SHM COMMUNICATIONS LTD

The Energy Vision Company

AN005 – Application note

A SUMMARY OF SHARED LINE TELECOMMUNICATION OPTIONS FOR LOGGED DATA COLLECTION

INTRODUCTION

SHM offers a number of configurations of data logging equipment, including the UL8 8-channel Universal Logger, the UL24 24-channel Logger (8 universal + 16 digital) and the DL4 4-channel Digital Logger. These can be mixed and matched to meet a variety of logging needs, and are completely inter-operable when connected via their own RS485 network or via modem, Ethernet or Paknet. This note describes the various options, focusing on the commonly encountered telecommunications facilities.

In addition various local area network configurations are possible, but are not described in this document.

The type of the communication equipment depends on the type of telephone line available and the type of other equipment already in use. The following list enumerates the various types of line and the various communication options available for collecting logged data. Features, advantages and disadvantages are listed in each case:-

[1] Settlements Line (can only dial out to UL8)

(a) Use serial modem switch

♦ Share existing line and modem.

♦ Works well with GEC PPM, but other Settlements meters might present a problem if the RS232 output from the modem is mechanically not easily accessible.

♦ Modem is often slow (1200 baud).

♦ For compatibility with logger, modem baud rate must be 1200, 2400, 4800 or 9600.

Note: It is not normally possible for a UL8 to dial in using Settlements lines, since for financial security, Settlements normally bars outgoing calls.

(b) Use CLI modem

♦ Share existing line.

♦ Works with all meters and settlements logger types.

♦ Modem can be up to 2400 baud (faster calls, lower cost?).

♦ Line "owner" needs to pay BT (or appropriate line provider) for the CLI feature to be enabled.

Note: Calling Line Identifier signals are often not available on internal PBX systems, so that the CLI approach is only feasible for external lines.

[2] Ordinary BT Line or PABX extension dialled via BT

(a) Use modem answer window

♦ Share existing line.

♦ Suitable for out-of-hours dial-out (from host PC).

♦ Calls are paid for at host PC end.

♦ Any other modem/fax equipment sharing line must be programmed to answer after more than 1 ring (preferably at least 3).

♦ Line must be unused out of hours.

(b) Use UL8 dial-in

♦ Share existing line.

♦ No restrictions on other equipment sharing line.

♦ Suitable for use at any time (though out-of-hours preferred).

♦ Calls are paid for at outstation end.

(c) Use CLI modem

♦ Share existing line.

♦ No restrictions on other equipment sharing line.

♦ Suitable for use at any time (though out-of-hours preferred).

♦ Calls are paid for at host PC end.

♦ More expensive than normal modem.

♦ Line "owner" needs to pay BT (or appropriate line provider) for the CLI feature to be enabled.

Note: Calling Line Identifier signals are often not available on internal PBX systems, so that the CLI approach is only feasible for external lines.

(d) Use serial modem switch

♦ Share existing line.

♦ Suitable for use at any time.

♦ Lower cost than modem.

♦ For compatibility with logger, modem baud rate must be 1200, 2400, 4800 or 9600.

♦ Calls are paid for at host PC end.

Note: This option is only applicable if there is equipment already on site being accessed via line and modem, such as building controllers, security equipment etc. The existing modem and line can then be shared as for a Settlements line.

[3] PABX extension dialled via internal exchange network

<u>(a) Use modem answer window</u>

♦   Share existing line.

♦   Suitable for out-of-hours dial-out (from host PC).

♦   Any other modem/fax equipment sharing line must be programmed to answer after more than 1 ring (preferably at least 3).

♦   Line must be unused out of hours.

<u>(b) Use UL8 dial-in.</u>

♦   Share existing line.

♦   Suitable for use at any time (though out-of-hours preferred).

♦   No restrictions on other equipment sharing line.

[4] Paknet (assumed provided by Settlements)

<u>(a) Use serial modem switch</u>

♦   Share Paknet PAD, Port, aerial installation etc.

♦   UL8 protocol gives low Paknet call costs.

♦   Calls paid for at host PC end.

<u>(b) Use second NTU port for SHM Loggers</u>

♦   Independent of Settlements usage other than using same PAD

♦   SHM Logger Protocol gives low Paknet call costs.

♦   Calls paid for at host PC end.

Note: The Paknet PAD or Network Terminating Unit (NTU) is supplied with two independently addressable physical ports/sockets on the rear of the PAD. Settlements metering normally only employs one of these.