



## Technical description

# Monopulse Tracking Receiver MTR8 x 00 Series

The Monopulse Tracking Receiver (MTR) series, developed by Vertex Antennentechnik, is a state-of-the-art Monopulse Tracking Receiver based on modern FPGA architecture. It has been developed for antenna systems which require very precise tracking accuracies. The MTR can be used in TT&C ground stations, in which accurate tracking for spatial coordinates is required, or the MTR is utilized in large Gateways where accurate tracking for gain minimizes tracking losses. The excellent tracking performance of the VA MTR has been proven in a highly dynamic LEO environment as the latency between in- and output response is extremely low.

## Available Models

### MTR8100:

A cost effective 19" 2 HU rack mounted unit without a user interface (MMI). In this case, control is effected through VA's ACU 8100 Antenna Control System

### MTR8130:

The MTR8130 is the three channel variant of the MTR8100. It consists of two 2HU rack mounted units.

### MTR8500:

Two-channel monopulse 4 HU rack mounted stand-alone version with a user interface (MMI). The user interface is realized with a 10.4" touchscreen. All parameters are available through a graphical menu structure.

### MTR8530:

Three-channel monopulse 6 HU rack mounted stand-alone version with a user interface (MMI). The user interface is realized with a 12" touchscreen. All parameters are available through a graphical menu structure.

## Tracking Signal Inputs

All MTR 8xx0 models can be equipped with the following inputs for tracking signals:

### MTR8xxx-70:

IF at 70 MHz +/- 2,5 MHz for standard 2-channel (1  $\Sigma$ -signal and 1 quadrature  $\Delta$ -signal) applications

### MTR8xxx-BB:

broadband IF between 70 MHz and 3 GHz supporting broadband carriers including spread spectrum input signals (no need for coherent downconverters up to 3 GHz)



**MTR 8100**



**MTR 8500**

## Monopulse Tracking Receiver MTR8xxx

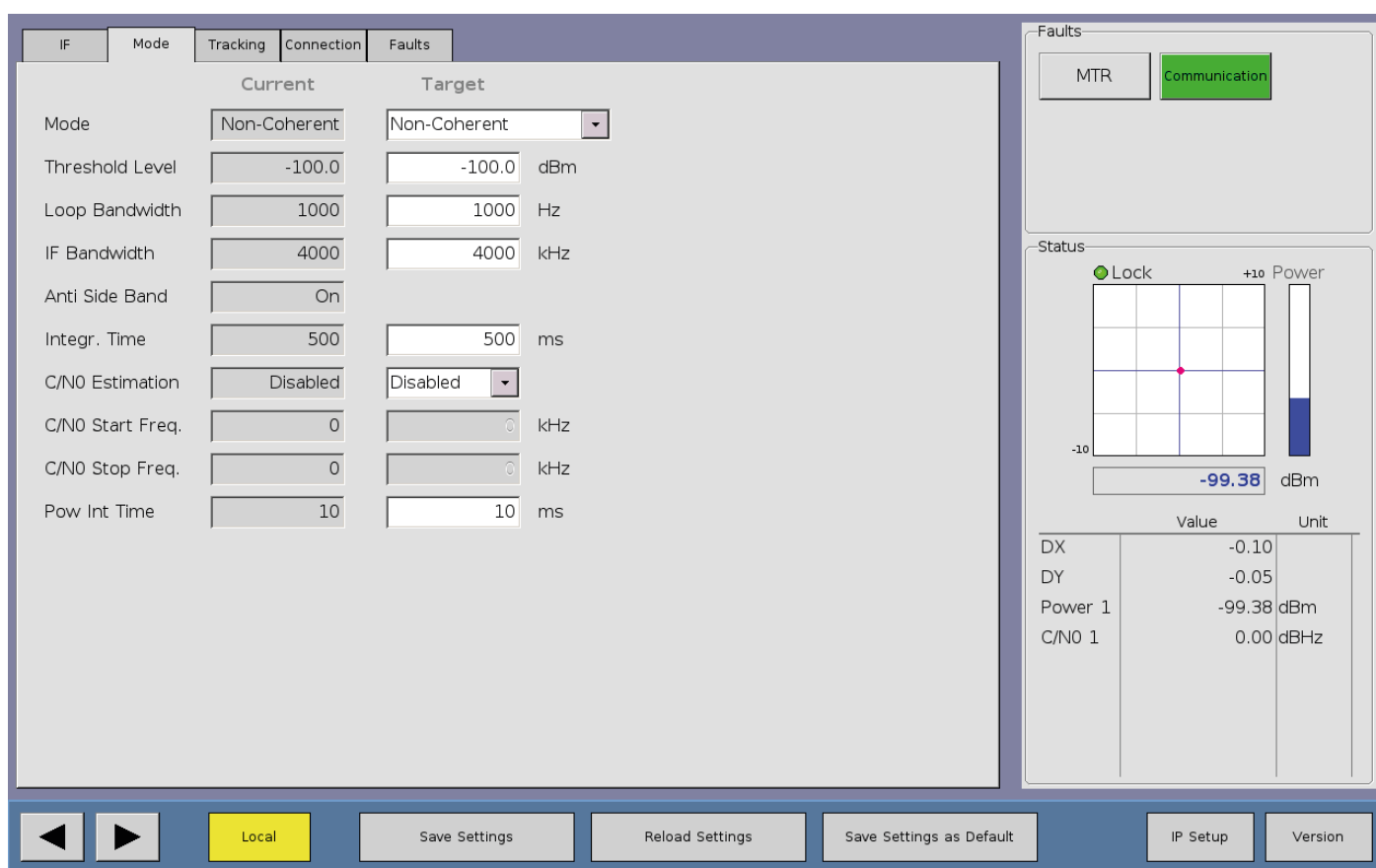
### Technical Specifications

		Monopulse Tracking Receiver MTR8xxx	MTR8x00-BB
IF Input	Input (N-female)	1 sum, 1 diff (X/Y = 90°)	
	Input frequency	70 MHz	70 MHz – 3 GHz *
	Bandwidth	5 MHz	5 MHz
	Inter-channel isolation	± 50 dB	
	Input level delta and sum signal	-20 dBm to -110dBm	
	External ref.	10 MHz	
Coherent Mode	Max. Doppler rate	20 kHz/s	
	PLL loop bandwidth	10 - 20000 Hz	
	Carrier acquisition search range	Up to 4 MHz	
	Acquisition threshold	10 dB in loop bandwidth	
	Max carrier acquisition time	<1 s	
	Integration time	2 ms – 1000 ms	TBD *
Non-coherent Mode	IF bandwidth	Up to 5 MHz	up to 160 MHz *
	Integration time	2 ms – 1000 ms	TBD *
Processing Latency	Max. Az and El error output delay	10 ms	
Hardware Interface	Remote control interface	LAN, RJ-45 connector: 100 / 1000 Mbps TCP/IP	
	Tracking data	LAN, RJ-45 connector: 100 / 1000 Mbps UDP analogue output: +/- 10 V BNC (option)	
	Ext. reference input / output	10 MHz 0 dBm BNC	
	Signaling, status	Digital output via opto couplers	
Technical Data	Dimensions	19" rack mounted unit	
	MTR 8100	2 HU	
	MTR 8130	2 x 2HU	
	MTR 8500	4 HU	
	MTR 8530	6 HU	
	User interface	via ACU8100	
	MTR 81xx	10.4" colour touch screen (1200 x 800 pixel)	
	MTR 8500	12.4" colour touch screen (1200 x 800 pixel)	
	MTR 8530		
	Configuration Interface	Dedicated LAN-port: Web-Interface	
	M&C Interface	Ethernet TCP/IP	
	Power input / power consumption	115/230 V- +/- 10%, 50/60 Hz / 70 Watt	
Environmental Conditions	operating temperature	+5 ...+40°C	
	Non-operating temperature	-15 ... +50°C	
	Humidity	up to 90% non-condensing	

# Monopulse Tracking Receiver



## Local User Interface Screenshot



## MTR 85xx local user interface

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