

# <Questions>

OutputX which is relation to PLL2 doesn't output in case of following conditions.

-PLL's setting -> please refer to the file "20200213\_LMK03328\_A.tcs".

PLL1 -> Output4, PLL2 -> Output1, 2, 3, 5, 6 and 7

(Other notes : PLLSTRTMODE = Parallel Cal)

(※ We measured with Output1 and Output6, the result was the same.)

-Connection to EVM -> please refer to the next page.

## -Procedure

1. PRIREF : no input, SECREF : 50MHz input from crystal on EVM.

2. Operation of calibration(RESETN\_SW toggles on GUI)

3. We measured the Output6 and Output4 using the Oscilloscope.

->In this case, Output6 doesn't output in spite of PLL2 lock condition.

As our assumption, in spite of PLL1 condition(no PRIREF),  
Output6 should output.

Why does this phenomenon occur?

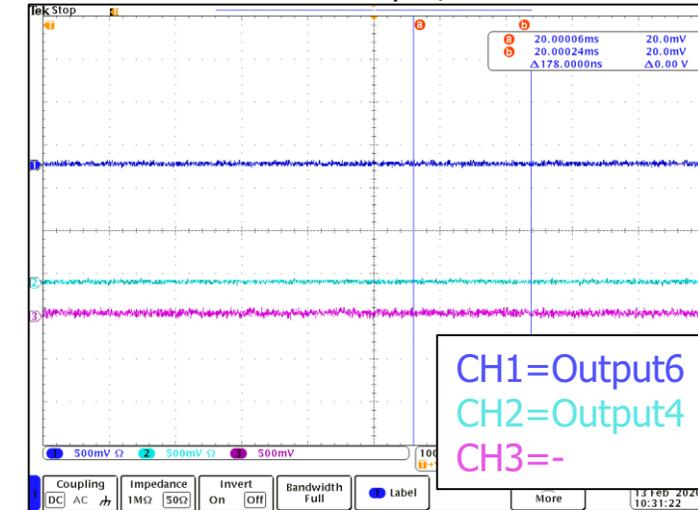
Is it possible to resolute using register setting?

And then, after PRIREF was inputted, OUTPUT6 outputted.

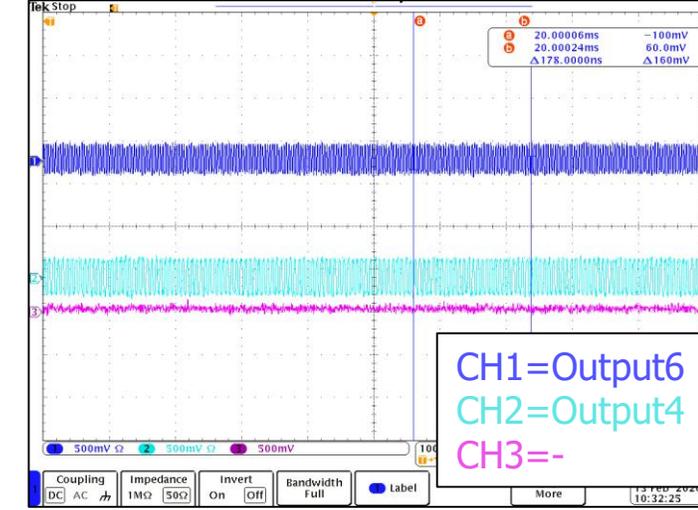
Therefore, does PRIREF have to be inputted first?

Could you confirm this phenomenon using your LMK03328 EVM?

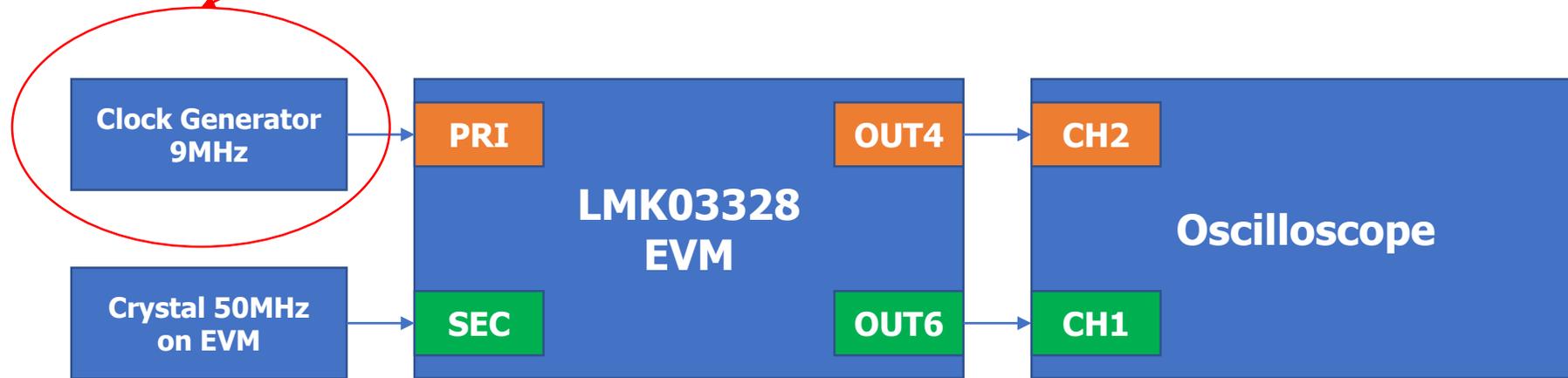
<In case of PRIREF=no input, SECREF=50MHz>



<In case of PRIREF=9MHz, SECREF=50MHz>



# <EVM's connection>



# <PLLSTRTMODE setting>

TICS Pro - LMK03328

File USB communications Select Device Options Tools Default configuration Help

Scan I2C Bus Soft Reset Write All Registers Read All Registers Read Status Registers Clear Interrupt Flags

LMK03328

- User Controls
- Raw Registers
- PLL1
- PLL2
- Inputs/PLLs
- Outputs
- Status
- EEPROM
- Wizard
- Burst Mode

General Context

Field Name: AUTOSTRT

Register Name: R12  
Start Bit : 0  
Stop Bit : 0  
Length : 1

Description: Autostart. If AUTOSTRT is set to 1 the device will automatically attempt to achieve lock and enable outputs after a device reset. A device reset can be triggered by the power-on-reset, RESETh pin or by writing to the RESETh\_SW bit. If AUTOSTRT is 0 then the

PRTID[31:24] 1

PRTID[23:16] 0

PRTID[15:8] 115

PRTID 30

OP\_MODE EEPROM Mode

GPIO\_HW\_MODE 0

SLAVEADR\_GPIO1\_SW 84

EEREV 0

General Control

- RESETh\_SW
- SYNCN\_SW
- SYNC\_AUTO
- SYNC\_MUTE
- AONAFterLOCK
- PLLSTRTMODE**
  - Parallel Cal (PLL1 & )
- AUTOSTRT

Status Pins

- STAT1\_SHOOT\_LIMIT
- STAT0\_SHOOT\_LIMIT

CH0\_MUTE\_LVL DIFF(Vcm)/CMOS(B)

CH7\_MUTE\_LVL DIFF(Vcm)/CMOS(B)

CH6\_MUTE\_LVL DIFF(Vcm)/CMOS(B)

CH5\_MUTE\_LVL DIFF(Vcm)/CMOS(B)

CH4\_MUTE\_LVL DIFF(Vcm)/CMOS(B)

CH\_4\_MUTE Enable

CH\_3\_MUTE Enable

CH\_2\_MUTE Enable

CH\_1\_MUTE Enable

CH\_0\_MUTE Enable

Status Mute

STATUS1\_MUTE Enable

STATUS0\_MUTE Disable

XO Margining

XO\_PWRCTRL Dynamic

OK

- NVMAUTOCRC
- NVMCOMMIT
- NVMBUSY Idle
- NVMPROG
- NVMLCRC 181
- MEMADR 0
- NVMDAT 168
- RAMDAT 197
- ROMDAT 255
- NVMUNLK 0
- REGCOMMIT\_PG Page 0

Wrote Register R0x1E as 0x1E18

Wrote Register R0x1E as 0x1E08

Wrote Register R0x1E as 0x1E00

Protocol: I2C

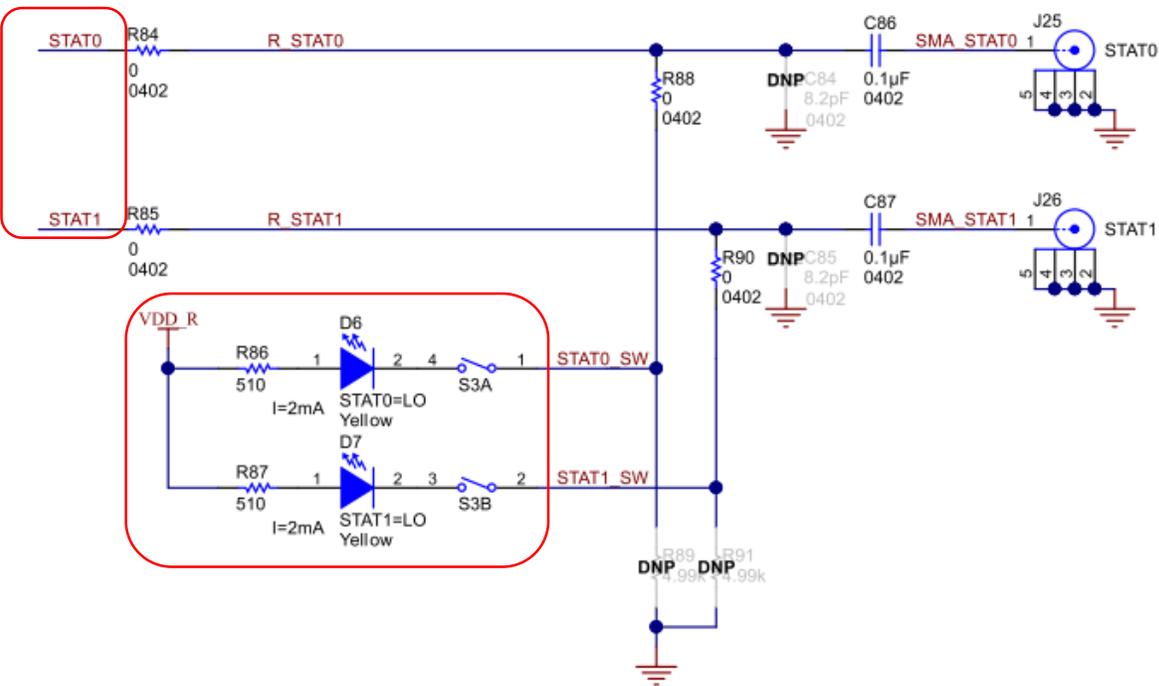
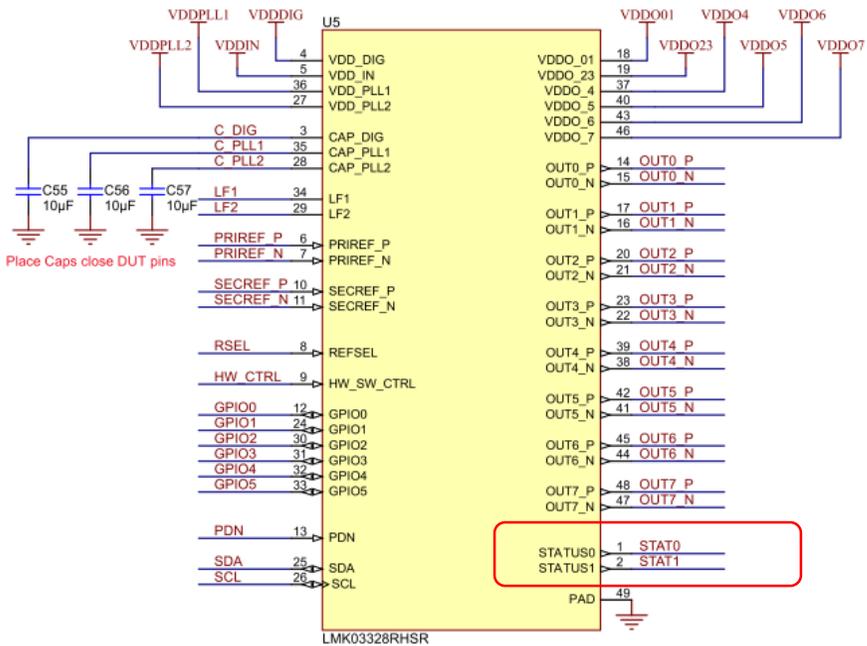
Connection Mode: USB2ANY

TEXAS INSTRUMENTS

10:07 2020/02/13



### LMK033x8 DUT



RESETN\_SW  
 SYNCN\_SW

CMOS Dividers	Status Muxes	3.3V LVCMOS Output Drivers		
<div style="border: 1px solid black; padding: 2px;"> <b>PLL1</b>                      PLL1 VCO Out                      4895.55 MHz                 </div>	Clock / Status0 Mux Status0 signal Status0 Signal PLL1 LOL	Type Push-Pull	Polarity Active High Slew Rate Fast	<b>STATUS0</b> MHz
<div style="border: 1px solid black; padding: 2px;"> <b>PLL2</b>                      PLL2 VCO Out                      5000 MHz                 </div>	Clock / Status1 Mux Status1 signal Status1 Signal PLL2 LOL	Type Push-Pull	Polarity Active High Slew Rate Fast	<b>STATUS1</b> MHz

Set Status Signal to INTERRUPT

INTR Source Live Status (read only)	INTERRUPT ENABLE	INTR Flag Polarity	INTR Flag Sticky Status	INTR Status Mask	
<input type="checkbox"/> LOL1	<input type="checkbox"/> LOL1_ENABLE	<input type="checkbox"/> LOL1_POL	<input type="checkbox"/> LOL1_INTR	<input type="checkbox"/> LOL1_MASK	<div style="border: 1px solid black; padding: 5px; background-color: #ffffe0;"> <b>INTR Mode</b>                      Logic OR                 </div>
<input type="checkbox"/> LOS1	<input type="checkbox"/> LOS1_ENABLE	<input type="checkbox"/> LOS1_POL	<input type="checkbox"/> LOS1_INTR	<input type="checkbox"/> LOS1_MASK	
<input type="checkbox"/> CAL1	<input type="checkbox"/> CAL1_ENABLE	<input type="checkbox"/> CAL1_POL	<input type="checkbox"/> CAL1_INTR	<input type="checkbox"/> CAL1_MASK	
<input type="checkbox"/> LOL2	<input type="checkbox"/> LOL2_ENABLE	<input type="checkbox"/> LOL2_POL	<input type="checkbox"/> LOL2_INTR	<input type="checkbox"/> LOL2_MASK	
<input type="checkbox"/> LOS2	<input type="checkbox"/> LOS2_ENABLE	<input type="checkbox"/> LOS2_POL	<input type="checkbox"/> LOS2_INTR	<input type="checkbox"/> LOS2_MASK	
<input type="checkbox"/> CAL2	<input type="checkbox"/> CAL2_ENABLE	<input type="checkbox"/> CAL2_POL	<input type="checkbox"/> CAL2_INTR	<input type="checkbox"/> CAL2_MASK	
<input type="checkbox"/> SECTOPRI1	<input type="checkbox"/> SECTOPRI1_ENABLE	<input type="checkbox"/> SECTOPRI1_POL	<input type="checkbox"/> SECTOPRI1_INTR	<input type="checkbox"/> SECTOPRI1_MASK	
<input type="checkbox"/> SECTOPRI2	<input type="checkbox"/> SECTOPRI2_ENABLE	<input type="checkbox"/> SECTOPRI2_POL	<input type="checkbox"/> SECTOPRI2_INTR	<input type="checkbox"/> SECTOPRI2_MASK	

**Chip Supply Currents**

VDD Current (mA) 0

VDDO Current (mA) 0

TOTAL Current (mA) 0

Measure Currents

**Register Types**  
 - EEPROM BASE Register (red)  
 - EEPROM PAGE Register (black)  
 - READ ONLY Register (blue)

**TIP:** For optimal jitter performance on OUTx channels, avoid using 3.3V LVCMOS CLK outputs and power-down CMOS Dividers to avoid crosstalk. If an LVCMOS CLK output is required, select the same PLL CLK signal on both STATUS pins and use opposite polarity to reduce crosstalk.

### STAT1(Status1 setting)

- Type : Push pull
- Polarity : Active high  
(it means the STAT1 output high in case of PLL=loss of lock.)
- Status1 Signal : PLL2 LOL(it means loss of lock at PLL2)
- > Therefore,

in case of Lock status : STAT1 outputs low -> STAT1 turns on  
in case of no Lock status : STAT1 outputs high -> STAT1 turns off