



R&M Materials Handling, Inc.  
4501 Gateway Boulevard  
Springfield, Ohio 45502  
P.: (937) 328-5100  
FAX: (937) 325-5319

## 6 FREQUENCY MANAGEMENT

### 6.1 System description

RADS11, RADF13 and RADH11 remote controls are equipped with microprocessor controlled synthesised frequency radio modules in both transmitter and receiver. This allows a simple frequency change in the transmitter, as well as an automatic search by the receiver for the new frequency.

### 6.2 Definitions

Channel:	Is the reference number of a frequency. See "Frequency lists".
Allowed channels:	A list of authorised channels (max 70). This is defined in the factory and cannot be changed. The Frequency List could be different from one country to another according to frequency regulations.
Operating channel:	Radio channel that is selected

### 6.3 Frequency settings

The system comes from the factory with the channel programmed in the EEPROM module.

When needed, the Operating Channel can be modified to another frequency channel within the allowed frequency list, which is included in EEPROM module.

#### 6.3.1 Entering in frequency programming mode



**The Operating Channel selection can be carried out through commands, which in the operation mode correspond to orders. Therefore it is of prime importance to follow the sequence described in order to avoid movements of the machine.**

To enter into programming mode follow the sequence:


1. Put a charged battery in the transmitter.
2. Move close to the receiver.
3. Turn on the key-switch.
4. Push down STOP pushbutton (See picture below).
5. Pull up STOP pushbutton (See picture below).



R&M Materials Handling, Inc.  
4501 Gateway Boulevard  
Springfield, Ohio 45502  
P.: (937) 328-5100  
FAX: (937) 325-5319



6. Press Down Pushbutton to the second step.

7. Same time press START  during 2 seconds (See picture below). During this sequence the LED will flash in red.



8. During next 4 seconds orange pulse in the LED will indicate that Programming mode is entered.

9. Immediately after this, the LED will indicate the Operating Channel selected at this time, though sequence of green and red pulses, in the following way:

- a. Tens, by green pulses
- b. Units, by red pulses

10. As an example, the channel 21 will be indicated by 2 pulses in green, followed by 1 pulse in red.

11. After this, the LED will turn orange and the transmitter will be ready for the introduction of new Operating Channel number (see next paragraph). Otherwise you can leave the programming mode by pressing Stop button.

### 6.3.2 Frequency programming mode

1. Once Operating Channel in service is indicated, you can select a new frequency from the list of Allowed Channels contained in "Frequency lists" paragraph, by pressing the DOWN button (tens), and the UP button (units). The LED through an orange flash indicates each pulse. (See picture below).



R&M Materials Handling, Inc.  
4501 Gateway Boulevard  
Springfield, Ohio 45502  
P.: (937) 328-5100  
FAX: (937) 325-5319



2. The LED, for checking, as explained in the previous point, indicates a short while after the last pulse, the new Operating Channel. Some orange pulses by the LED indicate that the new Operating Channel is sent to the receiver. When this transmission has finished, the LED remains in orange.
3. If the programming of the new Operating Channel has not been correct, try the process again.
4. If the programming of the new Operating Channel has been correct, press STOP. Restarting again, it will work on the new Operating Channel.
5. If an attempt is made to program a channel outside the Allowed Channel list, the LED will show the error by lighting up in red.

Once the new channel has been selected, the new frequency will be transmitted to the receiver using frames with no orders in the old frequency. If the channel change has been performed when the receiver is switched off, or the receiver has not been able to hear the transmitter, the receiver will SCAN the new frequency selected, and once scanned it will store this new channel in the EEPROM memory.

The receiver will modify its Operating Channel if it receives frames that contain the new frequency channel.

In Full systems the LCD Display will show the selected channel (picture below).



### 6.3.3 Exiting the frequency programming mode

You can exit the programming mode by pressing the STOP button. The new channel will be then stored in EEPROM.



R&M Materials Handling, Inc.  
 4501 Gateway Boulevard  
 Springfield, Ohio 45502  
 P.: (937) 328-5100  
 FAX: (937) 325-5319

## 6.4 Frequency lists

### 6.4.1 EU countries

Channel number	Frequency, MHz
1	869,70625
2	869,71875
3	869,73125
4	869,74375
5	869,75625
6	869,76875
7	869,78125
8	869,79375
9	869,80625
10	869,81875
11	869,83125
12	869,84375

Channel number	Frequency, MHz
13	869,85625
14	869,86875
15	869,88125
16	869,89375
17	869,90625
18	869,91875
19	869,93125
20	869,94375
21	869,95625
22	869,96875
23	869,98125
24	869,99375

### 6.4.2 USA and Canada

Channel number	Frequency, MHz
1	914,15000
2	914,17500
3	914,20000
4	914,22500
5	914,25000
6	914,27500
7	914,30000
8	914,32500
9	914,35000
10	914,37500
11	914,40000
12	914,42500
13	914,45000
14	914,47500
15	914,50000
16	914,52500
17	914,55000
18	914,57500
19	914,60000
20	914,62500
21	914,65000
22	914,67500
23	914,70000
24	914,72500

Channel number	Frequency, MHz
25	914,75000
26	914,77500
27	914,80000
28	914,82500
29	914,85000
30	914,87500
31	914,90000
32	914,92500
33	914,95000
34	914,97500
35	915,00000
36	915,02500
37	915,05000
38	915,07500
39	915,10000
40	915,12500
41	915,15000
42	915,17500
43	915,20000
44	915,22500
45	915,25000
46	915,27500
47	915,30000

Channel number	Frequency, MHz
48	915,32500
49	915,35000
50	915,37500
51	915,40000
52	915,42500
53	915,45000
54	915,47500
55	915,50000
56	915,52500
57	915,55000
58	915,57500
59	915,60000
60	915,62500
61	915,65000
62	915,67500
63	915,70000
64	915,72500
65	915,75000
66	915,77500
67	915,80000
68	915,82500
69	915,85000
70	915,87500