

Technical Data



WATKINS-JOHNSON

May 1996

Digital HF Receiver Family* WJ-871Y Option Matrix

UNIT OPTION	WJ-8711	WJ-8711A	WJ-8711-1	WJ-8711A-X	WJ-8712	WJ-8712A	WJ-8712P	WJ-8712-1	WJ-8712A-2	WJ-8710	WJ-8710A	HF-1000
871Y/8KRF	AR	YES	AR	AR	AR	YES	YES	AR	STD	AR	YES	STD
871Y/485	AR	YES	AR	AR	AR	YES	YES	AR	AR	AR	YES	NO
871Y/SEU	AR	YES	AR	AR	AR	YES	YES	AR	AR	AR	YES	AR
871Y/IFC125	AR	YES	AR	AR	AR	YES	YES	AR	AR	AR	YES	NO
8711/PRE	YES	YES	AR	AR	NO	NO	NO	NO	NO	NO	NO	YES
8711/DS01	YES	YES	AR	AR	NO	NO	NO	NO	NO	NO	NO	NO
8711/REF	YES	YES	AR	AR	NO	NO	NO	NO	NO	NO	NO	AR
8711/SPK	YES	YES	AR	AR	NO	NO	NO	NO	NO	NO	NO	STD
8711/488	YES	YES	AR	AR	NO	NO	NO	NO	NO	NO	NO	NO
8712/PRE	NO	NO	NO	NO	YES	YES	YES	AR	STD	NO	NO	NO
8712/DS01	NO	NO	NO	NO	YES	YES	YES	AR	AR	NO	NO	NO
8712/REF	NO	NO	NO	NO	YES	YES	YES	AR	AR	NO	NO	NO
8712/488	NO	NO	NO	NO	AR	YES	YES	AR	AR	NO	NO	NO
8712/BR	NO	NO	NO	NO	YES	YES	YES	YES	YES	NO	NO	NO
8710/DS01	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO

LEGEND:

- YES** Option available for unit configuration
- NO** Option NOT available for unit configuration
- AR** As Required, contact factory
- STD** Standard Feature of unit configuration

IMPORTANT: PLEASE CONSULT FACTORY FOR COMBINATIONS OF OPTIONS TO VERIFY COMPATABILITY. AS OF MAY 1996, WJ-871Y/488, /SEU, /IFC125, & DS01 OPTIONS ARE MUTUALLY EXCLUSIVE.

* Excludes WJ-8721 VXI Receiver

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This material provides up-to-date general information on product performance and use. It is not contractual in nature, nor does it provide warranty of any kind.

WJ-871Y OPTION MATRIX

Over view

The table below summarizes the family of products that Watkins-Johnson (WJ) has developed based on the WJ-8711 Digital HF Receiver. The standard Digital HF Receiver is available in a variety of mechanical configurations. Continuous product improvement has produced significant enhancements and a wide array of options to the product line.

DSP Enhancements

Digital Signal Processing (DSP) enhancements include an extended set of 66 high-performance digital IF bandwidths (IFBW's) from 56 Hz to 16kHz, and a Tunable IF Notch Filter (minimum). All units delivered after April 15, 1994 are equipped with:

- Synchronous AM (SAM) detection mode,
- Medium AGC decay selection
- Adjustable AGC decay times (for fast, medium & slow)
- Adjustable AGC Threshold

Watkins-Johnson Digital HF Receiver Family

Product	Description
WJ-8711¹	Original WJ-8711 full-rack Digital HF Receiver
WJ-8711A²	Same as WJ-8711, with DSP Enhancements
WJ-8711-1¹	Same as WJ-8711 Digital HF Receiver, but with the following features: <ul style="list-style-type: none"> • DSP enhancements • Upgraded front panel • Routed audio input, at rear of unit, to phone jack for controller applications • Customer-specific firmware with controller function
WJ-8711A-X^{1 & 3}	Same hardware as WJ-8711A with special firmware installed to provide a controller with the look and feel of a receiver; available in either RS-232 to allow control of a single receiver per controller, or with RS-485 multidrop for multiple receiver control applications
WJ-8712¹	Original WJ-8712 half-rack blank front-panel Digital HF Receiver
WJ-8712A²	Same as WJ-8712, with DSP enhancements
WJ-8712P²	Half-rack Digital HF Receiver with full front-panel control, complete with DSP enhancements
WJ-8712-1¹	Same as standard WJ-8712 Digital HF Receiver with the following differences: <ul style="list-style-type: none"> • DSP enhancements • No front-panel test port • Heavy-duty phone jack on front panel • Customer-specific firmware
WJ-8712A-2	Same as WJ-8712A Digital HF Receiver, but with the following features: <ul style="list-style-type: none"> • Preselector standard • 8-kHz roofing-filter standard • Firmware with AGC threshold feature
WJ-8710¹	Original WJ-8710 compact, dc-powered Digital HF Receiver
WJ-8710A²	Same as WJ-8710 with DSP enhancements
HF-1000²	Consumer Digital HF Receiver, similar to WJ-8711A Receiver with 8-kHz roofing filter, painted chassis, and internal speaker standard

¹ Units not in full production. Quoted on an individual basis. All others are regular-production standard catalog items.

² See Separate Technical Data Sheet for details.

³ Contact Factory for details.

⁴ Sold only through authorized distributors.

Options to Entire WJ-871Y Receiver Family

Option	Description
871Y/8KRF	<ul style="list-style-type: none"> • Provides narrower 8-kHz roofing filter (30-kHz standard) after the 1st mix for improved performance in crowded RF environments • Limits maximum IFBW & Signal Monitor output BWs to 8 kHz
871Y/485¹	<ul style="list-style-type: none"> • Provides RS-485 control capability for multidrop applications
871Y/MCU	<ul style="list-style-type: none"> • Provides hardware to convert RS-232 signals to RS-485 signals on RS-232 controller • Supplements 871Y/485
871Y/SEU¹	<ul style="list-style-type: none"> • Provides Speech Enhancement Unit that enables DSP-based adaptive filtering for noisy audio signals to automatically remove multiple heterodynes & reduce white noise
871Y/IFC125	<ul style="list-style-type: none"> • Provides IF output at a center frequency of 12.5 kHz

¹ See Separate Technical Data Sheet for details.

General Note: Firmware upgrades to add DSP enhancements are available. Upgrades to earlier versions of the Digital HF Receiver may require minor hardware modifications. Contact factory for pricing and details.

Options to WJ-8711 Series Receivers

Option	Description
8711/PRE¹	<ul style="list-style-type: none"> • Provides 11-band suboctave preselector
8711/DS01¹	<ul style="list-style-type: none"> • Provides digitized data in various output formats
8711/REF	<ul style="list-style-type: none"> • Provides higher stability internal frequency reference ± 0.2 ppm over temperature (± 0.7 ppm standard stability)
8711/SPK	<ul style="list-style-type: none"> • Provides internal speaker
8711/488	<ul style="list-style-type: none"> • Provides IEEE-488 interface for remote control applications • Replaces RS-232 & CSMA interfaces

¹ See Separate Technical Data Sheet for details.

WJ-871Y OPTION MATRIX

Options to WJ-8712 Series Receivers

Option	Description
8712/PRE¹	<ul style="list-style-type: none"> • Provides 11-band suboctave preselector
8712/DS01¹	<ul style="list-style-type: none"> • Provides digitized data in various output formats
8712/REF	<ul style="list-style-type: none"> • Provides higher stability internal frequency reference ± 0.2 ppm over temperature (± 0.7 ppm standard stability)
8712/488	<ul style="list-style-type: none"> • Provides IEEE-488 interface for remote control applications • Replaces RS-232 & CSMA interfaces
8712/BR	<ul style="list-style-type: none"> • Provides blank front-panel half-rack to mount side-by-side with WJ-8712 to fill 19-inch-rack space for ease of system integration

¹ See Separate Technical Data Sheet for details.

Options to WJ-8710 Series Receivers

Option	Description
8710/DS01¹	<ul style="list-style-type: none"> • Provides digitized data in various output formats

¹ See Separate Technical Data Sheet for details.

Other Features Available

WJ has developed other features that are available upon special request. Contact factory for additional details, pricing, and delivery. Examples:

- Firmware that allows the receiver to perform a controller function (see WJ-8712A-X)
- Firmware to assist in center-tuning to a carrier
- Firmware that allows user-adjustment of line-audio output levels
- Firmware that allows binary frequency tuning for faster remote tuning
- Firmware that causes automatic zeroing of frequency digits below the selected tuning resolution for ease of tuning

- Firmware that causes a specific detection mode to default to a given AGC decay mode
- Firmware that causes a specific detection mode to default to the last IFBW used on that detection mode
- Conformal coating for added environmental integrity
- AC switching an external device based on signal above threshold

A minimum-documentation test fixture, the TF30387, is also available for the WJ-8712A. It allows front-panel control for maintenance checks or troubleshooting without requiring removal of the receiver from the rack.