

# Model 8656-XEU-AM Scrambler



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Scientific-Atlanta's Model 8656 -XEU-AM Scrambler provides dynamic switched sync suppression, video and sync inversion, and high-speed encrypted data transmission to the 8600<sup>XTM</sup> Advanced Analog Home Communications Terminal (HCT) and Model 8600 Home Terminal (data transmission only) addressable systems. In addition, the Model 8656-XEU-AM Scrambler includes the SoundProtect audio masking capability.

## DESCRIPTION

The Model 8656-XEU-AM Scrambler provides all of the features and functions of the Model 8656-XEU-AMC Scrambler plus it includes the SoundProtect audio masking feature. SoundProtect audio masking provides a method to scramble or fully block the audio programming on scrambled channels.

When a channel is scrambled by the 8656 XEU-AM and the SoundProtect

audio masking feature is enabled, only authorized audio de-masking capable 8600<sup>X</sup> HCT will allow the audio to be heard by the subscriber. When tuned to a SoundProtect audio masked channel, "cable-ready" TV's or non-audio de-masking capable HCTs will provide sound consisting

of either a 400 Hz tone, generated internally by the Model 8656-XEU-AM Scrambler, or an audio barker provided to the rear terminals of the scrambler by the Network Operator. The audio barker can be promotional/advertising information or a local radio broadcast feed.

Only channels that need to have the audio signal masked need to use the Model 8656-XEU-AM Scrambler. Non-audio demasking HCTs may be used in cable networks which employ audio masking; however, these HCTs will not provide program audio on the audio masked channels.

## FEATURES

- Includes SoundProtect™ audio masking capability
- Secures premium video and pay-per-view services with more than 50 scrambling modes
- Supports 8600<sup>X</sup> HCT (VBI) and Model 8600 Home Terminals (Audio) type data transactions
- Supports 8600<sup>X</sup> HCT and Model 8600 Home Terminals messaging, as well as interactive viewing guide and virtual channel data transmission with 512 kB memory.
- Video scrambling compatible with all new and existing Scientific-Atlanta addressable and non-addressable descrambling systems
- Remote control via System Manager
- Front panel setup and calibration

# Model 8656-XEU-AM Scrambler

## SPECIFICATIONS

### **Electrical**

#### **Baseband Video**

Input level

0.5 V p-p to 2 V p-p (1 V p-p nominal) (neg. going sync)

Output level

1 V p-p  $\pm$  10%

Input impedance

75  $\Omega$ , unbalanced

Input return loss

30 dB (min) from 100 kHz to 4.5 MHz

Chrominance-to-luminance delay

70 ns (max)

Differential group delay

70 ns p-p (max) up to 3.7 MHz

Differential gain

1.5% (max)

Differential phase

2° (max)

Frequency response

0.5 dB p-p max. ripple from 100 kHz to 3.7 MHz,

>26 dB attenuation from 4.4 to 10 MHz

Response slope

0.3 dB/MHz max from 100 kHz to 3.7 MHz

#### **Audio IF**

Input level

+37 dBmV  $\pm$  6 dB

Insertion loss

0  $\pm$  0.5 dB (at 41.25 MHz,  $\pm$ 73 kHz)

Impedance

75  $\Omega$ , unbalanced

Hum and noise

-60 dB

Data pulse height

4.0 to 7.0 dB, adjustable

Sync buzz reduction level

5.8 dB  $\pm$  0.2 dB

Harmonic distortion

< 0.2% THD

Spurious outputs

< -57 dB

#### **Power Supply**

Input voltage

115 V AC  $\pm$  20%, 50 to 60 Hz

Power consumption

50 W max

Supplies

5 V  $\pm$  0.5 V,  $\pm$  15 V  $\pm$  0.5 V

Ripple

5 V: 100 mV p-p max

$\pm$  15 V: 225 mV p-p max

#### **Video IF**

Input level

+46 dBmV  $\pm$  6 dB

Insertion loss

0.0 dB  $\pm$  1.0 (over 41.5 to 47.0 MHz range)

Video sync suppression

5.4, 5.8, or 6.0,  $\pm$  0.1 dB

Impedance

75  $\Omega$ , unbalanced

Input return loss

16 dB (min) from 33.0 to 47.0 MHz

Hum and noise

-60 dB

Frequency response

$\pm$  0.25 dB from 4.15 to 47.0 MHz

Differential gain

$\pm$  0.25 dB

Differential phase

0.5 degrees

Spurious and harmonic outputs

< -57 dBc

#### **Vertical Blanking Interval**

Data amplitude

68  $\pm$  5 IRE

Data lines

Selectable; lines 9 through 262 may have data;

System Manager supports lines 11 through 22

#### **Mechanical**

Size

Housed in standard 19-inch (483 mm) rack-adaptable chassis,

3.5 in. (89 mm) high. Fits EIA-standard 24-inch (610 mm)

deep rack.

Weight

Approximately 10 lbs (4.5 kg)

#### **Environmental**

Temperature

32°F to 120°F (0°C to 50°C)

Humidity

95%, non-condensing

Specifications and product availability subject to change without notice.

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