



Features

- VIM-2 module for VIM-compatible processor boards
- Two identical channels include amplifier, A/D, digital receiver and demod
- Up to 65 MHz A/D sampling with 12-bit accuracy
- Prog. gain input amplifiers
- Anti-aliasing lowpass filters
- Receiver decimation range from 4 to 16,384
- Cartesian-to-polar converter for AFC and AM, FM, FSK and PSK demodulation
- 255-tap programmable-coefficient FIR filter
- Synchronization across channels and other 6210's

Ordering Information

| Model | Description |
|----------------|--|
| 6210 | Dual Narrowband Receiver, Demod and A/D VIM-2 module |
| Option: | |
| -021 | 53 MHz internal ref. (optimum output specs) |

General Information

Model 6210 is a VIM-2 module which attaches directly to VIM-compatible processor boards. It forms a complete 2-channel software radio system including tuning, filtering and demodulation.

Two Model 6210's may be attached to a VIM-compatible processor board to form a 4-channel software radio which utilizes all four processors while occupying only one VMEbus slot. Alternatively, the Model 6210 may be combined with another VIM-2 module to provide additional I/O functions.

Input Section

Each channel includes a wideband input amplifier followed by a programmable-gain amplifier and a 25 MHz lowpass anti-aliasing filter. Both of these may be bypassed for undersampling applications. Analog inputs are accepted through front panel SMA connectors.

A/D Converters

Each channel employs an Analog Devices AD6640 12-bit A/D converter capable of sample rates up to 65 MHz. The A/D sample clock is derived either from an external reference supplied to a front panel SMA connector or an internal 64 MHz crystal.

The A/D converters operate synchronously from the same sampling clock to

support multichannel applications where phase between channels must be maintained.

Digital Downconverters

The output of each A/D converter feeds the Intersil HSP50214B digital downconverter and communication signal processor.

Included in the HSP50214B is an input local oscillator (NCO) and a mixer to translate input signals down to baseband. The mixer is followed by multistage digital filters with programmable filter coefficients.

A second processing section consists of a resampling polyphase filter which operates with a second 50 MHz clock asynchronous to the input clock. This allows for a maximum output bandwidth of 929 kHz with 84 dB SFDR at an output sampling rate of 12.24 MHz (use Option -021 for these output specifications). Built-in hardware for cartesian-to-polar conversion provides magnitude and phase outputs. A FM discriminator and FIR filter delivers FM output.

A digital multiplexer allows either the digital receiver output or the A/D output to be sent into the processor board BI-FIFO to support direct, wideband input data capture.

A front panel ribbon cable bus allows multiple 6210's to share a common sample clock and synchronize the phase of the digital receivers across modules.

Block Diagram, Model 6210

