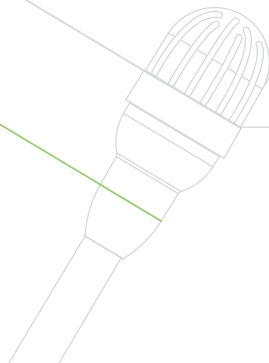


**SHURE**

BROADCAST & MEDIA SERIES

# FILM & TV





# ABOUT

## FILM & TV

On location. On a sound stage. Made for TV or summer blockbuster. Pristine audio crystalizes the moment of every take. Depend on clean, clear, and reliable audio.

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# WIRELESS SOLUTIONS

In the studio or on location, the last thing you want is unreliable wireless audio. Simplified setup. Flawless operation. Road-worthy ruggedness.

## AXIENT® DIGITAL



For professional productions that demand flawless execution, Axient Digital offers unprecedented signal stability and audio clarity, plus flexible hardware options, advanced connectivity, and comprehensive control. Up to 184 MHz tuning bandwidth across all receivers and transmitters.

Transmitter form factors include handheld, bodypack, and micro-bodypack.

PREMIUM WIRELESS





# ULX-D®

## DIGITAL WIRELESS SYSTEMS

Extremely efficient RF performance, networked control, Dante™ and AES67 digital audio, and AES-256 encryption for professional broadcast applications.



## SHUREPLUS™ CHANNELS

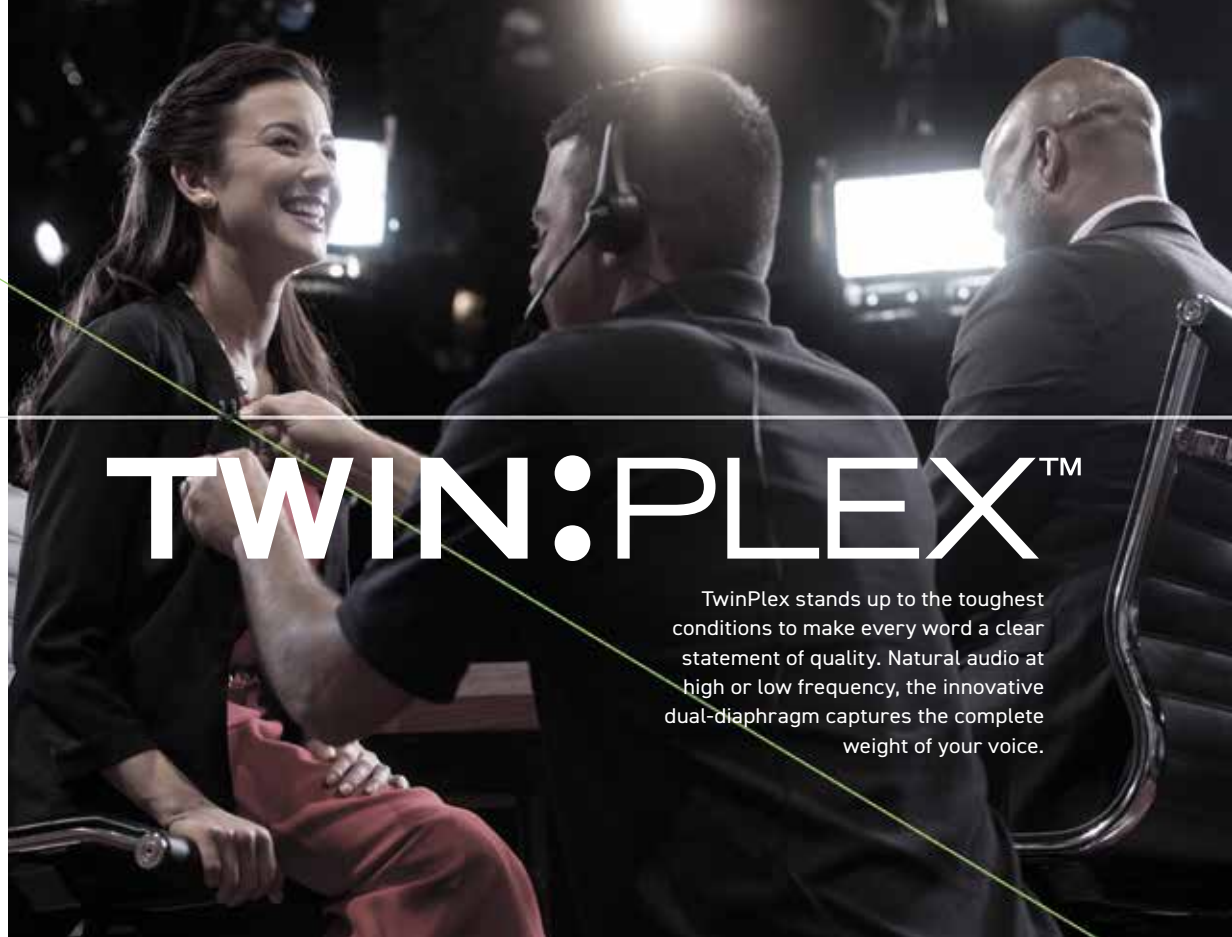
Roam the sound stage while monitoring key Shure wireless system parameters from your iOS iPad or iPhone.

## SUPPORTING SOFTWARE

A rich user interface and robust features help to manage and monitor wireless system performance over the network, from pre-show planning through post-performance analysis.

## WIRELESS WORKBENCH®





# TWIN:PLEX™

TwinPlex stands up to the toughest conditions to make every word a clear statement of quality. Natural audio at high or low frequency, the innovative dual-diaphragm captures the complete weight of your voice.

## TWINPLEX

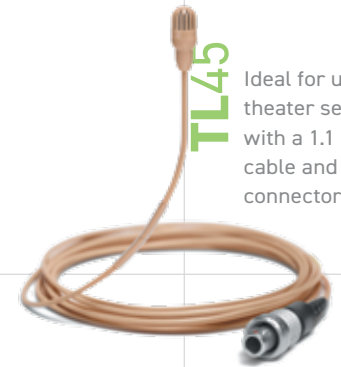
### TL48

Ideal for film and TV with a fixed frequency cap and mid-band boost that accentuates dialogue.



### TL45

Ideal for use in theater settings with a 1.1 mm cable and LEMO connector only.



### TL46

Ideal for a variety of theater, film, broadcast, and live TV applications when additional output is required.



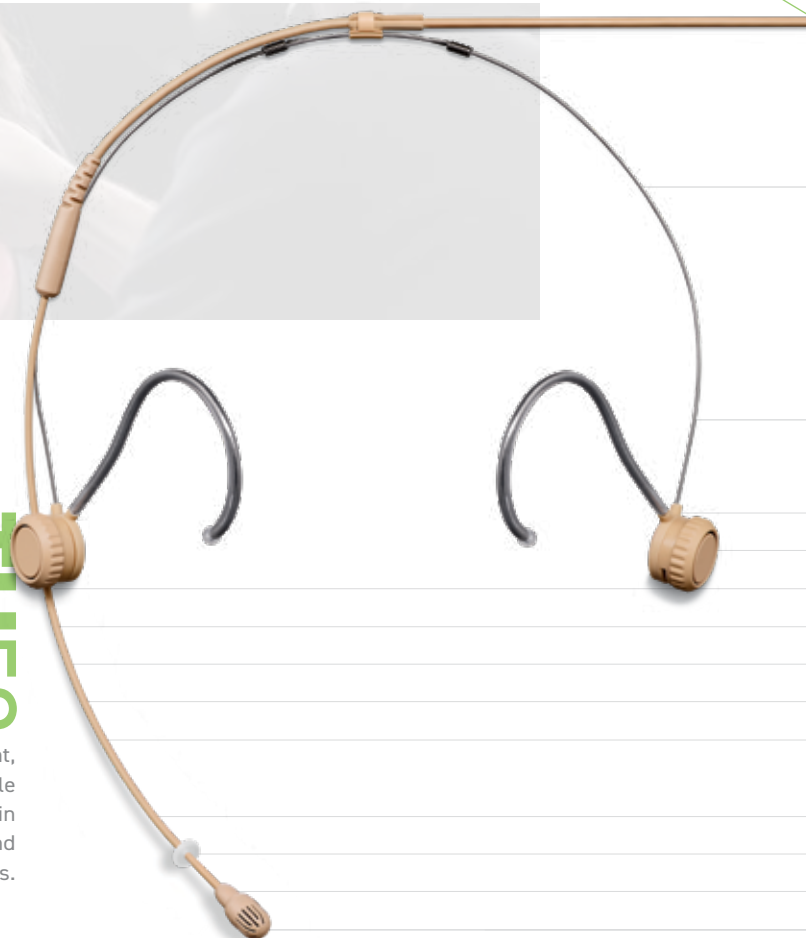
### TL47

Ideal for nearly any application, with a variety of colors and connectors.



### TH53

Comfortable, lightweight, and fully adjustable headset for use in theater, broadcast, and speech applications.



#### LAVALIERS

#### HEADSETS

	TL45	TL46	TL47	TL48	TH53
<b>POLAR PATTERN</b>			Omnidirectional		
<b>CABLE DIAMETER</b>	1.1 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm
<b>LEMO</b>	✓	✓	✓	✓	✓
<b>MTQG / TA4F</b>		✓	✓	✓	✓
<b>MICRODOT</b>			✓	✓	✓
<b>XLR</b>			✓	✓	
<b>NO CONNECTOR</b>			✓	✓	✓
<b>COLOR OPTIONS</b>					
<b>LOW SENSITIVITY</b>	✓		✓	✓	✓
<b>HIGH SENSITIVITY</b>		✓			
<b>SOUND SIGNATURE</b>	Natural	Natural	Natural	Speech Tailored	Natural
<b>ACCESSORIES (-A)</b>			✓	✓	







Q&amp;A WITH

# PETER SCHNEIDER

GOTHAM SOUND

Production Sound Mixer, and co-owner of Gotham Sound in NYC, Peter Schneider sat down with us and shared his and his customer's experiences testing and using TwinPlex microphones.

## WHAT ARE SOME OF THE CHANGES YOU'VE SEEN OVER THE YEARS?

You know, when I first started it was very traditional production. Single camera or, you know, you could turn in and get by with a mix track. Maybe you use the right channel for wireless mics or something like that. Now, of course, everything is multitrack. I think the speed of production has ramped up tremendously. Everything has to be so much more. orders of magnitude more reliable and lighter and everything has to be faster. And yeah, just work.

Wireless... we were at the tail end of VHF and now, of course, VHF is back. But yeah, there's been

tremendous advances in wireless technology and tremendous challenges in wireless technology and also changes in production.

## HOW ABOUT THE EVOLUTION OF AUDIO PRODUCTION?

When I first started, it was, you could do a whole movie with just a boom or two booms and some plant mics, and an occasional wireless mic. When I first started, it was not unusual for mixers to keep the wireless mics on the truck and then have to go get them for this set up.

Now, it's just expected that the sound mixer has, at the ready, I would say a minimum of eight channels ready to go, plus the wireless boom. And I think I'm being a little bit sort of generous when I say eight. We hear routinely of mixers that have 10, 12, 14 wireless ready to go at any one time.

So, the sound department has to be much more aware and much more present. And, at the same time, lighter on their feet and have more reliable equipment.

## TELL US ABOUT THE ROLE OF THE LAVALIER IN FILM AND TELEVISION TODAY.

In film production, it's often expected that if there's any question at all about whether the boom will work in a scene, you are just going to wire the actors.

It's no longer let's wait and see. Or you know let's work it out with the boom first, and see if we have to bring in the wireless. You know, certainly on action films, it's just assumed they're going to wire.

On episodic television, it's assumed you're going to wire. It's always a surprise when you when you tell the PAs and the second AD, "No, we don't need to wire."

And the LAV is what's carrying the dialogue. And that's a huge change. Before, you used to have a microphone that cost over a thousand dollars - well over a thousand dollars, that had a full-size diaphragm that was engineered to be somewhat directional. Whether you went in for a hypercardiod or a shotgun - those were personal choices.

But the point is that it was engineered in a precision instrument that was thousands of dollars. And now the bulk of your dialogue on a lot of shows, narrative shows, is coming from a lavalier.

So if we think about the signal chain, certainly it starts with the actor speaking. We're not in control of that. But the next thing in the chain we are in control of, it's going to be the lav more often than not.

As sound mixer, we fight for a boom placement, but we're often not able to get that. It's just the reality of production. So, if you are starting your signal chain with the lavalier, you have to make sure that it's the best quality lavalier that you can get.

**CONTINUED ON PAGE 12**



**"...the lav is what's carrying the dialogue. And that's a huge change."**

# Q&A WITH PETER SCHNEIDER (CONTINUED)

GOTHAM SOUND

## WHAT ABOUT THE PLACEMENT OF LAVALIERS?

One of the challenges that sound mixers face, of course, is amongst the things that they are not in control of, often, is the wardrobe. And sound mixers have to hide lavalier microphones. They can't be visible on camera, for most of the time - for most shows. So that puts an unusual strain or an unusual design constraint on the lavalier microphone itself. Of course, clothing affects frequencies differently than a microphone in open air.

Also, you're dealing with fabric and skin and sweat and lots of things that microphone designers, at least in the early years, didn't really think about and or have to worry about. It has now become the critical part of your signal chain, so you really need a tool that takes all of those real-world things into account. That is sweat resistant. That does not have a microphonic cable. That can sort of boost high frequencies in a way that's not obvious but just enough to overcome a layer of clothing. So yeah, that's where these Shure microphones really shine.

## HOW HAS TWINPLEX PERFORMED IN SUCH SITUATIONS?

We've put these mics on a number of different people here, and we've listened to them and they sound outstanding. The clothing noise from the cable is nonexistent. The high-frequency boost is exactly where you want it to be for being under a layer of clothing. The sensitivity is right there. The noise floor really low. In my opinion these mics are fantastic for this purpose, and I'm excited to be able to offer them to our customers.

There was one show that called us up that needed to redo the electronics in very old microphones. It's a period show, and it's on HBO. They needed to make old microphones sound really good.

This request was coming from the post-production department. And we knew we had the perfect microphone to be able to use for this. We gutted the microphone, and we put one of the TwinPlex microphones inside and wired it up and asked the mixer, just send us your thoughts about what you hear, and this is what he said:

"Hi guys. Just wanted to let you know that I had a chance today to plug in the modified mic, and wow, it sounds phenomenal. The off-axis response and lack of handling noise is great. This is what I wish we had all along."

And he goes on to ask about what it would be to modify all of their prop mics. So yeah, it was a huge, huge success.

**"The clothing noise from the cable is nonexistent. The noise floor is really low."**

## IS THERE ANYTHING ELSE YOU'D LIKE TO SHARE ABOUT YOUR EXPERIENCE WITH TWINPLEX?

The thing I really want to tell people about the TwinPlex lavalier mics are their quiet handling noise, their quiet noise floor, and the quality of their sound. Those three things combined, I think, are really key for our industry where the lavalier is often the first link in the signal chain.

And, hiding them under clothing, which is so important for our industry. Really, they really shined. The lack of handling noise, the clarity of the sound, and the quiet noise floor really blew us away. And also the openness of the mic. I think it's really unique among the lavaliers that we deal with where it had this kind of open quality. But at the same time on the right amount of sensitivity.

I think it's phenomenal. And I really do, I look forward to being able to share it with our customers. ■







IN THE FIELD

# SHOTGUN MICS

Capture sounds near and far. Shure shotgun microphones feature state-of-the-art preamplifiers and outstanding off-axis rejection to bring out all the environmental details.

END-ADDRESS SHOTGUN CONDENSER MICROPHONES

## VP89L

Designed with interchangeable long, medium, and short capsules, the VP89 provides scalable, superior off-axis rejection for focus and flexibility in a wide variety of production types.

## VP82

### END-ADDRESS SHOTGUN CONDENSER MICROPHONE

Compact and lightweight with a wide aperture and excellent off-axis rejection, the VP82 is the affordable and reliable choice for camera-mounted production.

VP89M

VP89S

**VP89L** 30° pickup angle. For targeting sound sources over longer distances such as sporting events and wildlife.

**VP89M** 50° pickup angle. Capture greater degree of ambience such as audience response and talk shows.

**VP89S** 70° pickup angle. Best for near-field, wide-aperture capture including interviews and field recording.







# BROADCAST HEADSETS

Shure Broadcast Headsets combine the pristine audio reproduction of our critical-listening and monitoring headphones with dynamic microphones developed especially for broadcast.

**+**  
VISIT [SHURE.COM](http://SHURE.COM) TO SEE CABLE AND CONNECTOR OPTIONS



**BRH440**



**BRH441**



**BRH31M**



LIVE MONITORING

## BRH50M

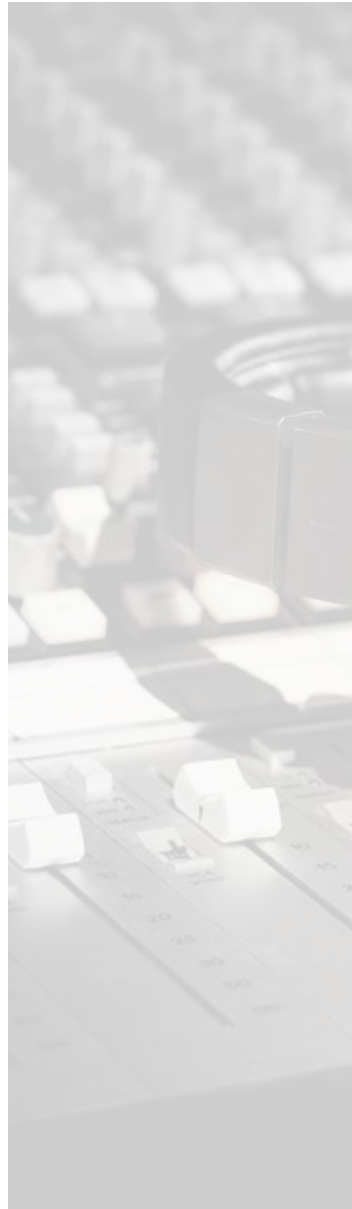
Premium, on-camera supra-aural headset with high-performance boom microphone.

[SHURE.COM/HEADSETS](http://SHURE.COM/HEADSETS)



# HEADPHONES

Getting the right sound means hearing the sound right. Shure Professional Headphones deliver studio-quality accuracy across an extended range and provide a comfortable fit that lets you keep going until your audio is exactly the way you intend it to be.



## SRH440

Used everywhere, they were built to last. Enhanced frequency response delivers accurate audio across an extended range.

SRH1540



**SRH1540** Superior acoustic performance with clear, extended highs and warm bass.

SRH940



**SRH940** Accurate high-end extension with tight bass and superior transient response.

SRH840



**SRH840** Tailored frequency response delivers rich bass, clear mid-range, and extended highs.

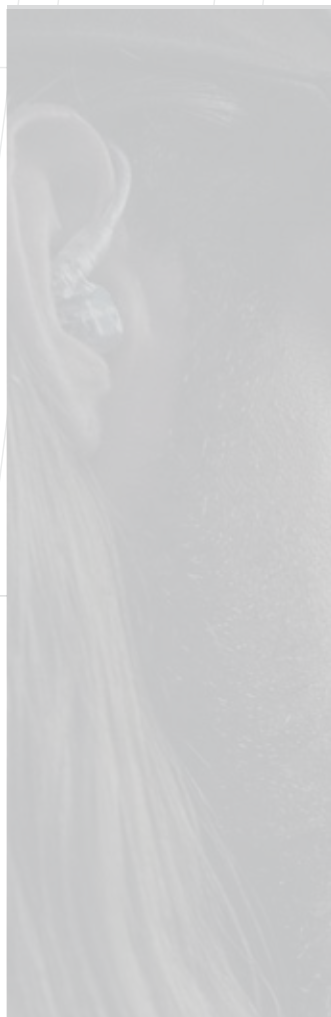




# SE SOUND ISOLATING™ EARPHONES



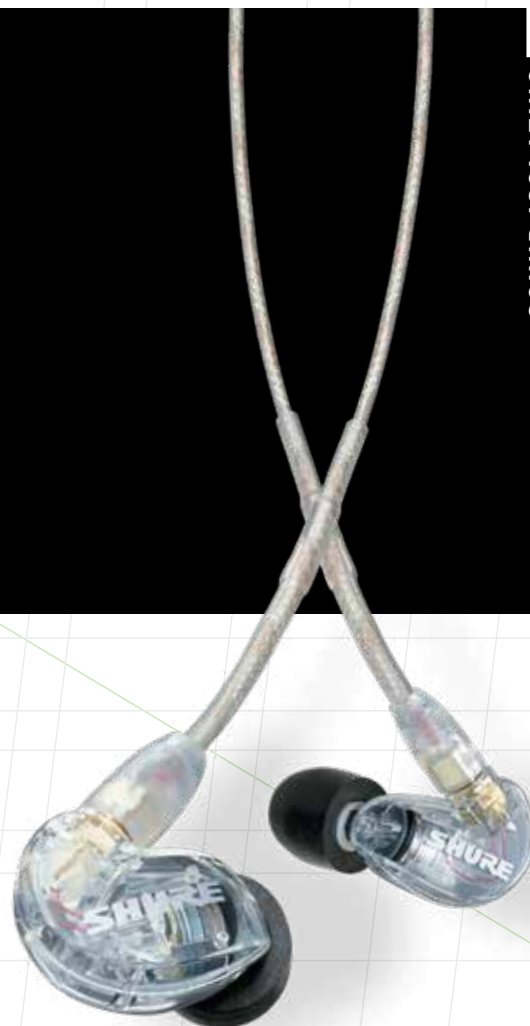
Shure Sound Isolating Earphones provide award-winning sound in a secure, over-the-ear design for long-lasting comfort and immersive audio.



SOUND ISOLATING

## SE215

Single dynamic driver produces clear sound with deep bass in a convenient and portable package.



DETACHABLE CABLE

Detachable cable system enables long-term device compatibility, upgrades, and ease of maintenance.



## SE425

Dual high-definition drivers (dedicated tweeter and woofer) deliver accurate and natural sound.



## SE535

Triple high-definition drivers deliver spacious sound and rich bass for cinematic audio.



## SE846

Four high-definition drivers for extended high-end clarity and a groundbreaking low-pass filter for true subwoofer performance.





PSM® TRANSMITTERS

P9RA+

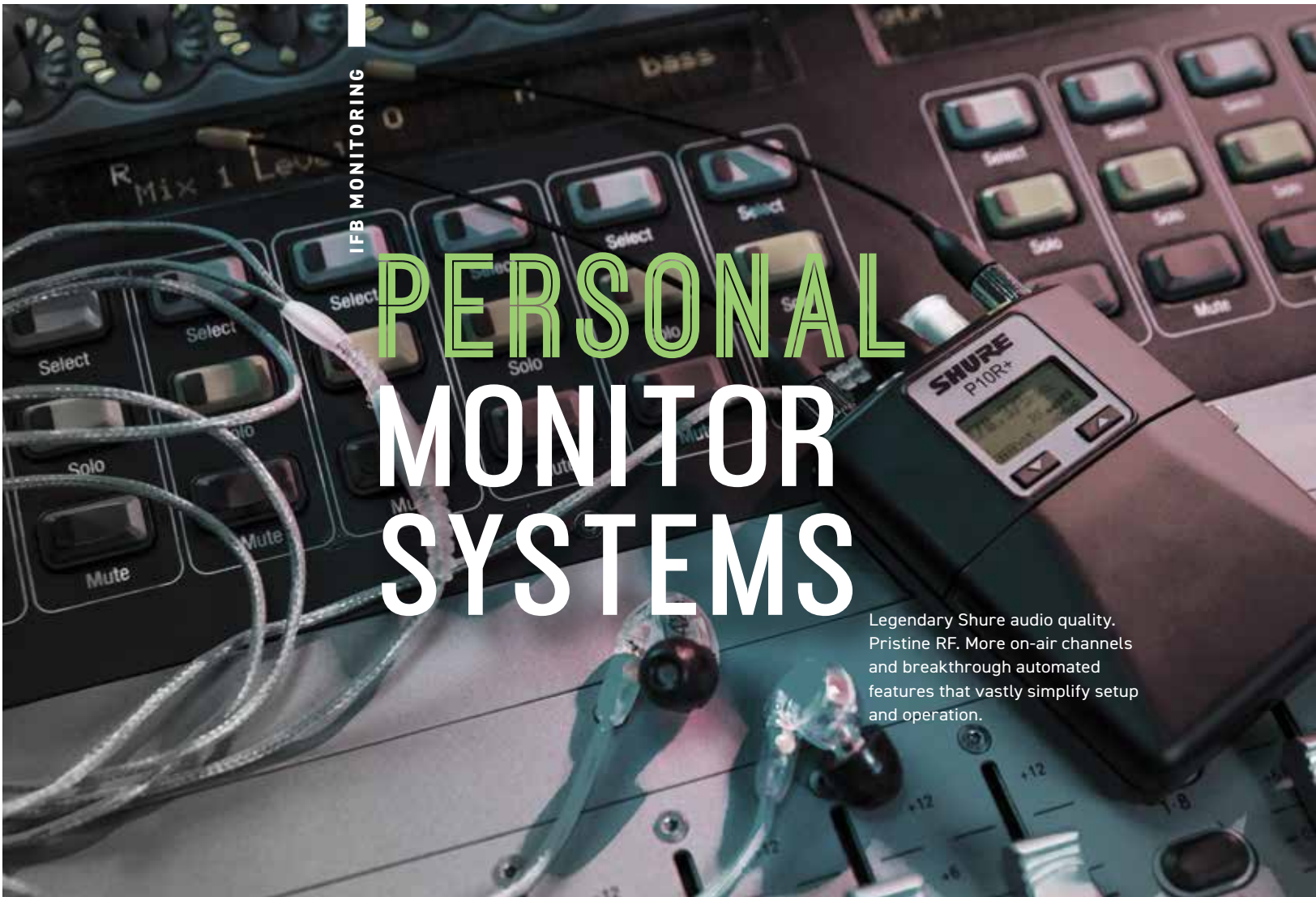


P10R+



**P9RA+** Stereo bodypack receiver with unparalleled audio quality.

**P10R+** Twin-antenna diversity bodypack receiver with advanced digital signal processing technology dramatically improves signal reception and range.



IFB MONITORING

# PERSONAL MONITOR SYSTEMS

Legendary Shure audio quality. Pristine RF. More on-air channels and breakthrough automated features that vastly simplify setup and operation.

PSM SYSTEMS

PSM 1000

PSM 900



**PSM 900** Single-channel, stereo. Up to 20 compatible frequencies per band.

**PSM 1000** Dual-channel, networkable. Up to 49 compatible frequencies per band. Diversity bodypack.

SHURE.COM/PSM



## EAC-IFB

The EAC-IFB Accessory Cable is a single-sided mono 1/8" (3.5 mm)-to-MMCX cable for use with Sound Isolating Earphones in professional intercom and monitoring applications.



ACCESSORY CABLE

NOW TRENDING IN BROADCAST:

# PSM<sup>®</sup> 1000, THE ULTIMATE WIRELESS IFB

WRITTEN BY BILL OSTRY

As a market development specialist for Shure, part of my role is to expose influential end users to our state-of-the-art products. In essence, I travel the U.S. and meet with power users in broadcast, production, and related fields, demonstrating Shure solutions to some of the most vexing of pro audio problems. I take a hands-on approach that allows potential customers to prove to themselves what works best in their situation. When you've got the right products, it works like a charm!

One product that has been enthusiastically embraced is the PSM 1000 wireless in-ear monitor system. With its true diversity bodypack receiver and resulting ability to operate reliably in the most challenging stage environments, this product has proven itself to be a reliable performer even on stages full of competing RF signals from microphones, moving lights, and video walls. As a result, it has become the unquestioned go-to IEM system in touring sound, to the point where is routinely specified at major live broadcast events like the GRAMMY<sup>®</sup>s and the Academy Awards.

One trend that we've noticed over the past several years is that the PSM 1000 has been selling in large quantities into the world of broadcasting, including major news, sports, and network production facilities. Literally hundreds of channels. It's been great to see this pro music product gain acceptance into the broadcast world, but we wanted to know why.

What's interesting is that a lot of these systems are not being used for in-ear monitoring. Because, as it turns out, the PSM 1000 is being embraced as the ultimate wireless system for interruptible foldback (IFB) applications as well.

“...the design of the PSM 1000 meets (and exceeds) all the requirements of a traditional IFB system...”

IFB is essentially a one-way transport system for bringing audio from a production's intercom system to the talent. It's what feeds the little curlicue earpieces you see on-air hosts wearing. Typically, the default audio is the program feed, but its real function is to allow key production personnel to cut off that feed and speak directly to the talent.

Traditionally, IFB systems have been bandwidth-limited to focus on speech, with both the wireless transmission and the earpiece being notorious for having high RF reliability (usually through high transmitter power) but relatively poor fidelity (voice-band audio with high noise floor). As it turns out, the design of the PSM 1000 meets (and exceeds) all the requirements of a traditional IFB system, but with fantastic fidelity.

As a result, broadcasting has become a new and vibrant vertical market for in-ear monitors. Here are some of the key design features that make the PSM 1000 the ultimate IFB system.

#### DIVERSITY RECEPTION UTILIZING TRUE ¼-WAVE ANTENNAS

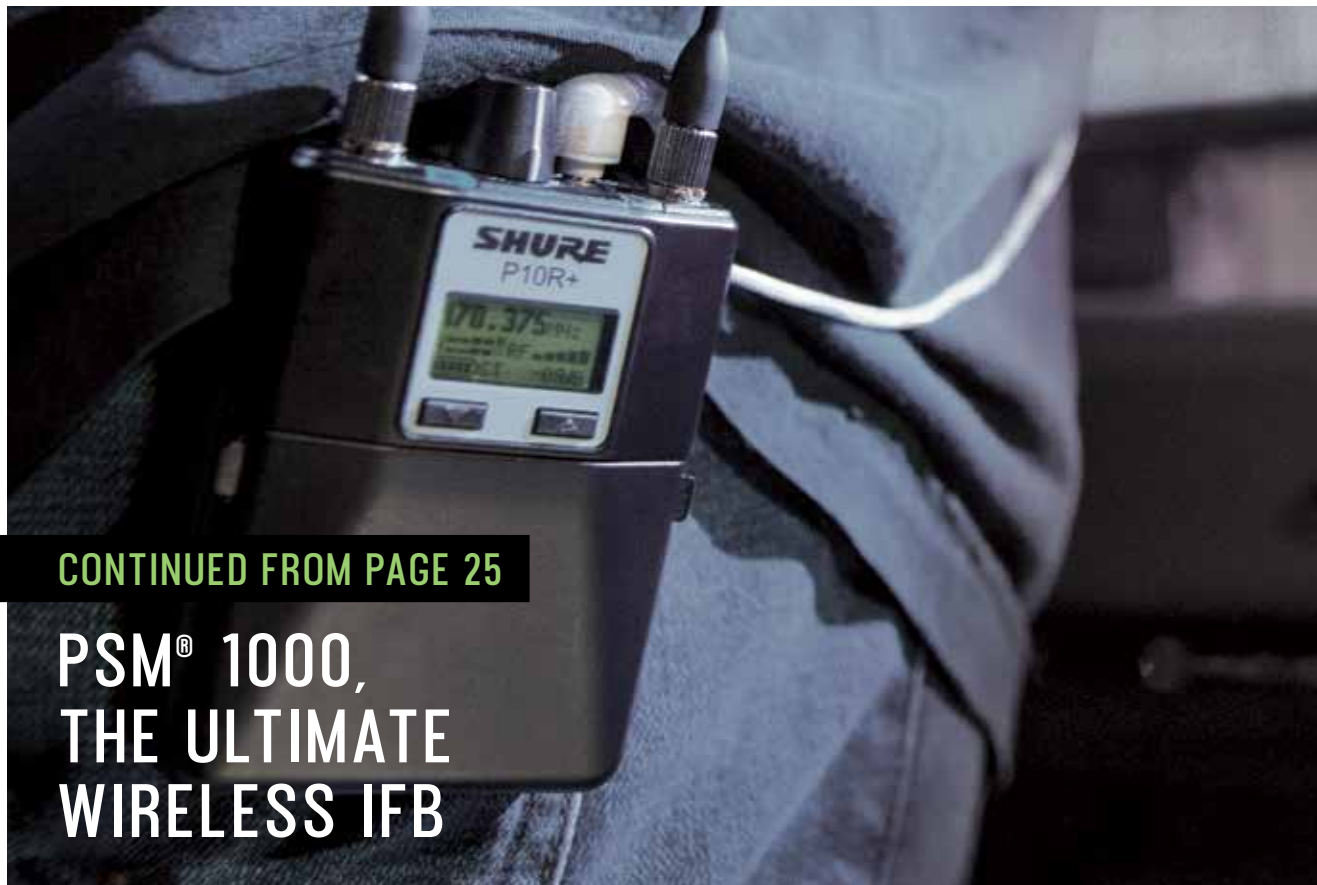
Other IEM systems (and traditional IFBs) use a single ¼-wave antenna or a combination of a ¼-wave antenna and the earphone cable as the secondary (diversity) antenna, but Shure engineers know better. An earphone cable never performs better than a true ¼-wave antenna. In predictive switching diversity scenarios, if the system switches to the earphone cable as the secondary antenna there is a high likelihood that side is receiving a highly degraded signal as compared to a true ¼-wave. This results in poor performance in high RF environments.

With its twin quarter-wave antennas, the P10R receiver still functions reliably even in high-noise environments. This explains why so many systems are being sold into RF-intensive markets like New York City.

CONTINUED ON PAGE 26







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## PSM® 1000, THE ULTIMATE WIRELESS IFB

### SPECTRAL EFFICIENCY

PSM 1000 can fit 16 channels of stereo IEMs into a single TV channel (8 MHz) of bandwidth. Then it doubles down: With exceptional stereo separation/isolation, it's possible to run two independent IFB feeds on a single PSM 1000 carrier, simply by feeding Left and Right inputs with IFB1 and IFB2 (respectively). Utilizing MixMode® on the receiver and panning hard L or R gives you isolated feeds. The result is that you halve the number of frequencies required, or you can cram twice as many IFBs in the same amount of spectrum that traditional IFB system use.

### PROBLEM-SOLVING CIRCUITRY DESIGN

PSM 1000 receiver packs (P10R) feature RF AGC and Noise-Sensitive Squelch, both of which seamlessly prevent common wireless problems, and are compatible with "wet line" inputs from daisy-chained systems. The Automatic Gain Control for RF reduces signal fluctuations and prevents RF overload when getting too close to the transmitter antennas, while the squelch automatically detects and mutes RF noise before it becomes audible. Eliminating noise bursts in their ears makes talent very happy.



### HIGH FIDELITY

Musicians require in-ear monitors with fantastic fidelity and negligible latency. This turns out to also be highly desirable in an IFB system. Studio technicians and talent may not require full-bandwidth response and low noise floor, but they sure do appreciate having it! More and more I am hearing from A1's that talent wants to hear music during breaks. Giving broadcast talent the same quality that is afforded a world class musician on tour is something that is appreciated by both the talent and the mixers.

For the talent that need high isolation and high fidelity, Shure's new EAC-IFB cable provides the perfect path for combining Shure's award-winning SE Series earphone line with PSM 1000 in IFB applications.

**"...by engineering the PSM 1000 to ensure flawless operation as a touring IEM, Shure has designed the perfect IFB system."**

Let's face it, the curlicue acoustic tube driven by a remote transducer is less than desirable audio quality. Shure's products provide hi-fidelity sound with reliability that is unsurpassed in our industry.

### WIRELESS WORKBENCH® (WWB)

Another huge advantage of the PSM 1000 is that it is part of the Shure ecosystem, the centerpiece of which is our free Wireless Workbench software. WWB handles sophisticated frequency coordination and monitoring, plus set-up, calibration, and diagnostics – and not just for PSM 1000, but for the full range of wireless microphones as well.

Basically, by engineering the PSM 1000 to ensure flawless operation as a touring IEM, Shure has designed the perfect wireless IFB system. This extra layer of utility has resulted in significant sales – expanding the PSM 1000 into the broadcast market, and extending across the Shure ecosystem to include a host of network-friendly wireless products, including the original Axient®, the new Axient Digital, and ULX-D microphone systems.

I think it's fair to say that the PSM 1000 really is that "better mousetrap," and it's exciting to see broadcasters beating a path to our door. ■





The SHURE logo is displayed in a bold, italicized, green font. The letters are slanted to the right, and the word is contained within a black, rounded rectangular background that also has a slight rightward slant.

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