

*100 KHz to 3 GHz, 2 probes*  
**3 AXIS RADIO FREQUENCY  
ELECTROMAGNETIC  
FIELD METER**

**Model : EMF-839**

*ISO-9001, CE, IEC1010*



# 3 AXIS RF ELECTROMAGNETIC FIELD METER

Model : EMF-839

## FEATURES

|   |
|---|
| * 3 Axis probe.   |
| * Wide measuring frequency ranges, 100 KHz to 3 GHz.  |
| * Radio frequency electromagnetic field tester.   |
| * EMF-839 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 :<br>EP-04L ( Low frequency Probe, 100 KHz to 100 MHz )<br>EP-03H ( 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.  |                               |
| <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:   |                               |
| <b>General public</b>  |                               |
| <b>Frequency range</b>   | <b>e-field strength (V/m)</b> |
| 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                            |
| <b>Occupational</b>  |                               |
| <b>Frequency range</b>   | <b>e-field strength (V/m)</b> |
| 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 structure              | 3 Axis.  |   |
| Probe Type Selection         | EP-03H : 100 MHz to 3 GHz.<br>EP-04L : 100 kHz to 100 MHz.   |   |
| Probe Input Impedance        | 50 OHM   |   |
| Frequency Selection          | EP-03H: 900 MHz, 1 GHz, 1.8 GHz, 2.4 GHz, 2.45 GHz, 3 GHz.   |   |
| Points                       | EP-04L: 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.<br>* 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.<br>* Can default auto power off or manual power off.<br>* 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 )<br>* Heavy duty or Alkaline type.<br>DC 9V adapter input.  |   |
| Power Current                | Approx. DC 5.95 mA   |   |
| Weight                       | 523 g/ 1.16 LB.  |   |
| Dimension                    | Main instrument :<br>200.0 x 76.2 x 36.8 mm<br>Probe :<br>70 mm ( diameter) x 290 mm ( length)   |   |
| Accessories Included         | Instruction manual..... 1 PC<br>EP-03H Probe..... 1 PC<br>EP-04L Probe..... 1 PC<br>Memory card for EP-03H..... 1 PC<br>Memory card for EP-04L..... 1 PC<br>DC 9V power adapter..... 1 PC<br>Metal carrying case..... 1 PC |   |
| Optional Accessories         | RS232 cable, UPCB-02.<br>USB cable, USB-01.<br>Data Acquisition software, SW-U801-WIN.<br>Data Logger software, SW-DL2005.   |   |

## ELECTRICAL SPECIFICATIONS ( 23 ± 5 °C )

|                             |                           |                             |
|-----------------------------|---------------------------|-----------------------------|
| <b>Strength Range</b>       | <b>Resolution</b>         | <b>Effective Value</b>      |
| 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> |

|                        |                 |                   |                  |
|------------------------|-----------------|-------------------|------------------|
| <b>Frequency range</b> | <b>Accuracy</b> | <b>Cal. level</b> | <b>Probe no.</b> |
| 400 KHz to 100 MHz     | < 2 dB          | 30 V/m            | EP-04L           |
| 50 MHz to 2.5 GHz      | < 2 dB          | 60 V/m            | EP-03H           |

### 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.

*NCC ( National Communication Commission is the official organization on behalf Taiwan government )*

# NCC RECOMMEND EMF-839, EMF-819 for Mobile station measurement

The correct instrument for mobile station measurement



安全基地臺 政府嚴把關



## O 正確測量儀器



頻譜分析儀配合適當的接收天線



高頻的「電磁場強度計」

The wrong instrument for mobile station measurement



## X 錯誤測量儀器



高斯計並非量測基地臺電磁波的工具

LUTRON

EMF-839

EMF-819

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