Product Overview

This chapter contains the following sections:

Overview

This hardware technical guide provides a product description, specifications, and compliance information for the Cisco Embedded Service 6300 Series Router.

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

The ESR6300 is a compact form factor embedded router module with a board size of 3.0" x 3.775"(76.2mm x 95.885mm). This module *may* fit in an enclosure that was *originally designed* for PC/104 modules with some additional adaptation. The more compact design simplifies integration and offers system integrators the ability to use the Cisco ESR6300 in a wide variety of embedded applications. The ESR card is available with a Cisco-designed cooling plate customized to the ESR, as well as without the cooling plate for system integrators who want to design their own custom thermal solution.

Note More on the PC/104 standard can be found on the PC/104 Consortium website at https://pc104.org/

Note IOx development is not supported on the ESR6300. While this is platform independent code, it is unsupported and untested on this device.

The following table provides the hardware product IDs and brief descriptions for the boards.

SKU	Description	Ports/Module Interfaces
ESR-6300-NCP-K9	Embedded Router Board without a cooling plate. (NCP = No Cooling Plate)	4 GE LAN ports 2 combo GE WAN ports 1 USB 3.0 port 1 async UART port 1 alarm input 1 Pluggable module interface
ESR-6300-CON-K9	Embedded Router Board with cooling plate. (CON = Conduction cooled).	4 GE LAN ports 2 combo GE WAN ports 1 USB 3.0 port 1 async UART port 1 alarm input 1 Pluggable module interface

Audience

This guide is for system integrators who are integrating the Cisco ESR6300 into a custom end product.

General Description

The ESR6300 is a ruggedized GigE Embedded Router platform for tactical, outdoor and mobile installations. Some of the key features are:

- Daughter board compact form factor 3.0" x 3.775"(76.2mm x 95.885mm)
- Class A EMC
- Industrial Temperature: -40C to +85C conduction plate temperature range
- 3.3V and 5V power inputs
- ARM Quad-Core A72 CPU, 1200MHz
- 4GB DDR4 memory capacity (32-bit + 4-bit ECC)
- 4GB usable (pSLC mode) eMMC flash
- Anti-counterfeit chip and Secure Boot
- Temperature Sensor
- Power consumption and voltage monitoring
- Gigabit Ethernet LAN Switch for 4 external LAN ports
- Gigabit Ethernet WAN PHY for 2 external WAN combo ports
- Interface to external features (requires additional circuitry):

    - Four GE 10/100/1000 LAN Ports (with PoE support)
    - Two GE combo (10/100/1000 and SFP) WAN Ports
    - One UART interface (for RS232 async serial port with flow control)

- One UART Console interface (for CPU console access)
- RTC (Real Time Clock) with customer-provided battery backup
- Push Button that supports the Zeroize feature
- One dry contact alarm input
- One USB 3.0 Host interface (for USB Flash Memory Device)
- One Cisco supported Pluggable Module Interface (for 4G/LTE module support)

Note In order to recover the device from a complete zeroization, it must be configured with a Cisco supported USB3.0 device. Before triggering the zeroization process, make sure you are familiar with the topics in Device Zeroization and Configuration Reset Overview!

Note The ESR6300 hardware uses GE as the name for the Gigabit Ethernet ports. However, Cisco IOS commands use Gi as the naming convention.

- Software: Cisco IOS-XE
- IPSec

ESR Board Layout and Dimensions

The following picture shows the ESR Board (left) with the cooling plate (right). The board dimensions are 3.0" x 3.775" (76.2mm x 95.885mm).

Board Without Cooling Plate

The following figures show the layout and dimensions of the ESR Board that is not equipped with the Cisco-designed cooling plate (ESR-6300-NCP-K9).

Note   Dimensions in inches. Tolerances (unless otherwise stated): .XX +/- 0.010, .XXX +/- 0.005
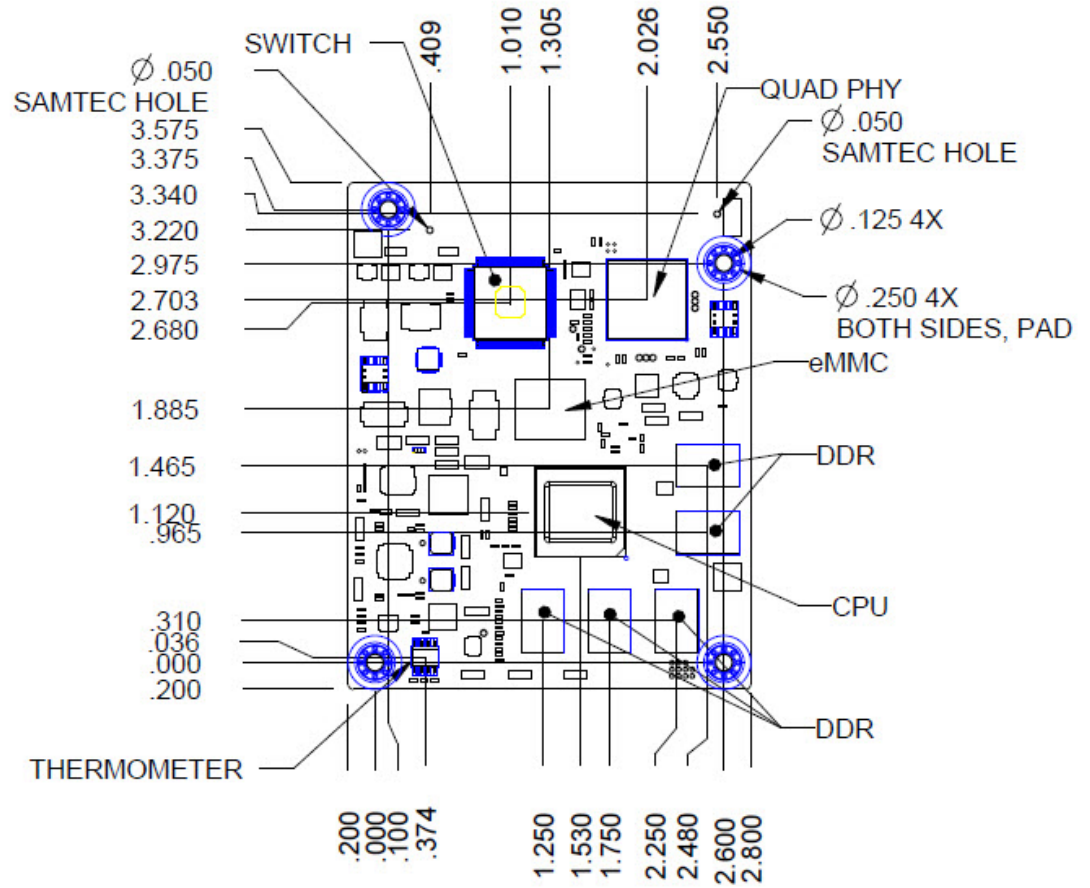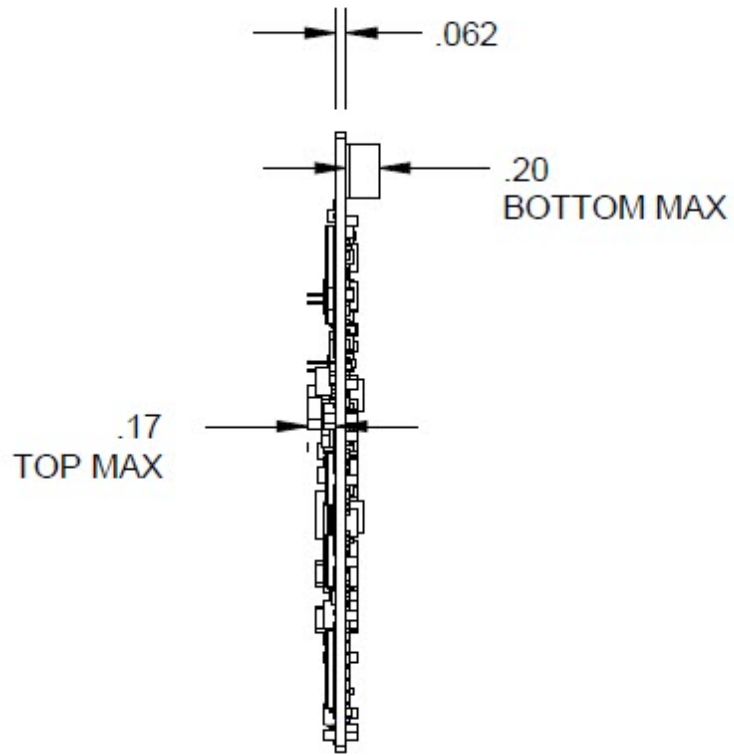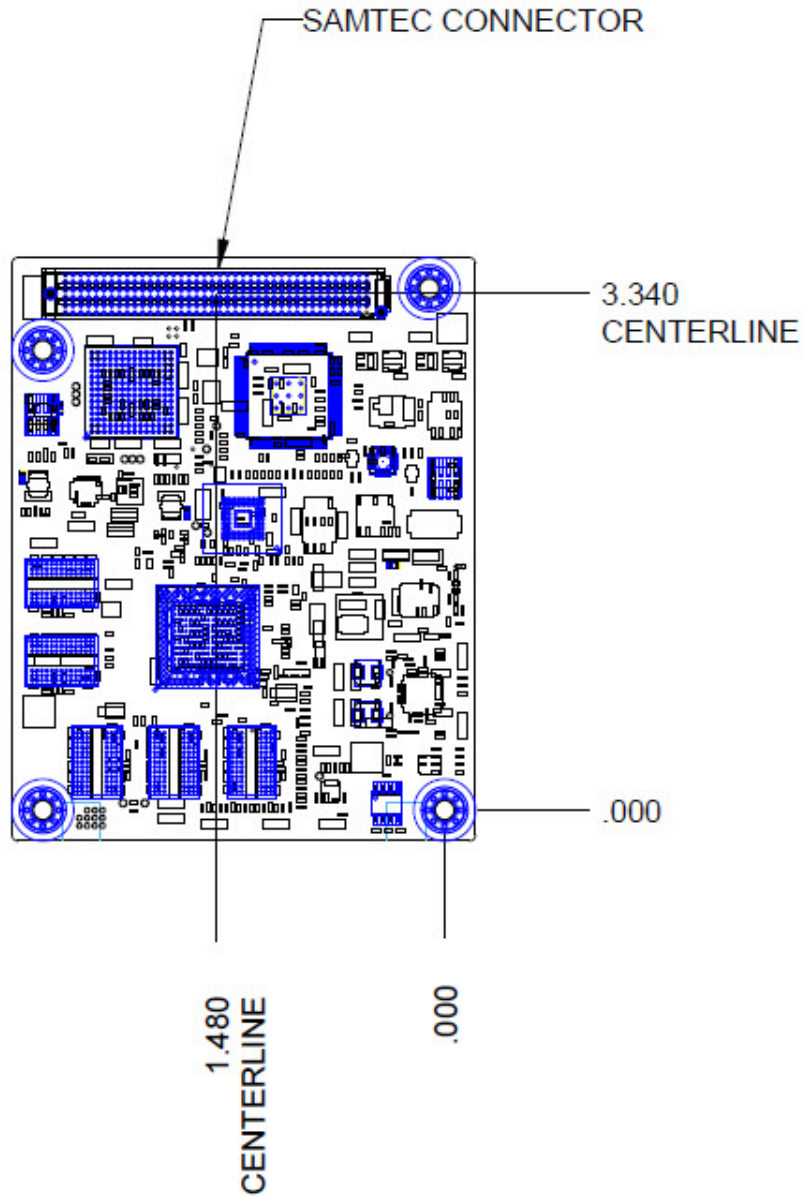
Figure 1: ESR-6300-NCP-K9

Figure 2: ESR-6300-NCP-K9

Figure 3: ESR-6300-NCP-K9

Board With Cooling Plate

The following figures show the layout and dimensions of the ESR Board that is equipped with the Cisco-designed cooling plate (ESR-6300-CON-K9).

> **Note**   Dimensions in inches. Tolerances (unless otherwise stated): .XX +/- 0.010, .XXX +/- 0.005
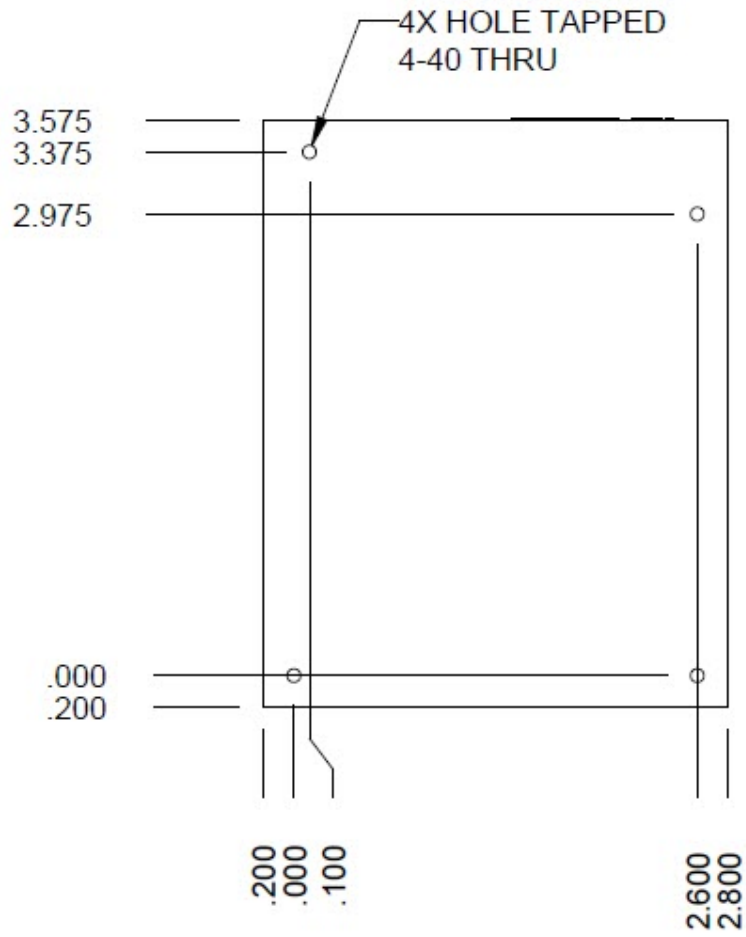
Figure 4: ESR-6300-CON-K9
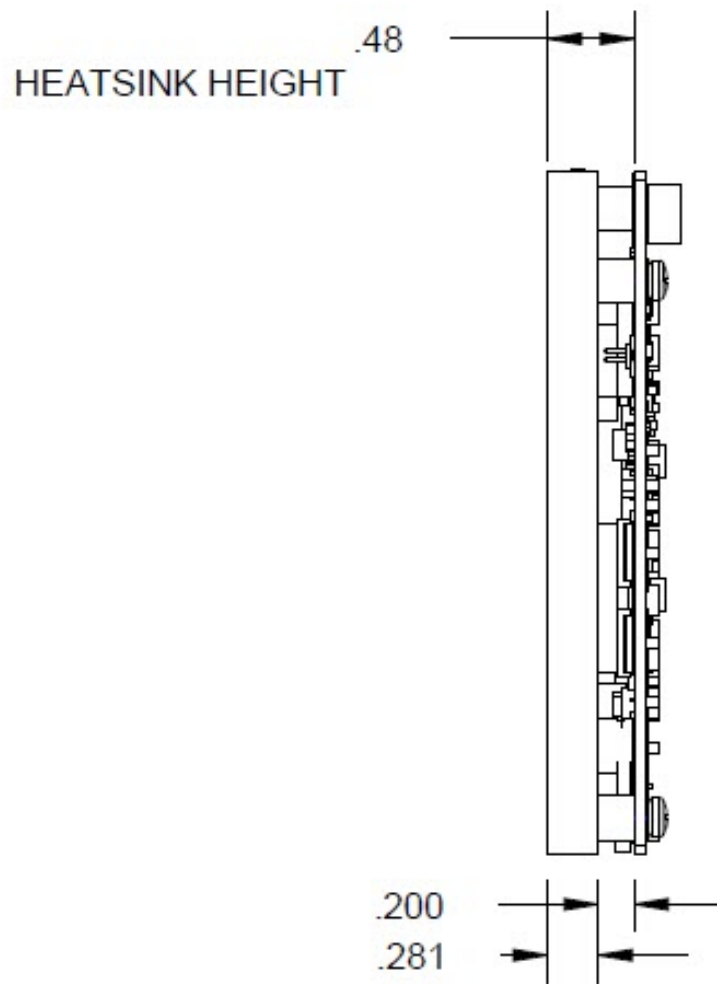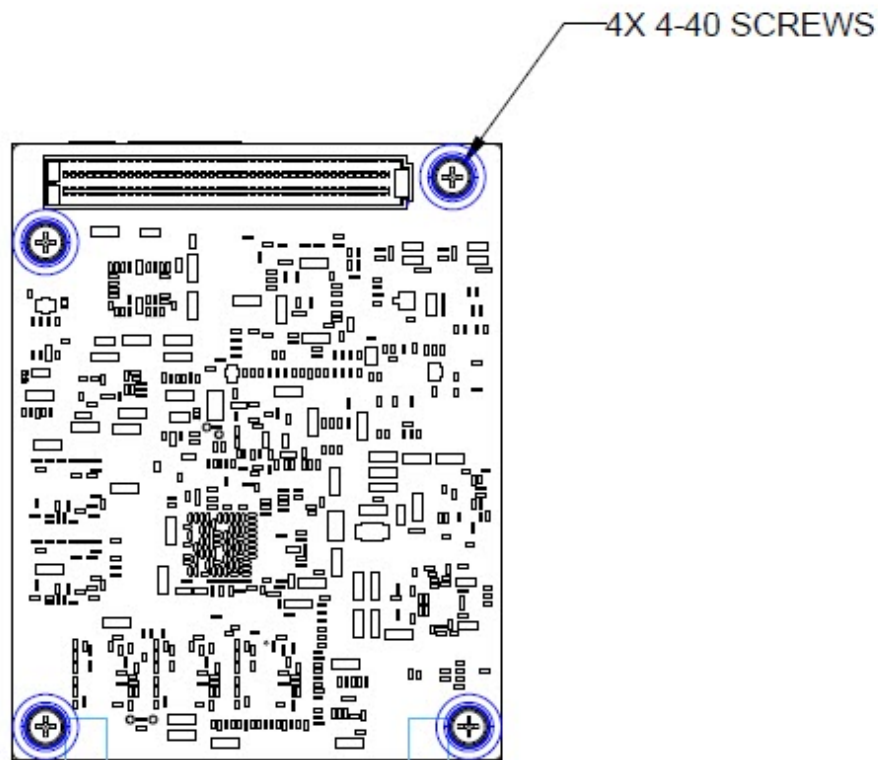
Figure 5: ESR-6300-CON-K9

Figure 6: ESR-6300-CON-K9

External USB 3.0

There is support for an external USB3.0 type A device built into the USB controller.

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Important   In order to recover the device from a complete zeroization, it must be configured with a Cisco supported USB3.0 device.

- Max 500mA at 5V
- Speed of operation: 1Mbps/12Mbps/480Mbps/5Gbps
- Storage only, not a data port

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Note   USBs with red/yellow port, for example the USBs with Sleep and Charge port, will not work on rommon prompt.