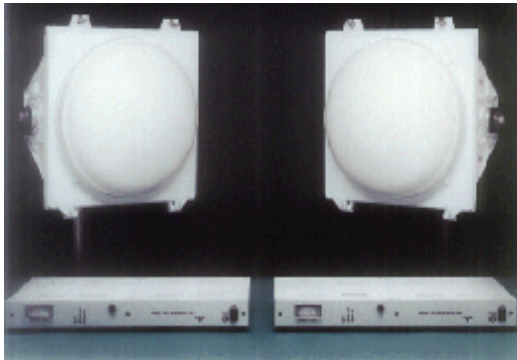




Model 2351 Microwave Radio



FEATURES

- * Flexible—Can be configured for ETHERNET only, ETHERNET+T1/E1, or ETHERNET+2T1/2E1
- * Operating Frequency tunable at the Interface Unit with thumbwheel switches
- * Optional Output Power Control at the Interface Unit with thumbwheel switches
- * Low parts count, highly derated solid state devices make for extremely high MTBF
- * Easy Installation—special mounts enable simplified, rapid installation

Description

The GDI 2351 series millimeter wave radio is a versatile, simple, low cost 10 Mbps alternative to burying fiber.

For all your ETHERNET needs, the GDI 2351 millimeter wave link affords a low cost full 10 Mbps radio solution. The GDI 2351 digital radio, with its' included switch selectable AUI/DB15 or UTP/RJ45 interface, will connect directly into your computer or 802.3 device, such as a Router, Bridge, or Repeater, because the transceiver unit is built into the radio itself. The UTP interface facilitates full duplex operation. Optional separate T1/E1 capability (1T1, 1E1, 2T1 or 2E1) is available to add low cost voice service to the same radio link.

Three units make up the GDI system:

- * A weatherproof outdoor transmitter/receiver unit including intergral 12" antennas
- * Also available in separate box for use with external antennas
- * An Indoor Interface unit containing power supplies, ETHERNET transceiver, and optional T1/E1 circuitry.

Technical Specifications

Technical Summary

| | |
|--------------------------------|------------------|
| Frequency Range | 21.2 to 23.6 GHz |
| Standard TX/RX Spacing | 1200 MHz |
| Allocated RF Channel Bandwidth | 50 MHz |
| Occupied Bandwidth | 28 MHz |
| Modulation Type | FM |

Status and Diagnostics

| | |
|-----------------------|--|
| LED Status Indicators | Primary power, Link continuity |
| LED Alarm Indicators | AGC Alarm, TX Alarm, RX Alarm, Frequency command error |
| Alignment Aids | Outdoor Unit: AGC Test Points Indoor Units: AGC Level Meter |

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Model 2351 Microwave Radio

Transmitter Specifications

| | |
|------------------------------------|--|
| RF Source | Oscillator/Multiplier/ Amplifier Type |
| Guaranteed Power Output | +17 dBm (min) |
| Frequency Stability (-34 to +74°C) | ±0.001% |
| Power Control Option | 7 steps down from max power out |
| Tuning Range | Covers full band with two sets of units |

Receiver Specifications

| | |
|--------------|-------------------------------------|
| Type | Dual conversion Superhet- rodyne |
| Noise Figure | 5.5 dB (typical) |

Sensitivity

| | |
|---|---------|
| For 10 ⁻⁶ BER operating point (LAN only) | -73 dBm |
| For 10 ⁻³ BER operating point (LAN + T1/E1) | -70 dBm |
| Maximum receiver input | -25 dBm |

Antenna Specifications

| | |
|-------------------------|-----------------|
| Type | Parabolic |
| Diameter | 12.5" (31.8 cm) |
| Polarization | Linear |
| Gain (22.4 GHz) | 35 dB |
| Front to back ratio | 42 dB |
| Beamwidth @ 3 dB points | 3.2 degrees |

Interface Parameters

| | |
|---------------------------------|------------|
| ETHERNET Specification (direct) | IEEE 802.3 |
| Protocols passed | IEEE 802.3 |

Environmental Specifications

| | |
|----------------------------|--------------|
| Ambient Temperature Range | -37 to +74°C |
| Storage and Transportation | -40 to +80°C |
| Humidity (non condensing) | Up to 100% |

Input Voltage Requirements

| | |
|-------------------|---------------|
| Power Input | 93 to 265 VAC |
| Brown-out voltage | 90 VAC |
| Line Frequency | 50/60 Hz |

Transmission Data

| | |
|--|-------------------|
| System Gain (Guaranteed for 10 ⁻⁶ BER operating point) | 90 dB (LAN Only) |
| Unfaded BER | 10 ⁻¹² |

Power Consumption

| | |
|-----------------------------------|----------|
| Total power required per Terminal | 25 W max |
|-----------------------------------|----------|

FCC Information

| | |
|-----------------------|---------------|
| FCC rules part number | 101 |
| Frequency Range | 21.2—23.6 GHz |
| Emission Designator | 42MOF7D |
| Frequency Tolerance | ± 0.001% |
| FCC Max power output | 0.10 W |

Size and Weight

Outdoor Unit with integral 12" antenna

| Height | Depth | Width | Weight |
|--------|-------|-------|--------|
| 15" | 12" | 15" | 15 lbs |

Outdoor Unit w/o antenna

| Height | Depth | Width | Weight |
|--------|-------|-------|--------|
| 10" | 4.5" | 8" | 15 lbs |

| | |
|--------------------|--|
| Indoor Unit | 19" Rack, 2U mounting space (3.5" high) |
|--------------------|--|

Connectors and Cabling

Between RF head & Interface Unit

| | |
|-----------|---|
| 0 to 750' | Times Microwave LMR400 or equivalent |
|-----------|---|

| | |
|--------------------|-------------|
| Coaxial Connectors | Type N Male |
|--------------------|-------------|

| | |
|------------------|--|
| Waveguide Flange | UG-595/U (for connection to external antenna) |
|------------------|--|

Interface Unit

| | |
|---|-----------------------------|
| ETHERNET Connector (Switch Selectable) | RJ45 (UTP or DB15 (AUI)) |
|---|-----------------------------|

| | |
|---------------|------|
| T1 Connectors | RJ45 |
|---------------|------|

| | |
|---------------|-----|
| E1 Connectors | BNC |
|---------------|-----|

Frequencies

The lower half of the band is covered by one pair of units and the upper half of the band is covered by a second pair of units. Therefore, to have spares for all possible frequencies four (4) different RF heads are required.

Specifications subject to change without notice

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