



## Meinberg Radio Clocks

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## IMS-VSG: Audio/Video-Sync Generator

The IMS-VSG181 is used as a video signal reference for studio equipment and provides the generated signals at four BNC outputs. These are Bi-Level Sync (Black Burst) / Tri-Level-Sync, Longitudinal Time and Control Code (LTC), Digital Audio Out (DARS), and Word Clock.

### Important Note

This product is not available.

### Key Features

- VSG181: Four BNC outputs with configurable video and audio signals: Out 1: Black Burst (PAL, NTSC with VITC support), tri-level sync Out 2: LTC 25 fps, 23,98 fps, 29,97 fps, 29,97 fps Drop Frame Out 3: DARS (Digital Audio Reference System) Out 4: Word Clock
- Four LEDs: Signal status of module and outputs
- Black Out (Black & Burst or Tri-Level Sync): PAL (525i @ 59.94 Hz, "Black & Burst", ITU-R BT.1700/SMPTE 170M) NTSC (625i @ 50 Hz, "Black & Burst", ITU-R BT.1700) 720p @ 50 Hz (Tri-Level Sync, SMPTE 296M) 1080i @ 50 Hz (Tri-Level Sync, SMPTE 274M) 720p @ 59.94 Hz (Tri-Level Sync, SMPTE 296M) 1080i @ 59.94 Hz (Tri-Level Sync, SMPTE 274M) Digital Audio Reference Signal (DARS): Resolution: 24-bit Sample Frequencies: 44.1 kHz and 48 kHz Signal Type: Balanced (IMS-VSG181H only) or unbalanced Word Clock: Frequency range at 44.1 kHz sample rate: 1.378125 kHz to 1.4112 MHz Frequency range at 48 kHz sample rate: 1.5 kHz to 1.536 MHz Supported Timecode Formats: LTC (Linear Time Code): 24 fps (23.976 or exactly 24 fps), 25 fps, 30 fps (with drop frame support for 29.97 fps content); balanced (IMS-VSG181H only) or unbalanced VITC (Vertical Integrated Time Code, SMPTE12M-1/SMPTE 309M) for integration into PAL/NTSC signal

## Description

### Functionality

The VSG181 is synchronized by an external 10 MHz signal, 1PPS and a time telegram, which provides the connected reference receiver. These signals significantly determine the accuracy of the output signals. The generated video signals, in different formats, have a phase reference to the 1PPS.

In order to be able to provide high-precision output signals during the switchover of the RSC (IMS systems with redundant receivers), the VSG181 has its own oscillator.

## Characteristics

### Status Indicators

St: Status of VSG181  
 In: Synchronization status  
 LED A: Status of Black Burst output  
 LED B: Status of LTC output

### Electrical Connectors

96-pin DIN 41612 connector

### BNC Connectors

#### Black Out (VSG181 and VSG181H)

Signal Level: 300 mVpp, 75 Ohm termination Output Signals:

\* Black & Burst: PAL (ITU-R BT.1700), NTSC (ITU-R BT.1700, SMPTE ST 170M)

\* Tri-Level Sync: 720p @ 50 Hz (SMPTE ST 296), 1080i @ 50 Hz (SMPTE ST 274M),  
 720p @ 59.94 Hz (SMPTE ST 296), 1080i @ 59.94 Hz (SMPTE ST 274M)

\* VITC (SMPTE ST 12M-1/SMPTE ST 309M) with PAL/NTSC signal output, optional  
 date information integration in accordance with ITU-R.BR.1353, SMPTE ST309 or  
 SMPTE ST309 MJD

#### DARS Out (VSG181 and VSG181H)

Output Signal: DARS (Digital Audio Reference Signal)

Signal Level: TTL, 2.5 Vpp, 75 Ohm termination

Signal Type: Sample Frequencies 44.1 kHz and 48 kHz

#### LTC Out (VSG181 only)

Output Signal: LTC - 24 fps (23.976 or exactly 24 fps), 25 fps, 30 fps (with optional drop  
 frame support for 29.97 fps content)

Signal Level: TTL, 2.5 Vpp (MARK/SPACE), 75 Ohm termination

#### Studio Clock Out (Word Clock) (VSG181 only)

Output Signal: Word Clock

Signal Level: TTL, 2.5 Vpp, 75 Ohm termination

Frequency Range: 24 Hz - 12.288 MHz

Sample Frequencies: 44.1 kHz and 48 kHz

Scale Factors: 0.125, 0.25, 0.5, 1, 2, 4, 8, 16, 32, 64, 128, 256

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<b>Current Draw</b>	5 V ± 5%, 250 mA
<b>Supported Temperature</b>	0 ... 55°C
<b>Supported Humidity</b>	Max. 85 % (non-condensing) at 40 °C
<b>Warranty</b>	Three-year warranty
<b>RoHS Status of Product</b>	This product is fully RoHS-compliant.
<b>WEEE Status of Product</b>	This product is handled as a B2B (Business to Business) category product. To ensure that the product is disposed of in a WEEE-compliant fashion, it can be returned to the manufacturer. Any transportation expenses for returning this product (at end-of-life) must be covered by the end user, while Meinberg will bear the costs for the waste disposal itself.

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#### Manual

The English manual is available as a PDF file: [1][Download \(PDF\)](#)

#### Links:

[1] <https://www.meinbergglobal.com/download/docs/manuals/english/vsg181.pdf>