

ICS-8552B

Rugged 2-channel SDR receiver with High Stability TCXO

Features

- Two ADC channels (Texas Instruments ADS5424): 14 bits @ 105 MHz
- Two GrayChip 4016 DDC ASICs
- 3 million gate Xilinx Virtex II FPGA
- Simultaneous wideband and narrowband acquisition supported
- 1 PPM Temperature Compensated Crystal Oscillator (TCXO) onboard
- Pn4 user I/O supports LVTTTL or LVDS signaling levels
- Windows, Linux and VxWorks device drivers
- Extensive application and technical support available

The ICS-8552B is a rugged IF receiver module bringing very high performance Software Defined Radio (SDR) capabilities to portable applications such as man-packs. A derivative of the highly successful ICS-554, but doubling the amount of FIFO storage and adding built-in test (BIT) capability, the ICS-8552B includes ADC, DDC, and FPGA resources in one PMC module and a high stability 1 PPM TCXO onboard. It also features a memory architecture that allows simultaneous wideband and narrowband acquisition providing maximum flexibility for signal intelligence and spectrum monitoring.

While substantial onboard processing resources let the DSP move to the data source, the ICS-8552B still provides the user with high bandwidth I/O for communication with host systems. The 64/66 PCI interface provides data

rates in excess of 400 MBytes/second (sustained aggregate rate – not the burst rate), while the Pn4 user I/O port allows the possibility of even higher data rates, and elimination of interrupt latencies.

When used with an appropriate DSP / processor carrier card, the ICS-8552B offers a very powerful single slot solution for Software Defined Radio applications.

Approximately 95% of the Virtex II FPGA is available for user applications, and GE Fanuc Embedded Systems includes a complete Hardware Development Kit (HDK) for the Xilinx ISE Foundation development environment, enabling system designers to efficiently develop new FPGA applications.

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Specifications

Analog Input

- 2 analog inputs (Transformer Coupled)
- MMCX analog, clock, trigger, sync connectors
- 50 Ohm input impedance
- Full scale input +5.5 dBm into 50 Ohms
- Input bandwidth 2 - 570 MHz (-3 dB)
- Max. sampling rate 105 MHz (100 MHz when using DDCs)
- Min. sampling rate 30 MHz
- Internal sample clock 94.4 MHz TCXO
- ADC resolution 14-bits
- Sampling on rising edge of clock
- SINAD > 70 dB
- SFDR > 80 dB

General

- IEEE P1386.1 compatible PCI Mezzanine Card
- Linux, Windows, VxWorks software drivers available
- 6.7 - 12.4 Watts power dissipation (depends on user FPGA contents)
- ANSI/VITA 20-2001 conduction cooled PMC
- MMCX coaxial connectors (signals, clock, trigger, sync)

Onboard resources

- Xilinx Virtex II FPGA (XC2V3000)
- 2 x GC4016 DDC
- 2 x 128k x 72 FIFO memories with independent write and read controls

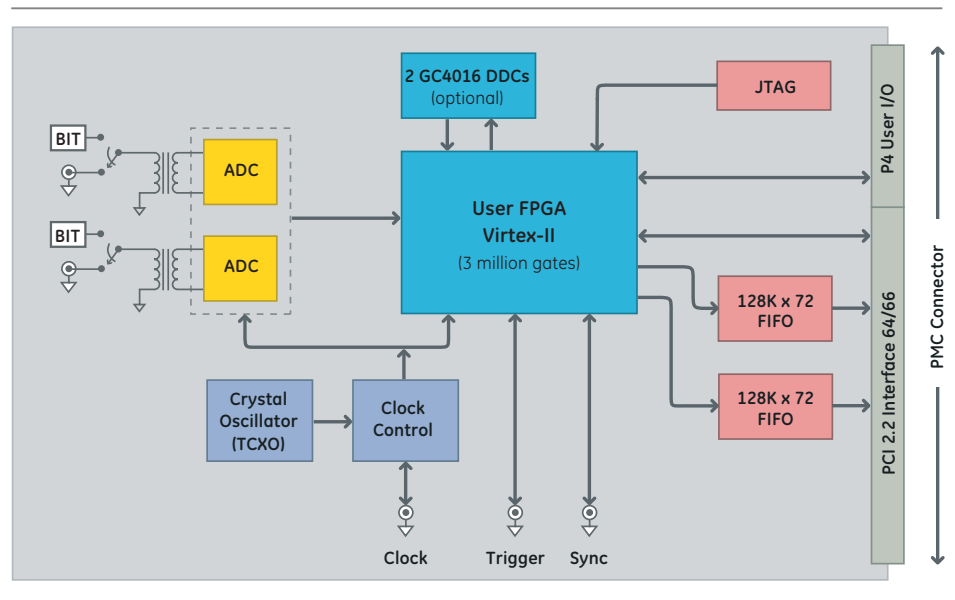
I/O resources

- PCI 2.2 64-bit, 66 MHz PCI bus interface
- All 64 user programmable I/O via Pn4 connector routed directly to FPGA as differential pairs
- User definable signaling levels on Pn4

Environmental

- Five build levels available. Air- and conduction cooled versions
- -40 to +85 ° Celsius operating temperature
- 95% non-condensing humidity

Block Diagram



Order Information

ICS-8552B-xyy

ICS-8552B ADC PMC Module

x = Ruggedization level (1 - 5)

yy = Configuration:

00 - DDCs included

01 - DDCs not included

02 - front panel SMA connectors with DDCs (may limit shock & vibration environment - see factory for details)

03 - front panel SMA connectors without DDCs (may limit shock & vibration environment - see factory for details)

DRV-8552-xxx Software Development Kit for xxx OS (xxx = Windows, Linux or VxWorks)

HDK-8552 Hardware Development Kit for ICS-8552B included

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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Additional Resources

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

www.gefanucembedded.com

