

# eN-MPS Board Schematics

## System Overview:

The eN-MPS-V1.0 board is a hardware platform based on ST32M407F,the board will meet the UL864, EN54-4,GB4717-2005 stardands . It provides the power supply for FAS, printer etc,fullfills the power switch between the main power and battery power seamlessly, maintians full battery capacity through battery charging by main power, acquires board events condition, displays status signal by LED indicators,reports events to or receives commads from CPU module via CAN bus.

## Hardware Specification:

- Main Power Specification:
  - AC 220V,350W, 28V Output.
- Battery Specification:
  - Chargeable lead-acid battery,24V/28Ah, max 4A charger current, max 6A discharge current.
- Power Output Specification:
  - Two resetable 28V/3A output, one 5V/3A output.
- CPU:
  - STM32F407VET,ARM Cortex-M4(168MHz,100Pin)
- Memory:
  - 196 KB on-chip RAM
  - 512 KB on-chip Flash
- Serial Interfaces:
  - One debug RS232.
  - One non-isolated CAN/RS232 interface.
- Status LEDs:
  - 8 work status LEDs, 7 fuse open indicator LEDs,6 Communication LEDs.
- JTAG :
  - SWD Interface.

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Title/标题:封面			Document Number/文档号: eN-MPS.SCH	
Size/尺寸: B	Author/设计: Liu Jiawei/刘佳威	Electric Eng/审核: Yond Yan/闫楠	Approved By/批准: Han Bin/韩斌	Rev/版本: V2.2
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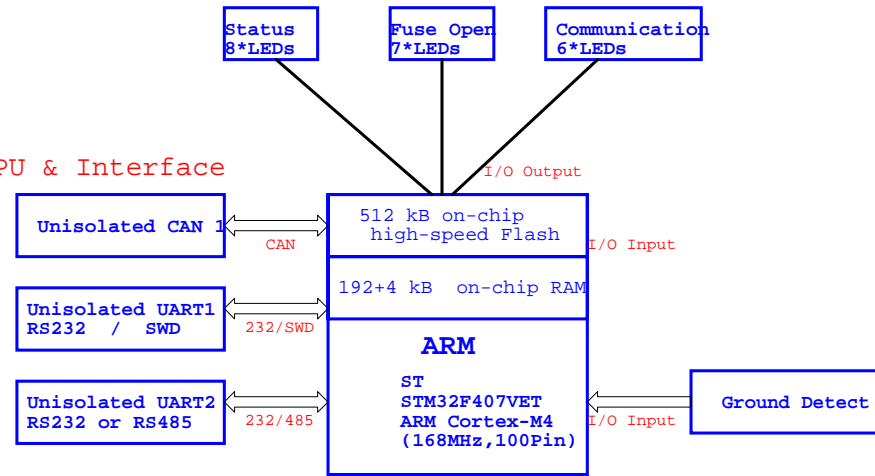
Revision History

DATE	Rev	Description	Author
2012-03-29	V0.0	Created	Lu, Vito
2012-03-29	V1.1	1: S1, S2丝印微调, 接法修改 2: J5, J6焊盘孔过大 3: JPS, JP6丝印反了 4: J1丝印反了, 4方向反一下, J3的SWDIO与SWCLK线对调 5: TR1底为1x4封装 (现改成互感器方式) 6: R129为56k, R128为10K 7: BMT445, 焊封紧变大 8: LED12系统故障灯改成CPO一样 9: U9接5V电源, 但增加分压电阻 10: R112改成20K 11: J3接线更正 12: I2S模式下, PB13为高电平, 需改为PA10或PA11 13: 两两继电器合并输出端子 14: AC接线端往内推 15: 交流保险丝改成1个(保险丝改成圆筒插座型), LED等也一个 16: D1, D3换成SMB封装 17: 去掉manual_output 18: MOS封装加丝印 19: 去掉PMS 20: 保持CAN, UART1, switch等引脚一致. 21: 增加硬件版本Ad 22: 主微电源分压电阻计算 23: 电池低压保护分压电阻计算	Yan, yond
2013-11-08	V1.2	1: 汽车保险丝座孔偏小 2: 5V电源使用GS74 3: R102, R104丝印反 4: 交流电安全间距问题 5: 电源反接保护措施, 增加双二极管 6: 主电24端子位置问题 7: SWD, SWCLK11号并 8: 蜂鸣器增加串联降压电路 9: 增加+5V 指示LED, 或增加5V电源指示 10: 各电检测5V增加串联降压电路 11: 220V耐压放电管电路更改为跳线规划设计 12: 增加can测试点 13: 充电采样电阻更改为2.5欧, SW插件	Yan, yond
2014-02-17	V1.3	1: 接地故障检测增加10uF/50V电容 2: 220V电源线焊盘孔封装修改 3: 中号保险丝座封装修改 4: 电源输出增加470uF/50V电容 5: 增加备用smc晶体 6: 主备电开关右移1.2mm, 满足结构装配	Yan, yond
2016-06-14	V2.1	1: 删除部分24V输出接口 2: 删除继电器输出接口 3: 增加一个风扇输出接口, 具备风扇检测功能 4: 3.3V电源芯片更换为MP2463 5: 功率MOS更换为更低内阻型号 6: 充电方式改为DCDC充电, 最大充电电流4A	Liu Jiawei
2017-07-16	V2.2	1: 蜂鸣器主电情况下也能启动 2: 更改接地检测电路	Liu Jiawei

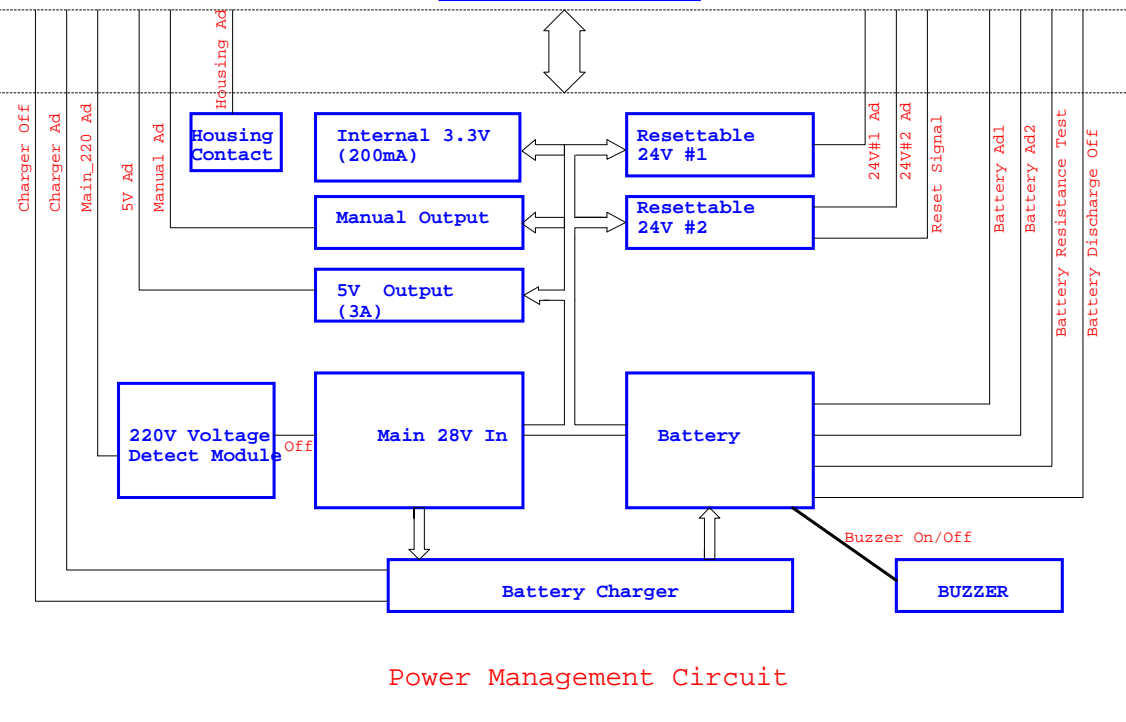
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Size/尺寸: C	Author/设计: Jiu Jiawei/刘佳威	Electric Eng/审核: Yond Yan/闫勇	Approved By/批准: Han Bin/韩斌	Rev/版本: V2.2
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# Power Supply System Block Diagram

## CPU & Interface



## Power Management Circuit



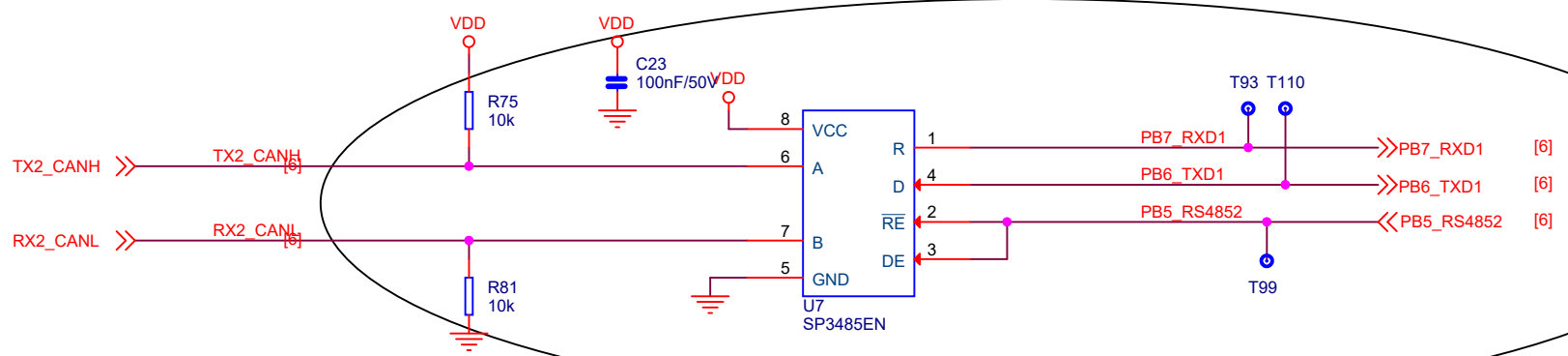
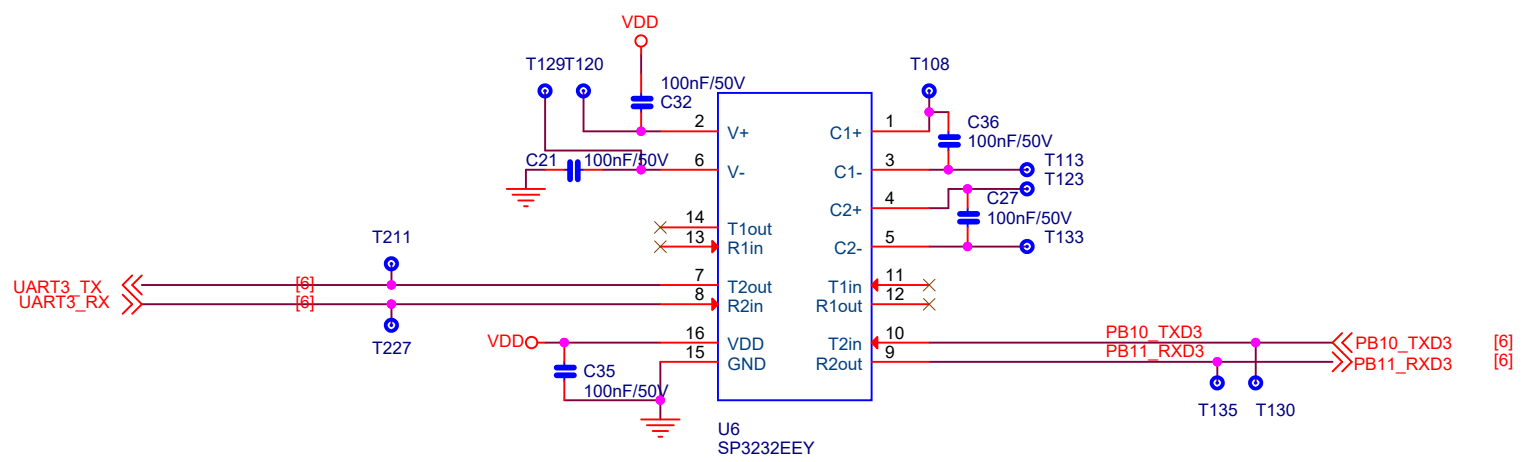
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Size/尺寸: C	Author/设计: Ju Jiawei/刘佳威	Electric Eng/审核: Yond Yan/闫勇	Approved By/批准: Han Bin/韩斌
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<p>«Cms Design»</p> <p><b>Honeywell Fire Systems</b></p> <p>No.430 Li Bing Road          Zhang Jiang 18-Tech Park          Pudong New Area          Shanghai 201203, China          上海浦东          主事处</p>		<p><b>霍尼韦尔消防安防系统          (上海)有限公司</b></p> <p>中国上海浦东新区张江高科技园区          张江430号          电话: +86 21 5855 1111          eMail: <a href="mailto:mp@hsh.cn">mp@hsh.cn</a></p>	
<p>Size/尺寸:          D</p>	<p>Author/设计:          Jia Jiawei/ 贾佳伟</p>	<p>Electric Eng/电气:          Yand Yanyin/ 颜彦</p>	<p>Approved By/批准:          Han Bin/ 韩斌</p>
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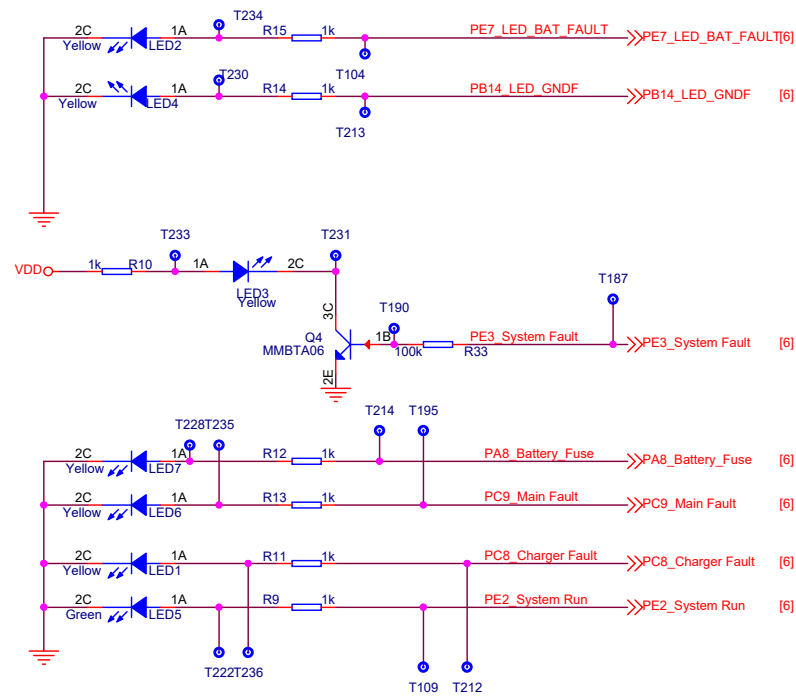


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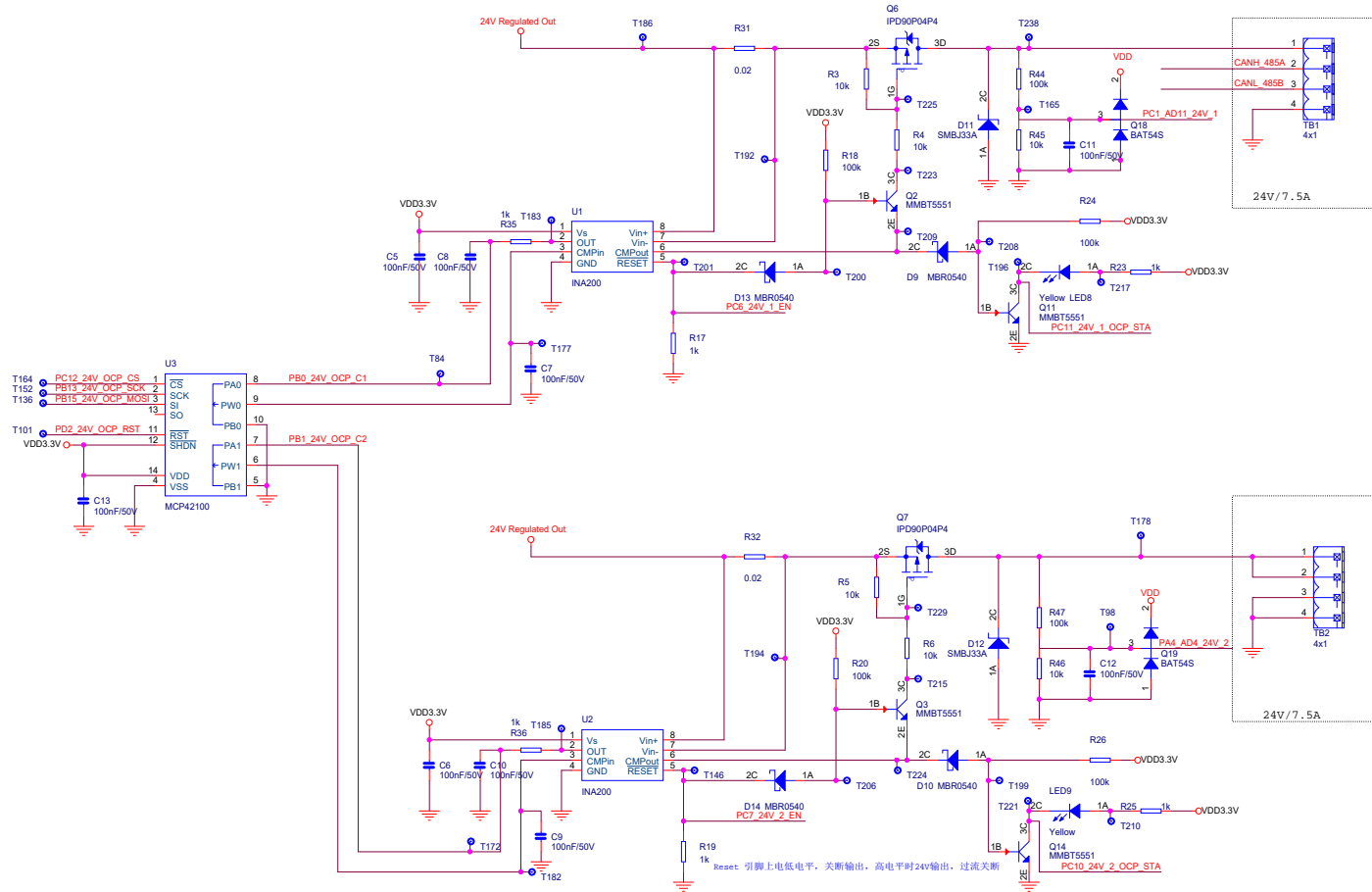
REVISION HISTORY			
REV	DESCRIPTION	DATE	APPV
00	Initial release	2012-03-29	HAN BIN



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Title/标题: 故障输出			Document Number/文档号: eN-MPS.SCH	
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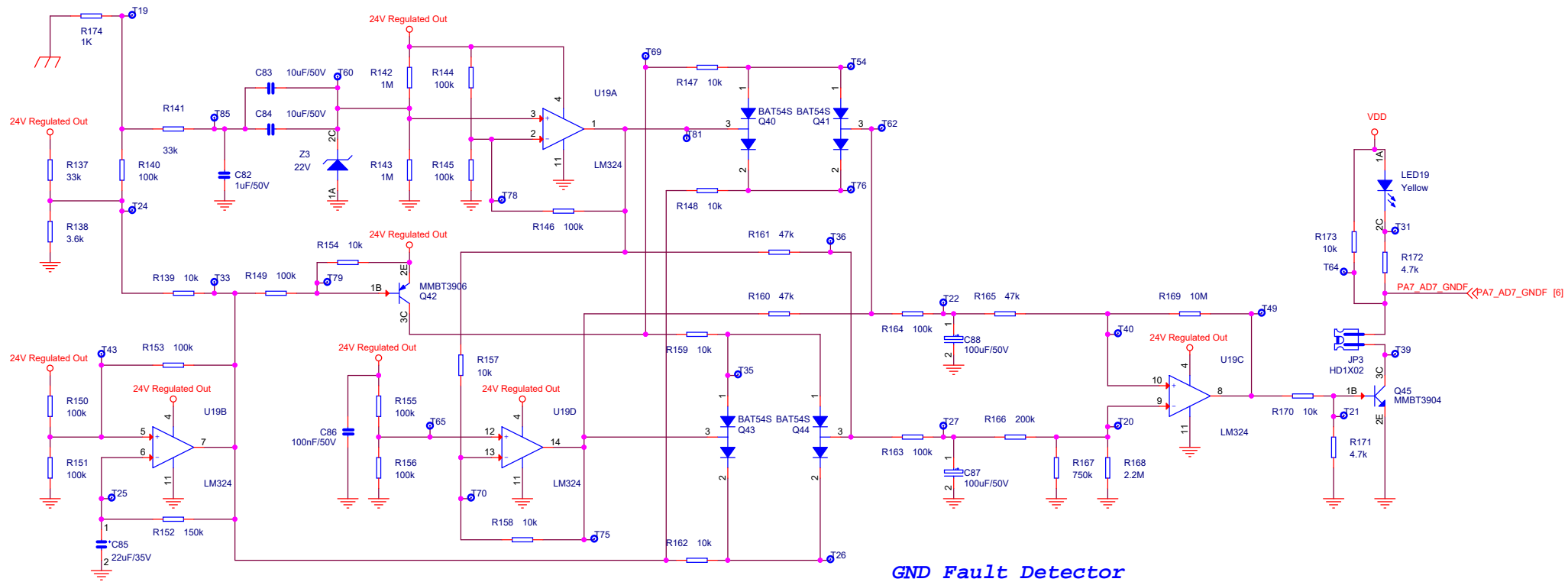


REVISION HISTORY			
REV	DESCRIPTION	DATE	APPV
00	Initial release	2012-03-29	HAN BIN

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PB13_24V_OCP_SCK	<<PB13_24V_OCP_SCK	[6]
PB15_24V_OCP_MOSI	<<PB15_24V_OCP_MOSI	[6]
PC12_24V_OCP_CS	<<PC12_24V_OCP_CS	[6,9]
PD2_24V_OCP_RST	<<PD2_24V_OCP_RST	[6]
PB0_24V_OCP_C1	<<PB0_24V_OCP_C1	[6]
PB1_24V_OCP_C2	<<PB1_24V_OCP_C2	[6]
PC6_24V_1_EN	<<PC6_24V_1_EN	[6]
PC7_24V_2_EN	<<PC7_24V_2_EN	[6]
PC11_24V_1_OCP_STA	<<PC11_24V_1_OCP_STA	[6]
PC10_24V_2_OCP_STA	<<PC10_24V_2_OCP_STA	[6]

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