

# SONY®

Tuner Base Unit

# MB-8N

UHF Synthesized Tuner Unit

# WRU-8N



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*Sony wireless microphone systems have earned an enviable reputation for their outstanding performance and reliability. In day-to-day use in the harsh environment of location recording, and in theater and studio operations, they continue to be the equipment of choice for artists and engineers. Sony demonstrates its long-term commitment to the development of wireless microphone technology with the introduction of the MB-8N Tuner Base Unit and WRU-8N UHF Synthesized Tuner Unit, which together represent a breakthrough in performance, flexibility and features.*

*Although only 1U high, the MB-8N accommodates up to four tuner units – a built-in antenna divider making it easy to daisy-chain up to four of these base units to form a 16-channel system. The WRU-8N Tuner Unit achieves exceptional standards of RF performance. It features space diversity reception, and a wide dynamic range with low levels of noise and distortion.*

*The ability to remotely control and monitor the status of complex wireless systems is becoming increasingly important, and the MB-8N/WRU-8N combination excels in the level of remote operation and monitoring it provides. Over standard Ethernet connections, a complete system can be set up and controlled from a PC running the supplied GUI software. This includes the store and recall of different channel configurations, a feature that is particularly useful for location use and equipment rental organizations. A separate audio monitoring feature is included to allow the individual outputs of the tuner units to be checked.*

*The MB-8N and WRU-8N are at the cutting edge of wireless microphone technology. They are bringing new standards of performance and functionality to wireless microphone systems.*



WRU-8N Tuner Unit

# Main Features

## Wide Dynamic Range

The MB-8N/WRU-8N provide a wide dynamic range, thanks to advanced sound processing technology developed by Sony. This wide dynamic range ensures that the WRU-8N can provide optimum reception of signals from current and future Sony wireless microphones and transmitters.

## Stable RF Reception

Three key technologies used in the WRU-8N UHF Synthesized Tuner Unit result in extremely stable RF reception, a vital factor for any wireless microphone system. Firstly, the Phase Locked Loop (PLL) frequency synthesized system employed in the WRU-8N provides highly stable, selectable frequencies that permit reception in increments of 125 kHz. Secondly, optimum combinations of precisely calculated and practically tested frequencies are stored in the tuner to help in choosing the correct

frequencies for simultaneous multi-channel operation. These frequencies are arranged in groups, with each group pre-programmed to allow intermodulation-free operation. Finally, a Space Diversity Reception System is incorporated to effectively eliminate signal dropout and provide stable reception. This is achieved by using dual antenna input/reception circuits that receive signals over two different paths and select the stronger RF signal as the output.

## Modular Design

The MB-8N Tuner Base Unit houses up to four WRU-8N UHF synthesized tuner units in its 1U high, 19-inch rack mountable design. This allows users to flexibly expand the number of wireless channels in a system according to their budgetary and operational needs. The compact design of the base unit makes it easy to install in both fixed and mobile applications.



MB-8N/WRU-8N Front panel

## Operational Convenience

The designs of the MB-8N and WRU-8N pay maximum attention to operational convenience. Controlled items can be adjusted from the main control area of the MB-8N Tuner Base Unit, and the controls on individual WRU-8N Tuner Unit.

## Advanced control settings from the MB-8N front panel

Using the controls and LCD panel built-in to the front of the MB-8N Tuner Base Unit, users can quickly generate and store channel names for each WRU-8N Tuner Unit installed. Since the stored names can be recalled to the base unit's LCD panel, operators can immediately verify the sound source assigned to a given unit. The output level (selectable to Mic or Line) and the variable RF squelch level for each tuner unit are also controlled from this main control area. Antenna attenuator value and power supply ON/OFF to Sony AN-820A UHF Antennas connected to the MB-8N Tuner Base Unit are also selected here.

## Multi-channel Operation

The MB-8N and WRU-8N have been designed to facilitate the setup of multi-channel wireless systems. The MB-8N Tuner Base Unit is designed with a built-in antenna divider, allowing four units to be daisy-chained without the need of an external divider. Since each tuner base unit accommodates up to four tuners, a 16-channel system is easy to configure. With the use of an optional Sony WD-880A Antenna Divider Unit, simultaneous operation on up to 42 channels\* becomes possible.

In combination with the pre-programmed channel plans, building a high-quality, sophisticated, multi-channel wireless system becomes a simple task.

\* Simultaneous operation on up to 20-channels is available with AU model.



## Sophisticated jog dial control and LCD/LED indicators

The controls on each WRU-8N UHF Synthesized Tuner Unit specifically focus on channel/group number selection, with a jog dial allowing operators to quickly choose the desired setting. An LCD panel and LED indicators provide extensive information on the tuner's operating conditions. The LCD indicates the operating channel group and frequency, and has four-segment displays of AF output level and RF input level, while the LEDs indicate RF input status and AF output status and the battery reserve of the transmitter. A red LED starts flashing one hour before the transmitter's battery will become exhausted, helping to avoid the chance of a battery failure at a critical moment.

## Selectable monitor output modes with level control

The headphone monitor jack and level control are located on the front panel of the MB-8N Tuner Base Unit. This output can be selected to monitor the sound from individual WRU-8N tuner units or the mixed sound from all installed units.

For added operational convenience, the MB-8N/WRU-8N system allows computer-based remote control. To provide straightforward and intuitive operation, the MB-8N and installed WRU-8N units can be set up, controlled and monitored from a PC interfaced via a simple Ethernet connection and running the supplied software.

## Full monitoring of operating status in one window

The GUI simultaneously displays the status of up to 16-channels in one window, which can be switched to a 25-channel or 49-channel display. Both a quick reference to each tuner's reception status and that of the entire configuration are displayed on left side, while details of the channel status are displayed on the right side.

## Extensive range of operating controls and information

Through a simple drag-and-drop operation, the operator can designate the channels to appear on the right side for access to an extensive range of operating controls and information which includes the channel name, selected channel group/frequency, tone squelch status, noise squelch status, RF squelch level, AF/RF input levels and transmitters battery alarm. The AF level is indicated in steps of approximately 2.5 dB, while the RF level is indicated in steps of approximately 5 dB.

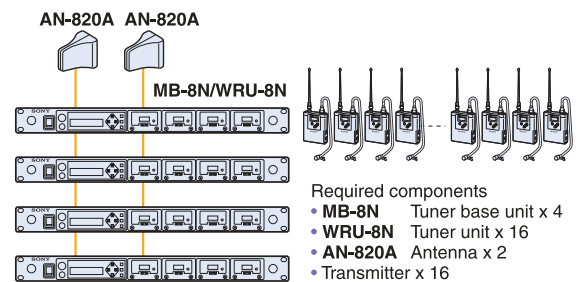
The GUI also allows the control of all other settings available on the MB-8N Base Unit.



MB-8N Rear panel

## System Configuration

### ◆ 16-channel simultaneous operation

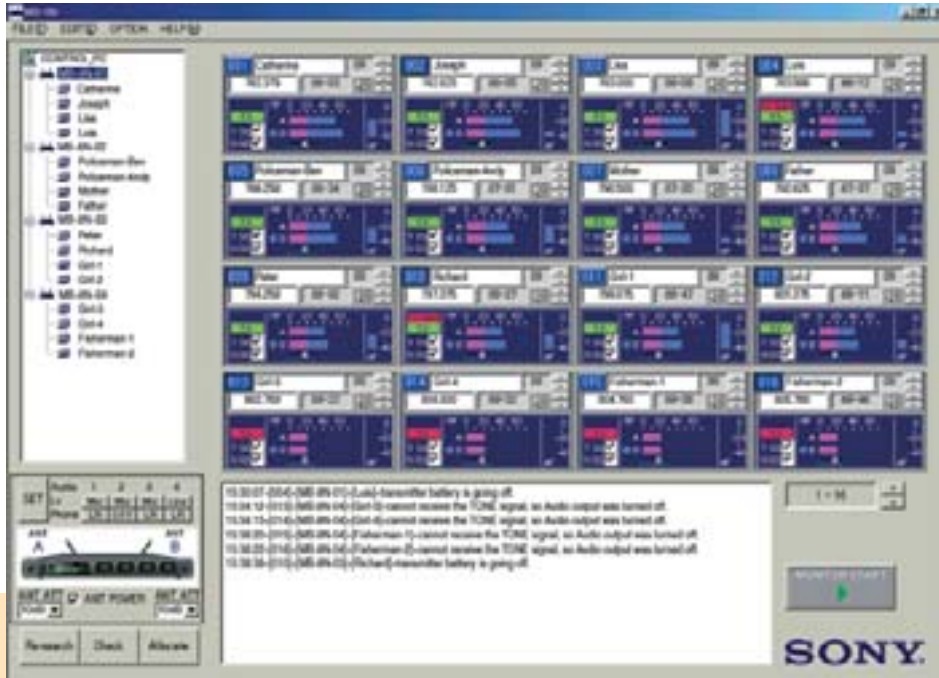


Note: Lavalier microphones are not supplied with transmitters.

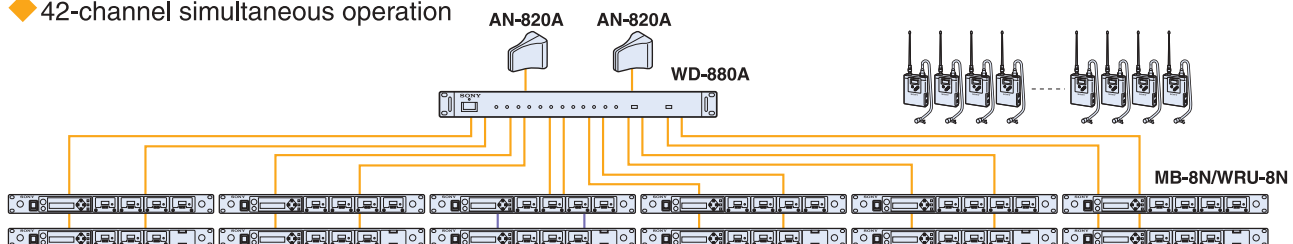
## Quick frequency settings and file-based store function

The pre-programmed channel frequencies can also be selected from this GUI. This is especially useful for complex multi-channel operations, since operators can adjust frequencies while simultaneously viewing all

channels. Once the appropriate frequencies are selected, the setup can be stored as a file. This is extremely useful, since the setup for a particular multi-channel system can be easily re-established by loading the appropriate file.



### ◆ 42-channel simultaneous operation



Note: WD-880A (USA model) operates over a 36 MHz band within the range of 770 MHz to 806 MHz.

#### Required components

- **MB-8N** Tuner base unit x 12
- **WRU-8N** Tuner unit x 42
- **AN-820A** Antenna x 2
- **WD-880A** Antenna divider x 1
- Transmitter x 42

	<b>MB-8N</b> Tuner Base Unit	<b>WRU-8N</b> UHF Synthesized Tuner Unit
Receiving channel	—	1 channel
Receiving frequencies	—	AU model: 792 MHz to 806 MHz (TV channels 66 to 67) Users may choose from 102 frequencies. U model: 758 MHz to 782 MHz (TV channels 62 to 65) or 782 MHz to 806 MHz (TV channels 66 to 69) Users may choose from 188 frequencies on each model.
Type of reception	—	Space diversity
Circuit system	—	Dual conversion superheterodyne
Local oscillators	—	PLL synthesizer
System dynamic range	116 dB (typical)	—
Reference deviation	—	±5 kHz deviation at 1 kHz modulation (Maximum deviation: ±40 kHz at 1 kHz modulation)
Signal-to-noise ratio	—	60 dB or more (65 dB typical) at 60 dBμ RF input at reference deviation, A-weighted
Selectivity	—	60 dB or more ±250 kHz
RF squelch level	—	10 dBμ, 20 dBμ, 30 dBμ or off
De-emphasis	—	50 μs
Frequency response	40 Hz to 20 kHz	—
Distortion	1.0 % or less	—
Audio output level	-20 dBm (LINE)/-58 dBm (MIC) at reference deviation	—
Audio output connector	XLR-3-32 type (x 4), balanced	—
Sub-audio output connector	D-sub 15-pin female, unbalanced	—
Antenna attenuator level	0 dB, 5 dB, 10 dB or 15 dB	—
Antenna connector	Inputs: BNC-R type (x 2), 50 Ω (nominal) Outputs (for cascade connection): BNC-R type (x 2), 50 Ω (nominal)	—
Monitor output connector	6.3 mm dia. stereo mini jack (x 1)	—
Monitor output level	12 mW	—
Network connector	RJ-45 (x 1), 10BASE-T	—
Power requirements	AC 100 to 240 V, 50/60 Hz DC 10 to 24 V	DC 5 V (supplied from MB-8N)
Power available for connected AN-820A antennas	9 V, max. 100 mA	—
Power consumption	50 W when accommodating four WRU-8N tuner units	—
Dimensions (W x H x D)	482 x 44 x 300 mm (19 x 1 3/4 x 11 7/8 inches)	56.0 x 30.7 x 149.0 mm (2 1/4 x 1 1/4 x 5 7/8 inches)
Mass	3.7 kg (8 lb 6 oz)	165 g (5.8 oz)
Supplied Accessories	AC power code (x 1), CD-ROM (contains operation manual and MB-8N Supplied software) (x 1)	—

### MB-8N Supplied software for computer-based control

System requirements	PC:	IBM® PC/AT compatible
	OS:	Windows® 98SE/Windows 2000/ Windows Me/Windows NT® 4.0
	Memory capacity:	128 MB RAM or more
	CPU:	Intel Pentium® 400 MHz or faster
	Display:	1024 x 768 screen resolution or higher, 256 color display or higher
	Network interface:	10/100 BASE-T Network interface card
	Hard disk drive:	200 MB or more remaining, after MB-8N supplied software and other applications are installed.

## Optional Equipment



**WRT-8B**  
UHF Synthesized  
Transmitter



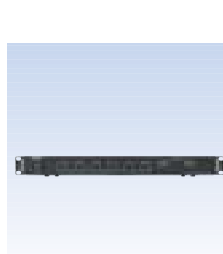
**WRT-822A/822B**  
UHF Synthesized  
Transmitter



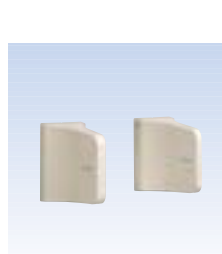
**ECM-77BC**  
Lavalier Microphone



**ECM-350BC**  
Headset Microphone



**WD-880A**  
UHF Antenna Divider



**AN-820A**  
UHF Antenna

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