

Trunk Board

(COIU2/4, PRIU, BRIU1/2/4)

(iPECS eMG100HW-TRA-01-004)

23 Aug, 2019

REVISION HISTORY

ISSUE	DATE	DESCRIPTION OF CHANGES
0.1	23-Aug-19	Preliminary release

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COIU2/4

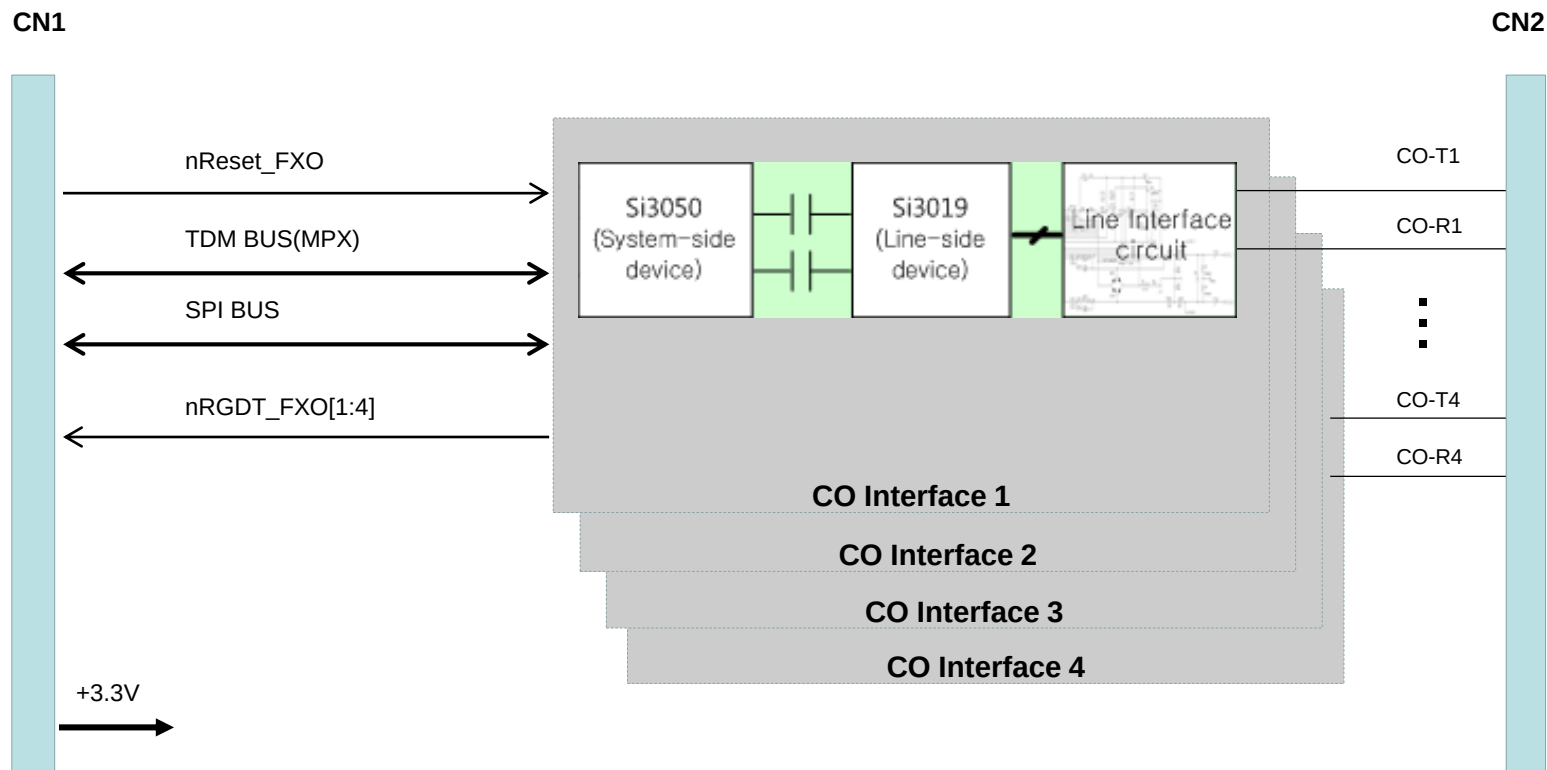
- General Description
- Block Diagram
- PCB Assembly
- Installation
- Modular jack wiring

General Description

- Loop start CO(PSTN) interface Function
- Caller ID / CPT (call progress tone) / DTMF Detection are supported by MBU ACT2 Device
- Tip/Ring Polarity Reversal detection by default, Pulse dial function are supported

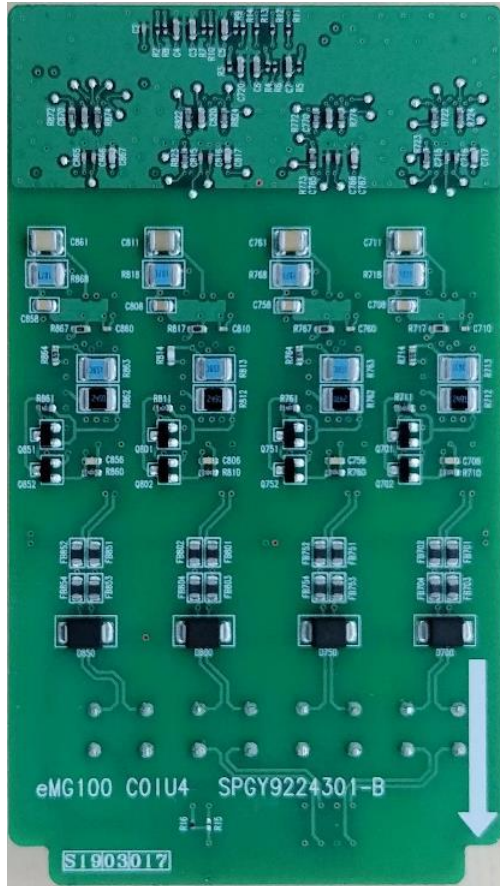
COIU2/4

Block Diagram

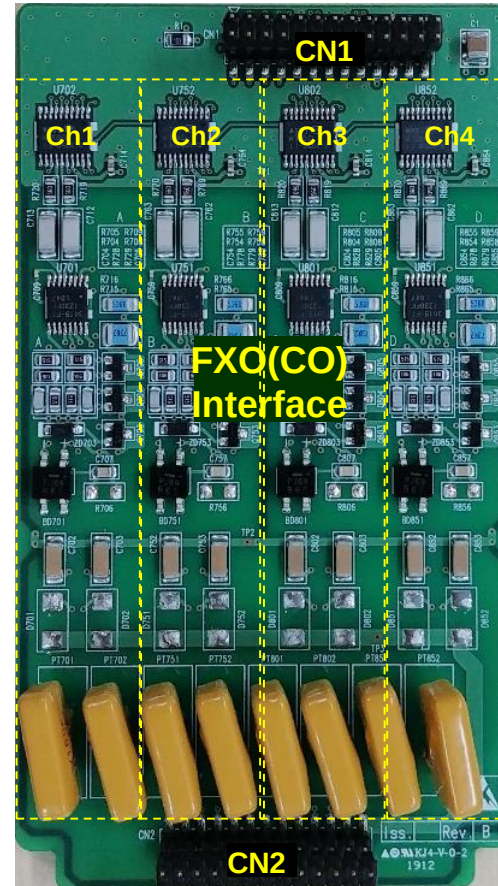


COIU2/4

PCB Assembly



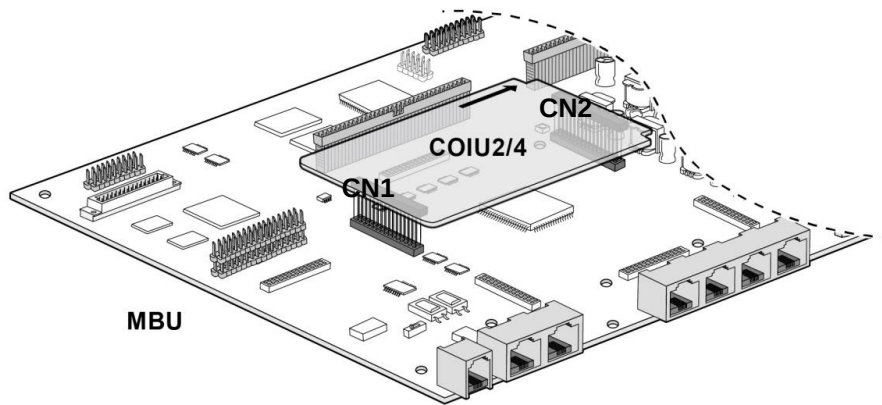
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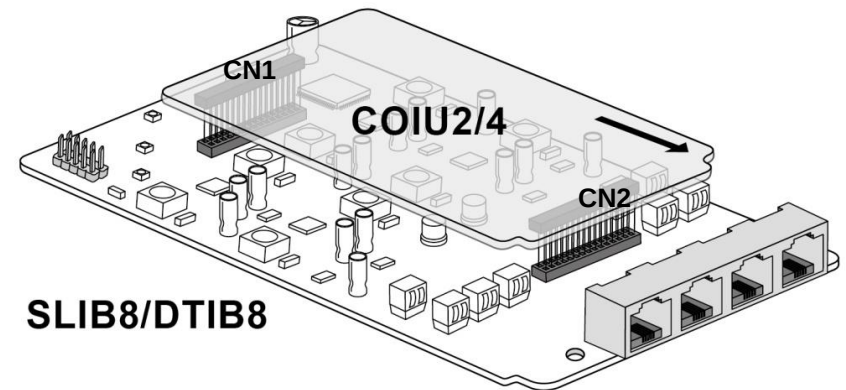
[BOTTOM]

Installation

Connector	Functions	Remark
CN1	Connection to the MBU (CN21 or CN31), SLIB8 (CN3) and DTIB8 (CN3)	26 pins
CN2	Connection to the MBU (CN22 or CN32), SLIB8 (CN4) and DTIB8 (CN4)	26 pins



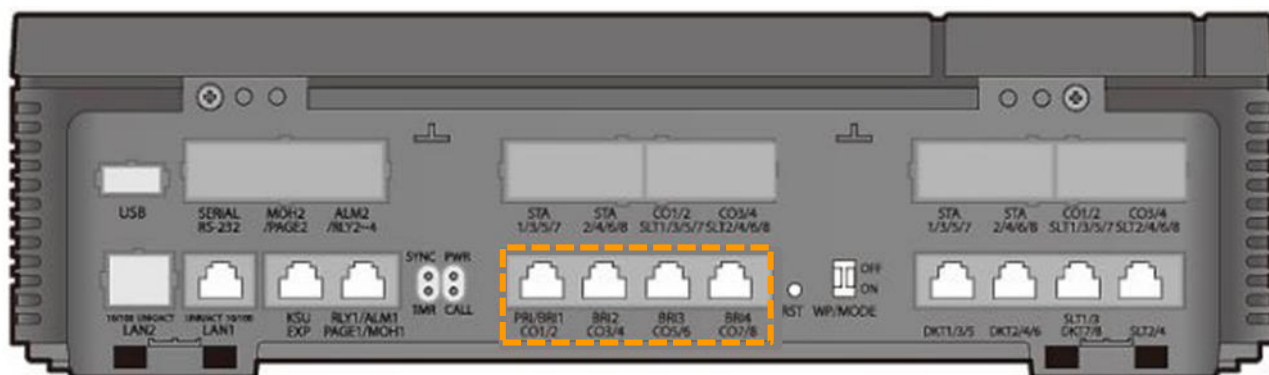
[On MBU]



[On SLIB8 or DTIB8]

COIU2/4

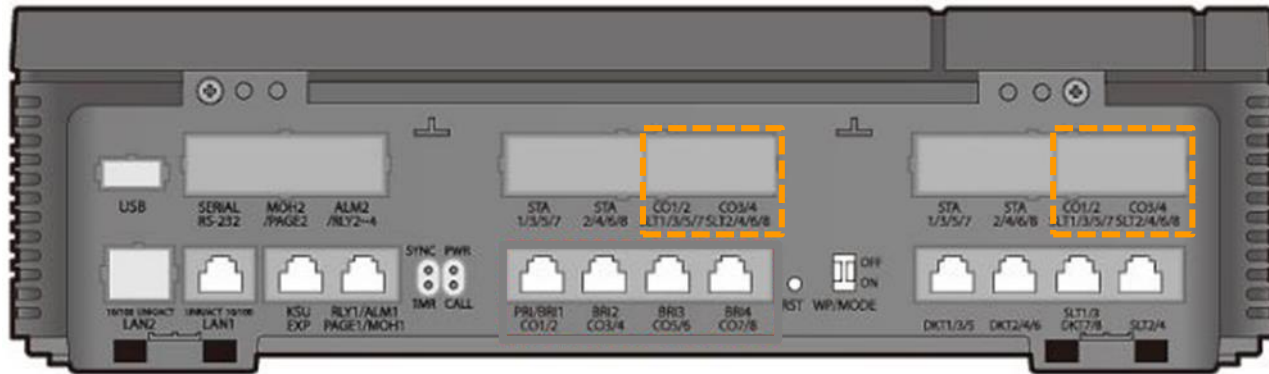
Modular jack wiring



Trunk interface Board	Modular jack	Pin assignment	
COIU2/4		MJ1-1: CO1 (7,8), CO2 (4,5) MJ1-2: CO3 (7,8), CO4 (4,5)	1 st COIU2/4
		MJ1-3: CO5 (7,8), CO6 (4,5) MJ1-4: CO7 (7,8), CO8 (4,5)	2 nd COIU2/4

COIU2/4

Modular jack wiring



Trunk interface Board	Modular jack	Pin assignment
SLIB8(or DTIB8) + COIU2/4		MJ1-1: MJ1-2: MJ1-3: CO1 (7,8), CO2 (4, 5) MJ1-4: CO3 (7,8), CO4 (4, 5)

[On SLIB8 or DTIB8]

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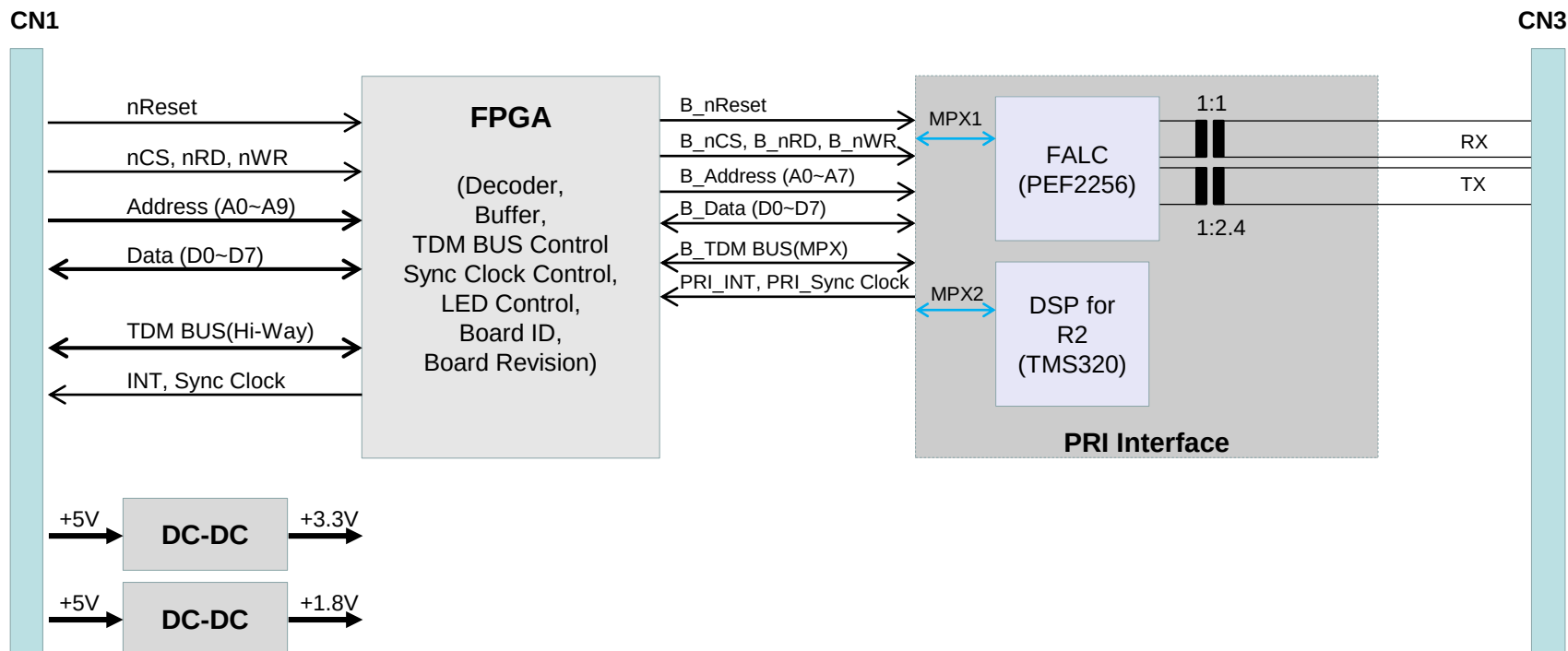
PRIU

- General Description
- Block Diagram
- PCB Assembly
- Switches & LEDs
- Installation
- Modular jack wiring

General Description

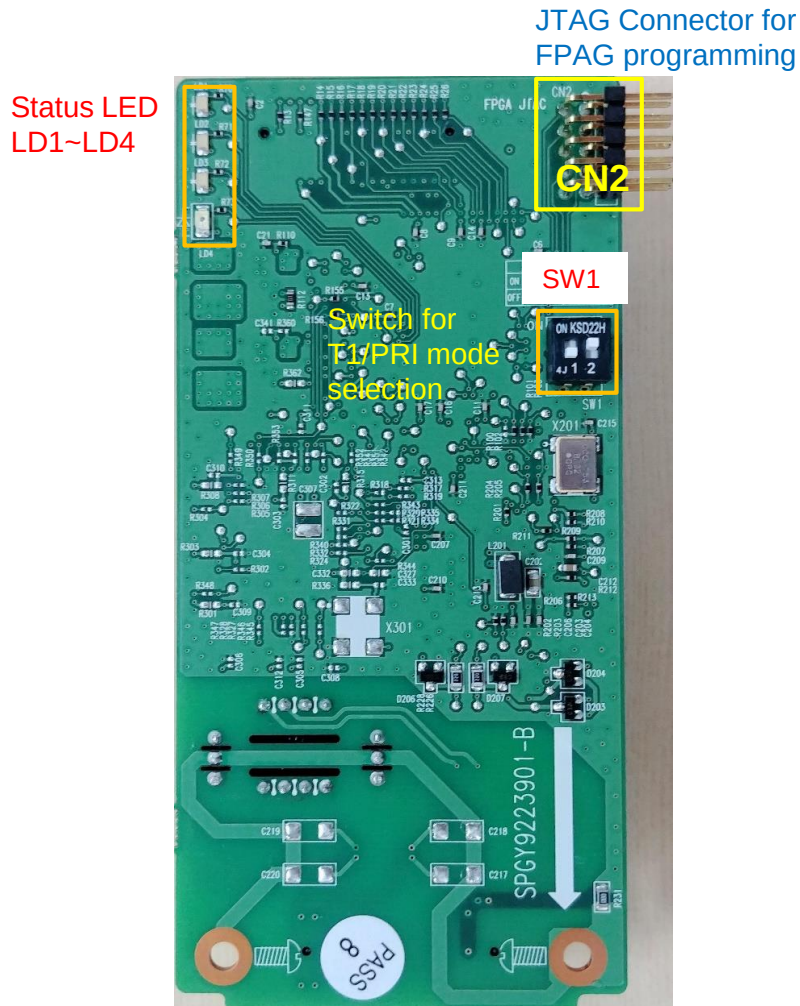
- One port PRI/ E1R2 : maximum 30 CO lines at the same time
(Default : PRI mode – One-pole Dip switch [OFF : PRI, ON : E1R2])
- 2.048Mbps E1 line : CAS (Channel Associated Signaling)
- 2.048Mbps PRI line : LAPD (Link Access Protocol on D-ch)
- Code : HDB3 (High Density Bipolar of order 3 code),
North American (B8ZS – Bipolar with 8 Zero substitution), T1 (AMI)
- Line Impedance : 120 ohm (Distance - Point to point 1km), 100 ohm (North America)
- RJ-45 4 wire : TE (1: RX+, 2: RX-, 4: TX+, 5: TX-), NT (1: TX+, 2: TX-, 4: RX+, 5: RX-)
- One-pole Dip switch SW1 : Mode Selection (OFF : PRI, ON : E1R2)
- DID, DOD, and TIE according to each country's specifications
- Pulse dialing, DTMF dialing, and MFC-R2 signaling(30 channels at the same time)
- ITU-T I.431, CCITT G.703,704,823, ETS 300 011, ANSI T1.601
- North America T1/PRI function

Block Diagram

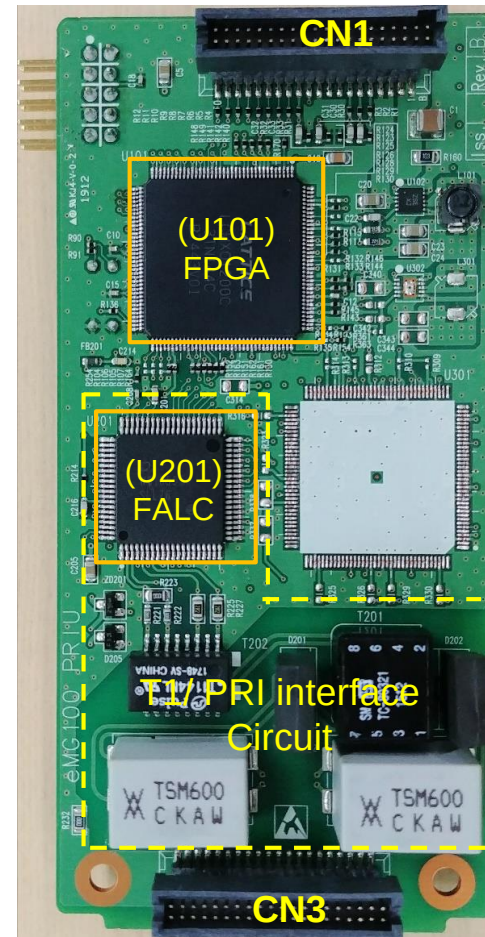


* FALC
(Frame and Line Interface Component)

PCB Assembly (PRI)



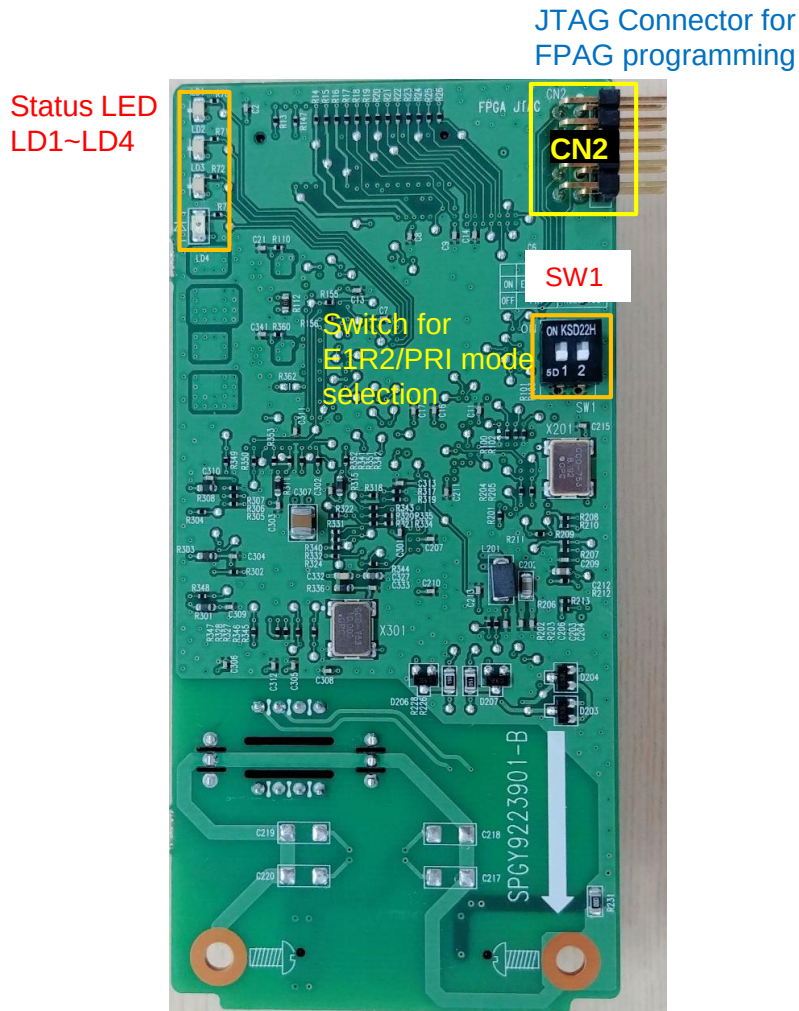
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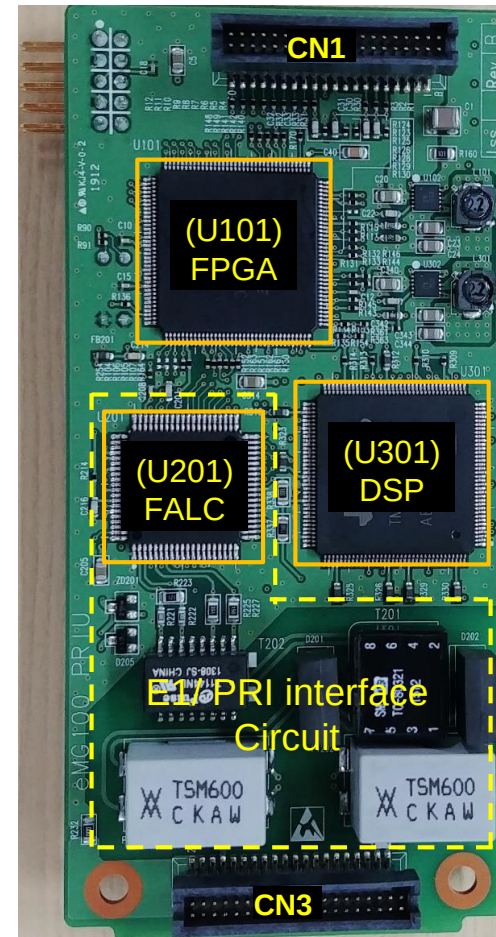
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PRIU

PCB Assembly (E1R2)



[TOP]



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Switches & LEDs

▪ PRIU PRI/E1(T1) Function SW1

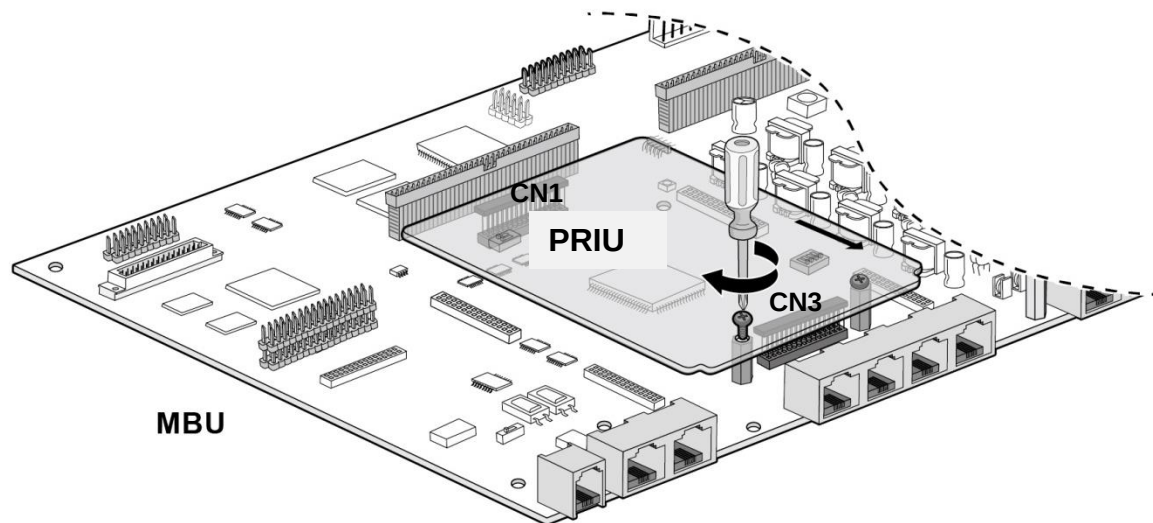
Pole	Function	Operating Mode		Remarks
		ON	OFF	
1	E1R2(T1) or PRI mode	E1R2(T1)	PRI mode	Default = OFF
2	Reserved	-		

▪ PRIU LED Indications

LED	Color	Description
LD1	Blue	ON : FPGA programmed OFF : FPGA not programmed
LD2	Blue	Flash (500ms): normal
LD3	Blue	ON: PRI channel in use OFF: All PRI channels idle
LD4	Red	ON: Line error OFF: normal

Installation

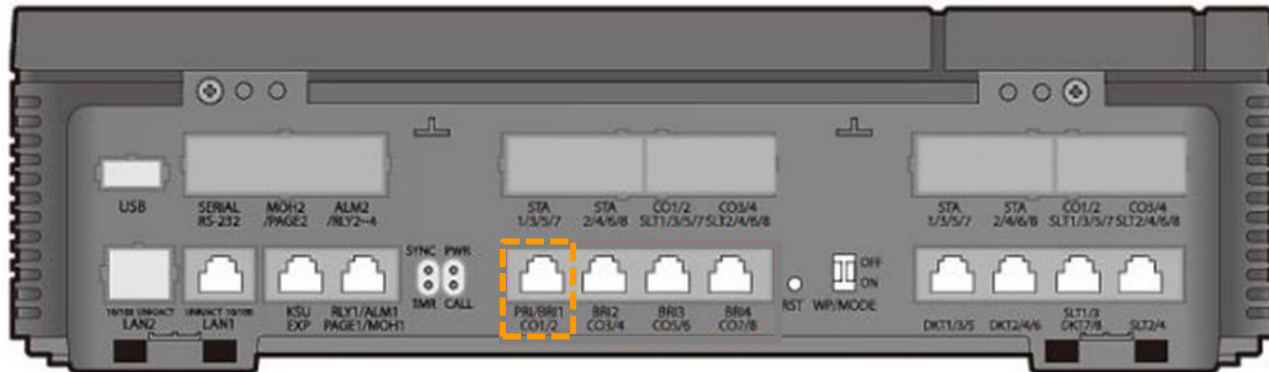
Connector	Functions	Remark
CN1	Connection to the MBU (CN2)	40 pins
CN3	Connection to the MBU (CN12)	40 pins
CN2	FPGA JTAG for development	10 pins



[On MBU]

PRIU

Modular jack wiring



Trunk interface Board	Modular jack	Pin assignment
PRIU		MJ1-1: PRI1 (1, 2, 4, 5: RX+, RX-, TX+, TX-) MJ1-2: Unused MJ1-3: Unused MJ1-4: Unused

[On MBU]

Table of Contents

BRIU1/2/4

- General Description
- Block Diagram
- PCB Assembly
- Installation
- Modular jack wiring

General Description

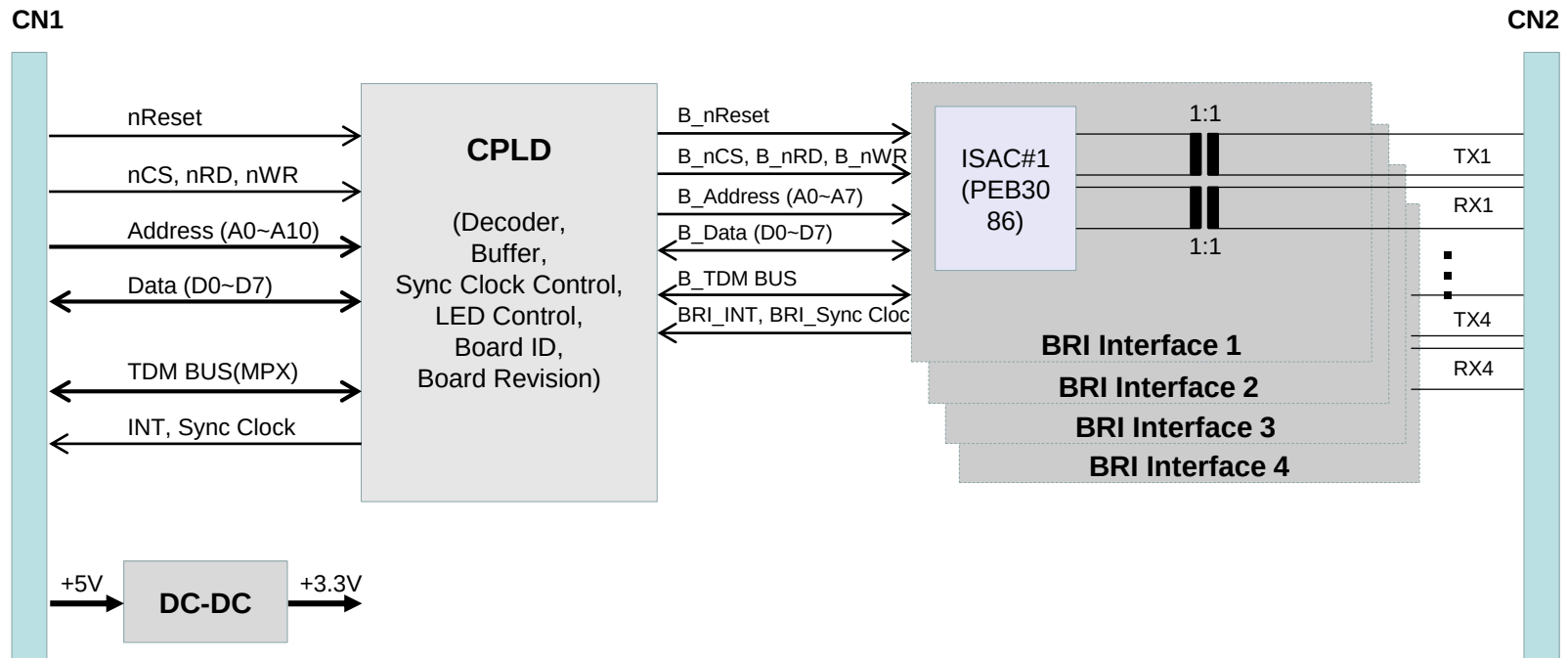
- 1/2/4 BRI S/T interface
- 192Kbps(B1+B2+D, 48Kbps for framing and maintenance)
- Code : AMI (Alternate Mark Inversion)
- Line Impedance : 100 ohm (Distance - Point to point 1km, Point to MP 200 ~ 500m)
- RJ-45 4 wire : T (3: TX+, 4: RX+, 5: RX-, 6: TX-), S (3: RX+, 4: TX+, 5: TX-, 6: RX-)
- 2 Pole Dip Switch, SW1 : [S/ T mode selection](#) (Default : OFF – T mode)
- 4 Pole Dip Switch, SW200, SW300: Termination (Default : ON)
- No Feeding Power to the Terminal at S mode
- ETS 300 012, ITU-T I.430 and Q921,Q931 (Euro ISDN)

T : ISDN Trunk line

S : ISDN standard user interface

BRIU1/2/4

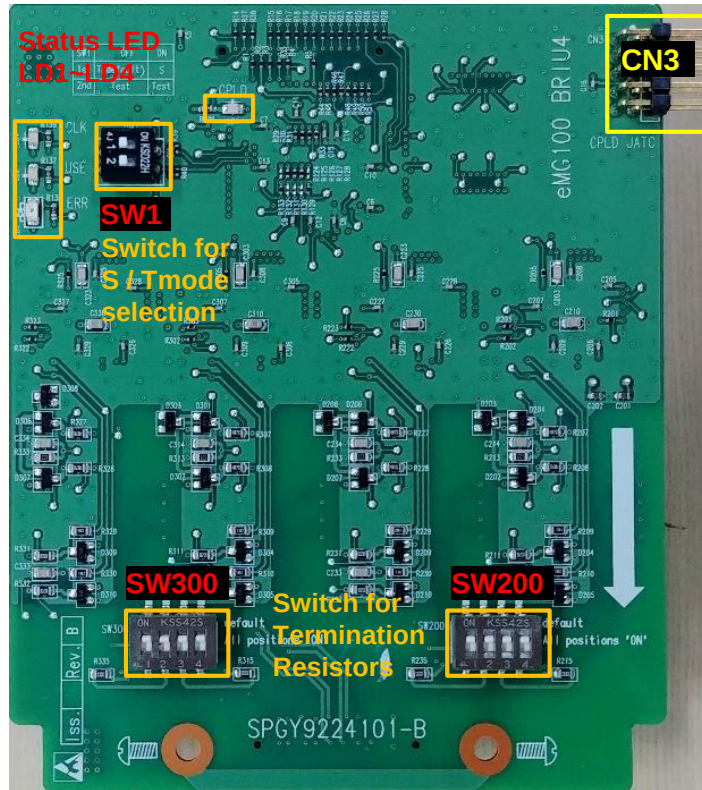
Block Diagram



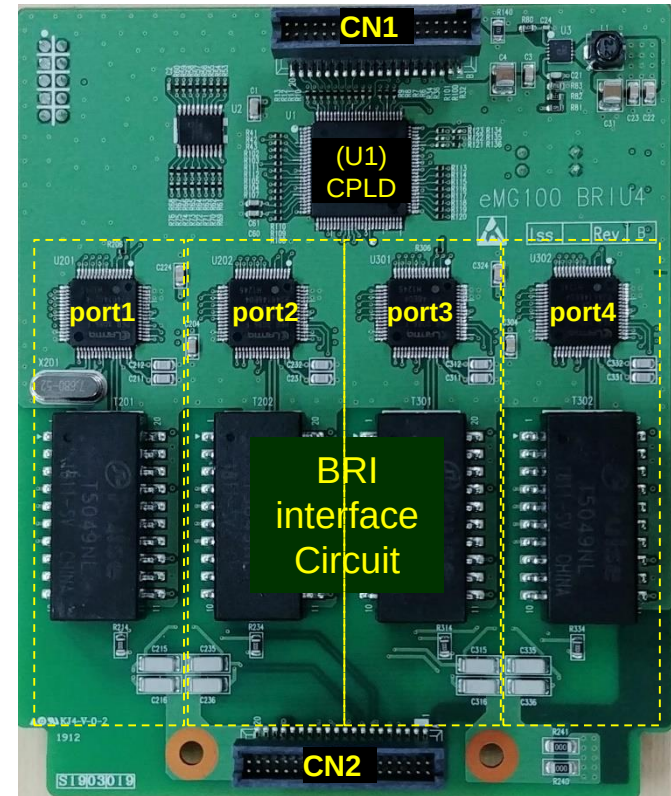
BRIU1/2/4

PCB Assembly (PRI)

JTAG Connector for
CPLD programming



[TOP]



[BOTTOM]

BRIU1/2/4

Switches & LEDs

▪ BRIU1/2/4 BRI Mode, SW1

Pole	Function	Mode		Remarks
		ON	OFF	
1	S or T mode	S mode	T mode	Default=OFF
4	BRI line loopback	Test		

▪ BRIU1/2/4 BRI Termination, SW200, SW300

Pole	Function	Termination	Remarks
1 & 2 (SW200)	Termination Resistor	Port 1 Termination Resistor • ON : Terminate • OFF : Open	Default = ON
3 & 4 (SW200)	Termination Resistor	Port 2 Termination Resistor • ON : Terminate • OFF : Open	
1 & 2 (SW300)	Termination Resistor	Port 3 Termination Resistor • ON : Terminate • OFF : Open	
3 & 4 (SW300)	Termination Resistor	Port 4 Termination Resistor • ON : Terminate • OFF : Open	

Switches & LEDs

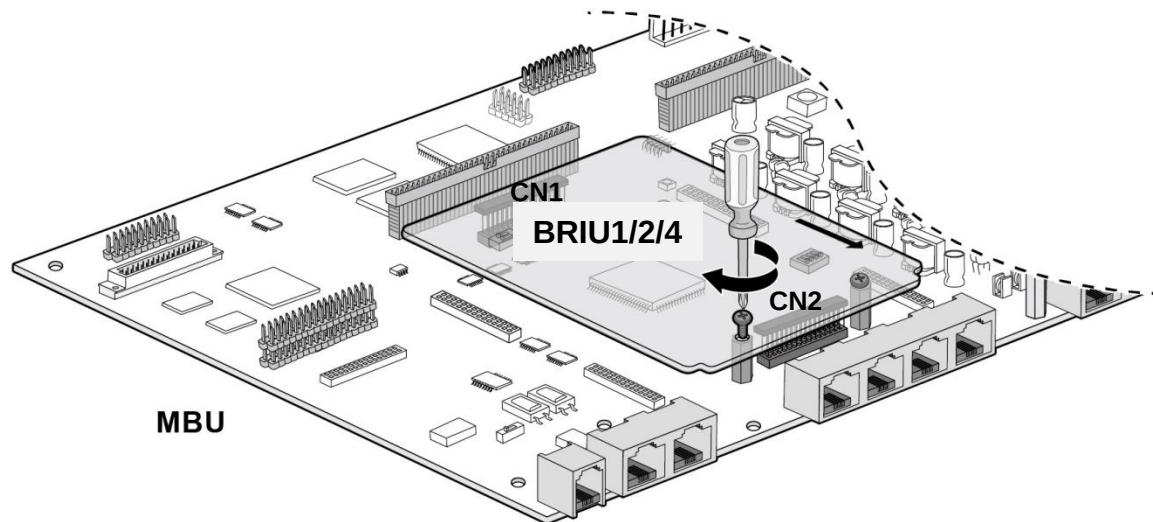
▪ BRIU2 LED Indication

LED	Color	Description
LD1	Blue	ON: Programming CPLD OFF: No programming CPLD
LD2	Blue	ON: a BRI channel is in use OFF: all BRI lines idle
LD3	Red	ON: BRI line Error OFF: both BRI Lines normal
LD4	Blue	ON: BRI reference clock external OFF: BRI reference clock internal

BRIU1/2/4

Installation

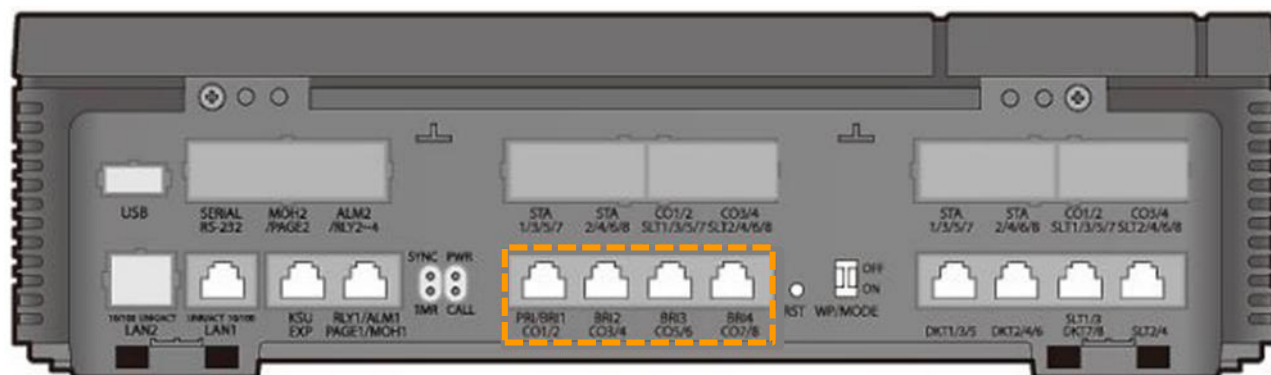
Connector	Functions	Remark
CN1	Connection to the MBU (CN2)	40 pins
CN2	Connection to the MBU (CN12)	40 pins
CN3	CPLD JTAG for development	10 pins



[On MBU]

BRIU1/2/4

Modular jack wiring



Trunk interface Board	Modular jack	Pin assignment
BRIU1/2/4	MJ1-1 MJ1-2 MJ1-3 MJ1-4  PRI/BRI1 CO1/2 BRI2 CO3/4 BRI3 CO5/6 BRI4 CO7/8	MJ1-1: BRI1 (3, 4, 5, 6: TX+, RX+, RX-, TX-) MJ1-2: BRI2 (3, 4, 5, 6: TX+, RX+, RX-, TX-) MJ1-3: BRI3 (3, 4, 5, 6: TX+, RX+, RX-, TX-) MJ1-4: BRI4 (3, 4, 5, 6: TX+, RX+, RX-, TX-)

[On MBU]

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