

TECHNICAL NOTE V003

Configuring Data Ports on SCOTTY mm Series, eyesite® Series, and CareStation™ Series Products

© SCOTTY Group plc, 2004 U-9901-02008

Introduction

This technical note explains the use of data ports on Motion Media video telephony products including mm146, mm150, mm156, eyesite® 110, eyesite® 140, eyesite® 550, CareStation™ 110, CareStation™ 126, CareStation™ 156.

The external data ports on the rear of Motion Media video telephony products enable the transfer of user-defined data during a video call. The data ports use standard DB9 pinouts with RS-232C signaling.

Although the system does not care what kind of data is being passed, there are certain guidelines that developers need to follow to ensure the integrity of the data. This technical note describes how to setup and use the external data ports, and includes programming guidelines.

Setting Up the Data Ports

To setup the external data ports, press the **MENU** key to display the main menu options. Select option **6**, Data Options. There are seven menu items. Use the number keys (either on the supplied remote control or on the videophone) to select the required option.

Aux Port 1

Use the Right and Left arrow keys to display the option you require.

Select **HOST** to set the first port to host mode, which allows applications to control the unit via Control Mode. This is a special mode of operation, which allows external devices such as PCs to control the operation of the unit using a communications protocol.

Select **DATA** to set the first port to transparent data mode. During a video call, any data present on the port will be sent to the far end. The data channel is always on while set to this mode.

EXT DATA is essentially the same as DATA mode above, but with the additional capability of being able to turn the data channel on and off during a call. Thus, bandwidth can be allocated and de-allocated as needed.

Select **----** to disable the port.

Other options for external pan/tilt/zoom cameras may be present; they are not covered in this technical note.

Baud Rate

Set the Baud Rate using the Right and Left arrow keys.

Select standard baud rate values of **1200, 2400, 4800, 9600, 19.2, 38.4, 57.6, and 115.2.**

The information provided in this Documentation is believed to be accurate and reliable. However, SCOTTY Group plc assumes no responsibility for its use, and reserves the right to revise this Documentation without notice.

Note that this is the transfer rate between the external device (such as a PC) and the unit, **not** the data transfer rate between the two units.

Handshaking

Select **NONE** if no flow control between the Motion Media unit and the external device is required.

Select **SOFT** to use software flow control. External devices can throttle data being sent out of the Motion Media unit by sending XON (okay to transmit) and XOFF (stop transmitting). Similarly, the external device must process any XON/XOFF characters received from the unit.

Select **THRU** to pass state changes in the CTS line to the other side.

Thru handshaking can be used for far end (hardware based) flow control.

Aux Port 2

This item sets the mode of data port 2. It has the same options as item 1 above.

Priority

Select **LOW** or **HIGH** priority.

When set to **LOW**, any data being passed through during a call takes lower priority with respect to video and audio.

When set to **HIGH**, the data being passed through takes higher priority. Note that this option affects mainly lower bit rates (PSTN calls). Higher rates, such as those found on ISDN and IP calls (64K and above), will not be as greatly affected.

Press the **ENTER** key twice to save the changes and return to the Setup Menu.

Using Host Mode

Using the data ports in this mode is not covered in this document.

Using Data Mode

There are some guidelines that need to be taken into account when utilizing the data ports in this mode.

The Motion Media units pass the data “as is” only attaching some header and error correcting information which is stripped off at the receiving end. The data is passed in-band with the H.324 data stream so transfer rates are typically restricted to values below what the actual baud rate is set to. This means that external devices will need to implement some sort of flow control or utilize the built-in flow control methods of the unit. The recommended method is to choose NONE for the Handshaking option and implement an external flow control protocol. The best type of protocol to follow resembles the ubiquitous X-MODEM. Data is divided into packets and checksums are calculated on each one. The device then transmits the packet to the far end and waits for an acknowledgement (ACK) or no acknowledgement (NACK). If an ACK is received then the next packet is sent; if a NACK is received then the packet is re-transmitted. Using this type of protocol ensures that the data port buffers do not overflow. This is especially important at low bit rates such as those found in PSTN calls.

Alternatively you can also use software flow control if SOFT is selected as the handshaking option. This requires that your transmitter check for the standard XON and XOFF characters from the unit. Upon receiving an XOFF you should stop transmission until receiving an XON character. On the receiving end you will need to monitor your buffer levels and send XON and XOFF to the unit to prevent overflows. The THRU option, which is only available on Aux Port 1, is a form of hardware handshaking. In this mode the Motion Media unit monitors the CTS line of Aux Port 1. An external device asserts this line when it is ready to receive data. The unit will pass this information to the far end unit, which in turn asserts the CTS line to its external device.

For low bit rates, such as PSTN calls, you may want to consider what the Priority is set to. When set to LOW the H.324 data stream takes precedence over any data so your transfer rate is somewhat reduced. When set to HIGH the H.324 stream is throttled down to allow more data to be sent. Be careful when setting this option to HIGH- this causes the audio and video to freeze while data is being transmitted. At high bit rates (64K and above) this option can be ignored.

As previously mentioned, the DATA and EXT DATA options are nearly identical with the exception that EXT DATA allows the user to enable and disable one or both data ports during a call. While in a call, put the unit in near mode, press the star (*) key followed by either “1” for data port one or “2” for data port. Repeat this to turn off the data ports.