EN 50131-1
EN 50131-3
EN 50131-5-3
EN 50130-4
EN 50130-5

INCERT
CEB T031

Air2-BS200

Wireless transceiver module

Installation and programming manual

inim ELECTRONICS

Table of contents

1. Air2 system description

All anti-intrusion systems INIM can manage the two-way wireless system Air2 characterized by a MHz carrier frequency 868 MHz.

The system components Air2 are:

- Air2-BS200/50 transceiver module, 50 terminals
- Air2-BS200/30 transceiver module, 30 terminals
- Air2-BS200/10 transceiver module, 10 terminals
- Air2-KF100 4 button remote-control key
- Air2-Ergo 4 button remote-control key
- Air2-Pebble 4 button remote-control key
- Air2-MC200 magnetic contact with shock and tilt sensor in white or brown
- Air2-MC300 magnetic contact with two I/O terminals, in white or brown
- Air2-FD100 smoke detector
- Air2-Aria/W keypad with graphic display
- Air2-Hedera outdoor sounder, in white or chrome effect
- Air2-Smarty/W indoor sounderflasher
- Air2-DT200T dual technology curtain detector, in white or brown
- Air2-XIR200W PIR detector, 12 m
- Air2-XDT200W dual technology curtain detector
- Air2-UT100 universal transceiver
- Air2-ODI100W outdoor wireless dual-infrared detector
- Air2-OTT100W outdoor wireless triple-technology detector

Technical specifications of the system Air2	
Operating frequency	
range	868.0 - 868.6 MHz
selectable channels	868.1, 868.3, 868.5 MHz
RF output power	25mW e.r.p.
Communication type	Two-way
Modulation	GFSK
Device supervision	from 12 to 250 minutes

Note

In order to comply with the EN 50131-1 standards the alarm system supervision time must be below 120 minutes.

2. Description of Air2-BS200

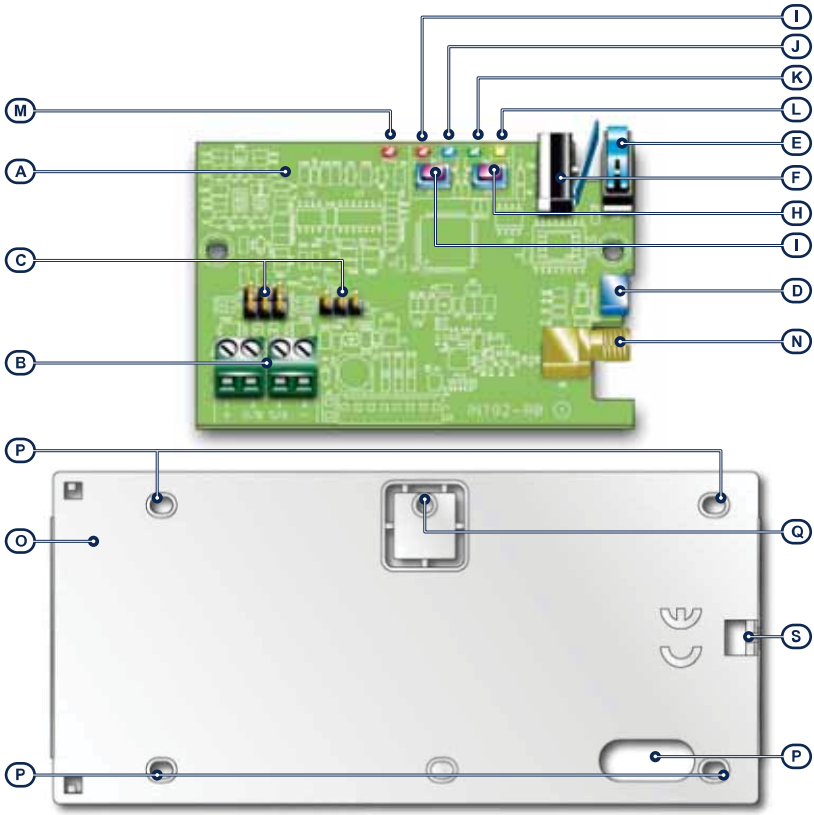
The wireless module Air2-BS200 allows the integration and management of wireless detectors, keypads, sounders in the hardwired environments of all models of intrusion control panels INIM.

The module simulates:

- a reader, at a programmed address (ADD), which allows you to configure the remote control keys
- up to 10 expansion boards, at addresses ADD, ADD+1, ... ADD+9, capable of managing the terminals

Additionally, each Air2-BS200 allows the Inim control panel to manage up to 4 wireless keypads and 4 wireless sounders.

2.1 Description of parts



[A]	PCB board
[B]	BUS connection terminals
[C]	Configuration connectors
[D]	USB-micro connector
[E]	Tamper microswitch: Open cover
[F]	Tamper microswitch: Dislodgement
[G]	Button P1
[H]	Button P2

[I]	LED DL1 - red
[J]	LED DL2 - blue
[K]	LED DL3 - green
[L]	LED DL4 - yellow
[M]	PRG LED - red
[N]	Antenna connector
[O]	Backbox
[P]	Mounting screw location
[Q]	Tamper-screw location
[R]	Cable entry
[S]	Enclosure screw hole

2.2 Technical specifications Air2-BS200

Model	Air2-BS200/10	Air2-BS200/30	Air2-BS200/50
Power Supply Voltage	from 9 to 15V ⎓		
Current draw	30 - 50 mA		
Bus type	I-BUS / BUS RS485		
Antenna			
connector	SMA female		
impedance	50 Ohm		
ACE type (Ancillary Control Equipment)	A		
Operating environmental conditions			
Temperature	from -10 to +40 °C		
Relative humidity	≤93% without condensation		
Security rating	2		
Environmental class	II		
Dimensions (W x H x D)	80 x 170 x 25 mm		
Weight	135 g		
Terminals	50	30	10
Remote control keys	100	50	30
Keypads	4		
Sounder/flashers	4		

2.3 Status LED

LED DL1 red	LED DL2 blue	LED DL3 green	LED DL4 yellow	PRG LED red	Signal
Off	Discontinuous flashing	Off	Off	Off	Wireless data reception
Off	Off	Discontinuous flashing	Off	Off	Programming phase in progress (from 1 to 5, for SmartLiving only)
Off	Off	Off	solid / blinking	Off	Parameter/Value undergoing programming (for SmartLiving only)
Off	Off	Continuous flashing	Off	Off	Enrollment of wireless device in progress (requested at the control panel)
Off	Off	Continuous flashing	Continuous flashing	Off	Erroneous programming (for example, two devices on the same terminal)
1 flash	1 flash	1 flash	1 flash	Off	Reset factory default settings
solid /off / blinking				Off	Address Programming (phase 6)

3. Operating principles

In order to configure Air2-BS200 it is necessary to assign an address between 1 and 30 in the control panel (to set the address follow the instructions in paragraph *4.1 Addressing of Air2-BS200*).

The selected address will be assigned to the simulated reader (which processes and manages wireless transmissions in the same way as keys) and to the first 10 expansion boards, also simulated, with successive addresses “ADD”, “ADD”+1, ..., “ADD”+9.

Conditions for secure deployment and operations:

- there must be no other transceivers at the selected address
- the simulated reader must be enrolled on the control panel
- there must be no other readers at the same address (nBy/X or built into the keypad)
- the simulated reader need not be associated with any partitions
- the simulated expansion boards must be enrolled on the control panel
- an expansion board will be considered part of the wireless network only when one of its terminals is configured as “wireless”
- a simulated expansion board cannot share its assigned address with other hardwired FLEX5 expansion boards.

3.1 Wireless terminals

A terminal can be considered a “Wireless” terminal only under the following conditions:

- it must not be configured as a “Double” zone (D)
- if configured as a “Zone”, it must not be configured as “Shock” in the detector type field
- it must be assigned to an expansion board (and not to the control panel or keypads)

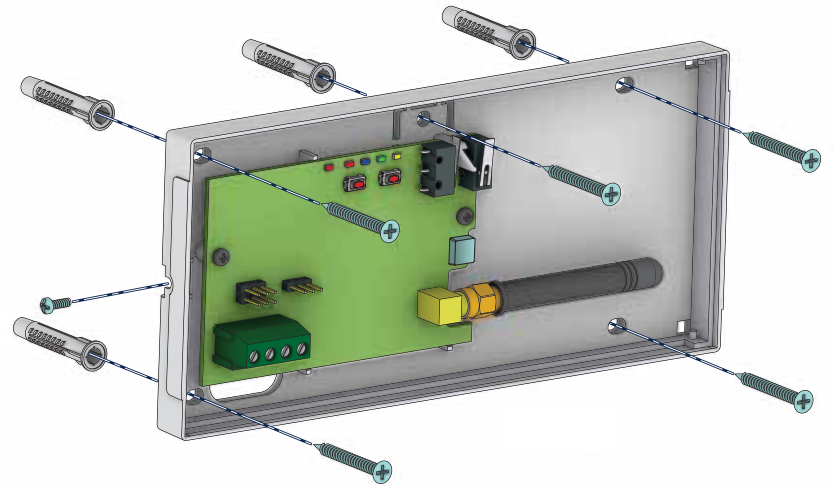
3.2 Wireless keypads and sounders

The Inim intrusion control panel can manage up to 4 keypads (Air2-Aria/W) and 4 sounders (Air2-Hedera and Air2-Smarty/W) for eachAir2-BS200. However, each control panel model supports a maximum number of keypads and sounders which must be respected.

During the addressing phase it is necessary to use only the free addresses and to ensure that no other keypads (Aria/HG, Joy, Concept, nCode or Alien) are present at the address of the wireless keypads, or other sounders at the address of the wireless sounders to be configured.

For the addressing procedure and the programming of these devices, refer to the respective manuals.

4. Installation of Air2-BS200



For optimal performance of the wireless system the transceiver module Air2-BS200 must be located at the core of the wireless network and area of use of remote-control keys, in a placement which allows easy connection of the I-BUS cable to the control panel.

All wireless protection devices should be located high up in order to increase their detection capabilities and prevent inadvertent masking caused by large objects or building occupants.

Attention!

Ferromagnetic materials which are located in the vicinity of the mounting position can influence the magnetic field and can result in the reduced operating capacity of the device.

It is possible to view on the keypads or via the programming and supervision software, the strength of the wireless signal on each wireless device Air2-BS200; this data can be used to optimize the installation process.

Note

A level 3 signal strength it is recommended for a good installation.

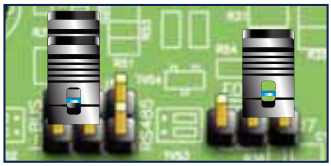
As an integral part of the system, the Air2 provides 3 inter-module transmission channels. This feature allows you to select the channel in such way as to avoid over-the-air interference between two close-proximity wireless systems (for example, in two adjoining apartments).

For secure deployment and operations of the wireless intrusion protection system Air2 it is necessary to refer to the Installation and programming guide of the hardwired intrusion control panel in use.

1. Choose a suitable mounting placement.
2. Using a flat-bladed screwdriver in the enclosure screw location, push open the enclosure and separate the two parts.
3. Hold the base to the chosen mounting placement and mark the screw holes and tamper protection position.
4. Pull the wires through the cable entry and wire up the transceiver.
5. Using the screws, secure the base and the tamper protection in position.
6. Enroll the device.
7. Re-attach the cover to the base and replace the enclosure screw.

Attention!

Do not change the setting of the jumpers on the connectors.



4.1 Addressing of Air2-BS200

During the enrolling phase the wireless transceiver Air2-BS200 is integrated into the intrusion control panel INIM by simulating:

- a reader, with the address programmed via the module itself (ADD), by means of buttons P1 and P2 on the PCB;
- up to 10 expansion boards, at addresses ADD, ADD+1, ... ADD+9, to manage the terminals and to be configured via the software project template

The address must be set during the programming phase of the reader. During this phase the address is indicated by LEDs DL 1-4 in accordance with the following:

Reader address	LED DL1 - red	LED DL2 - blue	LED DL3 - green	LED DL4 - yellow
1	**0**	**0**	**0**	**1**
2	**0**	**0**	**1**	**0**
3	**0**	**0**	**1**	**1**
4	**0**	**1**	**0**	**0**
5	**0**	**1**	**0**	**1**
6	**0**	**1**	**1**	**0**
7	**0**	**1**	**1**	**1**
8	**1**	**0**	**0**	**0**
9	**1**	**0**	**0**	**1**
10	**1**	**0**	**1**	**0**
11	**1**	**0**	**1**	**1**
12	**1**	**1**	**0**	**0**
13	**1**	**1**	**0**	**1**

0	LED Off
1	LED On
L	Flashing LED

14	1	1	1	0
15	1	1	1	1
16	0	0	0	L
17	0	0	L	0
18	0	0	L	L
19	0	L	0	0
20	0	L	0	L
21	0	L	L	0
22	0	L	L	L
23	L	0	0	0
24	L	0	0	L
25	L	0	L	0
26	L	0	L	L
27	L	L	0	0
28	L	L	0	L
29	L	L	L	0
30	L	L	L	L

1. Put the intrusion control panel in maintenance mode.
2. Press button **P1** to access the address setting menu. During this phase the PRG LED will switch On and the LEDs will show the current address.
3. Use the **P2** to reach the address to be assigned.
4. Use the **P1** button to assign the address and exit the menu (phase 0).
5. Include the wireless expansion boards in the control panel configuration, starting from the “ADD” address (maximum “ADD” +9).
6. In the control panel configuration set the presence of the reader at the "ADD" address, simulation of the transceiver associated with the wireless devices.

During normal operating status of Air2-Smarty/W, pressing and holding the **P2** button will allow you to view (but not change) the transceiver address indicated on its LEDs.

4.2 Enrolling a wireless device

The enrolling procedure allows you to associate a wireless device INIM with the transceiver Air2-BS200 which acts in conjunction with the intrusion control panel.

This procedure varies depending on the control panel in use and the programming software or application:

1. Access the control panel programming.
2. Select the device to be enrolled in accordance with its type:
   - an input terminal, for a detector (motion detector, magnetic contact, etc.)
   - an output terminal, for an output device connected to a terminal of a magnetic contact Air2-MC300
   - a keypad
   - a sounder/flasher
   - a key, for a remote control device, selecting as the associated reader the one simulated by the transceiver
3. Set the device as “Wireless”.

Note

If a terminal on the expansion board is configured as "wireless", all the remaining terminals must be configured as "wireless" terminals.

4. Start the learning phase from the control panel.
5. If you are enrolling an output device that is connected to an output terminal of Air2-MC300 it is necessary to enable the "Broadcast RF" zone option.

Note

The "Broadcast RF" option must be enabled for each terminal of the device Air2-MC300 concerned.

5. System programming Air2

The programming of a system Air2 concerns the parameters of the transceiver, which simulates a reader during the enrolling phase and an expansion board during normal operations and manages the devices represented by wireless terminals.

Each device Air2 that transmits to the control panel through Air2-BS200 therefore it has operating parameters and options, accessible through the programming sections of the control panel terminals.

Example

To program an intrusion control panel which requires:

- 12 hardwired zones of which 3 on the control panel, 2 on a keypad, 7 on 2 expansion boards
- 18 wireless zones
- 5 remote-control keys

Minimum requirements: 18/5=4 expansion boards; if the 2 expansion boards are for the hardwired zones assign them to addresses 1 and 2; set the Air2-BS200 DIP-microswitches to address 3 (LED DL1 Off, DL2 Off, DL3 On, DL4 On).

Enroll expansion boards 3, 4, 5 and 6 and reader 3 on the control panel.

In the “Terminals” programming section, select terminal T1 of expansion board 3 and enroll the detector. Enroll all the wireless devices consecutively.

In the “Keys-Enroll” programming section, select reader 3 then select the number of remote-control keys you wish to enroll.

Programming the control panel

The actual programming process for control panels Inim Electronics offers the following parameters for the management of the wireless system Air2:

Instant reset of wireless magnetic contact	If this option is enabled, reset of the magnetic reed sensor of wireless detectors will be signalled instantly (otherwise signalling has a maximum delay of 10 seconds).
Wireless supervision time	This parameter allows the selection of the supervision time of wireless devices. On expiration of the programmed time, any wireless devices which do not respond will be signalled as lost. Accepted values: 12 to 250 minutes.

5.1 Programming of Air2-BS200

Programming of a transceiver Air2-BS200, with transmission parameter settings for all devices Air2, it is possible via the programming software Inim Electronicswith Prime system keypads and, if a transceiver is installed in a SmartLiving system, directly by means of the buttons on the device itself (*5.3 Programming from Air2-BS200*).

Programming softwares Inim Electronicshave a section that allows you to view all the enrolled wireless devices and set the programming parameters of each individual transceiver Air2-BS200.

The “Wireless transceivers” section is divided in sub-sections, one for each receiver configured. Each subsection shows:

- the transceiver model
- the firmware version of the transceiver board
- the transceiver parameters
- a list of devices enrolled by the transceiver;
  for each device it shows:
  - the Icon
  - the terminals (where present)
  - the serial number
  - the model

5.2 Transceiver parameters

The programming software, selecting a transceiver, sets the following functions and parameters:

Clone remote-control keys	This function starts the guided cloning process of the wireless keys enrolled via the transceiver of the selected reader. The guide allows you to indicate which transceiver, from those selectable, the cloned keys will be assigned to.
RF	This function starts an operation which attenuates (6db) the wireless signal transmitted by the transceivers for 5 approximately minutes. During this period the installer can carry out tests on the stability of the RF connection under weak-signal conditions.
Channel	Section for the selection of the wireless communication channel used by the transceiver that simulates the reader that is undergoing programming: • Channel 001,868.1 MHz • Channel 002,868.3 MHz • Channel 003,868.5 MHz
Disable tamper protection	This option disables the tamper signal of the transceiver.Air2-BS200.
Disable the Rolling Code	This option disables the use of a rolling-code algorithm for the transmission of wireless commands via the moduleAir2-BS200. Deactivation can be useful to the installer when the same wireless command device is used on several systems.

5.3 Programming from Air2-BS200

Programming from a module Air2-BS200 allows you to set only some of the system programming parameters Air2 and only when used with a SmartLiving system.

This programming also includes a specific section for the addressing of the Air2-BS200, available for both SmartLiving and Prime control panels.

The available programming phases correspond to the 6 different sections in the Programming menu. Use the buttons and LEDs on the PCB of the module to navigate through the 6 programming phases.

1. Press the **P1** button.
   The programming menu will open.
2. Press the button again until access to the required phase is achieved. LED DL3 will emit a number of blinks corresponding to the current phase.
3. Using the **P2** button carry out any changes (where required). Where required, LED DL4 will show the current data.
4. Save any changes and exit the programming session.
   This can be done in two ways:

- Use the **P1** button to step back.
- Press and hold the **P2** button for at least 3 seconds. The 5 LEDs will light to confirm that the data has been saved.
  If this procedure is carried out during phase 2, the device will reset to factory default settings.

Phase 0

Stand-by: normal operating phase of the Air2-BS200 and its LED.

During this phase it is possible to exit programming and save any changes.

Phase 1

Enrolling: LED DL3 will emit in series 1 blink followed by a pause. LEDs DL1, DL4 and PRG will remain off.

Press the “ENROLL” button on the device you wish to enroll. Press simultaneously buttons F3 and F4 on the remote-control key. Within 4 seconds, LED DL2 should flash to indicate correct reception of the device and its enrollment.

Phase 2

Unenrolling: LED DL3 will emit in series 2 blinks followed by a pause. LEDs DL1, DL4 and PRG will remain off.

Press the "ENROLL" button on the device you wish to unenroll (delete). Press simultaneously buttons F3 and F4 on the remote-control key. Within 4 seconds, LED DL2 should flash to indicate that the device has been received and unenrolled.

Phase 3

Change transmission/reception channel: LED DL3 will emit in series 3 blinks followed by a pause.

LED DL4 emits a number of blinks equal to the number of the current channel. 3 channels are available. Press button **P2** to activate the successive channel to the one currently operating on the Air2-BS200 module. At this point, press the “ENROLL” button on all the detectors and sounders, access the “ENROLL” menu on the Aria keypad and press buttons F3 and F4 simultaneously on all the remote-control keys. This will synchronize the system wireless devices with the new channel.

Phase 4

Enable/Disable tamper Air2-BS200: LED DL3 will emit in series 4 blinks followed by a pause.

LED DL4 indicates the status of this option: OFF = Tamper enabled; ON = Tamper disabled. Press button **P2** to toggle the status of this option. If the Tamper option is disabled, the status of both microswitches will be ignored.

Phase 5

Enable/Disable rolling-code authentication on all Air2-KF100 keys: LED DL3 will emit in series 5 blinks followed by a pause.

LED DL4 indicates the status of this option: OFF = Rolling code authentication enabled; ON = Rolling code authentication disabled. Press button **P2** to toggle the status of this option.

Phase 6

Addressing: LED PRG will go On solid. LED DL1-4 indicates the current address.

This phase is available on all control panel models.

Factory data

To restore the factory default settings, press and hold the **P2** button until the 4 LEDs (DL) come ON during **Phase 2 - Unenroll**, as previously described.

6. General information

6.1 About this manual

Manual code: DCMIINE0A2BS2008E

Revision: 100-DRAFT

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6.2 Manufacturer's details

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The persons authorized by the manufacturer to repair or replace the parts of this system have authorization to work only on devices marketed under the brand Inim Electronics.

6.3 Notes from the Manufacturer

The devices Air2 are certified by IMQ-Sistemi di sicurezza (Italian certification body).

The information relating to the power-supply batteries required by the devices Air2 are provided in the following Technical Specification table.

The manufacturer cannot guarantee the declared battery life.

Attention!

Do not use batteries other than those indicated by the manufacturer as they may explode.

6.4 Simplified EU Declaration of Conformity

Hereby, Inim Electronics S.r.l. declares that the radio equipment type Air2-BS200 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.inim.biz.

6.5 Documents for the users

Declarations of Performance, Declarations of Conformity and Certificates concerning to Inim Electronics S.r.l. products may be downloaded free of charge from the web address www.inim.biz, getting access to Extended Access and then selecting "Certifications" or requested to the e-mail address info@inim.biz or requested by ordinary mail to the address shown in this document.

Manuals may be downloaded free of charge from the web address www.inim.biz, getting access to the reserved area, after the login, and then to the section of each product.

6.6 WEEE

Informative notice regarding the disposal of electrical and electronic equipment (applicable in countries with differentiated waste collection systems)

The crossed-out bin symbol on the equipment or on its packaging indicates that the product must be disposed of correctly at the end of its working life and should never be disposed of together with general household waste. The user, therefore, must take the equipment that has reached the end of its working life to the appropriate civic amenities site designated to the differentiated collection of electrical and electronic waste. As an alternative to the autonomous-management of electrical and electronic waste, you can hand over the equipment you wish to dispose of to a dealer when purchasing new equipment of the same type. You are also entitled to convey for disposal small electronic-waste products with dimensions of less than 25cm to the premises of electronic retail outlets with sales areas of at least 400m2, free of charge and without any obligation to buy. Appropriate differentiated waste collection for the subsequent recycling of the discarded equipment, its treatment and its environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and/or recycling of the materials it is made of.

Information about disposal of batteries and accumulators (applicable in Countries with separate collection systems)

This marking on batteries and/or their manual and/or their packaging, indicates that batteries of this products, at the end of their working life, should not be disposed of as unsorted municipal waste, but must be object of a separate collection. Where marked, the chemical symbols Hg, Cd o Pb indicate that the battery contains mercury, cadmium or lead above the reference levels of the directive 2006/66/EC. If batteries are not properly disposed of, these substances, together with other ones contained, can cause harm to human health and to the environment. To protect human health and the environment, to facilitate treatment and recycling of materials, separate batteries from other kind of waste and use the collection scheme stated in your area, in accordance to current laws. Before disposing of the above, it's appropriate to remove them from their holders avoiding to damage them or causing short circuits.

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