

Hotwire™ DSLAM for 8540 and 8546 DSL Cards Firmware Update Description, Release 2.3

Document Number 8000-A2-GK48-00

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This document contains information that been added in the Hotwire™ Models 8540 and 8546 DSLAM (Digital Subscriber Line Access Multiplexer) system as a result of Firmware Release 2.3. This document is to be used in conjunction with the following documentation:

- *Hotwire DSLAM for 8540 and 8546 DSL Cards User's Guide* (Document No. 8000-A2-GB20-30)
- *Hotwire DSLAM for 8540 and 8546 DSL Cards Network Configuration Guide* (Document No. 8000-A2-GB21-30)
- *Hotwire DSLAM for 8540 and 8546 DSL Cards Startup Instructions* (Document No. 8000-A2-GB24-10)

Firmware Version Numbers

For full version 2.3 compatibility, the DSLAM system must have the following (or higher) versions of firmware:

| Component | Firmware Version Number |
|--|-------------------------|
| MCC (8000) | 2.03.12 |
| DSL (8546 and 8540) | 2.03.12 |
| RTU (5446) | 2.03.06 |
| RTU (5216/5246) | 1.01.05 |
| IPC (8100/8200) | 3.2.3 |
| OpenLane™ DCE Manager | 4.0 |
| OpenLane™ DCE Manager for HP OpenView for Windows | 2.0 |

For MIBs, access <http://www.paradyne.com>, select *Service & Support* → *MIBs* → *Hotwire DSL*, and download and install the latest version.

Branding

Branding is a method of marking hardware platforms and software loads to ensure that compatible software is loaded. For example, an 8546 or 8540 card can become an 8510. The MCC card can be upgraded provided the hardware supports the firmware.

Branding allows the firmware of a card to be changed as shown in the table below.

| Model Number | To/From Model Number |
|--|-----------------------------|
| 8546 | 8510 |
| 8540 | 8510 |
| 8540 | 8546 |
| MCC IP Complex | MCC IP Conservative |
| 5446* | 5620 |
| * You must upgrade your 5446 firmware to version R2.02.07 or higher before you can migrate to the 5620. If you do not, unexpected errors will occur. | |

There are no restrictions on the number of upgrades, i.e., you can upgrade any number of cards with one copy of the new firmware.

For instructions on downloading new firmware from specific environments, see the *Hotwire DSLAM, IP Conservative Firmware Update Description, Release 1.1* (Document No. 8000-A2-GK47).

Screen Changes

Six screens have been modified for Release 2.3. These include:

- IP Network
- ARP Parameters
- RTU Selection
- DSL Performance Summary
- DSL Performance Stats
- RTU Information

IP Network

Configuration → *Interface* → *IP Network (A-C-B)*

One field has been added to this screen:

- **Source Routing** – Enable/Disable. Enter the source routing option. Fields differ depending on the data entered at the **IP Interface** prompt (e1a or s1b–s1f). If source routing for an interface is disabled, any existing source route for that interface is removed from the active routing table.

The screenshot shows a terminal window titled "IP Network" with a sub-header "<no name> R:". The main content area displays the following configuration details:

```
IP Interface: s1f
Base IP Addr:  -----
Base Subnet Mask: -----

Input Filter:
Output Filter:
Source Routing: enable

Peer IP Address: 198.152.111.0
Route to Peer:  Host

Enable/Disable: 
Hotwire 8800: DSL04: 8546: _ M R D U X X X
```

CAUTION:

Extreme care must be taken in network design when enabling source routing on the e1a interface as it can create routing loops. Source routing should be disabled on the e1a interface for most installations.

ARP Parameters

Configuration → IP Router → ARP → Parameters (A-E-D-A)

One field has been added to this screen:

- **Default Route Entry Timeout (minutes)** – 1–20. Enter the length of time, in minutes, that a default route is to remain in the ARP table. If the default route entry times out without being referenced, an ARP request is sent to the next hop router. If no response is received, the default route entry is removed from the ARP table and the DSL card switches to the next reachable default route with the highest preference.

The screenshot shows a terminal window titled "ARP Parameters" with a sub-header "<no name> R:". The main content area displays three configuration parameters:

| | |
|--|----|
| Complete Entry Timeout (minutes): | 20 |
| Incomplete Entry Timeout (minutes): | 3 |
| Default Route Entry Timeout (minutes): | 1 |

At the bottom of the screen, there is a status bar with the text: "Input Number: █ Hotwire 8800: DSL04: 8546: _ M R D U D X X".

RTU Selection

Configuration → *RTU* → *Selection (A-H-A)*

One field has been added to this screen:

- **System Circuit ID** – 32 characters. Enter the circuit ID of the Remote Termination Unit (RTU).

```
RTU Selection <no name> R:
Port #: 1
RTU Type: 5446r2
System Name: <no name>
System Contact: <nobody>
System Location: <nowhere>
System Circuit ID: <none>

Input System Circuit ID:
Hotwire 8800: DSL04: 8546: _ M R D U D X X
```

DSL Link Performance Summary

Monitoring → Physical Layer → DSL Link Perf (B-B-D)

Four fields have been added to this screen:

- **link dn count** – Displays the number of times the DSL link has failed.
- **elp link up** – Displays the count, in seconds, of the interval between when the DSL link has gone down and come back up.
- **elp time** – Displays the count, in seconds, of total elapsed time the DSL link has been up.
- **pct link up** – Displays the percentage of time the DSL link has been up.

| DSL Link Performance Summary | | <no name> | | R: | |
|--|-------------------|-------------|-----------|------------|--|
| Port #: 1 | Operating Speeds: | Downstream: | 2560 kbps | | |
| | | Upstream: | 1088 kbps | | |
| | Current | Prev | Prev | Current | |
| | 15 min | 15 min | 1 hour | Day | |
| Dn Margin: | 12 | 12 | 11 | 11 | |
| Up Margin: | 8 | 8 | 8 | 8 | |
| DnErrRate: | <NA> | <NA> | <NA> | <NA> | |
| UpErrRate: | 0.00E-00 | 0.00E-00 | 0.00E-00 | 1.00E-00 | |
| DnAttEst: | -2 | -2 | -2 | -2 | |
| UpAttEst: | 1 | 1 | 1 | 1 | |
| Link dn count: | 0 | 0 | 0 | 1 | |
| elp lnk up: | 740 | 900 | 3600 | 4294967236 | |
| elp time: | 740 | 900 | 3600 | 0 | |
| Pct link up: | 100 | 100 | 100 | 0 | |
| DSL Port #: <input type="text"/> | | | | | |
| Hotwire 8800: DSL04: 8546: _ M R D U D X X | | | | | |

DSL Performance Stats

Monitoring → Physical Layer → DSL Perf Stats (B-B-E)

Two fields have been added to this screen under **Customer Data**:

- **k octs sent dn** – Displays the number of octets (in thousands) of customer data sent by the DSL card to the endpoint.
- **k octs rcv up** – Displays the number of octets (in thousands) of customer data received by the DSL card from the endpoint.

| DSL Performance Stats | | <no name> | | R: | |
|-----------------------|-------------------|----------------|----------------|----------------|--|
| Port #: 1 | Current 15 min | Prev 15 min | Prev 1 hour | Current Day | |
| 15min Valid: | 1 | 1 | 4 | 0 | |
| All Data | | | | | |
| pkt rcv dn: | 0 | 0 | 0 | 5 | |
| pkt snt dn: | 0 | 0 | 0 | 6 | |
| pkt lost dn: | 0 | 0 | 0 | 0 | |
| pkt rcv up: | 3 | 3 | 12 | 3 | |
| pkt snt up: | 0 | 0 | 0 | 8 | |
| pkt lost up: | 0 | 0 | 0 | 0 | |
| k octs sent dn: | 0 | 0 | 0 | 0 | |
| k octs rcv dn: | 0 | 0 | 0 | 0 | |
| k octs sent up: | 0 | 0 | 0 | 0 | |
| k octs rcv up: | 0 | 0 | 0 | 0 | |
| Customer Data | | | | | |
| k octs sent dn: | 0 | 0 | 0 | 0 | |
| k octs rcv up: | 0 | 0 | 0 | 0 | |

DSL Port #:

Hotwire 8800: DSL04: 8546: _ M R D U D X X

RTU Information

Monitoring → *RTU* → *Information* (**B-F-A**)

One field has been added to this screen:

- **System Circuit ID** – 32 characters. Displays the circuit ID of the Remote Termination Unit (RTU).

The screenshot shows a terminal window titled "RTU Information" with a sub-header "<no name> R:". The main content area displays the following information:

```
Port #: 1
RTU Type:      5446r2
System Name:   <no name>
System Contact: <nobody>
System Location: <nowhere>
System Circuit ID:
```

At the bottom of the screen, there is a status line: "DSL Port #: Hotwire 8800: DSL04: 8546: _ M R D U D X X".

NOTE:

When you are connected to an RTU, the **CAP Rev** field appears on the screen.

Line Performance

The following line performance features are implemented in Release 2.3:

- Selection of long interleaving at 136 kbps downstream rates
- Downstream speed of 136 kbps/8ER
- Upstream 25 kHz filters (optional)

SNMP Trap Information

The IP source address contained in trap datagrams is always the address of the MCC card. The MCC sends the trap to the management system destinations configured on the MCC and uses its own IP address in the source field. The trap identifies both the DSLAM slot and the DSL card port. This value is based on the ifIndex schema (overloaded ifIndex) that uses slot numbers 1,000 to 20,000 for slots 1 to 20 and adds the interface number 0 for the card, 1 to 999 for an interface.

The following traps in the HotxDSL MIB are not applicable: 4, 104, 8, 9, 10, 11, 12, 13, 14, and 15.

The following trap message may appear on your NMS screen:

| Severity | Date/Time | Source | Message |
|----------|--------------|---------------|--|
| Minor | July 14 0700 | 135.28.144.75 | Paradyne: xDSL Margin Low Interface 1003 |

Source is the IP address of the MCC card, and, under **Message**, 1003 is the DSL card in slot 1, port 3.

The IP source address used in trap datagrams sent to NMS systems can always be that of the MCC card. The MCC can send the trap to the management system destinations configured on the MCC using its own IP address in the source field. The first varabind of the trap can identify both the DSLAM slot and DSL card port. This value is based on the ifIndex schema (overloaded ifIndex) that uses slot numbers 1,000 to 20,000 for slots 1 to 20 and adds the interface number 0 for the card and 1 to 999 for an interface.

Additional SNMP Trap

The following trap has been added in Release 2.3:

| Trap | Severity | Comment | Trap # – MIB |
|--------------------------|----------|---|--------------|
| xdslLinkDownAnalysisTrap | Major | Sending protocol entity recognizes that the xDSL communication link is down and lists reason. | 21-xDSL |

Information contained in this trap includes the port number (defined by its ifIndex), the length of time the port has been down (in seconds), which device triggered the link down (AN, SN, or both), and the cause of the event, as follows:

- **Normal** – Normal powerup training sequence.
- **Rate adaption** – Retrain due to rate adaptation speed change.
- **Low margin** – Retrain due to margin falling below threshold.
- **Low RSL** – Retrain due to receive signal level too low.
- **High SNL** – Retrain due to signal-to-noise level too high.
- **High CRCs** – Retrain due to excessive cyclic redundancy check errors.
- **High RS** – Retrain due to excessive Reed-Solomon buffer overflows.
- **Change power** – Retrain due to startup message contains a different transmitter power level that the current operating level.
- **Default power** – Retrain and revert to default –6db transmitter level after a failure to train at the last configured level.

Known Problems

1. On the DSL Parameters screen (**A-B-B**), if your **Dn Speed** field is set higher than your **Max Dn Speed**, the port won't train. Be sure to set your **Max Dn Speed** greater than or equal to the **Fixed Dn Speed**.
2. When upgrading from R1.1 to R 2.3, the information that has been entered on the SNMP screens (**A-F-A, B, or C**) disappears. You must reenter this information.

Ordering Information

Contact your sales or service representative to order product documentation about the Hotwire system.

Paradyne documents are also available on the World Wide Web at:

<http://www.paradyne.com>

Select *Service & Support* → *Technical Manuals*



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