

17IPS71

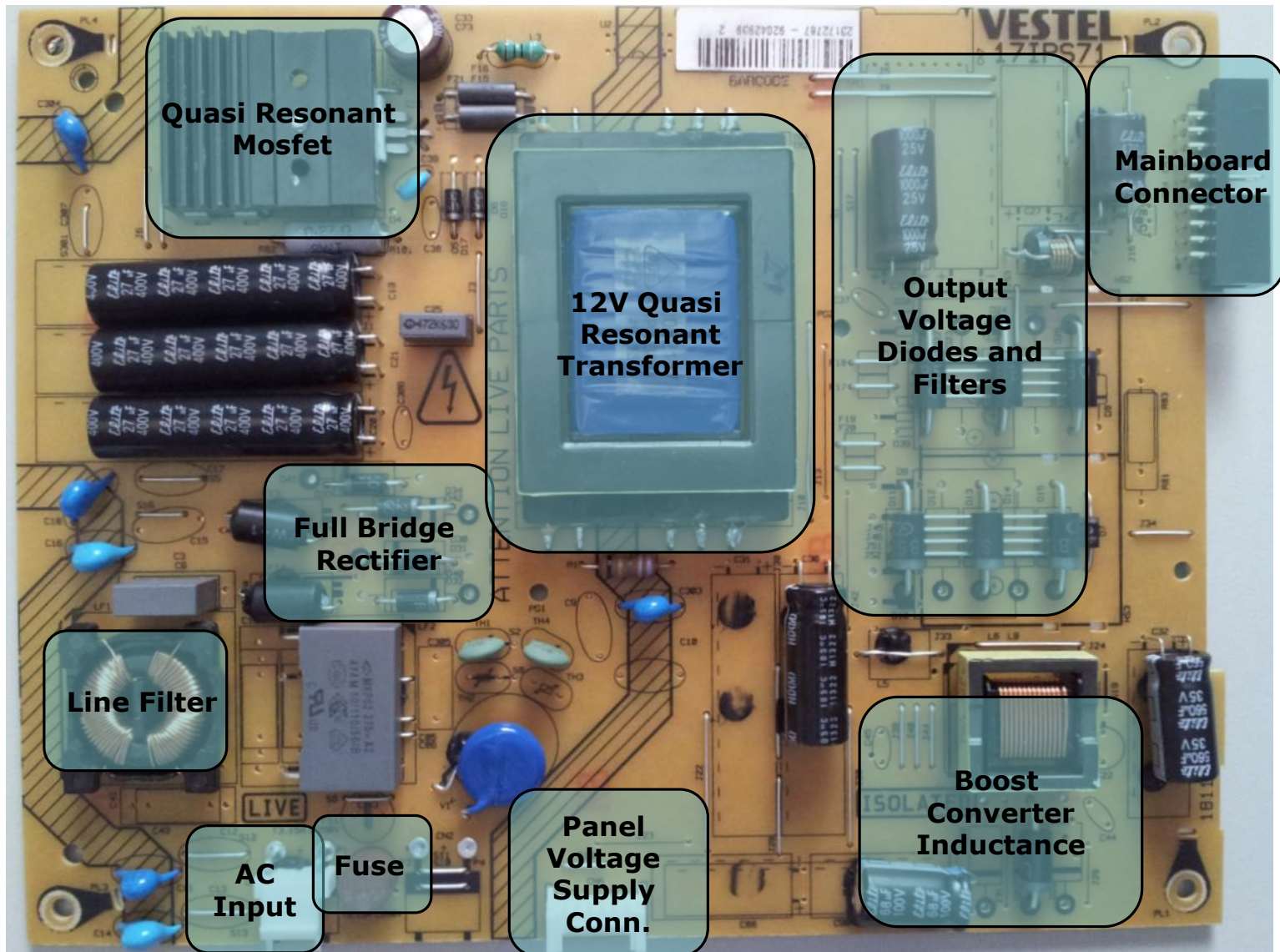
Power Board Presentation



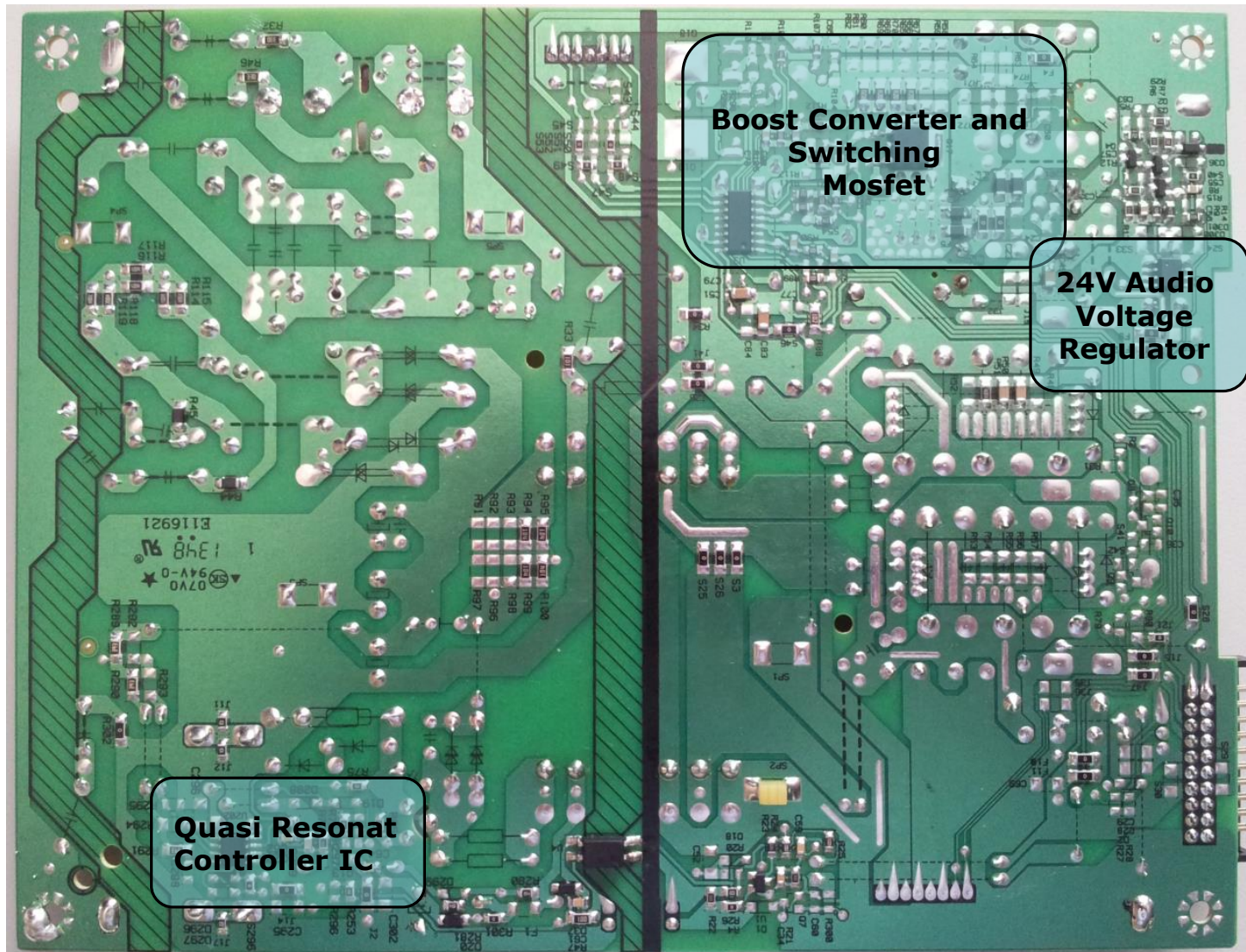
• 17IPS7X Power Board – General Features

- ✓ Supported Size : IPS71→43"
- ✓ Output Power : IPS71→84W (max.)
- ✓ Output Voltages : +5V StandBy, 12V, 24V(Optional)
- ✓ Supported Chassis : 17MB120DS
- ✓ Input Voltage : 170V-264V AC
- ✓ Frequency Range : 50Hz – 60Hz
- ✓ 17IPS71 includes AC-DC Quasi resonant converter

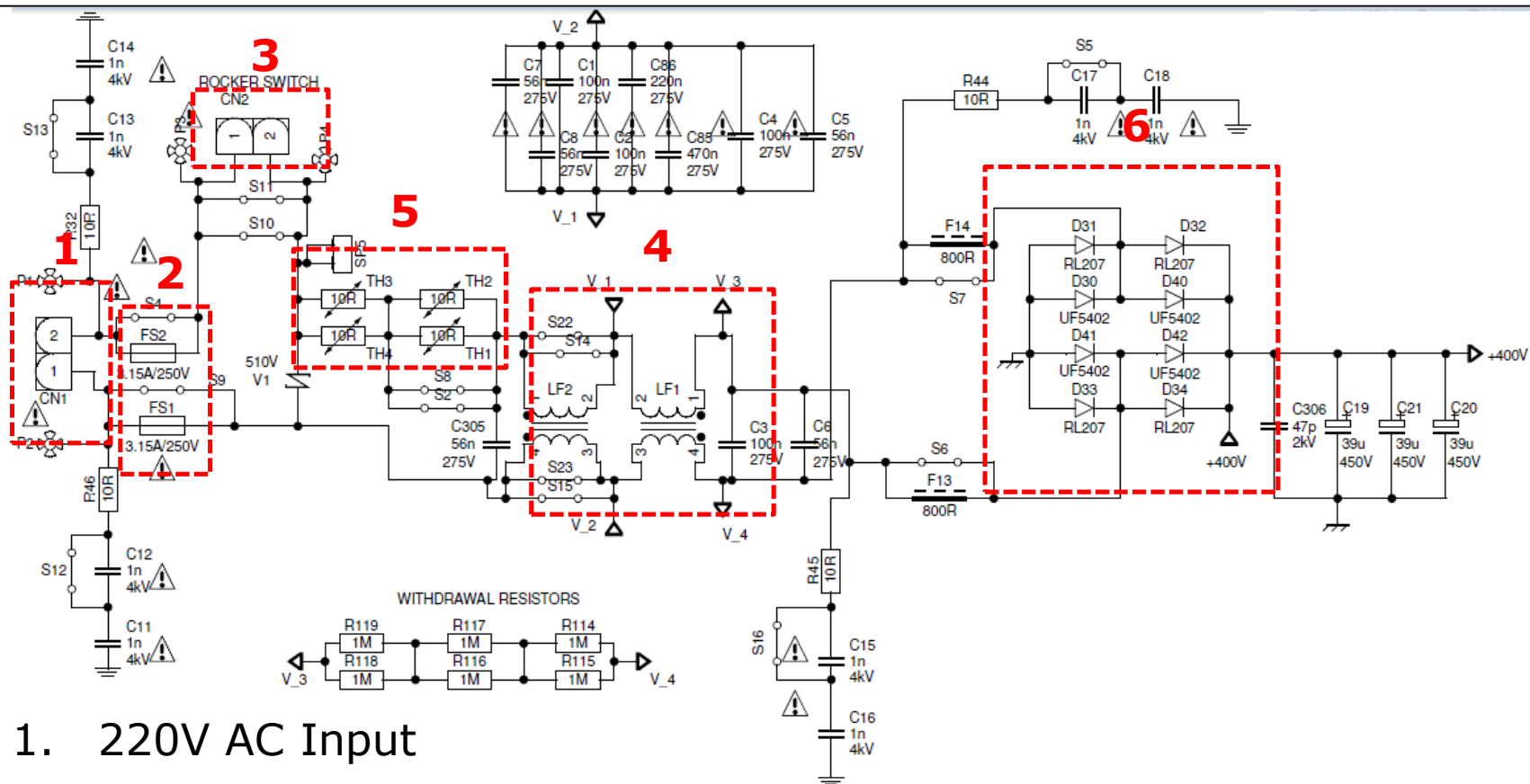
• 17IPS71 Power Board – Block Diagram - Top View



• 17IPS71 Power Board – Block Diagram-Bottom View

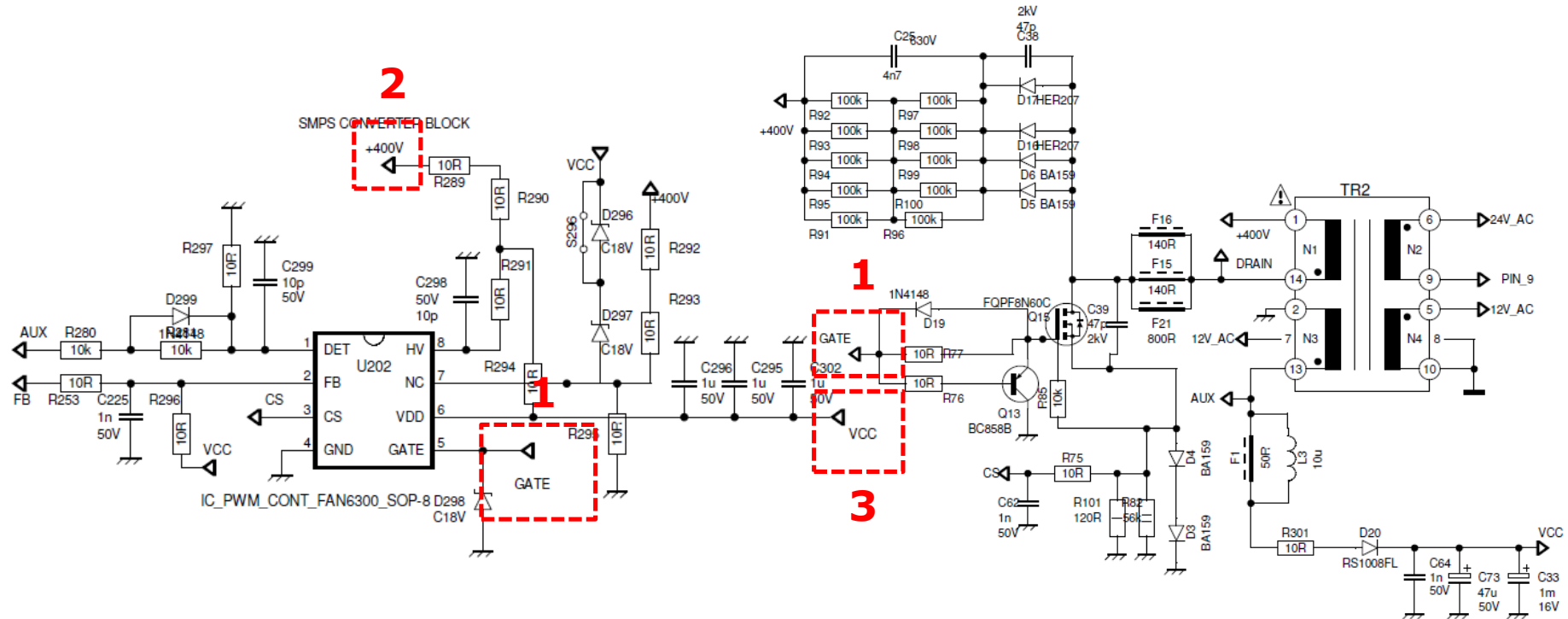


• 17IPS71 Power Board – 220V AC INPUT



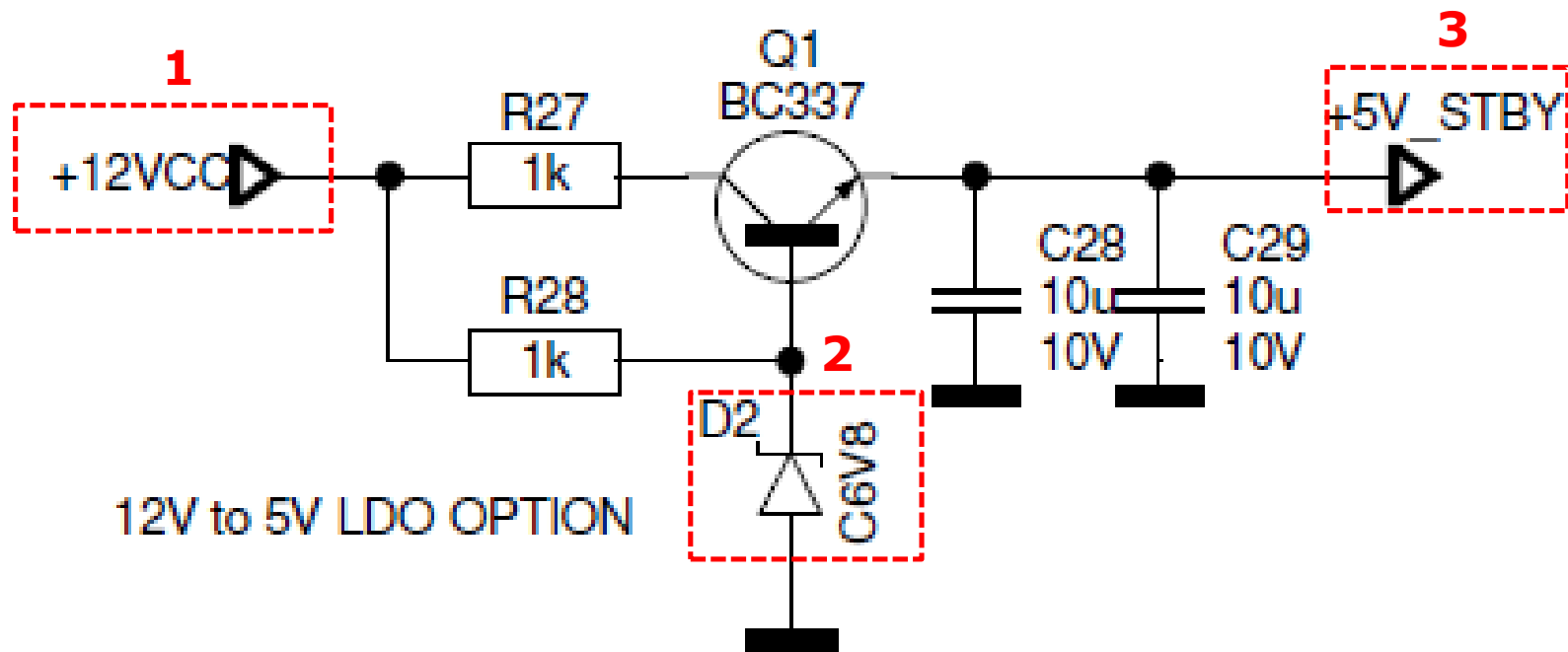
1. 220V AC Input
2. Fuses
3. Optional rocker switch connector
4. Line filters
5. NTC
6. Full Bridge Rectifier Diodes

• 17IPS71 Power Board – 12V Quasi resonant Circuit-1



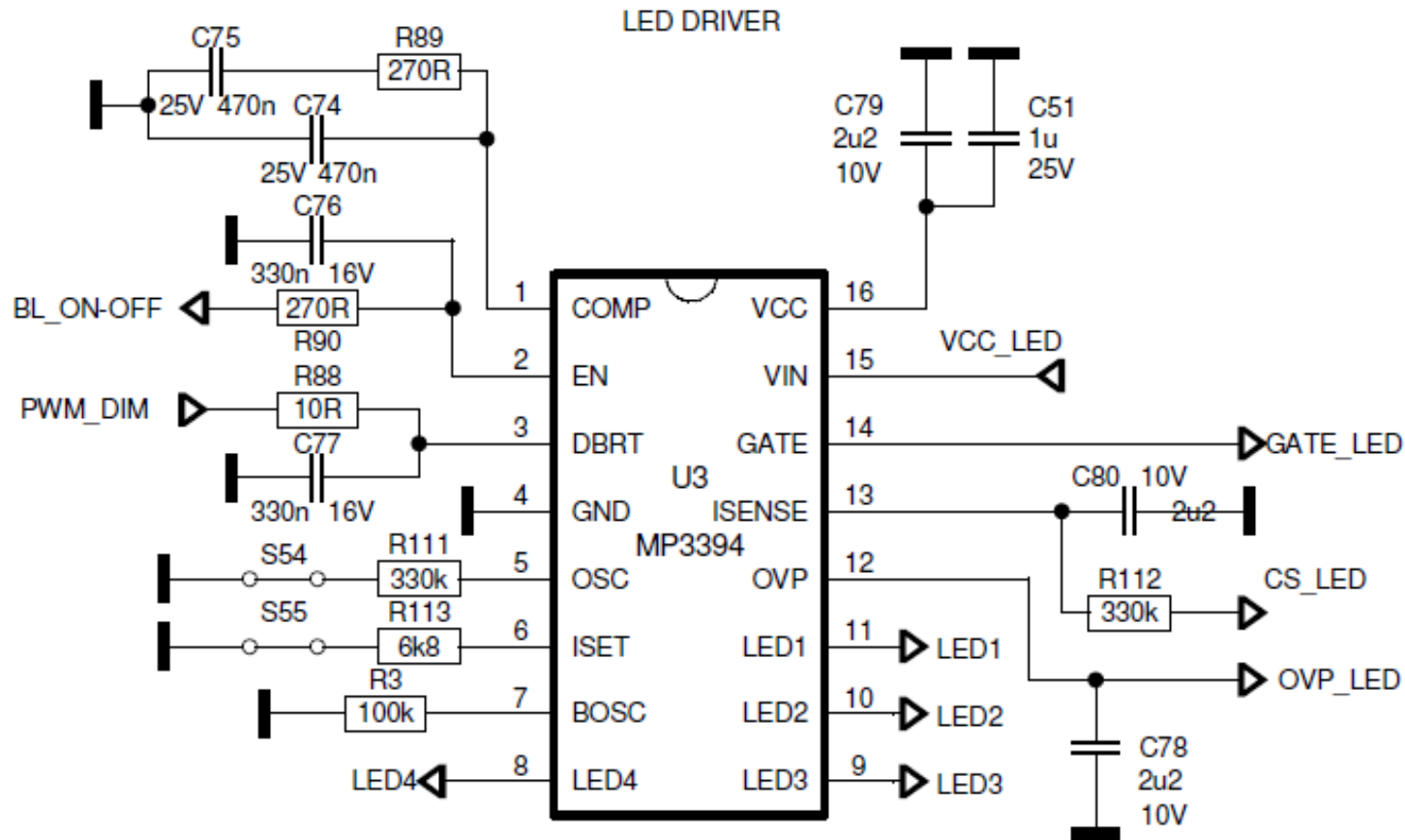
1. Gate signal can be measured both from this position and 5th pin of U202 IC.
2. 400V measured on HV pins of U202
3. U202 supply voltage measured from 6th pin, that is about 18V.

• 17IPS71 Power Board – 5V StandBy Circuit



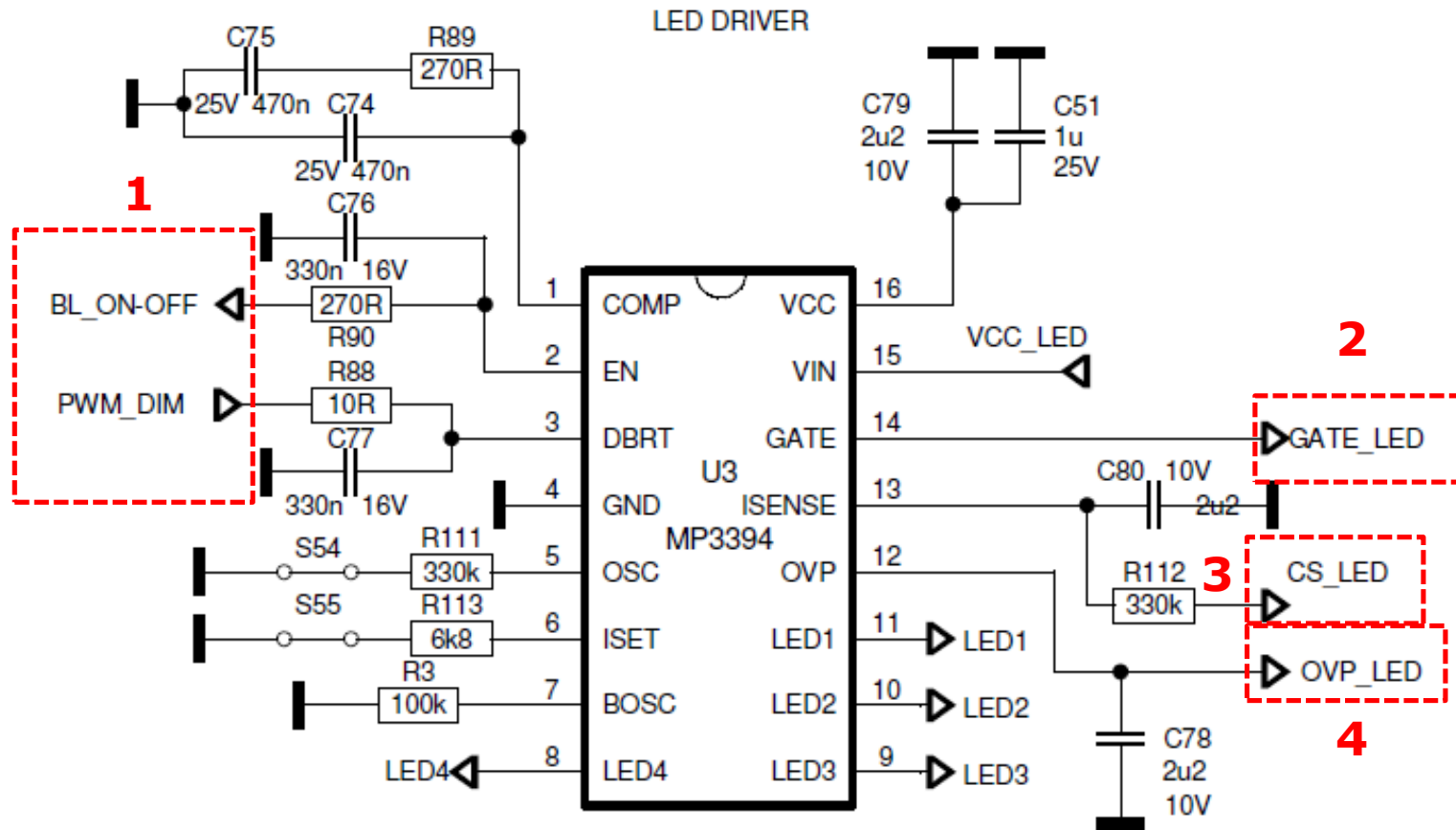
1. 5V StandBy voltage is generated from 12V.
2. 5.6V zener diode fixes 12V to 5.6V
3. 5V DC level must be measured from Q1 emitter pin.

• 17IPS71 Power Board – Led Driver IC



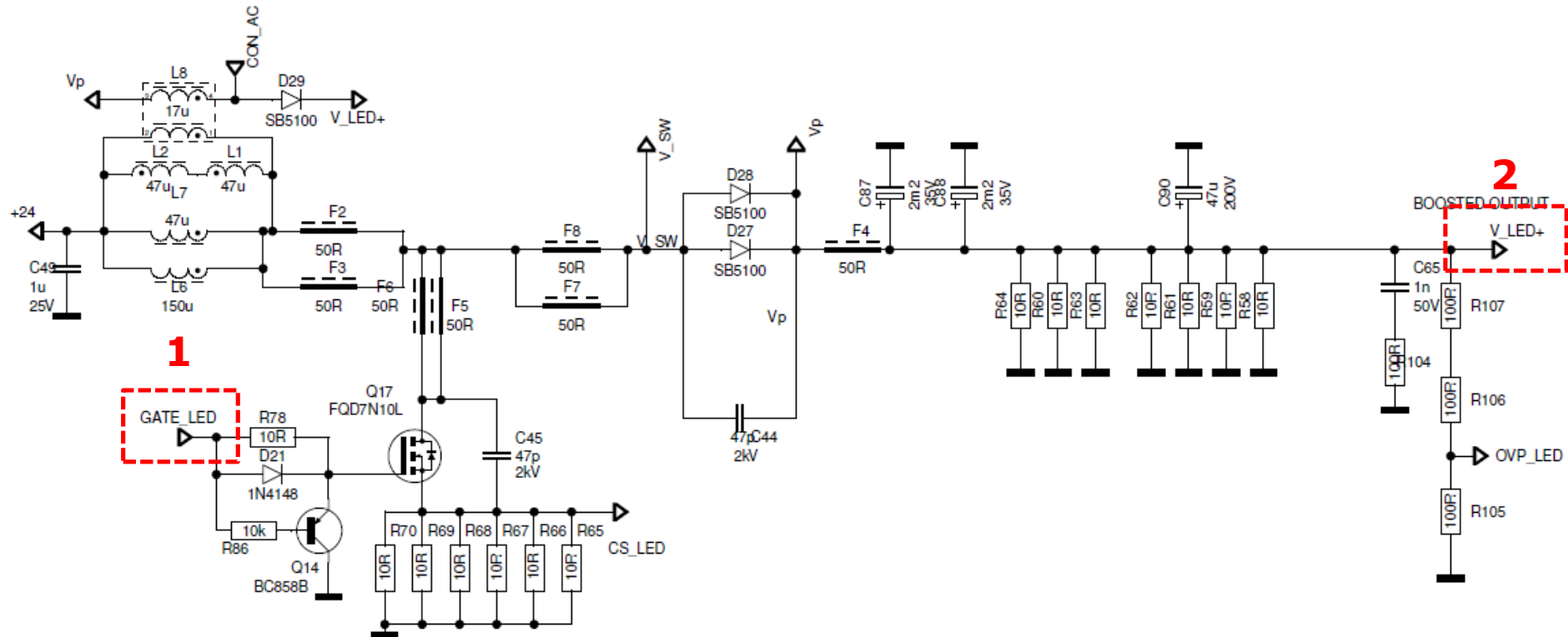
- 4-Channels, Max 200mA/Channel LED Driver
- Open and Short LED Protection
- Programmable Over-Voltage Protection
- Under Voltage Lockout

• 17IPS71 Power Board – Led Driver IC



1. Backlight on-off and backlight dimming signals.
2. Boost converter switching pin.
3. CS_LED arranges the current that flows to LEDs.
4. OVP_LED is the over voltage protection signal.

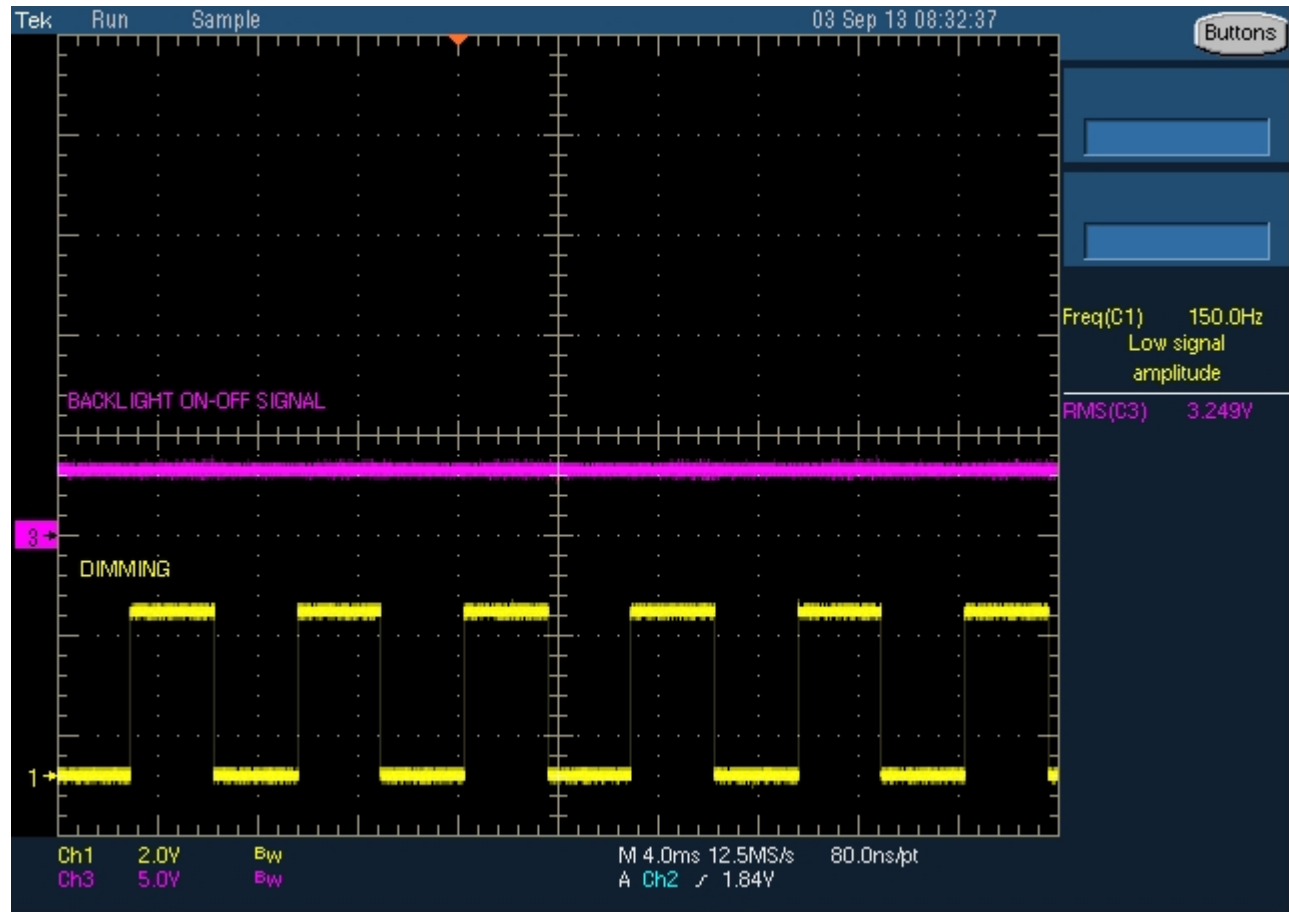
• 17IPS71 Power Board – Led Driver IC



1. Boost converter switching signal is measured from this point, it switches Q17mosfet. Current sense resistors adjusts current capacity.
2. Boost converter generates panel supply voltage. It is measured from that point also OVP reference voltage arranges.

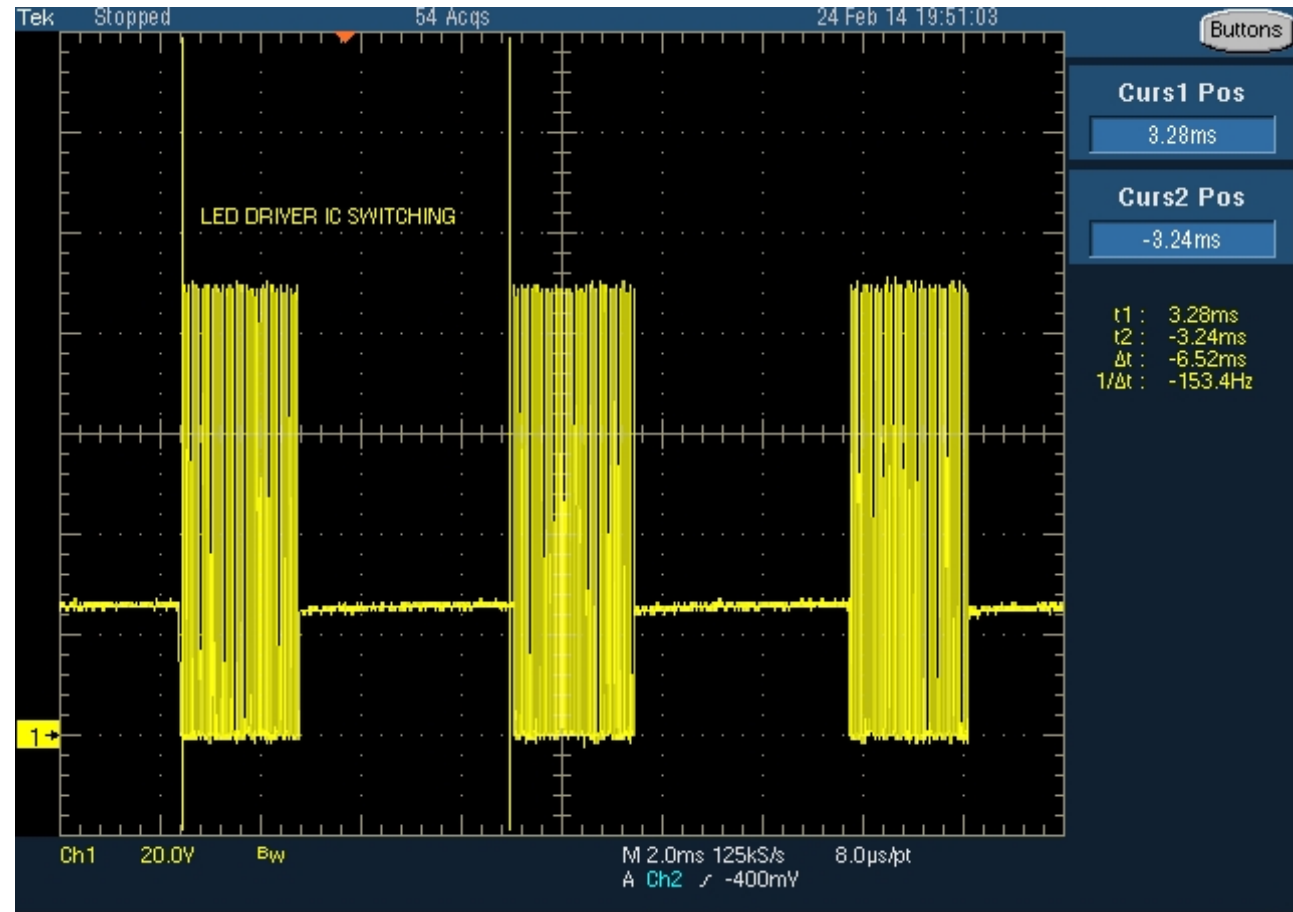
• 17IPS71 Power Board – Reference Signals

17IPS71 Power Board
Backlight on-off and
Dimming Signals for
Medium Backlight
Level.



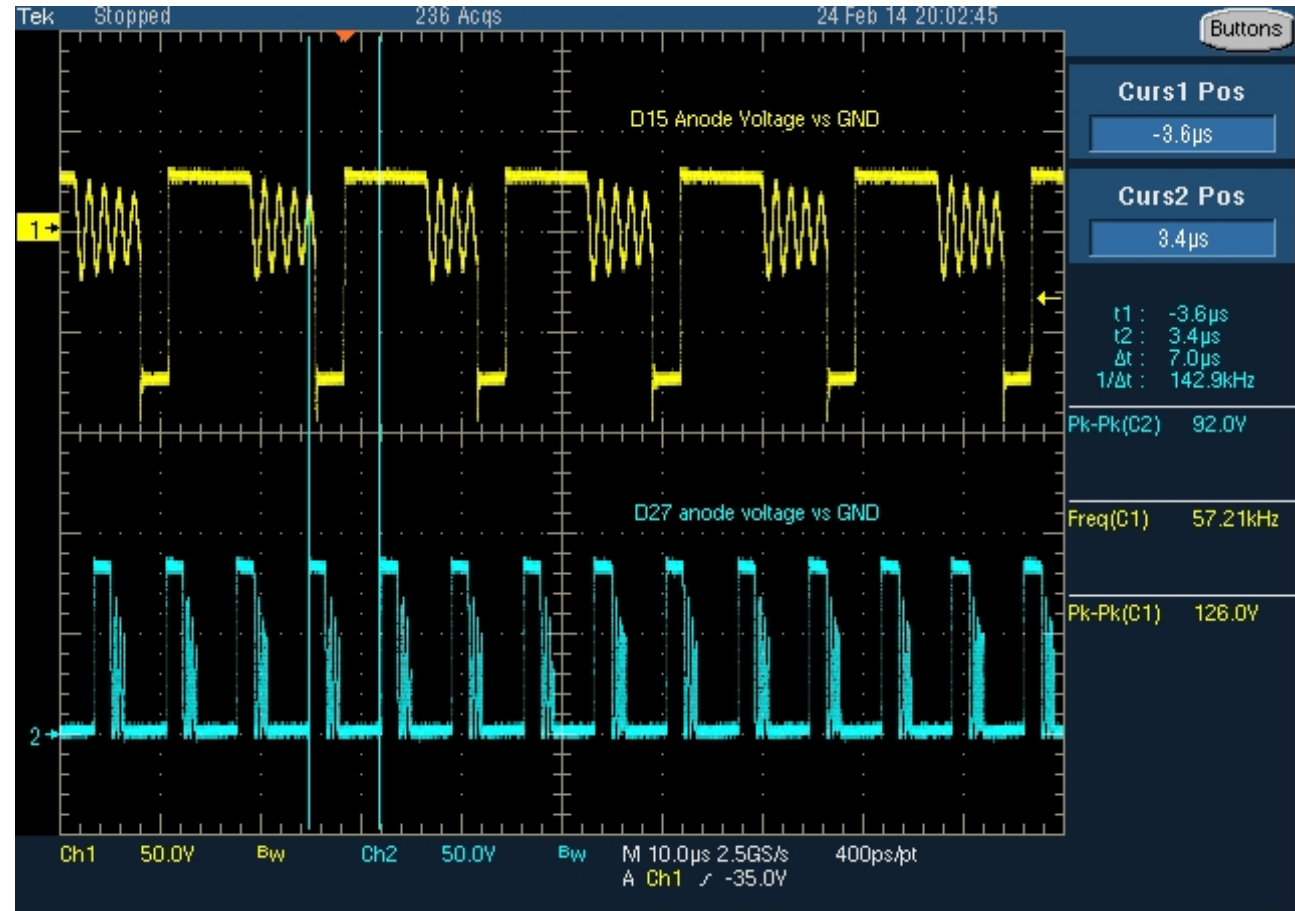
• 17IPS71 Power Board – Reference Signals

17IPS71 Power Board
Led Driver IC Switching
Signal Wave Form
(150KHZ).

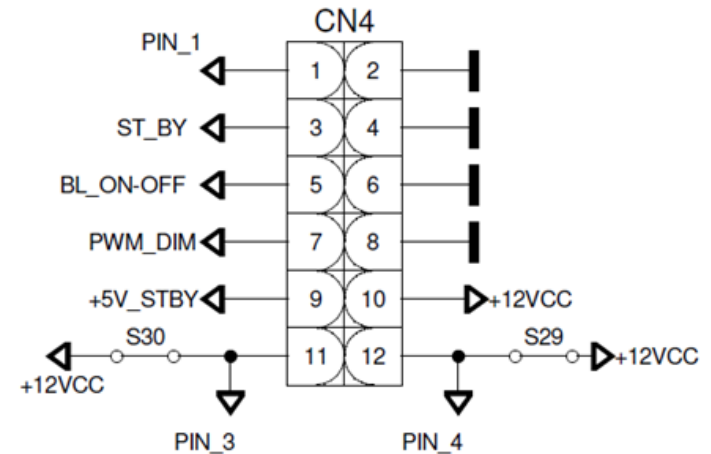
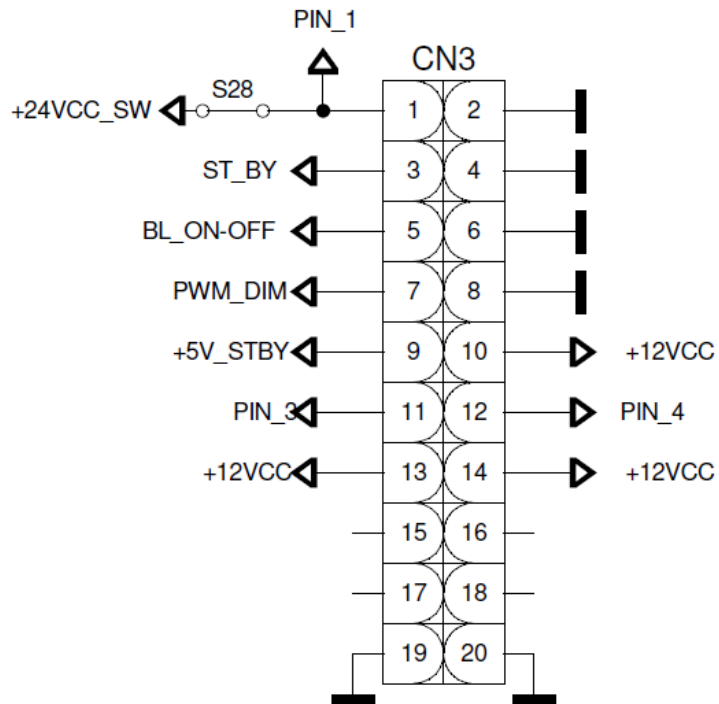


• 17IPS71 Power Board – Reference Signals

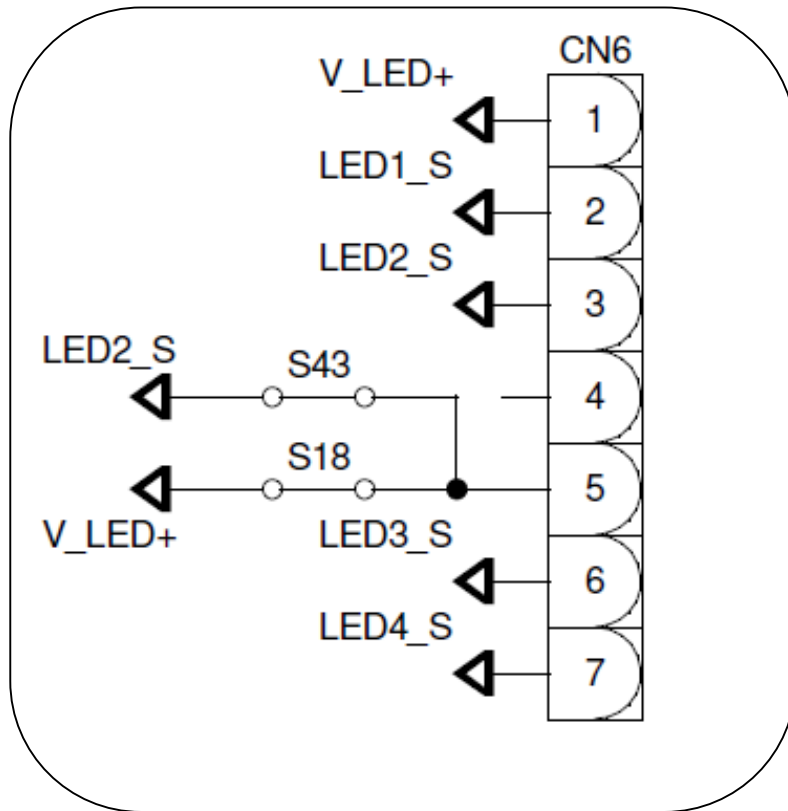
17IPS71 Power Board
D15 (24V) anode
voltage vs ground and
D27 (boost converter)
anode voltage
switching signals.



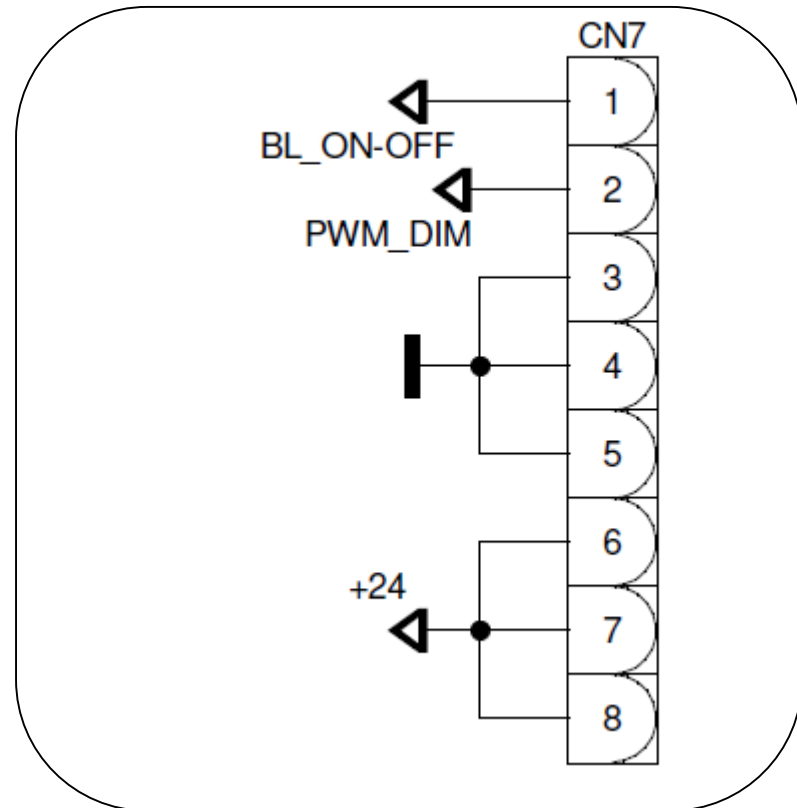
• 17IPS71 Power Board – Mainboard-Power



• 17IPS71 Power Board – Panel-Power



For BMS Panel



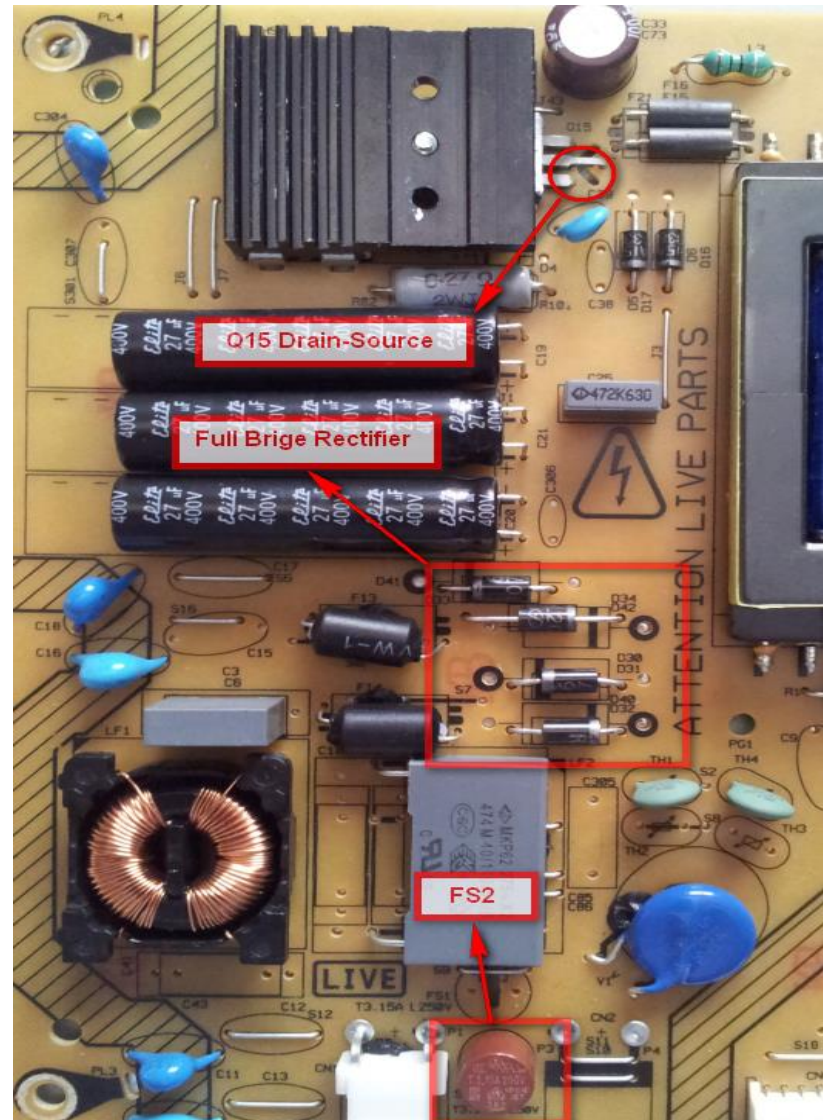
For Module Panel

• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 1: TV is not working

Check

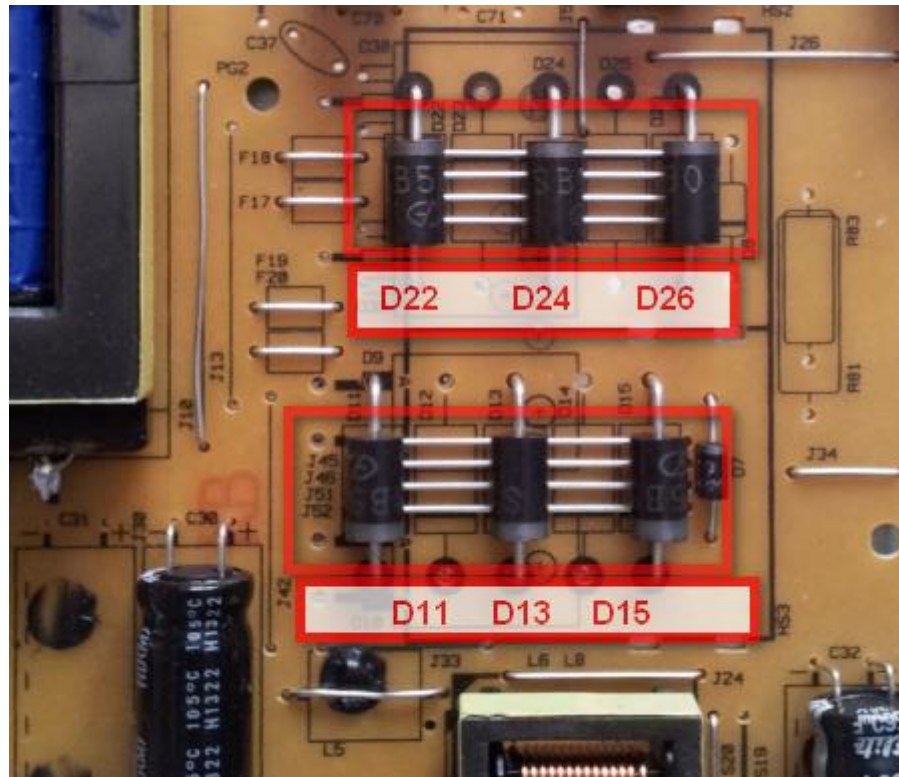
- FS2 fuse
- Full bridge rectifier diodes
- Drain-Source pins of Q15



• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 1: TV is not working

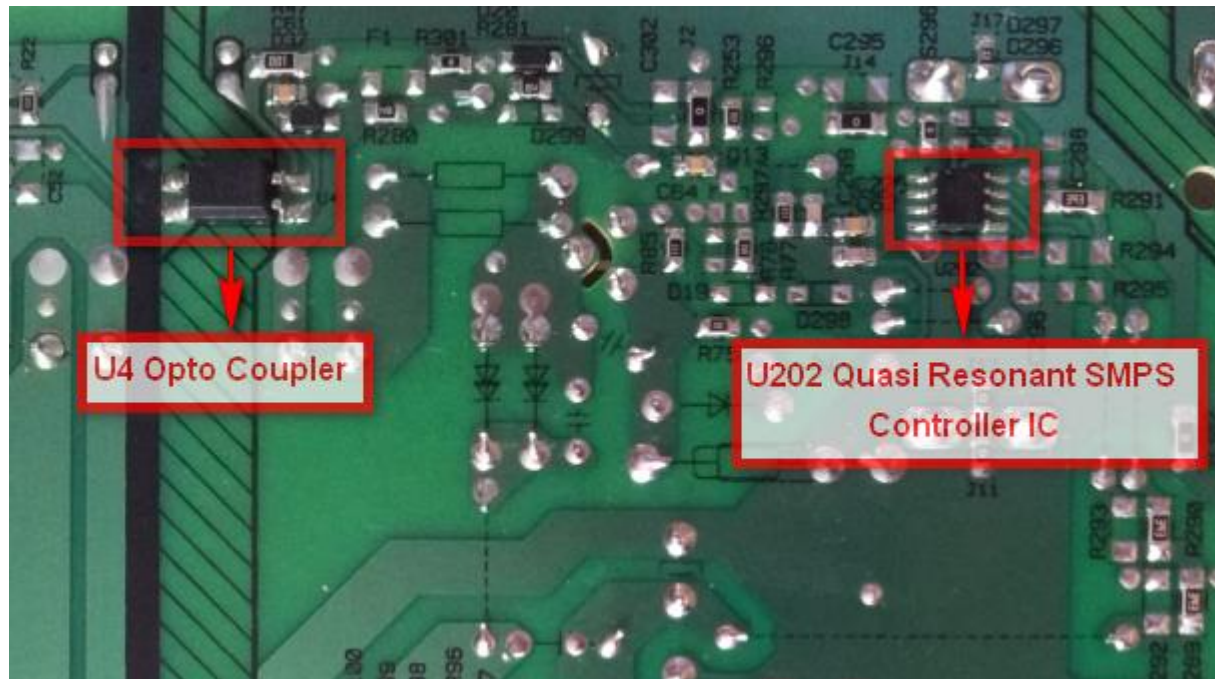
Check D22,D24,D26 and D11,D13,D15 diodes are ok or broken.



• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 1: TV is not working

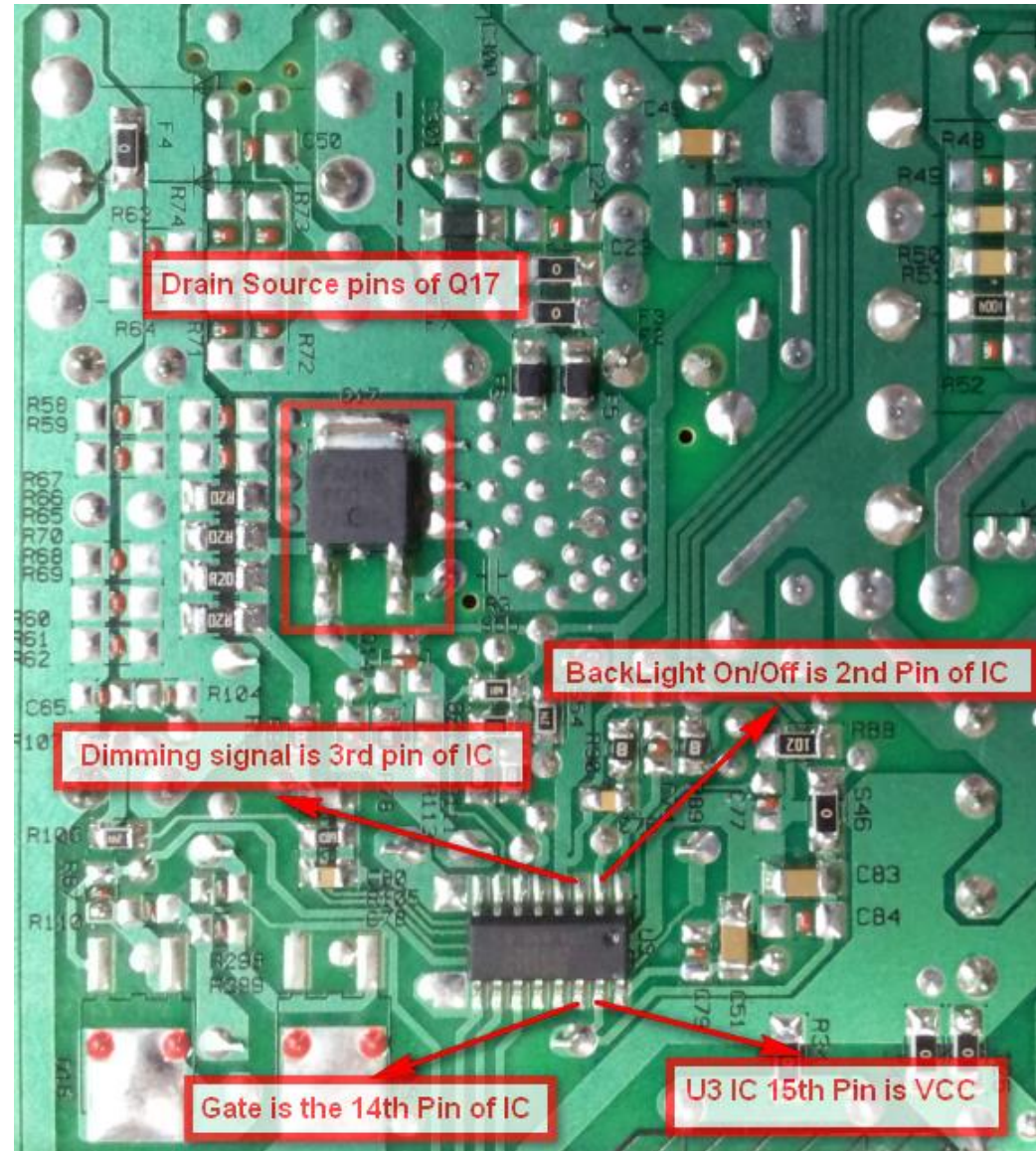
Check U4 Opto Coupler IC and U202 Quasi resonant SMPS Controller IC



• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 2: TV is working but there is no backlight

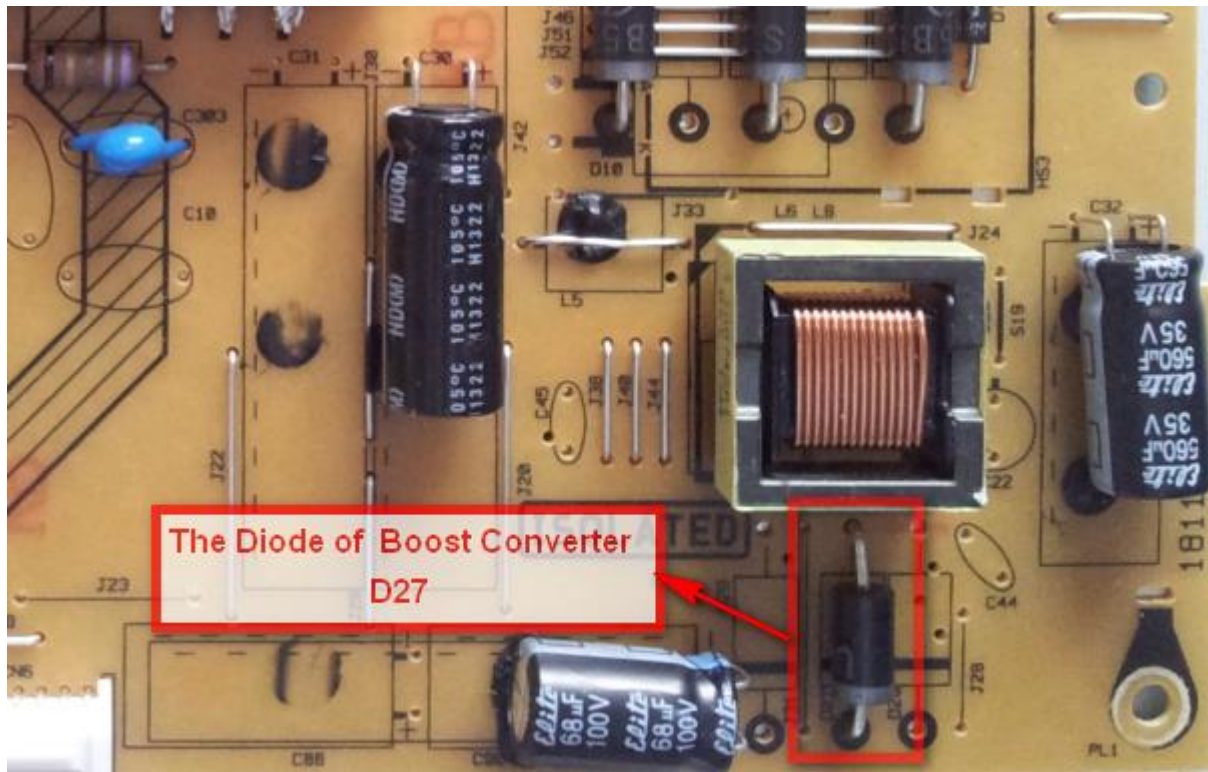
Check Q17 is OK or broken and pins of U3 LED Driver IC



• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 2: TV is working but there is no backlight

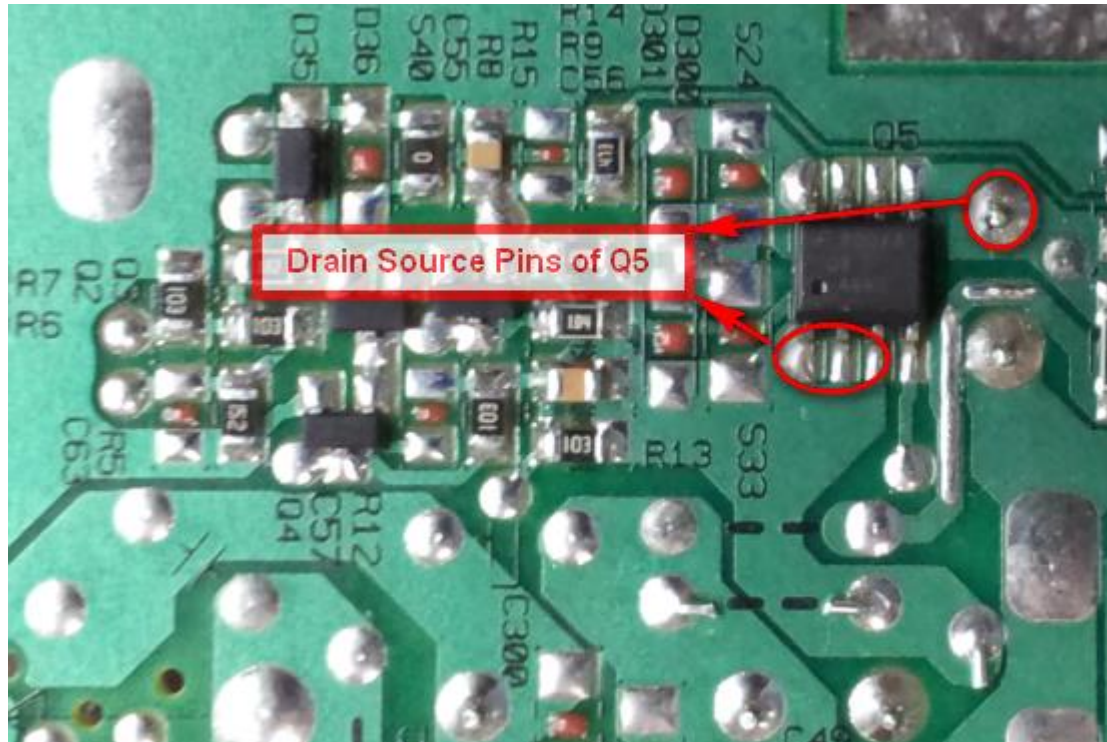
Check D27 is OK or broken



• 17IPS71 Power Board – Trouble Shooting & Solution

Problem 3: TV is working but there is no sound

Check Q5 is OK or broken



THANK YOU

Vestel Application Engineering Department

HBB - 2017