Ultra Electronics Herley Time Delay Units are a complete solution for phased array radar transmit and receive stages. Core functionality of 8 time delay bits are complemented by 360 degrees of phase shift capability and 31.5 dB of gain/attenuation. Low noise figure and high linearity allow this device to be an ideal solution for both transmitting and receiving signal paths.

This product data sheet showcases S-Band TDU IMA performance. Other bands of operation are also available as IMAs or as standalone, time delay stages. Please contact us to discuss how we can meet your desired performance goals.

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**FEATURES**

- 8-Bit S-Band time delay unit
- 35 nS total time delay
- 6-Bit 360° phase shifter
- 31.5 dB variable gain/attenuation
- FPGA with serial data control
- Fully automated digital tune/calibration algorithm

**OPTIONS**

- Narrow band vs. wide band modes
- Tight unit-to-unit tracking
- Externally programmable BIT detection
- Thermal correction/shutdown

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With expertise in signal path and amplitude control, we have a proven track record of integrating multiple functions into a custom solution that can be delivered in high volume.

**TYPICAL PERFORMANCE SPECIFICATIONS**

- **Frequency Range**: S-Band
- **Gain Range**: +25 dB to -6.5 dB
- **Time Delay**: 13 nS - 35 nS (86 ps steps)
- **Noise Figure**: < 7.0 dB
- **Output 1 dB Compression**: > 25 dBm
- **Output 3rd Order Intercept**: > 34 dBm
- **Residual Phase Noise @ > 10 KHz**: < 130 dBc/Hz
- **Phase Shifter Range**: 360º
- **Phase Shifter LSB**: 5.6º
- **Attenuator Range**: 31.5 dB

**TYPICAL PERFORMANCE SPECIFICATIONS**

- **Attenuator LSB**: 0.5 dB
- **Input/Output VSWR**: 1.2:1
- **Operating Temperature**: +15ºC to +35ºC (extended temperature range options available)
- **Supply Voltages**: +12 V @ 2.5 A, -12 V @ 500 mA
- **Logic Interfaces**: Digital ECL (LVTTL, TTL, and LVDS optional)
- **RAM Buffers**: 32 data sets