



Features

- 10/100/1000Base-T PTP Ethernet port
- SMPTE 2059-2 compatible
- Two 10 Mhz outputs, third output optional
- PPS and time and date data string reference outputs
- Additional unbalanced and balanced PPS outputs
- Leap year/second compatible
- SNMP ready
- Hot swapping compatible
- Failure relay
- TC_link compatible
- Integrated Surge Voltage Protector
- UMID data capable

The PLURA Rubidium Series PTP client module C3 is a stable way of universally acquiring a real time base for a Time Code or timer system (e.g. for GT modules) from a PTP grandmaster. The precise acquired reference time and date is transferred in form of a serial protocol and a synchronized seconds pulse.

The module comes with two 10 MHz outputs, which are often used for synchronizing a third party SPG system.

The PTP slave uses industry leading algorithms to extract time from a PTP input stream and produces stable frequency and time outputs.

The module needs to be used in conjunction with a RUBIDIUM Series housing and a power supply. For user specific setups, an initial configuration requires a Windows PC with an USB and/or Ethernet port (only in combination with an IE module).

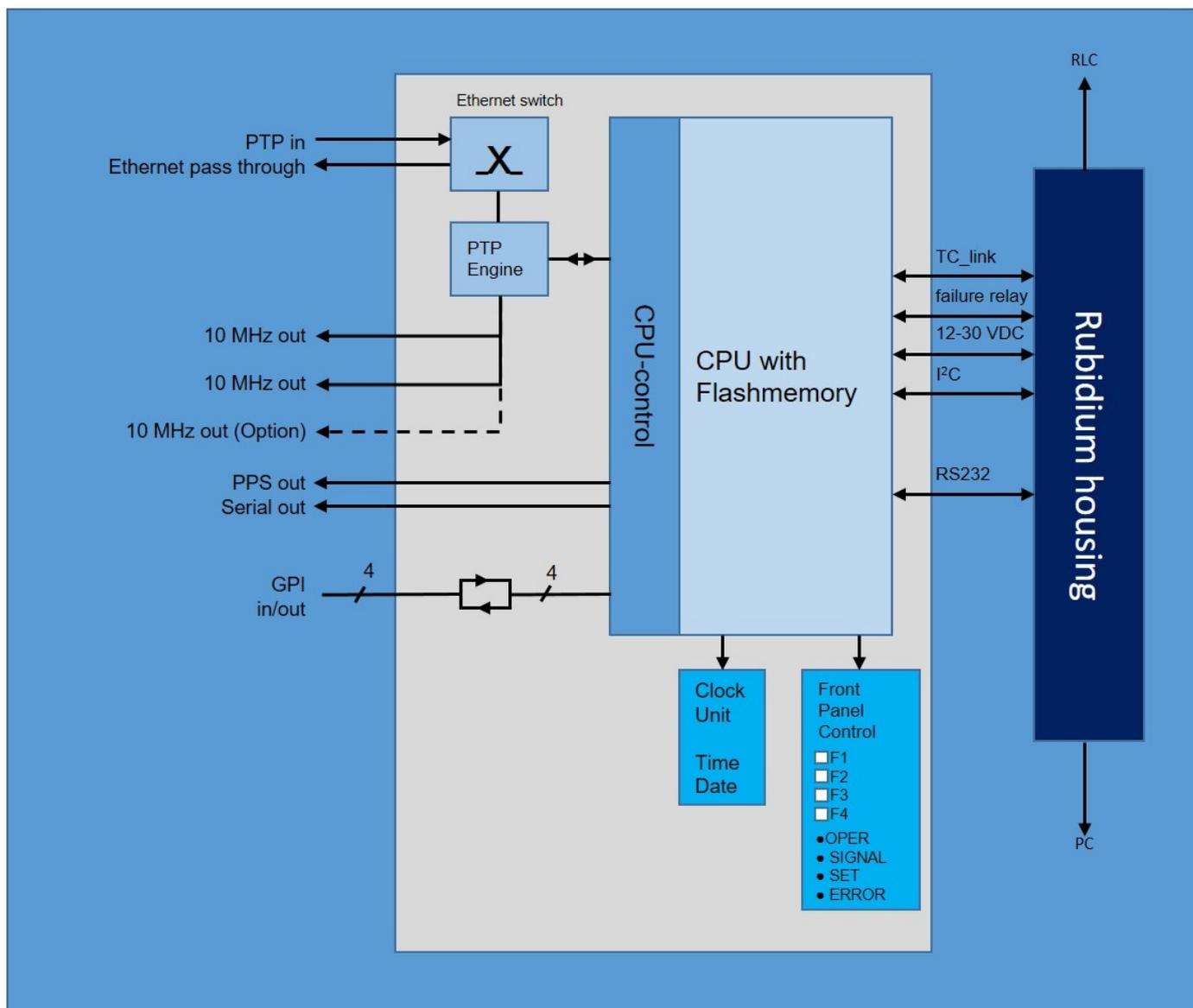
The PTPC module offers a variety of monitoring and control possibilities. Its design allows for the implementation into complex and fail-proof redundant systems.



RUBIDIUM H1 C3 module in H1 housing

The C3 module has the following outputs:

- A serial interface for the output of the time information
- Seconds pulse (PPS)
- Four programmable GPIOs
- Two 10 MHz-signals (a third output is configurable)
- An Ethernet pass through port



Every module is connected to an internal hot swappable bus, which bilaterally connects all modules within a particular housing. The internal bus can be distributed over several housings by using the RLC port. The RLC plug contains a voltage feed, a failure relay output and a TC_link interface. TC_link is a real time capable proprietary interface, which is based on a customized RS485 interface.

On the rear side of every housing, a PC interface (USB) can be found. This serial connection is used for configuration, status control, and also software and firmware updates.

Via our IE Ethernet module, browser configuration, status control and SNMP functions are available.

Various degrees of precision are possible by implementing the various available oscillators:

Accuracy of the frequency outputs:			
Oscillator options:		TCX O	OCX OHQ
PPS accuracy			
Accuracy free run one day		±	± 1e9
PTP synchronous, average 24h		±	±
Temperature dependant drift free run		± 5e7	± 5e9

Two PTPC modules connected to our RUB SR changeover module offer a time, date and 10 MHz fail-proof redundant system.c

C3 specifications

- Time alignment, better than $\pm 1 \mu s$ on a managed 10-switch GbE network under G.826 1 test conditions.²
- Frequency alignment, better than ± 10 ppb on a managed 10-switch GbE network under G.826 1 test conditions.²
- Supports 1-step and 2-step operation
- Input sync rate: up to 128 sync packets per second
- Ethernet (Layer 2) or UDP IPv4/IPv6 (Layer 3) supported
- Supports one-step and two-step clock
- Supports P2P and E2E modes
- Supports multicast and unicast
- Fully transparent, low latency pass through traffic
- Additional 10/100/1000Base-T Ethernet port for pass through

² With industry standard PDV profiles of switches and network conditions.

Standards

SMPTE ST 2051-2:2015 and default profiles
Full IEEE 1588-2008 PTP slave clock

Status LEDs

Fail LED indicates a not yet synchronized internal time frame or a system error lock.
LED indicates synchronization with the PTP system

Time to sync

30 sec to first fix ($< 2 \mu s$), 6 minutes to sync ($< 1 \mu s$) (TCX O)

Backup battery

When powered off, the on-board real time clock keeps time and date information. Holdover time: more than 7 days

Frequency Outputs

2 x 10 MHz per BNC, 1 Vpp, Sinus, 75 Ω

Others

Operating voltage

10 30 VDC

Power Consumption

max. 5.9 W

Weight

0.4 kg approx

Dimensions

RUB1: 103 (W) x 44 (H) x 16 5 (D) mm, 4.06 (W) x 1.73 (H) x 6 .50 (D) inch

RUB3: 8HP, 3RU

Environmental characteristics, operating

Temperature: 5 ° C 40 ° C / relative humidity: 30 % 85 %, non-condensing

Environmental characteristics, non-operating

Temperature: -10 ° C + 6 0 ° C / relative humidity: 5 % 95 %, non-condensing.

The RUBIDIUM modules must be used in conjunction with a RUBIDIUM housing and a RUBIDIUM power supply, please see our overview leaflet for more information.
We reserve the right to modify specifications without notice.

Product ordering ID:

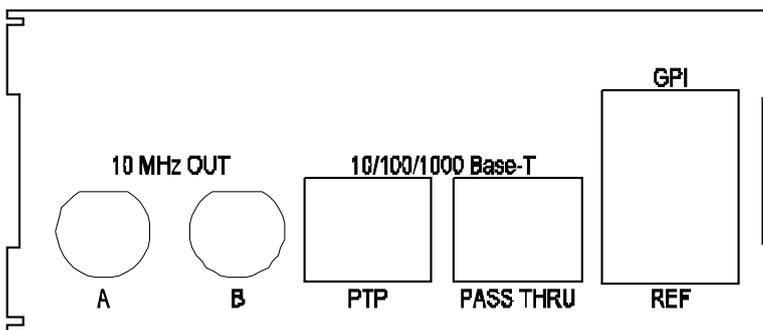
22100000 **C3-P0**
PTP client module with standard oscillator
module for RUBIDIUM 1, H1 housing

22150000 **C3-P1**
PTP client module with HQ oscillator
Module for RUBIDIUM 1, H1 housing

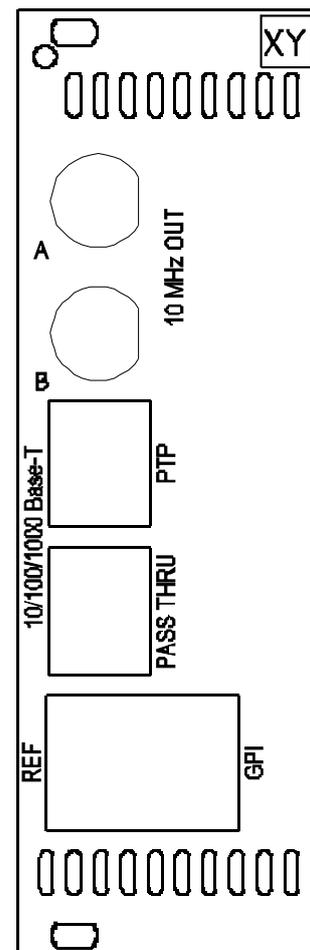
22300000 **C3-P0**
PTP client module with standard oscillator
module for RUBIDIUM 3, H3 housing

22350000 **C3-P1**
PTP client module with HQ oscillator
Module for RUBIDIUM 3, H3 housing

22100010 **C3-310**
additional 10 Mhz output for C3



Backpanel RUBIDIUM 1 module



Backpanel RUBIDIUM 3 module