

## Antenna Mounting Hardware and Accessories

This section describes all mounting hardware available for base station antennas.

RFS introduced a new universal mount applicable to most panel antennas and available in multiple upgradable configurations:

- fixed or wall mount,
- fixed or wall mount with azimuth adjustment,
- mechanical downtilt mount,
- mechanical downtilt mount with azimuth adjustment,
- mechanical downtilt mount with scissor kit,
- mechanical downtilt mount with scissor kit and azimuth adjustment.

A standard cluster mount is also described allowing to fix around a pole 3 panel antennas.

To adjust correctly both azimuth and elevation (downtilt), RFS has developed a special tool the CELaligner presented at the end of this section.

# Global Mounting Hardware

## APM40 Series

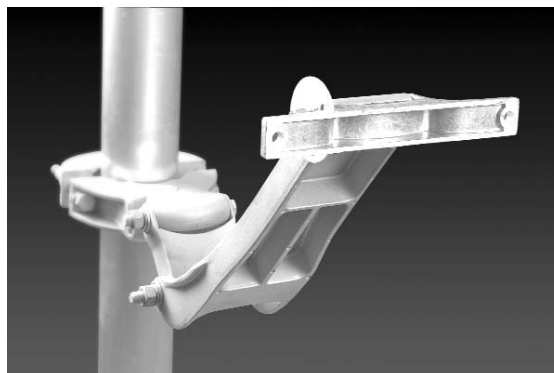
The RFS APM40 series mounting kits are suitable for all base station antennas up to 2.6m in length.

### Benefits

- One mount kit fits all.  
This standard downtilt mount kit can be used on the RFS range of single and multiband panel antennas.
- Convenient, one handed adjustment.  
This new design incorporates self-captivated bolts to allow a rigger to easily adjust using one hand.
- A single flexible mount system.  
The standard version can be upgraded using option for optimal adjustment flexibility.

### Features

- The standard downtilt mount kit can be used for
  - mechanical downtilt using a sliding beam
  - direct mount on pole or wall-mounted
- Optional azimuth adjustment or scissors are available to upgrade the standard down tilt kit.
- Pipe diameter: 60 - 120 mm
- Mechanical downtilt range:
  - 0-10° for 2m antennas
  - 0-15° for 1.3m antennas
- Azimuth adjustment up to +/- 30°
- Downtilt angle indicator
- Suitable for industrial and marine environments



### MOUNT ORDERING INFORMATION

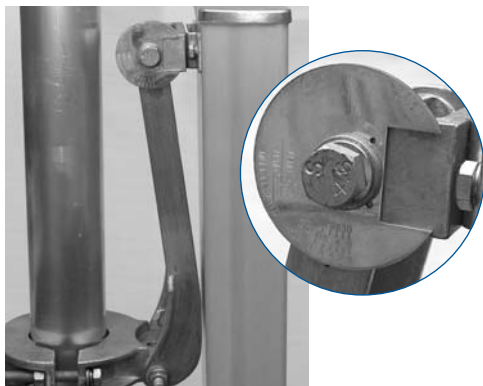
Antenna Suffix	Type of Mounting	Mounting Kit
C	Downtilt	APM40-2
D	Downtilt with azimuth upgrade	APM40-2 & APM40-3
E	Downtilt with scissor upgrade	APM40-2 & APM40-E3
F	Downtilt with scissor and azimuth upgrades	APM40-2 & APM40-E2 & APM40-E3

### MECHANICAL SPECIFICATIONS

Weight of standard configuration, kg (lb)	2.8 (6.2) tilt kit
Mounting kit material	Aluminum, Galvanized steel
Packed size, H x W x D, mm (inches)	1250 x 200 x 70 (49.2 x 7.9 x 2.7) tilt kit
Packaging material	Plastic sleeve
Tools required	18mm (0.75") AF Socket (3/8" drive recommended), 10mm (0.4") AF spanner or socket

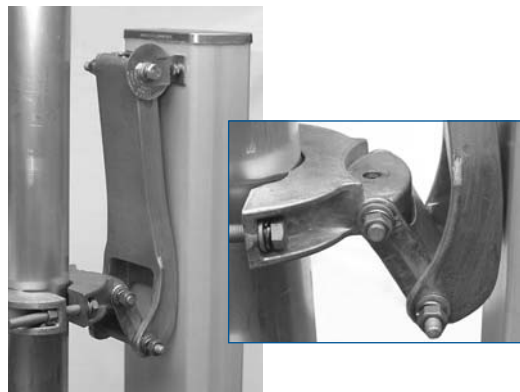
## Global Mounting Hardware

### Standard Configuration Mechanical Downtilt APM40-2 (Antenna "-C")



Beam tilt configuration at 0 deg. Pole or Wall mount.

### Standard Configuration with Scissor Upgrade APM40-2+APM40-E2



Beam tilt configuration with scissor kit. Pole or Wall mount.

### Standard Configuration Direct Mount with Azimuth upgrade APM40-2+APM40-E3



Direct Mount configuration with Azimuth adjustment. Pole mounted.

### Standard Configuration Wall Mount with Azimuth upgrade APM40-2+APM40-E3



Direct Mount configuration with Azimuth adjustment. Wall mounted.

### Standard Configuration with Azimuth Upgrade APM40-2+APM40-E3



Beam tilt configuration at 0 deg with Azimuth adjustment. Pole or Wall mount.

### Standard Configuration with Scissor Upgrade and Azimuth Upgrade APM40-2+APM40-E2+APM40-E3



Beam tilt configuration at 0 deg with scissor kit and azimuth adjustment. Pole or Wall mount.



Beam tilt configuration at 6 deg with scissor kit and azimuth adjustment. Pole or Wall mount.

## 3-Sector Cluster Mount Kit

### APM70-3C Series

The RFS APM70-3C mounting kits are suitable for all base station 3-sector cluster type antennas up to 2.6m in length.

Cluster antennas are used on sites where low impact aesthetics are required for site approval.

#### BENEFITS

- One mount kit fits all.  
This single mount kit can be used on the RFS range of CDMA800, GSM900, GSM1800, PCS1900, UMTS2100 and all multiband antennas.
- Low profile for minimal visual impact.
- Reduction of site costs due to easy and fast installation.

#### FEATURES

- Individual azimuth adjustment for each antenna
- Fits to mounting pipe 75 – 120 mm diameter.
- Direct mount or upgradable for mechanical downtilt.
- Suitable for industrial and marine environments.

#### MOUNTING OPTIONS

- Direct Mount (Standard)

When used as a direct mount the antennas are connected to the APM70-3C mount kit. This attachment occurs via the standard global interface brackets on the back of the antenna.

Parts requirement:

- 1x APM70-3C Mount Kit
- 3x APM40-E4 Interface kits for High band antennas. (normally supplied with antenna)

- Downtilt Mount (Optional) – ordered separately

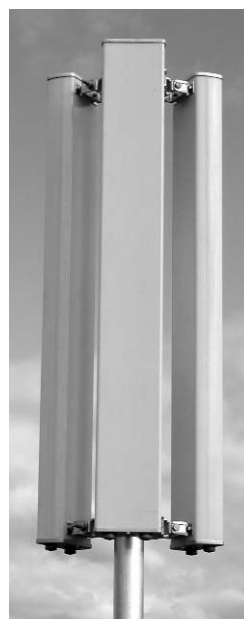
Full downtilt adjustment can be provided by use of the optional APM40-E1 beam upgrade kit and APM40-E2 scissor kits in conjunction with the APM70-3C mount kit.

Tilt ranges achievable are as follows:

- 0° – 7.5° for 2.6m antenna
- 0° – 10° for 2m antenna
- 0° – 15° for 1.3m antenna

Parts requirements:

- 1x APM70-3C Mount Kit
- 3x APM40-E1 Beam upgrade kits (order separately).
- 3x APM40-E2 Scissor upgrade kits (order separately).



High band Antenna cluster with APM70-3C direct mount kit with optional APM40-E4 interface kit attached to antennas.



Dualband GSM/DCS Antenna cluster with APM70-3C direct mount kit.



APM40-E4 Interface bracket assembly (highlighted) for high band antennas.



Dualband Antenna at 5deg tilt using APM70-3C plus optional APM40-E1 and APM40-E2 mounting kits

#### MECHANICAL SPECIFICATIONS

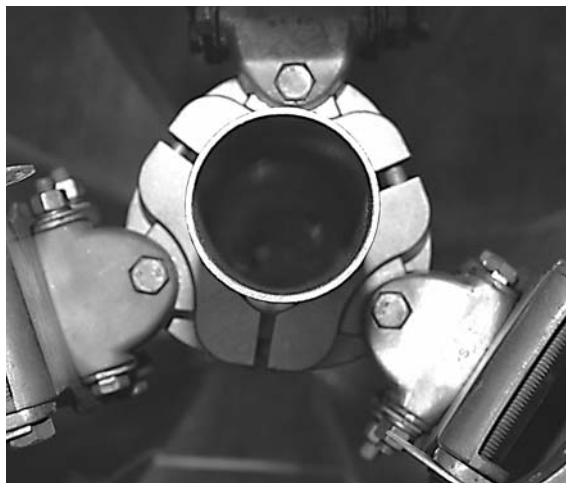
Model	APM70-3C	APM40-E1	APM40-E2
Weight of kit, kg (lb)	2.0 (4.4)	1.0 (2.2)	0.3 (0.7)
Mounting Pipe, mm (in)	75-120 (2.9x4.7)	N/A	N/A
Mounting kit material	Aluminum	Aluminum	Aluminum
Packed size, H x W x D, mm (in)	270 x 150 x 60 (10.6 x 5.9 x 2.4)	550 x 200 x 70 (21.6 x 7.9 x 2.7)	250 x 200 x35 (9.8 x 7.9x 1.4)
Packaging material	Cardboard carton	Plastic sleeve	Plastic sleeve
Tools required		18mm (3/4") AF Socket	

## 3-Sector Cluster Mount Kit

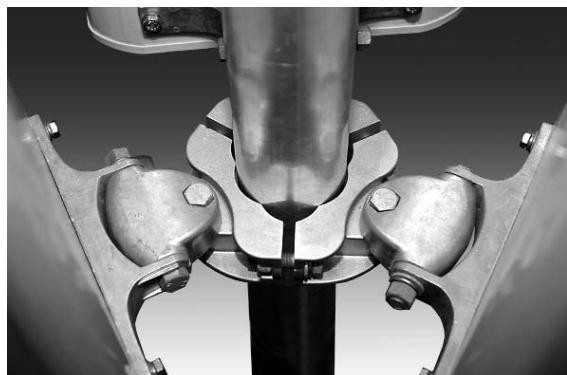
### APM70-3C Series



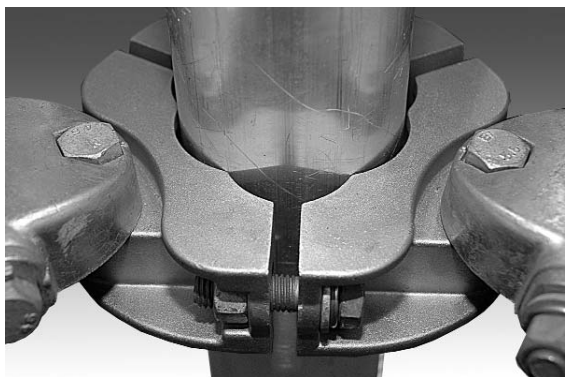
APM70-3C with standard direct mount (top section view)



APM70-3C with downtilt option (viewed from above)



APM70-3C (bottom section)



APM70-3C (bottom section) - zoom view



APM70-3C with downtilt option (top section)



APM70-3C with downtilt option (top section) - zoom view



APM70-3C with optional APM40-E1 & E2 scissor upgrade kit



APM70-3C with opt. APM40-E1 & E2 (top section) - side view

## CELaligner APT1-1

The CELaligner is a dual functional tool for alignment of panel antennas. It can be used for adjusting both the elevation (downtilt) and the azimuth. The CELaligner is supplied in a handy carrying bag, to wear over the shoulder, when climbing an antenna mast or tower.

