Focus on CSIR

5th Generation Wide Band DRFM

DRFMs are the main building blocks of hardware-in-the-loop (HIL), Radar Environment, Radar Target and Electronic Countermeasure Simulators.

Received radar signals can be delayed, Doppler shifted and retransmitted to create simulated targets of very high fidelity. HIL simulation is an aid to the development of new radar systems, which allows for testing and evaluation of the radar system earlier in the design cycle. Expensive operational evaluation, such as flight trials for airborne radars, can now be performed in a laboratory environment, significantly reducing overall development cost. The CSIR embedded a software-defined architecture into the 5th generation digital radio frequency memory (DRFM).

This innovation allows for the rapid development and implementation of new electronic attack (EA) techniques for test and evaluation purposes. This new technology is used by the world leaders in radar and electronic warfare, where high bandwidth, high fidelity, multi-scatter returns with low spurious is required.



Focus on CSIR in 5th Generation Wide Band DRFM



Software defined DRFM architecture



- Instantaneous bandwidth: Up to 2000 MHz
- 10-bit ADC, 12-bit DAC
- Delay resolution down to 0.2 ns
- Spurious free dynamic range (SFDR) better than -50 dBc
- Digital Instantaneous Frequency Measurement (DIFM)
- PRI prediction algorithm
- Up to 24 overlapping, independent scatterers which can be controlled with respect to range, phase and amplitude
- Support range ambiguous targets and range update phase correction
- Platform can be utilised for synthetic clutter generation (ground, sea and weather)
- Supports a wide variety of EA techniques software defined architecture
- Digital Doppler generation
- 6 ms of memory depth at full sampling bandwidth
- Industry standard VME bus
- Implementation on a single VME board improves reliability and robustness.

The CSIR has been in the business of developing and delivering DRFMs for more than 15 years. As a research institute the CSIR continuously innovate and improve on this technology, making it an ideal partner. The CSIR will provide a cost effective, tailored solution to your specific testing and training needs.

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