



RANGER® SERIES

X-BAND



### Solid State X-Band

Affordable dual-polarity • 100 or 500W of radiated power  
Ideal for short and medium range applications  
Compact design for permanent or portable installation



PROTECTING PEOPLE AND ASSETS®

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| SYSTEM                          | RANGER-X1*  | RANGER-X5†  |
|---------------------------------|---|---|
| Operating Frequency             | 9200-9700 MHz                                     | 9200-9700 MHz                                     |
| Pulse Width                     | 0.4-100.0 usec                                    | 0.4-100.0 usec                                    |
| Pulse Repetition Frequency      | 100-2500 PRF                                      | 100-2500 PRF                                      |
| Transmitter Output Power        | 100 Watts   | 500 Watts   |
| Maximum Velocity (unambiguous)  | 64 m/s  | 64 m/s  |
| Sensitivity-reflectivity        | 18dBz at 60km                                     | 18dBz at 120km                                    |
| Data Output                     | UZ (h/v), Z (h/v), V, SW, Zdr, Phv, Φdp, KDP, LDR | UZ (h/v), Z (h/v), V, SW, Zdr, Phv, Φdp, KDP, LDR |
| Max. Sustained Wind Performance | 65kts / 120km/hr                                  | 65kts / 120km/hr                                  |
| Max. Wind Gust Performance      | 78kts / 144km/hr                                  | 78kts / 144km/hr                                  |
| Max Wind Survival               | 130kts / 240km/hr                                 | 130kts / 240km/hr                                 |
| Max Operating Temperature       | -50° C (-58° F) - 60° C (140° F)                  | -50° C (-58° F) - 60° C (140° F)                  |

| ANTENNA/PEDESTAL                          | 1m / 1.8m* / 2.44m*  |                                  |                                  | 1m / 1.8m* / 2.44m*  |                                  |                                  |
|---|--|----------------------------------|----------------------------------|--|----------------------------------|----------------------------------|
| Type                                      | Parabolic, Prime Focus Reflector   | Parabolic, Prime Focus Reflector | Parabolic, Prime Focus Reflector | Parabolic, Prime Focus Reflector   | Parabolic, Prime Focus Reflector | Parabolic, Prime Focus Reflector |
| Gain-Minimum                              | ≥ 37.3 dB  | ≥ 40.0 dB                        | ≥ 45.0 dB                        | ≥ 37.3 dB  | ≥ 40.0 dB                        | ≥ 45.0 dB                        |
| Half Power Beam Width (typical)           | ≤ 2.3°   | ≤ 1.3°                           | ≤ 0.95°                          | ≤ 2.3°   | ≤ 1.3°                           | ≤ 0.95°                          |
| Polarization                              | Dual Polarization Orthogonal Feed (Simultaneous H + V)                       |                                  |                                  | Dual Polarization Orthogonal Feed (Simultaneous H + V)                       |                                  |                                  |
| Transportability                          | supports land, sea, and air deployment environments                          |                                  |                                  | supports land, sea, and air deployment environments                          |                                  |                                  |
| Mounting Configurations                   | guyed pole, tower, vehicle, skid, trailer or conventional fixed installation |                                  |                                  | guyed pole, tower, vehicle, skid, trailer or conventional fixed installation |                                  |                                  |
| Max Drive Motor Torque                    | 350 ft-lbs (477 Nm)  |                                  |                                  | 350 ft-lbs (477 Nm)  |                                  |                                  |
| Continuous Drive Motor Torque             | 88.5 ft-lbs (120 Nm)   |                                  |                                  | 88.5 ft-lbs (120 Nm)   |                                  |                                  |
| Angle Span (azimuth)                      | Continuous 360°  |                                  |                                  | Continuous 360°  |                                  |                                  |
| Angle Span (elevation)                    | -5° to +95°  |                                  |                                  | -5° to +95°  |                                  |                                  |
| Positioning Accuracy                      | ≤ 0.05°  |                                  |                                  | ≤ 0.05°  |                                  |                                  |
| Scanning Speed                            | 0 to 8 rpm   |                                  |                                  | 0 to 8 rpm   |                                  |                                  |
| Drive and Bearing Continuous Service Life | ≥ 10 years with no maintenance or lubrication required                       |                                  |                                  | ≥ 10 years with no maintenance or lubrication required                       |                                  |                                  |

| TRANSMITTER                    |   |  |
|--------------------------------|---|--|
| Type                           | Solid State                                 |  |
| Peak Power (per channel/total) | 100 Watts/200 Watts<br>2 Transmitters (H/V) | 500 Watts/1000 Watts<br>2 Transmitters (H/V) |

| RECEIVER                   |                        |  |
|----------------------------|------------------------|--|
| Type                       | Frequency Programmable |  |
| Minimum Discernible Signal | -114 dBm typical       |  |
| Linear Dynamic Range       | ≥ 95 dB                |  |

| DIGITAL RECEIVER/<br>SIGNAL PROCESSOR |  |  |
|---------------------------------------|--|--|
| Type                                  | 16-bit Modular, multi-channel Digital Receiver, Signal Processor   | 16-bit Modular, multi-channel Digital Receiver, Signal Processor   |
| Maximum No. of Processed Range Bins   | up to 8192   | up to 8192   |
| Minimum Processing Resolution         | as low as 16 meters  | as low as 16 meters  |
| Clutter Filters                       | Time Domain or Spectrum-Based Time Estimation and Processing (STEP) - An advanced adaptive clutter identification and mitigation and noise reduction algorithm | Time Domain or Spectrum-Based Time Estimation and Processing (STEP) - An advanced adaptive clutter identification and mitigation and noise reduction algorithm |

| METEOROLOGICAL USER SOFTWARE |  |  |
|------------------------------|--|--|
| METEOROLOGICAL USER SOFTWARE | PULSE  |  |
| Computer System              | Commercial off-the-Shelf PC                  |  |
| Meteorological Products      | See PULSE Data Sheet for additional details. |  |

\* Systems with a 1.8m antenna require a 3.66m (12ft) radome. Systems with a 2.44m antenna require a 4.0m (13.2ft) radome.

† All Ranger-X5 systems require a radome (1.8m/6ft radome used with 1.0m antenna)