

# Over-the-Air 1900C Network Repeater™

*The Only 7.0 Watt CDMA Channelized Repeater with Receive Diversity*

## IMMEDIATE BENEFITS

- ⇒ Diversity feature provides
  - Operational transparency
  - No degradation to network performance
- ⇒ Lower cost than base stations—Save up to 75%
- ⇒ Up to 90% less real estate required
- ⇒ Faster time-to-market
- ⇒ Expandable when greater capacity is needed
- ⇒ Excellent return-on-investment

## FEATURES

- ⇒ High-output power
  - 7.0 Watts per carrier
  - 1 or 2 Carriers
- ⇒ ANSI J-STD-008 Compliant
- ⇒ Receive diversity standard
  - Maintains low RFER
  - Prevents dropped calls
  - Doubles talk time
  - 3 dB more link budget
- ⇒ Low noise figure
  - Less than 6 dB on reverse link
- ⇒ Uplink & Downlink power control (ALC)
- ⇒ Simple maintenance concept: Field replaceable unit gets you back on the air fast
- ⇒ RepeaterNet™ – User-friendly supervisory control and alarm network software for OA&M
  - Windows® 95/98/NT (Craft)
  - Windows® NT (NMS)
  - Graphical User Interface
  - Regional National Control for up to 5000 Network Repeaters
  - Fully supports Repeater Hybrid Network (RHN) designs

Patent Pending



*The Repeater Technologies OA1900C NR*

## OAI 900C PERFORMANCE ADVANTAGES

- ⇒ Diversity Standard
  - Retains battery talk time
  - Preserves BTS capacity
  - Maintains Reverse Frame Error Rate
  - Extends range
- ⇒ High Output Power
  - Extends range
  - Lowest cost for covering rural highways
  - Provides more in-building RF power for Passive Distributed Antenna Architecture
  - Fills in larger holes
- ⇒ 2nd Channel at same RF power
  - Maintains original footprint when 2nd carrier is added
- ⇒ RepeaterNet™
  - Allows all repeaters to be integrated into the NOC via a single RepeaterNet NMS

# OAI900C NR—Technical Specifications

## 1 or 2 Channel Network Repeater

| MODELS AND FREQUENCY RANGE (MHz) |            |           |             |             |
|----------------------------------|------------|-----------|-------------|-------------|
| MODEL                            | BLOCK      | BANDWIDTH | FORWARD     | REVERSE     |
| 090-3600                         | A          | 15        | 1850-1865   | 1930-1945   |
| 090-3610                         | B          | 15        | 1870-1885   | 1950-1965   |
| 090-3621                         | C2 (Lower) | 705       | 1895-1902.5 | 1975-1982.5 |
| 090-3620                         | C          | 15        | 1895-1910   | 1975-1990   |
| 090-3622                         | C1 (Upper) | 705       | 1902.5-1910 | 1982.5-1990 |
| 090-3630                         | D          | 5         | 1865-1870   | 1945-1950   |
| 090-3640                         | E          | 5         | 1885-1890   | 1965-1970   |
| 090-3650                         | F          | 5         | 1890-1895   | 1970-1975   |

| RF CHARACTERISTICS |   |           |                         |
|--------------------|---|-----------|-------------------------|
| LINK               | RF OUTPUT POWER PER CARRIER AT THE ANTENNA PORT |           | GAIN<br>(in 2 dB steps) |
|                    | 1-CHANNEL                                       | 2-CHANNEL |                         |
| Forward            | +38.5 dBm                                       | +38.5 dBm | 65-95 dB                |
| Main Reverse       | +18 dBm   | +18 dBm   | 65-95 dB                |
| Diversity Reverse  | +18 dBm   | +18 dBm   | 65-95 dB                |

| MECHANICAL/ELECTRICAL CHARACTERISTICS |                   |                          |                      |                           |                         |                     |
|---------------------------------------|-------------------|--------------------------|----------------------|---------------------------|-------------------------|---------------------|
| POWER CONSUMPTION                     |                   | SIZE                     | WEIGHT               | INPUT VOLTAGE OPTIONS     | TEMPERATURE             | ANTENNA CONNECTIONS |
| 1-Channel                             | 205 Watts         | 16H x 14W x 11.5D (inch) | <50 lbs or<br><23 kg | 11-/230 Vac or<br>+24 Vdc | -40° to 55°C<br>ambient | Type N (f)          |
| 2-Channel                             | 350 Watts (total) | 406H x 356W x 292D (mm)  |                      |                           |                         |                     |

| ADDITIONAL CHARACTERISTICS                |                    |                           |             |                                       |        |                |
|---|--------------------|---------------------------|-------------|---------------------------------------|--------|----------------|
| WAVEFORM QUALITY FACTOR DEGRADATION (rho) | SPURIOUS RESPONSE  | 3 Db SAW FILTER BANDWIDTH | GROUP DELAY | MAXIMUM INPUT SIGNAL (without damage) | VSWR   | NOISE FIGURE   |
| $\rho < 0.95$                             | Per ANSI J-STD-008 | <1.27 MHz                 | <6µsec      | +10 dBm                               | <1.5:1 | <6 dB per path |

| REPEATER NET ALARM, MONITORING, AND CONTROL  |   |   |
|--|---|---|
| ACCESS OPTIONS   | GUI   | FUNCTIONS   |
| <ul style="list-style-type: none"> <li>RS-232 (local)</li> <li>POTS (dial-up)</li> <li>Wireless Modem</li> </ul> | <ul style="list-style-type: none"> <li>Windows® 95/98</li> <li>Windows® NT (NMS)</li> <li>32-bit</li> <li>Point-and-click</li> <li>Pull-down Menus</li> </ul> | <ul style="list-style-type: none"> <li>Summary Alarm</li> <li>Interrupt Reporting</li> <li>Definable Threshold</li> <li>Remote control; Gain, Channel, and PA On/Off</li> </ul> |

| ALTERNATE POWER OPTIONS |   |
|-------------------------|---|
| TYPE                    | DESCRIPTION   |
| BUPS                    | 6 to 11 hours of backup power without AC.               |
| Solar Power             | PV (Photovoltaic) with regulated charging to batteries. |
| Hybrid Solar and TEG    | PV with thermal electric propane generation assistance. |
| Hybrid Solar and MG     | PV with propane or diesel generation assistance.        |

| INPUTS AND OUTPUTS |              |                           |                   |
|--------------------|--------------|---------------------------|-------------------|
| LOCAL I/O          | OUTPUT TYPE  | LOCAL I/O                 | OUTPUT TYPE       |
| Critical Alarm     | Form C Relay | Remote Control Relays (2) | Form C Relay      |
| Major Alarm        | Form C Relay | Digital Outputs (2)       | Opto-isolated TTL |
| Minor Alarm        | Form C Relay | Digital Inputs (2)        | Opto-isolated TTL |

| LED INDICATORS           |                   |
|--------------------------|-------------------|
| LOCAL I/O                | OUTPUT TYPE       |
| External Battery Monitor | Analog (DC Volts) |
| BUPS Monitor             | 6 Alarms          |