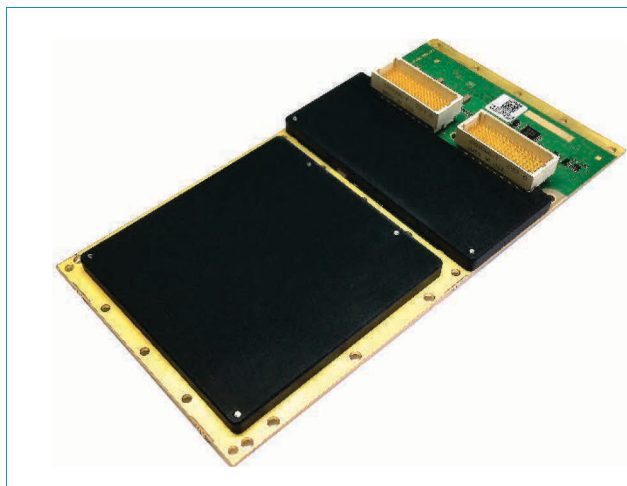


TTEnd System A664 Pro (XMC) v2.0

The certifiable 1 GbE TTEthernet® Network Board for Avionics and Open System Architectures



Key Benefits

- ✓ RTCA DO-254/DO-178C DAL A certifiable end system card for use in flight programs
- ✓ Ruggedized card (VITA 47 ECC4, MIL-STD-810G)
- ✓ PCIe connectivity for use in flight programs (SOSA/HOST4.1 compliant)
- ✓ Fully compliant with Ethernet (IEEE 802.3), rate-constrained (ARINC 664 part 7) and time-triggered traffic (SAE AS6802)

The TTEnd System A664 Pro (XMC) v2.0 network interface card brings the full power of Deterministic Ethernet communication technology to avionics and advanced open system architectures environments. It is designed for robust synchronization, partitioning and non-interference among integrated applications. This Ethernet end system uniquely supports different traffic classes for the design of complex integrated systems and embedded architectures: IP/UDP, VLAN, ARINC 664 part 7 and Time-Triggered Ethernet traffic. It offers redundancy management, as well as an IP/UDP profiled communication layer with safe network interface and Built-in Test functions.

XMC/PCIe Mezzanine Card for Network Communication

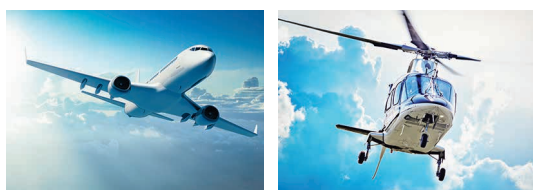
The TTEnd System A664 Pro (XMC) v2.0 card supports different Ethernet protocol services for airborne critical applications:

- Time-triggered (SAE AS6802) traffic and fault-tolerant synchronization
- Rate-constrained traffic (ARINC 664 part 7) compliant)
- Standard (IEEE 802.3) Ethernet traffic

This certifiable XMC Pro network interface card implements the distributed fault-tolerant clock synchronization algorithm of TTEthernet® in hardware.

100 % Deterministic and Hard Real-Time Data Transmission in Complex Systems

This PCIe mezzanine card enables hard real-time interactions among many computers and hosted software applications integrated by an Ethernet backbone integrated system. It supports different mechanisms for fault-tolerant synchronization and dual redundant networking in safety-critical, high-integrity and high-availability applications. The card can transmit time-critical and safety-critical data according to a predefined schedule, not affected by the number of application streams on the channel, or by traffic bursts. Furthermore, it can be configured to separate and isolate different types of traffic and prevent unintended interferences within the network.



Application Fields

- Aircrafts
- Rotorcrafts

End System Capabilities	<ul style="list-style-type: none"> – The NIC controller implements the TTEthernet® end system IP with 2 redundant channels – Configurable traffic classes and protocol services: <ul style="list-style-type: none"> ✓ Time-triggered (SAE AS6802) traffic ✓ Rate-constrained (ARINC 664 part 7) traffic ✓ Standard Ethernet (IEEE 802.3) traffic – 256 send VLs, 2048 receive VLs, 1024 send ports, 4096 receive ports – 2 output memory partitions/access points, 2 input memory partitions/access points – Flexible configurable periods (µs granularity) – Profiled IP/UDP, sampled and queued COM port network interfaces, handled in hardware – DMA support
Certifiability	<ul style="list-style-type: none"> – NIC controller according to RTCA DO-254 DAL A – Embedded software according to RTCA DO-178C DAL A – Environmental ratings according to MIL-STD-810G – Safety assessment according to SAE ARP 4754/4761
Supported Standards	<ul style="list-style-type: none"> – IEEE 802.3 – ARINC 664 part 7 – SAE AS6802
Software Driver Support	<ul style="list-style-type: none"> – Linux Ubuntu 20.10 / RedHat Enterprise Linux for development and integration purposes – RTCA DO-178C certifiable RTOS driver porting on request (e.g. GHS Integrity tuMP, VxWorks653)
Network Connectivity	<ul style="list-style-type: none"> – 2 ports 100/1000 Mbit/s on P16 XMC port X12d (VITA42/SOSA)
Hardware Connectivity	<ul style="list-style-type: none"> – 4x PCIe3 compliant interface on P15 port
Dimensions	<ul style="list-style-type: none"> – Size: 139 x 74 (mm) and weight: 125 g
Form Factor	<ul style="list-style-type: none"> – ANSI/VITA 42 PCIe mezzanine card, rugged conduction cooled
Power Supply	<ul style="list-style-type: none"> – +3.3 V external power supply
Power Consumption	<ul style="list-style-type: none"> – 10 W max.
Environmental Operating Ranges	<ul style="list-style-type: none"> – VITA 47 ECC4 (-40°C to +85°C operational, conduction-cooled)
Packaging Contents	<ul style="list-style-type: none"> – TTEthernet® XMC card hardware board – User manual, driver CD (Linux)
Variants	<ul style="list-style-type: none"> – N/A
Order Number	<ul style="list-style-type: none"> – Available on request



TTTech Europe, Austria (Headquarters)
Phone: +43 1 585 34 34-0

TTTech North America Inc.
Phone: +1 978 933-7979

TTTech Japan
Phone: +81 52 485-5898

© TTTech. All rights reserved. All trademarks are the property of their respective holders. To the extent possible under applicable law, TTTech hereby disclaims any and all liability for the content and use of this flyer.

products@tttech.com

www.tttech.com