

Technical Data



WATKINS-JOHNSON

May 1996

Digital Signal Output Option WJ-871Y/DSO1

The WJ-871Y/DSO1 option provides digital signal output from the WJ-8710A, WJ-8711A, WJ-8712A, and WJ-8712P receivers. The hardware supplied with this factory installed option includes:

- A multilayer printed circuit board assembly
- A cable assembly for routing signals to the rear panel
- Hardware and a mating connector for the customer's cabling requirements

Data available includes:

- IF data before filtering, fine tuning or demodulation (Data samples represent third IF centered at 25 kHz)
- Post-filtered, fine-tuned IF data centered at 25 kHz
- Demodulated audio data
- I&Q data (optional)

Data samples are 16-bit resolution at 100 kHz and are intended for digital signal processing external to the receiver. The customer can change the output formats via dip switches, and access data through a 15-pin D-type connector located at the rear panel of the receiver. The Formats table defines several user-selectable output formats.

Since the WJ-871Y/DSO1 uses a programmable gate array, the board has a flexible architecture, is easily modified and supports a variety of protocols. I&Q outputs, as well as DSP microprocessor-compatible outputs, are also available. Contact the factory for details.

Features

- ❑ *DSO from WJ-8710A, WJ-8711A, WJ-8712A & WJ-8712P*
- ❑ *Third IF data before filtering, fine tuning or demodulation*
- ❑ *Final IF data after IF filtering & fine tuning*
- ❑ *Demodulated Audio Data*
- ❑ *16-bit resolution at 100 kHz*
- ❑ *Optional I&Q outputs (with special software)*
- ❑ *Flexible architecture*

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WJ-871Y/DSO1

Formats

Mode	Features
Serial TTL	<ul style="list-style-type: none"> • Data transmitted in serial format, two's complement format (16 bit), with the most significant bit first. • Transmits data, clock & strobe signals • 3.2-MHz clock rate, 100 kHz frame rate • ADC, filtered IF, audio & multiplexed IF/audio data simultaneously present at output
Serial Differential	<ul style="list-style-type: none"> • Data transmitted in serial format over a differential pair, to achieve greater transmission distance; data is in two's complement format with the most significant bit first • Transmits data, clock & strobe signals • 3.2-MHz clock rate, 100 kHz frame rate • Either user-selectable ADC & multiplexed IF/audio data, or IF & audio data present at one time
8-bit Parallel	<ul style="list-style-type: none"> • Parallel TTL format includes 8-bit data, high-byte enable bit & clock • User can modify dip switches to select ADC, filtered IF, Audio or multiplexed IF/audio (only one at a time)

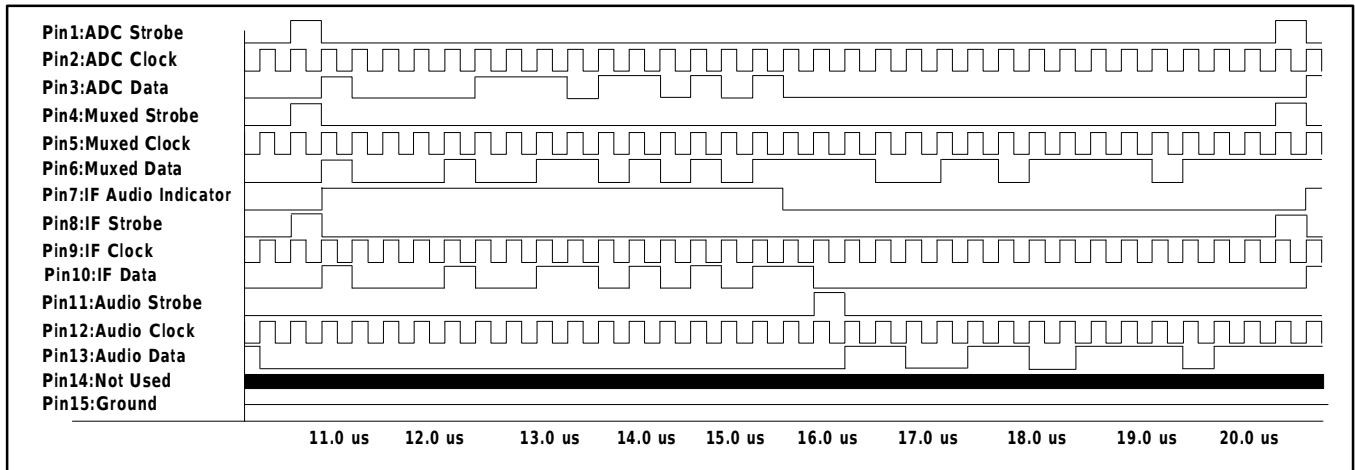
DSO1 Dip Switch Settings

S1		
SW 5 (Interface)		
OFF=TTL Level Output	ON=Differential output	
SW 6 (Clock polarity)		
OFF=Data changes on falling edge	ON=Data changes on raising edge	
SW 7, 8 (Data source)		
In Parallel mode:		
<u>Source</u>	<u>SW8</u>	<u>SW7</u>
ADC	ON	ON
Multiplexed IF & Audio	OFF	ON
IF	ON	OFF
Audio	OFF	OFF
In Serial Differential mode:		
<u>Source</u>	<u>SW8</u>	<u>SW7</u>
ADC, Multiplexed	ON	OFF
IF, Audio	OFF	OFF
SW 9, 10 (Data Format)		
<u>Format</u>	<u>SW10</u>	<u>SW9</u>
Serial Mode	OFF	OFF
8-bit Parallel	OFF	ON

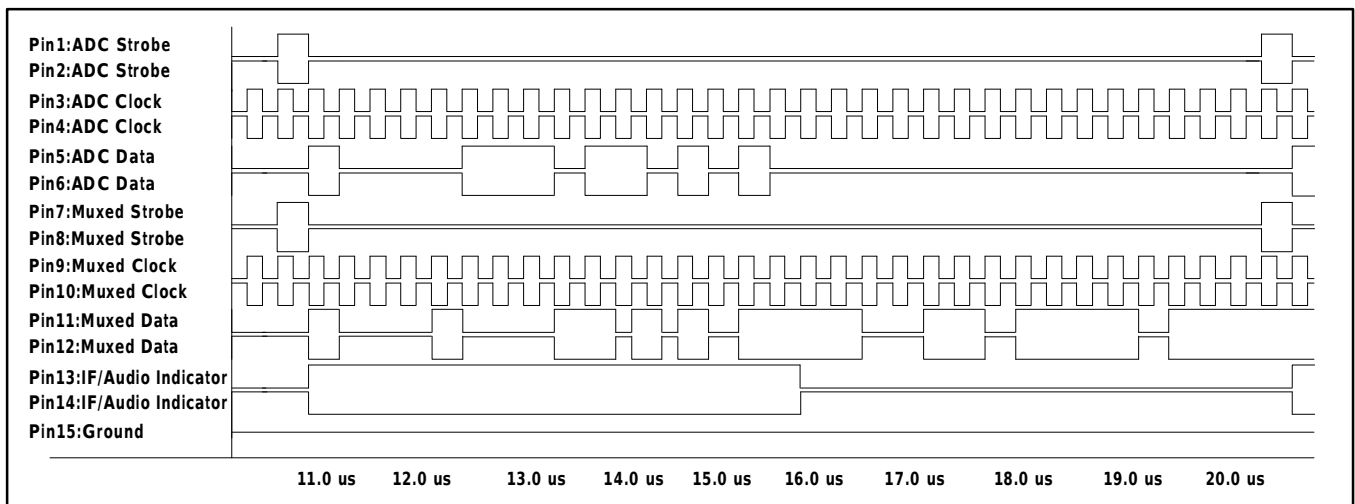
Output, 15-pin D-type Connector

Mode	Pin No.	Signal Name			
Serial, TTL Level	1	ADC Strobe			
	2	ADC Clock			
	3	ADC Data			
	4	Muxed IF/Audio Strobe			
	5	Muxed IF/Audio Clock			
	6	Muxed IF/Audio Data			
	7	IF/Audio* Indicator			
	8	IF Strobe			
	9	IF Clock			
	10	IF Data			
	11	Audio Strobe			
	12	Audio Clock			
	13	Audio Data			
	14	Not Used			
	15	GND			
Serial, Differential	1	When S1SW3 is OFF	ADC Strobe+	When S1SW3 is ON	IF Strobe +
	2		ADC Strobe -		IF Strobe -
	3		ADC Clock +		IF Clock +
	4		ADC Clock -		IF Clock -
	5		ADC Data +		IF Data +
	6		ADC Data -		IF Data -
	7		Muxed IF/Audio Strobe +		Audio Strobe +
	8		Muxed IF/Audio Strobe -		Audio Strobe -
	9		Muxed IF/Audio Clock +		Audio Clock +
	10		Muxed IF/Audio Clock -		Audio Clock -
	11		Muxed IF/Audio Data +		Audio Data +
	12		Muxed IF/Audio Data -		Audio Data -
	13		IF/Audio* Indicator +		Not Used
	14		IF/Audio* Indicator -		Not Used
	15		GND		GND
8-Bit Parallel	1	Clock			
	2	High Byte Enable			
	3	Data out (0)			
	4	Data out (1)			
	5	Data out (2)			
	6	Data out (3)			
	7	Data out (4)			
	8	Data out (5)			
	9	Data out (6)			
	10	Data out (7)			
	11	IF/Audio* Indicator (only in muxed mode)			
	12	Not Used			
	13	Not Used			
	14	Not Used			
	15	GND			

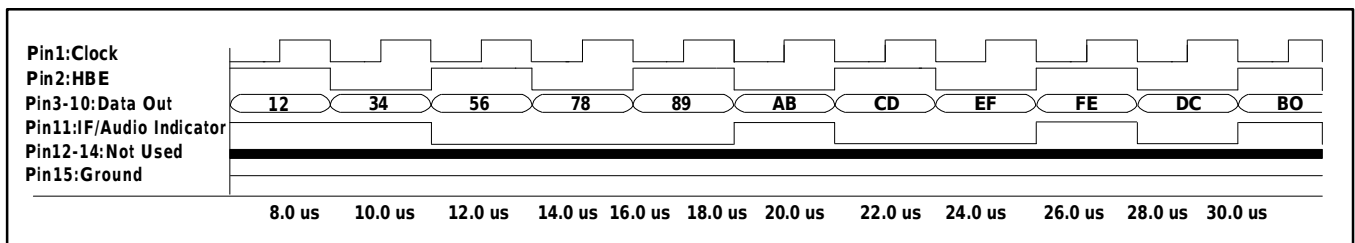
WJ-871Y/DSO1



Serial TTL Level Output



Serial Differential Output



8 Bit TTL Output