

Embedded software 2105808, 2105880

XSeries^{G5} (XFC^{G5}/XRC^{G5})

FEBRUARY 16, 2021

Contents

1 Purpose	2
2 Withdrawn software notice	2
3 Latest release	2
4 Determine software part and version numbers	3
5 Software download instructions	3
5.1 Software package components	3
5.2 Locating the software	3
5.3 Download packages from the ABB website	3
6 Software update instructions	4
7 Release features	4
7.1 Package number 2105808-012 and 2105880-012	4
7.2 Package number 2105808-011 and 2105880-011	5
7.3 Package number 2105808-010 and 2105880-010	5
7.4 Package number 2105808-009 and 2105880-009	5
7.5 Package number 2105808-007 and 2105880-007	5
7.6 Package number 2105808-006 and 2105880-006	5
7.7 Package number 2105808-005 and 2105880-005	6
7.8 Package number 2105808-004 and 2105880-004	6
7.9 Package number 2105808-003 and 2105880-003	6
7.10 Package number 2105808-001 and 2105880-001	7
8 Fixes	7
8.1 Package number 2105808-012 and 2105880-012	7
8.2 Package number 2105808-011 and 2105880-011	8
8.3 Package number 2105808-010 and 2105880-010	8
8.4 Package number 2105808-009 and 2105880-009	8
8.5 Package number 2105808-007 and 2105880-007	8
8.6 Package number 2105808-006 and 2105880-006	8
8.7 Package number 2105808-005 and 2105880-005	8
8.8 Package number 2105808-004 and 2105880-004	9
8.9 Package number 2105808-003 and 2105880-003	9
8.10 Package number 2105808-001 and 2105880-001	10
9 Known issues and workarounds	10
9.1 Package numbers 2105808-005 and 2105880-005	10
10 SHA512 Security Feature	10

1 Purpose

These release notes detail new features and modifications, functional changes, and bug fixes made to the G5 XFC/XRC flow computer embedded software distributed in customer package number 2105808 / 2105880.



IMPORTANT NOTE: This document includes release information on the most current version as well as several previous versions. The release details for the latest version are always first in the list.

2 Withdrawn software notice

The following customer package versions have been withdrawn and will not be supported. Plan to replace the software with a known working version, or upgrade to the latest version as indicated in this document.

Table 2-1: Withdrawn packages G5 XFC

Component	Part number	Internal version
Customer package	2105808-011 or earlier	4.3.2-1 or earlier
Flash	2105805-014 or earlier	4.3.1-1 or earlier

Table 2-2: Withdrawn packages G5 XRC

Component	Part number	Internal version
Customer package	2105880-011 or earlier	4.3.2- 1 or earlier
Flash	2105864-014 or earlier	4.3.1- 1 or earlier

3 Latest release

The latest software is available in customer package numbers 2105808-012 and 2105880-012. [Table 3-1](#) details the part numbers for the included components.

Table 3-1: Software included in customer package G5 XFC 2105808-012

Component	Part number	Internal version
Operating System (OS)	2105897-011	4.3.2-1
Flash	2105805-016	4.5.0-6

Table 3-2: Software included in customer package G5 XRC 2105880-012

Component	Part number	Internal version
Operating System (OS)	2106489-004	4.3.2-1
Flash	2105864-016	4.5.0-6



IMPORTANT NOTE: To use Flash 2105805-010 or 2105864-010 or later, upgrade to OS 2105897-008 or 2106489-001 respectively is required. New flash versions are not backwards compatible with previous OS releases.



IMPORTANT NOTE: Flashes 2105805 or 2105864 versions 015 were released internally and are skipped in this document.

4 Determine software part and version numbers

To determine the software part or version numbers currently installed in your device:

1. Connect to the device on PCCU entry mode.
2. On the navigation tree, select the top node on the tree, or the station name.
3. Select the **Registry** tab.
4. Locate and take note of the following:
 - Flash software part number
 - OS software part number

If the part numbers of either the flash or OS matches those listed in section 0, plan to update the software to the latest versions.

5 Software download instructions

Software is available for download from ABB sites. Review the following sections to determine how to locate and download software.

5.1 Software package components

Embedded software for the ABB Totalflow devices is distributed in packages. Packages may contain all or some of the components required for the device operation. Depending on the changes performed on each release, all or some components may have been modified. Packages may include:

- Operating system and boot software (OS, Boot)
- Main application (Flash)
- Default base device configuration file (Config)

For a more detailed description, see the Device Loader help topics available by clicking **Help** from PCCU.

5.2 Locating the software

Each customer package is identified by the software component included in the package and the part number and revision. For example:

A package containing the flash for the XFC^{G5} will be identified as FLASH package (2105805-NNN), where NNN is the revision of the package.

A package containing the operating system and flash software for the XFC^{G5} (also referred to as customer package), will be identified as Customer package (2105808-NNN), where NNN is the revision of the package.

5.3 Download packages from the ABB website

1. Go to www.abb.com/upstream.
2. Select the product name. The product home page displays.
3. Scroll down to locate and select **Downloads**.
4. On the navigation pane, scroll down to locate and select **Software**. The list of available software packages displays.
5. Locate and select the required software package.
6. Save the package in your local drive when prompted.
7. For improved security (and to ensure that your downloaded package is intact), locate and select the specific SHA512 for the package number.
8. Download this file to your local drive when prompted. Check files as instructed in [Software package integrity check instructions](#).



IMPORTANT NOTE: The SHA512 file is used to verify that the downloaded software has not been corrupted during download and is valid. This is not required but highly recommended. See section [10 SHA512 Security Feature](#) for more information. The SHA512 file name includes the number and version of the associated package. There is a file for each part number. Make sure you download the SHA512 that matches the software package number you need to check. For assistance downloading software, contact technical support.

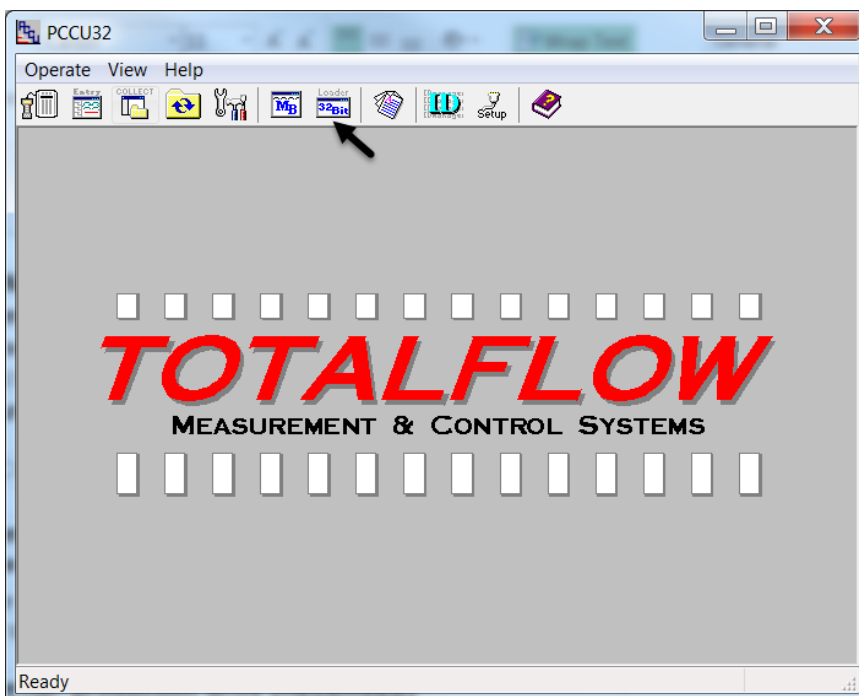
6 Software update instructions



IMPORTANT NOTE: Ensure device and measurement data are saved or backed up before any software update. For details, see the G5 XFC/XRC user manual or select **Help** from the PCCU top tool menu.

1. Start PCCU and select the loader icon from the top menu (see image below).

Figure 6-1: Starting the device loader



2. Establish a connection with the device.
3. Click **Help** for detailed update instructions.



IMPORTANT NOTE: The Flash and OS should be updated when a new release is available. Contact ABB technical support regarding questions of backwards compatibility between previous versions of flashes and OS.

7 Release features

Features or enhancements for each version can be reviewed in this section.

7.1 Package number 2105808-012 and 2105880-012

The following changes have been added to the ABB Totalflow XFC and XRC devices.

- Added Gross Volume calculation to the API Liquid application:
 - Added Gross Volume registers to current measurement data.

- Added register based read access to Gross Volume registers.
 - Included Gross Volume Daily and Log Period QTR records.
- Added monthly accumulators for volumes, mass, flowing pressure and flowing temperature to the API Liquid application:
- Added Monthly Accumulator registers to current measurement data.
 - Added register based read access to Monthly Accumulator registers.
- Added a new application: Batch Log. This application has the following capabilities:
- It is user configurable and provides flexibility to create custom logs.
 - It allows up to 10 Batch Groups per Batch Log app instance and 10 Batch Logs per Batch Log Group
 - Each Batch Log can have up to 50 numeric values and 20 string values.
 - Supports batch trigger types of hourly, daily, weekly, and monthly logging.
 - Supports register access and remote protocol access (DSID)

7.2 Package number 2105808-011 and 2105880-011

The following changes have been added to the ABB Totalflow XFC and XRC devices.

- Operating System changes to facilitate the absence of Wi-Fi Module

7.3 Package number 2105808-010 and 2105880-010

The following new features have been added to the ABB Totalflow XFC and XRC devices.

- Added support for XIO Interface application in XFC and XRC
- Updated XIO Interface app to support Data Transfer application on the XIO

7.4 Package number 2105808-009 and 2105880-009

No new features or enhancements for 2105808-009 and 2105880-009.

7.5 Package number 2105808-007 and 2105880-007

The following new features have been added to the ABB Totalflow XFC and XRC devices.

- Updated PID Controller Application including:
- Making the application calibration, zero setpoint and shutdown aware
 - Inhibiting manual mode windup
 - Adding options to Controller Reset Mode
 - Adding additional override statistics
- Updated Gas Lift Application including:
- Adding compressor limits
 - Adding a grouping option
 - Adding a continuous optimization mode
 - Adding multiple optimization options
 - Move the graph pop-up from the GUI screen to a tab
 - Making the Gas Lift application PID aware
 - Improving the usability of the Step Rate Test
- Updated Alarm System Application by removing an internal limitation on addressable registers by changing the register index value from one byte to two bytes.
- Updated Station Application to allow G5 XFC, G5 XRC and RMC Lite to instantiate up to 4 Station Applications.
- Repackage the OSAL libraries with the Totalflow application so that OS upgrade is not required.

7.6 Package number 2105808-006 and 2105880-006

The following sections list the new features available in this version.

7.6.1 New or updated applications/services

- Updated I/O Interface application:

- New support for hot-swappable and hot-pluggable TFIO modules.
- New support for remote calibration of I/O points

- New support for the Ethernet-to-Serial Application
- New support for auto-discovery features in XSeries^{G5} devices.
- Enhanced networking features in XSeries^{G5} devices.
- Added IEC performance statistics.

7.6.2 Ethernet Stat Changes

- Users can now choose the bandwidth of the Ethernet interface. Users can set the Ethernet bandwidth and the duplex mode depending upon the other devices (switches etc.) in the network. Several different bandwidths are now selectable in the Communications - Ethernet tab.
- Users can now set Ethernet data rate limiting on incoming and outgoing ethernet traffic.
- New Ethernet usage statistics are now available to allow the user to monitor traffic for bandwidth utilization, dropped packets or error packets etc. at any point of time. Users can trend these parameters to get a historical view of the activity on the ethernet. These new statistics are in the Communications - Ethernet tab.

7.7 Package number 2105808-005 and 2105880-005

The following sections list the new features are available in this version.

7.7.1 New Station Application

- New Station application to support:
 - Multiple meter run flowrates/volumes to be summed for station totalization
 - Basic multi-tube (run) tube switching that enables or disables meter tubes based on low/high limits of flowrates/volumes



IMPORTANT NOTE: This is a new station application for G5 XSeries and RMC that is different from and not compatible with the station application provided on G4 devices.

7.7.2 IEC applications enhancement

- All the available programming options can now be used in the IEC resource (customer logic development environment) as recommended on the IEC 61131.
- There are now 5 different application credits available in the application table. There is a now an IEC Base application along with four different application package levels (Tiers).
- Each application credit allows for only one IEC resource to run.
- Users can have only one resource running on the device at any time.
- Users can select, create, and delete their own custom IEC resource in a common folder.



IMPORTANT NOTE: Refer to the [IEC Developer's Guide \(2105857\)](#) or PCCU help for further information on setting up IEC applications or using the new enhancements.

7.8 Package number 2105808-004 and 2105880-004

No new features or enhancements for customer packages 2105808-004 and 2105880-004.

7.9 Package number 2105808-003 and 2105880-003

The following enhancements are included in the customer package version 2105808-003 and 2105880-003:

7.9.1 API Liquid tube application.

Shrinkage Factor/Stock Tank Volume

- If the user chooses to enable Shrinkage Factor/Stock Tank Volume, the Stock Tank Volume will then be calculated from Net Standard Volume and either a user-entered or live measured Shrinkage Percentage; average Shrinkage Factor and total Stock Tank Volume will be logged in Log Period and Daily QTRs.

Drive Gain Monitor/Log in QTRs

- If the user chooses to enable Drive Gain Monitor/Log in QTRs, the Coriolis Drive Gain will then be updated every second from a user-provided Drive Gain Source Register, also a flow weighted or linear average value (user-selectable) of Drive Gain will be logged in Log Period and Daily QTRs.

User-Selectable Input Units

- Users can now choose to assign various volume or mass K factor units to their pulse inputs and various volume or mass flow rate units to the input flow rate if they are getting volume or mass flow rate inputs from the primary meter. If they are using pulse inputs, they can also specify a volume or mass flow rate unit to be used for Multi Meter Factor reference flow rates (for flow rate inputs, the unit for the input flow rate is also used for Multi Meter Factor reference flow rates).

Light Hydrocarbons EVP Calculation

- Added "Test EVP Calc Per TP-15" tab to API Liquid tube applications' entry mode screens which allows users to calculate Equilibrium Vapor Pressure under various density and temperature conditions.

7.10 Package number 2105808-001 and 2105880-001

The following enhancement is included in the customer package version 2105808-001 and 2105880-001:

- The G5 XFC / XRC has the same capabilities as the G4 product line and has additional new features/enhancements that include Wi-Fi and Bluetooth (Onboard and USB)
- Wi-Fi capability that allows wireless communication between Totalflow devices and Wi-Fi clients (mobile devices or laptops with Wi-Fi capability). With Wi-Fi enabled, the Totalflow device performs the role of a wireless network (WLAN) access point. Access points advertise a wireless network ID or Service Set Identifier (SSID) which the Wi-Fi clients detect and join. Operators can establish TCP/IP based communication with the Totalflow device over this wireless link. A single Totalflow supports up to 10 simultaneous connections from Wi-Fi client
- A new on-board Bluetooth chip allows for users to connect to the device without having to plug a Bluetooth adapter into the USB port. The USB Bluetooth adapter is still supported on the devices, so the users now have two Bluetooth connection options.

8 Fixes

Bug or defect fixes for each version are described in this section.

8.1 Package number 2105808-012 and 2105880-012

The following bugs are fixed:

- 12420 - System voltage indicates 0V
- 12419 - Plunger does not obtain: Arrived state.
- 12413 - High Priority - Critical Severity - Multiple vulnerabilities can be exploited and result in re-remote code execution in root context
- 12392 - New Tube Alarm # 6 has the wrong name: "Density DE Alarm Bit". The name should be "Differential Pressure DE Alarm bit". Only fixed when a new tube is instantiated.
- 12360 - Gas Lift Rejects Manual Inject Rate
- 12351 -SU Coriolis tube Current tab does display Energy Rate (3.73) as zero on no flow.
- 12275 - G5 XRC and XFC Battery and Charger voltage do not show a status for Field or Factory Calibration

8.2 Package number 2105808-011 and 2105880-011

None

8.3 Package number 2105808-010 and 2105880-010

The following bugs are fixed:

- 12363 – AI TFIO parameters do not update upon replacement of the module
- 12343 – Can't set the Watchdog Enable for TFIO DO Module
- 12252 – After adding a new Holding Register App, the Holding Registers' Capacity tab Type and Name are Float for all holding register arrays.

8.4 Package number 2105808-009 and 2105880-009

The following bugs are fixed:

- 12371 - Gas Lift Tubing Length not saved
- 12360 - Gas Lift Rejects Manual Inject Rate

8.5 Package number 2105808-007 and 2105880-007

The following bugs are fixed:

- 12205 - Loading XRC config causes RMC cpu frequency to change.
- 12197 - Station App does not correctly show Period Uncorrected Vol for AGA7 tube and LIQUID APP.
- 12163 - Unable to enable network adaptor from entry mode in PCCU 7.69.1 on G5 XRC.
- CCRP US-1025418 - G5 uFlo device will disable the Ethernet port after a power cycle.
- 12158 - Calibration information does not restore with cold boot.
- 12075 - G5 XFC/XRC COM0 will not respond after power up without display attached. See CCRP US-1003021.
- 11837 - When adding a new trend and clicking on pre-existing trend, it auto-populates the new trend with all those variables.
- 11070 - G4 XFC enables Faux by default ... should not do this.
- 11790 - Cannot add xx.xx.xxxxx 9 Digit registers to Alarms app.
- 11642 - CCRP US-983778, Alarm app register app.array.256 changes to app.array.0
- 9153 - Alarm App: Maximum register array size for Input Reg, Three Reg and Trigger Reg is 255.
- 8601 - Alarm app only stores index as int8 instead of int16.

8.6 Package number 2105808-006 and 2105880-006

The following bugs are fixed:

- 12089 – PCCU crashes when moving cursor over the trend graph view.
- 12093 – Application Licensing not applied to general applications instantiated outside of the application table.

8.7 Package number 2105808-005 and 2105880-005

The following bugs are fixed:

Bug number	Description
11014	PCCU Ethernet tab has no scroll bar to see full screen content.
11351	PCCU Last Calc Doubles tab is displaying incorrect value for Stock Tank Flow Rate.
11367	Part number of Applications (0.5.app) do not show on Display. Required for BLM.
11311	Liquid Coriolis interface quits polling on loss of power to Coriolis.
11276	Liquid Coriolis does not increment Error Poll to its set limit.
10306	When testing the Liquid Coriolis Application using BLM flash 2104340-035 if the Coriolis meter is unplugged from its comm port while operating and then plugged

Bug number	Description
	back in, the meter does not auto-recover.
10172	Liquid Coriolis App Exceeds Error Limits.
10043	Data from the Liquid Coriolis Help Files not available.
9421	Liquid Coriolis Help files not available.
9283	Error Limit (0-60) and Timeout (10-3600) of fields values are out of range displaying incorrect limit message until either Error Limit or Timeout field is put back within their allowable ranges.
9262	PCCU locks up after error message shows in the Communication Setup tab.
9211	Coriolis Meter and Micro Motion is displaying Advanced Tab in Basic and Advanced Modes. Should only display in Expert mode. The requirement to display Advanced tab only in Expert mode has been removed.
11295	TFIO will not show up after custom config is loaded.
11504	Operations app forgets its station name after a shutdown/reset command.
11548	Gas Coriolis CFX output shows AGA7 Calculation Method.
11513	G5 XFC – Valve control application cannot write to VC module (address 0) AO output. Get 'Undefined' or 'NAN' in the AO output registers.
11390	Cannot transfer more than 1 IEC credit for all Tiers (1, 2, 3, and 4).
11709	The description field for holding registers is not correct.
11589	Holding registers 950 and higher always show value 0.
11694	Operations Periodic tab, rows 256 and greater show a blank Interval field.
10641	Operation Playback files will not handle a negative value.
11784	Operations - Write playback block after changing Pause status via automation.
11556	Laptop File Utility GUI would not display Created Date Column.
11805	The sampler accumulator keeps incrementing when there is no flow and the volume accumulator keeps accumulating during no flow.
11860	Holding registers (Holding & Oper & PID & Comm) cannot be set to size zero.
11928	G5 - API Liquid App accumulates negative flow rates.
11950	Unable to change Gauge Pressure Group for SU Tubes. Calc tests are failing
7460	Save and restore functionality of XRC doesn't work when the flash folder contains a .csv file (for playback operations).
11942	After allowing the RMC to run over a period, the device can no longer be accessed.
11939	Digital Oilfield is turned on by default when it should be disabled.
11979	PCCU show multiple INI errors as AGA3 is interpreted as an IO app.
11349	Standard AGA3 help file for General tab is missing information.

8.8 Package number 2105808-004 and 2105880-004

The following bugs are fixed:

11581 – I/O Subsystem communication improvements for SYNC CAN.

8.9 Package number 2105808-003 and 2105880-003

The following bugs are fixed:

- 10469 – IEC app overwrites station app register.
- 10518 – CFX Output showing Gauge instead of Absolute for some G3 devices.
- 10533 – PID app will not retain Station name.
- 10570 – Shutdown app forgets configuration settings on DIs and AIs tabs.
- 10751 – AGA7 Enhanced reports show Ultrasonic as "Sonic".
- 11042 – Product management wants to limit the number of applications on G5-Uflo to 24.
- 11043 – G4 Simulator should be updated to include fix for Light Hydro's (refer to bug 10978).
- 11085 – Liquid tube app "Pulses Min" column in PCCU Laptop Daily View always shows zero when primary meter type is Coriolis, PD or Other.
- 11156 – Comm app port name is not saved to cold configurations.
- 11157 – Operations app holding register array size not saved for value 0.

- 11159 – G5 RMC reset (same fix made on X Series). (The Issue was discovered to occur with IEC applications instantiated. It was found that when ISaGRAF started, it would get a copy of its file descriptors from Totalflow. Both Totalflow and ISaGRAF would get a copy of the USB file descriptors during start up. When 32-bit loader connection is established through USB, totalflow would close its handle to hand it over to device loader. But ISaGRAF process would still have its copy of the handle. When USB was unplugged and plugged back in would cause the TTY driver to generate a hang-up signal to device loader process group causing the device reset.).
- 11161 – Corrupt operations app configurations on the periodic tab (G5 RMC).
- 11163 – Analysis Trend Application not creating analysis files (G5 RMC)
- 11165 – SU Liquid tube with primary meter type of Coriolis is missing the Indicated Standard Volume column in the View Daily Flow Data and Log Period Data tabs.
- 11177 – API LIQUID SU embedded app does not correctly average PF, TF, Meter Factor, Ctl, Cpl of Log Period Data after a Warm Start.

8.10 Package number 2105808-001 and 2105880-001

None

9 Known issues and workarounds

9.1 Package numbers 2105808-005 and 2105880-005

Bug 11944 – USB connections to devices may lock up while performing one second screen monitors via PCCU or logging into the device for an extended period. These lockups usually occur within the PCCU host software and will result in having to restart PCCU. In extreme circumstances, the device may have to be restarted.

10 SHA512 Security Feature

SHA512 is an algorithm used to confirm the integrity of data that is downloaded from a site. ABB is now providing a checksum value for each software package downloaded from the ABB library that allows users to confirm that no data is missing or was changed during the download. A corresponding SHA file is available in the ABB library for all software packages. Please refer to the [Software package integrity check instructions](#) for further information on using SHA512.



ABB Inc.

Measurement & Analytics

Quotes: US-IAMA.inquiry@us.abb.com

Orders: US-IAMA.order@us.abb.com

Training: US-IAMA.training@us.abb.com

Support: upstream.support@us.abb.com

+1 800 442 3097 (opt. 2)

Additional free publications are available for download at:

www.abb.com/upstream

Main Office - Bartlesville

7051 Industrial Blvd
Bartlesville, OK 74006
Ph: +1 918 338 4888

Kansas Office - Liberal

2705 Centennial Blvd
Liberal, KS 67901
Ph: +1 620 626 4350

Texas Office – Odessa

8007 East Business 20
Odessa, TX 79765
Ph: +1 432 272 1173

Texas Office - Houston

3700 W. Sam Houston
Parkway S., Suite 600
Houston, TX 77042
Ph: +1 713 587 8000

Texas Office – Pleasanton

150 Eagle Ford Road
Pleasanton, TX 78064
Ph: +1 830 569 8062

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts - is forbidden without prior written consent of ABB.

Copyright© 2022 ABB all rights reserved