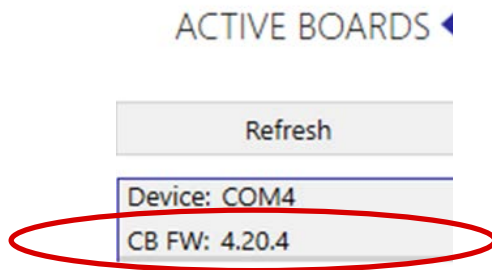


# ZSSC3281 OWI-CL EVK

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Communication Board (CB)

Ensure that the communication board (V4.1) is equipped with FW revision 4.20.4 or higher.



The latest FW is available at the following link (Software Downloads section):

[SSC-CB - SSC Communication Board | Renesas](#)

# ZSSC3281 OWI-CL EVK

ZSSC3281 configuration (GUI required)

1 – Power supply and oscillator

POWER SUPPLY AND OSCILLATOR SERIAL INTERFACES AFE TLC OUTPUT SCALING OUTPUT PRE

**Power Supply**

Supply Mode  Requires different jumper settings

Regulated VDD

**Oscillator**

System Clock Source

System Clock Source Divider

Clock Output Mode

# ZSSC3281 OWI-CL EVK

ZSSC3281 configuration (GUI required)

## 2 – Analog Front End

MAIN **CONFIGURE** MEASURE CALIBRATION DIAGNOSTIC F

POWER SUPPLY AND OSCILLATOR SERIAL INTERFACES **AFE** TLC

SEQUENCER TEMPERATURE SELECTION BRIDGE TEMPERATURE

AFE Selection and Configurability **AFE1 Only**

Sequencer Main Mode AFE1 Deterministic sensor step response

**AFE1**

SM/AUX Combination SM+/SM-/AUX\_i

1	2	3
SM+	SM-	AUX_i

Sequence Execution Continuous cyclic mode

Status: n.a

AFE1/2 data handling

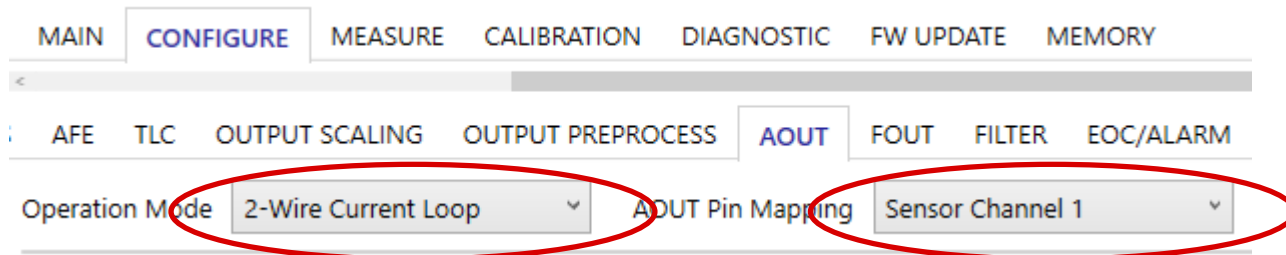
Idle Time [ms] 0

# ZSSC3281 OWI-CL EVK

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ZSSC3281 configuration (GUI required)

3 – Aout and Channel Mapping



# ZSSC3281 OWI-CL EVK

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ZSSC3281 configuration (GUI required)

4 – AFE

For use with the Sensor Replacement Board V3, ensure that Bridge 1 is configured as shown below:

Configure

<b>Configure Register</b>	Bridge 1
<b>Parameters</b>	
Mode	Voltage
PgaGain1	19.8
PgaGain2	1.6
PgaPolarity	Positive
PgaOffset [mV]	0
AdcReso	20
AdcShift and 2xGain	Enabled
AdcShift	0
SetTime [μs]	20

# ZSSC3281 OWI-CL EVK

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ZSSC3281 configuration (GUI required)

## 5 – Serial Interfaces

Set OWI mode to "AnalogCL2"

POWER SUPPLY AND OSCILLATOR SERIAL INTERFACE

**I2C/I3C**

Interface Active	Enabled
Slave Address [hex]	3C
Mode I2C	I2C Mode
I3C Manufacturer ID [hex]	0266
I3C Part ID [hex]	0042
I3C Instance ID [hex]	0
I3C In-Band Interrupts Supported	Disabled

**SPI**

Interface Active	Enabled
Slave Select Polarity	Active LOW
CPHA	Falling Edge
CPOL	Default LOW

**OWI**

OWI Mode	AnalogCL2
FamilyAddrEn	Disabled
FamilyAddr [hex]	78
SlaveAddrEn	Enabled
SlaveAddr [hex]	28

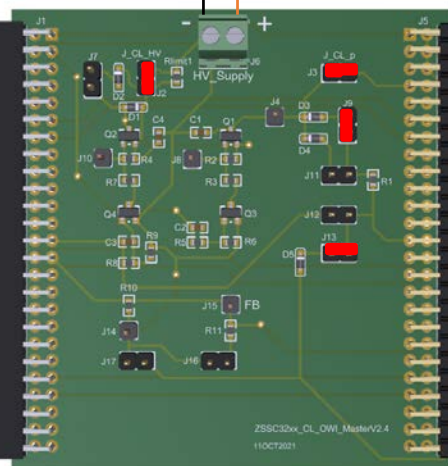
# ZSSC3281 OWI-CL EVK

CL HV supply = 26V  
(recommended current limit at 60mA)

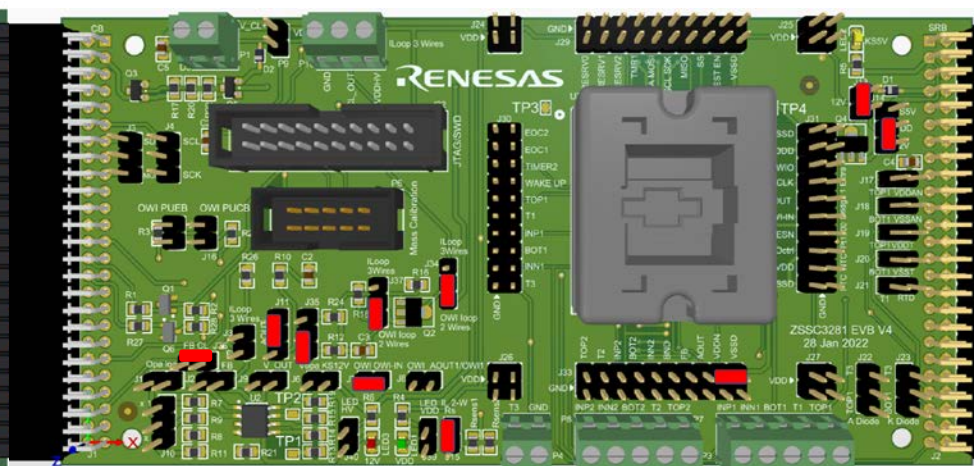
KIT HW setup



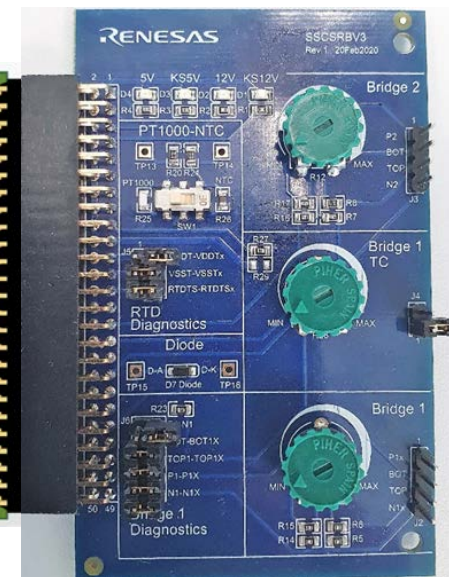
Communication Board (CB)



OWI Master Board v 2.4  
Jumpers to be set:  
J2,J3,J9,J13  
Note: For Current Loop measurement an amperometer can be connected on J3 (remove jumper)



ZSSC3281EVB  
Jumpers to be set:  
J15,J7,J14 (2-3),J13, J34(1-2),  
J37(1-2),J35(1-2), J11(2-3)  
J33(VDDN-VSSD),J36

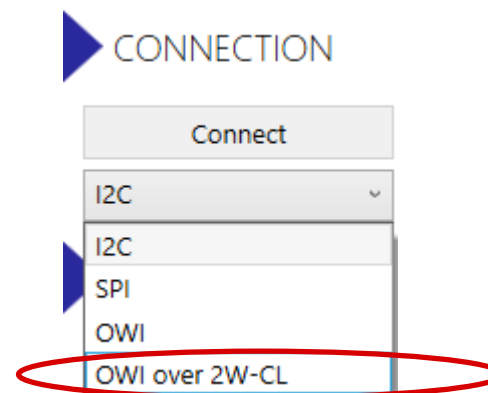
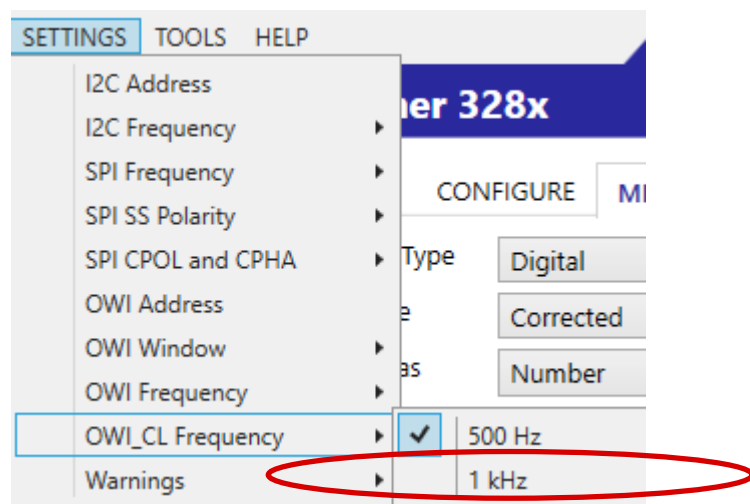


SRB V3  
(Can be used for Current Loop verification)

# ZSSC3281 OWI-CL EVK

After ZSSC3281 NVM configuration, KIT HW connection to the host PC with the USB, turn on the HV supply (26V)

- Start the Graphical User Interface SW
- Connect to the device using the following options:





# ZSSC3281 OWI-CL EVK

At the connection the OWI communication is running on the 2-wire current loop. The GUI will start to check the device NVM content, and after it, the system is ready to perform measurements, configuration changes, and most of the standard functionalities are available.

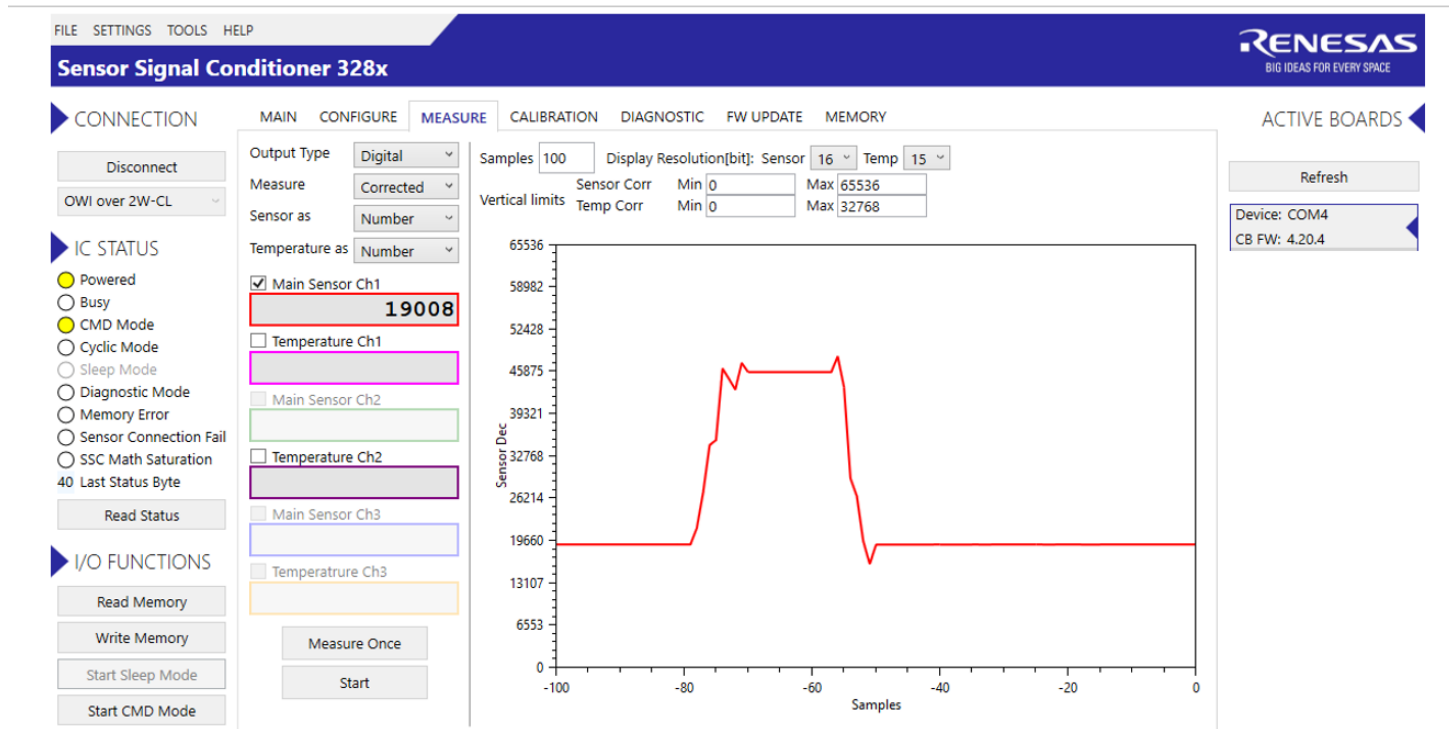
The screenshot displays the configuration interface for the ZSSC3281 OWI-CL EVK. The main window is titled 'CONFIGURE' and contains several sections:

- POWER SUPPLY AND OSCILLATOR**
- SERIAL INTERFACES**:
  - I2C/I3C**: Interface Active (Enabled), Slave Address (hex) (3C), Mode I2C (I2C Mode), I3C Manufacturer ID (hex) (0266), I3C Part ID (hex) (0042), I3C Instance ID (hex) ( ), I3C In-Band Interrupts Supported (Disabled).
  - SPI**: Interface Active (Enabled), Slave Select Polarity (Active LC), CPHA (Falling Edge), CPOL (Default LOW).
  - OWI**: OWI Mode (AnalogCL2), FamilyAddrEn (Disabled), FamilyAddr (hex) (78), SlaveAddrEn (Enabled), SlaveAddr (hex) (28).

A modal window titled 'ZSSC3281 Application' is open, showing 'Reading Memory' and 'Burst Read Chunk 9 (0x24 - 0x28)' with a progress bar and a 'Stop' button. A note at the bottom of the modal states: 'The availability of the different OWI Modes depends on the selected AOUT mode.'

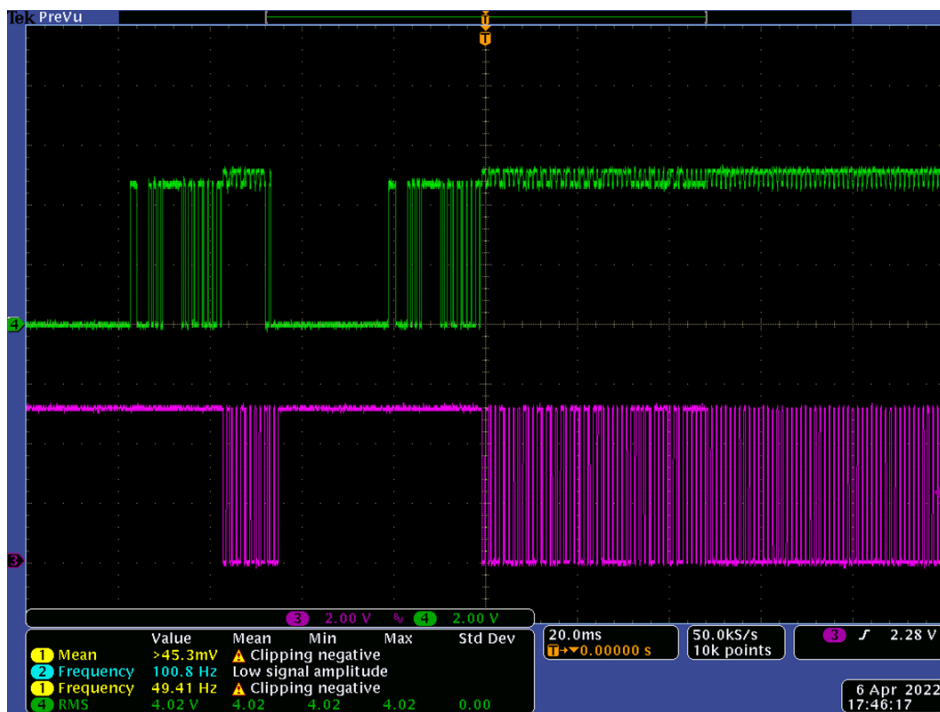
# ZSSC3281 OWI-CL EVK

For example, the measurement for Main Sensor Ch1 is displayed as follows:



# ZSSC3281 OWI-CL EVK

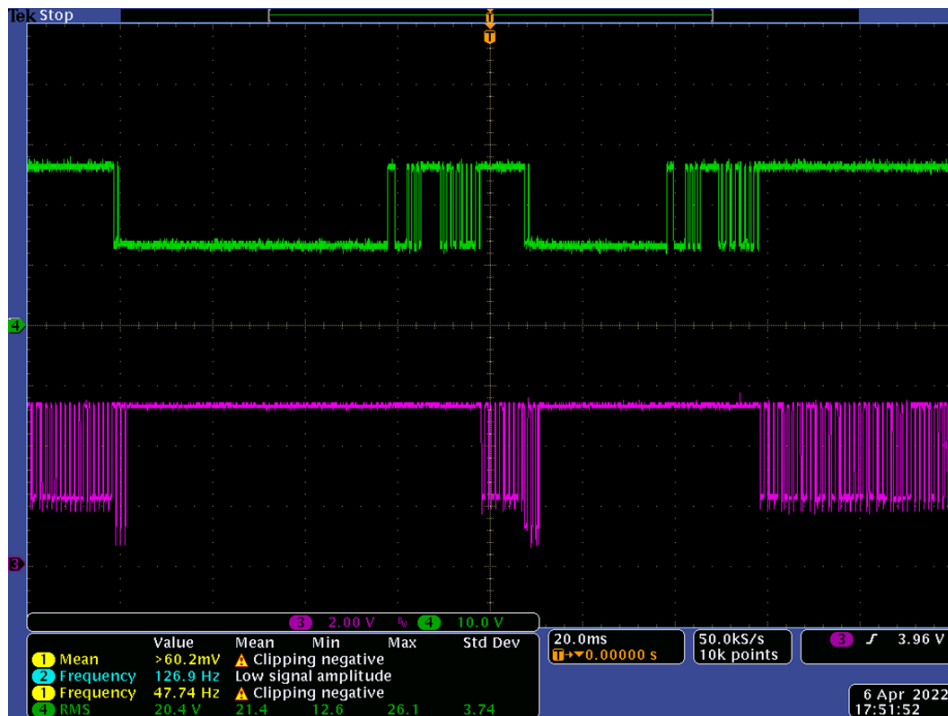
Electrical levels (referred to the Vss of the ZSSC3281) of the key signals are displayed in the following plot:



CH3 = Aout  
CH4 = OWI-IN  
GND = VSS

# ZSSC3281 OWI-CL EVK

Electrical levels (referred to the GND of the CB) of the key signals are displayed in the following plot:



CH3 =J15 FB OWI Master board  
CH4 = J4 OWI Master board  
GND= GND CB

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