

APPENDIX B - MOUNT SPECIFIC DATA

For

Vizada Elevation Warning Modification

Revision Date: 30 June 2010 - Software Version: 1.60

1.1 Manual Organization

This appendix is provided as a supplement to the QDMA terminal (VN) mount specific data appendix. It describes the software modifications requested by Vizada to incorporate an additional "guard" for verifying that the IBUC frame will not cause damage above a programmable elevation angle.

1.2 Mount Models

Software Configuration.

DESIGNATION	MODEL
KE	Vertex QDMA (VN) with elevation warning modification

NOTE: This modification is in addition to the existing unique items for the QDMA mount. All mount unique features are described in the mount specific appendix for the QDMA.

1.3.3 Operational Overview

This software modification adds a unique alarm condition that is triggered whenever the elevation axis is moved up to a defined angle. The alarm condition will automatically halt any further up movement until the user has pressed two different keys in sequence in order to verify that it is safe for the elevation axis to move up further.

The details of the software modification are described in section 3.0 below.

2.3.2 Elevation Calibration

The only unique calibration step required by this modification is to correctly set the UP limit in the ELEVATION CALIBRATION screen as described in 3.3.1.2.2 below.

3.0 Detailed Operation

3.2.1 Manual Mode.

If the elevation up limit is reached as the mount is manually being moved up, the "ODU POS" alarm will begin flashing and the "CHECK IBUC FRAME<MODE> OR <ENTER>PROCEED" message will be displayed on the bottom line.

```
AZIM:  0.0 STOW    CH4: 50          MANUAL
ELEV: -42.5 DOWN  SAT:TELSTAR 402
POL.  30.0 V      SPD:FAST          CST
CHECK IBUC FRAME<MODE> OR <ENTER>PROCEED
```

If the IBUC frame is in a safe position, the user may proceed by pressing the ENTER key. At this time the message "VERIFY MOVEMENT <MODE>MENU <BKSP>MANUAL" will be displayed prompting the user to confirm that the IBUC frame is truly safe.

```
AZIM:  0.0 STOW    CH4: 50          MANUAL
ELEV: -42.5 DOWN  SAT:TELSTAR 402
POL.  30.0 V      SPD:FAST          CST
VERIFY MOVEMENT <MODE>MENU <BKSP>MANUAL
```

After pressing the BKSP key, the "ODU POS" alarm state will be cleared and further movement up may be attempted.

NOTE: There is 1.0 degrees of hysteresis built into the ODU POS alarm triggering point. If, for example, the alarm happens at 70.0 degrees, the alarm will not turn off until the elevation angle is moved below 69.0.

3.2.2.2 Stow

In a similar fashion to MANUAL mode, when the elevation up limit is reached during elevation up movement the "ODU POS" alarm will begin flashing and the message "CHECK IBUC FRAME<MODE> OR <ENTER>PROCEED" will be displayed.

```
AZIM:-123.4 (  0.0)          STOW
ELEV:  55.1 ( -67.5)
POL:  -56.7 (  0.0)
CHECK IBUC FRAME<MODE> OR <ENTER>PROCEED
```

The user will be prompted to check the IBUC frame and press the ENTER key to proceed. After pressing the ENTER key, the message "VERIFY MOVEMENT <BKSP>CONTINUE TO STOW" will be displayed prompting the user to confirm safe IBUC position.

```
AZIM:-123.4 (  0.0)          STOW
ELEV:  55.1 ( -67.5)
POL:  -56.7 (  0.0)
VERIFY MOVEMENT <BKSP>CONTINUE TO STOW
```

After pressing the BKSP key, the "ODU POS" alarm state will be cleared and further movement will be automatically resumed.

3.3.1.2.2 Elevation Calibration

```
REF_V:1.69 OFF: 0.0          CONFIG-ELEV
DOWN: 0   UP: 70.0   SF:50.00
LOOK:1
SET UP LIMIT <0-90 DEGREES>
```

UP: SET UP LIMIT <0-90 DEGREES>

In most RC3000 software versions, the up_elev_limit configuration specifies the valid elevation operating range in degrees. The main use in software for this value is to trigger the "ELEV RANGE ERROR" in the LOCATE mode.

For the KE version of software, the up_elev_limit is used as the trigger position for the "ODU POS" alarm state.

WARNING: the alarm condition is triggered by comparing the elevation angle derived from the inclinometer and the trigger position set by this configuration item. If the antenna platform has any tilt, it can alter the physical position of the antenna where the inclinometer will read a certain angle. A reasonable amount of platform tilt should be factored into the value programmed into the UP limit.

NOTE: the up_elev_limit will still trigger the "ELEV RANGE ERROR" as in other software versions. A new configuration item was not included since any automatic elevation movement (as during LOCATE) would be stopped by the ODU POS alarm anyway.

3.3.1.2 Reset Defaults

The only configuration item default value that has been changed (compared to VN software) is the UP limit described above. The reset default value has been changed from 90 to 50 degrees to try to ensure safe operation upon resetting of configuration item values.

3.4 Alarm Displays

ODU POS

This alarm will be triggered anytime the sensed elevation angle reaches the programmed UP limit. When triggered, this alarm will not allow further up movement until it has been cleared by the user actions described above for the MANUAL and STOW modes.