PESA
UCI-2000-GVG

Protocol Converter

for

Grass Valley Group SMS7000 Control System

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INTRODUCTION

PESA's UCI-2000-GVG protocol converter is designed to provide an interface between a Grass Valley Group SMS7000 controller and PESA routing switchers. The UCI-2000-GVG communicates with the Grass Valley Group SMS7000 control system using the alien SWP protocol.

The UCI-2000-GVG provides control of up to four physical PESA PRC-based routing levels from the Grass Valley Group SMS7000 Control System. A matrix size of up to 1024 x 1024 inputs and outputs is supported on each level and may be comprised from several routing switcher frames. These physical PESA control levels cannot share existing levels with other matrices in the GVG routing space, they must be configured as additional levels within the SMS7000 control space. Figure 1 depicts a typical system block diagram.

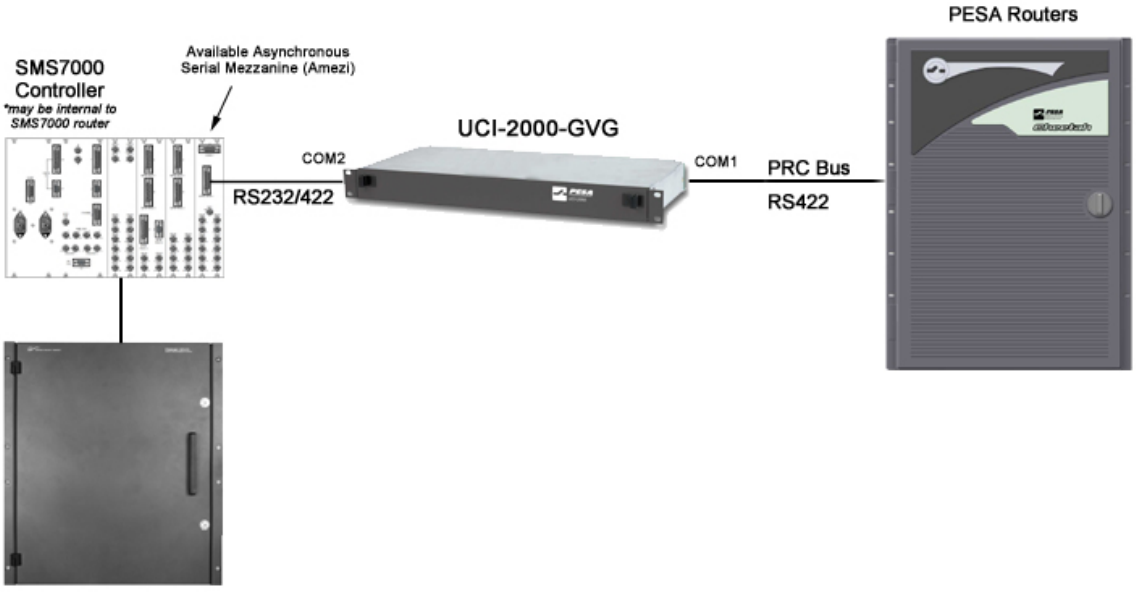


Figure 1: ***SMS7000 to PESA System Overview***

The UCI-2000-GVG receives commands from the SMS7000 system controller through a serial SWP protocol connection. These commands are then translated into appropriate PESA PRC Bus commands and transmitted to the PESA routing switcher(s). The UCI-2000-GVG 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.

HARDWARE CONFIGURATION

SETTING THE OPERATING MODE

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

OPERATING MODE	S1-8	S1-7	S1-6	S1-5	S1-4	S1-3	S1-2	S1-1
Controlling PESA Routers	Off	Off	Off	Off	Off	Off	Off	**On**
Factory Hardware Reset	**On**	**On**	**On**	**On**	**On**	**On**	**On**	**On**
All other settings are Reserved								
X = don't care.								

Table 1: ***UCI2000-GVG Operating Modes***

SETTING THE CONTROL LEVELS

PESA routers are to be set to start at strobe level 1 regardless of the actual physical level numbers configured in the SMS7000 control system. If multiple physical PESA levels are configured in the SMS7000 controller, strobe the different PESA router frame types accordingly. Typically the levels are numbered (strobed) in the order in which they are added to and appear in the amezi configuration.

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

CONFIGURING THE ON-BOARD JUMPERS

The serial ports in the UCI-2000-GVG are configured using on-board hardware jumpers. Please configure the jumpers as follows:

J4 - J5: (COM 1: RS-422) PESA PRC Bus
J14 - J15: (COM 2: RS-422) SMS7000 - *default*

or

J14 - J16: (COM 2: RS-232) SMS7000
J7 - J9: (COM 3: RS-422) Not used
J1: 1 - 3
J10: 1 - 3, 5 - 7
J12: 2 - 3
J13: Not Installed (Remove)

SOFTWARE CONFIGURATION

To enable the PESA routers in the system, they must be added to the configuration in the GVG SMS7000 control system software. The UCI-2000 is connected to the SMS7000 control frame using an available Communications Interface (CIF) module on an Asynchronous Mezzanine (AMEZI) module. The AMEZI must be configured to use the ProBel protocol with the following communication settings: RS422, 38400, N, 8, 1. Redundancy is not supported using a single UCI-2000, so the coprocessor redundancy should be set to None. The Third-Party Matrix Enable Option must be resident in the SMS7000 control system to allow the use of the ProBel protocol.

The physical I/O numbers of the PESA router are used in SMS7000 Source and Destination definitions exactly as if they were GVG routers. Please refer to the SMS7000 instruction manual for further information.

REAR CONNECTOR PIN-OUTS

COM1 – PESA PRC ROUTER CONNECTION

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

Table 2: ***COM1 PRC Controller Connector Pinout***

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 3: ***COM2 Connector Pin-out***

COM3 – NOT USED

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

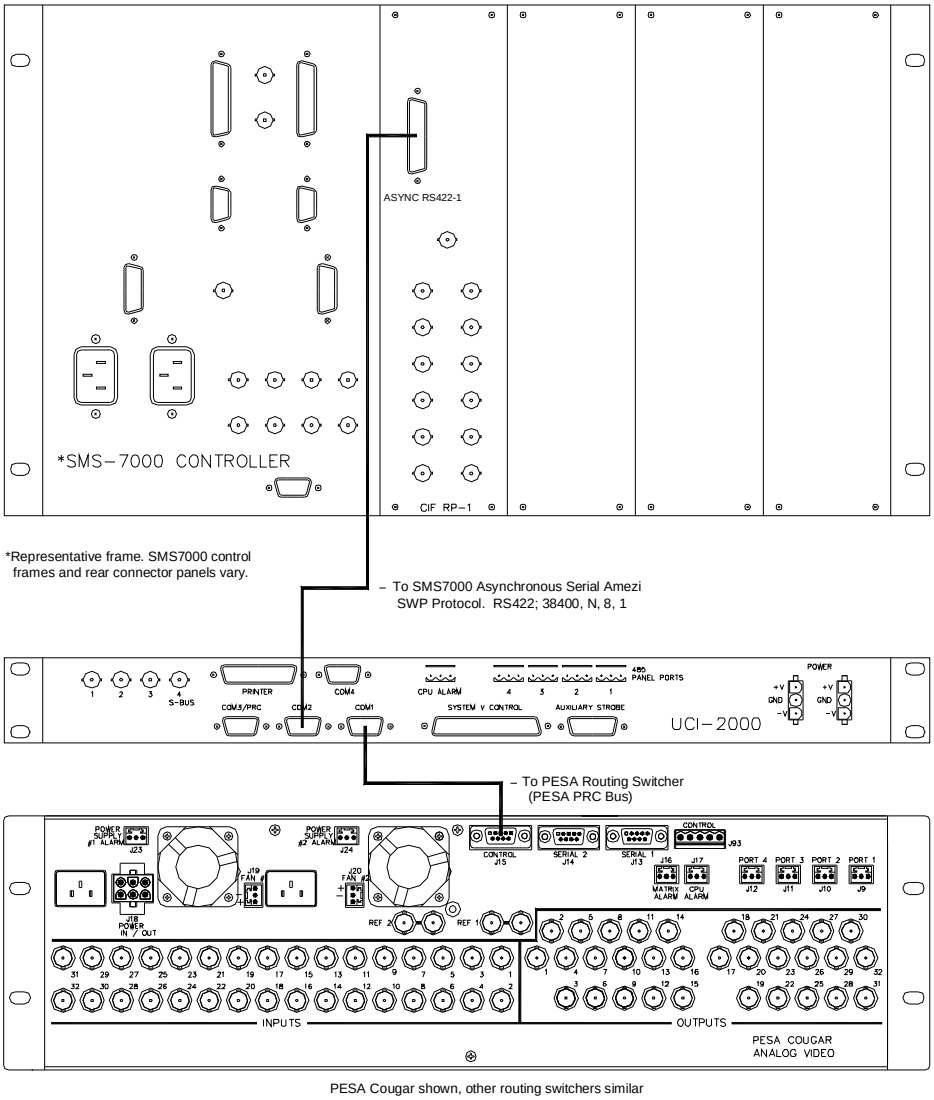
Table 4: ***COM3 PRC Matrix Connector Pinout (Not Used – shown for reference only)***

Please refer to Table 4 and your GVG SMS7000 manuals for pin-out information when creating the UCI-2000-GVG to SMS7000 Controller serial control cable. Connect the PESA Routing switcher to the UCI-2000-GVG using the standard 9-pin PESA PRC cable (pin-to pin).

CABLE CONNECTIONS

GRASS VALLEY SMS7000 TO PESA MODE

- COM1: PRC - Connect to PESA Routing Switchers. A "Y" cable may be necessary if multiple routing switchers are used.
- COM2: RS232/422SMS7000 connection. Connect to SMS7000 controller (38400,N,8,1)
- COM3: Not Used
- SYSTEM V CONTROL (37-pin): Not Used



PESA Cougar shown, other routing switchers similar

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


PESA