

Micro Link III

18/23 GHz Broadcast Quality Video Microwave System



Applications

- Studio-to-Transmitter Links and Transmitter-to-Studio Links
- CCTV Head Ends
- Distance Learning

Features

- High-performance, high-quality design
- Broadcast quality 525/625 line video with up to 4 plug-in audio subcarriers
- Extensive diagnostic features for simple maintenance and serviceability
- Modular design employs slide-in modules with easy access via hinged front panel
- Field tuneable across RF sub-bands
- 2', 4', or 6' antennas, single or dual polarization
- Simplex, full duplex, multiplex, and hot standby configurations
- AC or DC power
- Synthesized transmitter and receiver; microwave sources are field-tunable across 18 GHz or 23 GHz sub-bands

Overview

The MicroLink III 18/23 GHz Video Microwave System is a high-performance short-haul system designed to deliver broadcast-quality video in the 17.7 to 19.7 or 21.2 to 23.6 GHz frequency bands. The MicroLink III is available in simplex, duplex, multiplex, and hot standby configurations.

Up to 4 internal, high-quality audio channels can be carried above the video for program audio channels, low-speed data, or supervisory order wire in any combination. MRC offers a full range of antennas with single or dual polarized feeds that meet FCC Category A requirements.

Designed with extensive diagnostic features, the MicroLink III is simple to maintain and service. The modular indoor Baseband Interface Unit employs plug-in modules with easy access via a hinged front panel. Diagnostic information is provided at the module level in addition to the system level for systematic troubleshooting. The MicroLink III utilizes the same high performance baseband modules found in the FLR series of long-haul microwave radios. The RF Unit features a removable cover for easy access to the plug-in modules.

The MicroLink III offers high power output and a high-stability RF source phase-locked to a stable crystal reference with frequency stability of $\pm 0.003\%$, along with a built-in RF monitor test point. The receiver features an advanced dual-conversion superheterodyne design that incorporates a high first IF which provides superior image rejection.

The modular MicroLink III system is engineered for reliable operation and easy maintenance. The basic system is field-tunable over the full 600 MHz sub-band segments of the 23 GHz band, and over the 440 MHz sub-band assignments of the 18 GHz band. This field-tunability feature reduces system sparing requirements and enables rapid servicing and maintenance.

SPECIFICATIONS

GENERAL

Video: 525 or 625 line
18 GHz Band: 17.71 to 18.13 & 19.27 to 19.69 GHz
23 GHz Band: 21.225 to 23.575 GHz
(Entire Parts 21 and 94 bands)
Audio Capacity: Up to 4 audio subcarriers
Video Input/Output: 75 Ω coax, BNC connector
Audio Input/Output: 600 Ω plug-in connector
Modulation: FM
Video Signal-to-Noise: 67 dB min
FM Deviation: ± 4 MHz
Configurations: Simplex, Duplex, Multiplex or Hot Standby
Primary Power: 115/220 Vac (50 to 60 Hz)
Optional: 24 or 48 Vdc
Power Consumption, TX or RX: 80 W, typical

VIDEO PERFORMANCE

All measurements at -40 dBm RCL. Measurements are made in accordance with EIA RS250C or CCIR specifications, unless otherwise noted.
Signal-to-Noise Ratio (weighted): 67 dB min
Signal-to-Hum (p-p/RMS): 62 dB min
Frequency Response
10 kHz to 4.5 MHz (525 line): ± 0.25 dB
10 kHz to 5.0 MHz (625 line): ± 0.25 dB
5 MHz to 8 MHz (Baseband Output): ± 0.50 dB
Differential Phase: 0.5° max
Differential Gain: 2% max
Video Input/Output: 1 Vp-p, 75 Ω unbalanced

AUDIO PERFORMANCE

Signal-to-Noise Ratio: 70 dB, typical
Audio Response: 40 Hz to 12 kHz, ± 1.0 dB
12 kHz to 15 kHz, ± 1.5 dB
Harmonic Distortion: 0.5% max @ 1 kHz
Audio Input/Output: 0 to +9 dBm, 600 Ω balanced
Factory set to +8 dBm in/out

TRANSMITTER

Power Output (without branching)
Typical: 100 mW (+20 dBm)
Minimum: 66 mW (+18 dBm)
Frequency Stability: $\pm 0.003\%$

RECEIVER

Type: Dual conversion, superheterodyne
Threshold: -70 dBm min, -75 dBm typical
(37 dB weighted S/N)
Noise Figure: 11 dB typical
Intermediate Frequencies: 612 MHz and 70 MHz

INTERCONNECTION

Power Cable: AWG #18
IF or Baseband: RG-6/U
Lengths: 50, 100, 250 feet standard kits
Up to 1000 feet upon request.
A cable equalizer/clamper is available for longer runs.

ALARMS AND STATUS INDICATORS

TX/RX Summary Alarms: Form C
System Indicators:
Tx Meter: TX RF Monitor, +15 V, -15 V, RF Unit
Tx LEDs: Primary Power, Summary, Carrier Alarm
Rx Meter: RX Carrier Level, +15 V, -15 V, RF Unit
Rx LEDs: Primary Power, Summary, RCL
Test Points/Internal Indicators: AGC Voltage,
Subcarrier Alarms

ANTENNA OPTIONS (CATEGORY A)

Polarization Single or Dual available
Interface WR-42
Size 2', 4', 6'
18 GHz, Gain 39 dBi, 45 dBi, 49 dBi
Beamwidth 1.8° , 0.9° , 0.7°
23 GHz, Gain 40 dBi, 46 dBi, 50 dBi
Beamwidth: 1.5° , 0.7° , 0.5°

OPERATING ENVIRONMENT

RF Unit, Temperature: -30° to $+55^\circ$ C
Relative Humidity: up to 100%
Baseband Unit, Temperature: $+10^\circ$ to $+40^\circ$ C
Relative Humidity: up to 95%

PHYSICAL

RF UNIT,

Size: 13.75" h x 12" w x 8.5" d
(35.0 x 30.5 x 21.6 cm)
Weight: Approx. 15 lbs (6.8 kg)
Mounting (RF Unit): Mounts to 3.5" (8.5 cm) to 4.5" (11.0 cm) diameter pole

BASEBAND UNIT,

Size: 5.25" h x 19" w x 15" d
(13.33 x 49.5 x 38.1 cm)
Weight: Approx. 20 lbs (9 kg)
Contains up to: 2 TX's, 2 RX's, or 1 TX/RX

FCC DATA

18 GHz, Rule Parts: 21, 74, 78, 94
FCC ID Number: FC35DZMRCML2
Emission Designator, Video Only: 20M0F8F
Video + Audio: 20M0F8W
23 GHz, Rule Parts: 21, 94
FCC ID Number: FC35DZMRCML23
Emission Designator, Video Only: 25M0F8F
Video + Audio: 25M0F8W
Digital + Analog: 25M0F9W

