Compact VariTime™ Sync Generator, PT 5201

- **VariTime™, 8 fields for PAL**
- **VariTime™, 4 fields for NTSC**
- **Master applications with internal high stability reference**
- **Genlock to PAL, NTSC or 10 MHz clock, for slave applications**
- **Multistandard: 525/60, 625/50 and dual standard operation**
- **Outputs:**
  3 Black Burst
  1 Color Bar/Black Burst
  1 SDI Color Bar/Black
  1 AES/EBU or Analog Audio
  1 Word Clock at 44.1 or 48 KHz
- **Configuration via Windows interface**
- **Direct front panel access for operation and 4 presets status**
- **1U, half 19" wide and rackmountable**

Application

The new digital studios need cost efficient and reliable synchronization for the main equipment to work reliably. For this purpose PTV offers a fully integrated solution eliminating any costs associated with modular structures, support of many different signal types and fancy operating features.

All solutions have been carefully designed to meet all requirements for the modern studio and editing setups.

PTV introduces a Sync Generator as the first of its type ever seen!
The PT 5201 includes all basic features for professional sync, timing and test signals in one half-sized box.

Configuration

The PT 5201 configuration is based on a well arranged Windows interface. The Windows interface makes it easy to manage all timing, patterns and audio features in one screen.
Modification from factory preset can be saved as a file on the PC harddisk or uploaded to the PT 5201 as a setup. The setup are uploaded to PT 5201 in an instant mode or stored as a preset in the instrument.
Communication between PT 5201 and PC via standard RS-232 protocol, makes it possible to use any kind of PC.
Status of current functions and systems will be displayed at any time as matching LEDs, on the PT 5201 frontpanel.

PTV ProTeleVision TECHNOLOGIES

Master/Genlock Applications

The PT 5201 is designed to manage slave as well as master operations, as a stand alone unit.

In systems where PT 5201 operates as a master the genlock function locks to an internal, high stability TCXO, reference oscillator.
For use in applications where the PT 5201 operates as a slave the genlock function is used.
The genlock function features genlock to NTSC and PAL video signals, Black Burst house sync or a 10 MHz reference clock, e.g. from a GPS receiver. Further more the genlock function features timing and pasive loop-trough of the genlock signal.

Analog Outputs

The sync generator is equipped with tree VariTime™ analog Black Burst outputs. Each of these Black Burst outputs is individually fully timeable and can be configured as NTSC or PAL-generator, in any combination.

Analog Test Signals Output

An analog Color Bar generator, configurable in system and timing, is also included. The Color Bar generator provides standard Color Bars and testpatterns, according to SMPTE and EBU. For diagnostics in studio setups a list of simple testsignals is available.

SDI Output

The SDI Color Bar output is based on the same digitally generated Analog Test Signal generator and therefore it outputs the same test pattern and timing. The SDI output includes codes for embedded audio, featuring data for 1kHz Stereo and silence.

The SDI signals are in general generated as 10 bit signals, except one of the EBU 75% Color Bar signal which is generated with 8 bit according to ITU 801

Audio generators

PT 5201 contains an Analog Audio Generator as well as an AES/EBU Serial Digital generator. One generator must be selected due to both generators output on the same XLR connectors.

Analog Audio Outputs

The Analog Audio generator provides three different test tones in a number of levels. The output is available in stereo, mono and includes click markers for identification of left channel. The click interval is selectable.

AES/EBU Serial Digital Audio Outputs

The Serial Digital Audio generator provides three different test tones in a number of levels. The output is available in stereo, mono and includes click markers for identification of left channel. The click interval and samplings frequency for the AES/EBU output are selectable. The generator also features system lock and timing facilities.

Word Clock Output

The Word Clock signal is a continuous reference clock operating at TTL level, used for synchronizing audio equipment. Sampling frequency of 44.1 or 48 kHz is selectable in the audio window.

Presets

Four complete instrument presets have been included to make it simple to change the configuration for different studio setups. Changes between the presets are available from a hidden button at the frontpanel. The number of presets stored in the configuration PC is unlimited.

Product Data

Master oscillator

Master Frequency Reference TCXO

- Temperature drift: 0-50°: ± 2,5 ppm
- Aging: ± 1 ppm/year; first year, then better

Remote Control

- Input interface: RS-232 port, 9 pole D-sub, male
- Protocol: SCPI based
- Baud rate: 9600 Kbit

Genlock

- Input: 75 Ω looped trough
- Connector: BNC
- Return loss: >36 dB to 6 MHz
- Genlock Signal
  - Video: PAL, NTSC
  - Continuous freq.: 10 MHz
- Genlock Video
  - Amplitude: nominal ± 3 dB
- S/N ratio: >26 dB
- Sc-H phase: Nominally ± 45°
- Genlock Continuous freq.: Amplitude: 1 V ± 3 dB
- Pull-in range for f_{sc}: ± 50 Hz
- Jitter when locked to burst: < 0,5°
- Jitter when locked to sync: < 2 ns
- Timing range: PAL: ± 4 fields
  NTSC: ± 2 fields
- Timing resolution: < 0,5 ns

Analog Black Burst Outputs

- Output interface: BNC, 75 Ω
- Return loss: >36 dB, to 5 MHz
- Sync amplitude: PAL: -300 mV ± 2%
  NTSC: -286 mV ± 2%
- Burst amplitude: PAL: 300 mV ± 2%
  NTSC: 286 mV ± 2%
- Timing range: PAL: ± 4 fields
  NTSC: ± 2 fields
- Timing resolution: 0,15 ns
- Sc-H phase: Default 0°, adjustment ± 180°, resolution < 1°
- S/N ratio: 60 dB unweighted to 5 MHz
- Jitter: Burst jitter: ± 0.5°
  Sync jitter: ± 0.5 ns

Analog Color Bar Output

- Output interface: BNC, 75 Ω
- Return loss: >36 dB, to 5 MHz
- Timing range: PAL: ± 4 fields
  NTSC: ± 2 fields
- Timing resolution: 37 ns
- Sc-H phase: Default 0°, adjustment ± 180°, resolution < 1°
- S/N ratio: 60 dB unweighted to 5 MHz
- Jitter: Burst jitter: ± 0.5°
  Sync jitter: ± 0.5 ns

- Signal outputs:
  Color Bars, 525:
  - SMPTE Color Bar
  - FCC
  - 75% Color Bar, ITU-R BT.801 (timing and levels acc. To ITU801)
  - 100% Color Bar
  - 75% Red

  Color Bars, 625:
  - EBU Color Bar
  - 75% Color Bar, ITU-R BT.801 (timing and levels acc. To ITU801)
  - 100% Color Bar
  - 75% Color Bar with Red
  - 75% Color Bar with Grey
  - 75% Red
  - CCIR 18

  Test patterns:
  - Multiburst
  - 10% Window
  - 15% Window
  - 20% Window
  - 100% Window
  - 15 kHz Bl/Wh
  - White 100%
  - Black
  - SDI Check field
  - Digital Grey
  - Staircase, 5 Step
  - Staircase, 10 Step
  - Croshatch
  - Pluge

SDI Color Bar Output

- Output Interface: BNC, 75 Ω
- Format:
  270 Mb/s serial, complies with ITU-R BT 656 and SMPTE 259 M
- Return loss: > 15 dB, 5 - 270 MHz
- Timing range: PAL: ± 1 fields
  NTSC: ± 1 fields
- Timing resolution: 37 ns
- S/N ratio:
  60 dB unweighted to 5 MHz
- Jitter: ± 0.25 ns
- Rise and fall time: 0.75 - 1.50 ns
- Signal outputs:
  Color Bars, 525:
  - SMPTE Color Bar
  - FCC
  - 75% Color Bar, ITU-R BT.801 (timing and levels acc. To ITU801)
  - 100% Color Bar
  - 75% Red
  - CCIR 18

  Color Bars, 625:
  - EBU Color Bar
  - 75% Color Bar, ITU-R BT.801 (timing and levels acc. To ITU801)
  - 100% Color Bar
  - 75% Color Bar with Red
  - 75% Color Bar with Grey
  - 75% Red

  Test patterns:
  - Multiburst
  - 10% Window
  - 15% Window
  - 20% Window
  - 100% Window
  - 15 kHz Bl/Wh
  - White 100%
  - Black
  - SDI Check field
  - Digital Grey
  - Staircase, 5 Step
  - Staircase, 10 Step
  - Croshatch
  - Pluge

Analog Audio Output

- Output Interface:
  Balanced XLR, 30 Ω ± 10%
- Amplitude: 0 dBm, 775 mV
- Distortion: < 0.1 %
- Output signals:
  - Stereo 500 Hz; no click
  - Stereo 1 KHz; no click
  - Stereo 8 KHz; no click
  - Stereo EBU 1 KHz; single click in ch. A
  - Click rate: 1 or 3 sec
- Levels: From 6 to -54 dBFS in 2 dB steps and Silence

AES/EBU Audio Output

- Output Interface: Balanced XLR, 110 Ω ± 20% (According to AES3 1992)
- Amplitude: Typically 3 V_{pp}
- Rise and fall time: 10 - 30 ns
- Jitter: < 20 ns
- Timing range: ± 10 ms in 0.8 ms step
- Data rate: 3.072 Mbit/s
- Sampling frequency:
  44,1 kHz or 48 kHz
- Coding: Linear PCM, 20-bits two complement binary, Bi-phase mark
- Output signals:
  - Stereo 500 Hz; no click
  - Stereo 1 kHz; no click
  - Stereo 8 kHz; no click
  - Stereo EBU 1 kHz; single click in ch. A
  - Click rate: 1 or 3 sec
- Levels: Silence, 0 -9, -12, -15, -16, -18, -21 dBFS
- Pre-emphasis: None

Word Clock Output

- Output Interface: BNC, 75 Ω ± 0.5 Ω
- Reference output: 44.1 or 48 KHz TTL level

General Specifications

Power Supply

- Mains supply voltage: 90-264 V
- Frequency: 47-63 Hz
- Power consumption: 15 W

Mechanical Data

19” rackmountable cabinet

- Height: 42 mm (1.73")
- Width: 217 mm (8,54”)
- Depth: 380 mm (15")
- Weight: 1,5 kg (3,3 lbs)

Environmental Conditions

- Operational temperatures:
  +5°C to + 45°C (41°F to 113°F)
- Storage temperatures:
  -30°C to 70°C (-22°F to +158°F)

Electromagnetic Compatibility

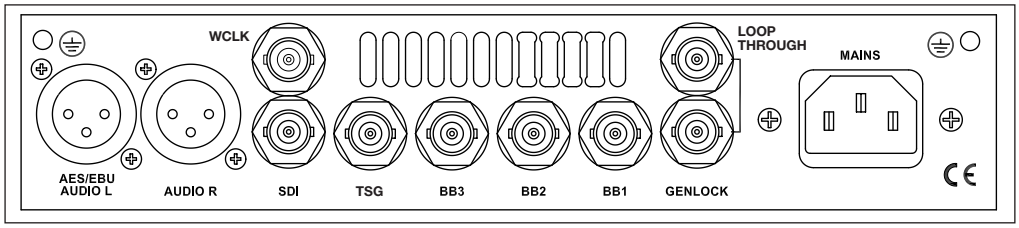
- Complies with the CENELEC requirements and immunity EN50081-1 and EN50082-1

Safety

- Safety: In accordance with IEC 348, class 1

Rackmount

- Rackmount included



Rear panel PT 5201

Ordering Information

PT 5201	Compact VariTime™ Sync Generator	9449 052 01001

FOR FURTHER INFORMATION

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