A600 High-Gain Tracking Directional Diversity Antenna System

Troll’s A600 is simply the most scaleable ground antenna system on the market today. Awarded multiple patents for tracking methods and design, for the past ten years the system has proven itself in challenging physical and saturated radio frequency environments. The antenna provides multi-band diversity reception and long range asset tracking in up to four bands simultaneously.

The combination of high-gain directional feed elements and a medium-gain diversity array enables the A600 to automate signal acquisition and signal tracking on up to eight antenna inputs at a single time. In the most sophisticated systems, Troll provides differential GPS and unique RF tracking technologies to automate signal acquisition and signal-lock for bidirectional video and data links. These unparalleled capabilities can concurrently support an almost infinite variety of fast moving airborne, terrestrial or marine platforms.

The A600:
- Operates at long distances
- Minimizes multi-path interference
- Minimizes operator workload
- Lowers installation costs
- Automates set-up and tracking
- Provides plug and play network management

Operation
The A600 allows the operator to concentrate on the content, not the capture of the signal. The system is designed to be completely hands-off, once the receive channel has been set. The A600 manages everything from capture via the panel antennas, the automatic peaking of the directional antenna, and the complete optimization of the system. No other antenna system looks like this or performs like this.

Performance
Using Troll’s two to eight input diversity receiver, the A600’s high-gain directional antenna and surrounding sector panels is truly a unique system. Its redundant and precision offset feeds provide multi-path immunity and robust long-range operation with minimal operator interaction.

Installation
A single multipurpose fiber cable carries bidirectional video, data and control to Troll’s DMR diversity receiver to simplify installation, minimize cost and improve performance.
A600 Physical Characteristics

### General:
- **System Type:** High-Gain Cavity Array
- **Main Antenna:** One (1) High-Gain Offset Fed Truncated Parabolic
- **Diversity Antennas:** Five (5) Medium-Gain, Slotted Dipole
- **Down-Converters:** Six (6) UHF Down-converters with LNA.
- **Receiver:** DVB-T/COFDM
  - Multi-Input Maximal-Ratio Combining (MRC) ASI Output

### System Interface:
- **Connection:** Single Control Cable
- **Control:** Serial RS485
- **Power:** 28 vdc (3 Amps) or 110 / 220 VAC
- **Outputs:** 2 ASI, 75 ohm
- **Control Device:** DMR Site Controller (DMR6000, S750, X750)

### Options:
- Self-enclosed Remote Panel Antennas
- Multi-Bands Available (up to quad band)
- Dual Receiver Mode (High-Gain / up to Eight-Channel Diversity)
- Filtering per System Requirements
- Bidirectional Systems Available

### Main Antenna:
- **Type:** Offset Fed Truncated Parabolic
- **Frequency:** 300 MHz to 15GHz
- **Gain:** 18 dBi to 33 dBi (Dependant on Frequency)
- **Antenna Polarization:** Vertical (Quad Polarization Optional)
- **Steering Azimuth:** Continuous Rotation, Max Speed 60 Degrees/Second
- **Steering Elevation:** Steering + 35 to 5 degrees (Recommended above 3GHz)
  - Optional

### Diversity Antennas:
- **Type:** Cavity Backed Dipole
- **Number:** Up to Five Evenly Spaced Around the High-Gain Antenna
- **Antenna Gain:** 12 dBi minimum (Frequency Dependant)
- **Antenna Polarization:** Vertical (Quad Polarization Optional)
- **Antenna Beamwidth:** Azimuth 75° / Elevation 38°

### Block Down Converter:
- **RF Frequency Range:** 1.4 GHz to 15GHz
- **RF Input SWR:** <1.5:1
- **IF Frequency Range:** 810 – 300 MHz
- **RF Input Impedance:** 75 ohms
- **Noise Figure:** <3.0 dB

### Frequency Table:

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<thead>
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<th>Frequency</th>
<th>UHF Optional</th>
<th>L Band</th>
<th>S Band</th>
<th>Lower C</th>
<th>Upper C</th>
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<tbody>
<tr>
<td>Diversity Array</td>
<td>Dual Can</td>
<td>Dual Slot</td>
<td>Dual Slot</td>
<td>Quad Slot</td>
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<tr>
<td>Tracking Antenna</td>
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<td>21.0 dBi</td>
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<td>± 8°EL</td>
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<td>± 3°EL</td>
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* HPBW Half Power Beam Width