Quick Configuration Guide

Document Information

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Upozornění:

Tato verze Quick Configuration guide je dočasnou verzí dokumentace poplatnou pouze pro příslušné aktuální verze uvolněných spojů Siklu EtherHaul. Použití tohoto manuálu je doporučené až po absolvování školení Siklu EtherHaul. V přípravě již je kompletní verze dokumentace. Za případné neodborné nebo nevratné zásahy do konfigurace nenese výrobce nebo distributor zodpovědnost.

Pro případné dotazy využijte lokální technické podpory na adrese: support@alternetivo.cz .

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1. Purpose

The purpose of this document is present the EtherHaul's quick configuration guide that covers the basic settings of the mm-Wave radio link.
This guide is supplementary to the Siklu EtherHaul-1200 Install & User Manual that provides the full configuration options of the product.
This guide is intended to assist customers to perform the basic configuration and monitoring tasks related to the product.

2. Installation and Setup Steps Overview

Connecting to the ODU

1. Use ssh client (like PuTTY.exe)
   Default IP Address: 192.168.0.1, Mask 255.255.255.0.
   User: admin; Password: admin.

Before antenna alignment

2. Verify configuration for antenna alignment.
   Verify ODU rf configuration and that ODU is in alignment mode.

After antenna alignment

3. Configure IP Address
4. Configure Modulation Table
5. Configure RF settings for Adaptive mode.
   Configure ODU to Adaptive mode. Configure one end of the link to Master and second to Slave.
6. Configure System Name.
7. Configure System Time & Date.
8. Verify link configuration and operation
   Verify RF settings, Modulation Table and System Settings.
   Verify no errors on the RF Statistics.

3. Antenna Alignment Configuration

ODUs are shipped from the factory configured to alignment mode with the required RF settings for antenna alignment.
Before heading out for installation, verify the following default settings on both ends of the link.

1. RF Settings

```
EH-1200>show rf

rf operational          : down
rf tx-state             : normal
rf rx-state             : normal
rf cinr                 : -128
rf rssi                 : -128
rf channel-width        : 500
rf frequency            : 74000
rf role                 : master
rf mode                 : alignment
rf alignment-status     : active
rf rx-link-id           : 0
rf tx-link-id           : 0
rf cinr-low             : 3
rf rssi-low             : -128
rf cinr-interval        : 100
rf rssi-interval        : 0
rf temperature          : <any value>
```

In case configuration is different than above, configure the ODU accordingly. You can configure the ODU by copying the commands to the CLI screen.

1. RF Settings

```
set rf  role master
set rf  mode alignment
set rf  rx-link-id 0
set rf  tx-link-id 0
set rf  cinr-low 3
set rf  rssi-low -128
set rf  cinr-interval 100
set rf  rssi-interval 0
set rf  frequency 74000
```

After setting these parameters, the configuration should be saved (copied to startup configuration) and reset should be applied.

2. Saving Configuration

```
EH-1200>copy running-configuration startup-configuration
```

3. Reset System

```
EH-1200>reset system
```

4. Link Configuration for Adaptive Mode

Once antenna alignment is completed, expected levels were achieved and antenna mount was locked, the ODUs should be configured to Adaptive mode that will allow traffic and management over the link.
For Adaptive (or Static) mode, different configuration should be applied both the two ends of the link. The difference in configuration between the two ends of the link is in the *rf role* parameter: one end should be set to *master* and the second to *slave*.
In addition, different IP addresses should be assigned to the two ends of the link.

Configuration Example Summary

	Site A	Site B
IP setting	Address 192.168.0.11 Mask 255.255.255.0 Route 192.168.0.100	Address 192.168.0.12 Mask 255.255.255.0 Route 192.168.0.100
Rf role	Master	Slave
System name	SiteA-11	SiteB-12

1. IP Address Setting

Site A
EH-1200>Set ip 1 ip-addr 192.168.0.11 mask 255.255.255.0 route 192.168.0.100

Site B
EH-1200>Set ip 1 ip-addr 192.168.0.12 mask 255.255.255.0 route 192.168.0.100

Note that after changing IP Address you will have to log in again in a new CLI session to the new IP Address.

2. Modulation Table

Site A and Site B
set modulation qpsk 1 4 0.5 cinr-low -128 cinr-high 11
set modulation qpsk 2 2 0.5 cinr-low 6 cinr-high 14
set modulation qpsk 4 1 0.5 cinr-low 10 cinr-high 127

3. RF Setting

Site A
EH-1200>Set rf role master
EH-1200>Set rf mode adaptive

Site B
EH-1200>Setrf role slave
EH-1200>Set rf mode adaptive

4. System Information

Site A
EH-1200>set system date 2011.01.18 time 15:08:00
EH-1200>set system name SiteA-11

Site B
EH-1200>set system date 2011.01.18 time 15:08:20
EH-1200>set system name SiteB-12

After setting these parameters, the configuration should be saved (copied to startup configuration) and reset should be applied.

5. Saving Configuration

EH-1200>copy running-configuration startup-configuration

6. Reset System

EH-1200>reset system

5. Link Verification

After setting the link to Adaptive mode, link should be up (*rf operational: up*) and locked on the highest modulation profile (*rf mode: adaptive qpsk 4 1 0.5*).
Link status and performance can be verified using the RF Statistics.

An example for ODU configuration in Adaptive mode can be found in Appendix A of this document.

1. Verifying RF Status

```
EH-1200>show rf

rf operational          : up
rf tx-state             : normal
rf rx-state             : normal
rf cinr                 : 16
rf rssi                 : -46
rf channel-width        : 500
rf frequency            : 74000
rf role                 : master                    ← SLAVE on remote end
rf mode                 : adaptive qpsk 4 1 0.5
rf alignment-status     : inactive
rf rx-link-id           : 0
rf tx-link-id           : 0
rf cinr-low             : 3
rf rssi-low             : -128
rf cinr-interval        : 100
rf rssi-interval        : 0
rf temperature          : 13
```

2. Verifying Modulation Table

```
EH-1200>show modulation

modulation  subchannels  repetitions  fec-rate  cinr-low  cinr-high
qpsk        1            4            0.5       -128      11
qpsk        2            2            0.5       6         14
qpsk        4            1            0.5       10        127
```

3. Verifying System Information

```
EH-1200>show system

system description        : EH-1200
system snmpid             : 1.3.6.1.4.1.31926
system uptime             : 0000:00:11:11
system contact            : undefined
system name               : SiteA-11
system location           : undefined
system voltage            : 55
system temperature        : 10
system date               : 2011.01.18
system time               : 15:19:05
```

4. Clearing RF Statistics Counters

```
EH-1200>clear rf statistics
```

5. RF Statistics

```
EH-1200>show rf statistics

rf in-octets          : 129952368
rf in-idle-octets     : 129896027
rf in-good-octets     : 48241
rf in-errored-octets  : 0
rf out-octets         : 129952348
rf out-idle-octets    : 129894909
rf in-pkts            : 666
rf in-good-pkts       : 666
rf in-errored-pkts    : 0
rf in-lost-pkts       : 0
rf out-pkts           : 668
rf elapsed-time       : 0000:00:00:06
```

Verify *rf in-errored-pkts* and *rf in-lost-pkts* are clear, indicating no errors over the link.

Note:
The RF Statistics will confirm that radio link is running error-free reliably only under traffic. In no traffic generator or customer traffic is running over the link, generate traffic by pinging the IP Address of remote ODU.

APPENDIX A – Configuration Example – Adaptive Mode

1. Full ODU Configuration for Adaptive Mode

EH-1200>copy running-configuration display

 # system configuring
set system contact undefined
set system name EH-1200 ← *System Name as configured*
set system location undefined

 # modulation configuring
set modulation qpsk 1 4 0.5 cinr-low -128 cinr-high 11
set modulation qpsk 2 2 0.5 cinr-low 6 cinr-high 14
set modulation qpsk 4 1 0.5 cinr-low 10 cinr-high 127

 # ip configuring
set ip 1 ip-addr 192.168.0.1 mask 255.255.255.0 route 0.0.0.0 vlan 0 ← IP Address as configured

 # fdb configuring

 # rf configuring
set rf role master ← SLAVE on remote end
set rf mode alignment
set rf rx-link-id 0
set rf tx-link-id 0
set rf cinr-low 3
set rf rssi-low -128
set rf cinr-interval 100
set rf rssi-interval 0
set rf frequency 74000

```
# configuring   eth
set eth host  admin up
set eth host  alias
set eth host  eth-type 1000fd
set eth host  auto-neg enabled
set eth host  alarm-propagation disabled
set eth host  pipe-to none
set eth eth0  admin up
set eth eth0  alias
set eth eth0  eth-type 1000fd
set eth eth0  auto-neg enabled
set eth eth0  alarm-propagation disabled
set eth eth0  pipe-to none
set eth eth1  admin up
set eth eth1  alias
set eth eth1  eth-type 1000fd
set eth eth1  auto-neg enabled
set eth eth1  alarm-propagation disabled
set eth eth1  pipe-to none
set eth eth2  admin up
set eth eth2  alias
set eth eth2  eth-type 1000fd
set eth eth2  auto-neg enabled
set eth eth2  alarm-propagation disabled
set eth eth2  pipe-to none

# bridge configuring

# fdb configuring

# vlan configuring
set vlan s1 1  egress c1,c2,c3,c4 untagged c1,c2,c3,c4 history disable
set vlan c1 1  egress host,s1 untagged host,s1 history disable
set vlan c2 1  egress eth0,s1 untagged eth0,s1 history disable
set vlan c3 1  egress eth1,s1 untagged eth1,s1 history disable
set vlan c4 1  egress eth2,s1 untagged eth2,s1 history disable
```

```
# bridge-port configuring
set bridge-port s1 c1 admit all
set bridge-port s1 c1 filter disabled
set bridge-port s1 c1 pvid 1
set bridge-port s1 c1 prio 0
set bridge-port s1 c2 admit all
set bridge-port s1 c2 filter disabled
set bridge-port s1 c2 pvid 1
set bridge-port s1 c2 prio 0
set bridge-port s1 c3 admit all
set bridge-port s1 c3 filter disabled
set bridge-port s1 c3 pvid 1
set bridge-port s1 c3 prio 0
set bridge-port s1 c4 admit all
set bridge-port s1 c4 filter disabled
set bridge-port s1 c4 pvid 1
set bridge-port s1 c4 prio 0
set bridge-port c1 host admit all
set bridge-port c1 host filter disabled
set bridge-port c1 host pvid 1
set bridge-port c1 host prio 0
set bridge-port c1 s1 admit all
set bridge-port c1 s1 filter disabled
set bridge-port c1 s1 pvid 1
set bridge-port c1 s1 prio 0
set bridge-port c2 eth0 admit all
set bridge-port c2 eth0 filter disabled
set bridge-port c2 eth0 pvid 1
set bridge-port c2 eth0 prio 0
set bridge-port c2 s1 admit all
set bridge-port c2 s1 filter disabled
set bridge-port c2 s1 pvid 1
set bridge-port c2 s1 prio 0
set bridge-port c3 eth1 admit all
set bridge-port c3 eth1 filter disabled
set bridge-port c3 eth1 pvid 1
set bridge-port c3 eth1 prio 0
set bridge-port c3 s1 admit all
set bridge-port c3 s1 filter disabled
set bridge-port c3 s1 pvid 1
set bridge-port c3 s1 prio 0
set bridge-port c4 eth2 admit all
set bridge-port c4 eth2 filter disabled
set bridge-port c4 eth2 pvid 1
set bridge-port c4 eth2 prio 0
set bridge-port c4 s1 admit all
set bridge-port c4 s1 filter disabled
set bridge-port c4 s1 pvid 1
set bridge-port c4 s1 prio 0

# fdb-table configuring

# arp configuring

# snmp-mng configuring

# cvlan-reg configuring
```

 # pep-vp configuring

 # svid-xlat configuring

 # ref-clock configuring
set ref-clock host prio 255

 # cfm-md configuring

 # cfm-ma configuring

 # cfm-ma-comp configuring

 # cfm-mep configuring

 # cfm-peer-mep-create configuring

 # classifier configuring

 # ingress-qos configuring

 # egress-qos configuring
set egress-qos host 0 length 12000
set egress-qos host 1 length 12000
set egress-qos host 2 length 12000
set egress-qos host 3 length 12000
set egress-qos host 4 length 12000
set egress-qos host 5 length 12000
set egress-qos host 6 length 12000
set egress-qos host 7 length 12000
set egress-qos eth0 0 length 12000
set egress-qos eth0 1 length 12000
set egress-qos eth0 2 length 12000
set egress-qos eth0 3 length 12000
set egress-qos eth0 4 length 12000
set egress-qos eth0 5 length 12000
set egress-qos eth0 6 length 12000
set egress-qos eth0 7 length 12000
set egress-qos eth1 0 length 12000
set egress-qos eth1 1 length 12000
set egress-qos eth1 2 length 12000
set egress-qos eth1 3 length 12000
set egress-qos eth1 4 length 12000
set egress-qos eth1 5 length 12000
set egress-qos eth1 6 length 12000
set egress-qos eth1 7 length 12000
set egress-qos eth2 0 length 12000
set egress-qos eth2 1 length 12000
set egress-qos eth2 2 length 12000
set egress-qos eth2 3 length 12000
set egress-qos eth2 4 length 12000
set egress-qos eth2 5 length 12000
set egress-qos eth2 6 length 12000
set egress-qos eth2 7 length 12000