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Find the *Ulyssix Technologies Syrinx-DualVME* at our website: ***Click HERE***

Syrinx Series

Digital Baseband Demodulator

Direct Replacement for

Legacy FM Demodulator Systems

PCM

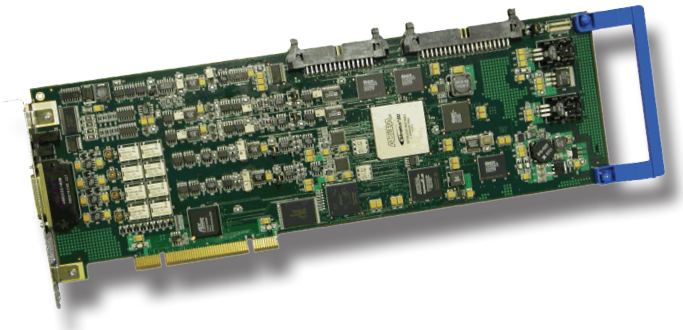
RF

FM

Data Link Analyzers

Custom Telemetry Solutions





Board & Chassis Solution

FM Demod

Ulyssix Technologies, Inc.

a woman-owned small business

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Syrinx Series

Baseband Demodulator

Program selectable for FM and FSK demodulation

Fully programmable for all IRIG 106 CBW and PBW subcarriers and other non-standard channels

Frequency range from 250 Hz to 15 MHz

FM subcarrier deviations from 0.5% to 50% of the center frequency

User friendly Windows based software for setup and operation

By using DSP based algorithms the Syrinx Series eliminates the need for calibration and tuning

Output Capabilities

Program selectable output filter characteristics for analog or digital data

Digital output filter, programmable from 1 Hz to 1 MHz, can be bypassed for higher PCM data rates, up to 2.7 Mbps NRZL

Digitally time synchronized sampled output data available for FFT analysis

PCM output generator which can build a PCM frame of user selectable outputs from digital demodulators (SyrinxDemux only)

Additional Features:

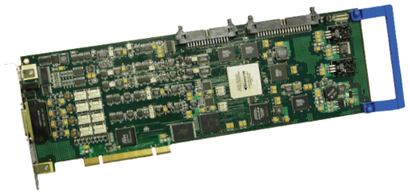
•FIR Lowpass Filter

Provides configuration capability to either be a Baseband Demodulator or as a standalone digital FIR Lowpass Filter

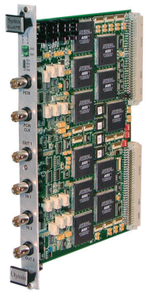
•Capture Mode

Outputs the digital demodulated data to the hard disk for storage, which can be analyzed by the SyrinxTurbo FFT playback screen or imported into 3rd party analysis software

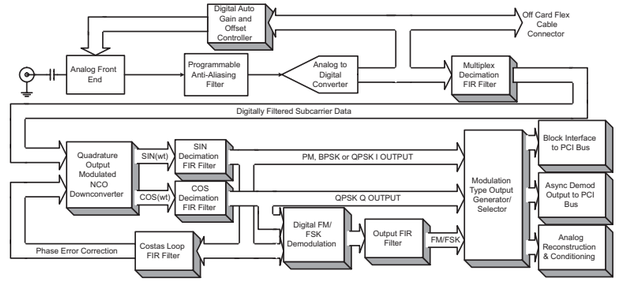
Available Form Factors:



PCI-Dual Digital FM Demodulator



VME-Dual Digital FM Demodulator
Contains PCM generator for selected demodulated data output



SyrinxTurbo Multimode Demodulator Block Diagram

Also Available in Chassis Solutions:



Gryphon122
Single, Dual or Quad FM Demultiplexing unit utilizing the SyrinxTurbo board. Running a Ulyssix embedded operating system with LCD display and integrated keypad.



Syrinx Demux
2 to 20 FM Discriminators utilizing the Syrinx-DualVME board in a single 7U chassis with a 1U rack mount drawer unit providing a keyboard, mouse and LCD display. Windows based GUI software for easy setup and operation. PCM frame generator output automatically configured based on selected channels.

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Specifications

Input Specifications

Subcarrier Frequency	250 Hz to 15 MHz, programmable
Amplitude Range	15 mVpp to 4 Vpp
Maximum Safe Input	±35 VDC
FM Deviation Range	0.5% to 50.0% of entered center frequency, up to 3 MHz, programmable
Demodulation Modes	FM or FSK programmable
Impedance Matching	Hi-Z/75Ω/50Ω, single ended input, software selectable with reed relay isolation

Demodulator Specifications

Output Filtering	3 digital output filter modes, program selectable

Analog Mode (Linear Data): The FIR Filter is programmed to be flat within 0.1 dB in the programmed passband and -60 dB attenuation at 2 times the programmed cutoff frequency.

Digital Mode (PCM Data): The FIR filter is programmed to be monotonic in the passband with -3 dB attenuation at the programmed cutoff frequency and down -50 dB at 2.5 to 3.0 times the programmed cutoff frequency.

Bypass Mode (>1 MHz Data): The digital and analog reconstruction filters are bypassed for maximum digital data throughput, up to 2.7 Mbps NRZ-L. The data frequency throughput is equal to the programmed deviation filter frequency.

Output Filter Range	Programmable from 1 Hz to 1 MHz with FM deviation ratios from 1 to 64 of the programmed deviation or from 1.5% to 50% of the subcarrier frequency
Output Linearity	Less than 0.05% of programmed full deviation bandwidth measured from the best 3 point straight line
Output Harmonic Distortion	All harmonic terms are below -56 dB for FM deviation
Analog Output Level	Programmable from 1.0 Vpp to 10.0 Vpp with programmable offset from -5 VDC to +5 VDC
Analog Output Noise	Less than 10 mVRMS
Subcarrier Deviation Accuracy	0.0001% of the programmed center frequency (32 bit MNCO phase accumulator)
Linear Deviation Range	±125% of the programmed deviation

PCM Generator Specifications

Available only on the Syrinx-DualVME	
PCM Output Format	NRZ-L or RNRZ-L PCM data and clock with 0º or 180º bit clock, program selectable
Word Size	16 bits per word, 32 bit sync pattern
Max Frame Size	2048 words
Output Bit Rate	Sub-multiples of 60 MHz clock, 15 Mbps max
Data Sample Rate	2.5 to 5 or 5 to 10 samples per period based on the programmed output filter frequency
Operation	The PCM Generator allows the user to build a PCM frame containing data from selected digital demodulator outputs available on the P2 connector. The bit rate of the PCM output is determined by the sample rates of each data channel. The sample rate for each channel is determined by the programmed output filter frequency.

Physical Specifications

SyrinxTurboPhysical Specifications	
PCI Form Factor	32 bit PCI form factor, +5 Volt System
Interface Connectors	Subcarrier input and analog outputs are available on BNC connectors.
Manufacturing	The design utilizes Surface Mount Technology (SMT), manufactured with robotic assembly techniques to IPC-610B Class 2 manufacturing standards.
Temperature Range	Operating: 0°C to 50°C Storage: -20°C to 60°C
Power Consumption	Less than 25 Watts total, for all supplies +5V 3 Amps +12V 0.4 Amp
Syrinx-DualVME Physical Specifications	
VME Form Factor	32 bit VME 6U form factor
Interface Connectors	Subcarrier input, both demodulator analog outputs, PCM clock and data output signals are available on BNC connectors.
Manufacturing	The design utilizes Surface Mount Technology (SMT), manufactured with robotic assembly techniques to IPC-610B Class 2 manufacturing standards.
Temperature Range	Operating: 0°C to 50°C Storage: -20°C to 60°C
Power Consumption	Less than 35 Watts total, for all supplies

Ordering Options

SyrinxTurbo	Digital Baseband Demodulator, PCI form factor, FM/FSK, with 15 MHz Extended Bandwidth and FIR Lowpass Filter
Syrinx-DualVME-02	Dual Channel FM Discriminator, 6U VME form factor, FM/FSK, PCI Power Supply
Syrinx-Demux FM Digital Demultiplexing System	FM Digital Demultiplexing System including VME chassis, 1U Rackmount Keyboard/Display, Pentium4 Controller running WindowsXP, Ulyssix application software, PCM Generator output with expansion capability of up to 20 FM demodulators (10 SyrinxDualVME) and 1 HalluxVME calibrator card
Gryphon122-01-Turbo	Single channel Digital FM Demultiplexing System. Including 2U rackmount chassis with Ulyssix embedded operating system, built-in graphic display, embedded keypad entry system.
Gryphon122-02-Turbo	Dual channel Digital FM Demultiplexing System. Including 2U rackmount chassis with Ulyssix embedded operating system, built-in graphic display, embedded keypad entry system.
Gryphon122-04-Turbo	Quad channel Digital FM Demultiplexing System. Including 2U rackmount chassis with Ulyssix embedded operating system, built-in graphic display, embedded keypad entry system.
ULX-C-300-S-124	General Devices C-300-S-124 24” rack mount slides
ULX-B308	General Devices B308 extension slides to 36”

Specifications subject to change without notice.

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Revised: October 4, 2010

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