

**FSM-5 Full Spherical Mount**  
DC-18 GHz.



Installation and Configuration Guide  
x000 Series Positioners

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# System Introduction

The FSM-5 Full Spherical Mount enables your x000 series positioner to perform unobstructed, phase centered spherical measurements of small to medium sized antennas. This guide will cover the installation of the FSM onto your positioner and the configuration of the DAMS Antenna Measurement Studio software.

When the FSM is fully installed and configured the Turntable of your x000 positioner will be the Elevation axis and the FSM mount will be the new Azimuth Axis.

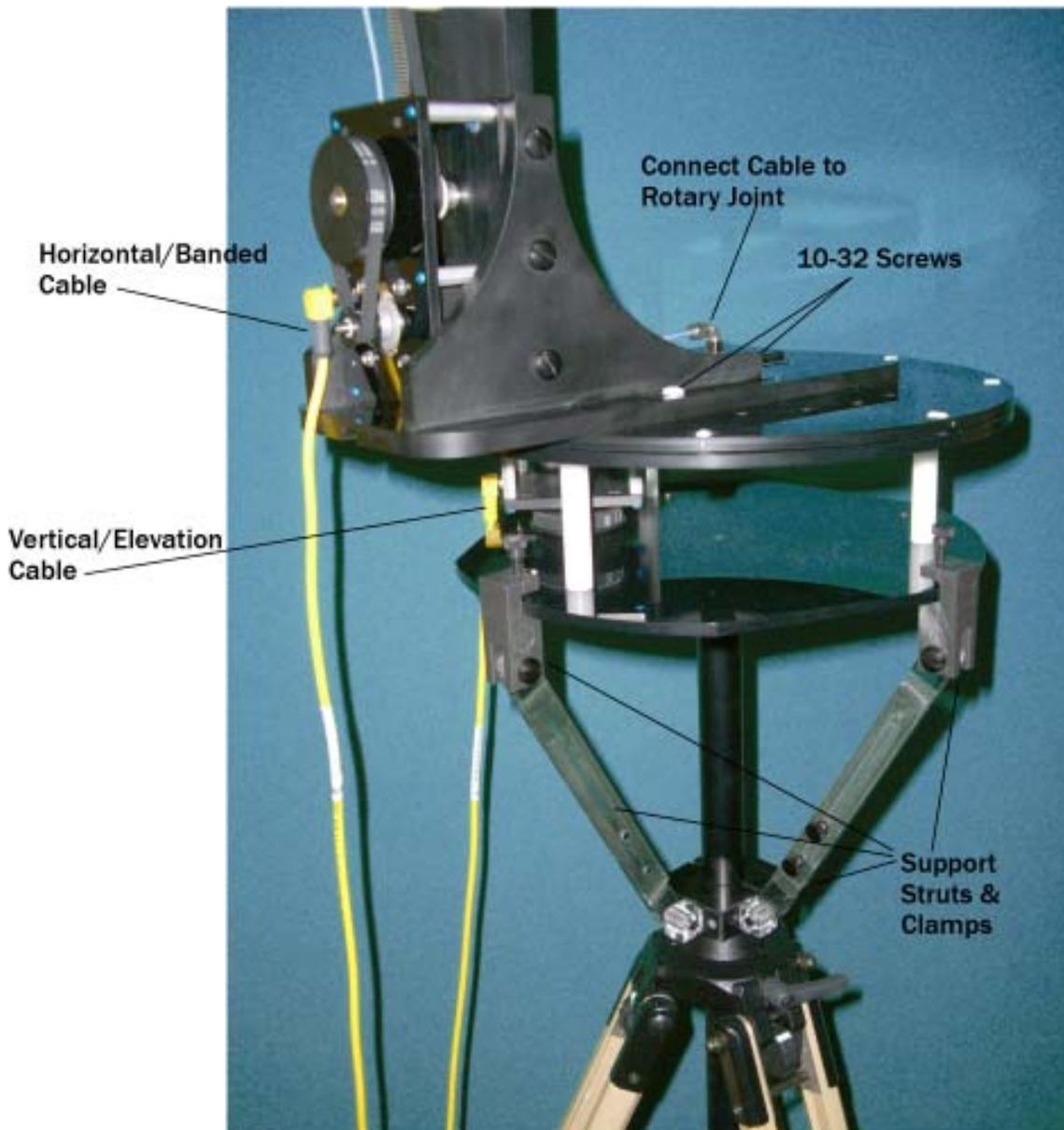
## DAMS x000 series FSM package contents.

- FSM-5 DC-18 GHz. Full Spherical Mount
- Hardware for mounting FSM to x000 series mounting plates.
- Turntable Support Struts
- Precision 90 deg. SMA elbow.
- AUT mounting hardware
- Precision tripod (not shown)
- Tools (not shown, only included with upgrade)



# Hardware Setup and Mounting

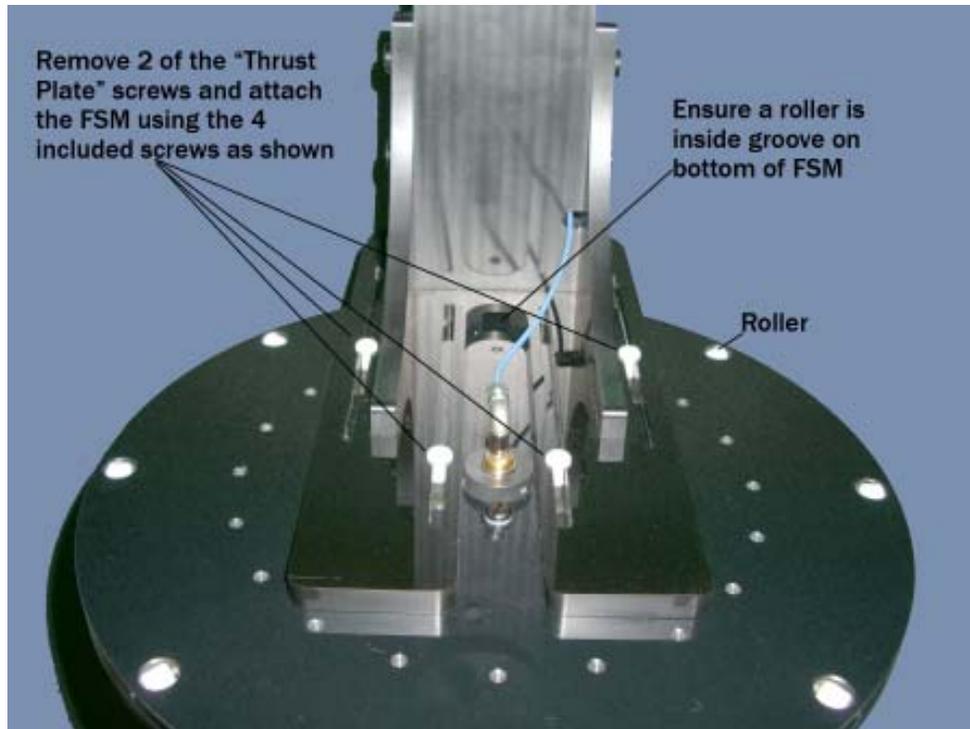
1. Disconnect all cables from your DAMS Positioner, and remove the tripod mounting plate from the bottom of the system.
2. Setup the wood tripod and extend the neck about 14"
3. Carefully thread the DAMS positioner onto the tripod.
4. Attach the support struts as shown in the pictures



Overall Assembly

## Hardware Setup and Mounting (contd.)

5. Remove two of the Thrust Plate screws to make room for the FSM Mount.
6. Attach the FSM to the top of the DAMS positioner using the included screws as shown in the attached pictures. The mount is adjustable to allow you to “phase center” the antenna on the Elevation/Vertical Axis.
7. Connect the cables as shown in the attached pictures.



**Mounting Diagram No. 2**



**Control Cable**



**Controller Connection**

## FSM Mounting Examples

To make proper spherical measurement you must phase center the antenna over the rotation axis. The examples below show the various positions that can be configured. Each configuration below allows a range of movement allowing precise centering. (x100 positioner shown for reference only)

**NOTE: The “T” block and flange bolts are not used with x000 series positioners**

### CENTER MOUNT

This position is ideal for very short antennas.



### MID MOUNT

This position provides a fairly wide centering range.



### EDGE MOUNT

For very tall / long antennas it may be necessary to use a support mechanism located at the opposite side of the turntable.



# Installing the Controller and Software

## CONTROLLER INSTALLATION- DAMS x000 Series

**\* The Controller should already be configured and working \***

**If this step has not been completed, please see the regular users manual**

## SOFTWARE CONFIGURATION- DAMS x000 Series

**NOTE: If upgrading your system please follow the upgrade instructions below before continuing**

1. Start the DAMS Software and click “positioner settings”
2. Place a checkmark in the “Full Spherical Mount” box.
3. Press the “save button” then the “QUIT” button to save changes and exit the software.
4. Restart the software, it should now show a picture of your positioner with the FSM attachment.

## SOFTWARE UPGRADE – When upgrading an existing x000 installation with the FSM

1. Make a backup of c:\dams before continuing.
2. Install the CD that was included with the FSM
3. Start the software and press the “import configuration” button to import your old configuration including license key.
4. If your old license was “Standard” press the “enter license key” button to enter the license key found on the White CD envelope that was shipped to you with the FSM , it should be a “Professional License”
5. Restart the DAMS software it should now be at the latest revision and show that a professional license key is in use.

# Operating the FSM

As noted earlier in this guide the FSM mount is now the Azimuth axis of the measurement system and the turntable portion of the positioner is the Elevation Axis. General operation of the system and making measurements is nearly identical to the standard system without FSM. The minor differences in operation are described below.

**Zeroing the Axis-** x000 series positioners do not have internal position tracking, to zero the positioner either manually move the positioner with the controller off or use the JOG buttons in the software to set the positioner to its 0 position, once this has been done press the “set as zero” to set the current position as 0,0 in the software.

**Resolution-** x000 positioners have accuracies of .125 Deg/Meas and .0625 Deg/Meas. The FSM mount has a resolution of .125 deg/step with .0625 possible by enabling half/stepping

## FSM Position Examples

The images below depict proper positioning of the system with the camera location as the Reference antenna location. (x100 positioner shown for reference only)



FSM@ -90 Deg. Elevation



FSM@ 0 Deg. Elevation



FSM@ 90 Deg. Elevation

## Troubleshooting

1. Check all connections and ensure the controller and power supply are on.
2. Be sure you have the FSM selected, and “Move and Measure” selected in the software.

If you still cannot resolve the issue, please contact us using one of the methods listed below

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