Viera Plasma Display PC Board Recycling
Component Level Repair
Course 2
PCB Recycling Component Level Repair Techniques

Adjustments Procedure

The following adjustment procedures are mandatory after replacing the SC, SS & P boards. It is also required if the Panel is replaced.

I. Item preparation:

1. Input a white signal. (please refer to the next slide on several ways to generate a white pattern).
2. Set picture controls as follows:
   Picture menu: Dynamic
   P-NR: OFF
   Aspect: 16:9

CAUTION:

1. Perform Vsus adjustment first.
2. Confirmation of Vscn voltage should be done after confirmation of Vad adjustment.

When Vad = -105V, Vscn voltage is 35V +/- 4V.

Several ways to generate White Pattern signal:

1. External pattern generator.

2. Internal white pattern in Service mode.
   (Please see next slide on how to enter Test Pattern Mode).

3. Disconnect LVDS cable **DG5** on the DG board to display white pattern.

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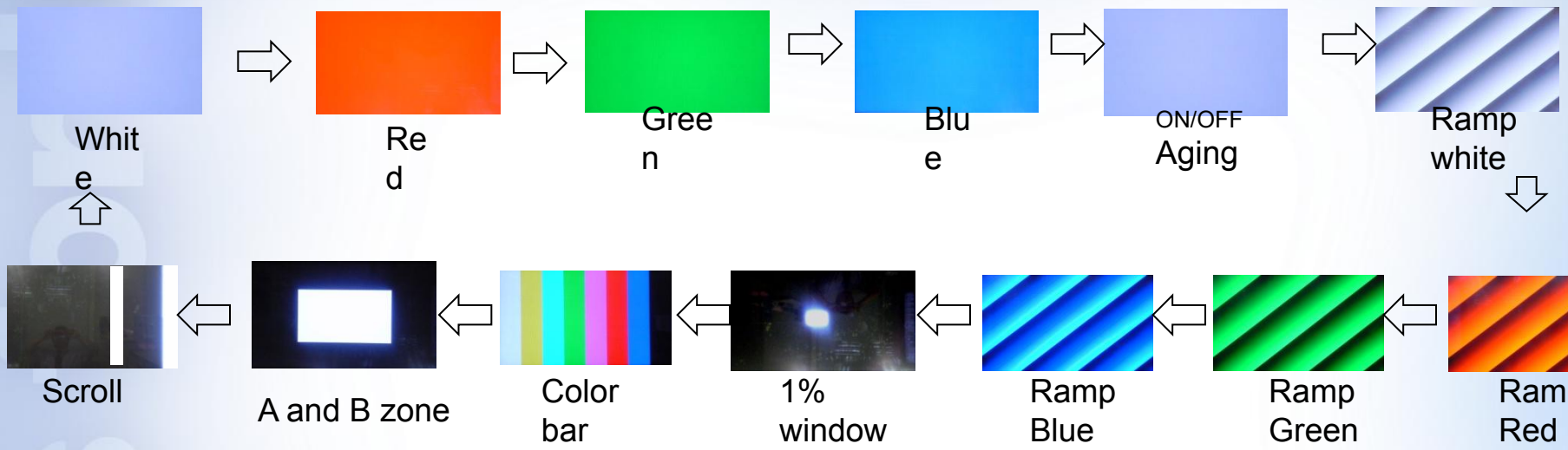
Entering Test Pattern Mode:

Test Pattern



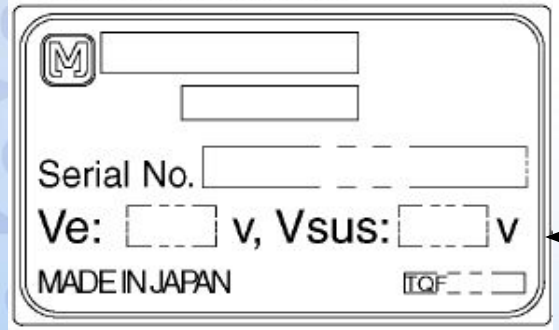
How to enter test pattern mode:

1. While pressing "VOLUME-" button of the TV set, press “RECALL” button of the remote control three times within 2 seconds.
2. Push button "1" of remote control several times, and select "OPTION” setting.
3. Press "OK" button of Remote controller for three seconds or more to place the unit in the test pattern mode.

II. Driver Adjustment TH42PX60

Name	Test Point	Voltage	Volume	Remarks
Vsus	TPVSUS (SS)	Vsus ± 2V	VR251 (P)	*
Ve	TPVE (SS)	Ve ± 2V	VR6000 (SS)	*
Vset	TPVSET (SC)	280V ± 7V	Fixed	
Vad	TPVAD (SC)	-105V ± 1V	VR6600 (SC)	
Vscn	TPVSCN (SC)	Vad+140V ± 4V	Fixed	
Vda	TPVDA (SS)	75V ± 1V	Fixed	

Panel Label information

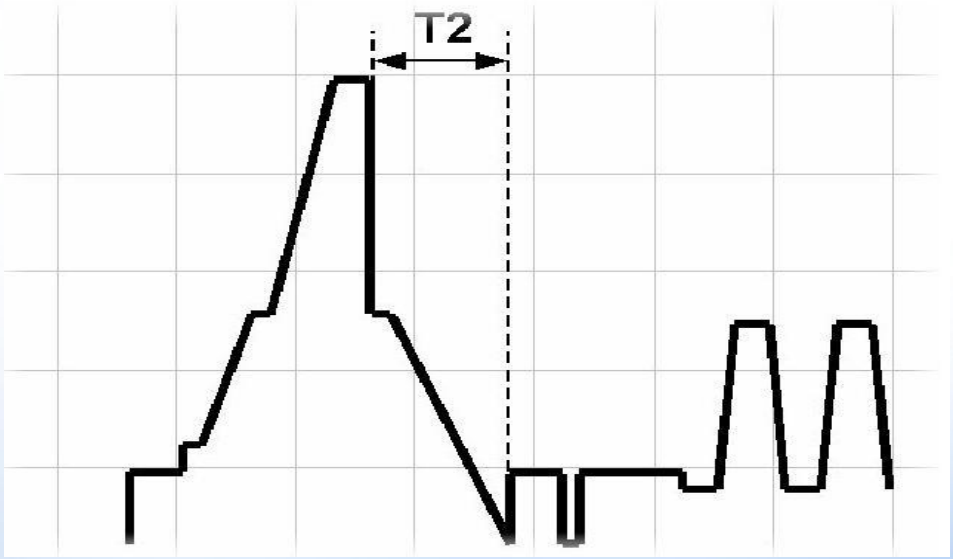


Adjustment voltage

III. Initialization Pulse Adjustment

1. Input a White signal into the unit.
2. Set picture controls as follows:
   Picture Menu: Dynamic
   P-NR: OFF
3. Connect oscilloscope probe to test point TPSC1 (T2).
   Adjust VR6602 to obtain 195 +/- 10 µsec for T2.

Note: Connect oscilloscope's negative probe to common ground (Please use panel metal chassis as common ground)



Adjustment necessary when PC board exchanged

Adjust the following voltages using a multimeter:

PCB	Adj Pt	TP	Voltage	Volume
P	Vsus	TPVSUS (SS)	*Vsus +/-2V	R628(P)
	Vdat	P12-1,5(P)	75.5+/-0.1V	R665(P)
	PFC	C445(P)	396V+/-0.5V	R443(P)
SC	Vad	TPVAD(SC)	-105+/-1V	VR6600(SC)
SS	Ve	TPVE(SS)	*Ve+/-2V	VR6000(SS)
D, DG	**White balance and black pedestal level confirmation necessary.**			

*Please refer to Panel label for set value.

Caution: Do not adjust Vsus below Ve to avoid damage to PCB.

Common symptoms experienced if the adjustment is not performed

- Several images maybe displayed at the same time.
- Excessive brightness.
- Low brightness.
- Wrong hue/color.
- Reduction of the life of the panel.

POWER SUPPLY

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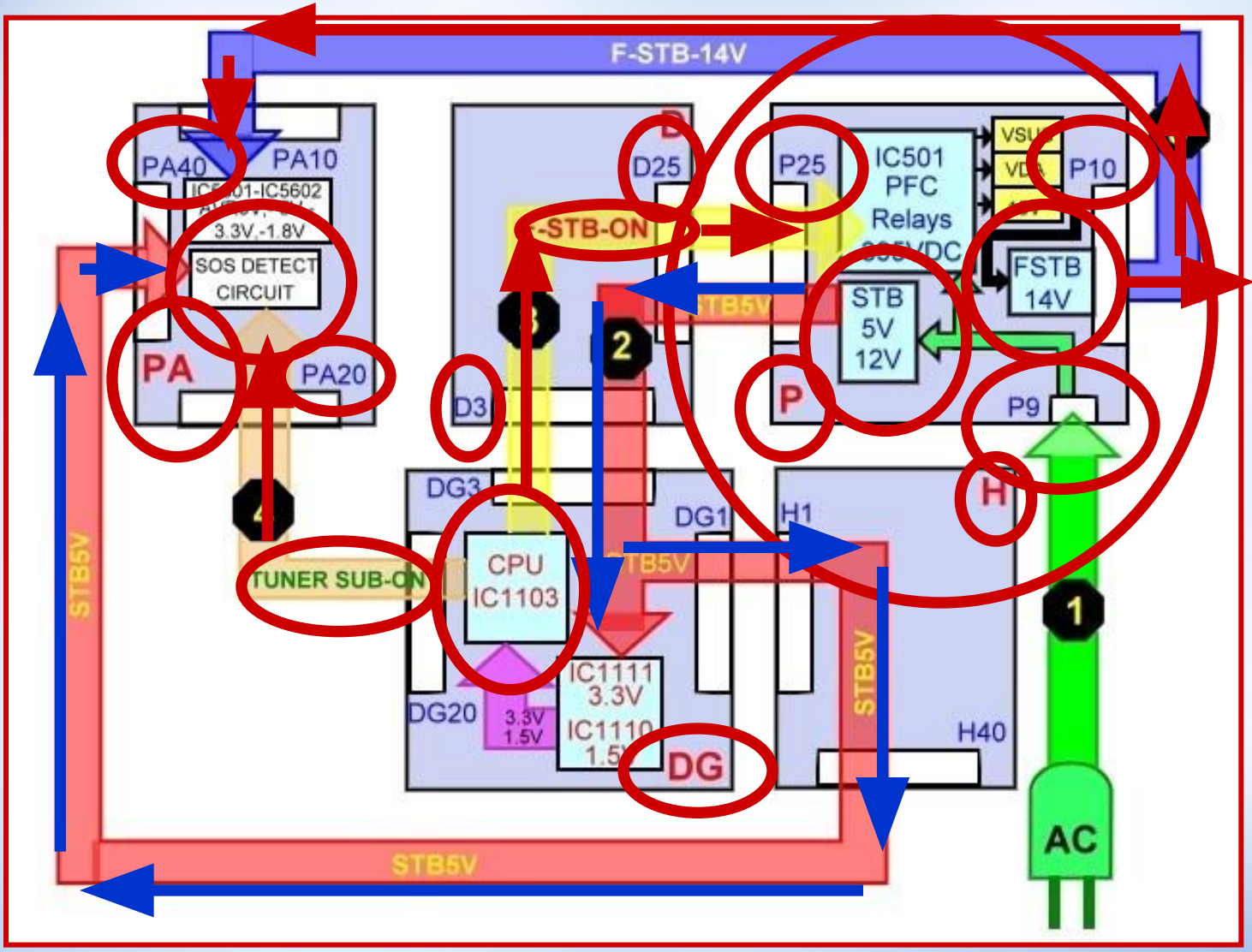
Sequence of events when Plasma TV is plugged in

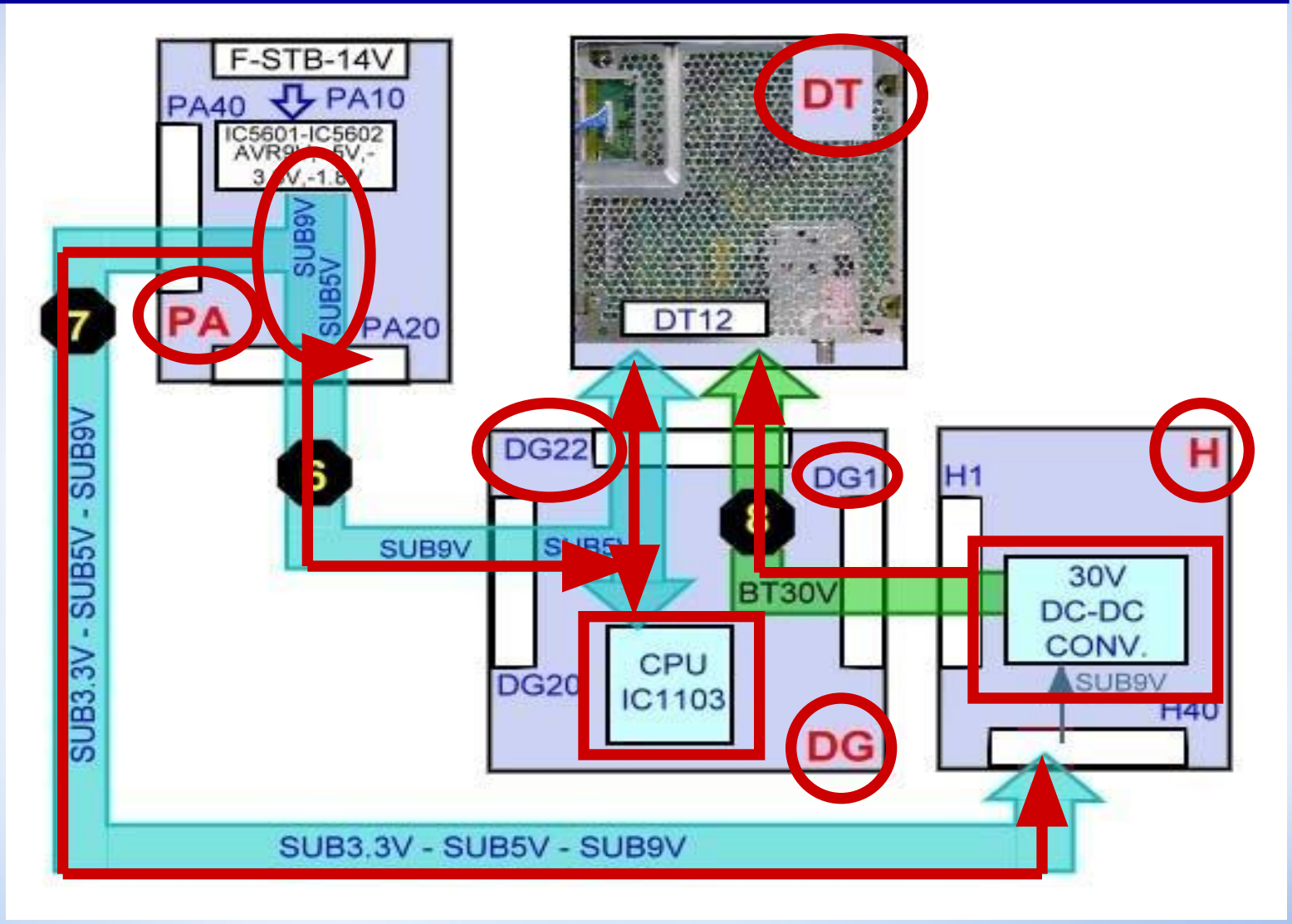
When a Plasma TV is plugged in, there are a few indications of normal operation. Knowing these will help us understand what's going on with the unit when an abnormality occurs.

1. There is a click from relay RL402 and RL403 when they are activated.
2. The LED in the optical jack (inside the DT board) turns ON for approximately 4 seconds.
3. Immediately after, the relay click the Tuner LEDs turn ON for approximately 20 seconds.
4. The LED in the optical jack turns ON again for approximately 1 second and both LEDs (tuner and optical jack) turn OFF.
5. Then another click is audible from relays RL402 & RL403, indicating that they are no longer engaged. Note at this time, LEDs (for Tuner & optical jack) are turned OFF.

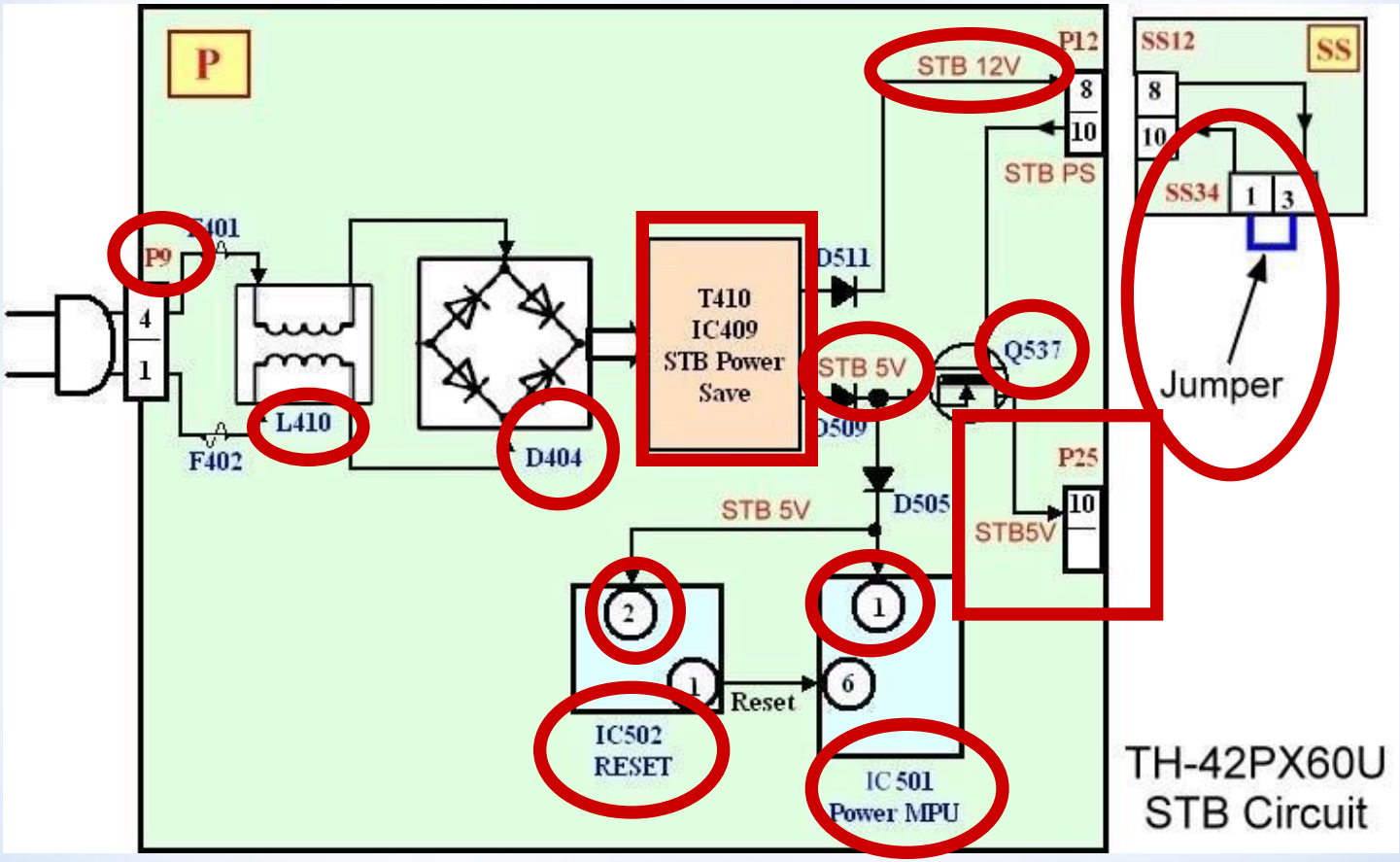
Standby Block (Part1)



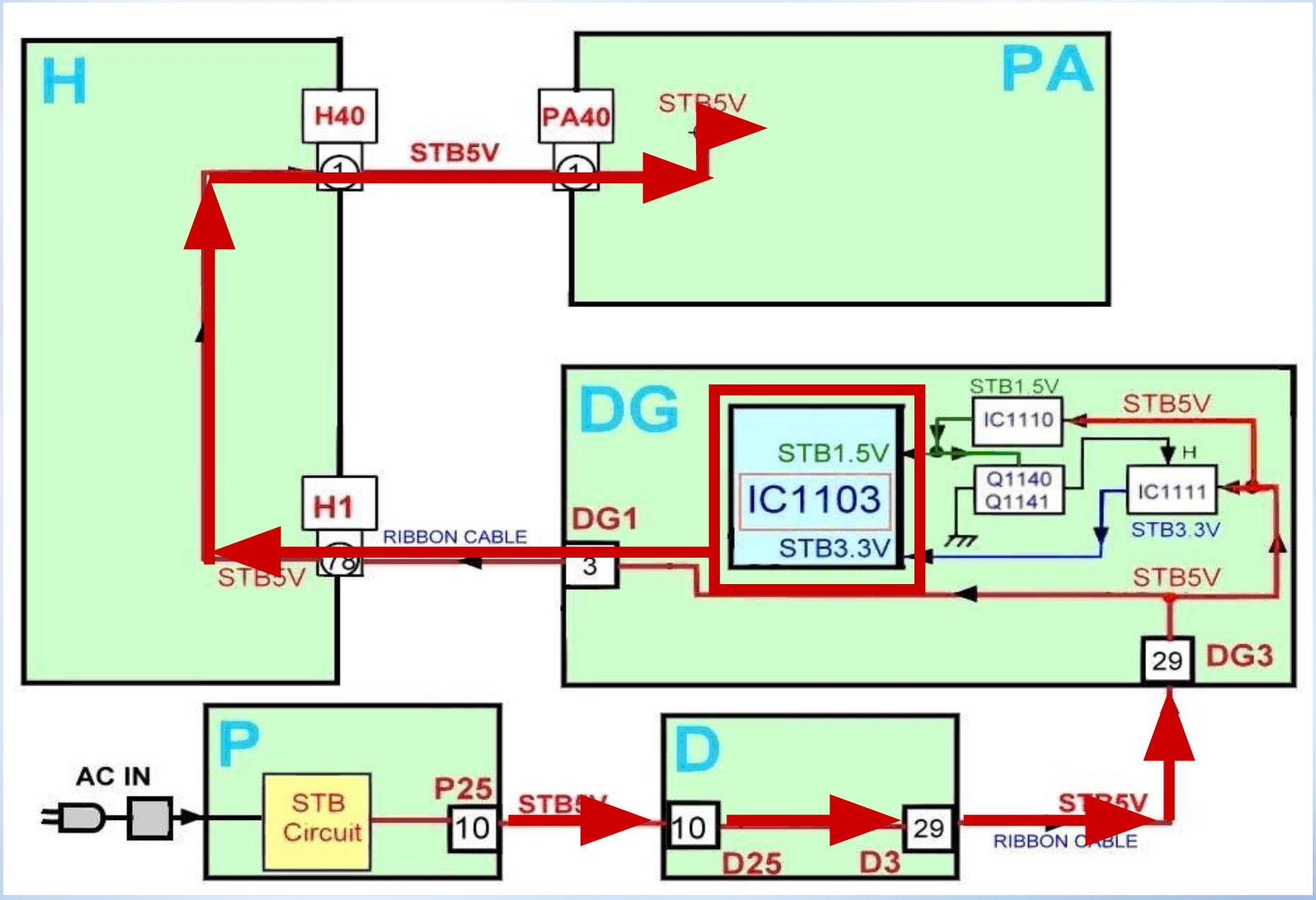
Standby Block (Part2)



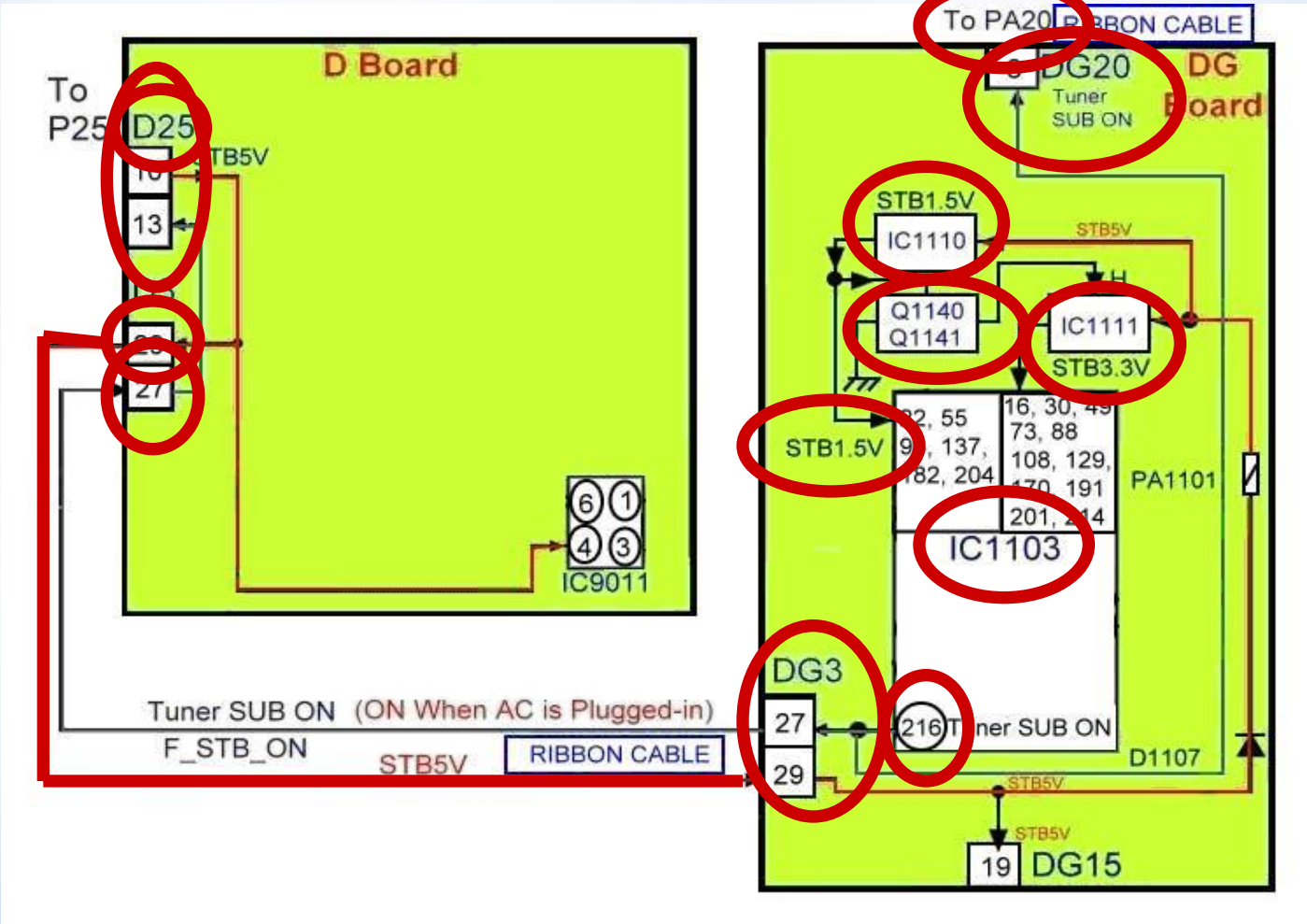
Power Supply (Standby Circuit)



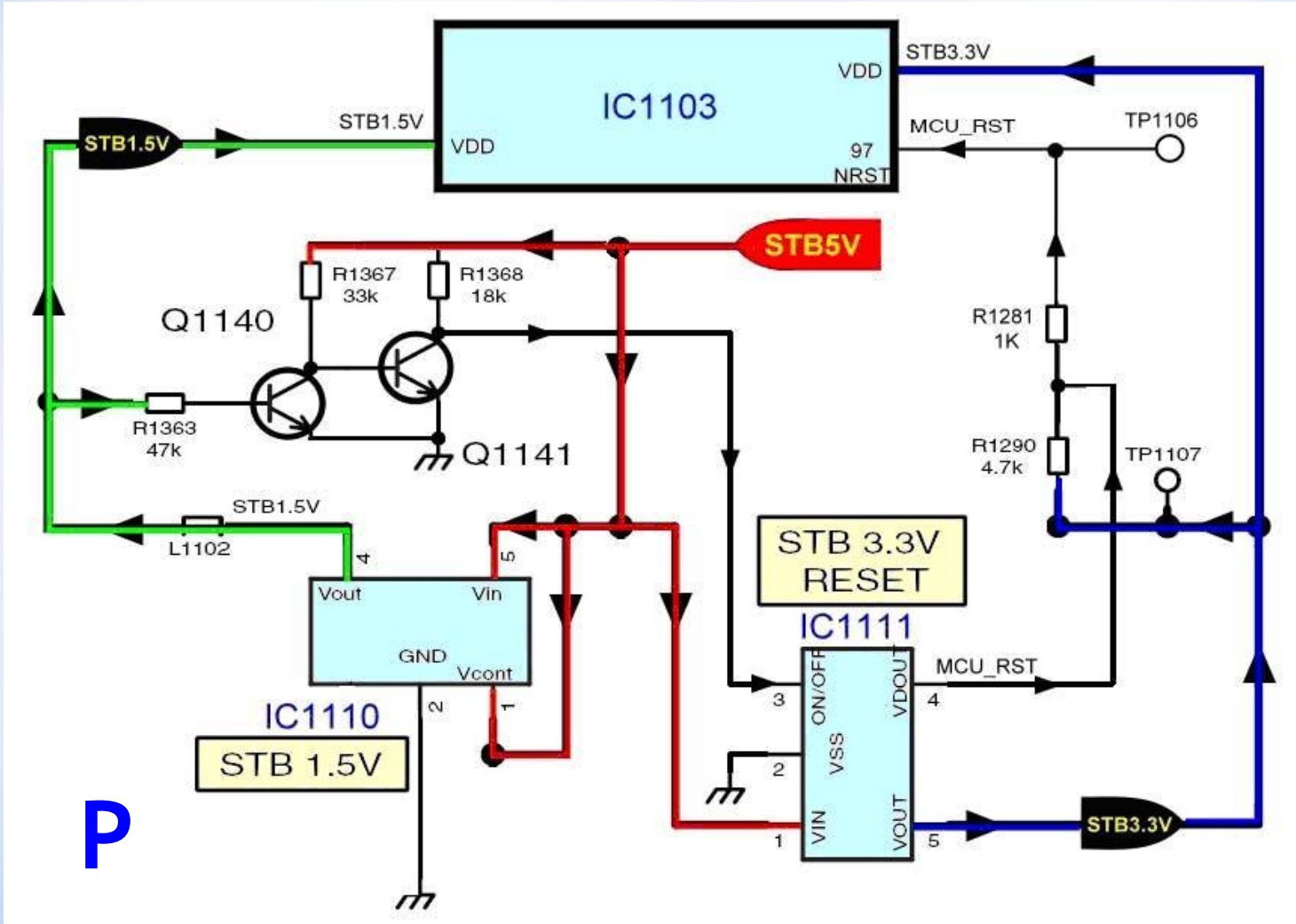
STB 5V Distribution



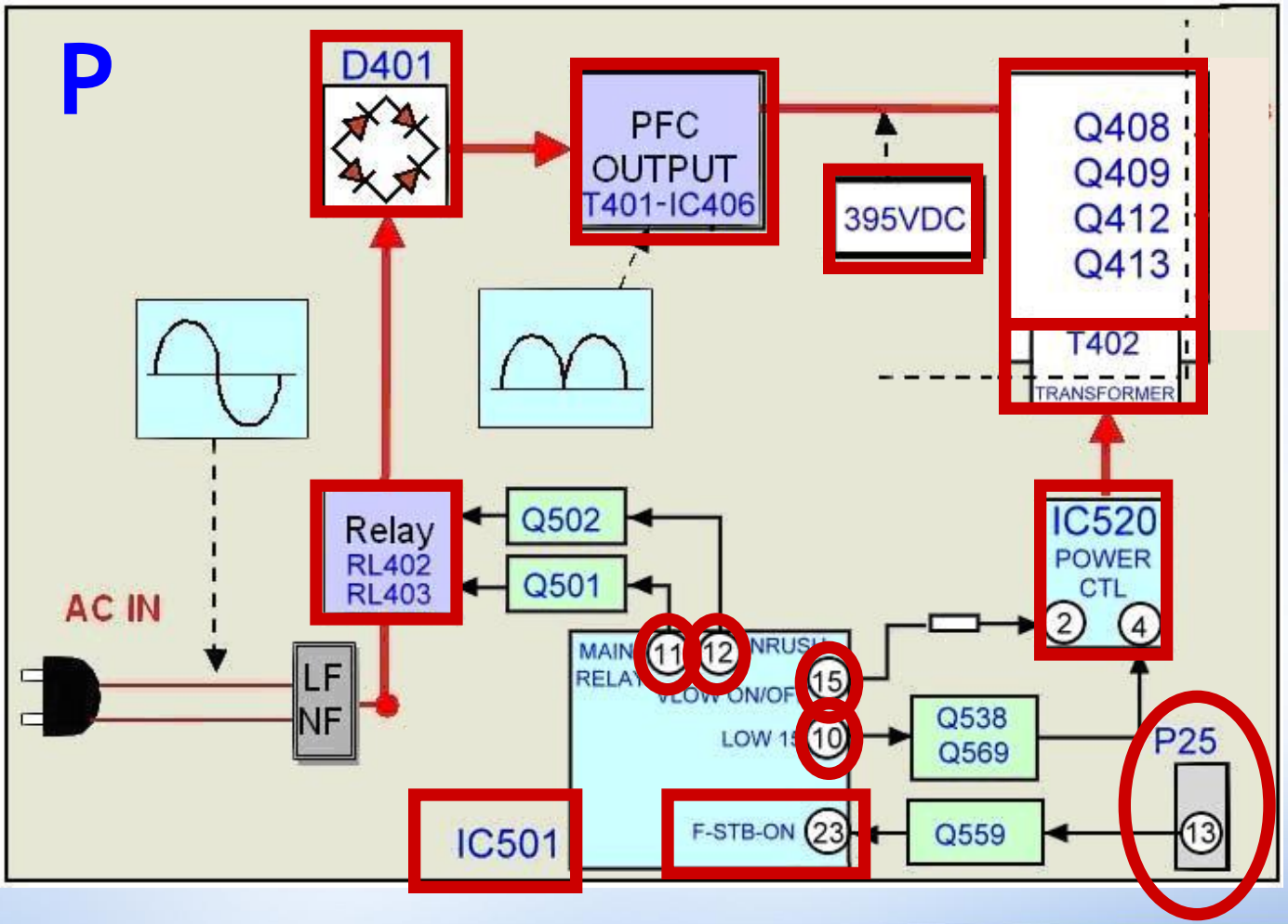
Power Supply (Standby Circuit)



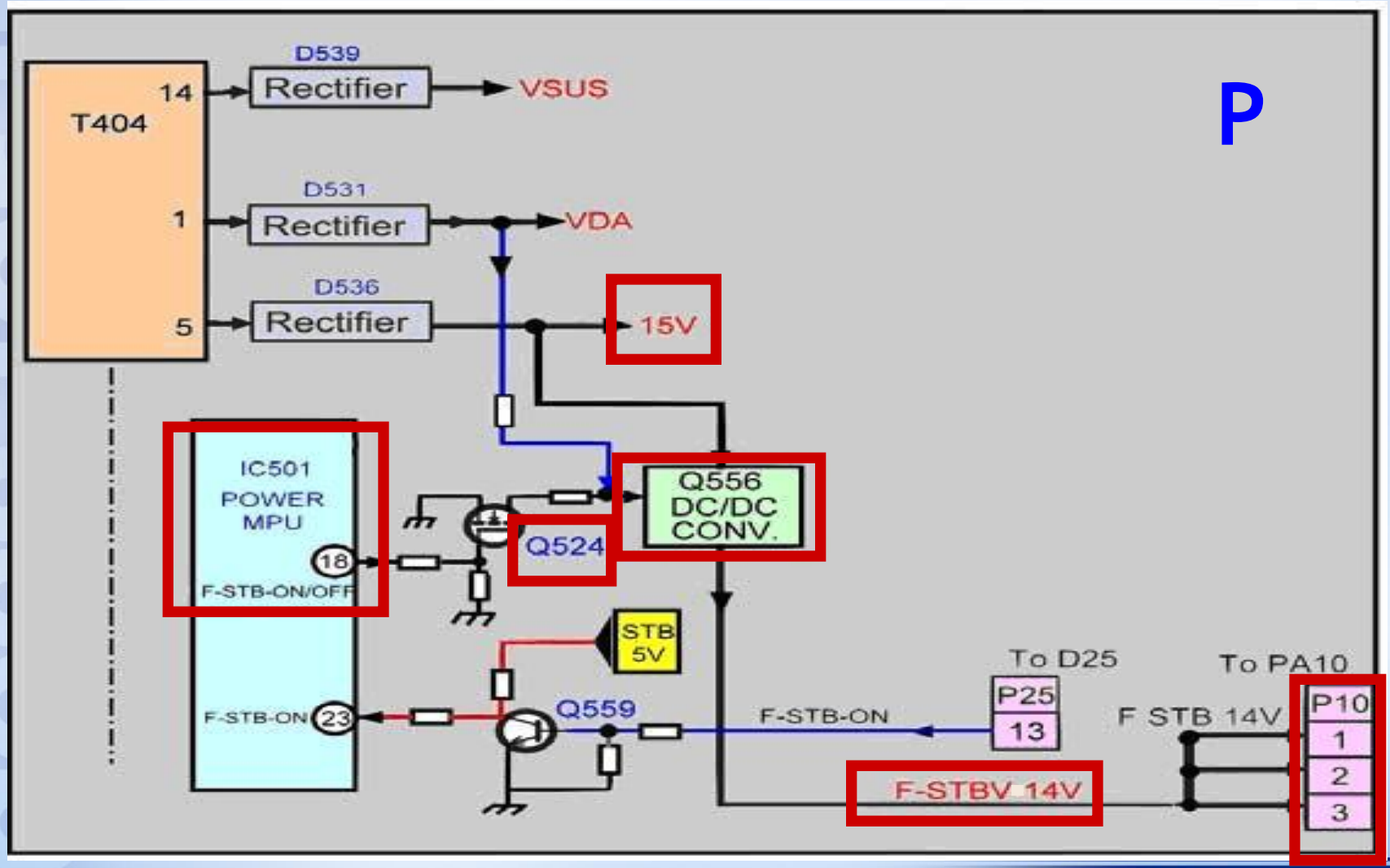
STB5V, STB3.3V & STB1.5V



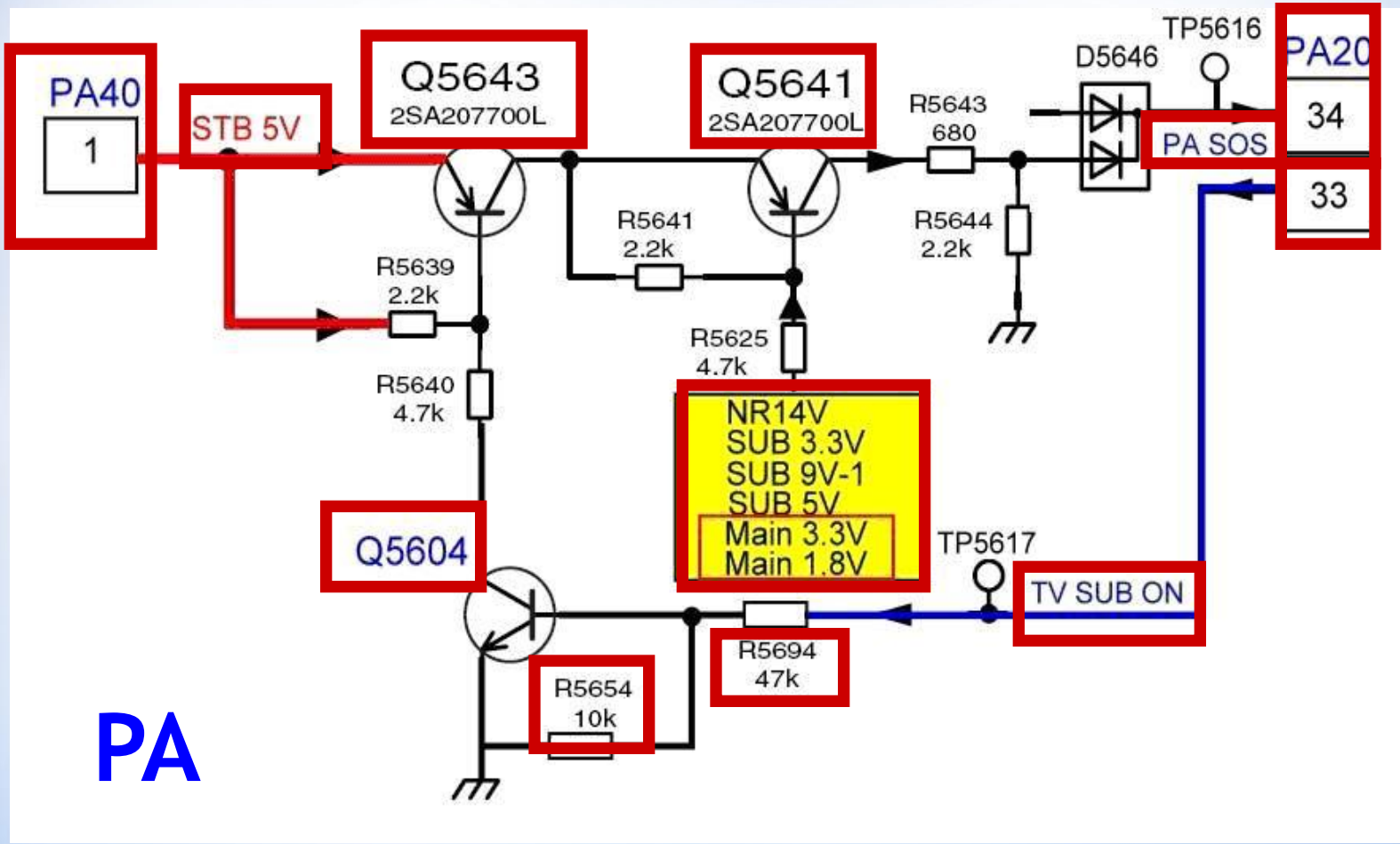
F-STB-ON (Primary)



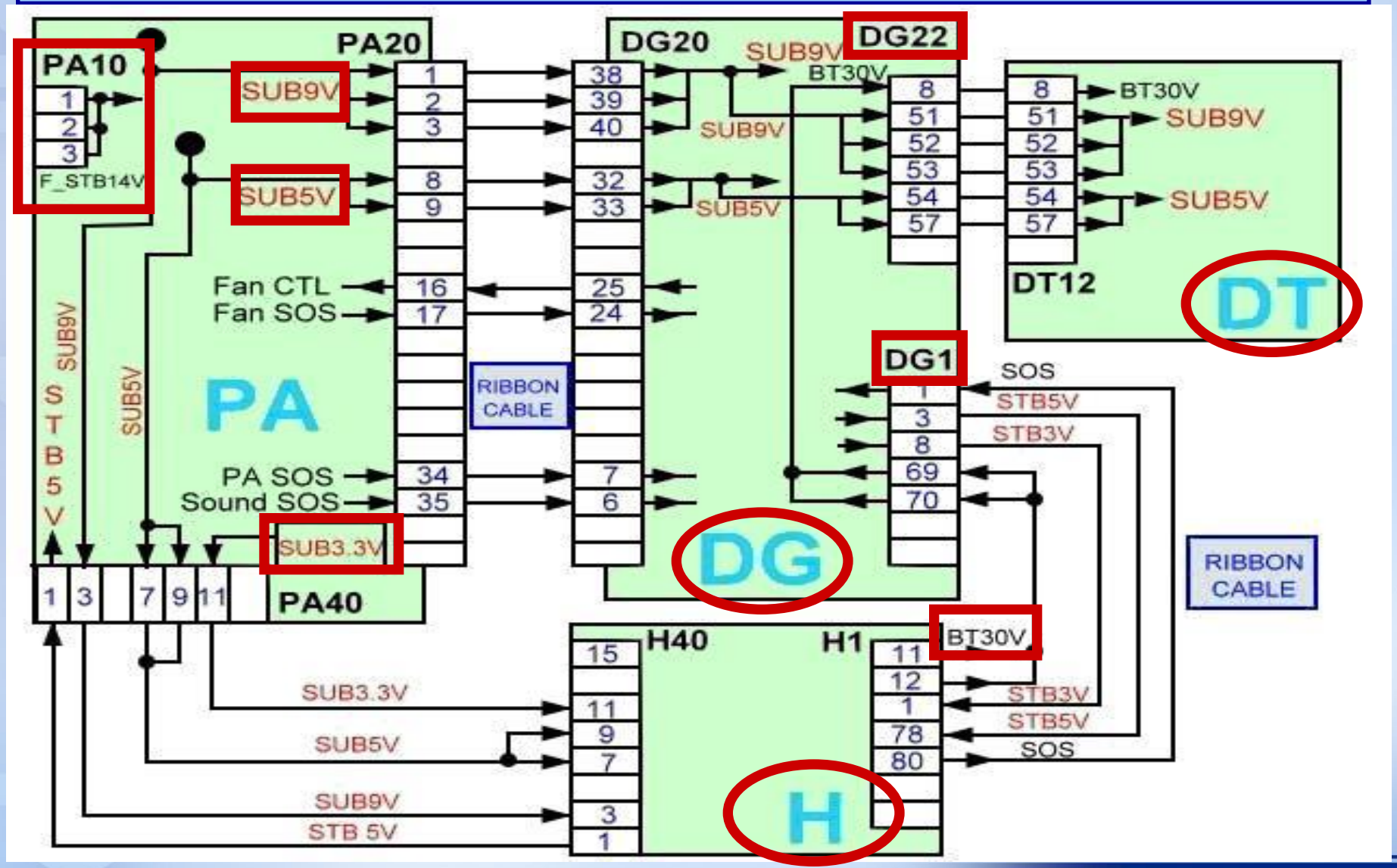
F-STB-14V


D539
Rectifier
VSUS
14
T404
D531
Rectifier
VDA
1
D536
Rectifier
15V
5
IC501
POWER
MPU
18
F-STB-ON/OFF
Q524
Q556
DC/DC
CONV.
STB
5V
F-STB-ON
23
Q559
To D25
P25
13
F-STB-ON
To PA10
F STB 14V
P10
1
2
3
F-STBV 14V
P

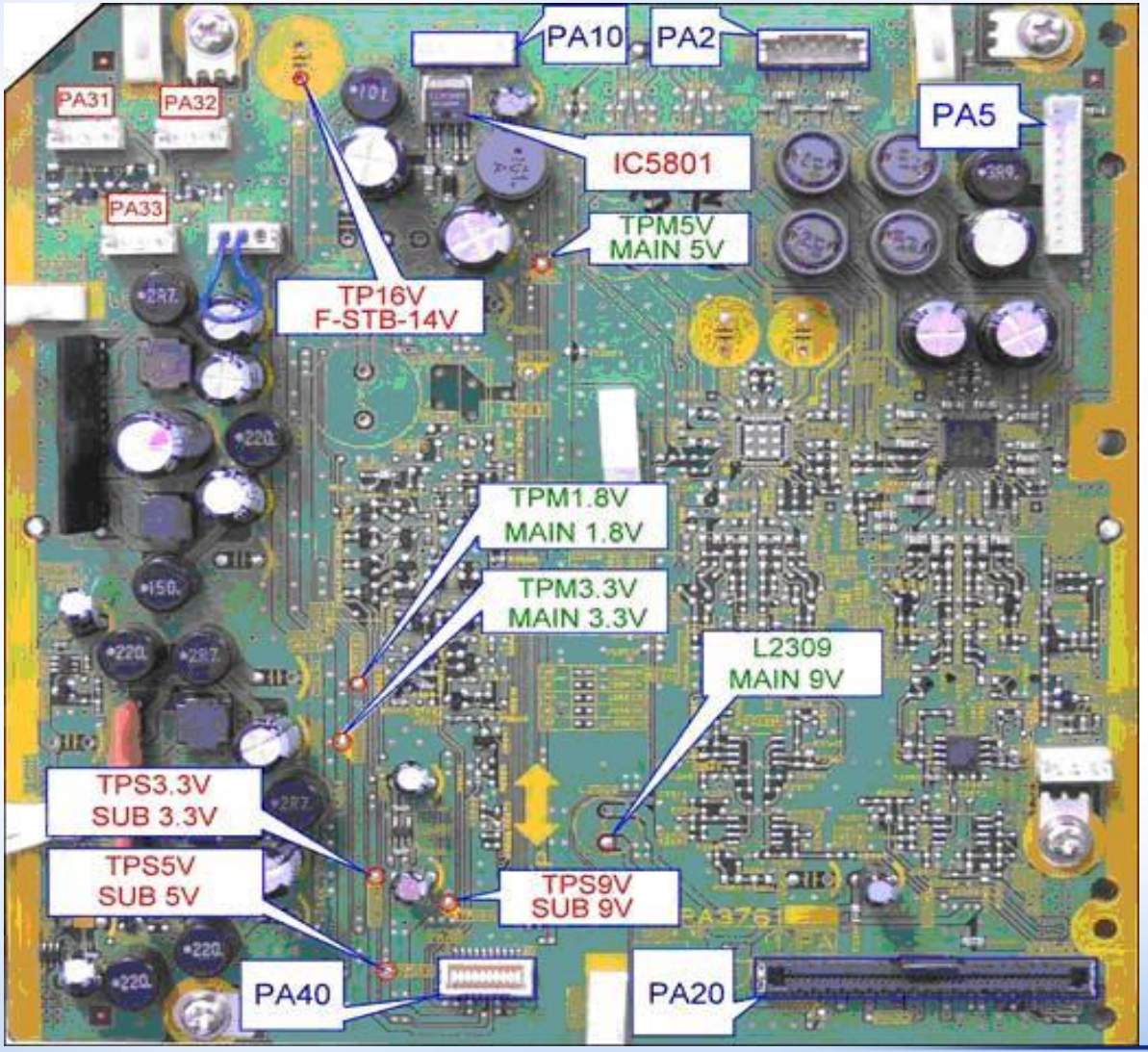
STB5V and TV-SUB-ON function on PA board



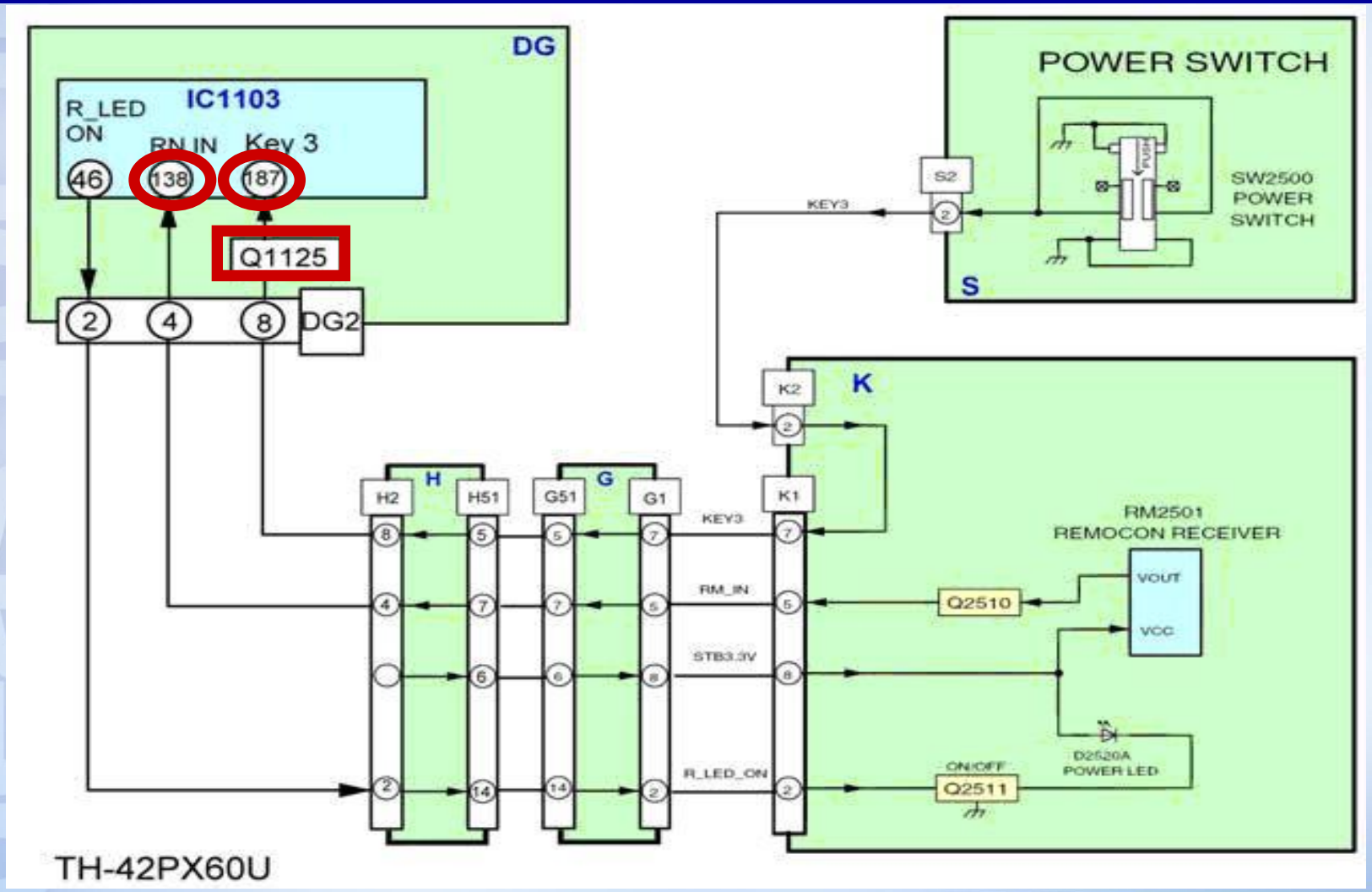
SUB-Voltages Output from the PA board



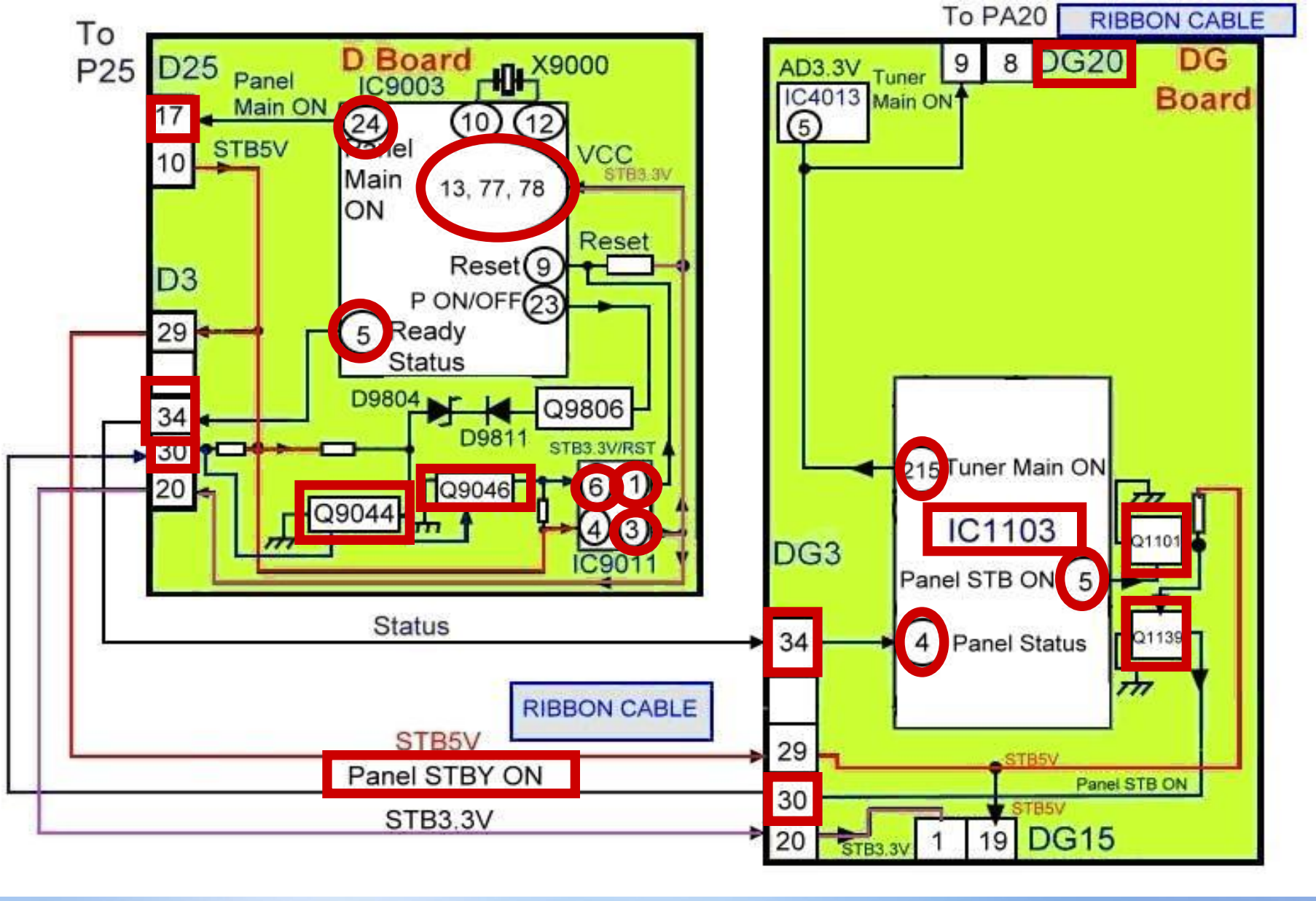
PA Board Test Points



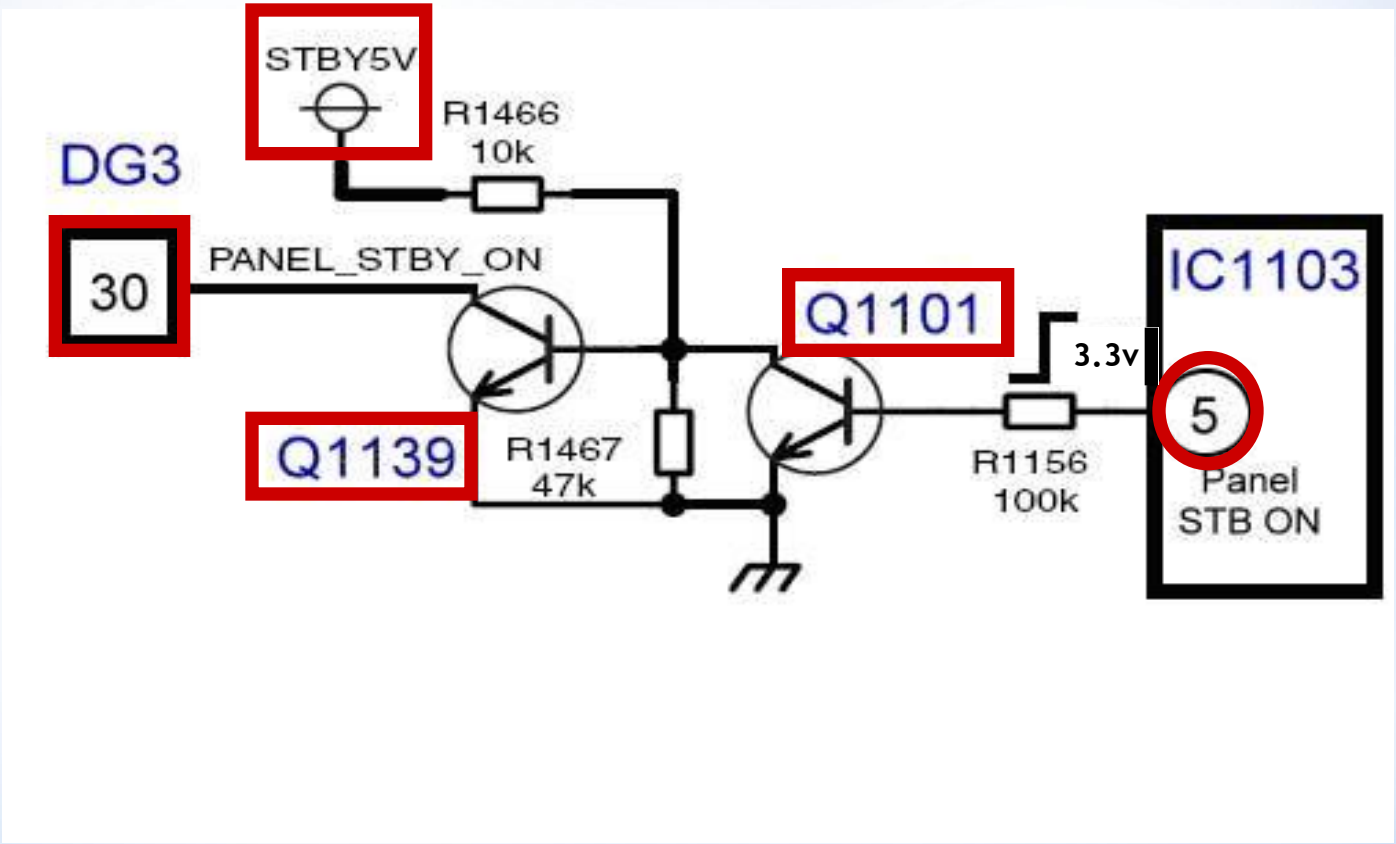
POWER ON


DG
IC1103
R_LED ON
RN IN
Key 3
46
138
187
Q1125
2
4
8
DG2
POWER SWITCH
S2
KEY3
SW2500
POWER
SWITCH
S
K
K2
K1
H
H2
H51
G
G51
G1
KEY3
RM_IN
STB3.3V
R_LED_ON
RM2501
REMOCON RECEIVER
VOUT
VCC
Q2510
D2520A
POWER LED
ON/OFF
Q2511
TH-42PX60U

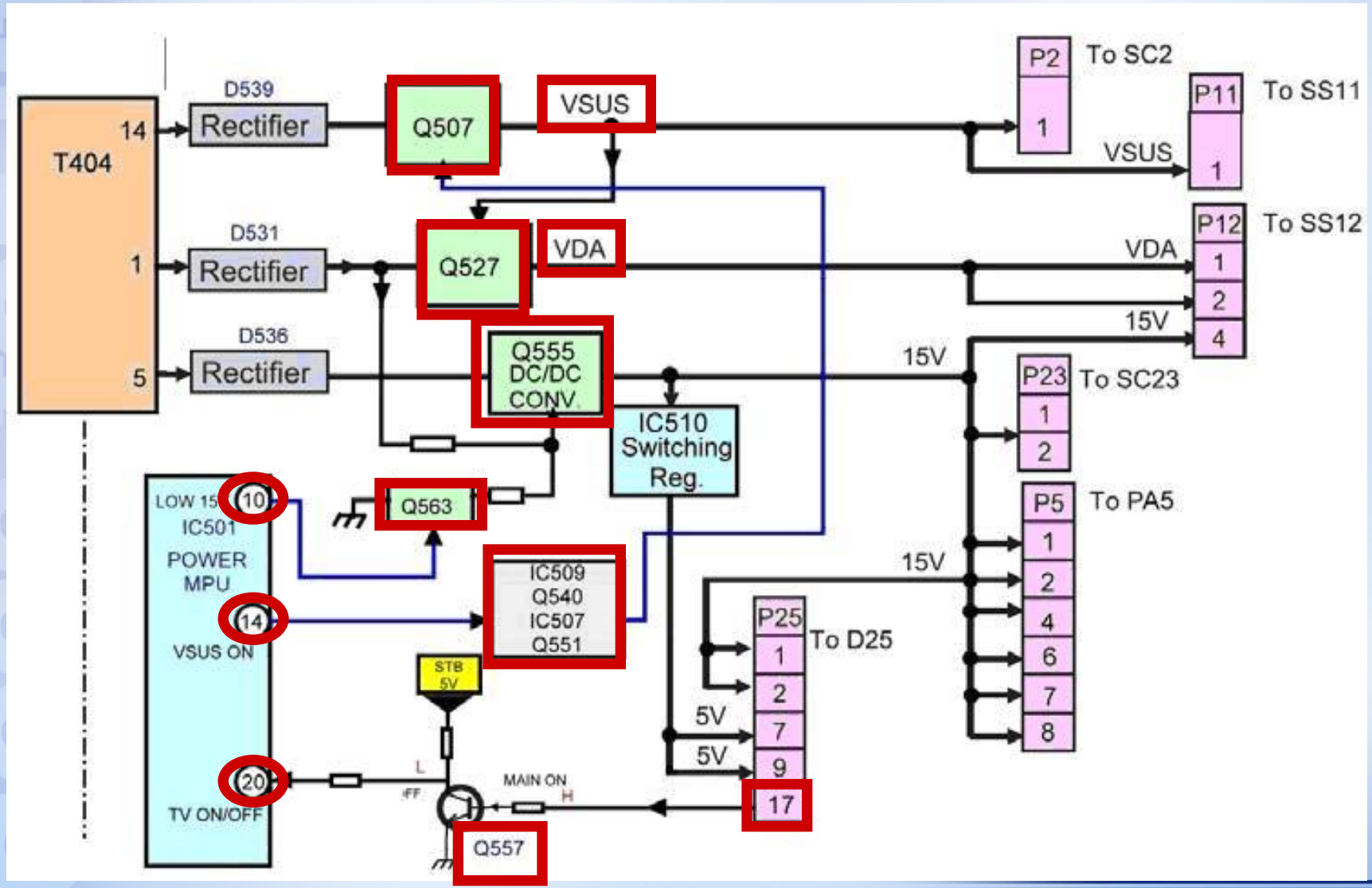
POWER ON


To P25
D25
D Board
X9000
IC9003
Panel Main ON
17
24
10
12
STB5V
10
Panel Main ON
13, 77, 78
VCC
STB3.3V
Reset
Reset
9
D3
P ON/OFF
23
29
5
Ready Status
34
D9804
D9811
Q9806
30
STB3.3V/RST
20
Q9046
6
1
Q9044
4
3
IC9011
To PA20
RIBBON CABLE
AD3.3V
IC4013
5
Tuner Main ON
9
8
DG20
DG Board
215
Tuner Main ON
IC1103
Q1101
DG3
Panel STB ON
5
Q1139
Status
34
4
Panel Status
RIBBON CABLE
STB5V
29
Panel STBY ON
30
STB3.3V
20
STB3.3V
1
19
DG15
STB5V
Panel STB ON
STB5V

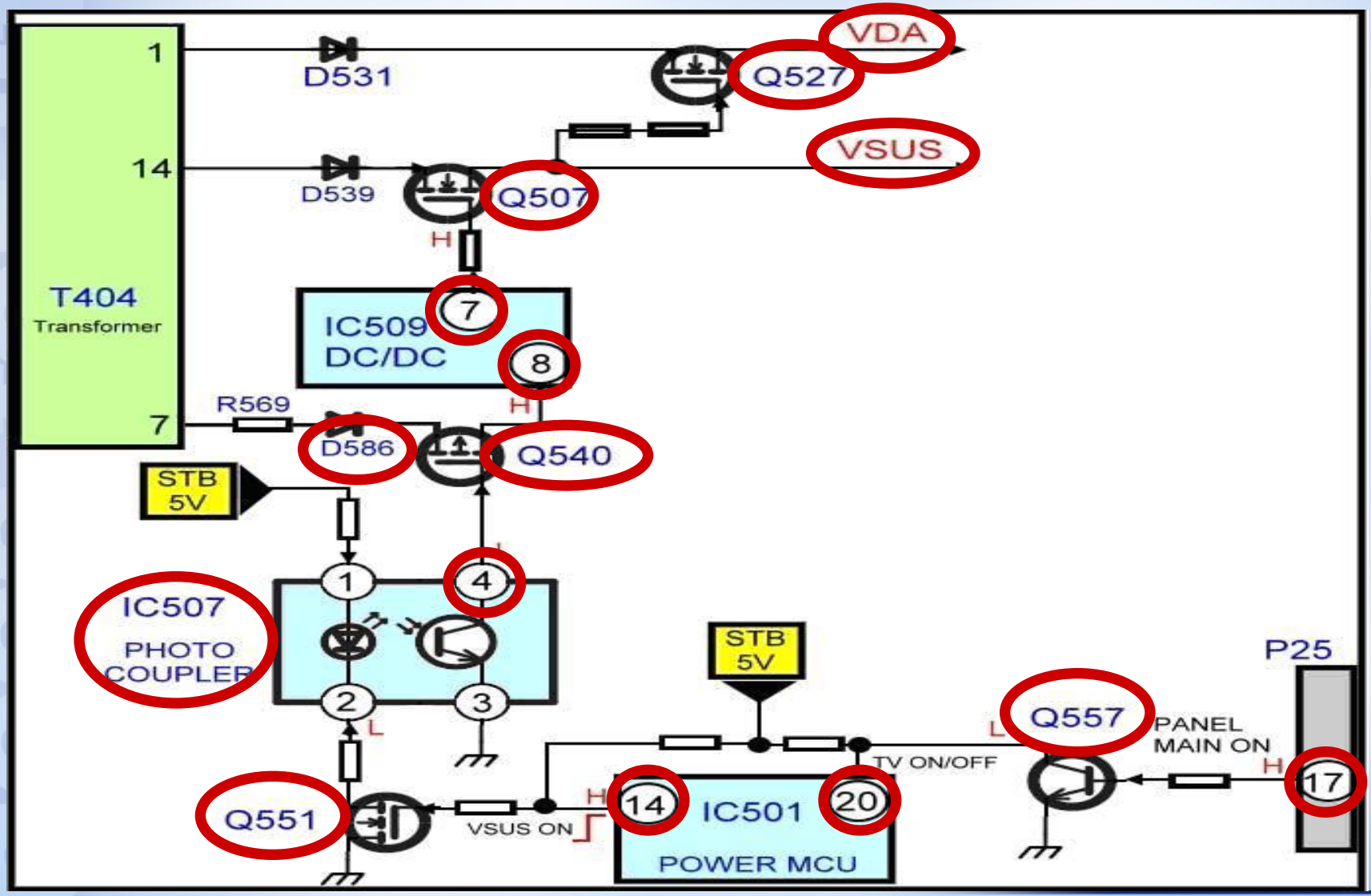
Panel Standby ON Circuit



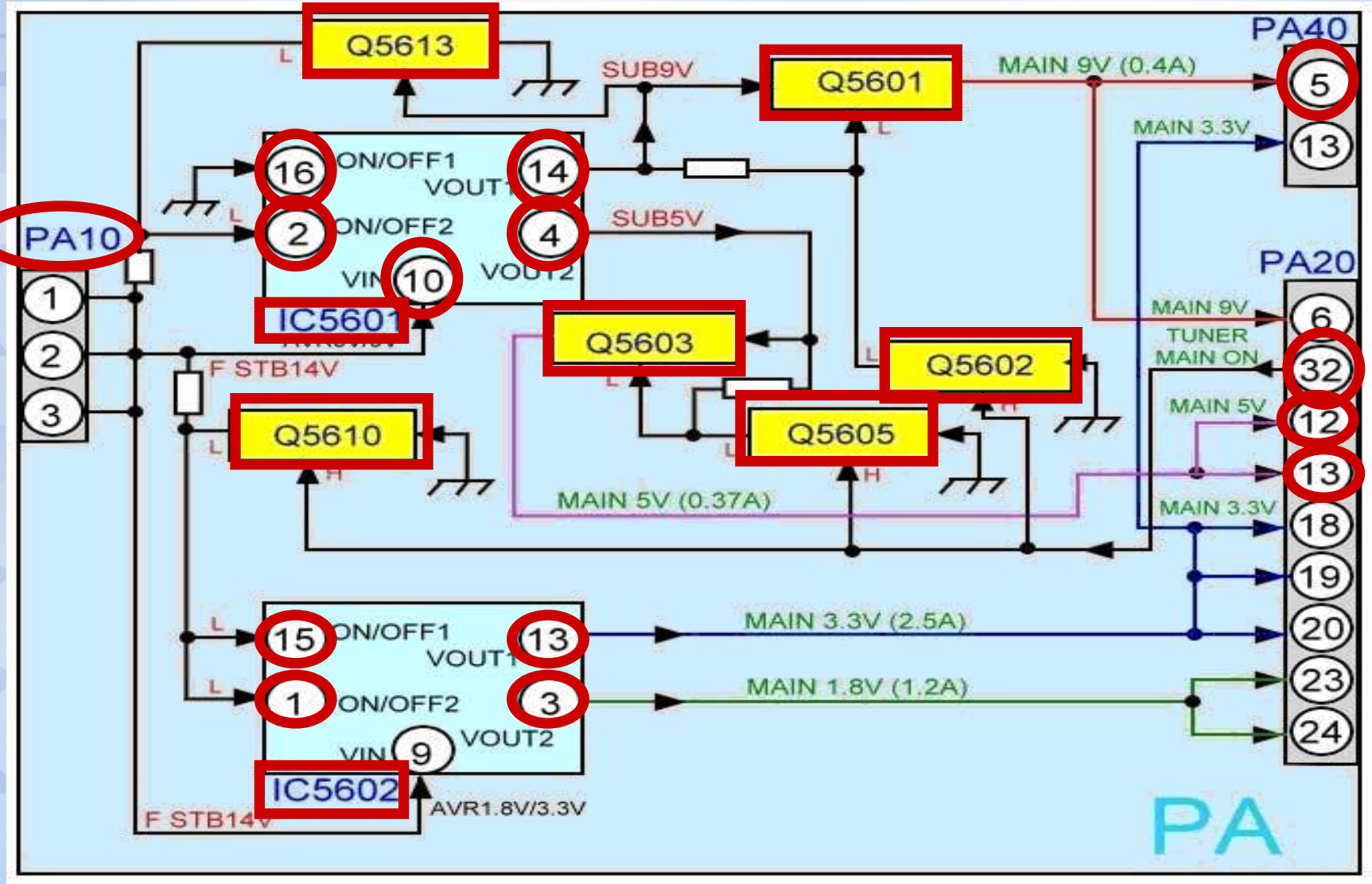
Power Supply Secondary Circuit



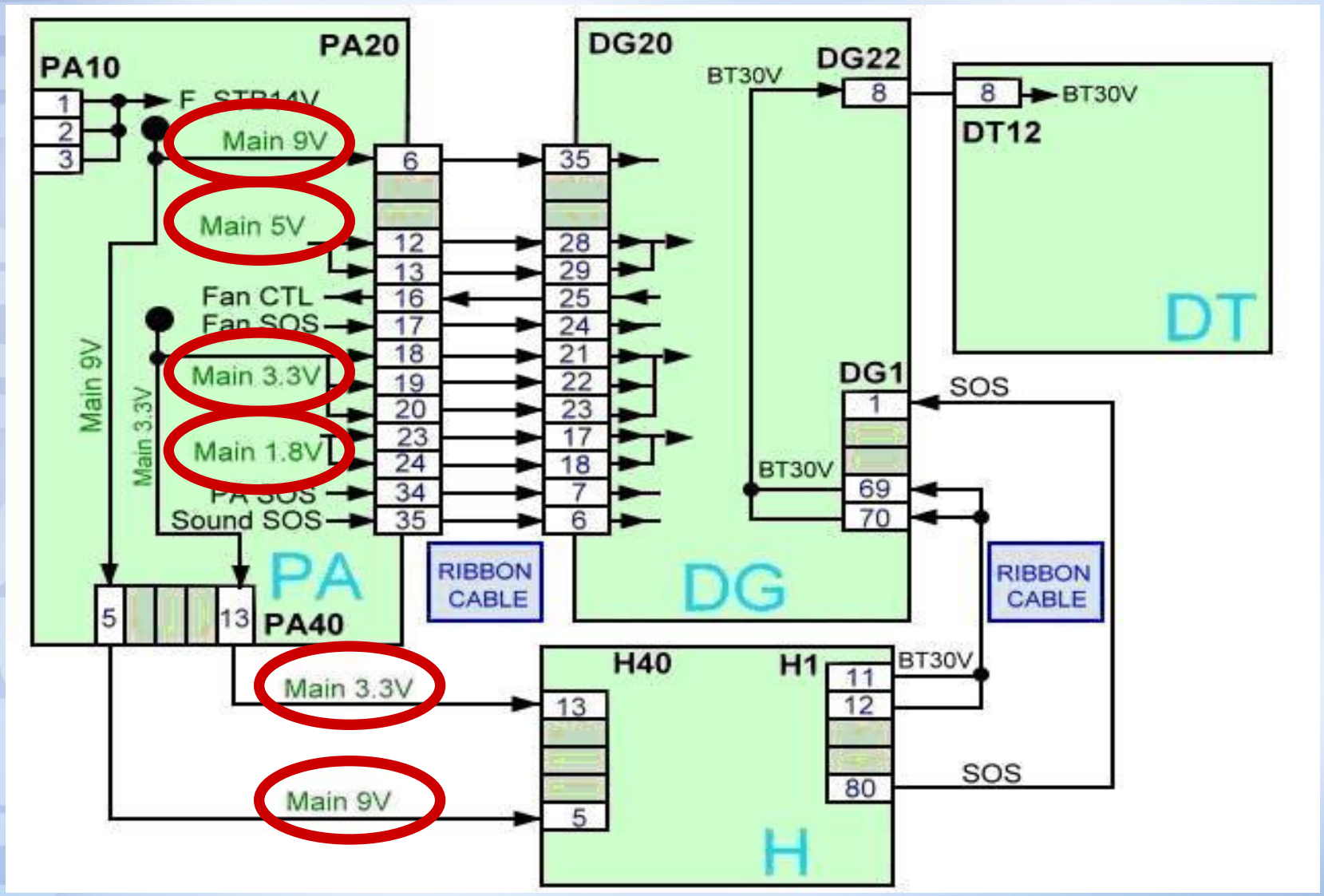
VSUS and VDA Circuit



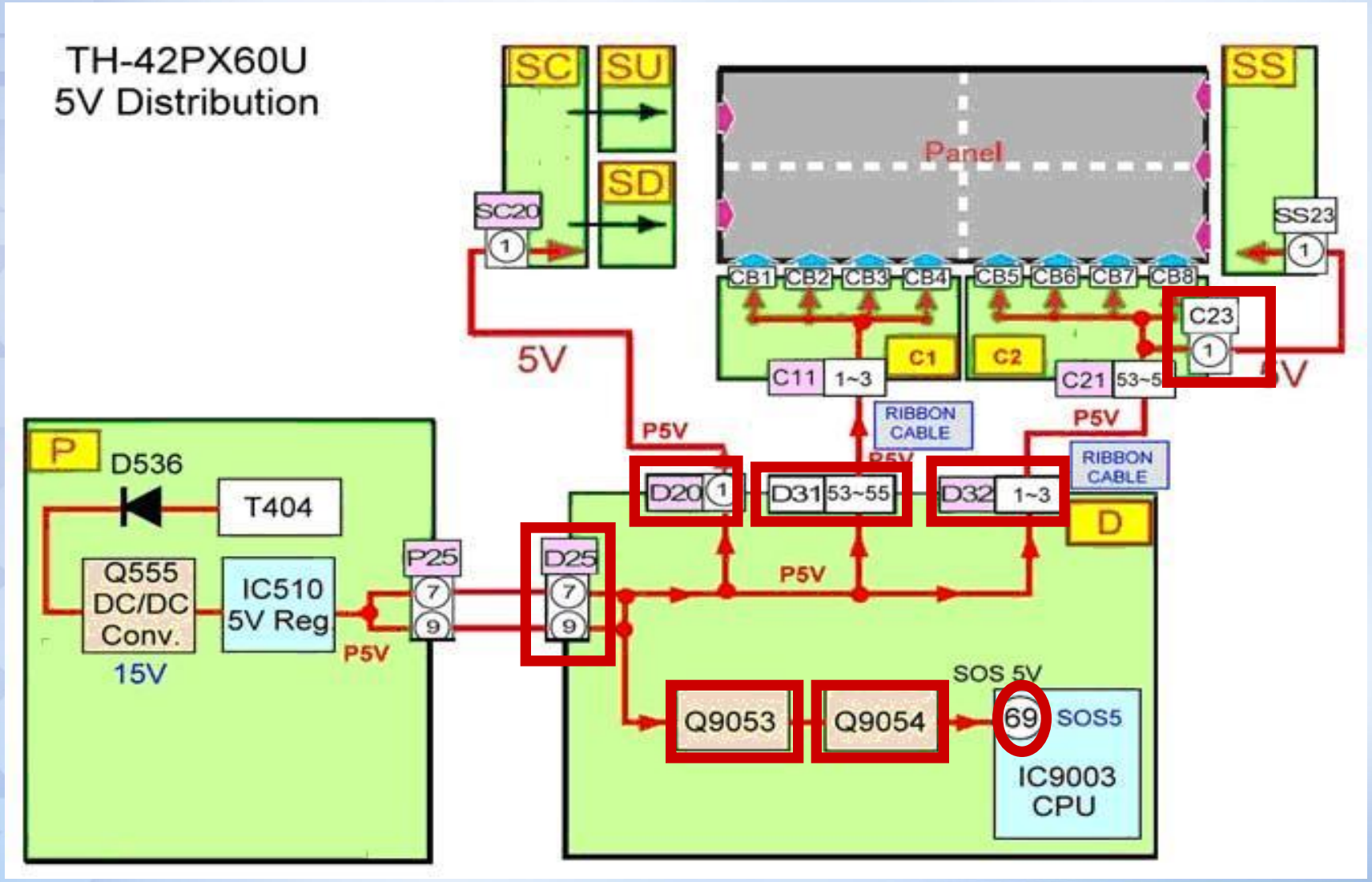
PA Board Circuit Explanation



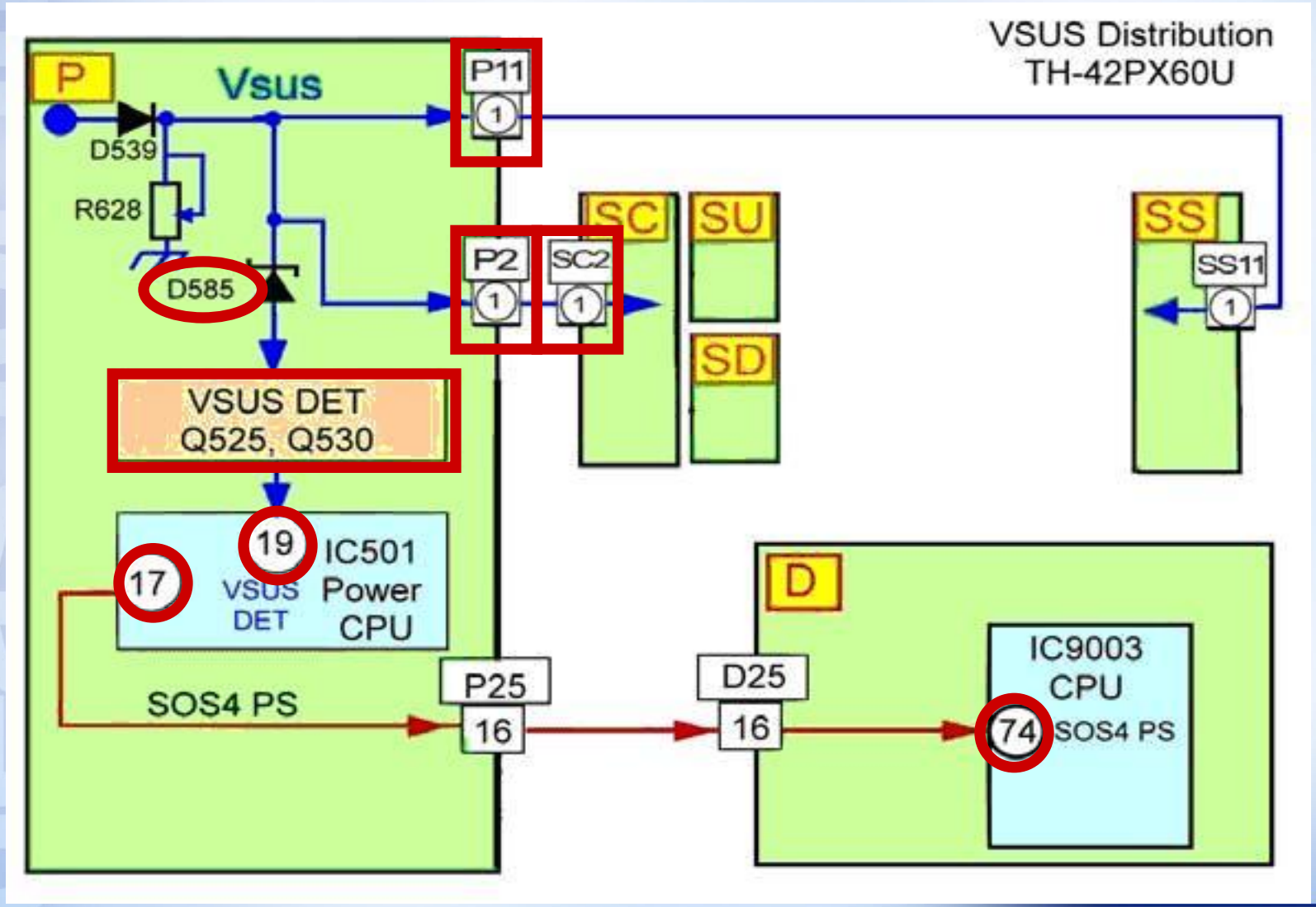
Main voltages output from the PA Circuit



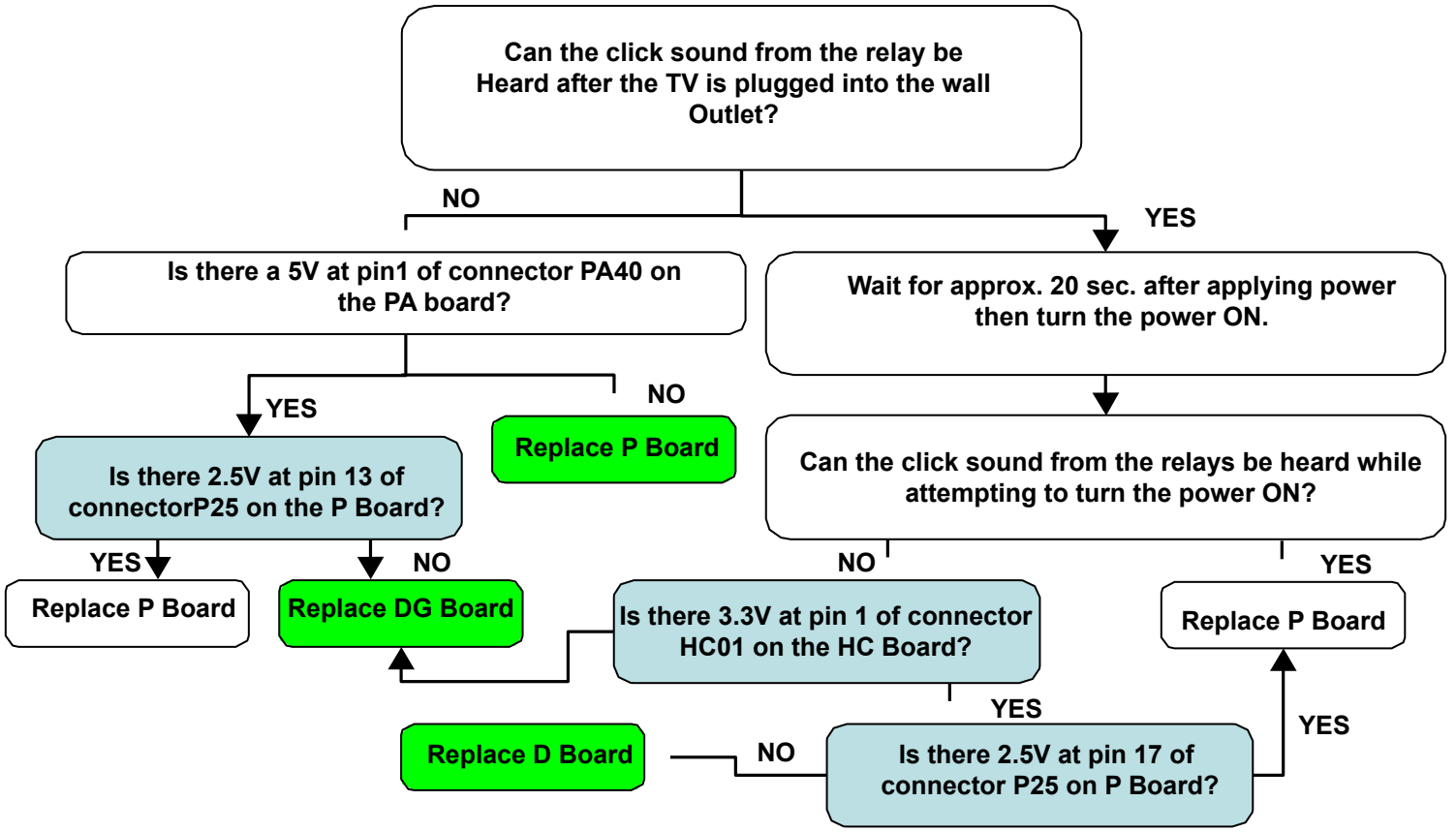
5V Distribution



VSUS Distribution



Troubleshooting Guide



Thank You

For Completing Course Two

<u>Course Three</u>

Understanding How System Shut Down Operates

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