HUGHES.

HX90 8.0.0 Release Notes

H48178

Build 8.0.0.32 Revision A.01 May 14, 2012

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REVISION HISTORY

Document Revision	Release #	Date of Issue	Author	Scope
A.01	8.0.0.32	May 14, 2012	S. Fahey	Updates for 8.0.0.32

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1 RELEASE DETAILS

1.1 RELEASE CONTENTS

The following package consists of release notes and installation procedures for the Release 8.0.0 of HX90 terminals. The terminal release is part of the overall HX System Release 4.0 Refer to HX System 4.0 Release Notes (H48180) for more information on features introduced in this release and the dependencies.

1.1.1 What's New in this Release

IPv6: This feature allows the HX System to support IPv6 on the customer facing interfaces of the system i.e. the Enterprise and the Remote LAN segments. With implementation of this feature, the HX200 and the IPGW are now capable of talking to IPv6 devices (hosts, routers) on their local LAN segments and the customer network/Internet and sending IPv6 traffic across the spacelink. Refer to the IPv6 Feature Release Notes document (H47655) for more details.

Supported Features

Listed below are the other features (*alphabetically ordered within each group*) that are supported in this release.

Subsystem/Feature Name	Codes ⁺	Restric tions	Mode [%]	Reference Document#	
General				•	
Automatic Global Resource Allocation (AGRA)	GRP	No	IR, LR	H34952	
DW7000 Rescue Button	N/A	No	IR, LR, RO	H33070	
End-to-End VLAN Propagation, Phase 1.5 and 2	VLAN	No	IR, LR	H39291	
Efficient VSAT Polling	VIP, EVP	No	IR, LR	6003878	
Events	EVT	No	IR, LR, RO	H30592	
Fallback update Over the Air (FOA), Terminal Configuration Update (FOA Phase II)	N/A	No	IR, LR, RO	H34535	
Improved Billing Lock/Unlock	N/A	No	IR, LR	H35569	
LAN Return and Receive Only Mode of Operation	N/A	No	N/A	H38106, H38107	
PCI Compliance	N/A	No	IR, LR, RO	None	
Radius Authentication for Telnet and FTP access	N/A	No	IR, LR, RO	H38596	
Rescue Button	N/A	No	IR, LR, RO	H33070	
Self-Hosted VSAT API support	N/A	No	IR, LR, RO	H31034	
SNMP Trap Forwarding Feature	N/A	Yes	IR, LR	H32687	
Spacelink Up/Down Enhancement	N/A	No	IR	H29487,	
				H34938	
Terminal Re-Branding	N/A	N/A	IR, LR, RO	H30583	
VSAT/Appliance Management over Satellite	N/A	No	IR, LR, RO	H35569	
Web Interface, with Password Protection	N/A	No	IR, LR, RO	H30583	
Outroute/Receiver Features					
DVBS2/ACM Support	N/A	No	IR, LR, RO	H34992	
Geographic NOC Switchover Enhancement	N/A	No	IR, LR, RO	None	
Low Symbol Rate Support	N/A	No	IR, LR, RO	H31476	
NOC Diversity	N/A	No	IR, LR	H34938	
Outroute (RBP) Header Compression	OHC	No	IR, LR	H35585	
Secondary Outroute (NetSwitch)	N/A	No	IR, LR, RO	H30010	
Inroute/Transmitter Features					
Adaptive (Open Loop) Inroute System	ACSP	No	IR	H33226	
CBR Return Channel Enhancement required for DW6040 VBD support	DIRT, SHOUT	No	IR	H32116	
Closed Loop Power	ICLPT	No	IR	H34735	
Closed Loop Timing	ICLPT	No	IR	H34734	
Dedicated Inroute Bandwidth	DIRT	No	IR	H34121	
Extended KU-Band Support	N/A	No	IR	H32493	
Generalized Load Balancing	N/A	No	IR	H35350	
High Speed/Turbo Coded Inroutes	N/A	No	IR	H34121	
IFL Diagnostics	N/A	Yes^	IR	H34874	
Inroute Header Compression	N/A	No	IR	H34121	
Inroute Prioritization (including DSCP support and CBR traffic handling)	DIRT	No	IR	H30008	
Low Power Idle Mode	N/A	No	IR	H33375	
On-Demand Streaming	DIRT	No	IR	H36753	

Rain Fade Rate Fallback	N/A	No	IR	H30489
Remote Site Originated Multicast	DIRT	No	IR	H36752
Scalable IQOS	N/A	No	IR	H34121
Selective Bit Rate Control	N/A	Yes	IR	H32494
Single Rate Ranging	ICLPT	No	IR	H34735
Diagnostics				
CPU Monitoring	N/A	No	IR, LR, RO	H32680
LAN Receive Traffic Monitor – Port (TCP/UDP)	N/A	No	IR, LR, RO	H35008
based	,		,,	
LAN Receive Traffic Monitor – IP Address based	N/A	No	IR, LR, RO	H35008
Packet Dump	N/A	No	IR, LR, RO	H34120
Terminal Diagnostics with Automated Reporting	N/A	No	IR, LR, RO	H35008
LAN Features				
LAN Health Monitor	N/A	No	IR, LR, RO	H32914
VLAN Tagging	VLAN	No	IR, LR, RO	H30582
Virtual Router Redundancy Protocol (VRRP)	N/A	No	IR, LR	H36007
IP Routing Features	1 1/11	110	III, EII	1130007
Dynamic Routing	VIP, DYNRT	No	IR, LR	6003878
- ŭ	VIP, DYNRT	No		H37285
Border Gateway Protocol (BGP4) Policy Based Routing (PBR)	FIRE	No	IR, LR	H30581
RIP/BRP Default Route	VIP, DYNRT	No	IR, LR IR, LR	6003878
	VIP, DINKI	NO	IR, LR	0003878
IP Stack/Services Features			T	T ****
DHCP Relay, including simultaneous operation with DHCP Server	DHCP	Yes	IR, LR	H30001
DHCP Server with Memory Optimization and	DHCPS	No	IR, LR, RO	H30001
simultaneous operation on both LAN ports				
DHCPS/NAT Local Configuration	DHCPS,	Yes	IR, LR	H33989
	NAT,NPR			
DNS Caching	DNS	No	IR, LR	H28669
IGMP – v1, v2, v3	N/A	No	IR, LR, RO	H35568
IPSEC	IPSEC	No	IR, LR	H33272
NAPT and Routing	NPR	No	IR, LR	H30584
NAT including Port Forwarding (aka Inbound Port Mapping), PPTP and IPSEC ALG, Simultaneous enabling on both LAN ports	NAT, NPR	No	IR, LR	H30172
NAT – Local configuration of Port Forwarding (aka	NAT, NPR	No	IR, LR	H30172,
Inbound Port Mapping)				H30583
Firewall				
Access Control List	FIRE	No	IR, LR, RO	H30581
Fenced Internet	FIA	No	IR, LR	H31637
MAC Address White List	FIRE	No	IR, LR, RO	H30581
Virus Protection	FIRE	No	IR, LR, RO	H30170
Acceleration Features			, ,	
PEP – RBP/PEPv3.5 (including DSCP Support)	PEP,	No	IR, LR	H30006
	PEPTS			
Turbo Page including STSB (Simple Transparency	TPC, NTS,	No	IR, LR	H34975
SSL Bridging), PCSB (Proxy Compatible SSL	DNS			
Bridging), Client IP Forwarding, MTG and Bulk				
Upload/Download Bypass				
Installation/Commissioning	· ·			ı
Dial-up Commissioning	N/A	No	IR, LR, RO	H30005
Easy Accessibility to Remote	N/A	No	IR, LR, RO	H30003

Mixed LNB	N/A	No	IR, LR, RO	H38766
Regional ACP	N/A	No	IR	None
Robust Parameter Update	N/A	No**	IR, LR, RO	H32130
Satellite Based Commissioning	N/A	No	IR	H29241,
				H29514
SDL Enhancements	N/A	No	IR, LR	H32130
Web Interface based Manual Commissioning	N/A	No	IR, LR, RO	H33181

^{!!!}Not yet qualified.

If SDL is not available, an empty file 'nouem.dat' should be added to /cfg0/ directory. N/A implies that no Feature code is required for enabling this feature.

^{*}UEM support is only via Advanced Parameters for Vision UEM 6.2.1 and earlier.

⁺ UEM codes are the Feature Set values that define the features supported by a software profile

^{**}SDL must be on. This feature is enabled by default and should not be used if SDL is not available.

1.2 REFERENCE DOCUMENTS

Listed below are documents that are referenced within this document. If no revision or date is specified the latest version should be referenced.

Table 1-1. Referenced Documents

Doc.	Title
Number	
1039456 -0001	HX90 Satellite Router Installation Guide
1039456 -0001	HX90 Satellite Router Installation Guide HX90 Satellite Router User Guide
6003878	Direcway Dynamic Routing Operations Guide
H24590	Universal Antenna Pointing Signal Quality Factor (uSQF) Data Sheet
H28223	PEPv3/v3.5/Turbo Page/Inroute Prioritization Recommended Configuration
H28669	Direcway DNS Caching Release Notes
H29241	DIRECWAY VSAT Satellite Based Commissioning Release Notes
H29514	Self-hosted Adapter Swap using Satellite Based Commissioning – Datasheet
H30001	DIRECWAY Terminal DHCP Server Release Notes
H30003	DIRECWAY Terminal Easy Accessibility Release Notes
H30006	DIRECWAY Terminal PEPv3 Release Notes
H30008	DIRECWAY Inroute Prioritization, CBR Traffic and PEP Flow Control Release Notes
H30010	DIRECWAY Terminal Secondary Outroute Release Notes
H30147	DIRECWAY VSAT VLAN Tagging Datasheet
H30170	DIRECWAY Terminal Virus Protection Release Notes
H30172	DIRECWAY Terminal NAT Implementation Release Notes
H30489	DIRECWAY Rain Fade Fallback Release Notes
H30581	HN System Terminal Policy Feature Release Notes
H30582	DIRECWAY Terminal VLAN Tagging Release Notes
H30583	Web Interface Release Notes
H30584	NAPT and Routing Release Notes
H30592	Direcway VSAT Events Feature Release Notes
H31034	HNS Self-Hosted VSAT Interface Specification
H31476	DIRECWAY Low Symbol Rate Support Release Notes
H31637	DIRECWAY Terminal Fenced Internet Access Release Notes
H32119	DiRECWAY Terminal Status Codes
H32130	DIRECWAY SDL Release Notes
H32492	DIRECWAY Automatic Ranging Release Notes
H32493	DIRECWAY Extended KU Band for In-Routes Datasheet
H32494	DIRECWAY Selective Bit Rate Control Datasheet
H32680	DIRECWAY Terminal CPU Monitoring Release Notes
H32687	DIRECWAY Terminal SNMP Implementation Release Notes
H32691	DW7000 Open Loop Power Control Data Sheet
H32741	DW7000 Network Features
H32914	DIRECWAY LAN Configuration and Health Monitor Release Notes
H33034	DW7000 User Bit Rate
H33070	DW7000 The Rescue Button Release Notes
H33226	DW7000 AIS Release Notes
H33272	DIRECWAY Site-to-Site IPSEC Encryption Release Notes
H33375	DIRECWAY Low Power Idle Mode Release Notes
H33989	DIRECWAY DHCPS/NAT Local Configuration Release Notes
H34120	DIRECWAY Terminal Packet Dump Release Notes
H34121	DIRECWAY Terminal Supported Inroutes Release Notes

Doc.	Title
Number	
H34535	DIRECWAY Terminal Fallback update Over the Air Release Notes
H34734	Closed Loop Timing Feature Release Notes
H34735	Closed Loop Power Control, Adaptive In-route Selection, Single Rate Ranging Feature Release Notes
H34874	HN7000S IFL Diagnostics Release Notes
H34938	HUGHES Terminal NOC Diversity Release Notes
H34952	Terminal Automatic Global Resource Allocation Release Notes
H34992	DVBS2 ACM Feature Release Notes
H35008	Diagnostics Feature Release Notes
H35350	Generalized Load Balancing Release Notes
H35568	HN System Terminal Multicast Implementation Release Notes
H35569	HN System Terminal/Appliance Management Over Satellite
H35585	HN System Outroute Header Compression Release Notes
H36007	HN System Terminal VRRP Release Notes
H36752	HN System Remote Site Originated Multicast Release Notes
H36753	HN System On-Demand Streaming Release Notes
H37285	HN System BGP4 Implementation Release Notes
H38106	HN System LAN-Return Mode Terminal Release Notes
H38107	HN System Receive-Only Mode Terminal Release Notes
H38426	HN System IP Payload Compression for UDP Packets Release Notes
H38596	HN System Radius Client Feature Release Notes
H38766	Mixed LNB Feature Release Notes
H39082	TurboPage 5.7.1 Installation and Operations Manual
H39291	HX/HX System End-to-End VLAN Propagation Release Notes
H39294	Enterprise Disaster Recovery Release Notes
H40464	HN System CAX Feature Release Notes

1.3 DEPENDENCIES

In the table below are the required HX System software components necessary to fully utilize this release. The build number represented by the last digit may be the latest release at the time of testing; however, if a later build is available its use is recommended. For example, a 5.0.0.7 version would be recommended over a 5.0.0.6 version of a component.

Table 1-2. Dependencies

	Tuble 1 2. Dependencies
Platform	Version Dependency
IP Gateway	Release 7.1.0.9 or higher
ExpertNMS	Release 7.6.1.16 or higher
CAC	Release 7.0.1.0 or higher
MFS	Release 7.0.1.0 or higher
WebACS/ACSLite	Release 7.1.1.0 or higher
DVBS2ACMGW	Release 7.0.0.3 (ACM) or higher
SGM	Release 7.3.0.4 or higher
CDS	Release 7.1.1.9 or higher
DNCC	Release 7.2.0.6 or higher
DW7000 Timing Unit	Release 5.6.0.34 or higher
SSGW	Release 5.6.1.2 or higher
ACP Server	Release 5.3.0.3 or higher

Turbo Page Server	Release 7.0.0.37 or higher
Direcway Installer	Release 4.0.21.11 or higher. Release 4.2.1.3 or higher is required for the Mobile Antenna Support feature.
DNS Cache Loader	Release 4.2.0.11 or higher

1.4 PREREQUISITES

1.4.1 3rd Party Software

N/A

1.4.2 3rd Party Hardware

N/A

1.4.3 MIBS

The following MIB versions (*organized alphabetically by MibVer Variable Name*) are supported by this software release

MIB Name **MIB File Name** Rev MibVer Variable **BGP4 MIB** 1.07 bgpAdminMibVersion bgp4.my CAX MIB 1.04 caxMibVersion cax.my **DIRECWAY Events MIB** 1.2 eventsMibVersion events.my **IPCOMP MIB** 1.05 ipCompAdminMibVersion ipcomp.my DIRECWAY IPSEC MIB ipsec.my 1.15 ipsecMibVersion DirecWay Multimedia Network ACM MIB 1.05 acmAdminMibVersion mmacm.my DirecWay Multimedia Network AIS MIB 1.03 aisAdminMibVersion mmais.my DIRECWAY Multimedia Network Common 3.8 mmCommonMibVersion mmcommon.my MIB Direcway Element Trap MIB mmdirecwaytraps.my 1.23 N/A DIRECWAY DNS Caching MIB dnsCacheMibVersion mmdnscache.my 1.12 DIRECWAY Multimedia Network NAT MIB natMibVersion mmnat.my 1.0 **Hughes OHC MIB** mmohc.my 1.5 ohcMibVersion DIRECWAY Multimedia Network PEP MIB 1.22 mmPepMibVersion mmpep.my DIRECWAY Multimedia Network VIP MIB 1.11 mmVipMibVersion mmvip.my DIRECWAY Multimedia Network VSAT MIB 2.56 vsatMibVersion mmvsat.my **DIRECWAY Routing MIB** routing.my 1.6 routingMibVersion **DIRECWAY Transport MIB** shannon.my 1.43 shannonAdminMibVersion DIRECWAY Network SSL MIB 1.4 sslbMibVersion sslb.my **DIRECWAY TCP Layer 4 MIB** tcpl4.my 1.13 tcpl4MibVersion DIRECWAY Turbo Page MIB tpc.my 2.12 tpcMibVersion

Table 1-3. MIBS

1.5 PERFORMANCE CHARACTERISTICS

1.5.1 Startup time

Nominal time from power up to RX tuner lock is approximately 30-45 seconds.

1.5.2 Inroute/Outroute Performance

• Data Transfer Rates (bps) as follows – Assuming uncompressible 1400 byte Data Packets

Out-Route	Out-Route Download				
TCP	15Mbps	•	Assumes high capacity outroute (45Msps 8Psk)		
UDP	45Mbps	•	CPU Utilization does not exceed 80%		
Multicast	60Mbps	•	Each test performed individually		
			 No excess traffic on inroute 		
			 No additional traffic on outroute 		

In-Route U	In-Route Upload				
TCP	3.2Mbps	•	Assumes high capacity In-route (2Msps Rate		
UDP	3.2Mbps		9/10, and packet size = 1000 bytes)		
Multicast	3.2Mbps	•	CPU Utilization does not exceed 80%		
		Each test performed individually			
			 No excess traffic on Outroute 		
			 No additional traffic on In-route 		

Simultaneous In-Route/ Out-Route				
TCP	Out- Route	10Mbps	Assumes 2Msps Rate 4/5 In-route Assumes 2Msps Rate 4/5 In-route	
	In-Route	2Mbps	Assumes 45Msps 8PSK Out-route CPU Liviliant 1000/	
UDP	Out- Route	40Mbps	 CPU Utilization 100% Inroute and Outroute simultaneous traffic 	
	In-Route	2Mbps	u anic	

o Packet Switching Rates (pps) as follows – Assuming uncompressible 60 byte Data Packets

Packet Switching Rate				
	Out-	5000pps		
UDP – In single direction	Route			
	In-Route	1250pps	CPU	Utilization
UDP – Simultaneous bi-	Out-		80%	
directional traffic	Route	1250pps		
directional traffic	In-Route			

1.6 RESOLVED ISSUES

1.6.1 Resolved in this release

The following issues are resolved in this release. This list includes all issues which were detected in the launch, beta, or production that have been resolved since Release 6.11.0.4

Table 1-4. Resolved SPRs since 6.11.0.4

Trouble	SPR#	Title	Release
Ticket #			No.

	None	

Table 1-5. Previously Resolved SPRs

Trouble Ticket #	SPR#	Title	Release No.
		None	

1.7 KNOWN ISSUES AND WORKAROUNDS

This section identifies the known operational limitations and issues with this release. Please consult the individual feature release notes for other information that may be pertinent to that feature.

- 1. Tuner/Demod Characteristics: Lock times may be longer for symbol rates below 5 Msps.
- 2. Make sure the NOC sends correct PSI on all transponders. The DNCC and Data Program numbers can be configured as zero in case the typical PIDs (40000 and 20500 respectively) are used.
- 3. You may need to disable the Customer Recoverable IP Address feature in certain cases. Reference H30003 (DIRECWAY Terminal Easy Accessibility Release Notes).
- 4. UDP packets' checksums get set to 0 (zero) if UDP header compression is enabled. This is expected behavior with DNCC version 4.0.3.x and higher.

1.8 OUTSTANDING ISSUES

Provided below are the outstanding issues with this release.

Table 1-6. Outstanding SPRs

Trouble Ticket #	Title
	None

2 INSTALLATION

For site installation of a HX90 unit refer to the <u>HX Series Installation Guide</u> for detailed installation procedures. Refer to the HX90 User Guide for details regarding the operation of the HX90

The following sections describe installation of the HX VSAT software into the ExpertNMS.

2.1 ROADMAP FOR INSTALLATION

The following sections are provided:

- Fresh Install
- Upgrade Install
- Fallback Steps
- Troubleshooting Tips

2.2 FRESH INSTALL

- 1. If using a CD, load CD containing the MM_HX90_8.0.0.32 file into the Vision EMS. Skip step 2.
- 2. Otherwise, download the zipped file for the HX90 Release 8.0.0.32 from the Release Center site. Use WinZip to extract the HX90_8.0.0.32 image and transfer it to the Vision EMS.
- 3. Copy the MM_HX90_8.0.0.32 file to \remote_releases\ MM_HX90_8.0.0.32.
- 4. Using the Profiles screen, change the remote software profiles to point to this file.
- 5. Press OK.

2.3 UPGRADE INSTALL

Same as Fresh Install.

2.4 FALLBACK STEPS

Follow the same steps as described for Fresh Install using a previous software release.

2.5 CONFIGURATION STEPS

See the individual feature release notes for details regarding configuration.

2.5.1 Important Configuration Notes for This Release

- 1. For Enabling LPDC Inroute encoding, please refer to LDPC Feature Release Notes (H42199).
- 2. For PEP and Turbo Page configuration guidelines see (H28223).
- 3. For important configuration information regarding terminal software upgrades (H32130).
- 4. Modifications to the bit rate mask should always be tested on a co-located remote before deploying to larger population. Improper setting of this parameter could result in remotes becoming isolated and unable to transmit. For proper settings please refer to (H32494).
- 5. The following release identification information is displayed by clicking the System Info button after browsing to the main web page at default IP address 192.168.0.1.

Software Date: May 11 2012, 14:44:53

Software Release: 8.0.0.32

2.6 TROUBLESHOOTING TIPS

2.6.1 Diagnostics

Please refer to the Diagnostics Release Notes for details on using this feature for troubleshooting common issues.

2.6.2 No Browsing due to Turbo Page Server issue

This release contains a troubleshooting tool for users having "no browsing" issues. In case, a no-browsing issue is detected and the user can access the System Control Center and do "secure browsing" and the Connectivity Test works successfully, the user should be instructed to go to the Advanced Page and click on the "Turbo Page->Advanced Cfg" link in the left menu bar. Then, the user should be told to ensure that "Auto-Select Turbo Page Server" option is selected and then click on the "Tear down Turbo Page Connection" button. Then, the user should be told to retry browsing and if the issue was due to Turbo Page server, browsing should work now.

Note: The Turbo Page configuration link also contains two other options — "Use Current Turbo Page Server" and "Use the specified Turbo Page Server". If the latter is selected, the IP Address and Port Number (typically port 86 — but depends on Turbo Page Server configuration) must be specified and in such a case, a bold [S] is added to the Web Acceleration Status message on the Main Page.

2.7 GUI UPDATES SINCE RELEASE 6.5.0

- 1. Main Page updates:
 - None
- 2. Advanced Page updates:
 - Multiple updates for E2EVLAN Phase2. Refer to (H39291) for more details.