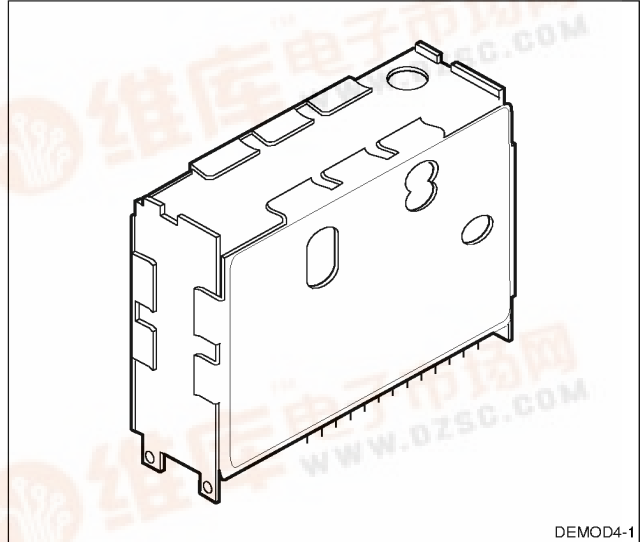


RFIVB4

PAL 6 MHz Demodulator

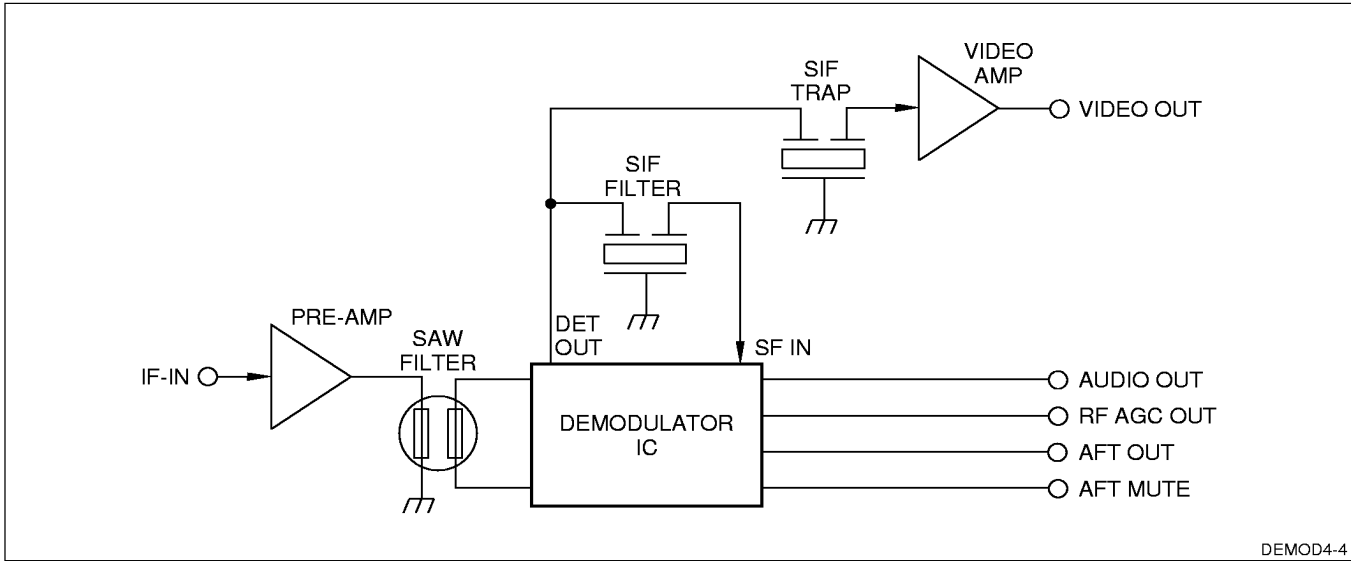
FEATURES

- Receiving Standard: United Kingdom (PAL I)
- Receiving System: Inter-carrier Sound
- Intermediate Frequency:
Picture: 39.5 MHz
Sound: 33.5 MHz
- Nominal Input Impedance:
75 Ω Unbalanced Type
- Terminal Output Voltage:
RF: 6.5 V (6.5 to 0 V)
AFT: 4.5 V (1 to 8 V)
- Operating Voltage:
B Voltage: 9 V $\pm 10\%$
AFT Mute: ON = 3 to 15 V
- Consumed Current: 100 mA max.
- Weight: 16 ± 10 gr
- Output Terminal Load Condition:
Video: High-Impedance Load
Audio: High-Impedance Load
- Temperature:
Storage: -40 to 75°C
Operating: -10 to 60°C



FUNCTIONAL DESCRIPTION

The RFIVB4 is an integrated television demodulator assembly designed for use with VTSS-series tuners. This unit replaces the earlier RIFU0570, and in all respects provides the same functionality. The input is a standard PAL-I or similar 6.0 MHz intercarrier frequency, 39.5 MHz inverted television IF spectrum, as referenced to the video frequency. The outputs are demodulated video (AM) and audio (FM), an AFT signal to indicate the need for tuning correction, and an AGC control line for feedback to the tuner. The demodulator operates from a +9 V source.



TERMINALS AND NOMINAL CURRENT

NO.	TERMINAL	VOLTAGE (V)	CURRENT (mA)
1	NC	—	—
2	VIDEO OUT	—	—
3	AFT MUTE	ON 3 to 15 V OFF 0 V	—
4	AFT OUT	(4.5)	—
5	RF AGC OUT	(6.5)	—
6	NC	—	—
7	AUDIO OUT	—	—

NO.	TERMINAL	VOLTAGE (V)	CURRENT (mA)
8	GND	—	—
9	B	9	80
10	GND	—	—
11	NC	—	—
12	GND	—	—
13	IF IN	—	—

NOTE:
Voltage in parenthesis is output from the unit.

ELECTRICAL CHARACTERISTICS

ITEM	TYPICAL	LIMITS	REMARKS
Selectivity Characteristics			IF AGC 20 dB Note 2
Picture Carrier Level (fp)	4 dB	4 $\pm$ 2 dB max.	
Sub Carrier Level (fc)	4 dB	4 $\pm$ 2 dB max.	
Adjacent Sound Carrier Level (Adj. fs)	48 dB	35 dB min.	
Adjacent Picture Carrier Level (Adj. fp)	40 dB	32 dB min.	
Sound Carrier Level (fs)	20 dB	20 $\pm$ 3 dB max.	
Picture Output Level			Standard Color Bar, 87.5% Mod. Note 3
Brightness Signal Level	1 Vp-p	1 $\pm$ 0.2 Vp-p max.	
Differential Gain	12%	20% max.	Stair step
Differential Phase	10°	20° max.	Stair step
Picture Output S/N Ratio	54 dB	47 dB min.	Weight Filter ON, White level 50%, HP 1 kHz, LP Thru
Sync. Shrinking V/S Ratio	1.0%	1.0 $\pm$ 5.0% max.	100% White
Picture Frequency Characteristics 100 kHz to 4 MHz	-3 dB	-4 dB min. 1 dB max.	Multi-Burst, 0.1 MHz Standard 4 MHz/0.1 MHz
SIN2T Pulse Amplitude Error	-14%	-25% min. 0% max.	2T and Bar Signal
Chroma Amplitude Error	+30%	0% min. +50% max.	SIN ² Signal
Chroma Phase C/L Delay	+220 ns	+220 $\pm$ 90 ns max.	
Sound S/N Ratio	52 dB	47 dB min.	Standard Color Bar, 87.5% Mod. 400 Hz $\pm$ 50 kHz/Dev.
Sound Output Level	0 dBs	0 $\pm$ 3 dBs max.	Standard Color Bar, 87.5% Mod. 400 Hz $\pm$ 50 kHz/Dev.
Total Sound Harmonic Distortion Rate	1%	3.0% max.	Standard Color Bar, 87.5% Mod. 400 Hz $\pm$ 50 kHz/Dev.
Sound Frequency Characteristics 50 Hz to 10 kHz	0 dB	$\pm$ 3 dB max.	fp: Non-modulation, fs: 20 kHz $\pm$ 50 kHz/Dev., 400 Hz Standard
AM Removal Level	56 dB	50 dB min.	Input Signal in Front of R14, 400 Hz $\pm$ 15 kHz/Dev., 1 kHz, 30% AM Mod.
Sound Buzz	30 mVp-p	100 mVp-p max.	Multi-Burst, 87.5% Mod., fp/fs: -25 dB

NOTES:

- Measuring method: a. SG modulation: Modulation frequency = 400 Hz; Modulation degree = 30%. b. Picture output voltage shall be obtained by measuring SG level at 0.3 Vp-p.
- Selectivity characteristics: Measuring method shall conform to Note 1. Shall be measured by applying 20 dB AGC to the stage of picture IF amplification (Mute terminal TP 2).
- Modulation caused by picture signals are as shown in Figure 2.

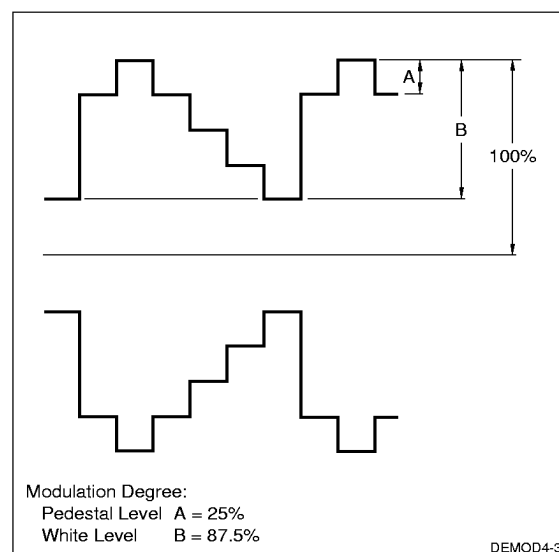
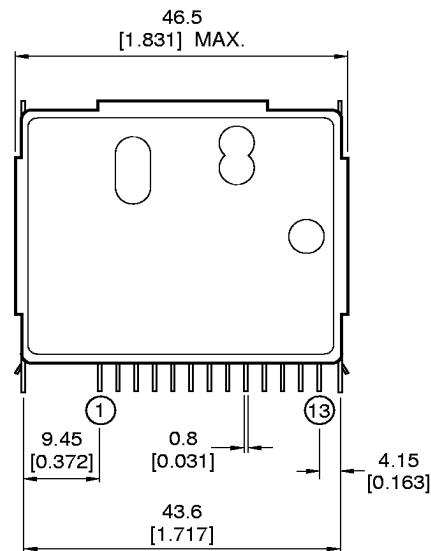
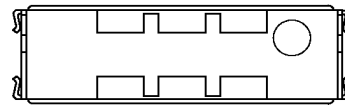
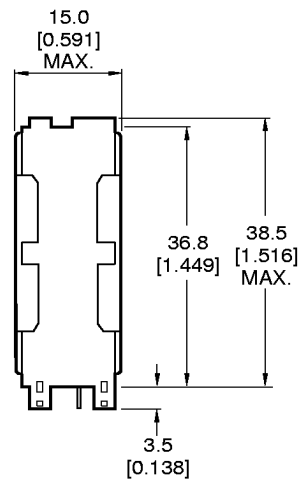


Figure 2. RF Signal Modulation

TEMPERATURE CHARACTERISTICS (25°C +35°C, -25°C)

ITEM	MIN	TYP	MAX	REMARKS
LLD Drift (kHz)	0 -40	+60 -10	+100 +20	60°C 0°C
AFT Drift (kHz)	-20 -50	+20 -10	+60 +30	60°C 0°C
Delayed AGC Operating Point Drift (dB)	-4 -1	-0.5 +2	+1 +4	60°C 0°C
Selectivity Characteristics Drift (dB)				
fp	±1 (maximum)			60°C 0°C
fc	±1 (maximum)			60°C 0°C
fs	±1 (maximum)			60°C 0°C
Adj. fs	±3 (maximum)			60°C 0°C
Adj. fp	±3 (maximum)			60°C 0°C
Differential Phase Drift (°)	-2 -1	0 +1	+2 +3	60°C 0°C
SIN2T Pulse Amplitude Drift (%)	-8 0	-4 +3	0 +8	60°C 0°C
Picture Frequency Characteristics Drift (dB)	-2 -1.5	-0.3 +0.2	+1 +2	60°C 0°C
Chroma Amplitude Drift (%)	-5 -5	+0.8 -0.4	+5 +5	60°C 0°C
Sound Output Level Drift (Vp-p)	-0.7 -0.5	-0.2 0	+0.3 +0.5	60°C 0°C
Sound S/N Ratio Drift (dB)	-4 -5	-0.8 -1.0		60°C 0°C
Sound Buzz Drift (mVp-p)	-20 -20	0 +7	+20 +30	60°C 0°C

OUTLINE DIMENSIONS



NO.	TERMINAL	NO.	TERMINAL
①	NC	⑧	GND
②	VIDEO OUT	⑨	V _{CC}
③	AFT MUTE	⑩	NC
④	AFT OUT	⑪	NC
⑤	RF AGC	⑫	GND
⑥	NC	⑬	IF IN
⑦	AUDIO OUT		

NOTE: Dimensions In MM [Inches]

DEM0DM1