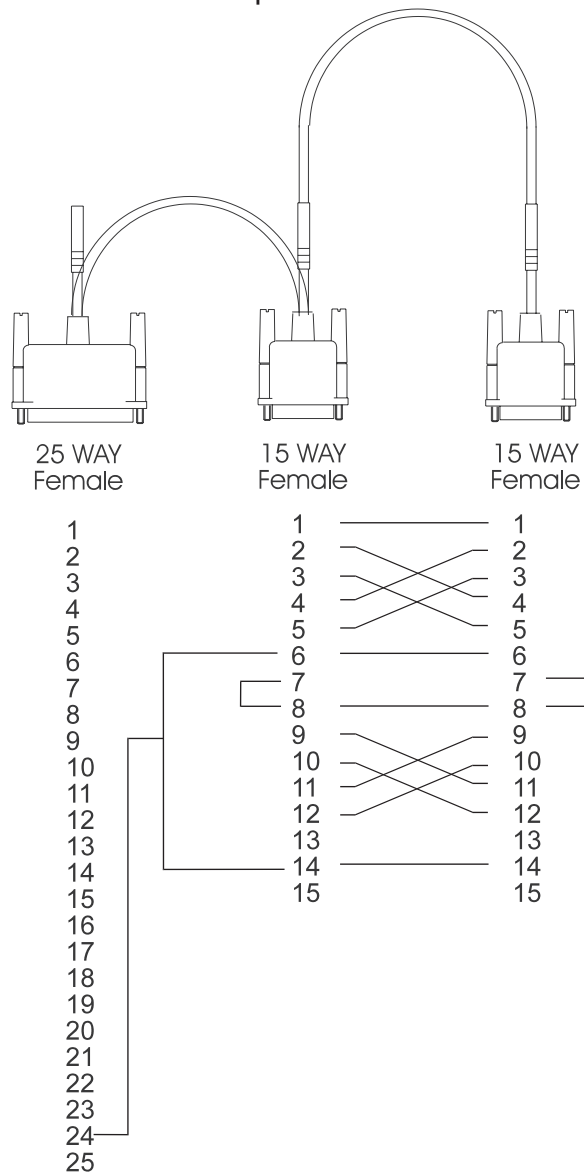
Fig: 3 Wiring details for demo cable

Tech Note:

This is a synchronous balanced transmission. Transmit and receive lines therefore cross yet maintain polarity. The flying lead is used to source a clocking signal from the MODEM port.

6.3   Connecting the demo cable

Single cable operation

The cable connects PORT 0 on the transmit unit to PORT 0 on the receive unit. The small flying lead connects to the MODEM port on the receive unit.
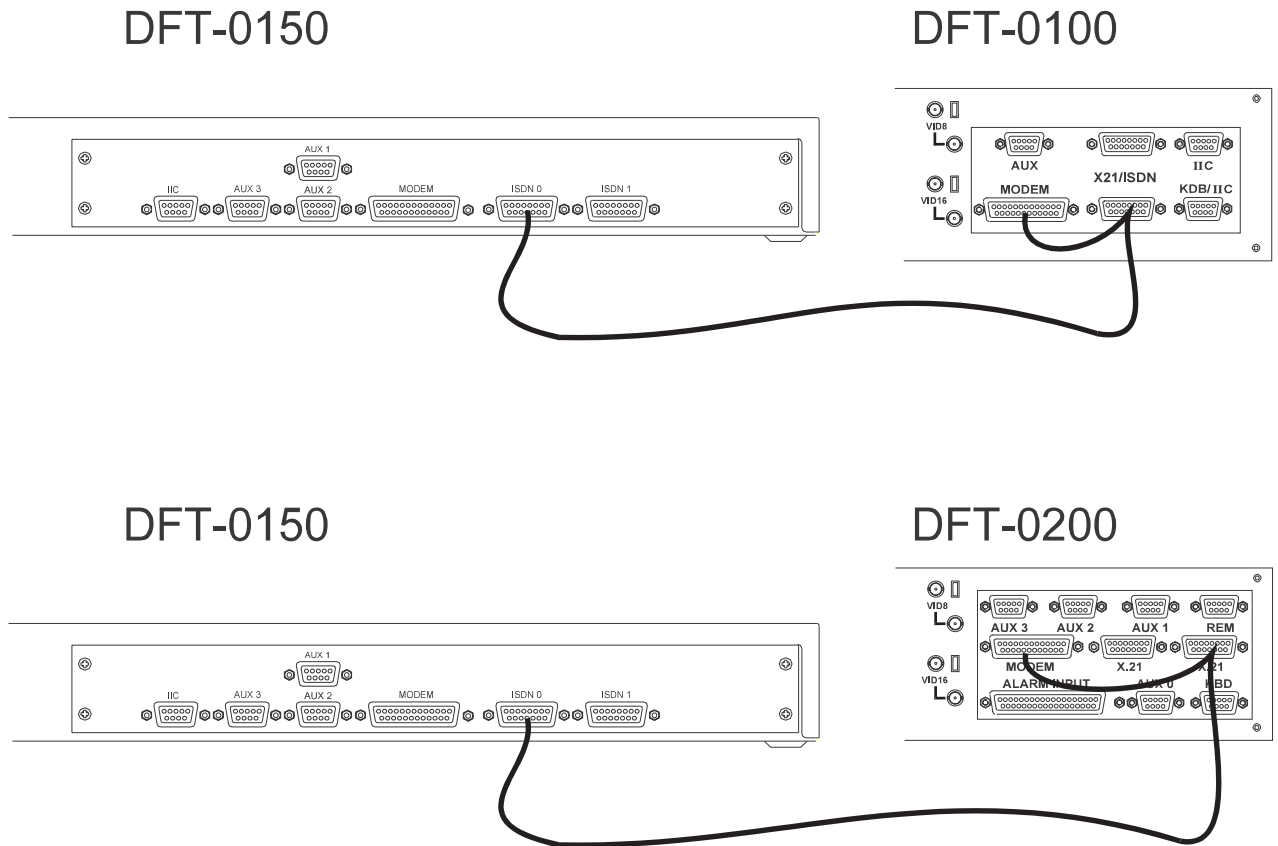
Fig: 4 Demo cable connections

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7   Modems

7.1   PSTN Connection (Modem)

Connection to a PSTN telephone line is via a modem and modem port.

7.2   MODEM Commands

MODEM=   *Sets MODEM operation, three parameters:*

The MODEM= command controls three distinct parameters.

> ***OFF***
> *(default, OFF)*

Tech note: The reason is as follows; if set to ATMODE the DVST attempts to communicate with the MODEM when starting up, exiting set up mode etc. The DVST will wait a set period of time for replies before giving up. This will considerably slow the system if no MODEM is attached.

> ***DIRECT, ATMODE***
> *(default, ATMODE)*

The DIRECT mode is used if the MODEM has its telephone numbers stored internally and the DVST does not pass telephone numbers for dialling.

The ATMODE is most often used. The DVST passes numbers from the dial menu to the MODEM which then initiates a call.

SYNC

The sync or synchronous mode relies on the modem generating clock signals to the DVST.

MODEM

Modem switches from the command mode **CMD>** to allow direct control of a connected MODEM. The speed of communication with the MODEM will be as set with the MBAUD= command.

This is called transparent MODEM mode and is terminated by pressing the ESCAPE or ESC key.

MBAUD=

Set MODEM port ASYNC baud rate.
(default, 19200)
9600, 19200, 38400

This command sets the speed of communication between the DVST and the MODEM when AUX 1 is used for asynchronous mode. The speed of communication in the Synchronous mode is determined by the clock signal supplied by the MODEM.

ASYNC

In the asynchronous mode the MODEM controls the flow of data using RTS/CTS signals.

MODEM2

Modem switches from the command mode **CMD>** to allow direct control of a connected MODEM through AUX 1. The speed of communication with the MODEM will be as set with the PORT= command.

This is called transparent MODEM mode and is terminated by pressing the ESCAPE or ESC key.

PORT=

AUX1, 19200, N 8 1, MODEM2

Refer Chapter Setup (Basic).

7.3   Modem configuration strings

All MODEMs need special configuration, depending on how the MODEM is to be used and how the DVST will interact with it.

Standard MODSTR set ups configure the MINIT and SREG strings, the USER string is left free for any extra configuration that may be needed.

MODSTR=   *Set type of modem:* **FAST or SYNC**
(default, FAST)

This setting (shortened form of MODem STRings) automatically sets up the DVST to operate with one of the three recommended MODEMs.

FAST

This sets the MINIT and SREG strings for correct synchronous operation with the MOTOROLA 326x VFAST MODEM. The MODEM configuration strings are set up as follows:

MINIT=AT&M1 &D2 &C1 *FLO *AA1 *DTO *OC1
SREG=ATS10=30S25=0

SYNC

This sets the MINIT and SREG strings for correct synchronous operation with the MICROCOM 4232bis MODEM. The MODEM configuration strings are set up as follows:

MINIT=AT&M1 &D2 \GO \EO E1 &C1 \JO
SREG=ATSO=1

MOD2STR=   *Set type of modem:* **FAST, SYNC, ASYNC** *or* **ZYXEL**
(default,)ASYNC

FAST

This sets the MINIT and SREG strings for correct synchronous operation with the MOTOROLA 326x VFAST MODEM. The MODEM configuration strings are set up as follows:

M2INIT=AT&M1 &D2 &C1 *FLO *AA1 *DTO *OC1
SREG2=ATS10=30S25=0

SYNC

This sets the MINIT and SREG strings for correct synchronous operation with the MICROCOM 4232bis MODEM. The MODEM configuration strings are set up as follows:

M2INIT=AT&M1 &D2 \GO \EO E1 &C1 \JO
SREG2=ATSO=1

ASYNC

This sets the MINIT and SREG strings for correct asynchronous operation with the Trailblazer MODEM. The MODEM configuration strings are set up as follows:

M2INIT=ATSO=1 &C1 &K3 E1 V1 &MO
SREG2=ATS7=60 S10=7 S37=7
          ~S50=255 ~S51=5 ~S52=1 ~S110=0 ~S104=0

ZYXEL *(US Modems Only)*

This sets M2INIT and SREG2 for the correct synchronous operation with the ZYXEL modem. The modem configuration strings are set up as follows:

M2INIT=AT&M1&D2&C1&H0
SREG2=ATS10=30 S0=1

USER=...   *Available for user configuration*
                    (Default, blank)

The USER string is for any extra commands that the user may need to send to the modem in addition to the MINIT and SREG settings.

SEND   *Send current modem configuration*

This transmits the information contained in the MINIT, SREG and USER strings to the MODEM.

Although this command can be issued from the command mode at any time, it is also invoked at the termination of any call and when the command mode is exited with the QUIT command.

DIAL=   *Modem dial string*
                         (default, ATDT)

This is the command that must precede all numbers that the MODEM has to dial. Typically the MODEM will dial using either pulse or tone dialling. This is dependent on the telephone exchange the MODEM is connected to, most modern exchanges are able to accept tone dialling which is faster than the older pulse dialling method.
For tone dialling: DIAL=ATDT
For pulse dialling: DIAL=ATDP

Tip: Extra information can be linked to the above commands, internal exchanges that require a "9" to be dialled to access outside lines can have this added to the dial string, typically ATDT9.

7.4   Modem Operation

All modern modems respond to a set of "Hayes" commands. There are several differences in these commands from manufacturer to manufacturer. It is important to use the correct commands with each modem and not to attempt to use one manufacturer's set up with another manufacturer's modem.

If possible modems should be linked to DVST in the synchronous mode. Some modems, for example those using PEP (Packet Ensemble Protocol), can only be used in the asynchronous mode.

Cables for connection to synchronous and asynchronous modems are different and are not interchangeable. Refer to the Cable Assemblies chapter for further details.

7.5   Connecting a modem in direct mode

This mode uses a modem in a 'dumb' mode, and purely relies on the hardware control lines. Telephone number selection, and all other configuration must be performed at the modem.

The modem is controlled using DTR (Data Terminal Ready), and indicates it's status using DCD (Data Carrier Detect).

Note: This mode is not recommended, easier operation is achieved in **ATMODE**.

Call request

A call is requested by making DTR active (high). At this point the MODEM dials it's stored number, and attempts to establish the call with the remote end. When the call connect has been completed the modem raises it's DCD line, confirming it is connected with the remote location.

A call already being active is indicated by the DCD line being active (high) from the MODEM.

Call answer request

If a call is incoming, the modem answers the call, establishes the physical link, and then raises DCD to inform the DVST unit that a call is present. The DVST unit responds to this by taking DTR active (high).

Call disconnect.

This is requested by dropping the DTR signal. A successful disconnect is confirmed by the DCD line being dropped by the MODEM. In this mode the DTR line remains low.

Configuration of modem in direct mode

No configuration can be performed by the system, however the following are required of the modem :

> Select synchronous operation.
> Dial stored number on low to high transition of DTR.
> Disconnect on a high to low transition of DTR.
> DCD must follow remote carrier.
> Ignore DTR to answer.
> Auto-answer. (If required).
> No flow control enabled.

7.6   Using a modem in ATMODE

In this mode the Hayes set of commands is used, all of which begin with the letters AT.

Both call setup and configuration are performed using these commands.

The commands can be configured on the DVST unit in setup mode.

The modem is also controlled using DTR (Data Terminal Ready), and indicates it's status using DCD (Data Carrier Detect).

Call request
The DTR is normally active, unless the modem channel is turned off, or the unit is in setup mode.

To dial a call the system sends the dial string (set by DIAL= in the DVST setup menu) to the modem, followed by the number selected.

For synchronous operation the modem switches to synchronous mode on connection. When the call connect has been completed the modem raises it's DCD line, confirming it is connected with the remote location. A call already being active is indicated by the DCD line being active (high) from the modem.

Call answer request
If a call is incoming, and the DTR line is high, the modem answers the call, establishes the physical link, and then raises DCD to inform the DVST unit that a call is present.

Call disconnect
This is requested by a high to low transition on DTR. A successful

disconnect is confirmed by the DCD line being dropped by the modem.

In this mode the DTR returns high after a short delay.

7.7   General settings for modems in ATMODE

The modem is configured from the DVST unit using the following strings:
MINIT=general modem configuration.
SREG=typically used for setting of s-registers.
USER=optional string, typically for individual customisation.
DIAL=string used to dial, typically ATDT for tone dialling.
The configuration details stored in MINIT, SREG & USER are sent on power-up, leaving setup mode, and on disconnecting a call. If a MODEM is not present a large delay will be experienced while the system waits for replies from the MODEM. To avoid this the command MODEM=OFF should be selected from the DVST setup menu. It is also possible to transmit or send these values to the MODEM using the SEND command in setup.

It is also possible to communicate with the modem directly using the MODEM command.

MODEM Requirements

Although there are default settings for three MODEMs, other MODEMs can be cofigured to operate with DVST.

As the settings vary from manufacturer to manufacturer there is not a set series of commands that are guaranteed to work. The following tables detail possible configurations, all should be checked against the MODEM manual. Before attempting these suggested settings the MODEM should be reset to factory defaults with the command AT&F or ATZ

The following settings are required as a minimum:

All modems:

Action required of MODEM	Possible AT settings
DCD (Data Carrier Detect, sometimes abbreviated to CD) must be set to follow the carrier. This signal indicates to the DVST that a connection to another unit has taken place.	&C1
The call must disconnect on a high to low transition of DTR (Data Terminal Ready). Only answer a call if DTR is present.	&D2
Auto-answer may be set if required.	S0=1 Check MODEM manual Country specific
Echo commands.	E1

Synchronous Modems:

Extra action required of Synchronous MODEM	Possible AT settings
Asynchronous mode must be set to dial the number and the modem must switch to synchronous mode on carrier detect.	&M1
Flow control must be disabled.	&K0 Check MODEM manual
The modem should ignore RTS.	&R1

Asynchronous Modems:

Extra action required of Asynchronous MODEM	Possible AT settings
Asynchronous mode must be enabled.	&M0
Flow control must be enabled on RTS/CTS.	&K3
Error correction enabled (if needed).	Refer to MODEM manual

Note   It is strongly recommended that once the modem has been configured as above, it is set in such a mode that this configuration is recalled automatically on power up. This will help to ensure correct operation after a power failure. Consult you modem instructions for details of how to achieve this.

7.8   MOTOROLA VFAST

Cable required to connect to DVST: (25 to 25 - V24 SYNC)

When installing the VFAST MODEM the following procedure should be

followed:

Connect the MODEM and DVST as in the installation chapter.

Power up the DVST (leave the MODEM without power).

Enter the setup mode and configure the DVST for operation with the VFAST MODEM by typing the command MODEM=ATMODE,MODSTR=FAST (default setting).

Power up the MODEM and wait for the self test to finish.

Type SEND then <ENTER>.

The DVST will program the MODEM.

It is good practice to store these values permanently in the MODEM.

Then the values will not be lost if power is removed from the MODEM.

To store these values proceed as follows:

User= AT&Y1&W1 <return>

Send <return>

Moden displays <save completed>

The MODEM will then always power up with the correct operational configuration.

Country specific settings
The answer on number of rings command *AA1 is not valid in some countries (France, xx) and the MINIT string should be reprogrammed with the value *AA2.

The MINIT string is programmed as:

MINIT=AT&M1 &D2 &C1 *FLO *OC1 *DTO *DE12 *AA1

No Dialtone

In some cases the MODEM will not recognise the prescence of a dial tone from the exchange. The following codes will allow blind dialling and if these are needed permanently they should be followed by:

User=ATX3*BDO&Y1&W1   Where

ATX3 is Dial blind without presence of dial tone
*BD0 Wait two seconds before dialling
&W1 Store above settings in option 1
&W1 Power up using these settings

Note: This feature is country specific and may not be available in some versions of the MODEM's software. Please refer to the literature supplied with your MODEM.

Transmission speed

The MODEM can be a little ambitious in setting the line speed. It is likely that a link will be established at a higher speed than the line can support without an unacceptable level of errors.

In these cases it may be necessary to limit the speed of transmission until a reliable point is reached.

Maximum line speed may be set by the command:

AT*MXn

where the value for n equals following baud rate applies:

13	=28800
12	=26400
11	=24000
10	=21600
9	=19,200
8	=16,800
7	=14,400
6	=12,000
5	=9,600
4	=7,200
3	=4,800
2	=2,400
1	=1,200
0	=300

To limit the speed of transmission to 14,400 use **AT*MX7**. This could be stored in the USER= string.

7.9   Microcom V3242

Cable required to connect to DVST 25to25 (Part No.AS-DVST-SYNC)

Syncronous mode :

&M1Dial async, switch on connect.
&D2Hangs up with on to off transition of DTR - needed for auto answer.

\G0Disables modem flow control.
\E0Do not echo data !
E1Echo commands.
&C1CD follows carrier.
\J0Turn off baud rate adjust.

DIP Switch Settings Synchronous Operation
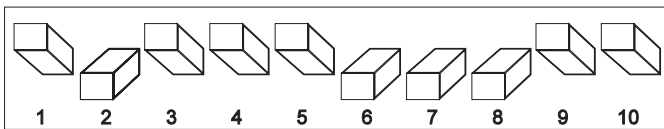
Front panel switches
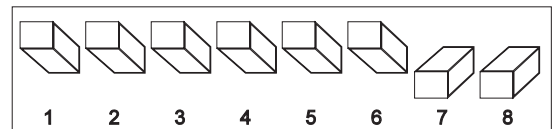
Rear panel switches

7.10   Trailblazer

Cable required to connect to DVST 9to25 (Part No. AS-DVST-ASYNC)

Async mode

Trailblazer in Conventional Command mode.

&C1CD follows carrier.
&k3RTS/CTS flow control.
E1Echo commands
V1Textual result codes
&M0Async mode

s7=60Wait 60 seconds for carrier.
s10=7Carrier loss to disconnect time.
s37=7Attempt to connect in PEP mode.
~s50=255Operate in PEP mode.
~s51=519200 bps operation.
~s52=1Modem hangs up on DTR, only autoanswer on DTR.
~s110=0PEP data compression disabled.
~s104=0Disable auto dialling.

7.11   OCTOCOM OSI 8196A

Cable required to connect to DVST 25to25 (Part No. AS-DVST-SYNC)

Manufacturer:
      Octocom Systems, Inc.
      One Executive Drive
      Chelmsford,
      MA 01824
      USA

No DIP switches are used.

A single DATA push button on the front panel serves to unhook the

modem.

When the modem is unpacked and used for the first time the CD line

is held on. This means that the DVST unit believes that there is an

incoming call and waits for data.

Proceed as follows to clear this condition:
Wait for the DVST unit to time out
 and then press **<SETUP>**
 At the command prompt CMD> type **MINIT= <RET>**
At the command prompt CMD> type **SREG= <RET>**
At the command prompt CMD> type   **USER=AT <RET>**
At the command prompt CMD> type   **SEND <RET>**
      Wait for the information to be sent to the modem.
At the command prompt CMD> type   **MODEM <RET>**
      The unit will reply - Modem Mode
Type **AT <RET>**
      The reply from the modem is "OK"
Type in the following,   **AT&M1&C1&D2&K0&R1<RET>**
      The reply from the modem should be "OK", if the reply
is "ERROR", try again.
Type **AT&W**
      The modem will now power up without the CD line held on.

Press the **<ESC>** key to exit modem mode.

At the command prompt CMD> type. **MINIT=&M1 &C1 &D2 &K0 &R1.**
      &M1Dial async, switch to sync on connect.
      &C1CD follows remote carrier.
      &D2 Hangs up with on to off transition of DTR - needed for auto answer.
      &K0Modem flow control is disabled.
      &R0Modem iignores RTS, CTS is on when the modem is online.

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8   Terminal Adapters

TA(s) or Terminal Adapters allow the DVST to communicate over digital ISDN telephone lines.

8.1   ISDN Connection (Terminal Adapter)

Connection to an ISDN line is via a terminal adapter and Port 0. On systems using dual ISDN lines both Port 0 and Port 1 should be connected.

The type of cable required to connect to the terminal adapter can vary.

DUALISDN=   *...Sets dual ISDN support **ON** or **OFF** (default, on)*

ISDN=   *...Sets ISDN for **ATMODE**, **DIRECT**, **X21** mode (default, ATMODE)*

DIRECT

DIRECT mode relies upon the terminal adapter dialling a stored number or a network only accessing a single remote point. Also used for Demo mode (chapter 7)

ATMODE

ATMODE refers to Hayes AT dialling where the numbers to be dialled are stored in the DVST dialling menu, also used for Dedicated Micros Terminal Adaptor TA04

X21

Uses X21 dialling for numbers in the DVST menu

Connection can be made in the direct mode, where the number to be called is stored in the terminal adapter, or in the X21 dialling mode where the DVST passes the number to be dialled to the Terminal Adapter, or ATMODE.

V35
V35=ON/OFF
Applicable in all modes (ATMODE, DIRECT and X21)

8.2   Connecting a terminal adapter in direct mode

This uses the signalling lines; C (control) and I (indicate), to respond to and initiate calls.

Making a Call
The DVST initiates a call by raising C
The TA then dials its stored number
When the call is connected the TA raises I
Call continues

Answering a Call
The TA indicates an incoming call by raising I
The DVST responds by raising C
Call continues

Call disconnection
The DVST ends a call by dropping C
The TA confirms disconnection by dropping I

Configuring a Terminal Adapter for direct mode operation
As the control lines I & C are used to control calls, the following is required of the system:
Answer : C
Originate : C
Disconnect : C
Alerting : I
DCD/I : Delay

Note: The above settings are the basic requirements. TAs have many other settings which can affect transmission such as speed of call, type of call, circuit switch etc.

8.3   Gandalf TA1

Cable required 15 to 25 (2 of Part No. AS-DVST-TA1)

The Gandalf TA1 is a dual port unit capable of simultaneiusly using both ISDN B channels on an ISDN2 connection.

The Gandalf has two X21 ports, PORT0 & PORT1. They must be configured as follows for DIRECT connection:

Direct Connection
Configure the Gandalf as follows:

CALL MODE=CKT SWITCH AUTO

CALL TYPE=BOTHWA*Y*

CALL SPEED=NEGOTIATE

ANSWER=C

ORIGINATE=C

DISCONECT=C

ALERTING=I

DCD/I=DELAY

8.4   ASCOM 5000 / CITAM

ATMODE

Cables required - 2x 15 to 15 (Part No. AS-DVST-X21). Dip switch settings can be used and should be set as follows:

Note: Switch 3 selects the sub address, if used.

Switch Position

Fig 5: ASCOM internal dip switch settings (ATMODE)

Step	Instruction	Remarks
1	Using the pull handle, remove the circuit board module from the Citam 5000	
2	Adjust the dip switches as shown in Figure 9	The Citam will now perform a self test. On completion the display will read **ISDN**.
3	Press the select key four times so that the legend **'CONF'** appears on the display.	
4	Press the enter key once and it will say **'PRT1'**, press the select key twice it will say **'TA'**, press the enter key it will say **'SHOW'**.	
5	Press and hold select until the display reads **'CHNG'**, remove your finger from the select key and press the enter key, **'INDB'** will be displayed.	
6	Press the enter key, the message will be **'ON'**, use the select key to turn this to **'OFF'**, then press the enter key.	
7	Hold the select key and press the enter key, the display will return to **'CONF'**.	This has turned of the in-band test feature of the unit.
8	At **'CONF'** press the enter key, the display will read **'PRT1'** for port 1.	

Step	Instruction	Remarks
9	Press the enter key, it will read **'SHOW'**. Hold the select until this changes to **'CHNG'**, press the enter key , display will then show **'DIPS'** for dip switch.	
10	Press the enter key, it should read **'INAC'** for inactive, press the select key to change this to **'ACTV'** for active, press the enter key to return to **'DIPS'**.	
11	Hold the select key down and press the enter key, this will return unit to **'CONF'**.	
12	Press the enter key and the display will read **'PRT1'**, press the select key to change this to port 2.	
13	Press the enter key and **'SHOW'** will appear, hold the select key for three seconds, the display will change to **'CHNG'**.	
14	Press the enter key it will change to **'DIPS'**, press the enter key and it will say **'INAC'**, press the select key and **'ACTV'** will be displayed, press the enter key and display will return to **'DIPS'**.	
15	Hold the select key and press the enter key, returning the display to **'CONF'**.	The unit has now had the dip switches made active on both ports 1 and 2.

SEND CONFIGURATION STRING

16	At the command prompt CMD> type **ISDN=ATMODE <RET>** **DUALISDN=ON <RET>** **ISDNSTR = CITAM <RET>** At the command prompt CMD> type **SEND <RET>** Wait for the information to be sent to the modem. At the command prompt CMD> type **ISDN0 <RET>** **AT<RET>** **AT&W<RET>,** **<ESC>** **ISDN1<RET** **AT<RET>**	

AT&W<RET>
<ESC>
QUIT <RET>

These commands are entered using Setup Mode on the DVST0200 unit via a PC. Refer to Chapter para

The Citam is configured to operate on DVST.

X21
Cables required - 2x15 to 15 (Part No. AS-DVST-X21)

Switch Position
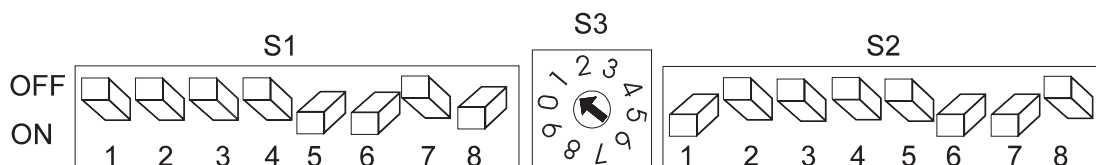
Fig 6: ASCOM internal dip switch settings (X21)

Dip switch settings can be used and should be set as follows:
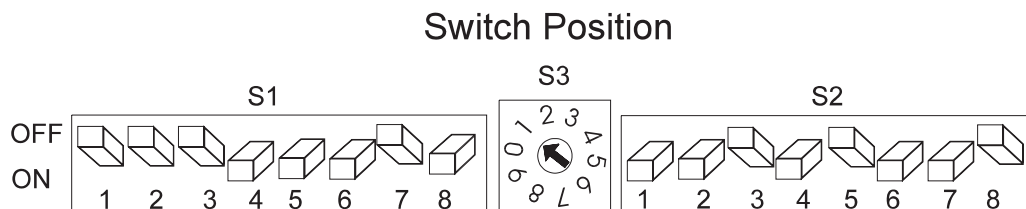
Note: Switch 3 selects the sub address, if used

Step	Instruction	Remarks
1	Using the pull handle, remove the circuit board module from the Citam 500	
2	Adjust the dip switches as shown in Figure 10	The Citam will nowperform a self test
		On completion the dispaly will read ISDN
3	Press the select key four times so that the legend **'CONF'** appears on the display	
4	Press the enter key once and it will say **'PRT1'**, press the select key twice it will say **'TA'**, press the enter key it will say **'SHOW'**	
5	Press the hold select until the display reads **'CHNG'** remove your finger from the select key and press the enter key, **'INDB'** will be displayed	
6	Press theenter key, themessage will be **'ON'**,use the select key to turn this to **'OFF'**, then press the enter key	
7	Hold the select key and press the enter key, the display will return to **'CONF'**	This has turned off the in-band test feature of the unit
8	At **'CONF'** press the enter key, the display will read **'PRT1'** for port 1	

Cont.

Step	Instruction	Remarks
9	Press the enter key, it will read **'SHOW'**. Hold the select until this changes to **'CHNG'**, press the enter key, display will then show **'DIPS'** for dip switch	
10	Press the enter key, it should read **'INAC'** for inactive, press the select key to change this to **'ACTV'** for active, press the enter key to return to **'DIPS'**	
11	Hold the select key down and press the enter key, this will return unit to **'CONF'**	
12	Press the enter key and the display will read **'PRT1'**, press the select key to change this to port 2	
13	Press the enter key and **'SHOW'** will appear, hold the select key for three seconds, the display will change to **'CHNG'**	
14	Press the enter key it will change to **'DIPS'**, press the enter key and it will say **'INAC'**, press the select key and **'ACTV'** will be displayed, press the enter key and display will return to **'DIPS'**	
15	Hold the select key and press the enter key, returning the dispaly to **'CONF'**	The unit has now had the dip switches made active on both ports 1 and 2

The Citam is configured to operate on DVST.

8.5   Dataflex TA

The Dataflex terminal adaptor

Cable 2 x 15 to 15 way (X21 Cable Assembly refer to page)

When connected to or supplied with a Dataflex Terminal Adaptor the DFT0150will automatically configure itself for this type of operation. Ensure all terminal adaptor conections are made BEFORE power up, on power up the DFT0150 will send its configuration string to the terminal adaptor. The following is provided for information only.

These commands are entered using Setup Mode on the DVST0150 unit.

SEND CONFIGURATION STRING
1   At the command prompt CMD> type
         ISDN=ATMODE <RET>
         At the command prompt **CMD>** type
         ISDNSTR =DATAFLEX <RET>
         Wait for the information to be sent to
         the modem.
         At the command prompt CMD> type
         DUALISDN=ON <RET>
         SEND <RET>
         ISDN0 <RET>
         AT <RET>
         AT&W <RET>
         <ESC>
         ISDN1 <RET>
         AT <RET>
         AT&W <RET>
         <ESC>
         At the command prompt **CMD>** type
         QUIT <RET>
         The Dataflex TA is now configured for use with the DVST0150.

9   Leased Line Transmission

Leased line transmission is generally used when a dedicated or private line is available to connect the transmit and receive units.

There are many different types of leased line, 2 wire and 4 wire, with many variants depending on what is offered by the PTT companies.

Most conventional Modems can operate on leased lines although the cables will differ from those used on a standard telephone connection.

Baseband Modems offer faster transmission rates over standard Modems and an example using one of these is given at the end of this chapter.

9.1   Leased line terminology

In leased line terms the receiver or calling unit is set as ORIGINATE.

The transmit unit is set to ANSWER.

9.2   DVST set up for leased line operation

When leased line operation is selected, the type of transmission selected (via the X21 or the V24 port) is determined by the dial type set in telephone number 0.

If telephone number 0 is set to MODEM, the V24 or Modem port will be used. If either ISDN 0 or 1 is specified, X21 ports 0 or 1 will be used.

LEASED=   *Leased line operation, options are:*
(default, OFF)

ORIGINATE
The Receiver unit is set to originate.

ANSWER
The Transmitter unit is set to answer.

OFF
This disables the leased line feature.

9.3   Leased line operation

When leased line operation has been set up, the DVST will attempt to communicate with a remote site when clocks are received. This does not require hardware handshaking.

If the line is broken for any reason, the units will attempt to reconnect and when commuunication is restored will automatically establish video transmission of images.

The units can be disconnected (taken off line) by pressing the LINE key. Pressing the LINE key again will establish image transmission.

9.4   ASCOM 64000 Baseband Modem

The am-64000 is a good alternative to using a conventional PSTN MODEM in leased line mode.it also has a greater data transfer rate for short or private wire connections, the speed is 64kbps for the AM-64000 and 128kbps for the AM-128000, the max distance between the two units is 14 kilometres on a 0.64 mm cable or a -50 db loss.

Set Both Dvst Units In The Direct Mode

Using the cursor keys on the front of the ASCOM unit set the system up as follows.

SET UP TX OR MASTER END

RATE MENU64K

OPTION MENUX21

CONFIGURATION MENUMASTER MODE
HIGH RATE
X21 LOOPS OFF
BIT SYNC
64K MODE OFF
POWER 0 dBm
MENU UNLOCKED

SET UP RX OR SLAVE END

OPTION MENUX21

CONFIGURATION MENUSLAVE MODE
HIGH RATE
X21 LOOPS OFF
POWER 0 dBm
MENU UNLOCKED

Connect both units to the line and confirm that the status menu reads C=off and I=on. This confirms the units are in communication.

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10   Calls

10.1   Passwords

Passwords can be set and used by the system. When a PASSWORD is set it provides protection for the system at two points:

1) Whenever a remote system calls it must send the correct password, otherwise no connection will be established.

2) Whenever the SETUP key is pressed, the password will be requested before the setup mode is entered.

Method:

Enter SETUP mode is by pressing the SETUP key on either keyboard.

If a password has been set the screen will go blank and the prompt PASSWORD will appear on the screen. At this point a valid password must be entered followed by pressing the <ENTER> key. If this entered correctly the prompt CMD will appear on screen.

PASSWORD=   *Set system password to ...*

The system password can be up to 10 alpha numeric, case sensitive, characters. Once this has been set only calling units that have the associated password linked to the telephone number can access the system.

PASSn=   *Set telephone entry n password to ...*
Range is 0 to 19

This is linked to the designated telephone number and is the keyword that will unlock the remote system that is being called. It may be up to 10 alpha characters in length.
Format: **PASS4=BERLIN**

In the above case the system called would have the password set to BERLIN. Only then could the system be accessed.

Default: None set

SPASSWORD= *Set SETUP password to ...*

> This feature allows an additional password to be allocated just to provide security for the set up mode. This can be used to prevent a remote user accessing the system and altering the settings.

> Default: None set

Note: To maintain security, passwords cannot be read back from the system. Care should be taken to ensure passwords are not lost as this will require a new EEPROM chip to be fitted to the DVST.

10.2   On Screen Titling

SYSTEM= *Set system ID string to ...*

> This is a 30 character title which appears on the front screen of the DVST. When a transmitter sends to a receiver this title is transferred from the transmitter and appears on the baseline of the receiving monitor.

TIME= *Set current time in HHMM format*
The time is based on the 24 hour clock. 4 digits must be entered.

DATE= *Set current date in DDMMYY format*

> Date is always set as a six figure format.

Two optional messages are superimposed on camera images sent from the transmitter. The first is the camera title and the second is the time and date.

TLPOS= *Set camera title position*
(default, 1)

> When the images are transmitted the camera title appears at the top of the screen. This setting adjusts the height of the camera title.

TDPOS= *Set clock screen position*
(default, 11)

> When the images are transmitted the time & date appears at the bottom of the screen. This setting adjusts the height of the time & date information.

Note: The range available for both TLPOS and TDPOS is from 1 to 11, 1 is at the top of the screen and 11 at the bottom. Settings for TLPOS and TDPOS should be 2 numbers apart to avoid overlap. Setting either value to 0 removes the text from the screen.

10.3   Telephone Number Entries / Connection Commands

TELn=   *Set telephone entry n to ...*
                     (default, blank)

Twenty telephone numbers can be stored in memory.

Format: TEL2=01044617944965

If the MODEM or ISDN Terminal Adapter is to work in the DIRECT mode, the entry can be left blank.

Telephone number 0 is the default number dialled when alarms are used to initiate a call to another system. The fall back number if this is engaged is always stored in telephone number 1.

Where a number is used with dual ISDN dialling it is automatically linked with that number plus 10. Therefore Tel number 4 & 14 would be dialled if dual ISDN was selected for that telephone number.

TELn   *Set telephone entry n as current*

This selects the number that will be dialled initially if the up/down keys are not used to select another.

Format: TEL2

TYPEn=   *Set telephone entry type to dial via **ISDN0, ISDN1,***
                    ISDNx2 (dual),** or **MODEM
                    (default, ISDN0)

Each of the telephone numbers can be linked to either a PSTN MODEM or an ISDN terminal adapter.
This command determines which of the external ports (MODEM, ISDN Port0, or ISDN Port1) will be used when a particular telephone number is selected.
Format:
TYPE0=ISDN0
TYPE1=ISDN1
TYPE2=ISDN2
TYPE3=MODEM
TYPE4=MODEM2
            Example: TYPE5=2
                  Sets Telephone entry 5 to ISDN2

TIMER=   *Call connection timeout period*
                     (default, 60 seconds)

> This is the period of time that the DVST will wait while trying to connect
> a call. This will vary depending on the type of call (ISDN or PSTN) and
> as there may be a delay in establishing International calls, the timer
> value should be increased.

DIALCLR=   *...Sets time dial menu remains on screen*
                     (default, 30 seconds)

10.4   Callback

This feature allows an operator to dial a remote unit and then have that unit
automatically call the operator back. This can be a useful security feature. The operation
of callback is as follows:

> Local unit calls remote unit.
> Call connects.
> Local unit passes the dial menu number (0 to 9) that the remote unit will call back.
> Call disconnects.
> The local unit waits for a return call.
> Remote unit waits for ten seconds then calls local unit.
> Local unit answers and contact proceeds as normal.

CALLBACK=   *Set call back* **ON** *or* **OFF**
                     (Default, off)

> When the callback feature is switched on the option appears on the
> dialling menu to make either a normal call or a remote callback call.
>
> Normal call is the default and this is highlighted. By using the left and
> right arrow keys remote callback can be selected and deselected.

Note: Callback must be enabled on BOTH the transmit and receiving units

11   Images and Transmission

Screen display - Periscope mode

CAMLO=Sets low resolution cameo operation:

Options are:

QUADHIHigh resolution quad size image
QUADLOLow resolution quad size image
CAMHISixteenth screen size high resolution

Default:

QUADLO

11.1   Image size

Target image size =

In the different screen modes of DVST each image is compressed to a target size and then transmitted.

SIZEFHI=Set target size (K):FULL HI RES
SIZEFLO=FULL LO RES
SIZEQHI=QUAD HI RES
SIZEQLO=QUAD LO RES
SIZEMULT=MULTISCREEN

DUALFHI=As above but for dual isdn operation
DUALFLO=
DUALQHI=
DUALQLO=
DUALMULT=

Target Picture Sizes :

SIZEFHI =20000(20000 Maximum)
SIZEFLO =12000(12000)
SIZEQHI =8000(8000)
SIZEQLO =4500(4500)
SIZEMULT=2500(2500)
DUALFHI =20000(20000)
DUALFLO =14000(14000)
DUALQHI =8000(8000)
DUALQLO =4500(4500)
DUALMULT=2500(2500)

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12   Alarms & Events

12.1   Purpose & intended use

Alarm devices connected to DVST transmission products are intended to allow verification and response to remote events.

12.2   Alarm Connections

Alarm connections are made via a 37 pin D type male connector which plugs into the side panel of the DFT0150.

WARNING: The alarm outputs are light duty reed relay types and should not be used for switching heavy loads.

12.3   ALARM Settings

ASYS=   *Set alarm system **ON** or **OFF***
                      (default, OFF)

The alarm system is dormant until activated by the ASYS=ON command.

When an alarm condition is detected the DVST transmitter dials stored number **TEL0** from the dial menu. If a connection cannot be made to this number the unit dials stored number **TEL1** from the dial menu. The transmitter will continue calling until a connection is made and the alarm is acknowledged from the receiver.

AON=n   *Enable alarm contact n*
AOFF=n   *Disable alarm contact n*
                      (default, all alarm contacts enabled)

By default all contacts are ON, or able to respond to contact closures on the alarm input.

Alarm inputs that are not used should be set to off.

Each input can respond to a contact closure or a contact opening, or respond to both.

ANOnn   *Set contact nn normally open*

ANCnn   *Set contact nn normally closed*

Images transmitted on alarm

The action taken on detection of an alarm is for the DVST unit to store a point of alarm image, dial the telephone number stored in dial menu number 0 and transmit the image.

The resolution of alarm images, and the screen mode in which they are transmitted can be selected with the following command:

ATYPEn=   **HI** *Selects a High resolution alarm image*
                   LO *Selects a Low resolution alarm image*

The alarm settings are displayed in the view mode as follows, (type VIEW <ENTER> and press a key until the following display appears)

Alarm Number	Input	Status	Type	Contacts
01: ALARM	01	On	FULLHI	N/O
02: ALARM	02	On	FULLLO	N/O
03: ALARM	03	On	FULLHI	N/C
04: ALARM	04	On	FULLLO	N/C
05: ALARM	05	Off		
06: ALARM	06	Off		
07: ALARM	07	On	FULLHI	N/O
08: ALARM	08	On	FULLLO	N/O
09: ALARM	09	On	FULLHI	N/O
10: ALARM	10	On	FULLLO	N/O
11: ALARM	11	On	FULLHI	N/O
12: ALARM	12	On	FULLLO	N/O
13: ALARM	13	On	FULLHI	N/O
14: ALARM	14	On	FULLLO	N/O
15: ALARM	15	On	FULLHI	N/O
16: ALARM	16	On	FULLLO	N/O

AOUT=   *Set alarm outputs **AUTO / MANUAL**
(default is AUTO)

The two alarm contacts can be configured for automatic or manual operation.

AUTO

In automatic mode relay 1 acts as a line indicator and closes whenever the DVST is on line.

MANUAL

In manual mode the AUX1 key on the local unit controls relay 1 on the remote unit, this works as a momentary contact. AUX2 on the local unit controls relay 2, which works as a toggle on / off (latching) control.

ALMODE=   *...Set Alarm operation mode
***NOFRZ/OLNFRZ/ FRZALL/TRKLST**
(default, OLNFRZ)

NOFRZ

No freeze mode - No frozen images are sent. If several alarms ocour to trigger the machine to dial, one shot from each will be sent in quick succession without any operator control. Any alarms present whilst on line will be indicated on the receive unit display baseline.

OLNFRZ

Offline alarm freeze - Only freezes the first alarm image and then transmits this image to the receiver. Subsequent alarms incoming while the uniit is transmitting to a receiver are flagged on the baseline but are not frozen, nor do they need to be acknowledged.

FRZALL

Freeze all alarm images - All alarm images are frozen. All must be acknowledged by the receiving station before the alarm can be cleared.

TRKLST

Track last alarm - No frozen images are sent. If several alarms ocour to trigger the machine to dial, one shot from each alarm will be sent in quick succession without any operator control, following an intruder. Any alarms present whilst on line will be displayed full screen and un frozen.

ADIAL=n   ***Set number of telephone entries to use in alarm condition*** *1 / 2 /3 / 4*
(default, 2)

By default DVST transmitter dials stored number **TEL0**, if a connection cannot be made to this number the unit dials stored number **TEL1** on the menu. With **ADIAL=3** the DVST transmitter dials the stored numbers **TEL0**, **TEL1**, **TEL2** until a line answers.

13   Audio

The Digital Audio Interface (DAL100) is a sound unit for the DVST range of products working on an intercom basis i.e. push-to-talk. Microphone and speaker connections are provided together with volume control and indicators for power, transmit, receive and line error.
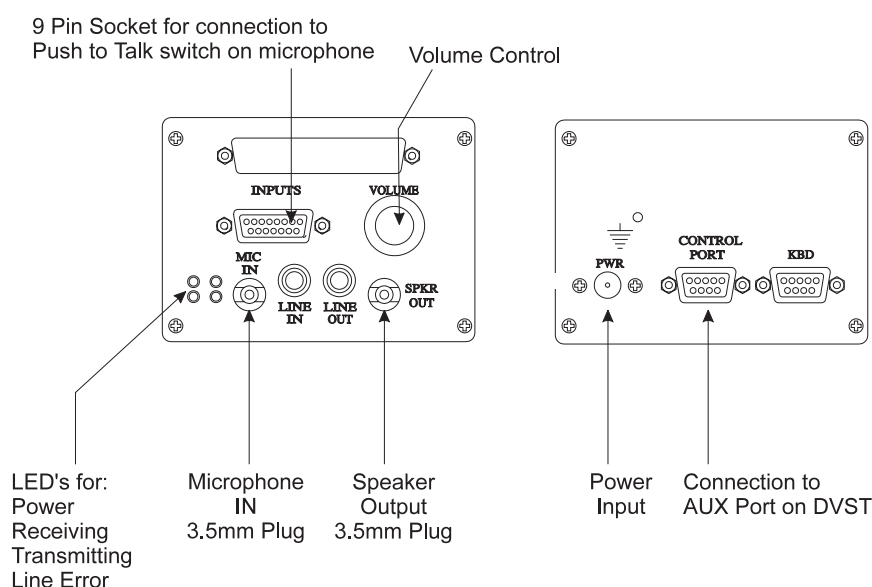

Fig: 7 End Panel Layouts

13.1   Equipment required but not supplied

The following lists equipment you will need to complete your installation of the DAL100 audio unit.

❑   Microphone with automatic gain control and complete with push-to-talk switch and 3.5mm jack connector.

❑   Speaker capable of handling a 2W into 8 Ohm input.

13.2   Connecting the DAL100

Microphone (refer to fig. 7)

Connect the 3.5mm jack plug of the microphone into socket on end panel. Connect the microphone press-to-talk lead to pins 1 and 9 of a 15way male connector and plug into socket on end panel,
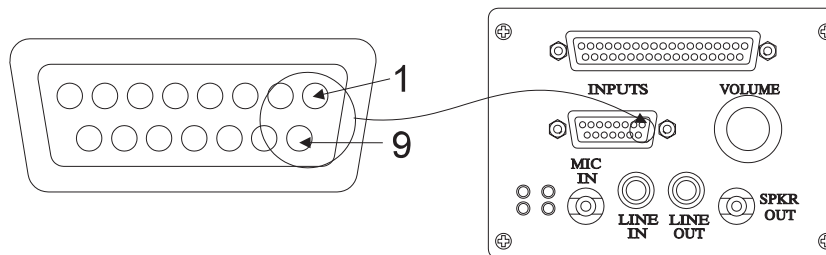
Fig: 8 Microphone connection

Speaker (refer to fig. 8)

Connect the 3.5mm jack plug of the speaker to the SPEAKER OUT socket.

Power Supply (refer to fig. 8)

Connect the power supply to the socket marked PWR on the end panel.

DVST Connection (refer to fig. 8)

Using the 9 way to 9 way cable connect the DAL100 unit to port AUX1 on the DVST. (Details are in the cable section of this manual)

Set Port Usage (refer to SETUP para 5.7)

Port Aux1 on the DFT0150 sould set to the following:

PORT = AUX1 38400 N 8 1 PKT

14   Cable Assemblies

The following pages detail cable assemblies with connectors for use with Dedicated Micros rang of DVST transmitters and transceivers. The cables are fully screened for EMC compatibility.

For prices and availability please contact our Sales Departments at the addresses below.

Northern UK Sales

Dedicated Micros Ltd
Pendlebury Industrial Estate, Bridge St, Manchester, M27 1FJ,
United Kingdom
Tel: 0161-794-4965   Fax: 0161-728-4142
Outside UK : Int +(44) 161-794-4965 Fax: Int +(44) 161-728-4142

Southern UK Sales

Dedicated Micros Ltd
3 Cannon Court, Warren Farm, Stratford Road,
Wolverton Mill, Milton Keynes MK12 5NS
Tel: 0908-225199   Fax: 0908-225197

In the United States

Dedicated Micros Inc.
11515 Sunset Hills Road, Reston, Virginia 22090, U.S.A.
Tel: Int +(1) 703-904-7738   Fax: Int +(1) 703-904-7743

In Australasia & the Far East

Dedicated Micros (Asia) PTE Ltd
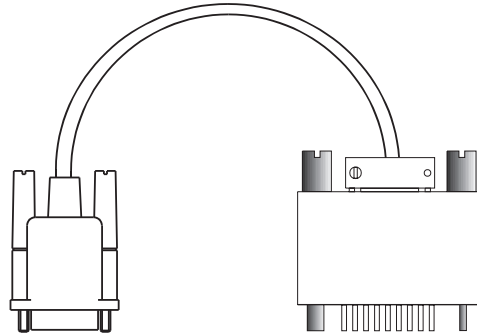1557 Kepple Road, #02-03 Singapore 0208
Tel: +(65) 227-3923/27   Fax: +(65) 227-4869

Dedicated Micros (Australia) PTY
1, Tannery Road, #05-04/05 Cencon I, Singapore 1334,
Tel: Int +(65)-741-0138 Fax: Int +(65)-741-7743

In France, Germany & Benelux

Dedicated Micros (Belgium) Ltd
Interleuvenlaan 64, B-3001 Leuven, Belgium
Tel: Int +(32)-16-40-1228 Fax: Int +(32)-16-40-0243

14.1   X21 to V35 Cable Assembly

9 WAY Female		V35 Male	Signal Name	CCIT Number
1				
2	← Purple →	P	SD-A	103
3	← Red →	H	DTR	108.2
4	← Orange →	R	RD-A	104
5	← Brown →	F	CO	109
6	← Green →	V	SCR-A	115
7	← →	AA	SCT-B	114
8	← Black →	B	Gnd	102
9	← Grey →	S	SD-B	103
10				
11	← Yellow →	T	RD-B	104
12				
13	← Blue →	X	SCR-B	115
14	← White →	Y	SCR-A	114
15				

KEY
SC = ClockT = TransmitR = Recieve
SD = Transmit Data
RD = Recieve Data
A/B = Signal Pairs

14.2   X21 Cable Assembly

X21 cable assembly

15 WAY Male		15 WAY Female
1	←→	1
2	←→	2
3	←→	3
4	←→	4
5	←→	5
6	←→	6
7	n/c	7
8	←→	8
9	←→	9
10	←→	10
11	←→	11
12	←→	12
13	←→	13
14	n/c	14
15	←→	15
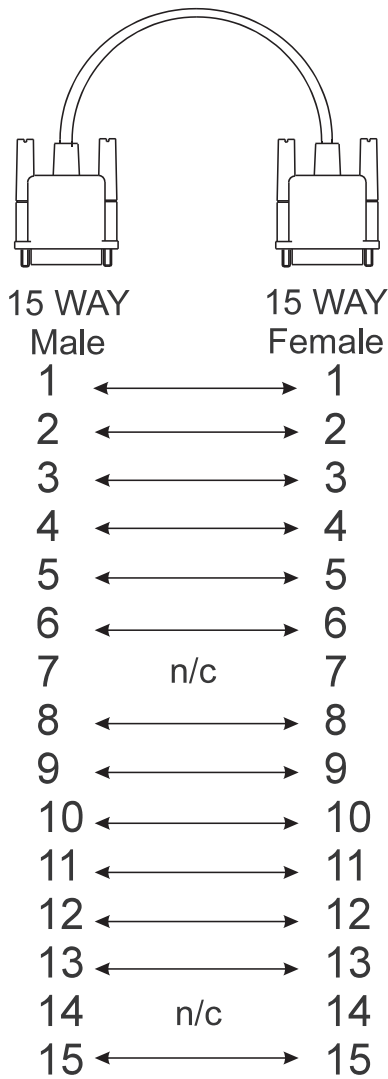
n/c = No Connection

14.3   V24 Sync Modem Cable Assembly
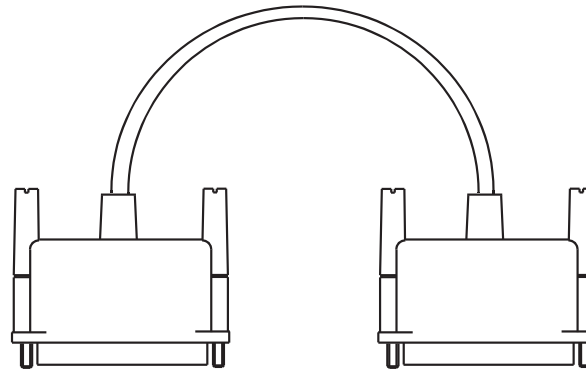
25 WAY
Male

25 WAY
Female

1
to
25

All connections
Pin to Pin

1
to
25

14.4   RS232 Cable Assembly (DVST-PC)

9 WAY Male		9 WAY Female
1	n/c	1
2	⤬	2
3		3
4		4
5	⟷	5
6		6
7	n/c	7
8		8
9	n/c	9
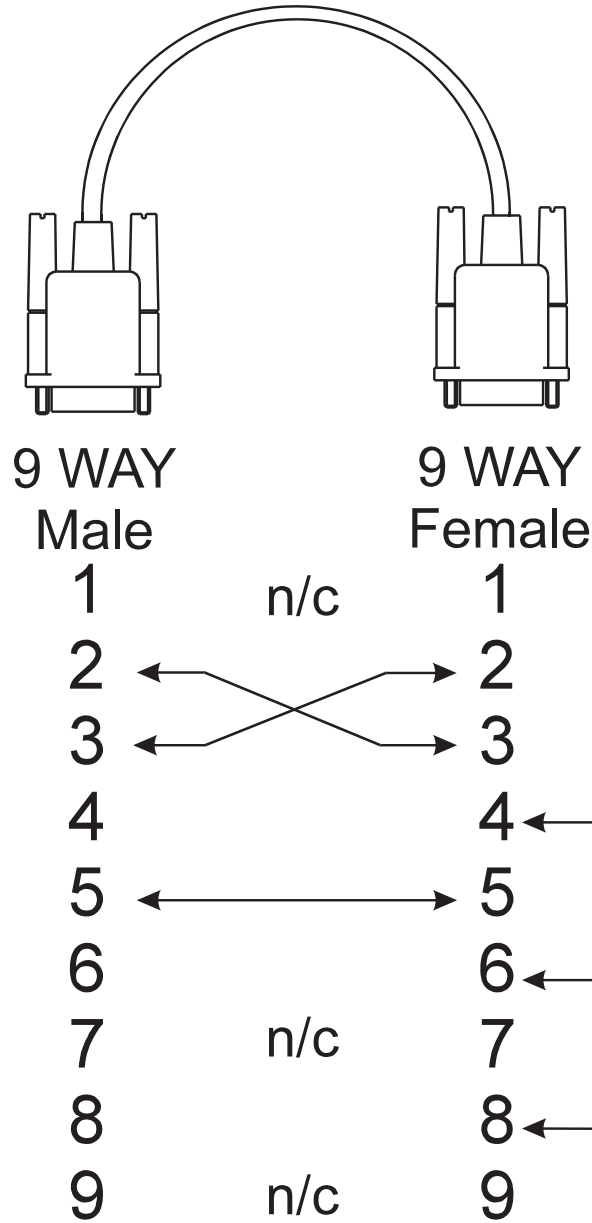
n/c = No Connection

14.5   RS232 Cable Assembly (DVST-DAL)

DAL100   DFT0150

9 WAY   9 WAY
Male   Male

1   n/c   1

2   ←————————→   2

3   ←————————→   3

4   ←——————   4

5   ←————————→   5

6   n/c   6

7   ————→   7

8   ←——————   8

9   n/c   9
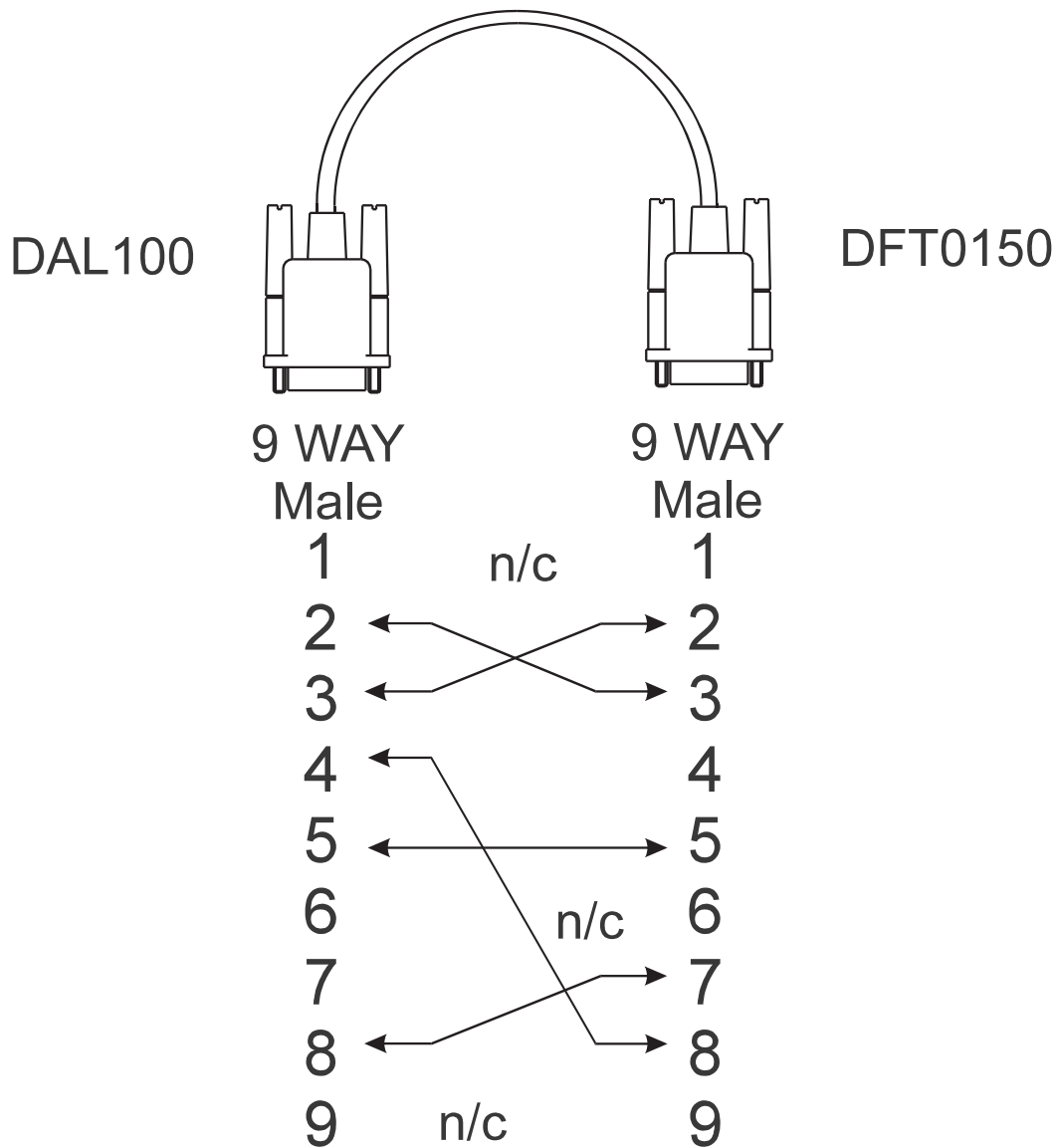
n/c = No Connection

15   **Glossary**

DVST	Digital Video Storage and Transmission
ISDN	Integrated Services Digital Network - A digital telephone system capable of transmitting data, speech, images and text.
PSTN	Public Subscriber Trunk Network - The standard telephone system used for speech and fax communication.
Speed of Update	The time taken to refresh a single picture.
Software Compression	Video data compression achieved by computer program processing.
Hardware Compression	Video data compression taking place in specialised purpose built microchips.
k bytes	Measurement expressing the size of digital computer memory
k bits per second	Measurement expressing the speed at which data can be transmitted.
Compression	Taking standard video signals and reducing these into compact digital data.
Decompression	Taking digitally compressed DVST information and restoring this to normal video images.
Complete compression	Each time the picture is transmitted, or stored to memory, the entire picture is compressed.
Conditional Updating	Update only the parts of the picture that have changed. The first time the picture is transmitted the entire picture is compressed. Thereafter only the parts of the picture that change are transmitted.
DAT	Digital Audio Tape, the new technology for recording digital information on a special tape cassette. Massive storage can be achieved in a very small package.
MODEM	MOdulator/DEModulator used to connect the DVST unit to a standard telephone line.
Terminal Adapter	Used to connect the DVST to an ISDN digital telephone line.

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16   Returns Procedure

In the Event of Difficulty

In the event of a fault, first approach your dealer or distributor. Dedicated Micros operates a Technical Support Group where most technical problems can be solved over the telephone. The addresses of Dedicated Micros are listed on the front page of this manual.

If, for what ever reason, this is not possible, the unit can be returned directly to a Dedicated Micros Repairs Department. In this event please follow the returns procedure as detailed below to avoid delay.

Photocopy the EQUIPMENT RETURN ADVICE. Contact the Customer Services Department to obtain a returns number.

The following information must be available to give to the Customer Services Department when requesting a returns number.

- ❑   Model type
- ❑   Serial number
- ❑   Full Account/Invoice address or Return Address if different
- ❑   Contact name
- ❑   Fax number and Telephone number
- ❑   Customer order number - for repair cost not exceeding £100
- ❑   Full description of the fault
- ❑   Previous returns number(s) (if applicable)

If the unit is rack mounted, the rack mount kit must be removed before the unit is packed. Wrap the unit in the original polythene bag. Fit preformed end pieces at either side of the unit.

If the unit is not returned in it's original packing, Dedicated Micros Repair Department will automatically re-box the unit, and there will be a charge of £11.75 inc VAT.

Mark the return number, obtained from the Customer Services Department, clearly on the outside of the box. Return the unit to the address on the front page of this manual, a completed copy of the EQUIPMENT RETURN ADVICE must be sent with the unit.

If the unit crosses a national boarder, enter Airway Bill number on the copy of the EQUIPMENT RETURN ADVICE and fax Dedicated Micros for the attention of the Despatch Department. This will avoid any delays in returning the unit after it has been repaired.

Notes:

Dedicated Micros tries to maintain a fast turnaround procedure for repairing equipment, incomplete or inaccurate documentation may result in delay.

If the unit is not under warranty a charge will be made for the repair.

If the unit has it's warranty void, due to misuse or damage, the Repairs Department will contact the account customer to advise cost.

Upon examination of the unit if the repair cost is likely to exceed £100, the Repairs Department will contact the account customer for authorisation before work is undertaken.

Repairs not exceeding £100 will automatically be carried out and invoiced on the official order number stated by the account customer on the EQUIPMENT RETURN ADVICE.

EQUIPMENT RETURN ADVICE

Company Name:

Contact Name:

Invoice Address:

Tel. No.:

Fax No.:

Model/Type of Equipment Returned:	Serial No.:

Returns Number:	Official Order Number:

Master Airway Bill Number:

Previous Returns Number: (if applicable)

Details of Reported Fault:

Returns Address for Unit:

◨ DEDICATED MICROS

WORLDWIDE

Dedicated Microcomputer Group Ltd, ✱
16 Hilton Square, Swinton,
Manchester. M27 4FL
Telephone: 0161 727 3200
Fax: 0161 727 3300

Dedicated Micros Ltd,
Amberley, 33 - 35 Wellfield Road, Hatfield,
Hertfordshire, AL10 0BY
Telephone: 01707 373 013
Fax: 01707 259 898

Dedicated Micros Ltd, ✱
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B-3001 Leuven, Belgium
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Fax: +(32) 1640 0243

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Reston, VA 22090.
USA.
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Fax: +(703) 904 7743

Dedicated Micros, Australia PTY,
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30, Leighton Place,
Hornsby, NSW 2077.
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