DESCRIPTION
The MD400X Radar Transponder is a general purpose augmentation device used to enhance the tracking capability of X-band radars. Utilizable for ground and man pack, sea and airborne application, the MD400X is compatible with most tracking, navigation, and attack radars. Applications include: missile, aircraft, and drone tracking; aircraft rendezvous and refueling; ground target and drop zone location; close air support; navigation and landing aids; and identification.

The design of the MD400X utilizes the latest in modern devices and circuitry. It is all solid-state, except for the magnetron, to provide a reliable product with extremely long operating life.

FEATURES
• 400 Watt typical peak power output
• Long life magnetron transmitter
• Sensitive superheterodyne receiver
• Small, less than 53 cubic inches (857 cubic cms)
• Lightweight, less than 43 ounces (1220 grams)
• Tunable over 9.0 to 9.5 GHz
• Adjustable internal delay
• Reverse polarity power lead protection
• Single and double pulse interrogations
• Adjustable code spacing
• Built-in duplexer for single antenna operation and protection from high antenna reflections

Due to U.S. Export Control Reform Ultra Electronics Herley Lancaster’s Radar Transponders have transitioned from ITAR to Department of Commerce Export Administration Regulations (EAR) making them ITAR-free!
**ELECTRICAL**
- Frequency Range: 9.0 to 9.5 GHz
- Frequency Separation: 50 MHz min.
- Impedance, Input/Output: 50 ohms nominal
- Reverse Polarity Protection: Built-in series diode protection against damage from DC input power reversal
- Voltage Transient Protection: Internal power supply stabilizes transients to the normal operating voltages
- Short and Open Circuit Protection: Built-in to provide antenna mismatch protection
- Input Voltage: 21 to 32 VDC, floating from ground
- Quiescent Current: 0.5 Amps nominal
- Input Current: 1.0 Amps maximum @ 3000 pps
- Power Consumption: 28 VDC, 0.6 Amps nominal @ 1000 pps
- Recovery Time: 50 µsecs maximum
- Blanking: Built-in circuitry prevents reply during recovery time

**PHYSICAL**
- Size: 5.0 x 4.65 x 2.5 inches (12.7 x 11.81 x 6.35 cms)
- Volume: 43 cubic inches (705 cubic cms) nominal displacement

**RECEIVER (CONTINUED)**
- Second Pulse Spacing: Accepts ±0.15 µsecs. Rejects ±0.3 µsecs
- Random Triggering: 10 pps maximum

**TRANSMITTER**
- Power Output: 400 Watts peak minimum
- Output Device: Magnetron
- Frequency Tuning: Single control externally accessible upon removal of seal screw
- Tuning Range: 9.2 to 9.5 GHz
- Frequency Stability: ±3.0 MHz plus ±50 KHz/°C
- Pulse Width: 0.5 ±0.1 µsec
- Pulse Width Jitter: 0.01 µsec maximum
- Pulse Rise/Fall Time: 0.1/0.2 µsec maximum
- Spectrum: The reply pulse RF spectrum bandwidth (in MHz) will not exceed 3.0/pulse width (in µsecs) measured at the 1/4 power level points
- Reply Delay: Adjustable from 1.5 to 6.0 µsec
- Delay Variation: 0.05 µsec maximum for input signal levels between 0 and -60 dBm
- Delay Jitter: 0.02 µsec maximum 0 to -50 dBm, 0.05 µsec maximum -50 to -60 dBm
- Interrogation Replies: 99% minimum input signal levels between +20 and -65 dBm
- Duty Cycle: Up to 0.002 (0.2%)