WIN 108
AIRBAND
RECEIVER
USER'S
GUIDE

WIN-108 Airband Scanner.

The WIN-108 is a sensitive, synthesised, digital readout, hand held airband monitor receiver capable of fixed channel, multi channel scanning, and search operation. It is suitable for both professional and hobby user in portable, mobile, or fixed station applications.

Modes of use.

DIRECT.

This mode is used to tune to a specific frequency or call up any of the 20 frequencies stored by the user in the memory channels. In Direct mode, the user can also tune the receiver across the entire airband in 25 kHz steps.

SCAN.

Up to 20 frequencies in two banks of 10 may be stored by the user and scanned in sequence.

SEARCH.

The user can tell the receiver to search between frequency limits which he programmes into the set, and the receiver will continuously search for signals, stopping when one is present.

In addition to the basic facilities described above, there are also the following :-

Priority channel.; Delay/Hold.; Channel lockout.

Keyboard lock.; Display lighting.

External speaker jack.; External power jack.

Controls.

Looking at the set with the keyboard and display facing you, at the top left you will see the aerial socket (known in the professional world as a BNC). The socket is used for connecting either the aerial supplied with the set, or alternative whip aerials, or connection to a fixed station aerial via a length of suitable coaxial cable.

Next to the aerial socket is a knob marked "Vol." which controls the volume from the loudspeaker and also the power on/off switching. Next to this is a knob marked "Sql." which stands for "Squelch". The function of the squelch control is to mute the background noise from the receiver in the absence of a signal. To set the squelch, select a frequency where you know there will be no signals, turn the knob fully anti clockwise, turn up the volume to the required level and then turn the

squelch control slowly clockwise until the noise from the loudspeaker is muted. This is the most sensitive setting for the squelch control, and occasional bursts of interference may open the squelch and produce a noise in the loudspeaker. If this is annoying, further clockwise rotation of the squelch control will increase the level at which an incoming signal will overcome the squelch, and this will effectively stop the unwanted bursts of interference. It will however mean that a genuine incoming signal will have to be stronger in order for it to be heard.

This only leaves the socket marked "Ear" which is used for connection of a suitable earphone, pair of headphones, or external loudspeaker. The correct impedance for external phones is 8 to 16 ohms, and the connector is a standard 3.5mm jack plug. Do not under any circumstances try to put anything other than the correct jack plug into the earphone socket.

Down the right hand side of the receiver is a recessed button marked "Light" which illuminates the display when pressed. Further down is a socket marked "DC in 6V". This is for connecting an external power supply so that you can use the receiver at home and save your batteries. Note that the supply must be 6 volts dc, at about 100 mA, and great care must be taken to observe the correct polarity when connecting external

power. **THE CENTRE PIN IS NEGATIVE, THE OUTER RING IS POSITIVE.**

The battery compartment is covered by a sliding panel at the rear of the receiver, and houses four AA size pen cells. Again, great care must be taken to observe correct battery polarity when installing batteries. We recommend the use of Duracell MN1500 or equivalent batteries.

On the front of the receiver you will see the Liquid Crystal display panel. This is a comprehensive information panel for the user and shows frequency, memory bank A or B, mode (Direct, Scan, or Search), memory channel number, delay/hold (for scan mode), priority on/off, keylock on/off, and battery low indication.

Below the display are the frequency keypad and four slide switches which perform the following functions:-

MEMORY.

This selects memory bank A or B. Each bank has ten channels, thus making a total of twenty.

DELAY/HOLD.

This is used in the scan mode and normally left in the "DELAY" position which holds the receiver on

frequency for about two seconds before resuming scanning. This is done so as to cater for the short pauses which naturally occur between transmissions in a two way radio conversation. The "HOLD" position of the switch is used when searching for any new stations. In this case the receiver will scan until a signal is received and stay on that frequency even when the signal has gone off. This enables the user to see if any new stations have appeared within his reception area.

PRIORITY.

When this switch is on, the receiver will automatically monitor whatever frequency is in memory channel 0 every few seconds, and should a signal appear on that frequency the receiver will switch to channel 0 and stay there for the duration of the signal, returning to the original set frequency when the signal on channel 0 has stopped. Most useful for keeping a continuous watch on the emergency frequency of 121.5 MHz.(Although of course any frequency may be entered in channel 0)

KEY LOCK.

This most useful facility completely disables all keyboard functions so that you can slip the receiver into your pocket or carrying bag without accidentally changing frequency. When the keylock is "on", the

receiver continues operating on the displayed frequency, and the priority function still works.

Using the Win-108

DIRECT Mode.

This, as its name suggests, gives the user direct control over the receiver, and is used for general listening and selecting frequencies for putting into the memory channels.

1) Switch on the receiver and set the squelch control.

2) Using the "MOD" button, select "DIRECT" mode as shown on the display.

3) Enter the frequency you wish to receive using the numerical keypad. Note that when entering a 25 kHz interleaved channel, the display will "Round-off" the entry to conform to normal ATC usage. e.g. a frequency of 121.225 is normally referred to by Air Traffic Control as "121.22". You can enter 121.22 into the Win-108 and the receiver itself will add the last "5" and confirm it on the display.

4) Press "EXE", and the display will add a "MHz" symbol after the frequency. This confirms that the

entry has been accepted and the receiver is now on the new frequency.

5) As a general note, you do not need to enter decimal points (actually, there isn't even a decimal point key), so 121.55 is entered as 12155. The receiver will automatically insert the decimal point in the correct place.

Memory storage.

Having set the receiver to a frequency of interest, the frequency can be stored in any of the 20 memory channels for future use by simply holding down the "ENT" button whilst pressing any key from 0 to 9 corresponding to the memory channel you wish to use. As an example, let us assume that you have switched on the receiver and you wish to listen to 131.05 and store it in memory A1 for future use. This is the sequence of operations:-

Select "DIRECT" using the "MOD" button.

Enter the frequency- 13105

Press "EXE". The display will now show 131.05 MHz.

Select memory bank A using the slide switch.

Hold down the ""ENT" button and press No.1 on the keypad.

There will be a single tone to indicate correct entry, and a number 1 will appear on the display under the frequency readout, to show that the frequency has been entered in memory 1.

That's it. You now have 131.05 MHz in memory channel A1.

NOTE that channel A0 and B0 are designated PRIORITY channels. See description of this facility in the SCAN mode section.

Tuning around.

At any time when the receiver is in "DIRECT" mode and the display is showing a frequency followed by the "MHz" symbol, you can step the receiver either up or down from that frequency by use of the + and - buttons. A single press of either button will move the receiver by one 25 kHz channel, and if the button is held for about 3 seconds, the set will auto-tune across the entire airband, stopping wherever a signal is present. By use of the DELAY/HOLD switch, you can choose whether the set carries on when the received signal goes off, or stops on the channel so that you can record the frequency (or transfer it to memory).

SEARCH mode.

A refinement of the auto-tune facility is the ability of the WIN-108 to search between preset limits chosen by the user. The method of using this facility is as follows:-

1) Select "SEARCH" mode by using the MOD button.

2) Decide the lowest frequency at which you wish to start searching, and enter it using the keyboard followed by "EXE".

3) Hold the "ENT" button down and press "-". A single tone will indicate that the entry has been accepted.

4) Enter the highest frequency at which you want the search to stop, and enter it using the keyboard followed by "EXE".

5) Hold the "ENT" button down and press "+". A single tone indicates correct entry.

6) Since the last frequency entered was the higher of the limits, press and hold the "-" button until the display shows the frequency falling rapidly. The search will take place until the bottom frequency limit is reached, at which point the receiver will

automatically jump back to the higher start frequency and repeat the search.

To reverse the search direction, simply press the "+" button and hold until the frequency starts rising rapidly.

In the SEARCH mode, the DELAY/HOLD switch can be used to determine whether the receiver steps on after finding a signal or remains on frequency for your information. To restart the search, simply press and hold either the "-" or "+" buttons until the search begins.

SCAN mode.

Having transferred your most useful frequencies into memory channels, as described under "DIRECT" mode operation, you have the facility to scan them in sequence. This has advantages over the "SEARCH" mode in that you are only scanning the frequencies on which you know there are likely to be signals, rather than searching a wide band of frequencies for the possibility of signals appearing. However, the "SEARCH" mode enables you to find frequencies on which you did not expect signals to appear, so both modes have their separate significance.

Using the "MOD" key, select SCAN mode. The number of the selected memory channel will be shown on the display under the frequency readout, and the readout will show the frequency stored in it. To select another memory channel, simply use the "+" and "-" buttons to step through the memories. As each channel is selected, the channel number will appear on the display, together with the frequency held in it. If no information has been programmed into a memory channel, it will automatically be set to 108 MHz.

If either "+" or "-" buttons are held for more than 3 seconds, the receiver will automatically begin scanning all the memories in sequence until a signal is found. You can use the DELAY/HOLD switch as previously described. To stop the scan manually and revert to single channel stepping, simply touch either the "+" or "-" buttons.

If you wish to change the frequency stored in any channel, return to DIRECT mode and proceed as described under that heading.

Occasionally, if the receiver is switched on for the first time in SCAN mode, it may not operate correctly. It is a wise precaution to select DIRECT mode at first switch on, then select SCAN or SEARCH as you wish.

LOCKOUT

When scanning memories, you may find that a particular frequency which you have entered into a memory is almost permanently occupied and is stopping the scan on every scan. A memory lockout facility is provided so that such a channel can be bypassed on scanning without losing the frequency information contained in the memory.

First select SCAN mode, assuming that you are not already in that mode. To select a memory for lockout, press and hold the "RCL" button and press the keypad number of the channel which you want to lock out. When you restart the scanning, the locked out channel number will flash on the display to tell you that the channel has been locked out. To restore the memory to the scan and cancel the lockout, press and hold the "RCL" button and again press the appropriate number button. The selected channel will then be scanned with all the others. The locked out channel numbers will continue to flash even when the set is returned to "DIRECT" mode, but not when in ""SEARCH" mode.

NOTE that the lockout facility does not apply to memory channel A0 or B0, because these are designated as PRIORITY channels.

Priority facility.

Memory channels A0 and B0 are used for priority monitoring, and the facility is activated by sliding the PRIORITY switch to "ON". When this is done, the frequency in channel 0 is monitored automatically every few seconds to see if a signal is present. If a signal appears on the priority frequency, the receiver stops what it is doing and switches to the priority frequency, staying there as long as a signal is present. When the signal disappears, the receiver reverts to its original frequency, unless the DELAY/HOLD switch is in the HOLD position.

The priority facility is available in DIRECT and SCAN modes, but not in SEARCH mode.

General notes

The WIN-108 is designed to be a reliable piece of equipment, but like most complex items it pays to take reasonable care of it - after all, you paid good money for it. A few cautionary notes follow:-

If using the receiver with the optional telescopic whip, be very careful when the whip is extended, for two reasons; firstly the receiver tends to be top heavy with a long whip and the whip will bend or break if it falls over and catches on the curtains, and secondly you

would be surprised how much it hurts when the whip pokes someone in the eye.

ALWAYS use the correct plugs for earphone, aerial, and power connectors. Damage will almost certainly result if you try to force in an incorrectly fitting plug. As for the advice given in at least one book on airband listening, suggesting the use of a self tapping screw in the earphone socket to provide an earth connection, the man who wrote that should have self tapping screws inserted under his fingernails.....

With regard to plugs, always check and re-check power supply polarity when using the external power connector. The centre pin is **NEGATIVE**, the outer ring is **POSITIVE.**

Also watch the polarity when inserting the batteries.

The supply voltage is 6 volts dc. **DON'T** exceed it.

When using the receiver from internal batteries, eventually the battery voltage will fall, at which point the display will show "BATT" in the lower right hand corner. This is the time to renew the dry batteries. The information in the memories will be retained for approximately five minutes after the old batteries have been removed, so there is adequate time to replace the four cells without losing all the hard won frequencies.

The ingress of compounds in liquid form results in deleterious effects on advanced electrickery. In other words don't get it wet or leave it out in the rain. It pays to give your pride and joy an occasional wipe with a dry duster just to keep it looking nice and also to minimise the possibility of getting dust into the inside bits. (Just what you believe to be your pride and joy is up to you, I'm talking about the WIN-108.)

Specification

Frequency range (Nav).....108-118 MHz /50 kHz steps
Frequency range (Com).....118-135.975 MHz
/25 kHz steps
Modes.....Direct/scan/search
Memories.....20
Antenna.....Rubber flexible (supplied)
Antenna connector.....BNC
Power.....6 vdc (4xAA cells. not incl.)
Consumption.....100 mA approx.
Size.....150x70x30 mm.
Weight (without batteries)..230 gm.
Earpiece (Supplied)

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