Update on the readbacker

T. Hachiya
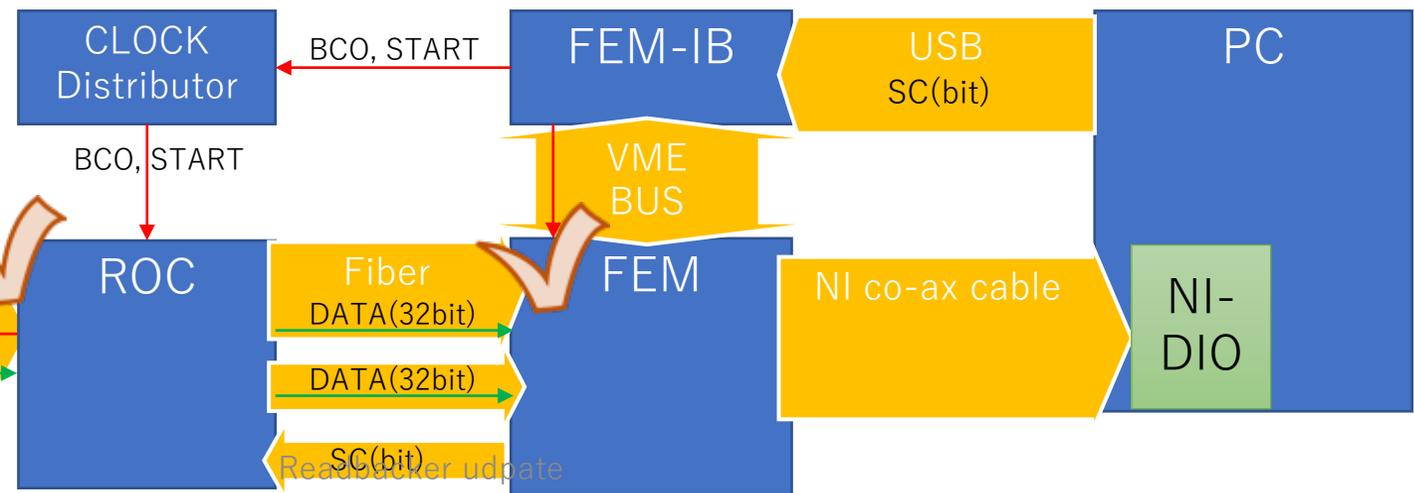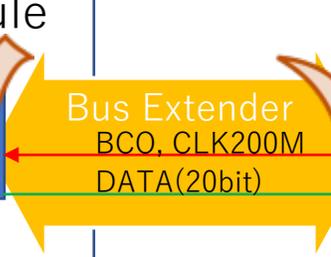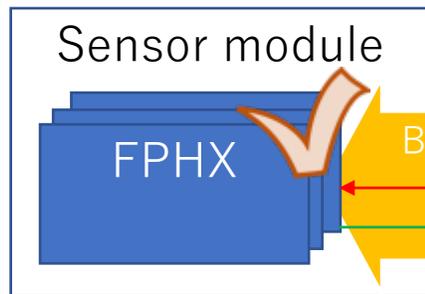
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Status

- We successfully sent a command to the specific chip on the ladder
  - GUI was also modified
- The interception board is useful for the readback development

32bit command (0b_1100 1110 0111 0111 1001 0100 0000 0000)

Sensor module

FPHX

CLOCK Distributor

BCO, START

FEM-IB

USB
SC(bit)

PC

BCO, START

VME BUS

Bus Extender
BCO, CLK200M
DATA(20bit)

ROC

Fiber
DATA(32bit)

FEM

NI co-ax cable

NI-DIO

DATA(32bit)

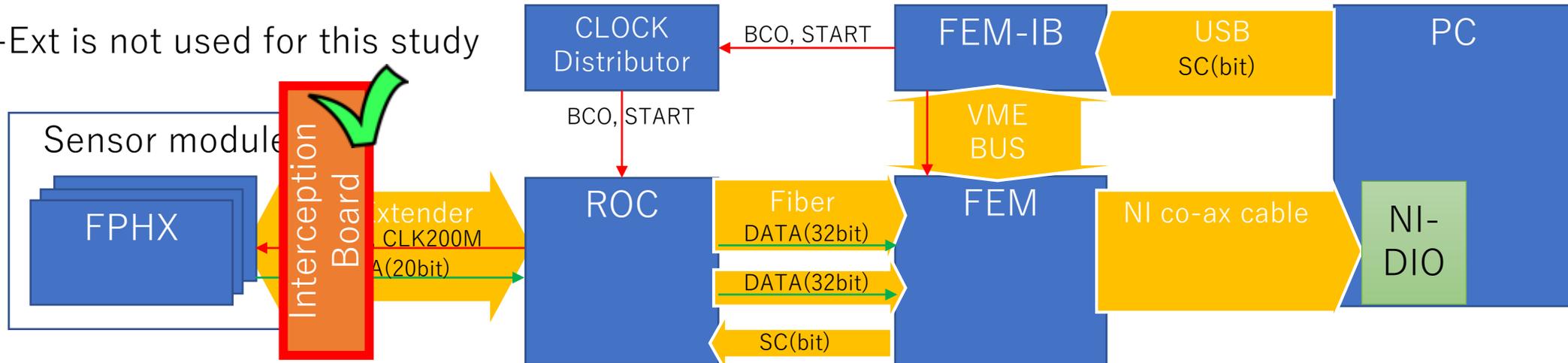SC(bit)

Readbacker update

GUI setting to send the command to the chip

1. Select module ID
   - Tab corresponds to ID
2. Select chipID (1-13) and side (0,1,15)
3. Send the command by "WRITE" button

Readback value at Interception board

Bus-Ext is not used for this study
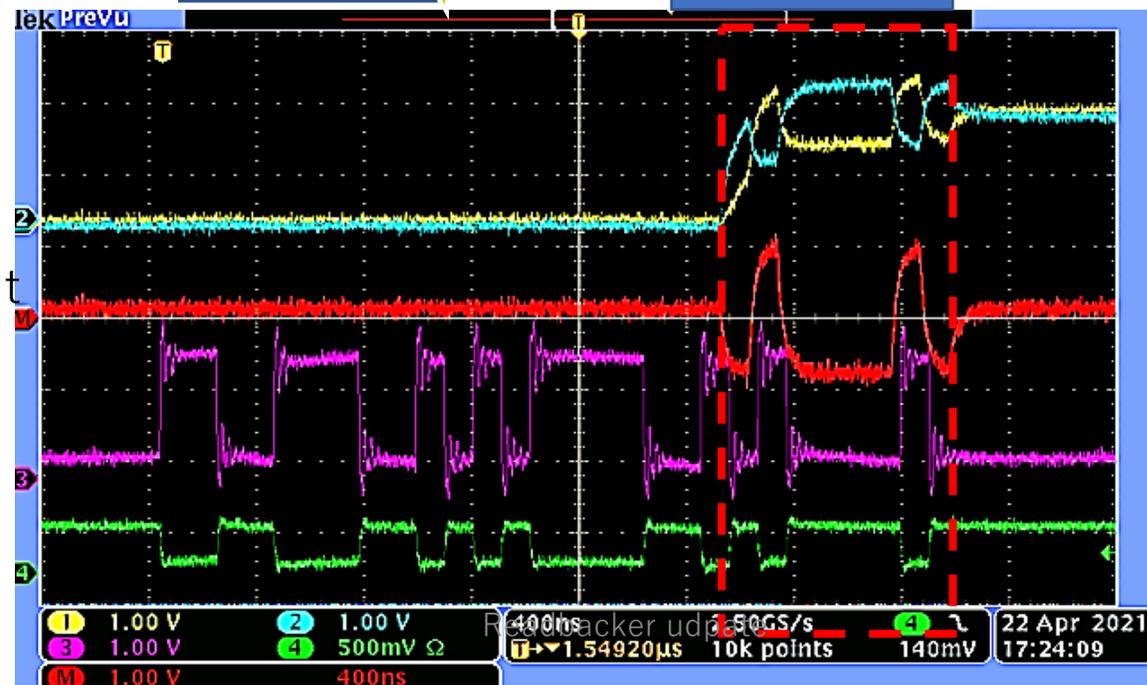
- Signal is monitored by I/B

- To see the readback value, need to send SC command twice.

- Readback value is successfully seen

Readback value at FEM

Bus-Ext is not used for this study

Sensor module

FPHX — Interception Board — Extender, CLK200M, A(20bit) — ROC

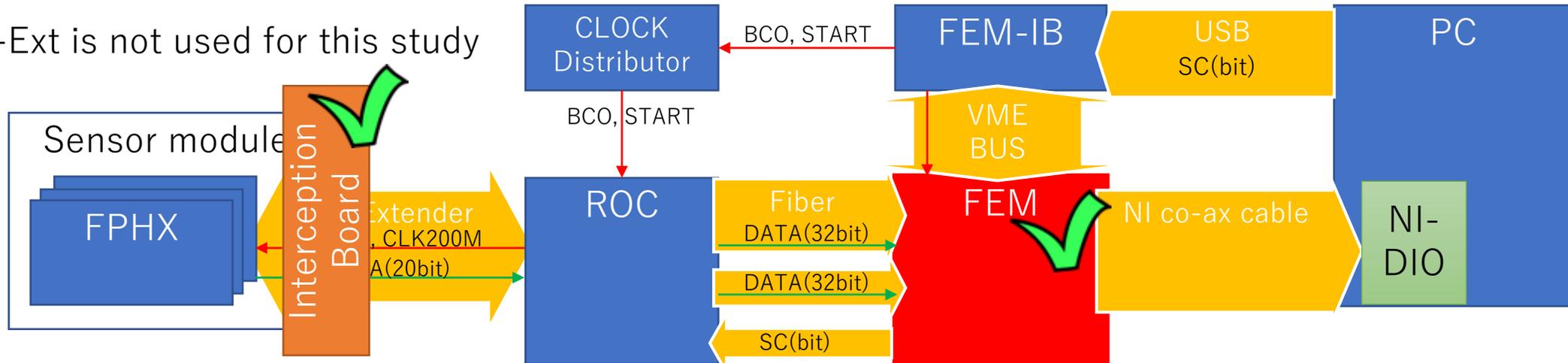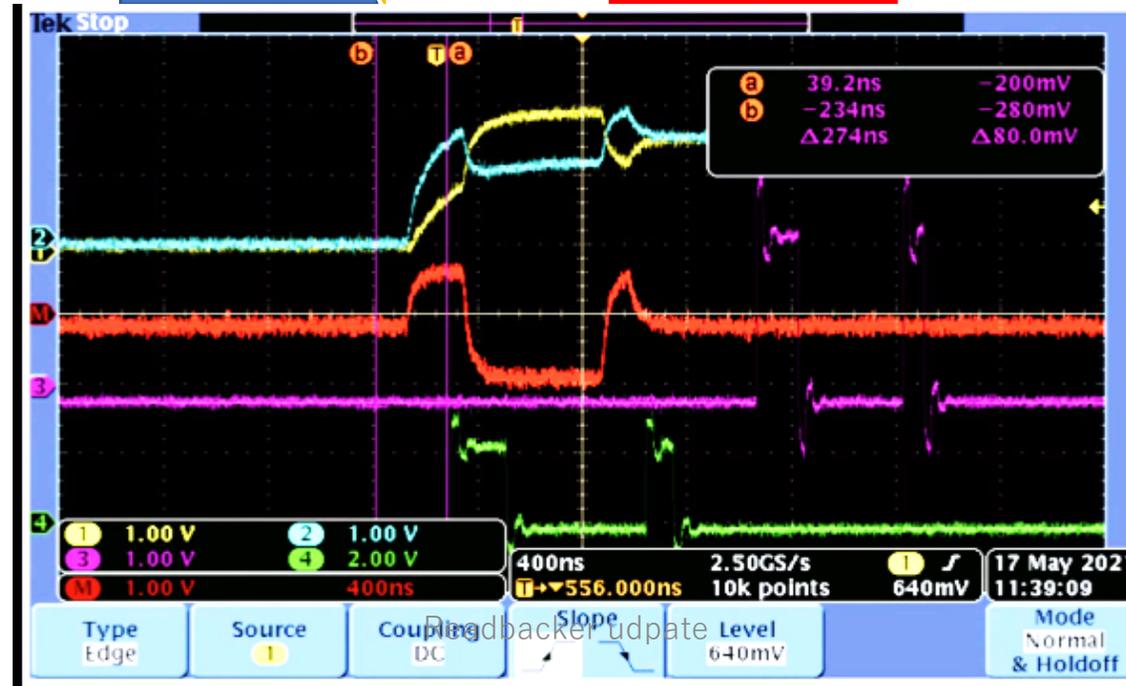CLOCK Distributor — BCO, START — FEM-IB — USB SC(bit) — PC

BCO, START

VME BUS

Fiber DATA(32bit) — FEM — NI co-ax cable — NI-DIO

DATA(32bit)

SC(bit)

Int. Board
CH1: SC_OUT_0N
CH2: SC_OUT_0P
M: CH 1 - CH 2

At FEM
CH3: DATA_TO_SERIAL_OUTPUT
CH4: SC_DATA_IN

Tek Stop

a	39.2ns	−200mV
b	−234ns	−280mV
	△274ns	△80.0mV

① 1.00 V	② 1.00 V
③ 1.00 V	④ 2.00 V
M 1.00 V	400ns

400ns   2.50GS/s   10k points   640mV

17 May 2021 11:39:09

T→▼556.000ns

| Type Edge | Source ① | Coupling DC | Slope | Level 640mV | Mode Normal & Holdoff |

Readbacker udpate

- Signal is monitored by testpins at FEM
- Readback value is successfully seen at FEM

Readback value at FEM-IB

Bus-Ext is not used for this study
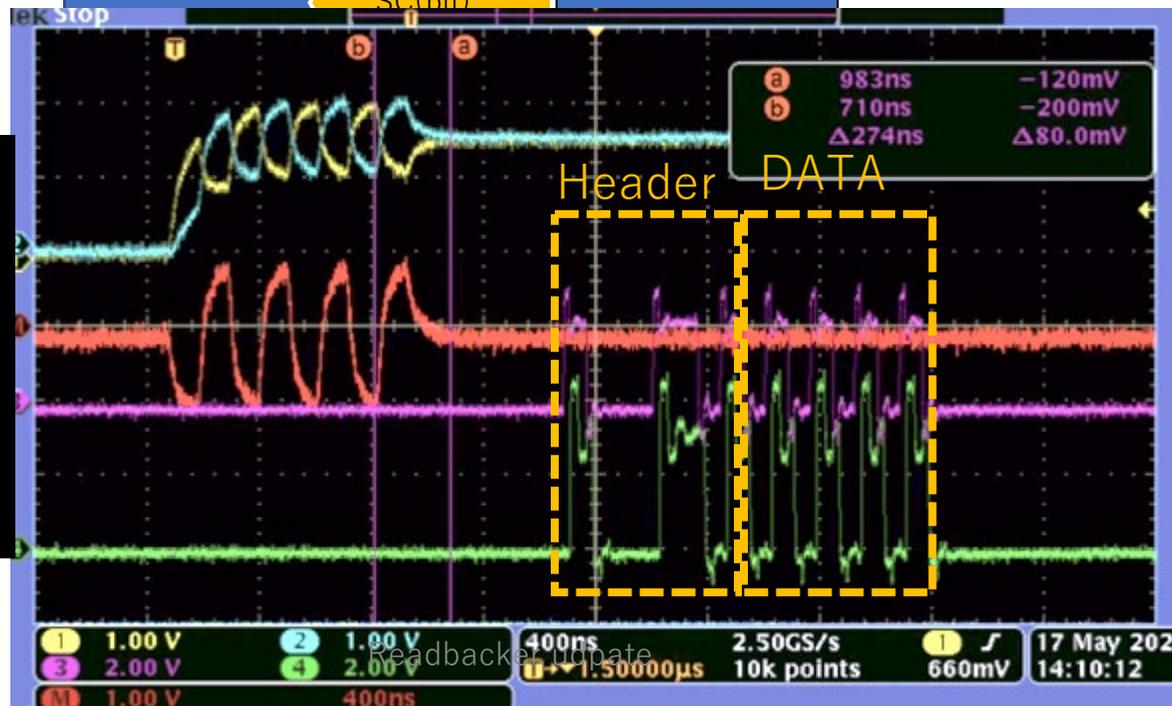
- Signal is monitored by testpins at FEM-IB
- Readback value is successfully seen at FEM-IB

Summary

- Confirmed that the readback value come successfully to FEM-IB.
- Will develop USB-I/F to get the value from FEM-IB to PC