

TUNER, RF/TU/IF

TYPE: 1AV4F1FAM0080

(For UL and FCC Applications)

SANYO Tuner Industries Co., Ltd.

TUNER, RF / TU / IF

TYPE 1AV4F1FAM0080
(VA065AC)

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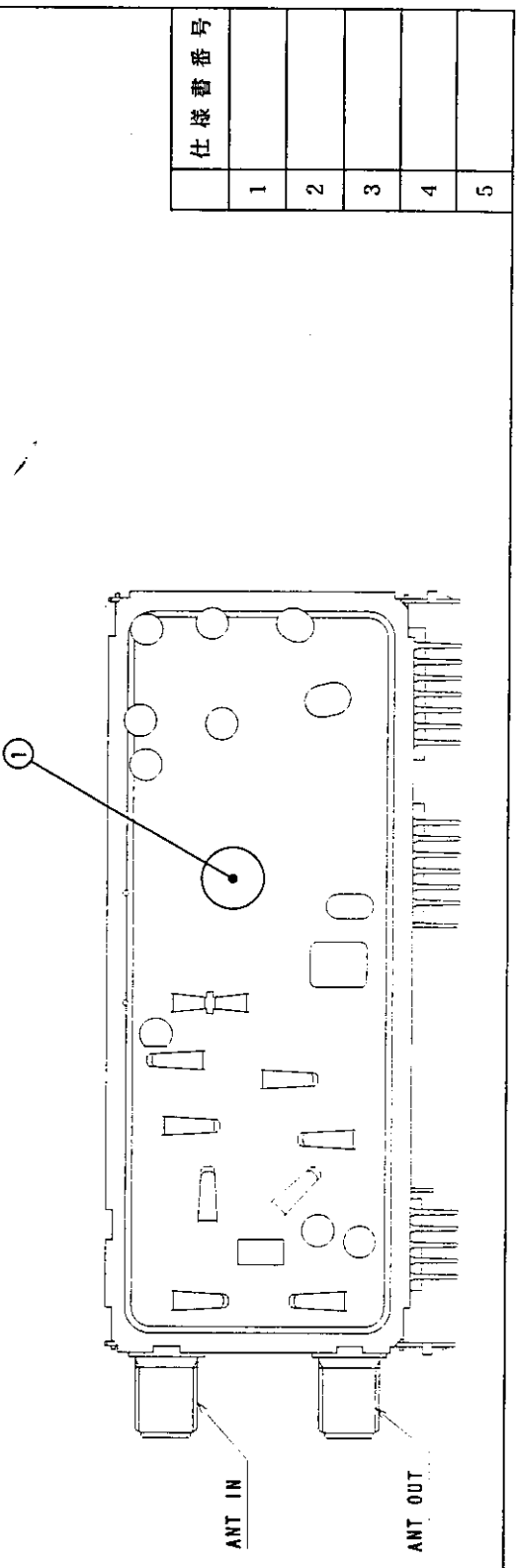
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APPROVED	CHECKED	CHECKED	WRITTEN
Sep. 12, '97 F. Kakehi	—	Sep. 11, '97 H. Takagi	Sep. 11, '97 H. Miyazuchi

Q. Item	Component Part	SANYO Type No.	Material Used		Flame Class		Hot Bar		Hot Wire		High Amp Arc		CTI	UL File No.	Application
			Generic ID	Type	Mfr	Reqd	Used	Reqd	Used	Reqd	Used	Reqd	Used		
	PRINTED WIRING BOARD		EPOXY GLASS RESIN →	KPC 4494W-0	KYOTO PRINTED CIRCUIT CO., LTD.		94V-0							E55888	UL796
				MEG-4V-0 or MBZ	(symbol mark; KPC 4494W-0) HOMER DENSHI CO., LTD.		94V-0							E55147	UL796
					(symbol mark; MBZ)										
					(MATERIAL : MITSUBISHI GAS CHEMICAL CO., INC : CCL-E145)		94V-0		120+		200		225	E81340	UL796
				KPC 6694V-0	KYOTO PRINTED CIRCUIT CO., LTD.		94V-0							E55888	UL796
				NEG-5V-0 or JAZ	(symbol mark; KPC 6694V-0) HOMER DENSHI CO., LTD.		94V-0							E55147	UL796
					(symbol mark; JAZ)										
					(MATERIAL : NIKAN INDUSTRIES CO., IND : L6524-C1)		94V-0		120+		52		175	E46785	
				KPC 6294V-0	KYOTO PRINTED CIRCUIT CO., LTD.		94V-0							E55888	UL796
					(symbol mark; KPC 6294V-0)										
					(MATERIAL : MATSUSHITA ELECTRIC WORKS, LTD : R-1781)		94V-0		120		200		600	E81336	
				KPC 8294V-0	KYOTO PRINTED CIRCUIT CO., LTD.		94V-0							E55888	UL796
					(symbol mark; KPC 8294V-0)										

; Mark shows material being used.



RF Modulator Technical Specifications Detail

SCOPE

The device, type 1AV4F1FAM0080 consists of RF modulator (RF converter) and Antenna switch (RF switch). When control switch is OFF (supply 0V or open), the output signal of RF modulator is not generated and TV signals which is supplied to the ANT input terminal is let to the ANT output terminal through the RF switch.

In this case, RF switch (Q1 and Q2) shall work as a high-pass filter (C19 to C22 and L4 to L7, $f_c = 54\text{MHz}$).

When control switch is ON (supply +5V DC), the output signal of the RF modulator is let to the ANT output terminal through the RF switch (D1) but Q1 and Q2 of this switch cut off the signal and do not lead it to the ANT input terminal.

1) Type of Emission

Video Modulation Type : A5c

Polarity of Video Modulation : Negative

TV System : N. T. S. C.

Audio Modulation Type : F3. $\pm 25\text{KHz}$, $75\mu\text{S}$ pre-emphasis

2) Output frequency Range

L CH : VHF Channel 3, (60MHz to 66MHz)

H CH : VHF Channel 4, (66MHz to 72MHz)

3) Range of Operating power : Fixed, 67dB μ Typ.

Means Provided for changing of Operating Power : Not Applicable

4) Maximum Power Rating (Into 75 ohms)

L CH : 69dB μ

H CH : 69dB μ

5) Voltage and Current to Modulator : 5V DC, 15mA typ.

6) Function of Active Circuit Devices

IC1 : Video Clamper, Video Clipper, Video Amplitude modulator, RF Carrier Oscillator, Audio Buffer Amplifier.
FM modulator, Audio Carrier Modulator

D1, Q1, Q2 : RF Switcher

Type of Devices

IC1 : HA11560FP (HITACHI) or Equivalent

Q1 to Q2 : 2SC2735 (HITACHI) or Equivalent

D1 : 1SS226 (TOSHIBA) or Equivalent

The video carrier is made by the RF carrier oscillator (IC) with surface acoustic wave resonator. Then the RF carrier is supplied to the video modulator (IC) and the audio carrier modulator (IC).

The video modulator signal is picked up with R9 and supplied to the ANT output terminal through the low-pass filter (C15 to C17 and L2) and RF switch (D1).

The audio signal is supplied to C4, R3 having $75\mu\text{S}$ pre-emphasis time constant. Then the audio signal is supplied to the FM modulator (IC).

The frequency modulated signal is supplied to audio carrier modulator (IC) and converted to the SOUND RF SIGNAL. Then this signal is picked up with R10 and added to video modulator signal (PICTURE RF SIGNAL). RF switch (Q1 and Q2) can attenuate the RF output signal enough to isolate the ANT input terminal both from the ANT output terminal and RF modulator output.

7) Tune Up Procedure over the Power Range or at Specific Operating

Power Level : Not Adjustable (※)

※ The consumer can not adjust it.

※ Tune Up procedure :

L1 : 4.5MHz Frequency Adjust.

8) All Circuitry and Devices Provided for Determinating and Stabilizing Frequency :

To keep good stability of video carrier, SAW oscillator is used.

The audio carrier is produced from L.C oscillator, Capacitor of C3 on the schematic. have suitable temperature coefficient like RH and other to compensate terminal frequency drift.

9) Any Circuitry or Devices Employed for Suppression of Spurious Radiation, for Limiting the Operating Power :

a) Suppression of Spurious Radiation

On the RF OUTPUT, there is low-pass filter to suppress spurious.

b) Limiting the Operating Power

The modulation degree is set with R6, R7 (Video)
and R1, R2 (Audio).

10) Block Diagram and Circuit Diagram : Attached.