

# Infrared Products Family

## Product Information



In focusing on connectivity solutions for our customers, Microchip now offers products to support infrared wireless communication. With the explosive growth of mobile phones, Personal Digital Assistants (PDAs) and other handheld electronic devices, the need for a simple, low-cost wireless communication method has grown as well.

The MCP2120 Infrared Encoder/Decoder is the first low-cost, easy-to-use infrared peripheral from a company that also has a broad range of microcontrollers and other related products specifically targeted for embedded systems. Utilizing this device and an off-the-shelf infrared transceiver, Microchip customers will now be able to add wireless communication capability to their designs. The MCP2120 enables customers to add infrared wireless communication capability to their embedded systems by a simple connection to a micro-controller UART peripheral on one end and an infrared transceiver at the other end.

If interoperability with other infrared enabled devices is required in your design, Microchip again has your solution. The revolutionary MCP2150 Infrared Communications Controller supporting the IrDA® Standard is simply the smallest, simplest, most economical way of adding IrDA cordless connectivity to embedded applications. In the past, supporting the complex IrDA Standard protocol stack on the host microcontroller required a large amount of system resources and protocol stack knowledge. The MCP2150 off-loads these requirements to a peripheral device, freeing up the system designer to focus on the design, not the communication with the outside world.

Applications for these infrared communication products include application-specific PCs and specialty peripherals, and wireless handheld data acquisition systems in the industrial market, pagers and modems in the communications market, POS terminals, printers and digital cameras in the consumer market, and fleet management systems in the automotive market. Any application where a cost-effective method of transferring data without a cable is the desired, Microchip has the solution.



### MCP2120 Features:

- Supports IrDA Physical Layer Specification
  - (baud rates up to 115.2k)
- Can support higher speeds than 115.2k bps with higher frequency crystal oscillator
- Connects to standard microcontroller UART peripherals
- Hardware and proprietary software baud rate selection
- Interfaces to industry standard infrared transceivers

### MCP2150 Features:

- Implements IrDA standard protocol stack on small, low-cost device
  - Includes support for Ir Link Access Protocol (IrLAP), Ir Link Management Protocol (IrLMP), Tiny Transport Protocol (Tiny TP) and IrComm portions of the IrDA Standard protocol stack
- 18-pin PDIP, 18-pin SOIC and 20-pin SSOP packages
- Supports baud rates of 9600, 19.2k, 57.5k, and 115.2k bps
- Includes encoder/decoder capability from UART bitstreams to IrDA Standard specified pulses
- Connects to standard microcontroller UART peripherals and optical transceivers

### Related Datasheets and Other Literature:

- DS21618 MCP2120 Datasheet
- DS21655 MCP2150 Datasheet
- AN756 Using the MCP2120 for Infrared Communication
- AN758 Using the MCP2150 to add IrDA Standard cordless connectivity
- TB91046 Connecting the MCP2150 to a Psion OS
- TB91047 Connecting the MCP2150 to a Windows® CE OS
- TB91048 Connecting the MCP2150 to a Windows® OS
- TB91049 Connecting the MCP2150 to a Palm® OS

# Infrared Products Family *Continued*

## Additional Information:

- Microchip's web site: [www.microchip.com](http://www.microchip.com)
- Microchip's *Technical Library CD-ROM*, Order No. [DS00161](#)
- *Analog Interface Handbook*, Order No. [DS00207](#)
- Product Line Card, Order No. [DS00148](#)
- *Analog Design Pack CD-ROM*, Order No. [DS51205](#)
- More than 112 Application Notes available:
  - *Embedded Control Handbook*, Order No. [DS00092](#)
  - *Embedded Control Handbook, Volume 2, Math Library*, Order No. [DS00167](#)
  - *Embedded Control Handbook Update 2000* Order No. [DS00711](#)
- *Microchip's Overview, Quality Systems and Customer Interface System*, Order No. [DS00169](#)

## Infrared Product Family

Product	Max Baud Rate	Xmit/rec Formats Supported	Voltage Range	Temperature Range	# Pins/Packages	Unique Features
MCP2120	115.2k*	1.63μs	2.7V to 5.5V	-40°C to +85°C	14P, 14SO	HW and SW baud rate selection
MCP2150	115.2k	1.63μs	2.7V to 5.5V	-40°C to +85°C	18P, 18SO, 20SS	Embeds IrDA Standard protocol stack on-chip

\*Can run up to 312.5k baud with higher frequency clock input.

**Package Key:** P = PDIP SO = SOIC SS = SSOP

## Development Tool Support

The MCP2120/MCP2150 Infrared Developer Kit includes everything needed to create a system that communicates using infrared. The kit contains two MCP2120 developer boards enabling a complete system (transmitter and receiver) to be implemented. Also included is an MCP2150 developer board that can be used to set up a system to communicate with other devices that contain the IrDA feature. On these developer boards, customers can configure input and output options. Input options include direct connection to a host UART or through on-board headers. Output options include off-the-shelf transceiver and a minimal cost component solution that is jumper-selectable. All of this functionality is designed to get the user communicating via infrared in the shortest amount of time.

### Americas

Atlanta	(770) 640-0034
Austin – Analog	(512) 345-2030
Boston	(978) 692-3848
Boston – Analog	(978) 371-6400
Chicago	(630) 285-0071
Dallas	(972) 818-7423
Dayton	(937) 291-1654
Detroit	(248) 538-2250
Los Angeles	(949) 263-1888
Mountain View	(650) 968-9241
New York	(631) 273-5305
Rocky Mountain	(480) 792-7966
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Toronto	(905) 673-0699

### Asia /Pacific

Australia	61-2-9868-6733
China – Beijing	86-10-8528-2100
China – Shanghai	86-21-6275-5700
Hong Kong	852-2-401-1200
India	91-80-229-0061
Japan	81-45-471- 6166
Korea	82-2-554-7200
Singapore	65-334-8870
Taiwan	886-2-2717-7175

### Europe

Denmark	45 4420 9895
France	33-1-69-53-63-20
Germany	49-89-627-144 0
Germany – Analog	49-89-895-650 0
Italy	39-039-65791-1
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