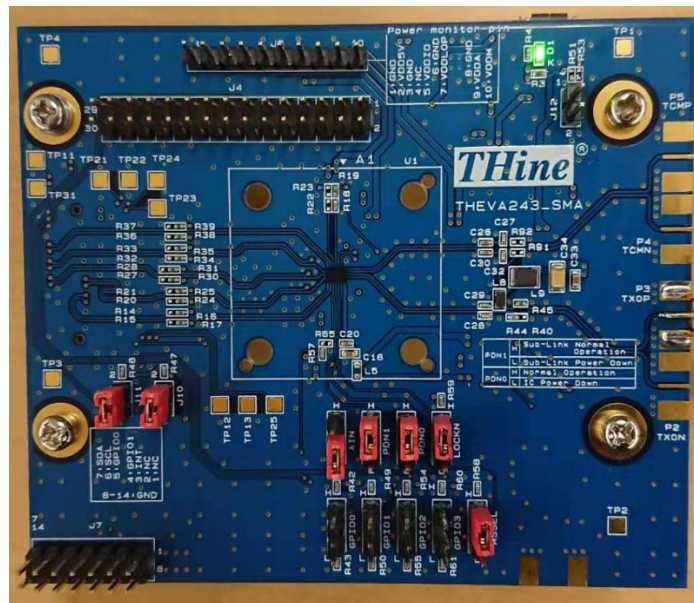




THEVA243-SMA Hardware Manual



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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.

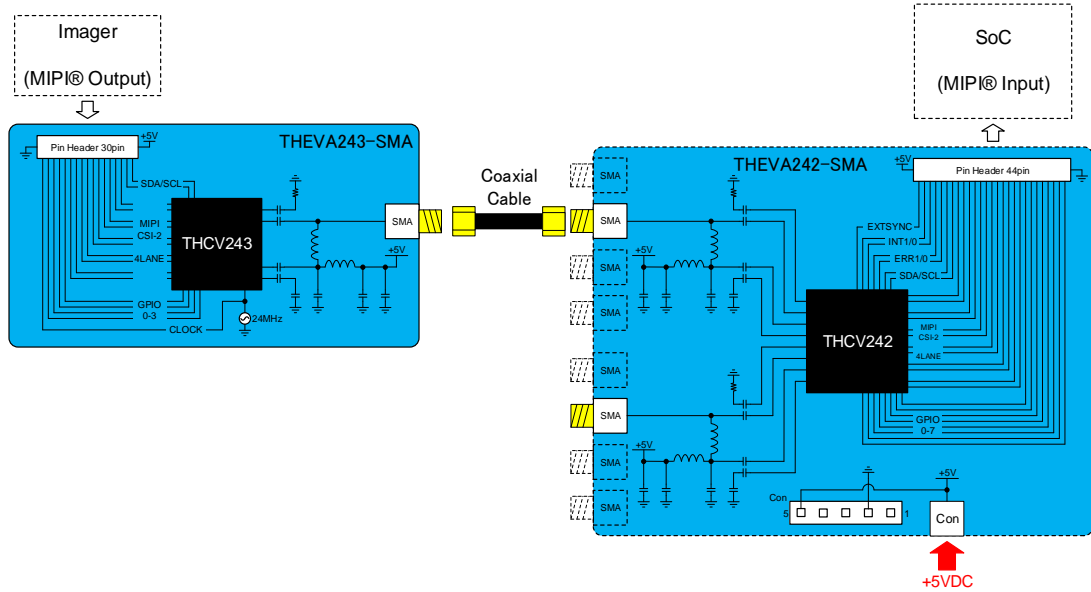


Figure 1 THEVA243-SMA and THEVA242-SMA connection example

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.

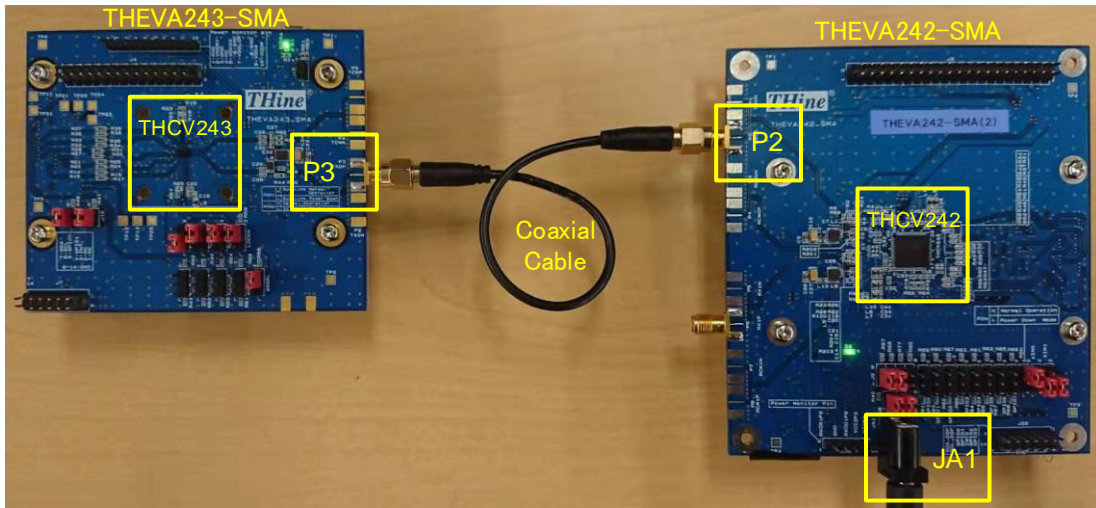


Figure 2 THEVA243-SMA and THEVA242-SMA connection

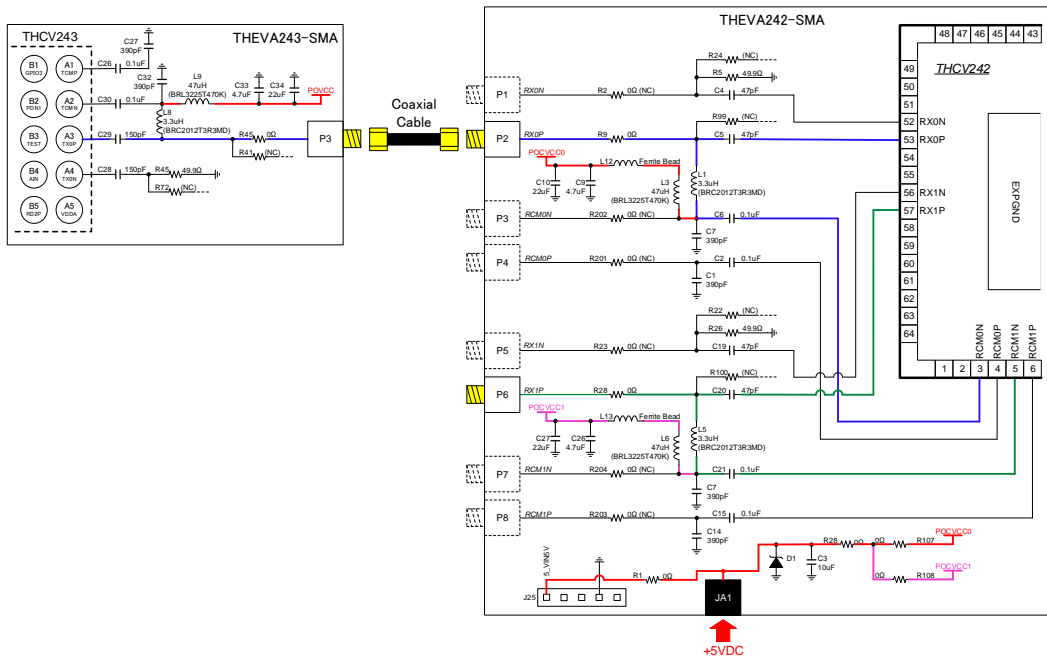


Figure 3 THEVA243-SMA and THEVA242-SMA connection

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.

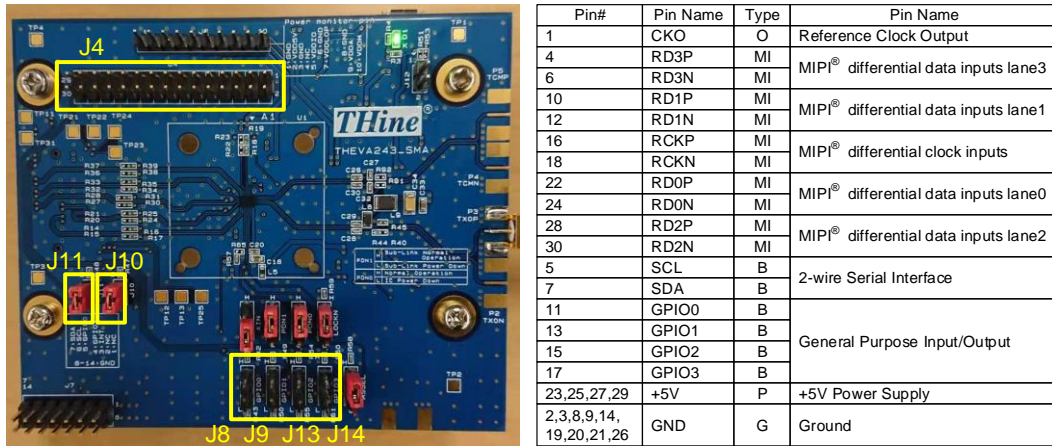


Figure 4 Connection with THEVA243-SMA and Imager

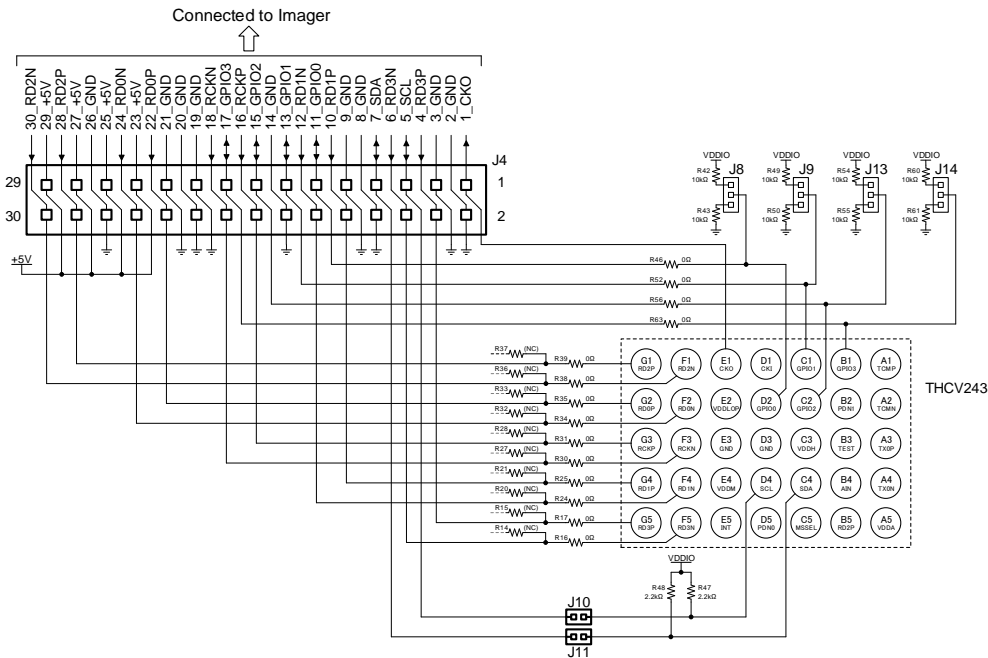


Figure 5 Connection with THEVA243-SMA and Imager

4. Pin setting of the THEVA243-SMA

As shown here by the Pin-settings.

*The Jumper-Pin should be prepared by users.

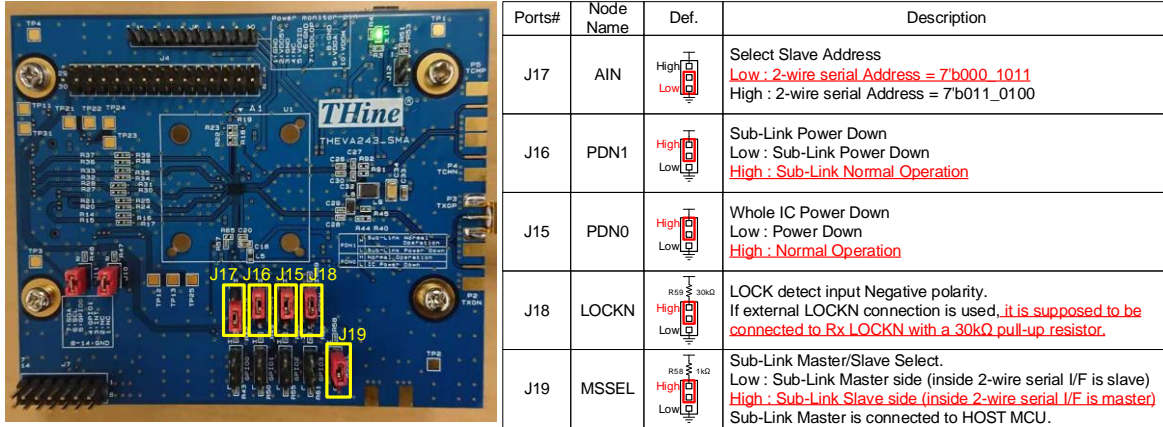


Figure 6 Pin setting of the THEVA243-SMA

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.

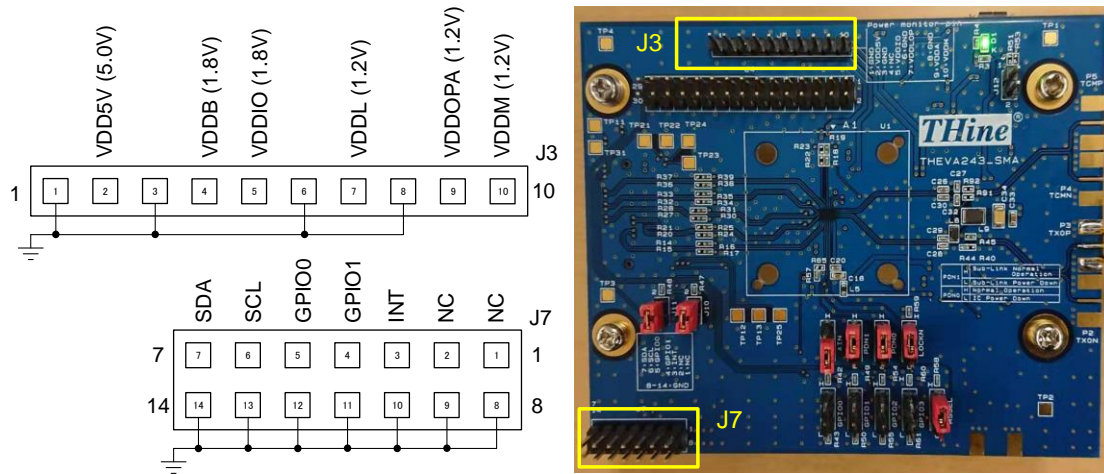
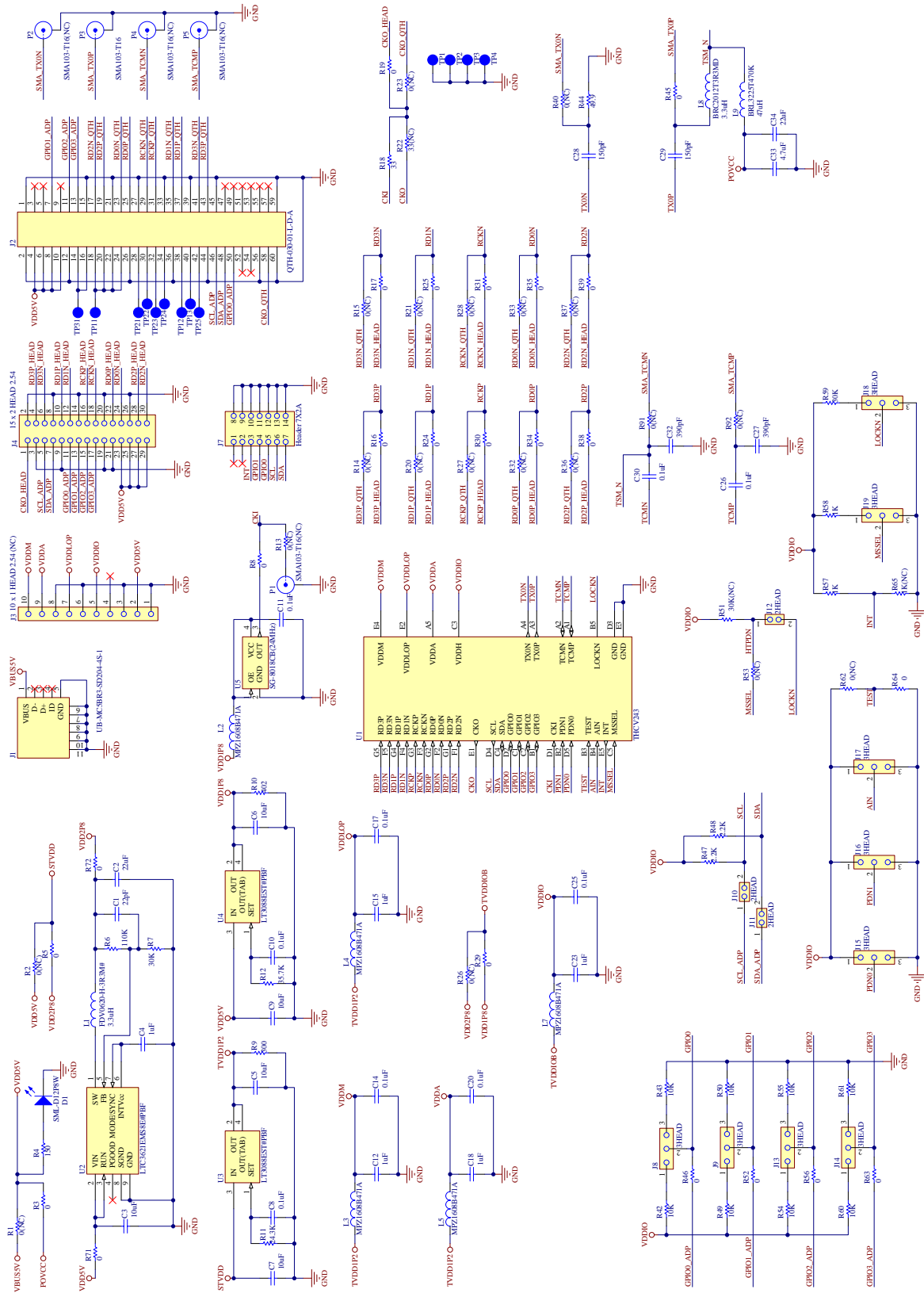


Figure 7 Monitor pin

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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