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)
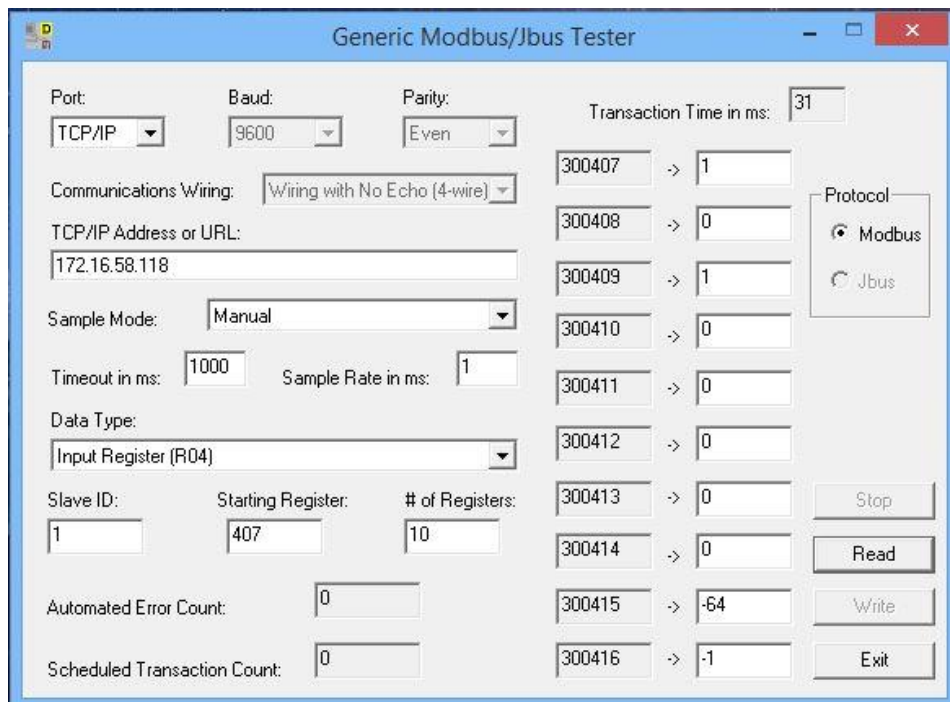

Figure 1: Modbus Tester Utility Example

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