

DC-1909 Model Digital Down Converter
PRODUCT FEATURES

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Fully Digital High Performance Down Conversion

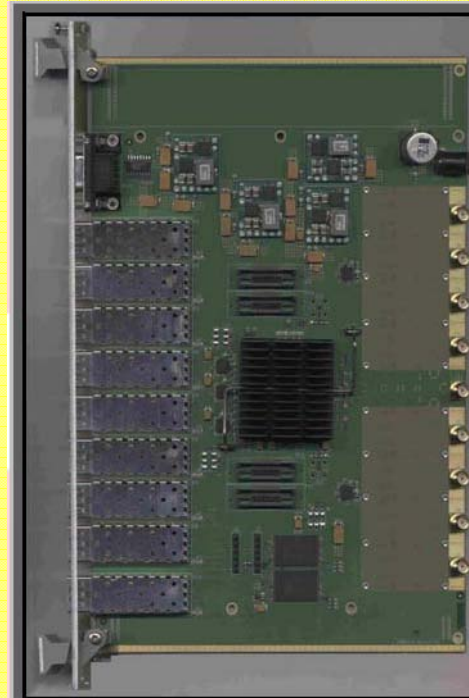
- Conversion rates up to 210 MSPS
- 8 input channels
- SMA input connectivity
- All 8 channels routed to single FPGA
- Low jitter clock distribution network

Fiber Optic Outputs

- Industry Standard Small Form Pluggable (SFP)
- Provides electrical isolation
- Supports Single/Multi Mode Fiber, enabling short or long haul data transport (> 10 km)

Single Hardware Platform

- 6U Form factor
- Supports VME and CPCI
- Factory configured Down Conversion



PRODUCT DESCRIPTION

The CAPS Inc. DC-1909 series of Digital Down Converters leverages a single hardware circuit board shipped with factory configured functionality fitting a wide range of analog to digital baseband down conversion applications. This single hardware platform, with factory configured "soft" filtering functionality, assures long life cycle product support.

The CAPS Inc. DC-1909 Digital Down Converter (DDC) Board contains 8 matched analog input channels. Each of these 8 channels is routed to a single high performance A/D converter operating at 210 MHz. A low jitter clock distribution network is provided to the A/D converter channels for custom A/D converter sampling.

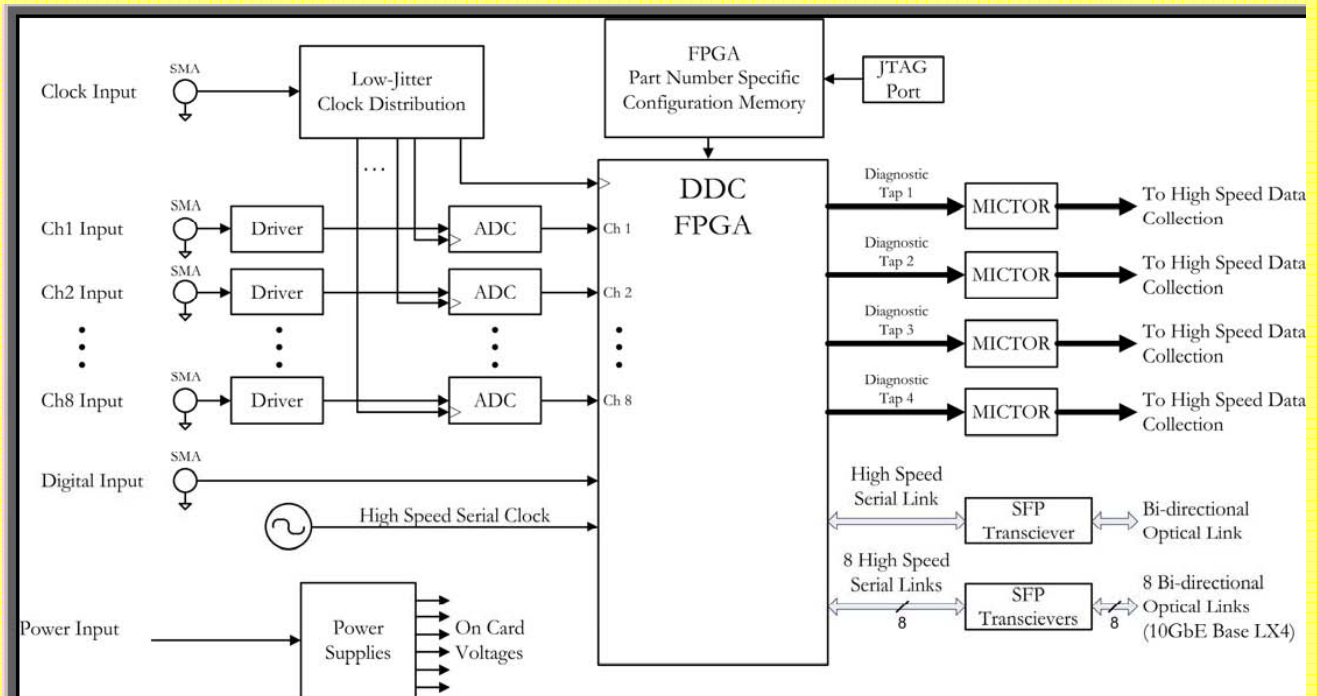
The outputs of the eight A/D converters are routed to a single Xilinx FPGA for digital down conversion, digital filtering, digital equalization and digital decimation. The Xilinx FPGA is configured at the factory with the proper down conversion, filtering, equalization and decimation functions specified by the customer upon order (see ordering information).

US (Sales) Contact: CAPS Inc.-1015 18th Street, NW, Suite 702-Washington, DC 20036 +1-202-223-5504 ext. 1
EU Contact: CAPS Inc.-Via Tiburtina 1166, Roma 00156, Italy +39-
US (Tech): CAPS Inc.- 316 Commerce Blvd., Liverpool, NY 13088 +1-315-453-1043 ext. 222
Or email: info@capsrad.com

PRODUCT SPECIFICATIONS

- Input Frequency Range: 10 MHz – 700 MHz
- Instantaneous Bandwidth: DC – 80 MHz *
- Passband Ripple: <0.1 dB pk-pk
- Input Power Level: 10 dBm max
- A/D Conversion: 14 bit
- Sample Rate: 210 MHz max
- Dynamic Range:
 - o SNR 67 dBFS @ 400 MHz typical
 - o SFDR 72 dBc @ 400 MHz typical
 - o SINAD 62 dBFS @ 400 MHz typical
- Down Conversion: Fully digital
- Filtering: see order table
- Digital Equalization Fully digital
- Output
 - o Format Baseband complex (I,Q)
 - o Physical: Small Form Pluggable (SFP)
Optical

* limited by input analog filtering



DC-1909: Functional Block Diagram

PRODUCT ORDERING INFORMATION

Part Number: DC-1909-XXX.xxx-YYY.yyy-ZZZ.zzz

DC-1909: Base Part Number

XXX.xxx: Input Frequency
 Range: DC – 700 MHz
 Specified in MHz (example 400.000 MHz)

YYY.yyy: Instantaneous Input Bandwidth
 Range: 0 – 80 MHz
 Specified in MHz (example 010.00 MHz)

ZZZ.zzz: Decimated Output Sample Rate
 Specified in MHz (example 016.000 MHz)

Example: DC-1909-400.000-010.000-016.000

Plug-In Option: RF (S-band/L-Band) to IF Converter Daughter Board

Plug-In Option: Integrated LO Synthesizer

Plug-In Option: Digital to S-band/L-Band-Up Converter/Waveform Generator