Specification of RS232C port for PRO-1110/910HD

2003 Oct

1. Communication conditions

1.1 Communication mode

Default communication mode of the display is SR+ mode. In this mode the display doesn't receive RS232C commands.

Before using RS232C control please set communication mode at RS232C mode.

Communication mode can be changed by remote control operation, Integrator Menu or RS23C command.

Baud rate can be changed by Integrator menu or RS232C command.

Note) RS232C control and SR+ function couldn't use in same time.

1.2 Communication mode and baud rate selection

1.2.1 Communication mode select by remote control operation

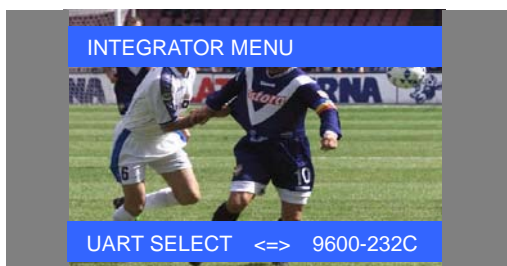a) Set communication mode at RS232C mode

1. Push Volume Up or Volume Down key continuously 3sec~10sec in Stand-by
2. Push Split key within 3sec continuously 3sec~10sec
3. Push Set key within 3sec. Communication mode set at RS232C mode.

b) Set communication mode at SR+ mode

1. Push Volume Up or Volume Down key continuously 3sec~10sec in Stand-by
2. Push Split key within 3sec continuously 3sec~10sec
3. Push Menu key within 3sec. Communication mode set at SR+ mode.

1.2.2 Communication mode and baud rate select by Integrator menu

Push Menu key and push Power key within 3sec. Integrator menu will appear as following figure.

In this menu user can change communication mode and baud rate by Left and Right key

UART SELECT: 9600bps(SR+)/1200bps/2400bps4800bps/9600bps(232C)/19200bps/38400bps

Push Menu key then close Integrator menu and return to normal operation.

1.2.3 Communication mode and baud rate select by RS232C command

Communication mode and baud rate can be changed by RS232C command.

Please see section 3.

1.3 Communication conditions

Set the RS-232C communications settings on the computer to match the display's communications conditions. The display's communications settings are as follows:

|	
Baud rate	1200/2400/4800/9600/19200/38400bps
Start bit	1bit
Data length	8bit (ASCII)
Parity bit	None
Stop bit	1 bit

2. Communication procedure

Send the control commands from the computer via the RS-232C connector.

The display operates according to the received command and sends a response message to the computer.

Do not send multiple commands at the same time. Wait until the computer receives the OK response before sending the next command.

2.1 Format of command with parameter

02h	*	*	C1	C2	C3	P1	P2	P3	03h

STX   ID   Command 3-digite   Parameter 3-digit   ETX
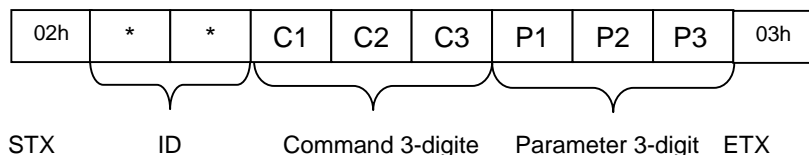
STX	Start condition (fixed value 02h)
ID	Fixed value **
Command	3byte (ASCII)
Parameter	3byte (ASCII)
ETX	Stop condition (fixed value 03h)

Parameter

Parameter	Description
000~999	
UPn	Up n step
DWn	Down n step

Command example

Up volume 1 step: 02, **, VOL, UP1, 03

02h	*	*	V	O	L	U	P	1	03h

Set volume at 10: 02, **, VOL, 010, 03

02h	*	*	V	O	L	0	1	0	03h

Set Analog TV channel at 25: 02, **, INA, 025, 03

02h	*	*	I	N	A	0	2	5	03h

Set Digital TV channel at 30.03: 02, **, INC, 030, 003, 03

02h	*	*	I	N	C	0	3	0	0	0	3	03h

Down TV channel: 02, **, CHN, DW1, 03

02h	*	*	C	H	N	D	W	1	03h

2.2 Format of command without parameter

02h	*	*	C1	C2	C3	03h

STX   ID   Command 3-digite   ETX
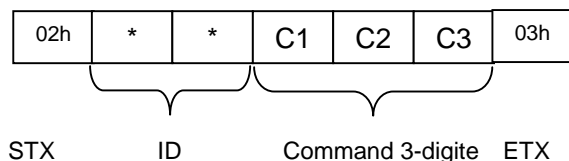
STX	Start condition (fixed value 02h)
ID	Fixed value **
Command	3byte (ASCII)
ETX	Stop condition (fixed value 03h)

Command example
Power On: 02, **, PON, 03

| 02h | * | * | P | O | N | 03h |

Select INPUT 2: 02, **, IN2, 03

| 02h | * | * | I | N | 2 | 03h |

Audio mute off: 02, **, AMN, 03

| 02h | * | * | A | M | N | 03h |

Screen mode: CINEMA: 02, **, SM4, 03

| 02h | * | * | S | M | 4 | 03h |

2.3 Format of acknowledgement

PDP will transmit the command that is received immediately before, without ID as acknowledge.
As soon as PDP receives command, completes the process and the following command become receivable.
When the unreceivable command has been sent, ERR is transmitted as acknowledge.

| 02h | C1 | C2 | C3 | 03h |
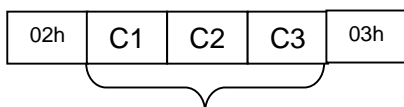
STX   Command 3-digite   ETX

STX	Start condition (fixed value 02h)
Command	3byte (ASCII)
	Communication successes: Transmitted command
	Error (Nonexistent command): ERR
	Error (Not effective command): XXX
ETX	Stop condition (fixed value 03h)

2.4 Communication examples

Communication is succeeded
Transmitted command from PC: 02, **, IN1, 03

| 02h | * | * | I | N | 1 | 03h |

Acknowledge from PDP: 02, IN1, 03

| 02h | I | N | 1 | 03h |

Communication is not succeeded (Receive nonexistent command)
Transmitted command from PC: 02, **, ZZZ, 03

| 02h | * | * | Z | Z | Z | 03h |

Acknowledge from PDP: 02, ERR, 03

| 02h | E | R | R | 03h |

Communication is not succeeded (Receive not effective command)
Transmitted command from PC: 02, **, PON, 03

02h	*	*	P	O	N	03h

Acknowledge from PDP: 02, XXX, 03

02h	X	X	X	03h

2.5 Restriction

1.   GUI is not displayed about the operation using RS232C.
  Ex. Input selection, Volume adjustment, Screen mode selection etc.

2.   Last memory is not carried out about operation by RS232C.
Ex. Input selection, Volume adjustment, Screen mode selection etc.

3.   Operation by input select command
When the input selection by the 232C command (IN1…IN5/INA) is performed, the multi-screen is canceled and the single screen display of the input that was chosen by the command is performed.

3. Commands and parameters

Command	Parameter		Description
PON			Power On
POF			Power Off
IN1			Select INPUT 1
IN2			Select INPUT 2
IN3			Select INPUT 3
IN4			Select INPUT 4
IN5			Select PC
INA	001~125		Select Analog TV
INB	001~125		Select Analog TV
INC	001~125	001~999	Select Digital TV (Parameters are Meager channel and Minor channel.)
ING			Select i Link input
VOL	000~060 UPn/DWn		Adjust audio volume
AMN			Mute Off
AMY			Mute On
CHN	UP1/DW1		Change TV channel (Up and Down by 1step only)
SM0			Screen mode: DOTbyDOT (PC only)
SM1			Screen mode: 4:3
SM2			Screen mode: FULL
SM3			Screen mode: ZOOM (Except PC and HD)
SM4			Screen mode: CINEMA (Except PC and HD)
SM5			Screen mode: WIDE (Except PC and HD)
SM8			Screen mode: FULL2(PC and HD only)
BR0			Set baud rate at 9600bps and communication mode at SR+ mode
BR1			Set baud rate at 1200bps (RS232C mode)
BR2			Set baud rate at 2400bps (RS232C mode)
BR3			Set baud rate at 4800bps (RS232C mode)
BR4			Set baud rate at 9600bps (RS232C mode)
BR5			Set baud rate at 19200bps (RS232C mode)
BR6			Set baud rate at 38400bps (RS232C mode)