



TRANS PACIFIC TECHNOLOGIES, INC.

Value-Added System Integration

Threat Radar

Threat Radar

IFF Interrogati
& Transpond

Data Links

RF Jamming

Weapons System
Under Test (SUT)

Background EME
Various Modulations

Pulsed, CW Friendly
& Threat Radars



OpenVPX 構成例

- 3U OpenVPX Chassis
 - Model ATR112 Series

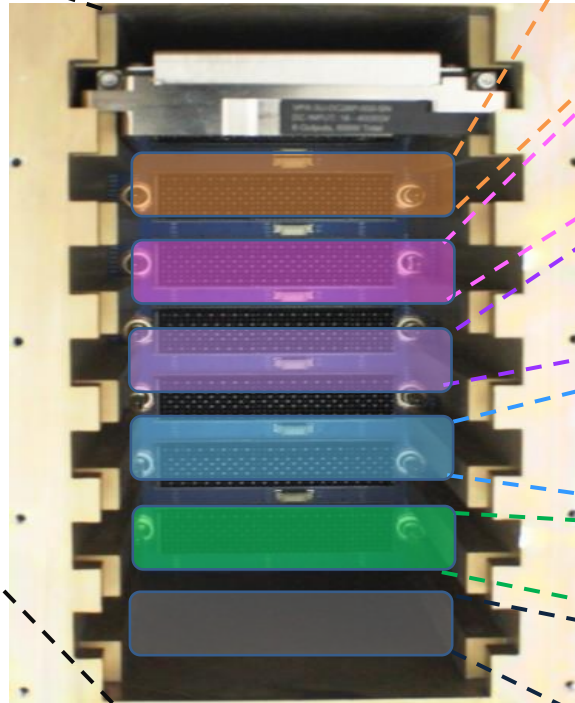


Background

航空機、ミサイル、車輛、艦船での目標
搜索ミッションにおける画像データ処理、
ビデオエンコーディング、ビデオキャプチャ
または電子戦データの高性能計算及び
人工知能による処理能力の要求

Keyword

3U VPX Embedded System



■ 3U VPX Single Board Computer

- VPX6600

CPU: Intel Xeon E3-1505M V5 2.8GHz, quad core, 8Mb cache, 47W
OS: Windows, Linux, VxWorks



■ Network Interface

- V1160

VPX Carrier: Dual-Port 100G Rugged Ethernet Card



■ GPGPU

- VPX3U-XAVIER-SBC

SBC includes Xavier with Volta GPU & Carmel CPU



■ Multi Function I/O

- 68G5

3U OpenVPX Multifunction I/O & Communication Board



■ Zynq® UltraScale+ MPSoC I/O

- Acromag AcroPack APZU Series with VPX4500



■ 100GbE 3U OpenVPX Switch

- WP3E10

backplane slots of multiple channels of 100Gb Ethernet



■ Environmental

Conduction-cooled, Conformal coating
Operating Temperature : -40~80°C
Storage Temperature : -40~85°C

System Integration for MIL-STD-1553 Data Converter Solution



ARCX-4120

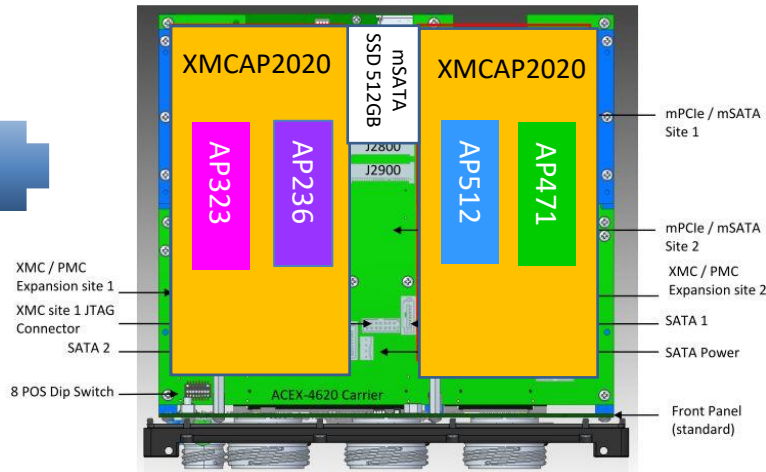
H83.57mm x W213.49mm x D211.71mm



Alta Data
data technologies

ENETX-MA4-1D4-EF

1553 & A429 combo
Ethernet converter



Background

回転翼機搭載向けシステム監視・警報装置

Keyword

1553、A429を含む各種I/Oを小型軽量低消費電力のシステムで提供
弊社オリジナルのカタログ品として提供（弊社にてコンフィグレーション管理）

Basic System

Acromag - Rugged Embedded Computer - ARCX-4120

CPU - Core i7-4700EQ, 2.4GHz, quad core

OS - VxWorks 7.0 + VxWorks 7 Plus Profile (Audio I/O) license



Integrated Solution Networking Interface



Alta Data - 1553 & A429 combo Ethernet Converter

ENETX-MA4-1D4-EF - MIL-STD-1553 : 1ch RT & ARINC429 : 4ch Rx

Integrated Solution Analog Input



Acromag - A/D 16 bit : 20ch - AP323

Integrated Solution Analog Output



Acromag - D/A 16 bit : 8ch - AP236

Integrated Solution RS422



Acromag - RS422 Serial ports : 4ch - AP512

Integrated Solution Digital I/O



Acromag - TTL Level Digital I/O : 48ch - AP471

Environmental

Conduction-cooled, Conformal coating

Operating Temperature : -40°C ~ +55°C,

Storage Temperature : -40°C ~ +85°C

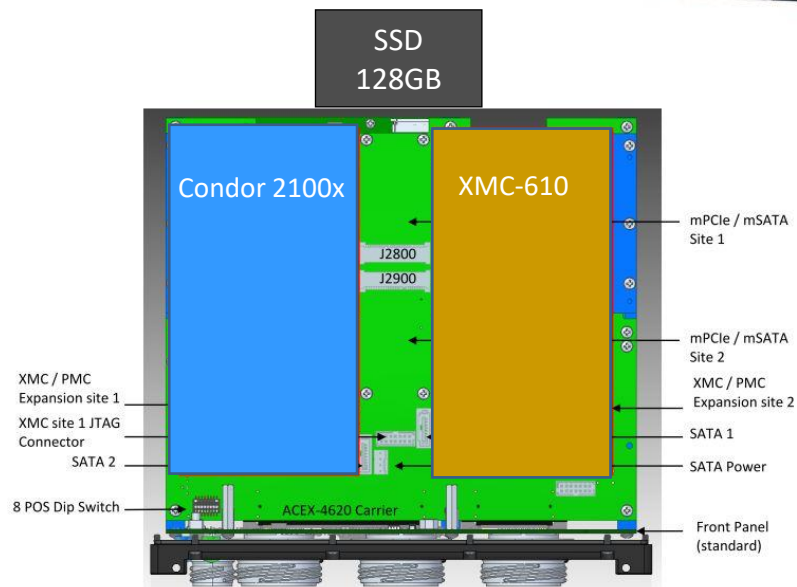
Power Consumption : up to 100W (as a whole system)

RS-170A Video Recording System



ARCX-4121-PF

H131.7mm x W213.5mm x D211.7mm



Background

固定翼機搭載向けビデオレコーダーシステム（外部信号入力による緊急消去）

Keyword

レガシーな2ch NTSC信号入力に対応、HD-SDIへのアップグレード対応可能

Basic System

Acromag - Rugged Embedded Computer - ARCX-4121-PF

CPU - Core i7-4700EQ, 2.4GHz, quad core

OS - RHEL-7



Integrated Solution

Removable SSD

OS : 64GB, Data Storage : 64GB

Write protection required for OS area

Secure Erase required for data storage



Integrated Solution

Video Graphics

EIZO - XMC Graphics Board & Video Input Card
Condor-2100x



Integrated Solution

Gigabit Ethernet

Acromag - Quad-port Gigabit Ethernet
XMC NIC Card XMC610



Environmental

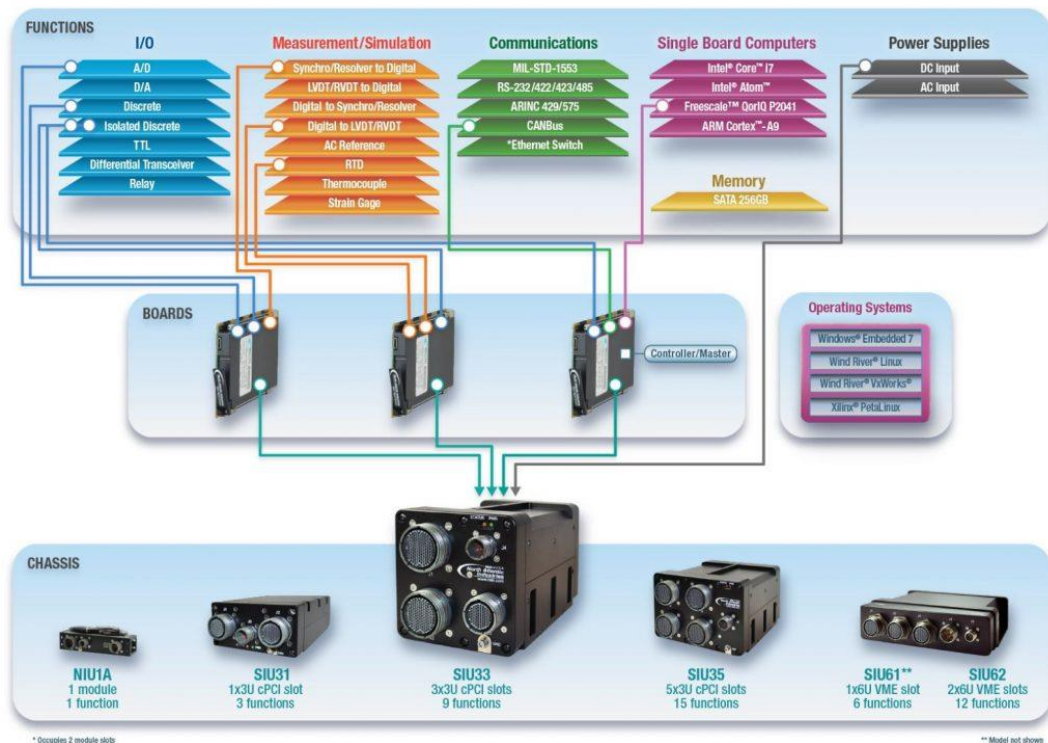
Conduction-cooled, Conformal coating

Operating Temperature : -15°C ~ +55°C,

Storage Temperature : -40°C ~ +71°C

Power Consumption : up to 100W (as a whole system)

Vibration : MIL-STD-810F, Shock : 20G 6~9ms



Background

70種類以上の既存I/Oモジュールにより、様々な要求仕様に対応することが可能（GUIによるI/Oの設定および動作確認が可能）

Keyword

CPUボード、I/Oモジュールは各種OS向けにBSPおよびドライバが用意されており、動作を保証（相性の心配は皆無）

Sensor Interface Unit/Nano Interface Unit

Basic System

North Atlantic Industries - Rugged SIU/NIU Series

CPU – PowerPC, ARM, Intel

Software - Windows, DDC-I Deos, VxWorks 6.X, 7.X and 653 3.X & HVP, PetaLinux

Integrated Solution I/O Selection

A/D, D/A, Discrete, TTL, Differential Transceiver, Relay

Integrated Solution Measurement/Simulation Selection

Synchro/Resolver to Digital, LVDT/RVDT to Digital, AC Reference, RTD, Thermocouple, Strain Gage

Integrated Solution Communication Selection

MIL-STD-1553, RS-232/422/423/485, ARINC429/575, CANBus, Ethernet Switch

Integrated Solution Single Board Computers Selection

Intel Core i7, Intel Atom, PowerPC, ARM

Integrated Solution Power Supplies Selection

DC Input, AC Input

Specifications

- Operating temp: -40 °C to +71 °C @ thermal interface, conduction cooled; convection & air-cooled options
- 28 VDC 50 ms hold-up option
- Environmental/EMI MIL-STD-461, MIL-STD-810, MIL-STD-1275 & MIL-STD-704A

RDC (Remote Data Concentrator)

SIU33



Board Level – 1
68PPC2-2-TE1 FT2

Board Level – 2
68G5-2-LD2 DA3 AC2

Board Level – 3
68G5-2-CB6 AD4 DT1

Board Level – 4 PSU
75PS4



Background

固定翼機搭載向けIMA (Integrated Modular Avionics)

Keyword

VPX 3U、DO-178C対応の高密実装システム

AFDX、CANbus、1553および各種I/Oが提供可能

Basic System

North Atlantic Industries - Rugged SIU33 OpenVPX

OS - VxWorks 653 3.0.1 CP2 BSP for T2080
– Path to DO-178C & DO-254 Certification
3 x 3U OpenVPX Slots

Integrated Solution Board Level-1 68PPC2-2-TE1 FT2

SBC(NXP® QorIQ® T2080 Quad-Core e6500 Processor
@1.5 GHz) + ARINC644(AFDX) + MIL-STD-1553

Integrated Solution Board Level-2 68G5-2-LD2 DA3 AC2

4ch LVDT/RVDT + 4ch Digital to Analog output + AC
Reference Source

Integrated Solution Board Level-3 68G5-2-CB6 AD4 DT1

CANBus + Analog to Digital module + Discrete I/O

Integrated Solution Board Level-4 Power Supply 75PS4

75/150-Watt DC/DC Converter

Specifications

- Operating temp: -40 °C to +71 °C @ thermal interface, conduction cooled; convection & air-cooled options
- 28 VDC 50 ms hold-up option
- Environmental/EMI MIL-STD-461, MIL-STD-810, MIL-STD-1275 & MIL-STD-704A