TECHNICAL NOTE TNOI35

Title: Troubleshooting Crimson 2 Software

Product(s): G3, DSP and Modular Controller

ABSTRACT

This tech note covers the most common problems encountered while setting up, programming or using the product. Do not forget to always download in the device after changing settings in Crimson.

GENERAL

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Unit screen is blank.		
And PWR LED off.	No power applied to the unit.	Check power supply. Units require 24 VDC, ± 10%.
And PWR LED on.	Contrast too low (G3 HMI only).	Program one of the soft keys with the action as User Defined and the following code in the field On Pressed: `dispcontrast++`
	No primitives on the display.	Add objects to the User Interface in Crimson.
	Backlight is off.	Push one of the soft keys to turn it back on.
	Backlight tube is broken.	Replace the backlight tube.
Unit continually cycles on and off.	Cross-references between tags, e.g., Var1 uses Var2 as maximum which in turn uses Var1 as minimum.	Remove one of the references or use formula tags for indirect reference, e.g., Form1 is equal to Var1 and used in Var2 minimum instead of Var1.
	Database is corrupted.	Create a new database or send to technical support for debugging.
Unit cycles power after an operation.	Most likely a program going in an endless loop.	Check if the operation launches program containing loops with no exit point.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Touchscreen not accurate	The touchscreen is not calibrated correctly.	Use the Touch Calibration primitive to recalibrate. Primitive available under Insert > System > Touch Calib. Insert the primitive so it covers the entire screen.
CF LED flashing slowly.	CF card corrupted or invalid.	Format the card from Crimson using the Link > Format Flash menu.
Unit shows "Version Mismatch".	The database currently in the device does not match Crimson's firmware version. (Message occurs after a download with a new version of C2 interrupted before the database was downloaded.)	Download the database from Crimson again.
Unit shows "Invalid Database".	The database in the device is corrupted or there are no databases in the device.	Download a database from Crimson.
Values show "----"	No communication with target device	See Serial Communication or Ethernet Communication.
Value does not update.	The tag on the screen is not linked correctly.	Check the tag mapping making sure the target device (PLC, etc.) register is correct.
		Check the primitive Data Source in the user interface in case the word WAS is displayed. Re-link the tag in this case.
Value shows +BIG or –BIG.	Not enough digits before the decimal point to show the number. For example, data is `1000.5` and format is three digits before the decimal point and one after.	Increase the number of digits before the decimal point in the tag format.
Value deviates by a factor of ten.	The tag format is not correct.	Change the decimal point position in the tag format.
Value is invalid.	Incorrect tag type.	Check if the tag type corresponds to the data type. Is the data a floating point number and thus the tag a real (Pi symbol), and not an integer (X symbol)?
	Incorrect data mapping.	Check if the tag is accessing the correct target device register.
	Incorrect primitive on the display.	Check if the primitive corresponds to the tag type. For example, primitive is a Text Integer so the tag has to be an integer.
	Data received is not what's expected. For example, bytes reversed in the word.	Use the transform property on the tag to modify the data source. You might have to try multiple solutions to solve the issue.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Symbol or image leaves a trace when animated.	The background of the image is not refreshed.	Change the primitive Fill Format to Solid color. Add the system variable **`dispcount`** in the background of the image to force the refresh.
Rich Bar Graph or Dial Gauge does not move	Tag minimum and maximum are not setup.	Check the tag's minimum and maximum values. These are used by both primitives for min and max.
Trend Viewer curve stuck at the bottom.	No minimum and maximum setup on the data tags displayed in the viewer.	Check that all displayed tags in the trend viewer have a Minimum and a Maximum setup.
Display shows "TIMEOUT" or "NOT READY" or "WORKING".	Program issue.	See program troubleshooting.
USB Drivers location for Windows.	Location of the drivers unknown.	The drivers are located under Crimson 2.0\Device installation folder. For example C:\Program Files\Red Lion Controls\Crimson 2.0\Device.
USB Driver installation.	The operating system is unable to find the driver or the installation failed.	In your operating system device manager, check if the device G3HMI is present. If so, uninstall that device. Follow the USB installation guide available on www.redlion.net*.
Upgrading Crimson did not upgrade the software version.	The option selected during the upgrade was Modify instead of Repair.	Launch the upgrade again and choose Repair when prompted.

* The USB tech note is available under the Human Machine Interface section on the following page:

http://www.redlion.net/Support/VirtualHelpDesk/TechNotes.html

CRIMSON MESSAGES

ERRORS	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Device incompatible with file.	The device you are trying to download into doesn't match the database device.	Create a new database file corresponding to your device (File > New).
Unable to open communication port.	The communication port you try to download with is unavailable.	
	▪ Cable not connected	Check if the cable is connected correctly to the PC and the device programming ports (USB or PG Port).
	▪ Incorrect download communication port	Check that Crimson is directed to the correct communication port (Link > Options).
	▪ Port already used	Check that the communication port is not used by another service or software especially for serial ports.
	▪ Target device IP address incorrect	If you download via Ethernet, Check the IP address of the target device in Link > Options.
	▪ No USB Drivers	Check that the USB drivers were install successfully. Reinstall G3 HMI USB driver under the PC device manager if necessary.
No Reply from terminal	Cable is not connected	Make sure the cable is connected or check above solutions
	If the message appears while downloading to the device	Download again with Link > Update or F9
CompactFlash required for upgrade.	The version of Crimson on the PC is different from the target device firmware version when attempting a download via Ethernet.	Insert a CompactFlash Card in the target device.
		Use another communication port for download; USB or Serial.
The window is too small to allow editing.	The current User interface view is too small to allow editing.	Change the panel view using View > Panel > Display only.
The device returned an unexpected reply code.	The device you are trying to download to is not supported by this version of Crimson.	Update Crimson 2 to the latest version available on www.redlion.net Choose Repair when upgrading.

SERIAL COMMUNICATION

This section is used to troubleshoot the communication between two devices linked via serial ports, i.e. RS232 or RS485.

TIP: For communication troubleshooting, it is strongly advised to create a new Crimson database including only one data tag mapped to a known register in the target device.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Values show "- - - -"	Port settings do not match.	Check that the port settings of the Crimson device match the target device (i.e. Baud, Parity, etc.).
	Incorrect target device address.	Check that the target device address in Crimson (in communications on the PLC symbol) matches the target device address setup.
	Incorrect cable	Check the cable part number or cabling to match your protocol.
	Incorrect communication port.	Check if the cable is connected to the right communication port.
		If the above is correct, check that the protocol settings are on the right communication port in Crimson.
	Communication port connector pins bent inward.	Although unlikely, check the communication port connector pins on the Red Lion device in case some are bent inward resulting in a bad contact with the cable.
	Incorrect tag mapping	Check that the tag is mapped to an existing register in the target device.
Values blink between the data and "- - - -"	Incorrect tag mapping on one of the tags on the display.	Delete tags one after another and download in-between. When the values on the screen stop blinking, the last deleted tag was mapped incorrectly or accessed an unknown register in the target device.
	Communications times-out.	Increase the Slave Response or Device Timeout on the communication port or target device in Crimson.

ETHERNET COMMUNICATION

This section is used to troubleshoot the communication between two devices linked via Ethernet.

TIP: For communication troubleshooting, it is strongly advised to create a new Crimson database including only one data tag mapped to a known register in the target device.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Values show "- - - -"	Incorrect target device IP address.	Check the target device IP address in Crimson (in communications on the PLC symbol) to match the target device IP address setup.
	Incorrect cable or wrong connection.	Check the LED on the Crimson device Ethernet port. If none are lit, there are no connections. Check the cable or that the Ethernet port is enabled in Crimson, see below.
	Ethernet port disabled.	Check that the Ethernet port in Crimson is enabled.
	Crimson and target devices are in a different address domain.	
	▪ If no routers are present on the network.	Check that the target device IP address and Crimson device IP address are different but in the same domain. (For example, both start with the same three first numbers; ex: 192.168.2.xxx if the mask is 255.255.255.0).
	▪ If a router is present on the network.	Check the Crimson device Ethernet port gateway address to match the router IP address.
	Incorrect tag mapping.	Check that the tag is mapped to an existing register in the target device.
Values blink between the data and "- - - -"	Incorrect tag mapping on one of the tags on the display.	Delete tags one after another and download in-between. When the values on the screen stop blinking, the last deleted tag was mapped incorrectly or accessed an unknown register in the target device.
	Communications times-out.	Increase the Slave Response or Device Timeout on the communication port or target device in Crimson.

PROGRAMS

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
The program does not seem to run.	Program not launched.	Check if the program is called somewhere in the database (code: **`ProgramName()`**).
	Some conditions in the program are not met (**`if`**, **`switch`** or loops).	If the Crimson device has a beeper, use the **`beep()`** function in the program to check if the program does go through the condition. Otherwise, use a dummy tag and change its value at different places in the program to check where it stops.
Display shows "NOT READY"	Program is launched but data are not available to run it yet.	If the message disappears, the program was launched successfully however it seems to require time to fetch all the required data. Communication is too slow or your database program is getting too complex.
Display shows "WORKING"	The device is busy working on a program.	The program takes too much time to run. Either run it in the background or reduce the workload. If it times-out, the program was stuck in a loop.
Display shows "TIMEOUT"	Program was unable to run due to unavailable data.	Make sure that all the tags in the program exist in the target device.

WEB SERVER

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Internet Browser says "Cannot display the web page"	Web Server not enabled.	Check that the Web Server in Crimson is enabled.
	Ethernet port disabled or Ethernet settings issue.	Check that the Ethernet port in Crimson is enabled and has a correct IP address. See Ethernet Communication troubleshooting.
	Incorrect Crimson device IP address.	Check that the IP address in the browser matches Crimson's Ethernet IP address.
	Incorrect PC IP Address.	Check the PC Ethernet Settings for a valid IP address.