

ZSSC3281 OWI-CL EVK

Communication Board (CB)

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

ACTIVE BOARDS ▼

Refresh

Device: COM4

CB FW: 4.20.4

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

The screenshot displays the configuration interface for the ZSSC3281 OWI-CL EVK. The 'POWER SUPPLY AND OSCILLATOR' tab is selected, with other tabs like 'SERIAL INTERFACES', 'AFE', 'TLC', 'OUTPUT SCALING', and 'OUTPUT PRE' visible. Under the 'Power Supply' section, the 'Supply Mode' is set to 'Pre-regulated VDD Supply' (circled in red) and 'Regulated VDD' is set to '5.25V'. A note 'Requires different jumper settings' is present next to the 'Pre-regulated VDD Supply' option. Under the 'Oscillator' section, the 'System Clock Source' is 'Internal Clock', the 'System Clock Source Divider' is 'div16' (circled in red), and the 'Clock Output Mode' is 'Inactive'.

Section	Parameter	Value	Notes
Power Supply	Supply Mode	Pre-regulated VDD Supply	Requires different jumper settings
	Regulated VDD	5.25V	
Oscillator	System Clock Source	Internal Clock	
	System Clock Source Divider	div16	
	Clock Output Mode	Inactive	

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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

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ZSSC3281 configuration (GUI required)

3 – Aout and Channel Mapping

The screenshot displays the configuration interface for the ZSSC3281 OWI-CL EVK. The top navigation bar includes tabs for MAIN, CONFIGURE (highlighted), MEASURE, CALIBRATION, DIAGNOSTIC, FW UPDATE, and MEMORY. Below this, a secondary set of tabs includes AFE, TLC, OUTPUT SCALING, OUTPUT PREPROCESS, AOUT (highlighted), FOUT, FILTER, and EOC/ALARM. The main configuration area shows two dropdown menus: 'Operation Mode' set to '2-Wire Current Loop' and 'AOUT Pin Mapping' set to 'Sensor Channel 1'. Both dropdown menus are circled in red.

MAIN	CONFIGURE	MEASURE	CALIBRATION	DIAGNOSTIC	FW UPDATE	MEMORY	
AFE	TLC	OUTPUT SCALING	OUTPUT PREPROCESS	AOUT	FOUT	FILTER	EOC/ALARM
Operation Mode		2-Wire Current Loop		AOUT Pin Mapping		Sensor Channel 1	

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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

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

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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

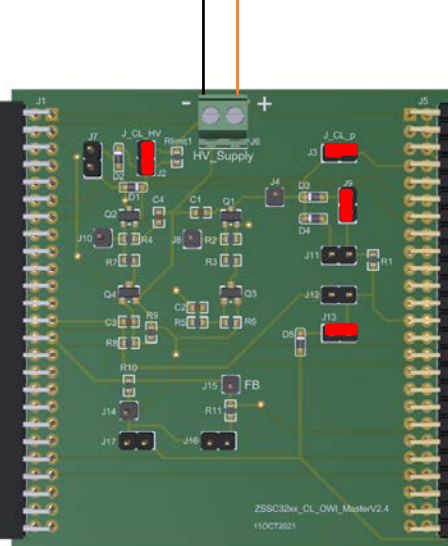
ZSSC3281 OWI-CL EVK

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

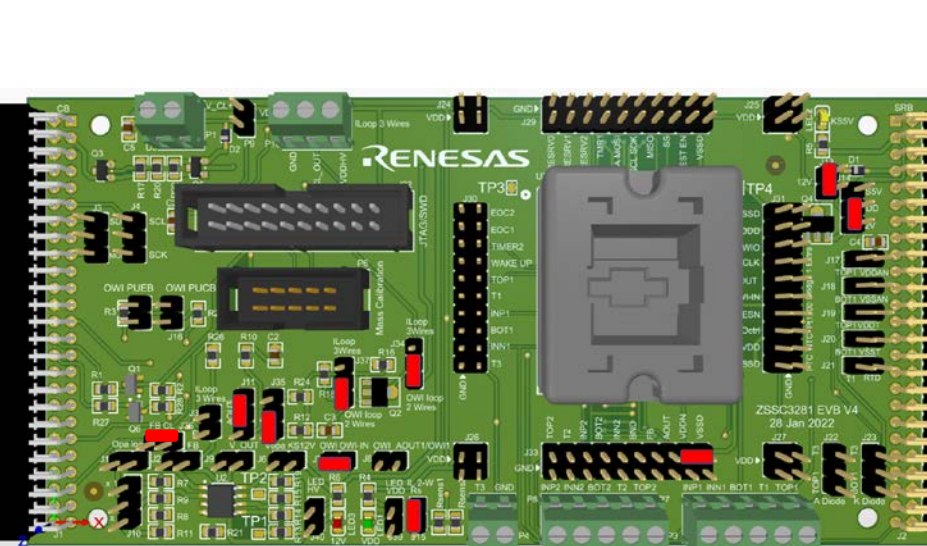
KIT HW setup



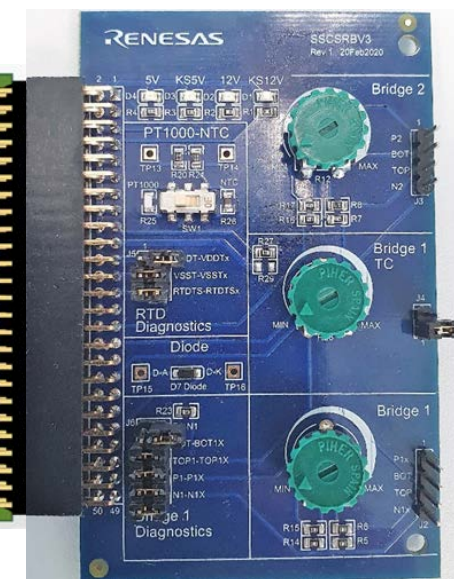
Communication
Board (CB)



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

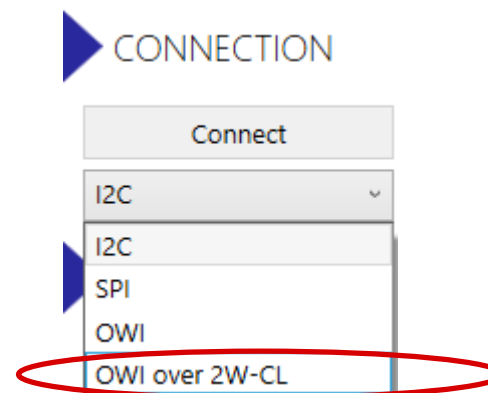
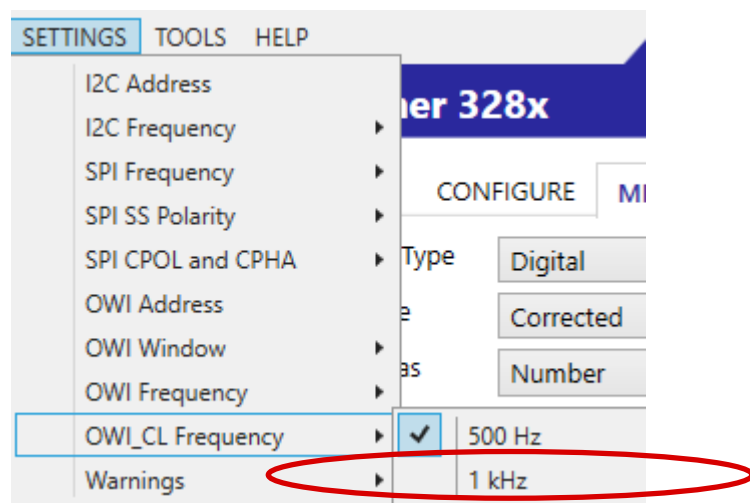


SRB V3
(Can be used for Current Loop
verification)

ZSSC3281 OWI-CL EVK

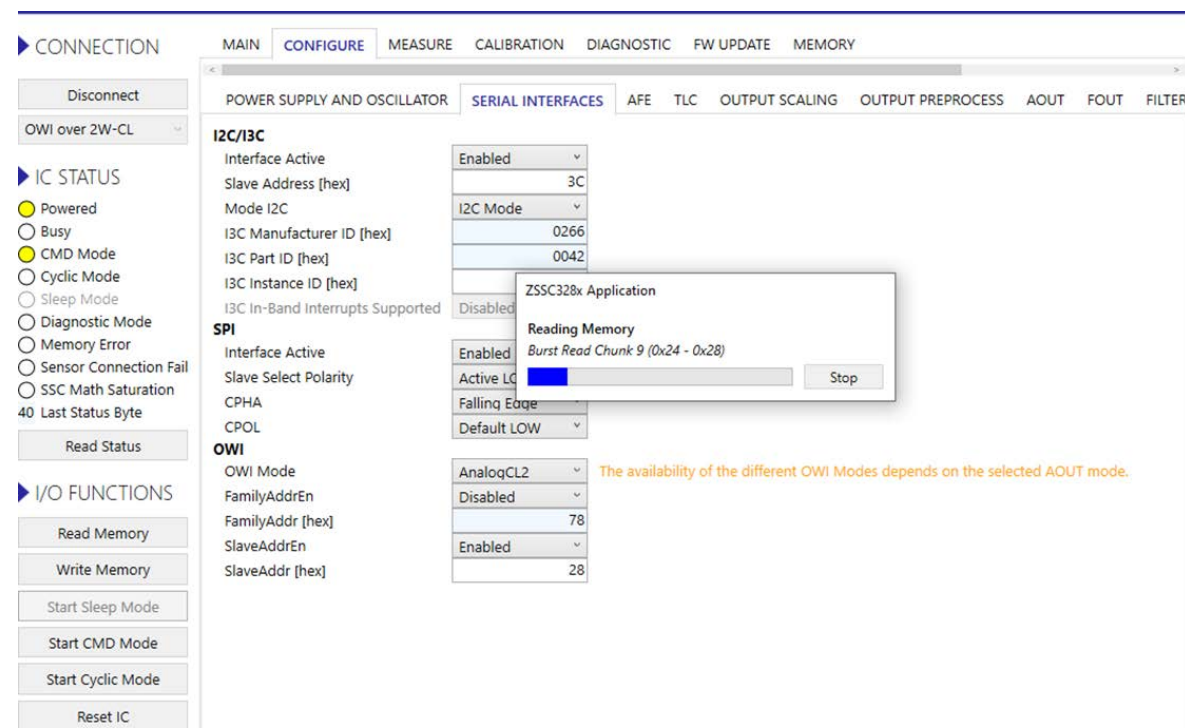
After ZSSC3281 NVM configuration, KIT HW connection to the host PC with the USB, turn on the HV supply (26V)

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



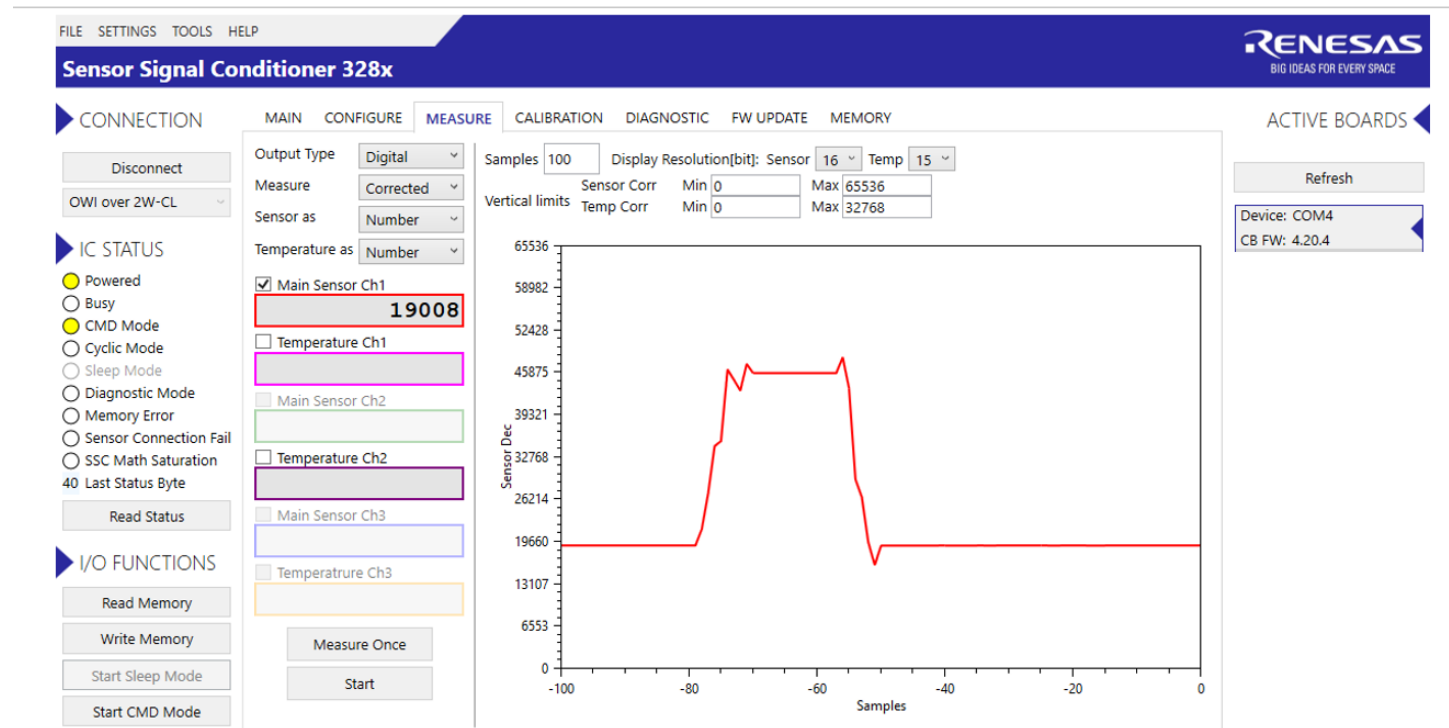
ZSSC3281 OWI-CL EVK

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.



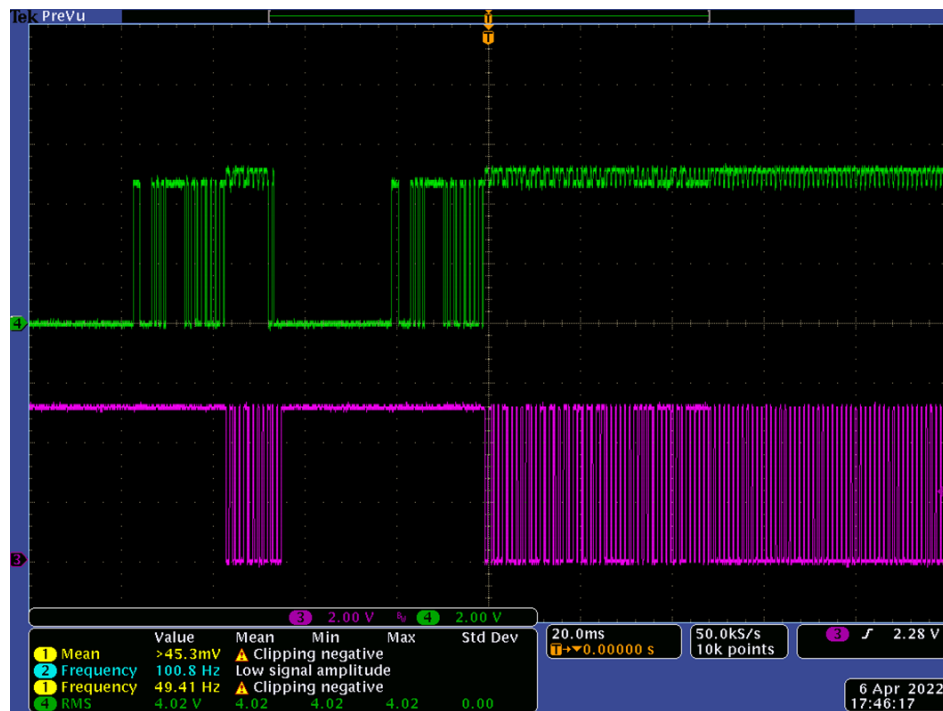
ZSSC3281 OWI-CL EVK

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



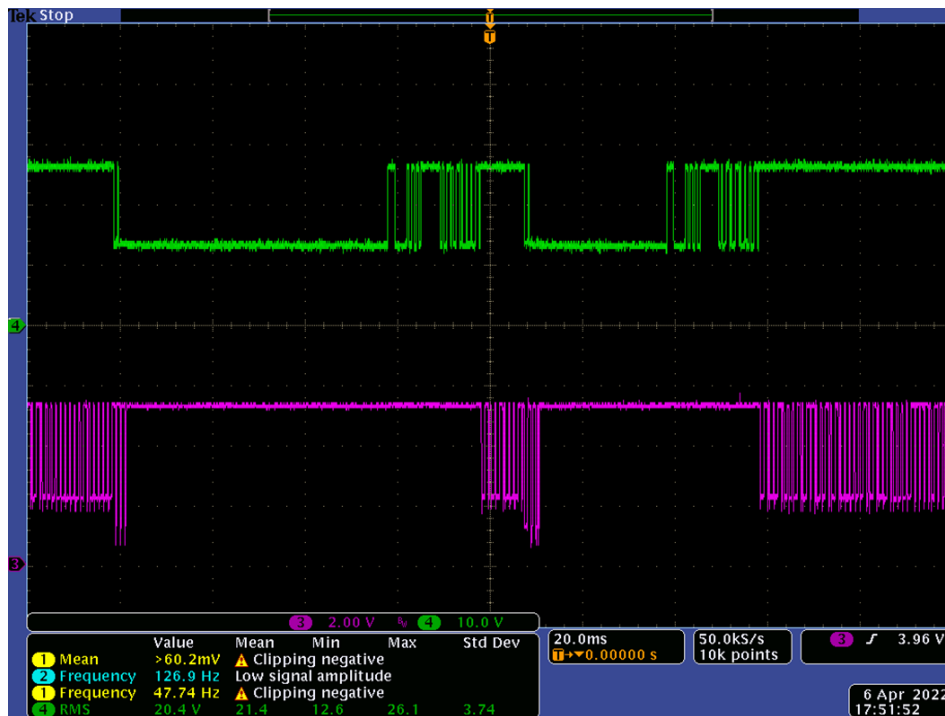
ZSSC3281 OWI-CL EVK

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



ZSSC3281 OWI-CL EVK

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



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