

## Data Sheet

# XTSS

## Time Synchronization

b-plus provides an advanced time synchronization solution in the AVETO toolbox with XTSS, offering wide configurability, plug-and-play capability, and exceptional accuracy. Users benefit from the flexibility to configure XTSS to their specific needs, seamlessly integrate it into existing systems, and rely on its precise time synchronization for various applications.

## Highlights

- Cluster + Platform Time Synchronization
- Hardware based Time Synchronization architecture
- GPS integrated (can be Time Master)
- External Time Master via Ethernet (802.1AS or gPTP / UPD), PPS, and NMEA input
- Configuration tool and API for Windows and Linux
- XTSS-TR / UDP Time Relay to synchronize external support of multi domain structure

## XTSS Configurator (example)

All Interfaces	Platform Sync [PTSS]	Time Relay [TR]	Protocol & (p)Delay Method	HW Time-stamping	Professional Interface Settings
68:B9:83:00:7E:40 1GbE-TS-1_VLAN_MISwitch Intel(R) I210 Gigabit Network Connection (bplus ptp)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:00:7E:41 1GbE-TS-2 Intel(R) I210 Gigabit Network Connection (bplus ptp) #4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:00:7E:42 1GbE-TS-3_T1_NETLion Intel(R) I210 Gigabit Network Connection (bplus ptp) #2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:00:7E:43 1GbE-TS-4_MGMT_NETLion Intel(R) I210 Gigabit Network Connection (bplus ptp) #5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:00:7E:44 10GbE-1 Intel(R) Ethernet Controller X540-AT2 (bplus ptp)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input type="checkbox"/>	Settings
68:B9:83:00:7E:45 10GbE-2 Intel(R) Ethernet Controller X540-AT2 (bplus ptp) #2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input type="checkbox"/>	Settings
68:B9:83:01:42:48 Ethernet 18 Intel(R) I210 Gigabit Network Connection (bplus ptp) #13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:01:42:49 Ethernet 21 Intel(R) I210 Gigabit Network Connection (bplus ptp) #16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IEEE 802.1AS	<input checked="" type="checkbox"/>	Settings
68:B9:83:01:42:4A					



## XTSS Ethernet Controllers and Features

Ethernet Controller	Max. Speed	XTSS (Time Synchronization) Features
Intel I210	1 Gbit/s	Receive time capturing with working clock L2 and UDP PTP Messages Clock synchronization in down link state Time synchronization support for link speeds: 100 Mbit/s, 1 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported
Intel I350	1 Gbit/s	Receive time capturing with working clock L2 and UDP PTP Messages Clock synchronization in down link state Time synchronization support for link speeds: 100 Mbit/s, 1 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported
Intel X540	10 Gbit/s	Synchronization in downlink state L2 and UDP PTP Messages Time synchronization support for link speeds: 100 Mbit/s, 1 Gbit/s, 10 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported
Intel X550	10 Gbit/s	Receive time capturing with working clock L2 and UDP PTP Messages Clock synchronization in down link state Time synchronization support for link speeds: 100 Mbit/s, 1 Gbit/s, 10 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported
Intel X710	40 Gbit/s	L2 and UDP PTP Messages Time synchronization support for link speeds: 1 Gbit/s, 10 Gbit/s, 10 Gbit/s (g)PTP messages with PTP v2.0 Header (IEEE1588-2008 / IEEE802.1AS 2011)
Intel X722	40 Gbit/s	L2 and UDP PTP Messages Time synchronization support for link speeds: 1 Gbit/s, 10 Gbit/s, 10 Gbit/s (g)PTP messages with PTP v2.0 Header (IEEE1588-2008 / IEEE802.1AS 2011)
Mellanox Connect-X5	100 Gbit/s	only support of Linux L2 and UDP PTP Messages Time synchronization support for link speeds: 1 Gbit/s, 10 Gbit/s, 25 Gbit/s, 40 Gbit/s, 50 Gbit/s, 100 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported
Mellanox Connect-X6	200 Gbit/s	only support of Linux L2 and UDP PTP Messages Time synchronization support for link speeds: 10 Gbit/s, 25 Gbit/s, 40 Gbit/s, 50 Gbit/s, 100 Gbit/s, 200 Gbit/s (g)PTP messages up to PTP v2.1 Header (IEEE1588 / IEEE802.1AS 2020) supported

## Specifications

Platform Requirements	CPU with invariant TSC (Intel 4Th Gen Core CPU or later) x86 64bit / AMD64 architecture
Supported OS	Windows® 10 64bit (optimized driver) Linux 64bit kernel 4.2.0 or higher
Supported Standards	IEEE 802.1AS-2020 IEEE1588v2
Features	Cluster Time Sync CTSS Platform Time Sync, hardware based Multi domain time relay 802.1AS-2020 Time relay IEEE 1588v2 UDP
Supported hardware platforms	BRICK and DATAlynx ATX4 systems



## Order Information

Name	Part Number	Description
XTSS Time Sync Service – Time Relay / UDP	B15583-XTS-001-0001	BRICK XTSS Time Relay / UDP (needs standard XTSS license) UDP need XTSS Pack > 4.xx Time Synchronization according to IEEE 802.1AS (Profile of IEEE1588) of external devices like MDILink and UDP profile ·single license (required per BRICK) ·supports 1GbE and 10GbE capturing ports on BRICK ·supported on single and cluster of BRICK systems
XTSS Time Sync Service – TR / UDP Upgrade	B15583-XTS-002-0001	XTSS Time Relay / UDP Upgrade license - needs XTSS Basic license  b-plus device serial number required for license process  Time Synchronization according to IEEE 802.1AS (Profile of IEEE1588) of external devices like MDILink and UDP profile ·single license (required per b-plus device) ·supports 1GbE and 10GbE capturing ports
XTSS Base and TR+UDP license on WiBu CmStick	B15583-XTS-010-WD01	XTSS Basic and TR / UDP License  Time Synchronization according to IEEE 802.1AS (Profile of IEEE1588) and IEEE1588v2 default profile Supports Time Synchronization of actual device and external devices (e.g., b-plus MDILink or any other gPTP / PTP enabled devices) ·enabled capturing on supported Ethernet interfaces ·single license bound to WiBu CmStick ·USB License key with XTSS 4.x Software installer and Documentation for Windows and Linux