Esterline
Control & Communication Systems

# Palomar CMS-9100 Communications Management Suite

Modular, scalable integration of multilevel secure voice/data/video communications

## Advanced, modular communications solutions for the information-based, net-centric battleground

An uncompromising combination of reliability, modularity, upgradability, and interoperability makes the Palomar CMS-9100 communications management suite the solution of choice for all multi-mission platforms in the 21st century.

- NSTISSAM / TEMPEST 1-92 Level 1
- Reduced size, weight and power
- Simultaneous clear and secure operation
- Digital voice, data and video management
- Complete management of communication assets and user configurations
- Easy customization due to modern modular design
- Radio and crypto relay
- Intercom conferencing
- Wideband audio (optional)
- Binaural audio (spatial optional)
- Redundancy and emergency operations
- Extensive BIT capabilities
- Radio-priority configurable for each position
- Conduction-cooled sealed enclosures
- Standard interfaces: MIL-STD-1553 and Ethernet
- Compatible with all standard headsets and microphones
- NVIS compatible and daylight readable
- DO-178B and DO-254 certifiable

## Palomar CMS-9100 Communications Management Suite

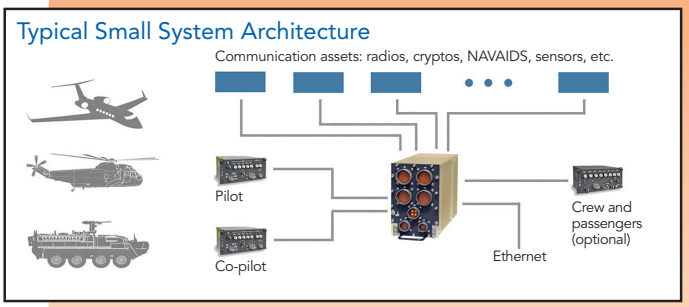
# Integrated, flexible communications solutions for a wide range of platforms and deployments

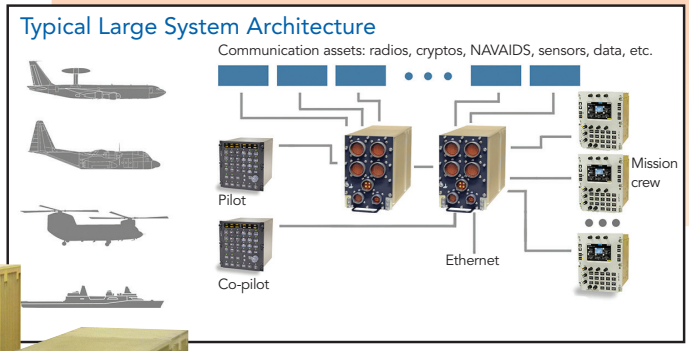
The Palomar CMS-9100 communications management suite from Esterline features an advanced set of modular building blocks that meet the most stringent military requirements of 21st-century information-based warfare.

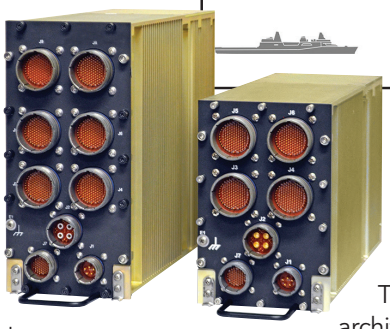
The suite's native scalability supports integration of communication systems for a wide range of platforms, from compact aircraft to large secure ISR aircraft, to sizeable multilevel-secure, battle-ready tactical installations.

Esterline has combined its proven expertise and core technologies in TDM switching, IP, and TEMPEST with standards-based and COTS architectures in a modern highly flexible and upgradeable design for today's multi-mission platforms and deployments. Our systems have unmatched flexibility, from automated multiband relay of voice/data/video to radio, crypto, modem, and sensor control, to dynamic, multi-level secure communications management.

This flexibility makes mission reconfigurations more efficient through a user-friendly configuration manager, reducing typical modification costs and timelines.



## Digital Switching Unit (DSU)

The DSU manages all connections among communications and data assets, crew members, and operatives. The DSU is a modular, secure, TEMPEST-qualified communications interface and control unit for all internal and external, secure and non-secure voice and data streams and ports.

- Best of non-blocking TDM and IP buses combined in one unit
- High-speed TDM architecture with very low deterministic latency for high-quality service and audio
- Architecture optimized for high bandwidth and universal interface
- Software-defined configuration manager to quickly and efficiently add, delete, modify or simply manage mission and communications plans
- Quick, low-cost upgrades and modifications with a modular, open cPCI 3U backplane, expandable with software updates or future Palomar and COTS cards
- T1, Ethernet, and MIL-STD-1553B ports
- Central unit available in ½ ATR and other smaller enclosures
- Scalable with additional DSU via Ethernet for larger-system roll-on/roll-off functionality with smaller than ever SWaP

## Digital Crew Unit (DCU) Architecture

The CMS-9100 suite features our new DCU architecture, allowing standard unit circuitry to operate with a wide range of panels without hardware or application software modifications.

- Minimum cost to change or redesign front panel quickly
- Generic programmable architecture with a universal connector
- Flexible backplane with all key functionality and a programmable panel interface
- Software-only control panel available for existing computer screens and multi-function modules — no need for extra space and wiring for special applications
- Binaural audio with support for ANR and dual headsets per position

### Flight Deck Digital Crew Unit (FD-DCU)

FD-DCUs provide flight crewmembers access to in-flight conference networks, radio channels, guard channels, NAVAIDs, and other voice and data assets in the aircraft.

- Separate volume controls for each channel, plus master volume control
- LED or screen-based indicators for activity and transmit/receive modes
- Multilevel secure operation
- Emergency communication access to other control modules
- Direct connection to selected radios and NAVAIDs in stand-alone and emergency backup modes
- Controls for radio and intercom channel selection, receive/transmit, stereo balance, VOX sensitivity, AGC, HOTMIC, security level, and more

### Common Digital Crew Unit (C-DCU)

C-DCUs provide the same functionality as FD-DCUs but have panels that meet the needs of mission-area crew members. They can also add optional human interface elements like display screens and specialized control modes.

- Controls for radio and intercom channel selection, receive/transmit, volume, VOX, AGC, HOTMIC, security level, playback, and more
- Access to other control modules in emergency mode

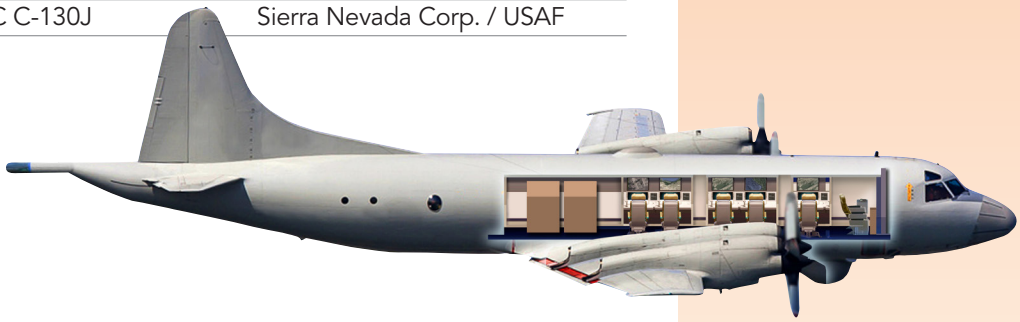
## Performance

| | |
|---|---|
| Radio receive levels | Software selectable 0.1 Vrms to 15.8 Vrms and 150 Ω, 600 Ω, and >4K Ω |
| Radio transmit levels | Software selectable from 0.1 Vrms to 2.0 Vrms |
| Microphone inputs | Low-level dynamic, high-level amplified |
| Headphone outputs | Binaural and monaural, standard and ANR high level (600 Ω cups) and low level (19 Ω cups) |
| Frequency response | Up to 20 Hz - 20 KHz |
| Speech intelligibility | 91 percent at peak noise |
| Crosstalk isolation | Red/black separation greater than 100 dB at 1 KHz |
| Audio and data latency | Audio: <3 milliseconds<br>Data: Ethernet QoS settings and load dependent |
| Audio quality | Distortion <3 percent, idle channel noise -56 dBr |
| Visibility | Programmable luminosity curves |
| Power | 28 V per MIL-STD-704 |
| Environmental | Designed to RTCA/DO-160F, MIL-STD-810G |
| EMI/EMC | MIL-STD-461F and RTCA / DO-160F, MIL-STD-464 and RTCA / DO-160F |
| TEMPEST | NSTISSAM 1-92 Level 1 |
| Software design assurance | RTCA/DO-178B Level-C |
| Hardware design assurance | RTCA/DO-254 Level-C |
| Operation standards | RTCA/DO-214 |
| Quality assurance and best practices | SAE AS9100 and ISO 9001 |

# Palomar CMS-9100 Communications Management Suite

## Programs

| | |
|---|---|
| P-8A Poseidon | Boeing / US Navy |
| P-8 India (P-8I) | Boeing / India |
| 737 AEW&C Wedgetail | Boeing / RAAF |
| 737 AEW&C Peace Eagle | Boeing / Turkish Air Force |
| Korean 737 AEW&C | Boeing / L-3 / Republic of Korea |
| AWACS | Boeing / USAF / Saudi Arabia / NATO / UK / ROF / Japan / USAF Block 40-45 |
| VH-3D / VH-60N / VH-71A | VIP |
| Combat Talon II | USAF SOF |
| TACAMO/ABNCAP (E-6B) | USN / USAF |
| P-3 AEW&C | Lockheed / US Customs |
| Special Mission P-3s | USN |
| NP-3 | USN |
| Sea Sentinel (AP-3C) | L-3 / RAAF |
| CP140 | Thales / Canadian forces |
| Airborne Laser | Boeing / USAF |
| CL604 | Bombardier / Royal Danish Air Force |
| AC-130H / U Gunships | USAF SOF |
| HC-130J Deepwater | Lockheed / USCG |
| German P-3 | USN FMS / German Navy |
| Korean P-3 | L-3 / ROKN |
| Portugal P-3 | Lockheed / Portuguese Air Force |
| Pakistan P-3 | Lockheed / Pakistani Navy |
| Taiwan P-3 | Lockheed / Taiwan |
| AW-149 | Agusta Westland |
| C-130J Block 8.1 Upgrade | Lockheed Martin / multiple nations |
| AFSOC C-130J | Sierra Nevada Corp. / USAF |



**For more information about the CMS-9100 system, please contact us at 949-766-5300 or palpro.sales@esterline.com.**

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