



AHEAD OF WHAT'S POSSIBLE™

UNMANNED SYSTEMS

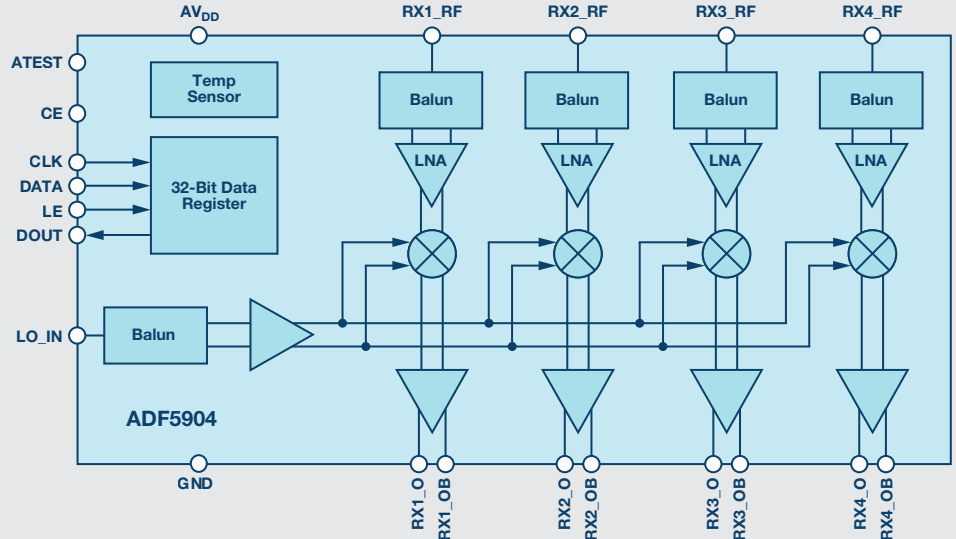
Analog Devices provides modern high performance solutions focused on the aerial, terrestrial, and marine unmanned platforms built upon our portfolio of robust and reliable products matched with our system-level capabilities and knowledge.



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Safety and Surveillance

- ▶ 24+ GHz radar object detection and collision avoidance
- ▶ Circuits supporting time of flight (TOF) and visual processing calculations
- ▶ Chipsets to support electronic surveillance, IFF systems, and civilian transponder/ADS-B requirements
- ▶ High power amplifiers, upconverters, and modules to support mission critical applications

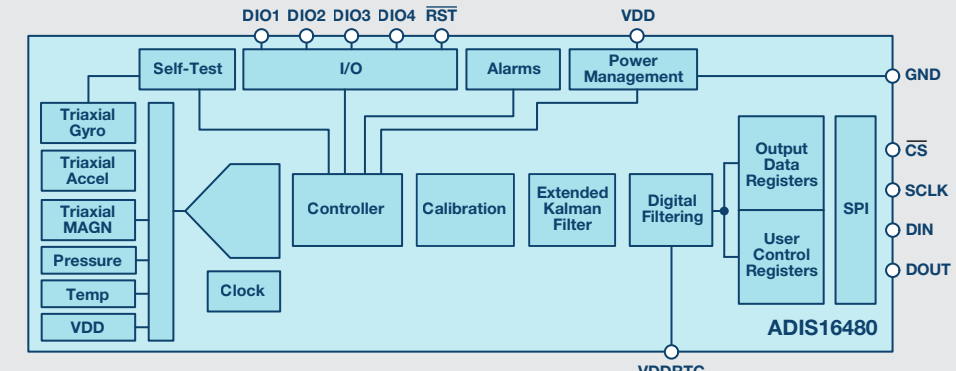


The diagram shows the ADF5904 integrated circuit with various pins including AVDD, RX1_RF, RX2_RF, RX3_RF, RX4_RF, RX1_O, RX1_OB, RX2_O, RX2_OB, RX3_O, RX3_OB, RX4_O, RX4_OB, LO_IN, GND, ATEST, CE, CLK, DATA, LE, DOUT, and Temp Sensor. It also includes a 32-Bit Data Register and Balun components.



Air Data Attitude Heading Reference Systems (ADAHRS)

- ▶ Advanced gyroscopes and accelerometers based on microelectromechanical systems (MEMS) digital signal processors (DSPs)
- ▶ Integrated inertial measurement unit (IMU) systems—iSensor® (6 axes to 10 axes)
- ▶ Magnetic and temperature sensors along with converters and digital signal processors for interfacing to external analog sensors

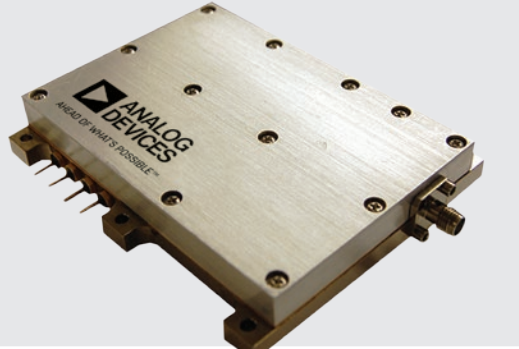


The diagram shows the ADIS16480 iSensor MEMS IMU with pins for DIO1, DIO2, DIO3, DIO4, RST, VDD, GND, CS, SCLK, DIN, DOUT, and VDDRTC. It includes blocks for Self-Test, I/O, Alarms, Power Management, Triaxial Gyro, Triaxial Accel, Triaxial MAGN, Pressure, Temp, VDD, Controller, Calibration, Extended Kalman Filter, Digital Filtering, Output Data Registers, and User Control Registers.



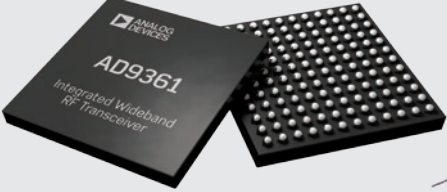
Connectorized Modules

ADI offers a large portfolio of standardized modules that help simplify and speed your time to market. ADI also offers customized modules for those designs that require additional performance. No matter your design needs, ADI has a solution for you.

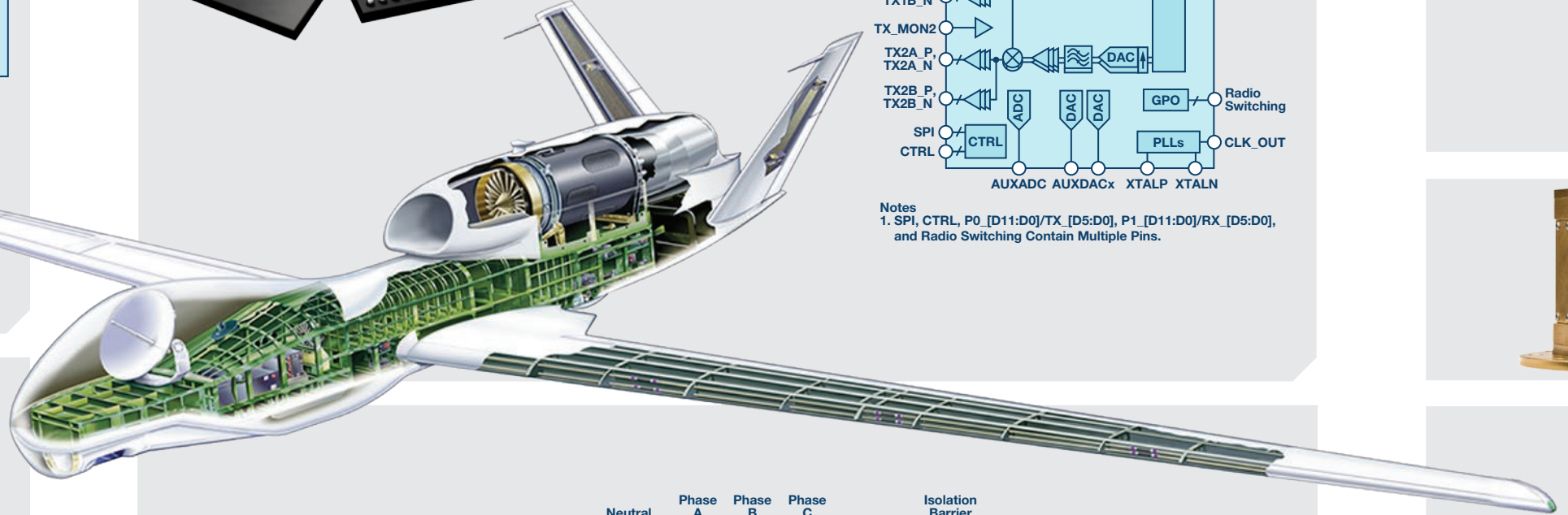


Communications

- ▶ Low power and frequency agile integrated transceivers for flight management and telemetry
- ▶ Solutions to support long range data links, airborne repeaters, and frequency hopping for secure communications
- ▶ Satellite communications components and modules



The diagram shows the AD9361 Integrated Wideband RF Transceiver with pins for RX1B_P, RX1B_N, RX1A_P, RX1A_N, RX1C_P, RX1C_N, RX2B_P, RX2B_N, RX2A_P, RX2A_N, RX2C_P, RX2C_N, TX_MON1, TX1A_P, TX1A_N, TX1B_P, TX1B_N, TX2A_P, TX2A_N, TX2B_P, TX2B_N, SPI, CTRL, AUXADC, AUXDACx, XTALP, XTALN, GPO, Radio Switching, PLLs, CLK_OUT, P0, P1, and Data Interface.

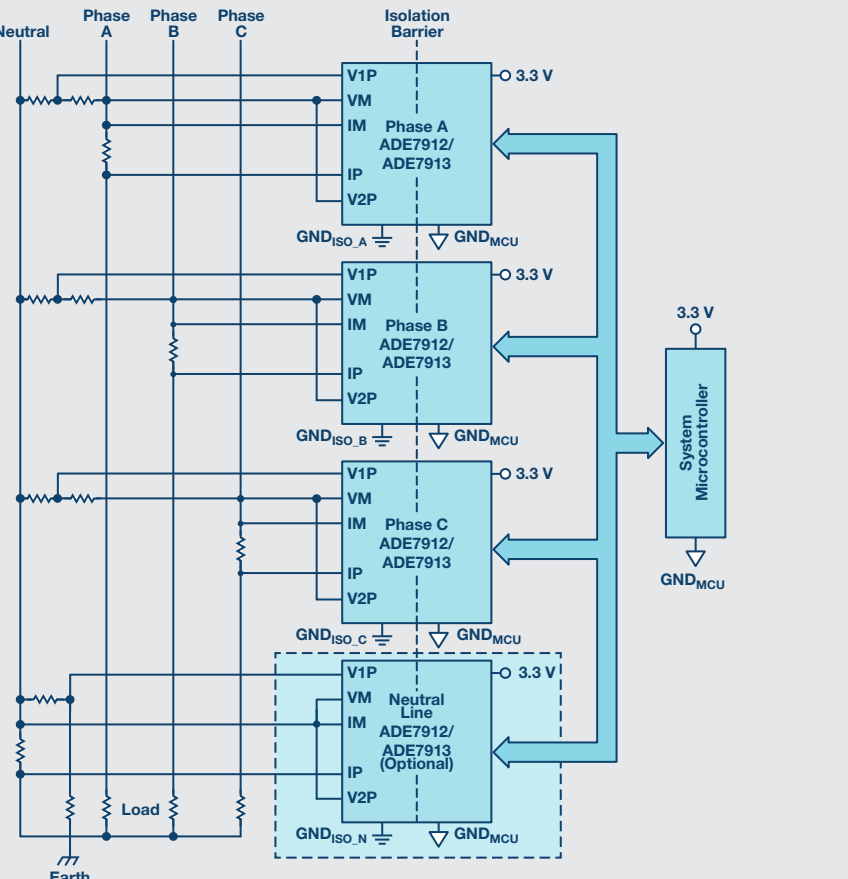


Vehicle Health

- ▶ Vibration sensors, isolators, and data converters to support on-board real-time health utilization monitoring systems (HUMS)
- ▶ Precision components enabling the use of airframe sensors such as LVDT, RVDT, and strain gages to assess vehicle conditions

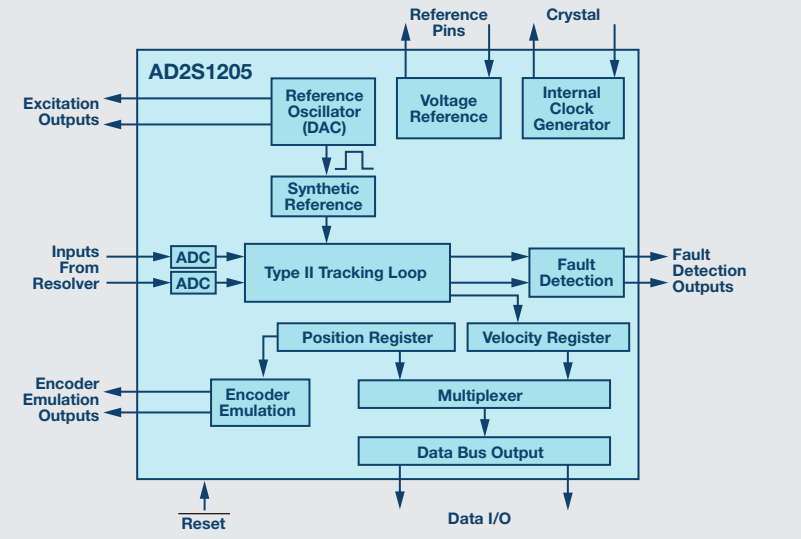


The diagram shows the ADIS16228 iSensor MEMS Vibration Sensor with pins for V1P, VM, IM, IP, V2P, and GND. It includes a block for Phase A, Phase B, and Phase C, and a block for Neutral Line. It also shows a block for VDD, GND, and a block for VDDRTC.



Airframe and Power

- ▶ Electric power management and conditioning systems
- ▶ High temperature systems for full authority digital engine controllers (FADECs)
- ▶ Flight control sensing and measuring via linear variable differential transformers (LVDTs) and related devices
- ▶ Motor control and isolation circuits for interfacing to physical control surfaces

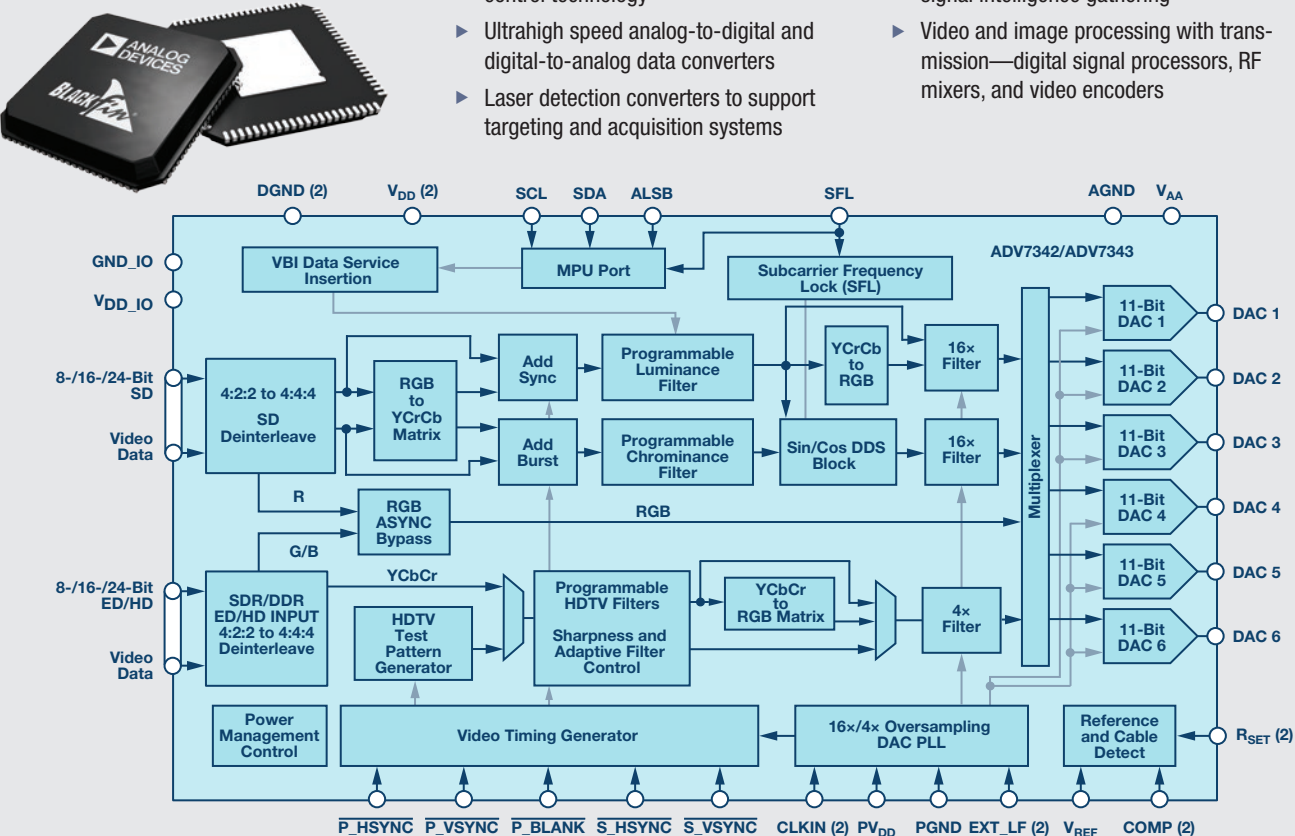


The diagram shows the AD2S1205 with pins for Excitation Outputs, Reference Pins, Crystal, Inputs From Resolver, Encoder Emulation Outputs, Reset, Data I/O, and Fault Detection Outputs. It includes blocks for Reference Oscillator (DAC), Voltage Reference, Internal Clock Generator, Synthetic Reference, Type II Tracking Loop, Fault Detection, Position Register, Velocity Register, Encoder Emulation, Multiplexer, and Data Bus Output.



Payloads and Data and Video Processing

- ▶ Payload stabilization and pointing—accelerometers and gyroscopes with control technology
- ▶ Ultrahigh speed analog-to-digital and digital-to-analog data converters
- ▶ Laser detection converters to support targeting and acquisition systems
- ▶ Precision analog-to-digital converters for a wide array of sensors—electronic and signal intelligence gathering
- ▶ Video and image processing with transmission—digital signal processors, RF mixers, and video encoders



The diagram shows the ADV7342/ADV7343 with pins for DGND (2), VDD (2), SCL, SDA, ALSB, SFL, AGND, VAA, and RSET (2). It includes blocks for VBI Data Service Insertion, MPU Port, Subcarrier Frequency Lock (SFL), 4:2:2 to 4:4:4 SD Deinterleave, RGB to YCrCb Matrix, Add Sync, Programmable Luminance Filter, YCrCb to RGB, 16x Filter, 11-Bit DAC 1, 11-Bit DAC 2, 11-Bit DAC 3, 11-Bit DAC 4, 11-Bit DAC 5, 11-Bit DAC 6, RGB ASYNC Bypass, RGB, Sin/Cos DDS Block, 16x Filter, Multiplexer, SDR/DDR ED/HD INPUT 4:2:2 to 4:4:4 Deinterleave, YCbCr, HDTV Test Pattern Generator, Sharpness and Adaptive Filter Control, YCbCr to RGB Matrix, 4x Filter, Power Management Control, Video Timing Generator, 16x/4x Oversampling DAC PLL, and Reference and Cable Detect.



Advanced Support For Unmanned Systems

Enhanced Products (EP)

Products from Analog Devices' EP process can be qualified over the temperature range of -55°C to $+125^{\circ}\text{C}$. EP products support NiPdAu lead finish and support STD-883 standards. All EP devices have separate data sheets along with a controlled manufacturing baseline—some products can be qualified up to $+175^{\circ}\text{C}$.

Die Products

ADI understands the need of our customers to purchase bare die for some specific applications and presently sells these products to meet our customers' needs.

DO 178 B/C and DO 254 Support

Analog Devices recognizes the need to support DO 178 B/C and DO 254 processes to support our customers certification. ADI can provide the correct artifacts and processes to support complex components and software.

Customized Solutions and System in Package (SiP)

System in package solutions provide reduced size and increase integration to optimize system performance and footprint. Using ADI's broad portfolio of die, advanced integrated solutions can be created for a wide and diverse range of applications.

Integrated Assemblies: Design and Production

ADI designs and manufactures high performance miniature subsystems for high reliability applications utilizing ADI's expertise in system analysis, MMIC and module design, mechanical packaging, automated manufacturing, RF testing, screening, and qualification. The majority of MMIC chips are ADI products that drive significant benefits in controlling performance, schedule, screening, qualification, packaging, and design optimization.

Material Declaration

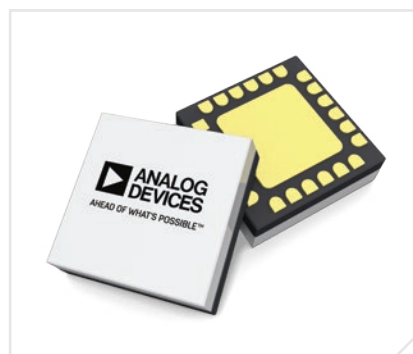
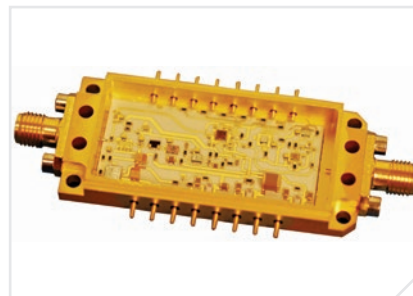
RoHS Compliance

Restriction of Hazardous Substances (RoHS) regulations restrict the use of four heavy metals (lead, mercury, cadmium, and hexavalent chromium) and two brominated flame retardants (polybrominated diphenyl ethers and polybrominated biphenyls) in electrical and electronic devices. ADI provides products that allow our customers to be compliant with RoHS regulations. For more information on ADI's RoHS compliance program, see [Analog Devices RoHS Compliance Information \(pdf\)](#).

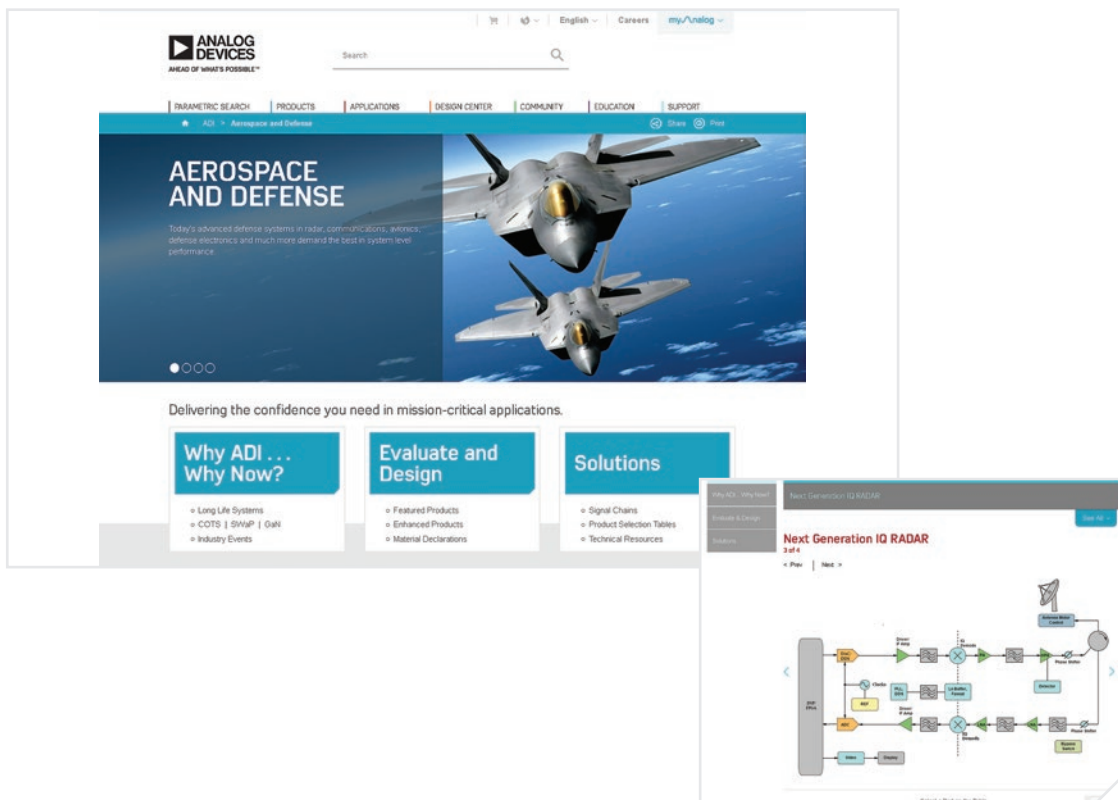
Analog Devices evaluation boards are specifically designed solely for the purpose of research and development and are made available solely on a business-to-business basis and therefore are excluded from the scope of the RoHS 2 Directive.

Export Classifications

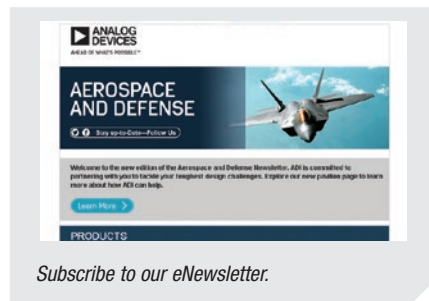
ADI is committed to maintaining full compliance with all U.S. and other national government export laws and regulations. In the U.S., ADI is subject to the U.S. Export Administration Regulations (U.S. EAR) for export and re-export of dual use items (these regulations are administered by the U.S. Department of Commerce). ADI is also subject to International Traffic in Arms Regulations (ITAR) for export and re-export of Defense Articles and Defense Services (these regulations are administered by the U.S. State Department). ADI's ITAR registration number is M-2477.



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