# APPENDIX B - MOUNT SPECIFIC DATA

# For

# VERTEX 1.8m. SMK-LT with multiple feeds

This appendix describes RC3000 operations unique for the Vertex 1.8m. SMK-LT mount when that mount can accept multiple feeds.

Revision History. Date: 12 May 2005 - Software Version: 1.50

### 1.1 Manual Organization

This appendix is provided as a supplement to the baseline RC3000 manual. Differences between this version and the operation described in the baseline RC3000 manual are noted on a paragraph by paragraph basis.

### 1.2 RC3000 Features

All features described in the baseline manual are supported.

**Software Configuration**. This version will be designated as VD.

Software will be designated as RC3K-VD-xxx

### 1.3.2 System Interface Requirements

The following unique interface requirements exists for the VE version:

- Feed type is sensed via the RC3000's accessories port.

### 1.3.3 Operational Overview

Operation of the VD version is almost identical to that described in the baseline manual. Differences will be noted in the appropriate paragraphs.

**2.0 INSTALLATION**

**2.1.4 Electronic Clinometer**

The inclinometer should be rigged with the face vertical. With the face vertical, the inclinometer should be mounted so that it is 16.5 (35.0 –18.5) degrees from vertical. This orientation will allow linear output from the inclinometer to a RF angle of 90 degrees.

**2.2.4 Limit Switches**

?? anything unique ??

**2.2.7 Accessories**

Polarization identification signals are input via the J8 accessories port.

| POL ID bit | J8 pin | Internal Signal |
|---|---|---|
| **f** | | **EPA3** |
| **j** | | **pcu_data_3** |
| **E** | | **EPA2** |
| **R** | | **EPA4** |

**2.3.4 Polarization Calibration.**

Separate reference voltages are maintained for the three linear feed types. At power up the linear feed type is sensed and the reference voltage stored for that feed type is used. Therefore the reference voltage for each linear feed type used should be separately set.

**3.2.1 Manual Mode.**

If the feed type input has sensed that a circular polarized feed is installed, no POL field will be displayed since the RC3000 assumes that there is no need for polarization feedback from a circular polarized system.

**3.2.2.2 Stow**

As part of the STOW sequence the polarization axis will be driven to the polarization CCW limit when a linear feed is attached. If the polarization axis is not at the CCW limit, elevation movement below the DOWN limit will not be allowed.

### 3.3.2.5 Limits Maintenance

```
AZIM CW:0  CCW:1  STOW:0           LIMITS
ELEV UP:1   DN:1  STOW:1  f:1 E:1 ACTIVE
 POL CW:0  CCW:1  STOW:1  j:0 R:0  REM:1
<BKSP>MAKE LIMITS INACTIVE    <MODE>EXIT
```

**REM:1**

In addition to the normal limit switch state information, this screen also shows the state of the handheld remote/computer switch. The REM field will be 1 if the handheld remote is attached and the remote/computer switch is at remote. If the switch is at computer or if the handheld remote is not attached, the REM field will indicate 0.

**f:1 E:1**

**j:0 R:0**

The state of the feed type inputs is also shown. The letters f, j, E and R correspond to corresponding pin in the connector. A 1 indicates that a switch closure is sensed at the pin. Note that E actually represents a logical OR'ing of pins E and D. The following table shows how the feed input combinations are interpretted.

| Pin f | Pin j | Pin E | Pin R | Sensed Feed Type |
|---|---|---|---|---|
| 0 | 0 | 0 | 1 | C-Band Linear |
| 0 | 0 | 1 | 0 | C-Band Circular |
| 0 | 1 | 0 | 0 | X-Band Circular |
| 0 | 1 | 0 | 1 | Ku-Band Linear |
| 1 | 1 | 0 | 0 | Ka-Band Circular |
| 1 | 1 | 0 | 1 | Ka-Band Linear |
| All other combinations | | | | INVALID FEED TYPE |

### 3.3.1.2 Reset Defaults

The following table supplies the default configuration item values for this mount. 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** | **VD** | | | | | **INSTALL VALUE** |
|---|---|---|---|---|---|---|
| **SYSTEM DEFINITION** | | | | | | |
| Antenna_size_cm | 180 | | | | | |
| GPS | 1 | | | | | |
| COMP | 1 | | | | | |
| COMP TYPE | 1 | | | | | |
| MODE | 2 | | | | | |
| WAVE | 0 | | | | | |
| **ELEVATION CALIBRATION** | | | | | | |
| Zero Voltage | 1.10 | | | | | |
| Elev_offset | 0.0 | | | | | |
| Up_elev_limit | 90 | | | | | |
| Down_elev_limit | 10 | | | | | |
| Elevation_Scale_Factor | 50.00 | | | | | |
| Elevation_look_configuration | 1 | | | | | |
| **AZIMUTH CALIBRATION** | | | | | | |
| Reference_voltage | 2.50 | | | | | |
| Azim_Scale_Factor | 60.50 | | | | | |
| Fluxgate_offset | 0.0 | | | | | |
| ccw_azim_limit | 135 | | | | | |
| Cw_azim_limit | 145 | | | | | |
| **POLARIZATION CAL** | | | | | | |
| Zero Voltage | 2.50 | | | | | |
| Polarization_Offset | 0.0 | | | | | |
| CW Polarization Limit | 90.0 | | | | | |
| CCW Polarization Limit | 90.0 | | | | | |
| Pol_Scale_Factor | 37.5 | | | | | |
| Polarization_type | 2 | | | | | |
| H/V_Reference | 1 | | | | | |
| Default Horizontal Position | -45.0 | | | | | |
| Default Vertical Position | 45.0 | | | | | |
| Pol_Automove_Enable | 1 | | | | | |
| **SIGNAL PARAMETERS** | | | | | | |
| RF_Lock | 0 | | | | | |
| RF_Time | 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 | | | | | |

| **CONFIGURATION ITEM** | **VD** | | | | | **INSTALL VALUE** |
|---|---|---|---|---|---|---|
| **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 | 0 | | | | | |
| **AZIMUTH POT DRIVE** | | | | | | |
| Fast/Slow Threshold | 1.5 | | | | | |
| Maximum Position Error | 0.20 | | | | | |
| Coast Threshold | 0.1 | | | | | |
| Maximum Retry Count | 3 | | | | | |
| **AZIMUTH PULSE DRIVE** | | | | | | |
| Pulse Scale Factor | 2850 | | | | | |
| CW Pulse Limit | 64000 | | | | | |
| CCW Pulse Limit | 1000 | | | | | |
| Fast/Slow Threshold | 50 | | | | | |
| Maximum Position Error | 1 | | | | | |
| Coast Threshold | 3 | | | | | |
| Maximum Retry Count | 3 | | | | | |
| **AZIM DRIVE MONITORING** | | | | | | |
| Jam Slop | 1 | | | | | |
| Runaway Slop | 400 | | | | | |
| Fast Deadband | 1000 | | | | | |
| Slow Deadband | 500 | | | | | |
| **ELEV POT DRIVE** | | | | | | |
| Fast/Slow Threshold | 1.5 | | | | | |
| Maximum Position Error | 0.2 | | | | | |
| Coast Threshold | 0.4 | | | | | |
| Maximum Retry Count | 3 | | | | | |
| **ELEV PULSE DRIVE** | | | | | | |
| Pulse Scale Factor | 2204 | | | | | |
| UP Pulse Limit | 64000 | | | | | |
| Down Pulse Limit | 1000 | | | | | |
| Fast/Slow Threshold | 50 | | | | | |
| Maximum Position Error | 1 | | | | | |
| Coast Threshold | 3 | | | | | |
| Maximum Retry Count | 3 | | | | | |
| **ELEV DRIVE MONITORING** | | | | | | |
| Jam Slop | 1 | | | | | |
| Runaway Slop | 200 | | | | | |
| Fast Deadband | 1000 | | | | | |
| Slow Deadband | 500 | | | | | |

| **CONFIGURATION ITEM** | **VD** | | | | | **INSTALL VALUE** |
|---|---|---|---|---|---|---|
| **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 | | | | | |
| **TRACK** | | | | | | |
| Search Enable | 0 | | | | | |
| Max Track Error | 3 | | | | | |
| Search Width | 4 | | | | | |
| Peakup Holdoff Time | 120 | | | | | |
| Track Signal Source | SS1 | | | | | |
| Signal Sample Time | 2 | | | | | |
| **REMOTE CONTROL** | | | | | | |
| Remote Enabled | 1 | | | | | |
| Bus Address | 50 | | | | | |
| Baud Rate | 6 | | | | | |
| Jog | 20 | | | | | |
| **STOW / DEPLOY** | | | | | | |
| AZ STOW | 0.0 | | | | | |
| EL STOW | -67.5 | | | | | |
| PL STOW | -95.0 | | | | | |
| AZ DEPLOY | 0.0 | | | | | |
| EL DEPLOY | 18.8 | | | | | |
| PL DEPLOY | 0.0 | | | | | |
| PL ENABLED | 2 | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |