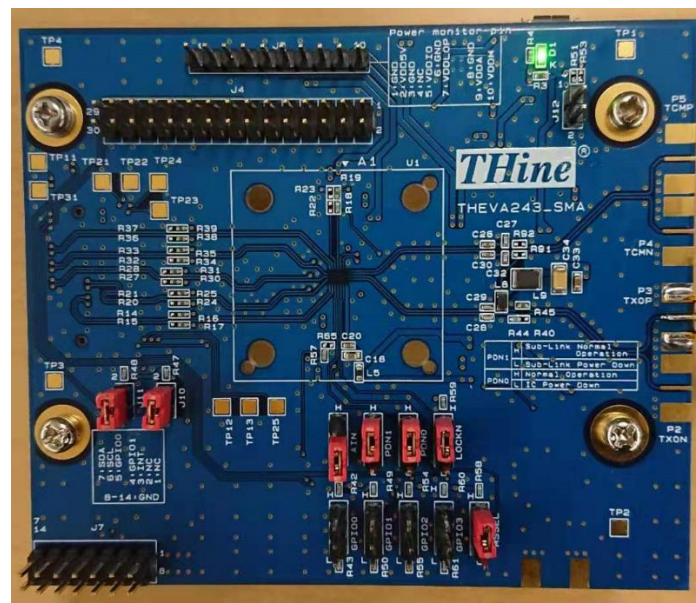




THEVA243-SMA

Hardware Manual





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1. Overview

THEVA243-SMA is a board equipped with THCV243 that converts MIPI[®] CSI-2 (or MIPI[®]) to V-by-One[®] HS.

This board can be connected to a V-by-One[®] HS receiver (THEVA242-SMA).

As shown here by this example connections.

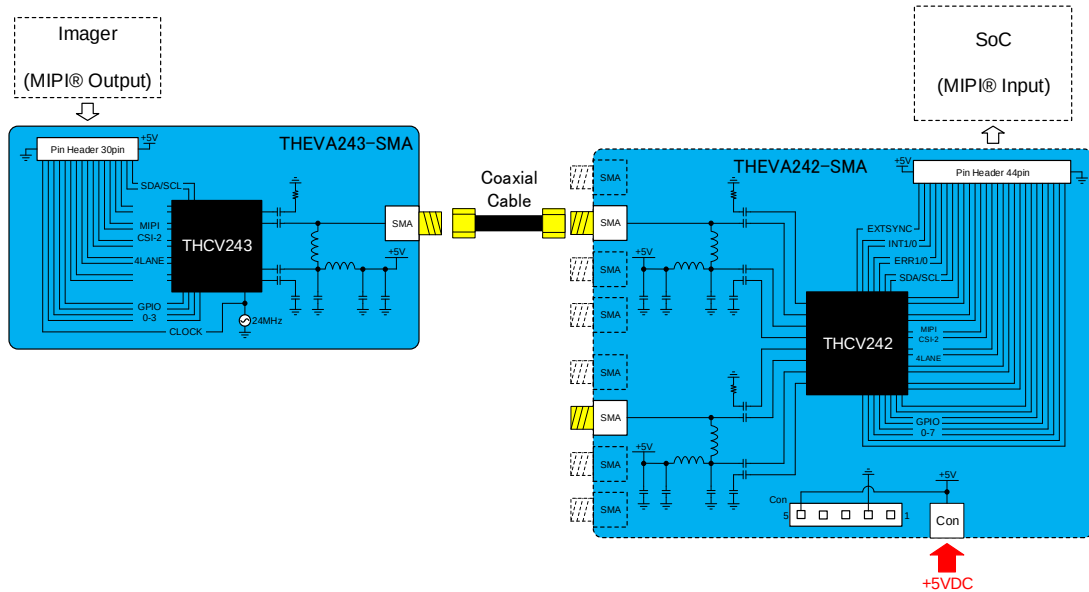


Figure 1 THEVA243-SMA and THEVA242-SMA connection example

2. Connection with V-by-One® HS receiver board (THEVA242-SMA)

Connect P3 of the THEVA243-SMA and P2 of the THEVA242-SMA with Coaxial-cable.

The power supply (+ 5.0V) is supplied to JA1 of the THEVA242-SMA.

Power supply of the THEVA243-SMA is supplied from THEVA242-SMA via a coaxial cable.

When power is supplied correctly, the green LED lights on both boards.

* The Coaxial-cable and the power supply should be prepared by users.

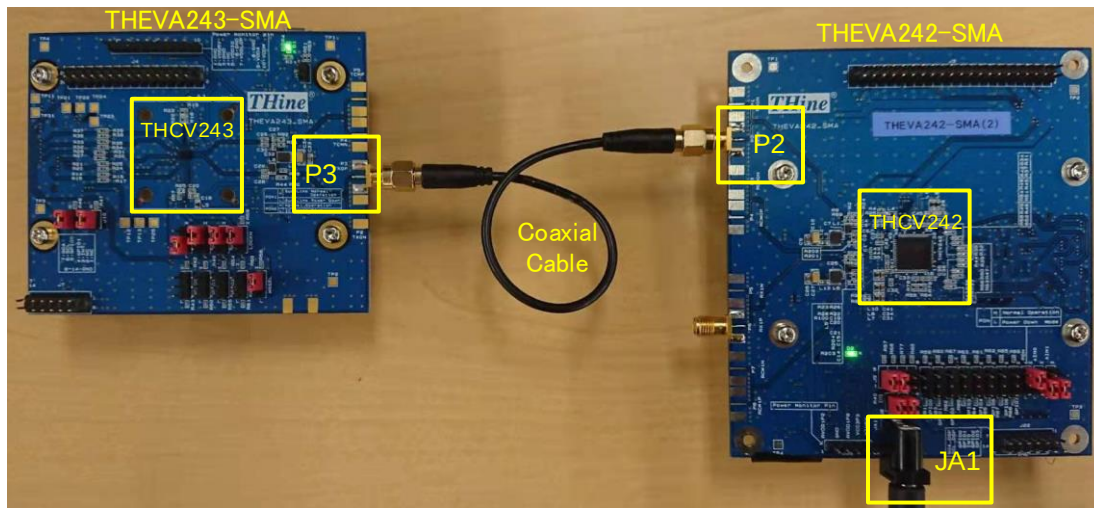
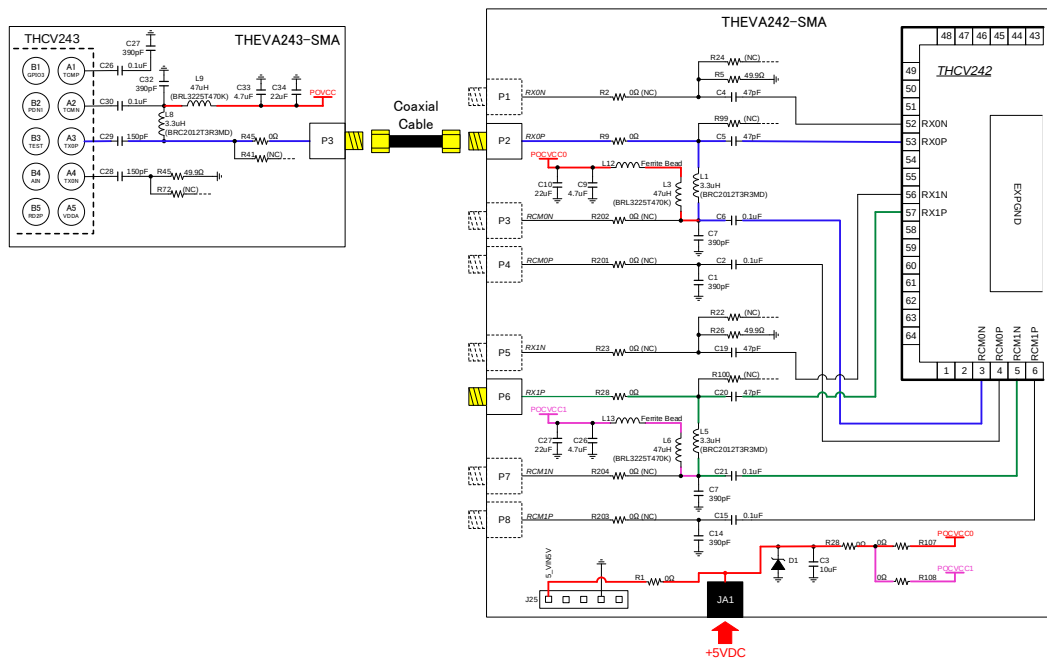


Figure 2 THEVA243-SMA and THEVA242-SMA connection



3. Connection with THEVA243-SMA and Imager by the MIPI®

J4 pin-header can be used to connect THEVA243-SMA and Imager.]

(J2 on the bottom side can also be used connect Imager. See the schematic on page 8 for details.)

When connecting 2-wire serial (SDA and SCL) to Imager, the J10 and J11 shall be shorted respectively.

Set the GPIO (J8, J9, J13, and J14) to pull-up or pull-down as required.

The reference clock (CKI, CKO) uses a 24MHz oscillator.

If the Imager does not require an external reference clock, CKO need not be connected.

*The Jumper-Pin should be prepared by users.

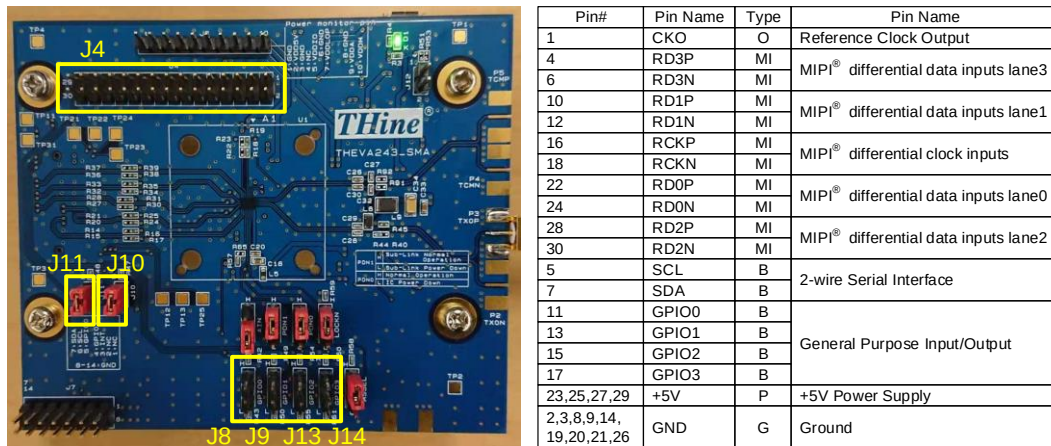


Figure 4 Connection with THEVA243-SMA and Imager

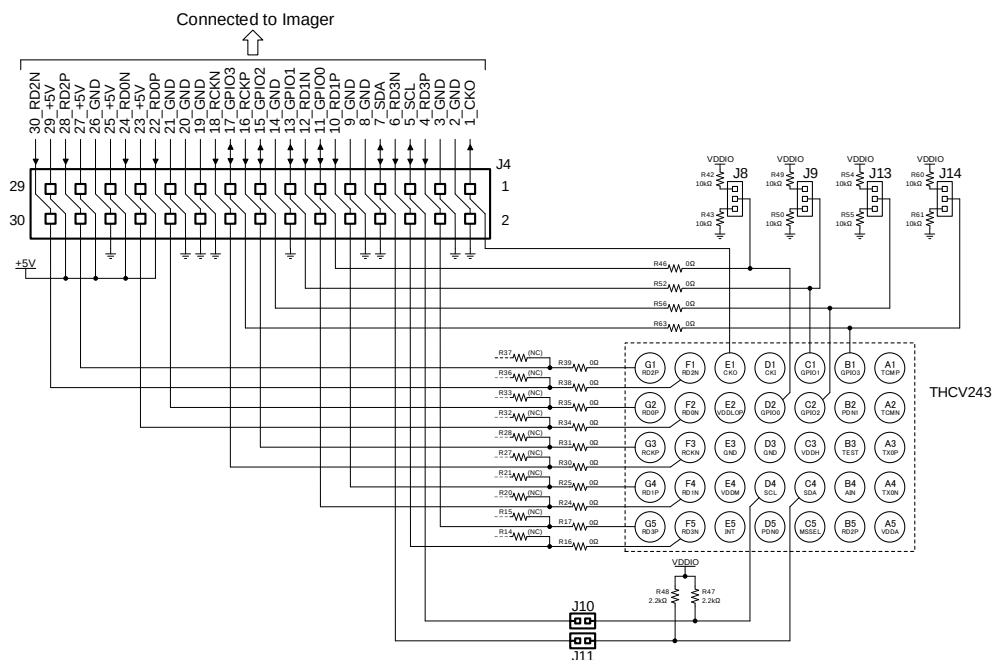


Figure 5 Connection with THEVA243-SMA and Imager

4. Pin setting of the THEVA243-SMA

As shown here by the Pin-settings.

*The Jumper-Pin should be prepared by users.

Ports#	Node Name	Def.	Description
J17	AIN	High Low	Select Slave Address Low : 2-wire serial Address = 7'b000_1011 High : 2-wire serial Address = 7'b011_0100
J16	PDN1	High Low	Sub-Link Power Down Low : Sub-Link Power Down High : Sub-Link Normal Operation
J15	PDN0	High Low	Whole IC Power Down Low : Power Down High : Normal Operation
J18	LOCKN	High Low	LOCK detect input Negative polarity. If external LOCKN connection is used, it is supposed to be connected to Rx LOCKN with a 30kΩ pull-up resistor.
J19	MSEL	High Low	Sub-Link Master/Slave Select. Low : Sub-Link Master side (inside 2-wire serial I/F is slave) High : Sub-Link Slave side (inside 2-wire serial I/F is master) Sub-Link Master is connected to HOST MCU.

Figure 6 Pin setting of the THEVA243-SMA

5. Monitor pins

Each power supply can be monitored by the J3 pin-header.

The 2-wire serial, the GPIO, and the INT signal can be monitored by the J7 pin-header.

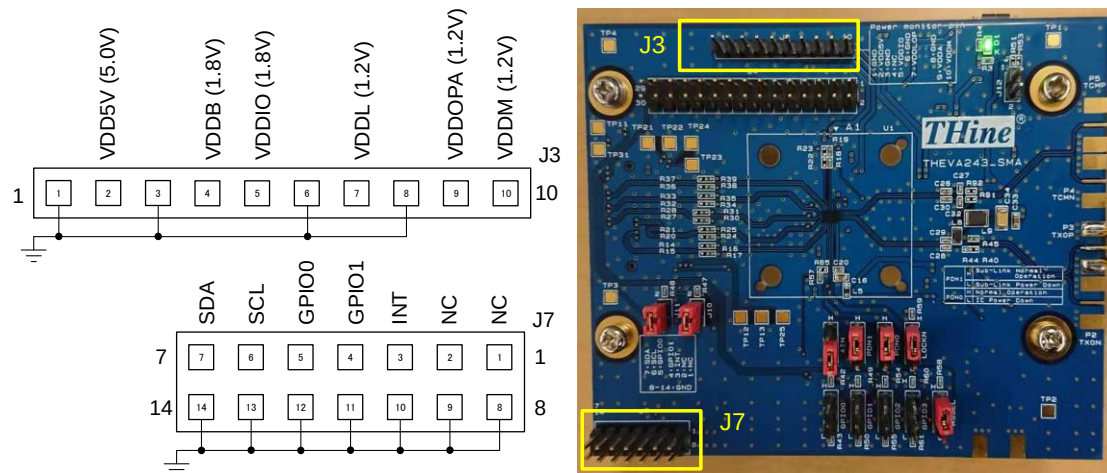
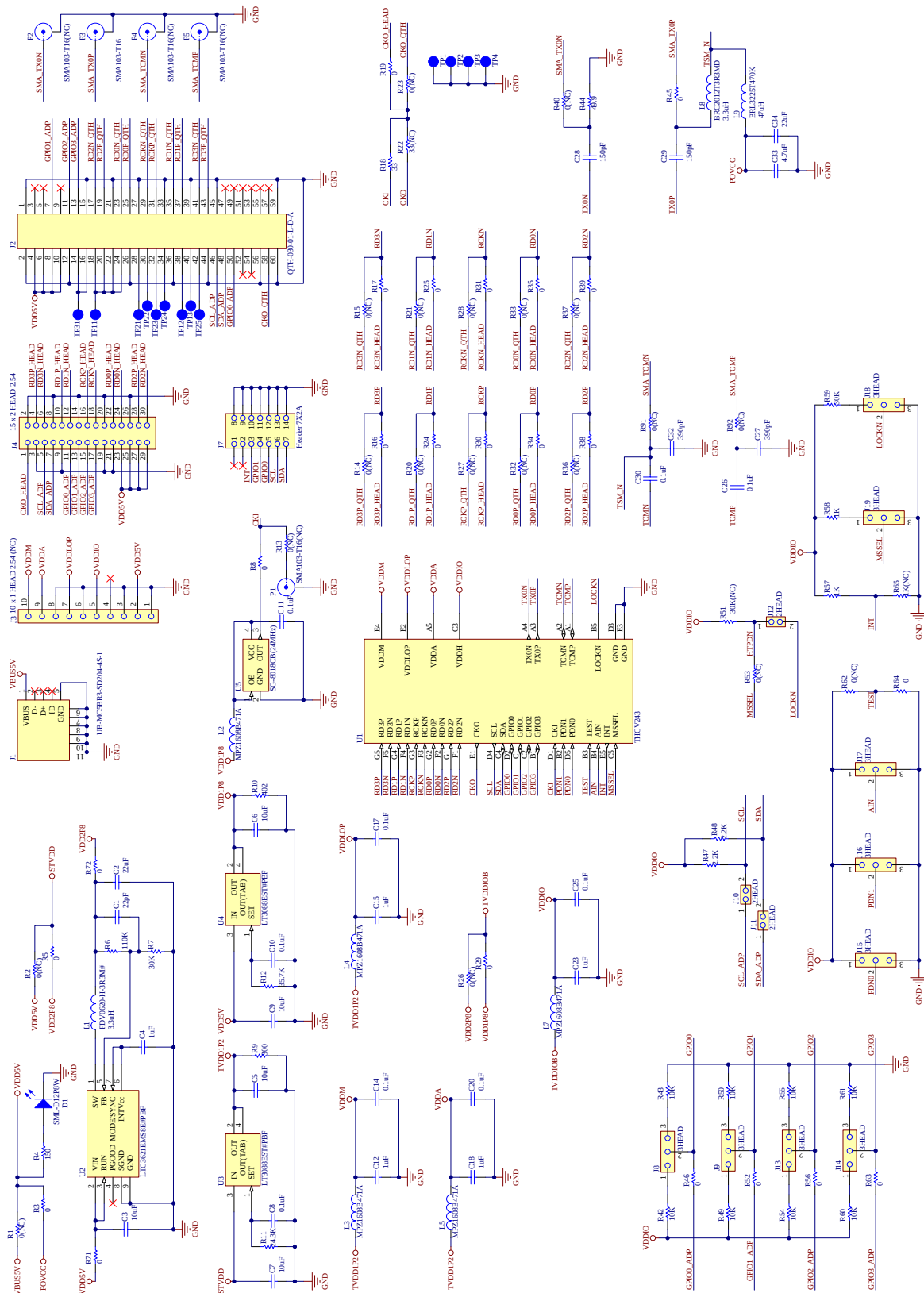


Figure 7 Monitor pin

6. THEVA243-SMA Schematic



7. THEVA243-SMA Bill of Material

Designator	Parts type	Quantity	Parts name	Specification	Value
C1	Capacitor	1	GRM1552C1H220JA01D	50V/1005	22pF
C2, C34	Capacitor	2	GRM31CR61E226KE15L	25V/3216	22uF
C3, C5, C6, C7, C9	Capacitor	5	GRM188R61E106MA73D	25V/1608	10uF
C4, C12, C15, C18, C23	Capacitor	5	GRM188B31E105KA75D	25V/1608	1uF
C8, C10, C11, C14, C17, C20, C25, C26, C30	Capacitor	9	GRM155B31H104KE14D	50V/1005	0.1uF
C27, C32	Capacitor	2	GRM1552C1H391JA01D	50V/1005	390pF
C28, C29	Capacitor	2	GRM1552C1H151JA01D	50V/1005	150pF
C33	Capacitor	1	GRM188R61E475KE11D	25V/1608	4.7uF
D1	LED	1	SML-D12P8WT86	-	
J1	USB 2.0 micro	1	UB-MC5BR3-SD204-4S-1-TBNMP	-	
J2	QTH-030-01-L-D-A	1	QTH-030-01-L-D-A	-	
J3	Pin header	1	TCHM13-70-010S-803R	2.54 mm pitch 10 pin X 1 row	
J4	Pin header	1	TCHM23-70-030S-803R	2.54 mm pitch 15 pin X 2 row	
J7	Pin header	1	TCHM23-70-014S-803R	2.54 mm pitch 7 pin X 2 row	
J8, J9, J13, J14, J15, J16, J17, J18, J19	Pin header	9	TCHM13-70-003S-803R	2.54 mm pitch 3 pin X 1 row	
J10, J11, J12	Pin header	3	TCHM13-70-002S-803R	2.54 mm pitch 2 pin X 1 row	
L1	Inductor	1	FDV0620-H-3R3MP3	-	3.3uH
L2, L3, L4, L5, L7	Ferrite beads	5	MPZ1608B471ATA00	-	
L8	Inductor	1	BRC2012T3R3MD	-	3.3uH
L9	Inductor	1	BRL3225T470K	-	47uH
P3	SMA Connector	1	SMA103-T16	-	
* P1, P2, P4, P5	SMA Connector	4	SMA103-T16	-	NC
* R1, R2, R13, R14, R15, R20, R21, R23, R26, R27, R28, R32, R33, R36, R37, R40, R53, R62, R91, R92	Resistor	20	RK73Z1ETTP	1A/1005	0(NC)
R3, R5, R8, R16, R17, R19, R24, R25, R29, R30, R31, R34, R35, R38, R39, R45, R46, R52, R56, R63, R64, R71, R72	Resistor	23	RK73Z1ETTP	1A/1005	0
R4	Resistor	1	RK73H1ETTP1500F	0.1W/1005	150
R6	Resistor	1	RK73H1ETTP1103F	0.1W/1005	110K
R7, R59	Resistor	2	RK73H1ETTP3002F	0.1W/1005	30K
R9	Resistor	1	RK73H1ETTP3000F	0.1W/1005	300
R10	Resistor	1	RK73H1ETTP 4020F	0.1W/1005	402
R11	Resistor	1	RK73H1ETTP2432F	0.1W/1005	24.3K
R12	Resistor	1	RK73H1ETTP3572F	0.1W/1005	35.7K
R18	Resistor	1	RK73H1ETTP33R0F	0.1W/1005	33
* R22	Resistor	1	RK73B1ETTP330J	0.1W/1005	33(NC)
R42, R43, R49, R50, R54, R55, R60, R61	Resistor	8	RK73H1ETTP1002F	0.1W/1005	10K
R44	Resistor	1	RK73H1ETTP49R9F	0.1W/1005	49.9
R47, R48	Resistor	2	RK73H1ETTP2201F	0.1W/1005	2.2K
* R51	Resistor	1	RK73B1ETTP303J	0.1W/1005	30K(NC)
R57, R58	Resistor	2	RK73H1ETTP1001F	0.1W/1005	1K
* R65	Resistor	1	RK73B1ETTP102J	0.1W/1005	1K(NC)
* TP1, TP2, TP3, TP4, TP11, TP12, TP13, TP21, TP22, TP23, TP24, TP25, TP31	TP	13	2mmX2mm		NC
U1	THCV243	1	-	See datasheet (CSP package)	
U2	LTC3621EMS8E#PBF	1	-	See datasheet (MS8E package)	
U3, U4	LT3088EST#PBF	2	-	See datasheet (ST package)	
U5	SG-8018CB24.000000MHz TJHPA	1	-	See datasheet	

8. Notices and Requests

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