EMC TEST SYSTEMS, L.P. – An ESCO Company

E M C O

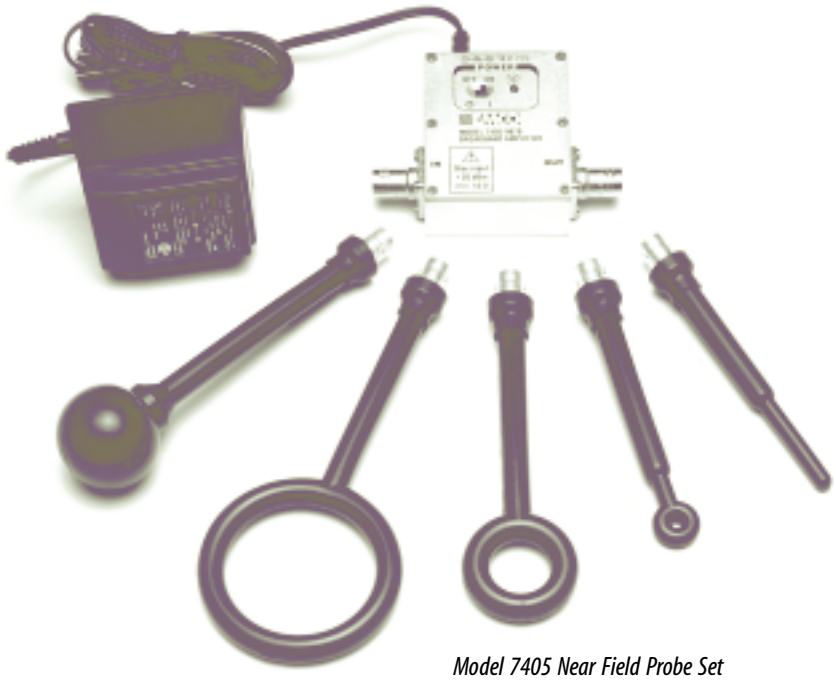
RF Test Sets

E & H Near Field Probes

Model 7405

Features:

- **Broadband Frequency Range**
- **Linear Response**
- **Locates both E and H- Field Emissions Sources**
- **Specialized Sizes / Shapes for Sensitivity**
- **Includes Free Carrying Case**
- **New Optional Preamplifier for Signal Amplification**



Model 7405 Near Field Probe Set with New Optional Preamplifier

ETS-EMCO's Model 7405 Probe Set is a passive, near field probe set designed as a diagnostic aid for locating and characterizing sources of E and H-Field emissions. The set consists of three loop probes, one stub and one ball probe, an extension handle, an optional battery-powered preamplifier, and a foam-lined carrying case with a manual and application note.

The handle of each probe terminates in a BNC connector. Probes are designed to be used with a signal analyzing device such as an oscilloscope or spectrum analyzer. The optional preamplifier is useful when signal amplification is necessary for the analyzing device.

The loop probes are H-Field selective and directional. Sensitivity is relative to loop diameter. For example, the 6 cm loop can be used to make a general survey for H-Field emissions, while the smaller diameter loops can isolate specific sources.

The ball and stub probes are E-Field selective and omni-directional. The stub probe is designed for precise E-Field source location, such as signal traces or IC pins. The ball probe has a large sensing element and is capable of locating weaker signals.

Typical applications include locating and characterizing emissions from PCB's, IC's, etch runs, cables, cover seams, etc.

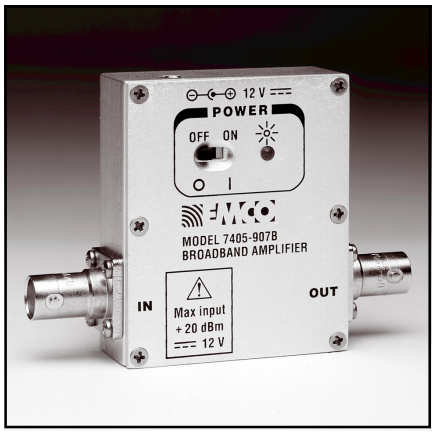
Standard Configuration

- **Three loop probes**
- **One ball probe**
- **One stub probe**
- **One 20 cm (7.87 in) extension handle**
- **Manual**
- **Carrying case**

Options

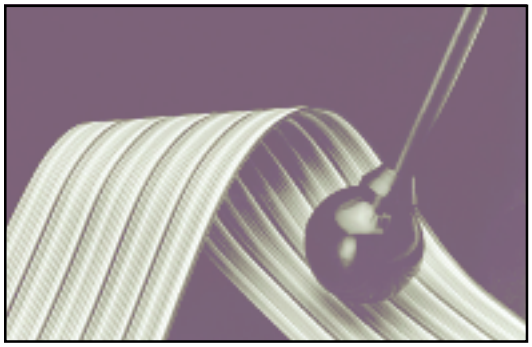
Preamplifier

ETS-EMCO's Model 7405-907B preamplifier exhibits excellent gain characteristics across a broadband frequency range of 100 kHz to 3 GHz. The preamplifier enhances the sensitivity of spectrum analyzers, oscilloscopes and other receivers. The unit can be ordered with either Type BNC connectors or type N connectors. A wall-mounted power supply is included (please specify 110 or 220 VAC). Purchase as an option to the Model 7405 probe set or as a stand-alone product.

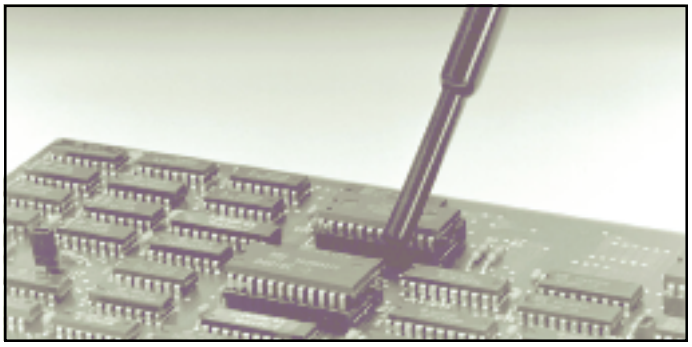


E & H Near Field Probes

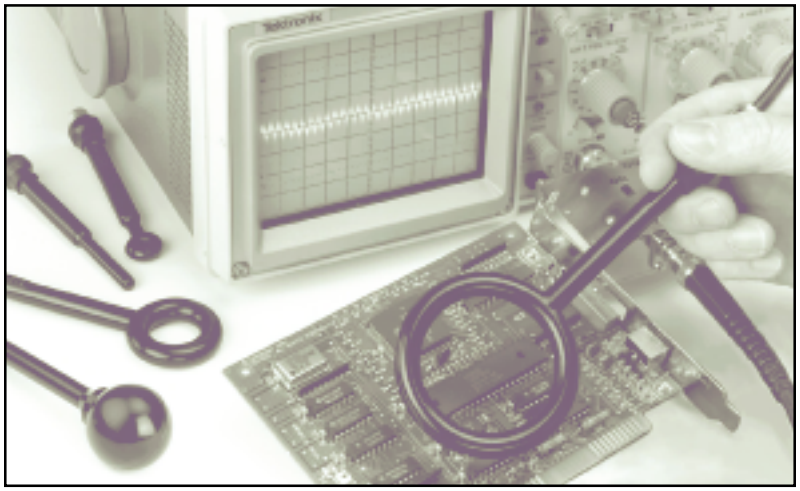
Model 7405



Omni-directional Ball Probe identifies E-Field signals over a broad frequency range.

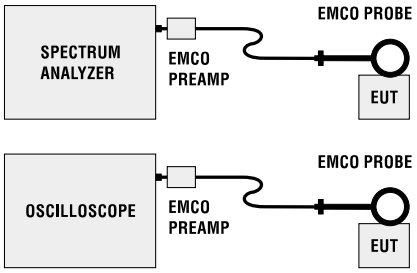


Stub Probe provides E-Field measurement near the signal source.

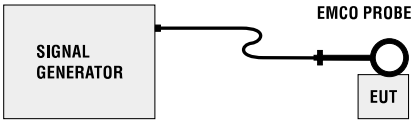


Loop Probes offer varying sensitivities to H-Field emissions.

Receiving Applications



Radiating Applications



Electrical Characteristics of Probes

MODEL 7405	PROBE TYPE	PRIMARY SENSOR	E/H OR H/E REJECTION	UPPER RESONANT
901B	6.0 cm Loop	H-Field	41 dB	790.0 MHz
902B	3.0 cm Loop	H-Field	29 dB	1.5 GHz
903B	1.0 cm Loop	H-Field	11 dB	2.3 GHz
904B	3.6 cm Ball	E-Field	30 dB	> 1.0 GHz
905B	6.0 mm Stub Tip	E-Field	30 dB	> 3.0 GHz

Nominal Gain of Optional Preamplifier

FREQUENCY	GAIN
100 kHz	35.5 dB
1 MHz	38.1 dB
100 MHz	37.2 dB
1 GHz	32.5 dB
2 GHz	25.0 dB
3 GHz	13.0 dB

Electrical Characteristics of Optional Preamplifier

MODEL 7405	BANDWIDTH	NOISE FIGURE (@ 100 MHz freq)	SATURATED OUTPUT POWER (@ 100 MHz freq)	1db GAIN COMPRESSION INTERCEPT	CONNECTOR
907B	100 kHz–3 GHz	3.5 dB (typical)	+12.0 dBm (typical)	+ 10.0 dBm	TYPE BNC
907BN	100 kHz–3 GHz	3.5 dB (typical)	+12.0 dBm (typical)	+ 10.0 dBm	TYPE N