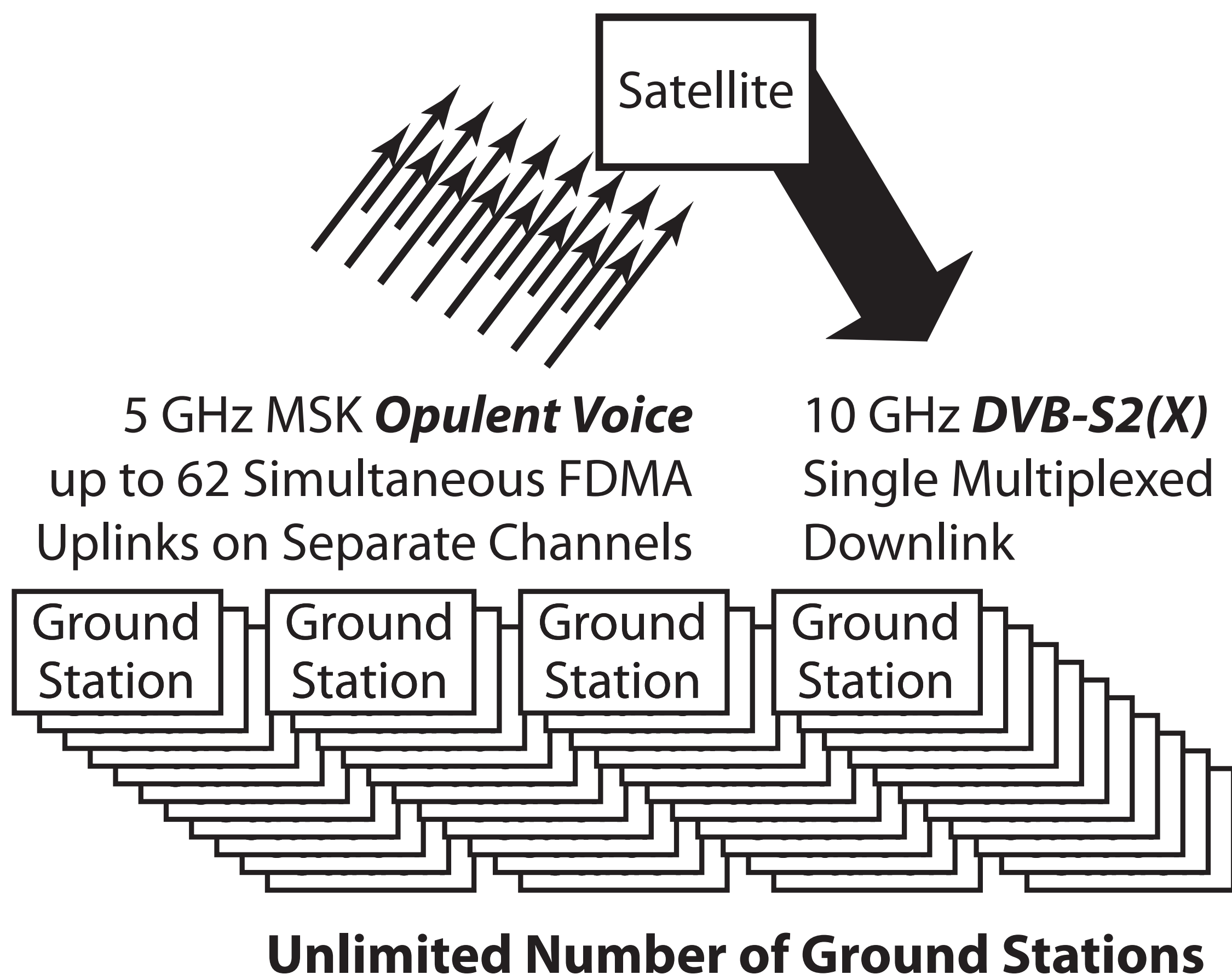
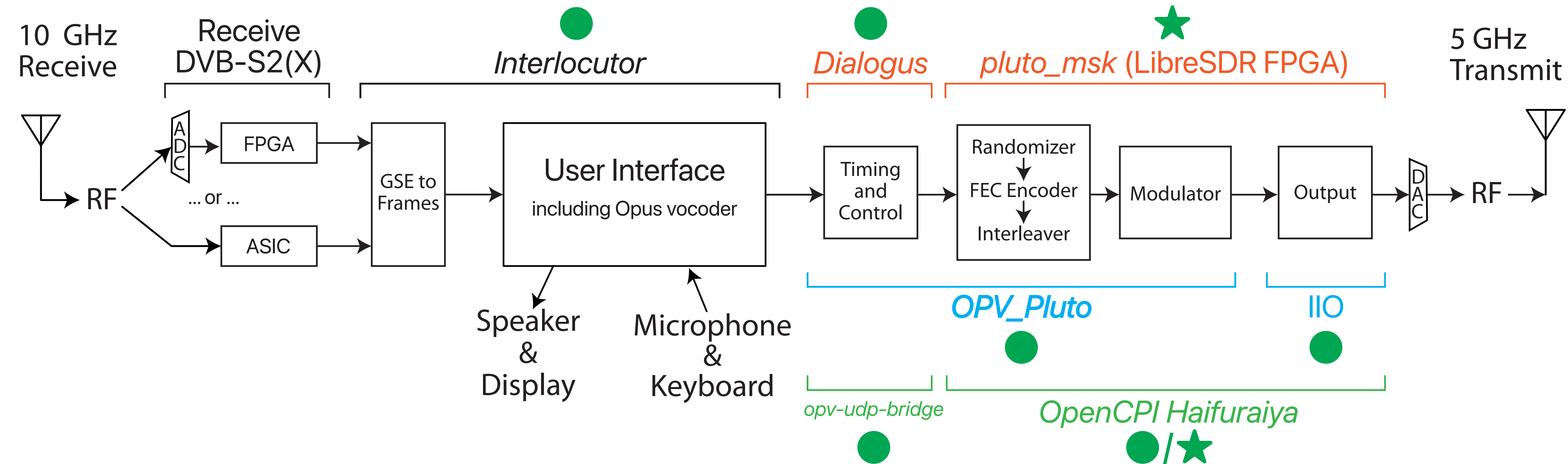




System Overview



Three Ground Station Implementations (so far)



★ = VHDL FPGA module is implemented and largely working.

● = Software module is implemented and largely working.

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Satellite Transponder Architectures

One of two separate but similar implementations shown.

Everything in the Haifuraiya transponder between the receive low noise amplifier and the transmit filters and power amplifier runs on a subset of the Xilinx ZCU102 MPSoC development board (mainly the Zynq UltraScale+ device and its direct support circuits) plus the Analog Devices ADRV9002 or AD9361 RF transceiver eval board.

1 Uplink Receiver
10 MHz wide
10M I/Q samples/sec

64 Uplink Channels
156 kHz wide
625k samples/sec

8 (TBD) channel processors,
each multiplexing to handle
8 (TBD) uplink channels

Move data
to the CPU

Create downlink data stream from uplink data and telemetry, etc.

