

EM61 INFORMATION

COMPUTER INTERFACE PORT INFORMATION (REV. 1.1)

October 24, 1994

PORT AND CABLE PIN ASSIGNMENT

The computer interface port is provided via a 10-pin circular socket mounted on the EM61 panel. A 10-pin circular connector to 25-pin sub-D connector cable is supplied with each system for connection between EM61 and the default controlling unit POLYCORDER. The same cable can be used to connect EM61 to other computer or data acquisition system provided that such computer or system has an RS-232 port and a digital I/O control line available.

EM61-Polycorder INTERFACE CABLE functions are summarised as follows:

10-pin connector EM61	25-pin sub-D POLY/COMPUTER	function
C,D	19, 7	GROUND
E (input)	14 (output)	EM61 on/off control from POLY/COMPUTER 5V on, 0V off.
G (output)	3 (input)	RS-232 RXD
H (input)	2 (output)	RS-232 TXD
J (output)	21	Regulated +12 Volt power supply from EM61 to charge Polycorder battery
K (input)	(19, 7)	manual trigger via a momentary switch.

RS-232 CONFIGURATION

The port is configured as a DCE (Date Communication Equipment). No handshaking is used.

The port is initialised as follows:

Baud rate:	9600
parity:	none
data bits:	8
stop bit:	1

POLYCORDER (OR OTHER CONTROLLING COMPUTER) COMMANDS

(all ASCII code, 30 ms between characters)

COMMAND	COMMAND INTERPRETATION
HH	high gain
HX	high gain, auto mode
HW	high gain, wheel mode
HM	high gain, manual mode
LL	low gain
LX	low gain, auto mode
LW	low gain, wheel mode
LM	low gain, manual mode
A	trigger byte in auto mode

EM61 RESPONSE MESSAGES

OK	POLYCORDER command received correctly
ER	receiving error

EM61 DATA FORMAT

Each data record consists of 16 bytes detailed below:

Byte 1 (ASCII) T: standard byte in Auto and Wheel modes
 M: standard byte in Manual mode

Byte 2 (HEX number for gain and ranges. Ranges are the gains of the DC amplifiers.)

HEX	DEC	GAIN	RANGE1	RANGE2
04	4	1	1	1
08	8	1	1	20
0C	12	1	20	1
10	16	1	20	20
14	20	4	1	1
18	24	4	1	20
1C	28	4	20	1
20	32	4	20	20

Byte 3 (ASCII) + or -, sign of channel 1 (channel T)

Byte 4 (ASCII) thousand's of channel 1 (channel T)

Byte 5 (ASCII) hundred's of channel 1 (channel T)

Byte 6 (ASCII) ten's of channel 1 (channel T)

Byte 7 (ASCII) one's of channel 1 (channel T)

Byte 8 (ASCII)	+ or -, sign of channel 2 (channel B)
Byte 9 (ASCII)	thousand's of channel 2 (channel B)
Byte 10 (ASCII)	hundred's of channel 2 (channel B)
Byte 11 (ASCII)	ten's of channel 2 (channel B)
Byte 12 (ASCII)	one's of channel 2 (channel B)
Byte 13 (ASCII)	ten's of battery voltage
Byte 14 (ASCII)	one's of battery voltage
Byte 15 (ASCII)	one tenth's of battery voltage
Byte 16 (ASCII)	carriage return

EM61 CONVERTING FACTORS

Geonics convention is that the response is converted to output voltage in mV at the output of each sampling channel by the following:

$$\text{CHANNEL} = \text{RESPONSE} \times 0.1875 \times \text{GAIN} \times \text{RANGE1} \times \text{RANGE2}$$