AR2300 CONTROL SOFTWARE GUIDE

Sept.9, 2010

MODE
Left-click to manually select one of the 24 available modes.
Selecting AUTO is also possible. Auto does also automatically select the IF BAND and STEP values.

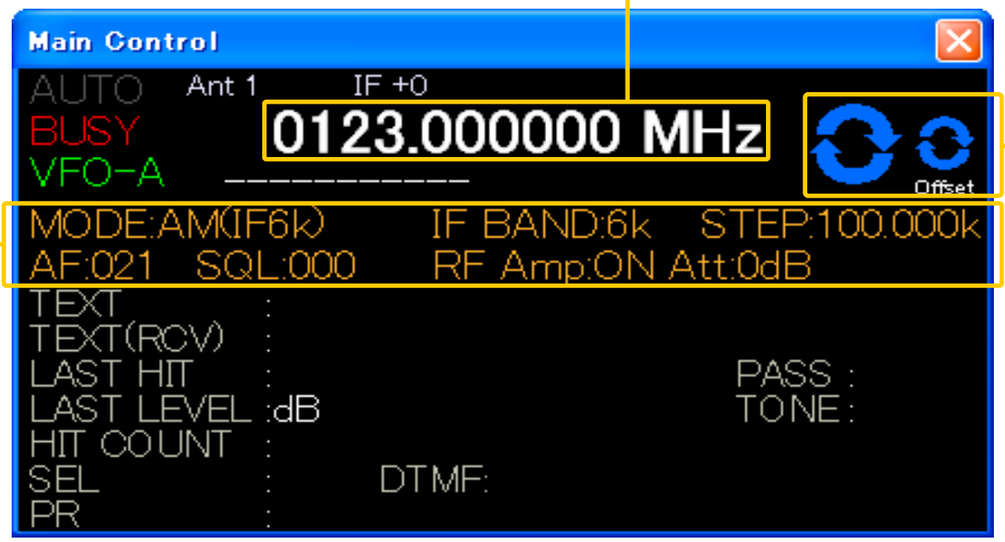
IF BAND
Left-click to manually select one of the 10 available IF filter bandwidths.

STEP
Manually change the freuquency step by hovering the mouse over each digit and increasing or decreasing the value with the mouse scroll wheel.
Min: 000.010k
Max:999.990k

AF
Adjust the volume from 000 to 255 by:
-Hovering your mouse over the 3 digits and scrolling the mouse wheel up or down.
-Left-click on the 3 digits to adjust the AF slider and set the audio channel balance when in OFFSET or DUAL BAND mode.

SQL
Adjust the squelch level from 000 to 255 by:
-Hovering your mouse over the 3 digits and scrolling the mouse wheel up or down.
-Use the keyboard up and down arrows.

RF Amp / Att
Left-click to select either:
-RF Amp: ON or OFF
-Att: 0, -10, or -20dB
-AUTO



FREQUENCY
(Min.: 0000.040000 MHz, max.: 3150.000000 MHz)
Change the receive frequency by either:
-Hovering with the mouse over each digit and scrolling the mouse wheel up or down.
-Entering the frequency via the PC keyboard + ENTER key for MHz.
-Entering the frequency via the PC keyboard + K key for kHz.
-Using the left and right arrow key of the PC keyboard.

To set an OFFSET frequency, enter it via the PC keyboard and validate with the SPACE BAR.

MAIN DIAL / OFFSET DIAL
Tune the frequency up or down by hovering the mouse over either symbol and scrolling the mouse wheel up or down.

Frequency step will be as set in the STEP menu.

The OFFSET symbol only appears if the offset function is active.

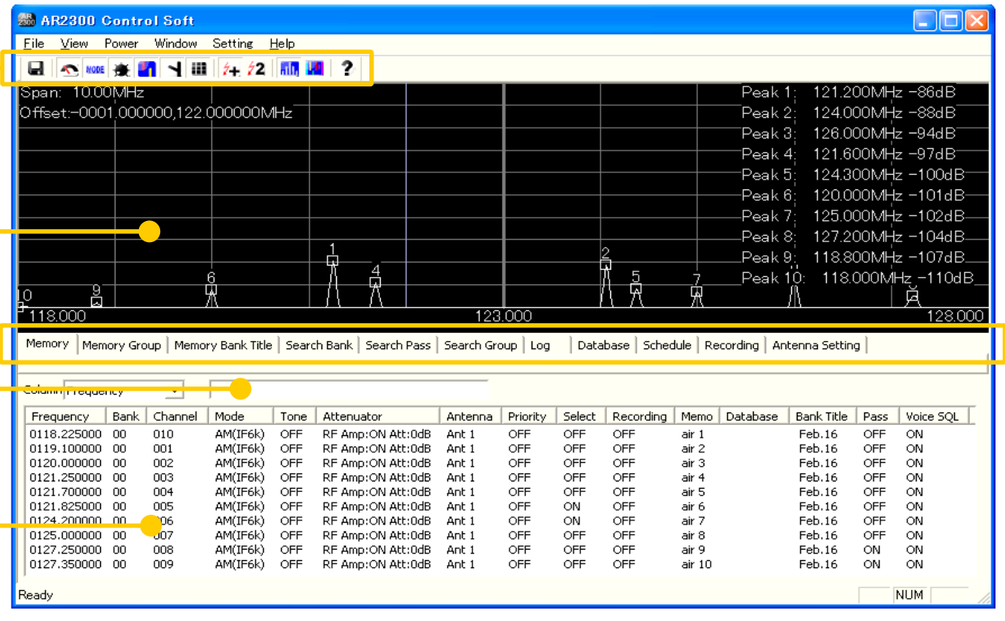
Check the back of this sheet for details

SPECTRUM DISPLAY
Spectrum displayed in real time. Receive frequency is the center frequency.
Left (single) click on spectrum: Receiver is tuned to the clicked frequency.
Right click on spectrum: OFFSET frequency is set and marked by a vertical blue line.
Mouse wheel: Each scroll step increases or decreases the frequency by a value 1/10 of the spectrum width.
For ex.: Spectrum bandwidth = 800kHz =>each wheel step = 80kHz

SEARCH BOX
Allows incremental and case sensitive word search, narrows down to the column selected on the left side of the box.

MAIN MEMORY LIST
Single left click: Highlights the line
Left double click: Activates the related function
Slow left double click: Edits the content of this cell
Right click: Opens a sub-menu related to this line

PC keyboard P key: Tunes to the frequency of the upper line
PC keyboard N key: Tunes to the frequency of the lower line
PC keyboard + key: Sets the upper line as a sub-band frequency
PC keyboard - key: Sets the lower line as a sub-band frequency



MEMORY tab
List-up of all stored memory channels. Can be edited, increased and erased. Max. 2000 channels

MEMORY GROUP tab
Settings for each memory bank:
-Scan delay time (after signal is gone)
-Free time (arbitrary time for each signal)
-Bank enable / disable
-Bank linking

MEM BANK TITLE tab
Assign or edit a title for each of the 40 memory banks.

SEARCH BANK tab
Create, edit, erase search banks (max.40). Individually set the frequency, mode, step, RF amp and ATT values.

SEARCH PASS tab
Lists all pass frequencies created during a bank search. Each entry can be enabled, disabled or erased. Max. 30 pass frequencies per bank.

SEARCH GROUP tab
Settings for each search bank:
-Scan delay time (after signal is gone)
-Free time (arbitrary time for each signal)
-Bank enable / disable & linking

LOG TAB
Log file of all scan and search hits, including time stamp, signal level, mode, RF amp and ATT settings, and hit counts.
Each hit can be copied to a bank / channel.

DATABASE tab
List-up of the database which can be imported as a ".csv" file. Information is limited to frequency, receive mode and text. The descriptive text appears on the "main control" panel whenever a signal is received on a frequency stored in the database.

SCHEDULE tab
Schedule multiple events such as scan, search, VFO reception and audio recordings.

RECORDING tab
List-up of all audio recordings in "wav" format. (AR2300 line-out needs to be connected to line-in of PC audio card)

ANT. SETTING tab
For frequencies over 25 MHz you can program an automatic selection between 2 antennas. Multiple band selections are possible.

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WATERFALL

The waterfall displays the variation of signal strrength in conjunction with the time elapsed. The color will vary depending on the signal amplitude.

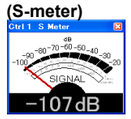
SPECTRUM

The spectrum display allows to visually check a specified frequency range or receiving signal condition.

CONTROL 1

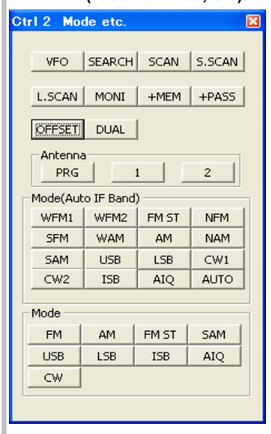
(S-meter)

The S-meter indicator shows the relative strength for the received signal in dB.



CONTROL 2

(receive mode, etc)



VFO

Stored tuneable data that contains frequency, step, attenuator, etc… Each click on this icon toggles between the 4 available VFOs (A~D).

SEARCH

The receiver sweeps between previously set start and end frequencies, in search of active frequencies. Each click toggles to the next previously set search bank.

SCAN

The receivers checks a list (bank) of frequencies, in search of active frequencies. Each click toggles to the next previously set scan bank.

S.SCAN

The receiver checks a list of memory channels tagged as "select", in search of active frequencies. Maximum of 100 select scan channels throughout all 40 memory banks.

L.SCAN

The receiver checks ALL memory channels listed in the MEMORY tab, in search of active frequencies.

MONI

Click to temporarly set the squelch treshold level to 0 (open). Any signal level will be audible as a result. Click again to return to the previous squelch value.

+MEM

Click to add the currently received frequency to the main memory list tab. You will be able to specify the bank, channel, mode, antenna, RF Amp and ATT settings.

+PASS

While scanning or searching, the frequency received at the time you click this button will be excluded from your next scan / search.

OFFSET

To set an offset frequency, enter it via the PC keyboard and validate with the SPACE BAR. Click this button to tune the receiver to the offset frequency. Click again to return to the main frequency. Limitations: Only works for frequencies over 25MHz and IF filter max. 100kHz. Offset frequency must be withing +/-5MHz from the main frequency.

DUAL

To enter dual band reception mode. One band must be below, the other over 25MHz. To set the audio channel balance, left click on the 3 digits of the AF indicator in the MAIN CONTROL panel.

ANTENNA

"PRG" automatically switches to antenna 1 or 2 according to the programmable settings in the "Antenna Setting" tab.
You can also manually select the antenna by clicking "1" or "2".

MODE (AUTO IF BAND) / MODE

By clicking AUTO, the receive mode and IF filter bandwidth are chosen automatically by the receiver depending on the frequency. The "Auto IF Band" buttons allow you to manually select a mode, but the receiver sets the IF filter bandwidth automatically depending on the frequency. With the simple

DUAL BAND RECEPTION

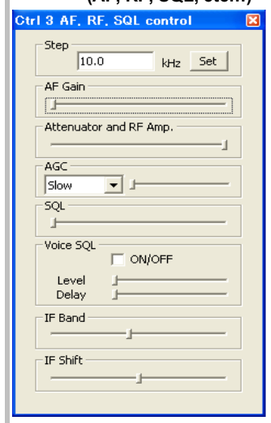
Click to enter dual band reception mode. One band must be below, the other over 25MHz.

OFFSET SETT.

Click to tune the receiver to the offset frequency. Click again to return to the main frequency. Limitations: Only works for frequencies over 25MHz and IF filter max. 100kHz. Must be within +/-5MHz from the main frequency.

CONTROL 3

(AF, RF, SQL, etc…)



STEP

This is the frequency increment used when selecting a frequency using the blue tuning dial, or the PC keyboard's left and right arrows.
0.001kHz to 999.999kHz in 0.001kHz increments.

AF GAIN

Speaker and headphone volume slider.

ATTENUATOR and RF AMP

With the slider select either RF Amp: ON or OFF, Att:0, -10, -20dB, or AUTO. Refer to the Main Control window for selection indication.

AGC

The AGC function controls receiver gain to produce a constant audio output level even when the received signal strength is varied by fading, etc. Select either FAST, MID, SLOW or MANUAL (adjust the AGC level with the slider).

SQL (noise squelch)

Use the slide to adjust the squelch treshold level. The squelch removes noise output from the speaker (closed condition) when no signal is received.

VOICE SQL

This function opens the squelch only when receiving a modulated voice signal. Ajust aggressiveness and delay (time until squelch opens) with the slide bars.

IF BAND

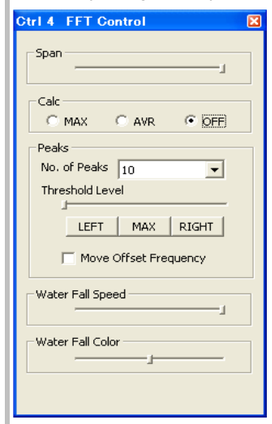
Use the slide bar to select one of the 10 available IF bandwidth filters. Refer to the Main Control window for exact values.

IF SHIFT

The IF shift function changes the center of the IF (intermediate frequency) passband frequency to reject interference.
+/-1200Hz
Refer to the main control window for exact values.
Not active in FM modes.

CONTROL 4

(FFT Spectrum)



SPAN

Control the displayed spectrum bandwidth from 0.8MHz to 10MHz. The top left corner of the spectrum indicates the exact span value.

CALC

The calculation function offers 2 alternative spectrum modes:
MAXIMUM: Each sweep is retained as data and built-up on screen.
AVERAGE: Signal averaging over the samling cycle. A stable pattern is produced even if the signal is fluctuating.

PEAKS

This function searches for the strongest signals in real time, in the displayed spectrum, above a treshold level you can set with the slide bar.
10 peaks maximum. Select 0 to erase all peaks.
You can tune to the strongest signal in the spectrum with MAX, or only in one half of the spectrum with LEFT or RIGHT.

WATER FALL SPEED

Control the waterfall speed by moving the slider.

WATER FALL COLOR

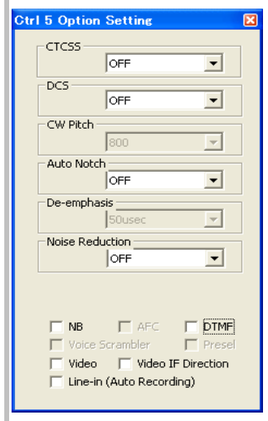
Control the waterfall color codes depending on the signal strength between -30 and -110dB.

SAVE

Saves the present database and software configuration.

CONTROL 5

(Options)



CTCSS

Select a CTCSS tone frequency between 60 and 254.1Hz. The squelch will only open if that tone is received on the audio signal.

DCS

Set a code between 017 and 754 (or all). The squelch will only open if this signal code is received.

CW PITCH

Change the CW audio pitch from 300 to 900Hz in 50Hz steps.

AUTO NOTCH

Automatically attenuates beat tones, tuning signals, etc., even if they are moving. 3 levels of aggressiveness.

DE-EMPHASIS

Decrease the magnitude of higher frequencies for a better signal to noise ratio. WFM and FM only. Default: 50 μ sec.

NOISE REDUCTION

Reduces noise components and picks out desired signals which are buried in noise. Audio signal masking may occur. Set the level for maximum readability.

NB

Removes pulse-type noise. Not effective against natural noise such as atmospheric static.

AFC

Tunes the IF filter's center freq. automatically when an unstable frequency is received. (Changes not visible on spectrum!)

DTMF

If DTMF tones are present in a transmission, the decoded letters, numbers and symbols will be displayed in the main control window.

VOICE SCRAMBLER

Decodes voice inverted signals. The carrier frequency can be adjusted between 2kHz and 7kHz, in SETTING > OPTION.

PRESEL

RF preselection filters help to prevent overloading caused by strong out of band interfering signals. Only for frequencies below 25MHz.

VIDEO

Enables the video-out on the AR2300 front panel. Decodes and displays only analog video signals. Standard of the video display connected must match the video standard of the transmission.

VIDEO IF DIRECTION

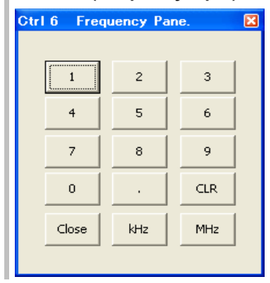
Changes the video IF direction. Mostly used to receive analog wireless camera signals.

LINE-IN (AUTO RECORDING)

Check the box to start audio recording of the frequency actually received. A ".wav" file will be saved on your PC in the same folder than this program.
Note: AR2300 line-out needs to be connected to line-in of the PC audio card.

CONTROL 6

(Frequency input)



To input a frequency, click on the ten-key digits and validate with kHz or MHz.
To cancel the last entered digit, click the CLR key.