



# STEVAL-ISA017V1

## Power supply for STB based on L6565 (US-110 V)

Data Brief

### Features

- Switch mode Quasi-Resonant Flyback Power Supply
- Input: 88 to 138 Vac (US version)
- Switching frequency: 50/60 Hz
- Output1: 12 V @ 500 mA delivering 6 W with  $\pm 10\%$  of stability
- Output2: 8 V @ 40 mA delivering 0.32 W with  $\pm 15\%$  of stability
- Output3: 5 V @ 1 A delivering 5 W with  $\pm 5\%$  of stability
- Output4: 3.3 V @ 450 mA delivering 1.485 W with  $\pm 2\%$  of stability
- Output5: 1.23 V @ 1 A delivering 5 W with  $\pm 5\%$  of stability
- Output6: 2.5 V @ 0.7A delivering 1.75 W with  $\pm 2\%$  of stability

### General description

This document describes a reference design of a 17 W Switch Mode Power Supply dedicated to Set-Top Box applications. The board accepts US input voltages (90 to 265 Vrms) and delivers up to 6 W outputs. It is based on the L6565 quasi resonant SMPS controller, working in variable frequency mode.

The Quasi-resonant operation and the high flexibility of the L6565 make it a very suitable device, able to satisfy all the requirements with only few external components.

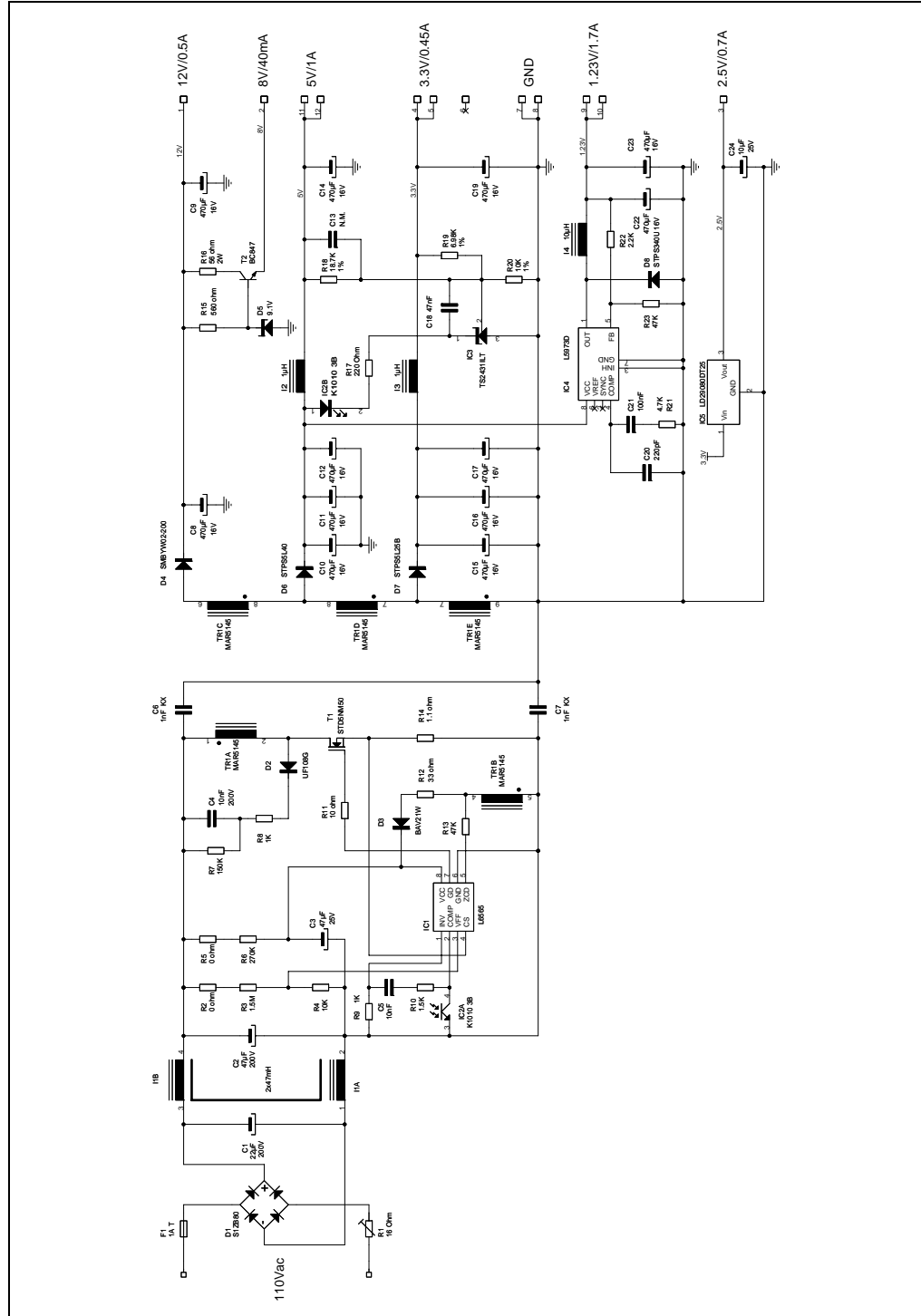


### ST components

- STTH108 High Voltage Ultrafast Rectifier, 1 A, 800 V
- SMBYW02-200 High Efficiency Fast Recovery Rectifier Diode, 2 A, 200 V
- STPS5L40 Power Schottky Rectifier, 5 A, 40 V
- STPS5L25B low drop power Schottky Rectifier, 3 A, 40 V
- STPS340 Power Schottky Rectifier, 3 A, 40 V
- L6565 Quasi Resonant SMPS controller
- L5973D step down switching regulator up to 2.5 A
- LD29080DT25, 800 mA fixed and adjustable output, very low dropout voltage regulator
- STD5NK50Z, N-channel zener protected SuperMESH Power MOSFETs, 500 V, 1.22 Ohm, 4.4 A

# 1 Board schematic

Figure 1. Board schematic



## 2 Revision history

**Table 1. Revision history**

<b>Date</b>	<b>Revision</b>	<b>Changes</b>
09-Oct-2006	1	First issue
06-Feb-2007	2	Typo mistake on page 1
09-Mar-2007	3	Minor text change

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