



## Unprecedented combination of audio and RF performance for the most demanding professional monitoring applications.

The PSM®900 Wireless Personal Monitor System from Shure offers an unprecedented combination of superb audio quality, robust RF performance, and category-leading features for the most demanding professional applications. Patent-pending CueMode allows the sound engineer to monitor different stage mixes with the touch of a button. Precision front-end RF filtering significantly reduces dropouts from RF interference, and the enhanced digital stereo encoder provides excellent stereo separation and audio clarity.

### **APPLICATIONS**

**Touring Sound** 

**House Of Worship** 

**Broadcast** 

Theater

### PRODUCT HIGHLIGHTS

**Superb Audio Quality** 

**Robust RF Performance** 

**Advanced Rechargeability** 

CueMode (patent pending)

**Active RF Gain Control** 

### **System Specifications**

| RF Carrier Range  | 470-952 MHz (regionally dependent)          |
|---|---|
| Compatible Frequencies                                    | 20 per band                                 |
| Tuning Bandwidth  | 36 MHz – 40 MHz (regionally dependent)      |
| Operating Range (environment dependent)                   | 90m (300ft)                                 |
| Audio Frequency Response                                  | 38Hz – 15kHz                                |
| Stereo Separation   | 60 dB                                       |
| Signal-To-Noise Ratio (A-Weighted)                        | 90 dB (typical)                             |
| Total Harmonic Distortion (ref. ±34 kHz deviation @1 kHz) | <0.5% (typical)                             |
| Companding  | Patented Shure Audio Reference Companding   |
| Spurious Rejection (ref. 12 dB SINAD)                     | >80 dB (typical)                            |
| Frequency Stability                                       | ±2.5 ppm                                    |
| MPX Pilot Tone  | 19 kHz (±0.3 kHz)                           |
| Modulation  | FM, ±34 kHz deviation (nominal), MPX Stereo |
| Operating Temperature                                     | -18°C - +57°C                               |

### Frequency Range

| Band | Range       | RF Output Power*** |
|------|-------------|--------------------|
| G6   | 470-506 MHz | 10 / 50 / 100 mW   |
| G6E  | 470-506 MHz | 10 / 50 mW         |
| G7   | 506-542 MHz | 10 / 50 / 100 mW   |
| G7E  | 506-542 MHz | 10 / 50 mW         |
| K1   | 596-632 MHz | 10 / 50 / 100 mW   |
| K1E  | 596-632 MHz | 10 / 50 mW         |
| L6   | 656-692 MHz | 10 / 50 / 100 mW   |
| L6E  | 656-692 MHz | 10 / 50 mW         |
| P7   | 702-742 MHz | 10 / 50 mW         |
| Q15  | 750-790 MHz | 10 / 50 mW         |
| R20  | 794-806 MHz | 10 mW              |
| R21  | 794-806 MHz | 10 / 50 mW         |
| R22  | 790-830 MHz | 10 / 50 mW         |
| A24  | 779-806 MHz | 10 mW              |
| X2   | 925-932 MHz | 10 mW              |
| X1   | 944-952 MHz | 10 / 50 / 100 mW   |

<sup>\*\*\*</sup>Regionally Dependent

# Optional Rechargeable Power Management SB900 Rechargeable Battery The P9RA bodypack is compati

## The P9RA bodypack is compatible with the SB900 lithium-ion rechargeable battery, which provides extended usage time of up to 10 hours and precise tracking of remaining life

## and charge cycle details. SBC800 Recharging Station

This compact and portable unit charges up to 8 SB900 batteries to full capacity within 3 hours, with status LEDs to indicate power levels. SB900 batteries fit securely in the charger for easy, efficient storage and transport.

#### **Furnished Accessories**

| 470-542 MHz               |
|---------------------------|
| 470-542 MHz               |
|                           |
| 596-692 MHz               |
| 692-830 MHz               |
| 830-952 MHz               |
|                           |
| 470-530 MHz               |
| 500-560 MHz               |
| 518–578 MHz               |
| 578-638 MHz               |
| 638-698 MHz               |
| 690-746MHz                |
| 740–814 MHz               |
| 900-952 MHz               |
| Front Mount Antenna Cable |
| Zipper Bag                |
|                           |

| 53A8612             | Rackmount Bracket, Long            |
|---------------------|------------------------------------|
| 53A8611             | Rackmount Bracket, Short           |
| 53B8443             | Link Bar                           |
| 90AR8100            | Hardware Kit (Rackmounting Screws) |
| 90B8977             | Bumper Kit                         |
| Energy Efficient Sw | itching Power Supply               |
| PS41US              | USA                                |
| PS41BR              | Brazil                             |
| PS41AR              | Argentina                          |
| PS41E               | Europe                             |
| PS41UK              | United Kingdom                     |
| PS41AZ              | Austrailia/New Zealand             |
| PS41CHN             | China                              |
| PS41TW              | Taiwan                             |
| PS41J               | Japan                              |

### **Antennas, Combiners and Accessories**

| PA821A   | 8-to-1 antenna combiner for better RF performance   |
|----------|---|
| PA421A   | 4-to-1 antenna combiner with power distribution to 4 transmitters (better RF performance and eliminates need for external power supply) |
| PA301    | Protective Cover for P9RA and P10R bodypack receivers   |
| PA805SWB | Passive Directional Antenna   |
| HA-8089  | Helical Antenna (470-900 MHz)   |
| HA-8241  | Helical Antenna (944-952 MHz)   |
| PA860SWB | Passive Omnidirectional Antenna   |
| P4M      | 4-Channel Personal Monitor Mixer  |
| UA802    | Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 2 ft length (0.6 m)   |
| UA806    | Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 6 ft length (2 m)   |
| UA825    | Coaxial Cable, BNC-BNC, RG8X/U type,<br>50 Ohm, 25 ft length (7.5 m)  |
| UA850    | Coaxial Cable, BNC-BNC, RG8X/U type,<br>50 Ohm, 50 ft length (15 m)   |
| UA8100   | Coaxial Cable, BNC-BNC, RG8X/U type,<br>50 Ohm, 100 ft length (30 m)  |
|          |   |



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### **Component Specifications**

P9RA Wireless Bodypack Receiver



The P9RA is a compact, stereo bodypack receiver for use with the PSM®900 Wireless Personal Monitor System. It offers premium features including RF Scan and Automatic Gain Control for unparalleled RF stability and channel availability, plus an advanced rechargeability option for extended usage times, all packed in the thinnest form factor available. Patent-pending CueMode allows monitoring of different stage mixes and storing of up to 20 separate channels from one bodypack for quick and easy reference.

| Front-End RF Filtering  | Dual Stage 3-Pole Chebyshev  |
|---|--|
| Active RF Gain Control  | Adjusts receiver RF sensitivity to provide 31dB more RF dynamic range  |
| RF Sensitivity (20 dB SINAD)  | 2.2 µV at 20dB SINAD   |
| Squelch Threshold   | 20 dB ±3 dB SINAD  |
| Adjacent Channel Rejection  | >70 dB   |
| Intermodulation Attenuation   | >50 dB (referenced to 30 dB SINAD with -80 dBm on channel signal at 45 kHz deviation of a 1 kHz tone), > 70 dB for 12 dB SINAD |
| Blocking  | >80 dB   |
| Image Rejection   | >90 dB typical   |
| Audio Output Power (1kHz @ <1% distortion, peak power, @32 $\Omega$ ) | 100 mW   |
| Minimum Load Impedance  | 9.5 Ω  |
| High Boost  | Selectable: +2 dB, +4 dB @ 10 kHz  |
| Volume Limiter  | Selectable: 3-9 (Reduces maximum output level. Selected value corresponds to volume knob increment)                            |
| Battery Life  | 4–6 hours (continuous use)   |
| Net Weight  | 200 g with batteries   |
| Dimensions  | 99 mm x 66 mm x 23 mm  |

### P9T Wireless Transmitter





The P9T is a half-rack wireless transmitter used in conjunction with the P9RA Bodypack receiver as part of the PSM®900 Wireless Personal Monitor System. It offers state-of-art technology including CueMode (patent pending), RF Sync, and RF mute switch for easy setup and operation. Connections include balanced 1/4" and XLR, loop out, and headphone out. Includes rack-mounting kit, front or back mountable antennas, and power supply.

| RF Output Power          | Selectable: 10, 50, 100 mW (regionally dependent)   |
|--------------------------|---|
| RF Output Impedance      | 50 Ω (typical)  |
| Net Weight               | 850 g   |
| Dimensions               | 197 mm x 166 mm x 42 mm (7.75in X 6.55in X 1.65in)  |
| Power Requirement        | 415 mA typical @ 120VAC (with RF on 100 mW power mode, no audio)  |
| Audio Input              |   |
| Connector Type           | Combination XLR and 6.35 mm (1/4") TRS  |
| Polarity                 | XLR: Non-inverting (pin 2 positive with respect to pin 3) 6.35 mm (1/4") TRS: Tip positive with respect to ring |
| Configuration            | Electronically balanced   |
| Impedance                | 70.2 kΩ (actual)  |
| Nominal Input Level      | Switchable: +4 dBu, -10 dBV   |
| Maximum Input Level      | +4 dBu: +23.3 dBu<br>-10 dBV: +12.5 dBu   |
| Pin Assignments          | XLR: 1=ground, 2=hot, 3=cold<br>6.35 mm (1/4") TRS: Tip=hot, Ring=cold, Sleeve=ground                           |
| Phantom Power Protection | up to 60 V DC   |
| Audio Output             |   |
| Connector Type           | 6.35 mm (1/4") TRS  |
| Configuration            | Electronically balanced   |
| Impedance                | Connected directly to inputs  |



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