iLOG Smart Sensor System
2.4GHz Wireless Data Logger

iLOG-Strain Type Logger

Quick manual

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Smart Control & Sensing

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2.4GHz Wireless Strain Logger (WL-S)

Introduction

With one differential channel, which include full strain gauge conditioning and programmable offset, the WL-S is compatible with most types of analog sensor. Fast and extremely versatile, the WL-S is designed to operate as part of a high speed wireless sensor network.
Featuring 800Hz sampling rates, combined with 16 bit A/D converter, these little nodes pack A lot of power in a small package. With every logger in the wireless network assigned a unique MAC address, a single host transceiver(MSP1000) can address 12 of logger.
The bi-direction RF communications link can trigger a sample to be logged from 200meters, or request real-time data to be transmitted to the host PC for data acquisition/analysis.
The scalable system architecture and programmable sensor interface enables a new generation of wireless sensor networks.
The WL-S is compatible with a wide range of Wheatstone bridge type sensors, including strain gauges, displacement sensors, load cell, torque transducers, pressure sensors, accelerometers, geophones, temperature sensors, inclinometers, and others.

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Features & Benefits

- •2.4GHz direct sequence spread spectrum radio is license free worldwide
- •supports simultaneous streaming form multiple nodes to PC
- •real-time streaming rate up to 800Hz
- •communication rang up to 200m line-of-sight
- •supports most types of analog sensors
- •low power consumption for extended use
- •internal rechargeable battery

Applications

- •condition-based monitoring of machines
- •health monitoring of civil structures and vehicles
- •smart structures and materials
- •experimental test and measurement
- •robotics and machine automation
- •sports performance and sports medicine analysis

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- **Specifications**

	Min	Typ	Max	Units
Battery		3.7		V
		300		mA
Power dissipation	0.24		0.6	W
Duration			1.9	H
Standby			5	H
Charge voltage	4.2	5	7.5	V
Charge current			300	mA
Weight		65		g
Size		64X50X18		mm
Operating Temperature Range	0		40	°C
Sampling rate	50		800	Hz
Internal flash		2		MB
Resolution		0.039		mV
Input Range	0		948	mV(Bipolar type)
	1.22		3.78	V(voltage type)
Export voltage		5		V
Current			200	mA

- **Basic components**

ILOG, Antenna(Stub), USB-DC cable, Manual

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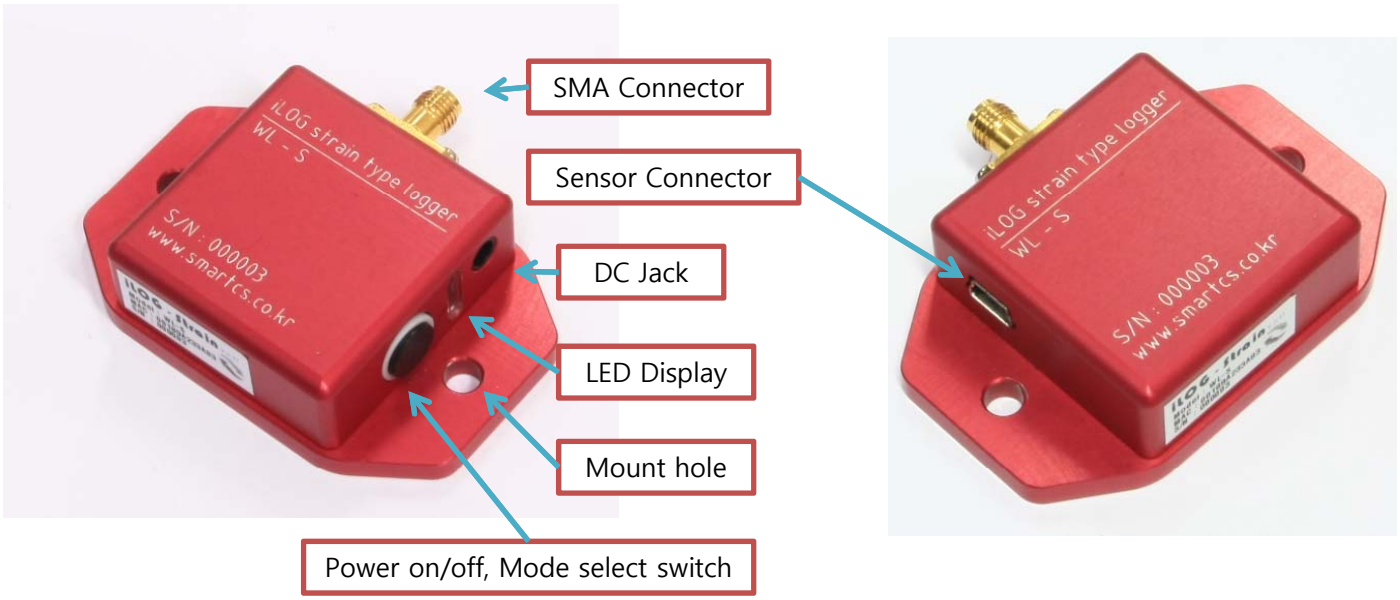
- **Optional components**

Antenna(Dipole), MSP-1000(Bluetooth AP), Bluetooth USB adapter, Solar Charger, Software , Bridge box, Conversion Cable

- **Exterior**



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SMA Connector	A connector used to connect the antenna
DC Jack	Jack for battery charging Input voltage : 4.2~7V
LED Display	To display the charging status and operation status LED
Mount hole	Holes for fixing to the structure of ILOG
Switch	Power ON/OFF and mode change switch
Sensor Connector	A connector to connect to the bridge box or sensor

▪ Switch Operation

You can turn on the ILOG power When do you long time push to the switch (3 seconds over), or turn off.

• Use to mode method

-Flash saving mode

If you want to using the mode of flash memory save then, you can try push the switch short time twice and long time once.

◦ ◦ ▬ Flash memory save mode except to a Bluetooth

-Bluetooth setting mode

Although the ILOG has the Bluetooth default settings(Acceptor mode), User can do try mode change (Bluetooth acceptor mode or MSP connect mode).

But we don't recommend try this mode because suit factory set to user's situation.

◦ ◦ ◦ ◦ ◦ ▬ , ◦ Bluetooth acceptor mode

◦ ◦ ◦ ◦ ◦ ▬ , ◦ ◦ MSP CH1 connect mode

◦ ◦ ◦ ◦ ◦ ▬ , ◦ ◦ ◦ MSP CH2 connect mode

◦ ◦ ◦ ◦ ◦ ▬ , ◦ ◦ ◦ ◦ MSP CH3 connect mode

◦ ◦ ◦ ◦ ◦ ▬ , ◦ ◦ ◦ ◦ ◦ MSP CH4 connect mode

*** ◦ Push the switch 3 seconds under**
▬ Push the switch 3 seconds over

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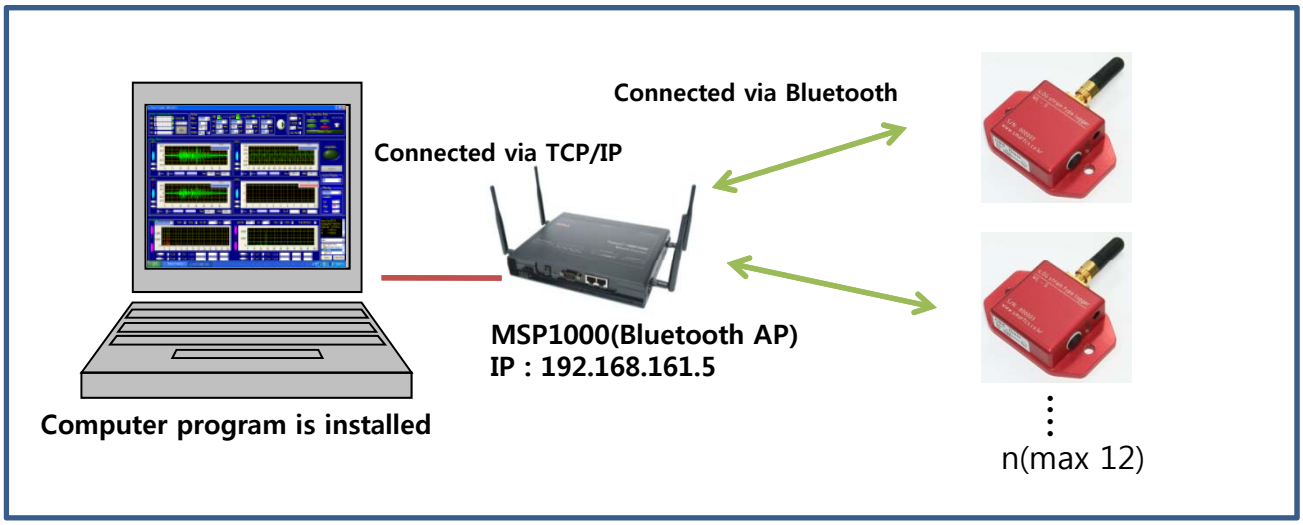
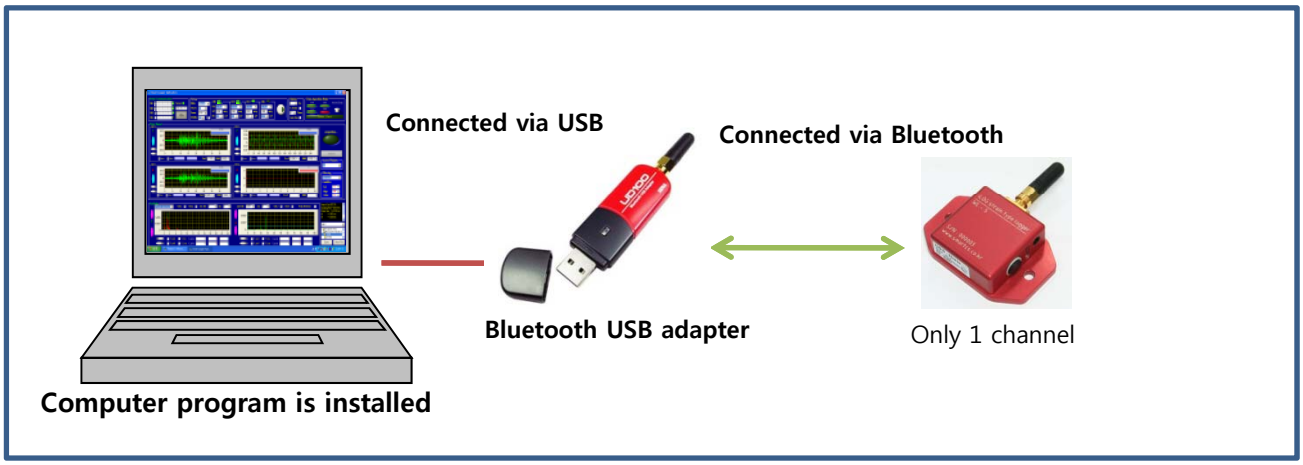
- **Preparation**

- System Configuration



<use multi channel ILOG>



<use one channel ILOG>

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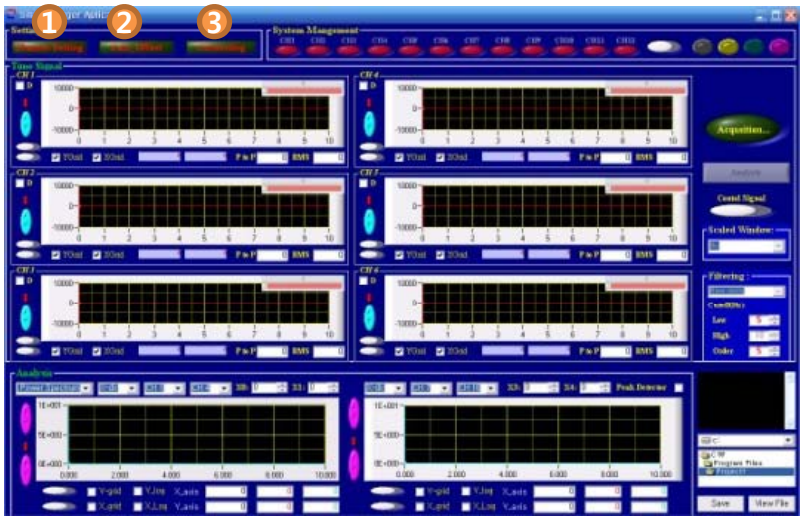
- **Software**

-Setting



<Main window>

1. Channel setting button
2. Gain setting button
3. Connecting button

1-3, you should set in order

<Channel setting window>

1. Check the use
2. Marking
3. Select the sensor type
4. Select the unit
5. Enter the rate output
6. The G.factor, coeffient value of the bipolar type of sensor
7. Displays the capacity of the calculated sensor

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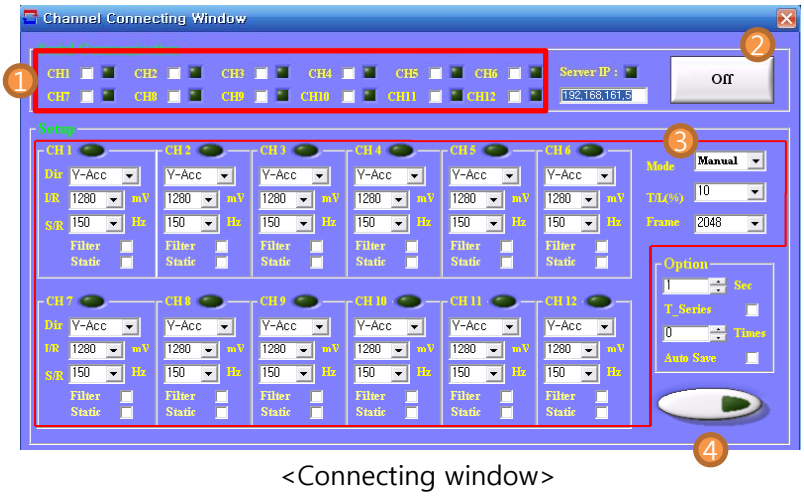
<Gain-Offset setting window>

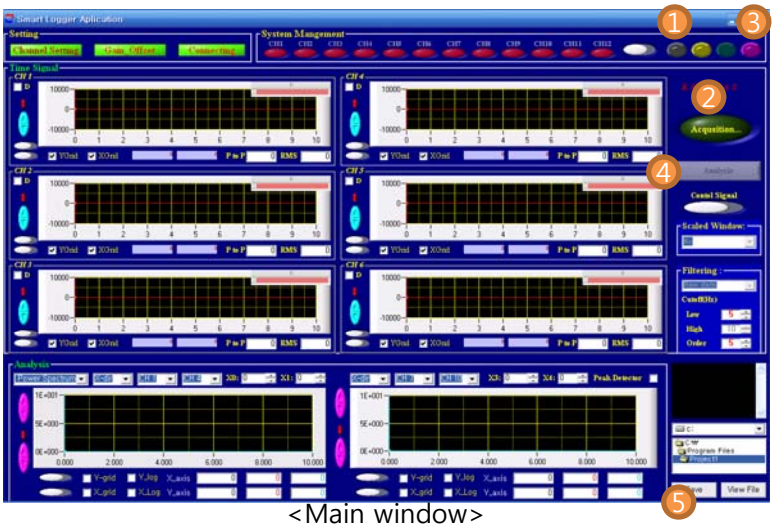
Window to set the value of amplification When using a bipolar type of sensor
Use the default value, only if necessary Make changes



<Connecting window>

1. **Channel selection**
2. **MSP and wireless data logger connection**
3. **Set the wireless data logger (Sampling, H / W Filter, Frame)**
4. **Transfer wireless data logger settings**

-Get data



<Main window>

1. **Wireless data loggers to verify connectivity**
2. **Get data command**
3. **Zero set**
4. **Data analysis button**
5. **Saving Data**

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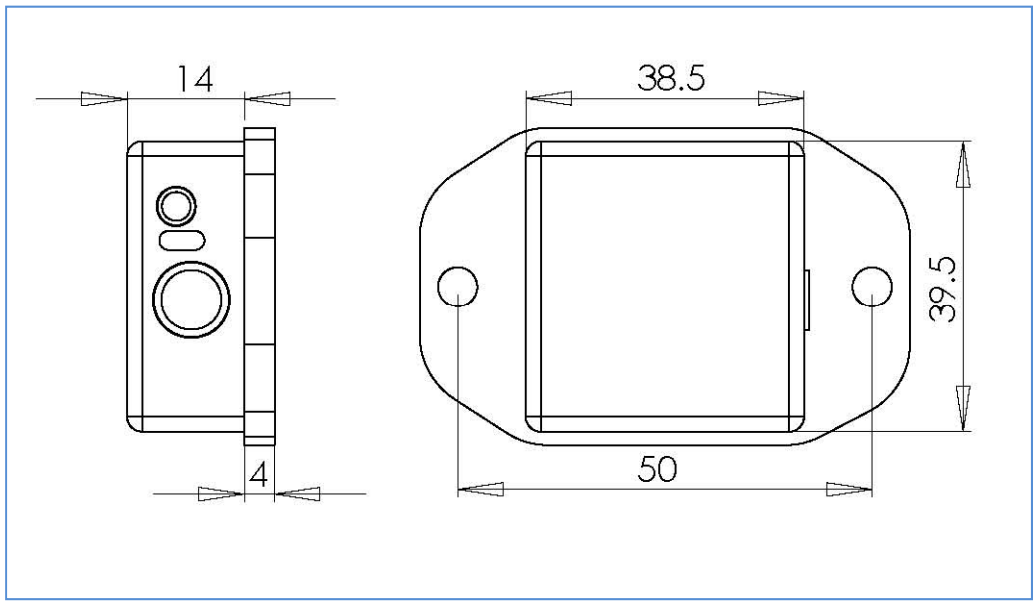
- **Dimension**



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Notes

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

FCC RF

INTERFERENCE STATEMENT
NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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