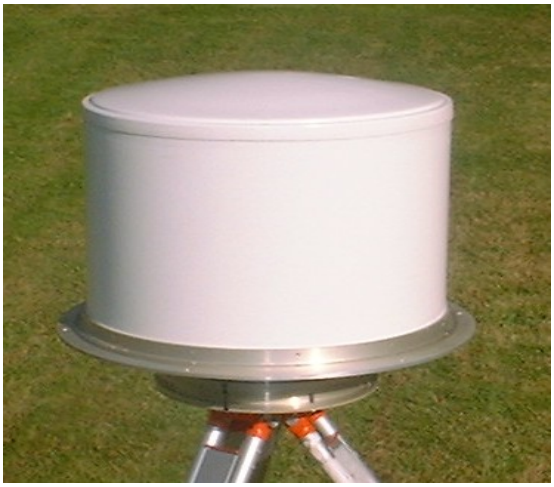
Navtech Systems Video Links



MicroSector - Solid State Switched Sector Antenna

The ***Telenav MicroSector*** is a fully automated receiving antenna for video microwave signals.

The ***MicroSector*** consists of an array of high gain, patch, antennas arranged to provide full 360º coverage in azimuth with an additional up-looking antenna for signals when transmitted from overhead.

Being solid state switched sector the antennas are selected by bearing derived from the relative positions, from GPS, of the mobile and that of the antenna pedestal. The azimuth alignment of the antenna array is automatically compensated by an integrated GPS heading sensor such that the antenna may simply be mounted in any orientation. This makes the system ideal for mobile command vehicles where the position of the receiver and the compass alignment is provided by the GPS heading sensor.

The construction shows the seven-segment antenna array, each having approximately 60 degrees (azimuth) by 18 degrees (elevation) beam width yielding approximately 15dBi gain at 2.4 GHz. Each sector has approximately 5 degrees overlap with control switching hysteresis. Low noise booster amplifiers enable the 'RF' signals to be distributed using low loss feeders directly coupled to the receiver.

For applications where a fixed (or mobile) ground station is required to receive microwave links from airborne transmitters, the ***MicroSector*** system automatically searches for and locks on to remote transmissions by virtue of their geographic location.

By using the ***Telenav*** process, which combines the mobiles (GPS) position with the transmitted video, the ***MicroSector*** will derive the bearing (and range) to where the mobile is transmitting. By selecting the appropriate sector the microwave signals are tracked wherever and whenever there are transmissions on the dedicated frequency.

Being a fully automatic solid-state system there is no operator intervention required and the ***MicroSector*** can thus be located at a convenient site for optimum reception of the transmissions. The received video signal may then be linked to where needed by conventional means.

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MicroSector Control Console

The ***Telenav MicroSector*** Control system decodes the GPS data from the video and derives the bearing from the local position. Display of the mobile's dynamic position information is provided along with other tracking parameters.

The ***Telenav MicroSector*** is suitable for fixed sites and for mobile applications both marine and land based. Tracking of ship to aircraft, shore to ship, point to point links, ground to aircraft are all possible with the ***MicroSector.***

Using the latest GPS and electronic control technology, together with signal switching, the ***MicroSector*** is also capable of dual channel operation so that two independent transmissions on differing channels may be tracked on the same antenna pedestal.

In addition, the antenna elements may be configured for **diversity** receiving techniques, as used in COFDM digital transmission systems.

Azimuth sector selection is derived from the relative positions of the receiving antenna and remote mobile transmitter. Using GPS techniques, the accuracy of sector steering can be maintained within 1 degree. The ***MicroSector*** is equally compatible with traditional analogue and the latest **COFDM Digital Video Transmission** systems.

Specification:

- Antenna array – nominal gain 15 dBi at 2.4 GHz in linear and left or right hand circular polarisation.
- Frequency range – 2.2 to 2.7 GHz – other bands to order
- Power – 12Vdc or and 90 – 250 volts ac universal (standard)
- Video - Standard PAL, NTSC, and Digital formats
- Acquisition time less than 30 seconds – typically 15 seconds, after system set-up

Dimensions:

- Antenna array 400 mm diameter x 500 mm long
- Controller – 300 mm x 200 mm x 55 mm
- Weight - less than 10 Kgs

Environmental:

- Temperature - Antenna array - -10 to + 60 C, Controller - 0 to + 50 C (TFT/LCD limitation)
- Humidity 0 - 90% non condensing.