



## Meinberg Funkuhren

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# **IMS-CPE:** Backend/Frontend for Configurable Output Modules

This product is only compatible with Meinberg's line of modular **IMS LANTIME** systems. Visit the [1] IMS Information Page to learn more.

The IMS CPE modules consist of a half-size standard controller card (back-end) and a dockable port expander card (front-end), enabling a wide variety of available programmable output signals and physical connections, including the different electrical and optical interfaces.

The IMS CPE modules follow a two-component concept in which the back-end uses the reference signals from the backplane and generates the output signals with its own microprocessor. The front end then makes the signals available at a wide variety of sockets. This allows a broad range of supported connection types such as BNC, RJ-45, 2-pin. DFK, DSUB9 and optical interfaces (ST).

# **Key Features**

- 1PPS, 10 MHz, Freq. Synth. (TTL), IRIG, AFNOR, IEEE1344, C37.118, NASA36, PPOs, DCF77 MARK, serial time strings
- Free configurable output signals



## **Description**

Compared to an IMS-BPE card, the output signals are generated directly on the CPE module (backend). The 10 MHz and PPS references provided by the upstream clock are used as reference signals. The generated signals are then output via the front end. This has the advantage that the output signals do not have to be configured on the receiver module, but directly on the CPE module. This significantly increases the number of possible output signals in an IMS system. Parallel operation of BPE and IMS cards is also possible without any problems.

### The IMS-CPE can be configured to output a wide variety of signal types:

- \* 1PPS, 10 MHz
- \* Time Codes: IRIG A/B/E/G/AFNOR/IEEE1344/C37.118/NASA36
- \* Frequency Synthesizer (TTL)
- \* Programmable Pulses: 1PPS, 1PPM, 1PPH, Timer, Single Shot
- \* Cyclic Pulses, DCF77 Mark, Sync Status
- \* Serial Time Strings (RS-232 or RS-422 / 485)

The following IMS CPE modules are currently available:

CPE ModuleConnectorsSignal Outputs

CPE-10004x BNC femalePPO\_1 - PPO\_4

Programable Pulses (Cyclic Pulse, Timer, PPS, PPM, PPH, DCF77 Marks, TimeSync, DCLS Time Code, Freq.Synth) CPE-10022x BNC / 1x DSUB9CAP\_0 / CAP\_1

Two time capture inputs called User Capture 0 and 1 are provided at the front panel (CAP 0 and CAP 1) to measure asynchronous time events. A falling TTL slope at one of these inputs lets the microprocessor save the current real time in its capture buffer.

#### TxD

Serial Time Telegramm (TxD - RS-232 / RS 422)

CPE-10404x BNC femaleTC AM

Amplitude Modulated Time Code, 3 Vsub>pp into 50 ohm

CPE-10504x BNC femalePPO\_1 - PPO\_3

Programable Pulses (Cyclic Pulse, Timer, PPS, PPM, PPH, DCF77 Marks, TimeSync, DCLS Time Code, Freq.Synth)

#### TC AM

Amplitude Modulated Time Code, 3 Vpp into 50 ohm

CPE-25004 x DFK 2pin connector, 1x BNC femalePhoto-MOS (250 V AC/DC; 150 mA)

Programable Pulses (Cyclic Pulse, Timer, PPS, PPM, PPH, DCF77 Marks, TimeSync, DCLS Time Code, Freq.Synth)

#### TC AM

Amplitude Modulated Time Code, 3 Vpp into 50 ohm

CPE-27004 x DFK 2pin connector, 1x BNC femaleOpto coupler output, (Uce\_max = 55 V, Ic\_max = 50 mA, Ptot = 150 mW)Programmable Pulses (Cyclic Pulse, Timer, PPS, PPM, PPH, DCF77 Marks, TimeSync, DCLS Time Code, Freq.Synth)

TC AM



Amplitude Modulated Time Code, 3 Vpp into 50 ohm

CPE-30002x 9pin D-Sub female connectorSerial Time String (RS-232) + PPO (TTL)

with multi data format timestrings and programmable pulse output.

CPE-30102x 9pin D-Sub female connectorSerial Time String (RS-422)

with multi data format timestrings

CPE-30202x 9pin D-Sub female connectorSerial Time String (RS-422) + PPO (RS-422)

with multi data format timestrings and programmable pulse output.

CPE-30302x 9pin D-Sub female connectorSerial Time String (RS-485)

with multi data format timestrings

CPE-30402x 9pin D-Sub female connectorSerial Time String (RS-485) + PPO (RS-422)

with multi data format timestrings and programmable pulse output.

CPE-30502x 9pin D-Sub female connectorPPO (RS-422)

Programmable Pulses (Cyclic Pulse, Timer, PPS, PPM, PPH, DCF77 Marks, TimeSync, DCLS Time Code, Freq.Synth)

CPE-30602x 9pin D-Sub female connector (A/B)A: Serial Time String (RS-232) + PPO (TTL)

B: Serial Time String (RS-422) + PPO (RS-422)

with multi data format timestrings and programmable pulse output.

CPE-40202x RJ45 connectorSerial interface RS-422 + PPS

with multi data format timestrings and PPS (pos, neg.).

CPE-50004x ST connector (multimode)PPS, 10 MHz, TC-DCLS, 2048 kHz, progr. Pulses

850 nm FO output, launchable optical output power: typ. 15 μW per output (into GI 62,5/125 μm)

CPE-50924x ST connector (singlemode)PPS, 10 MHz, TC-DCLS, 2048 kHz, progr. Pulses

1310 nm FOS output, launchable optical output power: typ. 15 μW per output (-15 dBm)

CPE-53104x ST connectors (multimode)Serial Time String (TxD 1 - TxD 4 / Serial 1 - Serial 4)

850 nm FO output, launchable optical output power: typ. 15 μW per output (into GI 62,5/125 μm)

CPE-53204x ST connectors (multimode)Serial Time String TxD 1 & RxD 1 (min. input power: 3 μW)

Progr. Pulses Prog.Out 1 + Prog. Out 2

850 nm FO output, launchable optical output power: typ. 15 μW per output (into GI 62,5/125 μm)



# **Characteristics**

LED Status Indicators
* LED St: CPE Status
* LED In: Status of the backplane's output signals
* LED A: CPE status - output signals (1 + 2)
* LED B: CPE status - output signals (3 + 4)
+5 V DC
5 V +-5%, 150 mA
Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
Max. 85 % (non-condensing) at 40 °C
Three-year warranty
This product is fully RoHS-compliant.
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.

### Manual

There is no online manual available for this product.: [2] Contact us

### Links:

 $\hbox{[1] https://www.meinbergglobal.com/english/products/modular-sync-system.htm}$ 

[2] mailto:info@meinberg.de