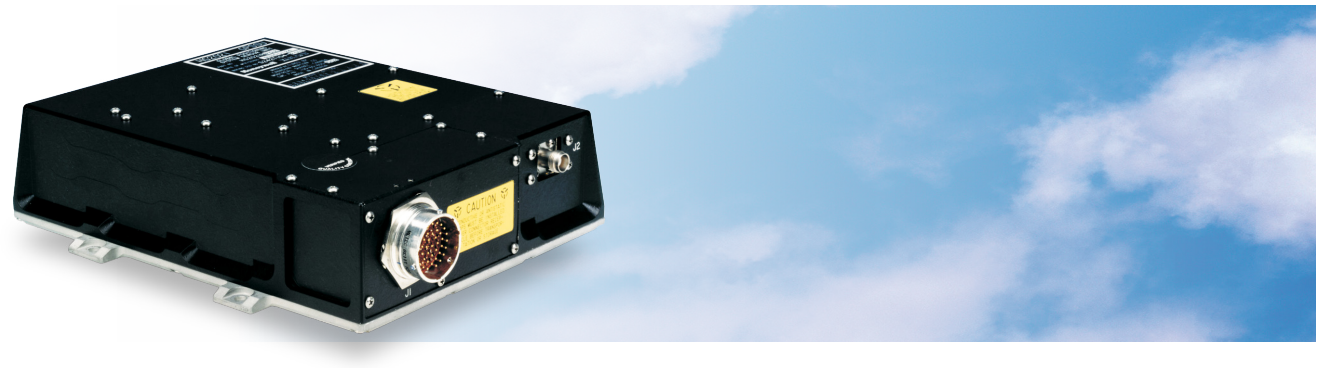
CMA-3024 GPS/SBAS Global Navigation System Sensor Unit (GNSSU)

High Performance • Narrow Correlator® Technology Enabled



- **High-integrity TSO-C145c SBAS Beta-3 sensor**
- **Fully ADS-B compliant position source**
- **RNP0.1 continuously in SBAS mode**
- **Patented 24-channel narrow correlator® ARINC 743A compliant receiver**
- **DAL-B certified**
- **MTBF > 45,000 h**
- **Easy bolt-on installation on all aircraft, existing and new**
- **Requires no special avionics mounting - installs anywhere**

The CMA-3024 aviation sensor provides fully ADS-B compliant SBAS/GPS Primary means navigation for business, regional, commercial air transport and helicopter aircraft. It is fully compatible and operational with all SBAS signals worldwide. With SBAS coverage, differential corrections are incorporated to further improve RNP capability, providing RNP0.1 with outstanding navigation system availability.

SBAS ranging, integrity and differential corrections are incorporated automatically, allowing the CMA-3024 to simultaneously meet all SBAS Beta-3 navigation accuracy and integrity requirements for primary means navigation and RNP-RNAV. The CMA-3024 provides an ARINC-743A compliant interface and can support both legacy avionics and those designed to take advantage of a TSO C-145c Beta-3 sensor.

Selection between SBAS coverage and out of SBAS coverage operation is automatic, delivering optimum navigation performance. When out of SBAS coverage, the CMA-3024 incorporates improved signal processing with SA-Aware performance, and incorporates all of the correction models as per RTCA/DO-229D&E. Predictive RAIM is provided to support primary means navigation worldwide. The result is operational performance that meets or exceeds the requirements for either RNP0.1 navigation or ADS-B as position source.

Key technology features

- At least three continuous SBAS channels, software assignable with full RTCA/DO-229D/E message processing
- Superb RNP0.1 (availability > 99.999% when in SBAS coverage) performance
- Extensive I/O supporting ARINC-743A interface.
- Design assurance level B

The CMA-3024 meets all requirements of TSO C-145c Beta-3, FAA Part 25 certification, RTCA/DO-178B Level B, RTCA/DO-254 Level B and RTCA/DO-160E and complies with ARINC-743A.

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CMA-3024 GPS/SBAS Global Navigation System Sensor Unit (GNSSU) — Specifications

DESIGN REQUIREMENTS

ARINC	743A Characteristic
RTCA	RTCA/DO-229D&E SBAS MOPS

CERTIFICATION

FAA	TSO C-145C Beta-3
Software	RTCA/DO-178B Level B (designed to Level A)
Hardware	RTCA/DO-254 Level B (designed to Level A)
Design Assurance	DAL-B

RECEIVER

Type	24 parallel Narrow Correlator® (patented) simultaneous digital processing channels, 3 SBAS + 21 GPS
Frequency	L1, 1575.42 MHz, GPS and SBAS C/A code
Signal Performance	Fully compliant to RTCA/DO-229D GPS and SBAS signal acquisition, tracking, and position accuracy performance under all interference conditions
Time to First Fix	< 75 seconds maximum, 95% confidence, as per RTCA/DO-229D
Navigation Accuracy	SA-OFF, continuous RNP0.1 with SBAS, and Primary Means of Navigation as per RTCA/DO-229D
Hor. Position Accuracy	Typically < 10 meters, 95%, SA off Typically < 2 meters, 95%, with SBAS Performance as per RTCA/DO-229D
Altitude Accuracy	Typically < 20 meters, 95%, SA off Typically < 3 meters, 95%, with SBAS Performance as per RTCA/DO-229D
Velocity Accuracy	< 0.5 knots, 95%, SA off, velocity as per RTCA DO-229D Appendix F, meets all ADS-B requirements
Position Update	1 time per second fully independent (navigation solution) 10 times per second fully independent (approach solution)

SOFTWARE

Language	Ada
Level	DO-178B Level B certified, Level A designed

OTHER FEATURES

Pressure Altitude	Automatic calibration and use as per RTCA/DO-229D
FDE and Predictive RAIM	Fault detection and isolation incorporated high performance parity space technique uses pressure altitude automatically, meets or exceed RTCA/DO-229D requirements
ADS-B Compliance	Fully compliant to FAA AC20-165b
BITE	Continuous coverage, >95% fault detection
MTBF	> 45,000 hours
Maintenance Port	RS-232
Antenna	Active antenna only as per ARINC-743A, TSO C-190
Aircraft Personality	Software loaded, customizable to aircraft

PHYSICAL

Size	2.6" x 8.5" x 9.5" (66 x 216 x 24 mm) Alternate form factor ARINC-743A
Weight	5.5 lb (2.5 kg)
Input Power	18 to 36 VDC
Consumption	20W max, 16W typical
Mounting	No tray required, 4-bolt mounting to any bulkhead

ENVIRONMENT

Temperature	DO-160E Cat. A2F2, -55 C to + 70 C
Altitude	DO-160E Cat. F2, 55,000 feet (16,500 meters)
Humidity	DO-160E, Cat. B
Vibration	DO-160E, Cat (CYL), R(G)
Cooling	Not required
EMC/HIRF	DO-160E, Cat. YY (200 V/m)
EMI	DO-160E, Cat. M
Lightning	DO-160E Cat A3J33

ARINC-743 INTERFACES

Inputs	8 ARINC 429, 1 RS-232
Outputs	3 ARINC 429 1 RS-232 1 28V valide discrete Three 1-Hz time marks

For more information, visit www.cmcelectronics.ca or email us at sales@cmcelectronics.ca

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