RS232 to PMC Converter Communication Protocol

This module provides a gateway for an RS232 device to interface with the Intellitec PMC System. It can be placed anywhere in the communication bus. The converter can read from and write to a dual loop (blue and yellow), 320 channel PMC system. The converter has DIP switches to select and deselect each of the loops.

All commands sent to the converter are 10-bytes of ASCII. All data responses from the converter are 10-bytes of ASCII. All error responses from the converter are 10-bytes of ASCII. Communication Parameters = 9600 baud rate, 8 bit, no parity. Commands must be sent in duplicate for error checking.

Writes are completed on a single channel basis. A channel is latched on until an off command is received. Reads are completed in 80 channel blocks. The channel information is encoded into 10-bytes of data. The commands are summarized in Table 2. The format for data reads is as follows (same for blue and yellow loops):

Table 1 - Data Format for Read Commands

Byte	**Data Received** (lower modules)
1	Module A, Channels 1 thru 8
2	Module A, Channels 9 and 10, Module B, Channels 1 thru 6
3	Module B, Channels 7 thru 10, Module C, Channels 1 thru 4
4	Module C, Channels 5 thru 10, Module D, Channels 1 and 2
5	Module D, Channels 3 thru 10
6	Module E, Channels 1 thru 8
7	Module E, Channels 9 and 10, Module F, Channels 1 thru 6
8	Module F, Channels 7 thru 10, Module G, Channels 1 thru 4
9	Module G, Channels 5 thru 10, Module H, Channels 1 and 2
10	Module H, Channels 3 thru 10
Byte	**Data Received** (upper modules)
1	Module I, Channels 1 thru 8
2	Module I, Channels 9 and 10, Module J, Channels 1 thru 6
3	Module J, Channels 7 thru 10, Module K, Channels 1 thru 4
4	Module K, Channels 5 thru 10, Module L, Channels 1 and 2
5	Module L, Channels 3 thru 10
6	Module M, Channels 1 thru 8
7	Module M, Channels 9 and 10, Module N, Channels 1 thru 6
8	Module N, Channels 7 thru 10, Module O, Channels 1 thru 4
9	Module O, Channels 5 thru 10, Module P, Channels 1 and 2
10	Module P, Channels 3 thru 10

Table 2 - Summary of Read and Write Commands

Command	**Send to Converter**	**Possible Responses**
Read Blue Loop Modules A thru H	"V1000V0000"	Successful = 10 Bytes of Data Returned
Read Blue Loop Modules I thru P	"V2000V0000"	Successful = 10 Bytes of Data Returned
Read Yellow Loop Modules A thru H	"V3000V0000"	Successful = 10 Bytes of Data Returned
Read Yellow Loop Modules I thru P	"V4000V0000"	Successful = 10 Bytes of Data Returned
Turn on a Channel in Blue Loop	SMCB1S0000[1]	Successful = "OKOKOKOKOK" Write Error = "EEEEEEEEEE" Blue Loop Disabled = "BEBEBEBEBE" General Communication Error = Anything Else
Turn off a Channel in Blue Loop	SMCB0S0000[1]	Successful = "OKOKOKOKOK" Write Error = "EEEEEEEEEE" Blue Loop Disabled = "BEBEBEBEBE" General Communication Error = Anything Else
Turn on a Channel in Yellow Loop	SMCY1S0000[1]	Successful = "OKOKOKOKOK" Write Error = "EEEEEEEEEE" Yellow Loop Disabled = "YEYEYEYEYE" General Communication Error = Anything Else
Turn off a Channel in Yellow Loop	SMCY0S0000[1]	Successful = "OKOKOKOKOK" Write Error = "EEEEEEEEEE" Yellow Loop Disabled = "YEYEYEYEYE" General Communication Error = Anything Else

[1] M = Module Letter (A – P), C = Channel Number (0 – 9)