Bird Technologies®

Antenna and Cable Monitor

ACM Series

Now With Ethernet!

Bird's® Antenna & Cable Monitor is the solution for monitoring your RF transmission systems. Service providers and self maintained end user's 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 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.

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.

POWER MEASUREMENT SPECIFICATIONS

Frequency Range	136-225 MHz 225-520 MHz 470-960 MHz 960-2400 MHz
Measurement Range	ACM: 2.5 to 100 W ACM500: 12.5 to 500 W ACMI: 2.5 to 100 W ACMI500: 12.5 to 500 W
Power Accuracy	136-225 MHz, ±10% 225-520 MHz, ±8% 470-960 MHz, ±5% 960-2400 MHz, ±5%
Insertion Loss	0.1 dB, 136-960 MHz 0.15 dB 960-2400 MHz
VSWR	1.07, 136 to 960 MHz 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
Reflected Directivity	30 dB, 136 to 960 MHz 26 dB, 960 to 2400 MHz

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VSWR ALARM CHARACTERISTICS

Alarm Set Point	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
Relay Contact Type	Dry, Form C, relay contacts, common, normally open, normally closed
Contact Rating	100 VDC @ 0.5A
Visual Alarm	Red LED will illuminate to indicate alarm
Stimulus	VSWR set point exceeded, response time proportional to overload
Reset	Local Mechanical reset switch Remote input (Reset if VDC is 0 to +0.8 volts)
Push to Talk	+5/+24 VDC to activate

MONITOR PORTS

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

INTERFACE SPECIFICATIONS

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

PHYSICAL AND ENVIRONMENTAL SPECIFICATIONS

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

ACCESSORIES

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

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) ACM 500 (12.5 - 500 W)	L1 = 136 - 225 MHz L2 = 225 - 520 MHz M = 470 - 960 MHz *H = 960 - 2400 MHz	NM = N Male NF = N Female DM = 7/16 DIN Male DF = 7/16 DIN Female	NM = N Male NF = N Female DM = 7/16 DIN Male DF = 7/16 DIN Female	N = N Female T = TNC Female B = BNC Female	L = +/- (11 to 25) VDC H= +/- (36 to 72) VDC

*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) ACMI 500 (12.5 - 500 W)	L1 = 136 - 225 MHz L2 = 225 - 520 MHz M = 470 - 960 MHz *H = 960 - 2400 MHz	NM = N Male NF = N Female DM = 7/16 DIN Male DF = 7/16 DIN Female	NM = N Male NF = N Female DM = 7/16 DIN Male DF = 7/16 DIN Female	N = N Female T = TNC Female B = BNC Female	L = +/- (9 to 18) VDC M= +/- (18 to 36) VDC H = +/- (36 to 72) VDC

*H Frequency Band Unavailable with 500 W Version.

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