⚠️ IMPORTANT INFORMATION

Information provided in this manual is used for the installation of the radio remote control on the machine and for its maintenance.

Information provided in this manual allows to disable, enable and set some radio remote control's functions that may have impacts on the risk assessment related to the machine; this assessment must be carried out to decide whether the machine can be radio remote controlled.
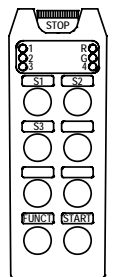
Information provided in this manual cannot be used and performed by people who are not competent, responsible for and authorized to do that.

The person in charge for the machinery's safety must keep information contained in this manual reserved.

Those who use this information must also have been trained about the radio remote control and its risks by Autec's personnell or by people authorized by Autec.

Autec cannot be held liable for responsibilities resulting from the modification of these functionalities after the product sale.

AIR SERIES

Working frequency (radio modules AIRTR08LM and AIRRT32NM)

General Section

General instructions

This manual aims at providing information to enable, disable and modify the features of Autec Air series' radio remote controls.

This manual and the "user manual" need to be fully read and understood by those who decide upon and/or modify the radio remote control's features.

Contact Autec if any of the instructions and/or warnings provided in this manual are not clear.

No part of this manual may be reproduced, in any form or by any means, without written permission of Autec (including recording and photocopying).

All operations described in this manual must be carried out by qualified technicians who are suitably trained with respect to the relevant norms and laws.

As for instructions and warnings regarding the machine where the radio remote control is to be installed, follow the instructions given in the machine's manual.

Symbol conventions

This manual contains two symbols that highlight special indications.
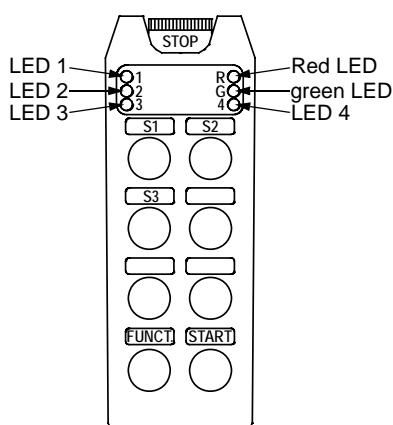
⚠ WARNING This symbol marks all extremely important indications and information: if they are not respected, this may result in critical danger for people or property.

ⓘ This symbol identifies all texts in the manual that shall be read carefully.

Caption

Signals	
◯	LED is off
◌	LED blinks once in a second
⊗	LED blinks twice in a second
✳	LED blinks three times in a second
●	LED is steady on
①	LED repeats 1 blink and an off phase
②	LED repeats 2 blinks and an off phase
③	LED repeats 3 blinks and an off phase
④	LED repeats 4 blinks and an off phase
⑤	LED repeats 5 blinks and an off phase

Pushbuttons	
◯	pushbutton is released
◉	pushbutton pressed to first step
●	pushbutton is pressed

MSC
Mode of Service Control

Description of the MSC

The MSC radio remote control's working mode is used to enter the installation menus.
It is possible to enable/disable the MSC either by acting on the receiving unit or by acting on the transmitting unit.

The SERVICE CONTROL programming can only enable the MSC mode if it is enabled as a factory setting. Therefore, the MSC mode can only be enabled after making sure that it is activated (ON) by checking this in the technical data sheet.

ⓘ When the radio remote control is in MSC, pressed pushbuttons do not activate the receiving unit's outputs.
Disable the MSC mode to start controlling the machine again.

Enabling/disabling the MSC through the receiving unit

Enabling the MSC

To enable the MSC, do the following.
1. Remove power from the receiving unit.
2. Open the receiving unit and set DIP switch 2 on the mother board to ON.
3. Close the receiving unit and power it.

At the next radio remote control's start up, the green LED in the transmitting unit and the ENABLE LED in the receiving unit blink twice per second, indicating that the radio link has been built and the radio remote control is in MSC mode.

Disabling the MSC

To disable the MSC do the following.
1. Remove power from the receiving unit.
2. Open the receiving unit and set DIP switch 2 on the mother board to OFF.
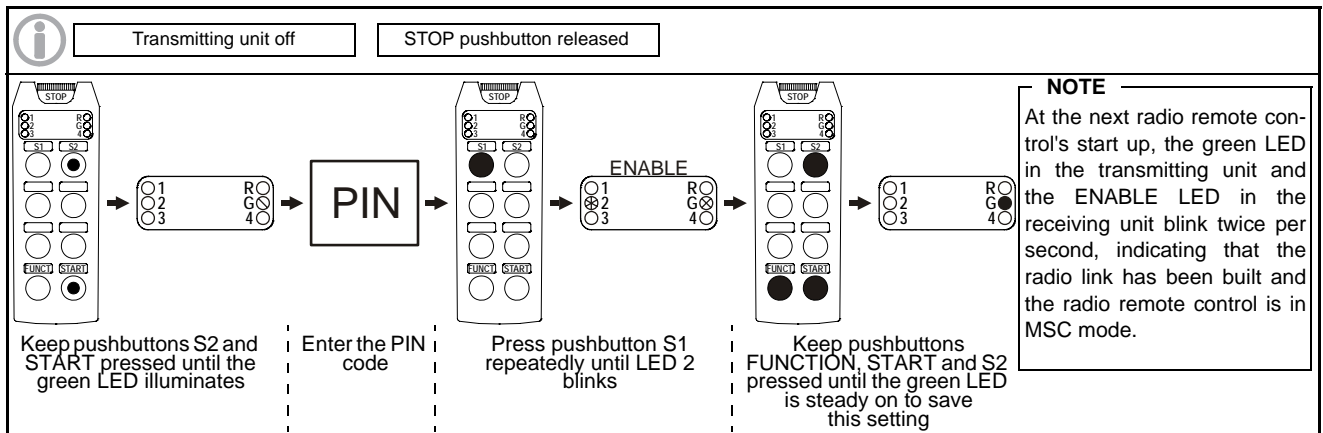3. Close the receiving unit and power it.

At next radio remote control start-up:
- the green LED in the transmitting unit blinks slowly, indicating that the radio remote control is ready to control the machine
- the ENABLE LED in the receiving unit blinks, indicating that the radio link is built.

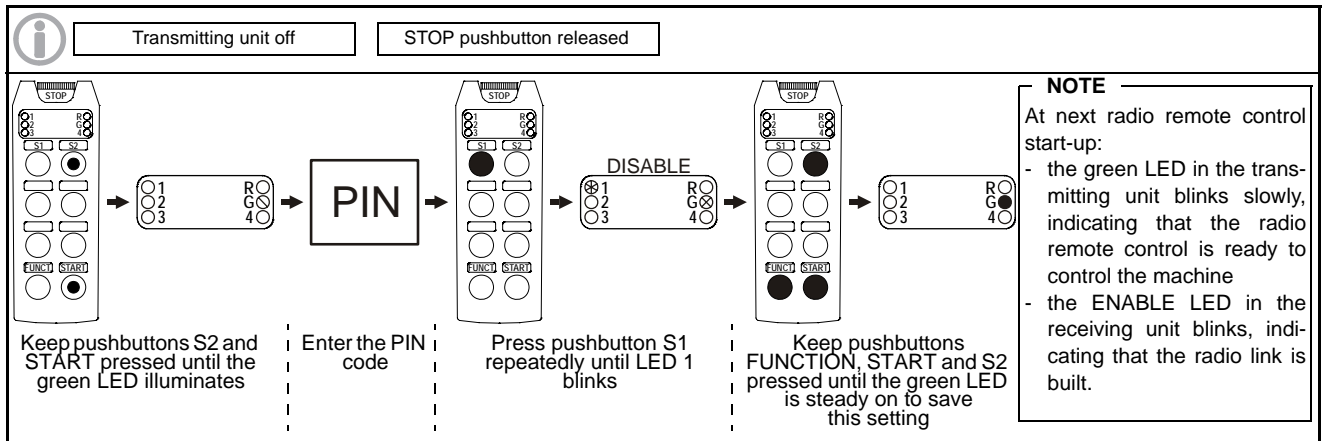## Enabling/disabling the MSC through the transmitting unit

Enabling the MSC

To enable the MSC do the following with the transmitting unit switched off and the STOP pushbutton released.

Transmitting unit off	STOP pushbutton released

Keep pushbuttons S2 and START pressed until the green LED illuminates | Enter the PIN code | Press pushbutton S1 repeatedly until LED 2 blinks | Keep pushbuttons FUNCTION, START and S2 pressed until the green LED is steady on to save this setting

NOTE

At the next radio remote control's start up, the green LED in the transmitting unit and the ENABLE LED in the receiving unit blink twice per second, indicating that the radio link has been built and the radio remote control is in MSC mode.

Disabling the MSC

To disable the MSC do the following with the transmitting unit switched off and the STOP pushbutton released.

Transmitting unit off	STOP pushbutton released

Keep pushbuttons S2 and START pressed until the green LED illuminates | Enter the PIN code | Press pushbutton S1 repeatedly until LED 1 blinks | Keep pushbuttons FUNCTION, START and S2 pressed until the green LED is steady on to save this setting

NOTE

At next radio remote control start-up:
- the green LED in the transmitting unit blinks slowly, indicating that the radio remote control is ready to control the machine
- the ENABLE LED in the receiving unit blinks, indicating that the radio link is built.

WORKING FREQUENCY

WORKING FREQUENCY

⚠️ **WARNING**
Programming procedures provided hereafter allow to set the radio remote control's radio link features; these must comply with the laws and standards enforced in the market where they are used. In order for the system "machine+radio remote control" to be compliant and therefore to be used, it shall comply with such laws and standards: if it does not, the system may be stopped and impounded by competent supervisory bodies.
Autec cannot be held responsible if the radio remote control is set with forbidden frequencies.

Programming related to "Working frequency" is as follows:
- BANK GROUP.
  The BANK GROUP programming is used to set the frequency bank used by the radio remote control.
- RADIO MODE.
  The RADIO MODE programming is used to choose the automatic scan mode or the manual selection of frequency.
- CHANNEL BANK.
  The CHANNEL BANK programming is used to choose the working frequency.

ⓘ It is only possible to enter the BANK GROUP, RADIO MODE and CHANNEL BANK programming if the radio remote control is in MSC working mode (Mode of Service Control).

ⓘ When the setting procedure has ended, disable the MSC mode to start controlling the machine again.

ⓘ Write down all changes in the technical data sheet.

ⓘ Enter the programming related to the BANK GROUP, RADIO MODE and CHANNEL BANK programming without modifying the setting to check options set through those procedures.

Leaving programming without modifying settings

You can leave any programming in any moment without modifying the settings; do as follows:
1. press the STOP pushbutton
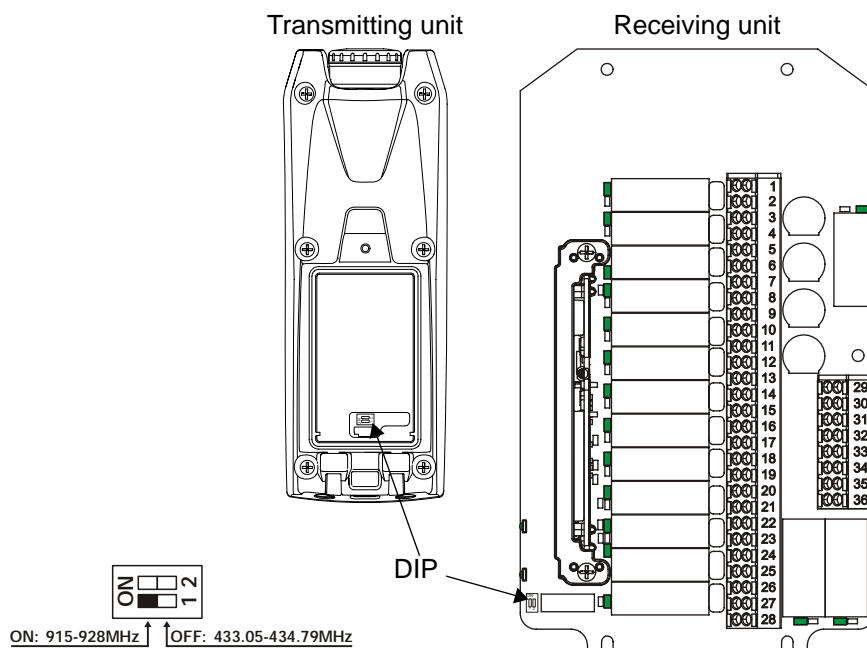2. wait approx. 10 seconds without pressing any pushbutton.

FREQUENCY BAND

AIR series radio remote controls can work at two different frequency bands:
- 433.050 - 434.790 MHz
- 915.000 - 928.000 MHz.

(i) The frequency band is selected by DIP 1 under the transmitting unit's battery and DIP 1 on the receiving unit's mother board. These DIPs shall be set in the same way.

(i) DIP 1 shall be set when the unit is off:
- press the STOP pushbutton in the transmitting unit
- disconnect power supply from the receiving unit.

Transmitting unit   Receiving unit

DIP

ON: 915-928MHz   OFF: 433.05-434.79MHz

If a radio remote control shall be used in the United States, after setting DIP 1 in the ON position, this DIP switch must be blocked (e.g. with glue, enamel...) so that it is not possible for operators to modify the frequency band.
This request arises from FCC requirements, and it is therefore necessary for the radio remote control to be compliant.

⚠ **WARNING** **Before putting a radio remote control into the United States' market, it is compulsory to check that DIP 1 on the transmitting unit is blocked as described above: if it is not, it must be blocked.**

Frequency use mode

The RADIO MODE programming allows to set the radio remote control in automatic frequency scan mode (AUTO) or in manual frequency selection mode (MANUAL).

Automatic scan mode
In AUTO mode, the radio remote control automatically chooses the working frequency among the frequencies in the selected BANK GROUP. The radio remote control checks that a frequency is free before using it.

Manual selection mode
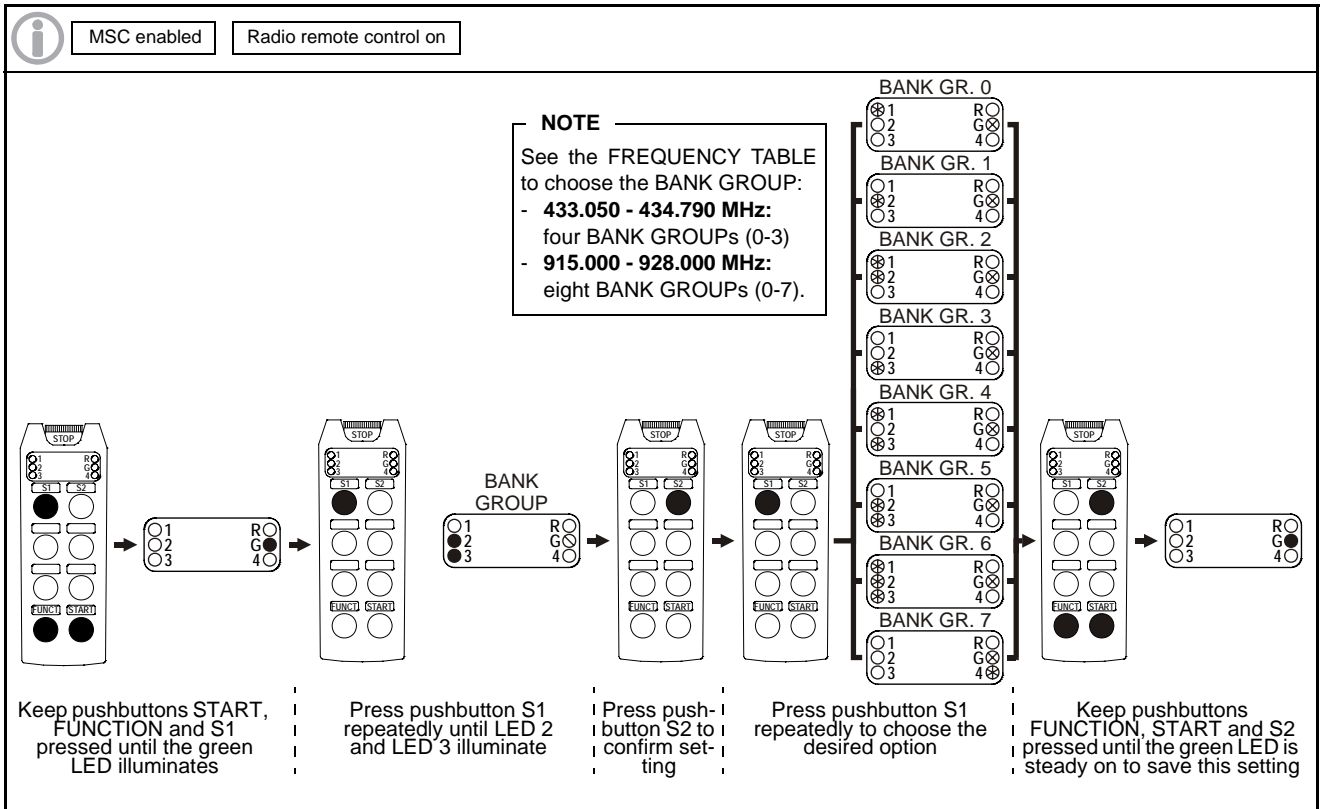In MANUAL mode, the radio remote control uses a fixed working frequency, that can be set with the following procedure:

> 1. With the help of the frequency table, identify FREQUENCY BAND, LOGICAL CHANNEL, CHANNEL BANK and BANK GROUP related to the desired frequency.
> 2. Set FREQUENCY BAND with DIP 1.
> 3. Set RADIO MODE to MANUAL.
> 4. Set BANK GROUP.
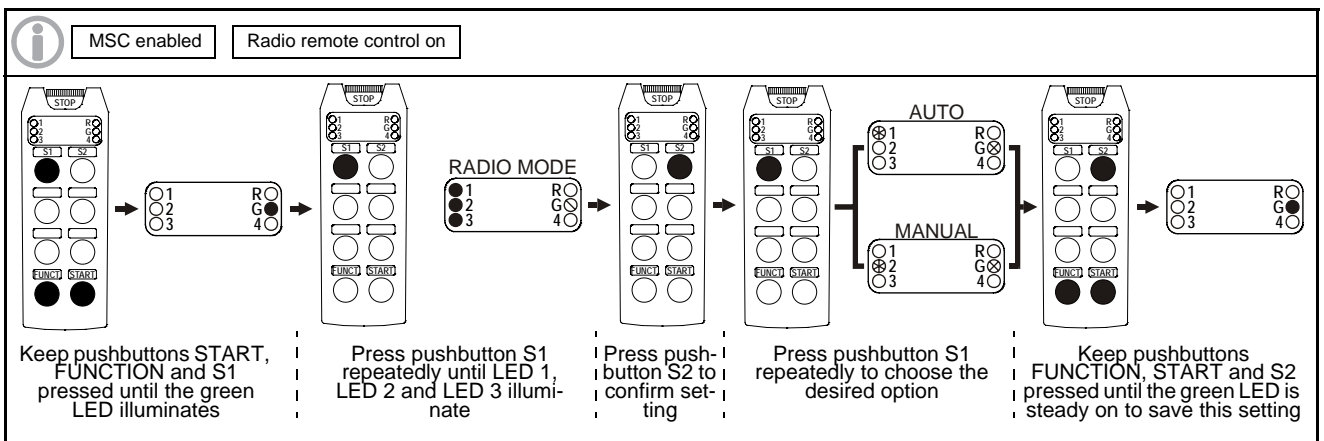> 5. Set CHANNEL BANK and LOGICAL CHANNEL.

Procedure for the BANK GROUP programming

Carry out the following procedure with the radio remote control on and in MSC mode (in this condition the green LED in the transmitting unit blinks twice per second and the ENABLE LED in the receiving unit blinks).

NOTE

See the FREQUENCY TABLE to choose the BANK GROUP:
- **433.050 - 434.790 MHz:** four BANK GROUPs (0-3)
- **915.000 - 928.000 MHz:** eight BANK GROUPs (0-7).

Keep pushbuttons START, FUNCTION and S1 pressed until the green LED illuminates | Press pushbutton S1 repeatedly until LED 2 and LED 3 illuminate | Press push-button S2 to confirm setting | Press pushbutton S1 repeatedly to choose the desired option | Keep pushbuttons FUNCTION, START and S2 pressed until the green LED is steady on to save this setting

Procedure for the RADIO MODE programming

Carry out the following procedure with the radio remote control on and in MSC mode (in this condition the green LED in the transmitting unit blinks twice per second and the ENABLE LED in the receiving unit blinks).

Keep pushbuttons START, FUNCTION and S1 pressed until the green LED illuminates | Press pushbutton S1 repeatedly until LED 1, LED 2 and LED 3 illuminate | Press push-button S2 to confirm setting | Press pushbutton S1 repeatedly to choose the desired option | Keep pushbuttons FUNCTION, START and S2 pressed until the green LED is steady on to save this setting

Procedure for the CHANNEL BANK programming

ⓘ The working frequency can only be set if the RADIO MODE programming is set to MANUAL.

Carry out the following procedure with the radio remote control on and in MSC mode (in this condition the green LED in the transmitting unit blinks twice per second and the ENABLE LED in the receiving unit blinks).
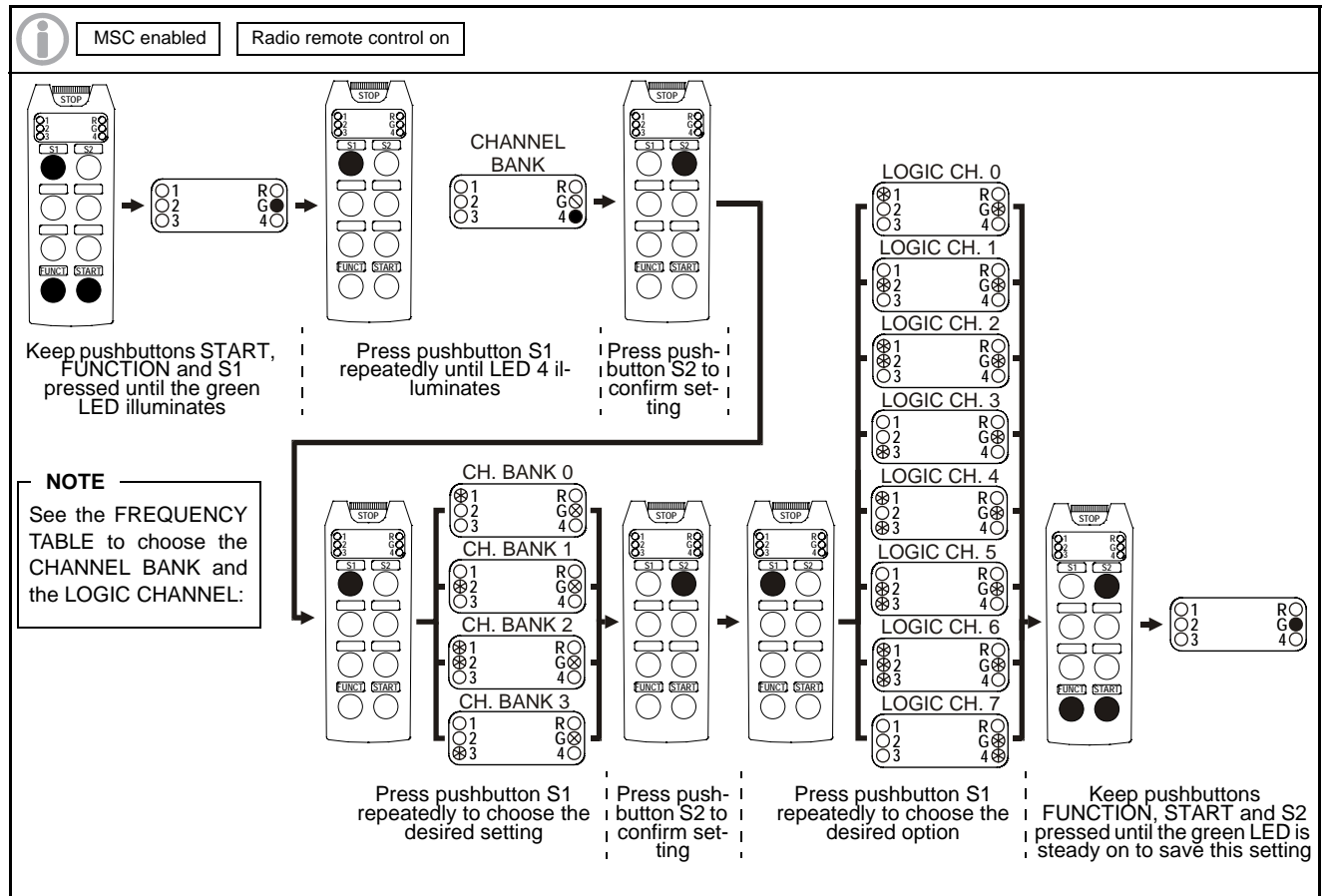

Example of manual selection of frequency

Example of frequency to be set: 433.700 MHz.
1. With the help of the FREQUENCY TABLE, identify the following:
   - FREQUENCY BAND = 433.050 - 434.790 MHz
   - BANK GROUP = 2
   - CHANNEL BANK = 3
   - LOGICAL CHANNEL = 1
2. Set DIP 1 to OFF (FREQUENCY BAND).
3. Set MANUAL (RADIO MODE).
4. Set BANK GR. = 2 (BANK GROUP).
5. Set CH. BANK = 3 and LOGICAL CH. = 1 (CHANNEL BANK).

FREQUENCY TABLE

433.050 - 434.790 MHz frequency band

	BANK GR. 0 LOGIC CH.	[MHz]		BANK GR. 1 LOGIC CH.	[MHz]		BANK GR. 2 LOGIC CH.	[MHz]		BANK GR. 3 LOGIC CH.	[MHz]
CH. BANK 0	0	433.075	CH. BANK 0	0	433.100	CH. BANK 0	0	433.075	CH. BANK 0	0	434.075
	1	433.125		1	433.150		1	433.100		1	434.100
	2	433.175		2	433.200		2	433.125		2	434.125
	3	433.225		3	433.250		3	433.150		3	434.150
	4	433.275		4	433.300		4	433.175		4	434.175
	5	433.325		5	433.350		5	433.200		5	434.200
	6	433.375		6	433.400		6	433.225		6	434.225
	7	433.425		7	433.450		7	433.250		7	434.250
CH. BANK 1	0	433.475	CH. BANK 1	0	433.500	CH. BANK 1	0	433.275	CH. BANK 1	0	434.275
	1	433.525		1	433.550		1	433.300		1	434.300
	2	433.575		2	433.600		2	433.325		2	434.325
	3	433.625		3	433.650		3	433.350		3	434.350
	4	433.675		4	433.700		4	433.375		4	434.375
	5	433.725		5	433.750		5	433.400		5	434.400
	6	433.775		6	433.800		6	433.425		6	434.425
	7	433.825		7	433.850		7	433.450		7	434.450
CH. BANK 2	0	433.875	CH. BANK 2	0	433.900	CH. BANK 2	0	433.475	CH. BANK 2	0	434.475
	1	433.925		1	433.950		1	433.500		1	434.500
	2	433.975		2	434.000		2	433.525		2	434.525
	3	434.025		3	434.050		3	433.550		3	434.550
	4	434.075		4	434.100		4	433.575		4	434.575
	5	434.125		5	434.150		5	433.600		5	434.600
	6	434.175		6	434.200		6	433.625		6	434.625
	7	434.225		7	434.250		7	433.650		7	434.650
CH. BANK 3	0	434.275	CH. BANK 3	0	434.300	CH. BANK 3	0	433.675	CH. BANK 3	0	434.675
	1	434.325		1	434.350		1	433.700		1	434.700
	2	434.375		2	434.400		2	433.725		2	434.725
	3	434.425		3	434.450		3	433.750		3	434.750
	4	434.475		4	434.500		4	433.775		4	434.775
	5	434.525		5	434.550		5	433.800		5	434.250
	6	434.575		6	434.600		6	433.825		6	434.450
	7	434.625		7	434.650		7	433.850		7	434.650

915.000 - 928.000 MHz frequency band

	BANK GR. 0		BANK GR. 1		BANK GR. 2		BANK GR. 3	
	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]
CH. BANK 0	0	915.050	0	915.100	0	915.150	0	915.200
	1	915.450	1	915.500	1	915.550	1	915.600
	2	915.850	2	915.900	2	915.950	2	916.000
	3	916.250	3	916.300	3	916.350	3	916.400
	4	916.650	4	916.700	4	916.750	4	916.800
	5	917.050	5	917.100	5	917.150	5	917.200
	6	917.450	6	917.500	6	917.550	6	917.600
	7	917.850	7	917.900	7	917.950	7	918.000
CH. BANK 1	0	918.250	0	918.300	0	918.350	0	918.400
	1	918.650	1	918.700	1	918.750	1	918.800
	2	919.050	2	919.100	2	919.150	2	919.200
	3	920.450	3	919.500	3	919.550	3	919.600
	4	919.850	4	919.900	4	919.950	4	920.000
	5	920.250	5	920.300	5	920.350	5	920.400
	6	920.650	6	920.700	6	920.750	6	920.800
	7	921.050	7	921.100	7	921.150	7	921.200
CH. BANK 2	0	921.450	0	921.500	0	921.550	0	921.600
	1	921.850	1	921.900	1	921.950	1	922.000
	2	922.250	2	922.300	2	922.350	2	922.400
	3	922.650	3	922.700	3	922.750	3	922.800
	4	923.050	4	923.100	4	923.150	4	923.200
	5	923.450	5	923.500	5	923.550	5	923.600
	6	923.850	6	923.900	6	923.950	6	924.000
	7	924.250	7	924.300	7	924.350	7	924.400
CH. BANK 3	0	924.650	0	924.700	0	924.750	0	924.800
	1	925.050	1	925.100	1	925.150	1	925.200
	2	925.450	2	925.500	2	925.550	2	925.600
	3	925.850	3	925.900	3	925.950	3	926.000
	4	926.250	4	926.300	4	926.350	4	926.400
	5	926.650	5	926.700	5	926.750	5	926.800
	6	927.050	6	927.100	6	927.150	6	927.200
	7	927.450	7	927.500	7	927.550	7	927.600

	BANK GR. 4		BANK GR. 5		BANK GR. 6		BANK GR. 7	
	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]	LOGIC CH.	[MHz]
CH. BANK 0	0	915.250	0	915.300	0	915.350	0	915.400
	1	915.650	1	915.700	1	915.750	1	915.800
	2	916.050	2	916.100	2	916.150	2	916.200
	3	916.450	3	916.500	3	916.550	3	916.600
	4	916.850	4	916.900	4	916.950	4	917.000
	5	917.250	5	917.300	5	917.350	5	917.400
	6	917.650	6	917.700	6	917.750	6	917.800
	7	918.050	7	918.100	7	918.150	7	918.200
CH. BANK 1	0	918.450	0	918.500	0	918.550	0	918.600
	1	918.850	1	918.900	1	918.950	1	919.000
	2	919.250	2	919.300	2	919.350	2	920.400
	3	919.650	3	919.700	3	919.750	3	919.800
	4	920.050	4	920.100	4	920.150	4	920.200
	5	920.450	5	920.500	5	920.550	5	920.600
	6	920.850	6	920.900	6	920.950	6	921.000
	7	921.250	7	921.300	7	921.400	7	921.400
CH. BANK 2	0	921.650	0	921.700	0	921.750	0	921.800
	1	922.050	1	922.100	1	922.150	1	922.200
	2	922.450	2	922.500	2	922.550	2	922.600
	3	922.850	3	922.900	3	922.950	3	923.000
	4	923.250	4	923.300	4	923.350	4	923.400
	5	923.650	5	923.700	5	923.750	5	923.800
	6	924.050	6	924.100	6	924.150	6	924.200
	7	924.450	7	924.500	7	924.550	7	924.600
CH. BANK 3	0	924.850	0	924.900	0	924.950	0	925.000
	1	925.250	1	925.300	1	925.350	1	925.400
	2	925.650	2	925.700	2	925.750	2	925.800
	3	926.050	3	926.100	3	926.150	3	926.200
	4	926.450	4	926.500	4	926.550	4	926.600
	5	926.850	5	926.900	5	926.950	5	927.000
	6	927.250	6	927.300	6	927.350	6	927.400
	7	927.650	7	927.700	7	927.750	7	927.800