

DS-1302

10th Generation Intel® Xeon/Core™ Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer with 2 PCI/PCIe Expansion Slot



High Performance, Highly Expandable



Overview

The DS-1302 is a powerful embedded computer and brings unrivalled performance. It has versatile functionalities and rich industrial I/O. And most importantly, it has dual PCI/PCIe expansion capability. Equipped with Cincoze's CMI, CFM, MEC modular expansion, customization for additional I/O or other functionality to fulfill different applications couldn't be easier. The DS-1302 meets the requirements of industrial environments and is certified with industry standards. It delivers ultimate and reliable performance for factory automation, industrial automation and rolling stock applications.

- 10-core 10th-gen Intel® Xeon® and Core™ i9/i7/i5/i3 CPU (max 80 W TDP)
- 2x GbE LAN and optional 2x 10GbE LAN
- 2x 2.5" SATA storage, 3x mSATA sockets, 1x M.2 key M for NVMe SSD
- 2x PCI/PCIe expansion slots
- 3x full-size Mini PCIe sockets, 2x SIM card slots
- Optional CMI modules for I/O expansion
- Optional CFM modules for ignition sensing & PoE
- Wide operating temperature -40°C to 70°C
- MIL-STD-810G military standard and EN50155 (EN 50121-3-2 only)





10-CORE & 80W
Workstation Grade Processor Support!

10-Core, Up To 80 W CPU

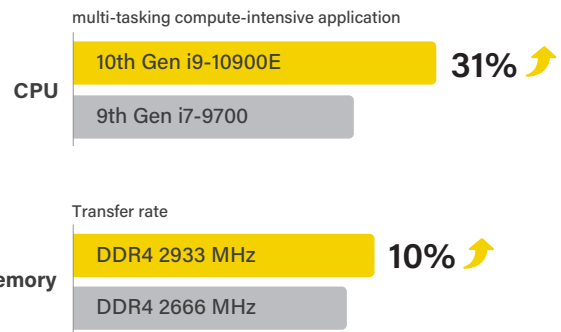
The DS-1300 series, powered by a workstation-grade 10th-gen Intel® Xeon® or Core™ i9/i7/i5/i3 CPU with up to 10-core architecture, provides superior processing performance. The DS-1300 supports Xeon® CPU up to 80 W TDP. It incorporates DDR4 2933/2666 MHz memory up to 64 GB, delivering unparalleled performance in a rugged, fanless system.

More Powerful & Faster Multiplies Productivity

The DS-1300 series's 10th-gen CPU brings to 31% better integer multi-tasking for compute-intensive application performance than 9th-gen CPUs*. DDR4 2933 MHz memory further increases speed by 10%***. The processing platform delivers the performance required to consolidate multiple workloads for intelligent devices and applications.

* 31% increase for 10th-gen i9-10900E 65W vs 9th-gen i7-9700 65W CPU

** 10% increase for 2933 MHz of DS-1300 vs 2666 MHz of DS-1200.

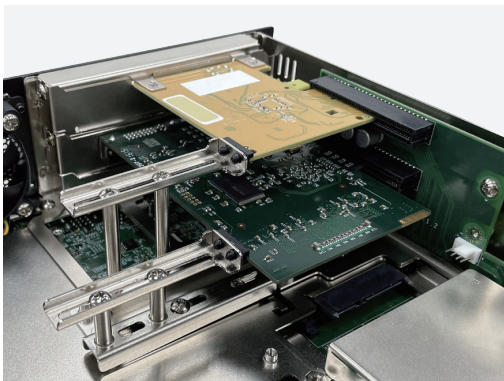


Industrial I/O and Modular Expansion

The DS-1300 series offers a vast array of industrial-focused I/O including up to 2x GbE LAN, 6x USB 3.2, and 2x USB 2.0, 2x RS232/422/485, 2x 2.5" SATA, 3x mSATA, 1x M.2 key M for NVMe SSD, 2x SIM card slots, 3x full-size Mini-PCIe and triple independent displays (DisplayPort, HDMI, VGA). It also features modular expansion through Cincoze's CMI/CFM modules, adding additional I/O or other functionality such as high-speed 10GbE LAN, PoE, and ignition sensing.

PCI/PCIe Add-on Cards

DS-1302 can accommodate dual PCI/PCIe add-on cards up to 110 mm x 237 mm (combined max 110 W). Flexible PCI/PCIe expansion allows the addition of I/O, GPU, image capture, data acquisition, and motion control cards for specific applications.



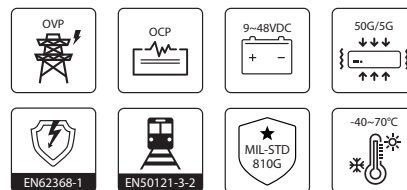
Adjustable PCIe Card Retainer

The PCI/PCIe expansion slots include two adjustable card retainers that firmly secure the PCI/PCIe add-on cards. The retainer is a cool feature that provides the extra protection needed to prevent add-on cards from shaking loose in high-vibration environments like rolling stock.

PATENT PENDING

Rugged Reliability Against Rigorous Environments

The DS-1300 series's fanless and cableless industrial-grade design can withstand rigorous environments. Its unique thermal design supports an extended operating temperature range from -40°C to 70°C. It has also passed stringent industry standards, including MIL-STD-810G military standard and EN50155 (EN 50121-3-2 only) for rolling stock environments.



Specifications

System

Processor	<ul style="list-style-type: none"> Intel® Xeon® Series Processor (80W / 35W): <ul style="list-style-type: none"> Intel® Xeon® W-1270E 8 Cores Up to 4.8 GHz, TDP 80W Intel® Xeon® W-1250E 6 Cores Up to 4.7 GHz, TDP 80W Intel® Xeon® W-1290TE 10 Cores Up to 4.5 GHz, TDP 35W Intel® Xeon® W-1270TE 8 Cores Up to 4.4 GHz, TDP 35W Intel® Xeon® W-1250TE 6 Cores Up to 3.8 GHz, TDP 35W Intel® Core® Series Processor (65W / 35W): <ul style="list-style-type: none"> Intel® Core™ i9-10900E 10 Cores Up to 4.7 GHz, TDP 65W Intel® Core™ i7-10700E 8 Cores Up to 4.5 GHz, TDP 65W Intel® Core™ i5-10500E 6 Cores Up to 4.2 GHz, TDP 65W Intel® Core™ i3-10100E 4 Cores Up to 3.8 GHz, TDP 65W Intel® Core™ i9-10900TE 10 Cores Up to 4.5 GHz, TDP 35W Intel® Core™ i7-10700TE 8 Cores Up to 4.5 GHz, TDP 35W Intel® Core™ i5-10500TE 6 Cores Up to 3.7 GHz, TDP 35W Intel® Core™ i3-10100TE 4 Cores Up to 3.6 GHz, TDP 35W Intel® Pentium® Series Processor (58W / 35W): <ul style="list-style-type: none"> Intel® Pentium® G6400E 2 Cores Up to 3.8 GHz, TDP 58W Intel® Pentium® G6400TE 2 Cores Up to 3.2 GHz, TDP 35W Intel® Celeron® Series Processor (58W / 35W): <ul style="list-style-type: none"> Intel® Celeron® G5900E 2 Cores Up to 3.2 GHz, TDP 58W Intel® Celeron® G5900TE 2 Cores Up to 3.0 GHz, TDP 35W
Chipset	<ul style="list-style-type: none"> Intel® W480E Chipset
Memory	<ul style="list-style-type: none"> 2x DDR4 SO-DIMM Socket, Support Up to 64GB (Un-buffered and non-ECC) Xeon / i9 / i7 Processor Supports Up to 2933MHz i5 / i3 Processor Supports Up to 2666 MHz Pentium / Celeron Processor Supports Up to 2400MHz
BIOS	<ul style="list-style-type: none"> AMI BIOS

Graphics

Graphics Engine	<ul style="list-style-type: none"> Integrated Intel® UHD-630 Graphics
Maximum Display Output	<ul style="list-style-type: none"> Supports Triple Independent Display
HDMI	<ul style="list-style-type: none"> 1 x HDMI Connector (4096 x 2160@30Hz)
DP	<ul style="list-style-type: none"> 2 x DisplayPort Connector (4096 x 2340@60Hz)
VGA	<ul style="list-style-type: none"> 1 x VGA Connector (1920 x 1200 @60Hz)

Audio

Audio Codec	<ul style="list-style-type: none"> Realtek® ALC888, High Definition Audio
Line-out	<ul style="list-style-type: none"> 1 x Line-out, Phone Jack 3.5mm
Mic-in	<ul style="list-style-type: none"> 1 x Mic-in, Phone Jack 3.5mm

I/O

LAN	<ul style="list-style-type: none"> 2 x GbE LAN, RJ45 <ul style="list-style-type: none"> - GbE1: Intel® I219 - GbE2: Intel® I210
COM	<ul style="list-style-type: none"> 2 x RS-232/422/485 with Auto Flow Control (Supports 5V / 12V), DB9
USB	<ul style="list-style-type: none"> 2 x 10Gbps USB 3.2 Gen2, Type A 4 x 5Gbps USB 3.2 Gen1, Type A 2 x 480Mbps USB 2.0, Type A
PS/2	<ul style="list-style-type: none"> 1 x PS/2, 6 Pin Mini-DIN Female Connector

Storage

SSD/HDD	<ul style="list-style-type: none"> • 1x 2.5" Front Accessible SATA HDD/SSD Bay (SATA 3.0) • 1x 2.5" Internal SATA HDD/SSD Bay (SATA 3.0)
mSATA	<ul style="list-style-type: none"> • 3x mSATA Socket (SATA 3.0, shared by Mini-PCIe socket)
M.2 SSD	<ul style="list-style-type: none"> • 1x M.2 Key M Type 2280 Socket, Support PCIe x4 NVMe SSD or SATA SSD (SATA 3.0)
RAID	<ul style="list-style-type: none"> • Support RAID 0/1/5/10

Expansion

PCI Express	<ul style="list-style-type: none"> • 2 x PCI/PCIe Expansion Slot with Optional Riser Card * Supports maximum dimensions of add-on card (H x L) : 110 x 237 mm
Mini PCI Express	<ul style="list-style-type: none"> • 3 x Full-size Mini-PCIe Socket
SIM Socket	<ul style="list-style-type: none"> • 2 x SIM Socket
CMI (Combined Multiple I/O) Interface	<ul style="list-style-type: none"> • 2 x High Speed CMI Interface for optional CMI Module Expansion • 2 x Low Speed CMI Interface for optional CMI Module Expansion
CFM (Control Function Module) Interface	<ul style="list-style-type: none"> • 1 x CFM IGN Interface for optional CFM-IGN Module Expansion

Other Function

External FAN Connector	<ul style="list-style-type: none"> • 1 x External FAN Connector, 4-pin Terminal Block (Support Smart Fan by BIOS)
Power Ignition Sensing	<ul style="list-style-type: none"> • Support Power Ignition Sensing Function with Delay Time Management and Selectable 12V/24V (With Optional CFM Module)
Clear CMOS Switch	<ul style="list-style-type: none"> • 1 x Clear CMOS Switch
Rest Button	<ul style="list-style-type: none"> • 1 x Rest Button
Instant Reboot	<ul style="list-style-type: none"> • Support 0.2sec Instant Reboot Technology
Watchdog Timer	<ul style="list-style-type: none"> • Software Programmable Supports 256 Levels System Reset

Power

Power Button	<ul style="list-style-type: none"> • 1 x ATX Power On/Off Button
Power Mode Switch	<ul style="list-style-type: none"> • 1 x AT/ATX Mode Switch
Power Input	<ul style="list-style-type: none"> • 9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	<ul style="list-style-type: none"> • 1 x Remote Power On/Off, 2-pin Terminal Block
Remote Power LED	<ul style="list-style-type: none"> • 1 x Remote Power LED, 2-pin Terminal Block
Total Power Budget	<ul style="list-style-type: none"> • 180W

Physical

Dimension (W x D x H)	<ul style="list-style-type: none"> • 227 x 261 x 128 mm
Weight Information	<ul style="list-style-type: none"> • 5.4 KG
Mechanical Construction	<ul style="list-style-type: none"> • Extruded Aluminum with Heavy Duty Metal
Mounting	<ul style="list-style-type: none"> • Wall Mount
Physical Design	<ul style="list-style-type: none"> • Fanless Design • Cableless Design • Jumper-less Design • Unibody Design

Reliability & Protection

Reverse Power Input Protection	<ul style="list-style-type: none"> • Yes
Over Voltage Protection	<ul style="list-style-type: none"> • Protection Range: 51~58V • Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	<ul style="list-style-type: none"> • 15A
Surge Protection	<ul style="list-style-type: none"> • 3.84 kV (impedance 12 ohm 1.2/50us waveform)
CMOS Battery Backup	<ul style="list-style-type: none"> • SuperCap Integrated for CMOS Battery Maintenance-free Operation
MTBF	<ul style="list-style-type: none"> • 371,393 Hours - Database: Telcordia SR-332 Issue 3, Method 1, Case 3

Operating System

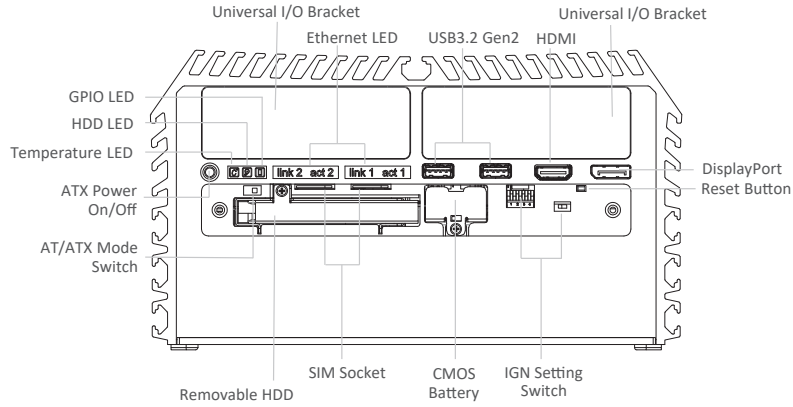
Windows	<ul style="list-style-type: none"> • Windows® 10
Linux	<ul style="list-style-type: none"> • Supports by project

Environment

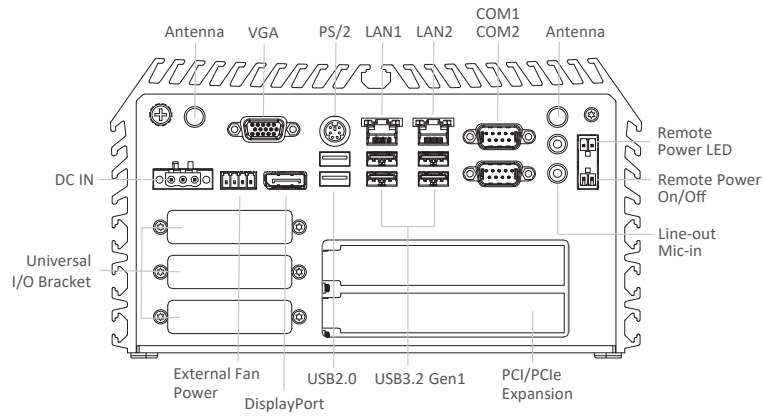
Operating Temperature	<ul style="list-style-type: none"> • 35W TDP Processor: -40°C to 70°C • 58W – 65W TDP Processor: -40~50°C (With External Fan Kit) • 80W TDP Processor: -40~40°C (With External Fan Kit) <p>* PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripherals; Ambient with air flow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14</p>
Storage Temperature	<ul style="list-style-type: none"> • -40°C to 85°C
Relative Humidity	<ul style="list-style-type: none"> • 95%RH @ 70°C (non-Condensing)
Shock	<ul style="list-style-type: none"> • MIL-STD-810G
Vibration	<ul style="list-style-type: none"> • MIL-STD-810G
EMC	<ul style="list-style-type: none"> • CE, FCC, ICES-003 Class A, EN50121-3-2 (Railway)
Safety	<ul style="list-style-type: none"> • IEC/EN 62368-1

External Layout

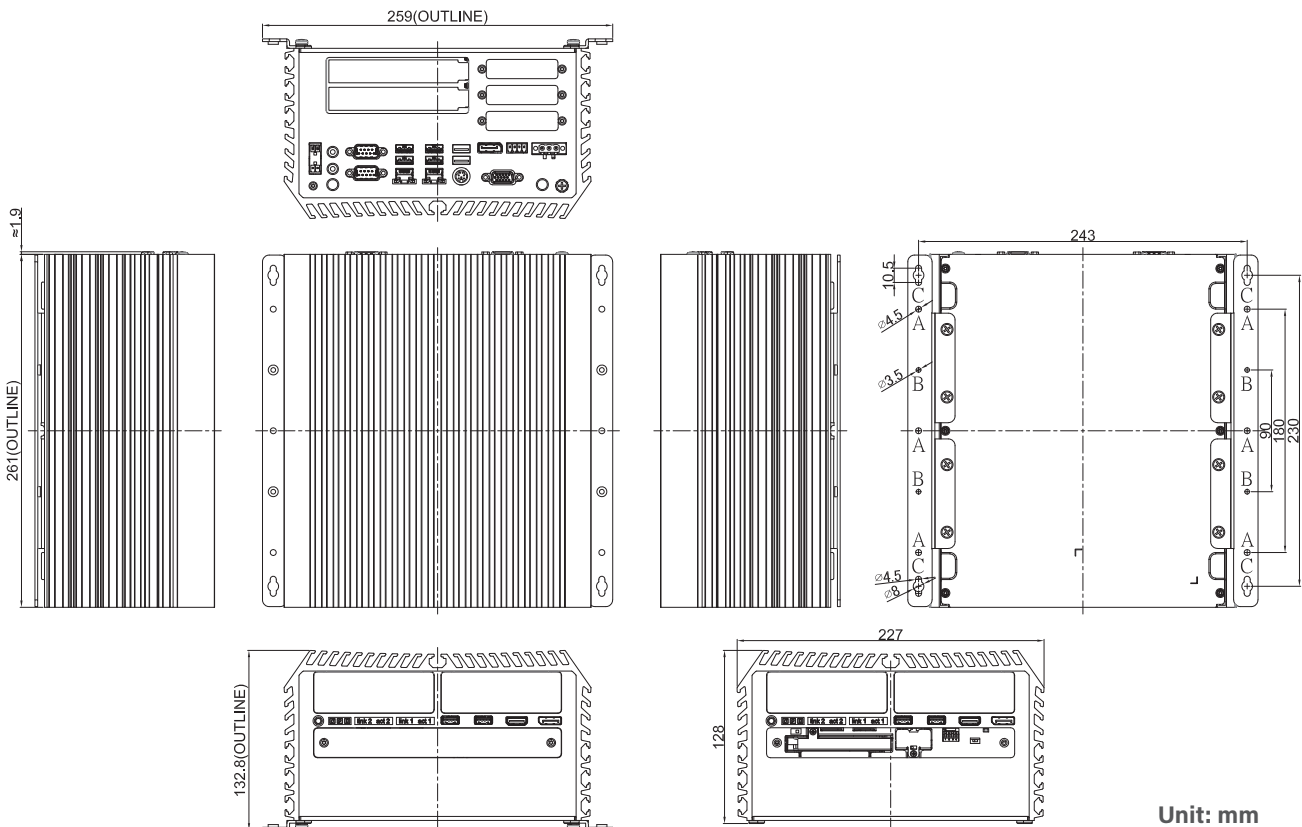
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

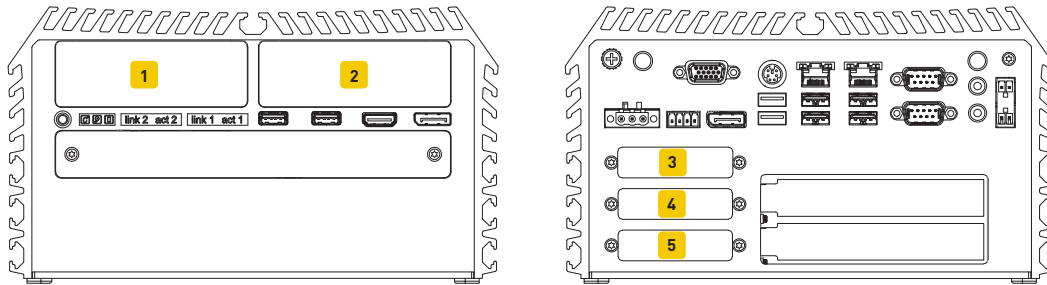
Available Models







Model No.	Description
DS-1302	10th Generation Intel Xeon/Core Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer with 2 PCI/PCIe Expansion Slot




Package Checklist

• DS-1302 Embedded System x1	• Heatsink Pack x1
• Utility DVD Driver x1	• Screw Pack x1
• Wall Mount Kit x1	• Power Terminal Block Connector x1
• Remote Function Terminal Block Connector x 2	• Fan Terminal Block Connector x 1

Optional I/O Modules



Model No.	Description	1	2	3	4	5
CMI-LAN01-R12/ UB1012 	CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout	V	V	--	--	--
CMI-M12LAN01-R12 /UB1010 	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 Cutout	V	V	--	--	--
CMI-10GLAN03-R10/UB1028 	CMI Module with 2x Intel X550 10GbE LAN, RJ45 Port / 1x Universal Bracket with 2x RJ45 Cutout	V	--	--	--	--
CMI-COM02/UB1004 	CMI Module with 4x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout	V	V	--	--	--
CMI-ICOM01/UB1004 	CMI Module with 4x Isolated RS232 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout	V	V	--	--	--
CMI-DIO02/UB1018 	CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout	V	V	--	--	--

Model No.	Description	1	2	3	4	5
MEC-COM-M212-DB9 /UB0303 	Mini-PCIe Module with 2x RS-232 Ports, 1x Standard DB9 Cable / 2x Universal Bracket each with 1x DB9 Cutout	--	--	V	V	V
MEC-USB-M102-15 /UB0314 	Mini-PCIe Module with 2x USB 3.0 Ports, 1x 15cm cable / 1x Universal Bracket with 2x USB Cutout	--	--	V	V	V
MEC-LAN-M002-30 /UB0311 	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout	--	--	V	V	V

Remark:

Maximum one CMI-COM02 or CMI-ICOM01 module can be installed in this system.

V : Compatible

Optional Function Modules

Model No.	Description
CFM-PoE03	CFM Module with PoE Function, Individual Port 25.5W
CFM-IGN101	CFM Module with Power Ignition Sensing Function, 12V/24V Selectable

Optional Riser Cards

Model No.	Description
RC-E8E8-01	Riser Card with 2 x PCIe8 Slots
RC-E16E1-01	Riser Card with 1x PCIe16 and 1x PCIe1 Slots
RC-E16PI-01	Riser Card with 1x PCIe16 and 1x PCI Slots
RC-PIPI-01	Riser Card with 2x PCI Slots

Optional Accessories

Model No.	Description
FAN-EX101	External Fan with 4pin Terminal Block Plug and Mounting Bracket, Support Smart Fan
GST120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug and Tubes, Level VI

Updated: Jul 14, 2021.

All product names, logos, and brands are the property of their respective owners. All company, product and service names used in this document are for identification purposes only. The use of these names, logos, and brands does not imply endorsement.

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

US

sales@assured-systems.com

Sales: +1 347 719 4508
Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050
Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28
Business Registration Number: 07699660