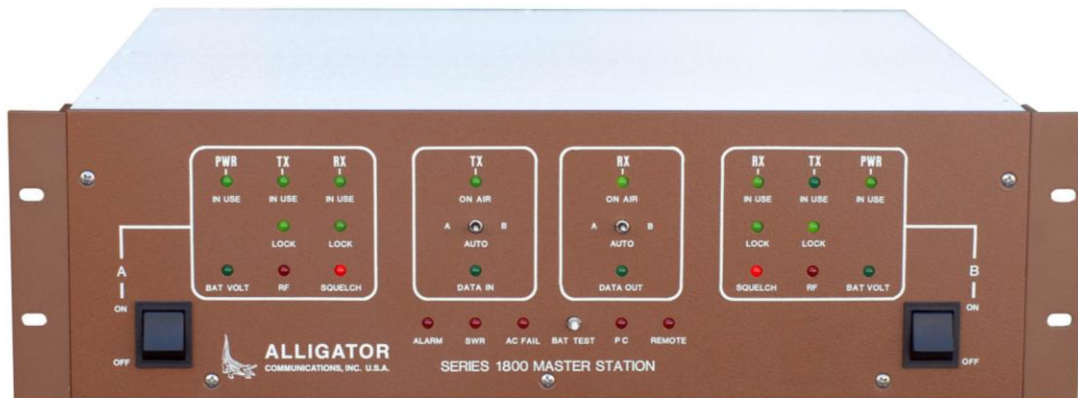


# Licensed Spectrum

# Alligator Communications Model 1800 Series

## MAS MASTER STATION RADIO



### Features:

- Common Time Base
- Single adjustment calibration
- Scrambled data, added security
- Robust adaptive noise reduction
- Legacy master radio co-sharing

### Applications

- SCADA Systems
- Utility Data Communications
- Oil & Gas Pipeline Monitoring
- Water Systems
- Distribution Automation

### General Description

Alligator is the first to offer frequency agile systems with over-the-air adjustment and control of all operating parameters. Even frequency change and calibration of remote radios can be performed from the master station without technicians travel to the remote sites. Alligator's design engineers incorporated significant suggestions from MAS radio users in order to achieve a radio virtually eliminating routine maintenances. Recently incorporated features include scrambling the over-the-air data for added security, 3-wire digital interface eliminates hardware handshake, robust adaptive noise reduction to improve signal to noise and the use of level averaging filter to null out

decoder drift. The unique Common Time Base provides zero offset between transmit and receive modules and allows a single adjustment of the transmit frequency to calibrate all RF modules simultaneously without interrupting SCADA polling. Other added bonuses are automatic rotation between the primary and standby transmitter and a replacement RF module is self programmed to the assigned frequency. Model 1800 offers an optional Antenna Switch Module with built-in intelligence which allows a new Alligator master radio to co-share existing antenna and the same channel frequency with any legacy master. This eliminates complete system shut down during legacy radio replacement process.



**Alligator**  
Communications, Inc.

# Model 1800 Series Master Station Radio

## TRANSMITTER

RF Power: 5 Watts, adjustable 0.5 to 5 W  
 Impedance: 50 Ohms  
 Duty Cycle: Continuous  
 Tx Attack Time: < 1 ms  
 Frequency Stability: .00015%(1.5 ppm) -30°C to +60°C  
 Bandwidth: 12.5 or 25 kHz  
 Modulation Deviation:  
     12.5 kHz Band: ± 3.0 kHz Max.  
     25.0 kHz Band: ± 5.0 kHz Max.  
 Spurious and Harmonic Emissions: -65 dB  
 Audio input level: -20 to +10 dBm  
 Frequency Response: +1/-3 dB: 300 to 3000

Frequency:	<b>360-512 MHz</b>	<b>860-960 MHz</b>
FCC Identifier:	JIL1800B	JIL1800
FCC Rules:	Parts 90 & 15	Parts 101
Emission Designator:	12K5F1D	12K5F1D
	11K0F2D	11K0F2D
	12K5F3D	12K5F3D
Industry Canada Cert:	3073195404A	3073A-1800A

## RECEIVER

Type: Double Conversion Super-heterodyne  
 Frequency Stability: .00015%, (1.5 ppm) -30°C to +60°C  
 Bandwidth: 12.5 or 25 kHz  
 Sensitivity: -117 dBm (0.3 uV) 12 dB SINAD  
 Selectivity: -100 dB min / Adjacent Channel  
 Desensitization: -60 dB (EIA) at 12.5 kHz spacing  
                     -70 dB (EIA) at 25.0 kHz spacing  
 Inter-modulation: -75 dB (EIA)  
 Spurious/Image Rejection: -80 dB  
 Audio Output levels: -20/+6 dBm, Adjustable  
 Frequency Response:  
     Filtered: +1/-3 dB 300 - 3000 Hz  
     Unfiltered: +1/-3 dB 300 - 6000 Hz  
 Bit Error Rate:  
     1200 bps: BER 1x10<sup>-6</sup> at -110 dBm  
     4800 bps: BER 1x10<sup>-6</sup> at -110 dBm  
     9600 bps: BER 1x10<sup>-6</sup> at -103 dBm

## ENVIRONMENTAL:

Temperature: -30°C to +60°C  
 Humidity: 95% at 40°C  
 Dimensions: 19"W x 5.25"H x 17"  
 Weight: 35 pounds

## GENERAL

Input Voltage: 110Vac, 220Vac, 12Vdc, 24Vdc, 48Vac  
 Data Rate: 300 to 9600 bps  
 Data Interface: 3-Wire RS232, 5-wire RS232, 4-wire VF  
 Connectors:  
     Antenna: Type N female  
     Data: DB-25 pin  
     Diagnostics: RJ45  
     External Battery: Terminal Block  
     Alarm Outputs: Terminal Block  
     Alarm Relays: Form C dry contact closure  
 Transient Protection: 2500V Isolation on VF Interface, Keying, Alarm and Power circuits

## OPTIONS and ACCESSORIES

### Master Station Diagnostics and Graphic Display:

Provides over-the-air monitoring, change and control of all remote radio operating parameters & limits.

### Repeater Diagnostics and Control:

Allows Over-the-Air monitoring, change and control of all operating parameters of the repeater station from the Polling radio..

### Automatic TX/AB Cycle:

Allows redundant master station transmitter A and B to rotate usage at a preset time and day.

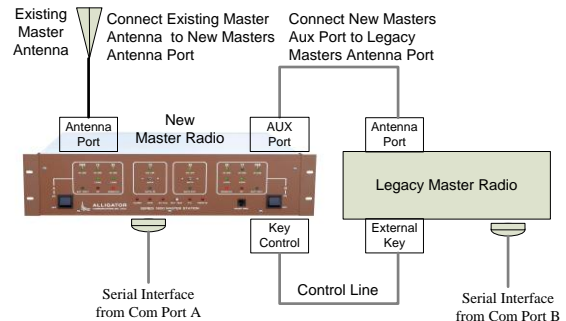
### TX/RX Switch Module:

Built-in RF module eliminates the use of a duplexer for master or polling radio operating in non-continuous, keyed mode

### Antenna Switch Module:

Built-in RF module allows co-sharing of legacy master and new master to co-share antenna and operating frequency. Legacy radios can be replaced on a per site basis eliminating the requirement of a complete system shut down.

## LEGACY MASTER & NEW MASTERS SHARING EXISTING ANTENNA & FREQUENCY



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