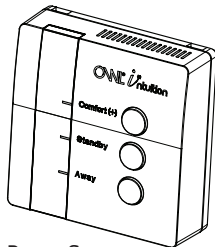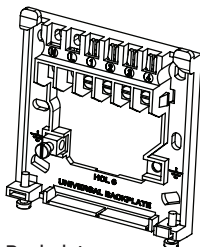# OWL® $i$ntuition

Heating Control Room Sensor [RBT-3C or RBH-3C]
Installation Instructions

Room Sensor to replace existing wired room thermostat. Alternatively can be paired to optional Relay Unit to allow wireless connection to the boiler / wiring centre location. Support for up to 4 separate heating zones. Provides programmer / time clock functionality. Requires Network OWL to operate.
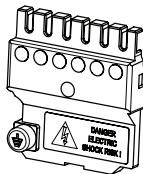
IN THE BOX:

Room Sensor	Backplate	Safety Cover	2 x AAA alkaline battery

Introduction

This Room Sensor is a part of the OWL Intuition range of cloud connected monitoring and control products. Its operation is dependant upon being paired to the broadband Internet connected Network OWL (supplied separately). The Room Sensor provides both room thermostat and programmer / time clock functionality.

Basic day-to-day user operation changes can be made using the three buttons. Additionally there is comprehensive yet intuitive and easy to use control via the OWL Intuition web dashboard. Accessible from any Internet connected computer anywhere in the World. iPhone and Android smartphone apps are also available for free download.

It is recommended that this product is installed by a suitably qualified heating engineer, plumber or electrician.

Please read the Safety Information section of this document before proceeding.

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Version Information

This Room Sensor is battery powered with a latching relay. It has 3 control buttons - Comfort (+), Standby and Away with associated LED indicators.

Device code RBT-3C is fitted with a digital temperature sensor.

Device code RBH-3C is fitted with a digital temperature and humidity sensor.

Installation Configurations Supported

This Room Sensor can be used in several ways to suit various heating control needs:

Heating Type: Combi boiler, Conventional central heating and System boiler.

Room Thermostat Type: Wired connection to boiler and Wireless connection to boiler - when paired to Relay Unit [RMx-6C].

Multi Heating Zone Control: A single OWL Intuition system can support up to 4 Room Sensors (one for each heating zone) in either a wired and/or wireless configuration (paired to Relay Units). Additionally a single Relay Unit can be paired to multiple (8) Room Sensors and optional Tank Sensors for Hot Water control. This flexibility enables OWL Intuition to be used to control heating and hot water systems that are Building Regulations Part L compliant and beyond.

Maximum Number of Devices: Every OWL Intuition device within a single system, e.g. Room Sensor, Tank Sensor, Relay Unit and Electricity Transmitter must be paired to the Network OWL. The Network OWL supports up to a maximum of 10 devices.

Installation Instructions

Single or multiple heating zones

If this is a single zone heating system then simply follow these instructions. The OWL Intuition system will support up to 4 heating zones. For additional Room Sensors simply repeat these instructions for each one required. The web dashboard will automatically update the Heating widget with the additional device when you next log in.

Network OWL installed and online

The Network OWL should already be installed. Refer to the Network OWL Getting Started Guide for guidance if required. Check that it is powered-up and connected to the OWL servers (the top green LED should be flashing in a "triple blip pattern").

IMPORTANT: Please upgrade the Network OWL firmware

1. It is essential that the Network OWL is running the latest released version of firmware available (at least Version 2.2). Please log in to the OWL Intuition web dashboard at **https://www.owlintuition.com** (this is a secure connection).
2. Click on the Devices menu. The Network OWL will appear in the list of devices. Click on Network OWL image to open a new window. If an upgrade is required, an Update Device button will be visible. Click on this button then wait for approximately 5 minutes for the upgrade to complete. You should check that the upgrade was successful before proceeding by repeating this instruction.

Other Steps Before Installing

1. Pair Room Sensor with Network OWL

   a. Put the batteries into the Room Sensor. The 3 LEDs will start flashing together indicating that the Room Sensor is ready to be paired.

   b. Power down the Network OWL by removing the power connector. Then after 10 seconds re-insert the power connector into the Network OWL and wait. The 3 LEDs on the Room Sensor will stop flashing indicating that it is now paired to the Network OWL.

   c. Now wait until the Network OWL is connected to the OWL servers (the top green LED should be flashing in a "triple blip pattern").

   d. Log in to the OWL Intuition account at **https://www.owlintuition.com** (this is a secure connection). You will then see the OWL Intuition web dashboard.

   e. Soon, a message box will pop-up indicating that a new device has been detected and requesting you to log out and log back in.

   f. When you log back in you will now have a Heating widget within your web dashboard.
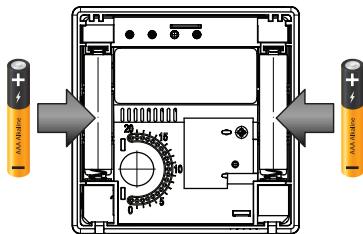
2. **Configure Account Settings**

   Select the Settings menu. Select an appropriate Energy Performance Certificate ("EPC") rating for this property. Enter the actual EPC rating if you have one, if not just estimate how you would rate the energy efficiency of the property on the A to G scale below. Be sure to click the "Save" button before closing the window.

Property EPC / Energy Efficiency Rating

Rating	Score	Description
A	92+	Exceptional
B	81 - 91	Above Average
C	69 - 80	
D	**55 - 68**	**UK Average**
E	39 - 54	Below Average
F	21 - 38	
G	1 - 20	

3. **Configure Heating Settings**

   You can make any necessary changes to the various Heating settings by clicking on the "gear wheels" icon on the grey Heating widget title bar.

4. **Configure Time Clock**

   The Heating Time Clock defines the periods during which the home is automatically heated and to what temperature. These periods are called Comfort Periods. OWL Intuition will intelligently calculate what time to switch the boiler on and off to maintain the target temperature for the whole of the Comfort Period. Each day of the week can be programmed with up to 10 different Comfort Periods.

21 °c Partly Cloudy
Humidity: 64%   Wind: 13 mph   Cloud Cover: 39%

Network OWL
System Online

22.6 °C

Status	Standby
Until	16:30, Today
Required	15.0 °C
Amb. Humidity	61.2 %

Heating

Heating Time Clock

Time Clock Day:
Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday

	Start Time	End Time	Temperature	Options
1	07:00	08:30	18.0°C	
2	16:30	22:30	20.0°C	

| Edit | 07:00 | 08:30 | 18.0°C | |

Options

Copy Current Day To: All Days   [Copy]

[Save To Network OWL]   [Download From Network OWL]

Please Note: Times should be set for your Comfort periods, when the set temperature should be maintained. OWL Intuition will automatically calculate and apply Warm Up and Cool Down times to help reduce your energy consumption.

Support & Manuals | Privacy Policy | Terms & Conditions

OWL Intuition Web Dashboard - Heating and Time Clock widgets

The preset heating 'Comfort' Time Clock settings are shown in the table opposite. These can be modified using the OWL Intuition web dashboard.

a. On the Heating widget click on the "Clock" icon. This opens the Heating Time Clock widget.

b. Select the day you wish to amend, then click an option on the line you wish to amend.
   i. Pencil icon to edit the line.
   ii. Cross icon to delete the line.

c. Amend details within the Edit box as required then click on the Tick icon to update the table.

d. To add a new line simply fill in the Add box with the required details and click on the Tick icon.

Preset Heating 'Comfort' Time Clock Settings

Monday to Friday		
Start Time	**End Time**	**Temperature**
07:00	08:30	18°C
16:30	22:30	20°C
Saturday & Sunday		
Start Time	**End Time**	**Temperature**
07:30	10:00	18°C
16:30	22:30	20°C

Note: Outside of these preset heating 'Comfort' periods, the Room Sensor will be in Standby mode (15°C - configurable).

e. When you are happy with your changes you can use the Copy Current Day feature to quickly duplicate to other days.

    f.   **IMPORTANT:** When you have finished making changes you must save them to your Network OWL by clicking on the "Save To Network OWL" button.

5. **Pair Room Sensor with Relay Unit (Intuition-cw wireless installations only)**

   If this Room Sensor is being installed for a wireless connection to an OWL Intuition Relay Unit [RMx-6C] then please follow the Relay Unit Installation Instructions supplied with that device.
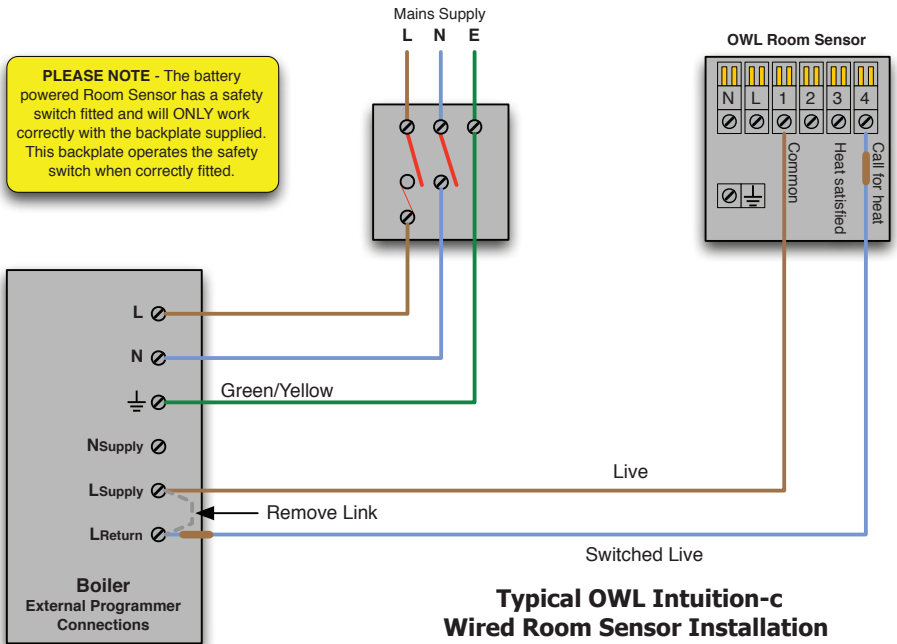
Installing the Room Sensor

The Room Sensor should be located on an internal wall approximately 1500mm above floor level, you <u>must</u> use the backplate provided. It should be positioned away from draughts, direct heat and sunlight. The backplate is suitable for direct wall mounting using two wood screws No. 6 x 1" or M3.5 x 25mm into correctly sized wall plugs if required. Alternatively mount on to a single gang flush wiring box complying with BS4662, using two M3.5 screws.

1. **Check Signal Strength** - With the Room Sensor at the chosen installation location you should now check the signal strength icon shown on the web dashboard Heating widget. The signal should be at least 2 bars and preferably more. Try moving the Network OWL closer to the Room Sensor if you have a signal strength problem.

2. **Ensure** there will be enough space to allow easy screwdriver access to the two captive screws located at the base of the backplate.

3. **Electrical Connections: -** *If in any doubt whatsoever, do not continue, but consult a qualified electrician or heating engineer.*

   WARNING: ISOLATE THE MAINS SUPPLY BEFORE COMMENCING INSTALLATION

   For existing installations, remove the old room thermostat to expose the wiring back to the boiler. **Check the wiring at both ends to correctly identify which wire is Live and which is Switched Live.**

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Mains Supply
L   N   E

OWL Room Sensor

PLEASE NOTE - The battery powered Room Sensor has a safety switch fitted and will ONLY work correctly with the backplate supplied. This backplate operates the safety switch when correctly fitted.

N L 1 2 3 4

Common

Heat satisfied

Call for heat

L

N

Green/Yellow

N Supply

L Supply

Live

← Remove Link

L Return

Switched Live

Boiler
External Programmer
Connections

Typical OWL Intuition-c
**Wired Room Sensor Installation**

For new installations, run a new cable between the boiler and chosen Room Sensor Location. The recommended cable size is 1.0mm^2. See diagram opposite.

a. **Ensure that the Live feed to the Room Sensor is correctly fused (3A or 5A maximum) - This protection is normally provided by way of a fused spur powering the heating system.**

b. **Fix the backplate** - Offer the backplate supplied to the wall in the position where the Room Sensor is to be mounted (with the cable through the central aperture of the backplate) and mark the fixing positions through the slots in the backplate. Drill and plug the wall, then secure the plate into position. The slots in the backplate will compensate for minor misalignment of the fixings.

c. **Wiring** - All necessary electrical connections should now be made.

- The Room Sensor is double insulated and does not require an earth connection.
- An earth connection block is provided on the backplate for terminating any cable earth conductors.
- Earth continuity must be maintained and all bare earth conductors must be sleeved.
- If one of the existing wires is a Neutral supply then this should be 'parked' on the terminal labelled 'N'.
- Ensure that no conductors are left protruding outside the central space enclosed by the backplate.
- Refer to the diagram and table shown below for the wiring arrangement for a typical heating system. This diagram is schematic and should be used for guidance only.

- **Y-Plan and S-Plan wiring diagrams are supplied with the OWL Intuition Tank Sensor product. They can also be downloaded from the Intuition web dashboard under Support & Manuals.**
- Please ensure that all installations comply with the current IEE regulations.
- Please consult the boiler manufacturers installation instructions before making these connections and note that a link may need to be removed when connecting external controls.

4. **Fit Safety Cover** - Check all of the wiring is safely attached to the appropriate back-plate terminals and the screws are tight. Then fit the Safety Cover by clipping it into place over the wiring terminals.

5. **Complete** the installation by mounting the Room Sensor to the backplate. To do this engage the Room Sensor on the lugs at the top of the backplate, then carefully swing the Room Sensor down and push it carefully back into its plug-in terminal connectors. Locate over the captive screws at the base of the backplate and tighten them so that the Room Sensor is locked into position.

6. **Existing Programmer / Time Clock** - any existing programmer or time clock is now redundant. You should either program it to be permanently on (24/7) or prefer-ably remove it, ensuring that the two wires it was switching are safely electrically linked together, preferably by installing a link wire within the boiler. Please check boiler manufacturers wiring instructions for further details.

7. **Finally** check that the Room Sensor is functioning correctly and switching the boiler

on and off correctly. A simple test for this is to press and hold the Comfort (+) button

OWL Intuition-c Heating Control Room Sensor Backplate Wiring

Terminal	Description
N	Neutral - Not used, may be used to 'park' unused neutral wire.
L	Live - Not used, may be used to 'park' unused live wire.
1	Common terminal of Room Sensor latching relay
2	Not used
3	'Heat Satisfied' - Normally closed terminal of Room Sensor latching relay
4	'Call for Heat' - Normally open terminal of Room Sensor latching relay
⏚	Earth continuity connection

for 5 seconds. This will activate the Boost mode and turn the boiler on. Check that the web dashboard Heating widget is now showing that the Boost is activated and the boiler is running (Red-glow around house icon at top of Heating widget).

8. **Handover** - Please ensure you handover this document to the householder and direct them to the Heating & Hot Water Control User Manual available for download by clicking on Support & Manuals on the web dashboard (lower right).

Additional Installation Information

Room Sensor Factory Reset (Delete Network OWL Pairing)

You can factory reset the Room Sensor by pressing both the Standby and Away buttons together for a minimum of 10 seconds. The 3 LEDs will start flashing indicating that it is in pairing mode. Refer to Getting Started with OWL Intuition Network Gateway guide if you need to factory reset the Network OWL.
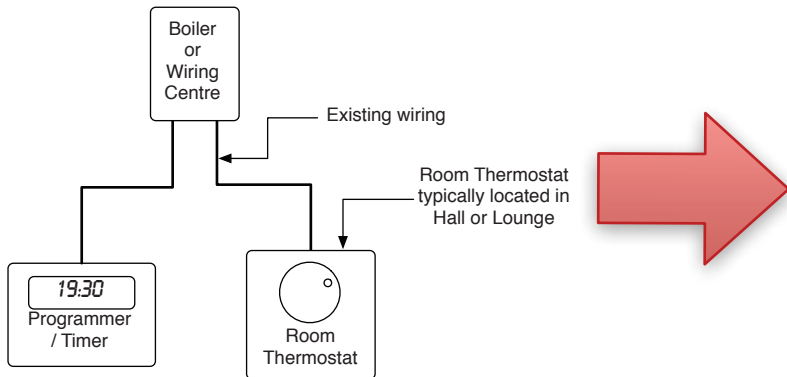
Room Sensor - Relay Unit Pairing Mode

You can place the Room Sensor into Relay Unit pairing mode by pressing all 3 buttons together for a minimum of 4 seconds. The 3 LEDs will start flashing indicating that it is in pairing mode. If the Room Sensor is already paired to a Relay Unit pressing the 3 buttons will delete that pairing. Refer to Relay Unit Installation Instructions for further information.

Safety Switch

The Room Sensor is fitted with a safety switch that is automatically activated when the front of the Room Sensor is removed from the backplate. Safety switch activation will immediately turn the heating off and the web dashboard will show an appropriate warning message. The Room Sensor MUST be installed onto the special backplate supplied otherwise the safety switch will not operate and the Room Sensor will not work.

BEFORE: Typical Existing Wired Room Thermostat Installation

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AFTER: Typical OWL Intuition-c Wired Room Sensor Installation

$((\cdot))$ = Wireless Pairing

OWL Intuition
Network OWL

Broadband
Router

Boiler
or
Wiring
Centre

Existing wiring

Option 1 - Remove
existing Programmer /
Timer and link inputs.
Option 2 - Retain existing
Programmer / Timer and
program to always on.

OWL Intuition
○ Comfort +
○ Standby
○ Away
Room Sensor

RBx-3C
Room Sensor
typically located in
Hall or Lounge

OWL Intuition supports up to 4 heating
zones each with a wired or wireless
Room Sensor. If required, along with
any Tank Sensors, they can all be
paired to a single Relay Unit to provide
a consolidated "call for heat" switch.

BEFORE: Typical Existing Wireless Room Thermostat Installation

Boiler or Wiring Centre

Existing wiring with mains power feed

Wireless Relay Unit typically located next to Boiler or Wiring Centre

19:30
Programmer / Timer

Wireless Relay Unit

Wireless Room Thermostat

Room Thermostat typically located in Hall or Lounge
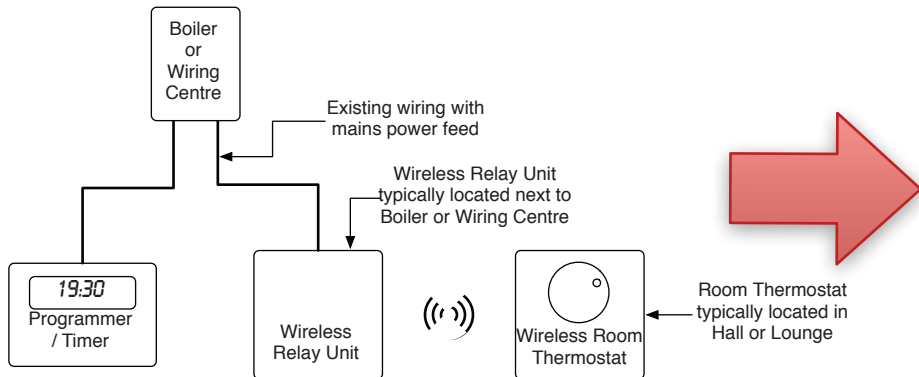
AFTER: Typical OWL Intuition-c Wireless Room Sensor Installation

$((\cdot))$ = Wireless Pairing

OWL Intuition Network OWL

Broadband Router

Boiler or Wiring Centre

Existing wiring with mains power feed

Option 1 - Remove existing Programmer / Timer and link inputs.
Option 2 - Retain existing Programmer / Timer and program to always on.

OWL Intuition
○ Comfort +
○ Standby
○ Away
Relay Unit

OWL Intuition
○ Comfort +
○ Standby
○ Away
Room Sensor

RMx-6C
Mains powered Relay Unit typically located next to Boiler or Wiring Centre

RBx-3C
Room Sensor typically located in Hall or Lounge

SAFETY INFORMATION

To ensure that you use your product safely and correctly please read the warnings & safety precautions below before installing your OWL Intuition Room Sensor.

- Isolate the mains power supply to the heating appliance that the Room Sensor will be connected BEFORE commencing any wiring work.
- If you are in any doubt about the Room Sensor installation whatsoever, DO NOT attempt to install, but consult a qualified electrician or heating engineer.
- Before attempting to fix the backplate to the wall you must ensure that there are no electrical cables or pipes that will be damaged drilling the fixing holes.
- Do not immerse the unit in water or other liquids. If you spill liquid over it, dry it immediately with a soft cloth.
- Do not use or store the product in conditions that could adversely affect the product such as rain, snow, desert and magnetic fields.
- Do not subject the product to excessive force, shock, dust, temperature or humidity.
- Keep the product away from heat sources - radiators, stoves, heaters etc.
- Do not use the product in or near water or in high moisture areas such as bathrooms.
- Do not tamper with the product's internal components. This invalidates the warranty.
- Do not attempt to repair the product yourself.
- Contact the retailer or Customer Services if your product requires servicing.
- If the equipment is used in a manner not specified in this manual, the protection provided by the equipment may be impaired.
- Take care when handling all battery types. Batteries can cause injuries, burns or

damage to property if they come into contact with conducting materials, heat, corrosive materials or explosives.
- Remove the batteries before storing the product for extended periods.
- Only use fresh batteries. Do not mix new and old batteries.
- Do not dispose of old batteries as unsorted municipal waste, only do so in accordance with your local waste disposal regulations.
- When disposing of this product do so in accordance with your local waste disposal regulations.

CARING FOR YOUR PRODUCT
- Before cleaning, remove the Room Sensor from the backplate and remove the batteries.
- Use a lightly dampened cloth. Do not use liquid or aerosol cleaning agents, benzene, thinners, abrasive or corrosive materials.
- Do not scratch hard objects against the product.
- Do not leave discharged batteries in the product.

COMPLIANCE
The CE marking certifies that this product meets the main requirements of the European Parliament and Council Directive 1999/5/EC. A copy of the signed and dated Declaration of Conformity is available on request. OWL Intuition products are manufactured to ISO-9001 Quality Assurance Standards.

WARRANTY INFORMATION

2 Save Energy Limited guarantees that OWL Intuition products will work for a minimum period of 24 months from date of purchase and that it will be free from defects in materials, workmanship or design. If during this limited 2 year period of guarantee, from date of purchase, you find that the equipment is not working properly, you may return it to us and we will replace, or, (at our discretion) repair it, free of charge.

2 Save Energy Limited will not accept any liability for defects arising from fair wear and tear, accidental or wilful damage, misuse or failure to follow product or safety instructions If you return any equipment as faulty, 2 Save Energy Limited reserves the right to test the equipment and if found to be in perfect working order, to return it to you. In this event, 2 Save Energy Limited reserves the right to charge for any testing or postage costs incurred. This does not affect your legal rights relating to equipment, which is faulty. Warranty conditions only apply where Proof of Purchase is provided.

To return OWL Intuition product contact customer.services@theowl.com to report the issue and reason for returning your product. 2 Save Energy Limited will issue you a form and reference number. Once we have received the completed form and proof of purchase we will commence the returns process.

SPECIFICATIONS - Room Sensor [RBT-3C and RBH-3C]

Case dimensions	86mm x 86mm x 37mm
Case material	Thermoplastic, flame retardant
Case ingress protection	IP30
Case electrical protection	Double Insulated
Radio frequency band	868MHz unlicenced ISM band
Operating range	Up to 50m (in free space)
Power source	2 x 1.5V Alkaline AAA batteries
Temperature accuracy - typical [RBT-3C]	±0.5°C
Temperature accuracy - typical [RBH-3C]	±0.2°C
Humidity accuracy - typical [RBH-3C]	±1.8%RH
Latching relay voltage rating	230V a.c. ±10% 50/60Hz
Maximum Switching Current	8A
Latching relay contacts rating - Resistive Load	8A @250V a.c. power factor Ø1
Latching relay contacts rating - Inductive Load	3.5A @250V a.c. power factor Ø0.4
Operating temperature range	0°C to +40°C
Storage temperature range	-25°C to +65°C
Relative humidity	25% to 95% non-condensing

For details on using your new OWL Intuition heating controls, please download the Heating & Hot Water Controls User Manual document by clicking on Support & Manuals (web dashboard - lower right).

Customer Support
If you have any further questions please check our frequently asked questions at:
http://www.theowl.com/faqs.html
You can also email us at: **customer.services@theowl.com**
(please ensure you state your Network OWL MAC ID)

2 Save Energy Limited operate a policy of continuous development and improvement, therefore the content of this document is subject to change without notice.