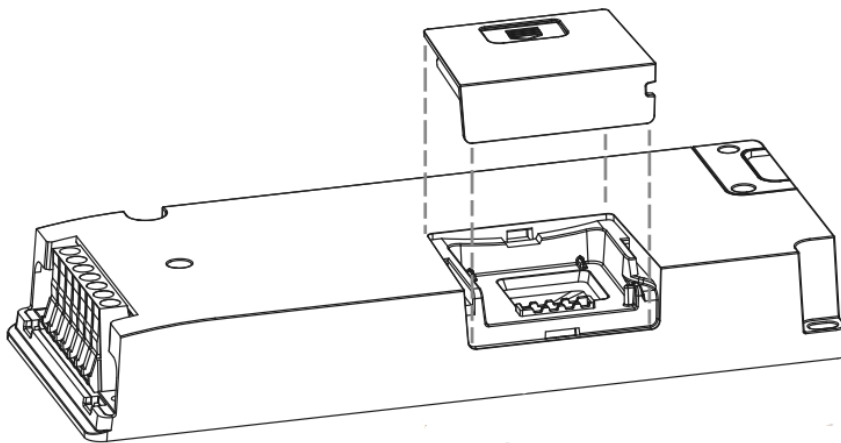


zencontrol

zc-driver 3rd Party Interface Guide



Overview

Zencontrol provides a third-party interface for IOT manufactures. This allows for

- Lower cost IOT interfaces to be installed into the smart driver
- Direct access to the device without a DALI power supply
- Better reliability
- Lower power consumption
- Faster communication

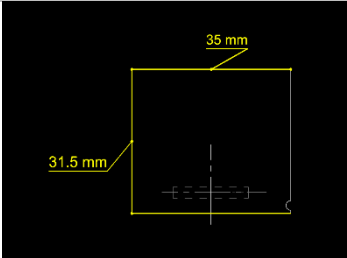
Manufactures that take advantage of this interface have access to all the device types and instances that the zc-driver has to offer.

Below are the items that are available depending on the operating mode and plugged in components:

- 202 (device type 1) emergency converter
 - Emergency types A, B, C or D based (dependent on smart emergency plug-in)
- 207 (device type 6) led driver
- 209 (device type 8) colour tunable (Tc) led driver
- 301 push button instance (with main rated switch)
- 302 absolute input instance (with mains rated switch – binary input)
- 302 absolute input instance (with IR input – support for up to 254 commands)
- 303 motion sensor instance (with mains rated sensor)
- 303 motion sensor instance (with plug-in PIR or uW sensor)
- 304 light sensor instance (with plug-in smart sensor)

Design Check List

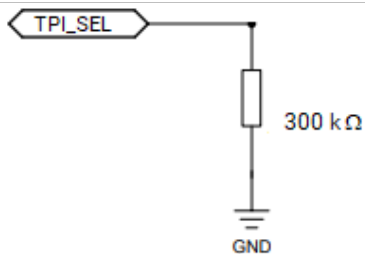
PCB Layout



DXF files for OEM PCB outline and connector placement can be downloaded from <https://zencontrol.com/wp-content/uploads/2019/07/zc-smart-driver-OEM-daughterboard.zip>

Note: All dimensions indicated in the .dxf file are the maximum sizes that the PCB can be made to.

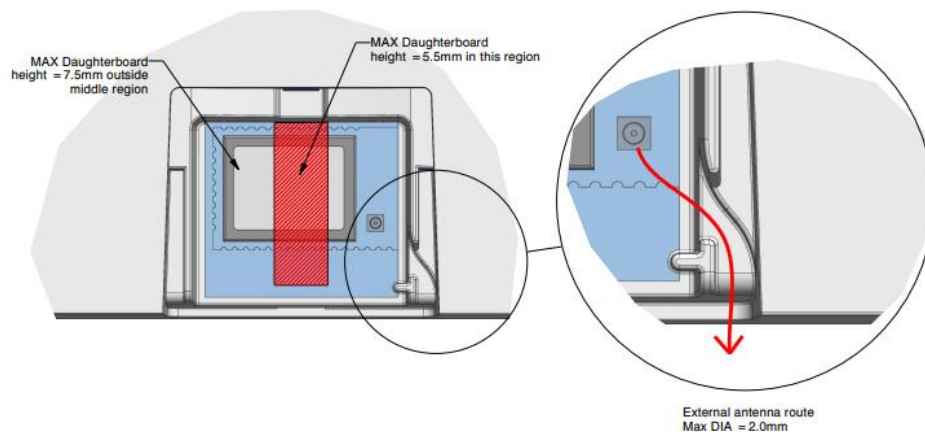
Third-party Select Resistor



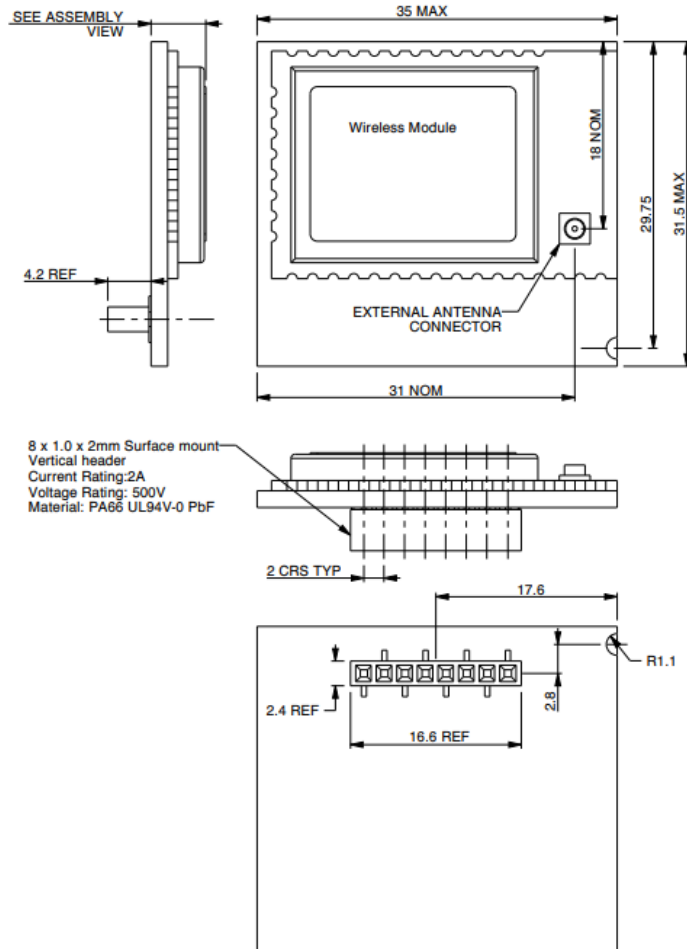
The OEM module must have a 300kΩ resistor connected to TPI_SEL to enable the 3rd party interface.

Note: There is a 100kΩ pull-up resistor on the zc-driver. TPI_SEL must be 2.5±0.1V to enable the 3rd party interface on the zc-driver.

External Antenna Route (Optional)

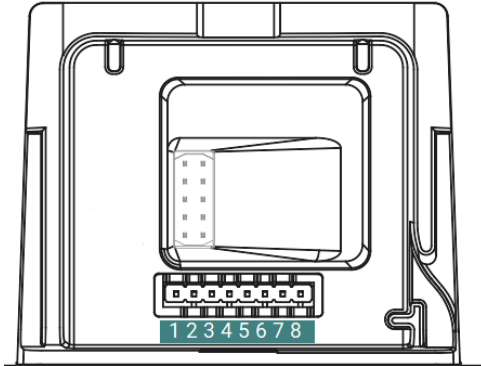


Mechanical Specifications



Note: All dimensions are in mm

Pinout and Terminal Description



Pin Number	Pin Name	Description
1	NRST	Reset pin for zc-driver MCU. Active high reset. If not used, leave floating. When connected, make sure that the reset is either pulled high or floating during normal operation.
2	n.c	Not used – do not connect
3	n.c	Not used – do not connect
4	TPI_SEL	Setting this pin to 2.5Vdc will enable the third-party interface on the zc-driver*
5	VDD	3V3 supply pin from zc-driver
6	GND	Common/GND pin for power and logic
7	UART_RX	UART receive pin <i>into</i> the zc-driver (OEM module -> MCU), it's a 3.3V logic level
8	UART_TX	UART transmit pin <i>out</i> of the zc-driver (MCU -> OEM module), it's a 3.3V logic level

* Note: See *Third-party select resistor defined in Design Checklist above*

Electrical Characteristics

VDD	3.3 ± 0.15 Vdc
Max. output current	200mA RMS

UART Interface

Baud rate	115200
Flow control	None
Parity	None
Number of stop bits	1
Bits per byte	8

UART Protocol

Start version (1 byte)	System address (1 byte)	Flags (1 byte)	ADU Length (1 byte)	Checksum (1 byte)	ADU (0-255 bytes)
0x68	As per IEC 62386-104	See below	Length of ADU	See below	ADU payload as per IEC 62386-104 Transmission protocol structure

Flags

Bit 0 – Bit 6	0 – reserved bit
Bit 7	0 – forward frame 1 – backward frame

Checksum

Algorithm	Result	Check	Poly	Init	RefIn	RefOut	XorOut
CRC-8/DVB-S2	0xBC	0xBC	0xD5	0x00	false	false	0x00

Test Packets

Ping command (Empty forward frame)

Command	\x68\x00\x00\x00\x00
Response	\x68\x00\x80\x00\x00

Broadcast ECG Recall Max

Command	\x68\x00\x00\x05\x94\x00\x40\x00\xff\x05
Response	None

Broadcast ECG Query Level Command

Command	\x68\x00\x00\x05\xf4\x00\x40\x00\xff\xa0
Response	\x68\x00\x80\x06\x06\xce\x01\x40\x00\xff\xa0\xfe

Broadcast ECG Recall Max and Query Level Command

Command	\x68\x00\x00\x06\x5f\x00\x40\x08\xff\x05\xa0
Response	\x68\x00\x80\x06\x06\xce\x01\x40\x00\xff\xa0\xfe

Broadcast ECG Recall Max with reliability flag set*

Command	\x68\x00\x00\x06\x5f\x00\x40\x08\xff\x05\xa0
Response	\x68\x00\x80\x00\x00

* IEC 62386-104 defines bit 3 of the Transaction type to determine whether the reply to the frame is to be sent using a reliable method. The UART protocol will send an empty reply to acknowledge the command was received.