

## Communications Link



## CL-100

### Features:

- Telemetry or Voice Transmission
- Superior Adjacent Channel Rejection
- AC/DC Operation
- 1 or 10 Watt Options
- Data and Voice Versions

### Options

- Microphone (hand-held) with push-to-talk cutting data circuit.
- I.D. with station license in code, separate power-fail message.
- 10 watt Transmitter output.

### CL-100 System

The CL-100 system gives the broadcaster an alternative to subcarriers and telephone lines for conveying control and telemetry data between the studio and transmitter locations. CL-100 systems provide the broadcaster with independent control and telemetry circuits, while freeing the STL or program subcarrier channels for other uses. CL-100 system data transmission is extremely reliable, even over a path length of 50 miles (line of sight).

The CL-100 comes in Data and Voice versions. The Data version has increased audio bandwidth and controlled group delay characteristics to allow 9600 baud data rates. In highly congested RF environments, the improved selectivity of the Voice version can be used, providing data rates up to 1200 baud.

The CL-100 system consists of a 1 or 10 watt Transmitter and companion Receiver in the 450-512 MHz range and is type-accepted for use on the Group P channels authorized by the FCC. Audio inputs are provided on the Transmitter rear panel, with a microphone input for voice communication on the front panel. The CL-100 Receiver is supplied with audio outputs and internal or external speaker drive.

An optional MCW Identifier for Transmitter identification and power-fail identification and optional provision for external transmitter battery for operation during a power failure are available. When both are used, the ID module identifies the Transmitter continuously, providing power failure indication. Antennas, transmission line, and connector kits are available to complete a CL-100 installation.

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# SPECIFICATIONS

## SYSTEM

Frequency Response	CL-100 Data CL-100 Voice	$\pm 3$ dB, 20 Hz to 3400 Hz ( $\leq -10$ dB @ 3825 Hz) $\pm 3$ dB, 20 Hz to 3000 Hz
Harmonic Distortion	CL-100 Data CL-100 Voice	2% nominal 5% nominal
Signal to Noise Ratio	CL-100 Data CL-100 Voice	Better than 45 dB @ 60 $\mu$ V (-71.2 dBm) Better than 20 dB SINAD @ 1 $\mu$ V (-106.9 dBm)
Carrier Frequencies		FCC Group P (CL-100 Data) and 450-512 MHz; specify exact operating frequency
Channel Spacing	CL-100 Data CL-100 Voice	USA: 10 kHz; International: 20 kHz 20 kHz

## TRANSMITTER

FCC Type Approval		Part 74 (CL-100 Data)
Type		Direct FM (VCXO)
Frequency Stability		$\pm 0.00025\%$ after 2 minutes
Frequency Deviation	CL-100 Data CL-100 Voice	$\pm 1.0$ kHz $\pm 2.8$ kHz
Input Levels		-16 dBm to +7 dBm, adjustable (line) -60 dBm, adjustable (microphone)
Input Impedance		600 Ohm balanced (line); High Z (microphone)
Input Connectors		Terminal strip plus microphone input
Metering		Bar graph peak modulation indicator
Indicators		RF LED, Power on LED (on modulation indicator)
RF Output		1 watt nominal, Type N connector, 10 watt option available (factory installed)
RF Output Impedance		50 Ohms
Spurious Output		Better than 60 dB below carrier at transmitter output.
Keying		Rear panel RF carrier keying
Temperature Range	Specifications Operating	-30 to +50°C -30 to +70°C
Power Requirements	Line Battery	120/240 Vac, 50/60 Hz, 30 watts (60 watts with 10 watt RFA) 13.6V, 1.5 amps nominal (3.5 amps with 10 watt RFA)
Dimensions	1w 10w	8.9 cm (3.5") H x 48.3 cm (19") W x 35.6 cm (14") D 8.9 cm (3.5") H x 48.3 cm (19") W x 40.6 cm (16") D
Net Weight	1w 10w	8 kg. (17 lbs.) 9 kg. (19 lbs.)

## RECEIVER

Type		Single-conversion Superheterodyne
RF Input Connector		Female Type N
RF Input Impedance		50 Ohms
Sensitivity	CL-100 Data CL-100 Voice	45 dB SNR @ 60 $\mu$ V 20 dB SINAD @ 1 V (-106.9 dBm)
Selectivity	CL-100 Data CL-100 Voice	-3 dB bandwidth: $\pm 3$ kHz or greater -40 dB bandwidth: $\pm 12$ kHz or less; down approx. 30 dB at adjacent Group P carrier ( $\pm 10$ kHz) -3 dB bandwidth: $\pm 6$ kHz or greater -80 dB bandwidth: $\pm 20$ kHz or less
Line Outputs		0 dBm nominal, -16 dBm to +7 dBm adjustable, balanced 600 Ohm
Output Connectors		Terminal strip
Line Output Monitor		Front panel speaker (level adjustable). Connections for external speaker available on terminal strip.
Received Signal Level LED		Carrier-operated, adjustable; normally green for SNR above 20 dB. Open-collector output on rear for hot standby/remote control use.
Temperature Range	Specifications Operating	0 to +50° C -20 to +70° C
Power Requirements		120/240 Vac, 50/60 Hz, 15 watts nominal
Dimensions		8.9 cm (3.5") H x 48.3 cm (19") W x 35.6 cm (14") D
Net Weight		8 kg. (17 lbs.)

NOTE: Specifications subject to change without notice.

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