Watkins Johnson 8615 series VHF/UHF - Receiver Versions   08-03-05

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Note: Exact version is displayed in digital display for a few seconds at power-up

Version format XX.YY where
XX represents the Type   YY represents the Revision (0-99)

Type

Type AA	WJ-8615	Amended "A" version used only with A.08 and AA.08
Type A	WJ-8615	Standard 8615 software
Type D	WJ-8615D	Standard 8615D software
Type E	WJ-8615/SSL	8615 with Scan/Step/Lockout option*
	WJ-8615D/SSL	8615/D with Scan/Step/Lockout option*
Types F & FD		No additional information available

* Scan/Step/Lockout adds associated scan functions and enables WJ-8610A controller to gather spectrum displays for system integration

Revision (software)

Original software was A.0 and has been revised a number of times. A brief overview follows:

Ver A.0.3
Rx power up sequence modified to improve 1st LO lock-up at all frequencies.
Gain normalization tables contained in RAM, were implemented to increase gain
        normalization across varying bandwidths.

Ver A.0.4
Tuning meter modified to accommodate spectrum reversal with implementation of
Frequency Extender (FE) option and receiver is tuned above 500MHz

Ver A.0.5
Digital control section signature analysis subroutine relocated in memory, to provide
         increased reliability in the analysis results.

Ver A.0.6
Tuning meter subroutines modified to prevent meter self-centering after reaching endstop -
        eliminates false center readings.
2nd LO tuning subroutine modified for net increase in tuning lock speed.
Other modifications allow for recognition of following IF bandwidths: 3.2KHz, 15KHz, 30KHz,
        and 250KHz. Also bandwidth sizing is provided for SSB operation, allowing auto
        selection of the 1st IF bandwidth greater than 6.4KHz when in SSB mode.

Ver A.0.7

Calibration subroutine added to operating system that generates a data table in RAM, providing optimum tuning of the 2nd LO synthesizer. This provides faster and more reliable 2nd LO synthesizer operation. Fifteen minutes after power-up, the 2nd LO CAL routine is executed. During the first 15 minutes of operation, the 2nd LO uses fixed ROM data. During a 2nd LO CAL operation, "2nd CAL" is displayed and front panel operation is disabled. Front panel operation is restored when 2nd LO CAL is completed.

The Front Panel Definitions mode allows the 2nd LO CAL routine to be enabled (2CAL ON) or disabled (2CAL OFF). When enabled, the 2nd LO uses data tables generated in RAM as a result of the 2nd CAL routine; when disabled, the 2nd LO uses fixed data tables factory loaded in ROM. Additional error codes have been added to service the 2nd LO CAL routine.

Ver A.0.8

The 488 busy bit is set while receiver is responding to a query. Additionally, the Master Receiver does not respond to selection of SSB or ISB if the slave receiver is not so equipped. Previously, this caused 488 control lockup.

Note: *Due to the hardware changes required to support SSL, version A.0.9 and later are not backward compatible with previous versions.*

Ver A.0.9

Step-Scan-Lock options are supported beginning with this revision.

Tuning meter operation is modified to allow half-step operation (manifested by illumination of two bars at various levels)...this tends to smooth the relationship between tuning meter readout and actual tuned position within bandpass.

Manual gain control limits are indicated with "--" at either end of the control range.

Automatic IF bandwidth control has been refined. Selecting SSB mode causes receiver to search installed filters to locate the the narrowest filter (equal or greater than 6.4KHz) regardless of its location. When exiting SSB mode, the bandwidth previously in use is reselected.

In Front Panel Definitions Mode, a mode change now requires a full 45 degree rotation of the tuning knob. This desensitizes this adjustment, requiring deliberate effort to effect a change.

The BFO and COR buttons toggle their associated functions on/off.

Pressing the BFO key while in CW or SSB or ISB, causes the BFO offset setting to replace the tuned frequency display. Pressing the BFO key again restores the frequency readout at its previous tuning resolution.

With COR enabled, the CHANGE pushbuttons vary the COR level.

In the TEST mode, the operator may observe actual synthesizer frequency in the tuning display for diagnostic purposes.

488 revisions include elimination of inconsistent responses to signal strength queries.

Commands and queries may now be formatted as strings, each command separated by a semi-colon. The receiver responds in same format.

Version A1.1/D1.1

Modified version of the A1.0/D1.0 software.

AGC AM detector is now 2V pk, allowing fast AGC. The AGC sample window is now 30msec.
In binary 488 mode, the semi-colon is removed from the VER? query.

Ver A.1.1
Software version may be used in either processor type in the 796242 assembly in U3 and
U4, or in type 796495 processors in U9.

Ver D.0.9
Standard software based on ver A.0.9, incorporating SSL.

Ver D.1.0
The CAL2 operation was modified to allow operator to interrupt a Scanning calibration.
The Fast Scan LO (FSLO) and Extended Memory (EM) have been incorporated. BFO tuning
can be exited by pressing any tune-related key.

Ver E.0.3
Version based on D.0.9 allows LOK command to lock out twice the selected IF bandwidth.
 LCK and RLK commands require a question mark (?). SRQ is set after data is entered into
the queue.

Ver E.0.4:
Version based on D.1.0. Changes as follows:
Scan parameters when going from Scan to Manual Scan. The sync pulse timing has been
adjusted to maintain specified limits during the extra time required for the 5KHz
interpolation.
It provides a calibration check at power-up, preserves receiver mode through
power-down/up, and has added the SCM (Scan Manual) and STM (Step
Manual) commands.

Ver E.0.5
Scan dwell time has been increased to 150msec during scan, allowing sufficient 2nd LO
lock time when a signal greater than COR level is encountered.
The CLM command now only clears memory.
The BIN command is allowed during Step or Scan mode.

Ver E.0.6
Version based on E.0.5. Provides following additional capabilities:
The "start-of-sync-pulse" is enabled at the start of Scan; the BFO sign bit (+/-) is saved in
channel memory.
The COR bit (in the status byte) is reset when a Scan or Step command is set and the CAL
abort flag has been added.

Ver E.0.7
Implements new Calibration timers for @nd LO CAL routines.

Ver E.1.0
Allows processor type 796495-5 to provide EPROM selectable options.

Software selectable options are SSL and EM.

Ver E.2.0
Version based on E.0.4 for SSL: allows tuning to ZERO and provides LO lock check routine.

Ver F0.0.0
Special version based on ver E.0.6:
Resets COR output when Scan or Step command is received.

Ver FD.0.1
Special version
Provides a SSL routine (no further info found).

Ver FD.0.7
Allows option to cause signal acquisition by edge triggering, thus avoiding duplicate lockons
        possibly off-center tuned. (no further info found).

Ver FD.0.9
Added Auto Cal and Scan Increment subroutines in operating software.