



ATM Interface Module Setup Guide





Warning: Do not move the unit whilst the power is connected.

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Important Safeguards

Unpacking

Remove all the items from the packaging and check you have the items listed below.

- Dedicated Micros ATM Interface Module
- External Power Supply
- Power Leads
- Break-out Cable
- CD ROM
- Rack Mount Ears
- Installation and Setup Guide

If any of these items are missing please contact the Dedicated Micros Technical Support team.

Important Note: Before installing the ATM Interface Module you must carefully read all Safety Instructions and the following information on where the unit should be located.

Safety Notes

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

Location

Ensure the ATM Interface Module is properly ventilated to protect from overheating.

Ensure there is a 3cm gap on both sides of the unit.

This unit must be stored in a low humidity and dust free area. Avoid places like damp basements or dusty hallways.

Ensure the unit is not located in an area where it is likely to be subject to mechanical shocks.

Electrical Connections

Please ensure the following are available and have been tested prior to the installation:

- Mains point
- Network point
- Network cable
- Desk / Laptop PC with CD ROM drive and connection to the same network as the DV-IP
- SDLC network

WARNING: Only operate your ATM Interface Module from the type of power source indicated on the label. Failure to do so may cause injury or death by electric shock and invalidates the warranty.

Servicing

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards.

Refer all servicing to qualified service personnel.

Ventilation

Ensure unit is properly ventilated to protect from overheating as detailed above.

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.

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Lightning Strike

The ATM Interface Module has some inbuilt protection for lightning strike, however it is recommended that isolation transformers be fitted to the system in areas where lightning is a common occurrence.

Regulatory Notes FCC and DOC Information

(US 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 interference when the equipment is operated in a commercial environment. 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 their 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 US 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 all applicable directives.

Directive 89/336/EEC.

A "Declaration of Conformity" is held at Dedicated Micros Ltd., 11 Oak Street, Swinton, Manchester M27 4FL.

Introduction

The ATM Interface Module has been designed to offer integration between Automatic Teller Machines and the DV-IP range of video servers including the DV-IP ATM (also includes the DM RS DVR range). The Module allows transaction data from the ATM to be received, decoded and stored alongside the relevant video images on the Server. A single ATM Interface Module can support up to three ATMs.

The ATM Interface Module receives the desired data from the ATM network infrastructure and decodes this into a format that can be interpreted by the DV-IP ATM which then stores the text information with the corresponding video input.

The integrated protocol conversion means the ATM Module is ideal for new or existing installations, and by combining the video and transaction data this Module ensures close monitoring of ATM usage is achieved. The module directly links a single transaction with a video image and allows these to be reviewed at a later date or used for evidence where prosecution is necessary.

The ATM Interface Module supports numerous data communication protocols which include:

- SDLC - Synchronous Data Link Control
- HDLC - High-Level Data Link Control
- RS232
- RS422
- RS485
- SNA - System Network Architecture

It is also possible to integrate the ATM module with newer installations using IP connectivity. In this mode the ATM Interface Module only 'listens' for transaction data ensuring that the device will not impact the performance of the banks mission critical data network.

Configuration of the unit can be via the PC application, ATM Enumerate and a typical web browser through on-board configuration pages.

The ATM Enumerate software is supplied with the unit and allows initial communication with the Interface Module, download or backup of set configuration, or setting of individual parameters before integrating into the ATM system.

The ATM Interface Module comes pre-configured with protocol conversion for Diebold 912, Diebold XAPCOM and NCR/NDC+ protocols. Other text mappings and translation rules may be added using the configuration screens within the Module.

Compatible Dedicated Micros Products

There are a number of DM products that can be used in conjunction with the ATM Interface Module, these include:

- DM's Retails Solution range of DVR's
- DM's DV-IP Server
- DM's DV-IP ATM

Typical System Layouts

The following diagrams show typical system layouts where SDLC and Ethernet networks are present.

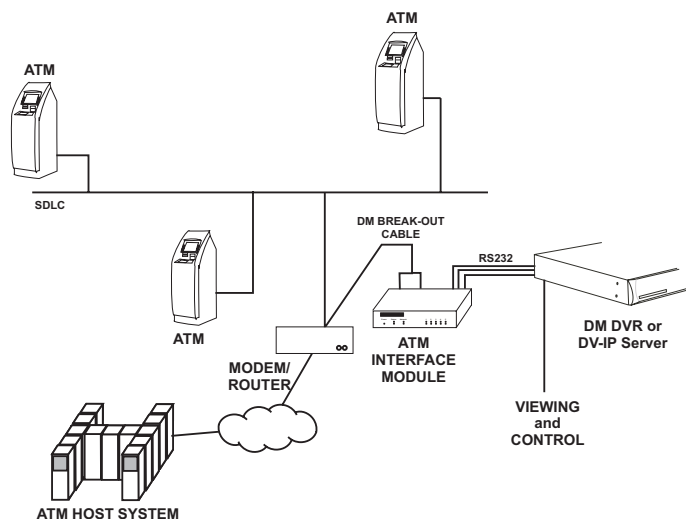
SDLC

The ATM Interface Module receives the data from the SDLC network via the serial ports by using the break out cable (supplied by Dedicated Micros, DM part number AC-W-24951), converts this into a format that can be interpreted by the DVR and transfers the data to the DVR via one of the other serial ports.

Note: Where the ATM is communicating with a remote Host it is recommended that the break-out cable be connected to the modem, applications where no modem is included the cable should be connected as close to the ATM as possible.

Important Information

The break-out cable (Appendix D) has Transmit and Receiver data from the SDLC network connected to the Receive data on the ATM Interface Module, this ensures the ATM Interface Module only receives data and does not send data back onto the network.



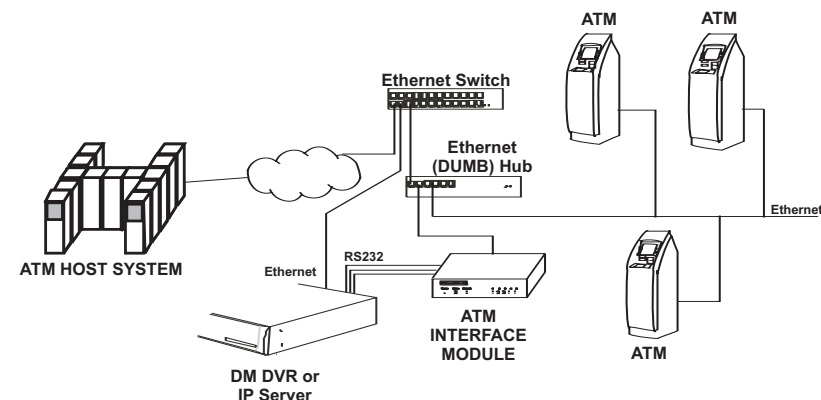
Ethernet

The ATM Interface Module receives the data directly from the Ethernet network, via the Network port on the unit, as an IP packet this is then translated into a format that can be transferred to the DVR. The data is transferred via one of the serial ports on the unit.

The diagram shows how the ATM Interface Module can be connected to an Ethernet network using a 'dumb' Ethernet Hub. An alternative connection solution is utilising a Managed Ethernet Switch that supports a debug port, an example of this is the Cisco® 2900 Series.

It would be necessary to configure one of the ports for debug and enable the transmission of UDP packets. The ATM Interface Module can then be connected to this port.

Warning: The configuration software transmits UDP packets and therefore it is necessary to ensure the network is configured to allow the UDP packets to be transmitted.

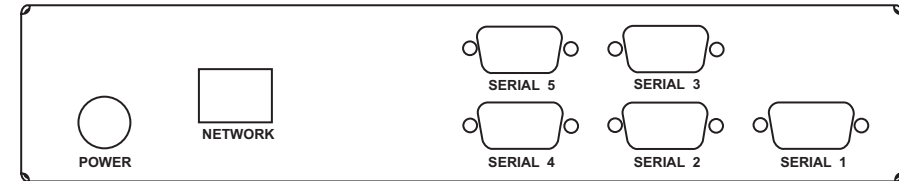


Network Information

The ATM Interface Module will continuously monitor the network traffic for ATM transaction data. When utilising the network viewing capabilities of the Dedicated Micros DVR's or DV-IP Server it is essential that the DVR/Server and the PC receiving the video over the network are not connected to the same Ethernet hub as the ATM Interface Module, the traffic would interfere with the operation of the ATM Interface Module.

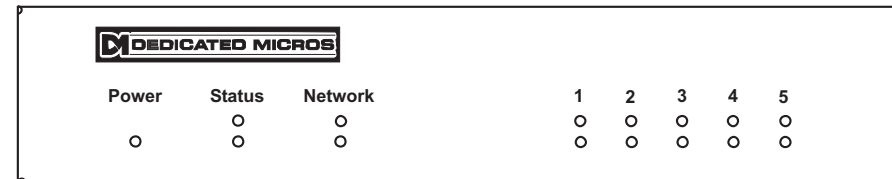
Installing the ATM Interface Module

Rear Panel Connections



Power	3 Pin Mini Din connector
Network	RJ45, 10/100Mbps Ethernet Network
Serial 1 - 3	9 Way D-Type Connector, RS232 only
Serial 4 - 5	9 Way D-Type Connector, SDLC

Front Panel LEDs



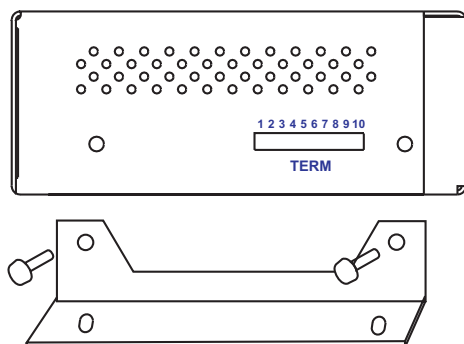
Power	Power connected
Status	Green flashing - normal operation Red flashing - Unit receiving ATM traffic
Network	Green - Connected to network Red flashing - receiving data
Serial 1 - 5	Green flashing - Receiving data Red flashing - Transmitting data

Mounting Ears

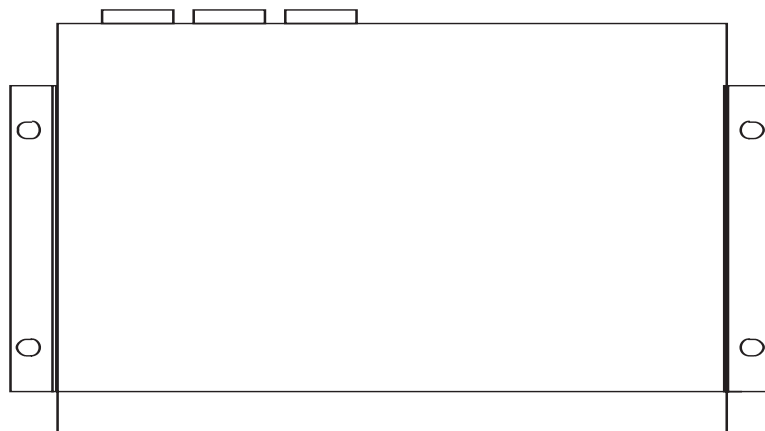
The ATM Interface Module is supplied with a set of mounting ears to allow the unit to be vertically mounted near (or within) the ATM.

To connect the ears

Step 1 Using the screws supplied connect the ears to the Interface Module. The side with the cut out should be connected to the unit.



Step 2 Place the unit in the required position and fix into place.

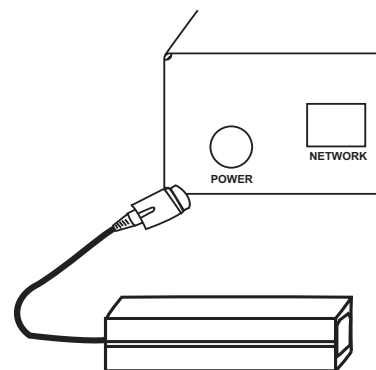


Note: The holes are elongated to ensure correct positioning.

Power

The Power connector is a 3 pin mini Din connector for connection to an external power supply (supplied by Dedicated Micros).

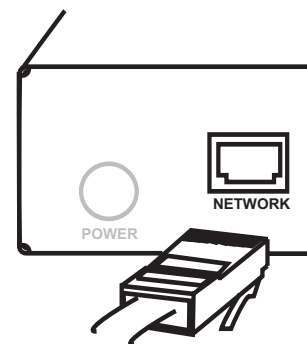
The power requirements are 12VDC, 500mA.



Network

The Network connection is a standard RJ45 connector.

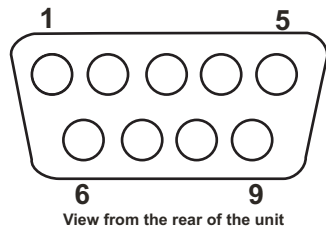
The ATM Interface Module connects to an Ethernet switch using a straight through Cat 5 network cable (Appendix F). The Network port is 10/100Mbps auto-detecting.



Serial Ports

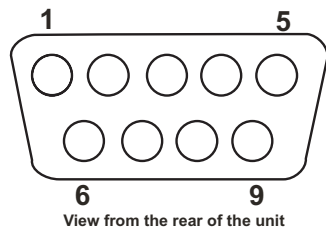
There are five serial ports on the ATM Interface Module, Serial 4 and 5 are reserved for configuration to communicate with the SDLC network. Serial ports 1 to 3 are enabled for RS232 for communication with the Dedicated Micros DVR or DV-IP Server.

The connectors are 9 Way D-Type Male connectors. Serial ports 1 to 3 have the following pin connections:



Pin	Pin Assignment
1	RS485 A (+) ^{*1}
2	RS232 RXD
3	RS232 TXD
4	RS422 B (-) ^{*1}
5	Ground
6	RS422 A (+) ^{*1}
7	RS232 RTS
8	RS232 CTS
9	RS485 B (-) ^{*1}

Serial Ports 4 and 5 have the following pin connections:



Pin	Pin Assignment
1	RS485 A (+) ^{*1}
2	RS232 RXD
3	RS232 TXD
4	RS422 B (-) ^{*1}
5	Ground
6	RS422 A (+) ^{*1}
7	RS232 RTS
8	RS232 RXCLK ^{*2}
9	RS485 B (-) ^{*1}

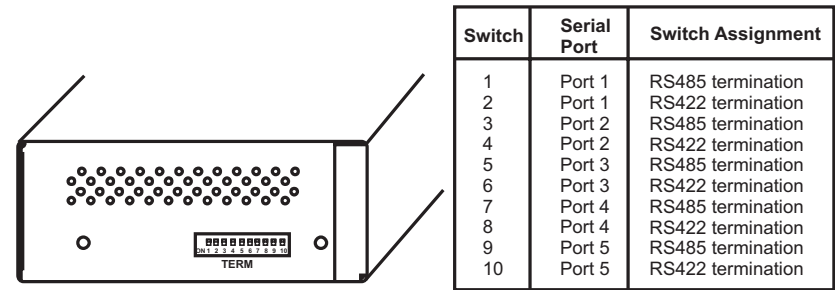
^{*1} the RS485/RS422 functionality is an optional item for future use, not all ATM Interface Modules will support this.

^{*2} pin 8 of ports 4 and 5 is used as a synchronous clock input in certain applications.

Termination Switches

Note: The termination switches are for future expansion. The ATM Interface Module supports RS232 serial communication with the DVR or DV-IP Server.

There are a number of termination switches that can be found on the side of the ATM Interface Module. These ensure that the serial ports are terminated correctly when using RS422 or RS485 serial data.



Configuration

Configuration of the unit can be via the ATM Enumerate Software or via the on-board configuration web pages.

It is recommended that the configuration be carried out locally using either an Ethernet Hub or an Ethernet cross over cable (Appendix E).

Note: The ATM Interface Module is shipped with a default IP address, if using an Ethernet hub for communication, only connect one unit at a time until the default IP address on each unit has been changed.

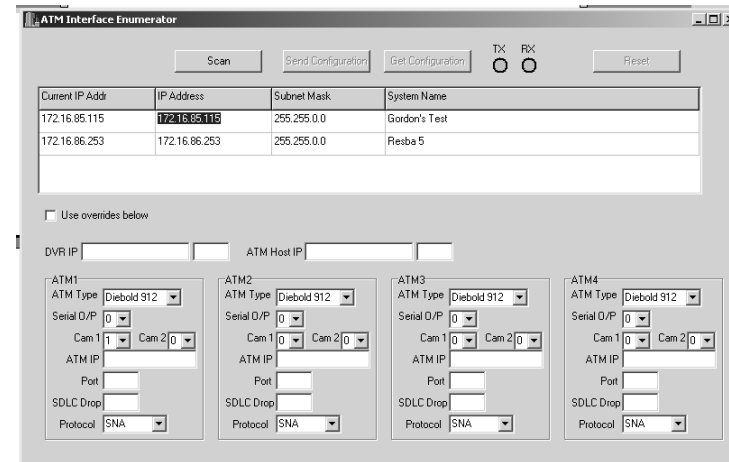
The process of configuring the units can follow this example for ease:

1. Scan the device with the ATM enumerate software; change the IP address to the required IP address.
2. Communicate with the unit using a hub or a cross-over cable; configure the unit using the web interface.
3. Use this configuration as the basis for other ATM Interface Modules in the system
4. Use the ATM enumerate software to retrieve (get configuration) the configuration file from the unit and save this to the PC
5. Download (send config) this file to any other ATM Interface Module with the same configuration requirement
6. Change the IP addresses and make any specific changes using the web interface

Accessing the ATM Interface Module

The first communication with the ATM Interface Module will be via the ATM Enumerate software application (see below for a more detailed description), this will allow the IP address of all units to be displayed and also provide the interface to change the IP address as required.

Using the software scan for all devices connected to network (hub or cross-over cable).



The address information will be displayed. To change the IP address edit the address in the 'IP Address' section.

Double click on the IP address to gain web access to the unit.

Web Interface

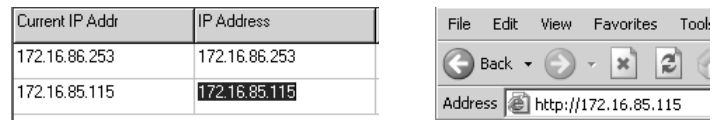
Note: The PC and the ATM Interface Module must be in the same network address range and subnet to allow access to the web configuration pages.

The ATM Interface Module can be configured via the on-board web configuration pages using Internet Explorer.

It is recommended that the configuration of the unit be carried out locally before installing the unit into the network. Communication between the PC and ATM Interface Module can be achieved by using a 'dumb' hub or an Ethernet cross-over cable (Appendix E).

Accessing the Web Pages

To access the web pages of the Interface Module, either double click on the IP address of the unit in the ATM Enumerate software or enter the IP address in the Address bar of Internet Explorer.



ATM Interface Configuration

When you connect to the ATM Interface Module the initial web page is the ATM Interface Configuration page.

This configuration page allows the following to be configured:

- Transaction data
- Unit address and name
- Encoding standard
- Hoper information (money bins)
- Serial port settings
- Access to specific ATM configuration

ATM Interface Configuration

Send

Show Full Account
 Show Part Account
 No Account Details
 Currency \$

Show amounts
 Show transaction ID
 Show keyed amount
 Show location

Unit IP Address
 Unit Netmask
 Unit name

Decode Printer
 Timeout
 Clear on Transaction
 ATM Timeout

Tx UTF8
 SDLC Encoding
 SDLC Modulus

	A	B	C	D	E	F	G	H
Diehold Hoppers	<input type="text" value="1"/>	<input type="text" value="5"/>	<input type="text" value="10"/>	<input type="text" value="20"/>	<input type="text" value="50"/>	<input type="text" value="100"/>	<input type="text" value="1000"/>	<input type="text" value="10000"/>
Currency	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
NCR Hoppers	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>				
Currency	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
Serial Baud	<input type="text" value="19200"/>	<input type="text" value="19200"/>	<input type="text" value="19200"/>	<input type="text" value="19200"/>	<input type="text" value="19200"/>			
Serial Mode	<input type="text" value="Simple"/>	<input type="text" value="Simple"/>	<input type="text" value="Simple"/>	<input type="text" value="Simple"/>	<input type="text" value="Simple"/>			
DVR Address	<input type="text" value="7000"/>	Cam 1 Port						

Commit

Select ATM to configure

[Show Text Mappings](#) [Show Rules](#)

- Send** Send the configured data to the ATM Interface Module.
- Show Full Account** Show unmasked account details from the ATM request.
- Show Part Account** Show masked account details from the ATM request.
- No Account Details** Do not show any account details.
- Currency** Sets the default currency when presenting non-receipt amounts.
- Show Amounts** Show currency selection and calculated amounts.
- Show Transaction ID** Show the transaction ID extracted from the protocol message.
- Show Keyed Amount** Show the amount keyed-in from the the ATM.
- Show Location** Show the Unit Name and ATM Name for each transaction.

Unit IP Address	IP address of the ATM Interface Module.
Unit Netmask	Subnet mask of the ATM Interface Module.
Unit Name	Name of the ATM Interface Module.
Decode Printer	Printer data to decode: 0 = No print 1 = Journal 2 = Receipt 3 = Journal and Receipt.
Timeout	Number of seconds until the screen text is cleared; 0 = no timeout.
Clear on Transaction	Clear screen when a new transaction is received.
ATM Timeout	If no ATM traffic is sensed after this designated time, a message relaying this information will be generated.
Tx UTF8	Format the output text as UTF8. Note: this has no effect on ASCII data, however this is required for Arabic.
SDLC Encoding	This is a drop down list allowing the encoding standard to be selected; NRZ, NRZI, Manchester, Biphase Space or Biphase Mark
SDLC Modulus	This is the SDLC address filed format and must be left as modulo 8. This is also for future expansion.
Hopper values	
Diebold Hoppers	This allows the denomination of each hopper to be identified, there are usually eight hoppers in diebold systems and four in NCR systems. Note: Coins are not decoded.
NCR Hoppers	
Currency [hopper]	Sets the currency demonination for each hopper.

Serial Baud	This is the baud rate for each of the serial ports on the Interface Module. The default settings of the DM DVRs and DV-IP are: 19200bps 8 data bits, nor parity, 1 stop bit. Note: Serial ports 1 to 3 are enabled, serial ports 4 and 5 are for future development.
Serial Mode	This determines how the text is output. Selecting Simple generates text with no additional protocols, unlike MuxK which adds additional header information. Selecting MuxK allows multiple ATMs and cameras to share a serial port.
DVR Address	IP address of the DVR if text is to be transmitted via the network. Note: The DV-IP receives data via the serial ports only.
Cam 1 Port	This is the port number for the base camera. The diagram shows camera 1 as port 1500, camera 2 would be a increment of 1 and therefore would be port 1502, camera 3 - 1503, etc.
Commit	Commit the sent data to the unit being configured. This is stored in non-volatile memory.
Select the ATM to Configure	Allows an ATM to be configured.
Show Text Mappings	Allows the Text Mappings to be configured.
Show Rules	Allows the Translation Rules to be configured.

Configure ATM

The ATM Interface Module can simultaneously support up to three ATM's. Each ATM can be individually configured by selecting the corresponding ATM from the drop down list.

The relevant information on the ATM is configured within this web page to allow communication to be established. This also links an ATM to a specific serial port on the ATM Interface Module.

Configure ATM 1

ATM Type	<input type="text" value="Diebold 912"/>	
Drop	<input type="text" value="0"/>	
Data Format	<input type="text" value="TCP/IP"/>	
ATM Name	<input type="text" value="Test"/>	
ATM Address	<input type="text" value="192.168.0.3"/>	<input type="text" value="0"/> Port
Host Address	<input type="text" value="192.168.0.4"/>	<input type="text" value="0"/> Port
Camera 1	<input type="text" value="1"/>	
Camera 2	<input type="text" value="0"/>	
Serial O/P	<input type="text" value="1"/>	

ATM Type This allows the relevant ATM type to be selected. The ATM Interface Module currently supports Diebold 912, Diebold XAPCOM and NCR NDC+.

Drop The SDLC network can be configured as multidrop. This allows the devices to be correctly addressed.
Note: If Diebold XAPCOM is selected, the serial port that receives the data will register as the Drop value.

Data Format This allows the data format to be configured. The ATM Interface Module currently supports SNA, X25 and TCP/IP.

ATM Name This is the name of the ATM.

ATM Address This is the IP address of the ATM machine. The ATM Interface Module only monitors traffic between the designated IP address of the host and ATM machine. This means that all external interfaces and equipment, except that of the host and ATM, are ignored.

Port This is the port number of the ATM.
Note: Recommended this is left at 0 to ensure all traffic is monitored regardless of the port number. If the ATM resets the port number can change after initialisation.

Host Address This is the network address of the host computer system. It is usually the format that the ATMs will communicate with a single host, however this option allows any host to be configured where multiple hosts are connected in the system.
Note: Leaving this blank will result in no traffic being monitored to the host.

Port This identifies the port number to be monitored.
Note: Recommended this is left at 0 to ensure all traffic is monitored regardless of the port number.

Camera 1 Primary camera on the DVR allocated to this ATM.

Camera 2 For future expansion.

Serial O/P Identifies which of the serial ports on the ATM Interface Module will send data to the DVR or DV-IP Server.
Note: Setting this to 0 will switch off serial output and therefore not send any data to the DVR.

Update Send the configuration within this page to the ATM Interface Module.
Note: To commit this information to the non-volatile memory the Commit button on the main page must be selected.

Show Text Mappings

This allows the text transaction settings to be configured. These settings should be configured in conjunction with Appendix A Diebold 912 'Pseudo' State Codes and Appendix B NCR NDC+ 'Pseudo' State Codes. For Diebold XAPCOM, use Appendix A.

User Text Strings

<7-12> <13-18> <19-24> <25-30> <31-36> <37-42> <43-48> <49-54> <55-60>

Text Mappings

Update<1-6>

User String (1)	Deposit and Print	950	951						
User String (2)	Dispense and Print	952	953						
User String (3)	Display and Print	954	955						
User String (4)	Print immed	901	956						
User String (5)	Next State and Print	902	957						
User String (6)	Night safe dep. & print	958							

Commit

- User Text String <nn-nn>** This allows a set of 6 text strings to be selected. Up to 60 text strings can be configured.
- Update <nn - nn>** This sends the values entered to the unit. **Note:** Press this button BEFORE changing screens to ensure the information is saved.
- User String (n)** The first box allows the user text to be entered. The subsequent boxes all for mapping of the ATM states and pseudo states. Refer to Appendix A and B for more details.
- Commit** This will commit the values sent to the unit to the units non-volatile memory.

Show Receipt Translation Rules

This allows the translation rules to be configured. It is possible to configure up to forty translation rules.

Translate Rules

<9-16> <17-24> <25-32> <33-40>

Update<1-8>

Rule (1)	TRANSLATE	(?	
Rule (2)	SUBSTITUTE_STRING	\Z_0#XU"IO[X	LOCATION
Rule (3)	SUBSTITUTE_STRING	PZ&-U WO@	Acquirer ID
Rule (4)	SUBSTITUTE_STRING	A#-JU"IO[X	LOCATION
Rule (5)	SUBSTITUTE_STRING	\O#G&U"WO@	CARD NUMBER
Rule (6)	SUBSTITUTE_STRING	Y%"> >_E@U"	CR
Rule (7)	SUBSTITUTE_STRING	\ZX	DR
Rule (8)	SUBSTITUTE_LINE_PRINT_NEXT	\LUXJU"AX@	AMOUNT TRANSACTION CODE

Commit

- "<9-16>" -> "<33-40>"** Select alternative set of 8 rules to edit.
- "Update<nn-nn>"** Send values entered to the unit. Press this key **BEFORE** changing screen.
- Rule (nn)** Drop down list selects type of rule (see table above). Subsequent 2 boxes allow entry of required strings for each rule type.
- "Commit"** Commit values sent to the unit to non-volatile memory. Commits all values from all screens.

The translation formats are:

TRANSLATE

If ESC&String1 are detected in text initiate translation of subsequent text.

SUBSTITUTE_STRING

If String 1 is detected in text line swap it for string 2.

SUBSTITUTE_STRING_PRINT_NEXT

If String 1 is detected in text line swap it for string 2 and always print next line as is.

SUBSTITUTE_LINE

If String 1 is detected in text line swap entire line for string 2.

SUBSTITUTE_LINE_PRINT_NEXT

If String 1 is detected in text line swap entire line for string 2 and always print next line as is.

MASK_LINE

If String 1 is detected in text line do not print the line.

MASK_CURRENCY

If String 1 is detected in text line mask all currency values in that line.

MASK_ALL_CURRENCY

If String 1 is detected anywhere in text mask all currency values in the entire print text.

MASK_FIRST_CURRENCY

If String 1 is detected anywhere in text mask first currency values in each line of the print text.

MASK_LAST_CURRENCY

If String 1 is detected anywhere in text mask last currency values in each line of the print text.

OP_CODE

When a transaction is requested at an ATM, a request is sent from the ATM to the Host. This request is made up of several parts; one of them being the OP-CODE which provides information to the acquiring host about the type of transaction requested.

Translate Rules

<9-16> <17-24> <25-32> <33-40>

Update<1-8>

Rule (1)	OP_CODE	*****	Transaction Request
Rule (2)	OP_CODE	C*****	Balance Enquiry
Rule (3)	NO_RULE		
Rule (4)	NO_RULE		
Rule (5)	NO_RULE		
Rule (6)	NO_RULE		
Rule (7)	NO_RULE		
Rule (8)	NO_RULE		

Commit

In the above example (where '*' can be any character), 'C*****' will interpret any OP_CODE beginning with 'C' as a 'Balance Enquiry'. The '*****' represents a catch-all, so anything not beginning with a 'C' will be caught by this and represented as a 'Transaction Request'. If a rule has been set in the ATM Interface to detect an OP_CODE, the OP_CODE will be decoded and presented. If no rule has been set to detect the OP_CODE, no data will be generated.

The ATM Enumerate Software

The ATM Enumerate Software application is provided on a CD with the ATM Interface Module, this software allows initial communication with the unit to configure the IP address of the unit. It also allows a saved default configuration file to be sent to multiple units to reduce the configuration process in larger systems.

This software should be installed on a PC that will be used to configure the system.

When the software is launched it will automatically scan the network for any ATM Interface Modules connected to the network. The software requests specific information from the units, this includes:

- Current IP address - this may be the default address or one previously configured
- Subnet mask
- System name

Note: The message transmitted from the application is a UDP packet requesting IP information on the unit.

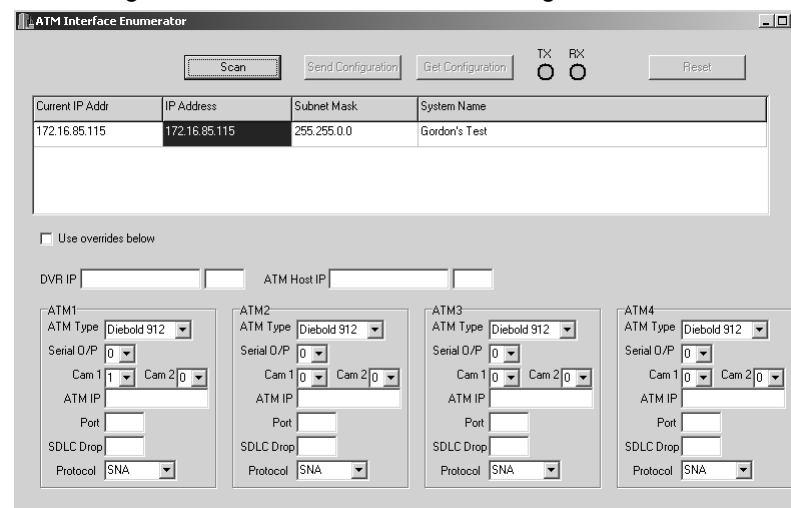
Configuration Steps

Using the ATM enumerate software;

1. Highlight the device that has previously been configured using the web interface.
2. Select Get Configuration and save this on the local PC hard drive, name the file configuration.ini. The ATM Interface Module will create a configuration file and download this to the PC.
3. Highlight the next ATM Interface Module that is to be configured and Select Send Configuration.
4. Locate the configuration.ini file previously saved you will be prompted to check the file is to be sent to the unit.

Note: It is possible to select the 'Use overrides below' option. This allows individual ATM settings to be configured where the settings differ from that of the configuration.ini file.

5. The file will be downloaded to the non-volatile memory of the unit. Once the file has been sent to the unit it will reset.
6. Change the IP address of the unit as required.
7. It is then possible to connect to the unit via the web interface to make any specific changes that differ from that of the configuration.ini file.



Scan

This will send a UDP packet across the network requesting specific information from any ATM Interface Module connected to the network. The UDP Port used is 8230.

Send Configuration

This allows a saved configuration file (from a pre-configured unit) to be sent to different units where the configuration requirements are the same. This reduces the configuration time in larger scale installations

Get Configuration	This will download a file from a pre-configured unit to allow devices requiring the same configuration settings to be easily and quickly configured Note: The file should be saved to the local hard drive of the PC being used for configuration purposes, this file can be used to configure additional ATM Interface Module
TX	This will flash when the application is sending information to a unit
RX	This will flash when receiving the configuration file from a pre-configured unit
Reset	This will reset the selected ATM Interface Module. The unit will take approximately 30 seconds to re-initialise.
Current IP Address	This is the IP address that has been allocated to the unit.
IP Address	This is the new IP address that will be allocated to the unit
Subnet Mask	This is the subnet mask information of the selected unit
System Name	This is the name allocated to the unit to allow the system to be efficiently managed
Use overrides below	When the settings with the configuration files are not as required this allows specific settings to be changed before downloaded to the unit
DVR IP	This is the IP address of the DVR that the ATM Interface Module is connected to Note: This must be left blank when using the DV-IP Server, communication between the ATM Interface Module and the DV-IP is serial only

DVR Port Number	This is the port number for Camera 1 on the DVR. Default for a Dedicated Micros DS2 DVR is 7000
ATM Host IP	This is the IP address of the Host PC that the ATM is communicating with
ATM Host Port Number	This must remain blank
ATM1 - ATM4	This allows the serial ports on the Interface Module to be individually configured to reflect the ATM associated with that serial interface

The screenshot shows a configuration window titled 'ATM4'. It contains the following fields and controls:

- ATM Type:** A dropdown menu currently set to 'Diebold 912'.
- Serial I/O:** A dropdown menu currently set to '0'.
- Cam 1:** A dropdown menu currently set to '0'.
- Cam 2:** A dropdown menu currently set to '0'.
- ATM IP:** A text input field.
- Port:** A text input field.
- SDLC Drop:** A text input field.
- Protocol:** A dropdown menu currently set to 'SNA'.

Synopsis

SDLC

Synchronous Data Link Control developed by IBM® for use in System Network Architecture (SNA) environments.

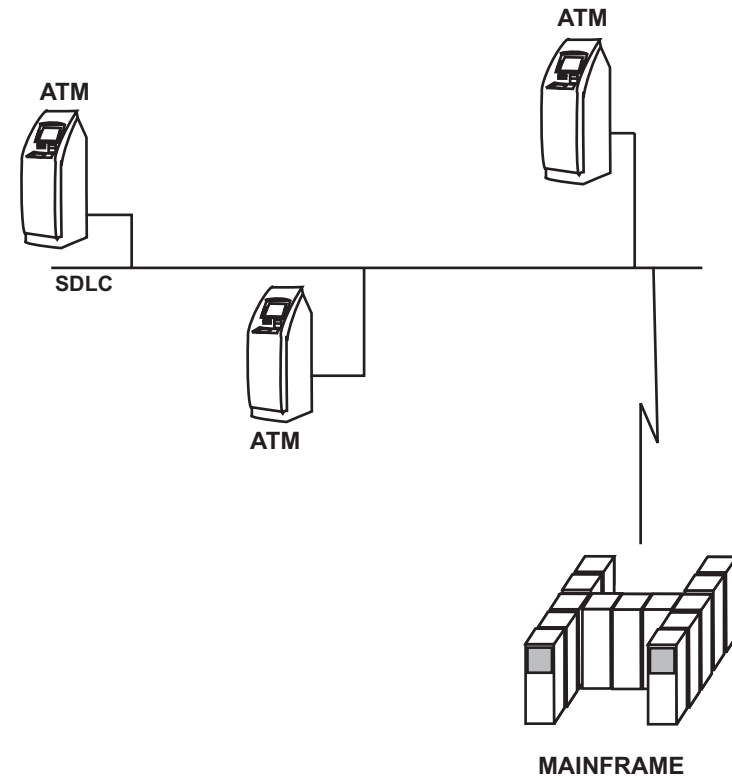
SDLC protocol sits at the link layer of the OSI model and is bit-oriented. There are two types of network nodes; Primary and Secondary.

The Primary node takes control of the other stations, in an ATM application the mainframe computer at a central location would be the primary node with the ATM machines would be the secondary nodes.

The mainframe will poll each ATM machine and all transactions from the ATM machine would be transmitted to the mainframe.

The nodes connection topology can be one of the following:

- **Point to point** - involves one primary and one secondary only
- **Multipoint** - involves one primary and multiple secondary nodes
- **Loops** - this is a loop where the primary is connected to the first and last secondary node
- **Hub go-ahead** - This has an inbound and outbound channel. The primary communicates on the outbound to the secondary nodes; the secondary nodes use the inbound channel to communicate with the primary node



HDLC

High-Level Data Link Control is a derivative of the SDLC and sits at Layer 2 (Data link) of the OSI model.

The HDLC protocol can be use in both point-to-point and multipoint data links. There are three modes of operation:

- **Normal Response Mode (NRM)** - In this mode of operation the secondary device are not able to communicate with the primary until permission has been granted by the primary node. This mode is also used by SDLC.
- **Asynchronous Response Mode (ARM)** - This mode allows secondary nodes to initiate communication with the primary node without requesting and receiving permission from the primary node.
- **Asynchronous Balanced Mode (ABM)** - This mode introduces the combined node which can act as a primary or secondary node depending on the situation.

The two basic functions in HDLC protocol are link management and data transfer.

Link Management

Prior to any information being transmitted (either as point-to-point or multipoint) a connection must be established between the devices to allow communication.

Data Transfer

The data transfer is monitored and includes error control and flow control.

RS232

RS232 is a universal data interface. RS232 is a point-to-point electrical data communication and is commonly integrated in both network and CCTV products.

Independent channels are available for two-way communication (i.e. full duplex). The RS232 signals are identified by voltage levels.

As this is a universal data interface the pin connections are standard and ensure that the data is transmitted and received correctly between devices.

The characteristics of RS232 are:

- Point to point (Single ended) - communication is between two devices
- Speeds are usually up to 256kbps
- Maximum distance between the devices is 15 Metres

Appendix A

Diebold 912 'Pseudo' State Codes

Function	Meaning	Diebold Mode	Pseudo Code
	Unknown code		900
'4'	Instructs a print immediate.		901
'5'	Instructs a set next state + print.		902
'6'	Instructs a Securomatic + print.		903
'7'	Instructs a deposit + print	911	904
'8'	Instructs a dispense + delivery + print	911	905
'9'	Instructs a delivery + print	911	906
'A'	Deposit Envelope	912	907
'B'	Dispense Bills and/or Coins.	912	908
'C'	Deliver currency.	912	909
'D'	Print and wait for completion.	912	910
'E'	Return card immediately.	912	911
'F'	Write Track 3 on card.	912	912
'G'	Securomatic deposit	912	913
'H'	Print and do not wait for completion.	912	914
'J'	Return card, dispense, deliver, and print.	911	915
'K'	Deposit envelope, return card, dispense, deliver, and print.	911	916
'L'	Conditional Delivery Door Exercise.	911	917
'M'	Conditional Delivery Door Exercise.		918
'O'	Print, return card, dispense, and deliver.		919
'P'	Print Data and Stay in Present State.	912, IDM	920
'Q'	Perform Presenter Dump Operation.	912, IDM	921
'R'	Deposit Check to Escrow	912, IDM	922
'S'	Return Check if in Escrow.	912	923
'T'	Retain Check if in Escrow.		924
'U'	Present Card.		925
'V'	Write Track 1.	912	926
'W'	Write Track 2.	912	927
'X'	Disable IDM and allow no further operations.	912	928
'Y'	Activate the chest door solenoid and unlock the safe door.	911	929
'Z' -	Do nothing.	911	930
'?'	Deposit, Write Card, Return Card, Dispense, Deliver, and Print.		931
'='	Write Card, Return Card, Dispense, Deliver, and Print.		932
','	Execute Enhanced Functions.		933

Appendix B

NCR NDC+ 'Pseudo' State Codes

Function	Meaning	Pseudo Code
'1' / '7'	Deposit and print	950 / 951
'2' / '8'	Dispense and print	952 / 953
'3' / '9'	Display and print	954 / 955
'4'	Print immediate	956
'5'	Set next state and print	957
'6'	Night safe deposit and print	958
'A'	Eject card, dispense and print (card before cash)	959
'B' / 'C'	Parallel dispense, print and card eject	960 / 961
'E'	Reserved	962
'F'	Card before parallel dispense and print	963
'O'	Reserved	964
'P'	Print statement and wait	965
'Q'	Print statement and set next state	966
'R'	Reserved	967
'S'	Process document with cash	968
'T'	Reserved	969
'*'	Refund BNA deposited money and set next state	970
'-'	Encash BNA deposited money, issue receipt if requested and set next state	971
'''	Encash BNA deposited money and wait for another reply from central	972
':'	Process CPM cheque	973

Appendix C

Unit Specification

Communication Inputs

SERIAL 4 - 5 9 Way D-type Male - SDLC

Communication Outputs

SERIAL 1 - 3 9 Way D-type Male - RS232

Ethernet Connection

NETWORK RJ45 connector, 10/100Mbps auto-detecting

Power Requirements

POWER 3 Pin mini Din, 12Vdc 500mA max.

Note: Only the Dedicated Micros approved power supply (supplied) must be used with this unit.

Temperature Range

Operating range: 0°C to +50°C

Dimensions

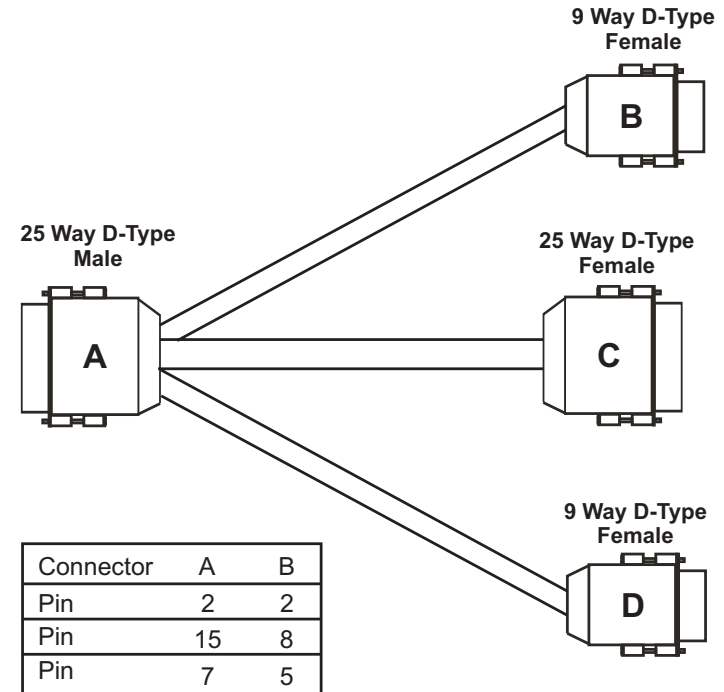
112mm (W) x 43mm (H) x 217mm (L)

4.41" (W) x 1.69" (H) x 8.55" (L)

Dimensions are without rack mount ears connected

Appendix D

Break-out Cable



Connector	A	B
Pin	2	2
Pin	15	8
Pin	7	5

Connector	A	C
Pin	1	1
	↓	↓
Pin	25	25

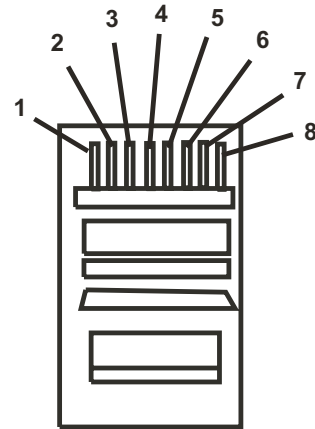
Connector	A	D
Pin	3	2
Pin	17	8
Pin	7	5

DM Part Number: AC-W-24951

Appendix E

Ethernet Cross-over Cable

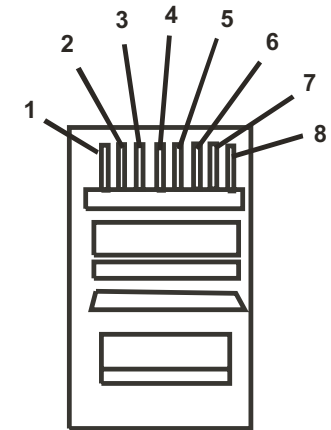
Pin	Colour Code	Pin Assignment	Pin
1	White/Orange	Transmit (+)	3
2	Orange/White	Transmit (-)	6
3	White/Green	Receive (+)	1
4	Blue/White	Not used	4
5	White/Blue	Not used	5
6	Green/White	Receive (-)	2
7	White/Brown	Not used	7
8	Brown/White	Not used	8



Appendix F

Ethernet Straight-through Cable

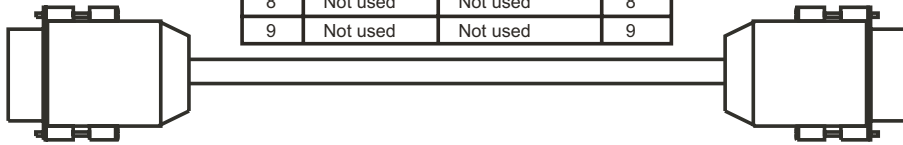
Pin	Colour Code	Pin Assignment	Pin
1	White/Orange	Transmit (+)	1
2	Orange/White	Transmit (-)	2
3	White/Green	Receive (+)	3
4	Blue/White	Not used	4
5	White/Blue	Not used	5
6	Green/White	Receive (-)	6
7	White/Brown	Not used	7
8	Brown/White	Not used	8



Appendix G

RS232 Serial Cable

Pin	Colour Code	Pin Assignment	Pin
1	Not used	Not used	1
2	Red	TX	3
3	Blue	RX	2
4	Not used	Not used	4
5	Green	Ground	5
6	Not used	Not used	6
7	Not used	Not used	7
8	Not used	Not used	8
9	Not used	Not used	9



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