

Digi One Embedded

Single
Component
Solution for
Embedded
Applications



Technical Brief

This document provides specific technical information about the Digi One™ Embedded device server, including pinout diagrams and application drawings.

The Digi One Embedded is part of the Digi One product family of device servers that provides simple, reliable and cost-effective network connections for serial devices. The product addresses the industrial automation, retail and embedded systems markets, and provides fully transparent serial device connectivity over industry-standard Ethernet connections.

The Digi One Embedded allows both equipment manufacturers and systems integrators to network-enable products at a fraction of the cost required to develop a custom solution. It is a highly specialized single component solution that provides fully transparent operation, including an IEEE 802.3 compliant Ethernet controller and a robust onboard TCP/IP stack. The ultra compact DIL48 based design will withstand the harsh conditions of commercial and industrial environments.

In virtually any embedded application where extremely cost-effective serial connectivity over Ethernet is needed, the Digi One Embedded is the device server of choice.

Please contact Digi at 1-877-OEM-DIGI for additional information or to discuss your application specific requirements.

FEATURES

- > Embedded TCP/IP stack
 - > TCP Server
 - > TCP Client
 - > UDP
 - > Telnet (RFC2217)
- > Fully Network Configurable
- > Single Component Solution
 - > DIL48 Module
 - > Compact Form Factor (61 x 29 x 13 mm)
 - > Power Requirements +5V DC
- > TTL serial interface
 - > Full signal support for TX, RX, RTS, CTS, DTR, DSR and DCD
 - > Supports throughput from 300 to 115,200 bits/s
- > Network Interface
 - > IEEE 802.3 Compliant
 - > Integrated 10BaseT transceiver w/polarity correction
 - > Attachment Unit Interface (AUI) support
 - > Auto-detect for AUI/10Base-T interfaces

Digi International
11001 Bren Road E.
Minnetonka, MN 55343
U.S.A.
PH: 877-912-3444
952-912-3444
FX: 952-912-4952

Digi International GmbH
Joseph-von-Fraunhofer Str. 23
D-44227 Dortmund
Germany
PH: +49-231-9747-0
FX: +49-231-9747-111

Digi International (HK) Limited
Suite 1101-02, 11/F
K Wah Centre
191 Java Road
North Point
Hong Kong
PH: +852-2833-1008
FX: +852-2572-9989

www.digi.com



Connectware™

GENERAL SPECIFICATIONS

NETWORK INTERFACES

- > RJ-45 (10Base-T),
- > AUI

NETWORK PROTOCOLS

- > IP, ARP, RARP, ICMP, TELNET, TCP, UDP

DATA RATES

- > 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps

FLOW CONTROL

- > RTS/CTS, DTR/DSR, XON/XOFF, None

MODEM CONTROL

- > DTR, DSR, DCD

ENVIRONMENTAL

- > Operating temperature: 32°F to 158°F (0°C to 70°C)
- > Storage temperature: -67°F to 257°F (-55°C to 125°C)
- > Humidity: 20% to 80%

POWER REQUIREMENTS

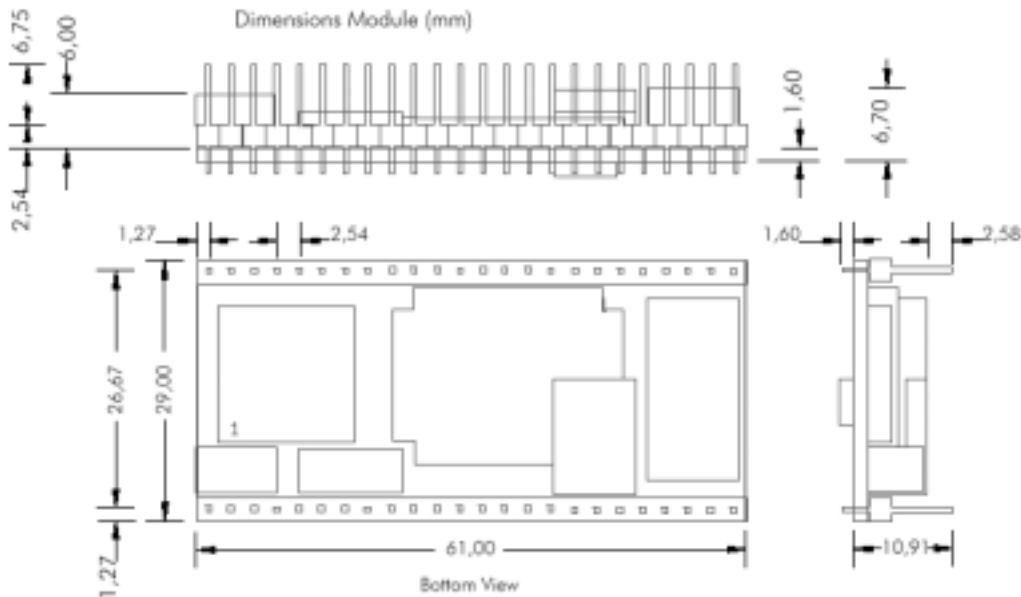
- > +5 V +/-10%, 250mA typical

DC CHARACTERISTICS

Vih, Vil	Input level	Min	Max	Units
	RESET\			
	Logic High	0.8Vdd	Vdd	V
	Logic Low	Vss	0.2Vdd	V
	All Other Inputs			
	CMOS			
	Logic High	0.7Vdd	Vdd	V
	Logic Low	Vss	0.3Vdd	V
	TTL			
	Logic High	2	Vdd	V
	Logic Low	Vss	0.8	V

DIMENSIONS

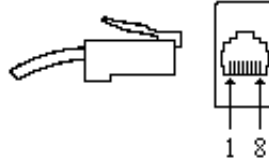
- > 61mm x 29mm x 13mm
- > 2.4in x 1.14in x 0.5in



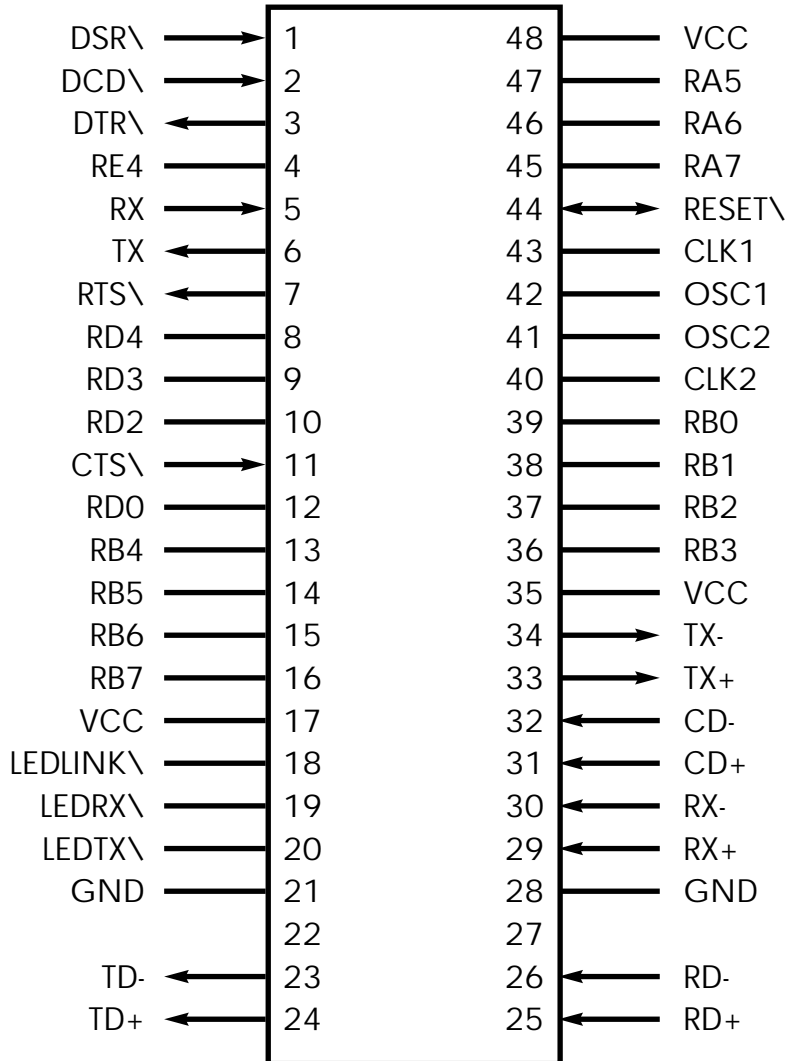
PINOUTS

Ethernet RJ-45 Pinout Reference

RJ-45 Rin	Digi One Embedded Signal
1	TD+
2	TD-
3	RD+
6	RD-



Digi One Embedded Pinout Reference



PINOUT INFORMATION

Pin	Signal	I/O	Description	Comments
General Pinouts				
21	GND	P	Ground	
28	GND	P	Ground	
17	VCC	P	Power	
35	VCC	P	Power	
48	VCC	P	Power	
44	RESET\	B	Reset	Low when active. The Digi One Embedded has its own RESET\ generator so this bi-directional pin may be left open.
Serial TTL Pinouts¹				
6	TX	O	Transmit Data	
5	RX	I	Receive Data	
7	RTS\	O	Request To Send	Low when active.
11	CTS\	I	Clear To Send	Low when active. When CTS\ is high transmission stops, if hardware flow control enabled.
3	DTR\	O	Data Terminal Ready	Low when active.
2	DCD\	I	Data Carrier Detect	Low when active.
1	DSR\	I	Data Set Ready	Low when active.

Pin	Signal	I/O	Description	Comments
Ethernet Pinouts				
18	LEDLINK\	O	LED Link Status	Low when 10BaseT link status is OK.
20	LEDTX\	O	LED TX	Low when receiving data.
19	LEDRX\	O	LED RX	Low when transmitting data.
29	RX+	I	AUI Receive	Receive data pins of the differential AUI pair ² .
3	RX-	I	AUI Receive	Receive data pins of the differential AUI pair ² .
31	CD+	I	AUI Collision ²	Collision pins of the differential AUI pair ² .
32	CD-	I	AUI Collision ²	Collision pins of the differential AUI pair ² .
33	TX+	O	AUI Transmit	Transmit data pins of the differential AUI pair ² .
34	TX-	O	AUI Transmit	Transmit data pins of the differential AUI pair ² .
25	RD+	I	10BaseT Receive	
26	RD-	I	10BaseT Receive	
24	TD+	O	10BaseT Transmit	
23	TD-	O	10BaseT Transmit	
Clock Pinouts				
43	CLK1			Not used ³
42	OSC1			Not used ³
41	OSC2			Not used ³
40	CLK2			Not used ³

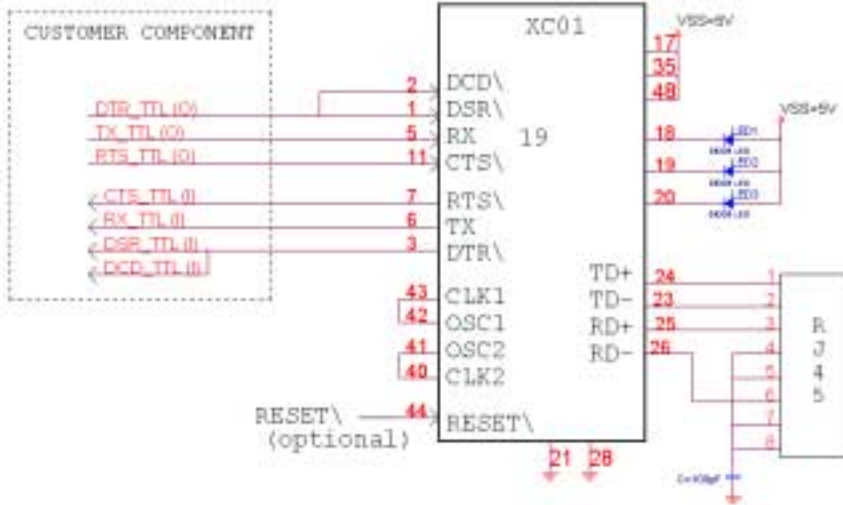
1 Default serial line setting is 9,600 bit/s, 8 bit, no parity, 1 stop bit, no flow control.

2 10BaseT interface connection always has priority over AUI interface connection.

3 CLK1 will be connected to OSC1, and CLK2 will be connected to OSC2.

SAMPLE APPLICATIONS

Serial Network Controller



EIA-232 Network Controller

