Ey Electro-Voice



Microphones



Born and bred in the American heartland, Electro-Voice lays claim to over 80 years of unmatched innovation in microphone design and manufacturing. Back in 1927, company founders Al Kahn and Lou Burroughs started out as true pioneers, establishing the industry standard for audio engineering excellence and reliability while continuously upping the ante with breakthrough technologies like the Humbucking coil for noise cancellation, Variable-D[™] and VOB[™].

Eight decades on, Electro-Voice microphones continue to deliver the sound of history's most significant events. We've helped the world hear everything from the very first radio broadcasts to John Glenn's first orbit of the Earth; from Elvis and the Beatles to the largest world tours with today's biggest artists; from Knut Rockne using his "Electric Voice" at Notre Dame to the state-of-the-art wireless microphone systems at this year's Superbowl; from Presidential inaugurations to tonight's evening news; from Dr. Martin Luther King's "I Have A Dream" speech to the Next Big Thing rehearsing in the garage next door...

Electro-Voice stays true to its roots as a great American brand while advancing to new heights in the 21 st century. We were the first to offer N/DYM[™] neodymium technology in microphones and created ClearScan[™] for quick, automatic wireless microphone channel coordination. And that's just the beginning—our engineers are constantly working on new ways to keep your tone intact.

From soundcheck to encore, Electro-Voice microphones offer great sound, durability, ergonomics and style, whether you're outfitting a world tour, a house of worship, a professional studio or a neighborhood block party. We believe the equipment you use should withstand both the rigors of performance and the scrutiny of your listeners. At Electro-Voice, innovating new products to make you sound your best is job number one—our name says it all.

Table of Contents:	
Artist Relationships	2
Wired Microphones	4
Live Performance Microphones	
PL Series	6
NDYM Series	8
RE Live	10
Cardinal / Raven	11
Broadcast Microphones	
RE Broadcast	12
Field Production	13
Installation Microphones	
Polar Choice	14
RE Installation	16
General Purpose	18
Wired Accessories	19
Wired Guidelines	20
Microphone Selection Chart	22
Wireless Microphones	24
RE-2	26
RE-2 PRO	28
REV	30
Wireless Antenna Accessories	32
Wireless Microphones	34
Wireless Cables, Clips & others	36
Wireless Guidelines	38

Artist Relationships

Dropkick Murphys

We're proud to be the brand of choice of professional artists and engineers from around the world, from all corners of the music and pro audio industry. From local broadcast studios, rehearsal spaces and nightclubs to the largest concert tours, our microphones and wireless systems are trusted tools that help forge careers.

Our ongoing relationships include:

ARTISTS	5
---------	---

Al Green Albert Lee Alexx Calise Alison Hinds Angelo Kelly (Kelly Family) Annie Minogue Band Avishai Cohen Big Bang Theory Black Label Society Blackbird McKnight (Parliament) Blackhawk Blasko (Ozzy Osbourne) Bobby Bare Jr. Bootsy Collins Carina Cesaria Evora Charlie Lustman CLÃ (Portugal) Clem Burke (Blondie) Courtney Pine Crash Anthem dada Damon Johnson Danny B. Harvey Dave Wolfe David Fonseca David Frizzell David Pack Davie Kimm Deke Dickerson Delaney Jackson Derick Sebastian DevilDriver Devo Dick Dale Dino Cezares DJ Ashba (Guns 'N' Roses)

Echo and the Bunnymen Ed "Mr. Improv" Hull Elliott and the Untouchables Eric Gales Eric Tavares Fishbone Garrett Mason Geezer Butler (Black Sabbath) George Clinton (Parliament) Gregg Rolie Band **Gregory Brock** GWAR Hatebreed Heaven Davis Helen Cornelius Henry Murphy and the Seahawks Herman Li (Dragonforce) Honeydogs Hoven Droven Jack Frost James LoMenzo (Megadeth) Jerry Montano Jim Vilandre Jimmy Clark Jimmy Keegan (Spock's Beard) Joe Bonamassa Joe Fraulob John Berry Johnny Hawthorn Band Johnny Kelly (Type-O-Negative) Johnny Young Joshua Craig Podolsky K&Neo Karl Denson's Tiny Universe Karnes McCarrick Keegan McClellan

Keith Capsuto Keith Frank Kenny Olson (Kid Rock) Kenny Wayne Shepherd Keri Noble Kerry King (Slaver) Kreg Viesselman Larry Russell Lee Scratch Perry Leroy Van Dyke Let's Get It Levon Helm LMT Connection Lonesome Spurs Los Lobos Maki Ohguro Maktub Malford Milligan Marcello Mello Marcia Ball Marcus Miller Mark Chestnutt Marthia Sides Maze Meusel Megadeth Meldrum Michael H. Sweet (Boston) Michel Montano Mitch Gordon Moe Bandy Mogwai Neal McCov Nick Catanese Niki Barr No Other Name Patrice Pike Pete Anderson Phil Bloch

Dr. Dog



Presidents of the United States of America Purple Reign Real Groove Band Reamonn **Reverse** Cowgirl Richard Buckner Rick Ward Rob Powers (Broadcaster) Rockie Lynne Rogue Wave Ronnie McDowell Rupee Saint Lu Sambomaster Saxon Secret Agent Bill Shinya Skerik Snoop Dog Southern Culture on the Skids Sparklehorse Staind Static-X Steve Brown Steve Vai T.M. Stevens Takako Afuso Takida TAT Terri Nunn Terri Walker Terry Evans The Baseballs The Buzzcocks The Honeydogs

The Joe Taylor Group The Lads

The Legendary Shack Shakers The Monks The Roots Theresa Andersson Three Days Grace ThundHERstruck Tim Burlingame/Kathrin Shorr Tim Lepard Tommy Victor (Prong) Tony Campos Travis Larson Band Twisted Sister Versa Emerge Vibro Champs Wolf Simon XNO Yellow Hands Yngwie Malmsteen Zakk Wylde

ENGINEERS

Al Davis Bill Racine Bradley Johnson Brian Garcia Brian Herb Bruce Reiter Craig Schumacher Dan Lance Dave Fridmann Deanne Franklin Doug Short Duane Dungey Jeremy Smith Jim Baker Johnny K Mark Robertson Mark Vanderwall Rafael Alkins Rocky Holman Sean Peel Steve "Sonny" B. Taylor





Wired Microphones

Live Performance Microphones

Electro-Voice is a proven leader in the design and manufacture of live sound microphones. Preferred by performers the world over since the company was founded in 1927, Electro-Voice microphones have long been the choice of the music industry's greatest artists. Why have so many top-name performers chosen Electro-Voice microphones over the years?

Trusted by both the artists and their skilled engineers and technicians, our legendary capsule designs are engineered to deliver the highest quality tone and clarity in any performance situation.

Rugged design and construction ensures that the capsule (the heart of a microphone's performance) remains unaffected by treatment that would destroy other brands' microphones.

Reliable and predictable polar pattern performance allows superior control in the mains and monitors.

Performances as sonically spectacular for the artist as they are for the audience – the Electro-Voice sound is synonymous with the highest quality and musicality.

Broadcast Microphones

Benchmarked by the legendary RE20 and RE27N/D Variable-D® vocal microphones, Electro-Voice broadcast studio and field production microphones confidently uphold their reputations as Industry Standards. These number-one choices for radio and television voiceover and interview work define the sound and reliability broadcast professionals around the world have come to demand.

Unquestionable reliability and spot-on sonic performance are prime requirements in broadcast field production work. Electro-Voice field production mics have been the go-to industry workhorses for decades. You've seen Electro-Voice live interview microphones in the hands of reporters and news correspondents around the world – from interviews with the President of the United States to the family next door – EV's RE50 and 635A mics are famous in broadcast, television, and radio inthe-field broadcasts. These microphones set world standards for ENG (electronic news gathering) and EFP (electronic field production). They are extremely rugged and withstand high humidity, temperature extremes and corrosive effects such as salt-air – all while providing excellent sound performance and that legendary "Buchanan Hammer" durability.

Installed Sound Microphones

Electro-Voice remains on the cutting edge of installed sound technology through innovative adaptation of our legendary RE and PolarChoice condenser capsules. These premium-grade elements are worldrenowned for their superb sonic performance.

Electro-Voice's breakthrough PolarChoice technology sets new standards in Installed Sound convenience, reliability and performance. Shortening the long list of products, polar pattern selections and margin for error, each PolarChoice model incorporates four switchable polar patterns strategically designed for these specific applications. Selection and deployment is as easy as choosing the best physical design for the installation, and setting the polar pattern switch for the best coverage performance. Should installation conditions change, the polar pattern can always be changed to meet the new requirements.



The PL Series is a comprehensive family of vocal and instrument microphones for the professional live sound and studio community. Featuring seven vocal models and three instrument models, the PL Series' exceptional durability, sonic performance and contemporary styling meet the needs of today's sound system professional.

Entry-level Dynamic Vocal Microphone

The PL24 is a professional-grade supercardioid dynamic vocal microphone designed for live sound applications. With its balanced frequency response, the PL24's sonic performance is robust and articulate, delivering all-around vocal clarity in any live sound situation.

Also available: PL24S with on/off switch.

- Balanced blend of controlled lows, palatable mid-range, and smooth high frequency content
- Powerful neodymium magnet structure
- Tight-mesh Memraflex[™] grille
- Supercardioid polar pattern
- Dynamic element

PL44



The PL44 is a professional-grade supercardioid dynamic microphone designed for plug-and-play placement of vocals in any mix. Its high-mid frequency content design precisely lifts vocals in the mix to where they need to be, resulting in fast and effective vocal placement.

Mid-level Dynamic Vocal Microphone

- Voice-contoured for transparency and high-mid lift
- Powerful neodymium magnet structure
- Tight-mesh Memraflex[™] grille
- Supercardioid polar pattern
- Dynamic element

PL80a

PL84

Premium Dynamic Vocal Microphone

The PL80a is a premium-grade supercardioid dynamic microphone designed to elegantly capture the character of vocals in live sound applications. Its EQ-friendly sonic contour adapts well to any vocal texture, allowing vocals to sit nicely in the mix without sounding harsh.

Robust, forgiving and EQ-friendly performance

Superior off-axis rejection

Incredible vocal power and clarity

- Ultra-low handling noise
- Exceptionally cooperative tonal characteristics

Also available: PL80c with the classic beige PL finish.

Premium Condenser Vocal Microphone

The PL84 is a professional-grade cardioid condenser vocal microphone designed to enhance a professional vocalist's creative expression. With its warm lows, musical mid-range and smooth high-frequency response, the PL84 captures all of the intimate detail expressive vocalists require.

Also available: PL84S with on/off switch.

- Carefully voiced for intimate detail and presence
- Condenser element for fast transient response
- Tight-mesh Memraflex[™] grille
- Cardioid polar pattern

PL Series

Dynamic Kick Drum & Instrument Microphone

- Voiced specifically for kick drums and low-frequency instruments
- Powerful neodymium magnet structure
- Tight-mesh Memraflex[™] grille
- Supercardioid polar pattern
- Dynamic element

The PL35 is a supercardioid dynamic microphone designed to deliver the power, punctuation and snap of kick drums in sound reinforcement systems or recording studios of any size. Its frequency response is strategically crafted to deliver great kick drum sound with little, if any, additional EQ'ing.



Dynamic Tom, Snare & Instrument Microphone

- Voiced specifically for snare drums and tom-toms
- Powerful neodymium magnet structure
 - Complete with DRC-1 drum rim clamp
- Supercardioid polar pattern
- Excellent isolation from surrounding drums

The PL35 is a professional-grade supercardioid dynamic microphone designed to deliver the power, punctuation and natural tones of tom and snare drums in sound reinforcement systems or recording studios of any size. Delivery includes the unique DRC-1 drum rim clamp.



PL35

Condenser Overhead & Instrument Microphone

- Small diaphragm condenser
 Voiced for overhead drums, hi-hats and acoustic stringed instruments
- Tight-mesh Memraflex[™] grille
- Tight cardioid polar pattern

The PL37 is a tight-cardioid condenser microphone designed to deliver all the crisp detail of cymbals, high-hats and percussion instruments on stage or in the studio. The PL37 delivers all the dialed-in tone and percussive transient response detail that professional drummers and sound system engineers require.

PL DK models and contents:

- PL DK4 (for a 4-piece drum kit): Three PL35's and one PL33
- PL DK4 Plus (for a four-piece drum kit): Three PL35's, one PL33 and one PL37
- PL DK5 (for a five-piece drum kit): Four PL35's and one PL33
- PL DK7 (for a five-piece drum kit): Four PL35's, one PL33 and two PL37's

PL Series drum mics are also available in pre-pack assortments of our most requested drum set configurations. The DK's come ready for the gig in a heavy-duty firm shell gig bag (with shoulder strap), which can hold up to six PL35's, three PL37's and one PL33 should you wish to expand your PL Series drum mic tool kit.

Pre-pack Drum Kits



PL Drum Kits

Specification

		1	2	2		2	
	PL24 & PL24S	PL44	PL80a & PL80c	PL84 & PL84S	PL33	PL35	PL37
Element	Dynamic	Dynamic	Dynamic	Condenser (self-biased)	Dynamic	Dynamic	Condenser (self-biased)
Polar Pattern	Supercardioid	Supercardioid	Supercardioid	Cardioid	Supercardioid	Supercardioid	Cardioid
Frequency Response	80 - 16,000 Hz	80 - 18,000 Hz	80 - 16,000 Hz	50 - 20,000 Hz	20 - 10,000 Hz	50 - 16,000 Hz	50 - 16,000 Hz
Impedance	600 Ω	600 Ω	600 Ω	200 Ω	150 Ω	600 Ω	200 Ω
Open Circuit Voltage	2.2 mV/Pascal	2.2 mV/Pascal	2.2 mV/Pascal	3.5 mV/Pascal	0.63 mV/Pascal	2.2 mV/Pascal	6 mV/Pascal
Power Requirements	Passive	Passive	Passive	11 to 52 VDC	Passive	Passive	11 to 52 VDC
Connector Type	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR
Міс Туре	Handheld	Handheld	Handheld	Handheld	Instrument	Instrument	Instrument
Case Material	Die-Cast Zinc	Die-Cast Zinc	Die-Cast Zinc	Die-Cast Zinc	Die-Cast Zinc	Die-Cast Zinc	Die-Cast Zinc
Finish	Textured Satin Black	Textured Satin Black	Textured Satin Black	Textured Satin Black	Textured Satin Black	Textured Satin Black	Textured Satin Black

Live

7

N/DYM Series



Excellent, clear sound; comfortable, safe handling; powerful neodymium magnetic structures and EV's unique VOB™ technology ... all set the N/DYM Series microphones apart from other microphones on the market. Designed to deliver exceptional power and clarity in live performance applications, N/DYM microphones outperform any other microphone in their class.

N/D267a

Versatile Dynamic Vocal Microphone

The N/D267a incorporates EV's unique VOB™ (Vocally-Optimized Bass[™]) technology to provide the performer with reduced resonant distortion at low frequencies. Critical damping of the low frequency resonant peak has resulted in a microphone with increased finesse and vocal clarity; ensuring a clean, clear, consistent sound that "punches through the mix."

Available with on/off switch (N/D267as)

High-performance Dynamic Vocal Microphone

- Classic N/DYM sound. The N/D367s has proven very popular with female vocalists across a variety of musical genres, thanks to its smooth, controlled frequency response and exceptional N/DYM sensitivity. The N/D367 also provides great sound for podium use.

VOB[™] technology

•

•

Cardioid polar pattern

and low handling noise

Tight-mesh Memraflex[™] grille

- Cardioid polar pattern
- Dynamic, high-sensitivity neodymium element

Dynamic, high-sensitivity neodymium element

Warm Grip[™] handle for more comfortable feel

- Classic N/DYM sound
- Tight-mesh Memraflex[™] grille
- Smooth, controlled frequency response
- Superior multistage shock mount for unmatched low handling noise
- On/off switch

N/D767a

N/D367s



Premium Dynamic Vocal Microphone The N/D767a is the singer and engineer's first choice for outstanding vocal clarity in live performance applications. With low handling noise, VOB™ technology, and excellent clarity through all frequencies, the N/D767a is the top choice dynamic mic in its class.

- Top-class vocal microphone
- Multi-stage shock mount
- Dynamic, high-sensitivity neodymium element
- . Tight-mesh Memraflex[™] grille
- Condenser-like performance
- VOB[™] technology
- Supercardioid polar pattern

N/D967

- Premium High SPL Dynamic Vocal Microphone
- The N/D967 is the highest gain-before-feedback performance vocal microphone on the market, making it

a perfect choice for louder stage environments. Comes with a superior multistage shock mount for unmatched low handling noise.

- Highest gain-before-feedback microphone
- Optimized response for live performance
- . Vocal personality switch shapes sound
- Dynamic, high-sensitivity neodymium element
- Tight-mesh Memraflex[™] grille
 - Unique removable front grille assembly and pop filter for easy, hygienic cleaning

N/DYM Series Instrument Group

Pulling double-duty on stage or in the studio, N/DYM Series instrument mics deliver outstanding performance in virtually any application. Highly acclaimed for their superior transient response and powerful tonal detail, these mics are the right choice when settling for good enough isn't an option.

Dynamic Supercardioid Instrument Microphone

- Designed specifically for instruments
- Supercardioid pattern
- Dynamic, high-sensitivity neodymium element
- Unique pivoting head ensures perfect placement for use on drums, horns, acoustic and electric guitar
- Accurate response, even in high sound pressure levels (SPL)
- Rugged steel construction

Designed specifically for horns, drums, acoustical and electric guitars, the N/D468's large-diameter voice coil (up to 50% larger than other mics) provides a powerful, articulate yet natural sound. Its unique pivoting-head design ensures perfect mic placement, while the supercardioid pattern provides superior off-axis rejection and acoustic isolation in any application.



- Outstanding choice for electric guitar/bass guitar amplifier, toms, snare, cymbals, hi-hat, brass and acoustic guitar
- Dynamic, high-sensitivity neodymium element
- Cardioid pattern for superior feedback rejection and acoustic isolation
- VOB™ technology provides tailored bass response for controlled "proximity effect"

More durable and natural sounding than the other "industry standard" instrument mic, the N/D478 is ideal for miking drums, percussion or guitar amplifiers. Its integrated VOB[™] technology reduces resonant distortion at low frequencies. The N/D478 also does a great job as a vocal microphone.

Dynamic Cardioid Kick Drum Microphone

- Designed specifically for kick drum
- A go-to mic for live or studio environments
 Optimized sensitivity for the high sound pressure levels found in bass drum miking
- Excellent on bass guitar, floor toms and electric guitar cabinets
- Extended low-frequency response
- Frequency response tailored for instant kick drum sound

The N/D868 is truly a top performer in any application, thanks to its ability to handle incredibly high sound pressure levels without distortion. With a frequency response specifically designed as the perfect kick drum sound, the N/ D868 has been applauded by drummers and engineers the world over.

Specification

	N/D267a	N/D367s	N/D767a	N/D967	N/D468	N/D478	N/D868
Element	Dynamic						
Polar Pattern	Cardioid	Supercardioid	Supercardioid	Supercardioid	Supercardioid	Cardioid	Cardioid
Frequency Response	45 - 15,000 Hz	25 - 20,000 Hz	35 - 22,000 Hz	50 - 13,000 Hz	20 - 22,000 Hz	45 - 15,000 Hz	20 - 10,000 Hz
Impedance	300 Ω	300 Ω	300 Ω	150 Ω	150 Ω	300 Ω	150 Ω
Open Circuit Voltage	2.9 mV/Pascal	3 mV/Pascal	3.1 mV/Pascal	4 mV/Pascal	3.1 mV/Pascal	2.9 mV/Pascal	1 mV/Pascal
Power Requirements	Passive						
Connector Type	Three-Pin XLR						
Міс Туре	Handheld	Handheld	Handheld	Handheld	Instrument	Instrument	Instrument
Case Material	Metal						
Finish	Non-Reflective Black						





Wired

Live







Live

With sonic quality and versatility proven at the highest levels, the performance group from EV's RE Series have become trusted industry standards for both stage and studio use. Although these premium grade handheld and stand mount condensers turn a good-sounding stage into a GREAT one, they will also deliver the professional depth, personality and sheen your recordings require.

RE200

True Condenser Cardioid Microphone

The RE200 is a cardioid condenser instrument microphone

strings, percussion, acoustic guitar and brass instruments in

designed for the exacting acoustic reproduction of choirs,

live performance and studio recordings.



Premium Condenser Cardioid Vo	0
Engineered for professional club and concert sound or	
studio recording applications, the cardioid condenser RE410	

studio recording applications, the cardioid condenser RE410 provides crisp, clear top-end and sweet mid-range, pulling the voice front-and-center in any mixing situation. The RE410 delivers the critical details other mics leave behind.

- True condenser design
- Continuous presence rise enhances sound quality
- Transformerless output
- Cardioid pattern
- Small, unobtrusive profile

Discription Premium-grade handheld condenser

- Cardioid pattern for excellent feedback rejection and acoustic isolation
- Ideal for both vocals and spoken word use
 High-compliance shock mount effectively eliminates handling noise
- Tight-mesh Memraflex™ grille
- Multistage pop filter

RE510

RE410

Premium Condenser Supercardioid Vocal Microphone w/HPF

The RE510's 5/8" diameter, self-biased, condenser capsule offers the warmth of a larger capsule design without sacrificing off-axis performance or transient response. Its supercardioid polar pattern enhances acoustic isolation and off-axis rejection. Low-frequency roll-off switch tailors lowfrequency response to meet application requirements.

- Premium-grade handheld condenser Supercardioid pattern for excellent feedback
- rejection and acoustic isolation Wide dynamic range
- High-compliance shock mount effectively eliminates handling noise
- Tight-mesh Memraflex™ grille
- Multistage pop filter

RE920



A cardioid condenser mic designed for use with musical instruments via its specially designed instrument-mount clip assembly. The RE920 is a premium-grade condenser solution when clipped to drum rims, brass, woodwinds and stringed instruments. Although terminated in a TA4F connector for use with EV and Telex bodypack transmitters, it can be made hard-wired with the additional TXA XLR preamp.

Premium Condenser Instrument Microphone

- Unidirectional horn/drum mic
- Back electret condenser element
- Cardioid polar pattern
- TA4F connector for wireless bodypacks
- A wired solution when coupled with a TXA
- High SPL handling
- Custom clip for securely mounting on a variety of instruments

Cardinal / Raven

Cardinal

Raven



Cardinal/Raven

The Cardinal and Raven microphones combine gorgeous, streamlined modern design with the latest audio engineering technology to offer sonic detail and clarity unparalleled in the industry. While both mics excel at capturing vocals and instruments in studio and on stage, they have been designed to be two birds of a different feather. The Cardinal is a Class-A cardioid condenser with smooth and detailed performance, while the Raven is a stylish dynamic that holds up even under the toughest conditions.

Condenser Vocal & Instrument Microphone

- Pressure gradient condenser
- Very musical cardioid polar pattern
- Class-A discrete ultra-low noise circuitry
- Unique double swivel-mounted design for ideal positioning
- Innovative visual design with cherry finish
- Great for voice or instruments
- Outstanding performance on tom-toms and overhead drums

The Cardinal is a cardioid condenser microphone designed to capture vocal and instrumental details in live sound or studio applications. Employing Class-A discrete amplifier circuitry, the Cardinal's smooth and detailed performance is sure to please even the most discerning artists and engineers. Although initially designed for vocals, the Cardinal has become a go-to favorite for miking tom-toms and overhead drums because of its unique tonal and transient response characteristics.

Dynamic Vocal & Instrument Microphone

- Dynamic microphone with studio detail and clarity
- Cardioid pattern with excellent off-axis rejection
 Unique double swivel-mounted design for ideal
- positioning
- Great for voice or instrument
- Chosen as the preferred electric guitar cabinet mic by hundreds of live and studio engineers.
- Stylish retro design

The Raven is a stylish dynamic microphone designed to capture the character of live and studio vocals. It is also the perfect microphone for live and studio instruments, and has been chosen as the preferred electric guitar cabinet microphone by hundreds of live and studio engineers. The Raven incorporates collaborative designs from top industry microphone engineers to provide unparalleled performance in a stunning package.

Specification

	RE200	RE410	RE510	RE920	Cardinal	Raven
Element	True Condenser	Condenser (self-biased)	Condenser (self-biased)	Condenser (back electret)	Condenser (self-biased)	Dynamic
Polar Pattern	Cardioid	Cardioid	Supercardioid	Cardioid	Cardioid	Cardioid
Frequency Response	50 - 18,000 Hz	50 - 20,000 Hz	50 - 20,000 Hz	80 - 18,000 Hz	35 - 20,000 Hz	45 - 16,000 Hz
Impedance	200 Ω	250 Ω	150 Ω	1000 Ω	50 Ω	335 Ω
Open Circuit Voltage	10 mV/Pascal	3.2 mV/Pascal	2.5 mV/Pascal	1.3 mV/Pascal	10.6 mV/Pascal	2.51 mV/Pascal
Power Requirements	12 - 52 VDC Phantom	24 - 48 VDC Phantom	12 - 52 VDC Phantom	5 VDC (via optional bodypack)	24 - 48 VDC Phantom	Passive
Connector Type	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	TA4F	Three-Pin XLR	Three-Pin XLR
Міс Туре	Instrument	Handheld	Handheld	Instrument	Vocal / Instrument	Vocal / Instrument
Case Material	Metal	Metal	Metal	Metal	Metal/wood	Metal
Finish	Semi-Gloss Camera Black	Non-Reflective Black	Non-Reflective Black	Non-Reflective Black	Cherry Wood	Non-Reflective Black

RE Broadcast



Benchmarked by the legendary RE20 and RE27N/D Variable-D® vocal microphones, Electro-Voice broadcast studio and field production microphones confidently uphold their reputations as Industry Standards. These number-one choices for radio and television voice-over and interview work define the sound and reliability broadcast professionals around the world have come to demand.

RE20 Broadcast Announcers Microphone w/ Variable-D
--

The RE20 Variable-D® dynamic cardioid microphone is truly an industry standard, a firm favorite among broadcasters and sound engineers worldwide. Its popularity also extends into music production as a premium grade instrument microphone. Its Variable-D® design and heavy-duty internal P-pop filter reduce proximity effect, while an internal element shock-mount reduces vibration-induced noise.	 Variable-D® for minimal proximity effect True cardioid with no coloration at 180-degrees off-axis Voice tailored frequency response Studio condenser-like performance Large diaphragm Humbucking coil Bass roll-off switch
---	--

RE27N/D

The RE27N/D is a high-performance, neodymium-equipped industry-standard broadcast microphone. Superb resolution and depth for vocals and instruments have also made the versatile RE27N/D a favorite of recording studios and live sound engineers around the world.

- Broadcast Announcers Microphone w/ Variable-D & N/DYM Cap • Variable-D® for minimal proximity effect . Neodymium element design brings 6 dB more sensitivity
 - . Ultra-flat frequency response
 - Studio condenser-like performance
 - Three selectable filters: -6 dB from 250-100 Hz, . -12 dB from 1000-100 Hz and -3 dB high frequency roll-off . Integral wind and blast filters

Specification

	RE20	RE27N/D	RE16	RE50-B	RE50 N/D-B	635A	635N/D-B
Element	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
Polar Pattern	Cardioid	Cardioid	Supercardioid	Omni	Omni	Omni	Omni
Frequency Response	45 - 18,000 Hz	45 - 20,000 Hz	80 - 15,000 Hz	80 - 13,000 Hz	80 - 13,000 Hz	80 - 13,000 Hz	80 - 13,000 Hz
Impedance	150 Ω	150 Ω	150 Ω	150 Ω	150 Ω	150 Ω	150 Ω
Open Circuit Voltage	1.5 mV/Pascal	3.1 mV/Pascal	1.4 mV/Pascal	2.0 mv/Pascal	2.0 mV/Pascal	1.4 mV/Pascal	2.8 mV/Pascal
Power Requirements	Passive	Passive	Passive	Passive	Passive	Passive	Passive
Connector Type	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR	Three-Pin XLR
Міс Туре	Vocal / Instrument	Vocal / Instrument	Handheld	Handheld	Handheld	Handheld	Handheld
Case Material	Steel	Steel	Steel	Aluminum	Aluminum	Steel	Steel
Finish	Fawn Beige	Satin Nickel	Fawn Beige	Semi-Gloss Camera black	Semi-Gloss Camera Black	Fawn Beige	Non-Reflective Black

Field Production Group

EV's legendary RE50B and model 635 microphones are classics in broadcast television and radio. These microphones set world standards, especially for ENG (Electronic News Production) and EFP (Electronic Field Production). They are extremely rugged and can withstand high humidity, temperature extremes and corrosive effects such as salt-air, yet still provide the excellent sound performance broadcast professionals demand.

Dynamic Supercardioid Handheld w/ Variable-D

- Variable-D[®] dynamic microphone,
- Supercardioid polar pattern
- Great for podium or handheld use
- Unique blast filter makes close-up use possible without popping
- Uniform response independent of angle
- Humbucking coil reduces electromagnetic hum pickup

A Variable-D[®] dynamic supercardioid microphone designed for the most exacting professional use, employing an integral blast filter to permit handheld and outdoor use without "P-popping" or excessive wind noise. EV's Variable-D[®] design allows its directional characteristic to be independent of frequency.

Handheld Interview Microphone

- Omnidirectional polar pattern
- Dynamic element
- Extremely low handling noise via Dyna-Damp™ "mic in-a-mic" shock mount system
- Impervious to wind noise and p-pops via its fourstage pop filter
- Withstands high humidity, temperature extremes, and corrosive salt air

The RE50B is the industry standard in broadcast television production handheld interview mics, seen and heard in the hands of reporters and news correspondents around the world – from interviews with the President of the United States to the family next door.

Handheld Interview Microphone w/ N/DYM Capsule

- Omnidirectional / Dynamic
- Higher output model with neodymium magnet structure
- Extremely low handling noise
- Impervious to wind noise and p-pops via its fourstage pop filter
- Withstands high humidity, temperature extremes, and corrosive salt air

The RE50N/D-B delivers all of the outstanding performance of the industry standard RE50B with the added benefit of its high-output neodymium capsule magnet. An industry standard in broadcast television production where the additional gain of the neodymium capsule is well-suited for particular camera or recording device inputs.

Classic Handheld Interview Microphone

- Omnidirectional polar pattern
- Dynamic element
- Incredibly robust and durable
- Linear frequency response
- Completely pop-free
- Four-stage pop and dust filter
- Internal effective shock absorber

The classic 635A live interview wired microphone is the most popular (ENG) electronic news gathering mic in the world. It delivers great sound and is known as "The Buchanan Hammer" for its rugged durability – a nod to EV's ancestral home in Michigan. Also available in black (model: 635A/B).

Classic Handheld Interview Microphone w N/DYM Capsule

- Omnidirectional / Dynamic
- Neodymium element design delivers higher output
- Acoustalloy® diaphragm material for very smooth response over a wide frequency range
- Integral windscreen and blast filter
- Black semi-gloss finish

The 635N/D-B has the same "hammer-like" toughness and classic performance and reputation as the 635A(B) with the added benefit of increased output from its neodymium magnet structure.



Wired

RE16

RE50B



Polar Choice

Install



EV's PolarChoice installation microphones feature user-selectable polar patterns in a variety of boundary, podium and desktop models. Users can select between omnidirectional, cardioid, supercardioid and hypercardioid (figure "8" on the PC Boundary), all in one mic! No matter the pattern selected, PC mics have a consistent voicing optimized for speech, equating to excellent clarity and speech intelligibility with outstanding feedback rejection.

PC Boundary Multi-pattern Boundary Layer Microphone



The PC Boundary is a very low-profile area microphone that can be used on any surface and with virtually any mic mixer. With one omni-directional and three directional polar patterns on board, it is ideal for virtually any installation where premium-grade area coverage is required.

- Selectable polar pattern to easily adapt to different acoustic environments.
- Switchable omni, cardioid, supercardioid or figure "8" polar patterns
- Easy-to-use mute switch. Can be programmed to operate as either latching on/off or momentary
- Consistent microphone voicing across all four patterns

PC Desktop	Multi-pattern Desktop Micropho	ne
	The PC Desktop is a free-standing, dual gooseneck section tabletop microphone firmly anchored by its elegant base. Selecting one of four polar patterns - omni, cardioid, super- cardioid or hyper-cardioid - via an easy-to-access switch simplifies choosing the right microphone for changing conditions. Available in 5", 12" and 18" gooseneck length versions.	 Switchable omni, cardioid, supercardioid or hypercardioid polar patterns Mute switch with LED can be programmed as either push on/off or push-to-mute Smooth and uniform frequency response, no matter what pattern is selected Extended low-frequency response and switchable high-pass filter Sturdy steel base
PC Plus	Multi-pattern Podium Microphone	2
	The PC Plus is the first dual gooseneck section podium microphone with the flexibility to be installed into any environment. Delivering four switchable PC polar patterns, it can be mounted via a standard three-pin XLR connector or permanently flush-mounted to a podium or tabletop. Available in 5", 12" and 18" gooseneck length versions.	 Switchable omni, cardioid, supercardioid or hypercardioid polar patterns Mute switch with LED can be programmed as either push on/off, or push-to-mute Smooth and uniform frequency response, no matter what pattern is selected Extended low frequency response and switchable high-pass filter Sturdy steel base
PC/XLR	Multi-pattern Gooseneck Microph	none w/ XLR
	PC/XLR models are dual gooseneck section podium microphones designed to be installed where mating to a three-pin XLR-F adaptation exists. Delivering four switchable PC polar patterns, it can be mounted into flush-mount, recessed, or standard three-pin XLR-F connectors on a podium or tabletop.	 Switchable omni, cardioid, supercardioid or hypercardioid polar patterns Smooth and uniform frequency response, no matter what pattern is selected The most natural-sounding podium mic on the market

Sturdy steel base

mount accessory

Mates well with the CPSM recessed shock

Polar Choice

Goose	neck Microphone w/ Flange Mount	PC/FL

 Switchable omni, cardioid, supercardioid or hypercardioid polar patterns

Multi-pattern

- Smooth and uniform frequency response, no matter what pattern is selected
- The most natural-sounding podium mic on the market
- Installs via an included flange mount kit with knurled brass threaded housing

PC/FL models are the flange-mount equivalent of the PC / XLR models described above. The four switchable PC polar patterns are accessed at the cable mounted XLR-M sized preamp module at the end of its 20' low-noise cable.

Available in 12" and 18" gooseneck length versions.

PolarChoice Wireless Conversions

When the contracted job includes a \$50,000 conference table with an installation rider stipulating "not to be marred or modified," or the sheer ease of secure storage and deployment lends itself to logical portability – a wireless solution is the ONLY option. The PolarChoice Satellite models deliver all of the features of their wired versions combined with the portability and ease-of-use of wireless adaptation. Coupled with an Electro-Voice or Telex brand wireless bodypack system, these Satellite models become a key component of a logical wireless solution.

Multi-pattern Boundary Layer Microphone PC Boundary Satellite

- Accepts Electro-Voice REV, RE2, RE2PRO and Telex FMR or SAFE1000 model bodypack transmitters
- Selectable polar pattern to easily adapt to different acoustic environments.
- Switchable omni, cardioid, supercardioid or figure "8" polar patterns
- Easy-to-use mute switch. Can be programmed to operate as either latching on/off or momentary

The PC Boundary Satellite is a low-profile area microphone that can be used on any surface with the additional convenience of adapting to any Electro-Voice or Telex brand wireless bodypack transmitter. Delivering the identical polar pattern, filter and mute switch functionality as its wired counterpart, it is ideal for virtually any installation where a wireless solution to premium grade area coverage is required.



- Accepts Electro-Voice REV, RE2, RE2PRO and Telex FMR or SAFE1000 model bodypack transmitters
- Switchable omni, cardioid, supercardioid or hypercardioid polar patterns
- Mute switch with LED can be programmed as either push on/off, or push-to-mute
- An extended low frequency response and switchable high-pass filter

The PC Desktop Satellite is a dual gooseneck section tabletop microphone and base, with the additional convenience of adapting to any Electro-Voice or Telex brand wireless bodypack transmitter. Delivering the identical polar pattern, filter and mute switch functionality as its wired counterpart, it is ideal for virtually any installation where a wireless solution to premium grade tabletop goosenecks is required.

Available in 5", 12" and 18" gooseneck length versions.

Specification

	PC Boundary	PC Desktop	PC Plus	PC/XLR	PC/FL	PC Boundary SAT	PC Desktop SAT
Element	Dual Condenser (back electret)	Dual Condenser (back electret)	Dual Condenser (back electret)	Dual Condenser (back electret)	Dual Condenser (back electret)	Dual Condenser (back electret)	Dual Condenser (back electret)
Polar Pattern	Omni Cardioid S-cardioid Figure 8	Omni Cardioid S-cardioid H-cardioid	Omni Cardioid S-cardioid H-cardioid	Omni Cardioid S-cardioid H-cardioid	Omni Cardioid S-cardioid H-cardioid	Omni Cardioid S-cardioid Figure 8	Omni Cardioid S-cardioid H-cardioid
Frequency Response	50 to 20,000 Hz	50 to 20,000 Hz	50 to 20,000 Hz	50 to 20,000 Hz	50 to 20,000 Hz	50 to 20,000 Hz	50 to 20,000 Hz
Impedance	200 Ω	200 Ω	200 Ω	200 Ω	200 Ω	1000 Ω	200 Ω
Open Circuit Voltage	31.5 mV/Pascal	5.6 mV/Pascal	5.6 mV/Pascal	5.6 mV/Pascal	5.6 mV/Pascal	17.8 mV/Pascal	5.6 mV/Pascal
Power Requirements	12 - 52 VDC	12 - 52 VDC	12 - 52 VDC	12 - 52 VDC	12 - 52 VDC	5 VDC (via optional bodypack)	5 VDC (via optional bodypack)
Connector Type	Three-pin XLR	Three-pin XLR	Three-pin XLR	Three-Pin XLR	Three-Pin XLR	TA4F	TA4F
Міс Туре	Boundary	Gooseneck	Gooseneck	Gooseneck	Gooseneck	Boundary	Gooseneck
Case Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Finish	Non-Reflective Camera Black	Non-Reflective Camera Black	Non-Reflective Camera Black	Non-Reflective Camera Black	Non-Reflective Camera Black	Non-Reflective Camera Black	Non-Reflective Camera Black

RE Installation



The RE Installed Sound Series microphones give the installed sound professional sonically superior solutions at a very affordable price. Featuring EV's premium performance condenser capsules, these microphones deliver all of the great sound and reliability professional sound contractors demand.

RE90B

Half-cardioid Pattern Boundary Layer Microphone



Boundary microphone with "half-cardioid" pick-up pattern and built-in equalization. Ideal for video and teleconferencing systems, boardrooms, classrooms or houses-of-worship. Delivers every word fully and naturally.

Also available in white (RE90BW).

Half-cardioid polar pattern Boundary layer .

.

- . Ultra-thin profile (16 mm) housing
- Rubber non-slip bottom pad and strong steel screen

Dual gooseneck section podium microphone

Strutted, yet flexible, ultra-thin gooseneck

Uniform frequency response and polar pattern

Integrated pop filter

RE90P

Cardioid Pattern Gooseneck Microphone

The RE90P dual gooseneck section podium microphone achieves sonically superior performance at a very affordable price. Featuring EV's premium performance RE90 capsules and in-line preamps, these goosenecks deliver all the great sound and reliability professional sound contractors demand.

Available in 12" and 18" versions.

RE90H

Cardioid Pattern Hanging Microphone



Compact hanging-style condenser microphone. Ideal for choral, instrumental, vocal groups and live theater. Controlled cardioid polar response for distant sound pickup without feedback. 25' braided and shielded cable with built-in preamp.

Hanging installation microphone

- Internal preamp
- Very uniform polar pattern
- Integrated 25' shielded low-noise cable .

Also available in white (RE90HW).

RE90

Cardioid Pattern Lavalier Microphone

applications.

Omnidirectional lavalier microphone with mic pre-amp and XLR termination. One of the world's most compact and lightweight high-performance microphones. Smooth frequency response for excellent sound quality. Perfect for television production, house of worship and business

- Ultra-miniature condenser element
- Internal preamp and XLR termination
- Omnidirectional polar pattern
- Perfect for television, business and house of worship applications
- Complete assortment of clips

RE92 Series

Meeting the sonic performance needs of today's installed sound professional requires precision tools. Electro-Voice engineers have risen to the challenge, developing the RE92 premium-grade condenser capsule to deliver the highest grade of acoustical performance. Choosing an RE92 Installation Series product insures superior sonic integrity and maximum durability.

Cardioid Pattern Hanging Microphone w/ HPF

- Hanging installation microphone
- Wide, smooth frequency response
- . Cardioid polar pattern
- . In-line electronics module
- 12 dB/octave switchable high pass filter Transformerless differential output to drive . long cables

Designed specifically for applications where the condenser microphone needs to be suspended from above the sound source. The RE92H is ideal for theater, house of worship or any application where a small, high-quality mic needs to be "heard but not seen."

Also available in white (RE92HW).



RE92L

Cardioid Pattern Lavalier Microphone The RE92L is a professional-quality miniature cardioid

- Wide, smooth frequency response
- Tight cardioid polar pattern
- Super-low noise condenser capsule

4' cable terminates at in-line preamp with 12 dB/ octave switchable HPF and XLR output

electret condenser lavalier microphone. Its excellent sound quality and small size make it the perfect choice for miking speech in house of worship, broadcast, presentation and theater applications. Terminated with three-pin XLR.

Specification

	RE90B	RE90P	RE90H	RE90L	RE92H	RE92L
Element	Condenser (back electret)	Condenser (back electret)	Condenser (back electret)	Condenser (back electret)	Condenser (back electret)	Condenser (back electret)
Polar Pattern	Cardioid	Cardioid	Cardioid	Omni	Cardioid	Cardioid
Frequency Response	80 to 15,000 Hz	70 to 15,000 Hz	75 to 15,000 Hz	50 to 18,000 Hz	40 to 20,000 Hz	40 to 20,000 Hz
Impedance	200 Ω	200 Ω	200 Ω	100 Ω	250 Ω	250 Ω
Open Circuit Voltage	25 mV/Pascal	4.5 mV/Pascal	27 mV/Pascal	12.6 mV/Pascal	5.6 mV/Pascal	5.6 mV/Pascal
Power Requirements	9 - 52 VDC	9 - 52 VDC	9 - 52 VDC	9 - 52 VDC	24 - 52 VDC	24 - 52 VDC
Connector Type	Three-pin XLR	Three-pin XLR	Three-pin XLR	Three-pin XLR	Three-pin XLR	Three-pin XLR
Міс Туре	Boundary	Gooseneck	Hanging	Lavalier	Hanging	Lavalier
Case Material	Die cast zinc	Steel	Steel	Metal	Metal	Metal
Finish	Non-Reflective Black or White	Non-Reflective Black	Non-Reflective Black or White	Non-Reflective Black	Non-Reflective Black or White	Non-Reflective Black



Dynamic Lavalier Microphone

This popular omnidirectional dynamic lavalier microphone has been an industry standard for many years. Its frequency response is tailored for balanced performance in the lavalier chest position. The turned aluminum case and nested mechanical parts assure rugged durability. Dynamic element.

.

.

- Omnidirectional polar pattern
- Rugged aluminum body
- Robust mechanical and electrical design

785 Group

Gooseneck Paging Microphone



A low-impedance gooseneck microphone for single zone paging. Designed for applications where ruggedness, dependability and durability are the main requirements. Microphone housing is constructed of die-cast zinc alloy to stand up to the toughest abuse and conditions. Features a recessed aluminum grille with a windscreen and durable satin-chrome finish.

- All units include a heavy duty, three-hole mounting flange and an extra-strength 16" flex arm of steel tubing. SR785LN/O includes a push button switch with
- normally "open" switching
 SR785L is the same as SR785LN/O except without normally "open" switching
- 785L is the same as SR785LN/O except without a switch

US690

Gooseneck Microphone



US690 12" flexible gooseneck microphone's neodymium magnet structure provides up to 6 dB more sensitivity than conventional designs. The US690 terminates with an XLR-type connector and plug-in mount. Its rugged design and mic element make the US690 ideal for the most demanding applications where superb sound is required.

- 12" gooseneck
- Dynamic element
- Cardioid polar pattern
- Powerful neodymium magnet structure
- XLR termination

US600EL & US602FL PTT Hand Microphone



General

US600EL is built to withstand rough usage and atmospheric extremes. A hand microphone designed for maximum noise rejection in high ambient areas and effective use without "close talking" techniques. An excellent choice for critical communication applications. **US602FL** – A hand microphone featuring clear speech transmission in high ambient noise level environments, convenient grip-to-talk activation and noise-canceling dynamic design. Perfect for police, marine and mobile paging applications.

NC450D & 450D PTT Hand Microphone



NC450D dynamic noise-canceling paging hand microphone with push-to-talk switch is particularly effective for use in noisy locations. Its excellent voice response characteristics also make it an excellent choice in quiet areas. 200 ohm impedance matches low impedance inputs. **450D** – Same as NC450D except without noisecancellation. Molded Cycolac® housing in pebble-grain black finish and unterminated black neoprene coil cord relieved at the housing by spring-type strain relief.

WP300



Wall Plate Microphone

WP300S is dynamic, omnidirectional wall plate microphone that is ideal for security monitoring, fast-food and retail outlets, warehouses and public usage applications. Mounts onto a standard single-gang electrical box. Brushed satin-chrome finish front plate includes double-pole, doublethrow switch for push-to-talk and line-shorting capabilities. **WP300** is the same as WP300S except without the double-pole, double-throw switch.

Wired Microphone Accessories

Wired

Shock mount adapters

ТХА	422A	DRC-1	309A	CPSM	SAPL-3
C IN IN	0		Canada a Marine		2
The TXA is designed to enable the use of lavalier, head-worn and other TA4F-terminated	Desk stand with rubber shock mount. Accepts all EV mic stand clamps	Designed for PL35 (stock replacement). Also works well with	RE20	RE90P	PL37 (stock replacement)
Electro-Voice professional micro- phones in a wired configuration.		N/D468.	RE27N/D	PC-12/XLR	RE200 (optional)
Using standard phantom power through the TXA ensures the same high-quality audio perfor-			(Replacement elastic bands, PART # 71220X)	PC-18/XLR	
Electro-Voice microphones over wireless systems.					

Direct replacement of standard equipment or optional accessories for Electro-Voice wired microphones.

Stand adapters

311	320	3235	326	SAPL-1	SAPL-2
			9		
635A & 635AB	RE20	RE50-B	All N/Dym Handhelds	All PL Series Handhelds	PL33
RE16	RE27N/D	RE50N/D-B			RE20
RE200	N/D868	BK-1			RE27N/D
N/D468					N/D868

(black foam unless otherwise indicated) Windscreens

314E	376 (grey) 379-1 (black) 379-2 (red)	WSPL-1	WSPL-2	WSPL-3	WSPL-4
635A	General Purpose	PL Series (vocal)	PL33	PL35	PL37
635AB	Fits most vocal	RE410	RE20		RE200
	N/Dym Series	RE510	RE27N/D		
	Cobalt Series	RE50B	N/D868		
	RE Series vocal	RE50N/D-B			

Wired Guidelines

Eight Decades of Engineering Excellence.

In 1934, just six years into its existence as a pioneer in electro-acoustical solutions, Electro-Voice invented the hum-bucking coil for microphones - still an industry standard almost 80 years later. This invention marked the start of EV's success in building microphones, and the company continued to drive audio technology ahead, rising to the challenges of rapidly changing times. During World War Two, EV worked with the U.S. Military on the development of the T-45 noise-cancelling microphone, a helmet-attached device that raised the success rate of combat communications from 20% to 90%, saving many lives in the process. With reliability and performance proven in the most critical environments, EV microphones later accompanied U.S. astronauts on the earliest space missions and many thereafter. And all this, of course, occurred while EV mics were performing at the highest level on live stages around the world, during the heyday of Jazz and the birth of Rock 'N' Roll.

EV continues to set new standards for microphone design today, adding to this long list of historic achievements in audio design. We were the first manufacturer to use neodymium-based magnet structures (N/DYM®) in microphones, thus achieving higher output and condenserlike qualities such as substantially-faster transient response, crystal clarity and reliable performance. Our goals in developing microphone technologies have always been the same: providing the highest sound quality, achieving better and more comfortable handling for the user and extending our tradition of legendary reliability and warranty support. A host of patented technologies attest to EV's success in meeting these goals, including the following:

Variable-D

A fundamental principal of acoustical behavior is that the volume and perceived frequency content of a sound is influenced by the distance between source and point of perception. As this distance varies, there is a non-linear adjustment of this perceived balance. Very near, a sound source will sound full with rich low-frequencies, defined mid-range, and articulate high end. But as this distance increases, the perceived sound will thin-out with a dramatically reduced low-frequency content. Because microphones serve as the point of perception at the front-end of the audio signal chain, this phenomenon greatly influences how microphones are used and perform.

Normal directional microphones (cardioid, supercardioid and hypercardioid) generate increased bottom-end when used close-up. This is typically called the "proximity effect." While some vocalists like this effect and use it to enhance their performance, it is attainable only in close-up situations where the microphone capsule is within a couple of inches of the performer's mouth. When the distance between the microphone and the source is extended, the sound quality changes dramatically, losing a substantial amount of the low-frequency content – thus changing the tone of the performance drastically.

Electro-Voice's patented Variable-D® eliminates this disadvantage. On the rear side of the diaphragm there is a perforated pipe (interference duct) with precise sonic slots at set distances. The duct provides maximum damping that is completely uncolored and undistorted at 180° off-axis, ensuring the same frequency response as if the source was nearly on-axis. This characteristic is particularly beneficial when the performer (announcer, vocalist or instrumentalist) moves around while addressing the microphone. And this same attribute is why radio announcers and DJ's have chosen Electro-Voice Variable-D® microphones for decades.

Low-frequency content comes in a variety of characters. An added benefit of the Variable-D® technology's low-frequency stabilization is the resulting personality of the low-frequency content. Variable-D® microphones produce a tight low-end that is unmatched by any other microphone technology, and this is why models such as the RE20 and RE27N/D are revered not only as the #1 announcers mic, but also the go-to mic for capturing kick drums, low-frequency instruments and guitar amplifiers.

For decades, the RE16, RE20 and RE27N/D Variable-D® microphones have been the chosen industry standard for broadcast show hosts, vocal booths, voice-over studios and professional touring or rental companies, trusted for their unparalleled acoustical performance and robust durability.

VOB

Electro-Voice's unique VOB[™] technology (Vocally-Optimized Bass[™]) reduces low-frequency distortion in the microphone's output. VOB[™] counteracts proximity effect, sibilance and P-popping, thus assuring maximum musical clarity and vocal intelligibility. Critical damping of the low-frequency resonant peak results in a microphone that replaces the "muddiness" found in competitive models with greater warmth and increased vocal intelligibility. With a wider range of working distances than other microphones, this intelligibility ensures a clean, clear, consistent sound that "cuts through the mix".

General microphone use guidelines

- 1. Always point the microphone at the desired source and away from sources of unwanted sound.
- 2. The microphone should be located close to the sound source to minimize interference from other potential sound sources.
- 3. Use the three-to-one rule when using multiple microphones: place each microphone three times farther away from other microphones as it is from the desired sound source. (If the microphone is 1' away from a sound source, it should be 3' away from the next closest microphone).
- 4. Minimize over-handling of the microphone to reduce unwanted mechanical noise.
- 5. Positioning the microphone close to the sound source will increase gain-before-feedback and will also increase the bass tone of the signal.

Microphone techniques for musical instruments

Miking techniques are a matter of personal preference. Choosing the right microphone for your application is a good place to start, and the suggested mic notes in each application below indicate EV mics that are either designed for the application or have been recommended by experienced professionals for their performance as described. These are merely guidelines to assist in the choice and placement of the microphone to achieve optimal performance

Usage	Best Mic placement	Suggested EV Mic
Kick Drum	Due to the unique nature of kick drums and placement, choosing a mic that is designed for kick drum and low-frequency instruments is recommended. Miking from the front of the drum (opposite the batter head) is preferred.	PL33, N/D868, RE20 and RE27N/D
	Front heads with hole: Place the mic inside the hole so that the capsule (mesh grille area) is just inside the interior of the drum. Aim the capsule at an angle toward the spot on the batter head where the beater makes contact for desired snap (attack of the sound).	
	Front heads without a hole: Aiming the capsule directly on-axis to the front head and within 1" of the head, choosing a spot that is between 2" and 8" towards the center from the rim. The center of the head has the floppiest tone, and the edge will have the tightest.	
	Kick drum with no front head: This allows the widest variety of placement options, but increases off-axis bleed and eliminates the tonal advantage of the front (resonance) head. Avoid placing the mic dead-center aiming directly into the beater because of possible wind velocity distortion. Choose a spot inside the drum between 2" and 8" from the outer shell, aiming the capsule at an angle toward where the beater strikes the batter head. Placing the mic deeper or shallower inside the drum will offer tone and attack variations.	
Snare Drum	Place mic 1-3" above the batter head, 0-2" in from the rim depending on the desired tone. Aim each mic at the top head angled down 45 degrees. If the drum rings, tape deadening material to the head or use damping rings. For more "snare" sound, place a second mic under the drum (aimed up at the bottom head) and reverse the phase on its input channel.	PL35, N/D468 and N/D478
Electric Guitar	Place microphone approximately 1-2" from and at a 0° angle to the speaker cone. To reduce boominess, position the microphone off-axis to the cone at 45°, or move the mic toward the center of the cone. You can expect a brighter tone at the voice coil (speaker center) and a darker tone the farther out from center you go.	PL33, PL35, N/D467, N/ D478, N/D868, RE20, RE27N/D and Raven
Tom-Toms	On double-headed toms, place mic 1-3" over the top of the drum head at a 45° angle to the drum surface and 1/2" from the drum edge. On single headed toms, use above method or place mic inside tom from underneath at a 90° angle from the center of head, 3-5" away.	PL35, N/D468; for floor tom - RE20, N/D868
Cymbals	Place microphone 1-2' above the top of the cymbals. If using a stereo pair technique, increase the overhead distance of the drum set to 2-3', and use the three-to-one rule as a separation concept.	PL37, RE200 and Cardinal
High-Hat	Place 5" above outside edge at a 45° down-angle toward the top cymbal.	PL37 and RE200
Brass	Place microphone 6-24" away, on axis with the bell of the instrument.	PL80a, N/D468, RE20, RE27N/D and Raven
Acoustic Guitar	Place microphone 6-12" from where fingerboard joins the body and aim toward sound hole.	PL37, N/D468, N/D478, RE200, RE20 and Cardinal



E200



mics • dsp • amps • speakers

		/	/	/	/		/	/	/				/	/				/		/			
Dynamic					Х	Х	X	X	X	X	Х												
Condenser	Х	X	Х	X								Х	Х	Х	Х	Х	X	Х	Х	Х	X	Х	>
Cardioid	x			X	X	X						X	X	X		X	X	X				x	х
Supercardioid		X					X															~	Ľ.
Hyporeordioid		~					~																
Figure 8																							
Omni			X					X	X	X	X				X				X	X	X		
Variable-D					X	X	X																
On/Off Switch																							
Stage																							
Lead Vocal, Female																							
Lead Vocal, Male																							
Backing Vocal																							
Speech																							
					~	~																	
					X	X																	
Snare																							
Toms					X	X																	X
HiHat / Overhead																						Х	
Percussion					Х	Х																Х	X
Guitar Amp					X	X																	
Base Amn					Y	×																	
					v	v																v	
																						^	-
	_				•	•																	
Strings																						Х	
Piano																						Х	
Accordion					Х	Х																Х	
Woodwinds					X	X	X															x	``
Brace					Y	Y	×															~	Ľ,
Chudio					~	^																	
Studio					~	~																	
vocals					•	•																	
Kick Drum					Х	Х																	
Snare																						Х	
Toms					Х	Х																	X
HiHat / Overhead																						х	
Percussion					Х	Х																х	×
Guitar Amp					X	X																	
Bass Amp					X	X																	
Acoustic Guitar					Х		X															Х	
Upright Bass					Х	Х																	
Strings																						Х	
Biano																						v	
Accordion					X	X																X	
Woodwinds					Х	Х																Х	X
Brass					Х	Х																	>
Broadcast																							
Speech / Announcers					X	X	X											X	X	X	X		
Interview / ENG					x	x	x	x	x	x	x												
Lavalier															x		x	X			x		
Headworn		v													~				v	v			
		~																	~	~			
Install / Contracting																							
Boardrooms / Podiums														X									
Boundary												Х											
Hanging													Х			Х							
Lavalier			X	X											X		X	X			X		
Headworn	Х	X																	Х	Х			

SON/D-B

01

N

21

C

5A (635A)

a 0



Microphones

REOC	REA.	REE	N/DC	N/DC	N/DC	N/DT	N/DC	N/D2	N/DS	84b	Carl	Rainal	Pla		PLAS	Pla	PLOG	PLAC	Play	PL2C	Plan	PLac	PC P	PC	PC of Uls	PC-12/Eilite	PC-12/2	PC-18/XLR	PC Bo	Jundary Sat
			x	×	X	x	/ X	×	X	×		x	X	x	x	x	×			x	×		/	/	/	/				
(Х	Х									X							X	X			X	Х	Х	Х	Х	X	X	Х	
{	Х	v	Х	X	V	v	v	v	v	Х	X	Х	v	v	V	v	V	X	X	v	V	X	X	X	X	X	X	X	X	
		^			~	^	~	^	~					^	^								X	X	X	x	X	^	<u> </u>	
																												X	X	
																							X	X	X	X	X	X	X	
				x	X									X					X				X	X	X			x	x	
	×	×	×	×	×	×	×				¥	X	Y	×	×	×	×	×	¥											1.0.0
	x	x	x	x	x	x	x				X	x	X	X	X	X	X	X	X											
	X	Х	X	X	X	X	Х				X	Х	Х	X	X	X	X	Х	Х											
	X		X	X	X	X			X		X	X	X	X	X	X	X	X	X							_				
							х	х	X	X	Х	X								X	X									
								х	X		X	X									X									
		X						v			X	v									V	X								
		~						×			×	x			X						×					_			_	
								x		х	^	X								Х	X									
											X							X	X			X								
										X	X									X		X				_				
	×	×									×				v				×		v	×								
	x	x						х	Х		X				^			X	X		X	X								
		х						х			х	х						Х	Х			Х								
		Х						Х			Х	Х									X	X								
											X																			
										х										X										
							Х				X	X									X									
		v						Х		X	X	X								X	X	V								
		x						х			X	X										X								
								Х			х	Х			Х						Х									
										X										X										
										х	X X											X X								
											Х											Х								
											X											X								
											X	X										X								
											X											X								
											X	X										X								
											X																			
																							X	X	X	X	X	X	X	



Wireless Microphones

Key Strengths

- Designed and supported in the USA
- Electro-Voice microphones, DSP, amplifiers and loudspeakers & Telex intercom systems are part of the Bosch Communications family of pro audio brands
- ClearScan[™] -- The original and best scanning technology on the planet
- Patented Posi-Phase® true diversity for dropout-free audio with the best range in the business
- Complete range of models and accessories to fit applications and installations of all shapes and sizes
- Designed and built for maximum professional performance
- Superior design, construction and warranty

Why Choose EV Wireless?

All EV wireless systems are designed to exacting standards in our Lincoln, Nebraska facility and built in state-of-the-art Bosch production facilities around the world. Advanced techniques are employed in the design of each wireless product, from initial computer simulation and circuit design all the way through the manufacturing line and automated testing. The individual components in every EV system are tested prior to a complete system test, ensuring reliable field performance. EV wireless microphone products are supported from the factory in Lincoln, Nebraska as well as authorized centers in Canada, Germany and Singapore. EV has been in the business of providing quality wireless communications for demanding professional events for over thirty years - we have the hands-on experience and engineering knowhow to address all your wireless needs. Whether designing a onechannel system or a large, multiple-wireless deployment, you can trust EV to provide the product, frequency coordination and system accessories for a turnkey installation.



Whether you're performing at the local rock club, lecturing at a corporate seminar, or speaking in a house of worship, the Electro-Voice RE-2 brings ease-of-use, clear sound, and clean channels to wireless.

RE-2 Bodypack BPU-2 Bodypack Transmitter

	The BPU-2 is a compact bodypack transmitter for the RE-2 wireless system made of high-impact ABS plastic. The single on/off switch also functions as mute, and the TA4 microphone connector is compatible with any EV lavalier or headworn mic.	 Unique "smart" battery with low battery LED LCD Displays Group and Channel, Frequency, or Battery Level One On/Off button that also acts as a mute On/Off button can be disabled Cell phone style beltclip Optional pouches and fixed clip available A wide selection of lapel and headworn microphone accessories available
RE-2 Handh	eld HTU2 Handheld Transmitter	
	The HTU2 handheld transmitter is a rugged, high-impact, ABS plastic handheld available with EV N/D267a, N/D767a, RE410, or RE510 microphone elements. One-button on/ off/mute, coupled with the smart battery feature, makes the HTU2 easy to use, and easy to maintain.	 Available with four different microphone elements N/DYM 267a Dynamic element N/DYM® 767a Dynamic premium vocal microphone RE410 cardioid condenser RE510 supercardioid condenser On/Off acts as mute and can be disabled. Internal 1/2-wave antenna
RE-2 Receiv	er UHF Wireless Microphone	
Ey REX (Constant)	The RE-2 is a completely programmable, frequency-agile system with one-touch Auto-ClearScan. It operates over 28MHz (six TV channels), XLR mic, line level output, and many other features.	 One touch Auto-ClearScan[™] Programmable in 25kHz steps across 28 MHz operating bandwidth Backlit LCD displays the Group, Channel, Frequency, transmitter battery level, diversity operation, and RF and Audio signal level meters Balanced XLR audio output for Microphone or Line level signals and a 1/4-inch line level jack Fourth generation Posi-phase[™] diversity and advanced audio circuits Unique "Guitar" setting Detachable 1/4-wave antennas

CONSUMER ALERT

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at www.fcc.gov/cgb/wirelessmicrophones

Specification

Audio Pa	rameters
Frequency Response	50-15 kHz +/- 2 dB
Balanced Output (max @ 40 kHz deviation) Mic position Line position	-10 dBV Adjustable 10 mV - 2V RMS
Unbalanced Output	Adjustable 10 mV - 1V RMS
Distortion	< 1.0%, 0.5% typical (ref 1 kHz, 40 kHz deviat)
Signal-to-Noise Ratio	> 100 dB A weighted
Dynamic Range	> 100 dB

	RE-2 Receiver
Receiver Type	Synthesized PLL
Frequency Response (RF)	A Band 648-676MHz (TV Channels 43-48) G Band 614-642 MHz (TV Channels 38-42)
Number of Channels	1112 possible channels, Programmable in 25 kHz steps
Modulation	+/- 40 kHz
Diversity	Digital Posi-Phase True Diversity
RF Sensitivity	< 1.0 uV for 12 dB SINAD
Image Rejection	> 60 dB
Squelch	Tone Code plus Amplitude
Ultimate Quieting	> 100 dB
FCC Certification	Approved under Part 15
Power Requirements	12 V AC/DC 300 mA
Antennas	Detachable 1/4 wave
Dimensions	H x W x D 1.72" x 7.5" x 5.9" 43.69 cm x 190.5 mm x 150 mm

Micr	ophone Head Options	Transmitters, Boo	dypack (BPU-2) and Handheld (HTU-2)				
767a	N/D767a Supercardioid	Radiated Ouput	30 mW typical				
	N/DYM Dynamic	TA4 Connector Wiring	Pin 1: Ground; Pin 2 Mic Input;				
267a	Cardioid Dynamic	Audio Gain Adjustment	40 dB (handheld 26 dB)				
RE410	RE410 Classic Cardioid Condenser	Power Requirements	9 Volt Alkaline Battery				
	RE510	Battery Life (typical)	> 8 hours with 9 Volt Alkaline Typical				
RE510	Classic Supercardioid Condenser	Bodypack Antenna	Flexible external 1/4 wave				
		Handheld Antenna	Internal 1/2 wave				
		Dimensions (Handheld)	9.4" (240 cm) Long				
		Dimensions (Bodypack)	H x W x D 3.8" x 2.6" x 0.92" 96.5 mm x 66 mm x 23.4 mm				

RE-2 Systems

RE-2 UHF systems provide groups of up to 10 simultaneous, harmonized channels per frequency bands. Besides individual components, following complete sets, including transmitter and receiver are available:

Receiver + N/D267a handheld transmitter	
Receiver + N/D767a handheld transmitter	
Receiver + RE410 handheld transmitter	
Receiver + RE510 handheld transmitter	
Receiver + bodypack transmitter + MAC-G3 guitar cord	
Receiver + bodypack transmitter	
Receiver + bodypack transmitter + OLM10 lavalier mic	
Receiver + bodypack transmitter + ULM21 lavalier mic	
Receiver + bodypack transmitter + RE97 headworn mic (beige or brown)	
Receiver + N/D267a handheld + bodypack transmitter + ULM21 lavalier mic	

RE-2 PRO Series



When applications like rentals, small tours, referee systems or tough environments call for a wireless microphone with a mix of REV and RE-2 features, the answer is RE-2 PRO.

RE-2 PRO Bodypack WTU-2 Bodypack Transmitter

Ĩ	

The WTU-2 is a compact metal bodypack solution for the RE-2 system. Automatically compatible with the Telex RSB-2 mute switch for football applications. Selectable RF output power and rechargeable AA battery operation with optional BH-200 charger.

- Cast magnesium construction Flat steel beltclip
- Two AA batteries w/ NiMH rechargeable option
- Exclusive EV Guitar optimization mode
- 5mW or 50mW transmit power
- Compatible with RSB-2 referee mute switch
- TA4 connector for all EV mic options
- "Blackberry Proof"

RE-2 PRO Handheld PHTU2 Handheld Transmitter



The PHTU-2 offers a high-impact, ABS plastic handle, and interchangeable RC2 microphone heads. Available with N/ D767a, PL80a, N/D967, RE410, and RE510 microphone elements, the PHTU-2 delivers the best sound for any application.

- ABS Resin body with interchangeable microphone heads
- User accessible on/off/mute switch
- Defeatable on/off switch
- 8 hour operation on one 9V battery
- Shure microphone compatibility
- PL80a and N/D967 microphones not available on HTU-2

RE-2 PRO Receiver RE-2 Professional Receiver w/ rack mount hardware

The RE-2 is a completely programmable, frequency-agile system with one-touch Auto-ClearScan. It operates over



28MHz, XLR mic, line level output, and many other features. The RE-2 PRO receiver includes all of the rack-mount hardware needed

- Rack Mounting hardware with front mount antenna cables
- One touch Auto-ClearScan
- Programmable in 25kHz steps across 28 MHz operating bandwidth
- Backlit LCD displays the Group, Channel, Frequency, transmitter battery level, diversity operation, and RF and Audio signal level meters
- Balanced XLR audio output for Microphone or Line level signals and a 1/4-inch line level jack
- Fourth generation Posi-phase[™] diversity and advanced audio circuits
- Unique "Guitar" setting
- Detachable 1/4-wave antennas

CONSUMER ALERT

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at www.fcc.gov/cgb/wirelessmicrophones

Specification

Audio Parameters			
Frequency Response 50-15 kHz +/- 2 dB			
Balanced Output (max @ 40 kHz deviation) Mic position Line position	-10 dBV Adjustable 10 mV - 2V RMS		
Unbalanced Output	Adjustable 10 mV - 1V RMS		
Distortion	< 1.0%, 0.5% typical (ref 1 kHz, 40 kHz deviat)		
Signal-to-Noise Ratio	> 100 dB A weighted		
Dynamic Range	> 100 dB		

Microphone Head Options		
767a	N/D767a Supercardioid N/DYM Dynamic	
967	N/D967 Versatile Supercardioid Dynamic	
PL80a	PL80a Supercardioid Dynamic	
RE410	RE410 Classic Cardioid Condenser	
RE510	RE510 Classic Supercardioid Condenser	

RE-2 PRO Receiver		
Receiver Type Synthesized PLL		
Frequency Response (RF)	A Band 648-676MHz (TV Channels 43-48) G Band 614-642 MHz (TV Channels 38-42)	
Number of Channels 1112 possible channels, Programmable in 25 kHz step		
Modulation +/- 40 kHz		
Diversity	Digital Posi-Phase True Diversity	
RF Sensitivity	< 1.0 uV for 12 dB SINAD	
Image Rejection	> 60 dB	
Squelch Tone Code plus Amplitude		
Ultimate Quieting > 100 dB		
FCC Certification Approved under Part 15		
Power Requirements	12 V AC/DC 300 mA	
Antennas	Detachable 1/4 wave	
Dimensions	H x W x D 1.72" x 7.5" x 5.9" 43.69 cm x 190.5 mm x 150 mm	

Bodypack (WTU-2)			
Controls	Power, Menu Set, Up and Down		
Indicators	Red LED low battery indicator		
Backlit LCD Display	Battery level, Channel / Group, or Frequency		
Battery Life	8 hours w/ two AA alkaline typical		
Battery Recharge	Optional BH-200 w/ NiMH AA		
Antenna	External 1/4 wave detachable		
Connector	TA4F input for microphone, Pin 1: ground, Pin 2: Mic input, Pin 3: +5 Bias, Pin 4: +5V through 3k ohm		
RF Output Selectable	5 mW or 50 mW typical		
Case Material	Cast Magnesium		
Dimensions	H x W x D 3.37" x 2.6" x 0.75" 85 mm x 66 mm x 19 mm		

Handheld (PHTU-2)			
Controls Power on/off, Set, Up and Down			
LCD Display Battery level, Channel / Group, or Frequency			
Battery Life 8 hours w/ 9V alkaline typical			
Antenna Internal 1/2 wave			
RF Output 30 mW typical			
Case Material High Impact ABS & Aluminum			
DImensions	Length x Diameter 9.75" x 2.04" 24.8 cm x 52 mm		

Two Bay Battery Charger

BH-200

- LED indicator show charging status
- Two drop in bays for REV-WT or WTU-2 transmitters
- 10 hour recharge time and transmitters can be left in charger indefinitely
- Use standard NiMH AA batteries
- Safeguards against wrong or improperly inserted batteries

The BH-200 recharges Nickel Metal Hydride (NiMH) AA batteries in REV-WT and WTU-2 bodypack transmitters. 2500 mAH batteries will last over 10 hours and recharge in 10 hours. The BH-200 helps to reduce waste and the cost of running wireless microphones all day, everyday.





The REV UHF System is the best-sounding, most roadworthy professional wireless in the industry to date. REV's optimized, analog audio path was developed to provide the truest representation of a wired microphone sound in a wireless system. REV offers two handheld options: a stylish, metal, compact handle for concert and broadcast, and the user-friendly presentation handheld for rental house, and other applications. In addition, EV's IRIS-Net PC software enables remote monitoring, control, and programming over a CAN bus connection through an EV UCC-1 converter.

REV-H	REV Concert Handheld Transmit	tter
ana a Re	The REV-H is a metal transmitter with interchangeable mic heads and a back-lit LCD display. All controls are inside the battery compartment, out of harm's way. With the EV 767a, 967, PL80a, RE410, or RE510, the REV-H is a world-class vocal microphone.	 Aluminum Construction Back lit LCD display 10 hour operation on two AA Batteries N/D 767, N/D 967, PL80a, RE410, RE510 Heads Shure mic head compatibility 5mW or 50mW transmit power
REV-PH	REV Presentation Handheld Trar	nsmitter
	The REV-PH presentation handheld combines the compact RC2 interchangeable microphone elements, and a rugged handle with a user-accessible on/off/mute switch. The REV-PH is perfect for applications that require the user to mute or turn it on or off.	 ABS Resin body with interchangeable microphone heads User accessible on/off/mute switch 8 hour operation on one 9V battery Shure microphone compatibility 5mW or 50mW transmit power
REV-WT	REV Bodypack Transmitter	
	REV-WT is a cast magnesium bodypack transmitter that uses two AA batteries, and can be used with the optional BH-200 charger. Unique features include programmable on/off switch, RSB-2 referee mute switch compatibility, and exclusive REV Guitar mode.	 Cast magnesium construction Flat steel beltclip Two AA batteries w/ NiMH rechargeable option Exclusive EV Guitar optimization mode 5mW or 50mW transmit power Compatible with RSB-2 referee mute switch TA4 connector for all EV mic options "Blackberry Proof"
	The REV-S is a full-rack width chassis with a universal power supply, headphone monitoring, CAN Bus connections, and full front-panel controls. Designed for one channel applications, or larger installations that require an odd number of receivers.	 V-D Dual Receivers Full 19" rack width with integrated rack mounting Ground independent ½ wave antennas Antenna pass-through connections to drive 6 channels (3 REV-D) with just two antennas
C MARCOLLEGISMENT OF	The REV-Dual receiver includes two world class UHF receiving channels with the most "wired" sounding audio in the market. CAN bus connection on the back for use with IRIS-Net PC software for monitor and control.	 IEC connection universal switching power supply Headphone jack for direct monitoring PC monitor and control with Iris-Net CAN bus pass-through connectors No adjustments or switches on back panel

Wireless

Specification

REV-H and REV-PH Concert Handheld		
Controls	Buttons for Power on/off, set, up and down	
Displays	Backlit LCD display showing: battery level, channel/group or frequency	
Battery Life (REV-H) (REV-PH)	10 hours w/ 2 AA alkaline typical 8 hours w/ 9V alkaline typical	
Antenna (REV-H) (REV-PH)	Internal proprietary Internal 1/2 wave	
Microphone Elements	EV N/D767a or N/D967 Dynamic EV RE510 or RE410 Condenser PL80a Supercardioid	
Case Material (REV-H) (REV-PH)	Machined Aluminum High Impact ABS	
RF Output	Normal: 5 mW typical High: 50 mW typical	
Dimensions	Length x Max Diameter 9.75" x 2.04" 24.8 cm x 52 mm	

REV-WT Bodypack Transmitter		
Controls	Buttons for Power on/off, menu set, up and down	
Indicators Red LED low battery indica		
Backlit LCD Display Battery level, channel/group frequency		
Battery Life	8 hours w/ 2 AA alkaline typical	
Battery Recharge	Optional BH-200 w/ NiMH AA	
Antenna	External 1/4 wave detachable	
Connector	TA4F input for microphone, Pin 1: ground, Pin 2: Mic input, Pin 3: +5 bias, Pin 4: +5 V through 3k ohm	
RF Output Selectable	5 mW or 50 mW typical	
Case Material	Cast Magnesium	
Dimensions	H x W x D 3.37" x 2.6" x 0.75" 85 mm x 66 mm x 19 mm	

REV-S Single and REV-D Dual ReceiversFront Panel ControlsButtons for On/Off, menu, set, up and down 1/4" headset jack with selector and volumeIndicators LCDGroup, channel, diversity, label, and set-upBacklit DisplayMenu-driven dot matrixBack Panel Connectors1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RL-45 CAN interface (x2, parallel)AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 48-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeRF Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB mistrophone 30-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB microphone 30-10 kADistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)<				
Front Panel ControlsButtons for On/Off, menu, set, up and down 1/4" headset jack with selector and volumeIndicators LCDGroup, channel, diversity, label, and set-upBacklit DisplayMenu-driven dot matrixBack Panel Connectors1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RI-45 CAN interface (x2, parallel)AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 44-47)SquelchTone code plus adjustable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReseiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINAD	REV-S Single	and REV-D Dual Receivers		
Indicators LCDGroup, channel, diversity, label, and set-upBacklit DisplayMenu-driven dot matrixBack Panel Connectors1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RJ-45 CAN interface (x2, parallel)AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 48-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeRF Sensitivity< 0.8 uV for 12 dB SINAD	Front Panel Controls	Buttons for On/Off, menu, set, up and down 1/4" headset jack with selector and volume		
Backlit DisplayMenu-driven dot matrixBack Panel Connectors1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RJ-45 CAN interface (x2, parallel)AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 44-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINADAudio Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB microphone 30-10 ko hm load)<	Indicators LCD	Group, channel, diversity, label, and set-up		
Back Panel Connectors1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RJ-45 CAN interface (x2, parallel)AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 44-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINADAudio Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB instrumentAudio Output LevelBalanced line level 10 mV - 1 V RMS adjustableUnbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & ControlIRIS NetDimensionsHx W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Backlit Display	Menu-driven dot matrix		
AntennasDetachable 1/2 waveRF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 44-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINADAudio Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB InstrumentAudio Output LevelBalanced line level 10 mV - 1 V RMS adjustableUnbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzDimensionsIRIS NetDimensions1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Back Panel Connectors	1/4" unbalanced adjustable line level output XLR balanced Mic / Line level output RJ-45 CAN interface (x2, parallel)		
RF SpecificationsC1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 48-51)Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINADAudio Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB InstrumentAudio Output LevelBalanced line level 10 mV - 1 V RMS adjustableUnbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna Output12 Vdc, 15 mAInternal Switching Power supplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & 	Antennas	Detachable 1/2 wave		
Number of Channels950 possible (programmable in 25 kHz steps)DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINAD	RF Specifications	C1 Band 614-638 MHz (TV Channels 37-41) C2 Band 650-674 MHz (TV Channels 44-47) C3 Band 674-698 MHz (TV Channels 48-51)		
DiversityDSP PosePhase True DiversitySquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINAD	Number of Channels	950 possible (programmable in 25 kHz steps)		
SquelchTone code plus adjustable amplitudeReceiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINAD	Diversity	DSP PosePhase True Diversity		
Receiver TypeSynthesized PLL agile UHFRF Sensitivity< 0.8 uV for 12 dB SINAD	Squelch	Tone code plus adjustable amplitude		
RF Sensitivity< 0.8 uV for 12 dB SINAD	Receiver Type	Synthesized PLL agile UHF		
Audio Specifications100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB InstrumentAudio Output LevelBalanced line level 10 mV - 1 V RMS adjustableUnbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna OutputTNCPowered Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzDimensionsH x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	RF Sensitivity	< 0.8 uV for 12 dB SINAD		
Audio Output LevelBalanced line level 10 mV - 1 V RMS adjustableUnbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna OutputTNCPowered Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & ControlIRIS NetDimensionsH x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Audio Specifications	100-15 kHz +/- 2 dB microphone 30-15 kHz +/- 2 dB Instrument		
Unbalanced Output Adjustable8 mV to 0.755 V RMS (100 k ohm load)DistortionLess than 0.5% (@ 1 kHz, 40 kHz deviation)Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna OutputTNCPowered Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & ControlIRIS NetDimensionsH x W x D 	Audio Output Level	Balanced line level 10 mV - 1 V RMS adjustable		
Distortion Less than 0.5% (@ 1 kHz, 40 kHz deviation) Signal to Noise Ratio > 110 dB (A) Dynamic Range > 100 dB REV-D Antenna Output TNC Powered Antenna Output 12 Vdc, 15 mA Internal Switching Power Universal cord, 90-240 VAC, 50-60 Hz CAN Bus Monitoring & Control IRIS Net Dimensions H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Unbalanced Output Adjustable	8 mV to 0.755 V RMS (100 k ohm load)		
Signal to Noise Ratio> 110 dB (A)Dynamic Range> 100 dBREV-D Antenna OutputTNCPowered Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & ControlIRIS NetDimensionsH x W x D 1.72" x16" x 12" 	Distortion	Less than 0.5% (@ 1 kHz, 40 kHz deviation)		
Dynamic Range> 100 dBREV-D Antenna OutputTNCPowered Antenna Output12 Vdc, 15 mAInternal Switching Power SupplyUniversal cord, 90-240 VAC, 50-60 HzCAN Bus Monitoring & ControlIRIS NetDimensionsH x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Signal to Noise Ratio	> 1 10 dB (A)		
REV-D Antenna Output TNC Powered Antenna Output 12 Vdc, 15 mA Internal Switching Power Supply Universal cord, 90-240 VAC, 50-60 Hz CAN Bus Monitoring & Control IRIS Net Dimensions H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Dynamic Range	> 100 dB		
Powered Antenna Output 12 Vdc, 15 mA Internal Switching Power Supply Universal cord, 90-240 VAC, 50-60 Hz CAN Bus Monitoring & Control IRIS Net Dimensions H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	REV-D Antenna Output	TNC		
Internal Switching Power Supply Universal cord, 90-240 VAC, 50-60 Hz CAN Bus Monitoring & Control IRIS Net Dimensions H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Powered Antenna Output	12 Vdc, 15 mA		
CAN Bus Monitoring & ControlIRIS NetDimensionsH x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	Internal Switching Power Supply	Universal cord, 90-240 VAC, 50-60 Hz		
Dimensions H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm	CAN Bus Monitoring & Control	IRIS Net		
	Dimensions	H x W x D 1.72" x16" x 12" 43.7 mm x 406.4 mm x 304.8 mm		

REV Accessories and Parts

Model #	Description	Model #	Description
RE90TX	Omnidirectional MicroMini lapel mic	CXU-XXX	Low loss coaxial antenna cable 25-100 ft
RE92TX	Unidirectional MicroMini lapel mic	WP-WT	Bodypack pouch for REV-WT
RE97TX	Lightweight omni headworn mic	MAC-G2	Guitar cord
HM7	Headworn cardioid condenser mic	RC2-767	767a dynamic head
FA-XX	1/2 wave Rx antenna	RC2-967	967 dynamic head
AB-2	1/2 wave antenna bracket	RC2-PL80a	PL80a dynamic head
UAA-500	UHF antenna amplifier (520-806 MHz)	RC2-410	RE410 condenser head
APD4+	Antenna / Pwr distribution (600-780 MHz)	RC2-510	RE510 condenser head
TP-2	Termination plug for APD4+	MSA-REV	Mic stand adapter
LPA-500	Directional Rx antenna (450-900 MHz)		

CONSUMER ALERT

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC's wireless microphone website at www.fcc.gov/cgb/wirelessmicrophones

Wireless Antenna Accessories

Wireless Antenna Accessories

Accessories needed for wireless microphone antenna systems. Included are products for remote mounting, amplifying, distributing and combining antenna signals.

APD4+	UHF Antenna / Power Distribution UHF Antenna/Power Distribution System The APD4+ is a UHF antenna/power distribution system (provides power and RF signals for 4 units) for use with RE-2 and REV receivers.	 Provides diversity antenna distribution to four single receivers Provides power distribution for four RE-2 receivers Universal power supply with IEC power cord Phantom power on antenna inputs for UAA-500 amplifier Can be cascaded to provide antennas for up to 16 receivers (requires 5 APD4+)
LPA-500	Directional Log Periodic Antenna The LPA-500 is a passive directional log periodic antenna with mounting hardware and 10-foot coax cable. LPA antennas are used to extend the range of coverage in certain direction.	 5dB gain on axis compared to an omnidirectional antenna Mounting hardware for microphone stands, truss, walls, and other surfaces Includes 10 foot coax cable for remote mounting Standard EV TNC connector for use with CXU-XX cables
FA-XX	Flexible 1/2 Wave UHE Antenna The FA-XX is a family of ground independent ½ wave omni-directional antennas. These antennas can be remote mounted using the AB-2 bracket or attached directly to the receiver or APD4+.	 ½ wave omni-directional antenna for excellent coverage Can be remote mounted using the AB-2 bracket Frequency tuned for best reception: FA-GW, Green/White, Freq.: 610-710 MHz FA-BW, Blue/White, Freq.: 710-880 MHz
	Antenna Signal Amplifier The UAA-500 is a broadband UHF amplifier with selectable 3dB and 10dB amplification settings. Antenna signal amplifiers are used to make up for losses in the cable run, they do not extend the operating range of the wireless microphone.	 3 or 10dB selectable gain Green LED to indicate power Requires phantom power from APD4+ or REV receiver Wideband 500 - 900 MHz operating range Cast aluminum case with mounting tabs
APS-1	Passive Antenna Splitter / Comb The APS-1 is a passive device that splits one transmit signal into two, or combines two receive signals into one. A combiner can be used to locate antennas in multiple rooms for increased coverage.	Combines two antenna signals into one Operating range 100MHz to 900MHz Low signal loss of -3.4dB High signal isolation of 23dB EV standard TNC connections

Wireless

Wireless Antenna Accessories



Wireless Microphones

Microphones

Electro-Voice has a wide range of lavalier and headworn microphones for use with any EV wireless bodypack transmitter. Any of these microphones can be used with the TXA adapter on page XX in XLR wired applications.

OLM10

Omni-Directional Lavalier Microphone



The OLM10 is a rugged lavalier microphone that picks up sound from all directions. The small size and wide pick up pattern make this an ideal microphone for beginners and soft speakers.

- Back Electret omni-directional microphone
- Clothing clip included for easy mounting
- 6 foot (180cm) permanently attached cord
- TA4F connector compatible with all EV bodypack
 transmitters
- Use with TXA for wired XLR applications

ULM21

Cardioid Lavalier Microphone



The ULM21 is a rugged lavalier microphone with a directional pick up pattern. The small size and pick up pattern helps reduce feedback and improve sound quality.

- Back Electret cardioid microphone
 Clothing clip attaches at microphone body to
- maintain cardioid pattern
 6 foot (180cm) permanently attached cord
- TA4F connector compatible with all EV bodypack transmitters
- Use with TXA for wired XLR applications

RE90TX ()

Omni-Directional Lavalier Microphone

		Ä	
1			
	C.		

The RE90Tx is a lightweight high-performance omnidirectional lavalier microphone. It is terminated with a TA4F connector for any EV wireless system, perfect for broadcast, house of worship, and business applications.

- Ultra-miniature lavalier (Diameter 0.2") Back electret condenser element
- Omnidirectional polar pattern
- 6 foot (180cm) permanently attached cord
- TA4F connector compatible with all EV bodypack transmitters
- Use with TXA for wired XLR applications

RE92Tx



Directional Lavalier Microphone

The RE92Tx is a professional-quality, miniature cardioid, electret condenser, lavalier microphone. Designed for picking up speech, it is an excellent choice for use in any presentation, house-of-worship, broadcast, or theater application.

- Back electret condenser element
- Cardioid polar pattern
- 6 foot (180cm) permanently attached cord
- TA4F connector compatible with all EV bodypack transmitters
- Use with TXA for wired XLR applications

RE920Tx

Horn and Instrument Microphone

The RI for wirr design termina bodypa additio

The RE920Tx is a cardioid condenser microphone designed for wireless use with musical instruments via its specially designed instrument-mount clip assembly. Although terminated in a TA4F connector for use with EV and Telex bodypack transmitters, it can be made hard-wired with the additional TXA XLR preamp.

- Unidirectional horn/drum mic
- Back electret condenser element
- Wired with TA4F connector

.

- Smooth audio response and high SPL handling
- Custom clip for securely mounting on a variety of instruments
- Use with TXA preamp for XLR wired applications

Wireless Microphones

Micro-Headworn Condenser Microphone

- Ultra-Low Profile for Inconspicuous Use
- Lightweight, Durable
- Interchangeable for Left or Right Ear
- **Omni-directional Polar Pattern Provides**
- **Clean Sound and Uniform Response**

Two ear wearing style for stability

Lightweight, durable

Moisture resistant

transmitters

transmitters

boom

-

-

Use with TXA preamp for XLR wired applications

Interchangeable for left or right side microphone

Omni-directional polar pattern for clean sound

TA4F connector compatible with all EV bodypack

Use with TXA for wired XLR applications

Ultra-Miniature Size for Inconspicuous Use

Sound and Uniform Response

Available in black and beige

Superior Sound Quality

Omni-directional Polar Pattern to Provide Clean

TA4F connector compatible with all EV bodypack

The RE97Tx is an ultra-low profile, omnidirectional, backelectret condenser, headworn microphone designed for use with standard EV and Telex belt packs. The RE97Tx is intended for spoken-word use such as houses-of-worship,

corporate AV, theaters, fixed install, and other applications where a full-range, natural, well-balanced sound is required. The RE97Tx microphone is available in beige, brown, and black.



RE97Tx

Two Sided Micro-Headworn Condenser Microphone The RE97-2Tx is an Ultra-low profile, omnidirectional,

- **RE97-2Tx**

Micro-Lavalier Condenser Microphone The RE97LTx is a micro-lavalier (black and beige) omni-

that demand a high quality microphone element that is

houses of worship, or any venue.

instructors and other presenters.

practically invisible when worn by the speaker or performer.

The RE97LTx is intended for spoken-word use in theatrical

performance, fixed installations, corporate AV presentations,

back-electret condensor headworn microphone ideal for

applications where a full - range, natural, well balanced sound

is required. The RE97 microphone element provides a clean

and accurate sonic quality and uniform output. This has a two

ear hook design with a band behind the head for comfort and

stability. The band is fully adjustable and the hooks fold flat

for storage and the boom can be on the left of right side. RE97LTx directional, condenser microphone designed for applications



Headworn Condenser Microphone

Lightweight – 0.9 ounces (25 grams), less cable -

Use with TXA for wired XLR applications

- Behind-the-head headband is comfortable and stays in place
- Cardioid pickup pattern ensures good gain before feedback
- Frequency response and proximity effect similar to handheld vocal mics
- TA4F connector compatible with all EV bodypack transmitters

The Electro-Voice HM2 headworn microphone is the ideal microphone for anyone who requires high-quality vocals in a hands-free application. The HM2 is perfect for use by lead vocalists, singing instrumentalists, dancers, aerobic

HM2

HM7

Headworn Condenser Microphone

- Supercardioid pickup pattern ensures good gain before feedback
- Behind-the-head headband is comfortable and stays in place
- Frequency response and proximity effect similar to premium handheld vocal mics
- TA4F connector compatible with all EV bodypack . transmitters
- Use with TXA for wired XLR applications

The HM7 headworn microphone is the ideal microphone for singers and entertainers that really need to move during a performance. The HM7 has a supercardioid microphone that offers concert vocal performance and stage noise rejection. The rugged headband makes for a comfortable fit and the flexible boom ensures precise microphone placement.



RC2-XXX

Microphone Heads for REV-H, REV-PH and PHTU-2

- RC2-767 Supercardioid dynamic N/D767a
- RC2-967 Supercardioid dynamic N/D967
- RC2-PL80a Supercardioid dynamic PL80a
- RC2-410 Cardioid condenser RE410
- RC2-510 Supercardioid Condenser RE510

The RC2 line of interchangeable heads includes the top dynamic and condenser EV vocal microphones for the REV and RE-2PRO wireless systems. Dynamic vocal microphones available are the N/D767a, N/D967 and the PL80a. And the premium concert condenser microphones RE410 and RE510 complete the RC2 series.



Cables, Clips & Others

Cables, Clips and other accessories

These mounting brackets, cables and other accessories can be used to complete or complement any Electo-Voice wireless microphone system.

RM-D	Dual Rackmount Kit	
	Dual Rackmount kit - (for two receivers) works with RE-2, FMR-500, SAFE-1000 and other older ½ rack receivers. Includes all screws and hardware required.	 Mounts two RE-2 receivers side by side in one 19" rack space Includes knock outs for FMCK front mount antenna cables Includes screws, hardware and instructions for installation Powder coated steel construction
RM-S	Single Rackmount Kit Single Rackmount kit - works with RE-2, FMR-500, SAFE- 1000 and other older ½ rack receivers. Includes all screws and hardware required.	 Mounts one RE-2 receiver in one 19" rack space Includes knock outs for front mount antenna cables, (RMS-TNC includes cables) Includes screws, hardware and instructions for installation Powder coated steel construction
FMCK	Front Mount Antenna Kit The FMCK includes 4 front mount antenna cables with female TNC connectors on one end and a bulkhead male TNC on the other end. The male connectors mount in the provided knockouts in the RM-S and RM-D rack mount kits. The four cables included are enough for two receivers.	 Female TNC end connects to any EV/Telex receiver Male TNC connector mounts in the rack mount knockouts Four cables included in each kit, enough for two receivers
RSB-2	Referee Mute Switch Referee Mute Switch The RSB-2 toggle mute switch is the football standard for referee wireless systems. The RSB-2 plugs in between the lavalier or headworn microphone and the bodypack transmitter to provide a noiseless mute. The REV-WT and WTU-2 bodypacks automatically recognize the RSB-2 but older transmitters require a special referee version.	 TA4 in and out connectors for any EV/Telex lavelier microphone and bodypack transmitter The belt clip can be flipped for right or left side wearing Positive toggle switch is large and easy to use without looking Noiseless mute, no clicks or pops
WP-WT	Leather Pouch for REV-WT The WP-WT is a leather pouch for REV-WT and WTU-2 bodypack transmitter. A clear window in the front allows the LCD screen to show through and the snapping top strap secures the bodypack. An integrated leather covered metal beltclip on the back of the WP-WT secures the unit to a belt, costume, or guitar strap.	 Elastic top band for a snug, secure fit Clear window over LCD screen Top strap snaps to secure bodypack Leather covered integrated belt clip for belt, costume or guitar strap mounting

Cables, Clips & Others

- TA4 connector for any EV or Telex Bodypack
- 4 ft cord to XLR
- Works with dynamic microphones only
- The MAC-2 cord allows any dynamic handheld microphone be used with any EV or Telex wireless bodypack transmitter.

XLR to TA4 Adapter Cord

George L Guitar Cable

- George L no-solder, low noise cable and connectors for great sound and easy repairs
- Includes right angle and straight in 1/4 . inch connector
- TA4 connector for any EV or Telex bodypack transmitter

No-solder George L[™] guitar cable for the REV-WT, WTU-2, CSB-1000, WT-1000, and REV-BP. The MAC-G2 includes a straight in and a right angle 1/4 inch connector so you can use whichever is best for your guitar.



- George L low noise cable for great sound
- Built in signal pad to work with BPU-2/WT-500 bodypack transmitters
- . TA4 connector for any EV or Telex bodypack transmitter
- The MAC-G3 uses low noise George L guitar cord for the BPU-2 and WT-500 bodypack transmitters. Using the MAC-G3 with the EV RE-2 exclusive Guitar Optimization gives you one of the most "wired" sounding wireless rigs of all time.
- Fits BPU-2, WT-500, REV-BP, CSB-1000 and WT-1000 Bodypacks
- Elastic sides for a snug, secure fit
- Clear window over LCD screen
- Top strap snaps to secure bodypack and it covers the on/off switch
- Leather covered integrated belt clip for belt, costume or guitar strap mounting

The WP-1000 is a leather pouch for CSB-1000, BPU-2, WT-500, WT-1000, and REV-BP bodypack transmitter. A clear window in the front allows the LCD screen to show through and the snapping top strap covers and protects the on/off button. An integrated leather covered metal beltclip on the back of the WP-1000 secures the unit to a belt, costume, or guitar strap.

Leather Pouch for BPU-2



WP-1000

MAC-G3





BC-1000 Beltclip w/ Tab & Screw	BP2-Clip-Swivel Beltclip w/ Tab & Screw	BP2-Clip Flat Beltclip for BPU-2	MSSA Custom Stand Adapter	MSA-REV Custom Stand Adapter	HHCK Handheld Color Kit
		The BP2-Clip is a flat beltclip for the BPU-2, and the WT-500 transmitter. The BP2-Clip offers an alternative mounting style to the standard swivel clip.			
The BC-1000 is a cell phone style swiveling beltclip with tab and screw for the REV-WT, WTU-2, CSB-1000, WT-1000, or the REV-BP transmitter. The mounting tab also allows these transmitters to work with the PC and Boundary Satellite wireless accessory microphones.	The BP2-Clip-Swivel is a cell phone style swiveling beltclip with tab and screw for the BPU-2, and the WT-500 transmitter. The mounting tab also allows these transmitters to work with the PC and Boundary Satellite wireless accessory microphones.		The MSSA is a custom fit stand adapter for the RE-2/FMR-500, PHTU-2 and REV-PH handheld transmitters.	The MSA-REV is a custom fit stand adapter for the RE-H handheld transmitters.	The HHCK includes 6 different color caps for the HTU-2, HT-500, PHTU-2 and REV-PH handheld transmitters. The color caps help the sound engineering identify which channel is in use from a distance.

MAC-G2

MAC-2



Choose the wireless system wisely!

It's important to note that all wireless systems are not created equal. Only a very few of the products on the market today are actually designed and built by the people selling them. Many of the most popular systems are built by microphone companies that only recently began to manufacture wireless devices. EV is unique in the world of wireless. Electro-Voice has been leading the way in microphone technology for 80 years and Telex practically invented professional wireless microphones 30 years ago. In the late 1990's when Telex and Electro-Voice came together, these two great heritages combined into a one of a kind microphone company. All EV wireless products are the result of this vast experience and technological know-how. As more and more wireless products get into the market, more problems in installation and performance are being encountered. Often times these problems are unique to the situation and require a trained professional with considerable RF experience to solve. EV maintains a staff of highly trained RF engineers and designers to help our dealers and customers get systems to work in the most critical and demanding applications. Wherever possible, we build features into our new products to take care of problems before they start. The key for the selling dealer is that they have a large company with plenty of experience and talent backing-up their wireless installations.

Important Wireless Terminology

Like any other technical business, the wireless world is filled with technical jargon and concepts all its own. It is very important that you understand the basics of this language, or overzealous marketing materials can easily mislead you.

A wireless system at its most basic includes a transmitter,

What is Diversity?

Diversity reception is a method of minimizing the effects of multi-path delays that create drop outs of the radio signal. This is done by combining or selecting two or more antenna sources for the same signal in order to produce a constantly usable signal. This always requires more than one antenna in different physical locations but not necessarily multiple receivers.

There are many diversity circuits used in wireless microphones on the market today, including twin receiver "switching" diversity, antenna diversity, switching antenna diversity, and the EV patented Posi-Phase auto diversity. Each of these methods may be effective, depending on the particular implementation of the circuitry by the manufacturer, provided other critical areas of the receiver circuitry are not compromised.

handheld or bodypack, and a receiver. There are many ways to get the signal from point A to point B and it is important to dispel any myths or preconceived notions that may have been picked up from various marketing materials. We will go through the more common technical terms and try to give you and objective outlook.

The term "diversity" is derived from the word "diverse", which according to the American Heritage Dictionary means varied or unlike. In the RF world, this translates to two or more unlike sources of received signal energy at the receiver. As long as the two sources of signal are unlike or varied from each other, they are diverse, hence the term 'diversity'. These days you hear a lot of hype about some systems that claim to be "true" diversity. It this were true, there would also have to be a "false" diversity. But, by definition, any receiver using two or more varied signal inputs has diversity, so the only 'false' diversity would be single antenna nondiversity. Major manufacturers may differ in their particular implementation of the diversity circuitry, but all diversity systems use different sources of received energy from two or more antennas. The term 'true diversity' is meaningless from an engineering standpoint.

What is patented Posi-Phase Diversity?

Posi-Phase diversity uses two antennas spaced apart, connected to a single high quality receiver. The antenna signals are connected internally to microprocessor circuits that monitor the phase relationship between the two antennas. Both antennas are active at all times which greatly increases the signal strength under normal conditions. In the event of a signal interruption from a partial phase cancellation (multipath) or total phase cancellation (dropout) the logic circuitry adjusts the phase of the secondary antenna to a positive condition relative to the primary antenna. This process occurs in a fraction of a second and continually adjusts the phase of the second antenna for the optimum signal. A similar patented technique is used in cellular telephones to insure their reliable operation. Telex Posi-Phase diversity is more effective and less costly to produce

than switching diversity because only one high quality receiver is required. Since only one receiver is needed, we are able to concentrate on the overall receiver design on more important aspects of the receiver design such as filtering, IF circuitry, squelch and audio circuitry Concentrating on these critical areas of a receiver design yields superior performance over switching diversity.

The superior performance is easily verified by a simple shoot-out with range and audio quality tests. Generally, under the same environment EV systems will go nearly twice as far as competitive models in a similar price range.

Wireless Guidelines

What is Phase Cancellation?

Phase cancellation or multipath dropout is a phenomenon where a direct radio signal and a reflected radio signal combine in the receiver. The two signals are slightly out of phase from each other due to the delay in the reflected signal. The phase difference causes the two signals to interfere with each other and cause deterioration in the quality of signal at the receiver. When the distance and geometry are just right, the signals are 180 degrees out of phase and can cancel each other completely, often referred to as a dropout.

A very common example of phase cancellation or multipath dropout has occurred to most people at one time or another. If you have ever driven your car listening to your favorite FM radio station and pulled up to a stop light and noticed your radio station become fuzzy and faded away as you pull slowly forward, you have experienced phase cancellation. Did you notice that when you pulled your car up just a few feet the station came back to perfect reception?

Because multipath problems are related to the geometry of the set up, it is possible to walk test the transmitters and correct potential dropouts using tools like the Sound Check Screen in the REV and adjusting your antenna placements. But be wary, each time you change the scenery, arena, or even add people in the performance area, the mix changes.

What is Squelch Circuit?

Good receiver design begins with the RF and IF filtering, but another important part of the receiver circuitry is the squelch system, or RF detection circuitry. This circuitry is the "gate" that allows the audio to turn on or off based on the RF signals entering the receiver. Simple gate squelch circuits that are commonly used in most competitive wireless receivers have a detector circuit that opens the audio path as soon as a preset level of RF energy is reached. When the signal is below the preset level, the audio path is "closed" or grounded to be very quiet. The obvious problem with a simple gate squelch is that any RF energy including distortion, hiss, harmonics from such sources as lighting dimmers, CD or DVD players, computers, digital effects and electric motors are indistinguishable from the desired signal. This extraneous RF energy will open the squelch gate just as easily as the intended transmitter. So, often times the user must "crank" up the squelch level all the way up to limit the sensitivity to noise, which reduces range and performance of the system.

What is Combination Squelch Circuit?

Advanced products like the FMR-1000, RE-1 and ENG-100 use a combination of tone-code and amplitude squelch to provide maximum protection against errant signals. In this case, the tone squelch works as described in the previous section and when the tone is present the amplitude squelch remains active. If, in the unlikely event, random noise fools the tone detector, the signal at the intended frequency still needs to be high enough to register on the amplitude squelch. The back up amplitude squelch further reduces the chances that an errant signal will cause audio noise while the transmitter is turned off.

Wireless "Gain Settings"

Almost every wireless microphone system has an adjustment on the transmitter that is called a "Gain" adjustment, which often confuses users. This setting should really be called a "Deviation Control", but that would more than likely confuse users even more. The problem with calling it a gain setting, however, is that the end user attempts to use it to set their overall audio level – not what the control is designed to do. After all, wired microphones do not have a gain control and the mixing board or amplifier must be used to control the audio levels.

The gain setting is unique to wireless microphones and is used to maximize the signal-to-noise ratio and dynamic range whether it is used as a podium microphone, close talking vocal mic, lapel, headworn, or even guitar or instrument. Frequency Modulated (FM) radios transmit audio information as changes in the carrier frequency. So, in the operation of a wireless microphone system, the greater the changes in frequency (deviation), the better the signalto-noise ratio will be. So, if the system's maximum deviation is +/-40KHz, we want the loudest level input into the microphone to generate 40KHz deviation. With the gain set above that, we would be clipping or distorting the maximum input and if it is set too low, we are not getting the clearest possible signal.

How to properly set the Wireless "Gain"

- 1) Before the audio connections are even made or with the PA system muted, simply sing or scream into the microphone as loudly as it will ever be used in performance in this application. (For guitar systems, turn the gains on the guitar to maximum and hit the hardest note that will be used in concert)
- 2) Then adjust the gain on the transmitter until the audio meter peaks in the usable range.
- 3) Make the audio connections and use the mixing board or amplifier to set the appropriate audio levels for the PA. For a guitar/instrument wireless system, use the receiver output level adjustment to match the "wired" instrument output level.

What other considerations should I think about?

When selecting a wireless system, consider the long-term use for the system and always purchase a complete solution. That is, if you eventually intend to add more systems, make sure you select a system that will allow for the total number of future systems. Also, don't forget to look at accessories such as antenna combiners, antenna amplifiers, antennas, low loss coaxial cable, and microphone choices.

Electro-Voice has a complete line of wireless accessories for UHF systems. These accessories allow the system to be tailored for the individual application and allow the user to get the most from their investment.

Wireless Microphone Antenna Guide

ANTENNA TYPES

Most products ship with 1/4-inch wave antennas to be mounted directly on the receiver or the rack mount hardware. These 1/4-inch wave antennas are not ground independent, meaning that they cannot be mounted remotely at the end of a run of coaxial cable. For remote mounting, use 1/4-inch wave or directional Log Periodic antennas such as the FA-GW, CLA series or the LPA500.

REMOTE MOUNTING

Antennas should be mounted with a direct line-of-sight to the performance area. Whenever possible, that also means above the cast and crew, so mounting antennas ten feet in the air at the side of the stage is one of the best places for them. All coaxial cable has signal loss, so keep the cable runs to minimum and use low loss cables to keep the maximum performance range. The CXU cables from EV use very low loss cables that will help maintain range.

ANTENNA DISTRIBUTION

When racking multiple receivers together, it is best to use an antenna distribution system like the APD4+. The APD4+ provides power and antenna connectors for 4 ½ rack receivers and can be cascaded to run antennas for up to 16 systems from 2 antennas (using 5 APD4+ units). With the REV-D receiver's antenna pass through feature, one APD4+ can supply antennas for 24 channels of REV wireless. One important thing to keep in mind is to connect the input of each additional splitter to the output of the original APD4+ (the one connected directly to the antennas) to prevent a loss of range.





Americas-

Headquarter Americas Bosch Security Systems, Inc. 12000 Portland Ave South, Burnsville, MN 55337, USA USA-Ph: 1-800-992-3497 Fax: 1-800-955-6831

Canada-Ph: 1-866-505-5551 Fax: 1-866-336-8467

Latin America-Ph: 1-952-887-5532 Fax: 1-952-736-4212

Europe, Africa & Middle-East Headquarters EMEA EVI Audio GmbH Hirschberger Ring 45, 94315 Straubing, Germany Phone: +49 9421 706-0, Fax: +49 9421 706-265 France: EVI Audio France S.A., Parc de Courcerin, Allée Lech Walesa, F 77185 Lognes, France Phone: +33 1-6480-0090 Fax: +33 1-6006-5103

UK: Shuttlesound, 4 The Willows Centre, Willow Lane, Mitcham, Surrey CR4 4NX, UK Phone: +44 208 646 7114 Fax: +44 208 254 5666

Asia & Pacific Rim Headquarter Asia Telex Communications (SEA) Pte Ltd 38C Jalan Pemimpin Singapore 577180 Tel: (65) 6319 0616 Fax: (65) 6319 0620 Japan: EVI Audio Japan, Ltd 5-3-8 Funabashi, Setagaya-ku, Tokyo 156-0055 Tel: +81 (3) 5316-5021 Fax: +81 (3) 5316-5031

Hong Kong: Telex EVI Audio (Hong Kong) Ltd. Room 508-509, 5/F, Topsail Plaza 11 On Shum Street Shek Mun,Shatin HK Phone: +852 2351-3628, Fax: +852 2351-3329

Shanghai: Telex EVI Audio (Shanghai) Co., Ltd. Room 3105-3109, Tower 1 Office Building, 218 Tian Mu Xi Rd., Shanghai, China Postal Code: 200070 Tel: +86 21-6317-2155 Fax : +86 21-6317-3025

©2010 Bosch Security Systems, Inc. LIT000476000

Live For Sound

