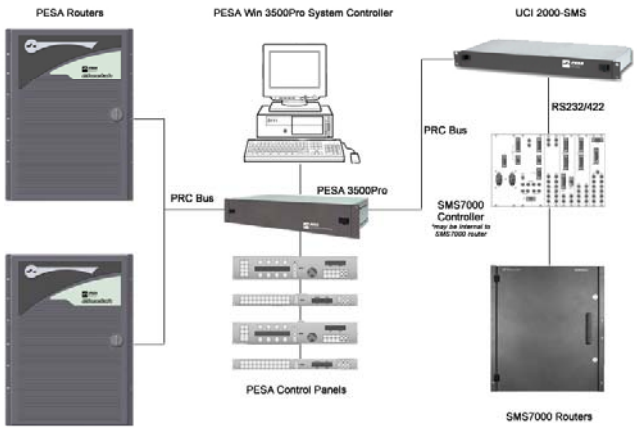
UCI-2000-SMS

Protocol Converter
For

Grass Valley Group SMS7000 Routing Switchers and Control Systems

Quick Start Manual



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1 SAFETY

It is the responsibility of all personnel involved in the installation, operation, and maintenance of the equipment to know all the applicable safety regulations for the areas that they will be working in. ***Under no circumstances should any person perform any procedure or sequence in this manual if the procedural sequence will directly conflict with local Safe Practices. Local Safe Practices shall remain as the sole determining factor for performing any procedure or sequence outlined in this document.***

2 INTRODUCTION

The PESA UCI-2000-SMS protocol converter is designed to provide an interface between Grass Valley Group and PESA routing switchers and control systems. The UCI-2000-SMS can operate in one of two distinct modes, allowing PESA routing matrices to be controlled by a Grass Valley Group SMS7000 control system and control panels or allowing Grass Valley Group SMS7000 Series routing matrices to be controlled by a PESA 3300/3500/3500+ Control System.

3 PESA TO GRASS VALLEY MODE

The PESA to Grass Valley control mode allows the UCI-2000-SMS to control up to eight levels of Grass Valley Group SMS7000 based routing switchers from a PESA 3300/3500/3500+ Control System. Each of the four additional levels can support a matrix size of 512 x 512 inputs and outputs. These control levels must occupy a consecutive block in the level space of the PESA control system and cannot share an existing level with a PESA router. Figure 1 (on the next page) depicts a typical system block diagram of the PESA to Grass Valley control mode.

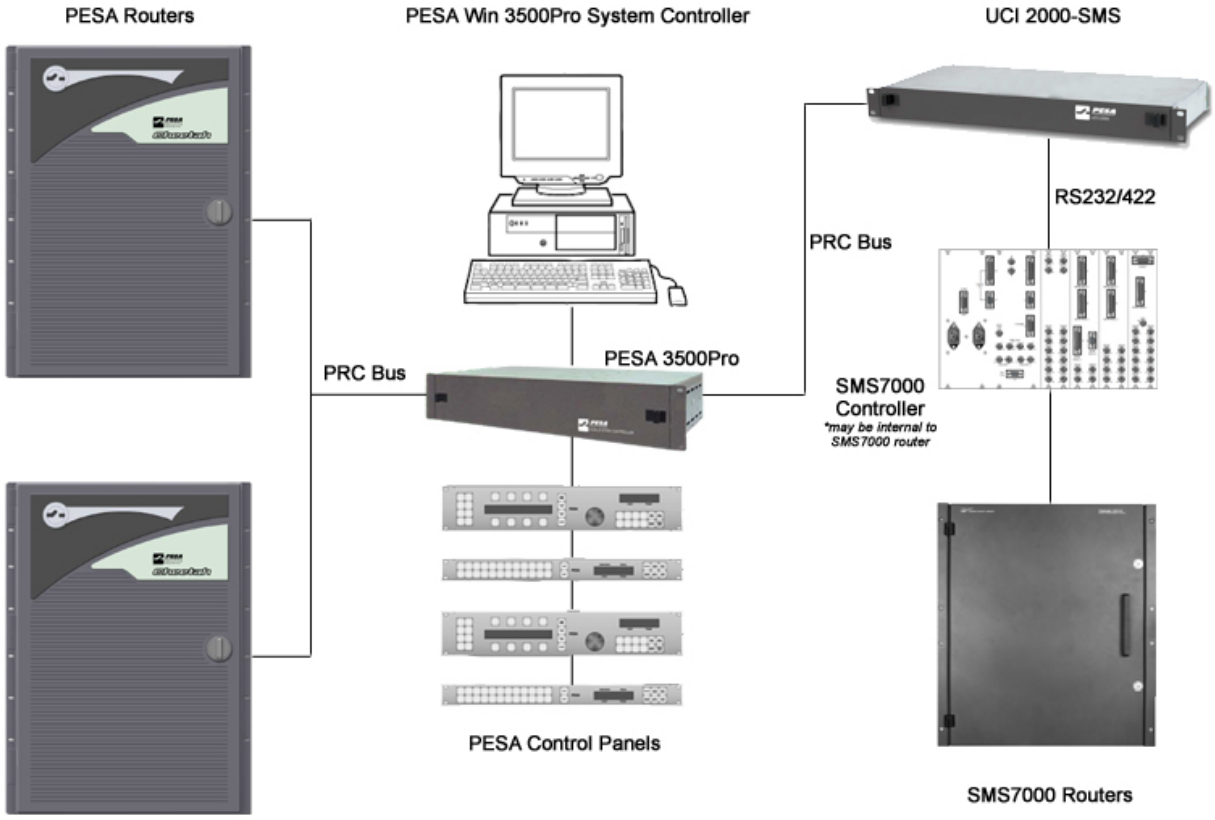

Figure 1: PESA to Grass Valley Mode

The UCI-2000-SMS receives commands from the PESA 3300/3500/3500+ system controller through its PRC Bus connection. These commands are then translated into appropriate SMS7000 commands and transmitted to the Grass Valley SMS7000 controller and routing switchers. The UCI-2000-SMS is connected to the GVG SMS7000 controller using an available Communications Interface (CIF) module on an Asynchronous Mezzanine (AMEZI) module in the SMS7000 control system hardware.

4 HARDWARE CONFIGURATION

4.1 SETTING THE OPERATING MODE

Dipswitch S1 on the UCI-2000-SMS pc board is used to set the card's operating mode. Available operating modes for the UCI-2000-SMS are listed in Table 1.

OPERATING MODE	S1-8	S1-7	S1-6	S1-5	S1-4	S1-3	S1-2	S1-1
Controlling Grass Valley Group Routers	Off	Off	Off	Off	Off	Off	Off	Off
Controlling PESA Routers*	Off	Off	Off	Off	Off	Off	**On**	Off
Factory Test Mode	**On**	**On**	**On**	**On**	**On**	**On**	**On**	Off
Board Reset	**On**	**On**	**On**	**On**	**On**	**On**	**On**	**On**
All other settings are Reserved *Not currently implemented.								

Table 1: UCI2000-SMS Operating Modes

Currently, the UCI-2000-SMS only supports the PESA to SMS7000 control mode.

4.2 SETTING THE CONTROL LEVELS

PESA To Grass Valley Group Mode:

Switches 1 – 4 of dipswitch S2 set the starting (base) strobe number of the controlled Grass Valley matrices using a binary representation according to the following table (refer to Table 2 on the next page). Valid level numbers are 1 – 15. (ON is to the right when viewing from above and the rear connectors are at the top of the board). Please note that Grass Valley Group routers cannot share a level with a PESA PRC router (i.e. expansion of an existing level) and must exist as a contiguous block of levels.

Starting Level #	S2-4	S2-3	S2-2	S2-1
Level 1	Off	Off	Off	**On**
Level 2	Off	Off	**On**	Off
Level 3	Off	Off	**On**	**On**
Level 4	Off	**On**	Off	Off
Level 5	Off	**On**	Off	**On**
Level 6	Off	**On**	**On**	Off
Level 7	Off	**On**	**On**	**On**
Level 8	**On**	Off	Off	Off
Level 9	**On**	Off	Off	**On**
Level 10	**On**	Off	**On**	Off
Level 11	**On**	Off	**On**	**On**
Level 12	**On**	**On**	Off	Off
Level 13	**On**	**On**	Off	**On**
Level 14	**On**	**On**	**On**	Off
Level 15	**On**	**On**	**On**	**On**

Table 2: Base Control Level of Grass Valley Routers

Switches 5, 6, and 7 of S6 set the number of controlled Grass Valley SMS7000 matrices according to Table 3:

S2-5	S2-6	S2-7	FUNCTION
Off	Off	Off	UCI Controls 8 GVG Levels
On	Off	Off	UCI Controls 1 GVG Levels
Off	**On**	Off	UCI Controls 2 GVG Levels
On	**On**	Off	UCI Controls 3 GVG Levels
Off	Off	**On**	UCI Controls 4 GVG Levels
On	Off	**On**	UCI Controls 5 GVG Levels
Off	**On**	**On**	UCI Controls 6 GVG Levels
On	**On**	**On**	UCI Controls 7 GVG Levels

Table 3: Number of Controlled Grass Valley Group Levels

Dipswitch S2 switches 8-10 are reserved for factory settings and should be turned OFF.

Each controlled GVG routing level can be independently enabled or disabled, for diagnostic or troubleshooting purposes, using dipswitch S4. Enable the controlled GVG levels according to the table below:

S4-x	ON	OFF
1	Level 1 Enabled	Level 1 Disabled
2	Level 2 Enabled	Level 2 Disabled
3	Level 3 Enabled	Level 3 Disabled
4	Level 4 Enabled	Level 4 Disabled
5	Level 5 Enabled	Level 5 Disabled
6	Level 6 Enabled	Level 6 Disabled
7	Level 7 Enabled	Level 7 Disabled
8	Level 8 Enabled	Level 8 Disabled

Table 4: Level Enable/Disable Control

Because of limitations that may exist with the installed base of Grass Valley Group routers in the field that may not support level settings above 8, all Grass Valley Group routers are set to start at level 1 regardless of where they "really" exist in the PESA control system. The UCI-2000 automatically offsets the base PRC strobe number when sending commands to the Grass Valley SMS7000 routers and assumes all GVG routers exist starting at level 1 (native to Grass Valley).

Dipswitch S3 (refer to Table 5) is used to configure the I/O size of the overall GVG matrix being controlled. Set dipswitch S3 to the I/O size of the largest control level (router) being controlled. Note that only 1 of the S3 dipswitches can be ON.

S3-x	MATRIX SIZE
1	8 x 8
2	16 x 16
3	32 x 32
4	64 x 64
5	128 x 128
6	256 x 256
7	512 x 512
8	Not used

Table 5: Matrix Input-Output Size

The levels (strobes), I/O range, and any other specific features of each Grass Valley Group router are configured by either setting dipswitches in the Grass Valley routers themselves or through their associated configuration software. Because these settings differ from router to router, please refer to your specific Grass Valley Group routing switcher manual for further information.

4.3 CONFIGURING THE ON-BOARD JUMPERS

The serial ports in the UCI-2000-SMS are configured using on-board hardware jumpers. Please configure the jumpers accordingly for the desired operating mode.

PESA To Grass Valley Group Mode:

J4 - J5: (COM 1: RS-422) Not Used
J14 - J16: (COM 2: RS-232) SMS7000 - *default*
Or
J14 - J15: (COM 2: RS-422) SMS7000
J7 - J9: (COM 3: RS-422) PRC Port

J1: 1 - 3
J10: 3 - 4, 5 - 6
J12: 2 - 3
J13: 1 - 2

4.4 SOFTWARE CONFIGURATION

PESA to Grass Valley Group Mode:

To enable the Grass Valley Group routers in the system, they must be added to the configuration in the PESA Win3500 Plus control system software. The Grass Valley Group routers are added and configured in the Win3500 Plus software exactly as if they were PESA routers. Please refer to the Win 3500 Plus instruction manual for more information.

The Grass Valley SMS7000 controller must be in place and be configured with a default, or numeric, source & destination I/O map with entries for all of the inputs and outputs on each of the GVG routing switcher control levels. For example, source #1 would be configured as input 1 on each of the control levels, source #2 would be configured as input 2 on each of the control levels, and so on. Tables 6 and 7 can be used as a guide. Please refer to the SMS7000 Control System documentation for more information.

Source Name	Source Num	Level 1 Input #	Level 2 Input #	Level 3 Input #	Level 4 Input #
IN001	1	1	1	1	1
IN002	2	2	2	2	2
IN003	3	3	3	3	3
IN004	4	4	4	4	4
…	…	…	…	…	…
INmax	MAX IN	MAX	MAX	MAX	MAX

Table 6: Example SMS7000 Source Configuration

Destination Name	Destination Num	Level 1 Output #	Level 2 Output #	Level 3 Output #	Level 4 Output #
OUT001	1	1	1	1	1
OUT002	2	2	2	2	2
OUT003	3	3	3	3	3
OUT004	4	4	4	4	4
…	…	…	…	…	…
OUTmax	MAX OUT	MAX	MAX	MAX	MAX

Table 7: Example SMS7000 Destination Configuration

4.5 REAR CONNECTOR PINOUTS:

COM1, COM4 – Unused:

Pin	RS232 Fn	RS422 Fn
1	CD	Ground
2	RXD	RX+
3	TXD	TX-
4	DTR	Ground
5	Ground	Ground
6	DSR	Ground
7	RTS	RX-
8	CTS	TX+
9	NC	Ground

Table 8: COM1, COM4 Connector Pinouts

COM2 – SMS7000 Connection:

Pin	RS232 Fn	RS422 Fn
1	CD	Ground
2	RXD	RX+
3	TXD	TX-
4	DTR	Ground
5	Ground	Ground
6	DSR	Ground
7	RTS	RX-
8	CTS	TX+
9	NC	Ground

Table 9: COM2 Connector Pinouts

COM3 – PESA PRC Bus Connection:

Pin	RS422 Fn
1	Ground
2	TX+
3	RX-
4	Ground
5	Ground
6	Ground
7	TX-
8	RX+
9	Ground

Table 10: COM3 PRC Matrix Connector Pinouts

4.6 CABLE CONNECTIONS

PESA to Grass Valley SMS7000 Mode:

COM1: Not Used

COM2: RS232/422SMS7000 connection. Connect to SMS7000 controller (9600,N,8,1)

COM3: PRC - Connect to PESA 3300/3500/3500+ Controller

SYSTEM V CONTROL (37-pin): Not Used

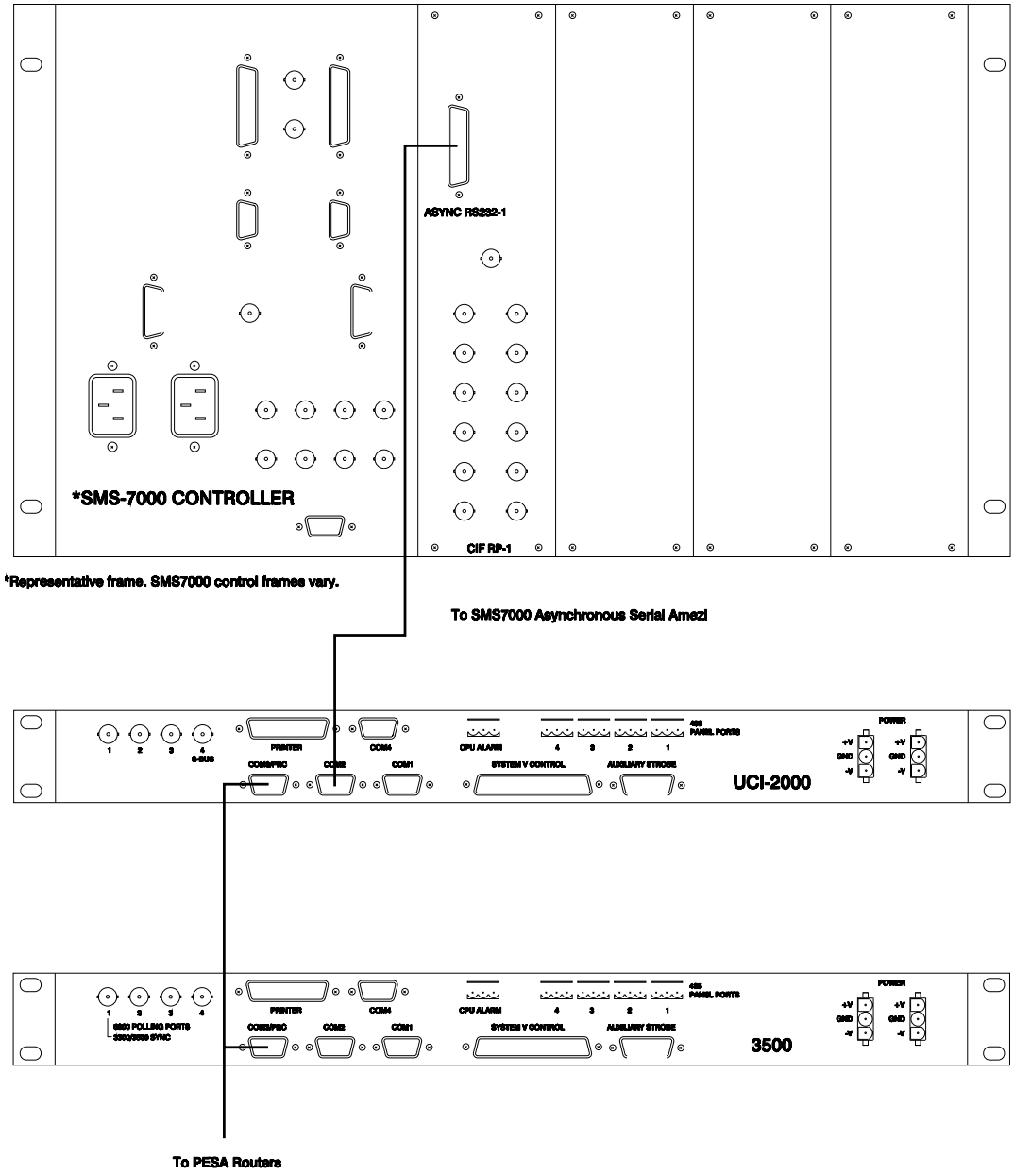

Figure 2: Control Cable Connections, PESA to Grass Valley Mode

Please refer to Table 9 and your GVG SMS7000 manuals for pinout information when creating the UCI-2000-SMS to SMS7000 Controller serial control cable. Connect the PESA 3500 series controller to the UCI-2000-SMS using the standard 9-pin PESA PRC cable (pin-to pin).