| LOGGING	Revision	0.54
	Date	17/02/2025

Logging overview

By default, all Cosworth logging devices are configured with one continuous logging table. The following explains how to configure and modify logging tables, configure logging and offload conditions, and configure remote logging devices.

The **Logging** node is used to define the frequency at which channels are logged. Before you set channel rates, you must first define a logging table.

Configure a logging table

On the **Logging** node, all existing logging tables are shown on the left of the screen. One continuous logging table (Logger 0) is enabled as default. Click **+** (1) to add a new logging table. You can also import and export logging tables from existing setups using the import and export tool (2). You can delete logging tables with the 'bin' icon (3).
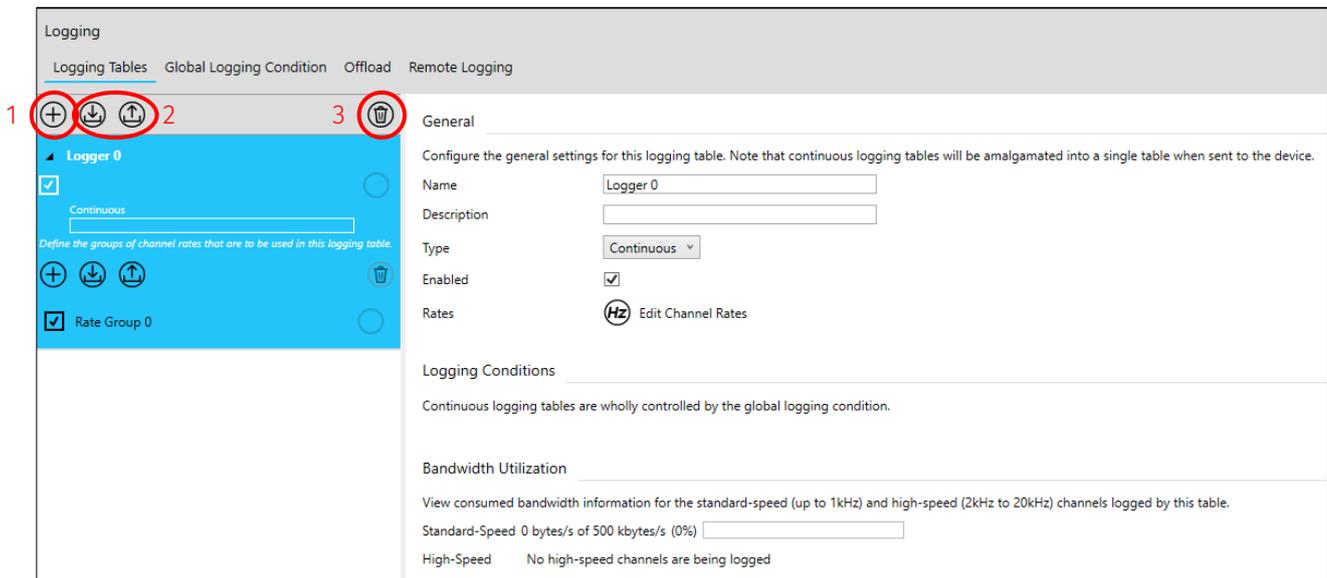
Enter a name for the logging table (1) and an optional description (2). Select the required type of logging table from the **Type** dropdown menu (3).
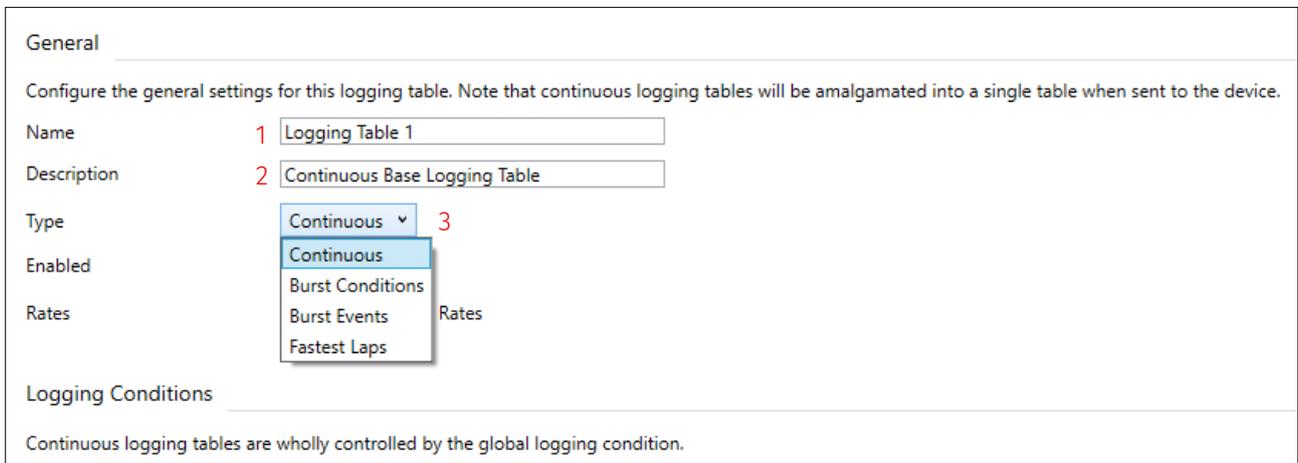
You can then configure the channel rates (1) for this logging table (see Channel Rates). The percentage bandwidth utilization is displayed in a bar graph (2).

Logging resources

You can view the total logging resource utilization at the bottom left of the page. The **Logging Resources** section shows information about the bandwidth usage and the estimated time capacity available for continuous logging. This provides an estimate of the time that the device can log with the selected table. Make sure the available logging time is greater than your session time to collect all data.

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Note: If the logger runs for longer than its capacity, then the earliest data logged is over-written.

Types of logging table

There are four types of logging table: Continuous, Burst Conditions, Burst Events, and Fastest Laps.

Continuous

All channels in a continuous logging table are logged whilst the global logging condition is true. Continuous logging tables are wholly controlled by the global logging condition.

Burst conditions

Ideal for short-term high-speed logging, burst condition logging is activated when a channel or bit-field channel meets the specified conditions.

Note: The global logging condition (for example, 'Engine ON') must also be satisfied before any logging takes place.

Burst events

Ideal for short-term logging based on a specific event, such as an alarm being triggered. Logging can then stop 'based on' time from the start of logging or 'based on' a second event such as the alarm being reset.

Note: The global logging condition (for example, 'Engine ON') must also be satisfied before any logging takes place.

Fastest laps

Stores data from the fastest lap(s) when the global logging condition is met to reduce memory usage. You can configure the number of fastest laps to store.

An estimated memory consumption is given from the configured number of fastest laps to store (1) and an estimated lap time (2).

Rate groups

Channels within the same logging table can be logged at different rates by adding rate groups. This is particularly useful when a manufacturer employs user groups (see Setup Locking – User Groups), or for viewing CAM & Crank data at high speed whilst cranking, but then reducing after idle, to optimise the logger capacity.

Click the + icon within a logging table to add a new rate group (1). You can name the rate group (2), enable or disable it (3), and add a brief description (4). After user groups are configured, you can define the minimum editing user group (5).

Generated channels

When you enable a logging channel, Toolset automatically generates five logging 'status' channels. These channels record:

- Available Logging Time
- Available Logging Memory
- Outing Number
- Outing Time
- Logger Status

Click the 'wrench' icon at the top right of the window to change the names of these channels.

Global logging condition

The global logging condition is used to define the conditions that must be met before any logging starts and when all logging stops. By default, the global logging condition is set to start logging when 'Engine is ON' and stop logging when 'Engine is OFF'.
You can also configure the global logging conditions to start/stop based on another Strategy, Channel, or Bit-

field Channel selectable from the dropdown menu (1). You can use the 'restore' tool (2) to reset the global logging conditions to the default.

Offload

Synchronized offload

If you enable synchronized offload (1) you can offload data from a secondary device with the data from the primary device. When you offload data from the primary device, both sets of channels are included, with those from the secondary device specified by a user-defined prefix.

For example, if you configure a setup for a Badenia as the secondary device and an Antares as the primary device, the Antares IP address is inserted in the primary address box (2). This allows the Badenia channels to be offloaded with the Antares channels with those from the Badenia device specified by a user-defined tag (for example, 'Badenia-' (3).

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No channel data is sent between the devices, they both log locally, using their own logging conditions. It is only during data offload that the devices are 'synchronized' together. Toolset offloads from both devices individually and then combines the data in the *.pds* file.

Remote logging

Enable remote logging

To log data remotely from a device, you must enable remote logging in the setup.

Select remote logging device

When you enable remote logging, you can select the remote logging device (1). If you have modified the remote logging device IP address in **Device Properties** (see Devices – Device Properties) you can choose whether to retain the logged data on the primary device (2) and whether high speed channels are transmitted to the remote logging device (3).

Optional stop logging on remote logging device

There is an option to stop remote logging, separate from the logging on the primary device. Click the three dots icon to open the dialog box (1), and then select a channel (2) to stop the remote logging.

Configure remote logging USB

You can use any USB stick to log data on a remote logging device such as the RLU or CDU10.3, but make sure the stick has sufficient storage capacity, otherwise data will be lost.

Plug the USB into a port on the PC, and then navigate to the **Data** tab in Toolset. Click **Configure RLU** at the top right (1), and then select the required device (2).
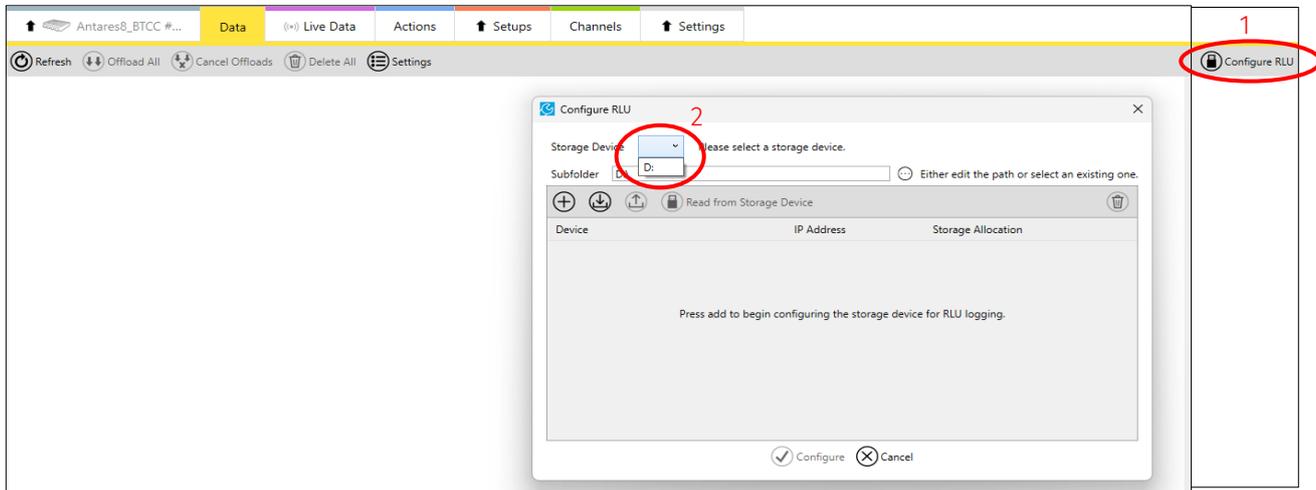
A warning dialog is displayed 'Formatting the USB for remote logging will erase all information currently on the USB.' Click **Yes** to proceed.
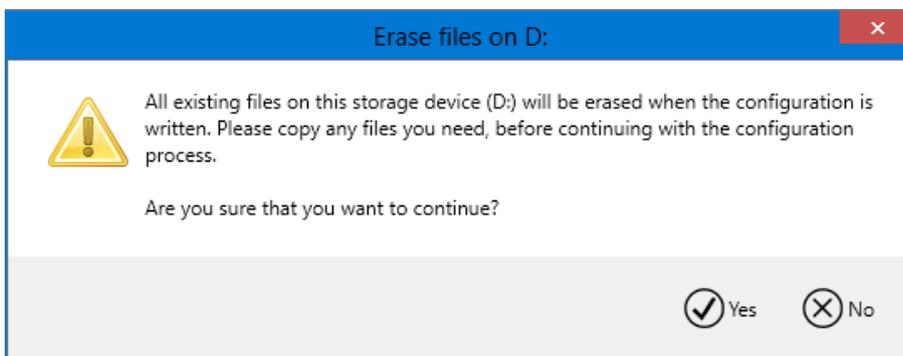
To add a new remote logging configuration, click **+** (1), and then use the dropdown menu to select the primary device (2).
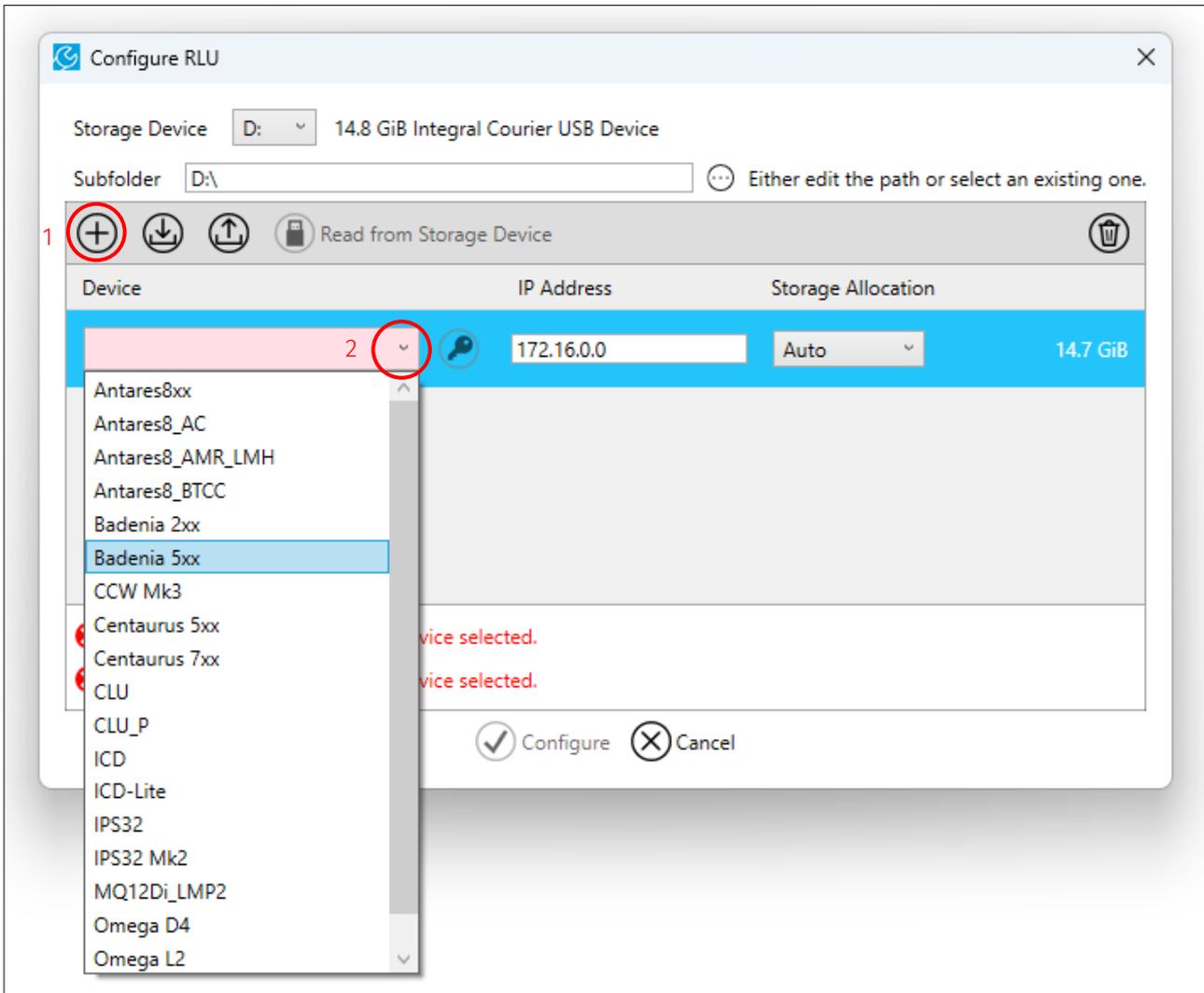
When you select the primary device, you are prompted to select the matching device variant (1). Make sure that the device IP address is correct for the primary device (2), select the storage allocation type – Auto, Fixed, or Percentage (3), and then click **Configure** (4).
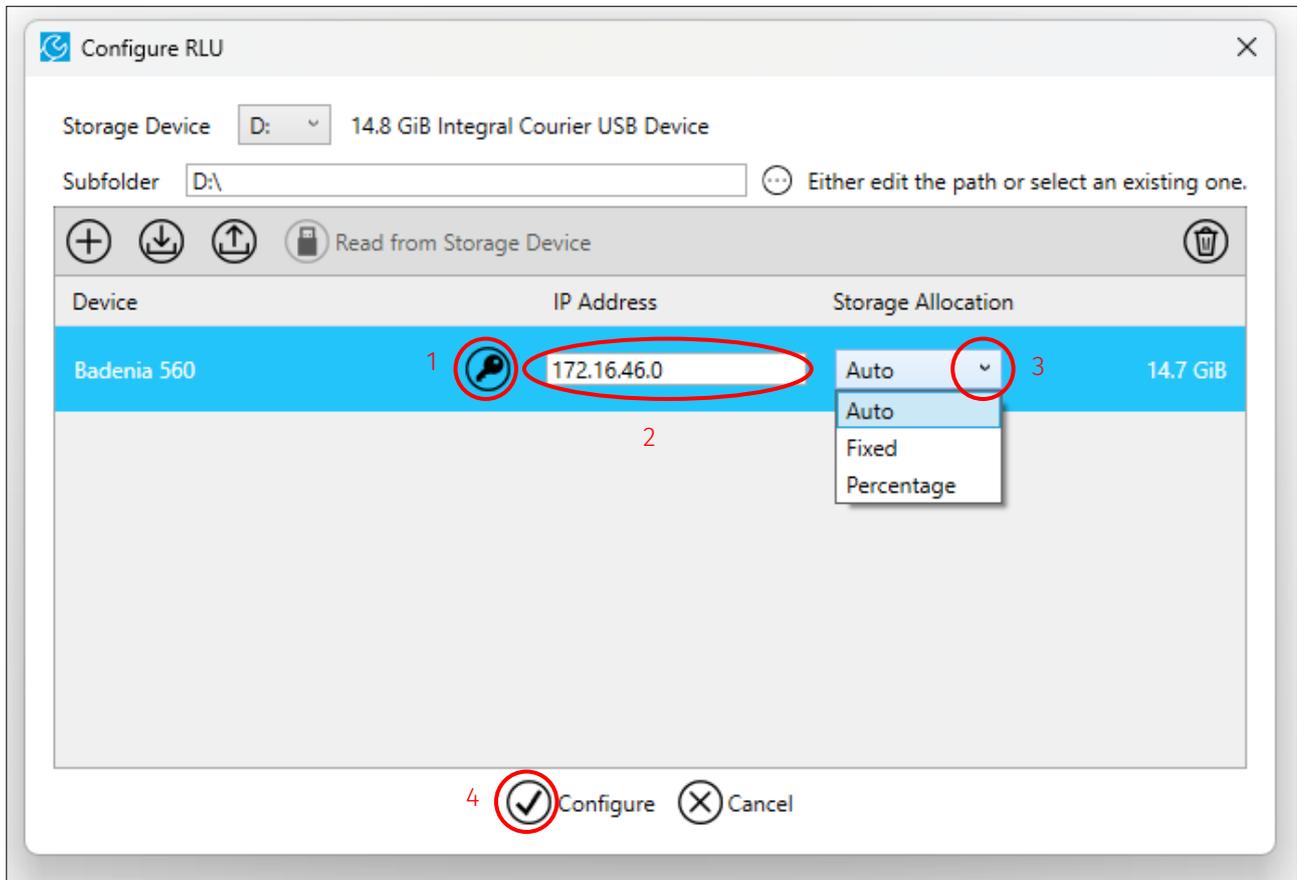
Toolset starts to format the USB device for remote logging.

Once the USB device is formatted it is ready for remote logging.

Remote logging status channels

When a remote logging device is enabled, Toolset automatically generates 9 logging 'status' channels.
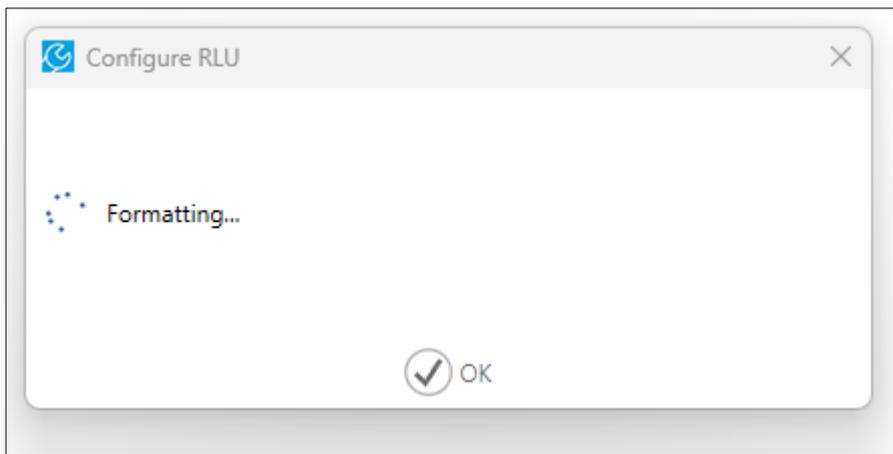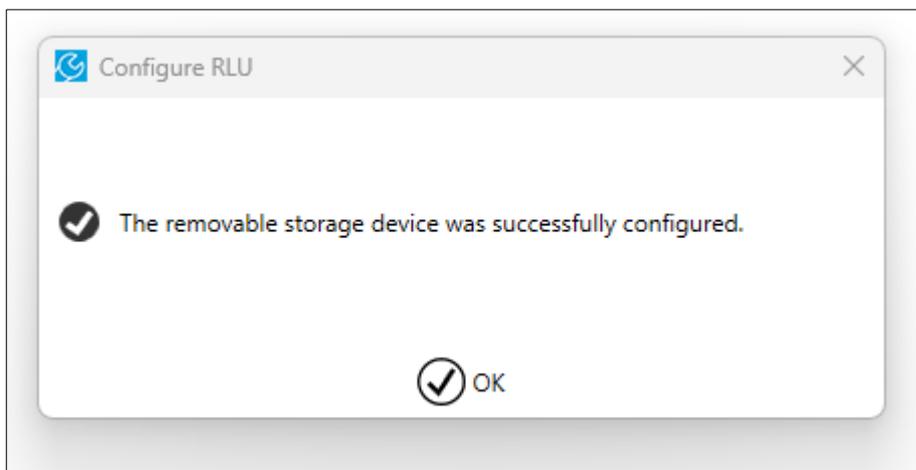
Channel Rates	
Logger 0 : Rate Group 0	
Remote Bad Packets	Off
Remote Disk Write Failures	Off
Remote Disk Writes	Off
Remote Ignored Packets	Off
Remote Missing Packets	Off
Remote Packet Retries	Off
Remote Packets Received	Off
Remote Status	Off
Remote USB Driver Resets	Off

Depending on the remote logging device selected (RLU or CDU10.3), device specific channels are also automatically generated.

Channel Rates	
Logging Table 1 : Rate Group 0	
RLU Device Present	Off
RLU Free CPU	Off
RLU OS Version Build	Off
RLU OS Version Major	Off
RLU OS Version Minor	Off
RLU OS Version Update	Off
RLU Serial Number	Off
RLU Total Physical Memory	Off
RLU Used Physical Memory	Off
RLU Version Build	Off
RLU Version Major	Off
RLU Version Minor	Off
RLU Version Update	Off

Channel Rates

Channels	Logger 0 : Rate Group 0
CDU 10.3 CPU Temperature	Off
CDU 10.3 Device Present	Off
CDU 10.3 Display Version Build	Off
CDU 10.3 Display Version Major	Off
CDU 10.3 Display Version Minor	Off
CDU 10.3 Display Version Update	Off
CDU 10.3 Displayed Page	Off
CDU 10.3 Free Cpu1	Off
CDU 10.3 Free Cpu2	Off
CDU 10.3 Module Temperature	Off
CDU 10.3 Serial Number	Off
CDU 10.3 Total Memory	Off
CDU 10.3 Used Memory	Off
CDU 10.3 Version Build	Off
CDU 10.3 Version Major	Off
CDU 10.3 Version Minor	Off
CDU 10.3 Version Update	Off

Note: You must select the channel rates to enable the channels to be logged