

	BS1	BS2
VHF1	0	1
VHF2	1	0
UHF	1	1

**IF bands pass filter**

The IF bands pass characteristic is determined by the band pass of the SAW filter 1015:

- For PAL BG sets a SAW filter with 5.5 MHz bandwidth is used (33.4 to 38.9 MHz).
- For PAL 1 sets a SAW filter with a bandwidth of 6.0 MHz is used (32.9 to 38.9 MHz).
- For PAL BG/SECAM BG/LL' sets a SAW filter with 6.5 MHz band switch is used to enable BG/LL' reception (33.9 to 40.4 MHz).
- For PAL BG/SECAM BG/DK sets a SAW filter with a bandwidth of 6.5 MHz is used (32.4 to 38.9 MHz).

**IF-demodulator**

IF-demodulation is done with reference circuit L5260 at pin 3 and 4 of IC7225-5A. **AGC control** of tuner is via pin 54 IC7225-5A to tuner. Top sync level is used for AGC inside IC7225-5A. AGC adjustment is done by 1°C control via entry into the SAM service menu. C2202 at pin 53 determines time constant of the AGC. **Base band CVBS** signal at pin 6 IC7225-5A (normal - 3V2) is fed to the sound trap filters (1206, 1207, 1208, 1209 and 5206) and return to pin 13 IC7225-5B for source selection and video processing (diagram A3). The NTSC\_SW signal from the control micro-processor turns on transistors 7216 and 7217 to activate filter 1209 when an NTSC signal is received.

Demodulation for sound IF takes place for the various signals as follows:

For single mono signal, the CVBS\_Sound signal goes to filter 1104 for 4.5 MHz and filter 1102 for 5.5 MHz (diagram A5 for Sound\_IF detector. The Sound\_IF goes to pin 11 IC7225-5E for demodulation.

**9.6.2 PAL/NTSC Processing (IC7225-5B, diagram A3)**

IC7225-5B contains of source select, PAL/NTSC colour decoder.

The main functions are:

- Source selection
- Colour Decoder

**Source Selection**

The input selector has CVBS\_INTCVBS\_EXT1, Y\_CVBSEXT2, C\_EXT2 as inputs which can be selected via the 1°C bus.

**Colour Decoder**

The main functions are:

- **PLL/VCO**  
The PLL operates during the burst key period. It synchronises the VCXO oscillator with the frequency and phase of the incoming chroma burst. For alternating burst (PAL standards), a loop filter enables the PLL to synchronise with the average burst (180° phase).
- **PAL/NTSC Identification**  
The 0° and 90° Reference signals from the VCO oscillator are supplied via the HUE phase circuit to the (B-Y) and (R-Y) burst demodulators respectively.  
The demodulated burst from the (B-Y) burst demodulator is supplied both to ACC detector and NTSC ident circuit. The NTSC ident circuit is an integrator. Once the integrator output exceeds the NTSC killer level then an NTSC burst has been identified (IDN=1). Therefore the IDN informa-

tion provided the ASM (Automatic System Manager) with NTSC colour ident information.

The demodulated burst from the burst from the (R-Y) burst demodulator is supplied to the PAL ident circuit via a AL switch. The PAL ident circuit is also an integrator. Once the integrator output exceeds the PAL killer level then a PAL burst has been identified (IDP=1). The IDP information provides the ASM with PAL-colour ident information.

**• Secam Interface**

The SECAM interface allows bi-directional communication between IC7241 (TDA8395) and the ASM for SECAM identification. When the VCO oscillator is oscillating at 4.43 Mhz, the reference frequency of 4.43MHz is superimposed on a DC level and is supplied from pin 33 of IC7225 to pin 1 of IC7241. If PAL/NTSC signals are identified, the reference frequency is continuously available at pin 33 and superimposed on a 1.5V DC level. When SECAM is identified by IC7241, the reference signals which is generated in packets form and superimposed on a 5V DC level is supplied to pin 33 of IC7225. Its ident signal (IDSM=1) is supplied to the ASM.

**• ASM (Automatic System Manager)**

The ASM can decode PAL/NTSC colour standards and in combination with IC7241 (TDA8395), multistandard applications can be realised. The different possibilities are controlled by the 1°C bus input commands which are communicated to the ASM via the 1°C bus. The 1°C bus input commands also indicate which crystals must be connected to pins 34 and 35. This is essential for correct calibration of the horizontal oscillator.

**• (R-Y)/(B-Y) demodulation**

For PAL/NTSC standards, the (B-Y)/(R-Y) baseband signals are extracted from the chroma signal by the (B-Y)/(R-Y) demodulators, filtered and supplied via the output switch to pins 29 and 30 respectively. When SECAM is identified by the SECAM decoder IC7241 and no PAL/NTSC is already identified by the ASM, then the ASM sets the (B-Y)/(R-Y) switch open. This implies (B-Y)/(R-Y) signals from the SECAM decoder can be directly connected to pin 29 and 30 respectively without extra loading.

**9.6.3 Video controller (IC7225-5C, diagram A3)**

The main functions are:

- Y/(B-Y)/(R-Y) signal processing/matrixing
- RGB signal selection/processing/output stages
- Black stretcher
- Beam current limiter (BCL,PWL)
- Automatic black current stabilisation (ABS)

**Y/(B-Y)/(R-Y) signal processing/matrixing**

The luminance at pin 27 is internally AC coupled to the luminance clamp, which is operational during burst key period. The luminance signal is supplied to the RGB matrix circuit via the black stretcher. The (B-Y)/(R-Y) signals supplied to pins 31 and 32 respectively are clamped during the burst key period. The signals are then supplied to the colour difference matrix to select the desired matrix from either PAL, NTSC or Japanese NTSC matrix. The selected matrix is controlled via the 1°C bus. For RGB matrixing the signal outputs from the colour difference matrix are added with the luminance signal in colour to generate the internal RGB signals.