



Advanced direct digital receiver

Direct digitalisation of the HF spectrum for high-performance OTHR, sounders and intelligence gathering

BAE Systems Australia's Advanced Direct Digital Receiver (DDRx) is designed to support demanding HF radar and intelligence-gathering applications.

This receiver is the culmination of three generations of digital receiver development, to meet the increasing expectations of HF spectrum users.

HF spectrum users require the detection and processing of minute energy returns in the presence of large intercontinental broadcast signals, coupled with the ability to accurately measure the time at which signals are received.

- Direct digitisation for wideband acquisition and analysis of the HF spectrum
- Wideband channel and multiple narrowband channels
- Exceptional wideband performance
- Analogue pre-conditioning
- Unrivalled signal dynamic range
- GigE interface
- Easy to use.



The receiver is housed in a half-width, one rack unit case. The standard configuration provides a single concurrent wideband channel with four narrowband channels with exceptional dynamic range. These channels are implemented in firmware, and alternate channel configurations are also available.

The receiver uses analogue filtering to allow conditioning of the signal prior to the A/D converter.

The receiver can be directly connected to a commercial PC via GigE.

The DDRx system has been designed for online, real-time processing. Provision is made for an external timing reference, which allows synchronous deployment of multiple systems in an array configuration. The external timing reference also allows geographically separated receivers to be synchronised using GPS receivers.

The receiver is also capable of running stand-alone using an internal oscillator.

The DDRx is used in experimental radar systems and operational sounder systems, providing unrivalled wideband performance and ease of use.

Specifications

Frequency range	5 to 35 MHz
Receiver noise figure	<10 dB
Attenuation	0 to 62 dB
Pre-selection filters	4
Internal memory	64 M samples
Narrowband channels - Typically 4	
– Dynamic range	148 dB
– Programmable BW	7.5 to 250 kHz
– Frequency resolution	<25 MHz
Wideband channel	
– Dynamic range	90 dB
– Programmable BW	0.2 to 4.25 MHz
ADC channel	
– Dynamic range	105 dB
– Bandwidth	50 MHz
Data interface	GigE

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