

Hotwire™ DSLAM for 8000 MCC and 8546 DSL Cards Firmware Update Description, Release 2.03.15

Document Number 8000-A2-GK54-00

December 1998

This document contains information that has been added in the Hotwire™ Models 8546 DSLAM (Digital Subscriber Line Access Multiplexer) system as a result of Firmware Release 2.03.15. 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 2.03.15 compatibility, the DSLAM system must have the following (or higher) versions of firmware:

Component	Firmware Version Number
MCC (8000)	2.03.15
DSL (8546)	2.03.15
RTU (5446)	2.04.07
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 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
MCC IP Complex	MCC IP Conservative
5446*	5620
* If your 5446 has a version older than R2.02.07, you must upgrade to R2.02.07. You may then upgrade to any later releases (i.e., R2.04.07). If you do not, unexpected errors will occur. If you are migrating from a 5446 to a 5620, and your 5446 has a version older than R2.02.07, you must upgrade to R2.02.07. You may then upgrade 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 2.03.15. These include:

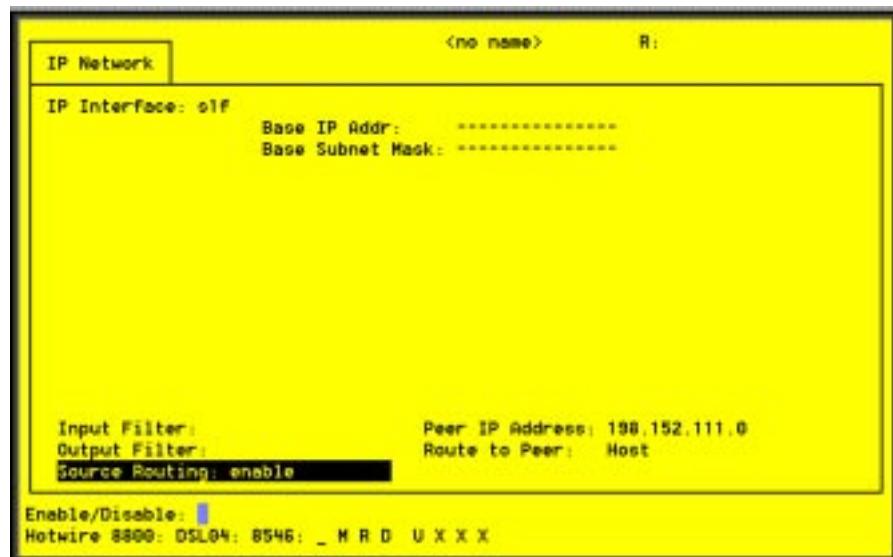
- IP Network
- ARP Parameters
- RTU Selection
- DSL Performance Summary
- DSL Performance Stats
- RTU Information

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.



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 yellow background. The window contains the following text:

```
ARP Parameters                               <no name>      R:
-----
Complete Entry Timeout (minutes):           20
Incomplete Entry Timeout (minutes):         3
Default Route Entry Timeout (minutes):      1
-----
Input Number:
Hotwire 8800: DSL04: 8546: _ M R O 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).



The screenshot shows a terminal window titled "RTU Selection" with a yellow background. The window contains the following text:

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

```

At the bottom of the screen, there is a prompt: "Input System Circuit ID:" followed by a cursor. Below the prompt, the text "Hotwire 8800: DSL04: 8546: _ M R D U D X X" is visible.

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.

The screenshot shows a terminal window titled "DSL Link Performance Summary" with a yellow background. The window displays performance data for a DSL link. At the top, it shows "(no name)" and "R:". Below that, it lists "Port #: 1" and "Operating Speeds: Downstream: 2568 kbps, Upstream: 1888 kbps". The main data is presented in a table with four columns: "Current 15 min", "Preu 15 min", "Preu 1 hour", and "Current Day". The rows include "Dn Margin", "Up Margin", "DnErrRate", "UpErrRate", "DnAttEst", "UpAttEst", "Link dn count", "elp link up", "elp time", and "Pct link up". At the bottom, it shows "DSL Port #: " and "Hotline \$800: DSL04: \$546: _ M R D U D X X".

	Current 15 min	Preu 15 min	Preu 1 hour	Current 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 link up:	740	900	3600	4294967236
elp time:	740	900	3600	0
Pct link up:	100	100	100	0

DSL Port #:
Hotline \$800: DSL04: \$546: _ 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.

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 sent dn	0	0	0	6
pkt lost dn	0	0	0	0
pkt rcv up	3	3	12	3
pkt sent 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

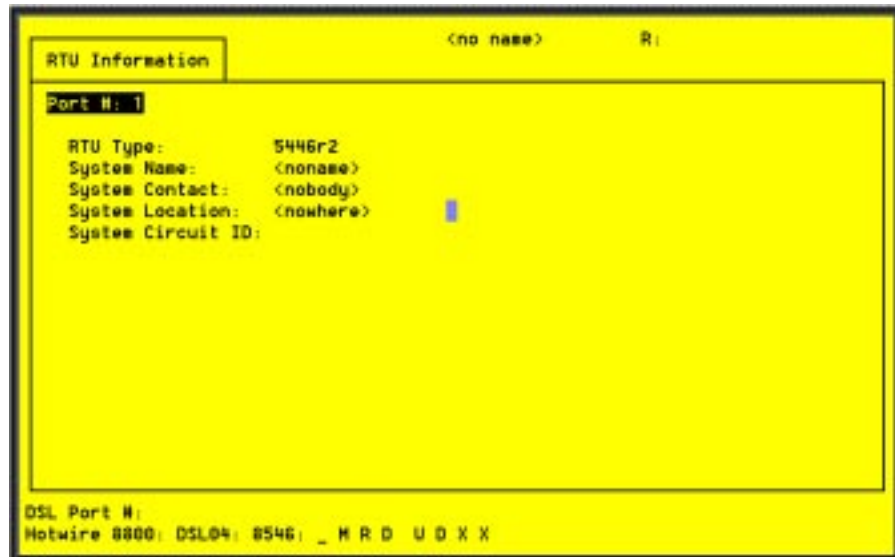
DSL Port #:
Hotwire 8800: DSL04: 8546: _ M R D U D X X

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).



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 2.03.15:

- 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 varbind 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 2.03.15:

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.

Release 2.03.15 Problem Resolutions

There were 8 MRs submitted in this 2.03.15 code release. A brief description of the problem and MR number is presented below:

- DSL links did not train up at Fixed mode 7168 Down speed when Adaptive Max Down speed is set lower. (MR ton980532)
- DHCP relay source address is incorrect on multihomed E1A interfaces. IP source address now set to the gateway address on all packets that are relayed through the DHCP relay. (MR ton980537)
- Internally generated traffic uses the wrong source subnet address. The source address of the IP packet is matched against the IP address of all interfaces that are up and the proper subnet address is then placed as the source IP address. (MR ton980538)
- Starlet lockup problem with 136K Baud. (MR ton980540)
- Unable to set correct date and time on the DSL card after 97 plus days. (MR ton9805410)
- Adaptive mode algorithm start-up for properly storing the last up/down constellation and last baud rate. (MR ton980542)
- DSL port stuck in port wait state after 97 days. (MR ton980543)
- Computation of 24-bit mask for subnet addresses in DSL active routing table. (MR ton980544)

Known Problem

When upgrading from R1.1 to R2.03.15, 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*