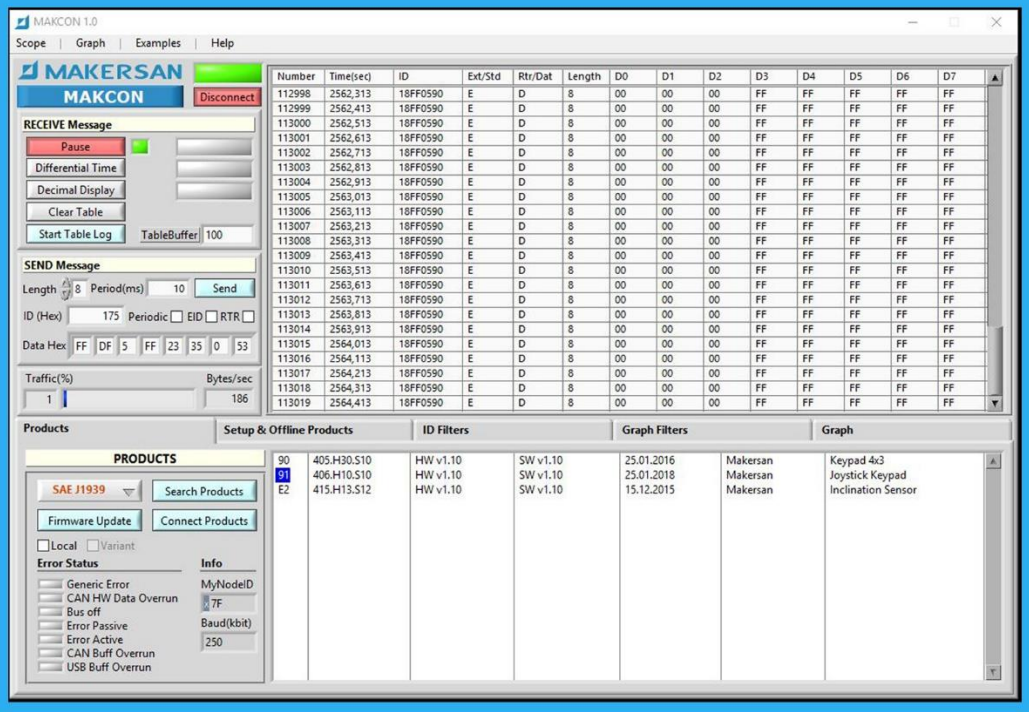
MAKERSAN

User Manual

Makcon IDE
790.01.S001

Makcon IDE



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Revision History

Date	Changed	Rev.
December 2018	Updated the new features	1.1
April 2018	First edition	1.0

Contents

1 Introduction

This document contains information on how to install, configure and operate the device “MO 79X USB to CAN Converter” via MakCon software is MO 795.S1. It describes product functions and parameters used for the operation.

Read through this document and related documents before use to become familiar with the device.

The following symbols may appear throughout this document.

This symbol indicates a warning that may cause personal injury, death or damage to the machine by means other than electrical if the symbol is omitted.

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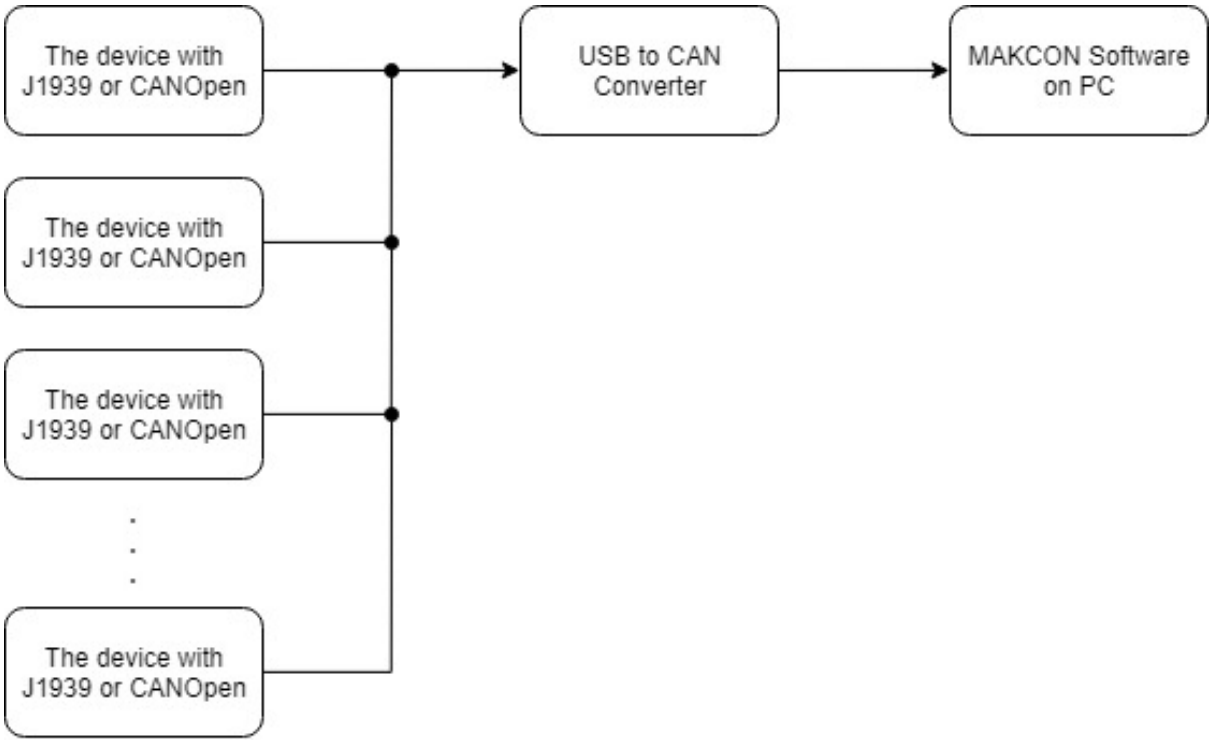
2 Overview

The “MO 799 USB to CAN converter” is a communication module to provide an interface between PC and CAN bus devices. It’s used to monitor the bus via MakCon software. MakCon is a software configuration tool that has been developed by Makersan and runs on a PC, also provides to monitor a J1939 bus or CANopen bus via the USB to CAN Converter.

Upon being connected to the bus, MakCon will find all devices manufactured by Makersan. The users can access easily to all the variable parameters of them and change.



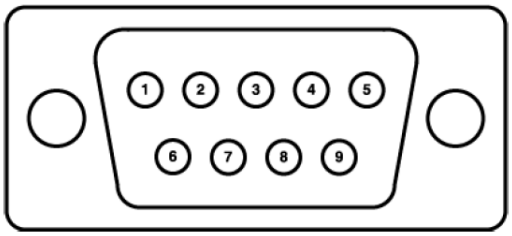
Some of the specifications of the USB to CAN Converter are listed below:

- USB socket: USB 1.1 or 2.0 full speed
- CAN socket: 9 pole DSUB male (DSUB-9)
- CAN Interface: Electrically isolated up to 1Mbit/s
- Supply Voltage: It’s powered directly from the USB port – 5V
- External Power: It’s optional for the devices
- LED Indicators:
    - Power – Orange
    - Error – Red (represents that there is an error)
    - USB – Green (blinking means that USB is sending/receiving data.)
    - CAN – Blue (blinking means that CAN is sending/receiving data.)

3 Installation

3.1 Electrical Connection

The USB cable is generic USB A to B cable and the CAN connector is 9 pole DSUB male(DSUB-9) as shown below;



Pin	Signal	Wires Marking
2	CAN_L	Green
7	CAN_H	Yellow
3	CAN_GND	White
9	VCC_BAT (optional)	Red
6	GND_BAT (optinal)	Black

3.2 Bus Termination

CAN bus must be terminated at both ends by a resistor of 120 Ω in order to prevent signal reflections. The device doesn't have an internal termination resistor. Therefore termination must be done externally if the device is connected at one end.

3.3 Software and Driver Installation

Using the provided download link, install the MakCon software by running MAKCONInstaller.exe. After that, the USB to CAN converter driver will be automatically run in order to install. Since the installer wizard installs the 64bit driver automatically, if your PC is x86, you get an error during installation. Therefore you shall install it using the file located at C:\Program Files(x86)\Makcon\Drivers\dpinst_x86.exe manually for x86 PCs after installed the MakCon software.

3.4 System Requirements

Operating System: Windows 7 32/64bit and later.
Port: USB(1.1 or 2.0 full speed)
Display: VGA – 1024x768 and later recommended for MakCon software

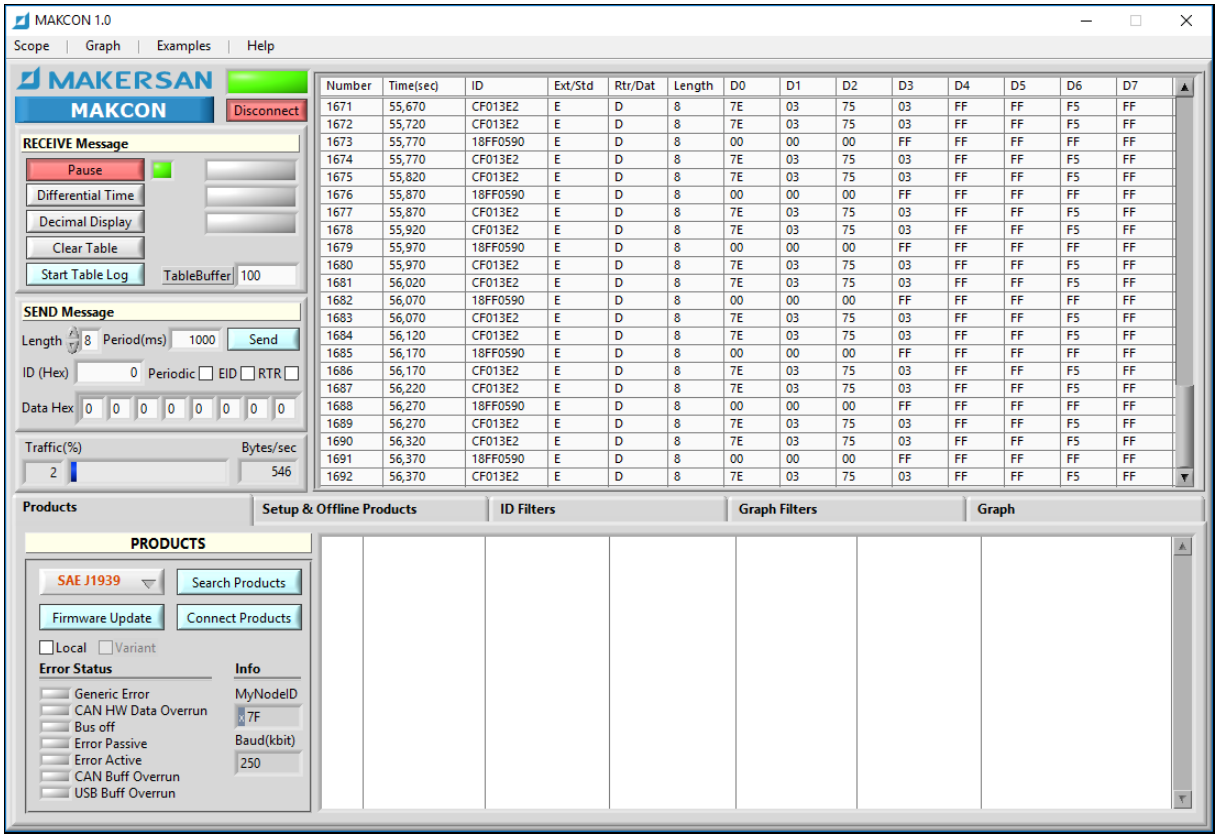
4 MakCon Software

4.1 Overview

The MakCon is a software configuration tool that has been developed by Makersan and runs on a PC, also provides to monitor a J1939 bus or CANopen bus via the USB to CAN Converter. The ID, time, data and data length which transferring on the bus can be monitored with it. Furthermore, the users can access easily to all the variable parameters of the devices and also change.

There are four menus which are; scope, graph, examples and help in the MakCon software.

- Scope: Setting/Monitoring the parameters and status of CAN bus, received data, sending data and searching products has been manufactured by Makersan.
- Graph: Plotting the filtered data in which set the graph filter in scope menu.
- Examples: The examples application of products has been providing from Makersan.
- Help: Providing the manual how to run it and updating MakCon.



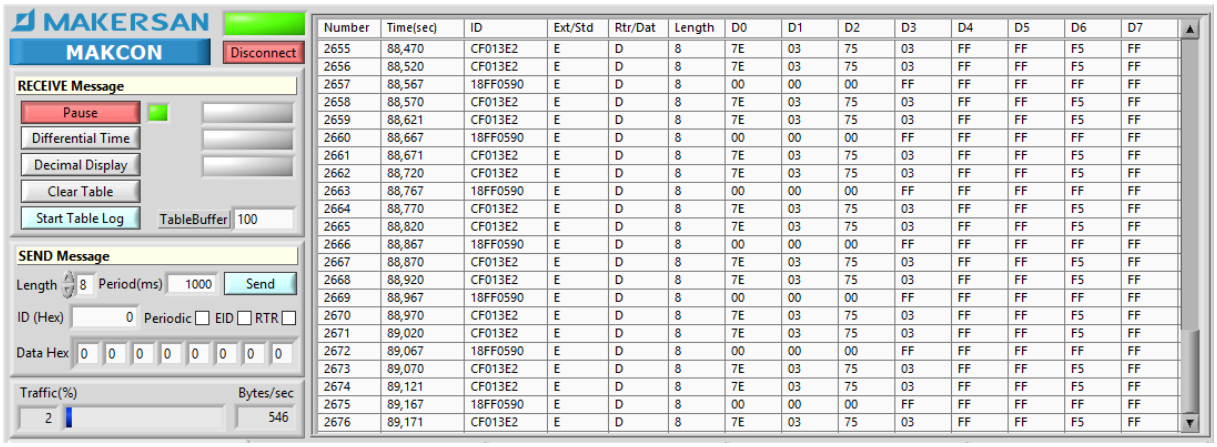
4.2 Scope Menu

The scope menu provides to set parameters of the CAN, send a message, monitor the bus and find the calculated the traffic ratio.

- The Connect Button: Provides to connect or disconnect the bus. Once the connect button is clicked, the software will find the USB/CAN converter automatically and connect if has been plugged to any USB port. Whether the connecting is successful can be seen through an indicator where is above the connect button. If it's green, the connecting is successful.

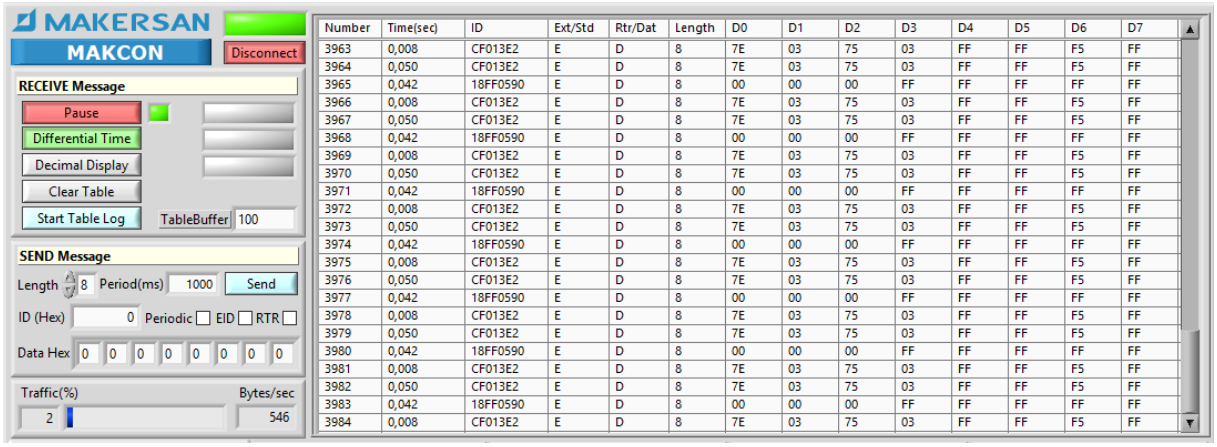
4.2.1 Receive Message

- Play/Pause Button: Provides to insert the new message which has just received from the bus to table. If the state of this button is "play", then the table will be refreshed automatically after received a new message. You can see which message that has just received. If the state of this button is "pause", then the table won't be refreshed, but the USB buffer will be read and not be an overflow.



Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
2655	88,470	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2656	88,520	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2657	88,567	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2658	88,570	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2659	88,621	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2660	88,667	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2661	88,671	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2662	88,720	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2663	88,767	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2664	88,770	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2665	88,820	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2666	88,867	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2667	88,870	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2668	88,920	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2669	88,967	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2670	88,970	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2671	89,020	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2672	89,067	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2673	89,070	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2674	89,121	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
2675	89,167	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
2676	89,171	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF

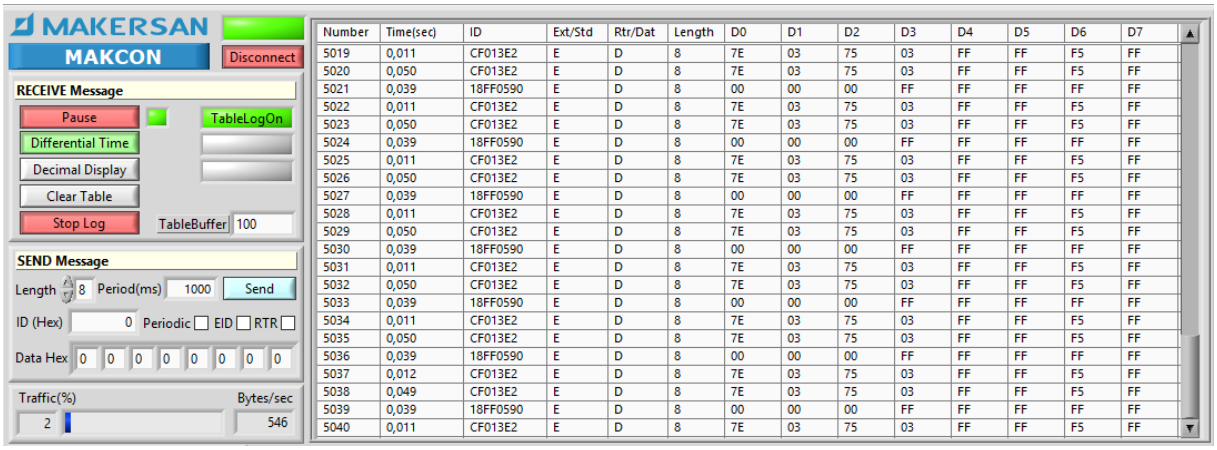
- Differential Time Button: Displays the time as a differential. Thus the time which is between a new and before the message can be seen and found the period time of the device easily. Otherwise, it has indicated the time since connecting.



Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
3963	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3964	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3965	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3966	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3967	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3968	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3969	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3970	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3971	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3972	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3973	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3974	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3975	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3976	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3977	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3978	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3979	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3980	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3981	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3982	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
3983	0,042	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
3984	0,008	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF

- Clear Table Button: Provides to clear the table which indicates the received and sent messages on the bus.

- Start/Stop Table Log: Provides to log the table to a text file where will be located Documents\Makcon\Log after clicked the start button. It will log the only just received message after the start to file and until is clicked again(the stop). While the logging is being active, the situation is indicating through an indicator.

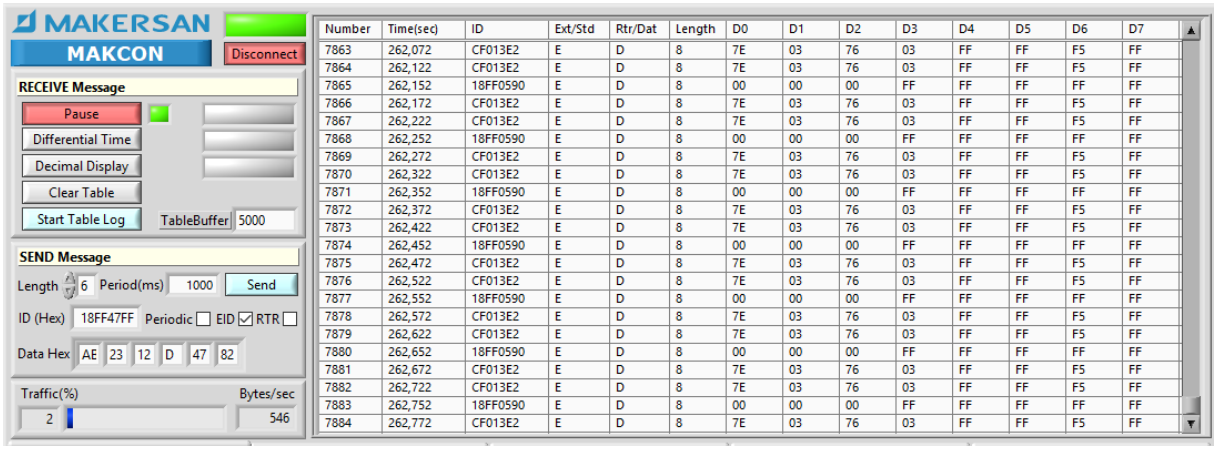


Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
5019	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5020	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5021	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5022	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5023	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5024	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5025	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5026	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5027	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5028	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5029	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5030	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5031	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5032	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5033	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5034	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5035	0,050	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5036	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5037	0,012	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5038	0,049	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
5039	0,039	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
5040	0,011	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF

- Table Buffer: Specifies how many messages will be displayed in the table. This value may be from 1 to 5000.

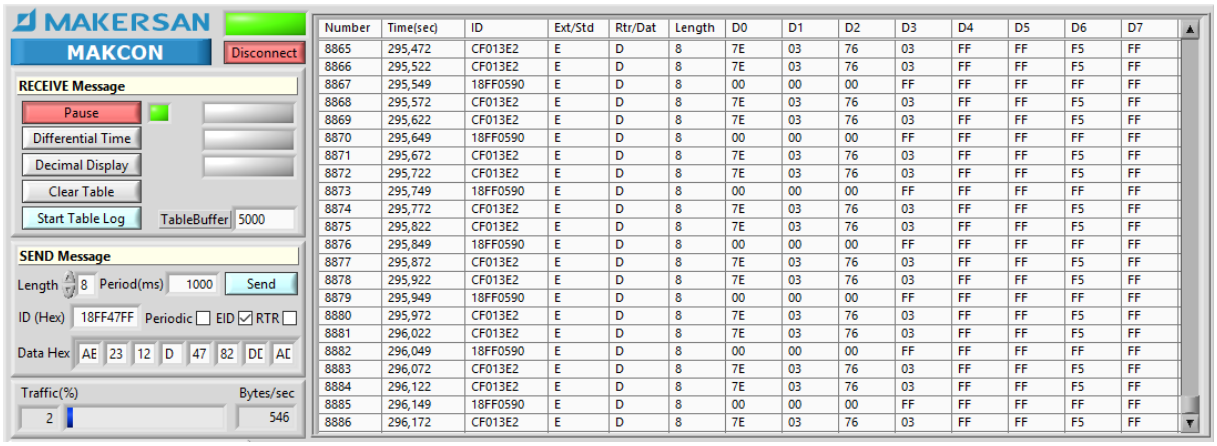
4.2.2 Send Message

- Length: Specifies how many bytes will be sent via CAN. This value may be from 1 to 8 due to the feature of the CAN.



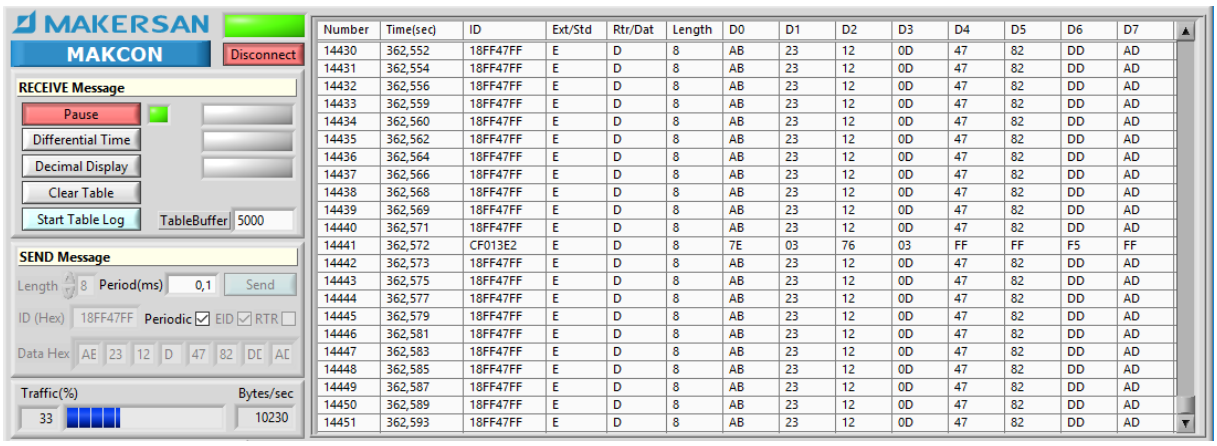
Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
7863	262,072	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7864	262,122	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7865	262,152	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7866	262,172	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7867	262,222	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7868	262,252	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7869	262,272	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7870	262,322	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7871	262,352	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7872	262,372	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7873	262,422	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7874	262,452	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7875	262,472	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7876	262,522	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7877	262,552	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7878	262,572	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7879	262,622	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7880	262,652	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7881	262,672	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7882	262,722	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
7883	262,752	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
7884	262,772	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF

- ID(Hex): Specifies the ID which the message will be sent.
- Data Hex: Specifies the data will be sent. The first box is D0 byte and the last box is D7 byte of the CAN. Please note, these values shall be written as hexadecimal, otherwise, the wrong values will be sent.



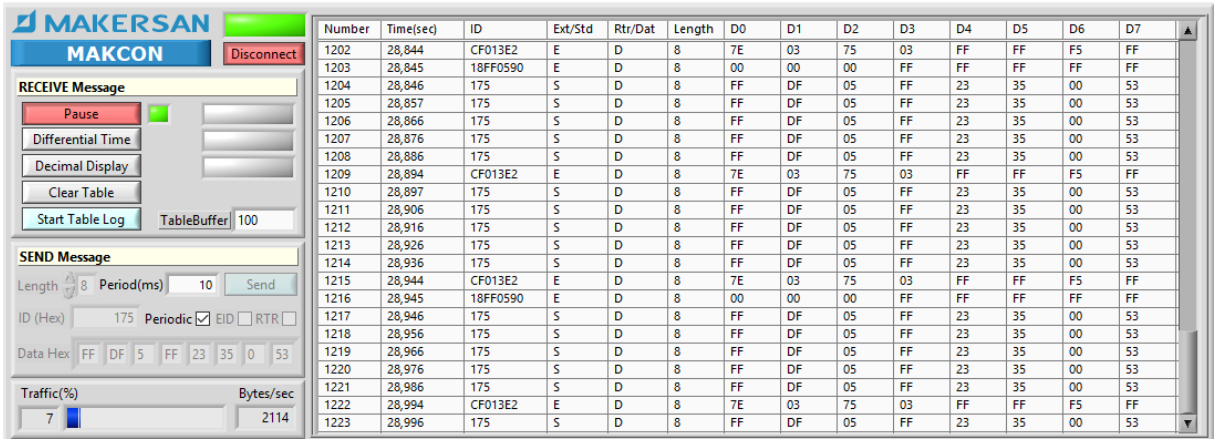
Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
8865	295,472	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8866	295,522	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8867	295,549	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8868	295,572	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8869	295,622	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8870	295,649	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8871	295,672	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8872	295,722	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8873	295,749	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8874	295,772	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8875	295,822	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8876	295,849	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8877	295,872	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8878	295,922	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8879	295,949	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8880	295,972	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8881	296,022	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8882	296,049	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8883	296,072	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8884	296,122	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
8885	296,149	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
8886	296,172	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF

- Period(sec): When the periodic checkbox is active, this value specifies the period of the message will be sent periodically. It can be minimum 0.1 milliseconds.
- Periodic Check Box: Provides the message to send periodically as a value which specified in the box.



Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
14430	362,552	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14431	362,554	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14432	362,556	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14433	362,559	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14434	362,560	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14435	362,562	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14436	362,564	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14437	362,566	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14438	362,568	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14439	362,569	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14440	362,571	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14441	362,572	CF013E2	E	D	8	7E	03	76	03	FF	FF	F5	FF
14442	362,573	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14443	362,575	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14444	362,577	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14445	362,579	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14446	362,581	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14447	362,583	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14448	362,585	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14449	362,587	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14450	362,589	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD
14451	362,593	18FF47FF	E	D	8	AB	23	12	0D	47	82	DD	AD

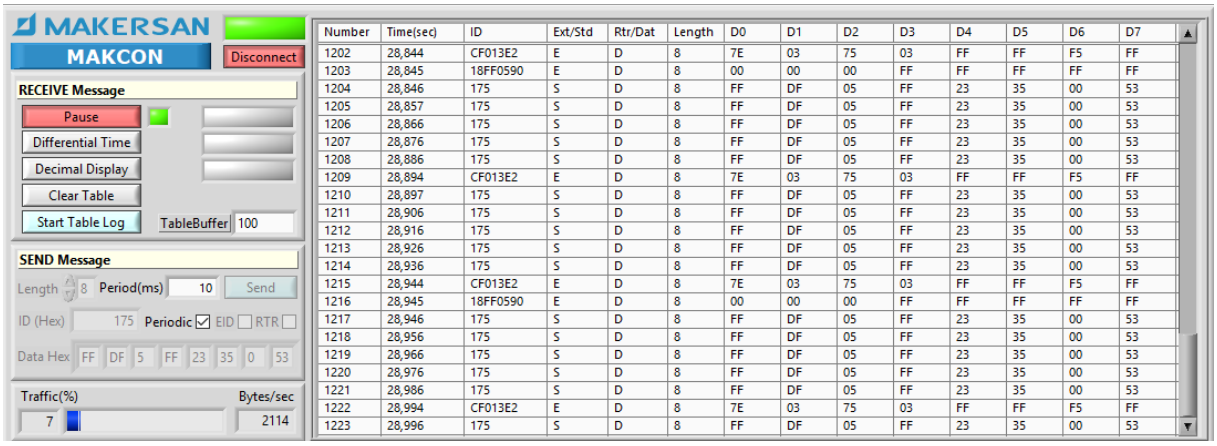
- EID: Specifies whether the ID will be sent, is standard or extended. For an extended ID, the checkbox shall be selected. Otherwise, the software will assume that you select a standard ID.



Number	Time(sec)	ID	Ext/Std	Rtr/Dat	Length	D0	D1	D2	D3	D4	D5	D6	D7
1202	28,844	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
1203	28,845	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
1204	28,846	175	S	D	8	FF	DF	05	FF	23	35	00	53
1205	28,857	175	S	D	8	FF	DF	05	FF	23	35	00	53
1206	28,866	175	S	D	8	FF	DF	05	FF	23	35	00	53
1207	28,876	175	S	D	8	FF	DF	05	FF	23	35	00	53
1208	28,886	175	S	D	8	FF	DF	05	FF	23	35	00	53
1209	28,894	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
1210	28,897	175	S	D	8	FF	DF	05	FF	23	35	00	53
1211	28,906	175	S	D	8	FF	DF	05	FF	23	35	00	53
1212	28,916	175	S	D	8	FF	DF	05	FF	23	35	00	53
1213	28,926	175	S	D	8	FF	DF	05	FF	23	35	00	53
1214	28,936	175	S	D	8	FF	DF	05	FF	23	35	00	53
1215	28,944	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
1216	28,945	18FF0590	E	D	8	00	00	00	FF	FF	FF	FF	FF
1217	28,946	175	S	D	8	FF	DF	05	FF	23	35	00	53
1218	28,956	175	S	D	8	FF	DF	05	FF	23	35	00	53
1219	28,966	175	S	D	8	FF	DF	05	FF	23	35	00	53
1220	28,976	175	S	D	8	FF	DF	05	FF	23	35	00	53
1221	28,986	175	S	D	8	FF	DF	05	FF	23	35	00	53
1222	28,994	CF013E2	E	D	8	7E	03	75	03	FF	FF	F5	FF
1223	28,996	175	S	D	8	FF	DF	05	FF	23	35	00	53

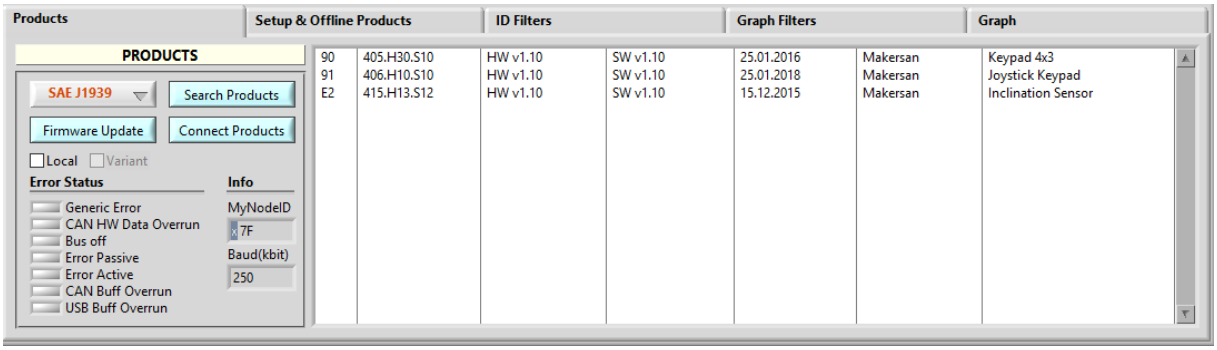
- RTR: Specifies whether doing a reading from an address or writing to an address.

- Traffic(%) & Bytes/sec: The traffic ratio gives the ratio between the current transferring messages and capacity of the bus.



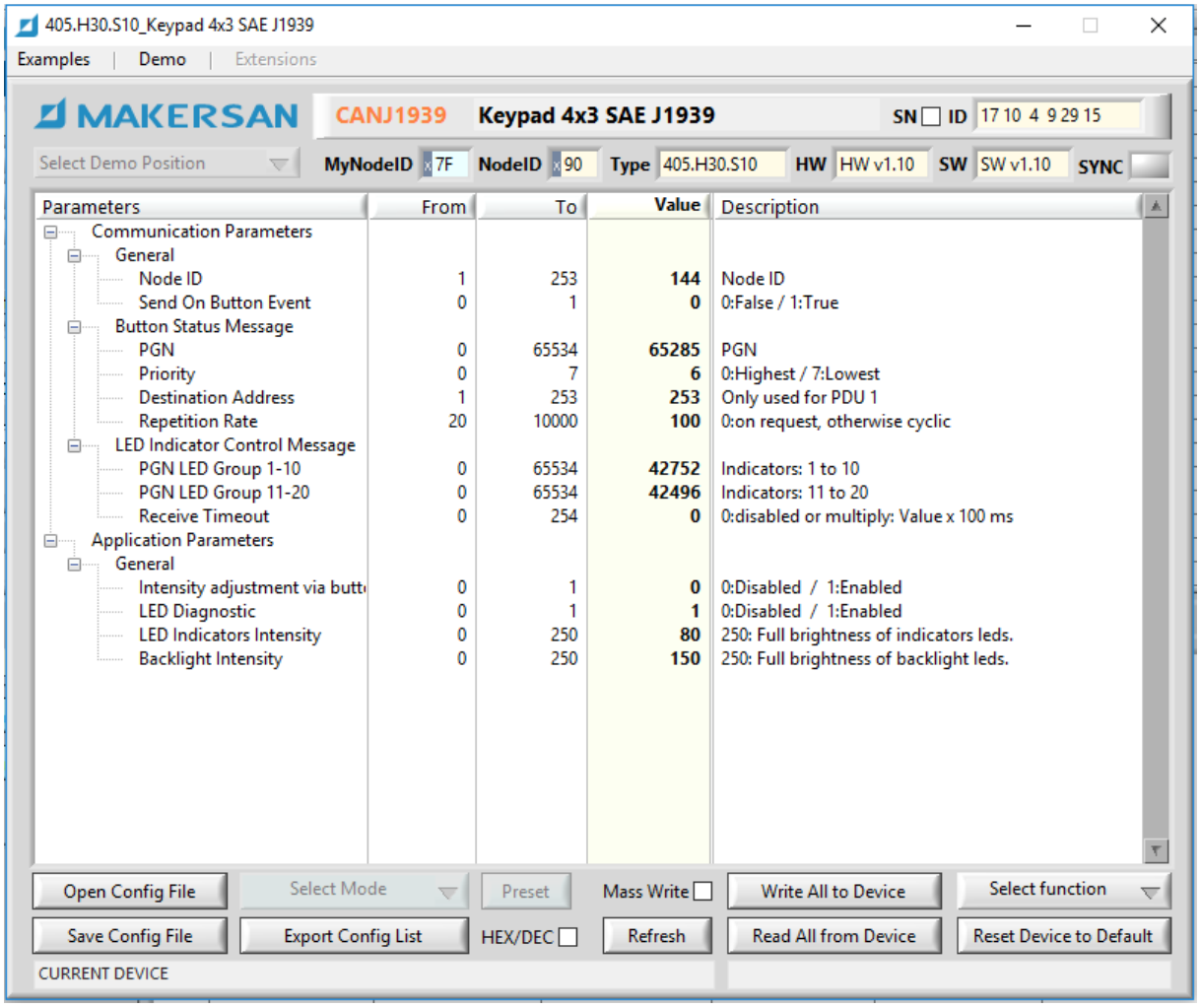
4.2.3 Products

- Protocol Combobox: Provides to find all devices has been manufactured by Makersan has the selected protocol on the bus.
- Search Products: After selected the protocol and clicked the search products button, the software will find all devices on the bus.



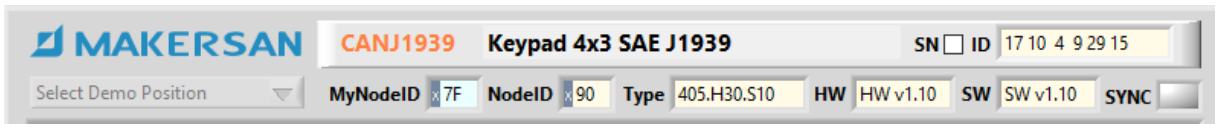
To view the parameters of any one of the listed products, please double click on it or click one connect products. After double-clicked on anyone, a new window of the selected product will be opened. Any parameter in this window can be changed easily. This window will be as follows.

While configuring the device, the machine or vehicle may react unexpectedly and may cause personal injury or death.
Ensure that man and machine in safe condition!



There are three menus which are setup, examples, demo, examples and extension in this window. The setup menu provides to set/get parameters of the device.

In title section, there is information about the device which has been connected. MyNodeID is the id of MakCon software, NodeID is the id of the device. The others which are the type, hw, sw and id are the manufacturing feature of it. The SYNC indicates whether there is a problem between the displayed values and the real values that the device has them. If it's red, this means that there is a problem.

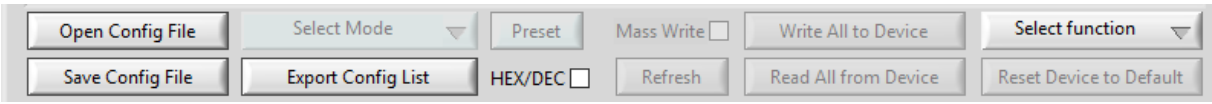


Also, you can make your own config files the new parameters in order to upload it to a new device. To do this, you can use "save config file button". It provides these parameters to save to a specific file, also through "open config file button", these parameters can be opened. Furthermore, these parameters to save to a text file through "export config list". During saving these parameters, the default folder path is Documents\Makcon\ProgCnf to save and load.

The “write all to device” and “read all from device” buttons provides to read and write all parameters. Also, the device can be restored the default settings and parameters through “reset device to default” button. If the Mass Write option selected, it will write all parameters but this time the write data will be preserved even if the parameters in the device memory are different.

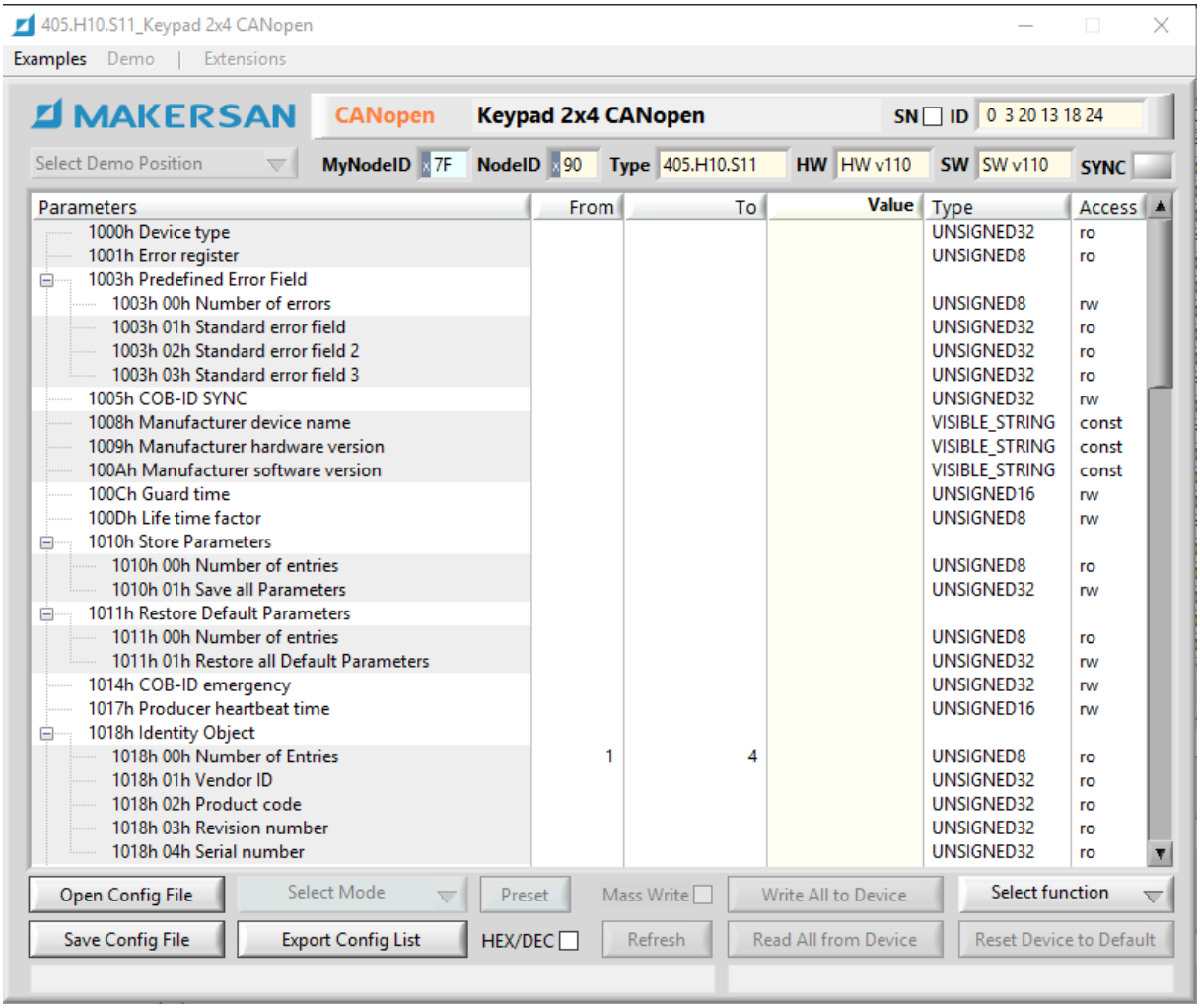
The select function combo box provides to restart the device and select whether the periodic message is sent.

The displaying of the values the can be selected as hexidecimal or decimal thanks to the HEX/DEC check box.

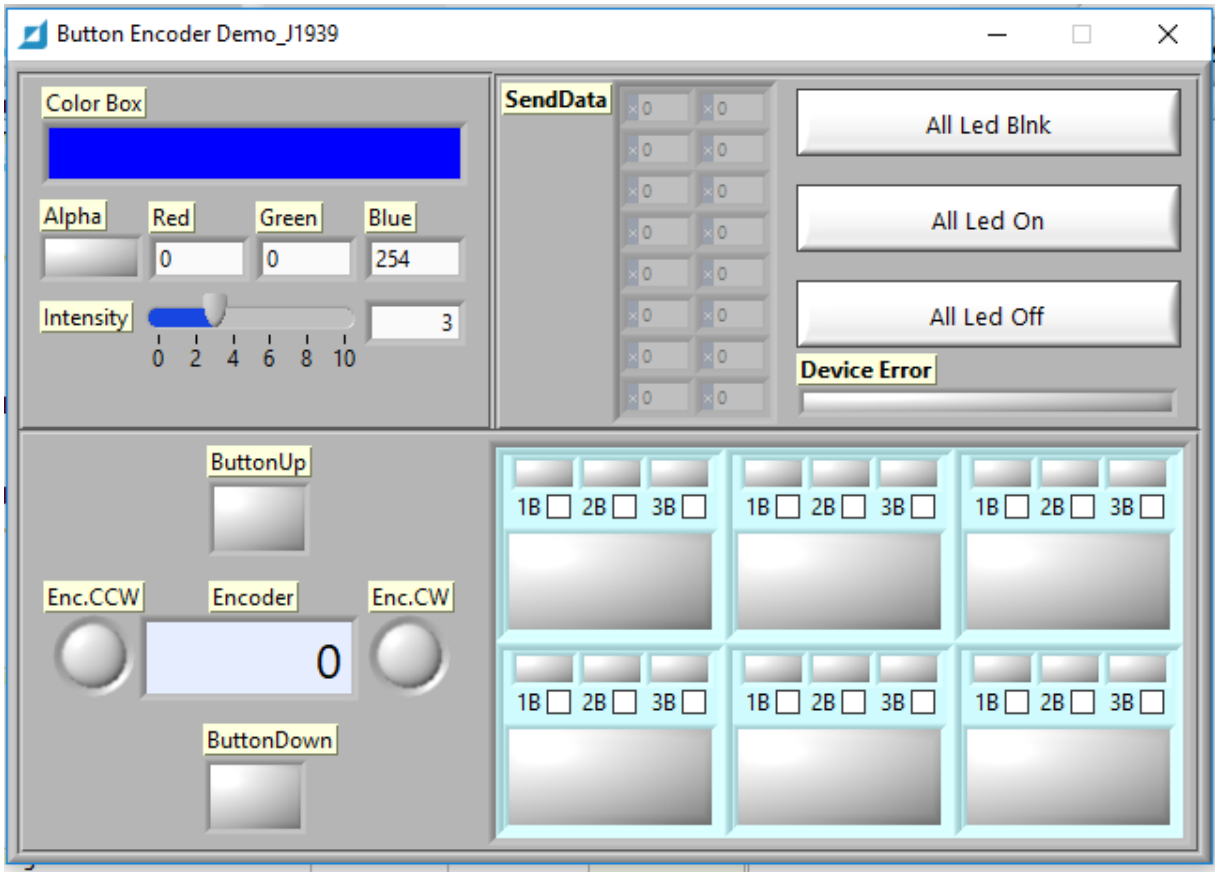


The select mode combo box and preset button are a specific feature for the products and all products may not have it.

Note: The values of having gray background rows as shown follows in the devices with CANOPEN can’t be changed.



The demo menu has an application how displays the current value of the device, thus it provides the users to see the current values and make sense them which has been measured.

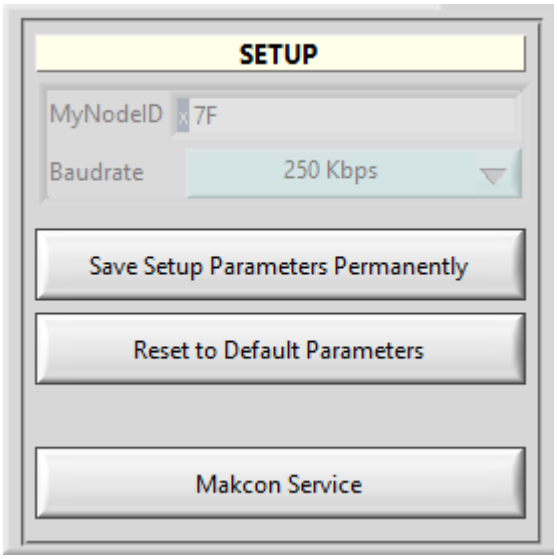


The examples menu has the example application parameters which provided by Makersan about the device. The extension menu if available means there is a module which can be used with this device.

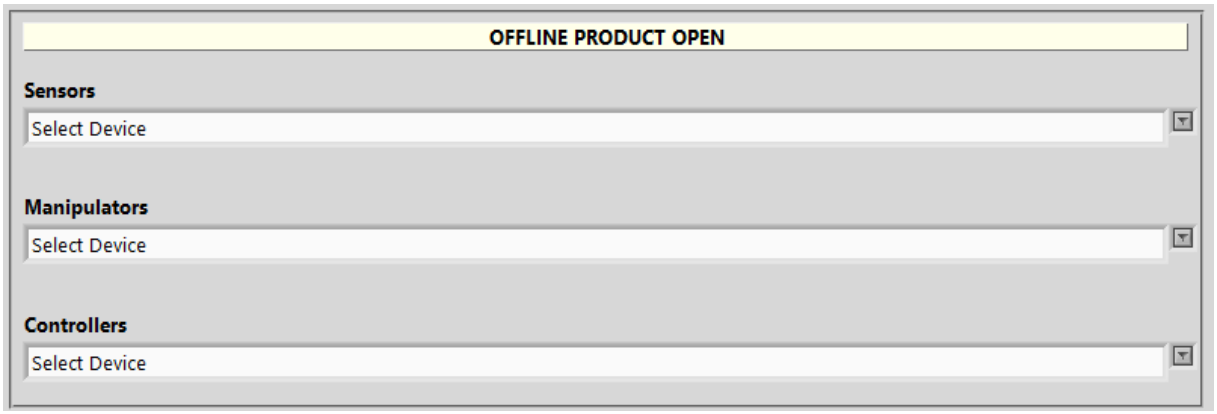
- Firmware Update: Provides to update the devices. After clicking this button, the software will connect our database and check whether there is a new software for it. If there is an available new software, it will update to the latest version. Updating can be also done with a local file which provided by Makersan. To do it, you should select the local checkbox.
- Error Status: These indicators notifies when there is a problem on the bus.
- Info: MyNodeID is the Node ID of the software and Baud(kbit) specifies the communication baud rate of the CAN. These two parameters can be changed in Setup & Offline Products menu.

4.2.4 Setup & Offline Products

- MyNodeID: Specifies the node ID of the MakCon software. This value shall be a hexadecimal number. Otherwise, the wrong node id may be chosen for communication.
- Baudrate: This combo box provides to select the baud rate/speed of the CAN. It can be chosen from 10Kbps to 1000Kbps.

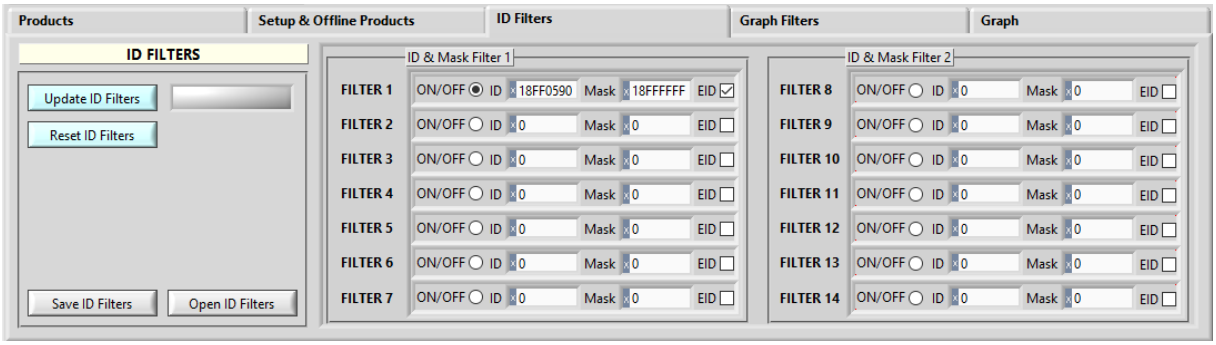


- Save Setup Parameters Permanently: Provides to save the changed settings which are node ID or baud rate for the MakCon software.
- Reset to Default Parameters: Provides to load the default setting for the MakCon software.
- Offline Product Open: Provides to review the products that manufactured by Makersan as offline.

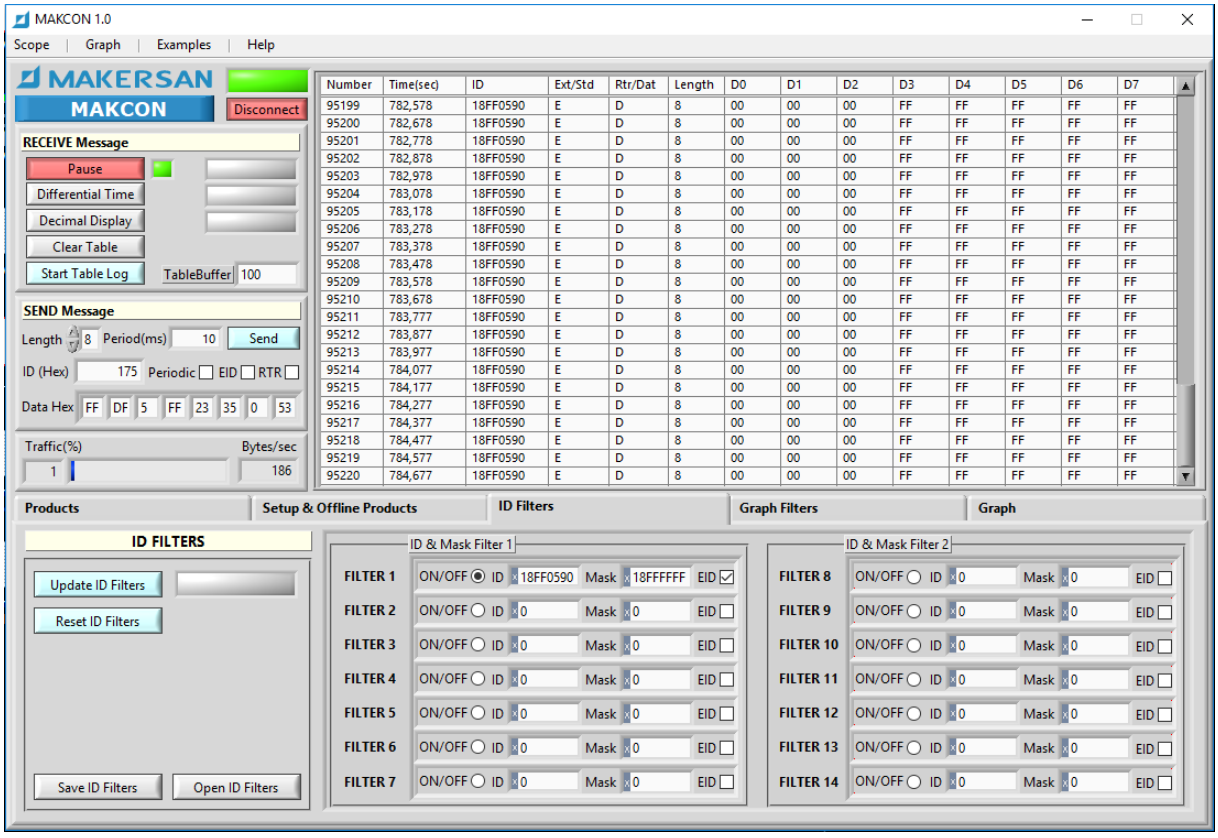


4.2.5 ID Filters

The capacity of id filter of the MakCon software is 14. That's mean you can use to filter the total of 14 id filter on the bus. To enable the set filter, first the on/off radio button shall be selected and then ID filters shall be updated by clicking “Update ID Filters” button. Thus the message of the only id which has been filtered will be displayed in the table. Also, when any changing was done, an indicator warns you to update these changes.

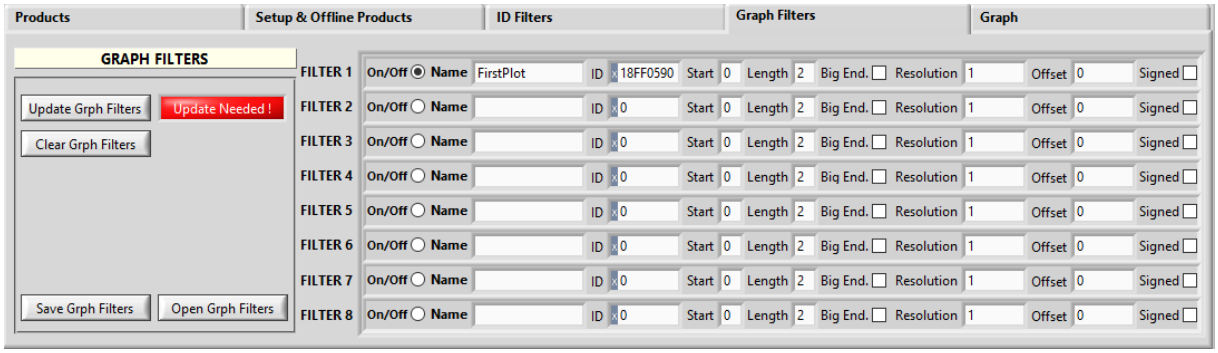


The specified filters can be saved in your documents folder and you can open them in order to use later.



4.2.6 Graph Filters

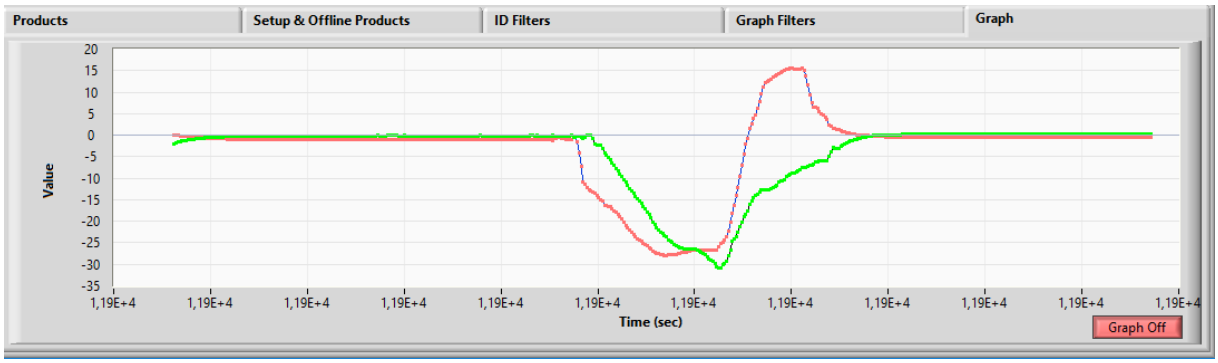
The graph filters provide to plot the data which is received from the filtered id. The maximum 8 filters can be inserted. The bytes which is wanted to plot can be selected from start to the last byte easily. Through the resolution and offset box, you can add offset the data or multiply it. Furthermore, you can display the data which received the signed number and select the endian format.



As in the id filters menu, the graph filters too need to update the plot.

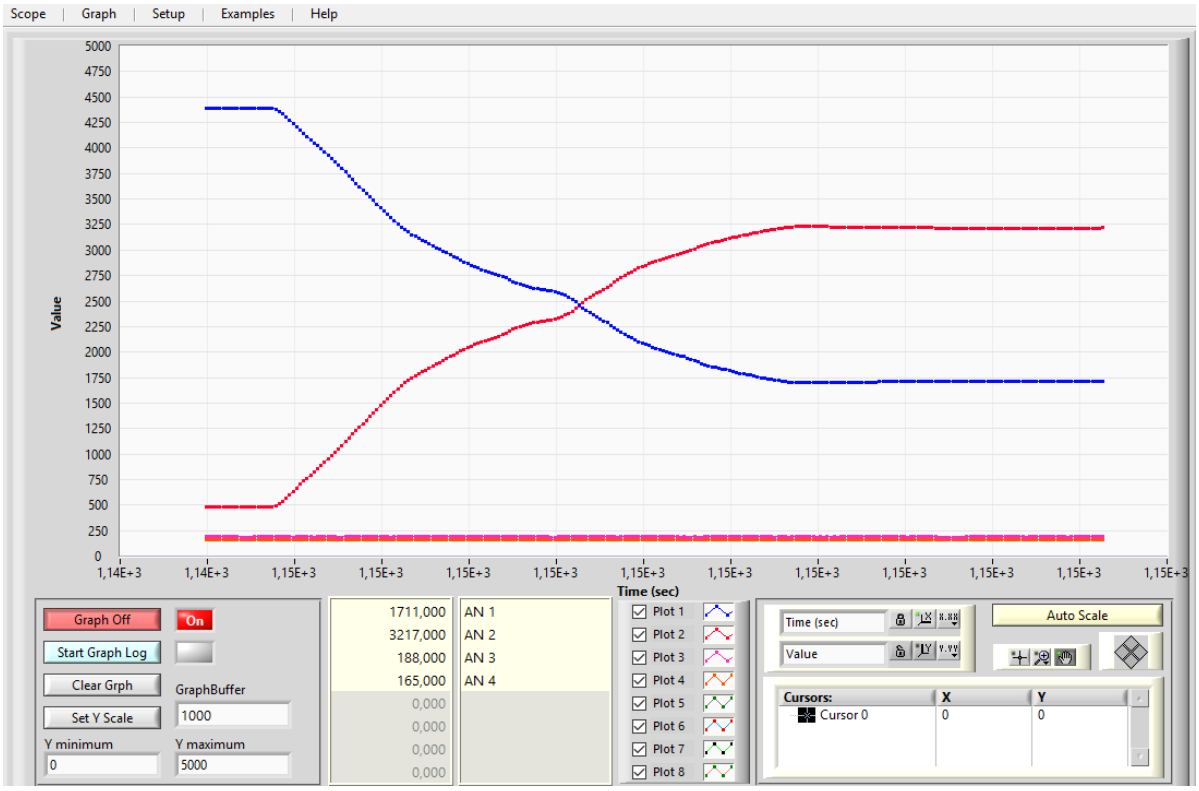
4.2.7 Graph

After updated the graph filters, the plotting data can be seen in this menu or another graph menu where is in the tab bar. All you need to do is click the “graph on” button.



4.3 Graph Menu

As the mini-graph menu in scope menu, this menu provides to plot the data which received, but this is more comprehensive.



For instance, you can log the plotted data as x and y-axis to a txt file where is located in the documents folder, set y scale axis, minimum and maximum values. Furthermore, the last value which received from the plotted data can be seen and the colour of the line changed. The graph buffer means that the plotted line will have how many points. Each line has the same point numbers.

4.4 Examples Menu

This menu includes the example filters which both id and graph provided by Makersan and are located in program files folder. The user can select the appropriate application for their own products and use.

4.5 Help Menu

The last menu of tab-bar is the help. It provides to reach the help manual and our website. Furthermore, it provides to update the MakCon software via internet.

5 Appendix

5.1 Definitions

USB	Universal Serial Bus
CAN	Control Area Network

5.2 Disposal

Please observe the national regulations for your country when disposing of the device.