

### Modbus Monitoring

The ESTeem Horizon Series supports ModbusTCP protocol for access to multiple operating parameters in the wireless modem and RF network health status. Frequency, bandwidth, receive signal strength, RF data rates and GPS data (with GPS option installed) are a few of the registers available through the open ModbusTCP protocol. This data can be obtained by polling the registers directly or using available utilities (Fig. 1)

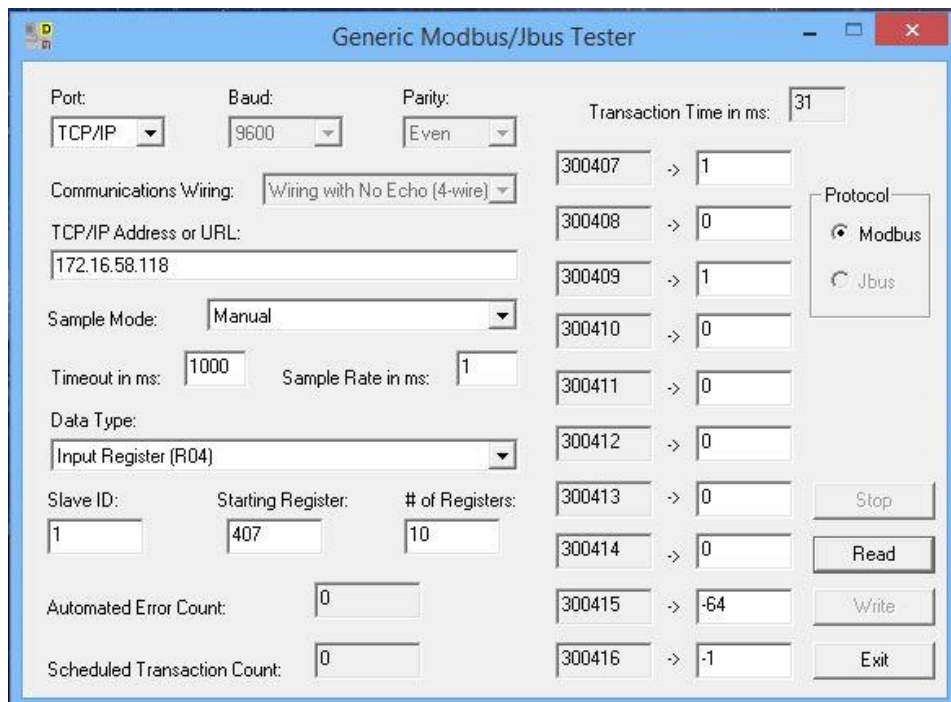


Figure 1: Modbus Tester Utility Example

The following are the Modbus registers supported in the ESTeem Horizon Series on Port 502. Registers are read through Modbus function 4 (read input registers) as little-endian 32-bit floating point integers (2 registers each) by default. These can be adjusted to big-endian in the Advanced menu of the radio.

### Radio Information

Function	Register	Example	
4	0	2412	Frequency
4	2	20	Channel Bandwidth
	5 – 199		Reserved

### GPS Information (GPS Option required)

Function	Register	Example	
4	201	17094900	Time (hh:mm:ss:ff)
4	203	17	Hours (hh)
4	205	9	Minutes (mm)
4	207	49	Seconds (ss)
4	209	0	Factional Seconds (ff)
4	211	9	Total Sync'd Satellites
4	213	1	GPS Fixed
4	215	0	HDOP
4	217	141	Altitude Meters
4	219	-119	Longitude Degrees Integer
4	221	209786666	Longitude Degrees Fractional
4	223	46	Latitude Degrees Integer
4	225	214503333	Latitude Degrees Fractional
4	227	46214503	Longitude Degrees x 10e6
4	229	-119209786	Latitude Degrees x 10e6
4	231	0	East = 1 West = 0
4	233	119	Longitude Degrees
4	235	12	Longitude Minutes
4	237	5872	Longitude Fractional Minutes
4	239	1	North = 1 South = 0
4	241	46	Latitude Degrees
4	243	12	Latitude Minutes
4	245	8702	Latitude Fractional Minutes
4	247	5120254	Northing Integer
4	249	213	Northing Fractional
4	251	329555	Easting Integer
4	253	252	Easting Fractional
4	255	11	Zone Number
4	257	84	Zone Letter
	259 – 399		Reserved

### Global Peer Information

Function	Register	
4	401	Reserved
4	403	Reserved
4	405	Reserved
4	407	Ant1 Enabled = 1 Disabled = 0
4	409	Ant2 Enabled = 1 Disabled = 0
4	411	Ant3 Enabled = 1 Disabled = 0 (currently not used)
4	413	Ant4 Enabled = 1 Disabled = 0 (currently not used)
4	415	Ant 1 RSSI
4	417	Ant 2 RSSI
4	419	Ant 4 RSSI (currently not used)
4	421	Ant 4 RSSI (currently not used)
4	423	Current Peer Radio Time
4	425	Last Received Packet Time
4	427	Last Received Data Rate / 10 For Precision
	429 – 439	Reserved

### Individual Peer Link Information

Function	Register	
4	441	Peer MAC First 2 Bytes [XX:XX:00:4F]
4	443	Peer MAC Last 4 Bytes [03:A9:00:90]
4	445	Peer Port Forwarding = 1 Blocking = 0
4	447	Ant1 Enabled = 1 Disabled = 0
4	449	Ant2 Enabled = 1 Disabled = 0
4	451	Ant3 Enabled = 1 Disabled = 0 (currently not used)
4	453	Ant4 Enabled = 1 Disabled = 0 (currently not used)
4	455	Ant 1 RSSI
4	457	Ant 2 RSSI
4	459	Ant 4 RSSI (currently not used)
4	461	Ant 4 RSSI (currently not used)
4	463	Current Peer Radio Time
4	465	Last Received Packet Time
4	467	Last Received Data Rate / 10 For Precision
	469 – 479	Reserved

### Individual Peer #2 Link Information (repeatable up to 128 Peers)

Function	Register	
4	481	Peer MAC First 2 Bytes
4	483	Peer MAC Last 4 Bytes
4	485	Peer Port Forwarding = 1 Blocking = 0
4	487	Ant1 Enabled = 1 Disabled = 0
4	489	Ant2 Enabled = 1 Disabled = 0
4	491	Ant3 Enabled = 1 Disabled = 0 (currently not used)
4	493	Ant4 Enabled = 1 Disabled = 0 (currently not used)
4	495	Ant 1 RSSI
4	497	Ant 2 RSSI
4	499	Ant 4 RSSI (currently not used)
4	501	Ant 4 RSSI (currently not used)
4	503	Current Peer Radio Time
4	505	Last Received Packet Time
4	507	Last Received Data Rate / 10 For Precision
	509 – 519	Reserved