



# Antenna & Cable Monitor

ACM Series



Bird's® **Antenna & Cable Monitor** is the solution for monitoring your RF transmission systems. Service providers and self-maintained end users can rely on this monitor and alarm to keep their critical sites up and running.

Designed to detect antenna and cable faults that transmitter-internal VSWR monitors may not detect, it also provides accurate RF in-line power measurement functionality.

- Models available from 108-144 MHz, 136-225 MHz, 225-520 MHz, 470-960 MHz, 960-2400 MHz. Accurately monitors your antenna and cable system VSWR levels.
- Integral coupler with high directivity optimizes measurement accuracy. Measures small changes in antenna VSWR with high feeder and interface losses.
- Provides multiple alarms if an antenna or cable failure should occur.
- Monitors transmitter output power and includes low or high power alarms.
- Measures true average power of signals with high peak-to-average characteristics - works with any modulation!
- Remote access with both monitoring and control via serial and ethernet interfaces.
- Included as standard Push-To-Talk (PTT) input to avoid false alarm triggering when the transmitter (radio) is not keyed.

## Specifications

<b>Frequency Range</b>	108-144 MHz 136-225 MHz 225-520 MHz 470-960 MHz 960-2400 MHz
<b>Measurement Range</b>	ACM: 2.5 to 100 W ACM500: 12.5 to 500 W ACMI: 2.5 to 100 W ACMI500: 12.5 to 500 W
<b>Power Accuracy</b>	108-144 MHz, ±8% 136-225 MHz, ±10% 225-520 MHz, ±8% 470-960 MHz, ±5% 960-2400 MHz, ±5%
<b>Insertion Loss</b>	0.1 dB, 108-960 MHz 0.15 dB, 960-2400 MHz
<b>VSWR</b>	1.07, 108 to 960 MHz, N or 7/16 Connectors 1.1, 960 to 2400 MHz, N Connectors 1.1, 960 to 2000 MHz, 7/16 Connectors 1.2, 2000 to 2400 MHz, 7/16 Connectors
<b>Reflected Directivity</b>	30 dB, 108 to 960 MHz 26 dB, 960 to 2400 MHz

## Applications

3G, Low Power Broadcast, CDMA, CDMA 2000, Edge, GSM, Government, Microwave, Military, Paging, Public Safety, Rail, TDMA, TETRA, TETRAPOL, VHF & UHF, LMR and WLL.

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## VSWR ALARM CHARACTERISTICS

<b>Alarm Set Point</b>	1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5 to 1
<b>Relay Contact Type</b>	Dry, Form C, relay contacts, common, normally open, normally closed
<b>Contact Rating</b>	100 VDC @ 0.5A
<b>Visual Alarm</b>	Red LED will illuminate to indicate alarm
<b>Stimulus</b>	VSWR set point exceeded, response time proportional to overload
<b>Reset</b>	Local Mechanical reset switch Remote input (Reset if VDC is 0 to +0.8 volts)
<b>Push to Talk</b>	+5/+24 VDC to activate

## MONITOR PORTS

<b>Connectors</b>	Female N, TNC or BNC
<b>Coupling</b>	-63 dB approx., Subject to changes in full-scale power

## INTERFACE SPECIFICATIONS

<b>ACM: RS-232 Serial Port</b>	9600 baud, no parity, 8 data bits, 1 stop bit, no handshake
<b>ACMI: Ethernet Port Network Interface Compatibility Protocols</b>	10/100-BASE-T (auto-sensing) Ethernet Version 2.0 / IEEE 802.3 ARP, UDP/IP, DHCP, BOOTP, Auto IP, HTTP, and SNMP
<b>Left LED</b>	Amber: 10 Mbps. Green: 100 Mbps
<b>Right LED</b>	Amber: Half-duplex. Green: Full-duplex
<b>Security</b>	128-bit encryption

## ACM (SERIAL) PART NUMBER DEFINITION

MODEL (POWER RANGE)	FREQ. RANGE (MHZ)	RF INPUT CONN.	RF OUTPUT CONN.	MONITOR PORT CONN.	INPUT VOLTAGE
ACM (2.5 - 100 W)	L0 = 108 - 144 MHz	NM = N Male	NM = N Male	N = N Female	L = +/- (11 to 25) VDC
ACM 500 (12.5 - 500 W)	L1 = 136 - 225 MHz	NF = N Female	NF = N Female	T = TNC Female	H = +/- (36 to 72) VDC
	L2 = 225 - 520 MHz	DM = 7/16 DIN Male	DM = 7/16 DIN Male	B = BNC Female	
	M = 470 - 960 MHz	DF = 7/16 DIN Female	DF = 7/16 DIN Female		
	*H = 960 - 2400 MHz				

\*H Frequency Band Unavailable with 500 W Version.

## ACMI (ETHERNET) PART NUMBER DEFINITION

MODEL (POWER RANGE)	FREQ. RANGE (MHZ)	RF INPUT CONN.	RF OUTPUT CONN.	MONITOR PORT CONN.	INPUT VOLTAGE
ACMI (2.5 - 100 W)	L0 = 108 - 144 MHz	NM = N Male	NM = N Male	N = N Female	L = +/- (8 to 18) VDC
ACMI 500 (12.5 - 500 W)	L1 = 136 - 225 MHz	NF = N Female	NF = N Female	T = TNC Female	M = +/- (18 to 36) VDC
	L2 = 225 - 520 MHz	DM = 7/16 DIN Male	DM = 7/16 DIN Male	B = BNC Female	H = +/- (36 to 72) VDC
	M = 470 - 960 MHz	DF = 7/16 DIN Female	DF = 7/16 DIN Female		
	*H = 960 - 2400 MHz				

\*H Frequency Band Unavailable with 500 W Version.

## PHYSICAL AND ENVIRONMENTAL SPECIFICATIONS

<b>General</b>	ThruLine® sensor for direct insertion in 50-ohm line
<b>RF Connectors</b>	N or 7/16 DIN, see chart below
<b>Maximum Line Section Power</b>	Dependent on frequency and connector
<b>Alarm/Power Connector</b>	15-pin Female "D" connector
<b>Operating Temperature</b>	0°C to 50°C
<b>Storage Temperature</b>	-20°C to 80°C
<b>Humidity</b>	0 to 95% maximum (non-condensing)
<b>Altitude</b>	Up to 3000 meters above sea level
<b>Passive Intermodulation Products</b>	Less than -130 dBc
<b>Power Requirements</b>	ACM +/- 11 to 26 VDC or +/- 36 to 72 VDC ACMI +/- 9 to 18 VDC or +/- 18 to 36 VDC or +/- 36 to 72 VDC
<b>Dimensions</b>	4.8" (121mm) wide (7.6" (192mm) with connectors), 7.2" (183mm) high, 1.06" (27mm) deep
<b>Weight</b>	Less than 2 lbs. (0.9 kg)
<b>EMC</b>	European Standard EN 61326-1:1997 + Addendums A1: 1998 and A2:2001 - Electrical equip. for measurement
<b>Safety</b>	European Standard EN 61010-1:2001- Safety Requirements - Electrical equip. for measurement, control and laboratory use - ECM Requirements.

## MONITOR PORTS

<b>7005A970</b>	PC software, displays Antenna & Cable Monitor readings and alarms, controls alarms set points (serial only)
<b>ACM-RACK</b>	19" rack shelf, mounts up to two Antenna & Cable Monitors
<b>ACM-RACKU</b>	19" rack shelf with universal power supply (100 to 240 VAC, 50 to 60 Hz) mounts up to two +11 to +26 VDC

