



Repair instruction

Published January 5, 2016

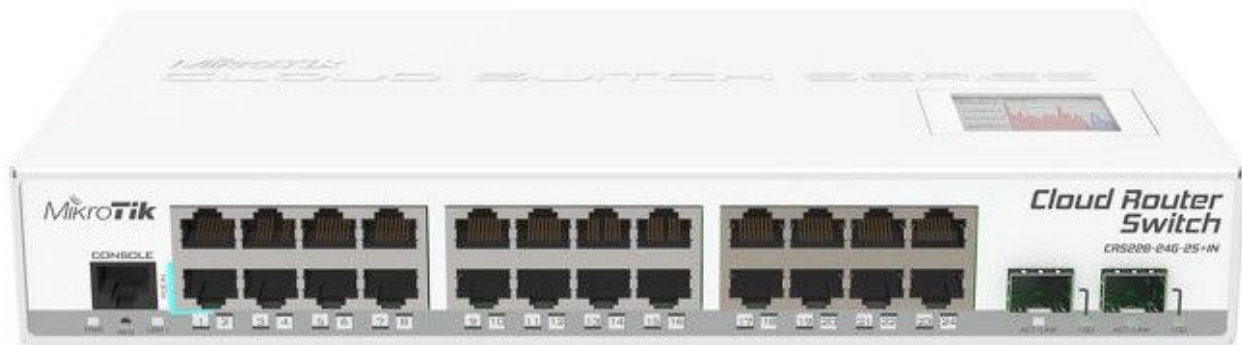
These repair instructions are for NON WARRANTY repairs only!
Please make visual inspection for signs of corrosion
or mechanical damages before starting.

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List of Cloud Router Switch CRS226-24G-2S+ series

CRS226-24G-2S+IN



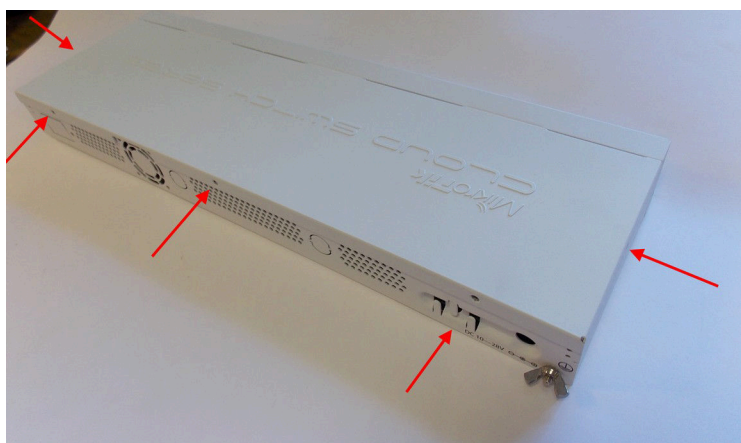
CRS226-24G-2S+RM



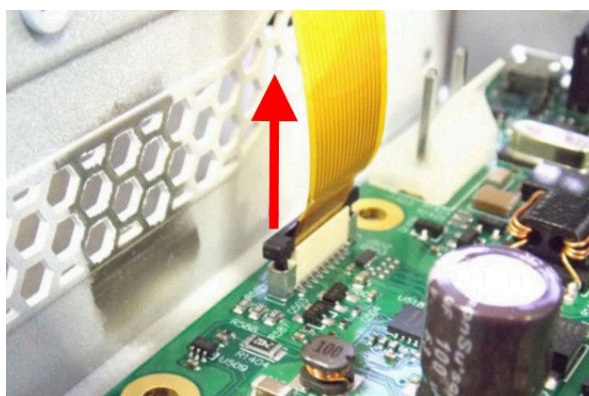
Disassembling information

Disassembling information

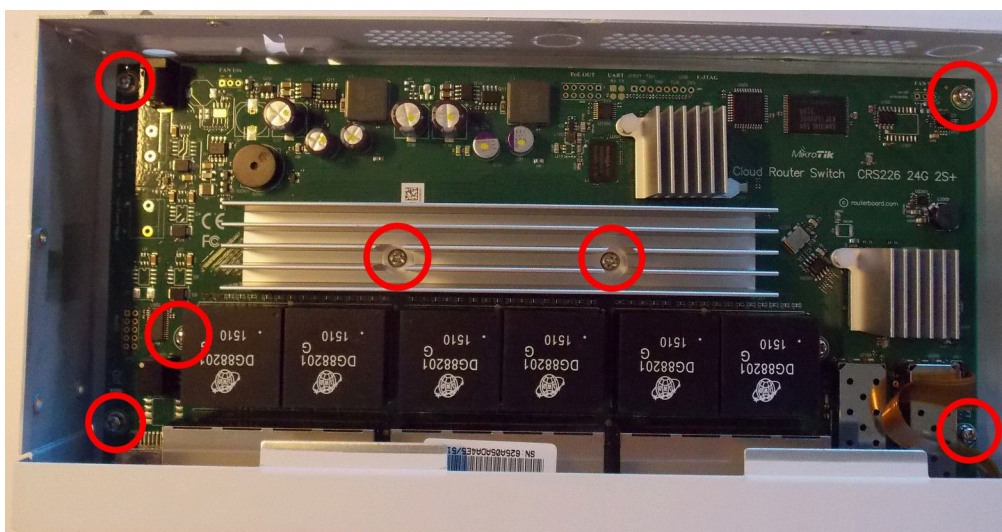
1. Step: use PH2 screw driver to loose backside screws, take off cover.



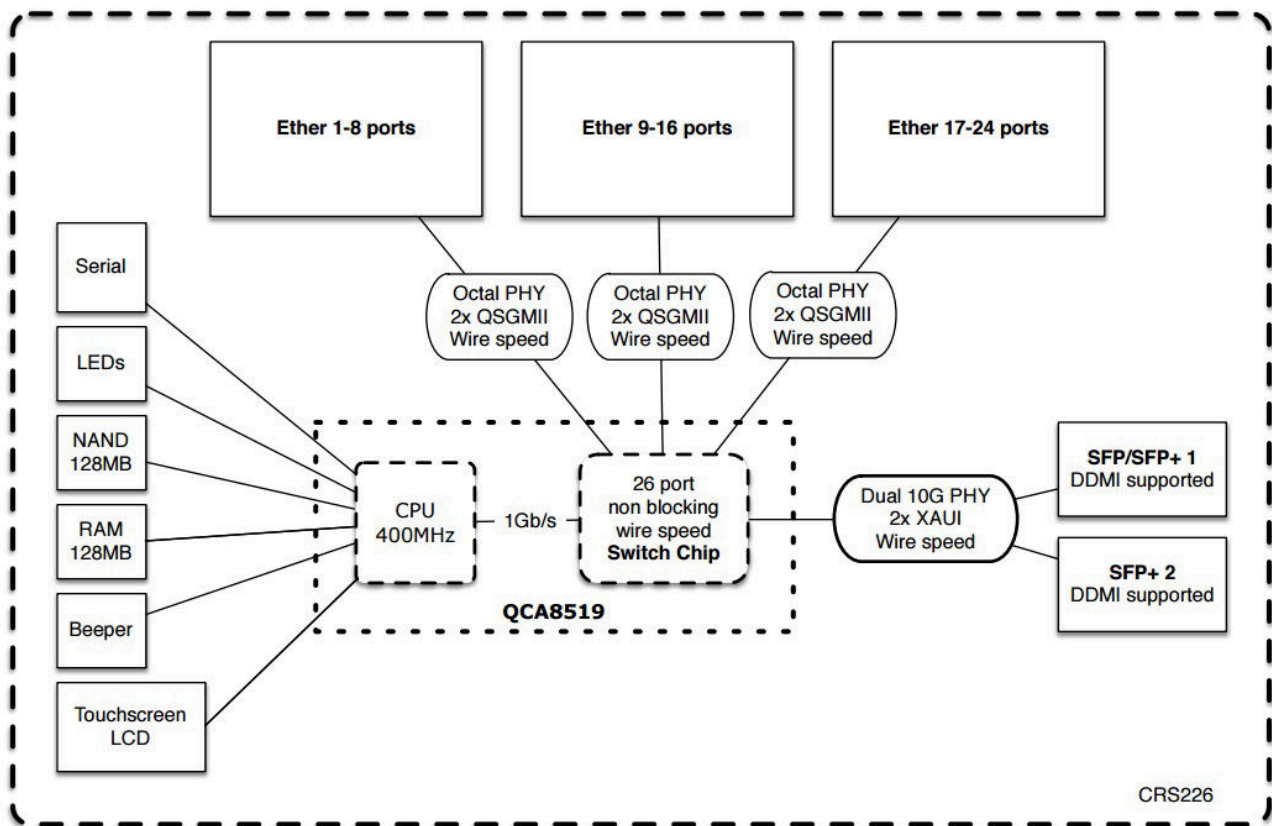
2. step: take off cover carefully, pay a tension to LCD connector. Push up both side of LCD connector from slot with "-" screwdriver as shown in next pictures



3. Step: use "+" screw driver to loose 7 pcs PCB screws, than take off PCB from case.



Block diagram of Cloud Router Switch CRS210-8G-2S+ series

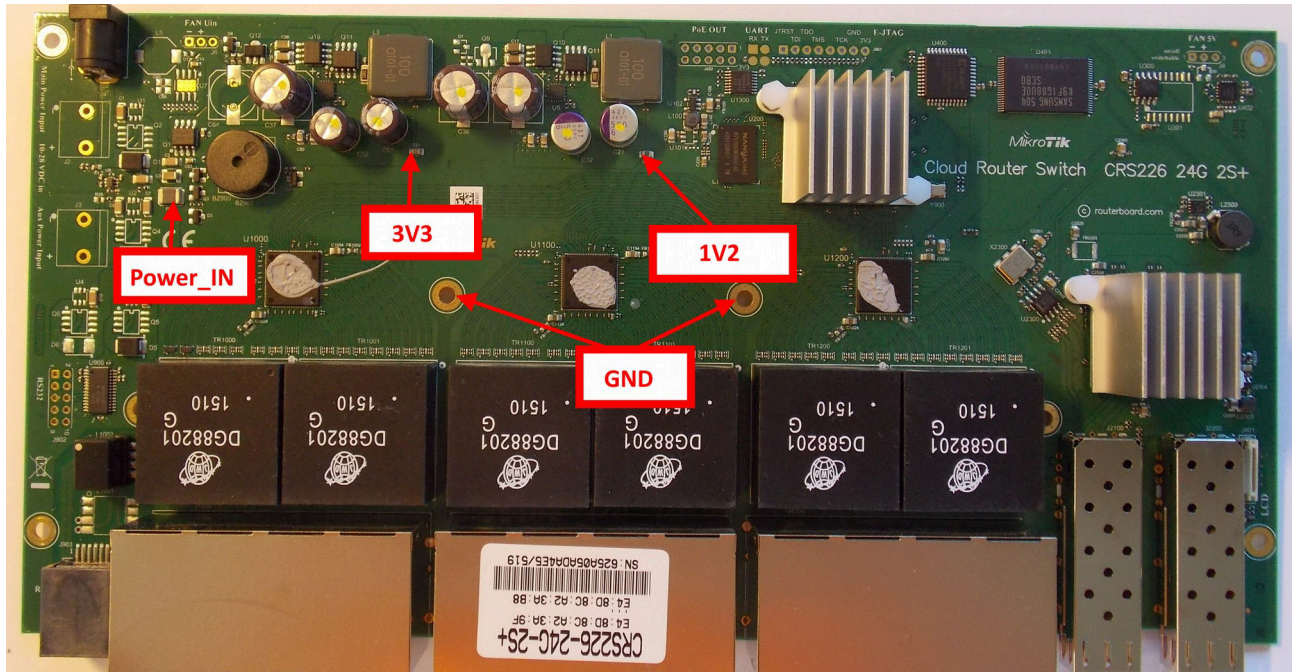


Routerboard does not power on

There no signs of any LED activity

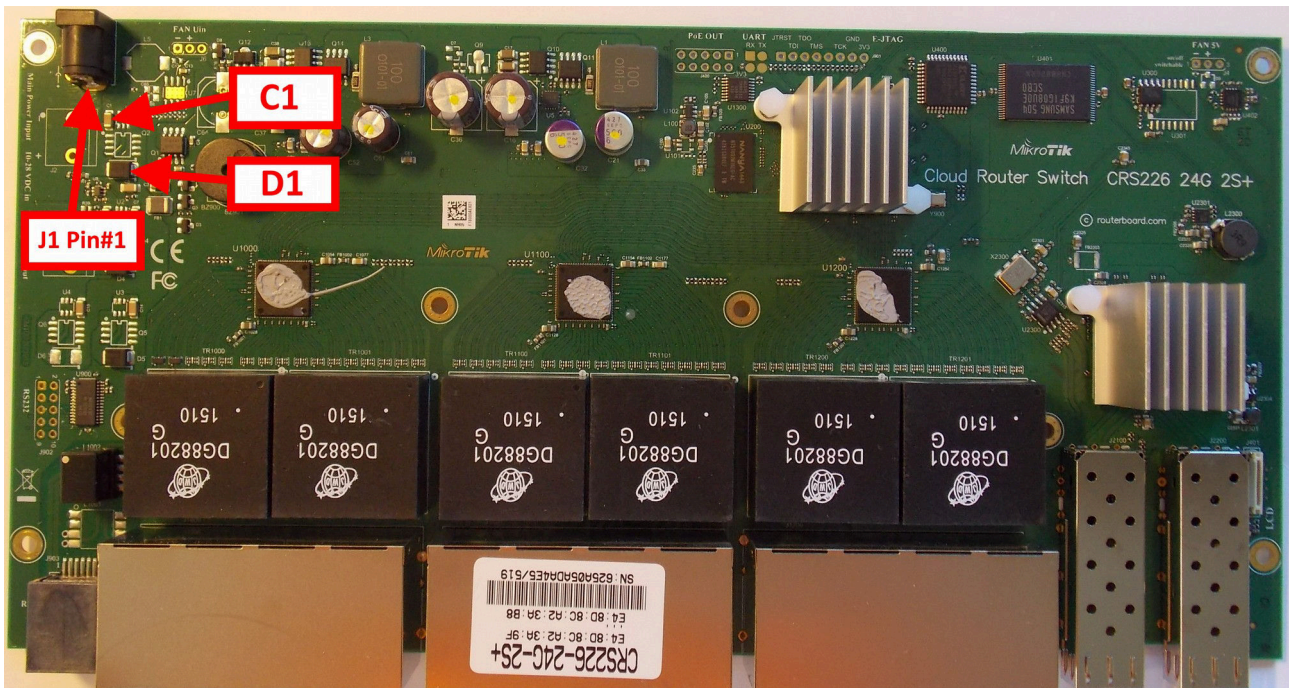
1. Find potential problem area

RouterBOARD does not turn on when one of the power is disconnected. check Which voltage is switched off, Power IN (10 – 28V), 3.3V or 1.2V.



2. If Power_IN Failed

1. When Power supply connected to Power jack J1,
 - 1.1 check 10 – 28V output on power jack J1 pin#1, if OK, go to next chapter, if not, follow recommendations:



- try different power supply, if did not help, go to next bullet

- measure if there is short circuit between GND and J1 Pin#1, if do, change C74, if did not help, go to next bullet

Capacitor 1uF 10% 100V X7R 1206	CL31B105KCHSNNE	Samsung Semiconductor Europe GmbH
Capacitor 1uF 10% 100V X7R 1206	GRM31CR72A105KA01L	Murata Manufacturing Co.
Capacitor 1uF 10% 100V X7R 1206	HMK316 B7105KL-T	Taiyo Yuden Co. Ltd.
Capacitor 1uF 10% 100V X7R 1206	C1206X105K101T	Holy Stone Enterprise Co., Ltd. (HEC)
Capacitor 1uF 10% 100V X7R 1206	C3216X7R105KHPS	Darfon's Headquarter

- try change J1 power jack, if does not help, board unrepairable.

DC Jack DIP Type PIN 2.0mm Black PE bag packing Ag plated pins	DJ-D507A-2.0	Dragon Well Electronics Co.,Ltd.
DC Jack 2.0mm, tin plated pins	201103-0110-72R	Liteconn Co., Ltd.
2.0 mm DC Jack (Rohs compliant)	DS-210-B	Sunny Young Enterprise Co., Ltd.
Connector WTJ	WTJ-020-04A	Sunny Young Enterprise Co., Ltd.
DC Powerjack	2DC-0005D100	Singatron Ent. Co., Ltd.
DC Jack 2.0mm, tin plated pins	SHD-2014SL-T	Powerway Electronics CO.,LTD
DC Jack 2.0mm/ RoHS	C8111-CCRTB000R	Hsuan Mao Technology Co., Ltd
Connec DC Jack 5.5/2.1mm Horizontal T/H /RoHS	PC-GK2.1	NINIGI

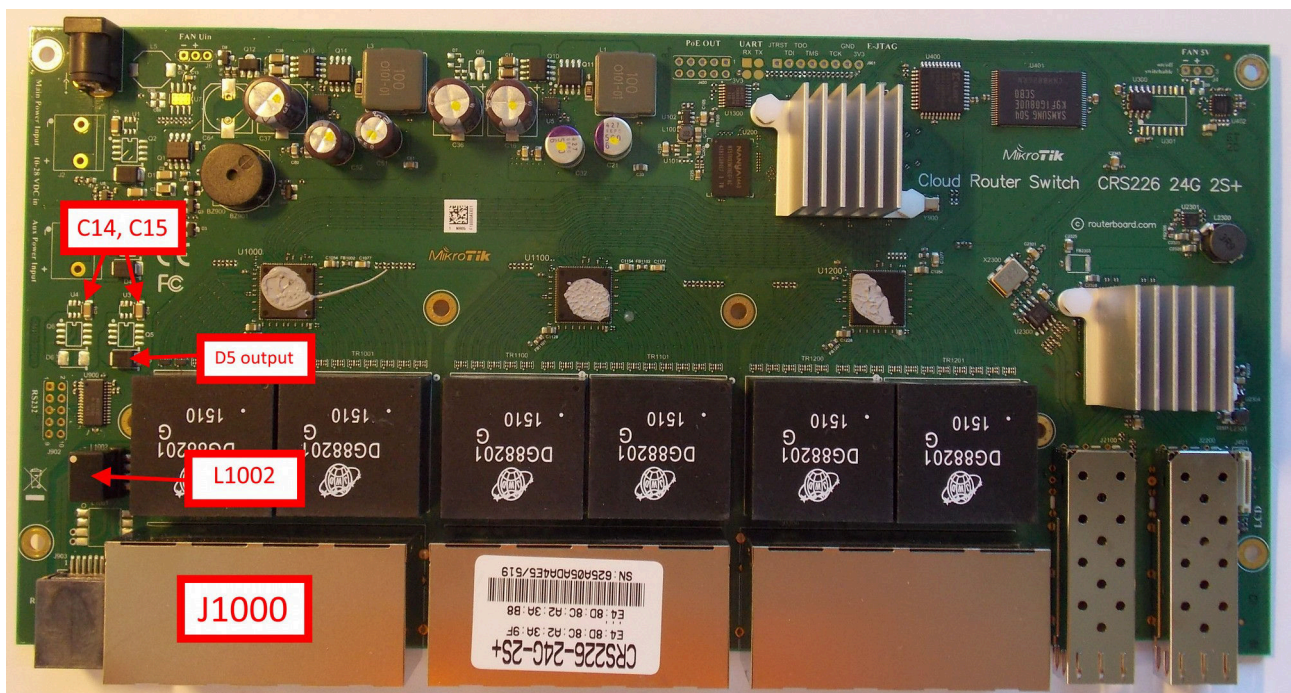
1.2 check 10 – 28V output on Schottky Diode D1 if ok, go to next chapter, if not, follow recommendations:

- try change Schottky Diode D1, if does not help, board unrepairable.

Diode Schottky 60V 3A SMB	B360B	Lite-On Semiconductor corporation
Diode Schottky 60V 3A DO-214AA SMB	SR36-GP	SINYORK CO., LTD.
Diode Schottky 60V 3A DO-214AA SMB	STPS3L60U	STMICROELECTRONICS A. P .
Diode Schottky 60V 3A SMB	SR36-T3-LF	Won-Top Electronics Co., Ltd.
Diode Schottky 60V 3A DO-214AA SMB	SK36S	General Electronics Components Co., LTD

2. When Power supply connected to POE_IN.

2.1 check 10 – 28V input of D5, if OK, go to next chapter, if not, follow recommendations:



- try change Schottky Diode D5, if does not help, board unrepairable.

Diode Schottky 60V 3A SMB	B360B	Lite-On Semiconductor corporation
Diode Schottky 60V 3A DO-214AA SMB	SR36-GP	SINYORK CO., LTD.
Diode Schottky 60V 3A DO-214AA SMB	STPS3L60U	STMICROELECTRONICS A. P .
Diode Schottky 60V 3A SMB	SR36-T3-LF	Won-Top Electronics Co., Ltd.
Diode Schottky 60V 3A DO-214AA SMB	SK36S	General Electronics Components Co., LTD

- measure if there is short circuit on C14, C15, if do, change C14, C15, if did not help, go to next bullet

Capacitor 10nF 10% 500V X7R 1206	CL31B103KGFNNNF	Samsung Semiconductor Europe GmbH
Capacitor 10nF 10% 500V X7R 1206	CL31B103KGFNNNE	Samsung Semiconductor Europe GmbH
Capacitor 10nF 10% 200V X7R 1206	C1206C103K2RACTU	KEMET Electronics S.A.
Capacitor 10nF 10% 250V X7R 1206	1206B103K251LT	Faithful Link Industrial Corp.
Capacitor 10nF 5% 200V NP0 1206	ECJ-3YC2D103J	Panasonic
Capacitor 10nF 5% 200V X7R 1206	12062C103JAT2A	AVX Corporation
Capacitor 10nF 10% 200V X7R 1206	B37872K2103K60	EPCOS AG
Capacitor 10nF 10% 200V X7R 1206	CC1206X103K201	Faithful Link Industrial Corp.
Capacitor 10nF 5% 200V NP0 1206	12062C103KAT2A	AVX Corporation
Capacitor 10nF 10% 200V X7R 1206	CL31B103KDCNNNC	Samsung Semiconductor Europe GmbH
Capacitor 10nF 10% 500V X7R 1206	C1206X103K501T	Holy Stone Enterprise Co., Ltd. (HEC)
Capacitor 10nF 10% 500V X7R 1206	2222 971 15636	Phycomp
Capacitor 10nF 10% 500V X7R 1206	CC1206KKX7RBBB103	Yageo Corporation
Capacitor 10nF 10% 200V X7R 1206	2238 931 15636	Phycomp
Capacitor 10nF 10% 500V X7R 1206	C3216X7R103KLTS	Darfon's Headquarter
Capacitor 10nF 10% 500V X7R 1206	C3216X7R103KLAS	Darfon's Headquarter
Capacitor 10nF 10% 500V X7R 1206	C3216X7R103KLPS	Darfon's Headquarter

- if does not help, than try change inductor L1002, if did not help, go to next bullet

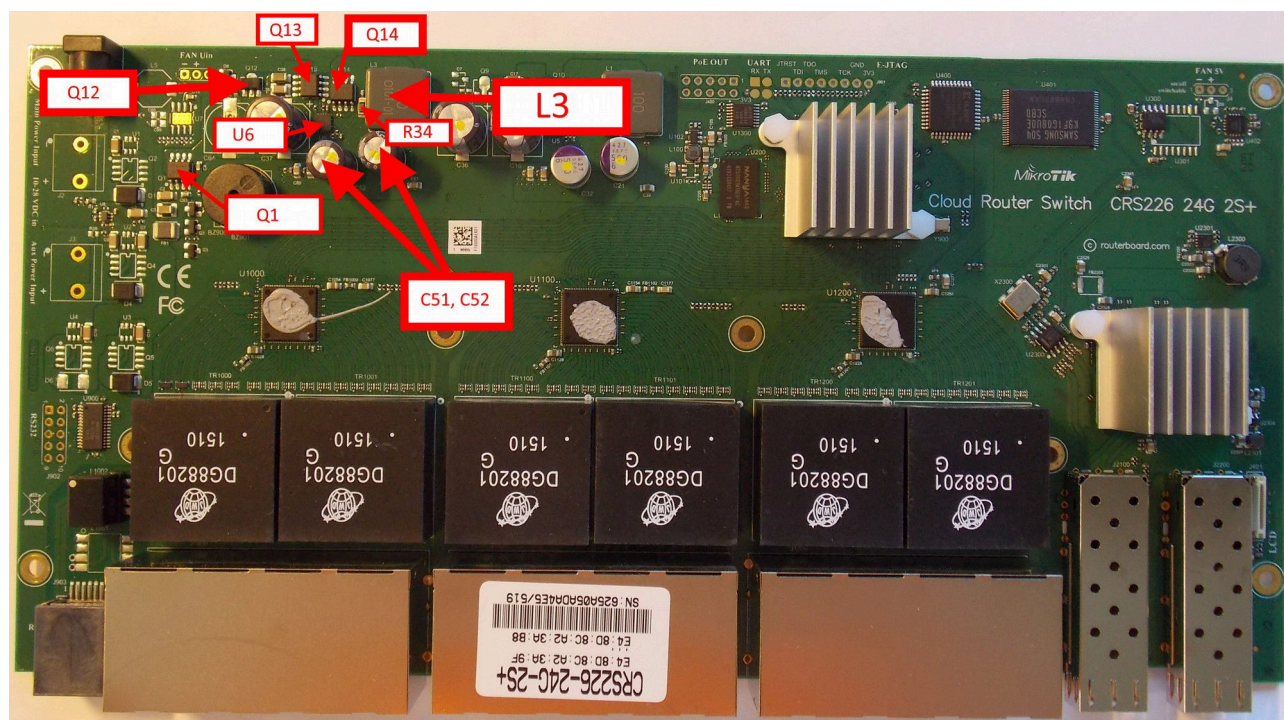
Passive PoE inductor 300uH 0.3Ohm, SMD, CAP, RoHS	BC2W4P-351M-1Arev08	Bao Cheng Electronics Co.,Ltd.,
Passive PoE inductor 300uH 0.3Ohm SMD bigger RoHS, T&R, Cap, New material	STR83-3C-281M	SHANGHAI MEISONGBEI ELECTRONICS CO.,LTD
Passive PoE inductor 300uH 0.3Ohm, SMD, CAP, RoHS	BC2W4P-351M-1A	Bao Cheng Electronics Co.,Ltd.,

- try change J1000,if did not help, board unrepairable.

RJ45 2x4 w/oLED w/Shield TH w/oEMI	415AE44AG1C00A13	CHANT SINCERE CO., LTD.
RJ45 2x4 w/oLED w/Shield TH w/oEMI	DW-918-26	Dragon Well Electronics Co.,Ltd.
RJ45 2x4 w/oLED w/Shield TH w/oEMI	PJ-D4-FDBH-FANNN-1	HTC

3. If 3V3 Failed

Problem area on top layer:



- try change Q1, if did not help, go to next bullet.

Transistor MOSFET P-Ch -60V -4.5A 90mOhm SO-8	P9006EVG	Niko Semiconductor Co. Ltd.
Transistor MOSFET P-Ch -60V -4A 100mOhm 3W SO-8	AO4441	Alpha & Omega
Transistor MOSFET P-Ch -60V -4A 90mOhm 2.5W SO-8	AP9576GM	Advanced Power Electronics Corp.

- try change Q13 and Q14, if did not help, go to next bullet.

Transistor MOSFET N-Ch 40V 11A 11.5mOhm SO-8 RoHS	AP9467AGM	Advanced Power Electronics Corp.
Transistor MOSFET N-Ch 40V 12.8A 10mOhm SO-8	FDS8447	Fairchild Semiconductor [FSC]
Transistor MOSFET N-Ch 40V 14A 11mOhm SO-8	AO4480	Alpha & Omega
Transistor MOSFET N-Ch 40V 11A 11.5mOhm SO-8 RoHS Halogen Free	AP9467AGM-HF	Advanced Power Electronics Corp.

- try change Q12, if did not help, go to next bullet.

Transistor NPN 80V 1A 1W Hfe=100-250 SOT89	BCX5616TA	Diodes Zetex Limited
Transistor NPN 80V 1A 1W Hfe=100-250 SOT89	BCX56-16,115	NXP Semiconductors
Transistor NPN 60V 1A 2W Hfe=100-250 SOT-89	BCX 55-16 E6433	Infineon Technologies Taiwan Co Ltd
Transistor NPN 80V 1A 2W Hfe=100-250 SOT-89	BCX 56-16 E6327	Infineon Technologies Taiwan Co Ltd

- try change L3, if did not help, go to next bullet.

Inductor 10uH 7.5A 28.2mOhm 12.9x13.8x5.0mm SMD T&R	BCIHP1350-100M	Bao Cheng Electronics Co.,Ltd.,
Inductor 10uH, 9A, 25.5mohm, 13.5x13.9x5.9mm	SRP1250-100M	Bourns Electronics (Taiwan) Ltd. [J.W.Miller]
Inductor 10uH 20%, 9A, 25.5mohm, 13x14.2x5.0mm, Tape&Reel	SDB1350MT100	Viking Tech Corporation

- try change R34, if did not help, go to next bullet.

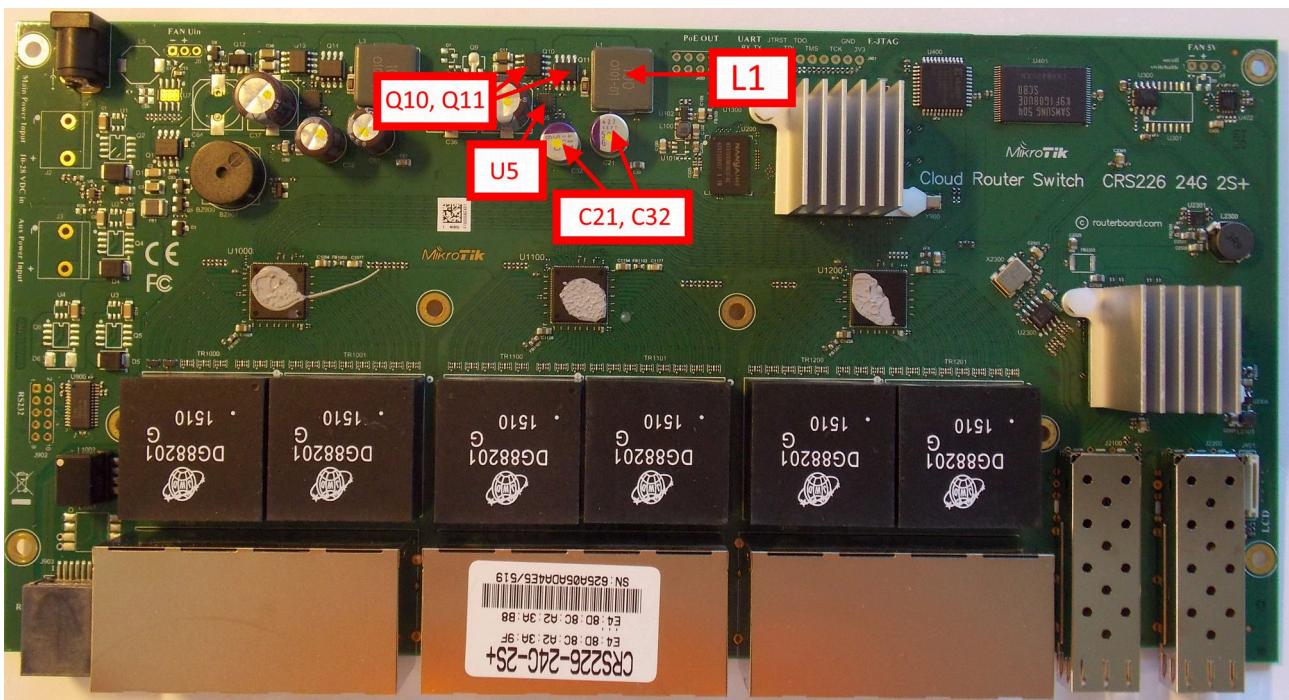
Resistor 10R 1% 1206	RC1206FR-0710RL	Yageo Corporation
Resistor 10R 1% 1206	MCR18EZHF10R0	ROHM CO., LTD.
Resistor 10R 1% 1206	CRCW1206 BC 10R0 TK 100 1%	Vishay Intertechnology, Inc.
Resistor 10R 1% 1206	RC1206FR-1010RL	Yageo Corporation

- try change U6, if did not help, board unrepairable.

Synchronous Buck Controller,Vin=4.5...26V, WQFN-14L_3.5x3.5	RT8209BGQW	Richtek Technology Corporation
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If 1V2 Failed

Problem area on top layer:



- try change Q10 and Q11, if did not help, go to next bullet.

Transistor MOSFET N-Ch 40V 11A 11.5mOhm SO-8 RoHS	AP9467AGM	Advanced Power Electronics Corp.
Transistor MOSFET N-Ch 40V 12.8A 10mOhm SO-8	FDS8447	Fairchild Semiconductor [FSC]
Transistor MOSFET N-Ch 40V 14A 11mOhm SO-8	AO4480	Alpha & Omega
Transistor MOSFET N-Ch 40V 11A 11.5mOhm SO-8 RoHS Halogen Free	AP9467AGM-HF	Advanced Power Electronics Corp.

- try change C21, C32, if did not help, go to next bullet.

Capacitor PolymerAl 560uF 20% 6.3V 8x9 TH P=3.5 3000h 5.7A 7mOhm	MP6RL560MD9	Matsuki Polymer Technology CO., LTD.
Capacitor PolymerAl 560uF 20% 6.3V 8x8 TH P=3.5 2000h 5.7A 8mOhm PSC-series	APSC6R3ELL561MH08S	NIPPON CHEMI-CON CORPORATION
Capacitor PolymerAl 560uF 20% 6.3V 8x9mm TH P=3.5 5000h 6.1A 7mOhm	6SEPC560MX	Sanyo [Panasonic]
Capacitor PolymerAl 560uF 20% 6.3V 8x8 TH P=3.5 3000h 5.6A 8mOhm CP-series	PCP567M6R3S1GNG08K	TEAPO Electronic Corporation
Capacitor PolymerAl 560uF 20% 6.3V 8x8mm TH P=3.5 2000h 5.7A 8mOhm	FP-6R3RE561M-L8	NICHICON CORPORATION

- try change L1, if did not help, go to next bullet.

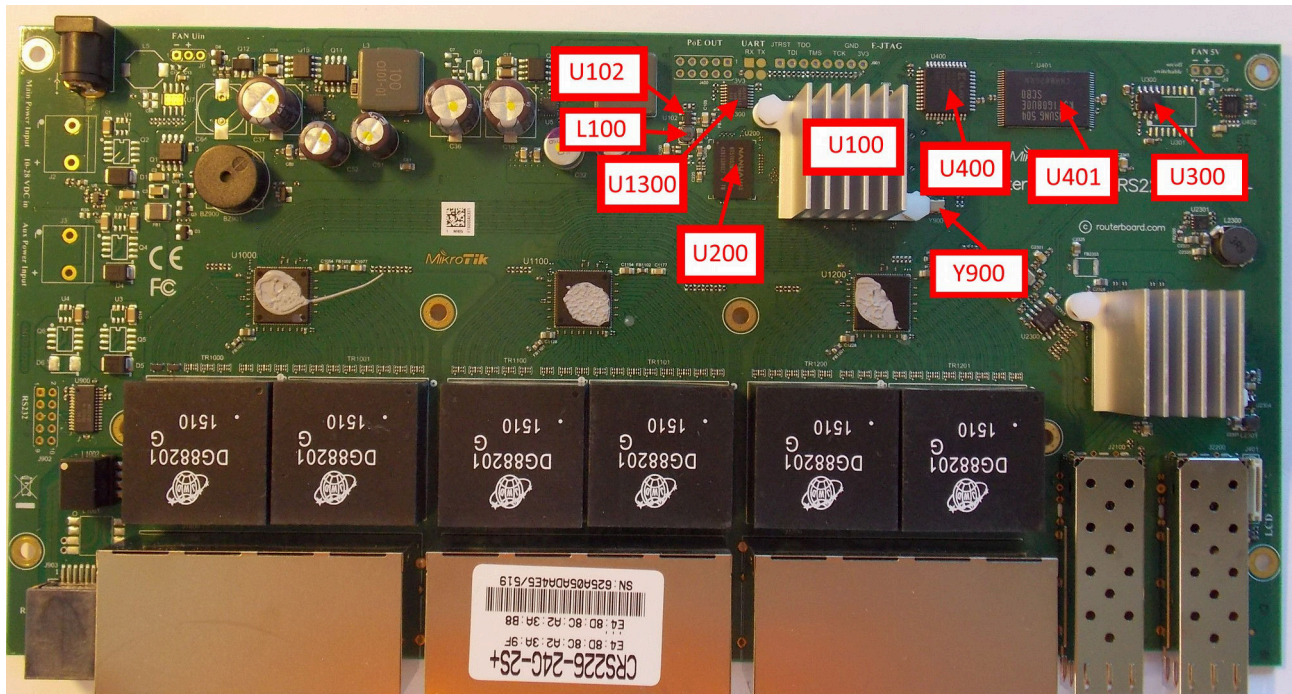
Inductor 10uH 7.5A 28.2mOhm 12.9x13.8x5.0mm SMD T&R	BCIHP1350-100M	Bao Cheng Electronics Co.,Ltd.,
Inductor 10uH, 9A, 25.5mohm, 13.5x13.9x5.9mm	SRP1250-100M	Bourns Electronics (Taiwan) Ltd. [J.W.Miller]
Inductor 10uH 20%, 9A, 25.5mohm, 13x14.2x5.0mm, Tape&Reel	SDB1350MT100	Viking Tech Corporation

- try change U5, if did not help, go to next bullet.

Synchronous Buck Controller,Vin=4.5...26V, WQFN-14L_3.5x3.5	RT8209BGQW	Richtek Technology Corporation
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Routerboard does not boot

Problem area on top layer:



1. If Netinstall can see the board, but can not install it

- try change RAM Flash U200, if did not help, go to next bullet

DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C T&R	W9751G6KB-25	Winbond Electronics Corp.
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C Tray	W9751G6KB-25 (tray)	Winbond Electronics Corp.
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C	NT5TU32M16DG-AC	NANYA TECHNOLOGY CORPORATION [F
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C T&R	K4T51163QJ-BCE7T00	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+95C Tray	K4T51163QJ-BCE7000	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C	D59C1512164ZTJ25	Delson Technology Co.,Ltd
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+95C	NT5TU32M16EG-AC	NANYA TECHNOLOGY CORPORATION [F
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C T&R	K4T51163QQ-BCE7T00	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C Tray	K4T51163QQ-BCE7000	Samsung Semiconductor Europe GmbH

- try change NAND Flash U401, if did not help, go to next bullet

NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc 0+70C (Lead free) NOP4	HY27UF081G2A-TPCB	Hynix Semiconductor GmbH
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C NOP4	NAND01GW3B2CN6E	Numonyx SA - German Branch
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -10+125C PB-Free Tray	K9F1G08U0D-SCB0000	Samsung Semiconductor Europe GmbH
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C 1bit-ECC Tray	S34ML01G100TFI900	Spansion Inc.
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc 0+70C RoHS Hardware 8	TC58BVG0S3HTA00B4Q	Toshiba
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C NOP4	W29N01GVSIAA	Winbond Electronics Corp.

- try change CPU chip U100, if did not help, board unrepairable

VIVO,24 GE ports + 2x10GE/FHL websmart,L2 managed, L2+ managed GE Switch , Au, C-temp	QCA8519-AC2C	Qualcomm Atheros Technology Ltd.
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If source of problem is U300 or U400 board is unrepairable.

2. If Board Leds turn on, board is unreachable through LAN or SFP+ ports and console shows no output

- If there no 1V8 output on L100 try change U102, if did not help, go to next bullet

1.25MHz, 400mA (works with 600mA load). PWM Step-Down DC/DC converter	RT8025GJ5	Richtek Technology Corporation
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Halogen free	RT8009GJ5	Richtek Technology Corporation
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Pb free	RT8009PJ5	Richtek Technology Corporation
1.5MHz 600mA Step-Down DC-DC converter Adjustable SOT-23-5	AUR9704AGH	Auramicro Co., Ltd.
2.2MHz, 600mA Step-Down DC/DC converter TSOT-23-5	TPS62561DDCR	Texas Instruments

- If there no 1V8 output on L100 try change L100, if did not help, go to next bullet

Inductor 2.2uH 30% 1.48A 3.2x3.2x2 RoHS	BCRH2D18B/HP-2R2N-NL	Bao Cheng Electronics Co.,Ltd.,
Inductor 2.2uH 25% 1.5A 3.2x3.2x2mm 88mOhm RoHS	CDRH2D18B/HPNP-2R2N	Sumida Trading Company Limited

- try change RAM Flash U200, if did not help, go to next bullet

DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C T&R	W9751G6KB-25	Winbond Electronics Corp.
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C Tray	W9751G6KB-25 (tray)	Winbond Electronics Corp.
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C	NT5TU32M16DG-AC	NANYA TECHNOLOGY CORPORATION [F
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C T&R	K4T51163QJ-BCE7T00	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+95C Tray	K4T51163QJ-BCE7000	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+85C	D59C1512164ZTJ25	Delson Technology Co.,Ltd
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+95C	NT5TU32M16EG-AC	NANYA TECHNOLOGY CORPORATION [F
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C T&R	K4T51163QQ-BCE7T00	Samsung Semiconductor Europe GmbH
DDR2 SDRAM 512Mbit DDR2-800 32Mx16bit BGA-84 0+90C Tray	K4T51163QQ-BCE7000	Samsung Semiconductor Europe GmbH

- try change NAND Flash U401, if did not help, go to next bullet

NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc 0+70C (Lead free) NOP4	HY27UF081G2A-TPCB	Hynix Semiconductor GmbH
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C NOP4	NAND01GW3B2CN6E	Numonyx SA - German Branch
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -10+125C PB-Free Tray	K9F1G08U0D-SCB0000	Samsung Semiconductor Europe GmbH
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C 1bit-ECC Tray	S34ML01G100TFI900	Spansion Inc.
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc 0+70C RoHS Hardware 8	TC58BVG0S3HTA00B4Q	Toshiba
NAND Flash 1Gbit x8 TSOP-48 3.3V Vih0.8Vcc -40+85C NOP4	W29N01GVSIAA	Winbond Electronics Corp.

- try change U1300, if did not help, go to next bullet

8-bit shift-and-store latch, Tape&Reel	74HC595T16-13	Diodes Incorporated
8-bit shift-and-store latch	74HC595PW,118	NXP Semiconductors
IC 8BIT SHIFT REGISTER TSSOP16	SN74HC595PW	Texas Instruments
8-bit shift-and-store latch	74HC595PW,112	NXP Semiconductors

- try change CPU chip U100, if did not help, board unrepairable

VIVO,24 GE ports + 2x10GE/FHL websmart,L2 managed, L2+ managed GE Switch , Au, C-temp	QCA8519-AC2C	Qualcomm Atheros Technology Ltd.
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- try change Y900, if did not help, go to next bullet

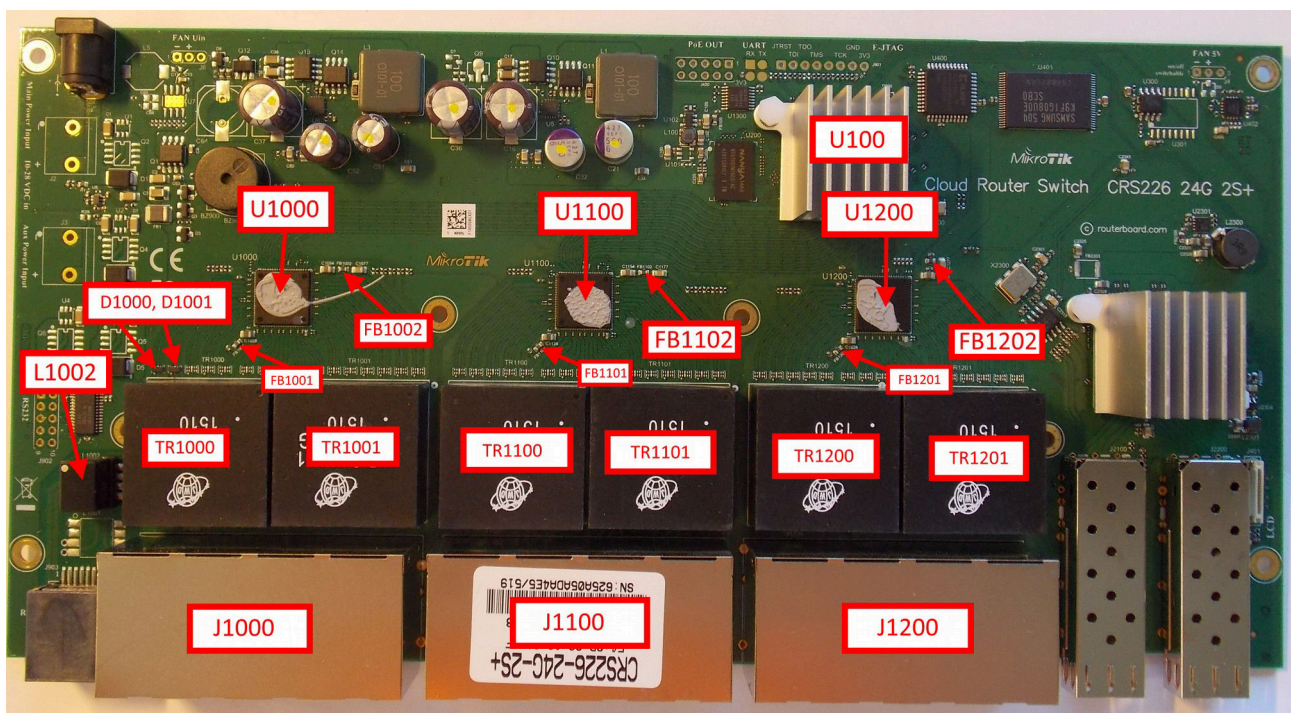
Crystal 25MHz 20ppm 10pF -20+70 3.2x2.5	FL2500121	PSE Technology Corporation
Crystal 25MHz 15ppm 10pF -10+75 3.2x2.5 SMD	NX3225SA-25.000000MHZ	Nihon Dempa Kogyo Co., Ltd.
Crystal 25MHz 20ppm 10pF -20+70 3.2x2.5	NXK25.000AE10F-BK7-2	NSK Jenjaan Quartek Corporation
Crystal 25MHz 20ppm 10pF -20+70 3.2x2.5	Q 25,0-JXS32-10-10/20-FU-LF	Jauch Quartz GmbH

- If source of problem is U300 or U400 board is unrepairable.

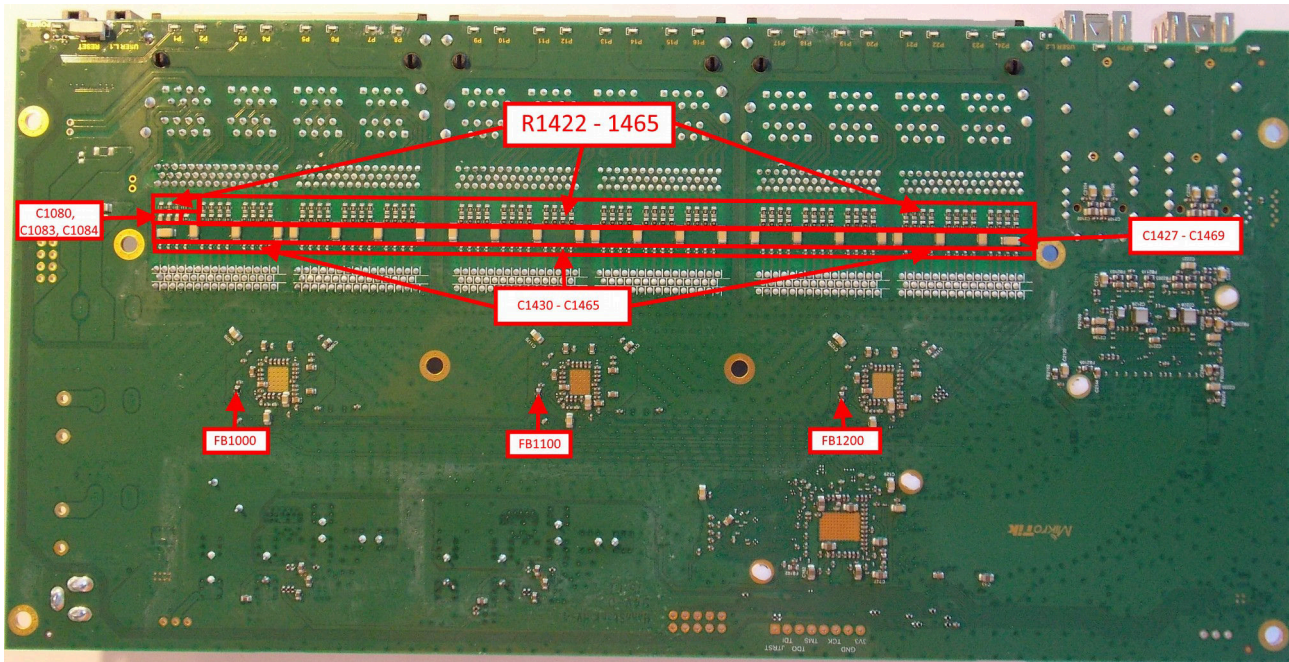
Problems with ether ports

1. Ethernet port (Eth1-Eth24) does not work

Problem area on top layer:



Problem area on bottom layer:



- If there no 3V3 output on FB1002, FB1102, FB1202 on top layer try change it, if did not help, go to next bullet

Ferrite Bead 120 Ohm 2.5A 0603	CB03YTYH121	Viking Tech Corporation
Ferrite Bead 120 Ohm 3A 0603	BLM18SG121TN1D	Murata Manufacturing Co.

- If there no 1V2 output on FB1001, FB1101, FB1201 on top layer, try change it, if did not help, go to next bullet

Ferrite Bead 120 Ohm 2.5A 0603	CB03YTYH121	Viking Tech Corporation
Ferrite Bead 120 Ohm 3A 0603	BLM18SG121TN1D	Murata Manufacturing Co.

- try change FB1000, FB1100, FB1200 on bottom layer, if did not help, go to next bullet

Ferrite Bead 120 Ohm 2.5A 0603	CB03YTYH121	Viking Tech Corporation
Ferrite Bead 120 Ohm 3A 0603	BLM18SG121TN1D	Murata Manufacturing Co.

- try change R1422 - 1465 on bottom layer, if did not help, go to next bullet

Resistor 75R 1% 0603	RC0603FR-1075RL	Yageo Corporation
Resistor 75R 1% 0603	RC0603FR-0775RL	Yageo Corporation
Resistor 75R 1% 0603	2322 704 67509	Panasonic
Resistor 75R 1% 0603	ERJ-3EKF75R0V	Panasonic
Resistor 75R 1% 0603	RC1608F750CS	Yageo Corporation
Resistor 75R 1% 0603 1/10W	WR06X75R0FTL	Walsin Technology

- try change C1080, C1083, C1084 on bottom layer, if did not help, go to next bullet

Capacitor 10nF 10% 100V X7R 0603	CL10B103KC8NNNC	Samsung Semiconductor Europe GmbH
Capacitor 10nF 10% 100V X7R 0603	06031C103KAT2A	AVX Corporation
Capacitor 10nF 10% 100V X7R 0603	GCM188R72A103KA37D	Murata Electronics
Capacitor 10nF 10% 100V X7R 0603	C0603X103K101T	Holy Stone Enterprise Co., Ltd. (HEC)

- try change C1430 - C1465 on bottom layer, if did not help, go to next bullet

Capacitor 0.1uF 10% 16V X7R 0402	C1005X7R104KETS	Darfon's Headquarter
Capacitor 0.1uF 10% 16V X7R 0402	EMK105B7104KV-F	Taiyo Yuden Co. Ltd.
Capacitor 0.1uF 10% 16V X7R 0402	CC0402KKX7R7BB104	Faithful Link Industrial Corp.
Capacitor 0.1uF 10% 16V X7R 0402	0402X104K160CT	Faithful Link Industrial Corp.

- try change C1427 - C1469 on bottom layer, if did not help, go to next bullet

Capacitor 1nF 10% 2kV X7R 1206	MC06KTB202102	Viking Tech Corporation
Capacitor 1nF 10% 2kV X7R 1206	C1206X102K202T	Holy Stone Enterprise Co., Ltd. (HEC)
Capacitor 1nF 10% 2kV X7R 1206	1206GC102KAT1A	AVX Corporation
Capacitor 1nF 10% 2kV X7R 1206	2250 021 15623	Phycomp

- try change D1000, D1001 on top layer, if did not help, go to next bullet

Diode Array TVS 150W 4 channel low cap DFN-10	L15ESDL5V0NA-4	Lite-On Semiconductor corporation
Diode Array TVS 4 channel low cap DFN-10	SP3012-04UTG	Littelfuse, Inc.
Diode Array TVS 4 channel low cap DFN-10	AOZ8808DI-05	Alpha & Omega
Diode Array TVS 4 channel low cap DFN-10	LXES2TBCC4-028	Murata Electronics

- try change L1002 on top layer, if did not help, go to next bullet

Passive PoE inductor 300uH 0.30hm, SMD, CAP, RoHS	BC2W4P-351M-1Arev08	Bao Cheng Electronics Co.,Ltd.,
Passive PoE inductor 300uH 0.30hm SMD bigger RoHS, T&R, Cap, New material	STR83-3C-281M	SHANGHAI MEISONGBEI ELECTRONICS CO.,LTD
Passive PoE inductor 300uH 0.30hm, SMD, CAP, RoHS	BC2W4P-351M-1A	Bao Cheng Electronics Co.,Ltd.,

- try change CPU U100, if did not help, go to next bullet

VIVO, 24 GE ports + 2x10GE/FHL websmart, L2 managed, L2+ managed GE Switch , Au, C-temp	QCA8519-AC2C	Qualcomm Atheros Technology Ltd.
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- try change U1000, U1100, U1200, if did not help, go to next bullet

8 ports GbE PHY with 2* QSGMII interface, Au, C-temp	QCA8059-AL1C	Qualcomm Atheros Technology Ltd.
8 ports GbE PHY with 2* QSGMII interface, Au, C-temp	QCA8059-3L1E	Qualcomm Atheros Technology Ltd.

- try change TR1000, TR1001, TR1100, TR1101, TR1200, TR1201, if did not help, go to next bullet board unrepairable

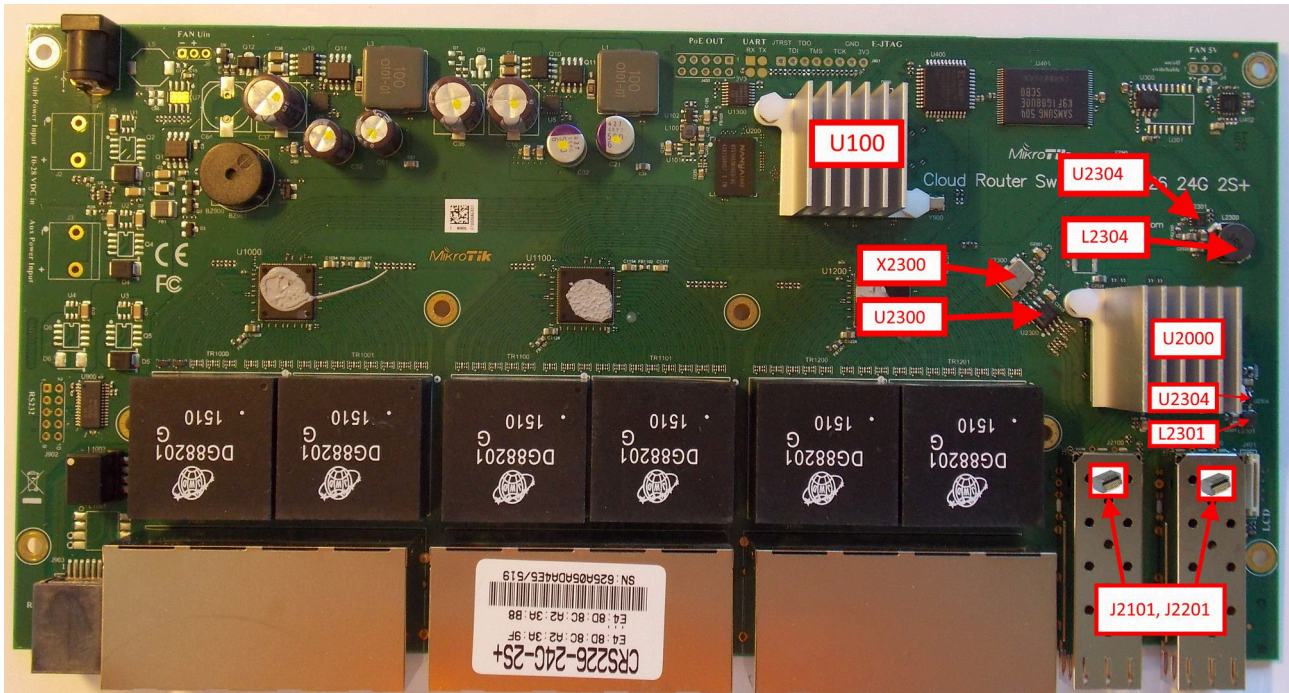
10/100/1000 Quad port Ethernet transformer TH 88pin wider 29x29x16mm	NS778801	Feei Cherng Enterprise CO., LTD.
10/100/1000 Quad port Ethernet transformer TH 88pin wider 29.1x29.5x20.4mm 802.3ab RoHS	LGP5409 LF	Bothhand Enterprise Inc.
10/100/1000 Quad port Ethernet transformer TH 88pin wider 29.1x29.3x16mm	ATPL-357R	Atech Technology Co., Ltd.
10/100/1000 Quad port Ethernet transformer TH 88pin wider 29.4x29.1x14.7mm	GL4P1012	ArchiCore Electronics CO., LTD

- try change J1000, J1100, J1200 on top layer, if did not help, board unrepairable

RJ45 2x4 w/oLED w/Shield TH w/oEMI	PRJ-4200002NL	Prosper Electronics & Ceptor Labs
RJ45 2x4 w/oLED w/Shield TH w/oEMI	415AE44AG1C00A13	CHANT SINCERE CO., LTD.
RJ45 2x4 w/oLED w/Shield TH w/oEMI	PJ-D4-FDBH-FANNN-1	HTC
RJ45 2x4 w/oLED w/Shield TH w/oEMI	DW-918-26	Dragon Well Electronics Co.,Ltd.
RJ45 2x4 w/oLED w/Shield TH w/oEMI	8801-31C8810221	Huaxin Electronics Co., Ltd.

2. SFP+1 or SFP+2 does not work

Problem area on top layer:



- try change U2000 on top layer, if did not help, go to next bullet

Dual Port Serial 10Gbps-to-XAUI Transceiver with Adaptive EDC (S/QT2225PRKDB	Applied Micro Circuits Corporation (AMCC)
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- try change X2300 on top layer, if did not help, go to next bullet

Crystal Oscillator 156.25MHz 50ppm 3.3V LVPECL, Jitter 0.8ps, Tr/Tf 600ps, -20+70 7x5	WX72F62007	PSE Technology Corporation
Crystal Oscillator 156.25MHz 50ppm 3.3V LVPECL, Jitter 0.8ps, Tr/Tf 350ps, -20+70 7x5	JX7021C0156.250000	PSE Technology Corporation
Crystal Oscillator 156.25MHz 25ppm 3.3V LVPECL, -20+70 7x5	SO7050CP-156250-O3X-BBC-MA	Yoketan Corporation
Crystal Oscillator LVPECL 156.25MHz 50ppm 3.3V -20+70C 7x5mm	DSC1122NE1-156.2500T	Discera, Inc.

- try change U2300 on top layer, if did not help, go to next bullet

PECL 1:2 Fanout buffer 3.3V SOIC-8 RoHS T&R	MC10LVEP11DR2G	ON Semiconductor [ONS]
PECL 1:2 Fanout buffer 3.3V RoHS	SN65LVEP11DR	Texas Instruments
PECL 1:2 Fanout buffer 3.3V SOIC-8 RoHS T&R	SY100EL11VZGTR	Micrel Inc.

- try change FB2303 on top layer, if did not help, go to next bullet

PO4501NT Ferrite Bead 90 Ohm 9A 1812 4mOhm design code P04501NT	FBMA-11-453215-900A90T	King Core Electronics Inc.
Ferrite Bead 125 Ohm 8A 1812	HI1812V101R-10	Laird technologies [Steward]

- try change resistor U2304 on top layer, if did not help, go to next bullet

1.25MHz, 400mA (works with 600mA load). PWM Step-Down DC/DC converter	RT8025GJ5	Richtek Technology Corporation
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Halogen free	RT8009GJ5	Richtek Technology Corporation
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Pb free	RT8009PJ5	Richtek Technology Corporation
1.5MHz 600mA Step-Down DC-DC converter Adjustable SOT-23-5	AUR9704AGH	Auramicro Co., Ltd.

- try change CPU chip U100, if did not help, go to next bullet

VIVO, 24 GE ports + 2x10GE/FHL websmart, L2 managed, L2+ managed GE Switch , Au, C-temp	QCA8519-AC2C	Qualcomm Atheros Technology Ltd.
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- try change connectors J2101, J2201 on top layer under SFP cage, if did not help, go to next bullet

Connector SFP 20pin 0.8mm T&R	3S102027-N11-7F	Foxconn Interconnect Technology Limited c/o Foxtek (UK) Ltd
Connector SFP 20pin 0.8mm T&R	902DH20BCT0100C3	CHANT SINCERE CO., LTD.
Connector SFP 20pin 0.8mm T&R	N3313-035-04	CTK Contact Electronics Co., Ltd.
Connector SFP 20pin 0.8mm T&R	NPD-10537	Liteconn Co., Ltd.
Connector SFP 20pin 0.8mm T&R	J198012-A130-A01	Jen Jia Precision Technology Co.,LTD
Connector SFP 20pin 0.8mm T&R	C023494-01	Chufon Technology Co., Ltd.
Connector SFP 20pin 0.8mm T&R	092CAAC20AA	Dragonstate Technology Co., LTD
Connector SFP 20pin 0.8mm T&R	NN330A035	Nextronics Engineering Corp.
Connector SFP 20pin 0.8mm T&R	CIC-OSCB-207-SFP	Honey Long Enterprises LTD
Connector SFP 20pin 0.8mm T&R	DW-SFP-H11-B209	Dragon Well Electronics Co.,Ltd.
Connector SFP 20pin 0.8mm T&R	567A-SCBB-2071-20	All Link Electronics
Connector SFP 20pin 0.8mm T&R	1367073-1	TE Connectivity Ltd.

- try change U2304, if did not help, go to next bullet

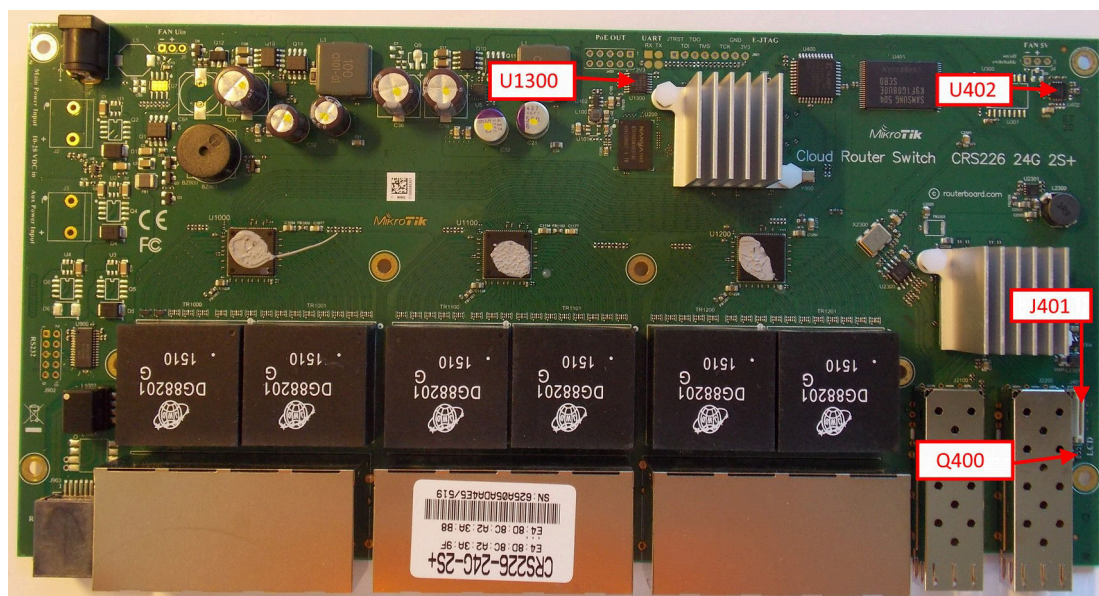
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Halogen free	RT8009GJ5	Richtek Technology Corporation
1.25MHz, 600mA, Step-Down DC/DC Converter, TSOT-23-5, Pb free	RT8009PJ5	Richtek Technology Corporation
1.5MHz 600mA Step-Down DC-DC converter Adjustable SOT-23-5	AUR9704AGH	Auramicro Co., Ltd.
2.2MHz, 600mA Step-Down DC/DC converter TSOT-23-5	TPS62561DDCR	Texas Instruments

- try change L2301, if did not help, board unrepairable.

Inductor 2.2uH 30% 1.48A 3.2x3.2x2 RoHS	BCRH2D18B/HP-2R2N-NL	Bao Cheng Electronics Co.,Ltd.,
Inductor 2.2uH 25% 1.5A 3.2x3.2x2mm 88mOhm RoHS	CDRH2D18B/HPNP-2R2N	Sumida Trading Company Limited

Temperature and Voltage monitor or LCD does not work

Problem area on top layer:



- try change U402 on top layer, if did not help, go to next bullet

Touch screen controller Serial 4-wire Internal reference QFN-16	ZT2046Q	ZillTek Technology Corp
Touch screen controller Serial 4-wire Internal reference QFN-16	AUR3840GQR	Auramicro Co., Ltd.

- try change U1300 on top layer, if did not help, go to next bullet

8-bit shift-and-store latch, Tape&Reel	74HC595T16-13	Diodes Incorporated
8-bit shift-and-store latch	74HC595PW,118	NXP Semiconductors
IC 8BIT SHIFT REGISTER TSSOP16	SN74HC595PW	Texas Instruments
8-bit shift-and-store latch	74HC595PW,112	NXP Semiconductors

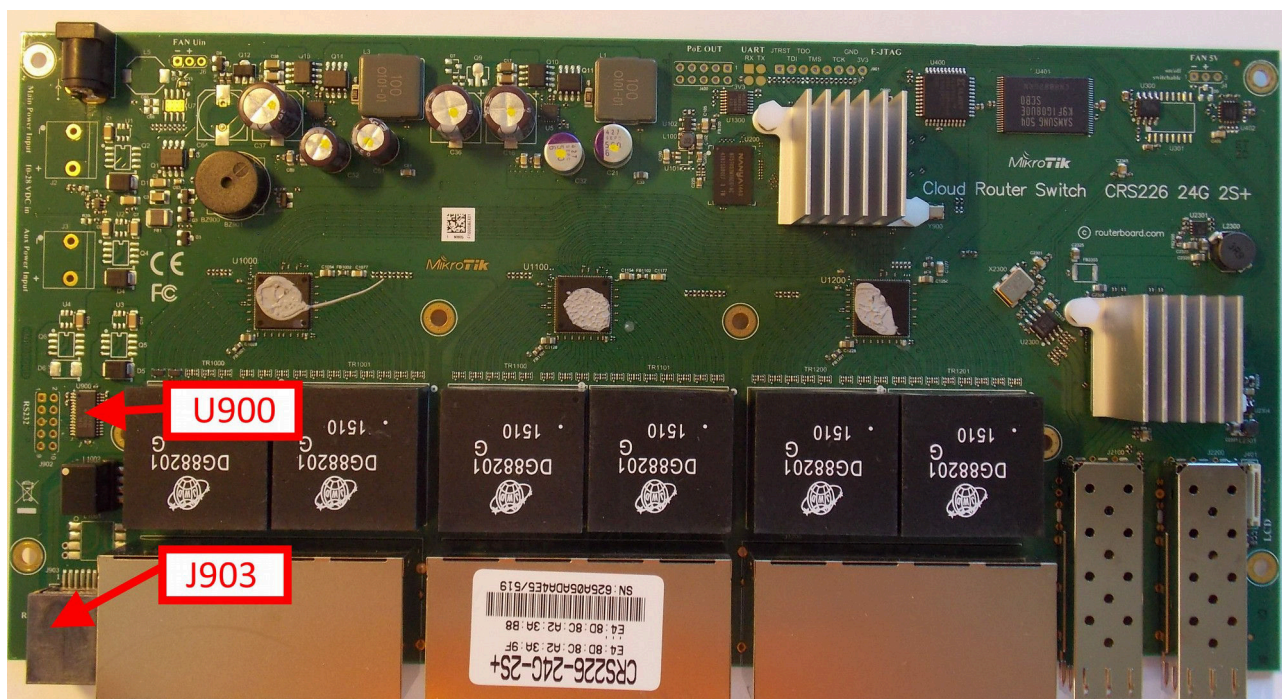
- try change Q400 on top layer, if did not help, go to next bullet

MOSFET P-ch -20V -4.7A 70mOhm 1.5V level SOT-23	LTC2303	Lite-On Semiconductor corporation
MOSFET P-Ch -20V -5A 41mOhm 1.5V level SOT-23	AO3415A	Alpha & Omega
MOSFET P-Ch -40V -3A 95mOhm 2.5V level SOT-23	GT340PSB	SINYORK CO., LTD.
MOSFET P-Ch -16V -4A 60mOhm 1.8V level SOT-23 RoHs	AP2307GN	Advanced Power Electronics Corp.
MOSFET P-Ch -20V 3.2A 100mOm 1.8V level SOT-23, RoHs	NTR4101PT1G	ON Semiconductor [ONS]
MOSFET P-Ch -60V -1.8A 250mOhm 3V level SOT-23	AP2311GN-HF	Advanced Power Electronics Corp.
MOSFET P-Ch -60V -180mA 50hm 2.5V level SOT-23	NDS0605	Fairchild Semiconductor [FSC]
MOSFET P-Ch -20V -3.5A 70mOhm 1.5V level SOT-23 Halogen free	AO3435L	Alpha & Omega
MOSFET P-Ch -40V -2.3A 82mOhm 3V level SOT-23	SI2319DS-1-E3	Vishay Intertechnology, Inc.
MOSFET P-Ch -40V -3.1A 90mOhm 3V level SOT-23	AP2321GN-HF	Advanced Power Electronics Corp.
MOSFET P-Ch -40V -3.7A 77mOhm 3V level SOT-23	SI2319CDS-T1-GE3	Vishay Intertechnology, Inc.
MOSFET P-Ch -40V -2.3A 82mOhm 3V level SOT-23	SI2319DS-T1-E3	Vishay Intertechnology, Inc.

- try change J401 on top layer, if did not help, go to next bullet

FPC connector 0.5mm pitch 18pin with Locking Drawer SMT Vertical Entry w/CAP T&R	0.5K-A-18PB-CAP	Dragon Well Electronics Co.,Ltd.
FPC connector 0.5mm pitch 18pin with Locking Drawer SMT Vertical Entry w/CAP T&R	88294-18041-FN-01	Aces Electronics Co., Ltd.(Taiwan)
FPC connector 0.5mm pitch 18pin with Locking Drawer SMT Vertical Entry T&R	160A-1118P-LB	All Link Electronics

Console does not work



- try change U900 on top layer, if did not help, go to next bullet

3v to 5.5V RS-232 LINE Driver/Receiver (lead free)	MAX3243CPWRG4	Texas Instruments
RS232 3Dr/5Rec 3/5V	MAX3243CUI	Maxim Integrated Products, Inc.
IC 3DRVR/5RCVR RS232 3V 28-TSSOP	ICL3243CVZ	Intersil
3V to 5.5V RS-232 LINE Driver/Receiver (lead free)	SP3243EBCY-L/TR	EXAR CORPORATION

- try change J900 on top layer, if did not help, go to next bullet

RJ45 w/oLED w/oShield TD SMD w/oEMI T&R (7.8mm) 6u"	SJS89-E105E2-06TR	Dragon Well Electronics Co.,Ltd.
RJ45 w/oLED w/oShield (with grounding) TD SMD w/oEMI T	8588D-B11-L2-TR	Powerway Electronics Co., LTD
RJ45 w/oLED w/oShield TD SMD w/oEMI T&R (7.8mm)	8588B-B11-L2-TR	Powerway Electronics Co., LTD
RJ45 w/oLED w/oShield TD SMD w/oEMI T&R (7.8mm)	3004CM6609	KINSUN INDUSTRIES INC
RJ45 w/oLED w/oShield TD SMD w/oEMI T&R (7.8mm) 3u"	SJS88-E105E2	Dragon Well Electronics Co.,Ltd.
RJ45 w/oLED w/oShield TD SMD w/oEMI T&R (7.8mm) 1u"	SJS89-E105E2-01TR	Dragon Well Electronics Co.,Ltd.