PC Link Kit
for Smart Fieldmeter® Digital
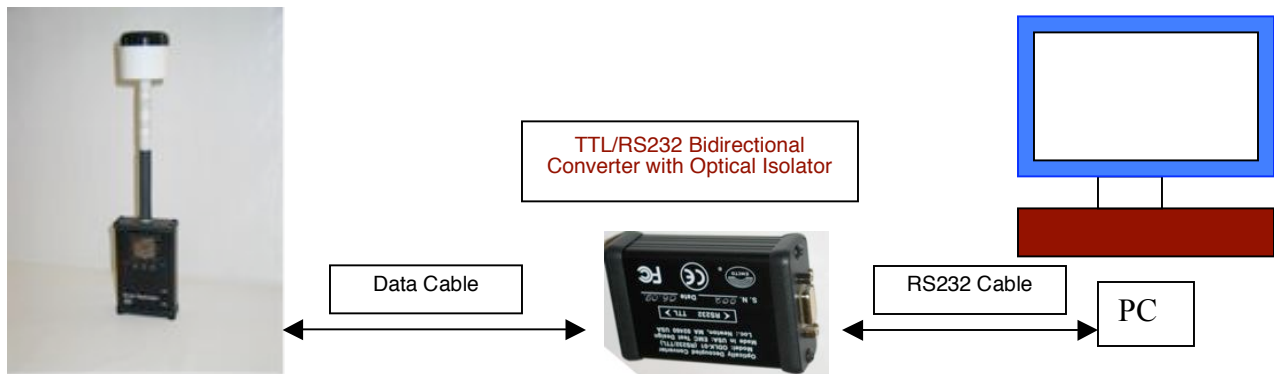
ODLK-01

Users Manual

1. The structure ODLK-01 kit
for Smart Fieldmeter® Digital

Bidirectional data transfer between Smart Fieldmeter® Digital, model RFP-05 and PC is done with ODLK-01 PC link kit. ODLK-01 provides a convenient way to connect Smart Fieldmeter® Digital to any PC having serial RS232 port. Kit contains the optically decoupled converter itself and data cable. No power supply is required - each side of the converter is powered from the corresponding serial port.

For PC's that don't have the RS232 serial port we offer third party RS232/USB adapter. This adapter is fully transparent and doesn't affect the data.

Optically Decoupled Link Kit: ODLK-01

TTL/RS232 Bidirectional
Converter with Optical Isolator

Data Cable

RS232 Cable

PC

2. Description of PC link kit
for Smart Fieldmeter® Digital

Connection of the ODLK-01 to RFP-05 is done through 6 ' shielded 3-Pin audio type Data cable having 2.5 mm plugs on both ends, that is plugged into "PC Link" jack at the bottom of the RFP-05 meter and - similar jack of the ODLK-01. Opposite end of the ODLK-01 has DB9 jack matching standard RS232 port of every PC (standard RS232 cable is not included).

ODLK-01 converter performs two functions:
1. Conversion of the serial RS232 voltage protocol from TTL to a standard RS232 one. This is an important function because the RS232 TTL voltage protocol and PC one are different.
2. AC and RF decoupling between RFP-05 and PC.
There is no electrical connection between TTL and RS232 sides of the ODLK-01.
The bidirectional coupling for data transfer and RF isolation are achieved by using dual optical converters and special design, resulting in a very small RF linkage between the

RFP-05 meter and PC. To minimize the capacitive coupling between Data cable and RS232 Serial cable - these cables should be kept separate.

The PC link starts operation as soon as RFP-05 is set into "PC" mode and PC software controlling the serial port is running (see below).

Data from RFP-05 can be viewed on PC and all meter pushbuttons can be emulated from PC by sending an appropriate commands, thus allowing the user to create a custom bidirectional remote control test system.

3. RFP-05 PC mode setup

To put RFP-5 into PC mode, perform the following settings:

<MENU> brings to the screen the Main Menu.
<↓> Select Setup.
<ENTER> brings to the screen the Setup Menu.
<↓> Select DSP/Key.
<ENTER> brings to the screen the Dsp/Key SetupMenu.
<↓> Select Sleep/PC.
<→> Select PC.
<MENU> brings to the screen the Main Menu.
<NORD> brings the Normal display.

Note: When PC link is not in use we recommend selecting the Sleep from Sleep/PC menu to extend the battery run time in case of prolonged periods of inactivity.

4. PC setup

The default software that can be used for communication with RFP-05 is a standard program HyperTerminal® from Hilgraeve, Inc., supplied with every Windows® operating system (except Vista®). We will specify the steps for Windows XP®, other Windows® variants can be done in a similar way.

First, RFP-05 should be turned on, Data cable and Serial cable - connected. To start the HyperTerminal®, perform the following:

Run HyperTerminal by selecting:
<START> <All Programs><Accessories><Communications><HyperTerminal>.
Ignore the HyperTerminal warning by pushing <OK>.
Print the session name <ABC>.
Ignore the HyperTerminal warning by pushing <OK>.
Select your COM port number (typically, COM1 or COM3).
<OK>.
Select the serial port communication parameters:
Bits per second: 4800.
Data Bits: 8.
Parity: None.
Stop Bits: 1.
Flow Control: None.

<OK>.
Configure the data display by selecting:
<File><Properties><Settings><ASCII> and
check "Append line feeds to incoming line ends"
<OK><OK>.

5. Specification

Parameter	Value
Model Number	ODLK-01
Number of Channels	1
Inputs/Outputs	Single ended, Isolated
Decoupling (TTL/RS232)	140 dB@60 Hz
Resolution	12 bit
Sampling Rate	4800 samples/sec
Interface	RS232
Power	Ports powered

Note: This Specification may be changed without notice due to continuous improvement of the design and manufacturing process.

6. Serial Link Set of Commands

RFP-05 can be controlled from the serial port similar way as from the soft keys and/or from the IR remote. Standard Terminal program (like HyperTerminal®) can control SFD and can get status/measurement information. Each message should be terminated by "<CR>" (ASC-II 13, known as Carriage Return or Enter code).

All control can be executed from PC through serial link same way as from the front-panel soft keys.

Each 7 soft key can be pushed from a terminal program by typing: Kx<CR>.

Where the first character is an upper case K. The second character is a number from 1 to 7 (1=Upper Left key, 2=Middle Left key, 3=Upper Right key, 4=Middle Right key, 5=Lower Left key, 6=Lower Right key, 7=Lower Middle key – Menu key).
The third character is the Carriage Return (or Enter key) on the terminal.

Logging to PC through Serial Port can be enabled by the "PC1<CR>" command, while it can be disabled by the "PC0<CR>" command.

If the PC Log enabled then the PC Log can be canceled any time with typing CTRL_C (Hold the Control key and type C). This command is equivalent by setting the Sleep/PC line to PC on the DSP/Key Setup screen.

When PC Log is enabled then all measurement value is pushed (sent) to the terminal as an ASC-II string (measurement with units and terminated by CR, like: " 7.49 V/m <CR>"). The measurement frequency depends of the measurement mode. If MAN selected then every time when the [MAN] button pushed otherwise in every 100msec, 300msec, 1sec, 3sec, 10sec, 30sec, 1min, 6min, 30min accordingly.

Anytime the current measurement value can be requested by the "GM<CR>" command. The format is same as in the PC Log mode: 3 numbers with a properly positioned decimal point followed by 4 ASC-II characters Unit description, like: "mV/m".

The Battery Time can be requested by the "BT<CR>" command.
The Unit operation time Time can be requested by the "UT<CR>" command.

Note: Developers who would like to write their own communication software should contact the manufacturer for more detailed software information.

7. Limited Warranty

The manufacturer (EMC Test Design, LLC) warrants the product to be free from defects in material and workmanship under normal use and service for the period of 1 (one) year from the date of purchase. This warranty extends only to the original buyer or end use customer of a manufacturer-authorized distributor.

Manufacturer's warranty obligation is limited, at manufacturer's option, to refund of the purchase price, or free of charge repair or replacement of a defective product, which is returned to an authorized distributor or manufacturer within the warranty period.

Manufacturer authorized distributors have no authority to extend the warranty on behalf of the manufacturer.

To obtain the warranty service, contact your authorized distributor. Buyer pays for the insured shipping of the unit to be returned or serviced. Manufacturer doesn't assume any risk for damage in transit. Following the warranty repair, the product will be returned to the buyer, transportation prepaid.

If manufacturer determines that the failure was caused by misuse, negligence, accident or abnormal condition of operation and handling, manufacturer will provide an estimate of the repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the buyer, transportation prepaid, after customer has paid for the repair and return transportation charges.

The typical example of product abuse, which voids the warranty, is: broken connectors. We will void the warranty if product has been opened.

This warranty is purchaser's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty or merchantability or fitness for a particular purpose.

EMC Test Design, LLC shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, whether arising from breach of warranty or based on contract, tort, reliance or any other theory.

The limitations and exclusions of the warranty may not be applicable to every buyer depending on the laws of the land of residence.

Buyer has the rights to return the unit within 14 (fourteen) days from the date of purchase using the insured prepaid carrier, in mint condition in undamaged original package with all accessories and documentation for replacement or refund. In case of refund the restocking fee of $10% will be charged.

8. Technical Support

To purchase the additional units, accessories, get technical support or warranty service, buyer should contact the authorized distributor or manufacturer by e-mail (preferred), or phone.   Check our web site www.emctd.com for the most up to date information.

Buyer should supply the following information:
- Buyer's name, company name and contact information.
- Distributor's name, and contact information.
- Date of purchase.
- Serial numbers of the meter and probe.
- Accurate description of the issues.

Your answers will be used in full confidentiality with only one purpose – to make the ODLK-01 for Smart Fieldmeter® Digital better.

9. EC Declaration of Conformity
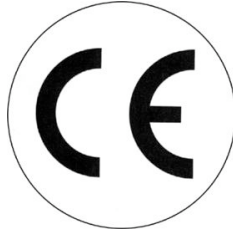
We, the undersigned, manufacturer: **EMC Test Design, LLC
P.O. Box. 600532, Newton, MA 02460, USA**

certify and declare our sole responsibility, that the following apparatus:

Description:	**Electronic Test Equipment**
Brand:	**PC Link Kit for Smart Fieldmeter® Digital**
Identification:	**Model ODLK-01**
Manufacturer:	**EMC Test Design, LLC**

conforms with the essential requirements of the **EMC Directive 2004/108/EC**,
based on the following specifications applied:

EU Harmonized Standards:	**EN 61326-1: 2006,**
specifically:	**EN55011: 2007+A2:2007**
	IEC 61000-4-2: 2008
	EN 61000-4-3: 2006

and with requirements of the **Low Voltage Directive 2006/95/EC,**
based on the following specifications applied:

EU Harmonized Standard:	**EN 61010-1: 2001**

and therefore, complies with the essential requirements and provisions of the EMC
Directive. The technical documentation is kept at the following address:

**EMC Test Design, LLC
P.O. Box. 600532, Newton, MA 02460, USA
www.emctd.com**

February, 19, 2009   _____

10. About EMC Test Design, LLC

EMC Test Design, LLC is a company created and driven by group of professionals with background in RF, Analog and Digital Electronics with particular expertise in EMC instrumentation. Our field strength monitoring products are designed for EMC/RF professionals as tools for RF safety, regulatory and EMC applications. We served the EMC/RF testing needs of our customers since 1992.

The most known product Smart Fieldmeter® has been in production since 2004 and it is an instrument of choice of EMC and RF professionals all over the world. It has been recognized as "best field strength monitor for the money" and we are proud of it.

The latest product addition is Smart Fieldmeter® Digital. This instrument was designed as a response to our customer requests for state of the art field strength monitor with flexible and expandable architecture for demanding applications but still with convenience and simplicity. We designed Smart Fieldmeter® Digital to be not only the "best field strength monitor for the money" but simply - "The Best".

Smart Fieldmeter® Digital is designed and manufactured in Boston, MA.
Our office is located in Newton, MA, USA.

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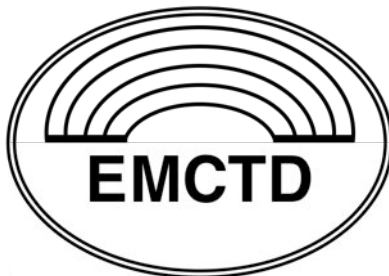
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