

IFLEX-D: Intermediate Frequency Converter (IFC)

Flexible Digital IF Transport for Modern SATCOM Networks



For SATCOM operators, modernizing legacy analog modem systems or deploying digital IF architectures, ATG Solutions offers the IFLEX-D to bridge analog L-band IF and digital IF environments.

The IFLEX-D is a high-density Intermediate Frequency Converter (IFC) platform designed to digitize, transport, and distribute L-band IF signals across Ethernet-based SATCOM infrastructures.

The platform supports distributed SATCOM processing environments, virtualized modem infrastructures, digital inter-facility links, and software-defined signal processing applications while maintaining compatibility with existing analog modem systems.

Deployment Applications

Teleport Modernization

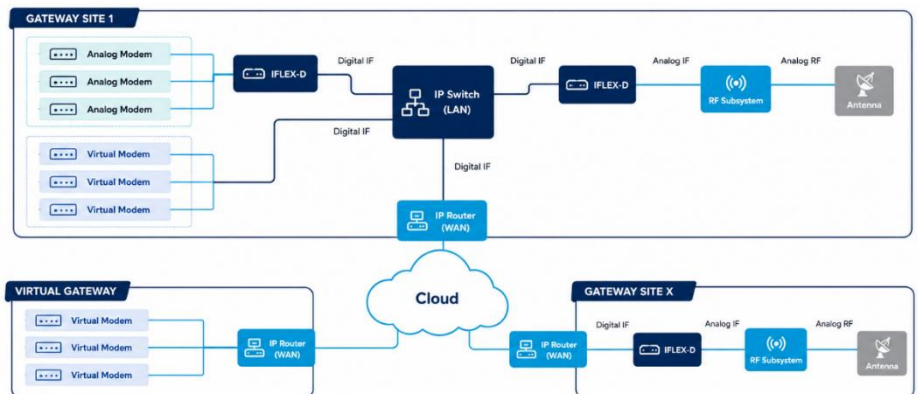
Replace analog IF matrix switching with Ethernet-based digital IF transport while maintaining compatibility with existing modem infrastructure.

Digital Inter-Facility Link

Transport digitized IF streams between geographically separated antenna, modem, and processing facilities.

Virtualized SATCOM Processing

Enable centralized or cloud-based modem, DSP, and waveform processing architectures using network-accessible IF streams.



Core Capabilities

High-Density IF Digitization

- Supports up to 12 RX and 12 TX channels
- Up to 1 GHz instantaneous bandwidth per port
- Compact 1U rackmount platform
- Enables migration from analog IF switching environments
- Supports hybrid analog/digital SATCOM architectures

IEEE 4900-2022 DIFI Transport

- Standards-based digital IF transport
- Vendor-interoperable IF distribution architecture
- Ethernet-based IF routing and transport
- Metadata and timing-aware packet transport
- Supports distributed SATCOM processing environments

Virtualized Signal Processing

- Network-accessible digitized IF streams
- Supports software-defined modem architectures
- Enables cloud and data-center-based DSP processing
- Compatible with FPGA and GPU processing systems
- Supports recording, monitoring, and waveform analysis applications

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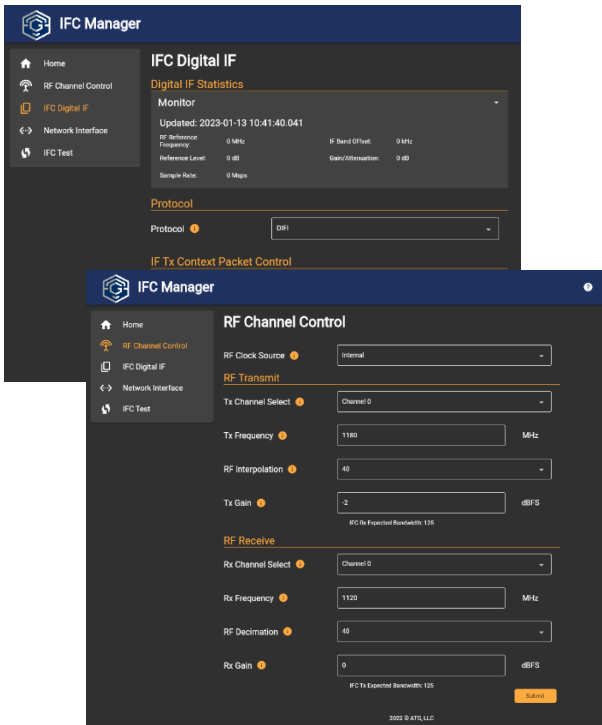
Front panel



Back panel



User Interface



Technical Specifications

Analog Interfaces	
Analog Connections SMA (50 Ohms)	Transmit/Receive Ports - IFLEX-D4: 4 TX/4 RX - IFLEX-D8: 8 TX/8 RX - IFLEX-D12: 12 TX/12 RX
Frequency L-Band (950-2150MHz)	Instantaneous Bandwidth 10MHz - 1000MHz per port (Configurable)
Variable Gain - Input -40 to 0 dBm - Output -40 to 0 dBm	Clocks and Reference 10 MHz In, SMA (50Ohms) 10 MHz Out, SMA (50Ohms) 1 PPS*
Digital IF Interfaces	
Digital IF Physical - IFLEX-D4: 2 x QSFP28 - IFLEX-D8: 4 x QSFP28 - IFLEX-D12: 6 x QSFP28	Digital IF Data Transport IEEE 4900-2022: DIFI V1.2
Digital IF MAC 100/40*/10* GbE	Sampling 4-16 bits per sample 10 ksp/s-1.25 Gsp/s (configurable)
	Digital Conversion 14-Bit ADC at 5 Gsp/s 14-Bit DAC at 6 Gsp/s
Mechanical & Power	
1RU: 17.55" x 1.72" x 28" (445.77mm x 43.68mm x 711.2 mm)	Input Power: 100-240VAC 50/60Hz IFLEX-D4: 75 W Max IFLEX-D8: 130 W Max IFLEX-D12: 190 W Max
Management Interfaces	
SNMP, Web GUI, REST API	RJ45 Ethernet
Other Specifications	
Operational Temperature: 5 to 35 °C	

* Future Capability