CCM/CCMx Version 7.6.20 Release Notes

Overview

This document describes the changes in the CCM and CCMx firmware since version 7.6.01. These changes include several New Features and a few Bug Fixes. This document also explains the Meanings of the Controller Status LEDs, and summarizes the Known Limitations in this release.

Like previous versions numbered 7.5.X, version 7.6.20 of the CCM/CCMx firmware works on the traditional CCM7 module used in controllers such as the M2 and the M8, and on the newer CCMx-2, CCMx-4, and CCMx-8 modules used in the Mx controller. It also works on the CCMx components built into the main board of the Mx-1 single-door controller.

This firmware package includes both a CCM BIOS component (for all controllers) and a STM-RTC component (for Mx controllers). The version numbers of these software components (for several recent releases) are shown in the following table:

CCM\CCMx version	CCM BIOS version	STM-RTC version
7.6.20.25	**7.6.02**	**6.9**
7.6.01.13	7.5.75	6.0
7.5.70.12	7.5.66	5.5
7.5.64.95	7.5.65	4.6
7.5.61	7.5.28	4.4
7.5.37	7.5.28	4.0
7.5.36	7.5.28	4.0
7.5.28	7.5.28	4.0
7.5.08	7.5.08	3.0

CAUTION: If you have an Mx controller running a CCMx firmware version earlier than 7.5.08, you must first upgrade to version 7.5.08 before you download version 7.6.20 to that controller. Downloading version 7.6.20 to an Mx controller running CCMx firmware version earlier than 7.5.08 will lock up that controller.

NOTE: Version 7.5.X or later of the CCM firmware is only supported by the Velocity security management system, or version 3.0 (or later) of the Identiv Connected Physical Access Manager (ICPAM). It is not supported by previous software products such as MOMENTUM or SAM.

New Features and Enhancements

This section lists the new features and enhancements introduced in this release.

Improved Reporting of the Mx-1 Controller's AC Power Level

PAC-69 - Mx-1 G8 LED behaviour
PAC-104 - Mx-1: Use G8 LED to indicate estimated AC power source (POE/24V/29V) instead of AC Power FAIL/LOW/OK.
PAC-221 - Mx-1 : System power status report does not shows the correct readings for Main Power
DT-433 - On powering Mx-1 controller with 24v,25v,26v power supply, message stating "AC power fail" is displayed in Velocity Event viewer
DT-460 - Mx-1 : On changing the power source from DC to PoE+ and vice versa, Messages describing the change is not displayed in Velocity

An Mx-1 controller can be powered by a combination of PoE+ and AC power, so it is able to operate within a broader range of power levels. An Mx-1 controller has a block of 16 large LEDs, which are visible outside of the closed plastic case, and provide information about the controller's current status and operation. The green LED labeled **PSU/PoE Power** (with the LED # of G8 in Table 9-5 of revision AG, dated 1/17/2018, or later of the **DIGI*TRAC Design and Installation Guide**) indicates the status of an Mx-1 controller's AC power. Starting with this 7.6.20 release of the CCM firmware, the status is indicated according to the following table:

AC Power Level and Meaning for an Mx-1 controller	G8 LED Behavior
Above 26V: AC OK	ON
Between 22V and 26V: AC OK	ON
Between 13 V and 22V: AC OK; probably using PoE+	Flashing
Between 11V and 13V: AC Low	off
Less than 11V: AC Fail	off

Improved Reporting of an Mx-1 Controller's UPS Battery Power Level

PAC-108 - Mx-1: Use Y8 LED to indicate Battery condition

An Mx-1 controller has a block of 16 large LEDs, which are visible outside of the closed plastic case, and provide information about the controller's current status and operation. The yellow LED labeled **Battery** (with the LED # of Y8 in Table 9-5 of revision AG, dated 1/17/2018, or later of the **DIGI*TRAC Design and Installation Guide**) indicates when the connected standby battery pack is low or bad. Starting with this 7.6.20 release of the CCM firmware, the status is indicated according to the following table:

Battery Power Level and Meaning for an Mx-1 controller	Y8 LED Behavior
Above 23V: Battery OK	off
Between 17V and 23V: Battery Low	Flashing
Between 6 V and 17V: Battery is Charging if AC Power is available	Flashing
Less than 6V: Battery Bad	ON

Support Configuring an Mx-1 as an Mx-1-W for Managing Wireless Locks

PAC-225 - (WL-1) Add Mx-1 option to enable Aperio Wireless Locks handling in CCM

Velocity 3.7 includes support for Assa-Abloy's **Aperio** wireless locks, using an Mx-1-W controller to manage up to eight Aperio wireless locks. (For more information, see the new "DIGI*TRAC Hardware Configuration > **Wireless Locks**" section in the Velocity 3.7 main help.)

Add an Alarm Relay Capability to the Mx-1-W Controller

PAC-226 - (WL-25) Mx-1: Add Alarm Relay capability to Mx-1-W

The Mx-1-W controller is a variation of the Mx-1 controller which has been configured to manage up to eight Aperio wireless locks. When an alarm is received by an Mx-1-W controller, its **Aux. Relay** (Y4) LED turns on and its alarm relay is activated.

Bug Fixes

This section lists the bug fixes included in this release.

PAC-507 - Mx-1 - Y5 LED does not turn ON for input out of spec alarm.

The **Fault Alarm** (Y5) LED of an Mx-1 controller was not turning on in certain situations. This issue has been fixed.

PAC-509 - Mx-1 : On downloading any controller configuration, G4 LED - Door Relay LED starts blinking.

While downloading a controller configuration to an Mx-1 controller, its **Door Relay** (G4) LED was blinking. This issue has been fixed.

PAC-514 - Mx-1 : On powering a Mx-1 controller in enclosure tamper state, G7 LED does not stay ON.

This was not a bug; the flashing state of the **Case Tamper** (G7) LED of an Mx-1 controller was not documented. When this LED is on, it means the controller's enclosure is open. When this LED is flashing, it means that multiple instances of an enclosure tamper have been detected (because the previous alarm was not cleared).

PAC-612 – Restore behavior of BIOS to light TEST LED solid, rather than blinking.

One of the changes in the 7.5.70 release of the CCM firmware was that during the first few seconds of a traditional controller's Power On System Test, the behavior of the yellow TEST LED (in the controller's set of status LEDs) was changed from being steadily lit to Blinking. In this 7.6.20 release of the CCM firmware, the previous behavior of that LED has been restored, so it is steadily lit during the entire POST. (This does not apply to an Mx-1 controller, which uses a different block of 16 larger LEDs, which are visible outside of the closed plastic case.)

PAC-723 - Support TZ Operate on Expansion Relays

Add support for the **Operate by Time Zone** relay control function on expansion relays. (For more information, see the "DIGI*TRAC Hardware Configuration > Functions > **Control Functions - Introduction**" topic in the Velocity 3.6 SP3 or later main help.)

Meanings of the Controller Status LEDs

This section provides tables that summarize the meanings of the controller status LEDs in this release of the CCM firmware.

Meanings of the LEDs on an Mx-1 Controller

An Mx-1 controller has a block of 16 large LEDs, which are visible outside of the closed plastic case, and provide information about the controller's current status and operation. The meanings of these LEDs (in this 7.6.20 release) are explained in the following table.

LED #	Purpose	**Description** (as of CCM/CCMx firmware version 7.6.20)
G1	Host Tx	If this controller is connected to an Ethernet network, this LED indicates when this controller's built-in SNIB3 is transmitting data to the Velocity Server. • When this LED is on, it means this controller is transmitting data to the Velocity Server. • When this LED is off, it means this controller is not currently transmitting data to the Velocity Server.
Y1	Host Rx	If this controller is connected to an Ethernet network, this LED indicates when this controller's built-in SNIB3 is receiving data from the Velocity Server. • When this LED is on, it means this controller is receiving data from the Velocity Server. • When this LED is off, it means this controller is not currently receiving data from the Velocity Server.
G2	Bus Tx	Indicates when data is being transmitted (either upstream or downstream) by this controller along a chain of controllers connected using RS-485 wiring. • When this LED is on, it means data is being transmitted by this controller along a chain of controllers connected using RS-485 wiring. • When this LED is off, it means data is not currently being transmitted by this controller along a chain of controllers connected using RS-485 wiring. (This LED is also off when this controller is not part of a chain of controllers connected using RS-485 wiring.)
Y2	Bus Rx	Indicates when data is being received by this controller along the RS-485 wiring that connects a chain of controllers. • When this LED is on, it means data is being received by this controller along the RS-485 wiring that connects a chain of controllers. • When this LED is off, it means data is not currently being received by this controller along the RS-485 wiring that connects a chain of controllers. (This LED is also off when this controller is not part of a chain of controllers connected using RS-485 wiring.)
G3	Readers Tx	Indicates when the controller is transmitting commands or data to a connected reader. • When this LED is on, it means the controller is transmitting commands or data to a connected reader. • When this LED is off, it means the controller is not currently transmitting commands or data to any of the connected readers.
Y3	Readers Rx	Indicates when the controller is receiving data from a connected reader. • When this LED is on, it means the controller is receiving data from a connected reader. • When this LED is off, it means the controller is not currently receiving data from any of the connected readers.

LED #	Purpose	**Description** (as of CCM/CCMx firmware version 7.6.20)
G4	Door Relay	Indicates when the door relay is active. • When this LED is on, it means the door relay is active. • When this LED is off, it means the door relay is not currently active. A Normally Open (NO) circuit is open, and a Normally Closed (NC) circuit is closed.
Y4	Aux. Relay	Indicates when the alarm (a.k.a. auxiliary) relay is active. • When this LED is on, it means the alarm relay is active. • When this LED is off, it means the alarm relay is not currently active. A Normally Open (NO) circuit is open, and a Normally Closed (NC) circuit is closed.
G5	Door Alarm	Indicates whether a door alarm is active. • When this LED is on, it means there is an active Door Forced Open alarm. • When this LED is off, it means there is not an active door alarm. • When this LED is flashing, it means there is an active Door Open Too Long alarm.
Y5	Fault Alarm	Indicates whether a fault condition exists on the supervised line input. • When this LED is on, it means there is a fault (such as a cut line or a short circuit). • When this LED is off, it means the supervised line is within normal specifications.
G6	Processing Events	Indicates when event information is being transmitted to the Velocity Server by the controller's CCM. • When this LED is on, it means the controller is transmitting event information to the Velocity Server. • When this LED is off, it means the controller is not currently transmitting event or configuration information to the Velocity Server. • When this LED is flashing, it means the controller is transmitting configuration information to the Velocity Server.
Y6	Processing Cred/Cfg	Indicates when user credentials or configuration information is being received by the controller's CCM. • When this LED is on, it means user credentials are being received by the controller. • When this LED is off, it means user credentials or configuration information is not currently being received by the controller. • When this LED is flashing, it means configuration information is being received by the controller.
G7	Case Tamper	Indicates when the controller's enclosure is open. • When this LED is on, it means the controller's enclosure is open. • When this LED is off, it means no enclosure tamper is currently detected. • When this LED is flashing, it means multiple instances of an enclosure tamper have been detected (because the previous alarm was not cleared).
Y7	Reader Tamper	Indicates when a tamper condition exists at a reader attached to the controller. • When this LED is on, it means there is a reader tamper or a code tamper. • When this LED is off, it means no reader tamper or code tamper is currently detected.

LED #	Purpose	**Description** (as of CCM/CCMx firmware version 7.6.20)
G8	PSU/PoE Power	Indicates when the controller has adequate power, and whether it is 24 V - 28 V DC from an external power supply or from POE+ (via the Ethernet jack). • When this LED is on, it means the controller is being powered by DC input (through the Power terminal), and its voltage is at least 22 V. • When this LED is off, it means the controller's power is either low (between 11 V and 13 V) or has failed (less than 11 V). • When this LED is flashing, it means the controller is either being powered by POE+ (via the Ethernet jack), or its voltage is between 13 V and 22 V.
Y8	Battery Power	Indicates when the connected standby battery pack is low or bad. • When this LED is on, it means the battery is bad, with a voltage of less than 6 V (and should be replaced). • When this LED is off, it means the battery is good, and its voltage is at least 23 V. • When this LED is flashing, it means the battery is either low (with its voltage between 17 V and 23 V), or is charging (with its voltage between 6 V and 17 V) if AC power is available.

Meanings of the LEDs on all other Controllers (except the Mx-1)

For all other controller models, the meanings of the traditional controller status LEDs (in this 7.6.20 release) are explained in the following table.

Name and Purpose of row of status LEDs	Meaning of First LED	Meaning of Second LED
BOX TAMPER = Enclosure Tamper or Reader Tamper	ON = first Enclosure Tamper; Flashing = multiple Enclosure Tampers	ON = Reader Tamper
AC = AC Power	ON (and second LED is OFF) = AC Power is OK	ON (and first LED is OFF) = AC Power Failure
	Both LEDs BLINKING = AC Power is Low	
BAT = Standby Battery	ON (and second LED is OFF) = Battery is OK	ON (and first LED is OFF) = Battery Failure
	Both LEDs BLINKING = Battery is Low; if AC Power is available, the Battery is Charging	
SYS = Controller's Status	Flashing (and second LED is OFF) = Controller is OK	ON (and first LED is OFF) = Controller Failure
KPD = Controller's communication with all of its connected readers	Flash = Controller is sending data to one of its connected readers	Flash = Controller is receiving data from one of its connected readers
NET = Controller's communication with the Velocity Server	ON = Transmitting an event to the Velocity Server Flash = Transmitting some other message to the Velocity Server	ON = Receiving credentials Flash = Receiving configuration or other commands
TEST = Door Alarm or Controller's Power-On Self Test	During the controller's POST: ON = Controller is running its Power-On Self Test During normal operations: ON = A door is in an alarm state Slow Blinking = A door is held open too long	(no second LED on this row)
ALARM = Line Fault Alarm	ON = A fault condition (Out Of Spec, Open, Short, or Noisy) exists on the supervised line input for a door	(no second LED on this row)

Known Limitations

These are known limitations since CCM 7.4.00.

CCMx firmware download to Mx causes lock-up

Downloading CCMx firmware to the Mx from Vn. 7.5.04 (or from a controller that was originally shipped as Vn. 7.5.04) will lock up the controller. Identiv only supports re-flashing CCMx firmware from Vn. 7.5.08, or from Vn. 7.5.12 or later.

If you have an Mx controller running a CCMx firmware version earlier than 7.5.08, you must first upgrade to version 7.5.08 before you download version 7.5.61 or later to that controller. Downloading version 7.5.61 or later to an Mx controller running a CCMx firmware version earlier than 7.5.08 will lock up that controller.

Features that reduce memory capacity

- There are several places in the **DIGI*TRAC Systems Design & Installation Guide** which list the capacity of the various controllers and memory expansion boards to support user records or alarms and events. These capacities assume that your Velocity is configured to use the standard features with data structures of a certain size. Your system's capacity could be reduced by up to 50% when using any or all of the following features (which require larger data structures):

Feature	Initially Released in
timed anti-passback	CCM firmware 7.4.25 and Velocity 3.1
multiple access zones	CCM firmware 7.5.28 and Velocity 3.6
PIV, PIV-I, or PIV-C cards	CCM firmware 7.5.64 and Velocity 3.6 SP2

- If you have 2048 or more credentials and you haven't already installed a memory expansion board, you will need to add one in order to use any of these features. Users with the MEB/CB128 might need to special order an MEB/CE64 to augment their capacity.

- **Special notice for upgrades where a site has already had credentials downloaded to the controller:** If the controller has ever had more than 50% of its user capacity used since its last cold-start (regardless of whether the credentials were deleted later), it may be necessary to cold-start the controller's user database. Cold-starting the user's database can be done via **CMD 98*27*0*0*0*0#**, or by pressing the controller's blue Reset button for 30 seconds. A cold-start may be necessary because the new CMD 98*41*9*8*1*0# feature changes how that database is allocated, but only to the extent that space has not already been allocated.

After removing a memory board, you should cold-start the controller (or at least download all credentials)

If you remove a memory expansion board from a controller, you should download the credentials to that controller again (because it is not done automatically), or you can cold-start the controller.

An M1N controller is incorrectly identified as an Mx-1 controller

An old M1N controller will be incorrectly identified as an Mx-1 controller by CCM/CCMx firmware version 7.6.20.25, so you should not upgrade its CCM firmware to that version.