History

Date (d/m/y)	Version	Note
02/12/2019	0.1	Draft version
04/12/2019	0.2	- Add resistors for CTs - Add 1.8V power for CTs - Add buffer ICs for MCU - Replace single transistors by darlington transistors array. - Fixbug
07/12/2019	0.3	- Add LED signal for relay - Change CTs - Add feedback signals from AC ports - Add WAKE-UP pin for 3G module
09/12/2019	0.4	- Add Buzzer - Add PCB document - Fixbug
12/12/2019	0.5	[x] Thêm chân nạp cho STM32 [x] Chỉnh số cho nguồn 3G (R1,R2) hoặc recommend cái nào thì tô đậm [x] Thêm test point cho mấy chỗ nguồn 12v, 3v3, 1v8 [x] Đèn led blink trạng thái chân B2 [x] Sim 5320 cũng ra hàng rào hoặc test point uart để test
24/12/2019	0.6	- Add PCB layout
29/12/2019	0.7	- Fix bug
27/02/2020	1.0	-
25/05/2020	2.0	- Pre-mass production (20 pcs)
12/03/2021	2.1	- Keep CTs 1 to 8 is 5A the same, the others change to 10A - Add wifi modules ESP-01 and ESP-05. Just use only one, the other for backup. - Bigger screw hole for more easy assembly - Fix the transformer footprint
31/01/2023	3.0	- New version with Thaco - Stackable, easy install and remove - Relay board add snubber - Relay board resize and change connect to flat - Led board change to led & connector smd - Main board add New wifi/lan module - Main board resize for just 4 pair relay - Main board AC-filter to zero detection - Main board 485 - Mainboard realtime 32khz crrystal - Wirre connector on sub or main -> sub

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Header

CT1
12V
CT0

V_REF
12V
RL1
RL0

RL0 # Input: relay control
RL1

ADC_OUT8 # Output: CT ADC out
ADC_OUT9

ACL_OUT0
ACL_F0
ACL_F1
ACL_OUT1

ACL_OUT0 # Output: Check AC output (fuse/relay fault)
ACL_OUT1

P301
CT1 — 2 1 — CT0
V_REF — 4 3
RL1 — 6 5 — RL0
12V — 8 7 — 12V
ACL_F1 — 14 13 — ACL_OUT0
ACL_OUT1 — 16 15 — ACL_F0
Header 8X2

Terminal

ACN — H301
ACL — H303 # Terminal: AC in

ACL_OUT0
ACL_OUT1
2
1
Terminal: AC out

P302
ACL
ACN
1
2
Header 2

H302
H304
H305

RL301
SLA-xxVDC-SL-C
R304 4.7K D301
12V
D302 SS14
RL0
ACL_OUT0
ACL_F0
R301 100K
R302 100K
R303 100K
F301 Fuse
J301
ACN
ACL

V_REF
CT0
R305 100R
S301
S302 TA17
TA20-100

RL302
SLA-xxVDC-SL-C
R310 4.7K D303
12V
D304 SS14
RL1
ACL_OUT1
ACL_F1
R307 100K
R308 100K
R309 100K
F302 Fuse
J302
ACN
ACL

V_REF
CT1
R312 100R
S303
S304 TA17
TA20-100

ACL_OUT0 — C301 C — ACN
ACL_OUT1 — C302 C — ACN
ACL_OUT0 — C303 C — R306 R — ACN
ACL_OUT1 — C304 C — R311 R — ACN

Title	*eBox_Peripherals*		NPN Lab
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