DXM Firmware Release Notes

Version 2.02.00 of the DXM Controller firmware requires version 3.1 of the DXM Configuration Software to use the new features. Version 3.1 should be backwards compatible with earlier versions of DXM Controller firmware.

Refer to Updating Your DXM Processor Firmware (p/n b_4474194) for instructions.

Date	Version	Feature	Details
13 May 2019	2.02	New Modbus Capabilities	Modbus TCP Client—The DXM Controller now has Modbus TCP Client Rules. The controller can be programmed to access other Modbus devices using Ethernet. Under Register Mapping > Modbus TCP complete each socket definition with the IP address, Poll rate and Poll timeout of other Modbus TCP server devices. Then create Modbus TCP Write/Read rules to Move register data between devices. Optimized Memory allocation for Modbus Rules—Memory use for Rules based logic is now dynamically allocated. This creates more efficient memory use for ScriptBasic programming and file operations. Enhanced Radio Polling—The Automatic Radio Polling (Settings > General) has four settings to get data from the internal ISM radio into the processors Local Registers. Each setting alters the Local Register data organization and/or the usage of outputs. Storing data into Local Registers Organized by Devices—This groups register data into Local Registers by radio devices: Local Registers 1-16 = Gateway, 17-32 = Node 1, 33-48 = Node 2, et al. When data is grouped by device there are two options, inputs only or inputs and outputs. Storing data into Local Register Organized by Inputs/Outputs—This setting groups radio register data into Local Registers by inputs/outputs. Local Registers 1-48 = Input 1 for each device (GW, N1-N47), Local Registers 49-96 = Input 2 for each device, et al. Action Rule Update—Tracker Rules have been updated to allow for the result register to be cleared. Functions for the Tracker Rules are also updated, functions include rising edge counting, Time in milliseconds the register is in high state and time in milliseconds the register is in low state.
13 May 2019	2.02	Security Updates	Enhanced SSL/TLS Performance—Use the hardware assist within the DXM Controller micro to increase the performance of encrypting and decrypting data payloads. Updated SSL/TLS stack—Updated the DXM Controller network stack to use the latest version of SSL/TLS for the most reliable and greatest performance possible. Boot Loading over SSL/TLS—Resolved issue with DXM boot loading over Ethernet using an encrypted data connection.
13 May 2019	2.02	Enhancements and Fixes	Updated LCD scaling with I/O Extended Modbus addressing for PTL Modbus RTU Slave port parity—Corrected the DXM Controller Modbus RTU slave port handling of parity for devices that require different parity settings. Reset Registers in Action Rules—Added the ability to reset the Action rules, Tracker registers and On Time registers in Threshold rules.
13 May 2019	2.02	Cellular Updates	Cellular updates to enhance LTE and GSM modems LCD additions for LTE / GSM modems Correction for GSM formatting of SMS messaging
15 Apr 2020	2.09	New Features (Not all features will be available to all platform devices)	PROFINET - will be available to the DXM700 and DXM1200 platforms. Version 2.09 provides a certified version of a PROFINET interface and the initial firmware release for BETA testing with our PROFINET customers. Supported production release will be second half 2020. Amazon AWS IoT platform support to provide DXM connections to the public AWS IoT infrastructure (DXM700, DXM1000, and DXM1200 only). New cellular support for LTE CAT M1 cellular modems. New support for FOTA (Firmware Over-The-Air updates) requirements for cellular modems. New DXM controllers, DXM1000 and DXM1200
15 Apr 2020	2.09	Networking	Ethernet hot plug, DXM will continuously recognize if the network connection is available. (DXM700, DXM1000, DXM1200 only) Encryption, Larger payloads
15 Apr 2020	2.09	Cellular	Increased throughput for heavy traffic Additional network registration checks for increased connection reliability.
15 Apr 2020	2.09	Scripting	Increased maximum register counts available for Modbus operations over the wireless network
15 Apr 2020	2.09	Push webserver	Register Scaling/Offset options Push groups HTTP Log file splitting for more efficiency

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Date	Version	Feature	Details
15 Apr 2020	2.09	Cleanup	Ethernet – Modbus TCP, Floating Point registers ISM/LCD improvements DXM700 pushbutton functionality
29 Jun 2020	3.0	Cleanup	Ethernet – Optimizations/performance improvements to minimize dropped connections ISM/LCD improvements – • Clean up IMEI/ ICCID values on LCD menu • Cellular Signal Strength indicator corrections • Cellular status corrections • Fixed updating high register addresses with values • Corrected issues with updating Ethernet IP / Sub mask using the display menu HTTP push • Corrected empty push packets • Corrected saving multiple identical entries in connection failure cases • AWS IOT support with JSON format
29 Jun 2020	3.0	Cellular	Additional cellular statistics/metrics
13 Aug 2020	3.01		Control/Logic Rules modifications for application designs creating feedback loops Change for Action Rules/Control Logic JK Flip-Flop element to implement toggle operation change. Added inactivity timeouts for Modbus TCP connections, if a Modbus TCP connection is left hanging open for a determined amount of time, the DXM will automatically close the connection to free up the resources for another Ethernet connection. This feature is turned off by default. Created an override mode in the DXM Controller to use Ethernet connectivity based on user preference.
10 Nov 2020	3.02		Updated DXM1000 to correct issues with internal radio operations. Resolved periodic fault/reset issue created by version 3.01. Updated firmware for inconsistencies in the first cloud push message for initial parameters, DXM100, DXM150
1 Jun 2021	3.04		Enabled AWS IoT Core MQTT cloud pushing with QoS 1 support Initial support for MicroPython Ethernet Radio backbone support: created the ability to use the Ethernet radio as a backbone network between multiple DXM controllers; this allows a host system to communicate with each networked DXM using its IP address. MultiHop Radio backbone supported for DXM700, DXM1000, and DXM1200 DXM1000 support for RS-232 in Scripting Adjusted Ethernet push timeouts to 30 seconds; previously, it followed the same rules as the cellular push of multiple minutes. A host Ethernet connection will automatically close after 10 minutes of inactivity Corrected an issue when cellular and local Ethernet traffic is occurring at the same time; the IP address would not resolve, causing the controller to stop sending data. Update of Ethernet/IP stack to resolve known issues Production test support for LTE Cat M1 in DXM100, Verizon, and ATT.
15 Oct 2021	3.06	Enhancements and Fixes	Low power file download update for DEK DXMs Improved Modbus TCP protocol-level error handling API access through Modbus RTU Server
22 Oct 2021	3.07		Low power file download updates Low power site survey update 8041 Phy compatibility
23 Nov 2021	3.09		Get SiteID API command Added MicroPython printing protocol Updates to MicroPython pyb.multiget and pyb.api commands
	4.0		For the DXMR90-X1 only Port 0 configured as serial API interface, 19200 baud AdminReset API command IP auto-discovery update Remote device request improvements to accommodate multiple API sources Resolved writing registers to 0 issue

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Date	Version	Feature	Details
17 May 2022	4.01		Improved Ethernet packet filtering and prioritization 8041 Phy compatibility improvements RS-232 improvements on DXM1000/1500
	4.03		For the DXMR90-4K only DXMR90-4K Initial Release
	4.04		For the DXMR90-X1 only Persistent storage of Profinet information Ability to modify RS-485 parity through xml Modbus ports 1-4 set to master ports by default Bug fixed associated with script list display in configuration software RS-485 communication on Port 0 unblocked when device is in xml bypass mode Improved Ethernet packet filtering and prioritization 8041 Phy compatibility improvements
	4.05		For the DXMR90-4K only Profinet support added for IO-Link masters Remove timestamp from HTTP push for Banner CDS compatibility IO-Link port settings are now stored as both non-volatile parameters and in XML configuration Non-volatile register bug fixed for IO-Link register map Length and data information are now included in IO-Link ISDU write response
13 Mar 2023	4.06		Added option for read rules to read as input registers via Modbus TCP/IP Added decoder rules for bitwise operation. Added a feature to conduct site survey through the LCD screen Added scripting access for MQTT, additional API commands and network parameters DIP switch 3 setting to route radio traffic to the external RS-485 port Improvements to general network connection management R90-X1 only - multiple read rule bug fixed, Port 0 server made available during XML bypass R90-4M only - ISDU subindex write, validation, and backup bugs fixed
	4.07		1000 New NvRegs
	4.08		Cellular transport update RuleObjects: Scalers New push state virtual register Sparkplug updates New integer registers, nonvolatile Scripting: set network params Console printing modification MQTT authentication update Modbus/TCP update for fast rates Scripting: HE access
	4.10		SNAP ID registers (disabled) PROFINET OrderID changed to DXM model API command 41 (get comms parameters) Nv flash fix MQTT bulk register transfer Disable TLS cert verify requirement PROFINET timer fix