

Review date : 29/01/2015

GMC+ RS232 ESPA 4.4.4 Protocol

Electrical specification



The data communication is standard RS232 format.

The baud rate is one off:

1200 baud
2400 baud
4800 baud
9600 baud
19200 baud

Data is transmitted with:

1 Start bit
8 Data bits
Odd, Even or No parity
1 or 2 Stop bits

Control characters

Hex		Description
1F	<US>	Unit separator.
1E	<RS>	Record separator.
01	<SOH>	Start of header. Start of a header of a message.
02	<STX>	Start of text. Precedes a text field and terminates a header.
03	<ETX>	End of text. Terminates a text field.
04	<EOT>	End of transmission.
05	<ENQ>	Enquiry.
06	<ACK>	Acknowledge.
15	<NAK>	Negative acknowledge

Protocol description

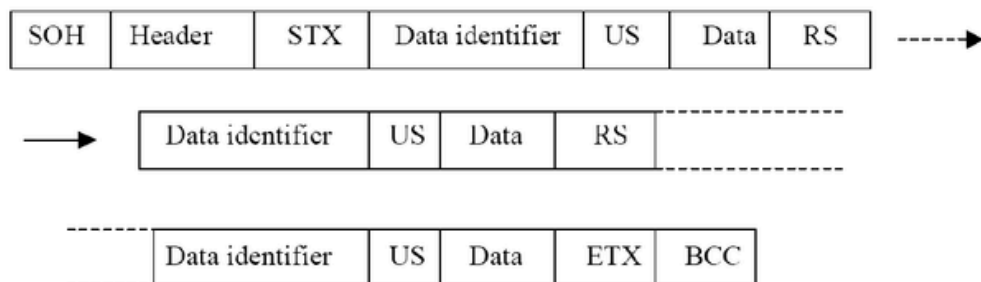
The default address of the GMC+ is 1. The default address of the external equipment is 2. The external equipment should react within 10 sec. The external equipment should send <ACK> when it accepts the data and <NAK> when it refuses the data. When the GMC+ receives a <NAK> or receives nothing within 10 sec, it retries 2 times this communication.

When the GMC+ sends a message it sends first a Polling String in the form '1'<ENQ>'2'<ENQ>. This selects the GMC+ as master and the external equipment as slave. The external equipment should respond with <ACK> if ready to receive or with <NAK> if busy.

After an <ACK> the GMC+ sends a Block Structure. This block contains 1 event of the GMC+.

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BCC is the Block Check Character (checksum).

The format of this block is fully configurable on the GMC+. On the GMC+ there is a block definition for alarm events and one for fault events.

Encoder text in the Data field can be between 0 and 40 characters long.

After the external equipment sends ACK the GMC+ sends an EOT to terminate the connection.

Description of the different possible records

<SOH> Header <STX>	'Header' is normally '1': call to pager. <SOH>1< STX>
1<US>cc	Call address. cc is the address of the pager or a group of pagers. This address must be supplied by the installer of the pager system. Max 16 chars.
2<US>cc	cc is the text displayed on the pager. If cc contains <TEXT>, this <TEXT> will be replaced with the location text of the detector. This location text is between 0 and 40 chars long. The location text is the text entered in the control panel by the installer of the control panel.
3<US>n	Beep coding. n is a number between 0 and 9 and is pager system dependant. Not all pager systems support this record. n must be supplied by the installer of the pager system.
4<US>n	Call type. n is a number between 0 and 3. Not all pager systems support this record. n must be supplied by the installer of the pager system and is normally 3.
5<US>n	Number of transmissions. Not all pager systems support this record. n must be supplied by the installer of the pager system.
6<US>n	Priority. n is a number between 0 and 3. Not all pager systems support this record. - 1 : Alarm (emergency) - 2 : High - 3 : Normal n must be supplied by the installer of the pager system.

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Connection test

Every 45 sec the GMC+ tests the connection.

The GMC+ first sends the Polling String in the form '1'ENQ'2'ENQ. When the external equipment acknowledges with an ACK the GMC+ sends an EOT to terminate the connection.

When this test fails the GMC+ gives an error on its control panel.

Example of transactions

In this example the GMC+ sends the text "Meeting room" to the pager with address 123.

GMC+

External equipment

Poll sequence
Polls itself

'1'	ENQ
-----	-----

Select sequence
Selects external equipment

'2'	ENQ
-----	-----

Positive reply to selecting

ACK

Block structure

Header
Call to pager

SOH	'1'	STX
-----	-----	-----

Record 1
Call address

'1'	US	'123'
-----	----	-------

Record separator

RS

Record 2
Display message

'2'	US	"Meeting room"
-----	----	----------------

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Record separator

RS

Record 3

Priority

'6'	US	'3'
-----	----	-----

Tail

Contains checksum

ETX	BCC
-----	-----

Acknowledge

ACK

Transaction complete

EOT

Example of connection test

GMC+

External equipment

Poll sequence

Polls itself

'1'	ENQ
-----	-----

Select sequence

Selects external equipment

'2'	ENQ
-----	-----

Positive reply to selecting

ACK

Transaction complete

EOT
