Network Extensible SOSA Testbed (NEST)

Summary

The NEST is an 8-slot chassis system with two form factors—Air Transport Rack (ATR) ruggedized chassis and 19-inch rack-mount enclosure. It is a modular, adaptable chassis system specifically designed for PNT and coherent ISR applications. The NEST ecosystem promotes collaboration and competition among vendors by enabling PNT and ISR technologies to be mixed and matched from multiple vendors to achieve new levels of system performance and flexibility.

The NEST features a fiber optic interface, allowing four other chassis to be interconnected for PNT data sharing across a network of chassis or sensor systems. With the fiber interface, a sensor fusion algorithm can exist anywhere on a network of connected chassis and utilize remote PNT data that is precisely harmonized, without requiring the PNT sensors to be co-located within the same chassis.

Key Features

- SOSA aligned
- ATR or rack-mount chassis options
- Fiber interface for connecting several chassis or systems together
- Front-panel RF signal I/O
- Available with network switch, SBC, chassis manager, PNT and SDR plug-in cards

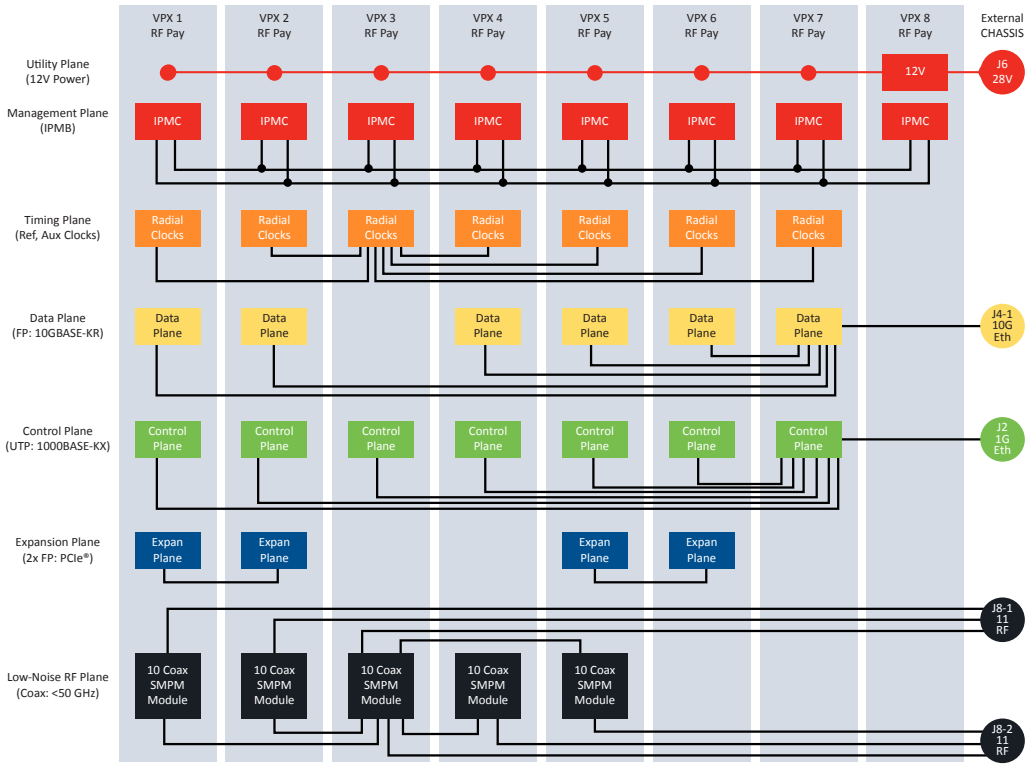
Specifications

- Size (L × W × H): 14 in × 6 in × 9.625 in (ATR chassis), 20 in × 19 in × 12.375 in (rack-mount chassis)
- Weight: 20 lbs (ATR chassis), 38 lbs (rackmount chassis)
- Power: 28 VDC chassis input, 12V power distribution to plug-in cards
- Backplane interface: Data-plane, fat-pipe 10GBase-KR, control-plane, ultra-thin-pipe 1000Base-KX
- 3U VPX plug-in card form factor
- Cooling: Fan-cooled chassis, conduction-cooled cards

Flexible Mission Capability

The NEST works with our SV-3100 radial clock card, SV-3200 PNT source payload card, SV-3210 Raptor SDR card and third-party cards like switches, Single-Board Computers (SBCs) and chassis managers. The PNT source card can host a variety of PNT sources, including Inertial Measurement Units (IMUs), atomic clocks, GNSS receivers, M-Code and ALTNAV receivers. By separating PNT sources from the radial clock card function, a user can mix and match PNT sources in payload slots based on mission requirements and easily upgrade PNT sensors as new technology becomes available. The NEST is optimized to work with a variety of sensors for processing PNT and digitized data for coherent ISR and sensing missions.

Chassis Slot Diagram



Slot Definition

Slot	Module Profile	Slot Profile
1 RF Payload	MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-	SLT3p-PAY-1F1U1S1S1U1U2F1H-14.6.11-2
2 RF Payload	MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-2	SLT3p-PAY-1F1U1S1S1U1U2F1H-14.6.11-2
3 Radial Clock	MOD3p-TIM-2S1U22S1U2U1H-16.9.2-1	SLT3p-TIM-2S1U22S1U2U1H-14.9.2-1
4 RF Payload	MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-2	SLT3p-PAY-1F1U1S1S1U1U2F1H-14.6.11-2
5 RF Payload	MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-2	SLT3p-PAY-1F1U1S1S1U1U2F1H-14.6.11-2
6 RF Payload	MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-2	SLT3p-PAY-1F1U1S1S1U1U2F1H-14.6.11-2
7 Switch	MOD3-SWH-6F1U7U-16.4.15-1	SLT3-SWH-6F1U7U-14.4.14

Contact for More Details

Please contact the Microchip Tactical Systems team for requests about the NEST chassis system or any SOSA card-related questions. FTS-GS-Quotes@microchip.com