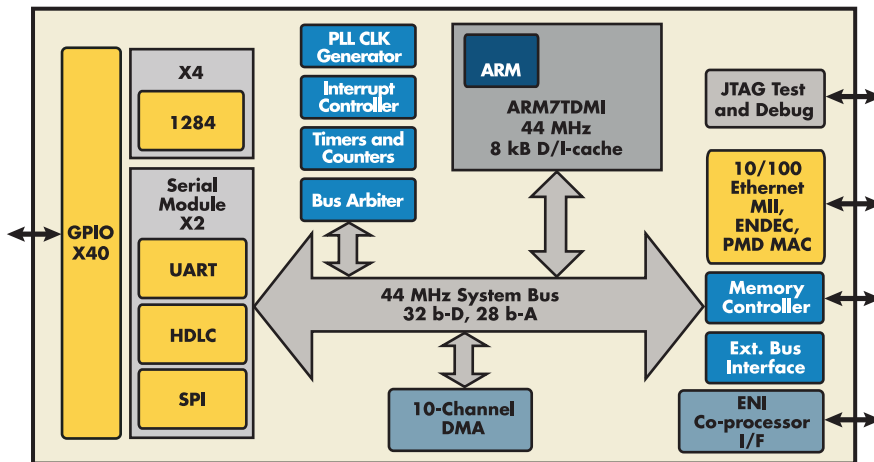


## NET+50

### 208-Pin BGA or PQFP; Lead-Free, RoHS Compliant



- 10/100Base-T Ethernet
- 8 kB on-chip cache
- Extensive GPIO
- 32-bit, 44 MHz, NET+ARM processor



### Features/Benefits

- 32-bit high-performance ARM7TDMI RISC processor
- Integrated 10/100Base-T Ethernet MAC
- 8 kB internal cache or 16 kB of RAM
- 10-channel DMA controller
- Large 2 kB Rx buffer for reliable network performance
- Software compatibility across product line to ease future migration
- Supported by NET+Works®, a complete production-ready networking software, royalty-free NET+OS® real-time operating system comprehensive development tools, and a development board
- Improves time to market and reduces design risk with pre-integrated hardware and software
- Reduces product unit costs with complete system-on-chip and a royalty-free operating system
- Saves engineering resources – no specialized networking development required

### Overview

The NET+50 is a low-cost, high-performance 32-bit network attached ARM7 processor developed especially for print servers. It includes an ARM7TDMI microprocessor core, integrated 10/100Base-T Ethernet MAC with an MII interface, a 10-channel DMA controller and a memory controller supporting all of the popular memory devices in use today.

Like all of our processors, the NET+50 is supported by the royalty-free NET+Works® software development tool suite. The integrated NET+Works package contains either Green Hills® MULTI® or Microcross GNU X-Tools™, MAJIC™ debugger, Express Logic's ThreadX™ real time operating system, a TCP/IP stack, networking applications software, utilities, and numerous networking applications examples.

Please contact us at 1-877-OEM-DIGI or 952-912-3444 for additional information or to discuss your specific application requirements.

# Hardware Specifications

## 32-BIT ARM7TDMI RISC PROCESSOR

- 44 MHz 32-bit ARM CPU
- 15 general purpose 32-bit registers
- 32-bit program counter and status register
- 5 supervisor modes, 1 user mode

## ON-CHIP CACHE

- 8 kB internal cache or 16 kB RAM
- 4-way set associative
- Lockable entries
- Write through

## INTEGRAL 10/100 ETHERNET MAC

- 10/100 Mbs MII PHY
- Full- or half-duplex
- Station, broadcast, multicast address detection and filtering
- 128B transmit buffer
- 2 kB receive buffer
- Intelligent receive side-buffer size selection
- External CAM filtering support

## 10-CHANNEL DMA CONTROLLER

- 2 dedicated to Ethernet transmit/receive
- 4 dedicated to serial transmit/receive
- 2 dedicated to 1284 interface
- 2 dedicated to external peripherals
- Flexible buffer management

## IEEE 1284/ENI/GPIO INTERFACE USING SHARED PINS

- 4 IEEE 1284 parallel ports, host mode
- 64 K shared RAM ENI interface (8- or 16-bit)
- Full-duplex FIFO mode interface (8- or 16-bit)
- 32 B transmit and 32 B receive FIFOs

## SERIAL PORTS

- 2 fully independent HDLC/UART/SPI serial ports
- 32B transmit and 32B receive FIFOs
- Internal programmable bit rate generators
- Bit rates from 75 bps to 230 Kbps 16X mode
- Bit rates from 1200 bps to 4 Mbps: 1X mode
- Odd, even, or no parity
- 5, 6, 7 or 8 bits
- 1 or 2 stop bits
- Both internal & external clock support
- Receive side character and buffer gap timers
- 4 receive side data match detectors

## EXTERNAL BUS INTERFACE/MEMORY CONTROLLER

- 44 MHz bus speed
- 5 independent programmable chip selects
- Supports 8-, 16-, 32-bit peripherals
- Supports external address decoding and cycle termination
- Supports dynamic bus sizing (8-, 16-, & 32-bit)
- ASYNC and SYNC peripheral timing
- All chip selects support SRAM, EDO DRAM, SDRAM, Flash, EEPROM without external glue logic
- Internal DRAM address multiplexing
- Internal refresh controller
- 256 MB addressing per chip select
- Burst-mode support
- 0-15 wait states per chip select
- Bootstrap support

## TIMERS

- 2 independent 27-bit programmable timers
- Programmable watch-dog timer
- Programmable bus timer

## GENERAL PURPOSE I/O

- 40 programmable I/O pins
- 16 general purpose input only pins
- 36 programmable edge or level interrupts

## CLOCK GENERATOR

- Simple external crystal
- On-board Phase Locked Loop
- Supports direct external clock input

## PACKAGE

- 208-pin BGA, 0.8 mm pitch
- PQFP
- Lead-free; RoHS compliant

## OTHER

- Operating voltage:
  - Core: 2.5V  $\pm$  10%
  - I/O Ring: 3.3V  $\pm$  10%
- Operating temperature range: -40° C to 85° C

## NET+Works Integrated Development Package

NET+ARM network-attached processors are the core of the NET+Works family of solutions that add intelligence and connectivity to electronic devices. We offer extensive networking software to support industrial automation, building automation, point-of-sale, office automation and other enterprise applications.

### DEVELOPMENT TOOLS

- Green Hills® MULTI® IDE or Microcross GNU X-Tools™

### RTOS

- ThreadX® picokernel

### BOARD SUPPORT PACKAGE

- 10/100Base-T Ethernet
- UART
- SPI
- HDLC
- DMA
- Flash
- 1284 peripheral

### NETWORKING PROTOCOLS

- HTTP v1.1 Server
- POP3 and SMTP Email
- FTP Client and Server
- SNMP MIBII and proxy agent
- DHCP Client & DNS Client

### UTILITIES

- HTML-to-C compiler
- Download of Flash images
- Code builds
- File system

### DEVELOPMENT BOARD

- NET+50 based development board with Raven JTAG In Circuit Emulator (ICE)

### TECHNICAL SUPPORT

- Software maintenance and technical support plans are available

### MODEL.....PART NUMBERS

#### Model

For NET+OS Operating System  
 For No Operating System, pSOS License  
 For No Operating System

#### BGA

NET+50-BIT  
 NET+50-BINP  
 NET+50-BIN

#### PQFP

NET+50-QIT-3  
 NET+50-QINP-3  
 NET+50-QIN-3

Note: OS versions contain paid fees for the run-time license.

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Digi International, the leader in device networking for business, develops reliable products and technologies to connect and securely manage local or remote electronic devices over the network or via the web. With over 20 million ports shipped worldwide since 1985, Digi offers the highest levels of performance, flexibility and quality.

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