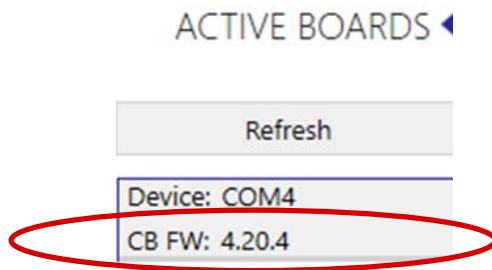


ZSSC3281 OWI-CL EVK

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

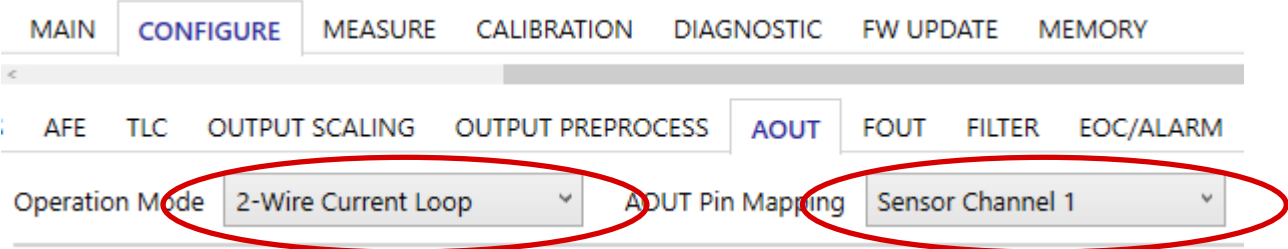
AFE1/2 data handling n.a

Idle Time [ms] 0

ZSSC3281 OWI-CL EVK

ZSSC3281 configuration (GUI required)

3 – Aout and Channel Mapping



ZSSC3281 OWI-CL EVK

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 ▾

ZSSC3281 OWI-CL EVK

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

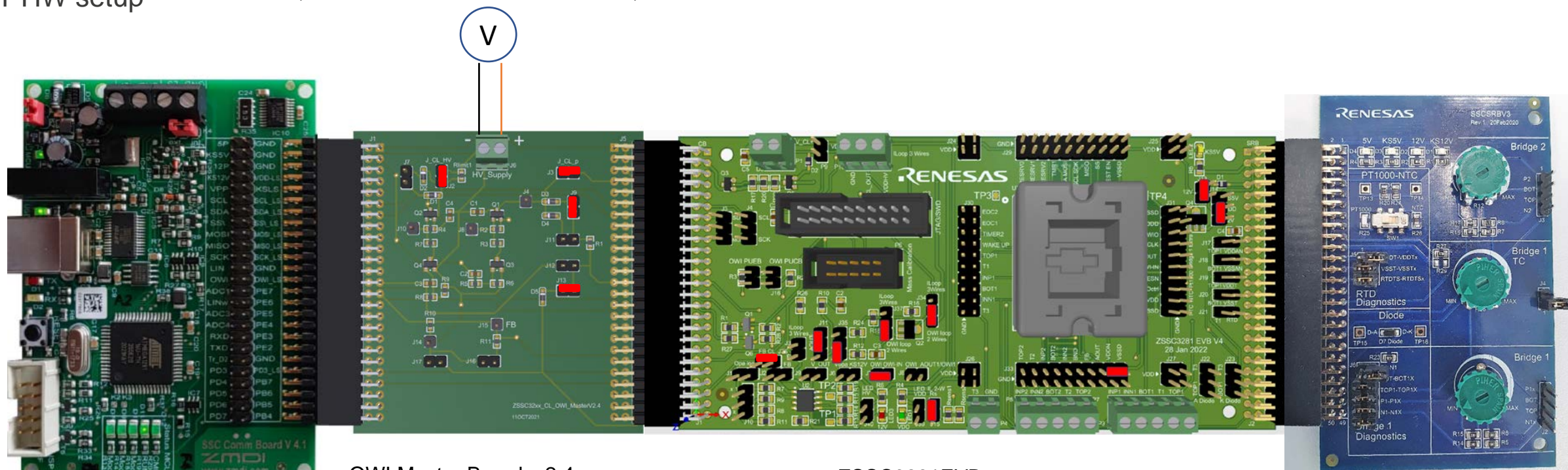
OWI

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)

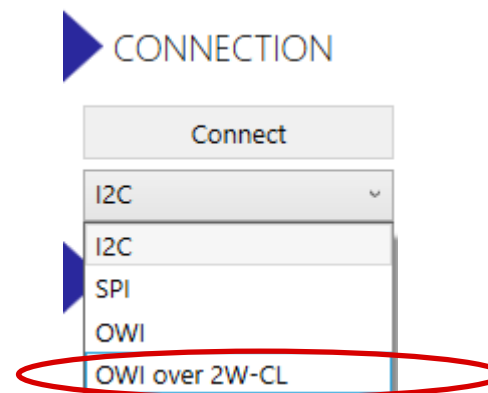
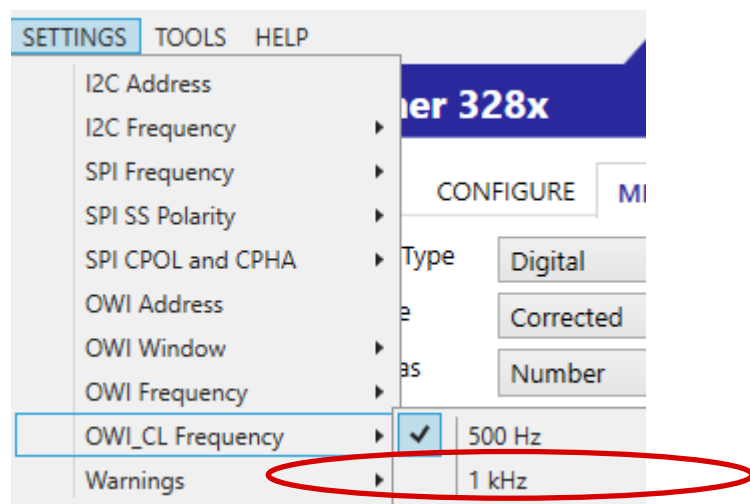
ZSSC3281EVB
Jumpers to be set:
J15,J7,J14 (2-3),J13, J34(1-2),
J37(1-2),J35(1-2), J11(2-3)
J33(VDDN-VSSD),J36

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

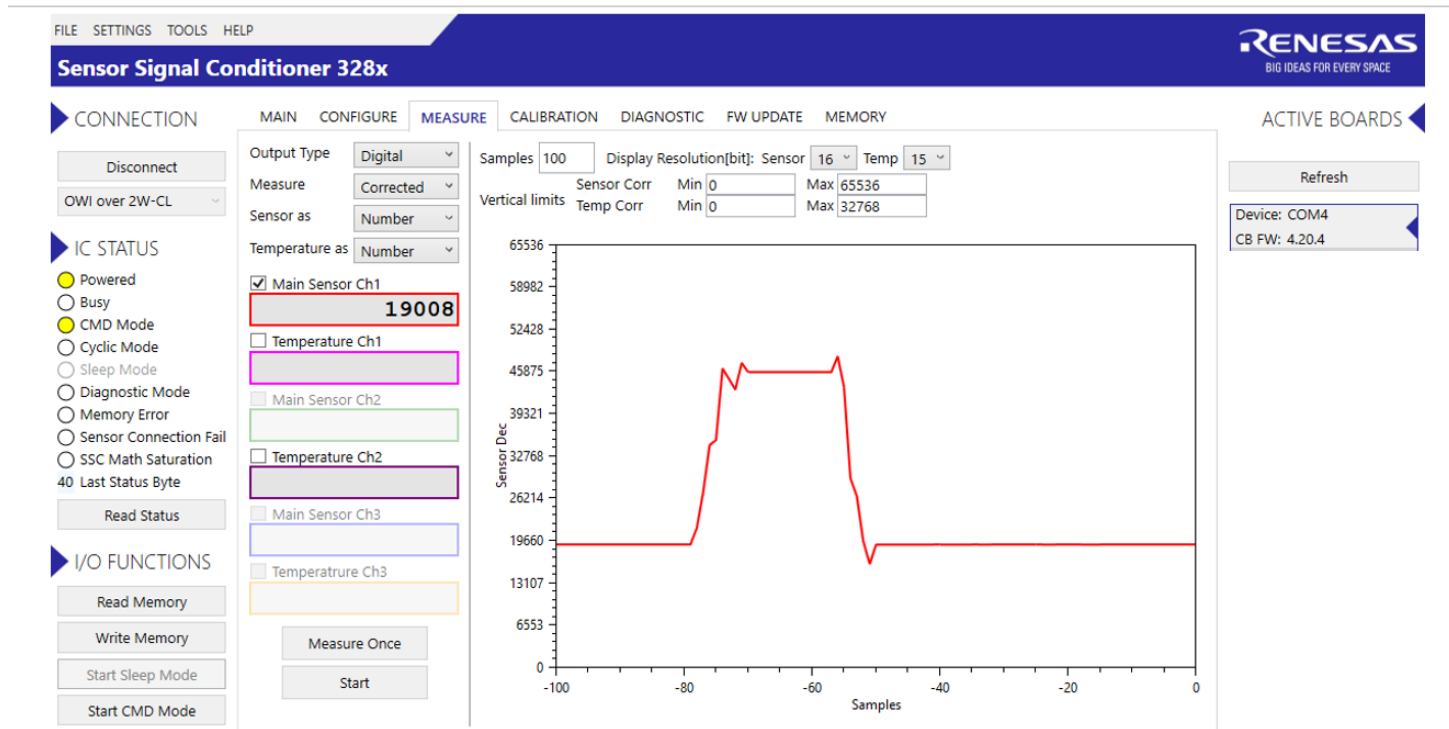
At the connection the OWI communication is running on the 2-wire current loop. The GUI will start to check the device NVM content, and after it, the system is ready to perform measurements, configuration changes, and most of the standard functionalities are available.

The screenshot displays the configuration interface for the ZSSC3281 OWI-CL EVK. The main window is titled 'CONFIGURE' and contains several tabs: MAIN, CONFIGURE, MEASURE, CALIBRATION, DIAGNOSTIC, FW UPDATE, and MEMORY. The 'CONFIGURE' tab is active, showing settings for 'POWER SUPPLY AND OSCILLATOR', 'SERIAL INTERFACES', 'AFE', 'TLC', 'OUTPUT SCALING', 'OUTPUT PREPROCESS', 'AOUT', 'FOUT', and 'FILTER'. The 'SERIAL INTERFACES' section is expanded, showing settings for I2C/I3C, SPI, and OWI. A dialog box titled 'ZSSC3281x 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 dialog states: 'The availability of the different OWI Modes depends on the selected AOUT mode.'

Section	Parameter	Value
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]	
SPI	Interface Active	Enabled
	Slave Select Polarity	Active LC
	CPHA	Falling Edge
	CPOL	Default LOW
	OWI	Mode
OWI	FamilyAddrEn	Disabled
	FamilyAddr [hex]	78
	SlaveAddrEn	Enabled
	SlaveAddr [hex]	28

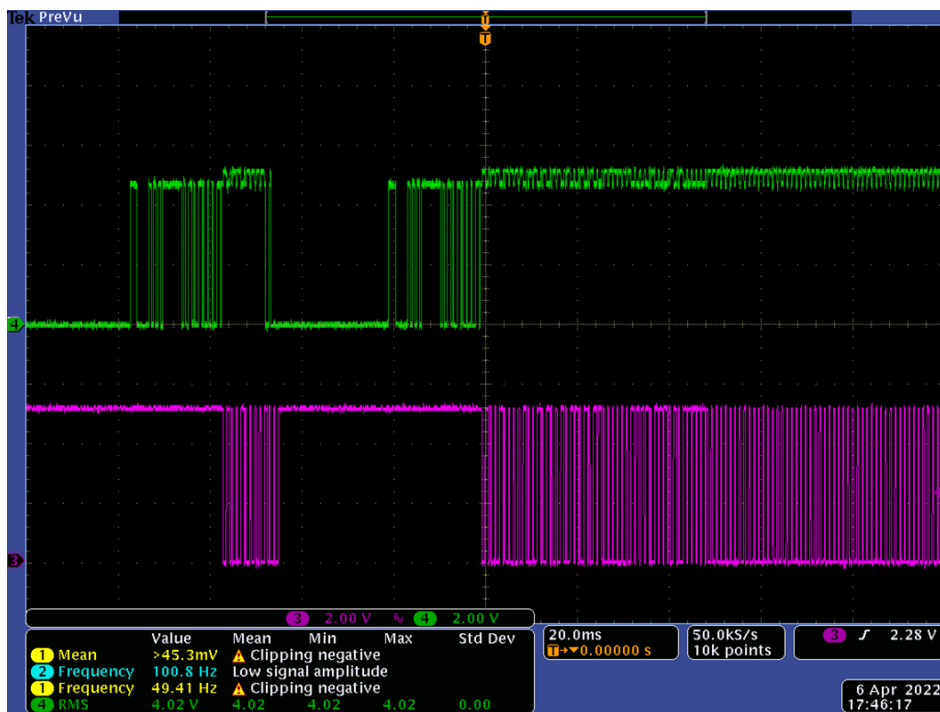
ZSSC3281 OWI-CL EVK

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



ZSSC3281 OWI-CL EVK

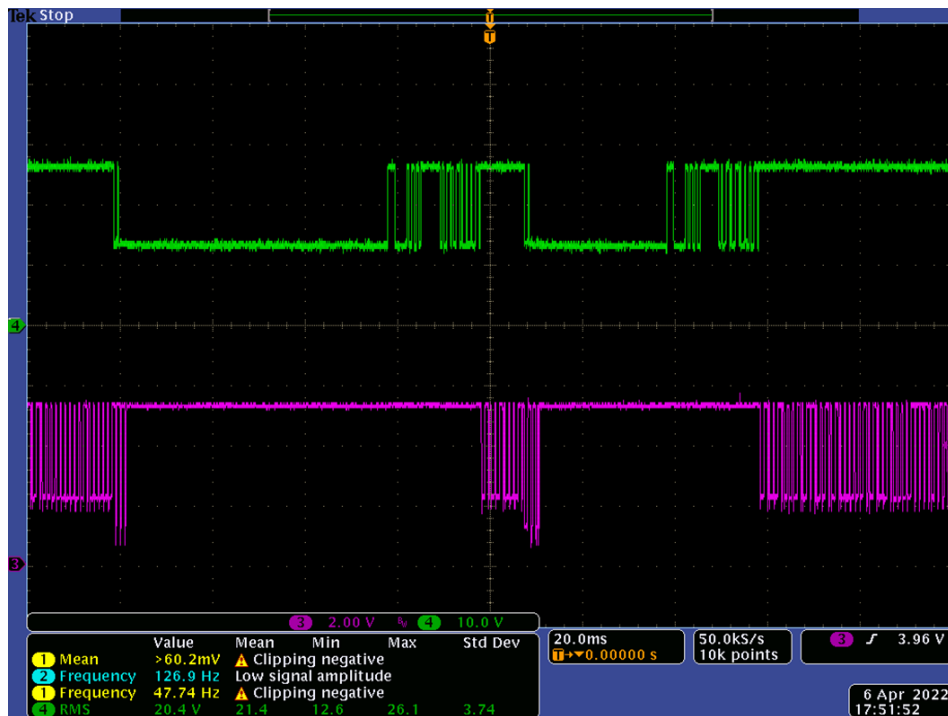
Electrical levels (referred to the Vss of the ZSSC3281) of the key signals are displayed in the following plot:



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

[Renesas.com](https://www.renesas.com)