Electronic On-Screen TV Tuning Scale

FEATURES

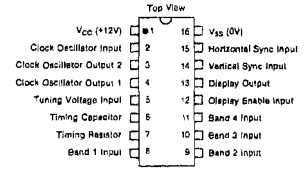
- Electronic tuning scale for 4 bands.
- Mask programmable for Band or Channel number display.
- Mask programmable for display position.
- 12V operation compatible with G.I. digital tuning systems.

DESCRIPTION

The AY-3-8330 is designed to provide an electronic on-screen tuning scale for varactor tuner TV sets. A horizontal line of variable length shows the tuning voltage and a scale is provided to aid tuning. Four bands are provided, band number or optionally channel number being displayed. The band or channel number display may be mask programmed as desired within the limitation of 2 blocks of 5×7 dots (see Fig.3). The graticule may also be programmed as required.

PIN CONFIGURATION

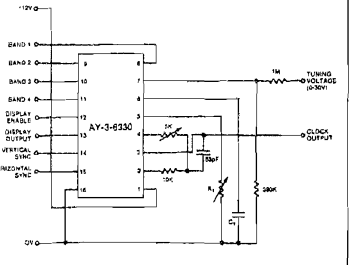
16 LEAD DUAL IN LINE



PIN FUNCTIONS

Name	Function
V_{CC}	Positive supply (+12V ± 10%)
V_{SS}	Ground
Horizontal Sync Input	Negative sync pulse from TV set
Vertical Sync Input	Negative sync pulse from TV set
Clock Input	1.1 MHz master clock which fixes display horizontal position.
Clock Output 1	Intermediate clock output
Clock Output 2	Output of on-chip oscillator synchronized by Horizontal Sync. May be used to drive AY-5-8320 Display Circuit via a CMOS invertor.
Tuning Voltage Input	Tuning voltage from Varactor diodes. Length of tuning bar is proportional to this voltage.
Timing Capacitor	Connect timing capacitor from this pin to V_{SS}.
Timing Resistor	Connect adjustable timing resistor from this pin to V_{SS}.
Band 1 Select Input Band 2 Select Input Band 3 Select Input Band 4 Select Input	Connect to V_{SS} to select required band, either channel number or band number information will be displayed.
Display Output	Positive going output of video information.
Display Enable Input	Connect to V_{SS} to enable display

SYSTEM DIAGRAM



ELECTRICAL CHARACTERISTICS

Maximum Ratings*

Voltage on any pin with respect to ground pin ..... -0.3 to +20V
Storage temperature range ..... -65°C to +150°C
Ambient operating temperature range ..... 0°C to +70°C

*Exceeding these ratings could cause permanent damage. Functional operation of this device at these conditions is not implied—operating ranges are specified below.

Standard Conditions (unless otherwise noted)

V_{CC} = +12V ± 10%
T_A = 0°C to +70°C
Clock frequency = 1.1 MHz

Parameter	Min	Typ**	Max	Units	Conditions
Inputs					
Logic '0'	0	—	+4	Volts	
Logic '1'	+8	—	Vcc	Volts	
Analog Input	0	—	+8	Volts	
Display Output					
Logic '0'	—	—	0.5	Volts	I sink = 1mA
Logic '1'	V_{CC} -1	—	—	Volts	I source = 1mA
Ton, Toff	—	—	200	nsec	
Power Supply Current	—	10	—	mA	

**Typical values are at +25°C and nominal voltages.

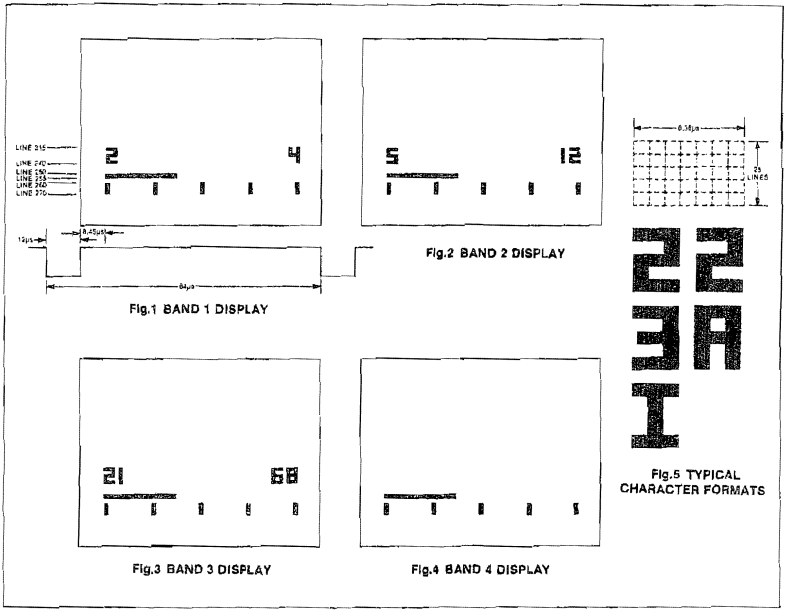


Fig.1 BAND 1 DISPLAY

Fig.2 BAND 2 DISPLAY

Fig.3 BAND 3 DISPLAY

Fig.4 BAND 4 DISPLAY

Fig.5 TYPICAL CHARACTER FORMATS