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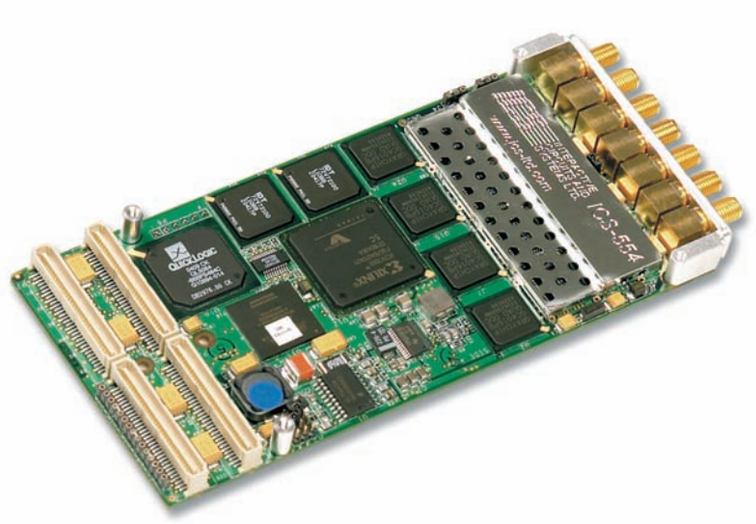
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Find the *GE Fanuc / ICS ICS-554B-4-MN* at our website: *Click HERE*

GE Fanuc
Embedded Systems



ICS-554

4-Channel, 14-Bit, 105 MHz PMC ADC Board with Down-Converters and Xilinx FPGA

Features

- Available in 1, 2 or 4 channel versions with or without DDCs
- Up to 105 MHz simultaneous sampling of all channels
- Internal or external clock and trigger
- >72 dB signal-to-noise ratio
- >85 dB spurious free dynamic range
- 1 MByte onboard memory storage
- User programmable 3 million gate Xilinx FPGA
- Uncommitted Pn4 user I/O PMC interface

Designed for communications, radar and test & measurement applications, the ICS-554 PMC product family combines unsurpassed ADC technology with industry-leading DSP expertise to provide an efficient combination of cost, size and performance in a single PMC site.

The ICS-554 PMC module consists of four 14-bit ADCs sampling synchronously at frequencies up to 105 MHz. Simultaneous down conversion of up to 16 arbitrary signal bands (e.g.16 FDM signals) is provided by four optional Graychip GC4016 quad digital down - converters (DDC). ICS-554A and ICS-554B include a 1 million gate Xilinx FPGA, while ICS-554D and ICS-554E each include a 3 million gate device. These FPGAs are almost entirely available for user applications, providing a powerful signal processing capability.

The ICS-554 also offers 1 MByte of onboard memory storage organized as two independent 0.5 MByte FIFOs, thus providing for simultaneous wideband and narrowband operation. The PCI interface is PCI 2.2 compatible, providing a fast 64-bit, 66 MHz DMA interface. All 64 Pn4 User I/O signals are routed to the FPGA and will support LVTTL signaling. LVDS signaling is also supported on ICS-554D and ICS-554E only; the user may specify LVDS termination requirements when ordering.

As for all of our products, the ICS-554 supports coherent sampling on single channels (from trigger interval to trigger interval), across multiple channels on the same board or across multiple boards. The latter capability provides for beam forming and time-of-arrival applications.

The ICS-554 can be used with any type of carrier card that will accept a PMC module, including VME, PCI and CompactPCI. When used with an appropriate DSP/processor carrier card, the ICS-554 offers a very powerful single slot solution for software radio applications.

The product is supported by comprehensive Software Development Kits for VxWorks, Windows and Linux, consisting of a kernal model driver, full API and application examples. A LabVIEW sample application is provided under Windows only and enable customers to quickly demonstrate the functionality of the board and driver.

A Hardware Development Kit (HDK) is available for customers wishing to develop FPGA signal processing applications in the onboard FPGA. This includes connectivity (.ucf) information, the default logic source file, a JTAG Emulator PCI Bus core loader and a manual providing a comprehensive description of the code development process.

For customers who prefer not to develop their own FPGA code, we provide standard FPGA applications such as wideband DDC, FFT and time stamping. These and other functions can be quoted on request.

The ICS-554 is ideally suited for demanding applications in military communications, 3G and 4G cellular base station development, signal intelligence, smart antenna, radar beam forming, wireless test & measurement and satellite ground stations.

GE FANUC

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ICS-554 4-Channel, 14-Bit, 105 MHz PMC ADC Board with Down-Converters and Xilinx

Specifications

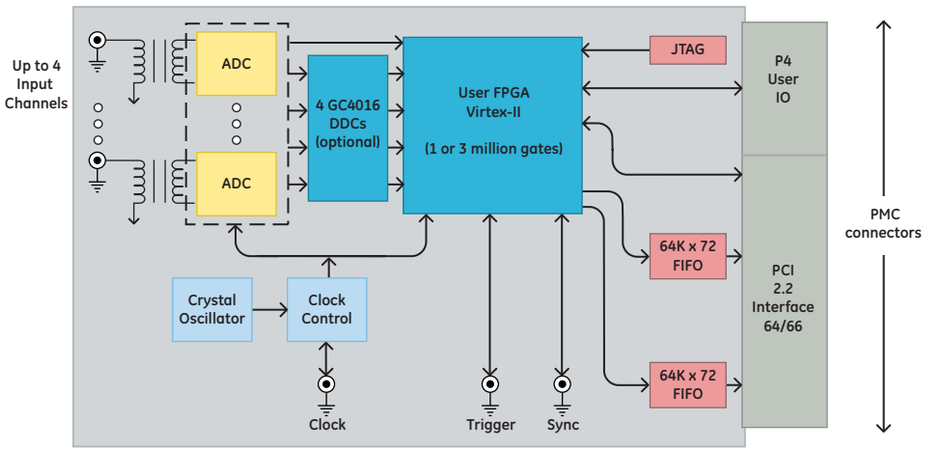
I/O specifications

- One, two or four analog input channels
- 14-bit ADC resolution
- Maximum sampling rate
  - 105 MHz/ch (four channels simultaneous)
  - 100 MHz/ch (when using DDCs)
  - 80 MHz/ch (maximum with ICS-554A)
- Minimum sampling rate
  - 30 MHz/ch (0.9375 MHz/ch with maximum board decimation ratio - ICS-554A & B)
  - 80 MHz/ch (ICS-554D & E)
- SMA coaxial connectors
- 50 Ohm input impedance
- Transformer or DC (ICS-554D) input coupling
- Full scale input
  - +5.5 dBm (approx.1.2 Vpp) into 50 Ohms
  - +3 dBm for the ICS-554D (approx. 0.9 Vpp)
- Internal crystal frequency
  - 100 MHz/ch (ICS-554B, D & E)
  - 80 MHz/ch (ICS-554A)
  - Custom frequencies on request
- >85 dB (>80 dB for the ICS-554D) spurious free dynamic range
- Sampling at rising edge of sample clock
- >71 dB (>67 dB for the ICS-554D) signal-to-noise ratio
- Sampling occurs following rising or falling edge of external trigger (programmable). Trigger must remain high for at least one clock cycle.
- Maximum DDC output bandwidth
  - 10 MHz (Fs=100 MHz, four channel output)
  - 5 MHz (Fs=100 MHz, eight channel output)
  - 2.5 MHz (Fs=100 MHz, 16 channel output)
- Minimum DDC output bandwidth
  - 4.9 kHz (Fs=100 MHz, 16 channel output)
- FPGA Type
  - Xilinx XC2V1000 (1 million system gates) or XC2V3000 (3 million system gates)

General Specifications

- 0 to +50 °C operating temperature
- -40 to +85 °C storage temperature
- 95% non-condensing humidity
- ~ 200 linear feet per minute (lfpm) cooling
- Current draw
  1.0A - 2.5A @ +5V
  Up to 1.5A @ +3.3V
  - 0.3A @ +12V, -12V (ICS-554D only)

Block Diagram



Order Information

ICS-554A-x-yy, ICS-554B-x-yy
105 MHz ADC PMC module with 1 million gate Xilinx (XC2V1000) FPGA
ICS-554A – maximum 80 MHz sampling
X: Number of channels 1, 2 or 4
yy: blank or MN for DDCs

ICS-554D-x-yy, ICS-554E-x-yy
105 MHz ADC PMC module with 3 million gate Xilinx (XC2V3000) FPGA.
ICS-554D – DC coupled

HDK-554
Hardware Development Kit. Required for user programming of Xilinx FPGA

DRV-554-WIN
Full source code Windows device driver including LabVIEW source code

DRV-554-VXW, DRV-554-LX
Full source code for VxWorks and Linux device drivers

DRV-554-SCA
SCA compliant driver

Custom FPGA Coding
Contact factory for details

About GE Fanuc Embedded Systems

GE Fanuc Embedded Systems is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Embedded Systems has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanucembedded.com.

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+44 1327 359444

Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:

www.gefanucembedded.com

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