Wireless – Proxim Tsunami BSU

Version 1.1

This probe monitors a Proxim wireless Tsunami BSUs (2411, 5054, others). The information are obtained from ORiNOCO, IEEE 802.11 and MIB-II MIBs.

Status page:

```
Device Status
           Name: Proxim TMP-xxxx
       DNS Name: tmpbsu.mywirelessdomain.net
        Address: 172.16.0.1
         Status: (UP|DOWN) (Reachable since Jan 20, 12:01:03)
       Protocol: Wireless - Proxim Tsunami BSU(port 161)
        Up Time: 8 days, 1 hours, 23 minutes
        SysName: TMPBSU
       Location: 999 This A Way Dr. NW
                 Issaquah, WA 98027
        Contact: John Doe / 555-225-8978
   Availability: 99.8 % (of 1 day, 20 hours, 25 minutes)
    Packet Loss: 0.85 % (of 10680 total attempts) [Reset]
    Recent Loss: 1 pkts at Jan 28, 10:26:28
Round-trip time: 87 msec

TMP11 Information
            Ethernet: 100 Mbps
                 DDR: enabled (default 6 Mbps, max 11Mbps)
Per Satellite Config: Enabled
Number of satellites: 2
Wireless interfaces
         MAC Address: 00:20:EF:23:56:AB     00:20:EF:BB:AA:CC
 Network Name (SSID): WirelessA             Wireless B
    Operational Mode: 802.11a               802.11b
             Channel: 10                    11
 Auto Channel Select: Enabled               Enabled
             Tx Rate: 36 Mbps               11 Mbps
   Multicast Tx Rate: 36 Mbps               11 Mbps
          Turbo Mode: Enabled               Enabled
          Rogue Scan: Disabled              Enabled (Background/60 mins)
     FCS Error Count: 1/sec                 3/sec
        Failed Count: 1/sec                 2/sec
        Retry Count: 1/sec                  1/sec
WORP interfaces
           Mode/Name: BSU (TMPBSU)          BSU (TMPBSU)
      Max Satellites: 250                   250
     Remote Partners: 3                     0
      Base Announces: 103                   102
   Reg/Auth requests: 103                   102
Avg. Local Sig/Noise: -12 dBm / -90 dBm     -21 dBm / -91 dBm
 Avg. Rem. Sig/Noise: -12 dBm / -90 dBm     -21 dBm / -91 dBm
%Snd Failure/Retries: 0.8%/1.0%             0.8%/1.2%
%Rcv Failure/Retries: 0.5%/0.0%             0.5%/2.0%
SU Statistics
    Mac                L.Sig    L.Noise   L.Tx     R.Sig    R.Noise    R.Tx
    00:20:EF:BB:AA:B1  -12dBm   -90dBm    36Mbps   -20dBm   -80dBm     36Mbps
    00:20:EF:23:56:EF  -12dBm   -90dBm    36Mbps   -20dBm   -80dBm     36Mbps
```

Notes:

- The grayed out area in the status page will be filled-in with the standard device info and cannot be changed.
- MIB-II interface statistics will be shown in a separate status page (link status page). There will be one link status page per link. We currently don't show 802.11 counters in this page, but we will look into implementing support for this in later version of InterMapper.
- There is an option to not display the SU statistics and the wireless interface settings.

Glossary of Terms:

Device Information:

- *Device name*: The type of the device (model). This is determined from comparing the sysObjectID against the OIDs listed in orinocoProducts in ORiNOCO MIB.
- *Ethernet*: The speed of the first ethernet interface (OID OriEthernetIfConfigTableEntry .oriEthernetIfConfigSettings).
- *DDR*: This indicates if the WORP DDRS (Dynamic Data Rate Selection) feature on the BSU is enabled. (OID oriWORPIfDDRSStatus). When DDRS is enabled, the default and maximum data rates are also shown in the status page (OIDs: oriVLANStatus).
- *Per satellite config*: This indicates whether per-satellite config from the base device is enabled (OID oriWORPIfSatConfigStatus).
- *Number of satellites*: The number of satellites associated with this base unit (the number of entries in the satellite table: oriWORPIfSatStatTable).

Wireless interface RF parameters

- *MAC Address*: This is the MAC address of the wireless interface(OID OriWirelessIfPropertiesEntry.oriWirelessIfMACAddress, if not available the MAC address will be obtained from ifTable.ifPhysAddress).
- *Network Name (SSID)*: the wireless card SSID string (wireless network name). A wireless interface can have several SSIDs. InterMapper will display of the SSIDs for the wireless inteface (all oriWirelessIfSSIDTableSSID in OriWirelessIfSSIDTableEntry whose oriWirelessIfSSIDTableIndex matches the index of this wireless interface).
- *Operational Mode*: The wireless NIC Operational mode, eg. 802.11b, 802.11g, 802.11b/g, 802.11a only, 802.11g-wifi (OID OriWirelessIfPropertiesEntry.oriWirelessIfOperationalMode).
- *Channel*: The radio frequency channel for this wireless interface (OID OriWirelessIfPropertiesEntry.oriWirelessIfChannel).
- *Auto Channel Select*: This indicates if the automatic frequency channel feature for the wireless interface is enabled (OID OriWirelessIfPropertiesEntry.oriWirelessIfAutoChannelSelectStatus).
- *Tx rate*: The configured transmit rate for unicast traffic for the wireless interface(OID OriWirelessIfPropertiesEntry.oriWirelessIfTxRate).
- *Multicast rate*: The multicast rate of the wireless interface (OID OriWirelessIfPropertiesEntry.oriWirelessIfMulticastRate)
- *Turbo mode*: This indicates if the turbo mode support is enabled/disabled for the wireless interface (OID OriWirelessIfPropertiesEntry.oriWirelessIfTurboModeStatus)
- *Rogue scan*: This indicates if rogue scan is enabled for the wireless interface (OID OriRogueScanConfigTableEntry. oriRogueScanConfigTableScanStatus). If rogue scan is enabled, the scan mode (background/continuous, OID OriRogueScanConfigTableEntry. oriRogueScanConfigTableScanMode) and the scan cycle time (OID OriRogueScanConfigTableEntry. oriRogueScanConfigTableScanCycleTime) will also be shown.
- *FCS Error Count:* The number of MPDU received with Frame Check Sequence (FCS) error per second (OID dot11FCSErrorCount).
- *Failed Count*: The number of MSDUs not transmitted successfully per second. The transmit failuire is due to the number of transmit attempts exceeding either the retry limit or long retry limit (OID dot11FailedCount).
- *Retry Count*: The number of MSDUs successfully transmitted after one or more retransmissions per second (OID dot11RetryCount).

WORP (Wireless Outdoor Routing Protocol) Interfaces:

- *Mode*: The running mode of this interface, possible values are disabled, AP, Base, Satellite (OID: OriWORPIfConfigTableEntry. oriWORPIfConfigTableMode)
- *Name*: The name of the base station. For a base this name will default to the MIB-II sysName (OID: OriWORPIfConfigTableEntry.oriWORPIfConfigTableBaseStationName).
- *Max Satellites*: The maximum of remote partners allowed on this interface (OID: OriWORPIfConfigTableEntry.oriWORPIfConfigTableMaxSatellites).
- *Remote Partners*: The number of remote partners. (OID: OriWORPIfStatTableEntry.oriWORPIfStatTableRemotePartners).
- *Base Announces*: The number of Base Station Announces Broadcasts (BSAB) sent on this interface (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableBaseStationAnnounces).
- *Reg requests*: The number of Registration Requests (RREQ) received on this interface (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableRegistrationRequests).

- *Auth Requests*: The number of Authentication Requests (AREQ) received on this interface (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableAuthenticationRequests).
- *Avg. Local Sig.*: The current signal level calculated over all inbound packets (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalSignal).
- *Avg. Local Noise*: The current noise level calculated over all inbound packets (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalNoise).
- *Avg. Remote Sig.*: The current remote signal level calculated over the inbound packets (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageRemoteSignal).
- *Avg. Remote Noise*: The current average remote noise level calculated over the inbound packets (OID: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageRemoteNoise).
- *%Snd Failure*: The percent of data packets sent that were (finally) not received succesfully by the remote partner (OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess).
- *%Snd Retries*: The percent of data packets sent that needed retransmition but were finally received succesfully by the remote partner (OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess).
- *%Rcv Failure*: The percent of data packets that were (finally) not received succesfully (OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess).
- *%Rcv Retries*: The percent of data packets received that needed retransmition by the remote partner but were finally received succesfully (OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess).

SU (Subscriber Unit) statistics:

- *MAC*: The the MAC address of the satellite for which the statistics are gathered (OID: OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableMacAddress)
- *L. Sig*: The current signal level calculated over all inbound packets (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableAverageLocalSignal)
- *L. Noise*: The current noise level calculated over all inbound packets (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableAverageLocalNoise)
- *L. Tx*: The Transmit Data Rate of the BSU. (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableLocalTxRate)
- *R. Sig*: The current remote signal level calculated over all inbound packets (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableAverageRemoteSignal)
- *R. Noise*: The current remote noise level calculated over all inbound packets (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableAverageRemoteNoise)
- *R. Tx*: The Transmit Data Rate of the SU. (OID OriWORPIfSatStatTableEntry. oriWORPIfSatStatTableRemoteTxRate)

Thresholds:

Alarms:

- Too many subscribers:
  This alarm will be raised the number of satellites associated to the BSU a specified parameter (user-defined, default 250). InterMapper obtains the number of clients from polling the device (the number of entries in oriWORPIfSatStatTable). This alarm will clear as soon as this number falls below the specified parameter.
- Signal dBm too low:
  This alarm will be raised if either remote or local signal level in any of the WORP interfaces reach/fall below the given user-defined threshold (default value -95 dBm). OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalSignal, OriWORPIfStatTableEntry.oriWORPIfStatTableAverageRemoteSignal.
- Noise dBm too high:
  This alarm will be raised if either remote or local noise level in any of the WORP interfaces reach/is above the given user-defined threshold (default value -40 dBm). OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalNoise, OriWORPIfStatTableEntry.oriWORPIfStatTableAverageRemoteNoise..
- Send retries pct too high:
  This alarm will be raised when (# send retries)/(#send success) is greater than or equals to the given (user-defined, default 5%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess.
- Send failures pct too high:
  This alarm will be raised when (# send failures)/(#send success) is greater than or equals to the given (user-

defined, default 5%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess.

- Receive retries pct too high:
  This alarm will be raised when (#receive retries)/(#receive success) is greater than or equals to the given (user-defined, default 5%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess.
- Receive failures pct too high:
  This alarm will be raised when (#receive failures)/(#receive success) is greater than or equals to the given (user-defined, default 5%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess.
- FCS errors/sec too high:
  This alarm will be raised if the number of MPDU received with Frame Check (FCS) error per second is greater than or equals to the given user-defined parameter (default 100). OID: dot11FCSErrorCount.
- Failures/sec too high:
  This alarm will be raised if the number of MSDUs not transmitted successfully per second is greater than or equals to the given user-defined parameter (default 100). OID: dot11FailedCount.
- Retries/sec too high:
  This alarm will be raised if the number of MSDUs successfully transmitted after one or more retransmissions per second is greater than or equals to the given user-defined parameter (default 100). OID: dot11RetryCount.
- Security: Rogue AP detected (trap-based)
  This alarm is based on oriTrapRogueScanStationDetected, which will be generated when a rogue station is detected. This alarm will clear when acknowledged manually.
- Security: Unauthorized Manager (trap-based)
  This alarm is based on oriTrapUnauthorizedManagerDetected, which will be generated when generated when an unauthorized manager has attempted to view and/or modify parameters. This alarm will clear when acknowledged manually.
- Security: Invalid encryption key (trap-based)
  This alarm is based on oriTrapInvalidEncryptionKey, which will be generated when an invalid encryption key has been detected. This alarm will clear when acknowledged manually.
- Security: Authentication failure (trap-based)
  This alarm is based on oriTrapAuthenticationFailure, which will be generated when a client authentication failure has occurred. The authentication failures can range from: MAC Access Control Table, RADIUS MAC Authentication, 802.1x Authentication specifying the EAP-Type, WORP Mutual Authentication, SSID Authorization (failure specifying the SSID), VLAN ID Authorization (failure specifying the VLAN ID). This alarm will clear when acknowledged manually.
- WirelessIf: Wireless card failure (trap-based)
  This alarm is based on oriTrapWLCFailure, will clear when acknowledged manually

Warnings:

- Many subscribers:
  This warning will be raised the number of satellites associated to the BSU a specified parameter (user-defined, default 240). InterMapper obtains the number of clients from polling the device (the number of entries in oriWORPIfSatStatTable). This warning will clear as soon as this number falls below the specified parameter.
- Signal dBm low:
  This warning will be raised if either remote or local signal level in any of the WORP interfaces reach/fall below the given user-defined threshold (default value -90 dBm). OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalSignal, OriWORPIfStatTableEntry.oriWORPIfStatTableAverageRemoteSignal.
- Noise dBm high:
  This warning will be raised if either remote or local noise level in any of the WORP interfaces reach/is above the given user-defined threshold (default value -60 dBm). OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableAverageLocalNoise, OriWORPIfStatTableEntry.oriWORPIfStatTableAverageRemoteNoise.
- Send retries pct high:
  This warning will be raised when (# send retries)/(#send success) is greater than or equals to the given (user-defined, default 3%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess.
- Send failures pct high:
  This warning will be raised when (# send failures)/(#send success) is greater than or equals to the given (user-defined, default 3%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableSendFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableSendSuccess.
- Receive retries pct high:
  This warning will be raised when (#receive retries)/(#receive success) is greater than or equals to the given

(user-defined, default 3%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveRetries, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess.

- Receive failures pct too high:
  This warning will be raised when (#receive failures)/(#receive success) is greater than or equals to the given (user-defined, default 3%) percentage value. OIDs: OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveFailures, OriWORPIfStatTableEntry. oriWORPIfStatTableReceiveSuccess.
- FCS errors/sec high:
  This warning will be raised if the number of MPDU received with Frame Check (FCS) error per second is greater than or equals to the given user-defined parameter (default 50). OID: dot11FCSErrorCount.
- Failures/sec high:
  This warning will be raised if the number of MSDUs not transmitted successfully per second is greater than or equals to the given user-defined parameter (default 50). OID: dot11FailedCount.
- Retries/sec high:
  This warning will be raised if the number of MSDUs successfully transmitted after one or more retransmissions per second is greater than or equals to the given user-defined parameter (default 50). OID: dot11RetryCount.
- Operational: Wireless service shutdown
  This warning is based on oriTrapWirelessServiceShutdown, which will be generated when the wireless interface has shutdown services for wireless clients. This warning will clear when acknowledged manually.

Supported Equipments:

Proxim wireless Tsunami BSU 2411, Tsunami BSU 5054 and Tsunami BSU that supports the ORiNOCO MIB.

Trap Host:

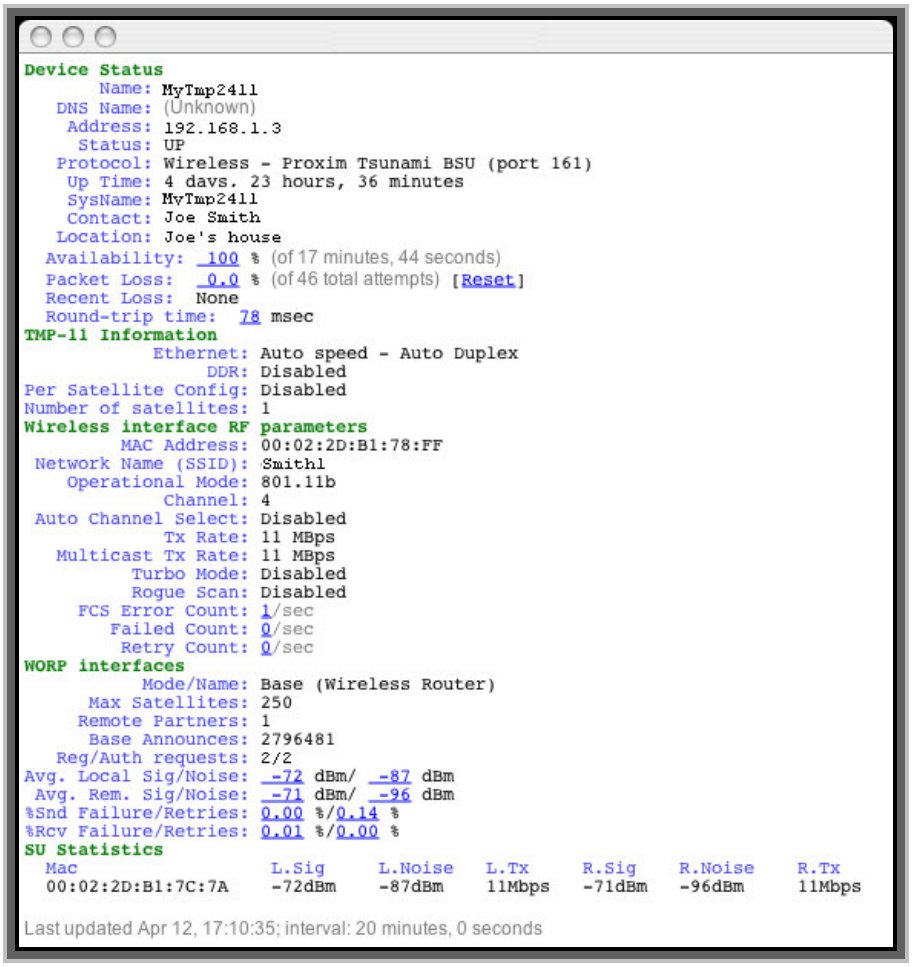
The trap-based alarms/warnings requires that the InterMapper server's IP Address is added into the device's Trap host.

Version:

Included with WISPerMapper 4.3, part of wireless bundle 1.1. Requires InterMapper 4.3 or later.

License:
IMWirelessAddon

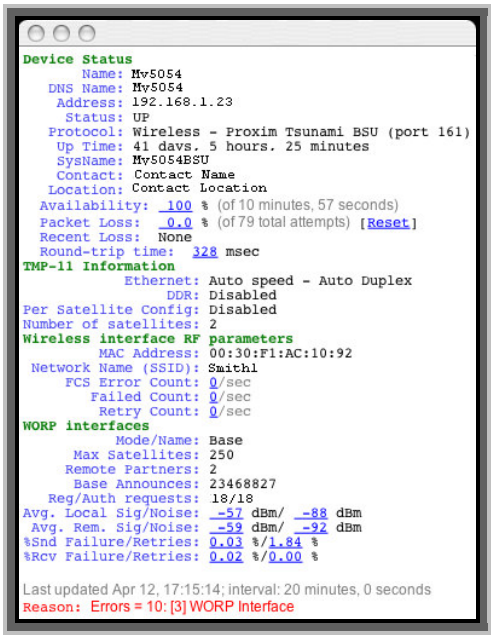
Sample Screen Shots:



```
Device Status
       Name: MyTmp2411
   DNS Name: (Unknown)
    Address: 192.168.1.3
     Status: UP
   Protocol: Wireless - Proxim Tsunami BSU (port 161)
    Up Time: 4 days, 23 hours, 36 minutes
    SysName: MyTmp2411
    Contact: Joe Smith
   Location: Joe's house
  Availability: 100 % (of 17 minutes, 44 seconds)
  Packet Loss:  0.0 % (of 46 total attempts) [Reset]
  Recent Loss:  None
  Round-trip time:  78 msec
TMP-11 Information
            Ethernet: Auto speed - Auto Duplex
                DDR: Disabled
Per Satellite Config: Disabled
Number of satellites: 1
Wireless interface RF parameters
         MAC Address: 00:02:2D:B1:78:FF
 Network Name (SSID): Smithl
    Operational Mode: 801.11b
             Channel: 4
 Auto Channel Select: Disabled
             Tx Rate: 11 MBps
   Multicast Tx Rate: 11 MBps
          Turbo Mode: Disabled
          Rogue Scan: Disabled
     FCS Error Count: 1/sec
        Failed Count: 0/sec
        Retry Count: 0/sec
WORP interfaces
          Mode/Name: Base (Wireless Router)
      Max Satellites: 250
     Remote Partners: 1
      Base Announces: 2796481
   Reg/Auth requests: 2/2
Avg. Local Sig/Noise: -72 dBm/ -87 dBm
 Avg. Rem. Sig/Noise: -71 dBm/ -96 dBm
%Snd Failure/Retries: 0.00 %/0.14 %
%Rcv Failure/Retries: 0.01 %/0.00 %
SU Statistics
  Mac                L.Sig     L.Noise   L.Tx     R.Sig    R.Noise    R.Tx
  00:02:2D:B1:7C:7A  -72dBm    -87dBm    11Mbps   -71dBm   -96dBm     11Mbps

Last updated Apr 12, 17:10:35; interval: 20 minutes, 0 seconds
```

Sample screen shot when wireless inteface settings and subscriber statistics are not displayed:



```
Device Status
       Name: My5054
   DNS Name: My5054
    Address: 192.168.1.23
     Status: UP
   Protocol: Wireless - Proxim Tsunami BSU (port 161)
    Up Time: 41 days, 5 hours, 25 minutes
    SysName: My5054BSU
    Contact: Contact Name
   Location: Contact Location
  Availability: 100 % (of 10 minutes, 57 seconds)
  Packet Loss:  0.0 % (of 79 total attempts) [Reset]
  Recent Loss:  None
  Round-trip time:  328 msec
TMP-11 Information
            Ethernet: Auto speed - Auto Duplex
                DDR: Disabled
Per Satellite Config: Disabled
Number of satellites: 2
Wireless interface RF parameters
         MAC Address: 00:30:F1:AC:10:92
 Network Name (SSID): Smithl
     FCS Error Count: 0/sec
        Failed Count: 0/sec
        Retry Count: 0/sec
WORP interfaces
          Mode/Name: Base
      Max Satellites: 250
     Remote Partners: 2
      Base Announces: 23468827
   Reg/Auth requests: 18/18
Avg. Local Sig/Noise: -57 dBm/ -88 dBm
 Avg. Rem. Sig/Noise: -59 dBm/ -92 dBm
%Snd Failure/Retries: 0.03 %/1.84 %
%Rcv Failure/Retries: 0.02 %/0.00 %

Last updated Apr 12, 17:15:14; interval: 20 minutes, 0 seconds
Reason: Errors = 10: [3] WORP Interface
```