APPENDIX B - MOUNT SPECIFIC DATA
For the
Patriot 4.8m Trailer Antenna System

Revision: 4 November 2010, Software Version 1.60

1.1 Appendix B Organization

This appendix is provided as a supplement to the baseline RC3000 User's Manual. The corresponding paragraphs in the baseline RC3000 manual are referred to when data specific to the referenced mount is described.

1.2 Mount Model

This appendix describes the RC3000 antenna controller unit variation built for use by the Patriot 4.8m trailer antenna. This mount model type is designated as “PL”.

A RC3000D version of hardware is used in order to provide drive signals to a separate Antenna Interface Unit (AIU).

1.3.2 System Interface Requirements

The PL ACU follows the standard RC3000 interface requirements with the following modifications:

- Azimuth, elevation and polarization resolvers present

- Rather than driving azimuth, elevation and polarization motors directly, the PL ACU links to an Antenna Interface Unit (AIU). The AIU will receive control signals from the ACU and provide greater drive capability than available from a standard rack-mounted RC3000 ACU alone. The AIU itself is housed in a weatherproof enclosure.

- The AIU also signals the ACU if azimuth or elevation drive error conditions exists.

- The "stow tail" range of movement is in the up direction rather than the down direction. No movement is allowed below the DOWN elevation limit. Elevation movement will be allowed above the UP limit only when the AZIMUTH STOW switch is active and will be stopped when the elevation STOW limit is reached.

2.0 INSTALLATION

2.1.4 Inclinometer Orientation

The inclinometer should be rigged with the reflector in the 45 degree look angle position.

2.3.2 Elevation Calibration

Elevation Reference Position

From the reflector refernce position, the elevation reference voltage should be close to 2.70 V. The elevation displayed at this voltage will be 45.0 reflecting the inclinometer's reference position.

3.0 Detailed Operation

The PL version of the RC3000 operates as described in the baseline RC3000 User's Manual with a few modifications as noted below.

3.2.2.8 Settings

When an azimuth or elevation drive alarm condition exists (see 3.4), the additional messages " <5>RESET AZ ALARM" and "RESET EL ALARM" appear on lines 2 and 3 of the SETTINGS mode screen. Pressing the 5 or 6 key will reset the alarm condition until the condition appears again.

```
1-AUTOPEAK:OFF                  SETTINGS
2-  AP SIG:SS1          <5>RESET AZ ALARM
<6>RESET EL ALARM          <0>RESET DRIVE
<1-2>CHANGE SETTING             <MODE>MENU
```

3.4 Alarm Displays

EMERGENCY STOP / STOW CLAMP

This alarm will be triggered anytime that the emergency stop switch or one of the two stow clamp switches are sensed open from the AIU. When triggered, this alarm will not allow further azimuth or elevation movement until the switches are all sensed to be closed. This alarm will reset itself as soon as all switches are closed.

AZIMUTH DRIVE ERROR

ELEVATION DRIVE ERROR

These alarms will be triggered anytime an azimuth or elevation drive error condition is signaled by the AIU. When triggered, this alarm will not allow further movement in the particular axis until it has been cleared by the user as described in the SETTINGS mode. If the AIU is still signaling the condition, the alarm will reappear soon after being cleared.

3.3.1.2 Reset Defaults

The following table supplies the default configuration item values for this model of the RC3000.

Space has also been provided to record installation specific changes to the configuration items. Note: recording of installation specific changes to defaults may prove valuable when trying to restore system configuration.

CONFIGURATION ITEM	**PL Default**					**INSTALL VALUE**
SYSTEM DEFINITION						
GPS	1					
COMPASS MOUNT	2					
MODE	2					
antenna_size_cm	480					
Waveguide	0					
ELEVATION CALIBRATION						
Zero Voltage	2.70					
Elev_offset	0.0					
Up_elev_limit	90					
Down_elev_limit	0					
Elevation_Scale_Factor	50.00					
Elevation_look_configuration	1					
Elevation_Resolver_Offset	-120.00					
Elevation_Resolver_Direction	0					
AZIMUTH CALIBRATION						
Reference Voltage	2.50					
Fluxgate_offset	0.0					
ccw_azim_limit	165					
Cw_azim_limit	165					
Azim_Resolver_Offset	-180					
Azim_Resolver_Direction	0					
POLARIZATION CAL						
Zero Voltage	2.50					
Polarization_Offset	0.0					
CW Polarization Limit	100.0					
CCW Polarization Limit	100.0					
Pol_Scale_Factor	43.19					
Polarization_type	2					
H/V_Reference	1					
Default Horizontal Position	-45.0					
Default Vertical Position	45.0					
Pol_Automove_Enable	1					

CONFIGURATION ITEM	**PL Default**					**INSTALL VALUE**
SIGNAL PARAMETERS						
RF Lock Type	0					
RF Delay	0.1					
Channel 1 Polarity	1					
Channel 1 Threshold	100					
Channel 1 Delay	0.1					
Channel 1 Lock Type	0					
Channel 2 Polarity	1					
Channel 2 Threshold	100					
Channel 2 Delay	0.1					
Channel 2 Lock Type	0					
AUTOPEAK						
Autopeak Enabled	0					
Signal Source	1					
RF Band	1					
Spiral Search AZ Limit	3					
Spiral Search EL Limit	3					
Spiral Signal Threshold	200					
Scan Range Limit	8					
Scan Signal Threshold	200					
Tilt Compensation	0					

CONFIGURATION ITEM	**PL Default**					**INSTALL VALUE**
AZIMUTH POT DRIVE						
Fast/Slow Threshold	2.5					
Maximum Position Error	0.20					
Coast Threshold	0.1					
Maximum Retry Count	3					
AZIMUTH PULSE DRIVE						
Pulse Scale Factor	2406					
CW Pulse Limit	64000					
CCW Pulse Limit	100					
Fast/Slow Threshold	50					
Maximum Position Error	0					
Coast Threshold	3					
Maximum Retry Count	3					
AZIM DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					
ELEV POT DRIVE						
Fast/Slow Threshold	3.0					
Maximum Position Error	0.2					
Coast Threshold	0.4					
Maximum Retry Count	3					
ELEV PULSE DRIVE						
Pulse Scale Factor	1646					
UP Pulse Limit	64000					
Down Pulse Limit	100					
Fast/Slow Threshold	50					
Maximum Position Error	0					
Coast Threshold	3					
Maximum Retry Count	3					
ELEV DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					
POL POT DRIVE						
Fast/Slow Threshold	2.0					
Maximum Position Error	0.5					
Coast Threshold	0.3					
Maximum Retry Count	3					
POL DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					

CONFIGURATION ITEM	**PL Default**					**INSTALL VALUE**
TRACK						
Search Enable	0					
Max Track Error	3					
Search Width	4					
Peakup Holdoff Time	120					
Track Signal Source	2					
Signal Sample Time	2					
REMOTE CONTROL						
Remote Enabled	1					
Bus Address	50					
Baud Rate	6					
Jog Duration	20					
STOW / DEPLOY						
AZ STOW	0.0					
EL STOW	-67.5					
PL STOW	0.0					
AZ DEPLOY	0.0					
EL DEPLOY	22.6					
PL DEPLOY	0.0					
PL ENABLED	2					
EL_TIME	0					
SHAKE						
AZ1	-40.0					
EL1	30.0					
PL1	-10.0					
AZ2	50.0					
EL2	40.0					
PL2	10.0					
AZ3	0.0					
EL3	-67.5					
PL3	0.0					
CYCLES	5					
DELAY	1					

4.0 Schematics