



UHF Masthead Amplifier

Broadband RF amplifier

Product Overview

The TT-RF-MHB-01500, UHF Masthead Preamplifier is a low noise figure, low thermal noise LNA designed to improve the sensitivity of UHF receiving systems by amplifying weak signals directly at the antenna before transmission through the coaxial feeder. This gives an improved signal to noise performance especially with long cable runs. This system also comes with a TX bypass system, which can sense Tx power as low as 0 dBm and support up to 100W RF power in transmit mode. Upon sensing RF power from the radio, the system bypasses the LNA and connects the radio directly to antenna port.

Application Domains

Amateur (HAM) radio applications, UHF communication receivers base station receiving systems, satellite and telemetry ground stations etc.

Product Identification

Part Number	TT-RF-MHB-01500
Description	UHF Masthead preamplifier module
Device Category	RF amplifier

Electrical Specifications

Impedance	50 Ω
Operating frequency range	300-500 MHz
Gain	12dB
Input return loss	< -10dB
Input TX sensitivity	> 0 dBm
Device operating voltage	13.8 V
Connector Type	SO-239

Environmental and Mechanical Characteristics

Housing Material	Aluminium Alloy (6061)
Mounting Type	Chassis-mount enclosure
Ingress Protection	IP69
Weight	400 gm

Standard Status

RF Compliance	Industry standard
Declaration of Conformity	RoHS, CE

Operation

The TT-RF-MHB-01500 is a UHF masthead preamplifier designed for use with dual-polarized antennas. The horizontal (H) and vertical (V) antenna outputs are first combined using an RF power combiner TT-UPD-002, and the combined signal is then fed to the masthead preamp. The preamp can also be used with a dual polarized antenna TT-ANT-UY-010. The preamplifier is powered remotely using a bias tee TT-RF-BT-01500. The amplified signal is sent to the receiver through the main feeder cable, while DC power is supplied to the preamplifier via the same coaxial cable using a bias tee TT-RF-BT-01500. For optimum performance, the preamplifier should be installed as close to the antenna as possible to minimize feeder losses and maximize receiver sensitivity. To protect the TT-RF-MHB-01500 masthead preamplifier and connected equipment from lightning-induced surges and electrostatic discharge (ESD), install a suitable RF surge arrestor TT-RF-SA-015 in the coaxial feed line and ensure that the antenna mast and surge arrestor are properly grounded in accordance with local electrical and lightning protection regulations.

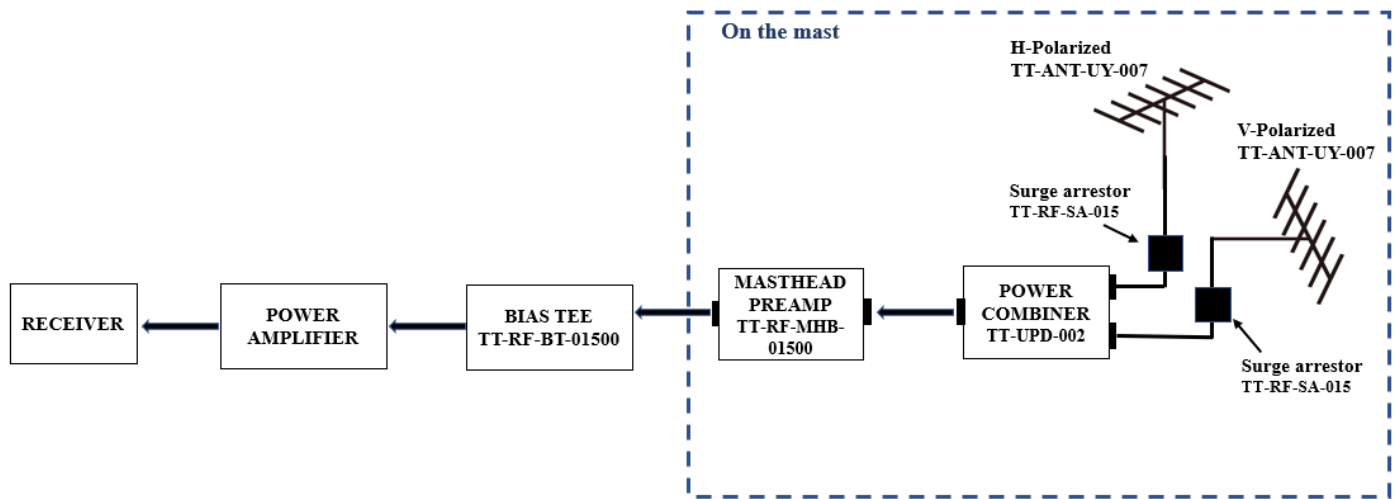


Figure 1: User setup

Product Visuals

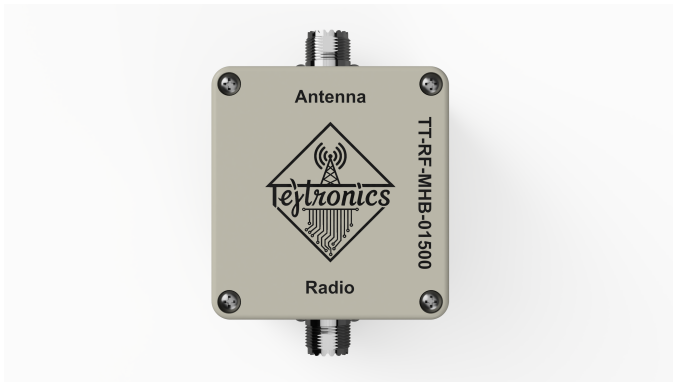


Figure 2: Front View

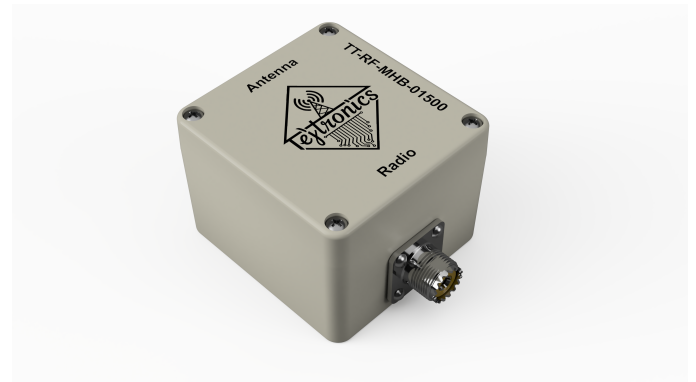


Figure 3: Side view