Endurance - CANopen User Guide

V1.0

Change Log

Version	Date	Description	Author
1.0	30/01/2024	Initial draft	Rahul Patel

This document covers the configuration of Producer Heartbeat Time, Event Timer, and RGB LED.

Prerequisite/ Requirements:

Use any CANopen Adapter like Kvaser, Peak, Ixxat etc

Use any adapter-supported CANopen software like CANopen Magic standard, PCAN view ,CAN analyzer, Opto Analyzer etc.

Event Timer(PDO Transmission Time)

Definition: Maximum interval for PDO transmission.

[1800sub5]

Parameter Name=Event Timer

Object Type=0x7

Data Type=0x0006

Access Type=rw

Default Value=20

PDO Mapping=0

How to update Event time in CANopen Network

Step 1: Make sure your Device/ Joystick Should be connected to CANopen Network.

Step 2: verify your Device/ Joystick is on operational state.

Step 3: Select New transmit Message from menu.

Type ID(hex) = 0x600 + Node ID

Length = 8 byte

Data (hex) =

Data	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte
Byte	0	1	2	3	4	5	6	7

CS: Command Specifier

For Example, To change Event timer for 20ms on TPDO 1 (1800h Index and 05h Subindex)

Data (Hex)= 2B 00 18 05 14 00 00 00

Data	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte
Byte	0	1	2	3	4	5	6	7
Data(Hex)	2B	00	18	05	14	00	00	00

Step 4: click ok and close the window.

You will receive the message from CAN ID(0x580 +Node Id) = 60 00 18 05 00 00 00 00

Now your device/ Joystick is now updated with a new event timer.

Producer Heartbeat Time

Definition : A CANopen node periodically sends out a heartbeat message which lets the CANopen master or the heartbeat consumer, know that the node is still alive

[1017]

Parameter Name=Producer Heartbeat Time

Object Type=0x7

Data Type=0x0006

Access Type=rw

Default Value=100

PDO Mapping=0

How to update Producer Heartbeat time in CANopen Network

Step1 : Make sure your Device/ Joystick Should be connected to CANopen Network.

Step 2: verify your Device/ Joystick is on operational state.

Step 3: Select New transmit Message from menu.

Type ID(hex) = 0x600 + Node ID

Length = 8 byte

Data (hex) =

Data	2B	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte
Byte	0	1	2	3	4	5	6	7

For Example, To change Heartbeat time for 20ms on 1017h index and 00 subindex.

Data (Hex)= 2B 17 10 00 14 00 00 00

Data	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte
Byte	0	1	2	3	4	5	6	7
Data(hex)	2B	17	10	00	14	00	00	00

Step 4: click ok and close the window.

You will receive the message from CAN ID(0x580 +Node Id) = 60 17 10 00 00 00 00

Now your device/ Joystick is now updated with a new heartbeat time.

Note: When you Reset the device, the defaults will be reflected.

RGB led Configuration

Step1 : Make sure your Device/ Joystick Should be connected to CANopen Network.

Step 2: verify your Device/ Joystick is in an operational state.

Step 3: Select New transmit Message from the menu.

Type ID(hex) = 0x600 + Node ID

Length = 8 byte

Data (hex) =

Data (Hex)	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte	Message
Byte	0	1	2	3	4	5	6	7	
Transmit Message 1	23	20	63	01	RR	GG	BB	SGID	For LED configuration
Transmit Message 2	2F	00	62	01	NL	00	00	00	Led position

RR- Intensity of RED Led

Data length: 1 byte

Resolution: 256 values

Operational range: 0 to FF

GG- Intensity of Green Led

Data length: 1 byte

Resolution: 256 values

Operational range: 0 to FF

BB- Intensity of Blue Led

Data length: 1 byte

Resolution: 256 values

Operational range: 0 to FF

SGID – Sure Grip Controls ID

Data length: 1 byte

value: 0x9A

NL- Number of Led

Data length: 8 bits

Resolution: 1 bit per LED

Data range: 0 to 255, with each bit in the byte targeting a specific LED

Bit	LED Position
1	LED1
2	LED2
3	LED3
4	LED4
5	LED5
6	LED6
7	LED7
8	LED8

Example 1: Turn on all Leds with White color Transmit message is look like

Data (Hex)	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte	Message
Byte	0	1	2	3	4	5	6	7	
Transmit Message 1	23	20	63	01	FF	FF	FF	9A	For LED configuration
Transmit Message 2	2F	00	62	01	FF	00	00	00	Led position

Example 2 Turn off all Leds

Data (Hex)	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte	Message
Byte	0	1	2	3	4	5	6	7	
Transmit Message 1	23	20	63	01	00	00	00	9A	For LED configuration
Transmit Message 2	2F	00	62	01	FF	00	00	00	Led position

Example 3

Turn on led 2,4,6 with yellow color

Data (Hex)	CS	Index lower byte	Index Higher byte	Sub index	Data byte	Data byte	Data byte	Data byte	Message
Byte	0	1	2	3	4	5	6	7	
Transmit Message 1	23	20	63	01	FF	FF	00	9A	For LED configuration
Transmit Message 2	2F	00	62	01	2A	00	00	00	Led position