AXM57104 Platform BSP User Guide

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1. Introduction

The AXM57104 TSN Development Platform provides an easy way to enter the new generation industrial Ethernet, Time-Sensitive Networking (TSN) world on Real-Time Linux (RT-Linux) industrial computers.

AXM57104 TSN Development Platform is a fanless industrial computer (IPC) with one AXM57104 Quad Port TSN Gigabit Ethernet PCIe NIC card installed, which is equipped with high-performance 8th Gen Intel® Core™ i7 processor and pre-installed AXM57104 TSN software applications on Linux operating system with real-time extensions.

AXM57104 TSN Gigabit PCIe NIC supports enhanced TSN functions, compliant to IEEE 802.1AS-Rev/AS, 1588V2, 802.1Qav, 802.1Qbu, 802.1Qbv and 802.1CB. AXM57104 TSN software applications includes AXM57104 Linux network driver, TSN configuration, PTP4L, RSTP, Netconf, Web Server configuration, Net Latency Test, OPC UA demo, etc. applications and FPGA firmware upgrade tool. AXM57104 also supports FPGA hard-core field upgradable via In-Application Programming (IAP) for TSN standards evolution.

2. Directory Information

Directory	Description
config	AXM57104 register configuration & bootup service
demo	AXM57104 TSN demonstration
document	Reference user manual and brief
nic_driver	AXM57104 Linux driver source
software	AXM57104 software components
AXM57104 Platform BSP User Guide	Platform BSP user guide for AXM57104

3. config

File Name	Description
asix_config	AXM57104 register configuration tool
asix_design	AXM57104 register map
bootup	AXM57104 bootup service

4. demo

File Name	Description
Netlatency	Network latency & jitter demo by AXM57104 TSN
op_cua	OPC UA over AXM57104 TSN demo

5. Document

File Name	Description
AXM57104 Brief	Product brief of AXM57104
AXM57104 TSN Platform Brief	Platform brief of AXM57104
AXM57104 TSN Development Platform UserGuide	Reference User guide of AXM57104
SLP-WHG-TSN 2nd Quick Reference Guide	Reference User guide of the platform

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6. nic_driver

File Name	Description
AXM57104 Linux Driver	PCIe based network adapter driver

7. software

File Name	Description
AXM57104_fpga_upgrade	FPGA code upgrading tool
AXM57104_ipconfig	AXM57104 middle-ware service
AXM57104_lib_common	Common API for middle-ware service
AXM57104_lib_ipconfig	TSN Function API for middle-ware service
AXM57104_lib_json	JSON string API for middle-ware service
AXM57104_lib_messaging	Internal Message API for middle-ware service
AXM57104_ptp4l	802.1AS for bridge architecture
AXM57104_rawcommand	Console command for access TSN function
AXM57104_web_demo	Web base function select for 802.1Qav / Qbv demo
AXM57104_web_server	Web base GUI for user
netconf	Network configuration tool

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7. Revision History

Revision	Date	Description
V2.01	2023/07/17	Initial release
V2.02	2023/08/14	1.Added AXM57104 Brief 2.Added AXM57104 TSN Platform Brief

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