

## VIDEO NTSC SYNC GENERATOR

Provides six black burst outputs



### 410BB NTSC SYNC GENERATOR

#### GENERAL

The 410BB is an NTSC Sync Generator that provides sync generator signals for other video equipment.

#### FEATURES

- Provides six black outputs
- Provides composite sync and subcarrier outputs
- Provides SMPTE color bars output
- Digital waveform generation provides highly accurate and stable signals.
- Supplies two 1 kHz outputs of audio tone
- The low-profile rackmount size easily fits into system configuration

#### 410BB REAR PANEL



## SPECIFICATIONS

## 410BB

### Black Burst

<b>(1) System and other System</b>	NTSC-M, conforms to SMPTE 170M standards
<b>Number of Scanning Lines</b>	525, interlaced
<b>Field Frequency:</b>	59.94 Hz
<b>Line Frequency:</b>	15.73426 kHz
<b>Subcarrier Frequency:</b>	3.579545 MHz $\pm$ 10 Hz
<b>Output Impedance:</b>	75 $\Omega$
<b>Number of Outputs:</b>	6

### (2) Sync Signal and Color Burst

#### Sync Signal

<b>Amplitude</b>	286 $\pm$ 14.3 mV
<b>Blanking Level:</b>	0 $\pm$ 20 mV
<b>Rise/Fall Times:</b>	140 $\pm$ 20 ns
<b>Horizontal Sync Pluse Width:</b>	4.7 $\mu$ s $\pm$ 100 ns
<b>Vertical Sync Pluse Width:</b>	3H
<b>Equalizing Pluse Width:</b>	2.3 $\mu$ s $\pm$ 100 ns
<b>Vertical Serration Pluse Width:</b>	4.7 $\mu$ s $\pm$ 100 ns
<b>Vertical Blanking Period:</b>	20H +1.5 $\mu$ s

#### Color Burst

<b>Amplitude</b>	286 $\pm$ 14.3 mVp-p
<b>Number of Cycles</b>	9
<b>Rise/Fall Times</b>	300+200 ns, or 300-100 ns
<b>SCH Phase</b>	$\pm$ 10 $^{\circ}$

### Composite Sync

<b>Amplitude</b>	4 $\pm$ 0.2 V into 75 $\Omega$
<b>Output Impedance</b>	75 $\Omega$
<b>Polarity</b>	Negative
<b>Timing</b>	$\pm$ 100 ns, compared with black burst
<b>Rise/Fall Times</b>	140 $\pm$ 20 ns
<b>Number of Outputs</b>	1

### Subcarrier

<b>Amplitude</b>	2 $\pm$ 0.2 Vp-p into 75 $\Omega$
<b>Output Impedance</b>	75 $\Omega$
<b>Frequency</b>	3.579545 MHz $\pm$ 10 Hz
<b>Phase</b>	$\pm$ 10 $^{\circ}$ , compared with black burst
<b>Number of Outputs</b>	1

### SMPTE Color Bar

<b>Specifications</b>	Conforms to SMPTE EG1-1990 standards.
<b>Full Amplitude</b>	1 Vp-p $\pm$ 20 mVp-p into 75 $\Omega$
<b>Number of Outputs</b>	2

### Analog Audio Tone

<b>Frequency</b>	1 kHz $\pm$ 100 Hz
<b>Output Waveform</b>	Sine Wave
<b>Output Amplitude</b>	0 $\pm$ 0.5 dBm, or 4 $\pm$ 0.5 dBm, selectable by internal switching
<b>Output Impedance</b>	600 $\Omega$ , balanced
<b>Output Connector</b>	XLR type (3-pin), cannon
<b>Number of Outputs</b>	2

### Others

<b>Power Requirements</b>	100, 120, 220, 240 VAC, 50/60 Hz, 20 Wmax. selectable by internal wiring
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### Dimensions and Weight

426 (W) $\times$ 44 (H) $\times$ 400 (D) mm
6 kg

### Environmental Conditions

<b>Operating</b>	Temperature:0 to 40 $^{\circ}$ C Humidity: $\leq$ 85 % RH(without condensation)
<b>Storage</b>	Temperature:-10 to 50 $^{\circ}$ C

### Accessories

Rack support.....	1 set
Power cord.....	1
Instruction manual.....	1