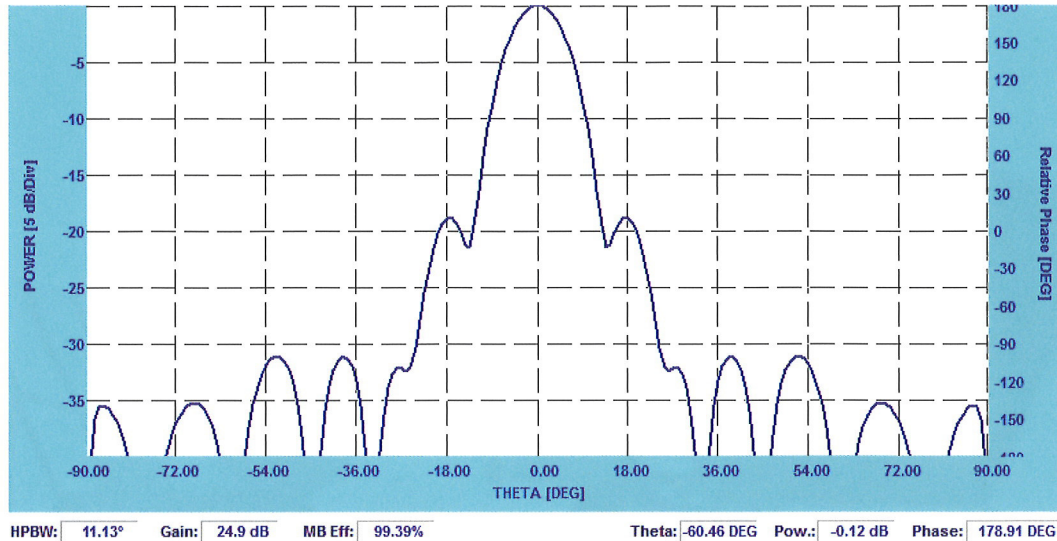




*Typical combination: L-band (front view, left) and 6.925/10.65 GHz packages (front view, right).*

## Antenna Performance

Parameter	Specification
Geometry	Planar 64 square patch array
Antenna dimensions	1200 x 1200 x 65 mm <sup>3</sup>
HPBW (half power beam width)	11°
Antenna gain	24.9 dB
Main beam efficiency	99.4% (same envelope as dual-mode horn)
Side lobe level	<30 dB
Minimum observation distance	5 m
Mass	36 kg
Operating temperature range	-40° to +50°
Operating humidity range	0-100% (rain protected)



**L-Band antenna pattern.**

## Receiver Performance

The receiver package continuously performs internal automatic calibration cycles for complete radiometric calibrations. The internal calibration standards are regularly compared to absolute standards by sky tipping procedures.

Parameter	Specification
Calibration	Dicke switch (internal ambient target), cold FET cold target, pin switch (1p3t) for antenna, cold target, ambient target
Ambient calibration temperature	315 (typical)
Cold calibration temperature	55 K (typical, cold FET)
Receiver system noise	<200 K (typical)
Calibration switch leakage	<0.01%
Detection bandwidth	20 MHz, 1.40 to 1.42 GHz
Out-of-band rejection	-50 dB @ 1.39 / 1.43 GHz
Polarization	Horizontal and vertical
Total system noise	500 K (typical, including patch antenna array)
Brightness temperature range	0 K to 800 K
Accuracy	1 K (typical)
Radiometric noise	<0.15 K RMS
Thermal receiver stability	<30 mK over full environmental temperature range
Operating temperature range	-40° to +50°
Operating humidity range	0-100% (rain protected)





## Filter Characteristic

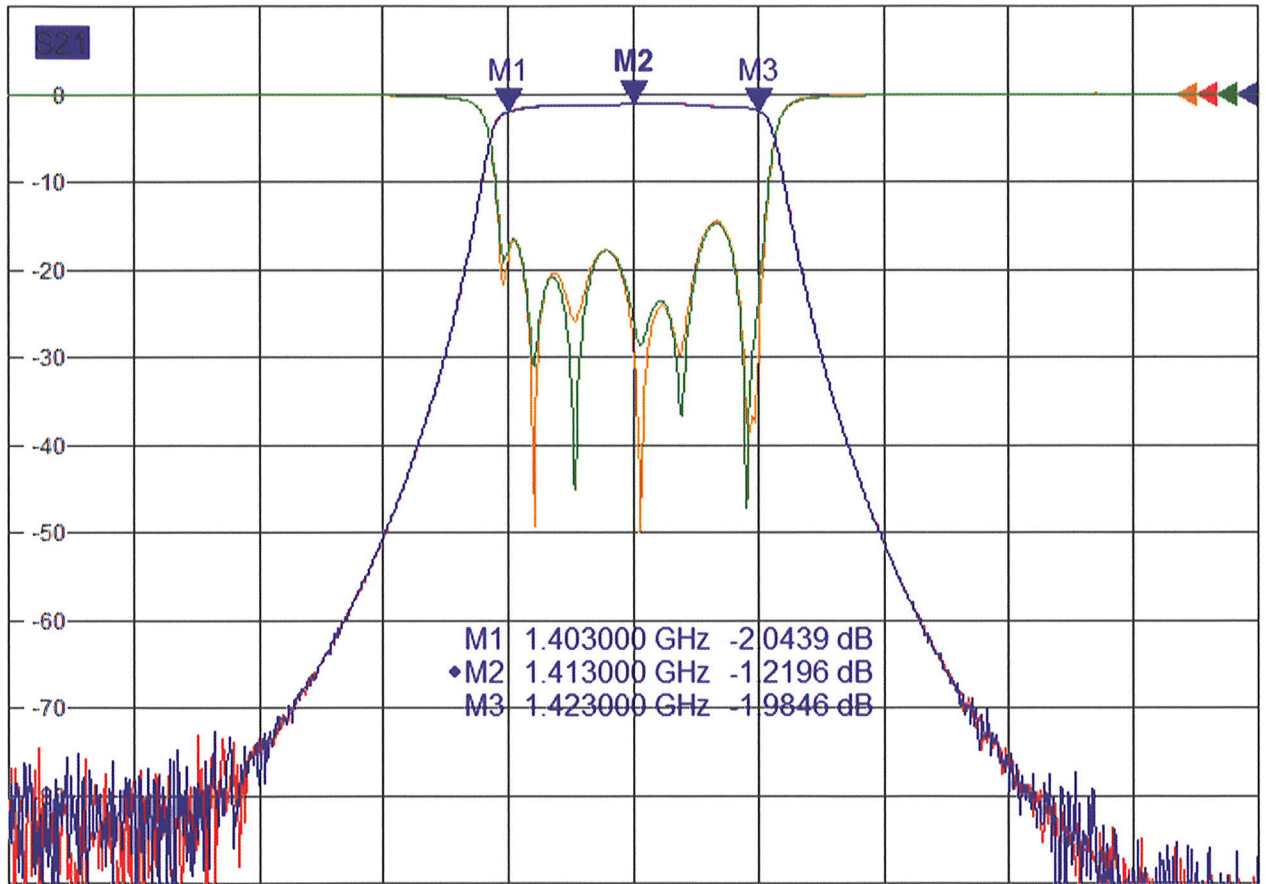
Super steep filter function with out-of-band rejection of -50 dB @ 10 MHz off band. The 1.40 to 1.42 GHz band is protected.



1

band-pass-filter 1.413GHz

Trc1 S21 dB Mag 10 dB / Ref 0 dB Cal int  
Trc2 S11 dB Mag 10 dB / Ref 0 dB Cal int  
Trc3 S12 dB Mag 10 dB / Ref 0 dB Cal int  
Trc4 S22 dB Mag 10 dB / Ref 0 dB Cal int



Ch1 fb Center 1.413 GHz

Pb -10 dBm

Span 100 MHz

09.04.2014, 16:14

*Sweep range: 1.36 GHz to 1.46 GHz.*



## Elevation / Azimuth Scanner

The positioner can handle the L-Band radiometer and another radiometer package, for instance the 6.925/10.65 GHz dual polarization receiver combination module.

Parameter	Specification
Elevation range	-90° (Nadir) to +90° (Zenith)
Elevation scanning speed	3°/sec
Azimuth range	0° to 360°
Azimuth scanning speed	3°/sec

## Additional Sensors

The instrument is turn-key with complete software package (for an embedded PC and an external host PC) and additional sensors.

Parameter	Specification
GPS receiver	Position and UTC time reference, North alignment by solar scanning
Environmental temperature	Accuracy: 0.5°C, range: -60°C to 80°C
Barometric pressure	Accuracy: 0.5 hPa, range: 250 to 1400 hPa
Rain sensor	Digital rain flag