

# IR remote control for ICOM Equipment

Operation Manual (V1)

(preliminary)

# ICOM Control Panel Layout

## GENERAL

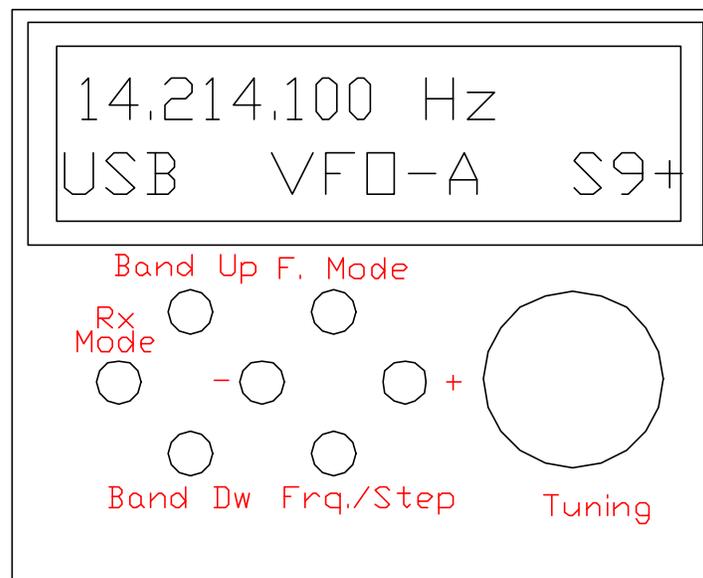
The controller is able to set-up many commands on ICOM equipment using CI-V protocol interface.

Also Infra-red control is possible if the Remote controller has equipped.

Via the IR controller direct frequency dialing is possible with the numeric Keypad.

A special version is also available for PCR1000 ICOM receiver (See related documentation).

The controller can be used as remote panel via CI-V interface (only two wires) so many functions are re-displayed on the LCD.



## Key functions:

1. **Rx Mode** :key to select LSB, USB, CW, AM, FM, WFM
2. **Band Up** :(amateur band select up)
3. **Band Dw** :(amateur band select down)
4. **-** :Decreasing Key (for the selected function)
5. **F. Mode** : function mode (see Table below)
6. **Frq./step**: Frequency/Tuning step toggle
7. **+** :Increasing Key (for the selected function)
8. **Tuning** : Frequency tuning with mechanical encoder (optional)

### Description for Function mode button 5

Mnemonic on LCD	Description
AGC	<b>Automatic Gain Control:</b> key 4 and 7 perform ON and OFF
ATT	<b>Input Attenuator:</b> key 4 and 7 perform ON and OFF
PRE	Input Preamplifier: key 4 and 7 perform ON and OFF
AUT	Automode: if ON, to any RX mode, is joined the typical selectivity, frequency band, and tuning step value. Keys 4 and 7 perform ON and OFF
BPT	<b>Band Pass Tuning</b>
VFO	<b>VFO select:</b> Buttons 4 and 7 select the A or B VFO
MER	<b>Memory Read:</b> Use Keys 4 (down) and 7 (up) for selecting the memory location from channels 1 to 20 (any location stores Freq. Filter, RX Mode and Tuning Step)
MEW	<b>Memory Write:</b> Key 7 selects memory location 1 to 20; Key 4 stores the channel received
NBL	<b>Noise Blanker:</b> Keys 4 and 7 perform ON and OFF
SQL	<b>Squelch:</b> Keys 7 and 4 perform up/down from 0 to 255
Sc1	<b>Scanning Mode 1:</b> The receiver scans from F1 to F2 frequency. Key 7 stores F1 (F1s on LCD) and F2 (F2s on LCD). Key 4 starts and stops scanning. If squelch threshold is exceeded scanning stops.
Sc2	<b>Scanning Mode 2:</b> as Sc1 mode but without stop for squelch
ScM	<b>Scanning Memory:</b> the receiver scan from channels memory location 1 to 20 ; Key 4 starts and stops scanning. If squelch threshold is exceeded scanning stops.

### Scan function

The frequency scanning function works in two modes:

- Sc1: Scans with stop on channel busy
- Sc2: Scans without stop on channel busy

### Scanning mode 1 (Sc1 on LCD)

To set up scanning proceed as follows:

1. Tune the first frequency (F1) with normal key for tuning
2. With function mode Key (key 5) select Sc1
3. With Key N7 store this frequency; LCD displays “F1s”. Press the key only once
4. With encoder or with Key 6 (frequency/step) and Keys 4/7 select a new frequency (F2) (F2 must be higher then F1)
5. With function mode key 5 return to Sc1 mode
6. With key N7 store this new frequency; LCD displays “F2s”. Press the key only once

7. To start scanning press key 4; LCD displays “Stop”
  8. To stop scanning press key 4; LCD displays “Str”
  9. When scanning stops you can change frequency up and down with the encoder
- Scanning stops if a carrier overcomes a Squelch level.

To set the squelch level use the “SQL” mode in the range S1-S64

Scanning is performed at the frequency step size selected .

Select the appropriate step size for the reception mode selected as follows:

- 100 Hz step for USB, LSB and CW
- 3KHz for AM
- 12.5 or 25 KHz for narrow FM
- 100 KHz for WFM

When scanning is running it is possible to change other operating modes: the tuning step, the reception mode and so on.

To stop scanning you must always return to Sc1 or Sc2 and press Key 4.

### **Scanning mode 2 (Sc2 on LCD)**

As for Sc1 mode without stop on channel busy. Start and stop scanning are controlled only with Key 4.

### **Memory scanning (ScM on LCD)**

Memory scanning is also possible (sw V4 and up): the receiver scans from channels memory location 1 to 20 ; Key 4 starts and stops scanning. If squelch threshold is exceeded scanning stops.

### **Description for the Key 6 (Frequency/tuning step toggle)**

Key 6 toggles frequency or tuning step. The action of Keys 4 and 7 increases and decreases the frequency or tuning step.

### **Description for the N8 Knob**

The N8 knob performs the frequency tuning with the tuning resolution selected with 6/4/7 key.

Tuning step available: 1 , 10, 100, 1000 Hz, 3, 10, 12.5, 25, 100 KHz 1, 10 MHz

This knob is optional. Keys 4 and 7 can also be used.

The knob uses a mechanical encoder.

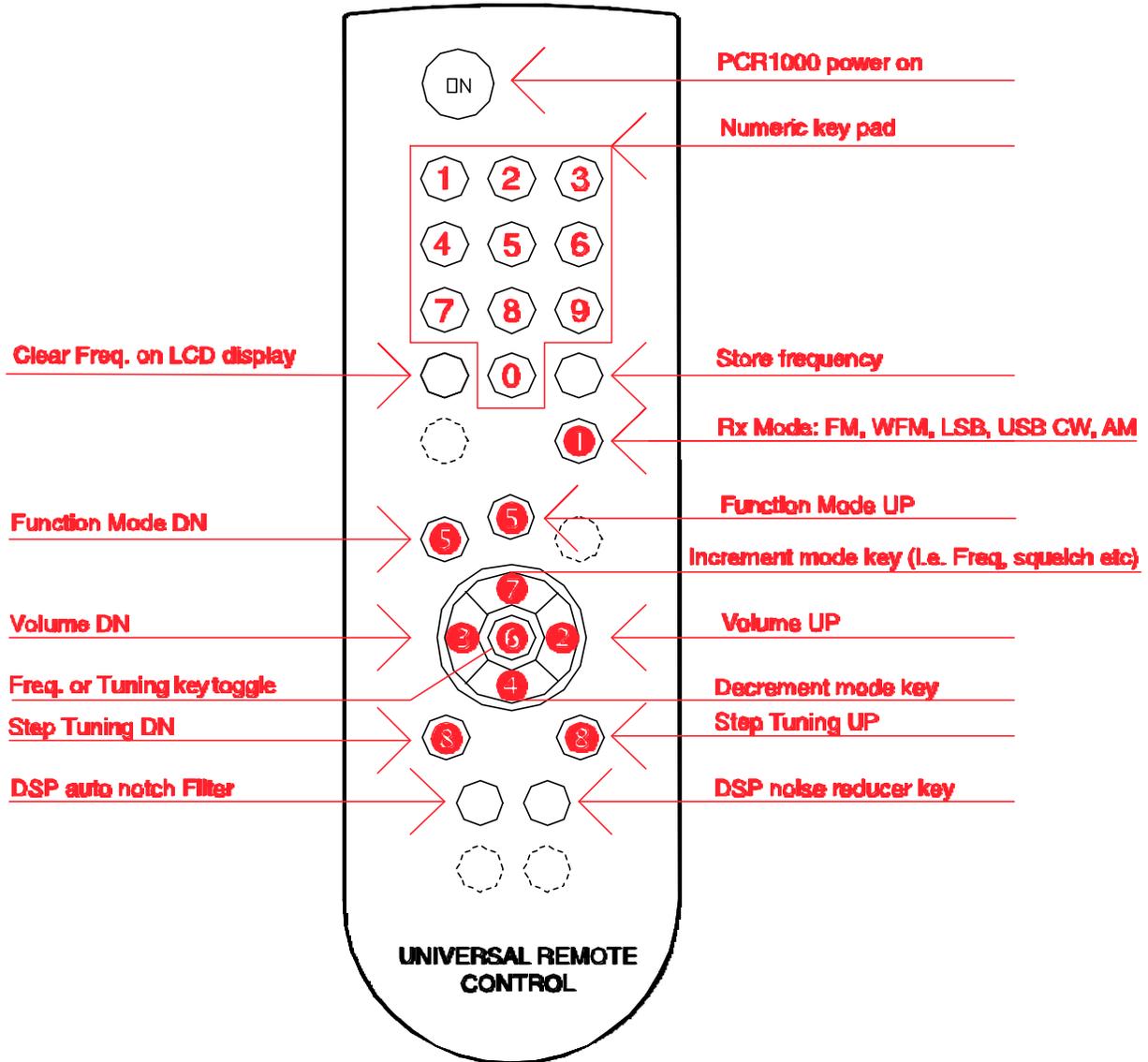
The keyboard PCB is assembled on the PIC CPU Printed circuit board.

### **Cables & Connections**

Connect the Control Panel unit to the Icon Equipment via 2 wire CI-V .

Power supply is 8-10v DC no polarity or AC.

# PCR1000 REMOTE CONTROL



## Notes for IR Version

The IR release works also with an IR remote controller.

If an infrared sensor is wired to pin 15 of PIC board all the functions are available from the remote controller.

The standard 7 keys or the encoder can also be used.

Because the operation is much easier with the remote controller it is also possible not to install the keyboard and/or the tuning encoder.

The main feature of IR version is the possibility to set the frequency directly from the numeric keypad and to activate the DSP if unit UT-106 is installed.

With the DSP option it is possible to insert the DSP auto notch or the Noise reducer (from 1 to 15 value). These two new functions are performed with two dedicated keys on the remote control.

### Function Modes/Buttons on Remote Control

Mnemonic on LCD	Description
AGC	<b>Automatic Gain Control:</b> buttons 4 and 7 perform ON and OFF
ATT	<b>20dB Input Attenuator:</b> buttons 4 and 7 perform ON and OFF
AUT	<b>Automode:</b> if ON, in any RX mode the typical selectivity, frequency band, and tuning step value is selected. Buttons 4 and 7 perform ON and OFF
BPT	<b>Band Pass Tuning</b>
VFO	<b>VFO select:</b> Buttons 4 and 7 select the A or B VFO
MER	<b>Memory Read:</b> Use buttons 4 (down) and 7 (up) for selecting the memory location from channels 1 to 20 (each location stores Freq. Filter, RX mode and Tuning Step)
MEW	<b>Memory Write:</b> Button 7 selects memory location 1 to 20; button 4 stores the channel received
NBL	<b>Noise Blanker:</b> Buttons 4 and 7 perform ON and OFF
SQL	<b>Squelch:</b> Buttons 7 and 4 perform up/down from 0 to 255
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Sc2	<b>Scanning Mode 2:</b> as Sc1 mode but without stop for squelch
ScM	<b>Scanning Memory:</b> the receiver scan from channels memory location 1 to 20 ; Button 4 starts and stops scanning. If squelch threshold is exceeded scanning stops.

### Scan function

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To set up scanning proceed as follows:

1. Tune the first frequency (F1) with normal key for tuning
2. With function mode (button 5) select Sc1
3. With button 7 store this frequency; LCD displays "F1s". Press the key only once

4. With button **6** (frequency/step) and buttons **4/7** select a new frequency (F2) (F2 must be higher than F1)
5. With function mode button **5** return to Sc1 mode
6. With button **7** store this new frequency; LCD displays "F2s".  
Press the key only once
7. To start scanning press button **4**; LCD displays "Stop"
8. To stop scanning press button **4**; LCD displays "Str"
9. When scanning stops you can change frequency up and down with Keys **8**

### **Memory scanning (ScM on LCD)**

Memory scanning is also possible (sw V4 and up): the receiver scans from channels memory location 1 to 20; Button 4 starts and stops scanning. If squelch threshold is exceeded scanning stops.

1. To start scanning press button **4**; LCD displays "Stop"
2. To stop scanning press button **4**; LCD displays "Str"

Universal remote controller can also be used.  
 The PHILIPS RC5 standard should be selected.  
 Be careful to use a controller with the same key dispositions.  
 A utility help to determine if the controller is set to the correct standard is included.  
 If the standard is correct the key code is displayed on the LCD (in the S-meter field)  
 and must be verified in the following table.

<b>Function key</b>	<b>Key code</b>
PCR-1000 off key (not implemented CI-V protocol)	12
Numeric key pad 0 to 9	0 to 9
Clear frequency on LCD display	56
Store frequency key	34
RX mode	23
Function mode DOWN	60
Function mode UP	41
Band select DOWN	17
Band select UP	16
Increment mode key UP	32
Increment mode key DOWN	33
Freq. tuning step toggle key	13 or 23
Step tuning DOWN	43
Step tuning UP	46
DSP auto notch	44
DSP noise reducer	45