Constitution (normal operation)
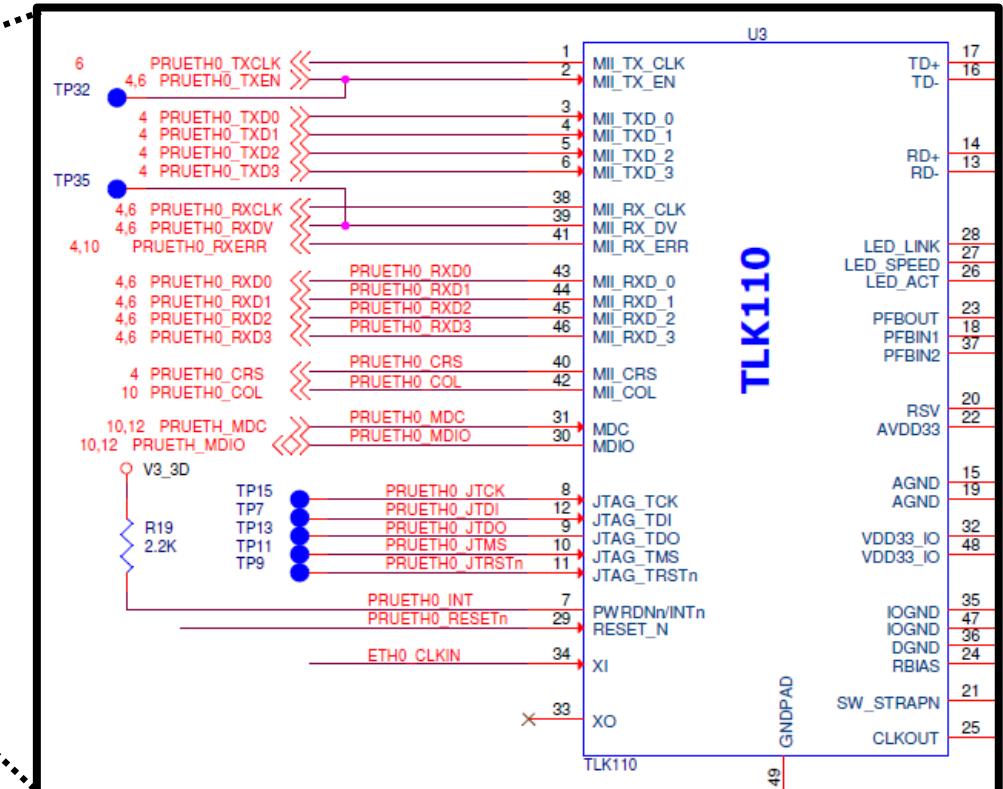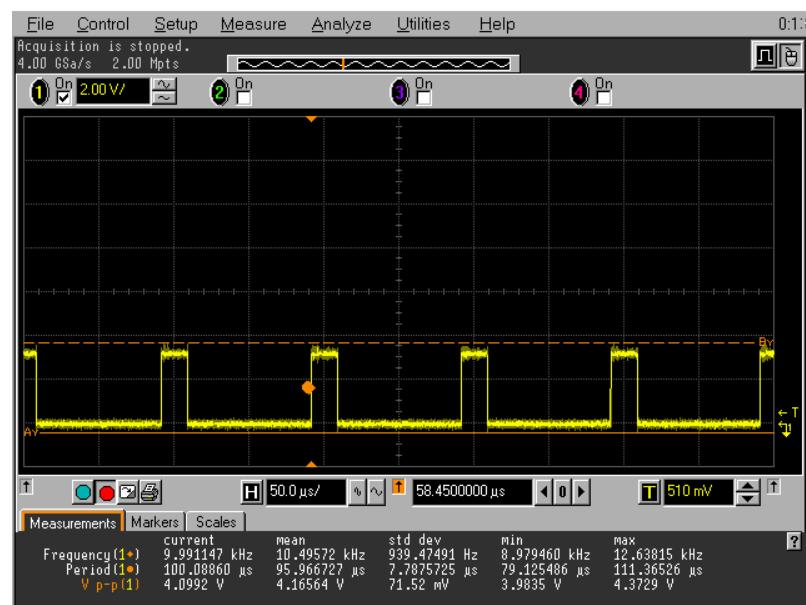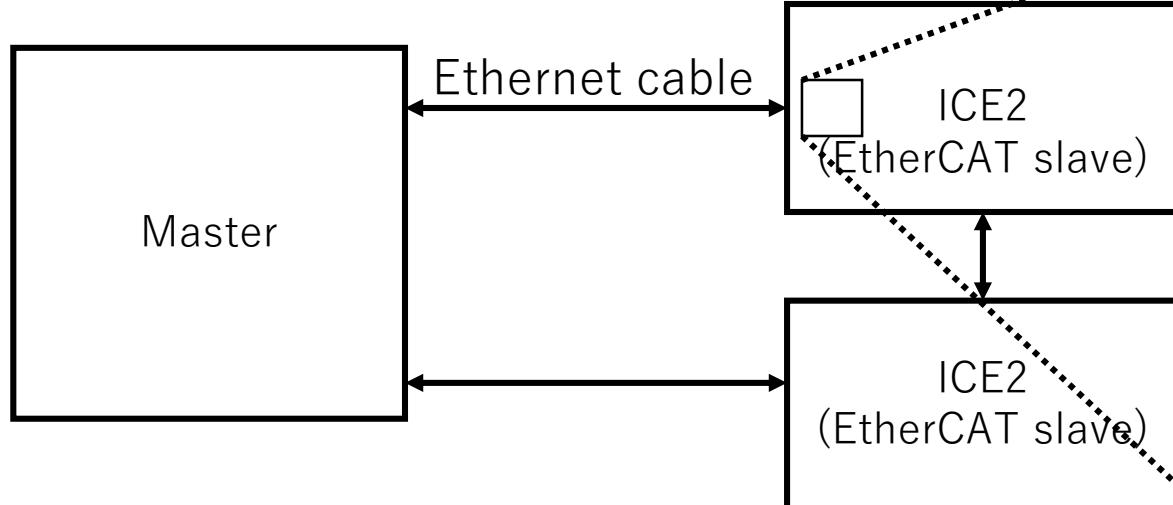
My customer checks the wave of TP32 in the above figure.
In normal operation, TX_EN signal is activated every 100us like left figure.

Issue

Master

Ethernet cable

ICE2
(EtherCAT slave)

ICE2
(EtherCAT slave)
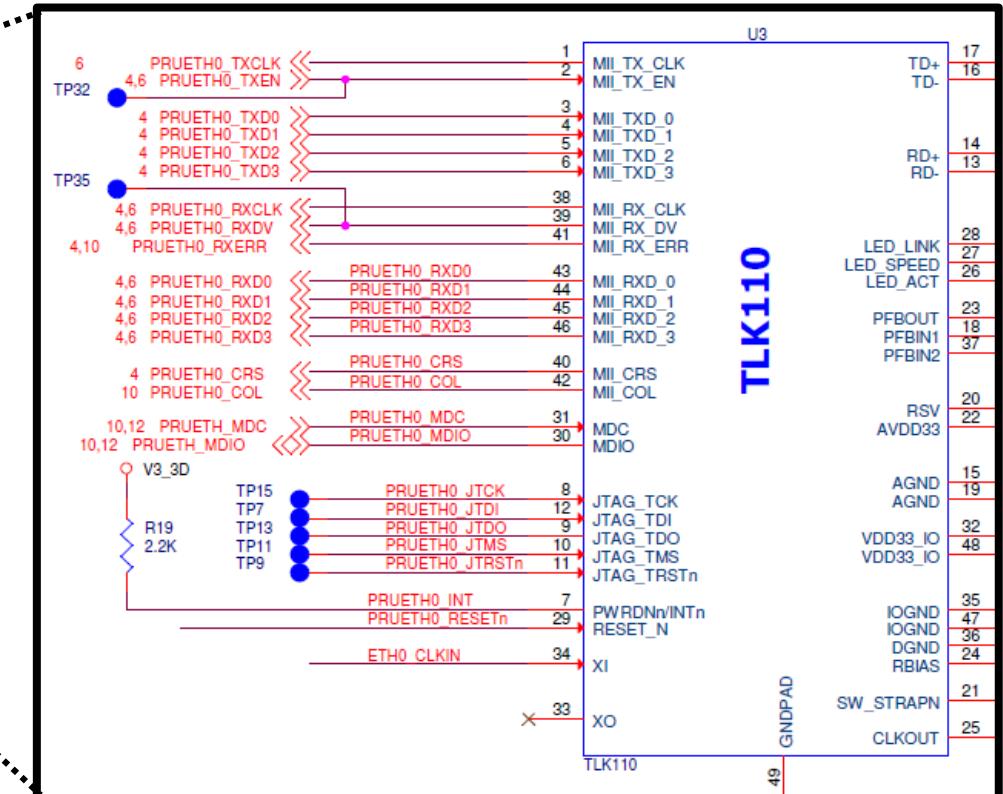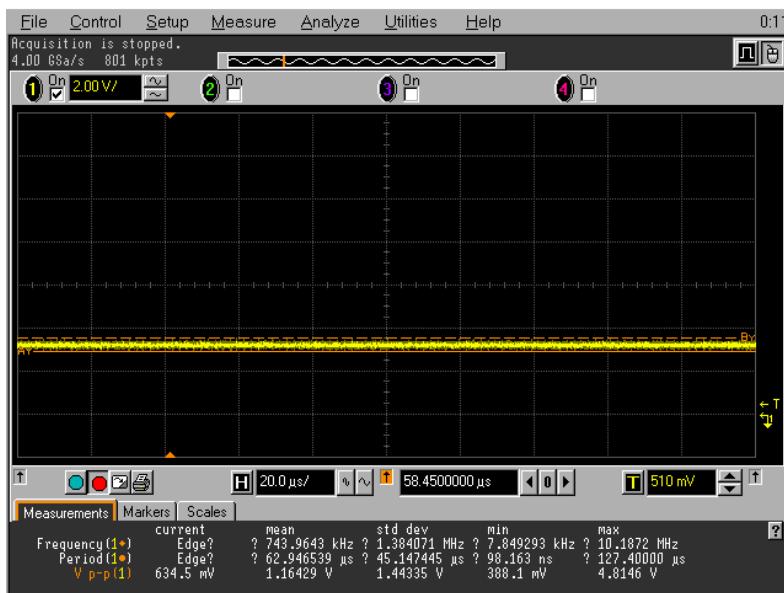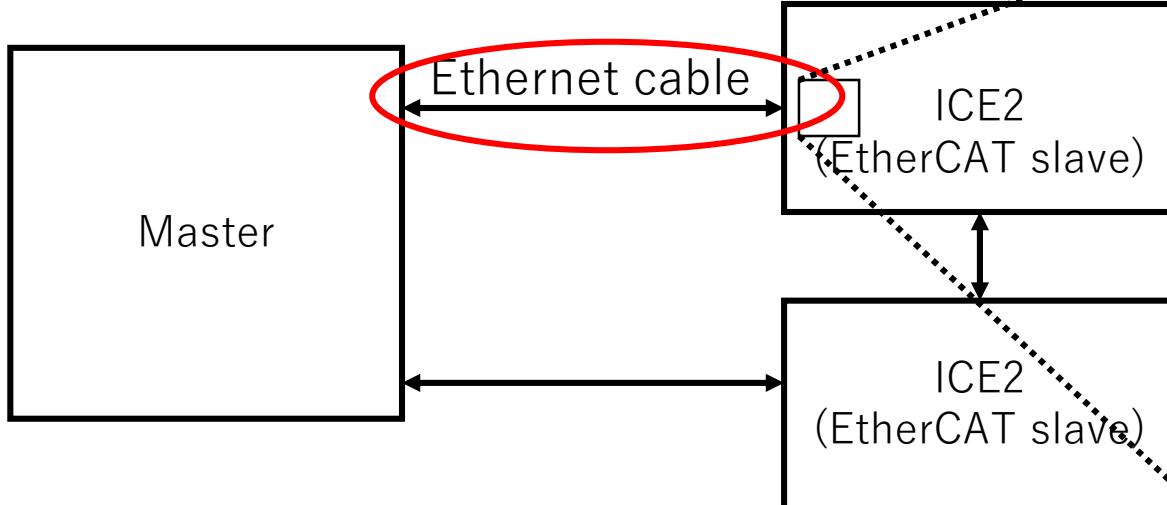
After the Ethernet cable (circled in red color) is disconnected during normal operation and link is down, TX_EN should be low. However, sometimes TX_EN keeps high despite the link down like left figure.

Is this a expected behavior?

U3

6	PRUETH0_TXCLK	1	MII_TX_CLK
TP32	4,6 PRUETH0_TXEN	2	MII_TX_EN
	4 PRUETH0_TXD0	3	MII_TXD_0
	4 PRUETH0_TXD1	4	MII_TXD_1
	4 PRUETH0_TXD2	5	MII_TXD_2
TP35	4 PRUETH0_TXD3	6	MII_TXD_3
	4,6 PRUETH0_RXCLK	38	MII_RX_CLK
	4,6 PRUETH0_RXDV	39	MII_RX_DV
4,10	PRUETH0_RXERR	41	MII_RX_ERR
4,6	PRUETH0_RXD0 / PRUETH0_RXD0	43	MII_RXD_0
4,6	PRUETH0_RXD1 / PRUETH0_RXD1	44	MII_RXD_1
4,6	PRUETH0_RXD2 / PRUETH0_RXD2	45	MII_RXD_2
4,6	PRUETH0_RXD3 / PRUETH0_RXD3	46	MII_RXD_3
4	PRUETH0_CRS	40	MII_CRS
10	PRUETH0_COL	42	MII_COL
10,12	PRUETH_MDC / PRUETH0_MDC	31	MDC
10,12	PRUETH_MDIO / PRUETH0_MDIO	30	MDIO

V3_3D

R19 2.2K

TP15 PRUETH0_JTCK 8 JTAG_TCK
TP7 PRUETH0_JTDI 12 JTAG_TDI
TP13 PRUETH0_JTDO 9 JTAG_TDO
TP11 PRUETH0_JTMS 10 JTAG_TMS
TP9 PRUETH0_JTRSTn 11 JTAG_TRSTn

PRUETH0_INT 7 PWRDNn/INTn
PRUETH0_RESETn 29 RESET_N

ETH0_CLKIN 34 XI

33 XO

17 TD+
16 TD-

14 RD+
13 RD-

28 LED_LINK
27 LED_SPEED
26 LED_ACT

23 PFBOUT
18 PFBIN1
37 PFBIN2

20 RSV
22 AVDD33

15 AGND
19 AGND

32 VDD33_IO
48 VDD33_IO

35 IOGND
47 IOGND
36 DGND
24 RBIAS

21 SW_STRAPN

25 CLKOUT

TLK110

GNDPAD 49

TLK110

File Control Setup Measure Analyze Utilities Help   0:11
Acquisition is stopped.
4.00 GSa/s   801 kpts

① On 2.00 V/   ② On   ③ On   ④ On

H 20.0 µs/   58.4500000 µs   T 510 mV

Measurements | Markers | Scales

	current	mean	std dev	min	max
Frequency(1) Edge?	? 743.9643 kHz	? 1.384071 MHz	? 7.849293 kHz	? 10.1872 MHz	
Period(1) Edge?	? 62.946539 µs	? 45.147445 µs	? 98.163 ns	? 127.40000 µs	
V p-p(1)	634.5 mV	1.16429 V	1.44335 V	388.1 mV	4.8146 V