



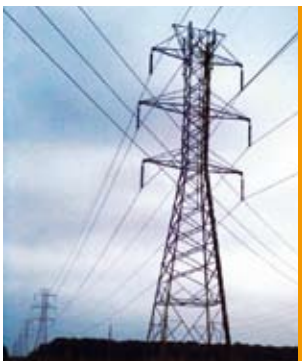
# HIOKI

## MAGNETIC FIELD HiTESTER FT3470-51/-52

Environmental Measuring Instruments



### Providing robust support for 3-axis magnetic flux density measurement



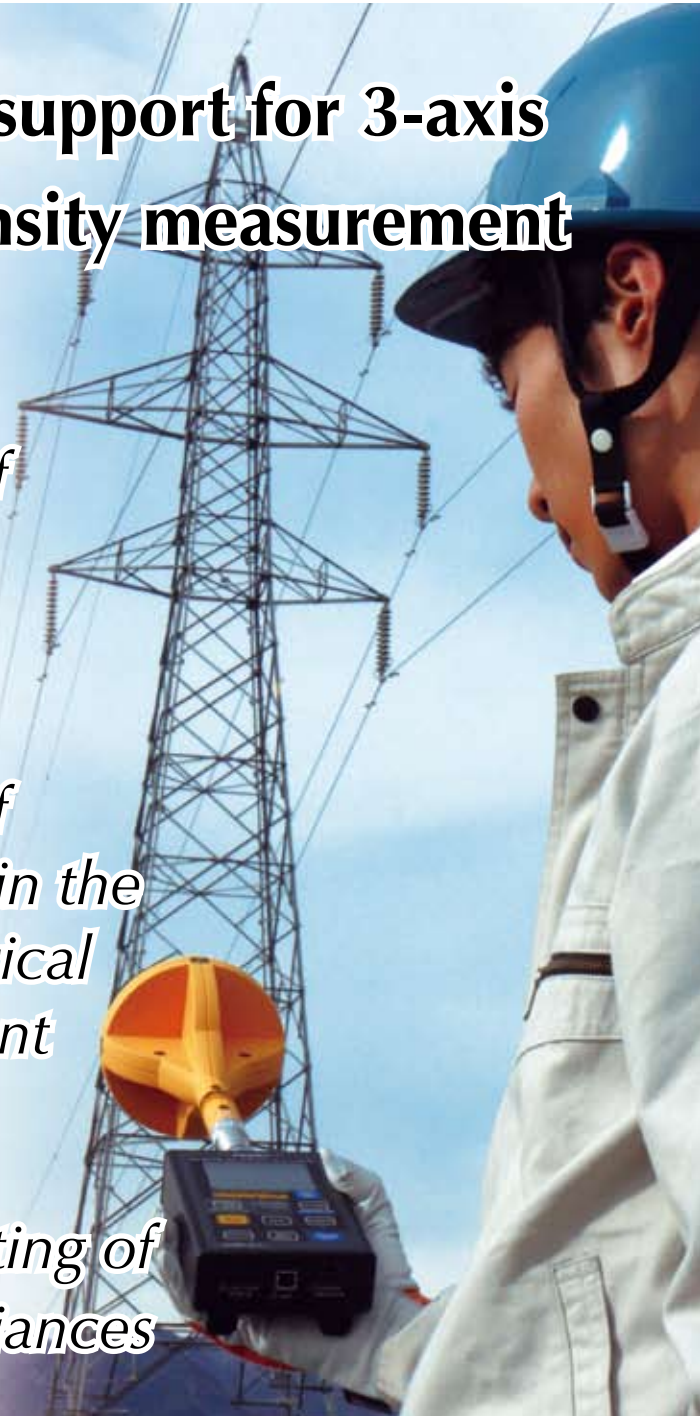
*Measurement of environmental magnetic fields*



*Measurement of magnetic fields in the vicinity of electrical power equipment*



*Compliance testing of household appliances*



ISO 9001  
JMI-0216



ISO 14001  
JQA-E-90091



[www.hioki.com](http://www.hioki.com)

HIOKI company overview, new products, environmental considerations and other information are available on our website.



# Your one-stop solution for magnetic field measurement

The FT3470-50 Series complies with the ICNIRP 2010 guidelines as well as other relevant standards for evaluation testing.

## 1. International guidelines

### ICNIRP 2010 compliant.

The guideline value has been changed to **200  $\mu\text{T}$**  (for public exposure) at 50/60 Hz.  
The FT3470-50 Series completely supports related measurements.

## 2. Magnetic field measurement methods

### The FT3470-50 Series complies with IEC 62110/IEEE 644 as well as IEC 62233.

## 3. Magnetic field measuring instrument requirements

### The FT3470-50 Series complies with IEC 61786.

### Measurement underneath transmission lines

The memory function is helpful when using the standard-defined measurement method for averaging readings taken at three different heights. The FT3470-50 series can also be used to take measurements at substations, underground lines, and pole-mounted transformers.



### Long-term measurement and waveform observation

Using the output function, the FT3470-50 series can be combined with the MEMORY HiCORDER MR8880-20 to observe waveforms, allowing the capture of level and waveform output.



### <Convenient functionality>

#### Memory function

The instrument can store up to 99 measurement data points in its memory.



Saved data can be checked and deleted on-site.

#### Checking data on a computer

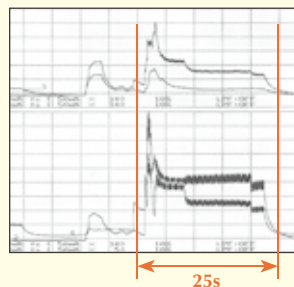
The bundled application software can be used to check measurement data.  
Compatible OS : Windows XP, Vista, 7  
Functions : RMS logger, batch export and tester setup  
Storage format : CSV format



Batch capture: Measurement data recorded using the instrument's memory function can be imported to a computer with a single operation.

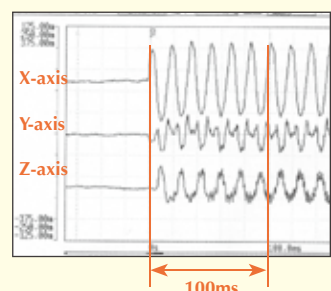
#### Level output

The level output function allows RMS values to be recorded with a recorder or logger, making it useful for applications involving observation of data over extended periods of time.



#### Waveform output

You can also observe magnetic field waveforms by connecting the instrument to an oscilloscope or recorder.





# Features

## 1. Simple operation for easy measurement

Procedure for measuring magnetic flux density (in microteslas)

**1 Set the mode** Magnetic flux density mode covers the entire range from 10 Hz to 400 kHz.



The operation mode switches with every push.

**2 Position the probe**



**3 Measure the magnetic flux density**



The FT3470-50 series can also be used to measure exposure levels as defined by IEC/EN 62233 (compliant with the ICNIRP 2010 guidelines).

## 2. User-selectable display units



**T (Tesla)**

SI unit of magnetic flux density  
\*1μT=10mG



**A/m**

SI unit of magnetic field strength



**G (Gauss)**

Unit of magnetic flux density



The FT3470-50 series can use different units of magnetic flux density as required by the applicable standard or regulation.

## 3. Two 3-axis sensors

Select from two differently sized sensors according to the needs of your application.



### 100cm<sup>2</sup> Sensor

Ships with the **FT3470-51** and **FT3470-52**  
Standard sensor for use with the IEC/EN 62233 standard.  
φ122×295Lmm, 220g



### 3cm<sup>2</sup> Sensor

Ships with the **FT3470-52**  
Enables detailed analysis of magnetic field distribution for measurement targets.  
□27×165Lmm, 95g

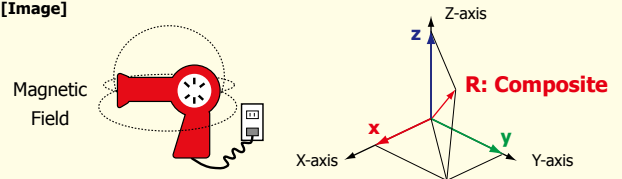


The X-, Y-, and Z-axes of Hioki's 3-axis sensors are labeled, making it easy to identify the direction of magnetic fields.



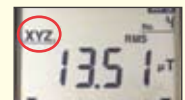
### What is Three-Axis Measurement?

[Image]

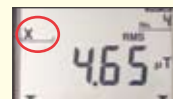


The area of magnetic influence that occurs around an object through which a current is passing is termed a magnetic field. Because the values obtained when measuring a magnetic field vary with direction due to the field's directionality, it is necessary to measure all three axes of the magnetic field.

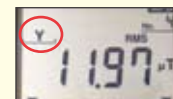
The FT3470-50 Series is capable of accurate measurement because **it measures three axes simultaneously** and calculates the composite (R) value. It can also **measure each axis (X, Y, and Z) separately**.



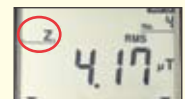
R: Composite, XYZ



X-axis measurement (X)



Y-axis measurement (Y)



Z-axis measurement (Z)

## Also consider: POWER QUALITY ANALYZER PW3198

Record and Analyze Power Supply Problems Simultaneously with a Single Unit  
The New World Standard for Power Quality Analysis



- Assess power quality problems in accordance with international standards (IEC61000-4-30 Class A)
- High-precision, gapless recording (V: ± 0.1 % rdg., A and W: ± 0.2 % rdg. ± 0.1 % f.s.)
- CATIV 600V - Safe enough for incoming power lines
- High-order harmonics and up to 80kHz bandwidth
- Wide dynamic input range and rated up to 6000V peak
- All standard interfaces included (LAN, USB, SD card)
- Synchronize multiple devices with optional GPS BOX

## Specifications

Measurement accuracy will be maintained when the tester and sensor are used in an environment where the temperature is 23°C ±5°C and humidity is 80% RH or less with no condensation

### Basic specifications

Magnetic flux density	10Hz to 400kHz/ 10Hz to 2kHz/ 2kHz to 400kHz
Exposure level	General Public/ Occupational
Indicated axes	X, Y, Z/ R (measured axes: X, Y, Z)
Measurement method	True RMS
Range switching	Auto/ manual
Display update rate	Slow function off: 250msec. Slow function on: 2sec. (Slow function: Functionality for applying the 1-sec RMS value integration time required by IEC/EN 62233)
Crest factor	3 or less But exposure level (occupational) for r1 is 1.45 or less.
Function	Switching magnetic flux density (T, A/m, G), Slow function, Maximum value hold, Memory function (99 measurements), Auto power off, Buzzer sound
Interface	USB1.1
Storage environment	-10 to 50°C, 80% RH or less (no condensation)
Operating environment	0 to 40°C, 80% RH or less (no condensation)
Period of guaranteed accuracy	1 year
Power supply	Four LR6 alkaline batteries 1.5V, Rated power supply voltage DC1.5V×4, AC adapter 9445-02
Continuous usage	Approx. 10 h (with sensor connected, continuous, low load operation)
Dimensions	100W×150H×42D mm (3.94"W×5.91"H×1.65"D)
Mass	870g (30.7 oz)
Applicable standards	Safety EN61010 EMC EN61326, EN61000-3-2, EN61000-3-3
Standard compliance	IEC61786

### Output

Output mode	Magnetic flux density (T), Exposure level (%)	
Output type	MON	Waveform output for each axis (X, Y, Z)
	REC	Composite RMS value level output (output via the X-axis) Exposure level output (output via the X-axis)
Output accuracy	MON	±3.5% rdg. ± 3mV (±5.0% rdg. ± 3mV when the exposure level is or exceeds 1kHz)
	REC	±3.5% rdg. ± 10mV
Output rate	0.1 mV/display value count An output rate based on the magnetic flux density unit T is used.	

### Magnetic flux density accuracy specifications

#### FT3470-51/52 (with 100cm<sup>2</sup> Sensor)

Measurement items	Range	Measurement mode	Prescribed accuracy range	Measurement accuracy
X Y Z	r0	10Hz-400kHz	0.050 to 2.000 μT	±3.5% rdg. ± 0.5% f.s. (50Hz to 100kHz when in 10Hz-400kHz mode)
	r1	10Hz-2kHz	0.50 to 20.00 μT	
	r2	2kHz-400kHz	5.0 to 200.0 μT	
R	r3		0.050 to 2.000 mT	±3.5% rdg. ± 0.5% f.s. (50Hz to 100kHz when in 10Hz-400kHz mode)
	r0	10Hz-400kHz	0.100 to 3.464 μT	
	r1	10Hz-2kHz	1.00 to 34.64 μT	
	r2	2kHz-400kHz	10.0 to 346.4 μT	
	r3		0.100 to 3.464 mT	

#### FT3470-52 (with 3cm<sup>2</sup> Sensor)

Measurement items	Range	Measurement mode	Prescribed accuracy range	Measurement accuracy
X Y Z	r0	10Hz-400kHz	0.200 to 2.000 μT	±3.5% rdg. ± 0.5% f.s. (50Hz to 100kHz when in 10Hz-400kHz mode)
		10Hz-2kHz	0.050 to 2.000 μT	
	r1	10Hz-400kHz	0.50 to 20.00 μT	
	r2	10Hz-2kHz	5.0 to 200.0 μT	
	r3	2kHz-400kHz	0.050 to 2.000 mT	
R	r0	10Hz-400kHz	0.400 to 3.464 μT	±3.5% rdg. ± 0.5% f.s. (50Hz to 100kHz when in 10Hz-400kHz mode)
		10Hz-2kHz	0.100 to 3.464 μT	
	r1	10Hz-400kHz	1.00 to 34.64 μT	
	r2	10Hz-2kHz	10.0 to 346.4 μT	
	r3	2kHz-400kHz	0.100 to 3.464 mT	

### Exposure level (General Public/ Occupational)

Measurement items	Range	Measurement mode	Measurement accuracy
X, Y, Z	r0	0.50 to 20.00 %	±3.5% rdg. ± 0.5% f.s. for smoothed edge 50 Hz to 1 kHz operation
	r1	5.0 to 200.0 %	
R	r0	1.00 to 34.64 %	±5.0% rdg. ± 0.5% f.s. for smoothed edge 1 kHz to 100 kHz operation
	r1	10.0 to 346.4 %	

\*Smoothed edge: Exposure level is here defined as the time domain evaluation introduced in IEC/ EN 62233 applied to the magnetic flux density indicated in the ICNIRP 2010 Guidelines.)

## Ordering Information

### MAGNETIC FIELD HiTESTER FT3470-51

#### Packing contents:

Magnetic Field HiTester FT3470-50, 100cm<sup>2</sup> Sensor, AC Adapter (9445-02 or 9445-03 (EU)), Instruction manual, CD (PC application software), USB cable, LR6 alkaline battery×4, Carrying Case



### MAGNETIC FIELD HiTESTER FT3470-52

#### Packing contents:

Magnetic Field HiTester FT3470-50, 100cm<sup>2</sup> Sensor, 3cm<sup>2</sup> Sensor, AC Adapter (9445-02 or 9445-03 (EU)), Extension Cable 9758, Output Cable 9759, Instruction manual, CD (PC application software), USB cable, LR6 alkaline battery×4, Carrying Case



### Options

Extension Cable 9758 (1.5m, for connecting a sensor and the instrument)

Output Cable 9759 (1.5m, with three BNC jacks on the output end)

AC Adapter 9445-02

AC Adapter 9445-03 (EU)



Note: Company names and Product names appearing in this catalog are trademarks or registered trademarks of various companies.

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