

# RF ELECTROMAGNETIC FIELD METER

Model : EMF-829

ISO-9001, CE, IEC1010



LUTRON ELECTRONIC

*The Art of Measurement*

# RF ELECTROMAGNETIC FIELD METER

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## FEATURES

* Wide measuring frequency ranges, 100 KHz to 3 GHz.
* Radio frequency electromagnetic field tester.
* EMF-829 is used for broadband devices of monitoring the wide range radio frequency electromagnetic field value.
* For precision measurement consideration, the meter are included two probes : EP-02L ( Low frequency Probe, 100 KHz to 100 MHz ) EP-01H ( High frequency Probe, 100 MHz to 3 GHz )
* Unit : V/m, W/m <sup>2</sup> , mW/cm <sup>2</sup> .
* Alarm setting function can warn the user if the measuring antenna is too near the strong radiation sources, the buzzer will sound to remind the user.
* Peak hold function to latch peak value.
* Data hold function to lock the current reading.
* RS232 computer interface.
* Real time data logger, build in clock ( hour-MIN-sec., year-month-date ).
* Auto or manual data record, 16,000 Data logger no.
* Wide sampling time adjustment range from one second to 8 hours 59 minutes 59 seconds.
* Compact metallic carry case.
* Large size LCD with contrast adjustment, which can fit best viewing angle.
* Microcomputer circuit provides special function & offers high accuracy.
* Powered by 006P DC 9V battery or DC 9V adapter.

## APPLICATIONS

This meter is specially developed for measuring or monitoring electromagnetic field, for example: cell-phone station, hospital equipment, radar, micro-wave oven, radiation work, TV antenna, Radio station, welding equipment, baking- equipment, television, computer, factory, laboratory, and other environment...etc.

## SAFETY INSTRUCTIONS

<b>Danger</b>
* For worker's safety, be aware that persons with electromagnetic implant ( e.g. cardiac-pacemaker ) are subject to especial danger in some case.
* Particular to observe the local safety regulations of the operator of the equipment.
* Before using the device, it need to know that how to setting " alarm-limit " value ( refer to page 12 ).
<b>Attention</b>
* Claims by some scientists that long term exposure to electromagnetic field may be the cause of childhood leukemia & other forms of cancer.
* Complete answers to any of these and related questions are not currently available. At the present time the most common practice is to avoid excess exposure over long period of time.
* Complete answers to any of these and related " Prudent Avoidance " as stated by the Environmental Protection Agency(EPA) USA is recommended.
* According to ICNIRP of reference levels to time-varying electromagnetic fields, The E-field strength levels are:

### General public

Frequency range	e-field strength (V/m)
3 to 150 kHz	87
0.15 to 1 MHz	87
1 to 10 MHz	87/f <sup>1/2</sup>
10 to 400 MHz	28
400 to 2000 MHz	1.375 x f <sup>1/2</sup>
2 to 300 GHz	61

### Occupational

Frequency range	e-field strength (V/m)
65 to 1000 kHz	610
1 to 10 MHz	610/f
10 to 400 MHz	61
400 to 2000 MHz	3 x f <sup>1/2</sup>
2 to 300 GHz	137

## GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.	
Display	LCD size : 58 mm x 34 mm.	
Measurement Unit	V/m, mW/cm <sup>2</sup> , W/m <sup>2</sup> .	
Accuracy	± 2 dB.	
Probe Type Selection	EP-01H : 100 MHz to 3 GHz. EP-02L : 100 kHz to 100 MHz.	
Probe Input Impedance	50 OHM	
Frequency Selection Points	EP-01H: 900 MHz, 1 GHz, 1.8 GHz, 2.4 GHz, 2.45 GHz, 3 GHz. EP-02L: 100kHz, 200kHz, 500kHz, 1MHz, 10MHz, 13.56MHz, 100MHz.	
Sensor Structure	Semiconductor	
Sampling Time of Data Logger	Manual	Press the data logger button once will save data one time. * Set the sampling time to 0 second
	Auto	1 sec to 8 hour 59 min. 59 sec.
Data Hold	Freeze the display reading.	
REC Function	Record Maximum & Minimum value.	
Power off	Auto shut off saves battery life or manual off by push button. * Can default auto power off or manual power off. * When default auto power off, power will off automatically after 10 min. if no button be pressed.	
Peak Hold	To latch the peak measurement value.	
Alarm Setting	Buzzer will sound when display over the setting value.	
Sampling Time	Approx. 1 second.	
Low Battery Indicator	When display show Low battery Indicator, it should change the batteries.	
Data Output	RS 232 PC serial interface.	
Operating Temperature	0 to 50 °C.	
Operating Humidity	Less than 80 %RH.	
Power Supply	DC 9 V battery ( 006P ) * Heavy duty or Alkaline type. DC 9V adapter input.	
Power Current	Approx. DC 5.95 mA	
Weight	577 g/ 1.272 LB.	
Dimension	Main instrument : 200.0 x 76.2 x 36.8 mm Probe : 70 mm ( diameter ) x 400 mm ( length )	
Accessories Included	Instruction manual.....1 PC EP-01H Probe..... 1 PC EP-02L Probe..... 1 PC Memory card for EP-01H..... 1 PC Memory card for EP-02L..... 1 PC DC 9V power adapter..... 1 PC Metal carrying case..... 1 PC	
Optional Accessories	RS232 cable, UPGB-02. USB cable, USB-01. Data Acquisition software, SW-U801-WIN.	

## ELECTRICAL SPECIFICATIONS ( 23 ± 5 °C )

Strength Range	Resolution	Effective Value
0~200.00 V/m	0.01 V/m	> 1 V/m
0~99.999 W/m <sup>2</sup>	0.001 W/m <sup>2</sup>	> 0.03 W/m <sup>2</sup>
0~9.9999 mW/cm <sup>2</sup>	0.0001 mW/cm <sup>2</sup>	> 0.0003 mW/cm <sup>2</sup>

  

Frequency range	Accuracy	Cal. level	Probe no.
400 KHz to 100 MHz	± 2 dB	30 V/m	EP-02L
50 MHz to 2.5 GHz	± 2 dB	60 V/m	EP-01H

### Remark:

- \* Measurement under other frequency range ( below 400 KHz and over 2.5 GHz ), the reading value just for reference only.
- \* For precision measurement consideration, it should select the " Frequency Team point " near the frequency value of measuring object.