IRIS

Infrared Intellibox controlling System

Manual

Uhlenbrock
digital

Order number 60 652

Contents

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1. Description

1.1 Operation

The Infrared Intellibox controlling System IRIS adds to the Intellibox a wireless remote control for indoor use. The operating range is 10 meters (33 feet). The IRIS consists of a 38-key remote and a receiver which has to be connected to the Intellibox using its 5 meter cable.

With IRIS one can select any locomotive on the digital layout and control its speed and driving direction as well as the available locomotive functions (e.g., the loco lights, sounds, etc.). IRIS lets you control every turnout of your digital layout and activate every route which has been defined in the Intellibox.

In oder to enhance its functionality, IRIS features 4 "transmission channels" - labeled as A, B, C and D on the IRIS remote. Through each IRIS channel one can operate a different locomotive and control a different set of turnouts. For example, one could use channel A to control locomotive address 15 and turnouts in range 1 through 4, while channel B could be used to control locomotive address 20 and turnouts in the range 13 through 16. If only one IRIS remote is being used, one can quickly switch among the channels by pressing the corresponding key on the IRIS remote. If additional IRIS remotes are being used by different operators, each operator should use a separate IRIS channel so as not to "conflict" with other operators - assuming each channel is controlling a different loco address and turnout range.

IMPORTANT IRIS requires that the Intellibox software be at least version 1.5.

IRIS uses four transmission channels to communicate with the Intellibox. The current active channel can be selected on the IRIS remote by pressing the corresponding key (A, B, C or D). Each channel can select and control a locomotive address as well as a turnout address range. The selected loco address and turnout address range are memorized by the Intellibox and will therefore be "remembered" when you power up your Intellibox for the next operating session. The default setting is: channels A through D control loco addresses 1 through 4, respectively. Each channel controls turnouts in range 1 through 4.

If only one IRIS remote is being used, one can quickly switch among control of 4 different locomotive addresses and a four turnout address range by pressing the appropriate channel key (A-D) on the IRIS remote.

If additional IRIS remotes are used, each IRIS channel can control one locomotive address and one turnout address range without affecting the status of the locos and turnouts which are being controlled through the other IRIS channels. Please note that if the same communication cannel - e.g., channel A - is selected on two different IRIS remotes, both remotes will control the same locomotive.

1.2 Connection

Remote
Please insert the batteries in the battery compartment located on the rear of the remote.

Please use only batteries of this type: LR03-AAA-1.5 V.

Receiver
The DIN connector at the end of the 5 meter cable coming from the IRIS infrared receiver should be plugged into the "Lokmaus" connector located on the rear of the Intellibox. The flat underside of the IRIS receiver should be affixed to a vertical flat surface using the piece of double-side sticky tape which is provided with the IRIS set. As the picture on this page shows, the IRIS remote must always be able to "see" the IRIS receiver in order to have reliable communication between remote and receiver. The receiver has maximum sensibility along the axis perpendicular to its flat underside.

Receiver

Remote

Layout landscape
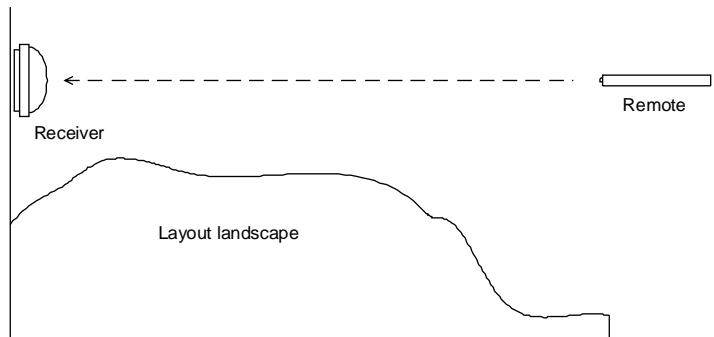
During use, the remote should always be pointed towards the receiver. There is a small red LED placed under the opaque cover of the receiver; this LED illuminates when the receiver "sees" some infrared signal.

In difficult cases, e.g. a layout which occupies two rooms, it may be necessary to use more than one receiver. This is accomplished by

using an additional IRIS receiver item no. 66 520. The additional receiver features a Y-cable and can therefore be connected along existing receivers to the Intellibox. Up to 3 receivers can be connected to the Intellibox.

TIP If the IRIS is to be used in conjunction with a Lokmaus 1 connected to an Intellibox, then it is necessary to connect them using a Y-cable (item no. 66 530) to the "Lokmaus" connector of the Intellibox.

Intellibox

Please use the "Basic Settings/Software version" menu in order to verify the version number of the software currently operating on your Intellibox.

Starting with version 1.5, there is an "IRIS mode" in the Intellibox. If you have an older software version, please perform an Intellibox software update so that you'll have at least software version 1.5.

The required update disk is provided along with each IRIS set - or you can check the Uhlenbrock internet site www.uhlenbrock.de for more recent software releases.

Please perform the software update as instructed by the "readme.txt" file found on the update disk.

1.3 User interface
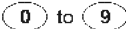
Control-LED
The red LED at the top of the IRIS remote flashes as long as a key is pressed

Selection keys

(🔫) Starts locomotive selection

(◿) Starts turnout selection

(⫽) Starts route selection, activates routes

(stop) Toggles layout power on/off

Digit keys

(0) to (9) For input of locomotive address, turnout address and route number

Locomotive control keys

(+) Increases locomotive speed stepwise

(−) Decreases locomotive speed stepwise

(←) Selects reverse driving direction and forces emergency stop

(→) Selects forward driving direction and forces emergency stop

Special function keys

(f0) Turns on the locomotive lights

(off) Turns off the locomotive lights

(f1) to (f4) Control locomotive functions f1 through f4

(f+4) Shift key for controlling locomotive functions f5 through f8

(f+8) Shift key for controlling locomotive functions f9 through f12

(red) Switches turnout "diverging" or "red"

(green) Switches turnout "straight" or "green"

Channel selection keys

(A) to (D) Select an infrared communication channel

1.4 Locomotive control

**Communication channel selection**

Each communication channel can be used to control a locomotive independently of the other communication channels.

• A communication channel can be selected by pressing the (A), (B), (C) or (D) key.

If the 4 channels have been assigned to the control of 4 different locomotives, then one can switch among the channels in order to control the 4 locomotives.

If more than one user, each one operating his own IRIS remote, would like to take part in controlling the layout, then each user should be assigned a communication channel. In this case, locomotive selection should be performed using the "Locomotive selection" key - as opposed to changing the channel.

Locomotive address input

• Press the (loco) - key.

• Input the desired loco address using the digit keys (0) through (9). If more than 4 digits are entered, only the last 4 will be accepted.

TIP Locomotive selection can be terminated by pressing the (loco) - key again.

• The newly input locomotive address will be accepted as soon as one of the following keys is pressed:

(f0)/(off)- Locomotive lights on or off
(+)/(−)- Locomotive speed increase or decrease
(←)/(→)- Set locomotive driving direction
(f1)-(f4)- Control one of the locomotive functions

TIP Locomotive selection is terminated automatically if no key is pressed for 10 seconds.

Examples:

• (loco)+(1)+(f0)

Locomotive address 1 is selected and its lights are turned on.

- (🚂) + (1) + (2) + (3) + (4) + (5) + (6) + (+)

Locomotive address 3456 is selected - indeed, only the last 4 digit keys are accepted. (+) increases the locomotive's speed.

- (🚂) + (1) + (2) + (🚂) + (f0)

No (new) locomotive address is selected since locomotive selection has been terminated by pressing the (🚂)-key a second time. The final (f0)-key will turn on the lights of the locomotive already controlled by this channel.

Speed control

Use the (+) and (-) keys to increase or decrease the locomotive speed stepwise. If one of these keys is kept pressed, the locomotive speed will be changed until the maximum locomotive speed has been reached or the locomotive is stopped.

Driving direction

The keys (←) and (→) select, respectively, the reverse and forward locomotive driving direction. If one of these keys is pressed while the locomotive is moving, the locomotive performs an emergency stop first. It will then be ready to drive in the desired driving direction.

Emergency stop

If one of the arrow keys is pressed while the locomotive is moving, the locomotive performs an emergency stop first. It will then be ready to drive in the desired driving direction.

Lights control

The loco lights can be turned on/off using the (f0) and (off)-keys. If the (off)-key is used, then the lights will be on as long as that key is kept pressed.

Function control

The (f1), (f2), (f3) and (f4)-keys toggle the corresponding locomotive functions on/off.

Locomotive functions f5 through f8 can be controlled (toggled) by pressing the (f+4) shift key first and then the corresponding (f1), (f2), (f3) or (f4)-key.

Starting with Intellibox software 2.0, locomotive functions f9 through f12 can be controlled (toggled) by pressing the (f+8) shift key first and then the corresponding (f1), (f2), (f3) or (f4)-key.

If a key other than f1, f2, f3 or f4 is pressed after one of the two shift keys, then the "shift operation" is terminated.

The function selection mode is terminated if no (f1), (f2), (f3) or (f4)-key is pressed within 10 seconds after having pressed either the (f+4) or (f+8)-key combinations.

1.5 Turnout control

Communication channel selection

Each communication channel can control 4 turnouts (or signals), independently of which turnouts the other 3 channels may be controlling. Turnout control takes place using the red and green keys of the IRIS remote.

• Use the Ⓐ, Ⓑ, Ⓒ or Ⓓ-key to select one of the 4 communication channels.

Using the 4 communication channels, one can quickly control up to 4 sets of different turnouts or signals - for a total of 16 turnouts or signals.

If more than one user, each one operating his own IRIS remote, want to control a layout, then each user should select his own communication channel on the IRIS remote. In this case, the user may only control a new set of 4 turnouts or signals by specifying a new turnout "base address" (using the ⬿- key as described below).

Input of a turnout base address

The 1st (leftmost) pair of red/green keys is assigned to the control of a specific turnout or signal by specifying a turnout base address. The other key pairs are automatically assigned to control the subsequent 3 turnout addresses.

• Press the ⬿- key.

• Input the desired turnout base address using the digit keys ⓪ through ⑨. If more than 4 digits are entered, only the last 4 will be accepted.

HINT Turnout base address selection can be terminated by pressing the ⬿- key again.

• The newly input turnout base address will be accepted as soon as one of the following keys is pressed:

⟨red⟩- switches the corresponding turnout to "diverging" or "red".

⟨green⟩- switches the corresponding turnout to "straight" or "green".

HINT Turnout base address selection is terminated automatically if no key is pressed for 10 seconds.

Examples:

• ⬿+①+⟨red1⟩

The leftmost pair of red/green keys is assigned to the control of the turnout base address 1. The subsequent 3 keypairs are automatically assigned to the control of turnout addresses 2, 3 and 4. The ⟨red⟩- key (the last key pressed in this example) makes the Intellibox switch the turnout address 1 to "diverging" or "red".

• ⬿+⑤+⑥+①+②+③+④+⟨red3⟩

The leftmost pair of red/green keys is assigned to the control of the turnout base address 1234, since indeed only the last 4 digits are accepted. The subsequent 3 key pairs are automatically assigned to the control of turnout addresses 1235, 1236 and

1237. The ⓡ-key (the last key pressed in this example) makes the Intellibox switch the turnout address 1236 to the "diverging" or "red" position.

• ⇄+①+②+⇄+ⓡ

The turnout base address of the current communication channel does not get changed, since the selection mode has been terminated by pressing the ⇄-key a second time. The ⓡ-key (the last key pressed in this example) makes the Intellibox switch the turnout address corresponging to the current turnout address base to the "diverging" or "red" position.

Turnout control

You can control a turnout or a signal by pressing either the red or the green key corresponding to that turnout address. For example, if the 1st (leftmost) red/green keypair has been assigned to the control of turnout address 11, then the subsequent 3 red/green keypairs would then control turnout addresses 12, 13 and 14.

• ⓡ - Switches turnout "diverging" or "red"
• ⓖ - Switches turnout "straight" or "green"

1.6 Route activation

The IRIS remote can activate any route which has been defined in the Intellibox:

• Press the ⇄-key.
• Input the route number using the digit keys.
• Press the ⇄-key again in order to activate the selected route number.

TIP   If a key other than the ⇄-key is pressed, no route will be activated and route selection will be terminated.

Valid Intellibox route numbers are in range 1 through 48. If more than 2 digits are entered, only the last 2 will be accepted.

TIP   Route selection is terminated automatically if no key is pressed for 10 seconds.

Examples:

• ⇄+①+⇄

Route number 1 is activated.

• ⇄+①+②+③+④+⇄

Route number 34 is activated - since indeed only the last 2 digits have been accepted.

• ⇄+①+ⓕ

No route will be activated, since no ⇄-key has been pressed after the 1 digit. ⓕ currently turn on the lights of the locomotive.

1.7 Power on/off

The ⏹-key toggles the power to the layout on/off.

2. The IRIS mode of the Intellibox

Starting with software version 1.5, the Intellibox features a new mode which can be used to show the status of one of the IRIS communication channels A, B, C or D. While in this mode, the central part of the Intellibox display shows the status and the actions which are performed on the selected channel.

If you have an Intellibox with an older software version, you must perform a software update to version 1.5 or newer.

2.1 IRIS mode activation

The IRIS mode can be activated by repeatedly pressing the Intellibox [mode]-key (until "IRIS mode" is shown on the display), or directly by pressing the Intellibox [mode]-key and then immediately thereafter the Intellibox [5]-key.

When the IRIS mode is active, the central part of the Intellibox display will show:

```
m  12|IRIS|lok#
   7  |MODE|
```

2.2 Selection of a communication channel

Communication channel selection is performed by pressing the [menu]-key while in IRIS mode and then pressing either [+] or [↓]. Channel selection must be confirmed by pressing the [↵]-key.

2.3 The display

Locomotive address

Assuming the IRIS remote and the IRIS mode of the Intellibox are currently set on the same communication channel, pressing the ⊛-key on the IRIS remote causes the address of the locomotive currently being controlled to be shown on the central part of the Intellibox display.The left and right sides of the Intellibox display continue to indicate the status of the locomotives controlled by the respective speed knobs of the Intellibox.

```
m  12|Lok:|lok#
   7  |  23|
```

Digit keys can now be pressed on the IRIS remote in order to select a locomotive address: each keypress will be shown on the Intellibox display.

Speed and direction

Changes to the locomotive speed and direction are shown on the Intellibox display:

```
m  12|  23|lok#
   7 | 25↑|
```

The display shows the locomotive address, the speed step and, except for Motorola old - format locomotives, the driving direction of the currently selected locomotive.

Status of the special functions

If the status of a special function of the currently selected locomotive is changed, then the display shows the function number and its new status: 1 = special function is on, 0 = special function is off.

```
m  12|  23|lok#
   7  |f3=1|
```

Turnout addresses

If the ⏀ - key of the IRIS remote is pressed, the display shows the turnout base address currently assigned to the 1st (leftmost) red/green keypair.

```
m  12| -↲-|lok#
   7  | 120|
```

Digit keys can now be pressed on the IRIS remote in order to select a different turnout base address: each keypress will be shown on the Intellibox display.

Turnout status

If a red or green key is pressed, the display shows the current status of the 4 turnouts currently being controlled by that IRIS communication channel.

```
m  12| -↲-|lok#
   7  |■■■▪|
```

block in lower position = Turnout status is green/straight
block in upper position = Turnout status is red/diverging

Route numbers

By pressing the ⏀ - key, the display shows:

```
m  12|-↲↲-|lok#
   7 |    |
```

Digit keys can now be pressed on the IRIS remote to select a route number: each keypress will be shown on the Intellibox display.

Route activation status

If a route is activated through the IRIS remote, the display will show the status of the activation of that route - as it does in the Intellibox "Memory mode".

```
m  12|-↲↲-|lok#
   7  |1/10|
```

The display shows the group number and the route number (within that group), separated by a rotating dash symbol. The symbol is shown until the selected route has been completely activated.

3. Special Configurations

All of the special configurations mentioned in this chapter can be setup by changing the value of selected Intellibox Special Options.

3.1 How to change the Intellibox Special Options

The "behavior" of the Intellibox can be controlled by editing the Intellibox Special Options. Each Special Option is identified by its number. Each Special Option has a value. The value of a Special Option can be changed using a specific menu of the Intellibox.

• Press the [menu]-key
• Press the [mode]-key
• Press the [↓]-key until you'll be at the "Special Options" menu item
• Now press the [→]-key

```
Special Option:
No. ..1 = ...
```

• Input the number of the Special Option you wish to reset in the left input field (before the "=" symbol).
• Switch over to the right input field by pressing the [→]-key. The display will indicate the current value of the selected Special Option.
• Input the value you would like to assign to that Special Option.
• Press the [↵]-key to confirm the value change. A '∗' symbol next to the value will confirm that that value has now been assigned to the selected Special Option.
• Go back to the main display with the [menu]-key

You can press the [C]-key to remove a digit you may have mistakenly pressed. If all digits have been removed this way, pressing the [C]-key again will make the default value of that Special Option be shown on the display.

3.2 IRIS as DC-style throttle

The default IRIS configuration implies controlling the speed and direction of a locomotive in a way very similar to what applies to the Intellibox speed knobs configured as AC-style throttles. The ⊕ and ⊖ keys of the IRIS remote increase and decrease the locomotive speed while the locomotive driving direction is controlled by the ⊖ (forward) and ⊖ (reverse) keys.

Users who prefer the DC-style operation of the Intellibox speed knobs can adjust the IRIS user interface to that style.

DC-style locomotive control through the + and - keys

In order to configure the IRIS remote for DC-style control the following Intellibox Special Options must be edited:

Special Option #732 = 27; DC-style for the ⊕-key
Special Option #733 = 28; DC-style for the ⊖-key

Using the DC-style of the IRIS remote, a stopped locomotive moves in the forward driving direction when the ⊕-key is pressed. If the ⊕-key remains pressed, the locomotive will accelerate step by step up to its maximum speed. Conversely, a stopped locomotive moves in the reverse driving direction when the ⊖-key is pressed. If the ⊖-key remains pressed, the locomotive will accelerate step by step up to its maximum speed.

If a locomotive is moving, depending on the locomotive driving direction, either the ⊖-key (if direction=forward) or the ⊕-key (if direction=reverse) can be pressed to reduce the locomotive speed. If that key remains pressed, the locomotive will eventually come to a stop. If the locomotive is now to start in the opposite direction, that very key has to be released and then pressed once again.

DC-style through the arrow keys

In order to configure the IRIS remote for DC-style control the following Intellibox Special Options must be edited:

Special Option #716 = 27; DC-style for the ➡-key
Special Option #717 = 28; DC-style for the ⬅-key

If the Special Options 732 and 733 are left unchanged (with respect to their default value), then it is possible to keep using the ⊕ and ⊖-key to increase and decrease the locomotive speed.

Large speed change

Furthermore, it is possible to change the speed of a locomotive in "large chunks" (as opposed to a stepwise change). To accomplish this, the following Intellibox Special Options must be edited:

Large speed change through the arrow keys

Special Option #716 = 23; the ➡-key increases the locomotive speed by a "large chunk"
Special Option #717 = 26; the ⬅-key decreases the locomotive speed by a "large chunk"

Large speed change through the + and - keys

Special Option #732 = 23; the ⊕-key increases the locomotive speed by a "large chunk"
Special Option #733 = 26; the ⊖-key decreases the locomotive speed by a "large chunk"

The size of the "large chunk" is determined by the value of Special Option 769. The default value of this Special Option is 4, i.e., the size of the "large chunk" implies changing the locomotive speed by 4 speed steps.

3.3 Direction change using the [f+8] key

If there is no need to control locomotive functions f9 through f12, then the ⊛-key can be used to change the locomotive driving direction.

Direction change

Special Option #730 = 43; pressing the ⊛-key immediately stops the locomotive and changes its driving direction.

Large speed change

Since direction control now takes place using the ⊛-key, the ⬅ and ➡-keys can now be used in order to change the locomotive speed by a "large chunk".

Special Option #716 = 23; ➡ increases the locomotive speed by a "large chunk"

Special Option #717 = 26; ⬅ decreases the locomotive speed by a "large chunk"

The size of the "large chunk" is determined by the value of Special Option 769. The default value of this Special Option is 4, i.e., the size of the "large chunk" implies changing the locomotive speed by 4 speed steps.

3.4 Direct selection of specific locomotive speed levels

Per default configuration, the IRIS remote digit keys are only used during locomotive, turnout or route selection.

It is however possible to configure these keys so that, while not selecting a locomotive, turnout or route, they will instead select a specific locomotive speed level. This is accomplished using the Intellibox Special Options 780 through 789. Special Option #780 determines the action pertaining - outside locomotive/turnout/route selection - to the ⓪-key and Special Option #789 determines the action pertaining to the ⑨-key.

Special Option Number	780	781	782	783	784	785	786	787	788	789
Special Option Value	31	32	33	34	35	36	37	38	39	40

The above configuration allows directly changing the locomotive speed level in approx 10% speed steps of the maximum speed:

Digit key	0	1	2	3	4	5	6	7	8	9
Speed by 14 speedsteps	1	2	4	5	7	8	9	11	12	14
Speed by 28 speedsteps	1	4	7	10	13	16	19	22	25	28
Speed by 31 speedsteps	1	4	7	11	14	17	21	24	28	31
Speed by 128 speedst.	1	15	29	43	57	70	84	98	112	126

If the ⓪-key is to be used to stop a locomotive, the Special Option #780 must be set to the value 29.

The default value for Special Options 780 through 789 is 255. This value implies that pressing a digit key while not selecting a locomotive, turnout or route does not cause any action at all.

3.5 Direct control of 8 different turnouts

It is possible to setup the IRIS remote so that the red/green keys can control 8 consecutive turnout addresses per communication channel. In this case, pressing one of the red or green keys toggles the turnout status (red/green, diverging/straight).

In order to take advantage of this feature, the values of the following Intellibox Special Options have to be changed:

Key	1	2	3	4	5	6	7	8
Special Option Number	740	742	744	746	741	743	745	747
Special Option Value	140	141	142	143	144	145	146	147

For example, if the first (leftmost) red key has been assigned to the control of turnout address 1, the the other red and green keys will control the subsequent 7 turnout addresses.

3.6 Direct route activation

The red/green key pairs which are normally used to control turnouts and signals can be used along with the ✍ - key to activate 8 pre-selected routes.

In order to do this, the Intellibox Special Options 791 through 798 have to be set to values corresponding to the routes which you'd like to activate by pressing that red/green pair immediately after the ✍ - key. The values which correspond to the routes 1 through 48 are 201 through 248.

Key	1	2	3	4	5	6	7	8
Special Option Number	791	793	795	797	792	794	796	798
Special Option Value	201	202	203	204	205	206	207	208

The example shows how routes 1 through 8 can be directly activated.
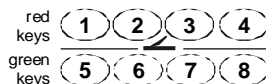
The default value for Special Options 791 through 798 is 255. This value implies that activating a red or green key immediately after the ✍ - key does not activate any route.

3.7 Using an IRIS remote to control a PC

It is possible to use an IRIS remote to control a PC connected to the Intellibox. Depending on the Intellibox configuration, it is possible to send each infrared command to the PC (coming from the IRIS remote) or only a selected subset. It is furthermore possible to assign specific "commands" to keys of the IRIS remote, commands which do not cause any action on the Intellibox and would only be forwarded to the PC for further processing. In each of these cases it is necessary to have a PC program which understands about and reacts to infrared events.

Further technical details regarding this use of the IRIS remote can be found in the document "IRIS Special Options.txt" and in other documentation files. The former is available also on the disk which comes with the IRIS set (IRIS remote + IRIS receiver). Both are also available on our Internet site: www.uhlenbrock.de.

3.8 Reset

This is how to proceed to reset an Intellibox Special Option to its default value:

• Press the [menu]-key
• Press the [mode]-key
• Press the [↓]-key until the "Special Options" menu item appears
• Now press the [→]-key

```
Special Option:
No. ..1 = ...
```

• Input the number of the Special Option you wish to reset in the left input field (before the "=" symbol).
• Switch over to the right input field (after the "=" symbol) by pressing the [→]-key. The display will indicate the current value of the selected Special Option.
• Press the [C]-key twice: the display will indicate the default value of the selected Special Option.
• Press the [↵]-key to confirm the change. A '∗' symbol will show that the value has been assigned to the selected Special Option.
• Go back to the main display with the [menu]-key.

HOTLINE

Any questions?

You can reach us by e-mail at

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