

TRIAX

Unique

MULTI RECEPTION DISH

- new high-performance standard for multi satellite reception



TRIAX Unique Multi Reception Dish

- Only one dish for reception of 2 - 5 satellites
- Uniquely shaped dish giving high and constant gain within a 30 deg. range.
- No moveable parts
- Quick and easy to mount
- Simple and easy adjustment
- Individual setting of each LNB
- Prepared for future satellites
- High mechanical strength and resistance to corrosion

TRIAX
Bjørnkaervej 3
DK-8783 Hornslyd
Tel.: +45 76822200
Fax: +45 75687966
www.triax.dk

TRIAX Unique Multi Reception Dish

- a technical description

Multi Satellite Reception

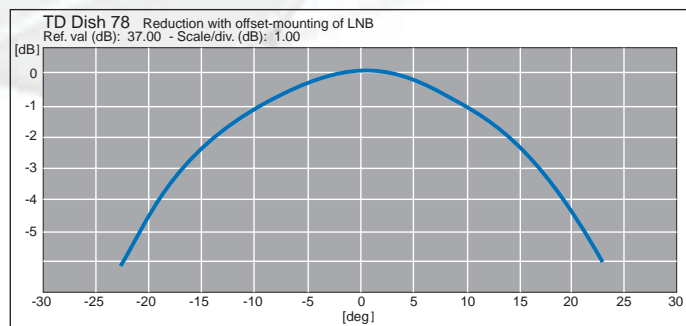
With the increasing number of satellites follows the wish to receive signals from different (satellite) directions.

There are several approaches to this, each with its own advantage and disadvantage.

- 1) One dish for each satellite. Technically this is the best solution, as each dish can be optimized with respect to size and position. However to receive many satellites you need a lot of dishes!
- 2) Sidemounting of LNB's. Using this method an adjacent satellite can be received by offsetting an LNB from the true focus, thereby changing the beamdirection of the dish. However this "twisting" of the beam reduces gain - and the further away from the true focal point, the more gain is lost and so the available satellite signal. Offsetting two LNB's symmetrically to each side of the focalpoint generally gives a better compromise, with less reduction of each signal.
- 3) A motorized dish. With this solution one dish is covering all available satellites, however only one position can be received at a time and the installation and adjustment can be complicated.

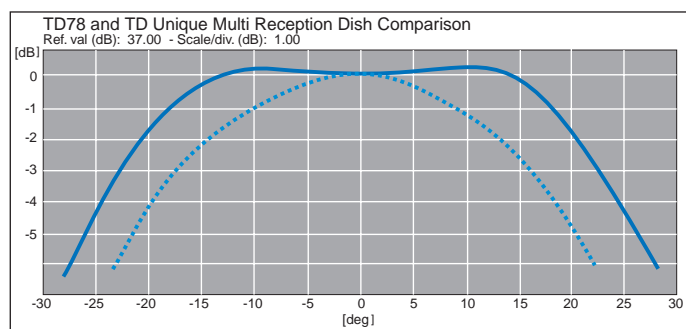
All three types of installations are used - depending on the individual requirement of the customers. And TRIAX offers the right products for each of these solutions.

Fig. 1 Shows reduction in gain vs. change in azimuth beam angle on a TD78 dish with sidemounting.



On a standard dish the LNB is placed in focus for best gain. A second LNB can be sidemounted for reception of an adjacent satellite. However gain is lost as this LNB is out of focus, and the losses increase dramatically with large offsets. For neighbouring satellites having 3 to 6 deg spacing this is uncritical - additional losses may be limited to 0,2 - 0,5 dB; however for separations of 10 deg or more, the losses quickly rise to 3 - 6 dB!

Fig. 2 Comparison of gain distribution vs. azimuth beam angle using a standard TD78 dish and the TRIAX Unique Multi Reception Dish.

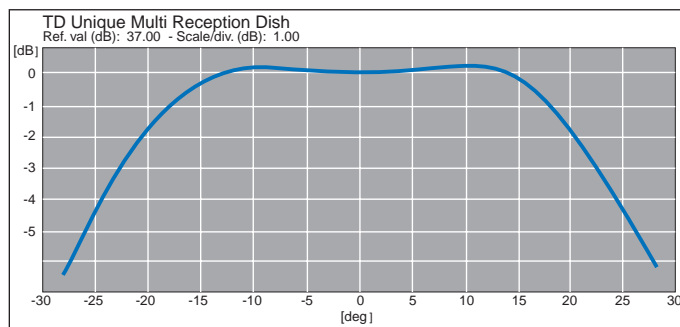


There are certain antenna designs, where several LNB's may be placed next to each other for multi satellite reception without change in individual performance. One such design is the torus dish, which has a rectangular reflector using a combination of a parabolic and circular shape. This design has the advantage that the focuses are placed on a line in front of the dish, where all LNB's are placed. The disadvantage is, that each LNB only utilizes a minor part of the reflector, and as a consequence the gain is equivalent to that of a smaller dish.

Advantage of TRIAX Unique Multi Reception Dish

The Unique Multi Reception Dish is the result of research into semi-parabolic shapes and the influence on available gain in both main and sidedirections. Through a special shaping we have stretched the focal point into a focalline and still letting each LNB utilize all of the dish's surface. Thus successfully combining efficient area utilization of sidemounting with the broad and uniform azimuth beam coverage of the torus antenna.

Fig. 3 TRIAX Unique Multi Reception Dish gain.



It is quite obvious, how the TRIAX Unique Multi Reception Dish design retains gain even at large changes of azimuth beam angles - where it really matters for multisatellite reception!

Technical Specifications

Type	TD Unique Multi Reception Dish
Part No.	126390
Frequency range	10,7 - 12,75 GHz
Gain (@ 11.7 GHz)	37.1 dBi
X-polarisation	> 20 dB
Offset angle	26°
Reflector type	Offset (F/D ratio 0.6)
Beam width	2.6°
Elevation range	5 - 50 deg.
LNB adjustment (azimuth)	+/- 17 deg.
Material	Pregalvanised steel
Finish	Chromate, polyester powder coat
LNB holder	Plastic feed holder Ø25/Ø40
Size (w x h)	100 x 111 cm
Weight (kg)	11
Windload (42m/s)	950N
Mast dimension	Ø 28-Ø 63 mm
Wall bracket	- optional extra