

The slide features a minimalist design with a white background. A vertical line on the left and a horizontal line at the top intersect at a small circle in the top-left corner. Another horizontal line is positioned below the title, and a vertical line on the right intersects with a horizontal line at the bottom at a small circle in the bottom-right corner.

Lucix Software Defined Radios (SDRs)

February 2026

The logo for LUCIX, featuring the word "LUCIX" in a bold, blue, sans-serif font. The letter "X" is stylized with a long, thin diagonal stroke extending upwards and to the right, crossing the top of the letter.

LUCIX

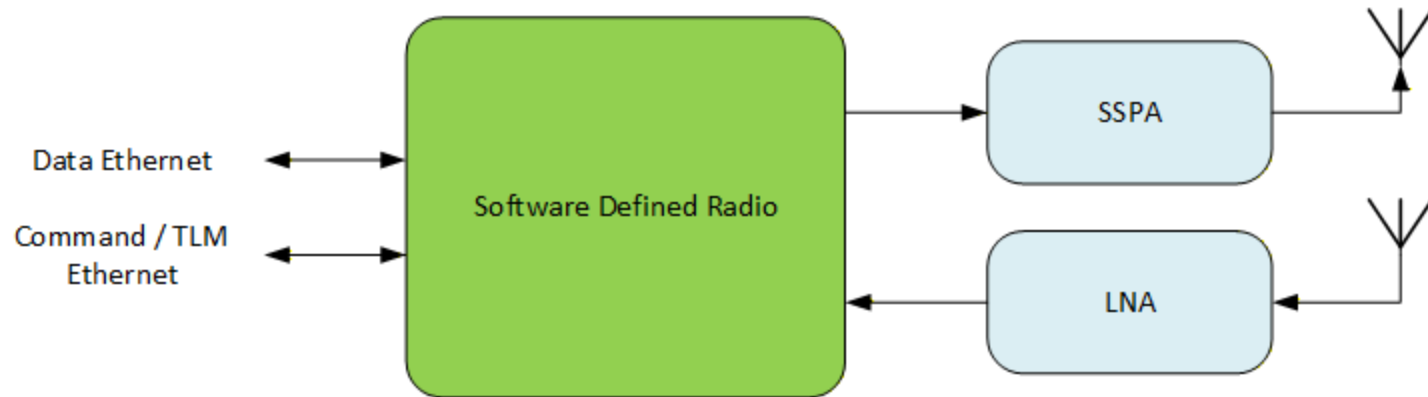


NOTICE

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SDR Introduction

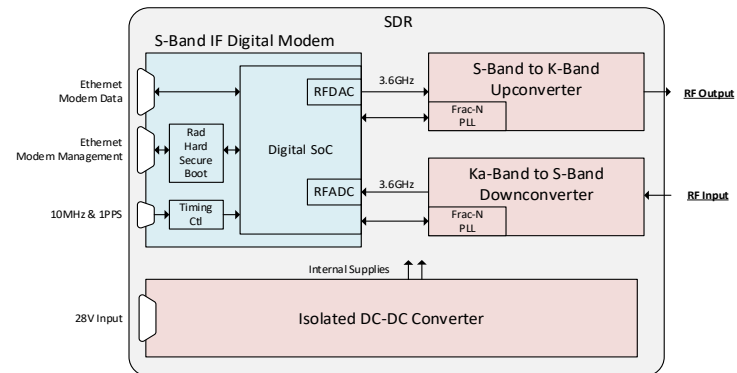


- Core modulator / demodulator component of the payload.
- Convert from baseband data (typically Ethernet packets) to RF waveforms.
- Typically coupled with external LNA and SSPA
- Single or multiple channels



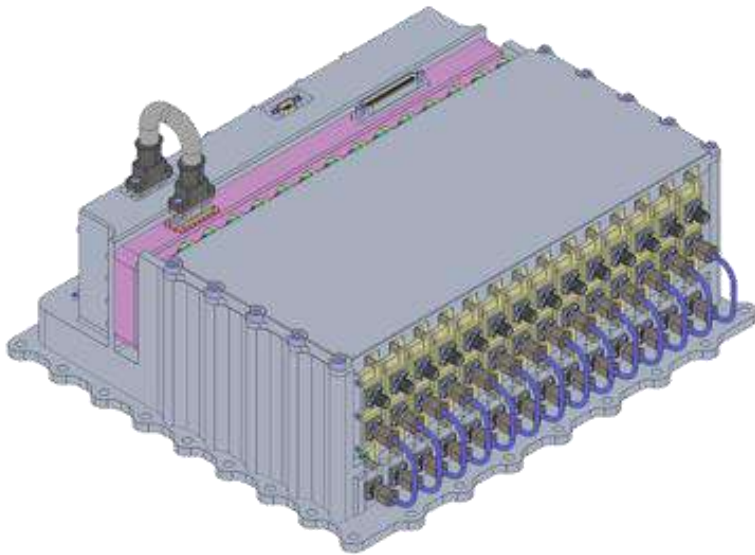
Lucix Software-Defined Radio General Capability

- High data rate up to 2.5 Gbit/s
- High symbol rates up to 800Msps.
- QPSK and 8-PSK modulation standard, higher constellations available.
- High-speed DSP with ADC/DAC sample rates up to 5Gsps.
- Supports custom waveforms
- Frequency adjustable over a 1GHz range
- Multiple frequency band options: Ka, K, S, X, L
- 10GbE Ethernet interface
- Radiation tolerant, suitable for LEO missions up to 7 years and GEO up to 5 years
- Radiation tolerant boot loader
- On orbit firmware upgradable
- Time stamping / ranging capability





Lucix Active Programs: Customer one: NEXUS-3MM

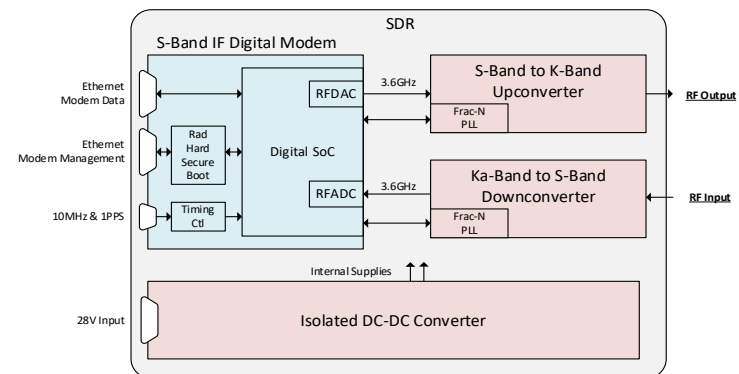


- 7 full-duplex channels in concurrent operation.
- Transmit and receive in Ka band, X band, and S band.
- Modular architecture simplifies reconfiguration for different applications.
- Two 1000BASE-T Ethernet ports: one for data, one for command.
- Communication via UDP/IP with Lucix custom protocol.
- Accepts 10MHz and 1PPS reference for time synchronization.

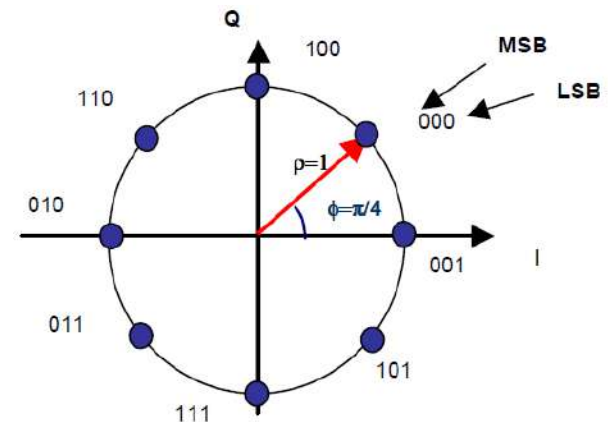
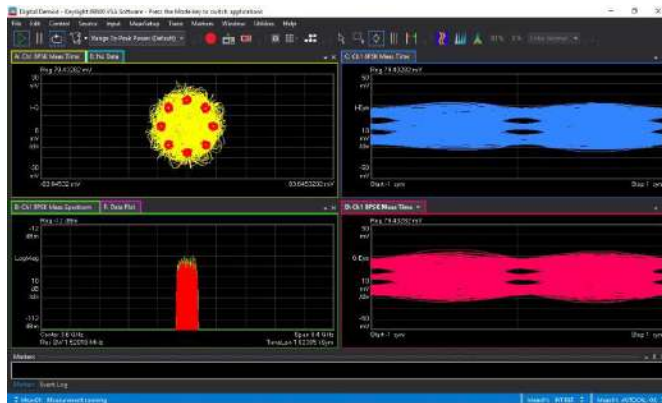
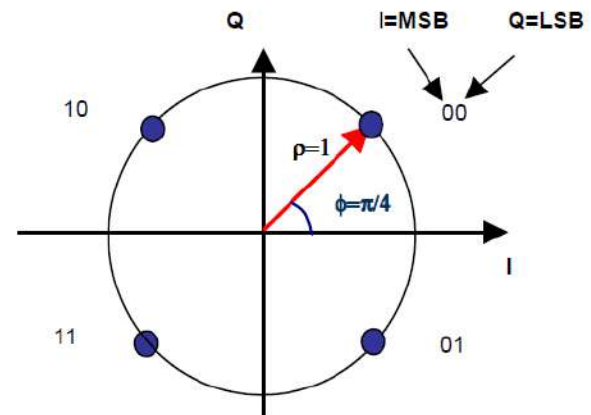
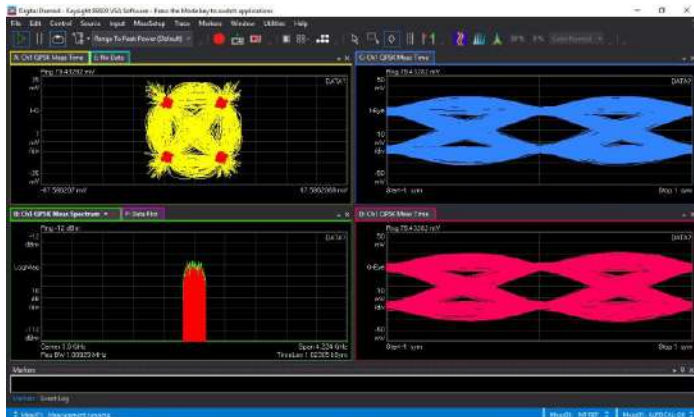


Lucix Active Programs: Customer two: NEXUS-800

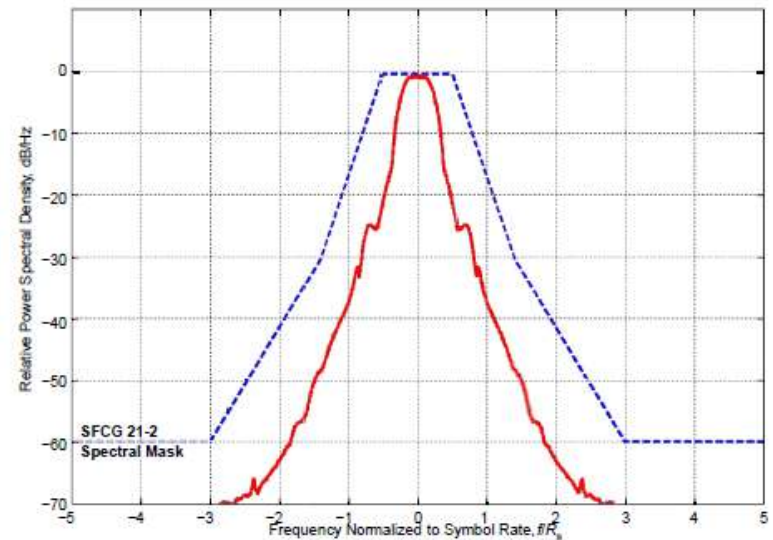
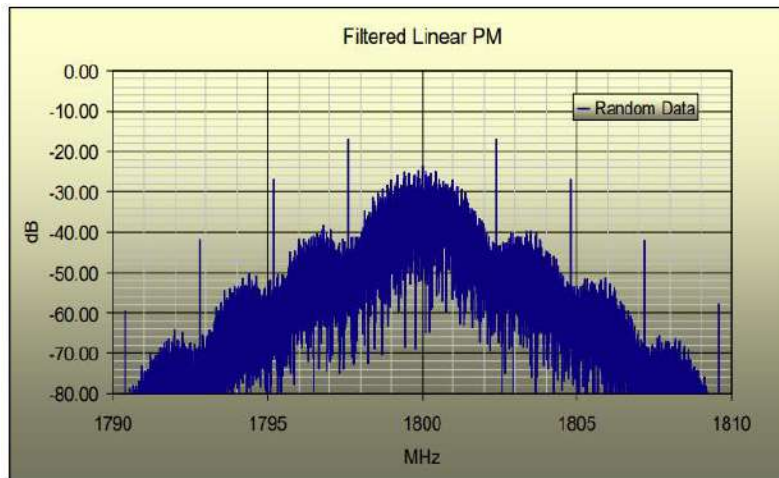
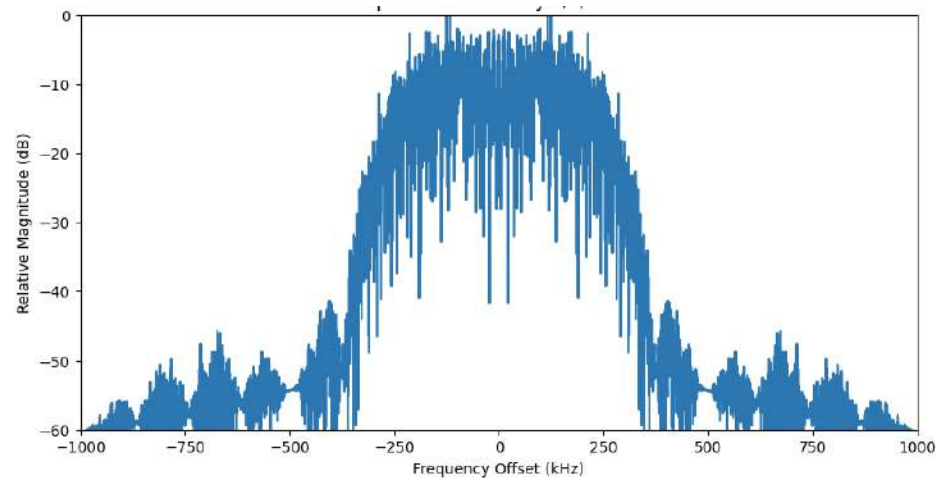
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- QPSK and 8-PSK implemented.
- Full support for standard DVB-S2 MODCODs.



- Per CCSDS 401 and related standards
- BPSK
- PCM/PM/BIPHASE-L
- PCM/PSK
- Low symbol rates on subcarrier, high symbol rates at center frequency
- OQPSK
- PN code ranging sequence, T4B code
- Transmit and receive function





Communication Protocol and Support

- DVB-S2 communication enhancements:
 - Constant, Variable, and Adaptive coding and modulation (ACM, CCM, VCM)
 - Generic Stream Encapsulation
- CCSDS enhancements
 - Advanced Orbiting Systems (AOS) space data link protocol
- Forward error correction: LDPC, convolutional, and BCH codes.

