Smart Spectrum® Wireless Systems Engineering Specifications

SW60/70 Series Receivers, One- or Two-channel

SW60 Carrier Frequency Range: ISM Band 902 - 928 MHz
SW70 Carrier Frequency Range: ISM Band 2.400 - 2.483 GHz
SW60 Frequencies: 34 pre-programmed
SW70 Frequencies: 70 pre-programmed
Oscillation Mode: PLL synthesized
Receiving Mode: True diversity
Sensitivity: -95 dBm
Image Rejection: >63 dB
Spurious Rejection: >76 dB
Stability: 10 ppm
Maximum Deviation: +/- 100 KHz
Dynamic Range: > 100 dB
THD: <0.1%
Frequency Response: 20 Hz - 20 KHz +/- 1 dB
Antennas: 2, ¼ wavelength coaxial dipole
Power Supply: 100-240 VAC 50-60 Hz
Rack-Mount case
Working Range: >100 meters
Outputs: XLR-mic level, TRS-line level, all balanced
Serial Interface: RS232 or USB
RS485 Serial Network**
AES3 Digital Audio Output with Sync Input**
Dimensions: 1-U rack-mount, 19 x 1.75 x 9 in. (48.3 x 4.5 x 21.6 cm)
Weight: 5.3 lb. (2.4 kg)

SW60/70 Series Handheld Microphones

Dynamic Mic Capsule: Audix OM3 or OM5
Condenser Mic Capsule: Voice Technologies
Antenna: Built-in
FM Deviation: +/- 100 KHz
RF Frequency Stability: 10 ppm
RF Output: < 25 mW
Spurious output: < -50 dB of rated output
Telemetry: Battery Voltage, Type, and Hours; Mute Status, Capsule Type, Low Cut and Pad
Programmable LCD
Programmable On/Off switch
Battery: Sabine NiMH Rechargeables or two 1.5V Alkaline AA cells
Rechargeable Battery Life: nine hours per charge, 500 charge cycles (typical)
Alkaline Battery Life: 14 hours (typical)

SW65/75 Series Beltpack Transmitter

FM Deviation: +/- 100 KHz
RF Frequency Stability: 10 ppm
Spurious output: < -50 dB of rated output
RF Output: < 25 mW
Telemetry: Battery Voltage, Type and Hours; Mute Status, Low Cut, Pad, Mic or Instrument
Programmable LCD
Programmable On/Off switch
Mic input impedance: 47K Ohms
Mic bias: 3.3V
Mic connector: TA4
Antenna type: Internal
Battery: Sabine NiMH Rechargeables or two 1.5V Alkaline AA cells
Rechargeable Battery Life: 9 hours per charge, 500 charge cycles (typical)
Alkaline Battery Life: 14 hours (typical)

SWA6SS Antenna Distribution Amplifier

Two antenna inputs
Six pairs of RF outputs to receivers
Bandwidth: 2.40 - 2.484 GHz +/- 3 dB
P_{1dB}: -20 dBm
Noise Figure: < 3.7 dB (Center Band)
Input/Output Gain: +2dB nominal (Center Band)
Output Port Isolation: 30 dB minimum
Connector: TNC type
Power Supply: 100-130 VAC or 200-240 VAC 50/60 Hz

Digital Signal Processing (in each receiver)

FBX Filters
Ten independent digital filters per channel, controlled automatically from 20 Hz to 20 KHz
Filter depth: 3 dB steps from 0 dB to -40 dB
Filter width: .1 or .2 octave*
Resolution: 1 Hz from 20 Hz to 20 KHz
Time required to find and eliminate feedback: typically 0.3 seconds @ 1 KHz

Digital Compressor/Limiter
Threshold: -30 dB to 0 dB
Ratio: 1:1 through infinity
Knee: soft
Attack: 1-99 msec
Release: 5-500 msec

Adaptive De-Esser
Cut range: 0 to -24 dB

Presets

9 User Presets, one factory default – Saves all configurations

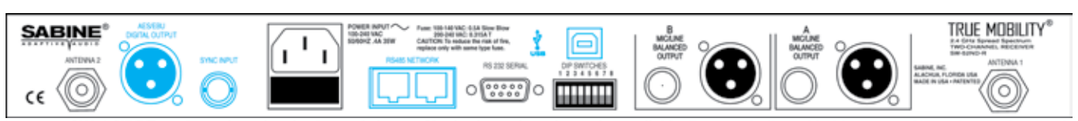
Microphone SuperModeling™

Dynamic Capsules***
Shure SM-58
Shure Beta 58A
Audio-Technica ATM 41a
AKG D3800

Condenser Capsules***
Shure Beta 87A
AKG C535 EB
Audio-Technica ATM 89R
Crown CM200A

**Below approximately 200 Hz the feedback filters become slightly wider to increase the feedback and rumble capture speed at these low frequencies.*
***ND Series Receivers Only*
****Company names, product names and trademarks listed here are the property of their respective owners and are used only to identify evaluated microphones used to develop digital processing; they in no way imply association, endorsement or approval by any named manufacturer.*

(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)



SW72-NDR Two-channel receiver back panel shown. Single-channel receivers also available. Features indicated in blue are on ND series receivers only.

One-year limited warranty
Patented†
Other Patents Pending
Made in USA

SABINE®
the sound of innovation

Complete Operating Guide & Catalog available at our website
www.Sabine.com
13301 Highway 441
Alachua, Florida 32615-8544 USA
Tel: (386)418-2000
Fax: (386)418-2001

†FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665, Australian Patent No. 653,736, German Patent No. 69118486.0, U.K. Patent No. 0486679 and Canadian Patent No. 2,066,624-2. Other patents pending.

©2008 Sabine, Inc. 071218

TRUE MOBILITY® WIRELESS MICROPHONE SYSTEMS

SWM6000 Series
SWM7000 Series
Smart Spectrum®
1 and 2-Channel Systems

Sabine SWM-Series Wireless: 915 MHz and 2.4 GHz ISM Bands DTV and License Free

SW72-NDR Two-channel Receiver with network and digital interface

DTV AND LICENSE FREE FREQUENCIES

FULL FREQUENCY RESPONSE

EIGHT-HOUR RECHARGEABLE BATTERY SYSTEM

DIGITAL CHANNEL STRIP PROCESSOR

COMPUTER SOFTWARE MONITOR AND CONTROL

COMPATIBLE WITH THIRD PARTY CONTROL SYSTEMS

PROGRAMMABLE PRESETS

Wireless microphones offer several advantages over their wired cousins, but they also bring along undesirable baggage. Three major issues haunt the wireless mic user. Radio frequency problems, sound quality problems and battery problems all combine to make the wireless experience a real challenge. And perhaps the biggest question facing wireless users is "with all these new laws allocating frequencies to DTV and other devices, will my wireless mics work tomorrow?" Sabine has the right answer to that and many other wireless challenges: SWM Smart Spectrum Wireless. This ground-breaking new system sets a new standard for quality, reliability and longevity of wireless microphones.

New standards in RF performance

• **UHF: hear today, gone tomorrow.** You read all about it every day in industry journals: digital television and a whole host of high-power consumer WiFi phones will overwhelm mics in the traditional UHF white spaces. Just when you need more wireless mics, government restrictions squeeze the UHF band tighter and tighter. UHF mics you buy today may well be useless as early as 2009.

• **915 MHz and 2.4 GHz Bands: the clear alternative.** Both 915 MHz and 2.4 GHz FCC ISM bands are above the UHF and VHF bands and immune to TV and DTV interference and all the "white spaces" issues you read about. These bands are limited to low-power devices (no broadcast!). The SWM6000 series operates license free in the USA and the SWM7000 operates license free in almost every country in the world. Now you can buy one system and travel anywhere – the ultimate in unlimited roaming.

• **Smart Spectrum™: up to 70 simultaneous users.** We achieved this unprecedented breakthrough by using digital signal processing in the RF circuit. You get 70 channels to choose from and can use all 70 at one time! Sabine's patent-pending Smart Spectrum system combines spread spectrum filtering with a variation of FM technology. This innovative breakthrough provides for a more interference-resistant system with many more simultaneous channels.

New standards in wireless audio quality

Conventional wireless systems cannot supply the same audio quality as their wired counterparts. Low frequencies are typically rolled-off below 130 to 150 Hz, prompting most of us to wish for that extra performance from our wireless mics. Sabine's new SWM7000 series utilizes a new DSP adaptive companding scheme for transmission and reception that provides flat response from 20 Hz to 20 KHz – ideal for use with both voice and musical instruments.

SABINE®
the sound of innovation

SW71-R One-channel Receiver

Handheld mic with condenser element

All transmitters are rugged cast aluminum with soft-grip finish

Beltpack transmitter

Handheld mic mounted in cradle with built-in charger

Built-in digital signal processing for every mic – with instant recall

Using DSP in the RF circuit also allows every Sabine receiver to come with its own stack of built-in audio processors – at no extra cost! Think of each receiver as having the channel strip of a digital mixer built-in, including on-the-fly instant recall of these DSP functions:

- **FBX Feedback Exterminator®:** Wireless microphones invite movement, and as the mic moves, feedback may be waiting in ambush. Like having an automatic parametric filter set on the job, the FBX is the industry standard for transparent, automatic feedback control, providing maximum gain and increased clarity on every mic.
- **Parametric Filters:** Every receiver provides 10 filters per channel. These can be individually selected as either parametric or FBX filters.
- **High and Low Cut Filters:** Use these for broad sound shaping or problem solving.
- **Mic SuperModeling:** You'll love our rugged, all-metal series dynamic or condenser handheld mics just the way they are. But if your application calls for another mic "personality," a push of a button calls up a library of "virtual capsules" that model the sounds of your favorite microphones. You'll be ready for any vocalist or speaker, in any situation, and you can match the sound of existing wired mics in any venue.
- **Compressor/Limiter:** Manage gain for all types of performers with Sabine's famous digital compressor.
- **Adaptive De-Esser:** Improve intelligibility with this adaptive de-esser with surgical control over sibilance (harsh "s," "ch" and "t" vocal sounds) that adapts for various voice types.
- **Channel Mixing:** Create one mix of the two outputs on dual-channel receivers

Batteries that last for years

Conventional wireless systems force you to continuously purchase, store, change and dispose of batteries – forever. SWM mics are engineered specifically for use with rechargeable NiMH AA batteries so they provide a full eight hours of continuous performance per charge. The handheld microphone cradle doubles as a docking station so the mic can be used even when the batteries are charging. The transmitters charge just like your cell phone – plug them in and they are ready for a full eight-hour usage in four hours. Sabine transmitters are designed around NiMH batteries – using rechargeables was not just an afterthought. The transmitters are engineered for both NiMH AA and standard AA alkaline batteries. The battery system is smart and it detects which type of battery is in use – no charging is attempted if alkalines are detected.

Simple operation

Ergonomic controls and displays give you quick information and easy control of essential features. The front-panel LCD displays the precise value of every function on the LCD with the touch of any front panel control. Ten recallable preset configurations allow you to customize and save your setups. Transmitters also have programmable, backlit LCDs with behind-the-door switches to prevent unintentional changes, and the external on/off switches are programmable.

Flexible control

Choose from full front panel control, or limit which controls are accessible on the front panel. Or use Sabine's SWM Remote Software to control all channels (ND System required, which also includes digital audio output). Or use any serial remote control system, like Crestron or AMX, to access each receiver in your system – perfect for touch-panel control and recalling customized presets for each user.

All at the right price

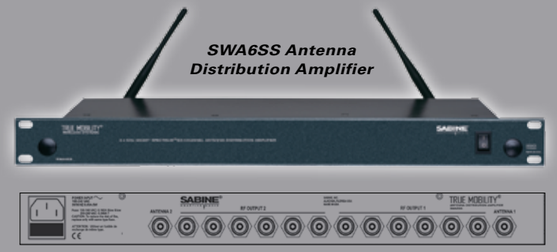
Sabine provides a dozen problem-solving features for no more than you are already paying, all with superior audio quality. The price looks even better when you consider the savings provided by the battery charging system. Let your ears tell the story – try the new Smart Spectrum Wireless Microphone Systems from Sabine today.

Remote Control Software Included

All Sabine receivers come with the SWM Remote Control Software for Windows, and all receivers have an RS232 and USB connection for your computer. Choose the ND (Network Digital) option to control all available channels in one software session. This intuitive software allows you to view and control all of the receiver's most powerful features, including:

- View and edit all channels using the multi-channel display or choose command display to control all functions of a single channel.
- View all transmitter status telemetry: battery voltage, battery run-time hours (for a complete picture of battery status), battery type, mute status, pad status and capsule type.
- Parametric EQ for each channel: 10 filters independently switchable to full parametric or FBX feedback exterminator (fixed or dynamic); graphic editing of filters
- Compressor/Limiter Controls: unique colorcomp meter shows multi-color graphic display of compressor functions; additional control of release, knee, and mute.

- RF scanner function reports ambient signal strength of spectrum on each channel.
- Continuous scan records and displays a history of RF activity on each channel. Displays clear channels and allows for automatic disabling of interference channels based on user-controlled thresholds.
- Name channels and receivers.
- Save individual or all channel settings to a file; save RF scans; copy any function or setting to one or all channels.
- Print parameters for all channel settings; print RF scans.
- Flash RAM upgradeable firmware and mic modeling.



SWA6SS Antenna Distribution Amplifier

SVT40L-TA4 Sub-mini Omni Lavalier Mic

Instrument cable interface

Extension Antenna (wall or stand mounted)

SVT70LW-TA4 Omni Headworn Mic

Components *(See price list for a complete listing of all components)*

Receivers
SW62/72-NDR: Two-channel Receiver w/Network & Digital Interface
SW62/72-R: Two-channel Receiver
SW61/71-R: One-channel Receiver

Transmitters
SW65/75-T: Beltpack Transmitter
SW60/70-H13: Handheld Microphone w/Dynamic Element (Audix OM3)
SW60/70-H15: Handheld Microphone w/Dynamic Element (Audix OM5)
SW60/70-H19: Handheld Microphone w/Voice Technologies Condenser Element

Microphones
SVT70BW-TA4 Voice Technologies Headworn Mic (Black)
SVT70LW-TA4 Voice Technologies Headworn Mic (Light Tan)
SWT73W-TA4 Audio Technica Cardioid Headworn Mic
SWTVT50-TA4 Voice Technologies Omni Mini Lavalier Mic
SVT40L-TA4 Voice Technologies Omni Sub-Mini Lavalier Mic
SWT31L-TA4: Audio Technica Cardioid Lavalier Mic1
SWT70G-TA4: Instrument Input w/cable

Batteries
SWBAA2: Rechargeable NiMH AA set for transmitters

Antennas
SWASS-EXT3: 2.4 GHz Extension Antenna Kit (Set of 2)
SWA6SS: 2.4 GHz Antenna Distribution Amplifier for up to 12 channels
SWACA15-TNC: RF Cables, 15' RG58, One Pair
SWACA30-TNC: RF Cables, 30' RG58, One Pair

Accessories
SWC70CL-1: SW70-H1 Series Charging Mic Clip
SWC70CL-12: SW70-H1 Series Stage Mic Clip
SWC-POWR: Plug-in charger for SW70 Series Transmitters