

VIDEO RF MODULATOR

The KCR113B is a electrical equipments of the video RF output modulator.
The RF output modulator which converts the TV video and TV audio signal into the RF signal for PAL G color television.

FEATURES

- Output Channel : 28~47 CH
- Outgoing Channel : 38 Channel

MAXIMUM RATINGS

CHARACTERISTIC		RATING	UNIT
Power Supply Voltage		5.0±0.25	V
Current Consumption	BST.	Max 70	mA
	MOD.	Max 60	
	TUNING	Max 5	
Allowable Ripple Voltage		Max 5	mV _{P-P}
Operation Condition	Temp.	0~60	℃
	Humidity	Max 85	%
Storage Condition	Temp.	-10~70	℃
	Humidity	Max 90	%

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ELECTRICAL PERFORMANCE

1. TEST CONDITIONS

CHARACTERISTIC		TEST CONDITION	REMARKS
Ambient Condition	Temperature	25±2℃	That temperature of 5~30℃ and humidity of 45~85% RH may be regarded as standard
	Humidity	65±5% RH	
Video Carrier Frequency (Outgoing Channel)		Min=606.55, Typ=607.25, Max=607.95MHz	Unless otherwise specified, the tests shall be made with the above frequency.
Unit Setting Condition	Picture	Apply 80% modulation color bar signal 1V _{P-P} (loaded) and set modulation and V/S ratio standard values.	Modulation Setting-White Signal 1V _{P-P} (loaded) : V/S = 7:3
	Sound	Set 0.98V _{P-P} (-7dBs) of sine wave 1kHz	

2. VIDEO PERFORMANCE

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Impedance	Frequency 0~5MHz		1		kΩ
Input Signal Level	Mod. Loading		1.0		V _{P-P}
Modulation	Outgoing Channel	70	80	90	%
Amplitude Frequency Response	RF Output : 0.5~5MHz	-3		3	dB
Differential Gain	Superimposed sinuous wave(4.43MHz) is 20% of the step input level. Measure under the APL of 10~90% differential gain of demodulator unit is to be compensated.	-10		10	dB
Modulation Variation with Respect to APL	Measure modulation variation over a range of 10~90% APL with respect to 50% APL	-3		3	%
S/N	Use the standard demodulator	45			dB
Video Sync Ratio (V/S)	Input Ratio 7 : 3	6.7/3.3	7/3	7.3/2.7	

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3. SOUND PERFORMANCE

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Impedance	Measure at 0.1~10kHz	10			k Ω
Modulation	50kHz=100%	40	55	70	%
Amplitude Frequency Response	0.1~10kHz with 1kHz REF.	-4		4	dB
Distortion Factor	Audio Input Signal : 0.98V _{p-p} 1KHz modulation 55%(SINE WAVE) Video Input Signa : All back use standard demodulator of inter-carrier system. De-emphasis(50usec) is ON.			3	%
S/N	With Buzz	40			dB

4. OUTPUT PERFORMANCE

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Video Carrier Frequency	Test at 25°C temperature and 65% RH of humidity. Fs : 5.5MHz (G)	-700	Fp	700	kHz
Video Output Level		68	72	76	dB μ
Sound Output Level Difference	P/S Ratio	10	14	18	dB
Sound Carrier Frequency		-10	Fs	10	kHz
Output Channel	Measurement difference video of carrier frequency output level for 0~1GHz. Except to fp, fp \pm fs against video carrier output level.	28		47	CH
Output Terminal Spurious Response		32			dB
Spurious response within Bandwidth		55			dB
Output Impedance	Unbalanced		75		Ω

5. BOOSTER PERFORMANCE

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range		47		862	MHz
V.S.W.R.	75 Ω Termination			4	
Power Gain	ANT--TV 75 Ω Termination	0	3	6	dB
Noise Figure	ANT--TV MOD. B+ : OFF 75 Ω Termination			13	dB
Intermodulation	F1 = 175MHz F2 = 230MHz F(IM2) = 55MHz	50			dB
	F1 = 200MHz F2 = 210MHz F(IM2) = 220MHz	50			
	F1 = 600MHz F2 = 650MHz F(IM3) = 700MHz	50			
	F1 = 60MHz F2 = 55MHz F(IM3) = 50MHz	50			
ANT Leakage	ANT OUT 75 Ω Terminated.			40	dB μ V

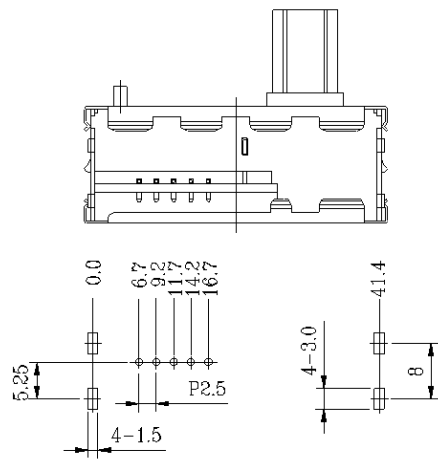
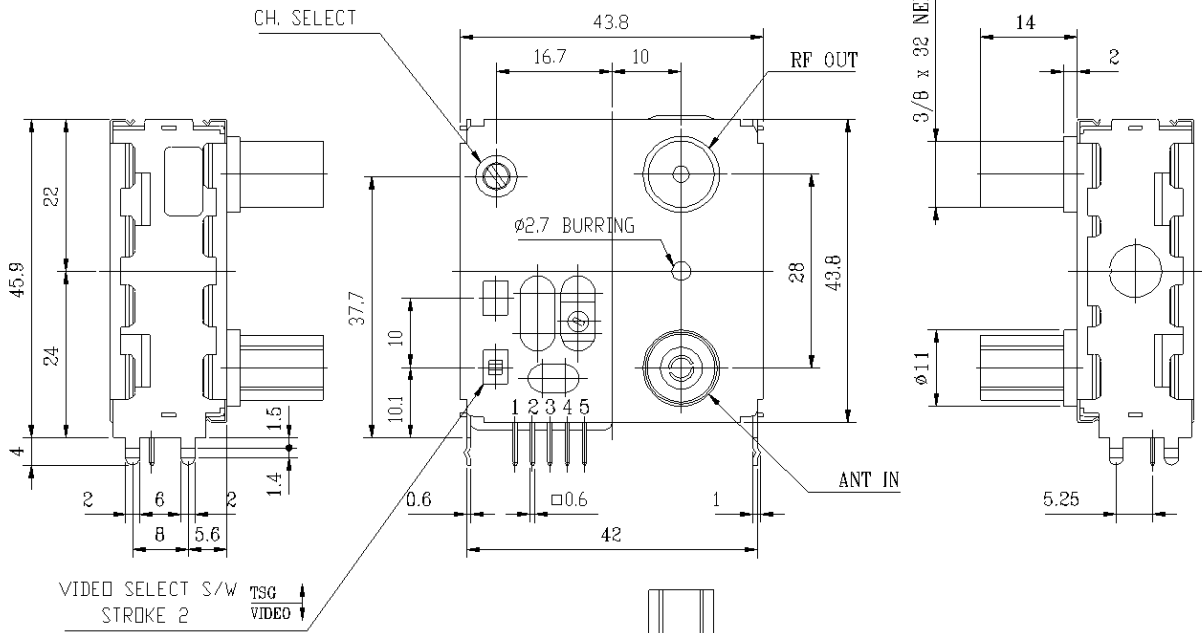
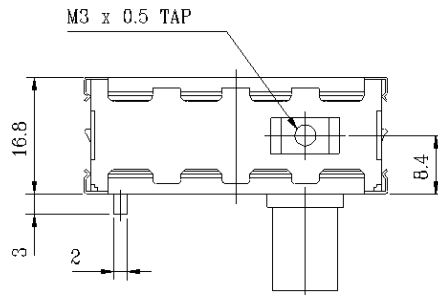
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6. THERMAL PERFORMANCE

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Thermal Stability in Video Modulation	Measure variation with respect to initial value at 0~60°C outgoing channel. Unless otherwise specified, the about test should be carried under condition of 25°C, 1HR(Initial Value)---0°C, 1HR---25°C, 1HR---60°C, 1HR. Humidity 45~80% RH.	-10	Initial-Value	10	%
Thermal Stability in Video Carrier Frequency		-700	Initial-Value	700	kHz
Thermal Stability in Sound Modulation		-15	Initial-Value	15	%
Thermal Stability in Sound Carrier Frequency		-20	Initial-Value	20	kHz
Thermal Stability in Video Carrier Level		-5	Initial-Value	5	dB
Thermal Stability in Sound Output Level Difference		-4	Initial-Value	4	dB
Thermal Stability in Synchronizing Level		6.5/3.5	7/3	7.5/2.5	
Thermal Stability in Differential Gain		-12	Initial-Value	12	%

* TERMINALS

1	VIDEO IN
2	AUDIO IN
3	B+ (MOD)
4	N.C
5	BOOSTER B+



HOLE DIMENSIONS (TOP VIEW) * TOLERANCE : ±0.1

* TOLERANCE : ±0.5

OUT LINE							
NO	PART'S NAME	MATERIAL	SIZE	TREATMENT	REMARK		
MODEL NO	SCALE	UNIT	DATE	DRAW NO			
KCR113B	1/1	mm	1999. 02. 10				
KEC	REFERENCE			DRAW	DESIGN	CHECK	APPRO
	MODULE DEVELOPMENT GROUP						