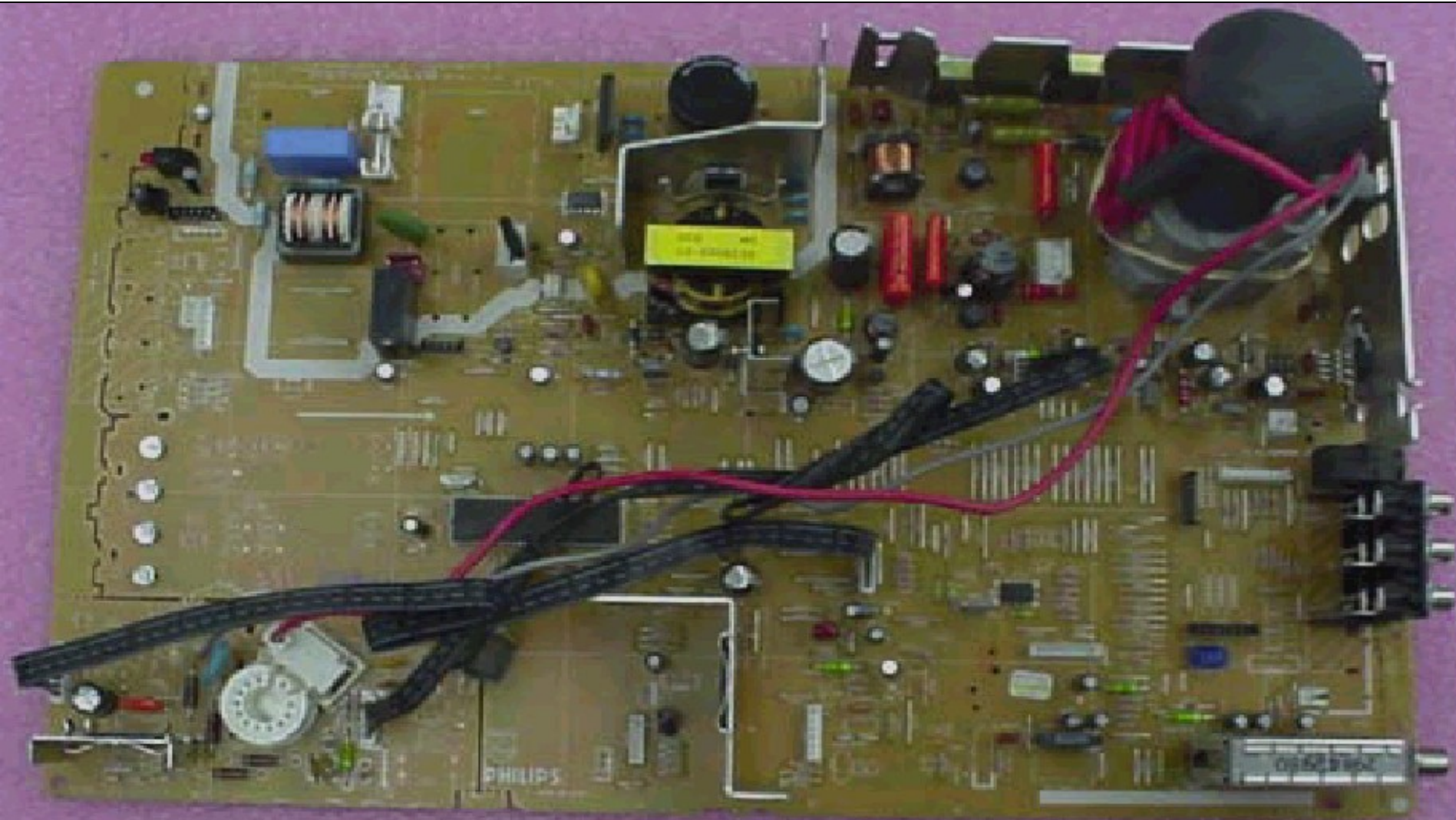


Bienvenidos al Service Training CTV chassis L01

Let's make things better.



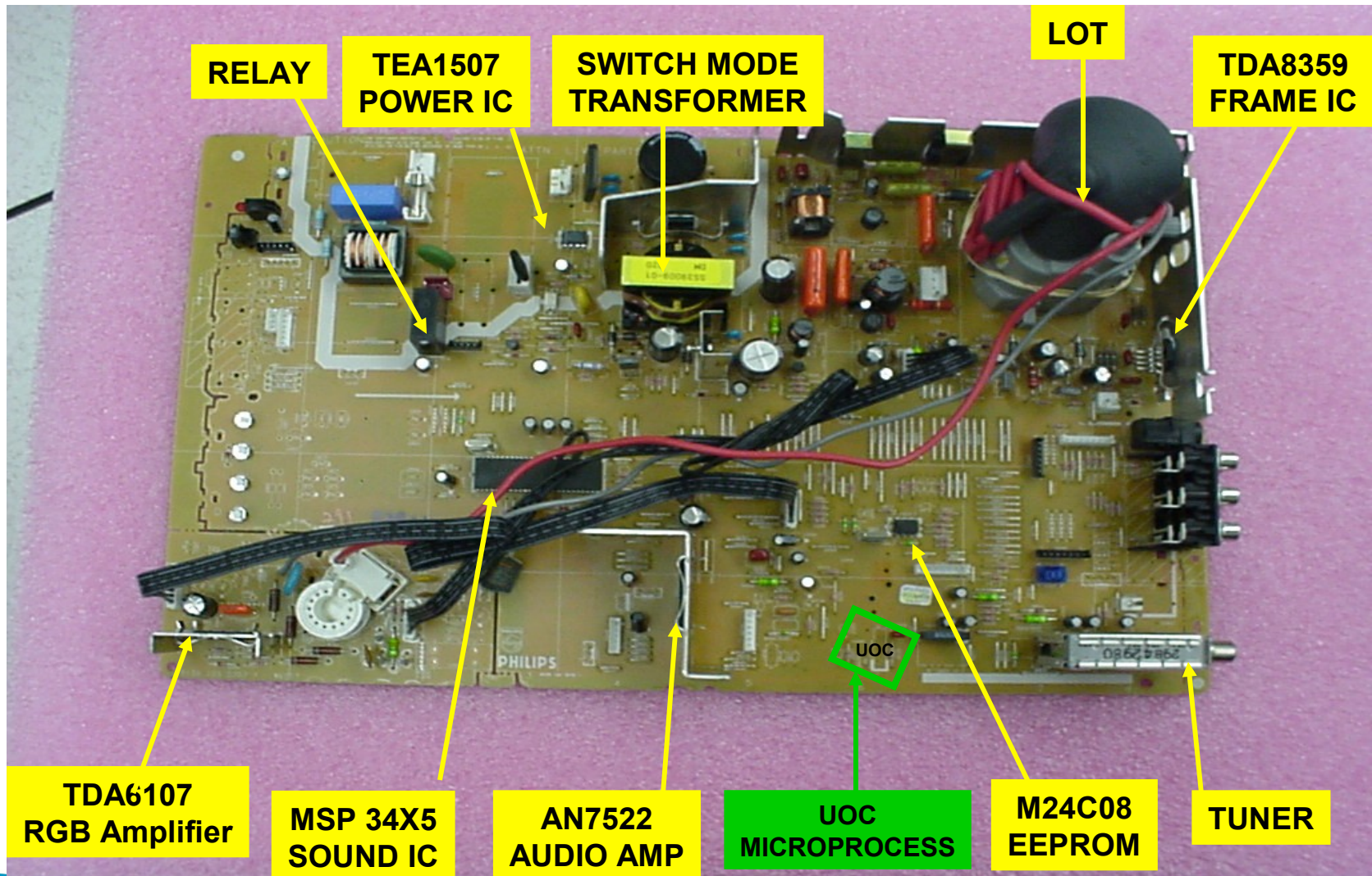
PHILIPS



Let's make things better.



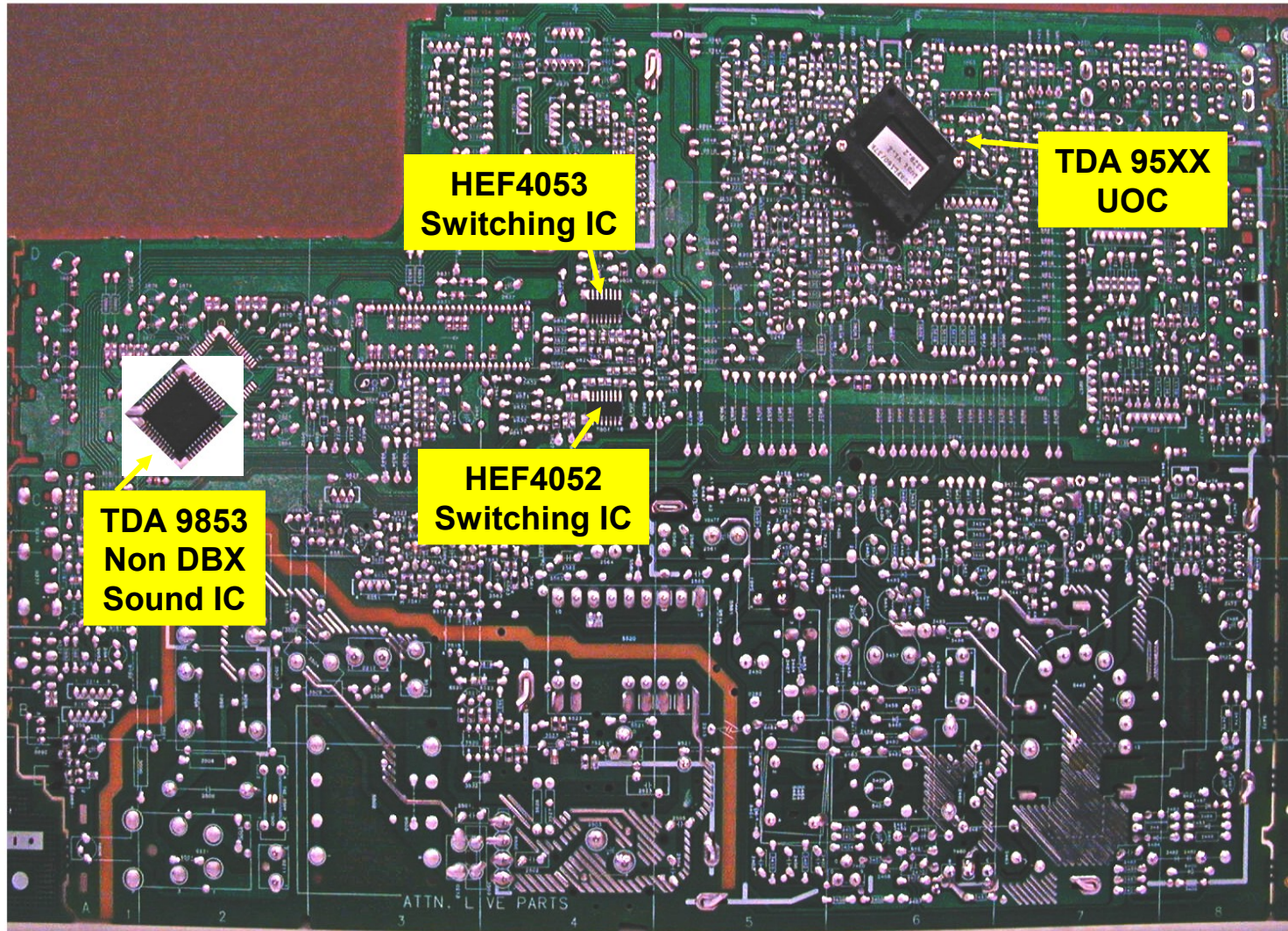
PHILIPS



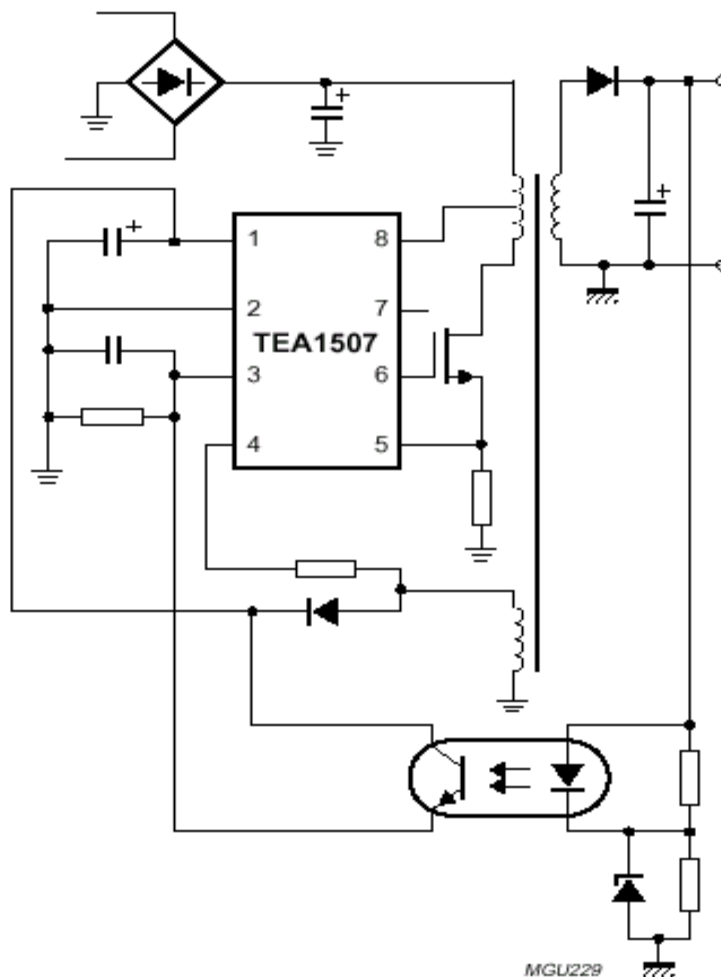
Let's make things better.



PHILIPS



POWER SUPPLY



FEATURES

Distinctive Features

- **Universal mains supply operation(70 to 276V AC).**
- **High level of integration, giving a very low external component count.**

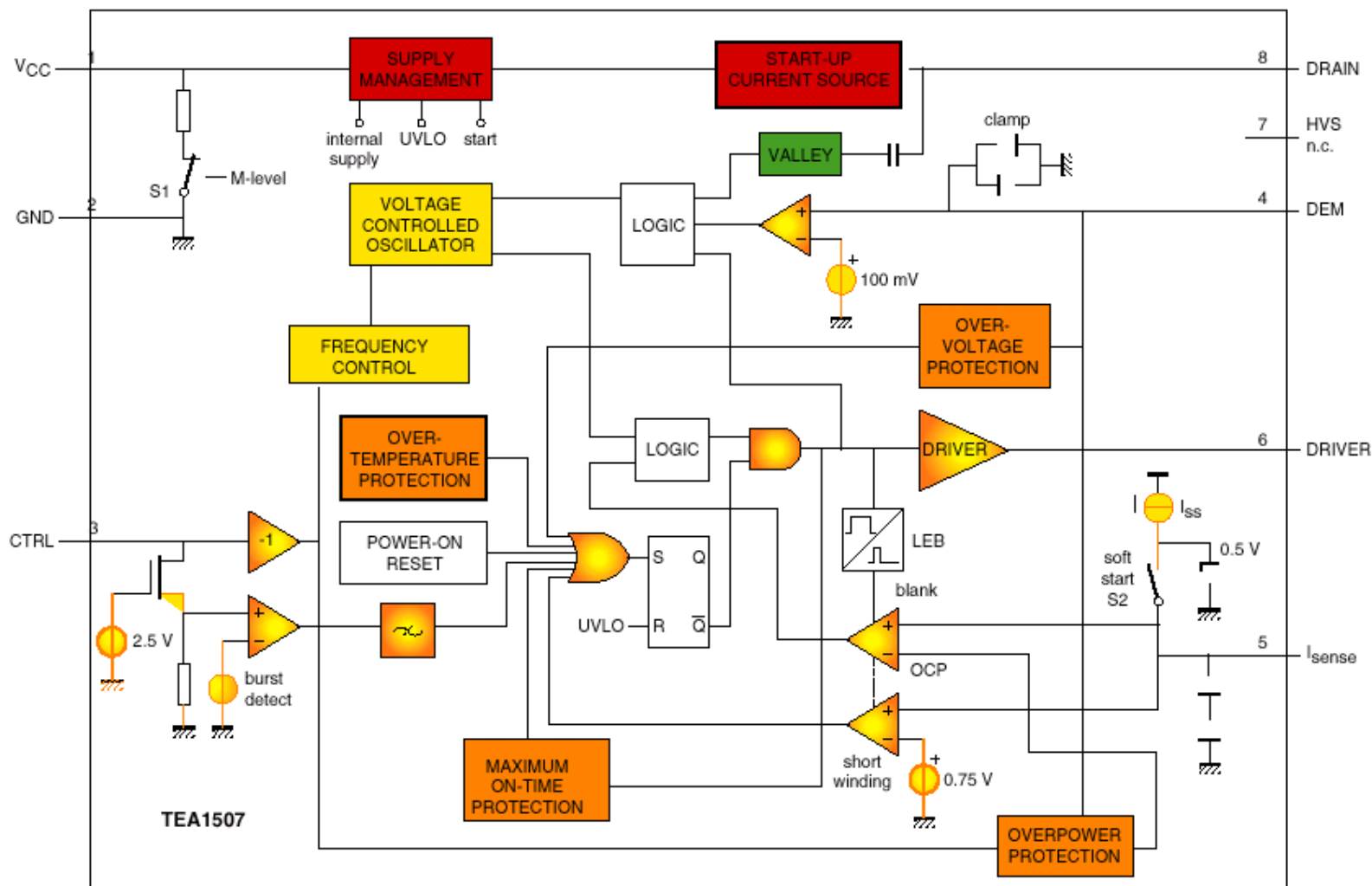
Green features

- **Valley/zero voltage switching for minimum losses**
- **Efficient quasi-resonant operation at high power levels**
- **Frequency reduction at low power standby for improved system efficiency(<3W)**
- **Burst mode operation for very low standby levels(<1W)**
- **On-chip start-up current source**

Protection features

- Safe restart mode for system fault conditions
- Continuous mode prot. by demagnetization detection
- Accurate and adjustable overvoltage protection
- Short winding protection
- Undervoltage protection
- Overtemperature protection
- Low and adjustable overcurrent protection trip level
- Mains voltage-dependent operating-enabling level

TEA1507

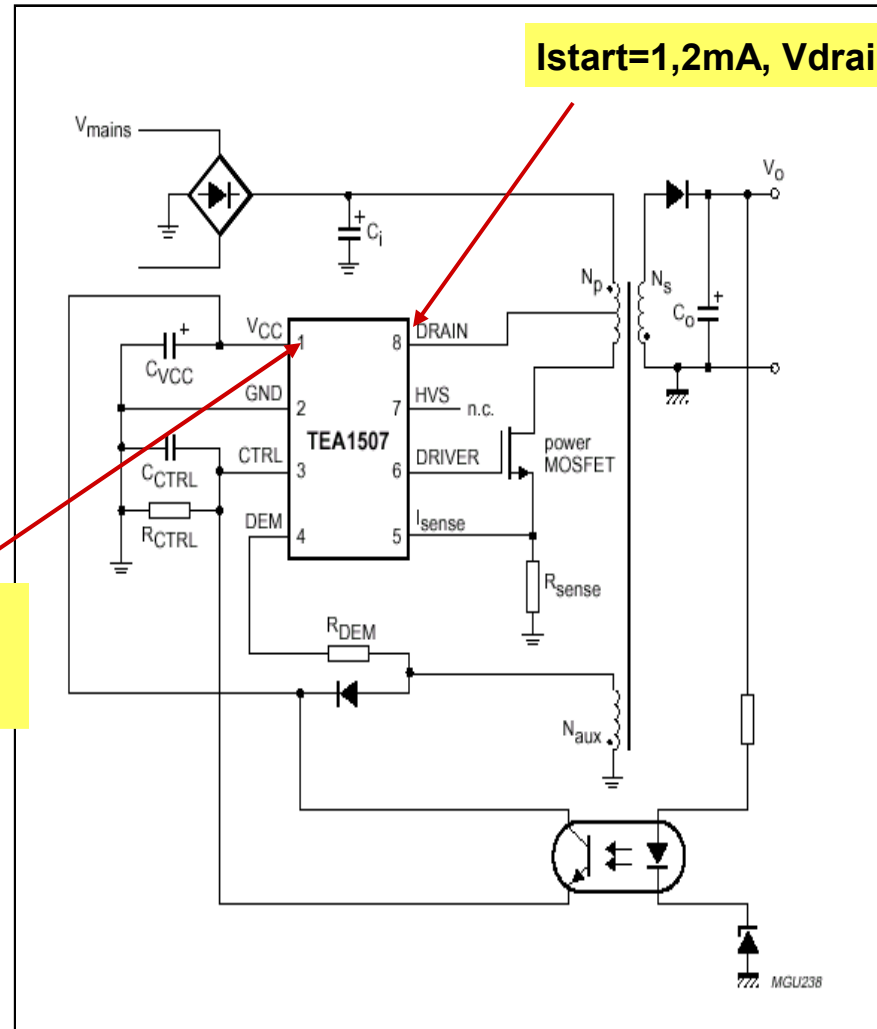


MGU230

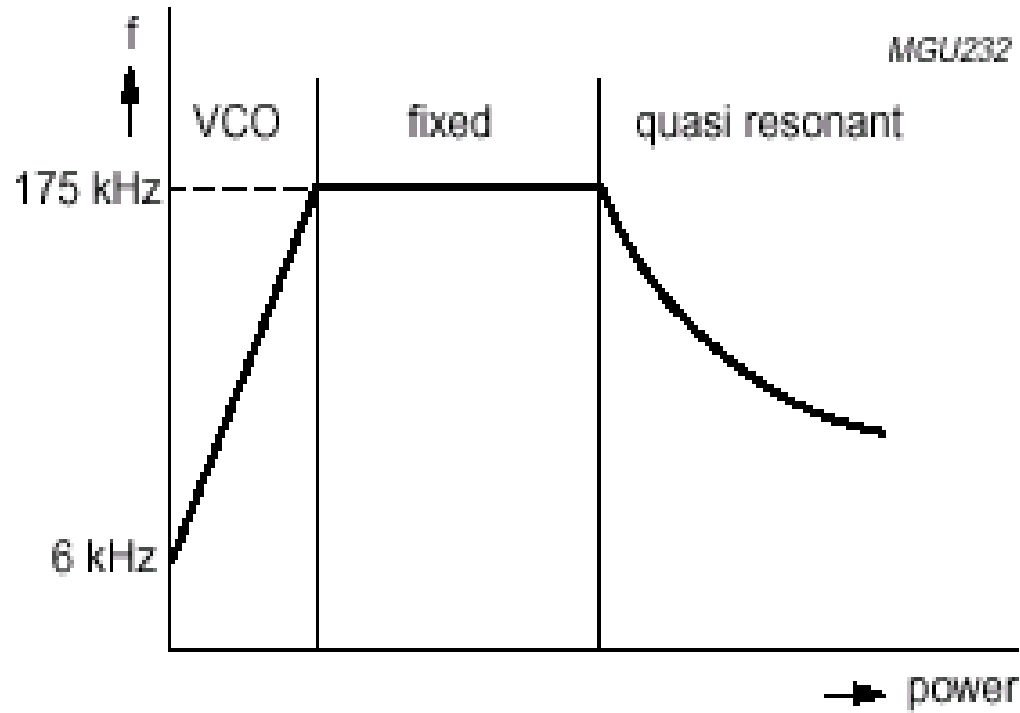
Functional description TEA1507

Vstart-up=11V, Icc=1,3mA
Vcc Low=8,7V

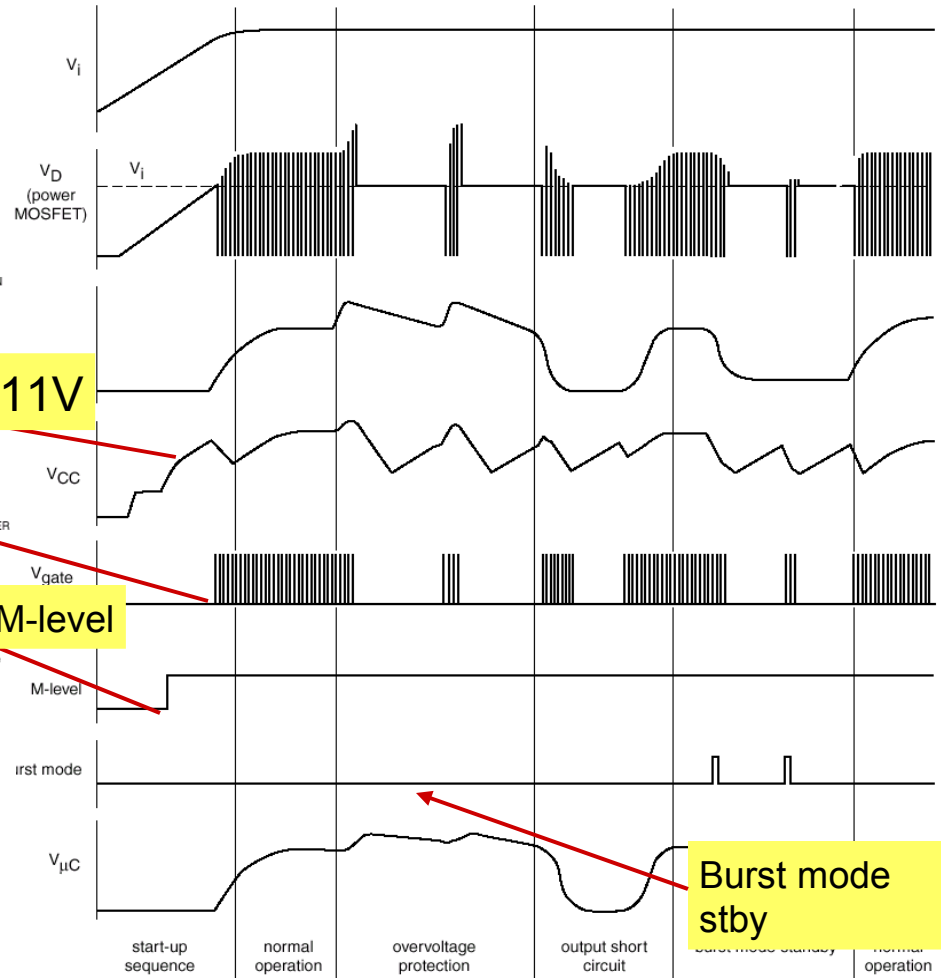
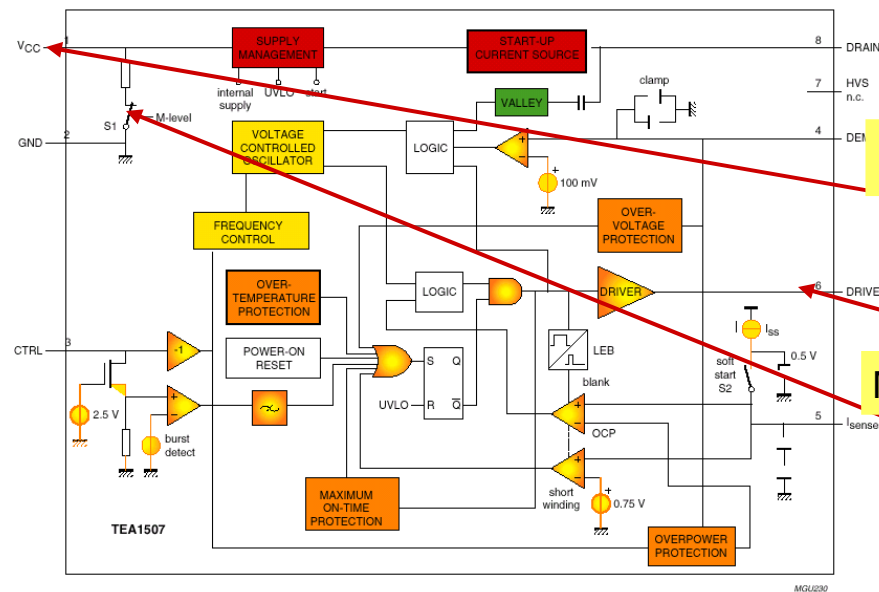
Istart=1,2mA, Vdrain>100V



TEA1507 operating modes

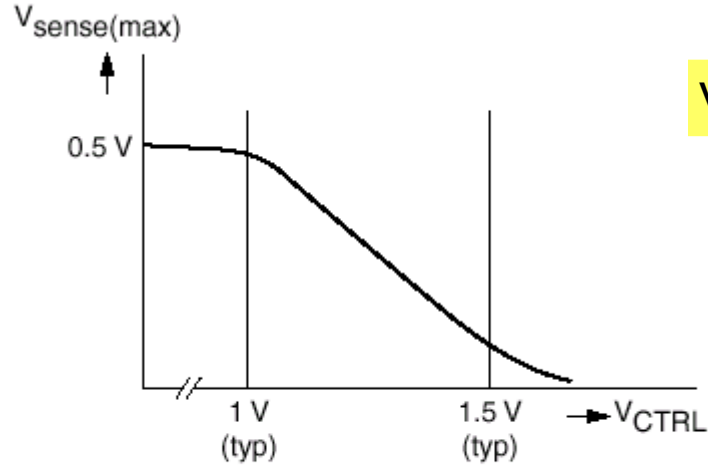


Start-up sequence



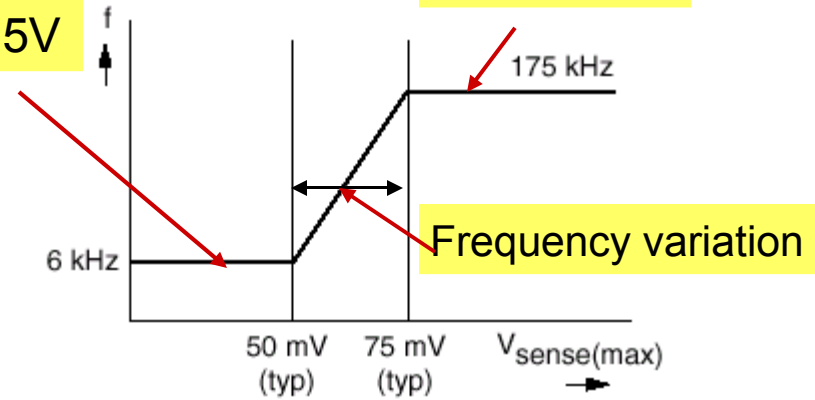
Control pin CTRL

$V_{\text{sense(max)}}$ voltage as function of V_{CTRL}



VCO frequency as function of V_{sense}

$V_{\text{ctrl}} > 1.5\text{V}$

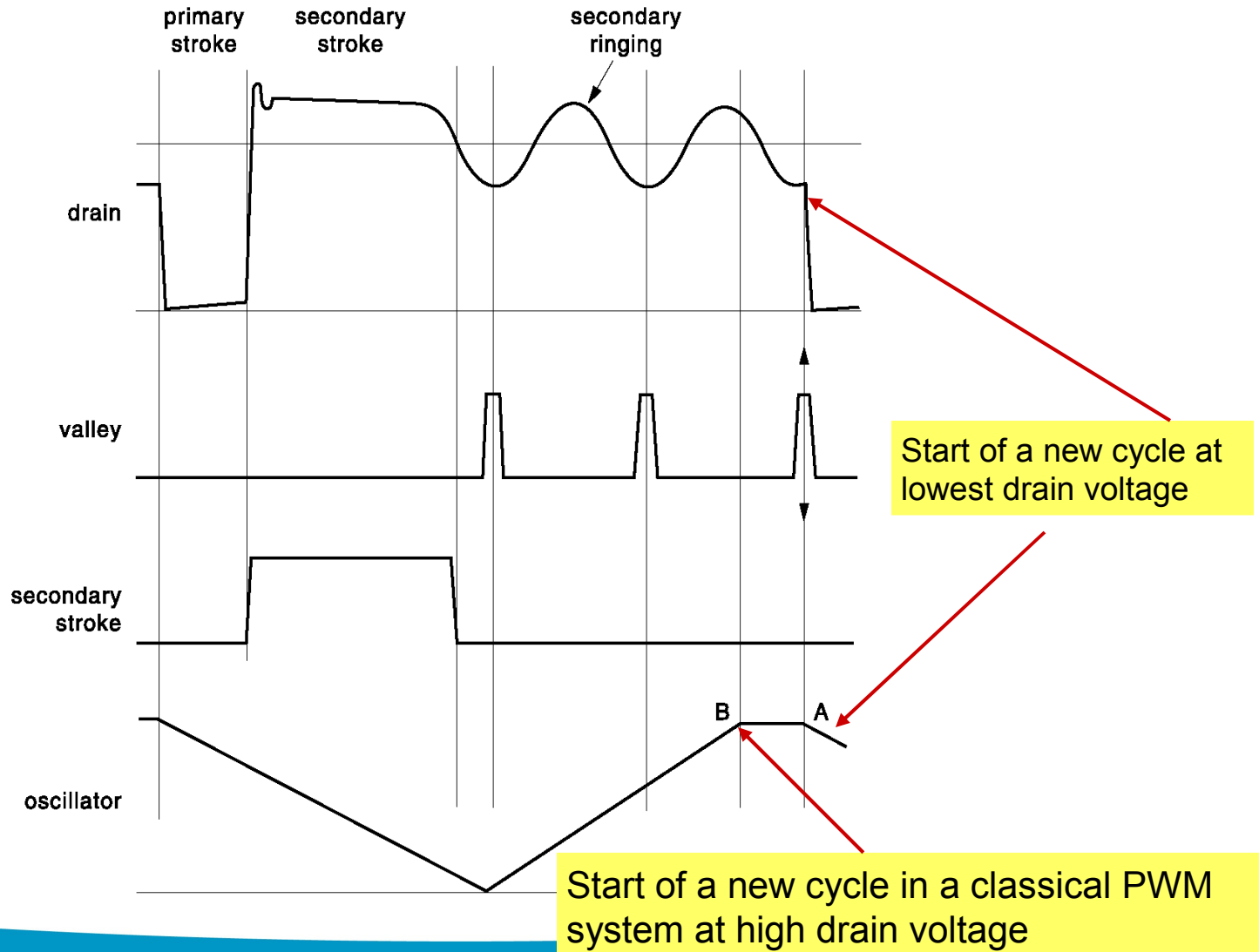


If V_{ctrl} increases V_{sense} decreases $\rightarrow$ frequency decreases

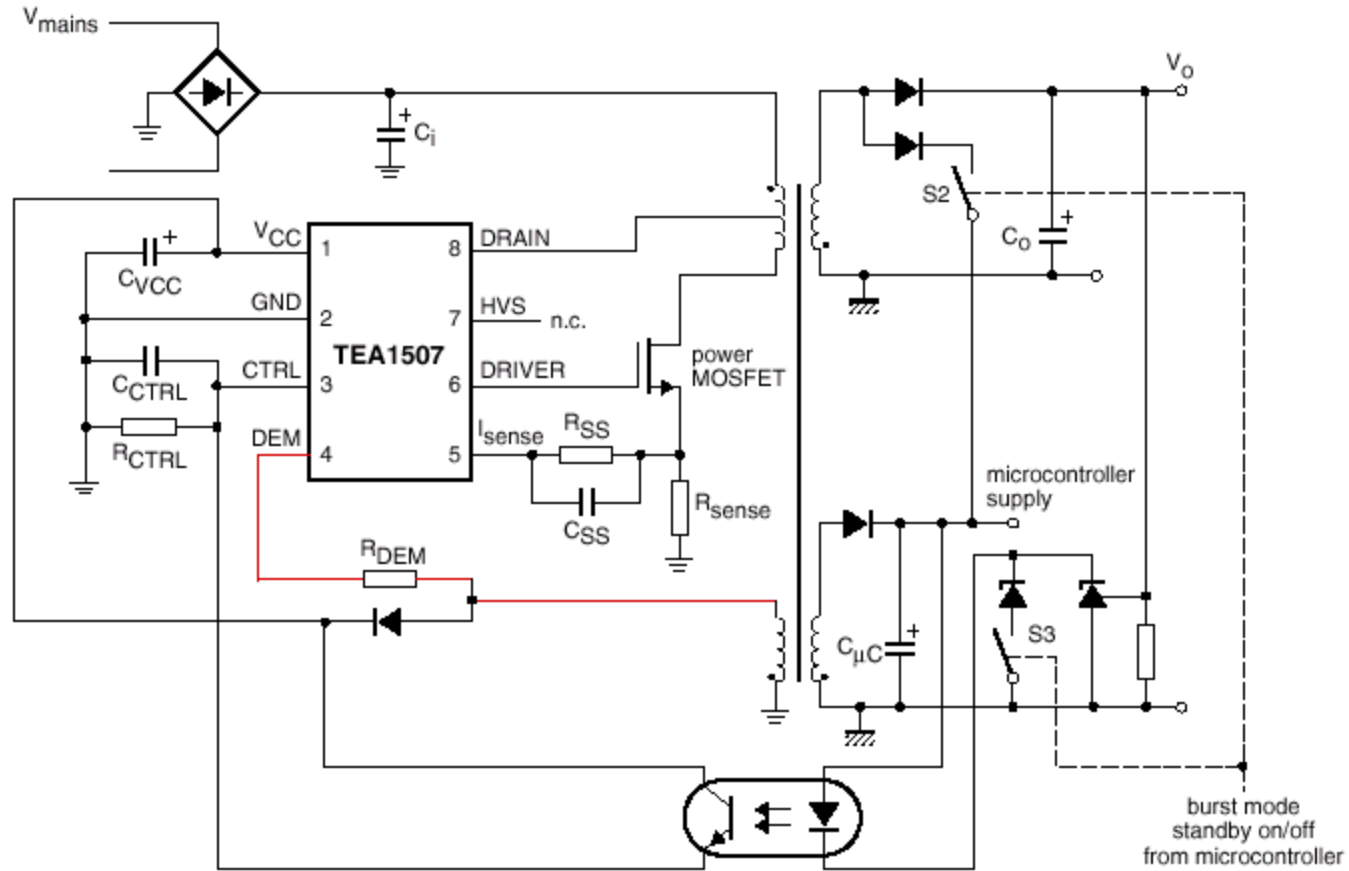
If V_{ctrl} decreases V_{sense} increases $\rightarrow$ frequency increases

If $V_{\text{ctrl}} < 1\text{V}$ and $> 1.5\text{V} \rightarrow$ PWM regulation and fixed frequency

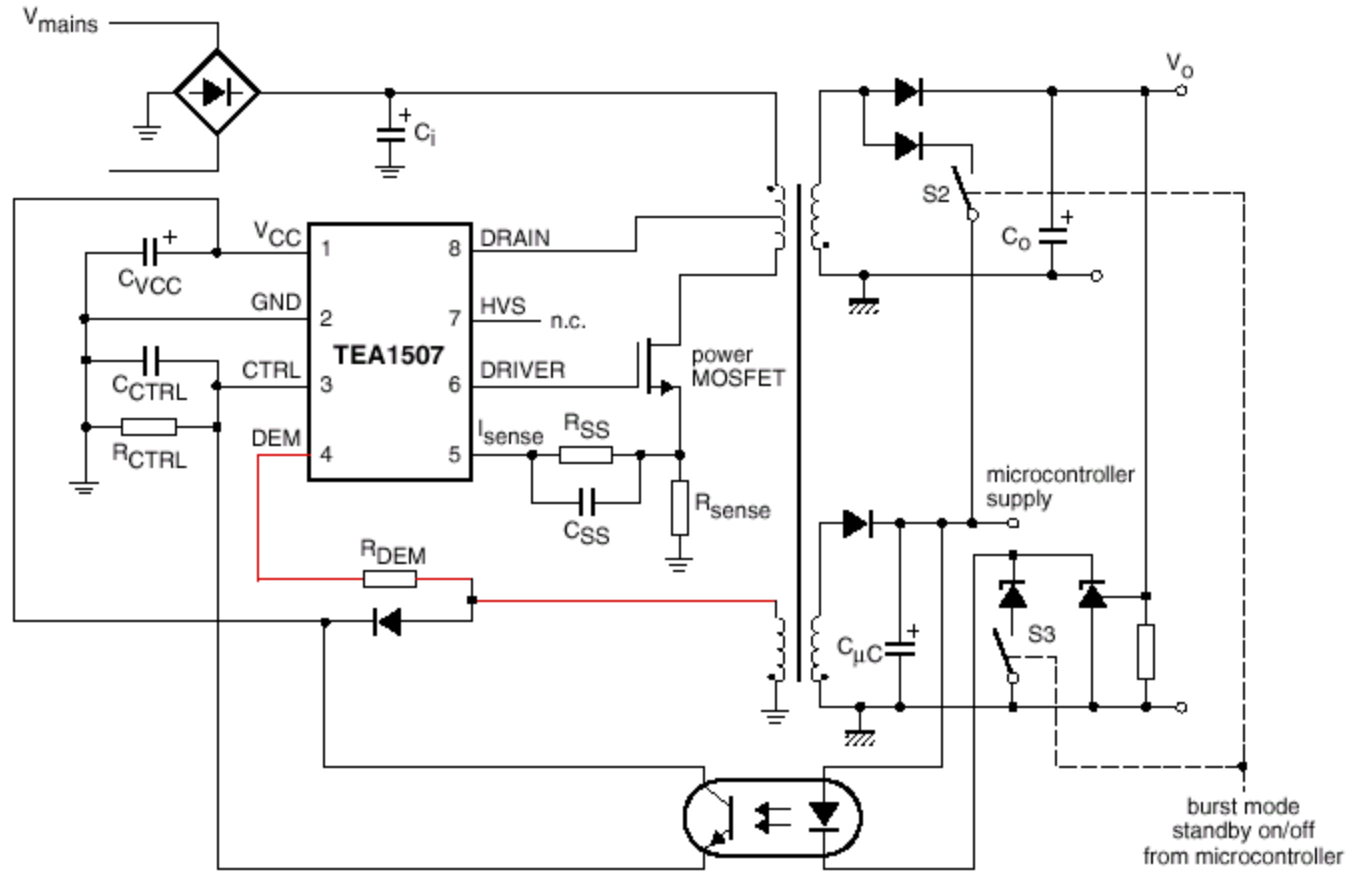
Valley switching



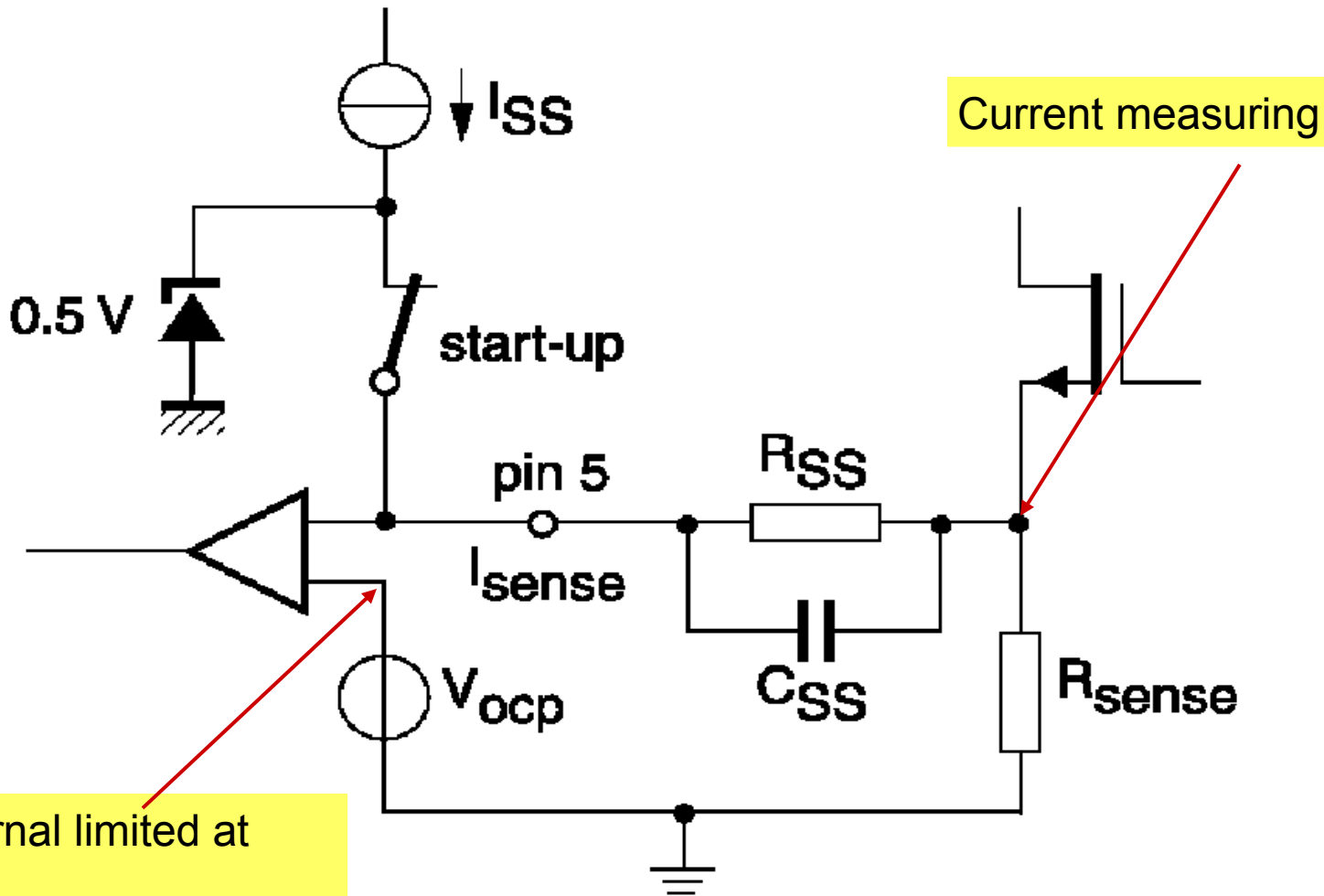
Demagnetization



Overvoltage protection(OVP)



Overcurrent protection(OCP)

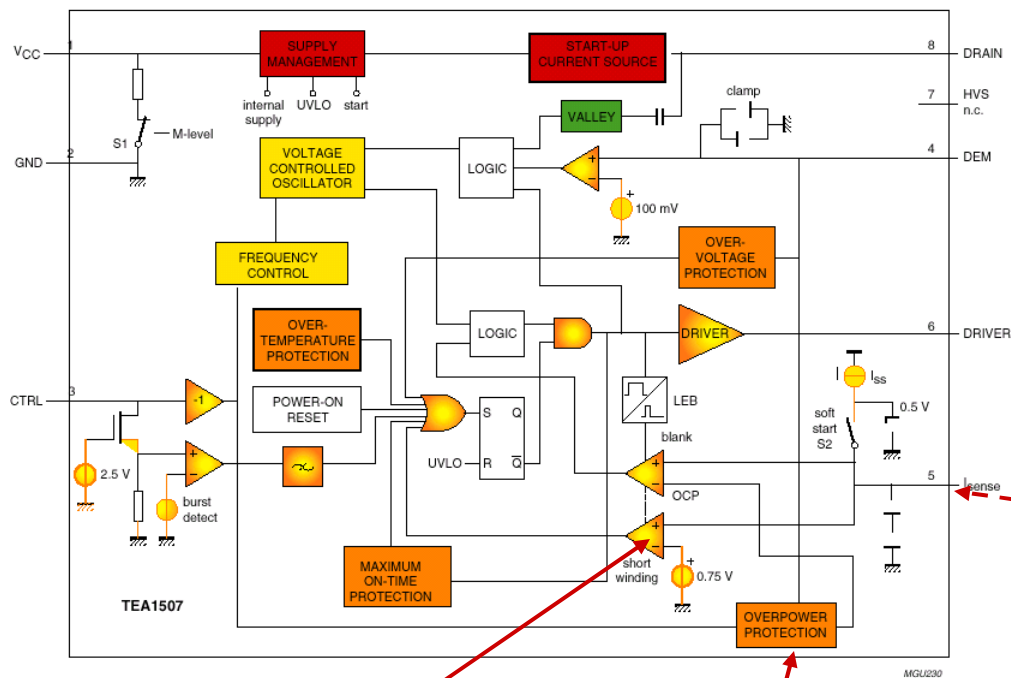


Let's make things better.



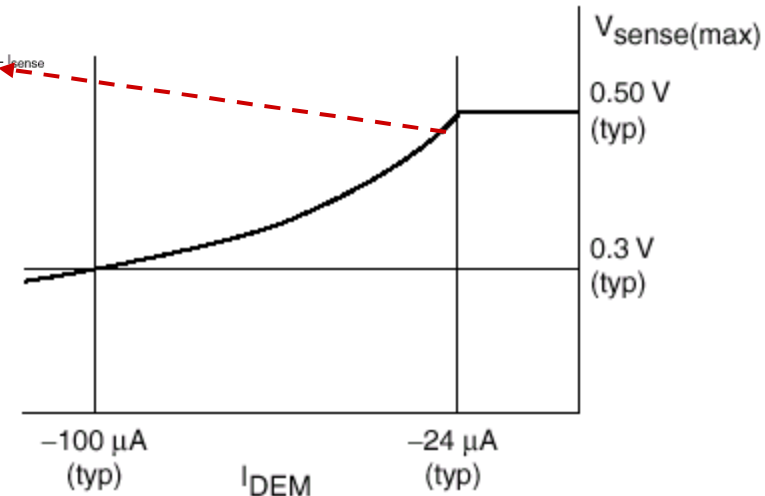
PHILIPS

OverPower protection(OPP)



Short winding protection

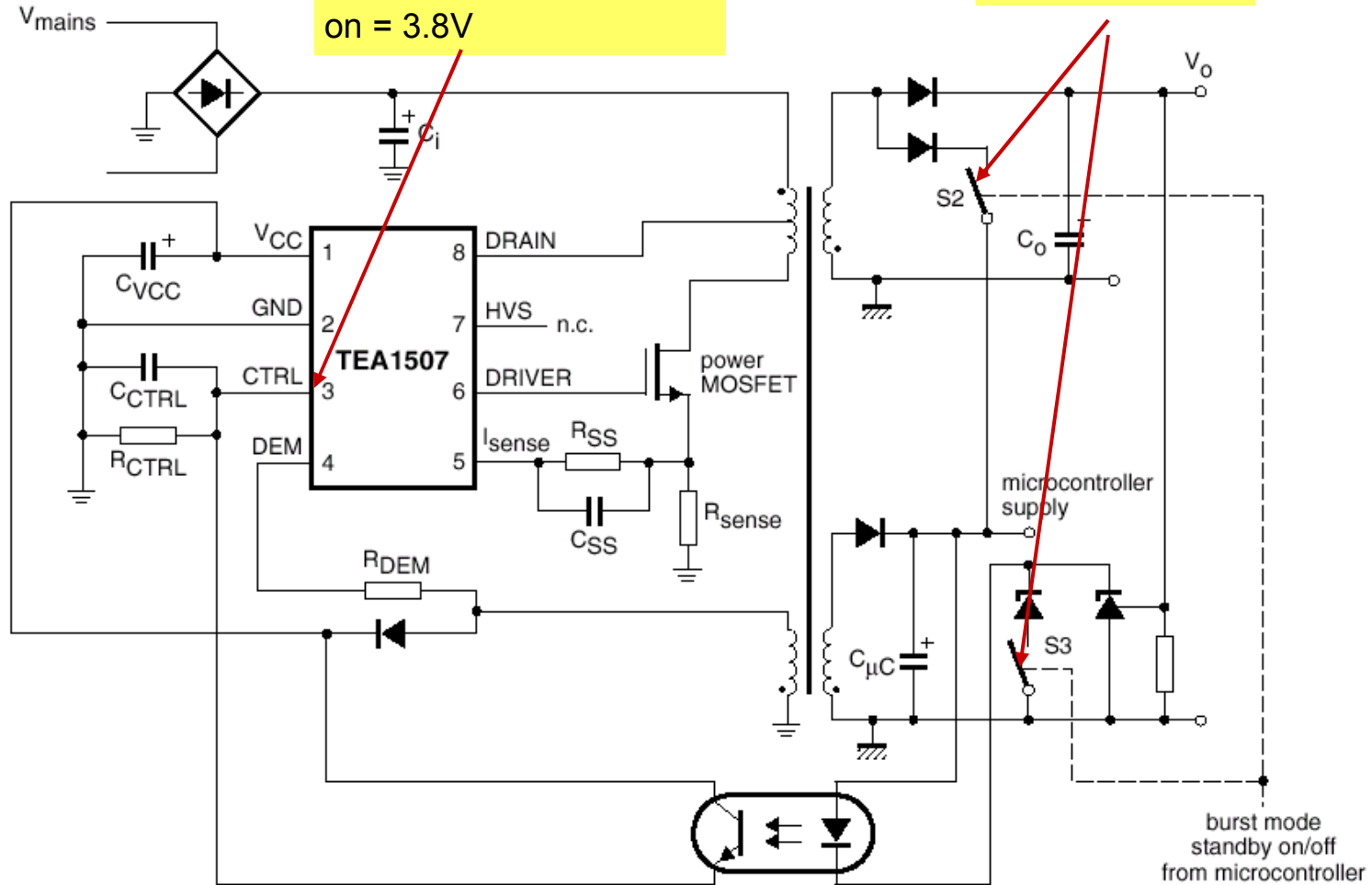
Overpower protection



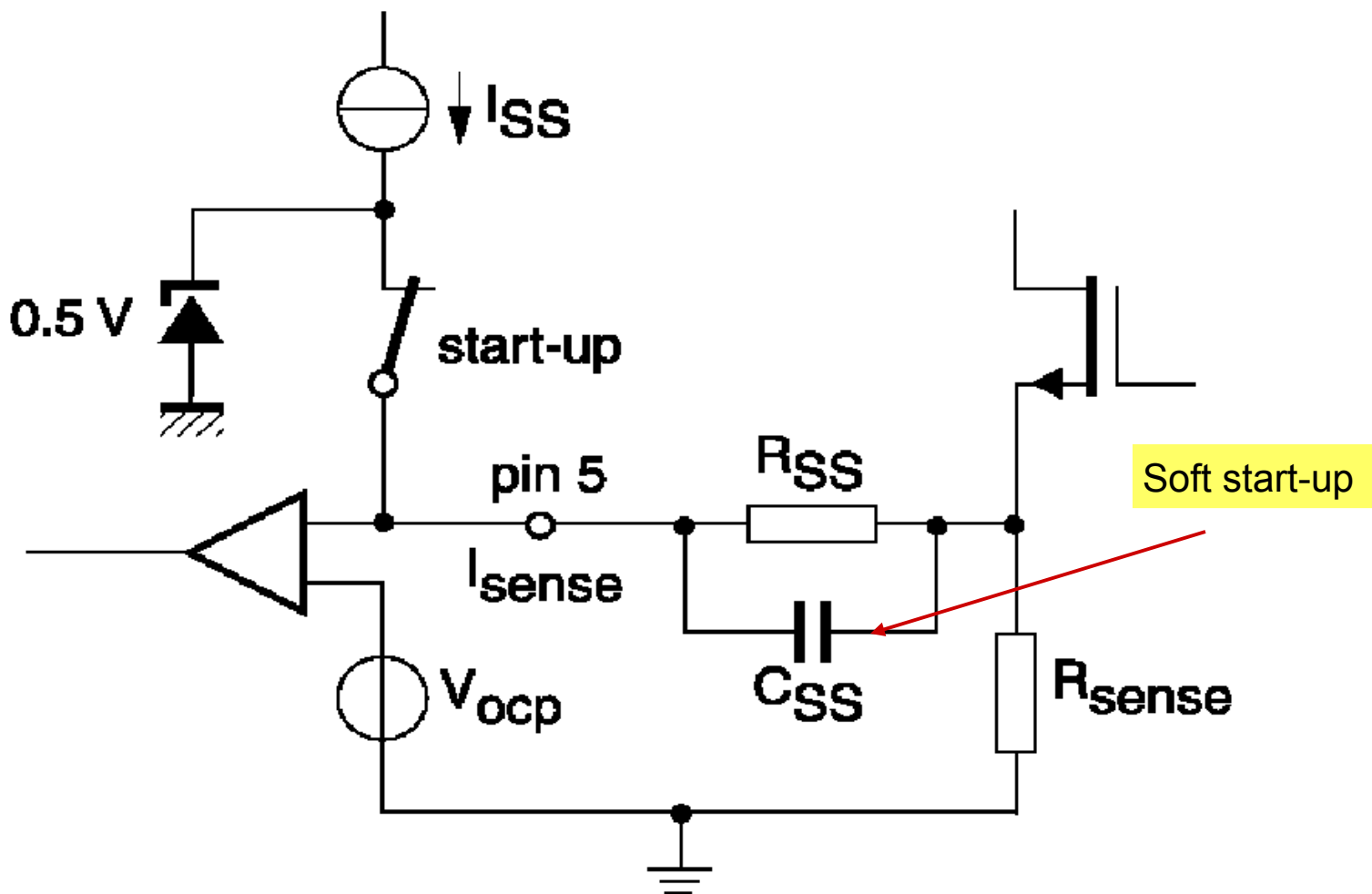
Burst mode standby

Burst mode standby
 $I_{burst\ on} = 16mA$ $V_{burst\ on} = 3.8V$

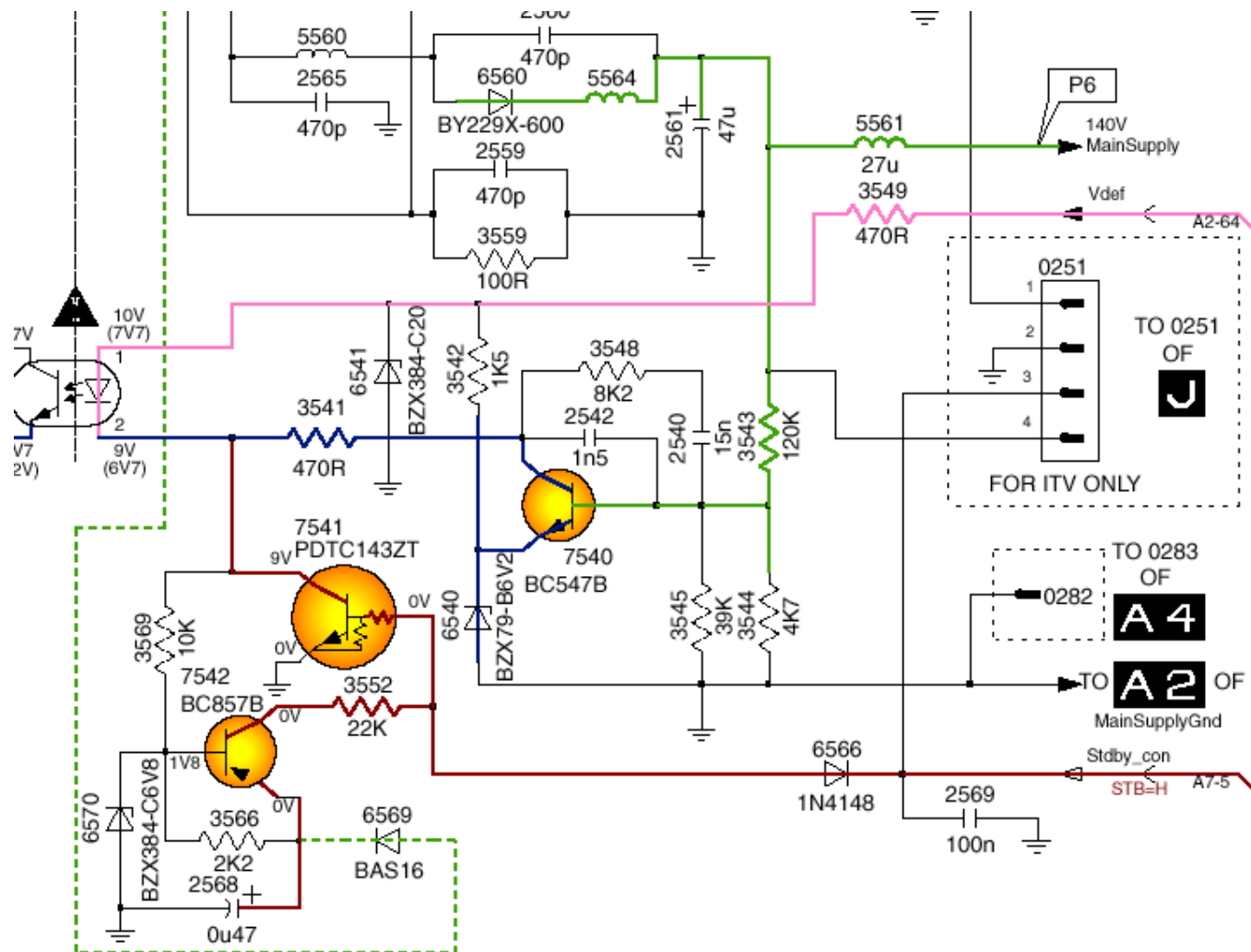
Standby position



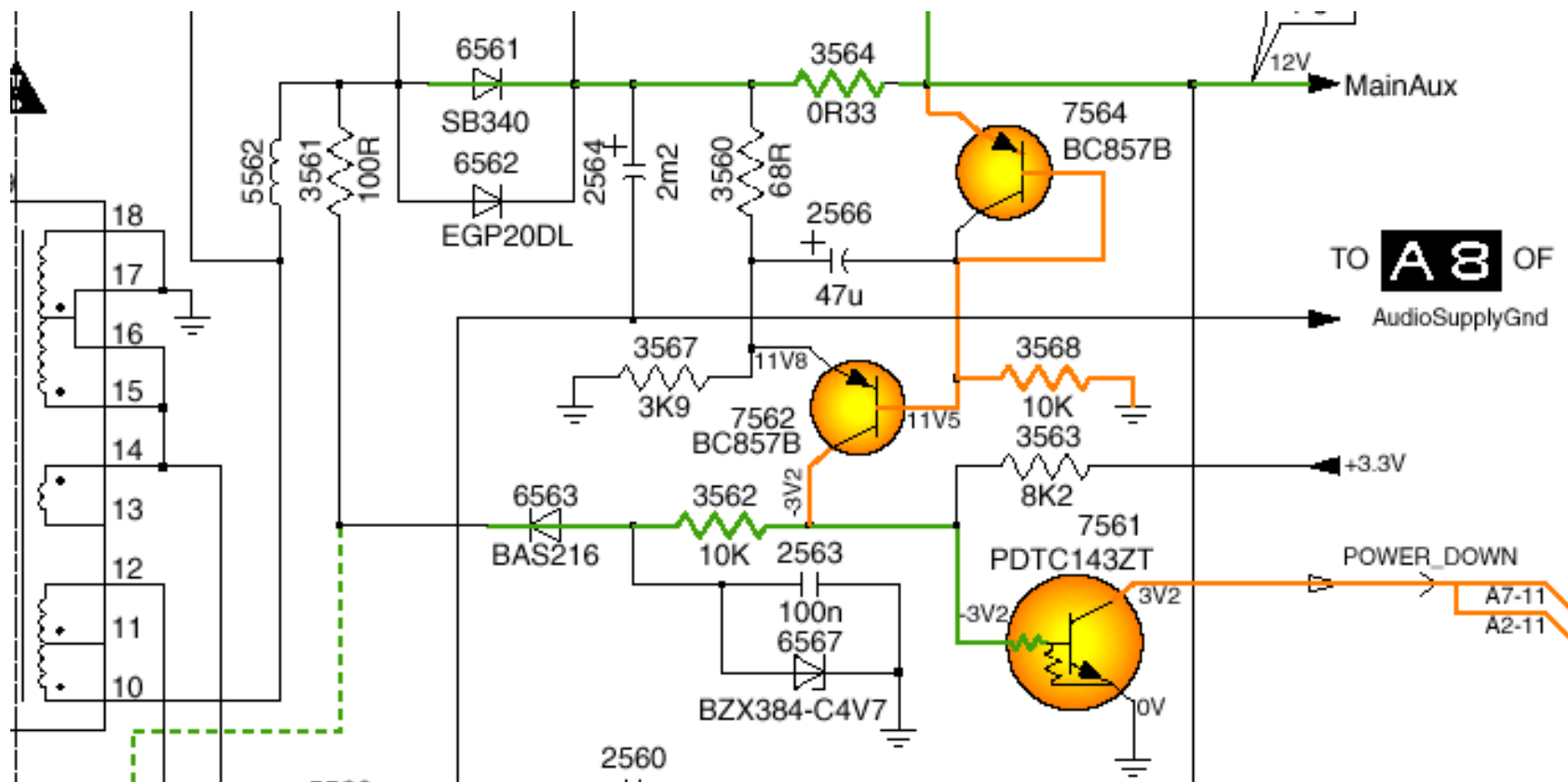
Soft start-up



A1 Standby mode



Power down and protection



Schema service manual

A1 page 22



Tips for debugging power supply

No.	Problem symptom	Check
၁)	No Vbatt volt, Vaux volt	Voltage on Pin ၁ of ၇၀၃၀, ၃၀၃၃, ၃၀၃၃, ၇၀၃၁
၂)	Low voltage on Vbatt,Vaux But ၃.၃v is OK	Stdbby_con signal (normal- Low, Stdbby- High), ၇၀၄၁, ၇၀၄၃ collector of ၇၀၆၁ (normal - High, Stdbby - pulses)
၃)	Set automatically switchoff after switch on	collector voltage of ၇၀၆၁, ၃.၃V supply, shorting on Vaux supply.
၄)	No ၃.၃V supply	Short on ၃.၃V ၇၀၆၀ ၆၀၆၁/၆၀၆၃ ၃၀၆၄

END

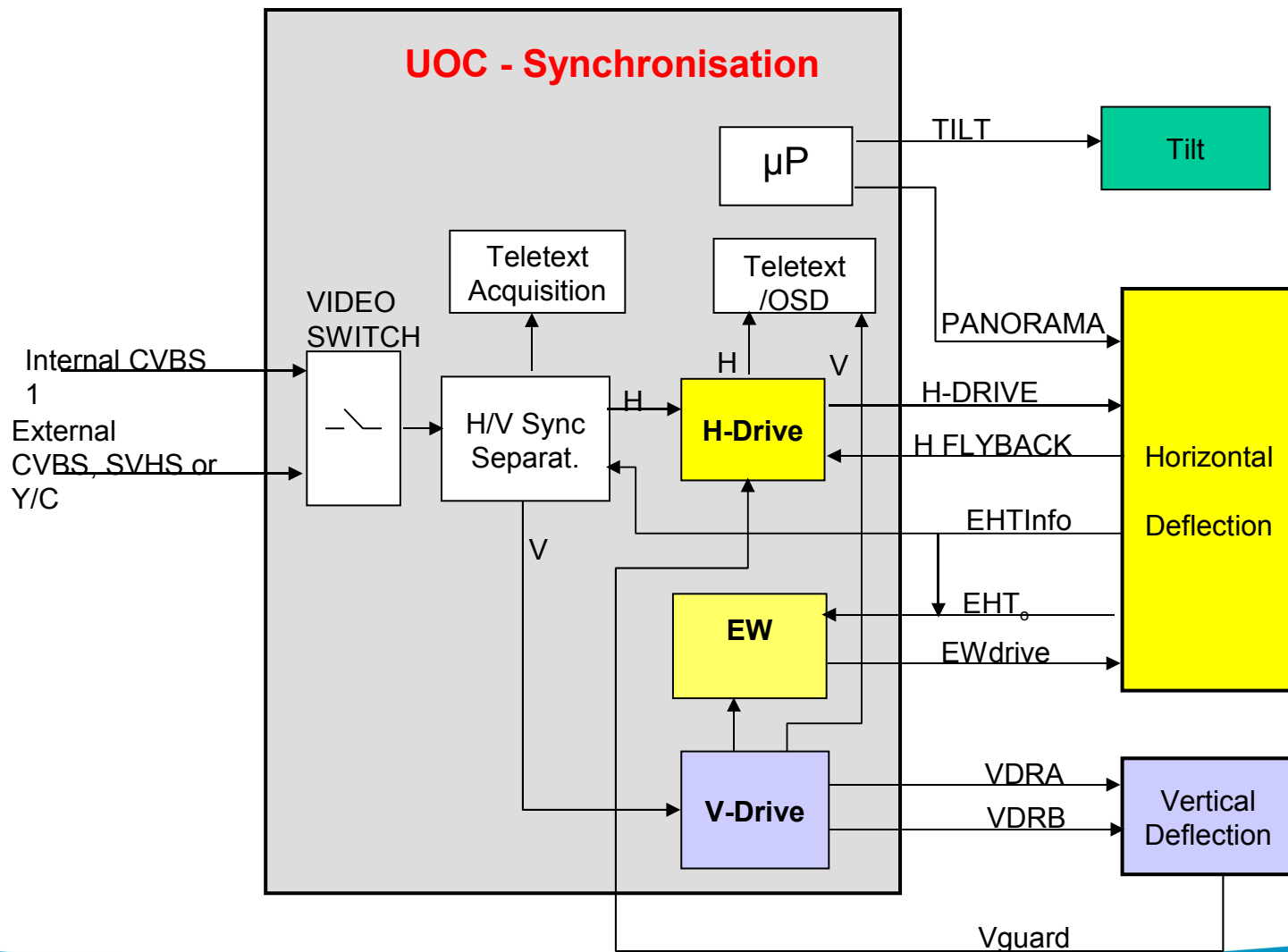
go back to

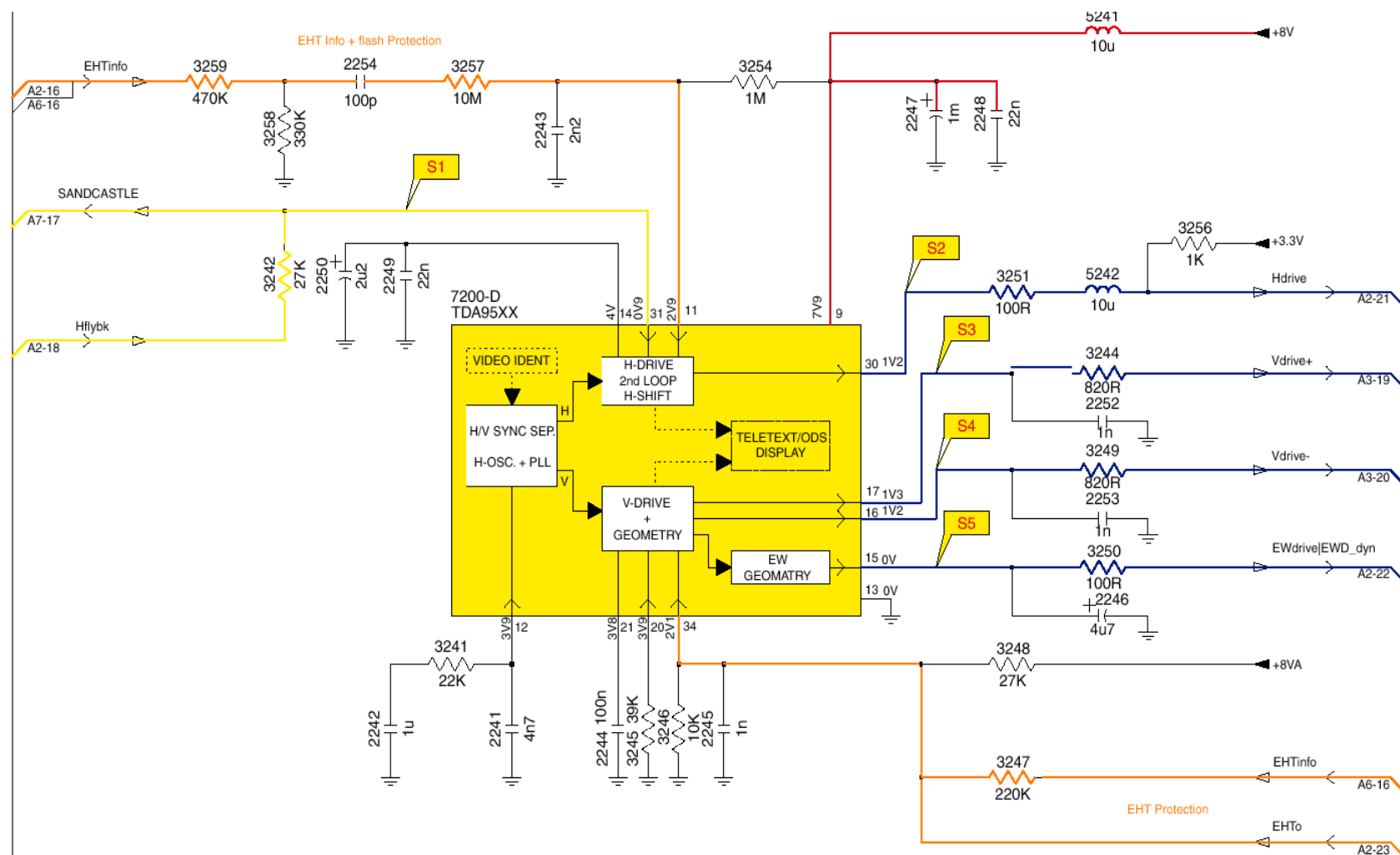
MAIN MENU

DEFLECTION

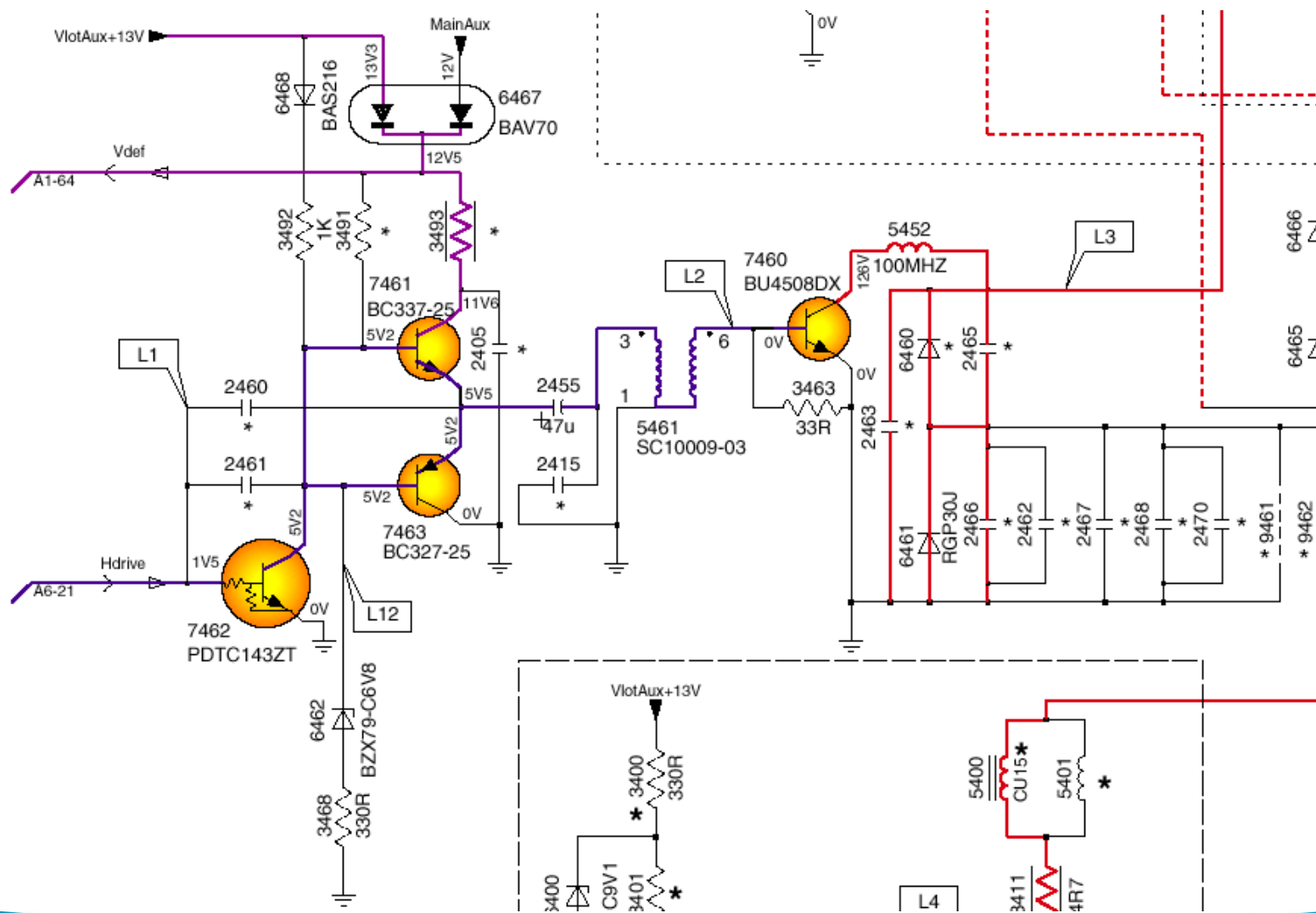
- Synchronisation
- Horizontal deflection
- Vertical deflection
- Protections

Synchronisation





A2 Horizontal deflection



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PHILIPS

A2 LINE DEFLECTION

Mains Supply

Panorama

Horizontal Deflection Coil

EW Correction

Secondary output voltage

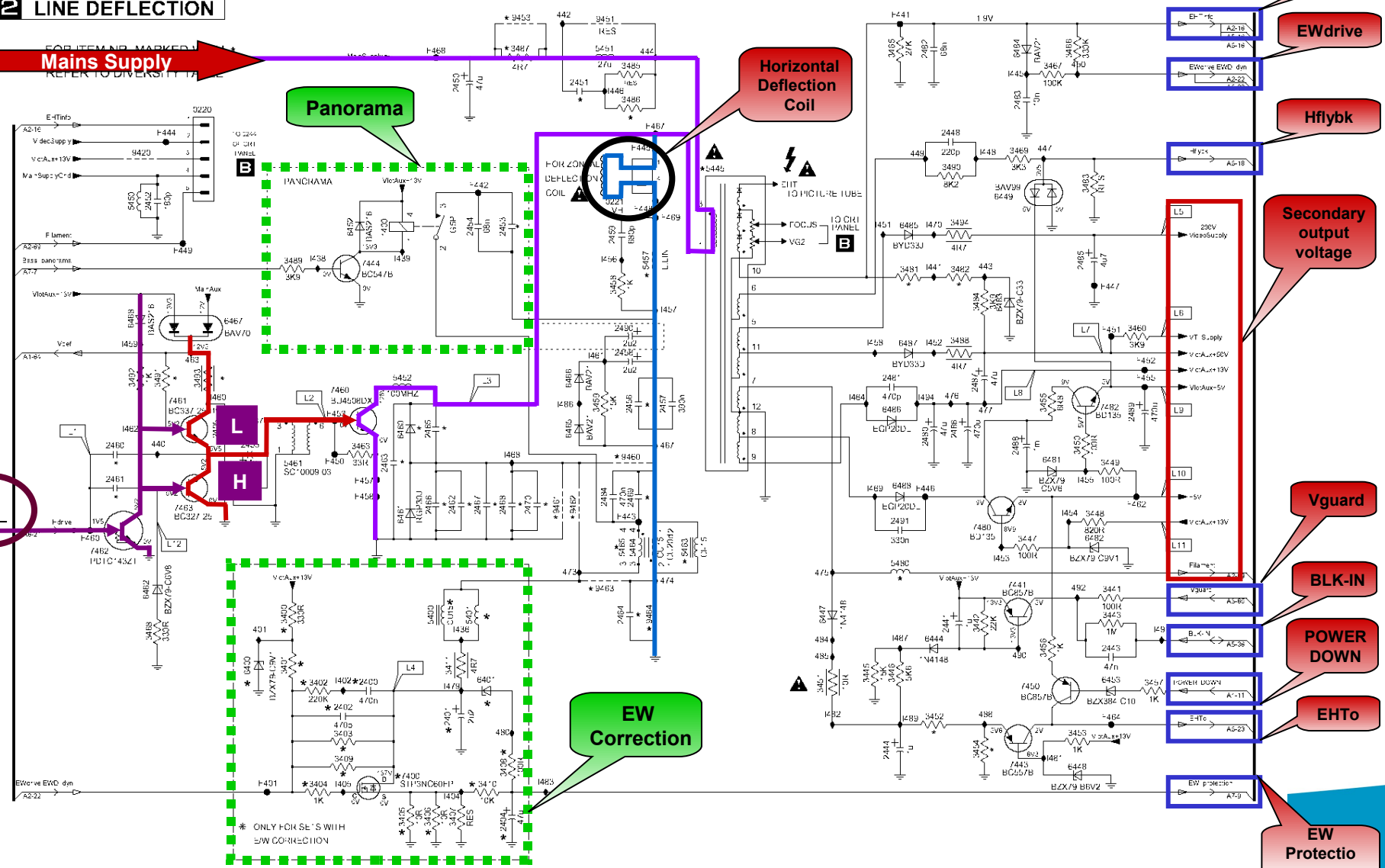
Vguard

BLK-IN

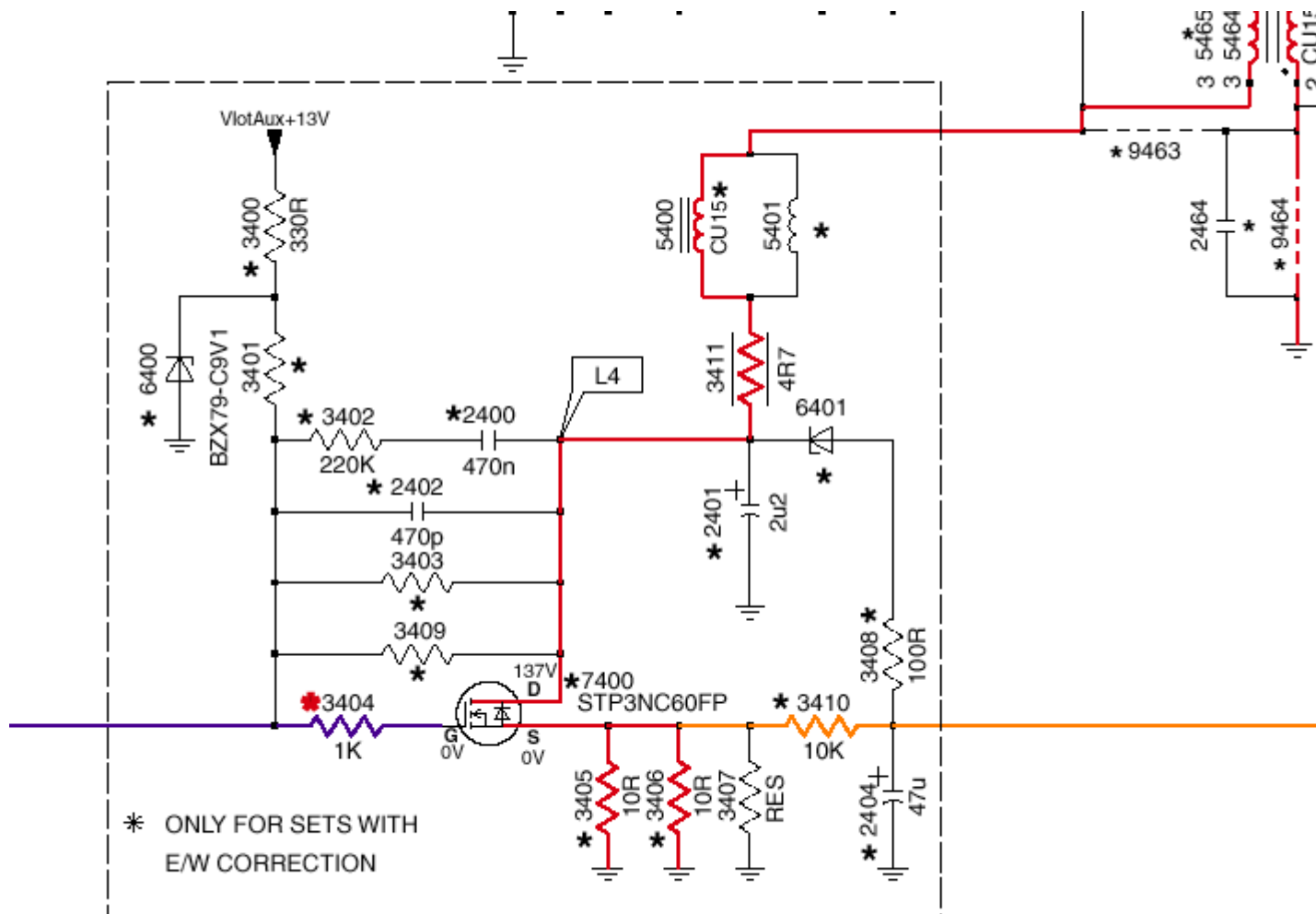
POWER DOWN

EHTo

EW Protectio



EW correction

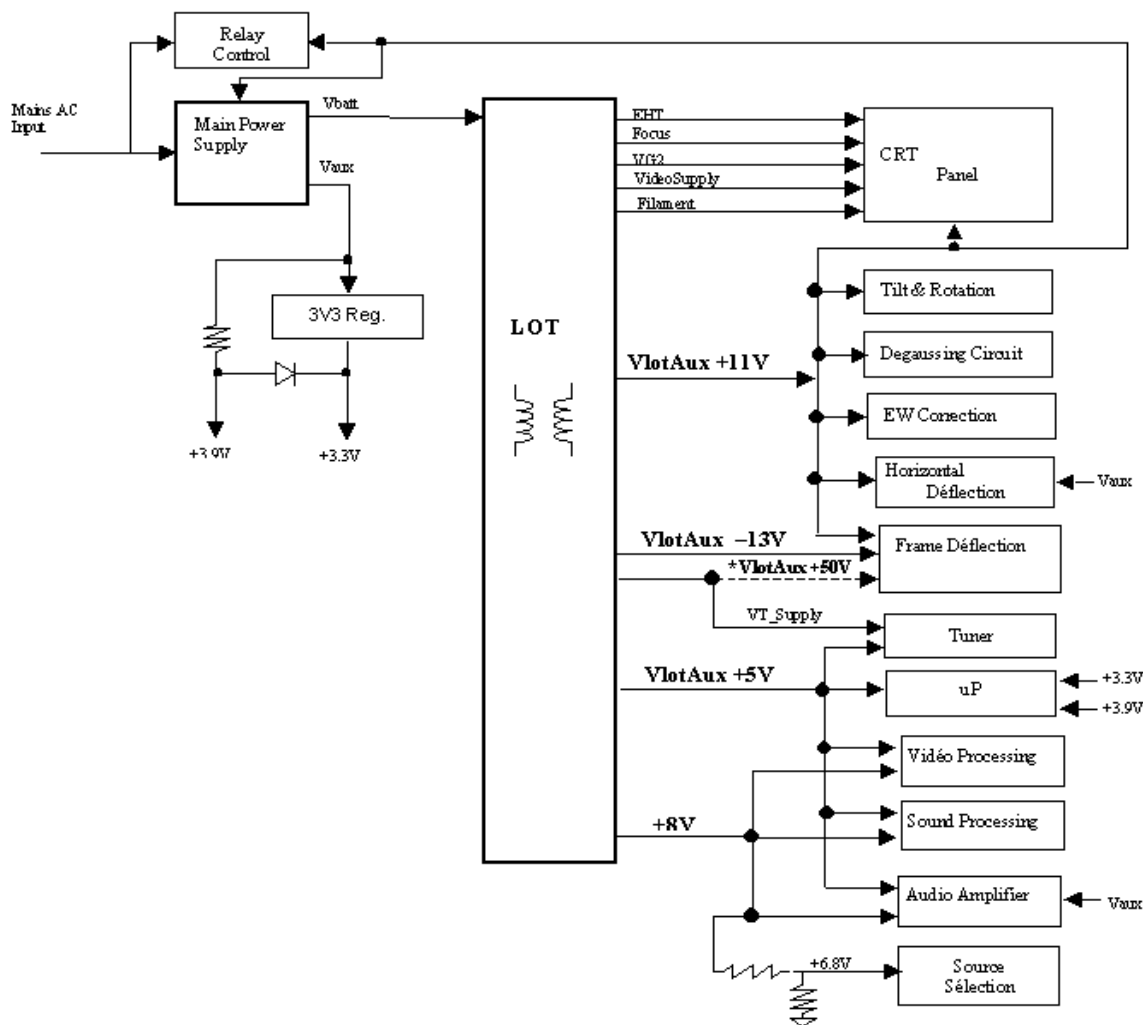


Let's make things better.

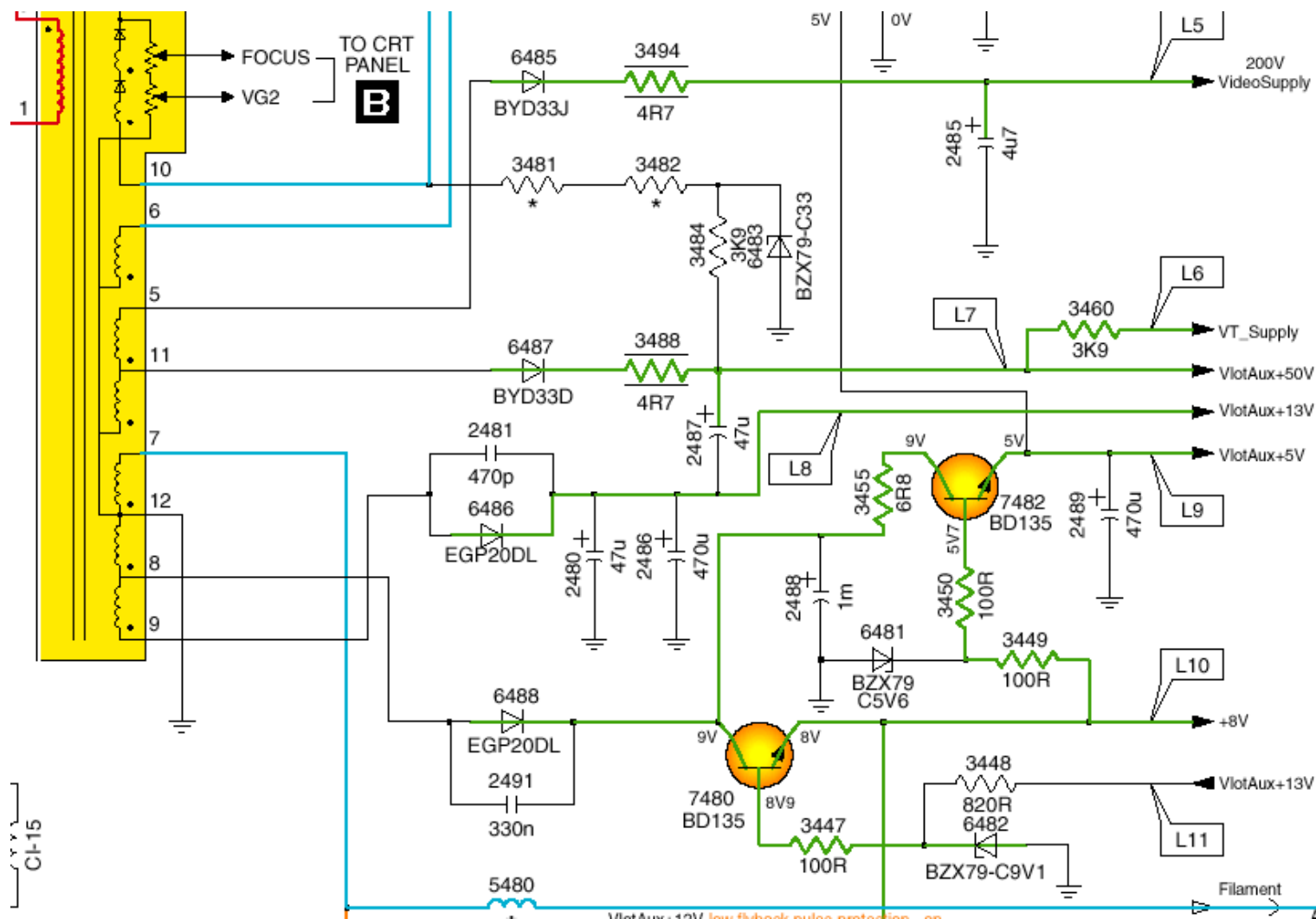


PHILIPS

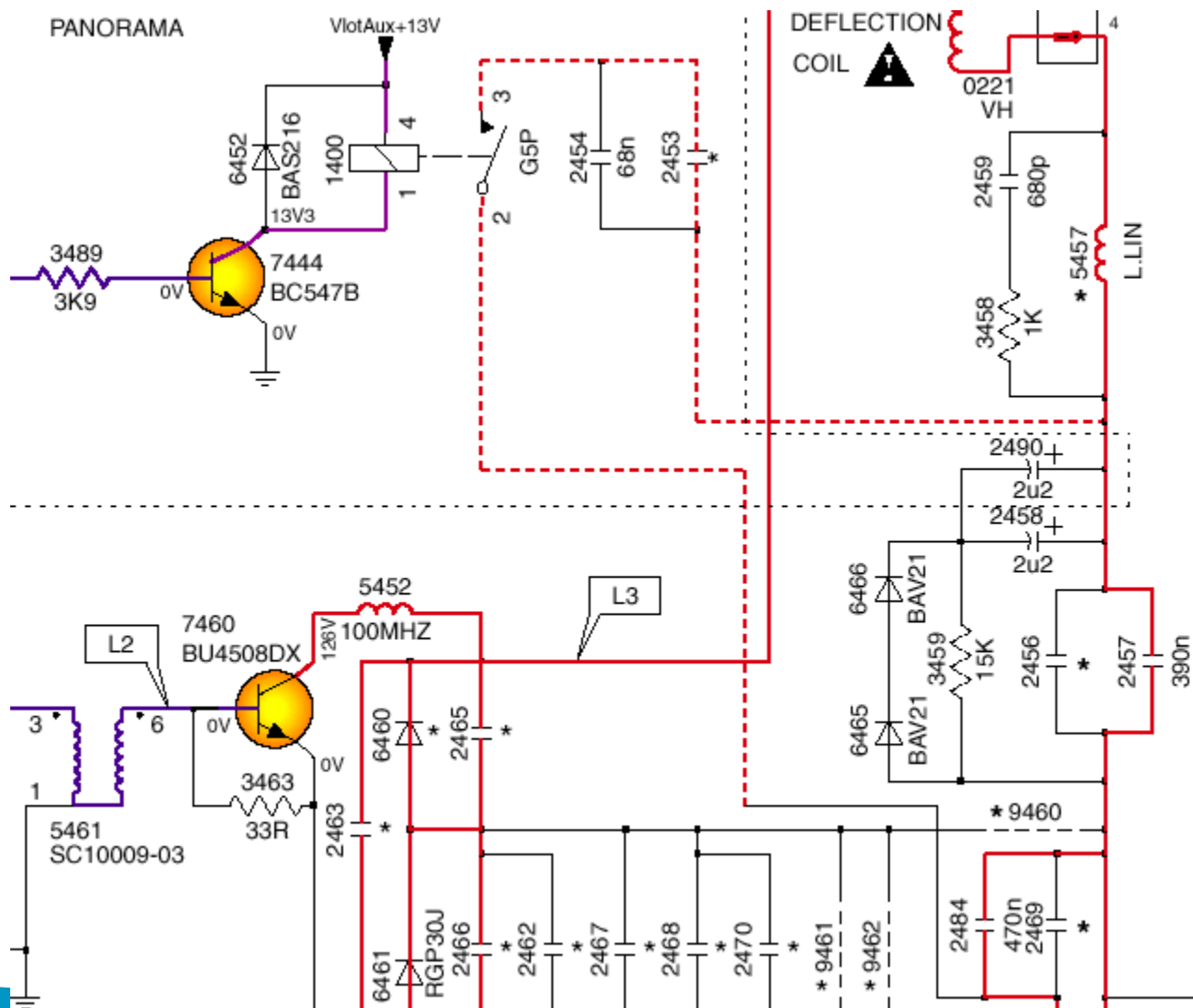
Auxiliary voltages LOT



A2 Auxiliary voltages



Panorama

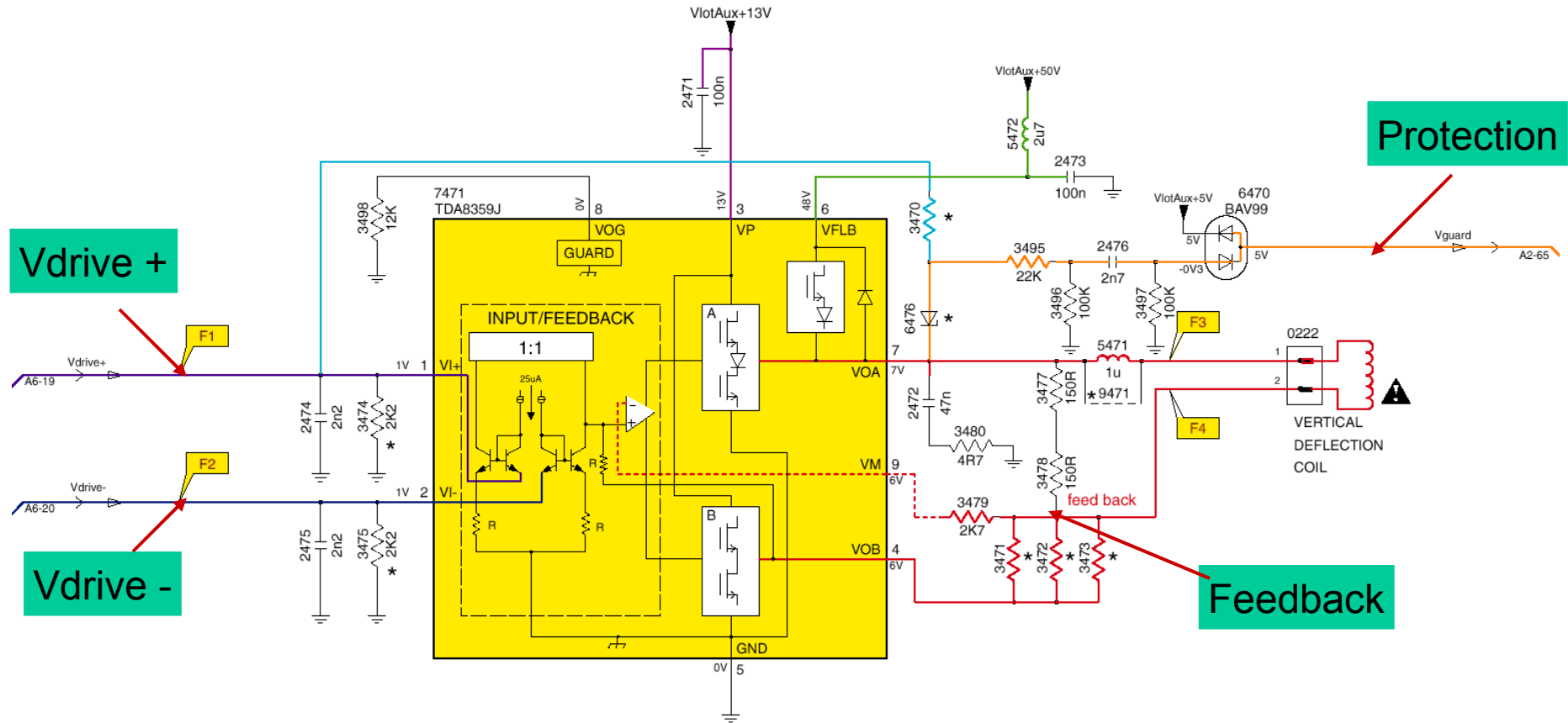


Let's make things better.

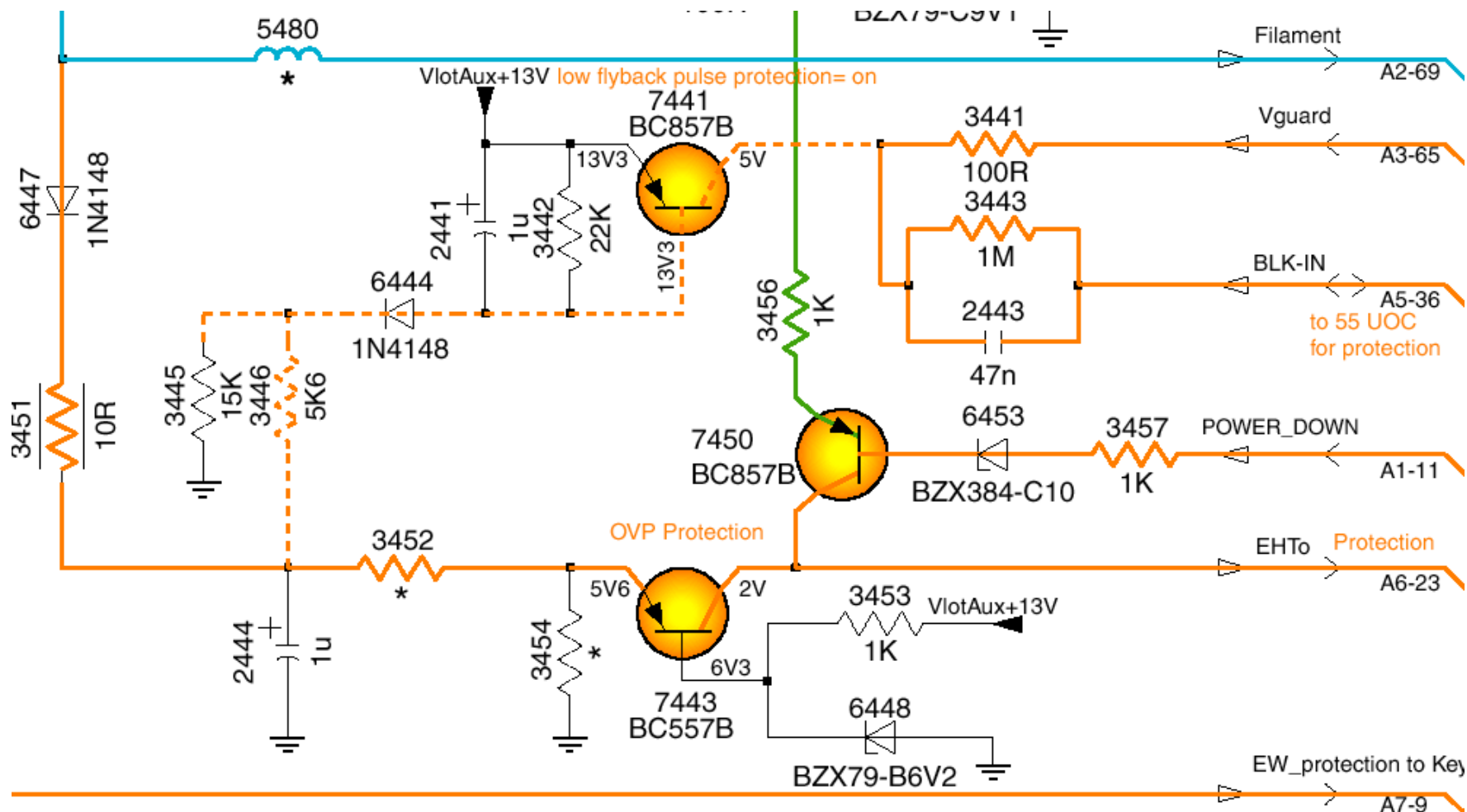


PHILIPS

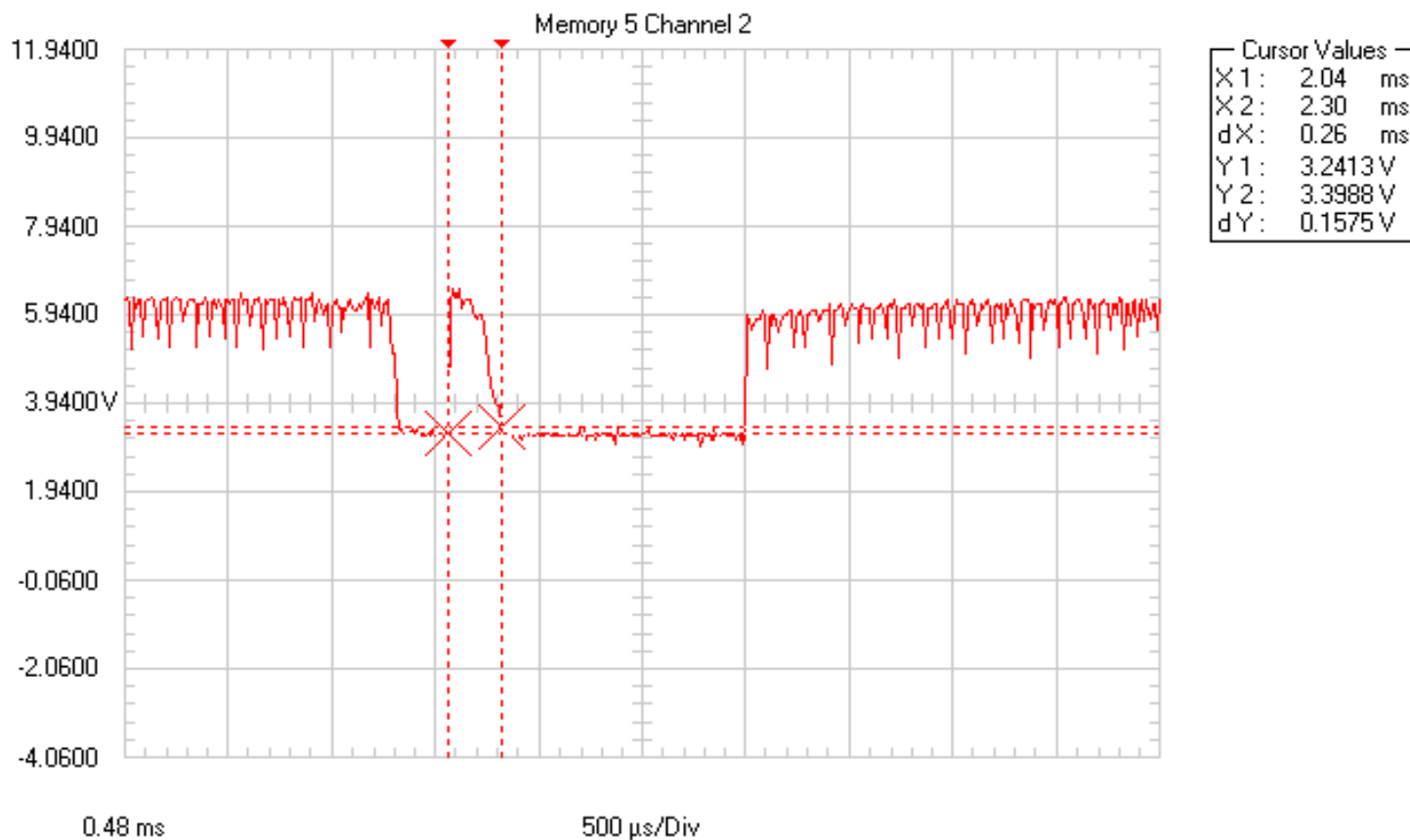
A3 Frame deflection



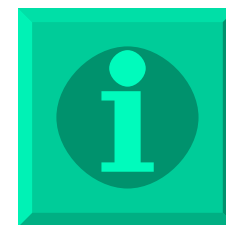
A2 Protections deflection H and V



BLK_IN/VGUARD Signal(UOC Pin 55)



SERVICE MANUAL PAGE



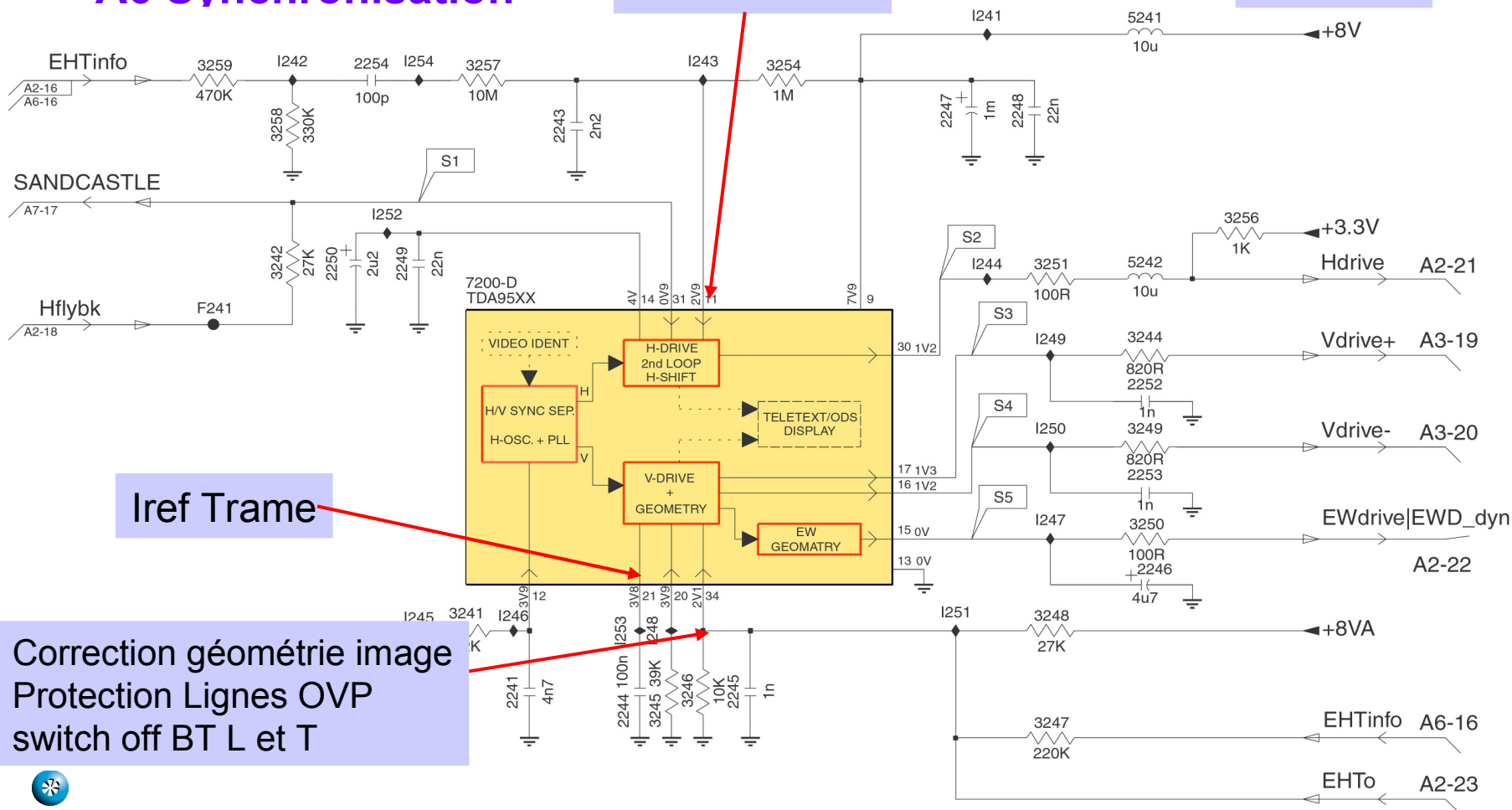
Tips for debugging deflection

No.	Problem symptom	Check
1)	Set cannot start-up & Vbatt volt not correct	Isolate 5561 & check Vbatt is correct now (Power Supply ok) – check for 7460, 7461, 7462 failure. Check MainAux and VlotAux +13V (7467) are correct for base drive of deflection – check for 7461, 7463 & 7460 failure.
2)	Incorrect pic. width or EW Protection trigger	Isolate 5400 & check EW_protection is now not trigger – check for 7400, 7401, 7404 failure.
3)	No +200V, +50V, +13V, +8V, +5V supply	Check secondary voltage supply – 7494, 7488, 7486, 7480, 7482.
4)	Single horizontal line	No vertical deflection – check 7471 Frame IC, VlotAux+13V failure.
5)	Flyback line visible on screen	Check 7330 Video amplifier, +200V supply failure.

A6 Synchronisation

Protection flash

Alim VP2



Correction géométrie image
Protection Lignes OVP
switch off BT L et T



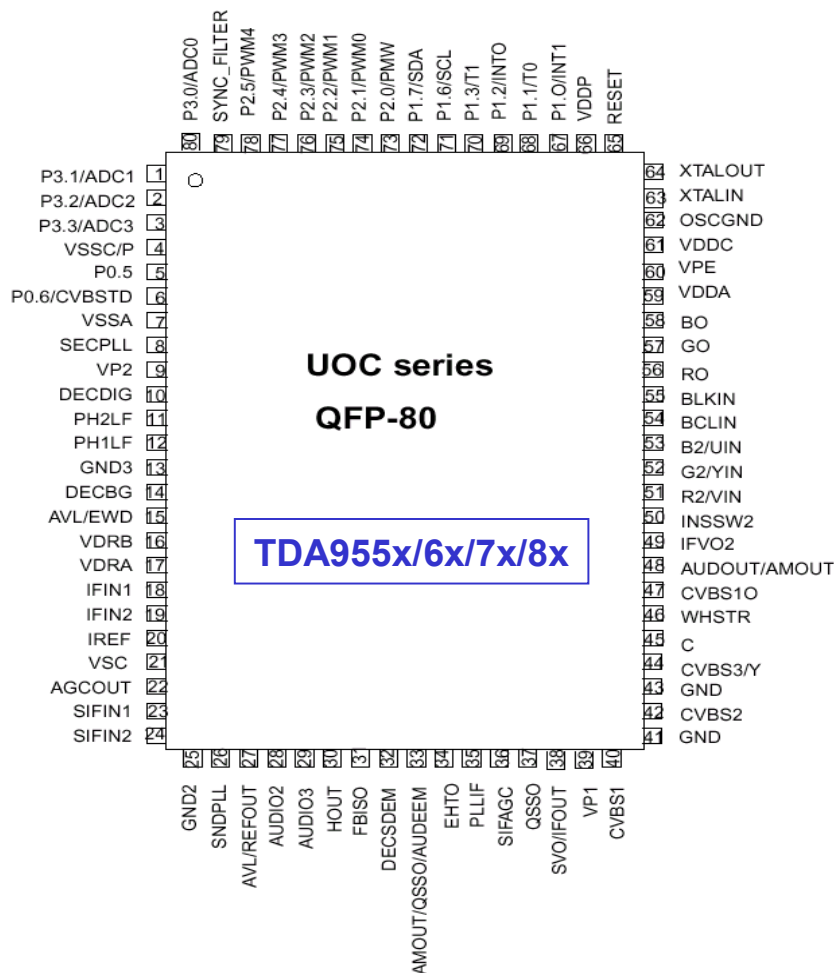
Video Signal Processing

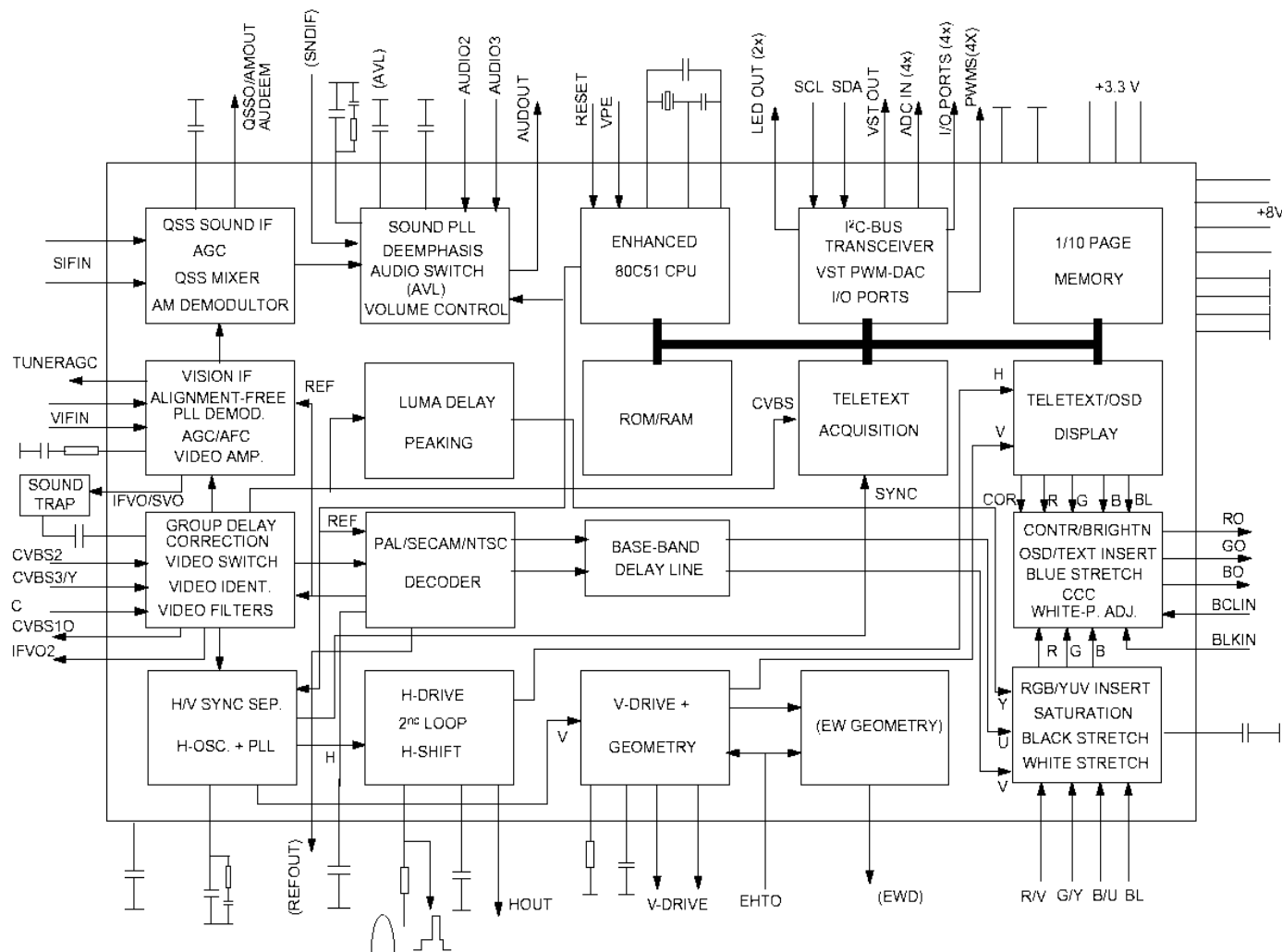
General description

Combined the function of :
video processor + Micro-controller.

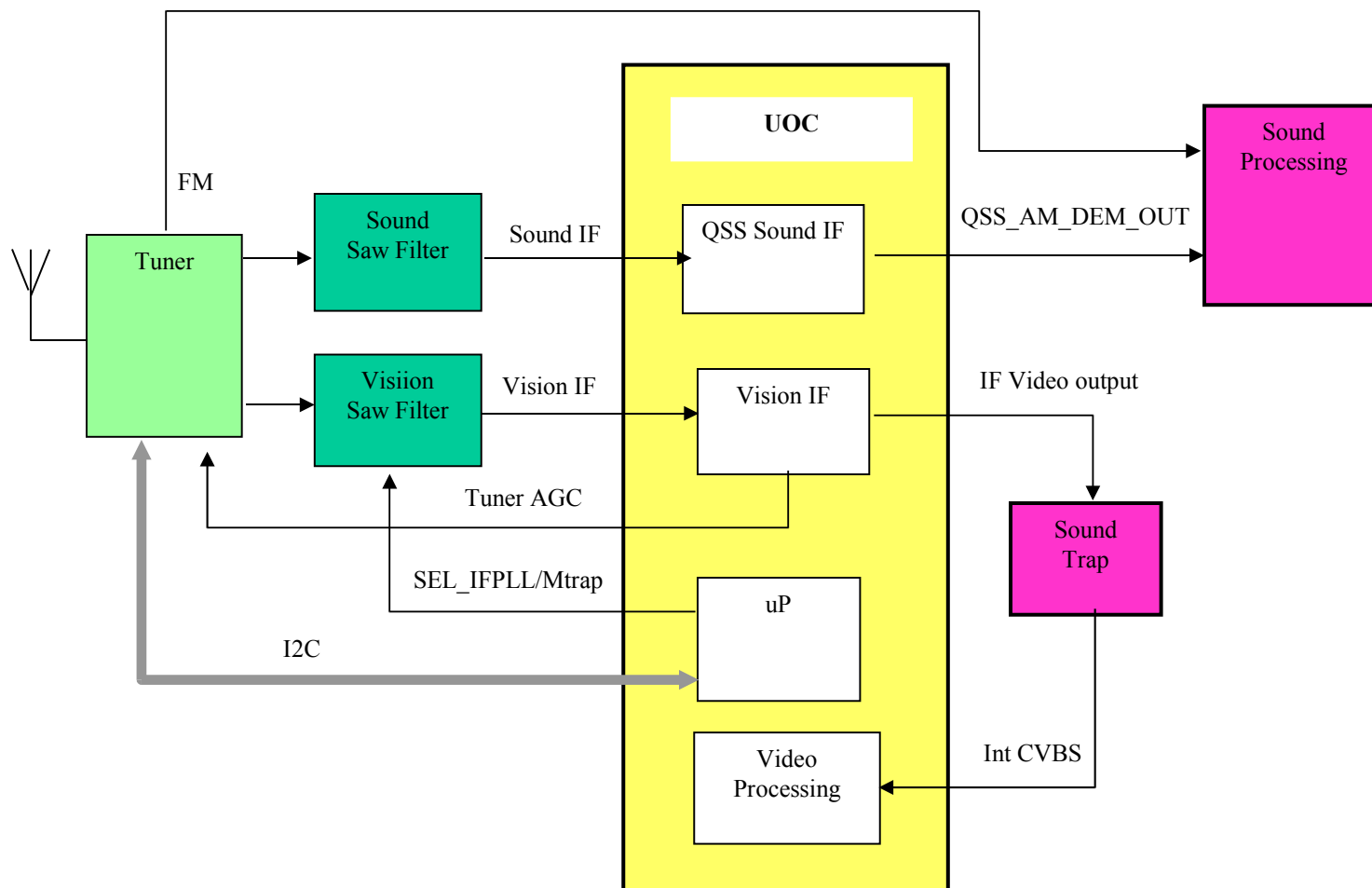
Basically divided in 4 main function :

- 1) Microcontroller
- 2) Video / Audio Demodulator
- 3) I/O Switching
- 4) SYNC Separator

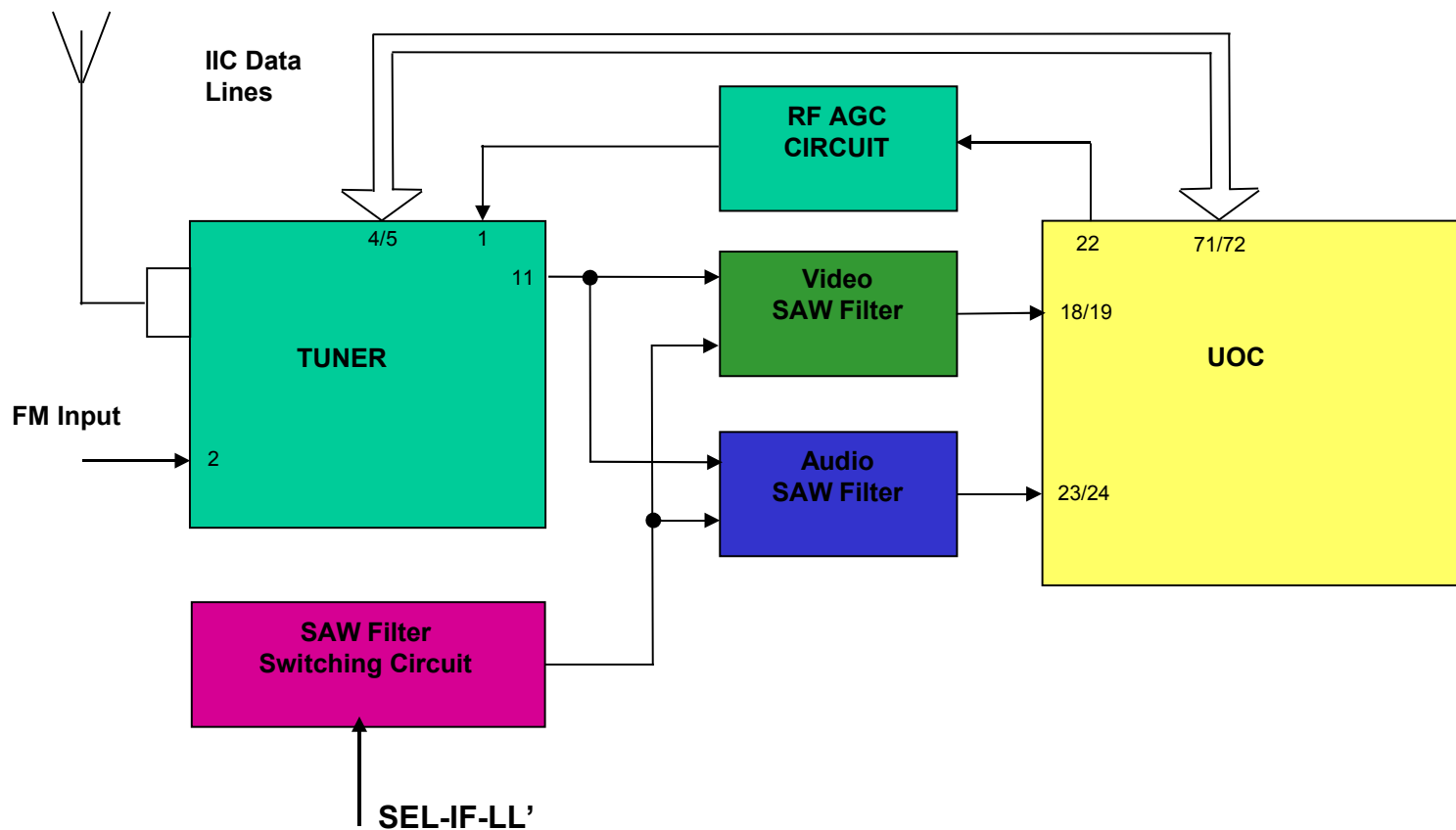




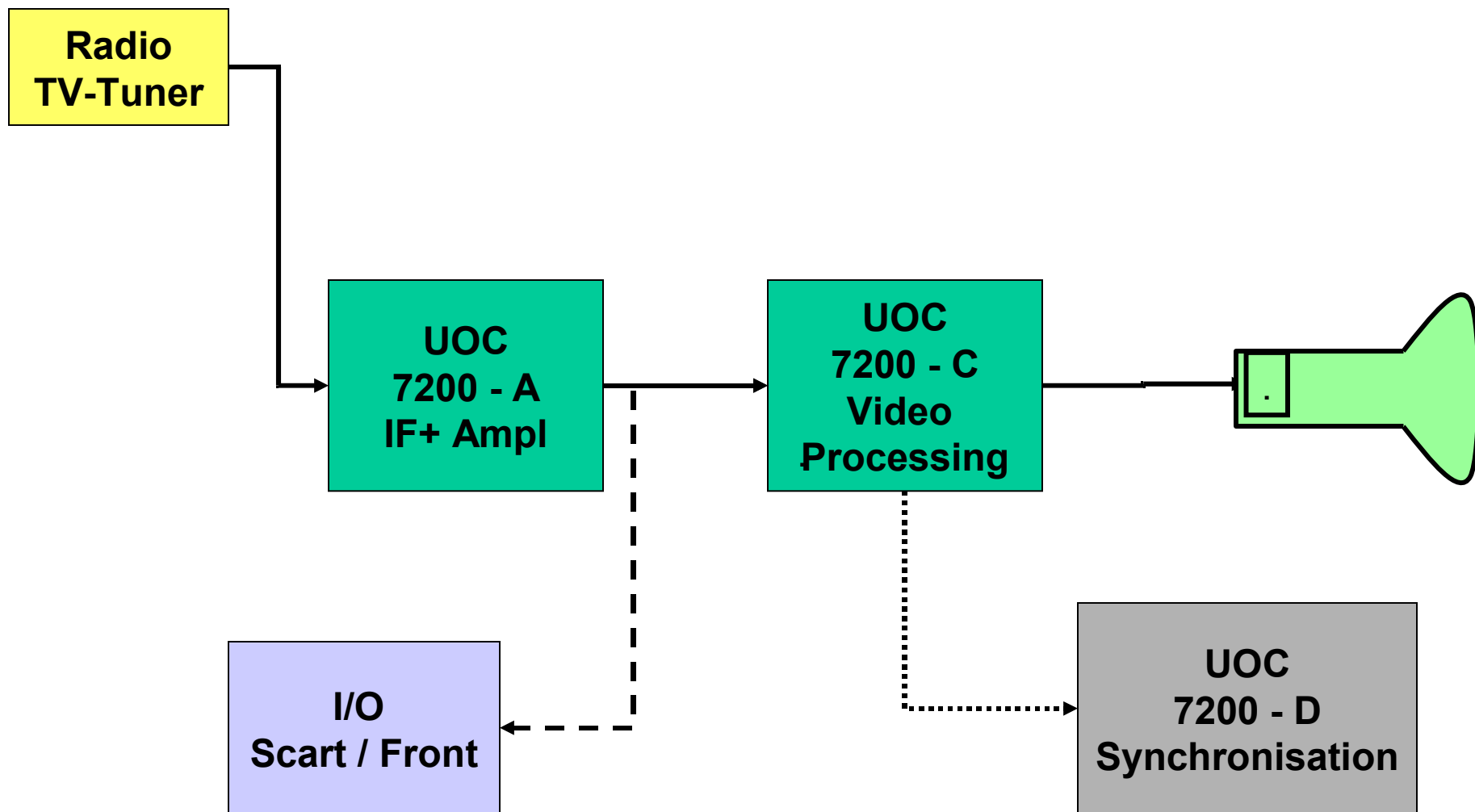
Tuner and IF QSS



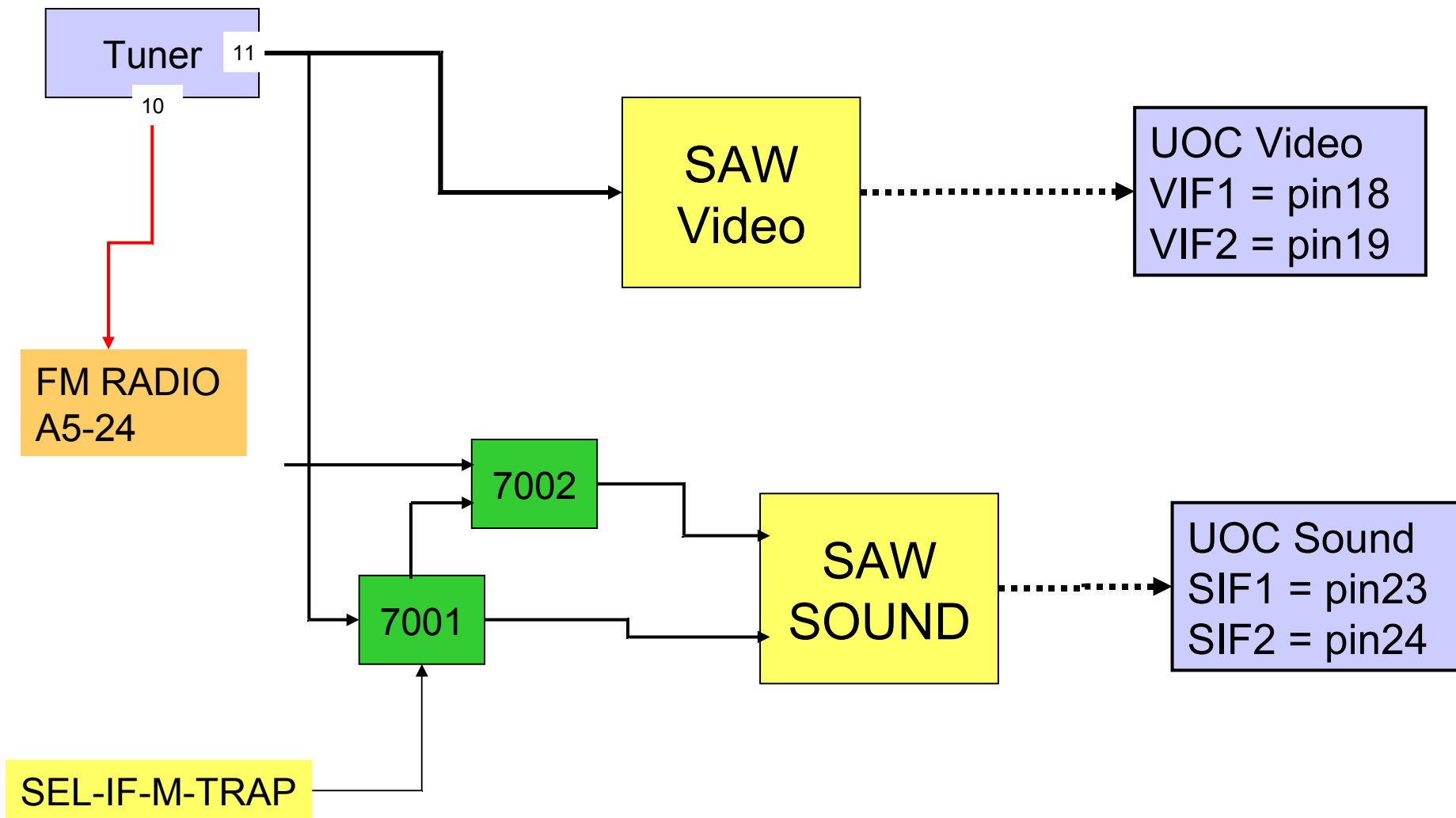
Tuner Block Diagram



Video Processing



Tuner IF

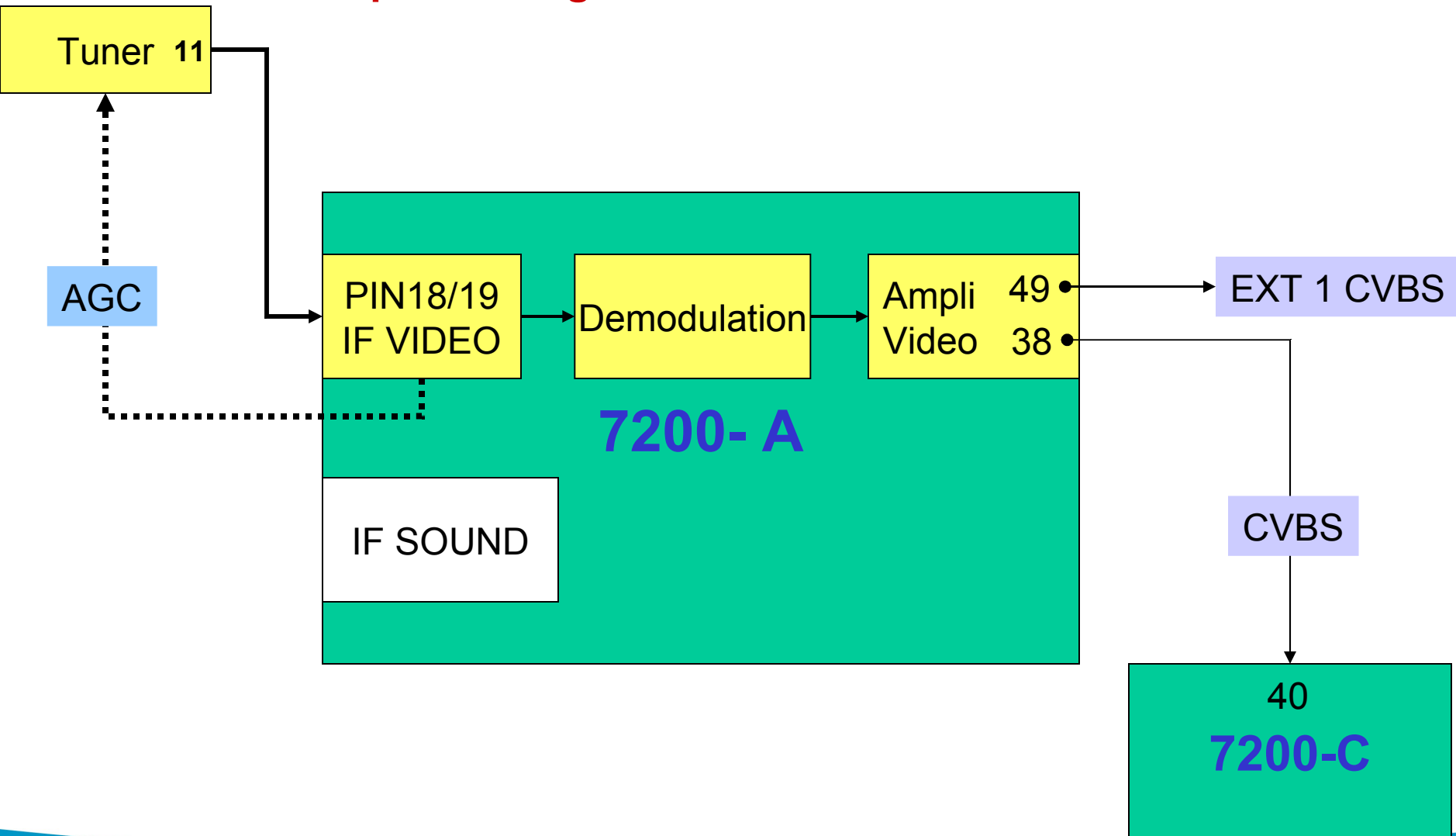


Schema service manual

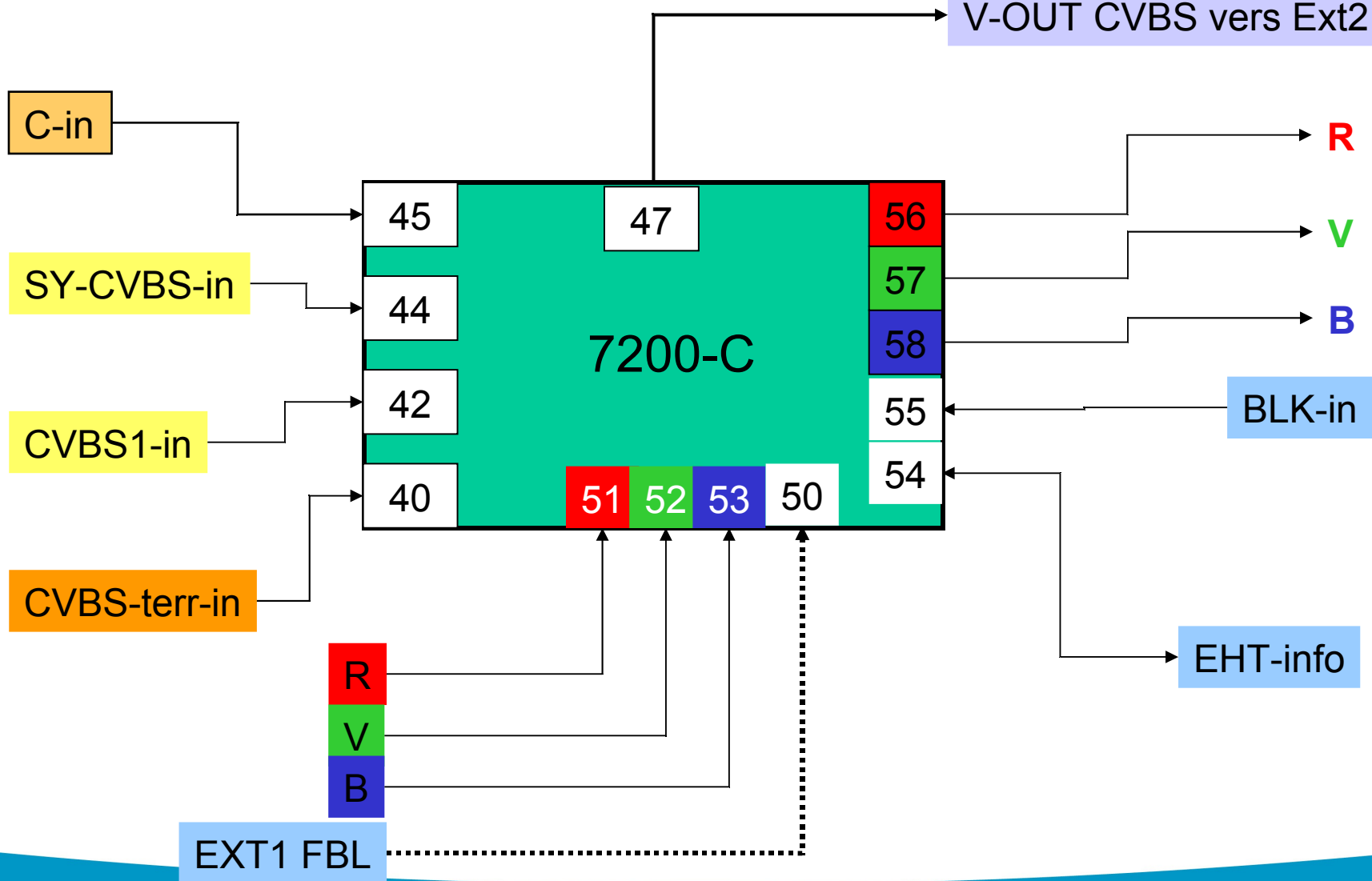
A4 page 26



Video processing



Video Processing

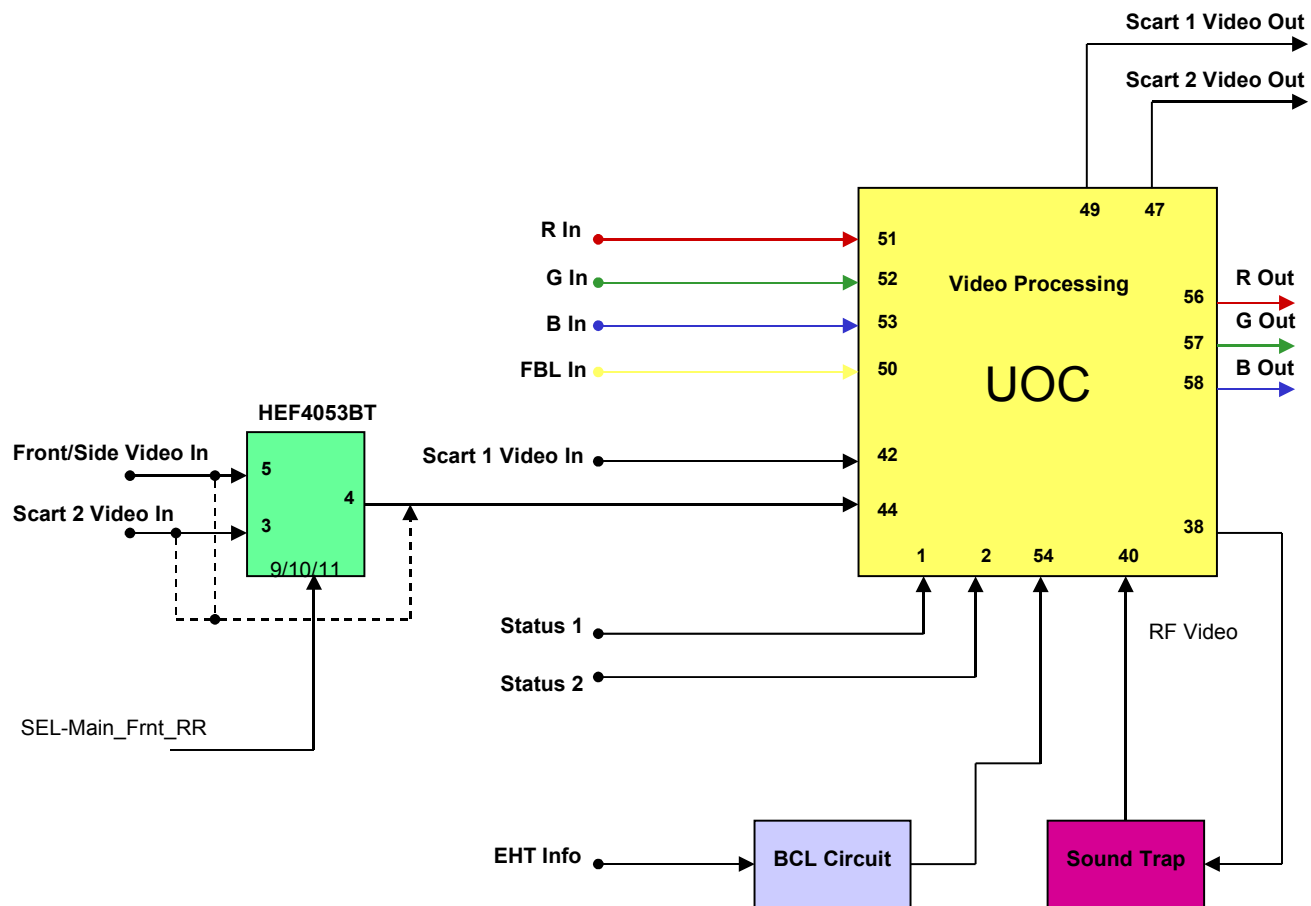


Schema service manual

A5 page 27



Video source select

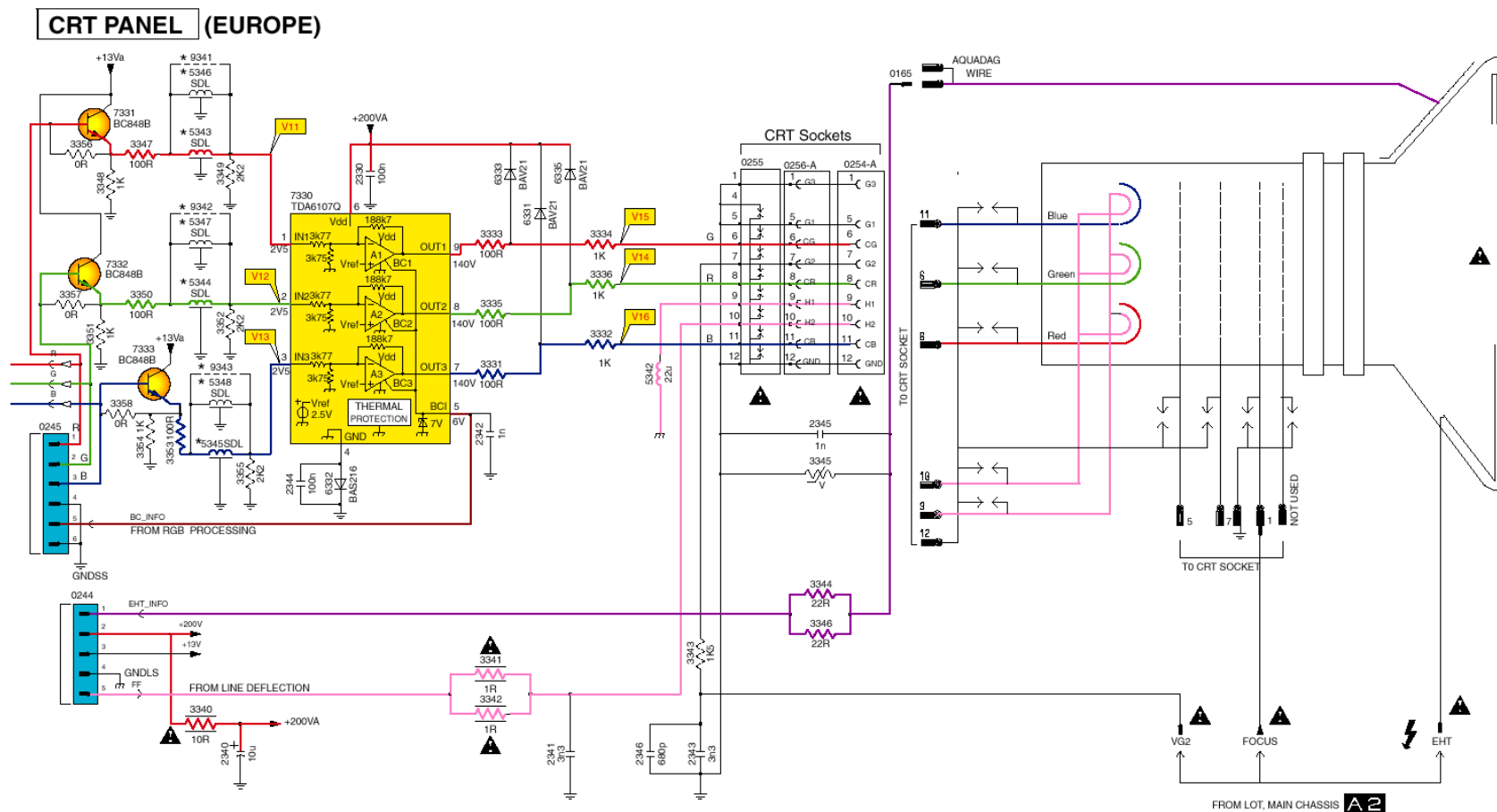


Schema service manual

A10 page 32



B1 CRT panel



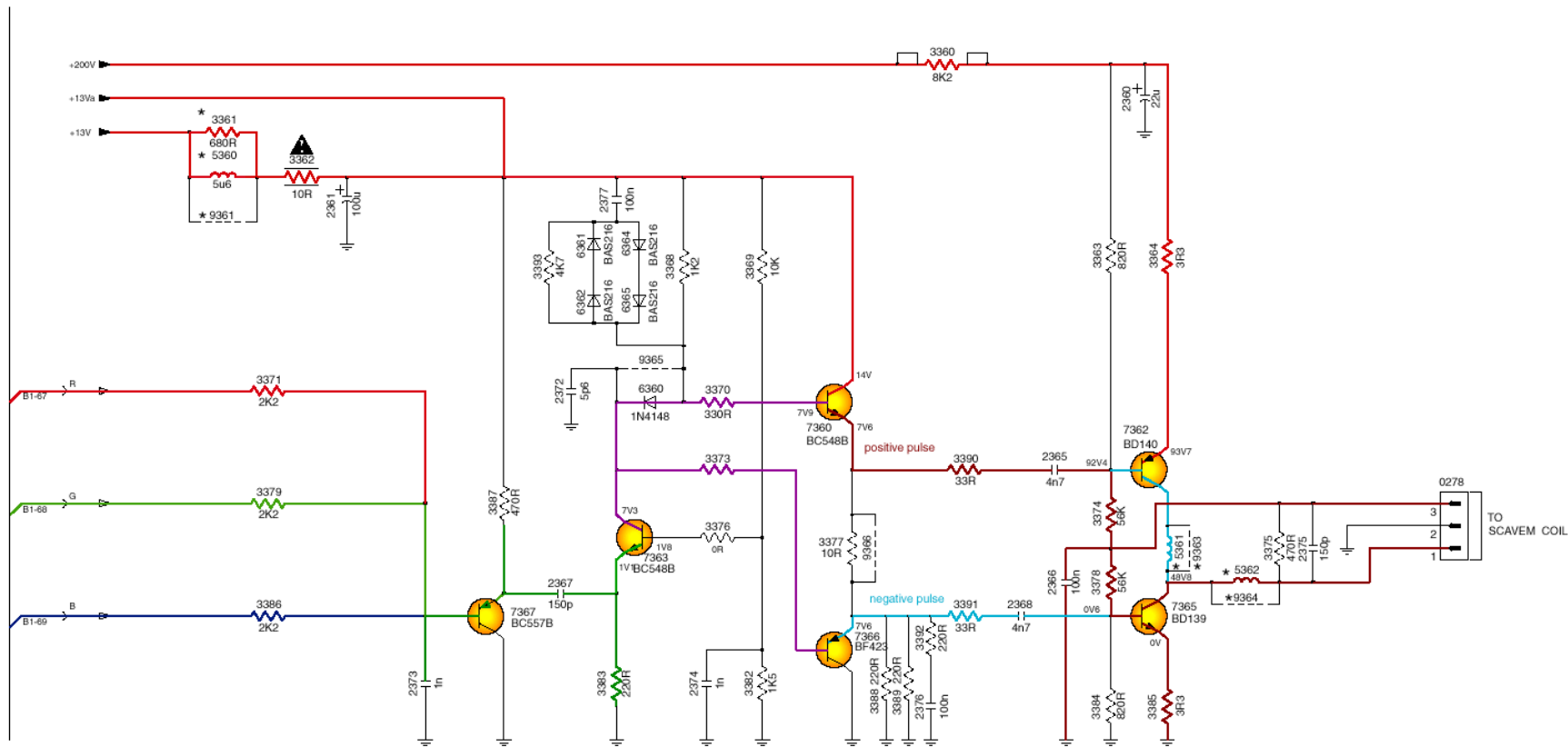
Schema service manual

B1 page 42



2 CRT Scavem

2 CRT PANEL (EUROPE)



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PHILIPS

Schema service manual

B2 page 43



END

go back to

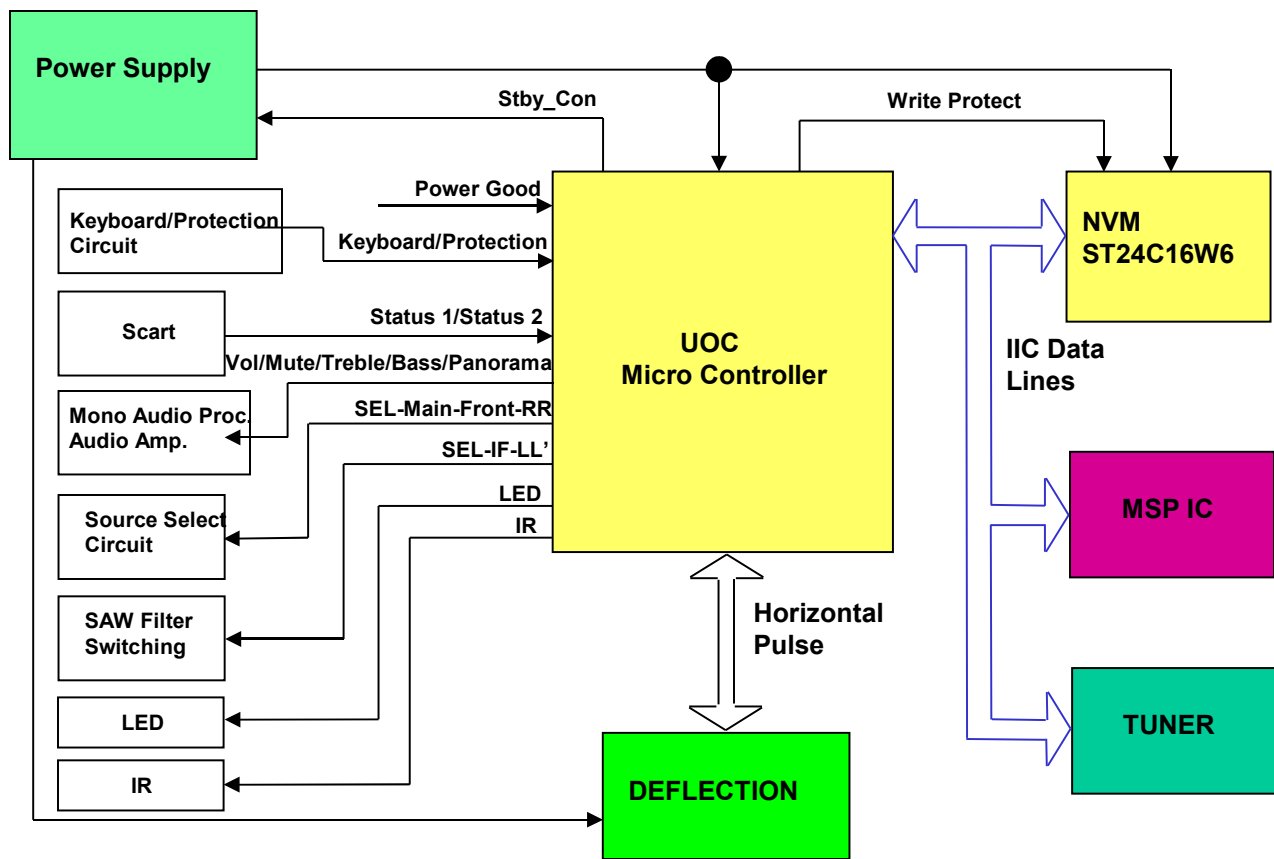
MAIN MENU

MICROPROCESSOR

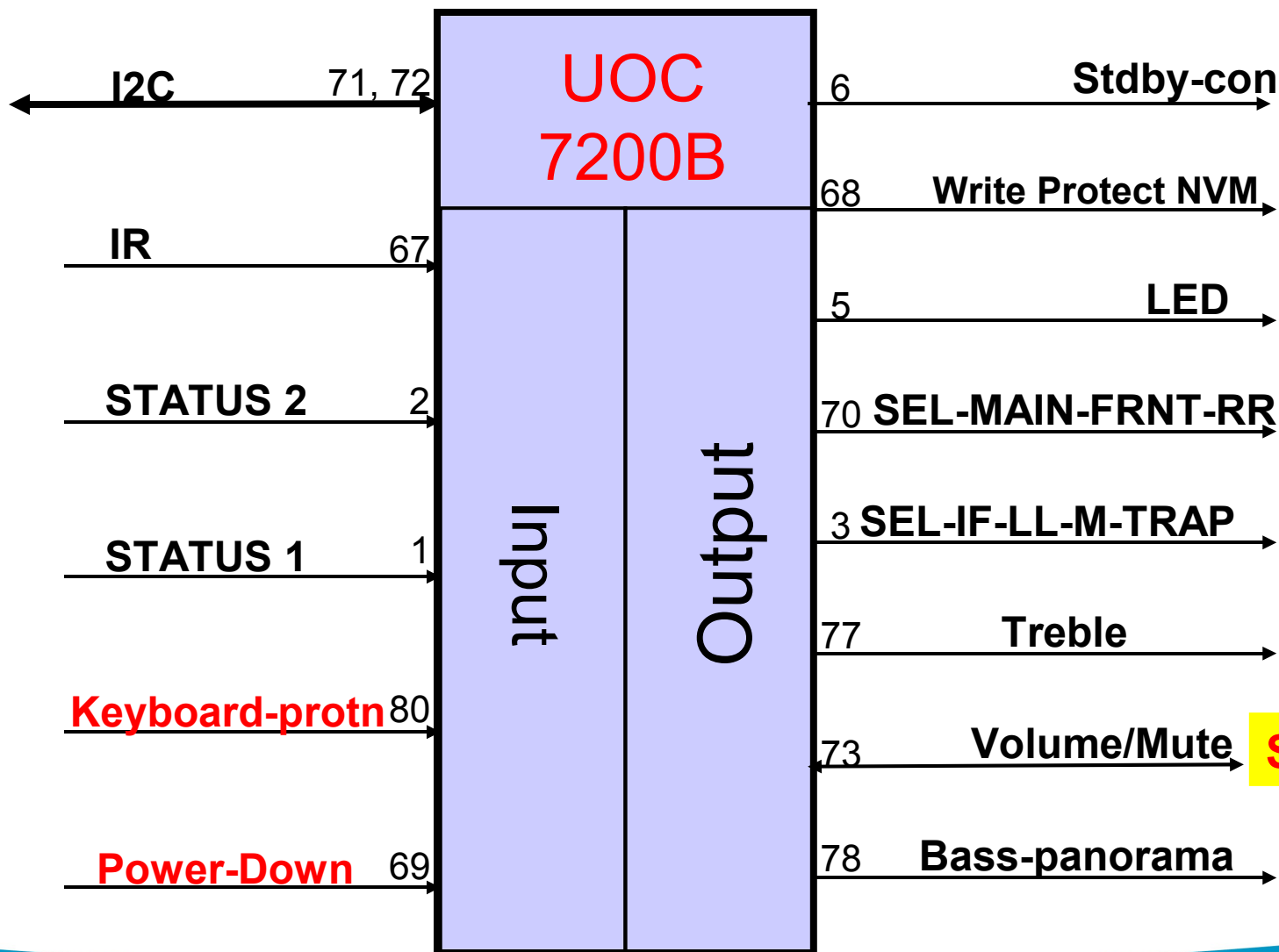
Micro Controller Diversity

Type Number	Teletext Type	ROM Size	Software Used	Others
TDA9561	10 Page	128k	3EU1/3EU2	Inter-Carrier
TDA9567	10 Page	128k	3EU1	QSS
TDA9552	1 Page	64k	2EU0	QSS
TDA9551	1 Page	64k	2EU9	Inter-Carrier
TDA9550	1 Page	64k	2EU0	Inter-Carrier
TDA9572	Nil	32k	1EU0	QSS
TDA9571	Nil	32k	1EU0	Inter-Carrier
TDA9581	Nil	32k	1EU0	Inter-Carrier

Micro Controller block diagram

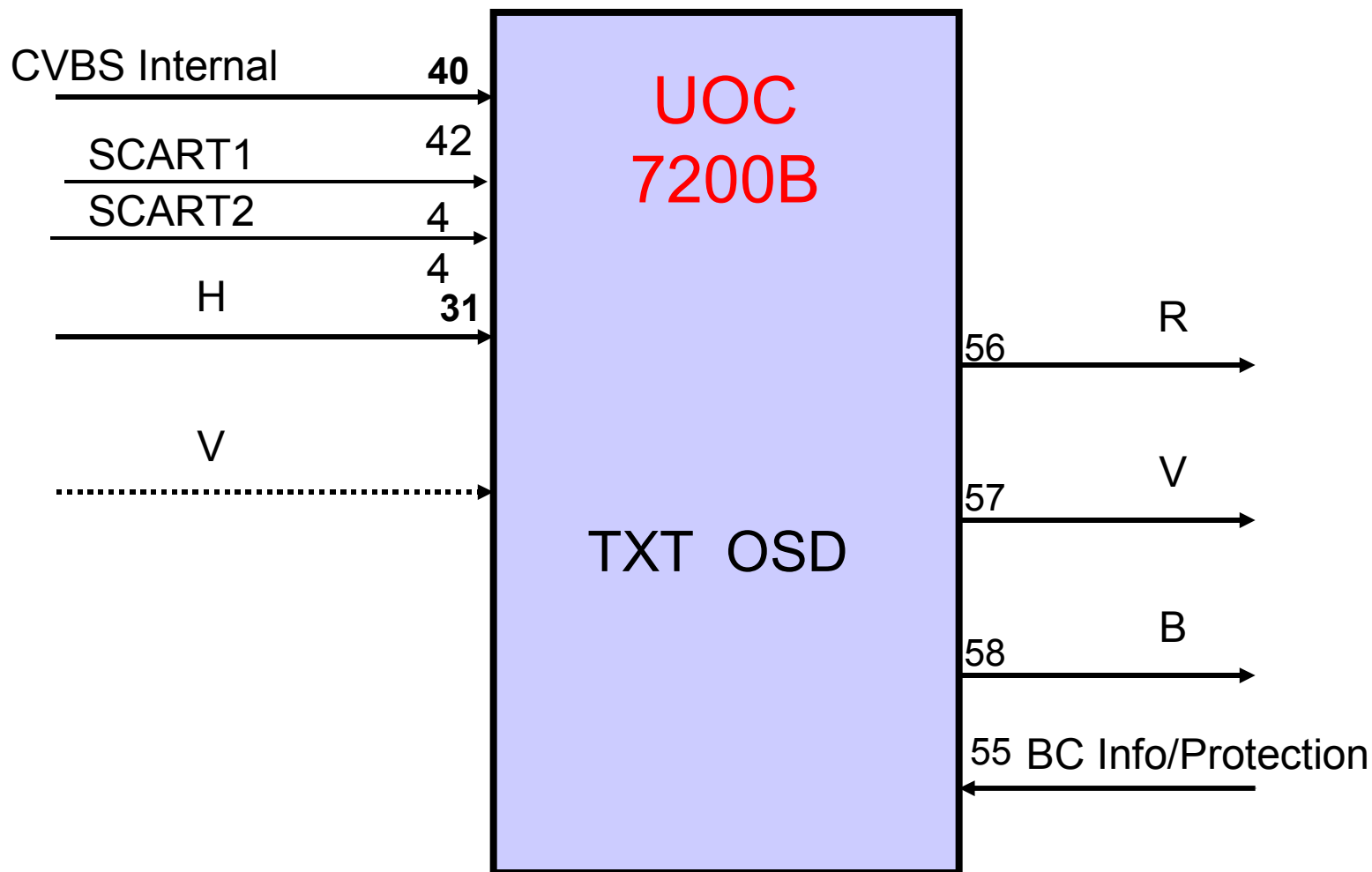


Microcontroller functionality

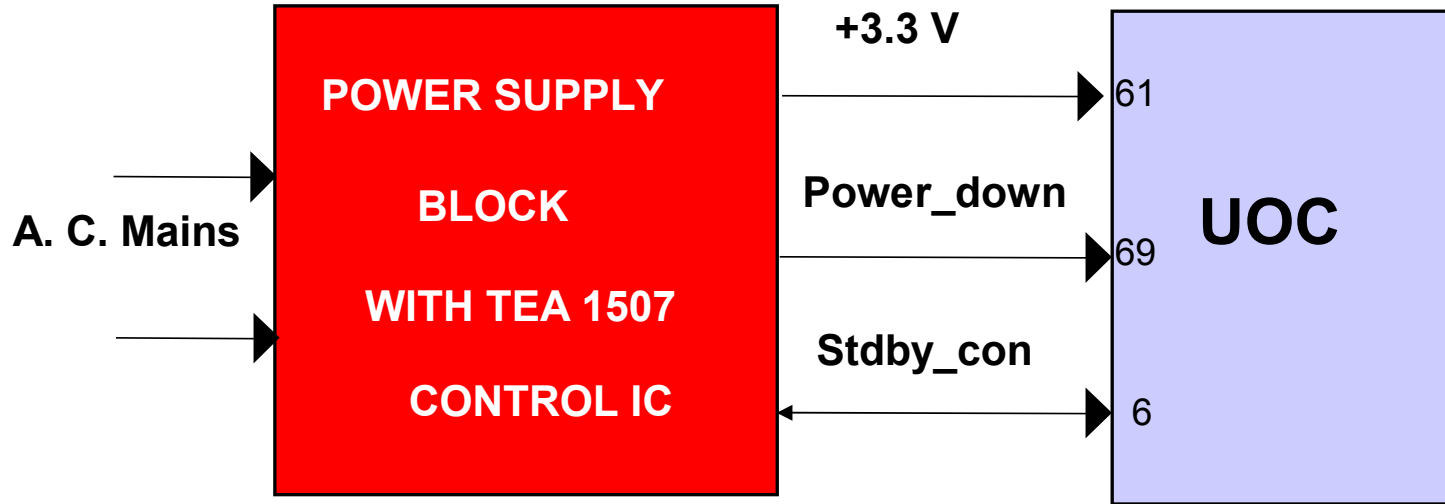


SDM

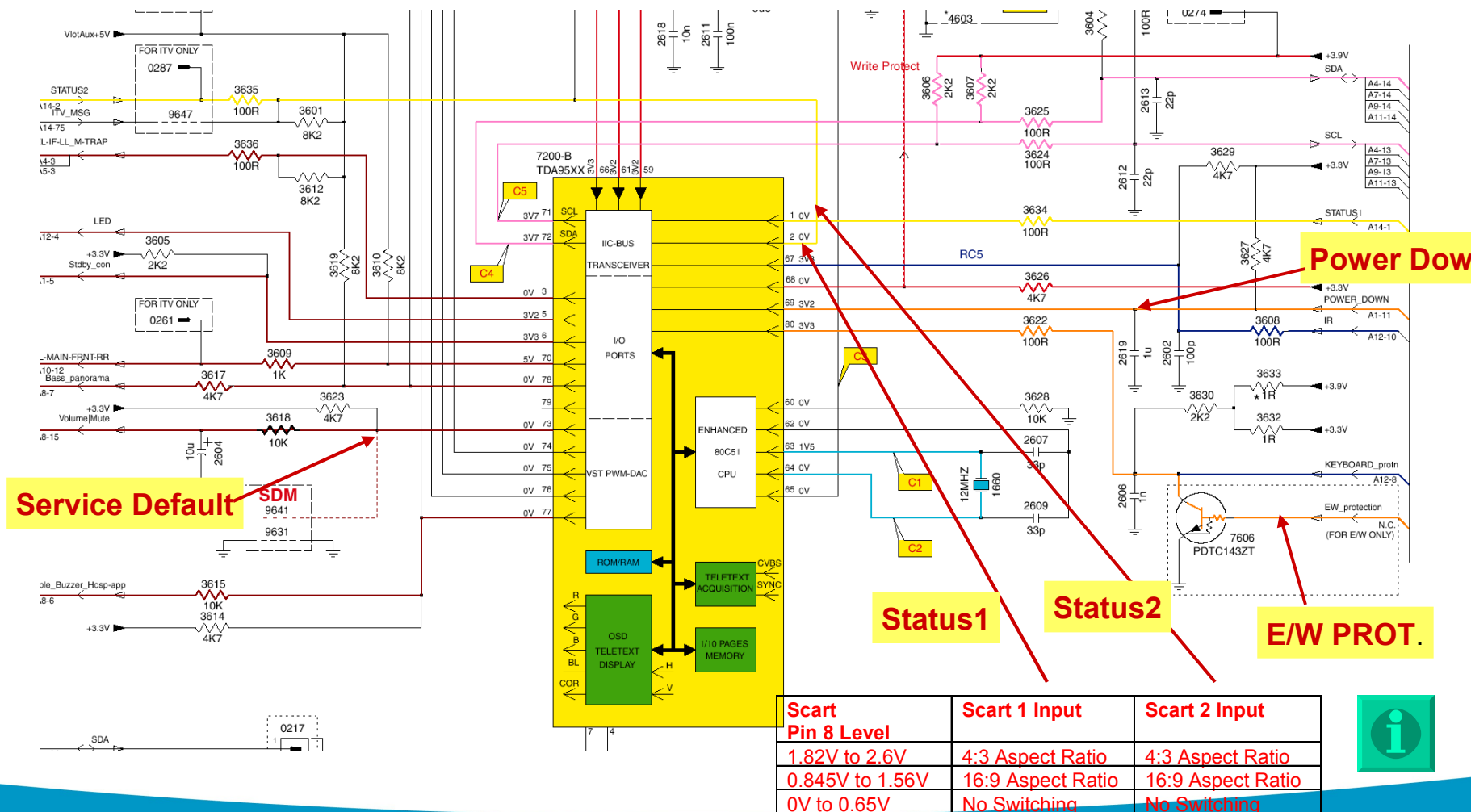
Functionality TXT/OSD



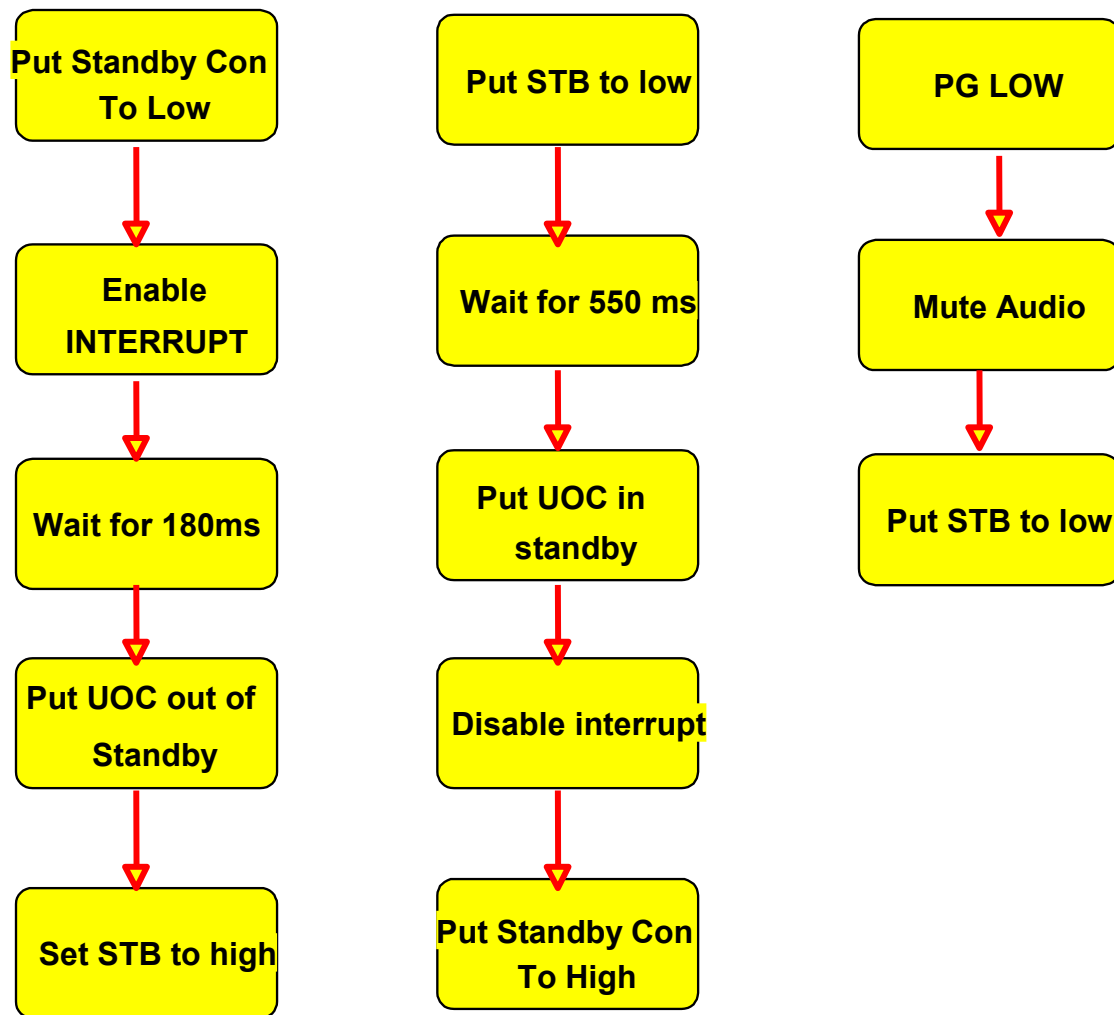
UOC interface with power supply



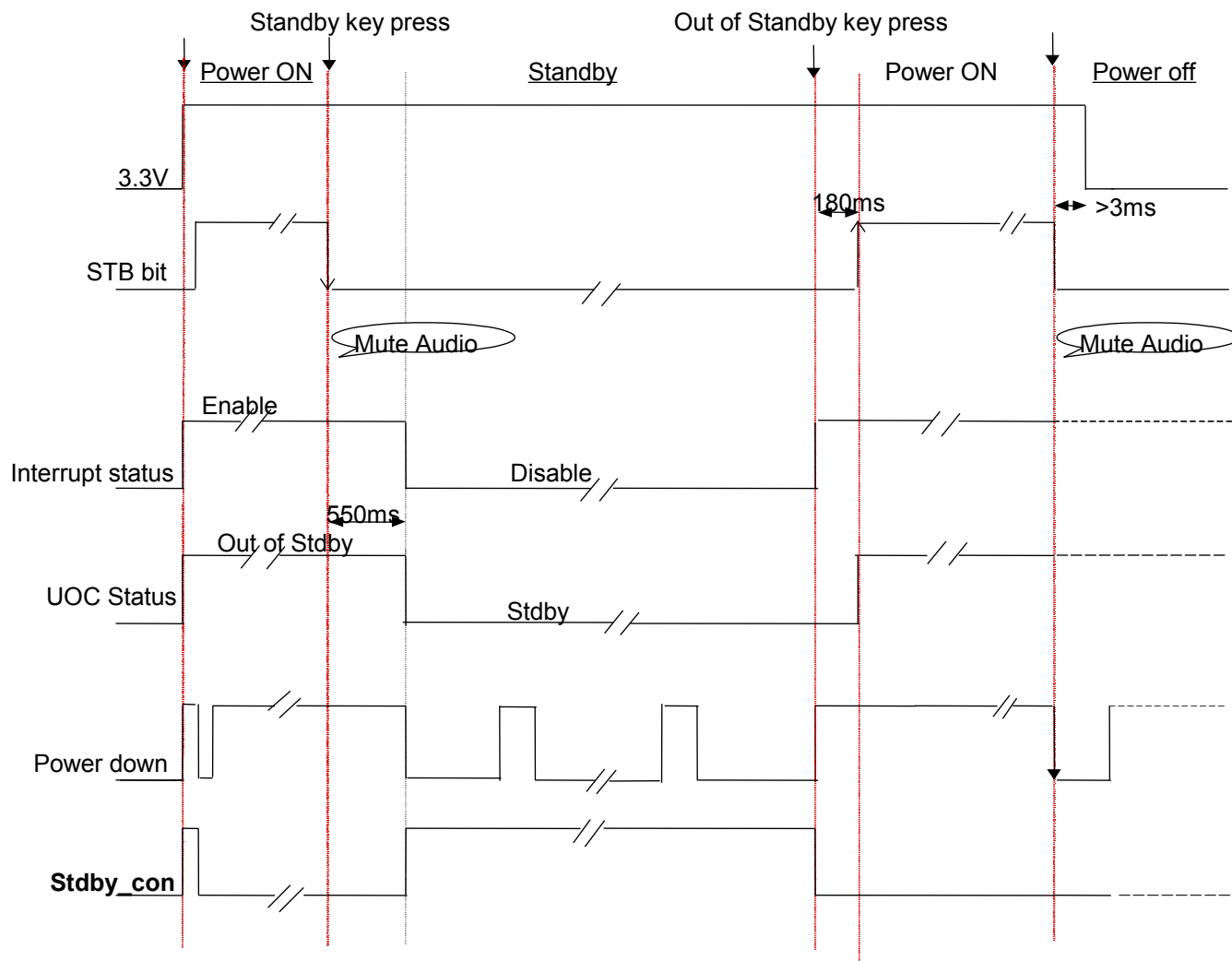
A7 Control



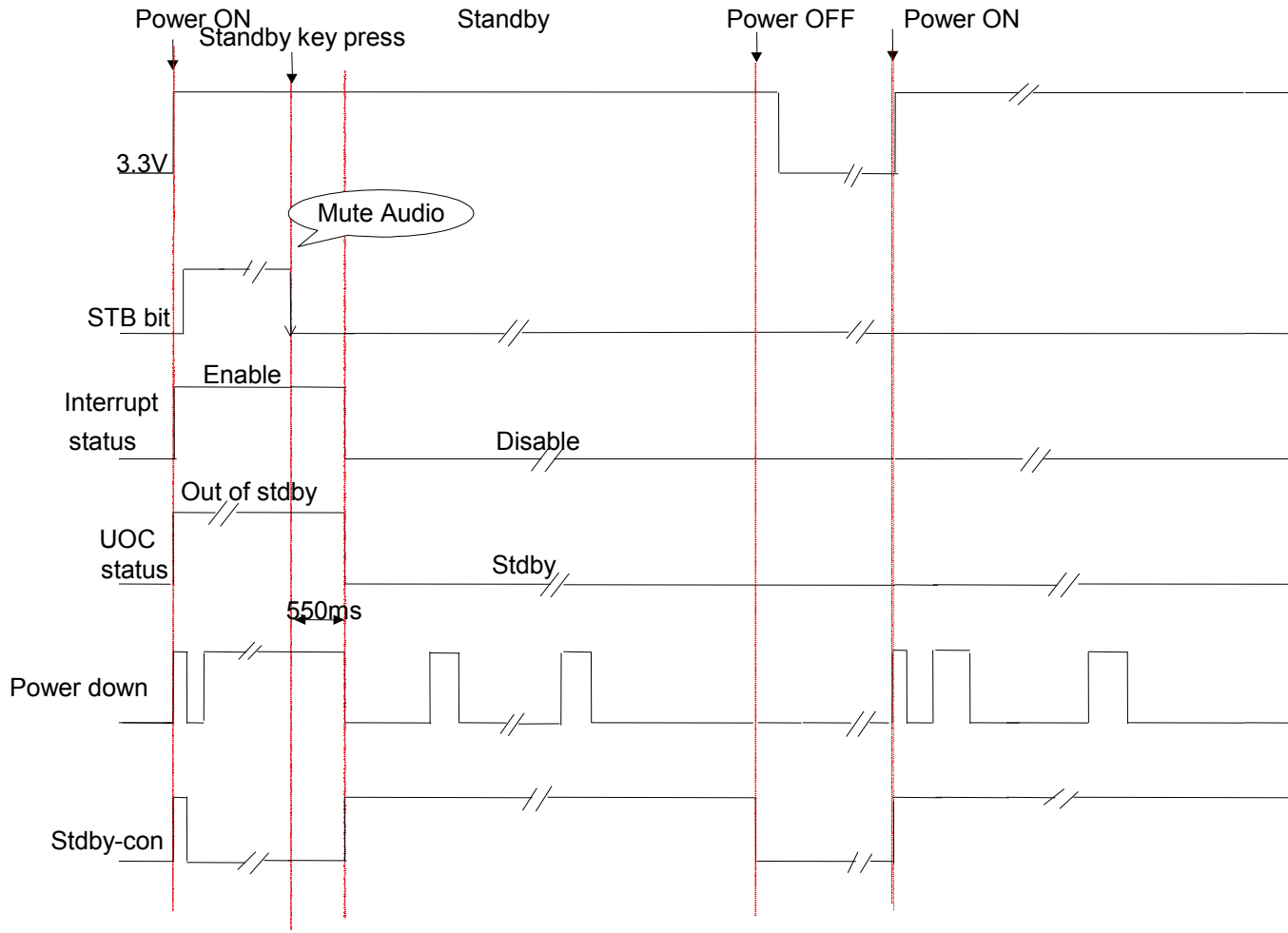
Standby status UOC



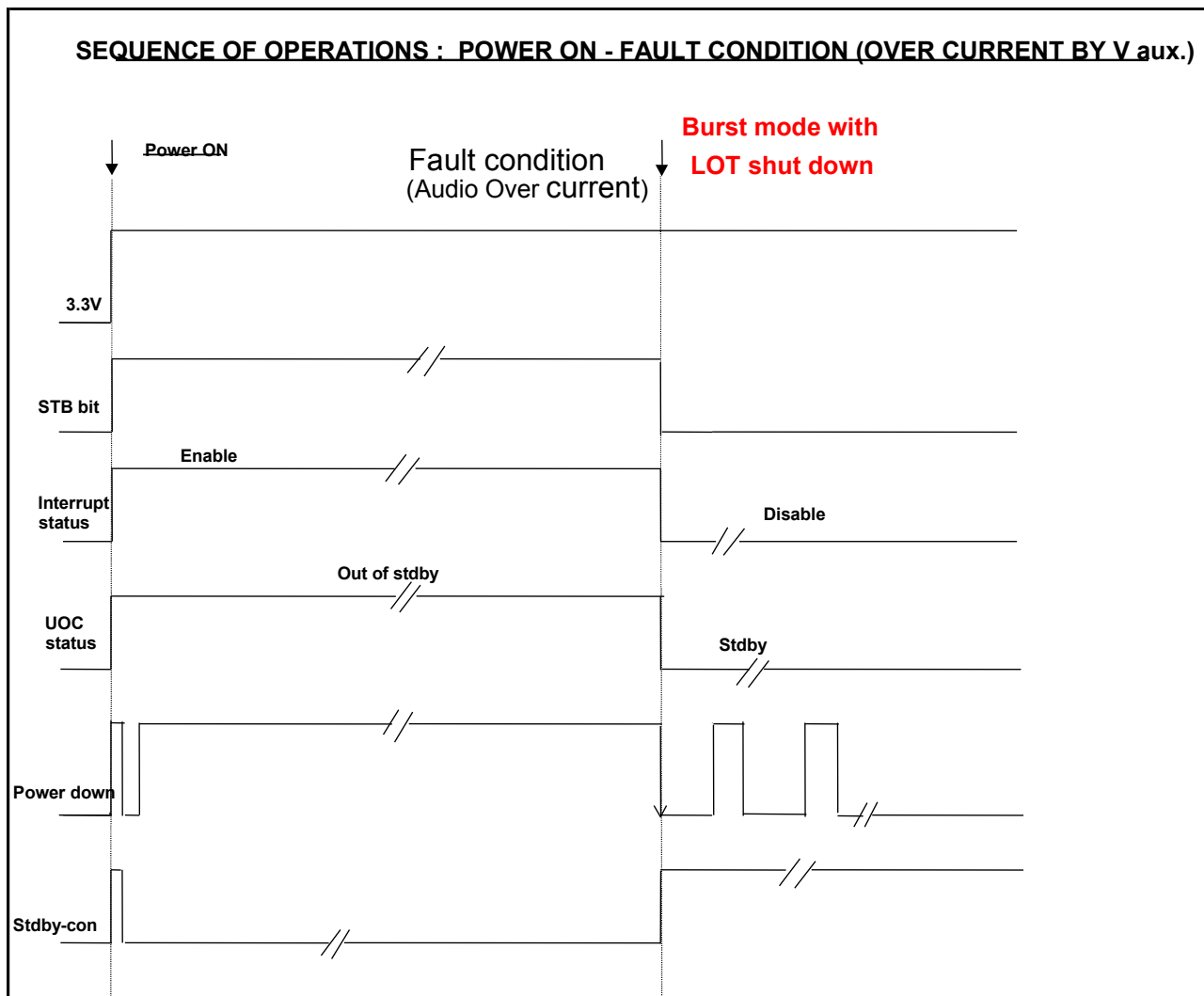
Power ON-Standby-Power On-Power Off



Power ON-Standby-Power OFF-Power ON



Power ON - Fault condition



Tips for debugging μ P

1. Check that both +3.3V DC and +3.9V DC are present.
2. Check that crystal oscillator is working.
3. Check keyboard protection pin that it is in high logic. For sets with EW control, make sure that base of 7606 is low.
4. Check that Power Good signal is at high logic, normal operation.
5. Check that UOC is not in standby mode. Pin 6 of UOC should be 0V DC.
6. Make sure H-drive pulse is there. This can be check from resistor 3251. If H-drive is does not exist, remove resistor 3251 to check if there is loading.

Schema service manual

A7 page 29



END

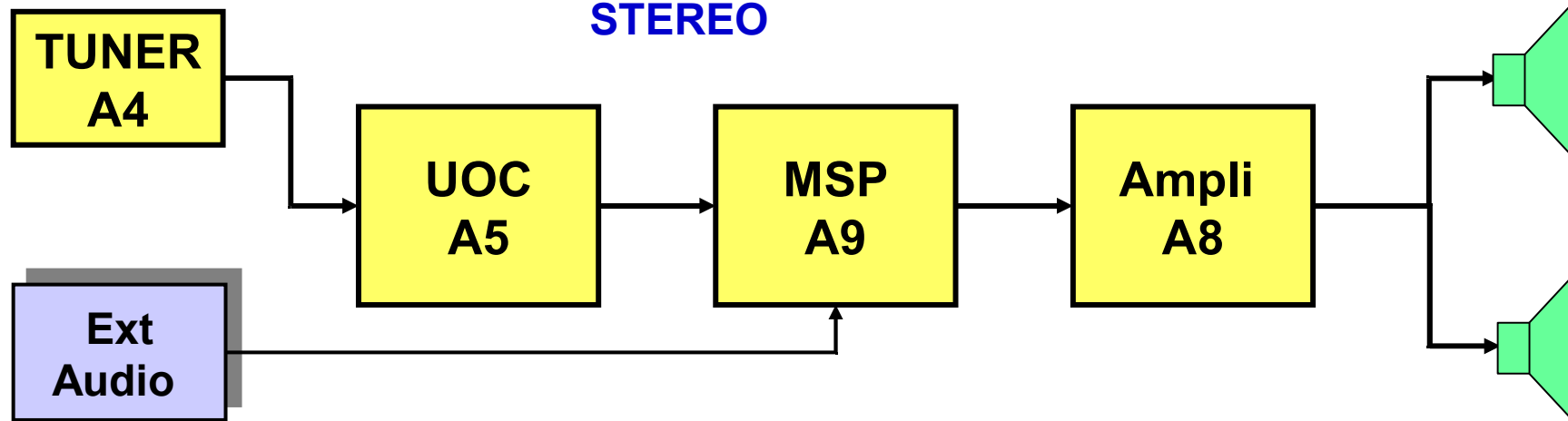
go back to

MAIN MENU

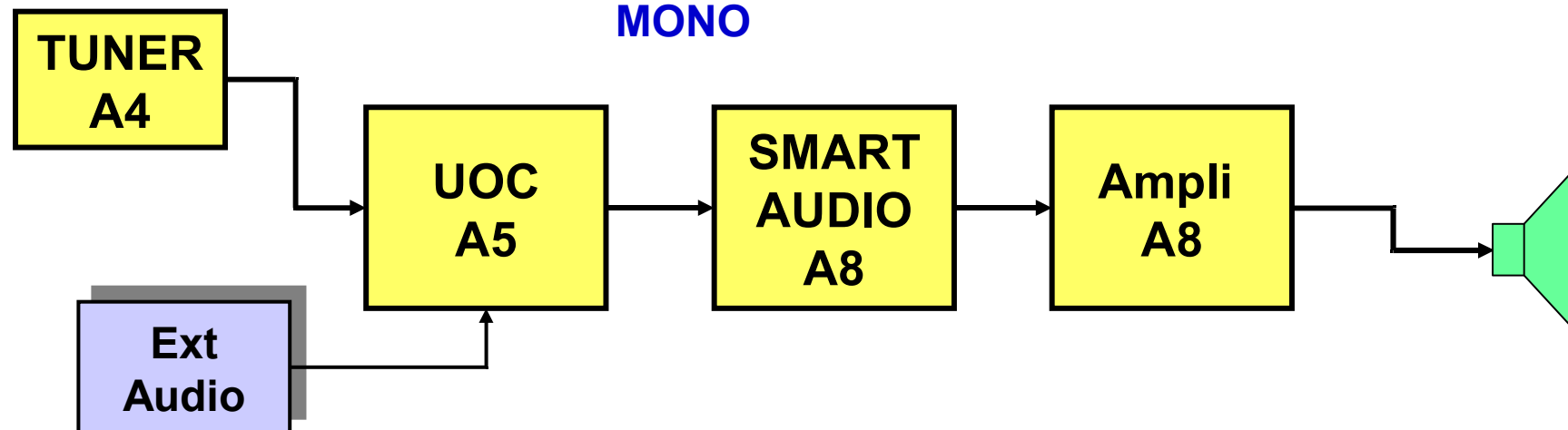
AUDIO PROCESSING

Audio processing

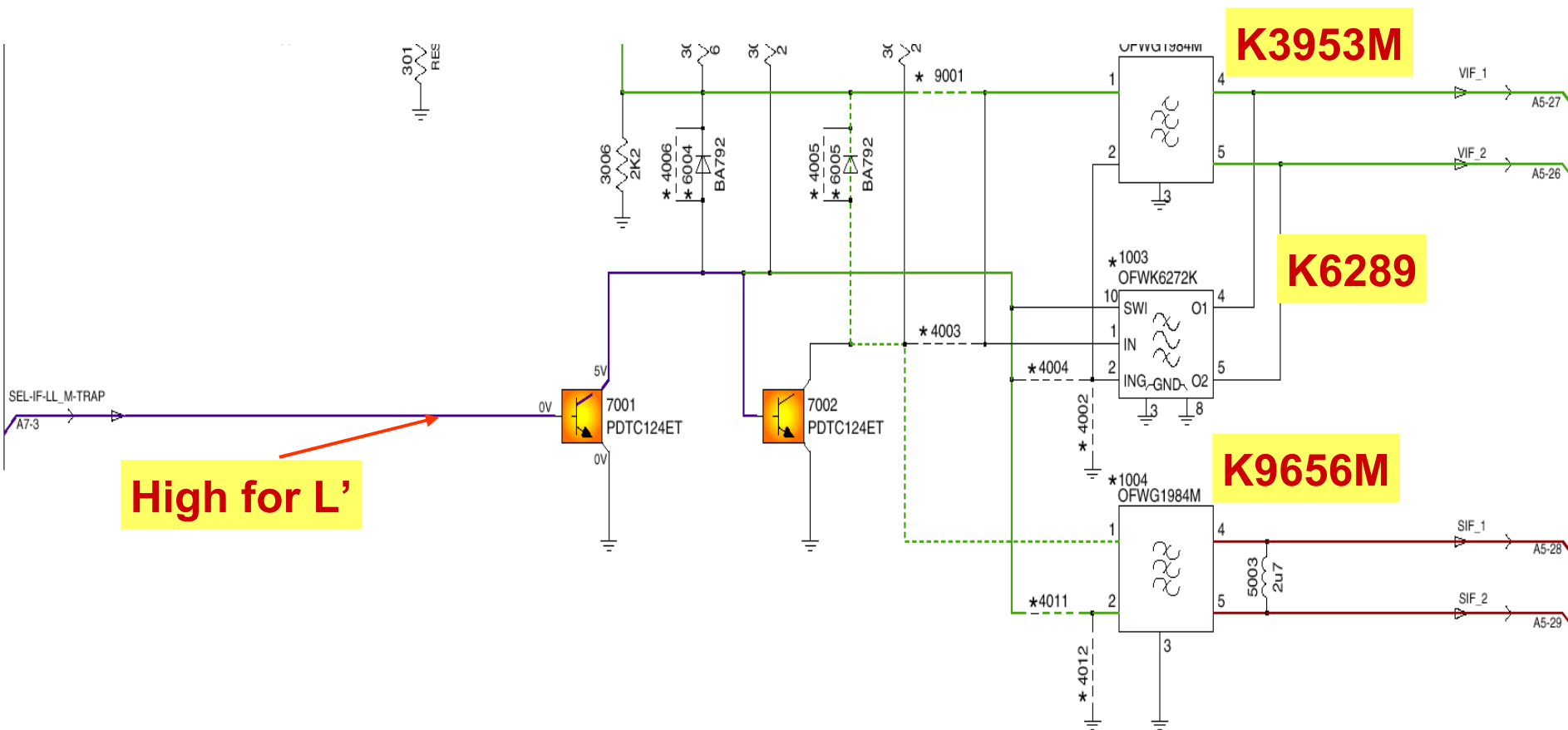
STEREO



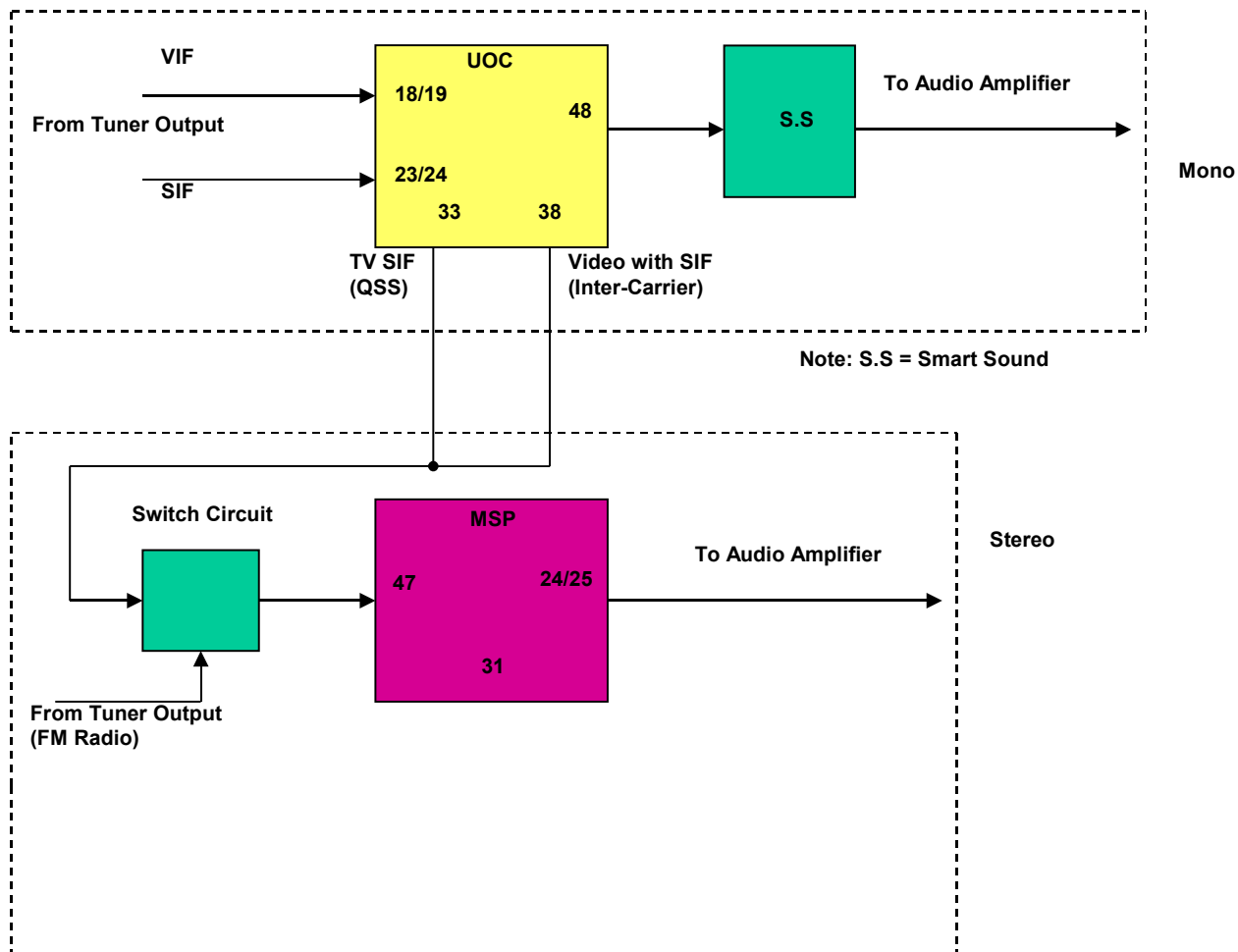
MONO



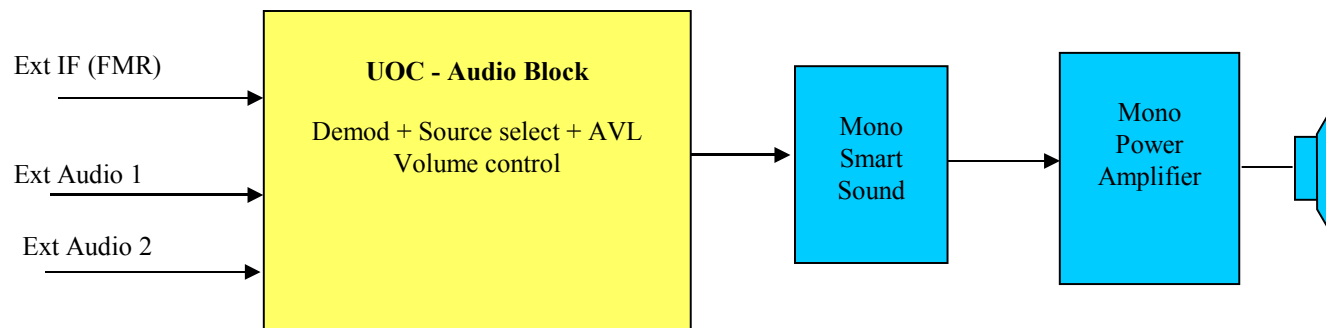
A4 Sound IF



Audio Decoder/Processor

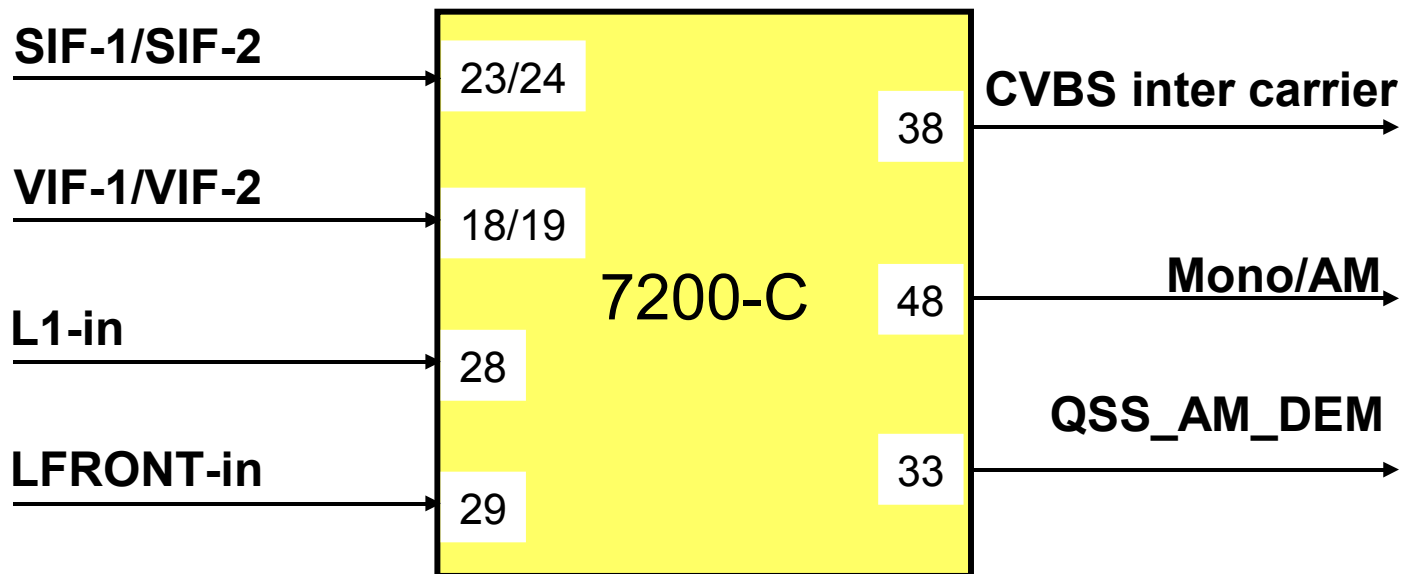


Mono sound processing

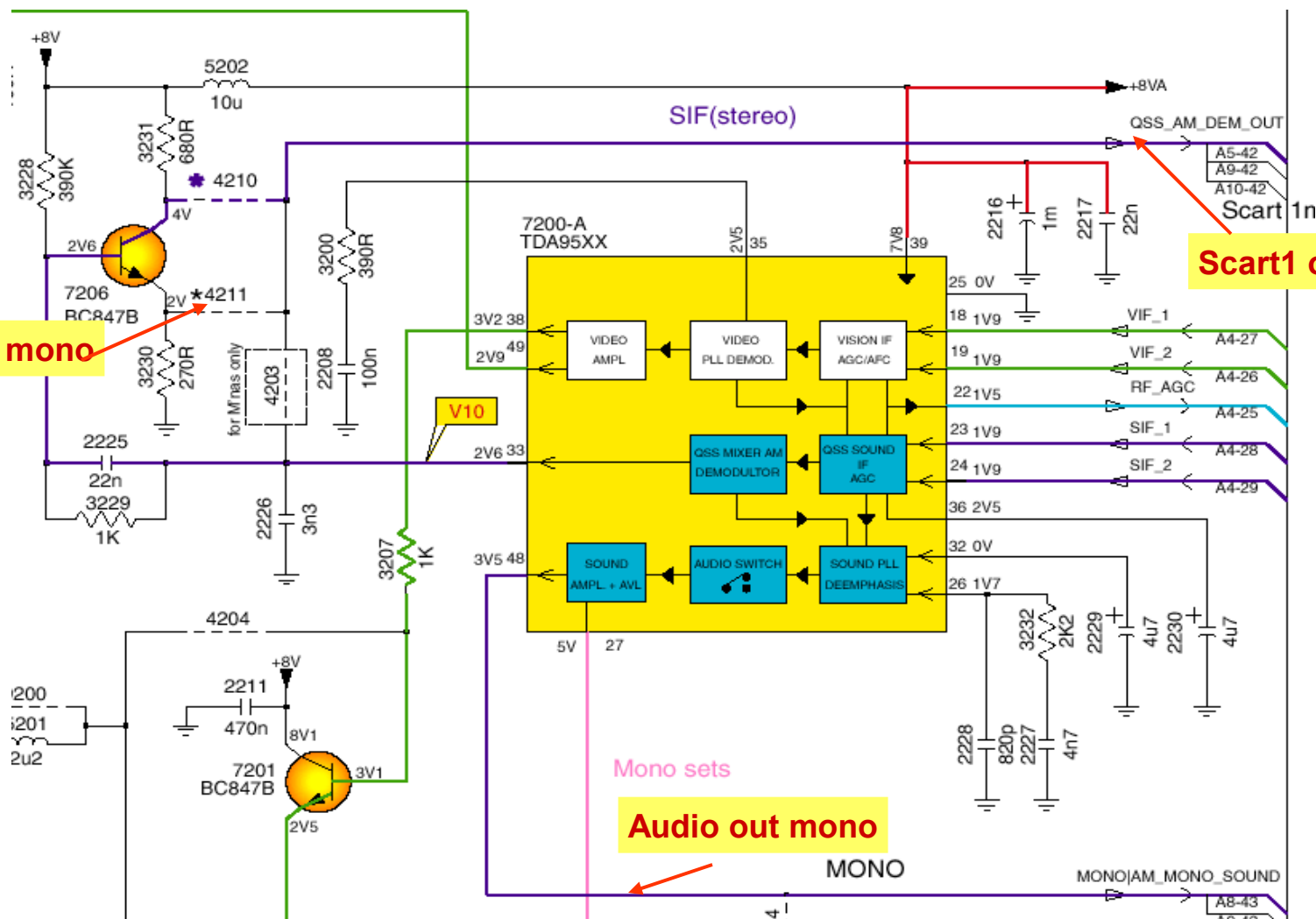


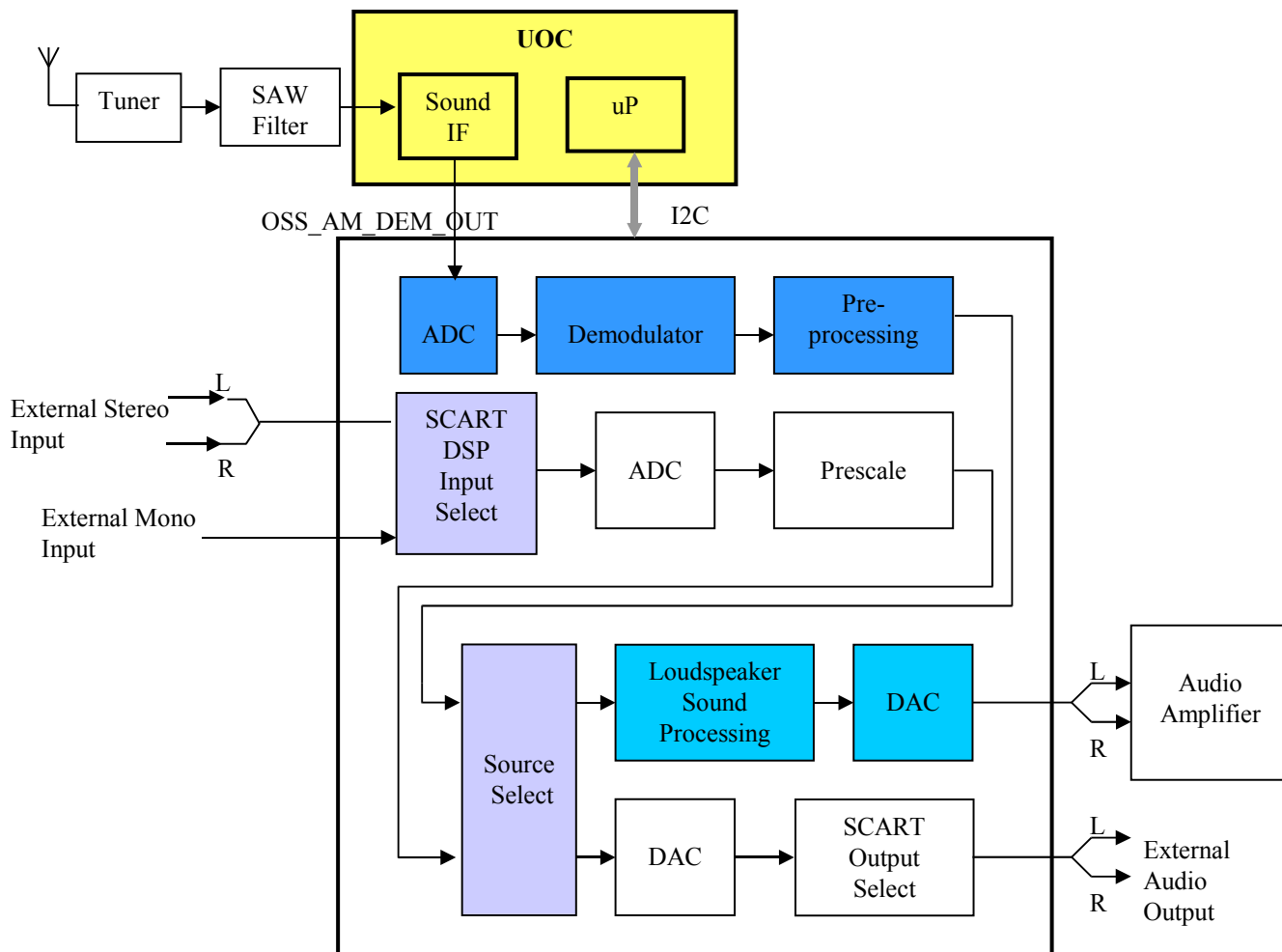
A5 IF Sound

Input/Output UOC Sound

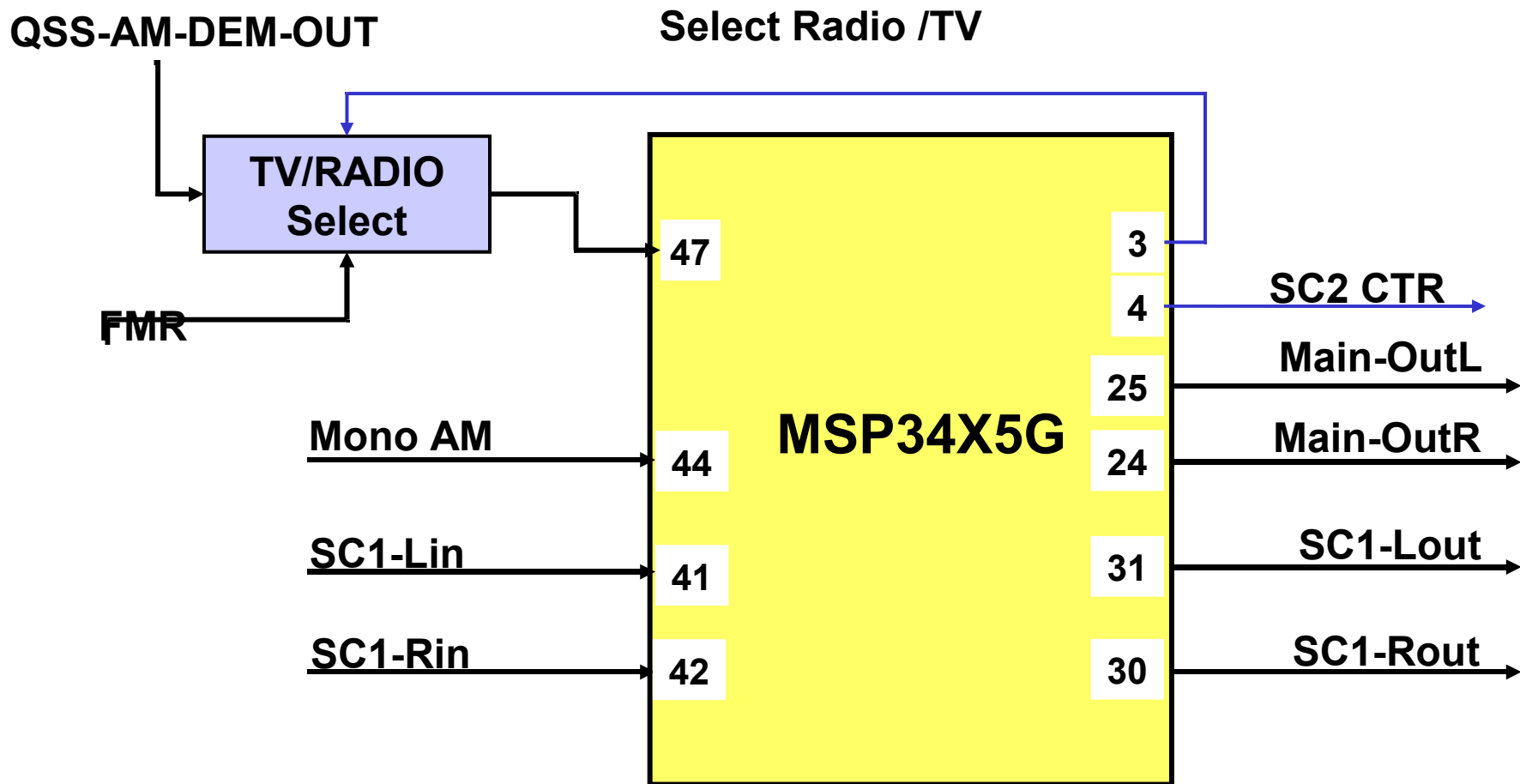


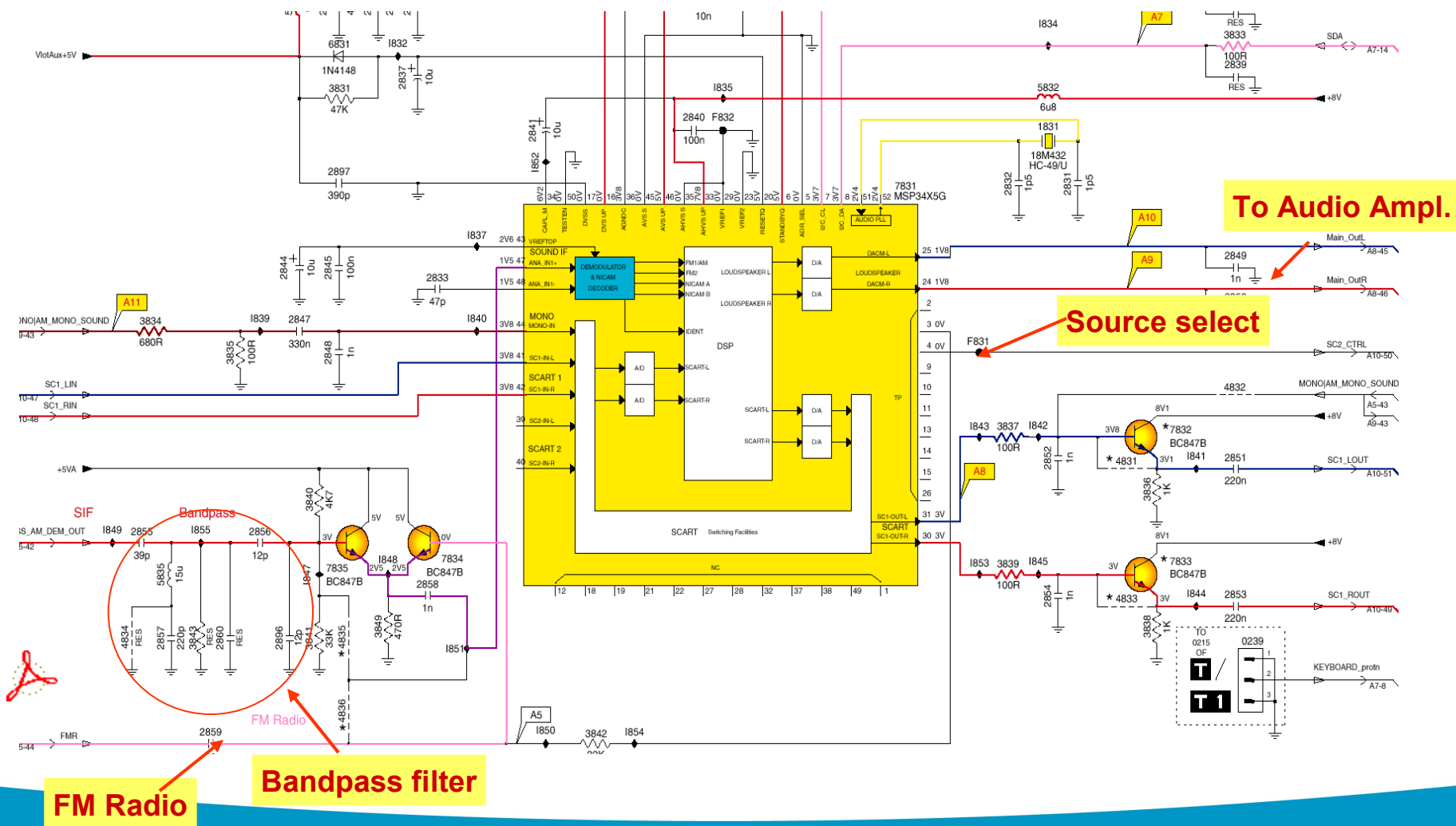
A5 Sound mono set



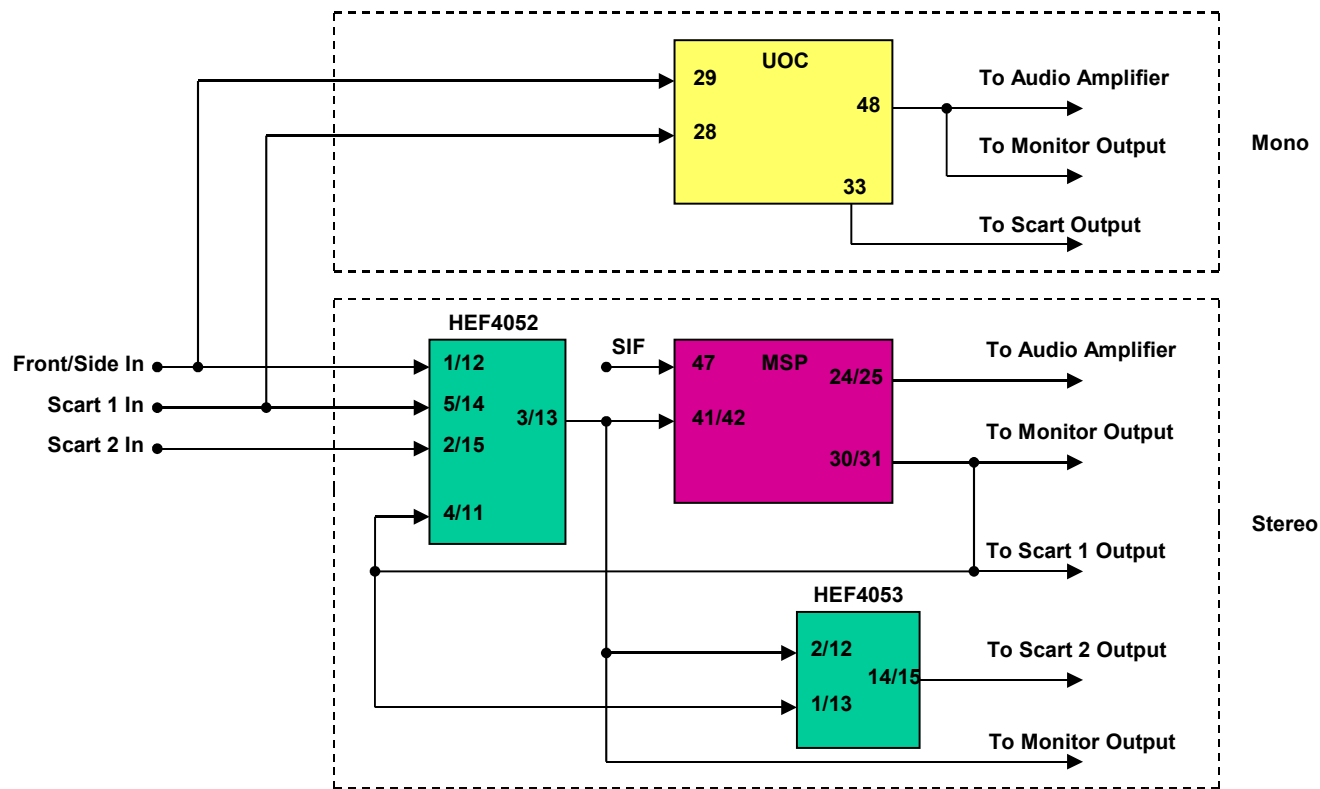


Nicam + 2CS + BTSC Stereo Decoder





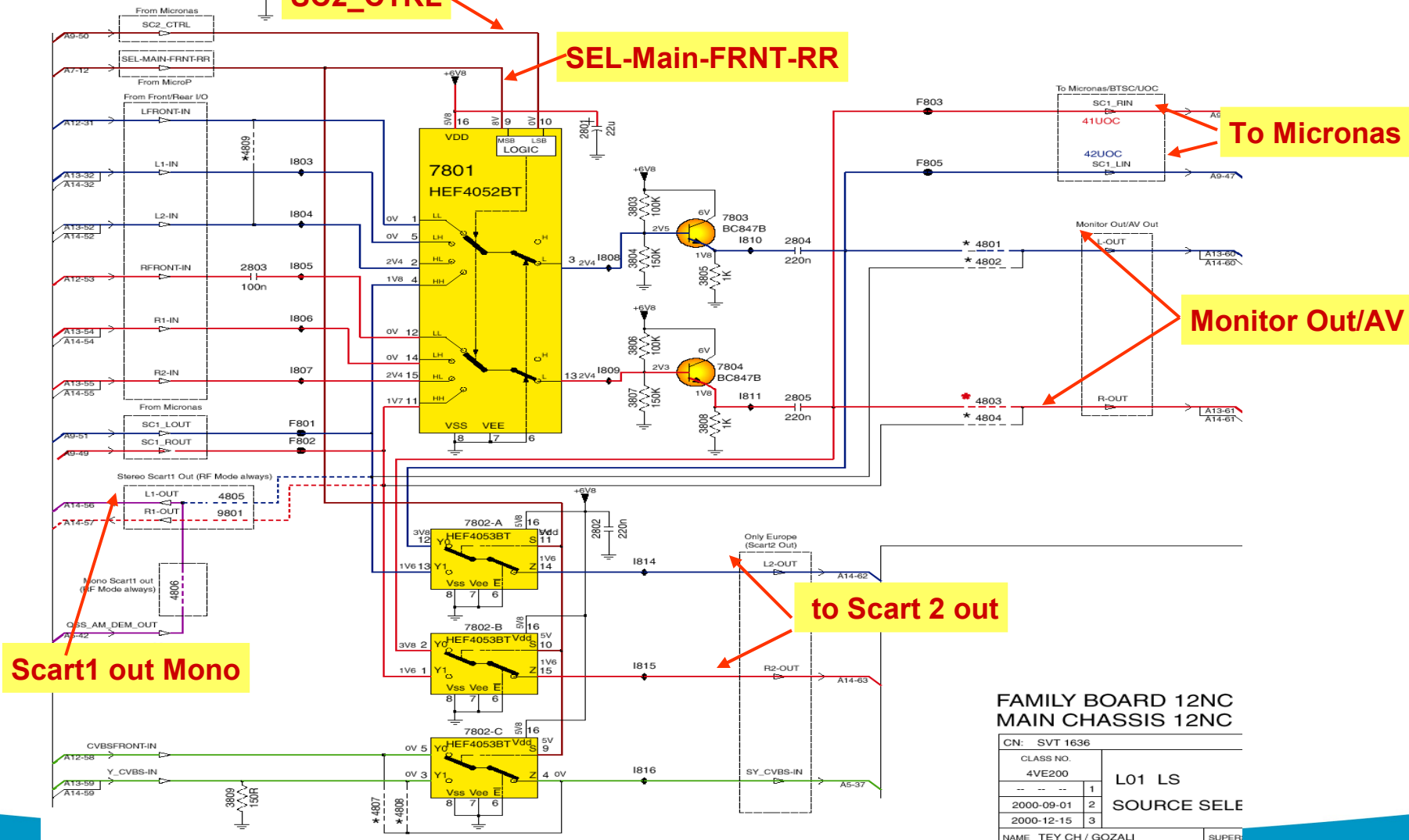
Audio source select



A10 Audio/video source switching

SC2_CTRL

SEL-Main-FRNT-RR



FAMILY BOARD 12NC
MAIN CHASSIS 12NC

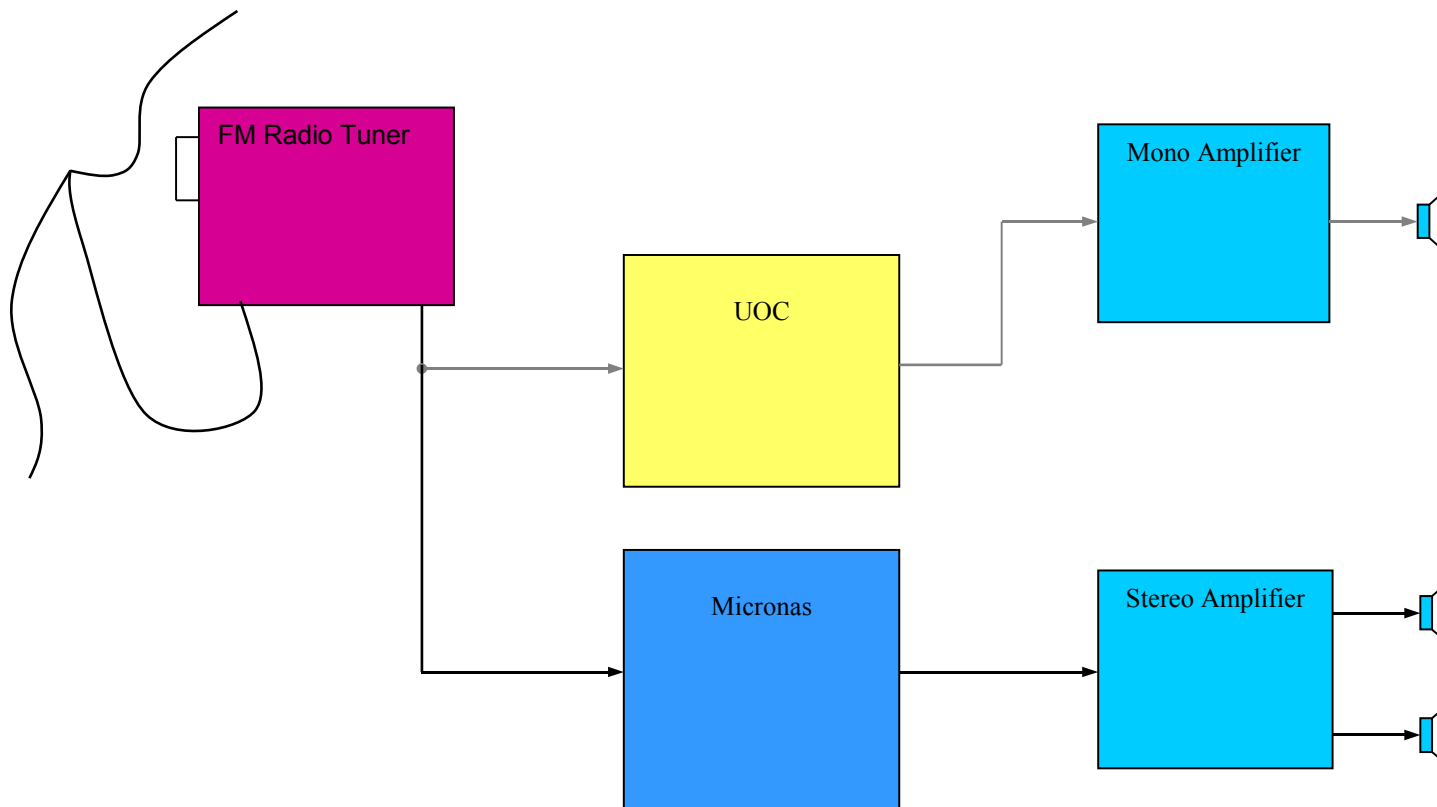
CN: SVT 1636		L01 LS SOURCE SELE	
CLASS NO.	4VE200		
2000-09-01	2		
2000-12-15	3		
NAME TEY CH / GOZALI		SUPER	

Let's make things better.

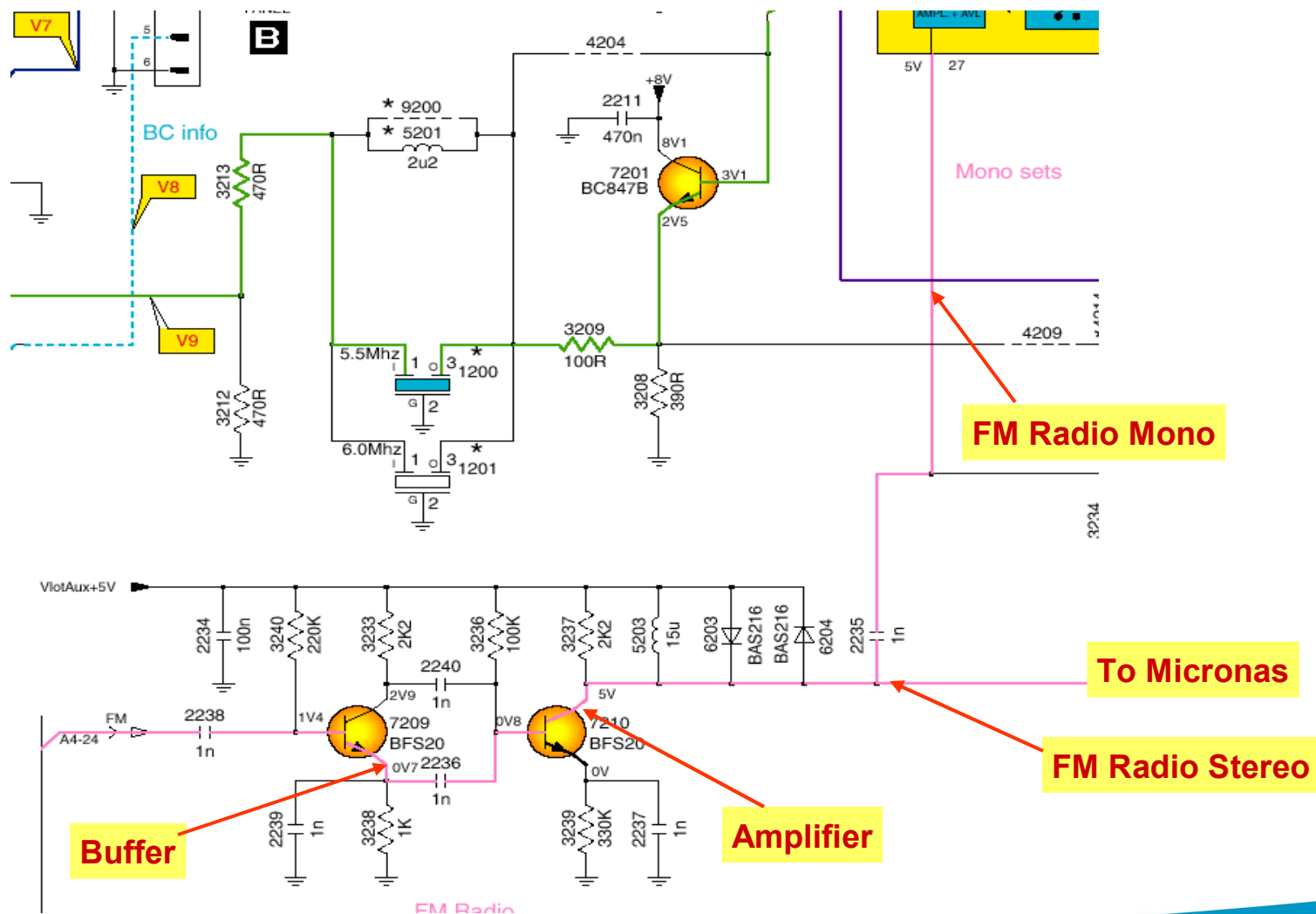


PHILIPS

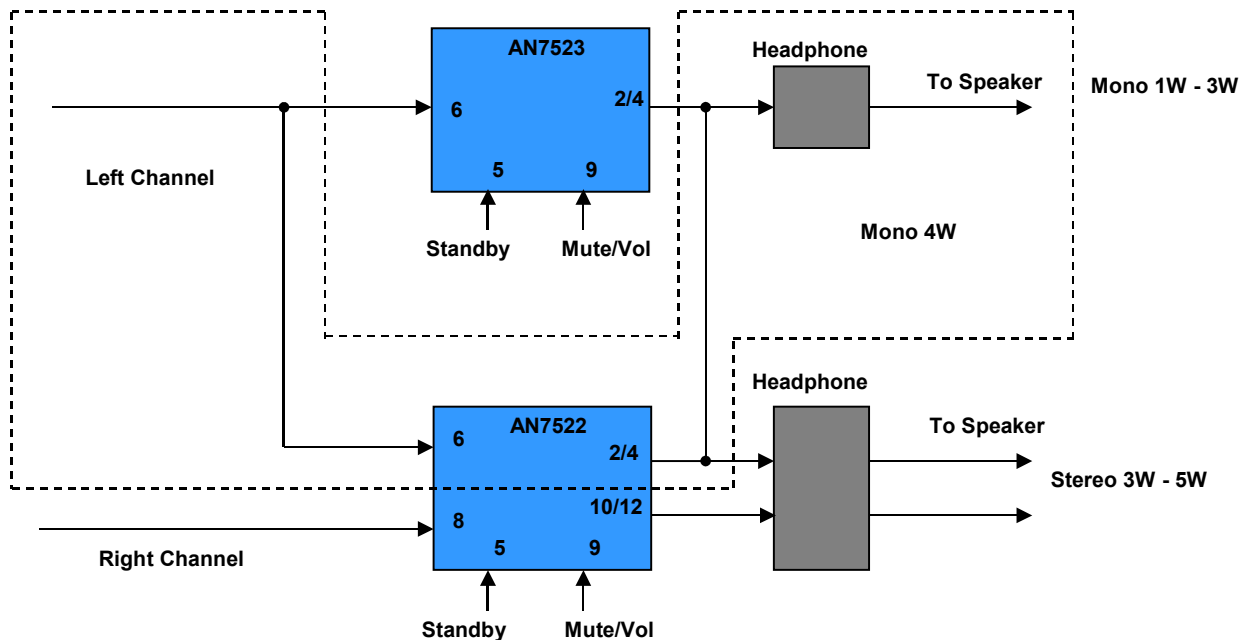
FM Radio



A9 FM Radio circuit

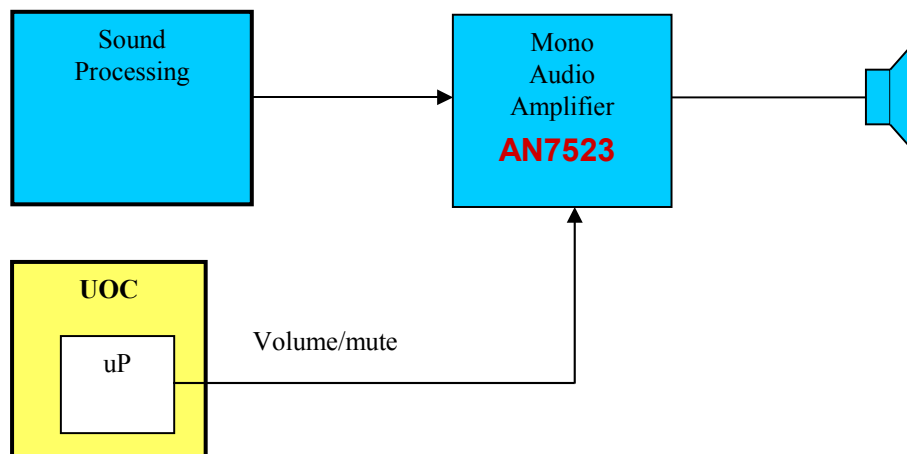


A8 Audio amplifier



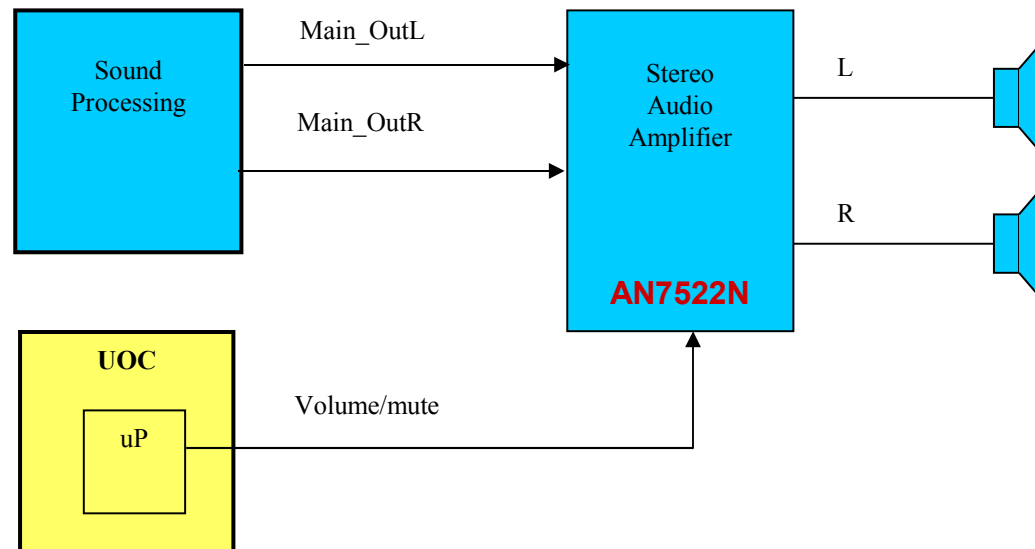
Audio Output

Mono System

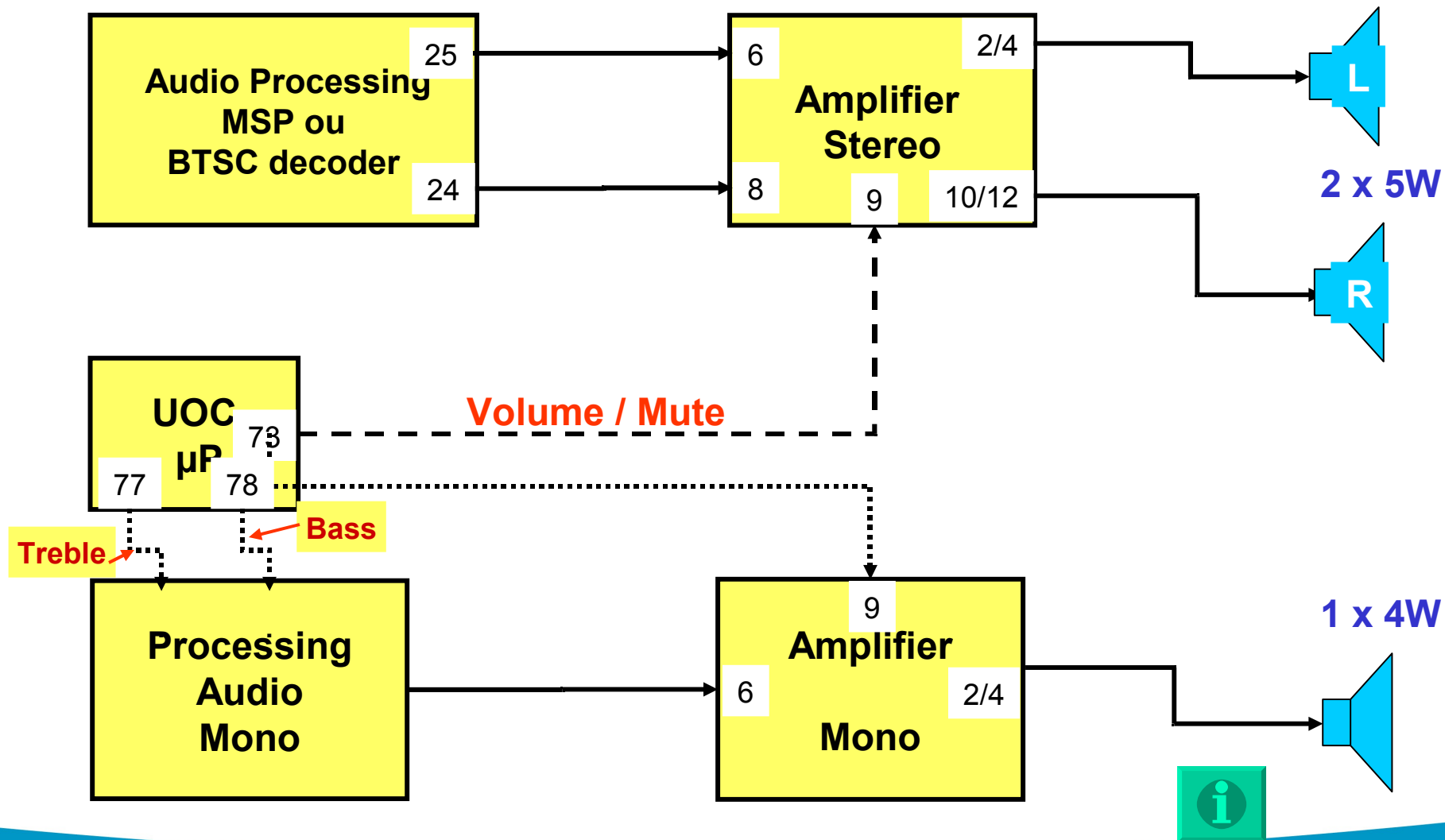


Audio Output

Stereo System



A8 Audio amplifier



Schema service manual

A8 page 30



END

go back to

MAIN MENU



Error Code 0

A “0” in a buffer means an error has not been detected.

L01US0 1.0

SDM

ERR 0 0 0 0 0

Contents of last 5 detected errors

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PHILIPS

Operation hours timer

Software version

S A M indication

Contents of last 5 detected errors

OB(n) - Option Byte Value

Clear Error Buffer

Options

AKB

Tuner

White Tone

Geometry

Audio



0

<u>Item</u>	<u>Description</u>
IFPLL	Default value = 24 (do not align)
AFW	AFC window
AGC	Default value = 28 (do not align)
SL	On / Off
YD	Default value = 3 (do not align)
CL	Default value = 4 (do not align)
AFA	Not selectable
AFB	Not selectable

White Tone



Normal



NORMAL RED
NORMAL GREEN
NORMAL BLUE

Cool



DELTA COOL RED
DELTA COOL GREEN
DELTA COOL BLUE

Warm



DELTA WARM RED
DELTA WARM GREEN
DELTA WARM BLUE



Let's make things better.



PHILIPS