A close-up photograph of a musician playing a saxophone. The musician is wearing a light-colored shirt with a green and red strap over their shoulder. A silver saxophone is held in front of their face, and a silver microphone is positioned to capture the sound. The background is dark with some blue and yellow lighting.

**TELEX.**



Microphones  
2002



Hello,

Last year I had the opportunity to meet Electro-Voice founder Al Kahn, and during our conversation I asked him to name what he enjoyed most during his long career in the professional audio industry. His quick reply was short and sweet, "Microphones". Mr. Kahn explained that at the time he founded the company, microphone design was still relatively new and the technology he and other designers went on to explore was absolutely exciting. Well, things haven't changed much. With the ongoing demands of audio professionals around the world for design advances and better sound, the world of microphones still holds that excitement.

Our approach to wired and wireless microphone design here at Electro-Voice and Telex Communications, Inc. is to continue in the direction that pioneers like Al Kahn began exploring seventy five years ago. It is the culmination of years of research, a commitment to innovation, and a technical staff that is second-to-none. From the first primitive P.A. systems to today's state-of-the-art wireless systems, we have continually sought to bring excellent sound to any and all applications. From WWII tanks to our first steps on the moon, from the first radio broadcasts to tonight's TV news, from the garage band next door to The King, from Knute Rockne to the Super Bowl, and everything in between, our products have been there and it is my commitment that we'll do our very best to keep it that way.

Best regards and good audio,

Joel P. Johnson  
General Manager, Wired & Wireless Microphones  
Telex Communications, Inc.



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# N/DYM® Series

The N/DYM® Series is different from other microphones. For the first time, the quality, reliability and ruggedness of a concert sound microphone are affordable without compromise. Excellent and clear sound, comfortable and safe handling, N/DYM® magnetic structure, EV's unique VOB™ technology and studio sound performance mark EV's N/DYM® Series.

As part of a fixed installation, in studios, or on the road, EV N/DYM® microphones outperform any other microphone in their class. Each microphone comes with a

helpful manual about handling and use. EV is famous throughout the industry for high quality and robust microphones as used in studios, on stage, TV and broadcasting.

It was an EV mic which amplified Neil Armstrong's famous words on his arrival on the moon's surface in 1969. Cardiline®, RE-Series and Variable-D® are all well-known industry terms. Most of EV's microphones are low-impedance enabling long cable runs without RFI problems.

**WIRED MICROPHONES**



## N/D167

Vocal and speech microphone

- Entry into the world of high-performance mics
- Includes accessories



## N/D267 a(s)

Vocal microphone

- On/off-Switch (as version)
- Includes accessories



## N/D767 a

Top-class vocal microphone

- Multi-stage shock mount for unmatched low-handling noise
- Condenser mic performance
- Includes accessories

### SPECS

	N/D167	N/D267 a(s)	N/D767a
Element	Dynamic	Dynamic	Dynamic
Polar pattern	Cardioid	Cardioid	Supercardioid
Impedance, Low-Z balanced	600 ohms	300 ohms	300 ohms
Frequency Response (-3 dB), close response	50 - 12,000 Hz	45 - 15,000 Hz	35 - 22,000 Hz
Frequency Response (-3 dB), far response	100 - 12,000 Hz	100 - 15,000 Hz	70 - 22,000 Hz
Output Level(OdB = 1 m W/Pascal) at 1.000 Hz	- 52 dB	- 52 dB	- 51 dB
Open Circuit Voltage (at 1.000 Hz)	2.3 mV/Pascal	2.9 mV/Pascal	3.1 mV/Pascal
Equivalent Noise (0 dB=20 micropascal) A-weighted	—	—	—
Magnetic Circuit	N/DYM®	N/DYM®	N/DYM®
Specials	see features above	see features above, On/off-Switch (as version)	see features above
Case Material	Metal	Metal	Metal
Finish	Nonreflecting black	Nonreflecting black	Nonreflecting black
Included accessories	Stand adapter, soft zippered carrying pouch	Stand adapter, soft zippered carrying pouch	Stand adapter, soft zippered carrying pouch
Optional accessories	see page 17	see page 17	see page 17
Connector type	3-pin XLR	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	181 x 52 mm	181 x 52 mm	181 x 52 mm
Weight net	238 g	238 g	260 g

## N/DYM® Series Features

N/DYM®: The neodymium based magnet structure provides greater sensitivity, better signal-to-noise ratio and extended frequency range with clear “highs”. In 1985, EV was the first to use neodymium-based magnets. Because of this, N/DYM® mics are unique to the industry.

Note: Other Neodymium mics are not similar to N/DYM®-mics as it's the quantity and quality of the Neodymium used that matters. Therefore N/DYM® mics are unique.

VOB™: This unique EV technology provides tailored bass response for controlled proximity, exceptional vocal clarity and reduced boominess, sibilance and P-popping. Furthermore, VOB™ provides clear, consistent sound without low-end distortion over greater working distances.

Warm Grip™: EV's uniquely designed handle provides a more comfortable and “better” feeling mic with low handling noise.

Memraflex™: A deformed screen risks capsule malfunction and changes the polar pattern dramatically. In many cases, “omnidirectional” sensitivity is the result, which reduces gain-before-feedback close to speakers. Therefore a Memraflex™ screen secures maximum protection and good appearance.



WIRED MICROPHONES



**N/D468**  
Instrument microphone

- Unique “moving head”
- Extreme low self-noise
- Accurate response, even in high SPLs
- Includes accessories



**N/D478**  
Universal microphone

- Ideal to mic drums, percussion or guitars, also as vocal “spare” mic
- Smooth response
- Includes accessories



**N/D868**  
Designed specifically for kickdrums

- RE20 capsule type
- Extended “lows” to tighten mixes
- Frequency response typically eliminating the need of an EQ
- Extreme low self-noise
- Includes accessories

### SPECS

	N/D468	N/D478	N/D868
Element	Dynamic	Dynamic	Dynamic
Polar pattern	Supercardioid	Cardioid	Cardioid variant
Impedance, Low-Z balanced	150 ohms	300 ohms	150 ohms
Frequency Response (-3 dB), close response	30 - 22,000 Hz	45 - 15,000 Hz	20 - 10,000 Hz
Frequency Response (-3 dB), far response	60 - 22,000 Hz	100 - 15,000 Hz	—
Output Level(OdB = 1 m W/Pascal) at 1.000 Hz	- 51 dB	- 52 dB	- 52 dB
Open Circuit Voltage (at 1.000 Hz)	3.1 mV/Pascal	2.9 mV/Pascal	1.0 mV/Pascal
Equivalent Noise (0 dB=20 micropascal) A-weighted	< 14 dB SPL	—	< 17 dB SPL
Magnetic Circuit	N/DYM®	N/DYM®	N/DYM®
Specials	see features above	see features above	see features above
Case Material	Metal	Metal	Metal
Finish	Nonreflecting black	Nonreflecting black	Nonreflecting black
Included accessories	Stand adapter, soft zippered carrying pouch	Stand adapter, soft zippered carrying pouch	Stand adapter, soft zippered carrying pouch
Optional accessories	see page 17	see page 17	see page 17
Connector type	3-pin XLR	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	115 x 52 mm	181 x 52 mm	133 x 60 mm
Weight net	190 g	247 g	295 g



# Cobalt™ Series

Cobalt™ microphones are EV's newest offering – with roadworthy performance, affordability, and ergonomics Cobalt™ satisfies all the microphone needs of the music market. The Co11 is the newest addition to the line, offering condenser performance at an affordable price. The Co4 is ideal for a variety of instruments and stage applications; the other members of the Cobalt family all provide outstanding performance for vocal and spoken word program. From the high-SPL handling of the Co7 to the premium Co9, and the Co5 with its on/off switch, Cobalt provides versatility and exemplary sound. All microphones come complete with a stand adapter and a zippered, vinyl carrying pouch.



**WIRED MICROPHONES**

**NEW**  
CONDENSER



**Co11**  
Condenser Vocal Mic

The new Co11 offers extended frequency response and wide dynamic range. Ideal for anyone who appreciates the crisp high end and warm proximity effect that can only come from a top performing condenser mic. It features a high compliance shock mount that makes handling noises "disappear" and comes in a rugged die cast housing with EV's famous Memraflex™ dent resistant grille screen.



**Co9**  
Premium Vocal Mic

The Co9 is a favorite among vocalists across all musical genres. Regardless of the live performance application, sound technicians and engineers feel confident with this mic. A slight bass roll-off and accentuated midrange make this a superb, world-class sound transducer.

**SPECS**

	Co9	Co11
Element	Dynamic	Self-biased condenser
Polar pattern	Cardioid	Cardioid
Impedance, Low-Z balanced	600 ohms	Low-Z balanced (250 Ohms)
Frequency Response (-3 dB)	50 - 18,000 Hz	50 - 20,000 Hz
Open Circuit Voltage (at 1,000 Hz)	3.2 mV/Pascal	—
Power requirement (Phantom power)	N/A	24 to 48 Vdc
Current Consumption	N/A	N/A
Magnetic Circuit	N/DYM®	N/A
Specials	—	—
Case Material	Die cast zinc	Die cast zinc
Finish	cobalt	cobalt
Included accessories	Stand adapter, zippered vinyl carrying pouch, hard-shell case	Stand adapter (black) gig bag
Connector type (Details see page 73)	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	170 x 53 mm	173 x 53 mm
Weight net	335 g	292 g





# Cobalt™ Series



## Co7

### Crossroad Vocal Mic

The Co7 is the perfect choice for the performer who wants hassle free sound — a mic that performs in high volume situations without feedback. Built to the same standards of EV's N/DYM® microphones, this mic's low handling noise also makes it ideal in critical acoustic settings.



## Co5

### Classic Vocal Mic

Designed for the performer who prefers a careful balance of highs, midrange and bass, the Co5, with on/off switch, offers exceptional vocal intelligibility with controlled proximity effect. With the Co5, you get clarity and grit – when YOU want it.



## Co4

### Instrument Mic

Designed to yield outstanding performance in applications requiring the miking of acoustic and electric instruments, as well as vocal performances. Excellent for stage or studio, the rugged Co4's versatility will make it a “must have” in any microphone mix.

WIRED MICROPHONES

## SPECS

	Co4	Co5	Co7
Element	Dynamic	Dynamic	Dynamic
Polar pattern	Cardioid	Cardioid	Cardioid
Impedance, Low-Z balanced	600 ohms	600 ohms	600 ohms
Frequency Response (-3 dB)	50 - 18,000 Hz	50 - 18,000 Hz	50 - 18,000 Hz
Open Circuit Voltage (at 1,000 Hz)	2.2 mV/Pascal	2.8 mV/Pascal	3.2 mV/Pascal
Power requirement (Phantom power)	N/A	N/A	N/A
Current Consumption	N/A	N/A	N/A
Magnetic Circuit	N/DYM®	N/DYM®	N/DYM®
Specials	—	Low-noise On/off-Switch	—
Case Material	Die cast zinc	Die cast zinc	Die cast zinc
Finish	cobalt	cobalt	cobalt
Included accessories	Stand adapter, zippered vinyl carrying pouch hard-shell case	Stand adapter zippered vinyl carrying pouch hard-shell case	Stand adapter, zippered vinyl carrying pouch hard-shell case
Connector type (Details see page 73)	3-pin XLR	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	148 x 23 mm	170 x 53 mm	170 x 53 mm
Weight net	340 g	306 g	332 g



## RE Series

The RE Series is the first choice of microphones for smooth and accurate sound reproduction. Its unique and famous performance make it a favorite in the broadcast, studio and professional touring business. RE20 and RE27 N/D broadcast microphones were developed with EV's Variable-D® design to ensure true and accurate response across all frequencies without the up-close boominess associated with proximity effect. As a result, these microphones have become the industry standard for radio studios worldwide. And when it comes to studio recording or professional concert sound jobs, the RE20 and our other condenser models, RE200 and RE1000, provide you with the tools you need to get the sound you're after when recording vocals, guitars, drums or brass. For more details about Variable-D®, see page 40.



WIRED MICROPHONES



### RE20

- Variable-D® for minimal proximity effect
- True cardioid with no coloration at 180° off-axis
- Ultra-flat frequency response
- Studio condenser response
- Large diaphragm
- Humbucking coil
- Integral wind and blast filter
- Switchable EQ (down -4.5 dB from 400 to 100 Hz)
- Comes with accessories

### RE27 N/D

- Variable-D® for minimal proximity effect
- N/DYM® element design brings 6 dB more sensitivity
- Ultra-flat frequency response
- Studio condenser performance
- Large diaphragm
- 3 selectable filters:
  - 6 dB, 250-100 Hz /
  - 12 dB, 1000-100 Hz/
  - 3 dB high frequency roll-off
- Integral wind and blast filter
- Comes with accessories

### SPECS

	RE20	RE27
Element	Dynamic	Dynamic
Polar pattern	Cardioid	Cardioid
Impedance, Low-Z balanced	150 ohms	150 ohms
Frequency Response (-3 dB)	45 - 18,000 Hz	45 - 20,000 Hz
Power Level (0dB = 1 mW/Pascal) at 1,000 Hz	- 57 dB	- 51 dB
Open Circuit Voltage (at 1,000 Hz)	1.5 mV/Pascal	3.1 mV/Pascal
Equivalent Noise (0 dB=20 micropascal) A-weighted	—	—
Maximum SPL (1% distortion, 1,000 Hz)	—	—
Power requirement (Phantom power)	N/A	N/A
Current Consumption	N/A	N/A
Magnetic Circuit	—	N/DYM®
Specials	Variable-D®	Variable-D®
Filters	Tilt-down EQ	3 selectable EQs
Case Material	Steel	Steel
Finish	Fawn beige	Satin nickel
Included accessories	Stand adapter, zippered vinyl carrying pouch, hard-shell case	Stand adapter zippered vinyl carrying pouch, hard-shell case
Connector type	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	217 x 54 mm	217 x 54 mm
Weight net	737 g	709 g





# RE Series Performance Mics



## RE510

- Professional self-biased condenser vocal microphone
- Selectable low-end roll-off
- Supercardioid pattern
- Excellent off-axis rejection
- Wide dynamic range
- Large diameter diaphragm for clear, warm sound
- Warm grip handle for great feel and low handling noise

**NEW**  
CONDENSER



## RE16

- Variable-D Dynamic Supercardioid handheld
- 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
- Bass roll-off switch
- Memraflex grille means screen keeps its shape



## RE200

- High-end transducer based on world standard studio microphone RE2000
- Very low self-noise
- AcoustiDYM™ shock-mount system
- Ultralow-mass, gold-laminated diaphragm
- Transformerless output device
- Rear response 15 dB below the front axis at 1,000 Hz
- Comes with accessories



## RE1000

- High-end studio true condenser microphone
- Very low self-noise (< 14 dB SPL, A weighted)
- Extremely linear frequency response
- Low-mass, gold-laminated large diaphragm
- Tighter polar pattern and transient response of a smaller diaphragm
- Output electronics provide no voltage gain to ensure low self-noise
- Transformerless output device
- Integrated two-stage pop-filter
- Switchable Roll-off filter (130 Hz/12 dB)
- Comes with accessories

### SPECS

	RE510	RE200	RE1000	RE16
Element	Condenser (self-biased)	True condenser	True condenser	Dynamic
Polar pattern	Supercardioid	Cardioid	Supercardioid	Supercardioid
Impedance, Low-Z balanced	150 ohms	200 ohms	250 ohms	150 ohms
Frequency Response (-3 dB)	50 - 20,000 Hz	50 - 18,000 Hz	70 - 18,000 Hz	80-15,000 Hz
Power Level (0dB = 1 mW/Pascal) at 1,000 Hz	-41 dB	-39 dB	-39 dB	-56 dB
Open Circuit Voltage (at 1,000 Hz)	5.6 mV/Pascal	10 mV/Pascal	11 mV/Pascal	1.4 mV/Pascal
Equivalent Noise (0 dB=20 micropascal) A-weighted	18 dB SPL	21 dB SPL	< 14 dB SPL	
Maximum SPL (1% distortion, 1,000 Hz)	140 dB SPL	130 dB	130 dB	150 dB
Power requirement (Phantom power)	12 - 52 VDC	12 - 52 VDC	12 - 48 VDC	
Current Consumption	N/A	3.5 mA	—	
Magnetic Circuit	N/A	N/A	N/A	N/A
Specials	transformerless output device	AcousticDYM, transformerless output device	transformerless output device	—
Filters	switchable low-freq roll-off	—	switchable roll-off	—
Case Material	Metal	Metal	Metal	Steel
Finish	Warm-Grip black handle	Semi-gloss camera black	low-gloss black texture	Fawn beige micomatte
Included accessories	Stand adapter, zippered vinyl carrying pouch	Stand adapter, windscreen	Stand adapter, hard-shell case	Stand adapter Zippered vinyl pouch Model 310A
Connector type	3-pin XLR	3-pin XLR	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	180 x 50 mm	137 x 28 mm	205 x 62 x 43 mm	187 x 45,2 x 19,1 mm
Weight net	215 g	185 g	400 g	227 g

WIRED MICROPHONES



# Live Interview Mics

EV's 635 and RE50 microphones are famous in broadcast, television, and radio OBs (outside broadcasts). These microphones set world standards especially for ENG (electronic news production) and EFP (electronic

field production). They are extremely rugged, can withstand high humidity, temperature extremes and corrosive effects such as salt-air yet provide excellent sound performance.



**RE50/B**  
**RE50 N/D**

- N/DYM® element design offers higher output (RE50 N/D)
- No muddy lows when used near lips
- Dyna-Damp™ for extremely effective handling noise isolation
- On-camera use with 422 A desk stand
- Acoustalloy® diaphragm material for very smooth response over a wide frequency range
- Withstands high humidity; temperature extremes, corrosive salt air
- Integrated four-stage pop-filter
- Integral windscreen and blast filter
- Comes with accessories



**635A (beige)**  
**635A/B (black)**

- Linear frequency response
- Completely pop-free performance
- Four-stage pop and dust filter
- Internal effective shock absorber
- Comes with accessories



**635N/D-B**

- Uniform 80 - 13,000 Hz frequency response
- N/DYM® element design offers higher output
- Acoustalloy® diaphragm material for very smooth response over a wide frequency range
- Integral windscreen and blast filter
- Comes with accessories

SPECS	RE50/B	RE50N/D-B	635A(B)	635N/D-B
Element	Dynamic	Dynamic	Dynamic	Dynamic
Polar pattern	Omnidirectional	Omnidirectional	Omnidirectional	Omnidirectional
Impedance, Low-Z balanced	150 ohms	150 ohms	150 ohms	150 ohms
Frequency Response (-3 dB)	80 - 13,000 Hz	80 - 13,000 Hz	80 - 13,000 Hz	80 - 13,000 Hz
Power Level (0dB = 1 mW/Pascal) at 1,000 Hz	- 55 dB	- 51 dB	- 55 dB	- 51 dB
Open Circuit Voltage (at 1,000 Hz)	—	2.0 mV/Pascal	—	2.0 mV/Pascal
Equivalent Noise (0 dB=20 micropascal) A-weighted	—	—	—	—
Maximum SPL (1% distortion, 1,000 Hz)	—	—	—	—
Power requirement (Phantom power)	N/A	N/A	N/A	N/A
Current Consumption	N/A	N/A	N/A	N/A
Magnetic Circuit	Alnico	N/DYM®	Alnico	N/DYM®
Specials	Dyna-Damp™	Dyna-Damp™ Memraflex	—	Acoustalloy®
Filters	—	—	—	—
Case Material	Aluminum	Aluminum	Steel	Steel
Finish	Semi-gloss camera black	Semi-gloss camera black	Fawn beige (A) Semi-gloss black (A/B)	Semi-gloss camera black
Included accessories	Stand adapter zippered vinyl carrying pouch hard-shell case	Stand adapter zippered vinyl carrying pouch hard-shell case	Stand adapter	Stand adapter
Optional accessories	see page 17	see page 17	see page 17	see page 17
Connector type	3-pin XLR	3-pin XLR	3-pin XLR	3-pin XLR
Dimension (Length x max. Diameter)	197 x 49	197 x 49	151 x 36 mm	151 x 36 mm
Weight net	269 g	269 g	170 g	170 g

# Live Interview Mics



## ENG618

- Integrated Shotgun/Boom-pole Microphone
- Designed for ENG / Broadcast news gathering
- Hypercardioid-line back-electret condenser mic
- Ultra-lightweight boom-pole extends from 18" to 6ft length
- Includes built-in headphone pre-amp
- Operates from either Phantom or battery power

### SPECS

### ENG 618

Generating Element:	Condenser, back electret
Frequency Response:	50 - 8,000 Hz, 200Hz roll-off switch
Polar Pattern:	Hypercardioid-line
Sensitivity, (Open Circuit Voltage, 1kHz):	19 mV/Pascal
Power Level, 1kHz (0 dB = 1 mW/pascal):	-55 dB
Clipping Level (1% THD)	120 dB SPL
Equivalent Noise:	15 dB SPL, A-weighted
Dynamic Range:	105 dB
Output Impedance, 1 kHz:	100 ohms
Power Requirements:	12 - 52 V dc phantom supply or 9V battery
Current consumption:	2mA phantom, 20 mA battery (20 hr estimated battery life)
Dimensions:	
Length, collapsed:	46 cm (18 in)
Length, extended:	180 cm (6 ft)
Diameter:	9 cm (3.5 in)
Capsule diameter:	5.3 mm (0.21 in)



WIRED MICROPHONES



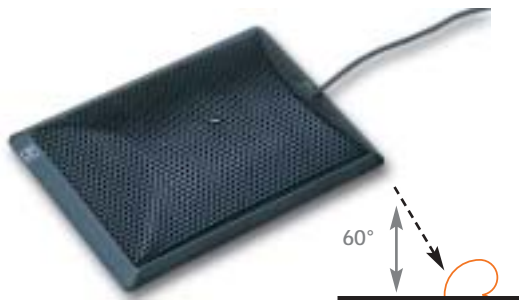
# Installation Microphones

The RE90 series brings the famous sound performance of EV's legendary RE series to fixed installations for public speaking, as well as theatrical productions. EV's RE90 microphones are the most natural-sounding microphones on the market for public speaking, etc. and as a matter of course for professional theatrical productions. Compact, yet austere, the EV RE90 series is inconspicuous – an important consideration in many cases. Ergonomically and architecturally designed, EV has married functionality with aesthetics making RE series the traditional favorite among sound contractors, architects and sound engineers. RE90 microphones are designed for the highest-quality applications with linear frequency response and excellent,

high gain-before-feedback. The cardioid types have a typical rear response 15 dB below the front response. All microphones guarantee a uniform polar pattern across the range, high sensitivity, low self-noise and provide a transformerless output device.

The high-quality pre-amps are highly-resistant to electrical noise and radio frequency interference (RFI). RE90 L and RE90 H have an internal pre-amp housed in the XLR connector. Gooseneck microphones have an all metal construction to substantially reduce noise from stray magnetic fields and RFI. The unique and patented multi-polar PolarChoice™ sets standards in sound and flexibility.

WIRED MICROPHONES



**RE90 B (Black)**  
**RE90 BW (White)**

- Boundary layer
- Ultra-thin profile (16 mm) housing with rubber nonslip bottom pad and strong steel screen
- Internal terminal block for disconnecting cable to insert thru holes
- Integrated pop filter
- Ideal working angle 60° off-axis
- Comes with accessories

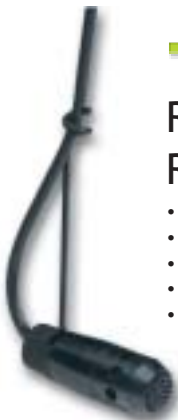


## RE90 L

- Lavalier microphone
- Sub-miniature capsule design
- Capsule provides superior EMI/RFI shielding
- Very light-weight yet extremely reliable
- Internal pre-amp with very low current consumption
- Comes with accessories



Actual size



**RE90 H (Black)**  
**RE90 HW (White)**

- Hanging microphone
- Internal Pre-amp
- Very uniform polar pattern
- Includes an installation guide
- Comes with accessories



**CH230 (Black)**  
**CH230 W (White)**

- Hanging microphone ideal for choirs and live theater
- Includes external pre-amp with low-frequency roll-off switch
- Includes pre-amp shield for high resistance to electrical noise and RF interference
- Exceptionally high sensitivity,
- Very wide dynamic range (<105 dB),
- Smooth extended frequency response
- Uniform cardioid directional pattern is perfect for the highest quality distance sound pickup



## RE90 P-12 RE90 P-18

- Gooseneck podium microphone
- Also perfect for instruments on stage (i.e. acoustic guitar or choir)
- Uniform frequency response and polar pattern
- Strutted (yet flexible) ultra-thin gooseneck
- Integrated two-stage pop-filter
- Comes with accessories

## PolarChoice™ 12 PolarChoice™ 18

- Gooseneck podium microphone
- Selectable polar pattern - four to choose from (omnidirectional, cardioid, super-cardioid, hyper-cardioid)
- Dual capsule design
- Consistent on-axis response
- Strutted (yet flexible) ultra-thin gooseneck
- Comes with CPSM shock mount
- Comes with accessories

### SPECS

#### RE90 P

#### PolarChoice™

Element	Back electret condenser	Back electret condenser
Polar pattern	Cardioid	Omni, Super-, Hyper, Cardioid
Impedance, Low-Z balanced	200 ohms	200 ohms
Frequency Response (-3 dB)	70 - 15,000 Hz	75 - 15,000 Hz
Power Level (0 dB = 1 mW/Pascal) at 1,000 Hz	- 43 dB	- 44 dB
Open Circuit Voltage (at 1,000 Hz)	4.5 mV/Pascal	5.6 mV/Pascal
Equivalent Noise (0 dB = 20 micropascal) A-weighted	< 28 dB SPL	< 28 dB SPL
Maximum SPL (1% distortion, 1,000 Hz)	130 dB	130 dB
Power requirement (Phantom power)	9 - 52 VDC	9 - 52 VDC
Current Consumption	2.5 mA	2.8 mA
Magnetic Circuit	N/A	N/A
Specials	transformerless output device	transformerless output device
Case Material	Steel	Steel
Finish	Nonreflecting black	Nonreflecting black
Included accessories	Windscreen, double-sided	Windscreen, two-piece shock mount CPSM-Kit
Optional accessories	see page 17	see page 17
Connector type	3-pin XLR	3-pin XLR
Dimension	P-12: 281 x 6.4 mm (11.05 x 0.25 in.) P-18: 443 x 6.4 mm (17.45 x 0.25 in.) (gooseneck)	PC-12: 299 x 6.4 mm (11.75 x 0.25 in.) PC-18: 461 x 6.4 mm (18.15 x 0.25 in.) (gooseneck)
Weight net	400 g (P-18: 528 g)	411 g (PC-18: 539 g)



WIRED MICROPHONES

### SPECS

#### RE90 B

#### RE90 H

#### RE90 L

#### CH230W

Element	Back electret condenser	Back electret condenser	Back electret condenser	Back electret condenser
Polar pattern	(Half-) Cardioid	Cardioid	Omnidirectional	Cardioid
Impedance, Low-Z balanced	200 ohms	200 ohms	100 ohms	150 ohms
Frequency Response (-3 dB)	80 - 15,000 Hz	75 - 15,000 Hz	50 - 18,000 Hz	30 - 20,000 Hz
Power Level (0 dB = 1 mW/Pascal) at 1,000 Hz	- 33 dB	- 30 dB	- 34 dB	- 21.7 dB
Open Circuit Voltage (at 1,000 Hz)	25 mV/Pascal	27 mV/Pascal	12.6 mV/Pascal	30 mV/Pascal
Equivalent Noise (0 dB = 20 micropascal) A-weighted	< 25 dB SPL	< 25 dB SPL	< 29 dB SPL	< 22 dB SPL
Maximum SPL (1% distortion, 1,000 Hz)	127 dB	120 dB	130 dB	127 dB
Power requirement (Phantom power)	9 - 52 VDC	9 - 52 VDC	9 - 52 VDC	12-52 VDC
Current Consumption	2.5 mA	2.0 mA	1.0 mA	2.1 mA
Magnetic Circuit	N/A	N/A	N/A	N/A
Specials	transformerless output device	internal pre-amp	internal pre-amp	external pre-amp shield box mounting hardware switchable high pass filter
Filters	—	—	—	—
Case Material	Heavy-duty zinc diecast	Steel	Polycarbonate resin	Steel
Finish	Nonreflecting black or white	Low-gloss black or white	Nonreflecting black	Nonreflecting black or white (CH230W)
Included accessories	180 cm thin and flexible cable	760 cm braided cable	Gig bag	9.1 cable
Optional accessories	see page 17	see page 17	see page 17	—
Connector type	3-pin XLR	3-pin XLR	3-pin XLR	3-pin XLR
Dimension	128 L x 94 W x 16 H mm	37 L x 13 D mm	6 L x 5 D mm	41,9 L x 10,5 D mm 67,3 L x 40,6 W x 30,5 D mm
Weight net	358 g	157 g	34 g	332 g



# General Purpose Microphones



## US622L Single-zone desktop paging mic

A dynamic, low-impedance balanced-output microphone. Designed for general communication and paging application use. Stand alone for desktop use or may be configured for handheld operation. Noise cancelling design, provides base-mounted push-to-talk operation.



## MP756 11-zone desktop paging mic

An 11-zone all-call microphone. MP756 features an all-call switch for simultaneous activation of all paging zones and a paging indicator lamp.



A 3-zone all-call microphone. MP753 features an all-call switch for simultaneous activation of all paging zones and a paging indicator lamp.



## 253 Single-zone desktop paging mic

A low-impedance single-zone paging desk microphone. Microphone housing is constructed of strong, one-piece, die-cast zinc alloy with gray powder coat finish. 253 is equipped with a 4-conductor, 2-shield cable to allow for external relay operation. Also equipped with a front press-to-talk bar with a locking bar lever on the side of the base. Rugged yet sensitive, the 253 should be used with amplifiers that have input impedance of 50 to 250 ohms.

## SR785LN/O Single-zone gooseneck mic



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 windscreen and a durable satin-chrome finish. All units include a heavy-duty, 3-hole mounting flange and an extra-strength 16-inch flex arm of steel tubing. SR785LN/O includes a push-button switch with normally "open" switching.



Same as SR785LN/O except without normally "open" switching.



Same as SR785LN/O except without a switch.



## NC585L Noise-canceling gooseneck paging mic

This low impedance noise-cancelling dynamic gooseneck microphone is designed for use in high noise environments. The noise cancelling microphone picks up sound only from the close talking position. With no on/off switch, it is ideal for noisy restaurant environments where hands-free operation is required.

WIRED MICROPHONES

### SPECS

	US622L	MP756/753	253	SR758LN/O	758L	NC585L
Generating Element	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
Frequency Response	100 Hz-9 kHz	60 Hz-10 kHz	60 Hz-10 kHz	100 Hz-10 kHz	100 Hz-10 kHz	100 Hz-7 kHz
Polar Pattern	Noise cancelling	Omnidirectional FL: Noise cancelling	Omnidirectional	Omnidirectional	Omnidirectional	Noise cancelling
Impedance	150 ohms	200 ohms	150 ohms	150 ohms	150 ohms	150 ohms
Output Level	-57 dB	-58 dB	59 dB	-58 dB	-58 dB	-60 dB
Switch	Shorts or opens in "off" mode	11 zone and all call	2 zone (SB253) single zone (253)	Single zone normally open (SR785LN/O) normally shorted (SR785L)	—	—
Dimensions, in. (H x W x D)	9.7 x 4.5 x 4.8	9 x 4 x 6	7.75 x 4 x 5.5	Gooseneck 16 Body 5.25 x 1.825	Gooseneck 16 Body 5.25 x 1.825	Gooseneck 9 x 4 x 6
Net Weight	1 lb., 13 oz. (822g)	2 lb. (0.9 kg) including cable	2 lb. (0.9 kg)	14 oz. (397 g)	1.25 lb. (0.57 kg)	16 oz. (450 g)

# General Purpose Microphones



## US690 Gooseneck mic

A 12-inch flexible gooseneck microphone. Features N/DYM® magnet structures that provide up to 6 dB more sensitivity than conventional designs. A dynamic cardioid, the US690 terminates with an XLR-type connector and plug-in mount. Rugged design and mic element make the US690 ideal for the most demanding applications where good sound is required.



## US600EL PTT hand mic

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, US600EL is built to withstand rough usage and atmospheric extremes.

**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.



## 649 B

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 aluminium case and nested mechanical parts assure rugged durability. The 649B is also used in industrial applications.



## NC450D PTT noise-cancelling hand mic

A dynamic paging hand microphone. NC450D's noise-canceling design makes it particularly effective for use in noisy locations and excellent voice response characteristics make it a good choice in quiet areas as well. Output impedance is 200 ohms for matching low impedance input circuits. A push-to-talk switch is located on the molded ABS microphone housing. A soft rubber lip guard assure user of correct microphone-to-mouth positioning.

**450D** Same as NC450D except without noise-cancellation. Molded Cicolac® housing in pebble-grain black finish and unterminated black neoprene coil cord relieved at the housing by spring-type strain relief.



## WP300S Wall plate mic

A dynamic, omnidirectional wall plate microphone. Ideal for security monitoring, fast-food and retail outlets, warehouses and public usage applications. WP-300S mounts on standard electrical, single-gang wall boxes. The housing of each unit is an aluminum assembly on a steel outlet plate with a brushed, satin-chrome finish. The assembly is complete with rubber shock mount. Includes a double-pole, double-throw switch for push-to-talk and line shorting capabilities.

**WP300** Same as WP-300S except without double-pole, double-throw switch.

### SPECS

	US690	US600EL/FL	649B	450/NC450D	WP300/300S
Generating Element	Dynamic	Dynamic	Dynamic	Dynamic	Dynamic
Frequency Response	60 Hz-20 kHz	60 Hz-10 kHz	80 Hz-10 kHz	100 Hz-8 kHz	100 Hz-10 kHz
Polar Pattern	Supercardioid	Omnidirectional FL: Noise cancelling	Omnidirectional	Omnidirectional (450D) Noise cancelling (NC450D)	Omnidirectional
Impedance	150 ohms	200 ohms	150 ohms	200 ohms	150 ohms
Output Level	-50 dB	-58 dB	-61 dB	-64 dB	-60 dB
Switch	N/A	11 zone and all call		PTT	PTT
Dimensions, in.	2 dia x 16.6 long	9 H x 4 W x 6 D	0,75 dia x 2.25 long	2.5 H x 3 W x 4 D	(WP300S only)
Net Weight	1 lb., 1.8 oz. (505 g)	2 lb. (900 g) including cable	0,7 lb. (310 g)	0,5 lb. (225 g)	4.5 H x 2.75 W x 1.125 D WP300S: 3.5 oz. (99 g)



## Microphone Accessories



**WIRED MICROPHONES**





# Microphone Accessories



## EV Wired Microphone Accessories

- 422A** Desk stand with rubber shock mount - accepts mic stand clamps, black
- 309A** Suspension shock mount for RE20, RE27, black
- 323S** Mic stand clip for 1.0 inch diameter microphones (RE50, BK-1), black
- MSA-NDV** Mic stand clip for tapered microphones (N/DYM®), black. Same as MSA-COV
- 311** Mic stand clamp for all EV 3/4-inch diameter microphones (635A, RE16, RE200, N/D468), black
- MSA-COI** Stand clamp for Cobalt® Co4 instrument microphone, black
- 320** Stand clamp for RE20, RE27, N/D868
- 376/379** Windscreen pop filter, 376 - gray, 379-1 - black, 379-2 - red.
- CPSM** Shock mount for RE90P and PolarChoice™ gooseneck mics, black
- FMK** Flange mount for RE90P and PolarChoice™ gooseneck mics, black
- 368** Drum mic mounting clamp (N/D468, N/D478), black
- 314E** (not pictured)  
Windscreen pop filter for use with 635 series mics, gray



Where does the sound engineer, guitar tech or performer turn to minimize the stress of using wireless equipment? To Electro-Voice®, a company that has over 25 years of experience in wireless innovations. The RE-1™ wireless system takes frequency agility to a whole new level...

touring performance with unmatched simplicity. The clear channels have always been there — but it took EV to bring them to your fingertips. Now you can feel secure that even the most crowded RF environments are fully manageable with the Electro-Voice RE-1!

## Receiver Features and Benefits

- Optimized channel groups allow up to 16 systems to operate simultaneously in one frequency band. For groups larger than 16, EV can help with the coordination and custom groups are easily programmed.
- Programmable in 25 kHz steps across 24 MHz operating bandwidth, there are over 950 possible channels so you can always find a clear channel.
- Advanced ClearScan™, automatic group and channel selections, allows quick, simple setup.
- Backlit LCD Display shows the Sound Engineer the Group/Channel, transmitter battery status, diversity operation, RF and Audio level meters, and space for a custom label.
- Specially designed “Sound Check” mode provides the ability for one person to walk test the microphone in the performance space with tangible results.
- Patented DSP Posi-Phase™ Diversity System for maximum range and audio quality.
- Balanced XLR microphone output and 1/4-inch unbalanced adjustable line level output to match the application.
- Rackmount hardware included.
- Three Year Limited Warranty.

## Transmitter Features and Benefits

### All Transmitters

- Unique “smart” battery circuit in the transmitters means there is no way to put the battery in wrong.
- LCD display and same four control buttons as receiver make channel or frequency programming quick and easy.
- Low battery LED lights when battery needs changing and you can check the battery level every time you turn on the transmitter.
- One on/off switch also acts as a mute. Great for pauses in presentations and worship services.
- On/off button can be disabled to prevent accidental turnoffs during performance.
- Normal and High power transmit uses low power for the application, maximizing number of simultaneous systems and limiting RF spillover into adjacent buildings/theaters.

### Handheld Transmitter

- Interchangeable microphone head allows choice of elements to fit vocalist's style and environment.
- N/DYM® 767a premium dynamic vocal mic with VOB™ (Vocally-Optimized Bass), excellent gain before feedback for high SPL stages.
- The new RE510 premium condenser vocal microphone for experienced vocalists, spoken word and quieter stages.
- Internal 1/2-wave antenna: excellent range; stays out of harm's way
- Over-molded Warm-Grip™ handle reduces handling noise and encourages proper microphone technique for better performances.

## Bodypack Features

- Cast magnesium housing weighs only ounces but is durable enough to take the pounding on tour.
- Detachable 1/4-wave antenna allows for easy replacement or using different antenna options.
- Cell phone style beltclip included for quick and easy attachment. Optional pouches also available for wearing under costumes or for more vigorous applications.
- EV has a wide selection of lapel and headworn microphones and microphone accessories to go with the RE-1 bodypack transmitter.

### Unique Guitar Bodypack Features

- Dual band compander circuit provides the audio bandwidth required to cover the lows of a bass guitar to the highs of a solid body.
- Mic/Instrument switch adds a 20 dB pad in the transmit path so the standard bodypack can be used for microphone and guitars.
- Guitar patch cord featuring George L's® cable with right angle and straight plugs included to fit your guitar.



## APD-4 Antenna Distribution System

- Drives up to four RE-1 diversity receivers using a single pair of antennas to conserve rack space and eliminate the "antenna farm". (8 TNC output and 2 front mount TNC cables included, 1/2-wave antennas sold separately.)
- Supports "cascade" arrangement of multiple APD-4 splitters to allow you to drive up to 16 receivers using just 2 antennas.
- Power outputs for up to four receivers help conserve power strip space. (4 cables included)



Platinum country artist and EV Endorser Neal McCoy

### SPECS RE-1

#### CSR-1000 Receiver

<b>Controls</b>	
Front Panel:	On/Off, Menu, Set, Up, Down Buttons
Rear Panel:	1/4 inch output level
Indicators LCD	Group, Channel, Diversity, Label, Set-up
Backlit Display:	Transmitter Battery Level, Audio Signal Amplitude and RF Signal Strength, Squelch
<b>Connectors</b>	
Back Panel:	1/4 inch unbalanced adjustable line level output XLR balanced mic level output USB programming port
<b>Antennas:</b> Detachable 1/4-wave	
Number of Channels:	950 possible (programmable in 25 kHz steps)
Diversity:	DSP SecurePhase True Diversity
Receiver Type:	Synthesized PLL Agile UHF
RF Sensitivity:	<0.8uV for 12 dB SINAD
Agency Approvals:	FCC, IC, CE
Audio Specifications	100 - 15 kHz +/- 2 dB Microphone
Frequency Response:	30 - 15 kHz +/- 2 dB Instrument
<b>Audio Output Level:</b>	
Line Level	8 mV - 0.775V RMS @ 100 k ohm load
Balanced	-20 dBV max (@40 kHz deviation)
Distortion:	Less than 0.5% (@1 kHz, 40 kHz deviation)
Signal to Noise Ratio:	> 110 dB(A)
Dynamic Range:	>100 dB
<b>General Specifications</b>	
Power Supply:	External 12 VAC 750mA in-line with cord
Size:	1.72 in. H x 7.50 in. W x 8.38 in. D 43.69 mm H x 190.50 mm W x 212.85 mm D

#### CSB-1000 Bodypack Transmitter

<b>Controls:</b> Power on/off switch, Audio Gain Adjustment with 40 dB range, Transmit Power Switch, Microphone/Instrument Switch (0,-20 dB), Menu, Set, Up, Down Buttons	
Indicators:	Red LED Low Battery Indicator, LCD displays one of the following: Channel/Group, Frequency, or Battery Level
Battery Life:	8 hours with 9V alkaline typical
Antenna:	External 1/4-wave detachable
Connector:	TA4 input for microphone Pin 1 ground, Pin 2 Mic input Pin 3 +5V Bias, Pin 4 +5V through 3 kΩ
RF Output:	Normal: 5 mW typical High: 50 mW typical
Case Material:	Cast Magnesium
Size:	4.4 in. H x 2.6 in. W x .9 in. D 111 mm H x 66 mm W x 23 mm D

#### CSH-1000 Handheld Transmitter

<b>Controls:</b> Power on/off, Audio Gain Adjustment with 26 dB range Transmit Power Switch, Menu, Set, Up, Down Buttons	
Displays:	Red LED Low Battery Indicator, LCD displays one of the following: Channel/Group, Frequency, or Battery Level
Battery Life:	8 hours with 9V alkaline typical
Antenna:	Internal 1/2-wave
Microphone Elements:	EV N/D 767a Dynamic or RE 510 Condenser
RF Output:	Normal: 5 mW typical High: 50 mW typical
Size:	10.5 in. (26.8 cm) long



# N/DYM® Series Wireless

The N/DYM® Series UHF Wireless is a 10-channel frequency-agile system that provides professional quality performance at a price working musicians can afford! N/DYM® wireless also features the latest in wireless technical innovations — ClearScan™ auto channel select. ClearScan greatly simplifies system set-up by automatically scanning and selecting a clear channel for trouble-free operation. The handheld systems feature EV's famous N/DYM® elements for great sound and performance. The N/DYM® Series UHF Wireless from EV sets the new standard for wireless systems.



## NRU Receiver

The N/DYM® wireless receiver is housed in a half-rack-wide metal housing and features Secure-Phase™ diversity for clear, drop-out-free audio. Fixed, front-mount antennas for quick system set-up; balanced, mic-level XLR output; level adjustable, unbalanced, 1/4" output; a seven-segment, LED channel display; adjustable squelch control; Transmit and Diversity LED indicators and channel-change lockout. Single or double rack-mount kits are also available (RM-S and RM-D).



## NRSCU Receiver

The N/DYM® NRSCU is housed in the same half-rack metal housing but with added features for fixed installations. Install features include detachable rear mount antennas, 4 segment RF signal meter, 4 segment audio level meter, and single/dual rack mounting hardware included.



## Transmitters

N/DYM® wireless transmitters feature adjustable audio gain control, on/off and mute switches, up to ten hours of battery life on a single 9-volt battery, rotary channel-select switch and low-battery indicator. Bodypack transmitters feature a flexible 1/4-wave whip antenna, while the handheld transmitters contain an internal high efficiency antenna.





featuring  
**ClearScan™**

Auto Channel Select



ClearScan™ is the latest in wireless technical innovations from EV. With the simple touch of a button, ClearScan automatically scans the airwaves and quickly selects the best of 10 UHF channels.

**SPECS**

**N/DYM® Wireless System**

<b>Wireless Receiver</b>	
Operating Frequencies :	710MHz – 862 MHz in 4 different 12 MHz wide bands.
Number of Selectable Channels	10
Diversity True diversity with Secure-Phase™	
RF Sensitivity	<0.8 µV for 12 dB SINAD
Agency Approvals:	FCC, IC, CE
Frequency Response	50-15,000 Hz ±2 dB
Audio Output, Balanced (XLR)	-20 dBV (600-ohm load)
Distortion	Less than 0.5%
Signal/Noise Ratio	94 dB
Dynamic Range	100 dB
Receiver Type	Synthesized PLL
Size (receiver housing)	190 mm (7.5 in.) x 145 mm (5.75 in.) x 43 mm (1.7 in.)

**SPECS**

**NRU Receiver**

<b>Receiver: NRU</b>	
<b>Controls</b>	
Front Panel	Channel-set button: increments channel setting by one; also used to activate ClearScan™ and channel-change lockout
Rear Panel	Squelch adjust
Antennas	1 .4 -wave, fixed front mount
Displays/Indicators	Channel set: seven-segment LCD
Diversity LED:	lights red or green to indicate when diversity circuitry switches from one antenna to the other.
Tx On LED:	lights when carrier signal is present.

**SPECS**

**NRSCU Receiver**

<b>Receiver: NRSCU</b>	
Rear Mount Antennas (TNC)	
Diversity LED's:	A or B lights to indicate when diversity operational
RF Signal Strength:	4 segment LED lights to show strength of received RF signal.
Audio Signal Strength:	4 segment LED lights to show audio signal amplitude

**SPECS**

**Transmitters**

<b>Transmitters: NBPU, NHTU-N7, NHTU-N2, NHTU-N1</b>	
Radiated RF Output	10-15 mW typical
Adjustments and Controls	On/off switch, Audio mute switch Audio gain pot with 40-dB adjustment range, Rotary channel switch
Displays/Indicators	Power on/low battery LED (red LED flashes upon turn on); LED stays lit when low-battery voltage impacts system performance.
Battery Life	8-10 hours with 9-Volt alkaline
Bodypack Antenna	Flexible external 1/4-wave
Handheld Antenna	Internal 1/2-wave
TA4 Connector Wiring	Pin 1: ground; Pin 2: mic input; Pin 3: +5-Volt bias; Pin 4: +5-Volt bias fed through a 3,000-ohm resistor for two-wire electret mics
Size (handheld transmitter)	273 mm (10.75 in.) long
Size (bodypack transmitter) (no antenna)	114 mm (4.5 in.) x 66 mm (2.6 in.) x 32 mm (1.25 in.)
<b>Handheld Transmitter Microphone Elements:</b>	
NHTU-N7	N/D 767a dynamic cardioid
NHTU-N2	N/D 267a dynamic cardioid
NHTU-N1	N/D 167 dynamic cardioid
<b>Bodypack Transmitter Microphone Elements:</b> Can be used with any compatible microphone elements. See above for TA4F Pin-out wiring.	

**WIRELESS MICROPHONES**



# MS3000 UHF Diversity Wireless System

Professionals in every facet of the audio business trust Electro-Voice products to deliver incredible sound quality, uncompromising reliability and long useful life. From this dedication to innovation and craftsmanship comes the MS3000 UHF wireless system. The EV MS3000 is the fourth generation of a product line designed to deliver pristine sound with genuine "hardwired" audio quality. By combining UHF frequencies with EV's advanced technology and solid construction, the MS3000 offers unsurpassed perfor-

mance and reliability. When everything has to be just right, you can count on the MS3000.

The MS3000 is available in 30 custom-tuned UHF frequencies. With UHF frequencies, interference is less likely because there are significantly fewer sources in use. The higher power and wider signal deviations permitted with UHF wireless mean that sound quality and useful range are better, plus more systems can be used simultaneously.



## MR3000 Receiver Secure-Phase™ Diversity

An important facet of the MS3000's sound quality and reliability is its Secure-Phase™ Diversity circuitry. Most "true diversity" wireless systems use two low-quality RF receivers that are monitored for signal strength and switched in/out. The Secure-Phase™ design utilizes a single high-performance, high-quality RF receiver and combines the signal from both antennas at all times to maximize signal strength. As the signal changes, a sophisticated circuit adjusts the phase angle between the two antennas to minimize potential dropouts from signal cancellations. The combination of the high-quality receiver and Secure-Phase™ circuitry produces the strongest signal possible with the best sound quality. Even in difficult RF environments, the MS3000 performs.

## MT3000 Handheld Transmitter

EV's handheld transmitter design not only eliminates the antenna "pig-tail," it also delivers the highest effective radiated output power of any unit in its product class which can make a big difference in difficult RF situations. The MT3000 features EV's classically styled contoured chassis that is covered in a rubber-like finish, making it comfortable and secure to hold. There are on/off and toggle-type mute switches for convenient operation and status lights to indicate when the system is on and the condition of the battery. Choose either the premium EV N/D767a N/DYM® dynamic or the N/D267 vocal microphone, each of which is precisely mounted to minimize handling noise. EV's famous Mem-rافلax™ dent-resistant grille keeps the mic looking new.

## MB3000 Bodypack Transmitter

The MS3000's bodypack transmitter features a TA4 4-pin input connector to accommodate a wide range of available lavalier and headworn microphones. There are on/off and a toggle-type mute switches that allow the bodypack to be easily controlled without undue fumbling. A low-battery indicator is located on the control panel. The MB3000 also has a wide-range gain control to maximize S/N ratio and prevent front end overload.

SPECS		MS3000
<b>MR3000 RECEIVER</b>		
Frequency Range:	690 - 725 MHz	
RF Stability:	0.005% or better	
Modulation Type:	FM, 40 kHz nominal	
Type:	Double Conversion, 65.75 MHz and 10.7 MHz I.F.	
IF Bandwidth:	230 kHz at -3 dB points	
Image Rejection:	65 dB or better	
Squelch:	Amplitude adjustable	
Audio Outputs:		
Mic Level:	-20 dBV at 600 ohms	
Line Level:	0.775 V rms at 100 kΩ ohms (max)	
Signal-to-Noise Ratio:	104 dB	
Receiver Sensitivity:	Less than 0.8 μV for 12 dB SINAD	
FCC Compliance:	Notification, Part 15	
FCC Identification:	B5DR307	
Diversity:	Continuous Secure-Phase™ Diversity to maximize signal strength	
Supplied Accessories:		
Two 1/4-wave antennas; two antenna adapters and extension cables; rack mount adapters (1 short, 1 mid, 1 long); adjustment screwdriver; AC power supply; owner's manual.		
Size (HxWxD):	1.75 in x 7.5 in x 7.75 in without antennas (44.5 x 190.5 x 196.85 mm)	
Weight:	2.06 lb / 1.06 kg	
<b>MT3000 Handheld Transmitter</b>		
Power Output:	10-mW terminated, 50-mW maximum	
Antenna:	Internal	
Modulation:	FM, ±40 kHz deviation w/50 us pre-emphasis	
Frequency Response:	50 Hz to 15,000 Hz	
Transducer:	Electro-Voice N/D767 Supercardioid (MSHN7) Electro-Voice N/D267 Cardioid (MSHN2)	
Supplied Accessory:	Deluxe stand adapter	
Battery:	9 volt alkaline	
Approvals:	FCC, Part 74H Industry Canada RSS123	
FCC Identification:	B5DH211	
Size:	10.75 in. long (27.3 cm) x 2 in. (5.08 cm) max.	
Weight:	284 g (10 oz) without battery	
<b>MB3000 Bodypack Transmitter</b>		
Power Output:	10-mW terminated, 50-mW maximum	
Antenna:	Permanently attached	
Modulation:	FM, ±40 kHz Deviation w/50 us pre-emphasis	
TA4F Connector:	Pin 1: Ground; Pin 2: Mic Input; Pin 3: +5 volt bias; Pin 4: +5 volt bias fed through a 3 K ohm resistor for 2-wire electrets	
Frequency Response:	50 Hz to 15,000 Hz	
Microphone Input Sensitivity:	7.8 mV for full deviation	
DC Power:	9 volt alkaline battery	
Approvals:	FCC, Part 74H Industry Canada RSS123	
FCC Identification:	B5DB108A	
Size (HxWxD):	4.5 in x 2.6 in x 1.25 in (no antenna) (114.3 cm x 66 cm x 31.75 cm)	
Weight:	3.4 oz (9.6 grams) without battery	



# RTM-1 Remote Test Wireless System

Reduce the hassle and improve the results of your pre-concert soundchecks with the Electro-Voice® RTM-1 Remote Test Wireless System. The RTM-1 provides a wireless link between your calibrated measurement microphone and audio analyzer. That means you can quickly test multiple locations from the front row to the nose-bleed seats in the time it would take to haul long mic cables to just one spot.

- Wireless link between test microphone and audio analyzer allows faster, easier measurement of large performance spaces
- Works with most measurement microphones
- Non-companded transmission does not affect audio quality

The key feature of the RTM-1 is the compander on/off switches on both the receiver and bodypack transmitter. Wireless mic systems normally use companding (compressing/expanding) to stuff more dynamic range through narrow wireless channels. But companding can also add coloration or distortion to the signal. The RTM-1 lets you defeat the compander circuit, leaving the signal from mic to analyzer unchanged.

The RTM-1 system includes a bodypack transmitter in a rugged metal case with a mic stand mounting strap and a LEMO-to-XLR adapter cable to accommodate most calibrated microphones. The RTM-1 receiver includes two detachable 1/2-wave antennas, and can be rack-mounted with optional hardware.

## RTM-1 System

- MOUNTING STRAP
- LEMO-to-XLR ADAPTER CABLE
- AC ADAPTER (as pictured at right)



## SPECS

### RTM-1

#### Receiver

Controls	
Front Panel:	Power On/Off
Rear Panel:	Microphone Output Adjustment Compander on/off
Indicators	
Diversity Lights:	Indicates antenna phase relationship
Audio Meter:	Shows audio signal level from the transmitter
RF Meter:	Shows the RF signal strength
Connectors	XLR balanced output
Antennas	Detachable 1/2- wave ground independent
RF Specifications	
Frequency:	566.3, 590.3, 614.3, 638.3, or 662.3MHz
Diversity:	Full True Diversity
RF Sensitivity:	<0.5uV for 12 dB SINAD
FCC type acceptance:	Approved under Part 15 (compander active)
Audio Specifications	(compander inactive)
Frequency Response:	50 Hz – 15 kHz ± 1 dB
Audio Output Level:	-50 dBm to -10 dBm into 200 Ohms
Distortion:	Less that 0.5%
Signal to Noise Ratio:	110 dB typical
Dynamic Range:	100 dB
Audio Specifications	(compander inactive)
Signal to Noise Ratio:	62 dB typical

#### Transmitters

Controls	
	Power on/off switch
	Audio mute on/off switch
	Audio gain adjustment with 40 dB range
	Compander on/off
Indicators	
	Red LED low battery indicator
Battery Life	10 hours with 9-volt alkaline
Antenna	1/4-wave detachable
Connector	
	Microphone input 4-Pin LEMO
	Pin 1: ground; Pin 2: Mic input;
	Pin 3: +5V bias; Pin 4: +5V through 3k ohm
RF Output	45 mW typical, 50 mW max
Size	3.75 in. x 2.5 in. x .75 in. (96 mm x 64 mm x 19 mm)

## RTM-1 Transmitter

is shown with the mounting strap and cable adapter. (Microphone and mic stand not included)

WIRELESS MICROPHONES



# Cobalt® Wireless System

On stages, in broadcast and recording studios, in theatres, in stadiums and houses of worship — EV products are used everywhere. Electro-Voice Cobalt wireless systems were conceived to meet the needs of professional users who want EV quality and reliability on a budget. Choose from handheld, lapel, headset or instrument systems in VHF or UHF.



## VHF Cobalt®

The R100 VHF systems operate in the frequency band between 174.100 and 185.350 MHz (channels 7-8 in the TV band). With the R100 Series, having EV wireless freedom has never been more affordable, cost-effective or practical. The R100's rock-solid RF performance is the result of superior design and state-of-the-art manufacturing. The R100 receiver can also be rack mounted with the optional RMR accessory kit.



## UHF Cobalt

The R200 UHF systems operate in the 710.000-721.350 MHz band (channels 54-55 in the TV band). The chief advantage of the UHF band is that there are far fewer chances of interference problems since the frequency range is less crowded. With the R200U systems, there is a wider selection of premium high-performance microphones for better audio performance plus the receivers have 1/4-inch unbalanced and balanced mic-level 3-pin XLR-type output connectors. The R200 receiver can also be rack mounted with the optional RMR accessory kit.





## Cobalt® Receivers

Cobalt receivers utilize EV's Secure-Phase™ diversity circuitry to provide the strongest, cleanest signal possible. Unlike other diversity circuits that switch antennas or signals, Secure-Phase uses the signal from both antennas at all times to increase signal strength, minimize dropouts and lower the potential for interference. Secure-Phase is a real breakthrough in maximizing signal strength for better audio performance and increased range. The Cobalt receivers have fixed front mounted 1/4-wave antennas for easy setup and can be rack mounted with the RMR accessory kit.



## Cobalt® Handheld Transmitters

Cobalt handheld systems combine EV's classically styled, ergonomically contoured transmitter with famous EV microphone transducers. Separate on/off and mute switches give you operational flexibility and eliminate popping common in single switch transmitters. The R100 and R200 systems feature the Co7 dynamic and Co11 condenser microphones.

## Cobalt® Bodypack Transmitters

Cobalt bodypacks have options to fit virtually any wireless application. Each system features an oversized switch for easy, silent muting and a separate on/off switch. R100 systems offer hardwired lavalier (lapel) condenser microphones and a 1/4-inch instrument plug. R100 headworn and all R200 bodypacks come with TA4 connectors to allow easy interchangeability of mics. There is a collection of lavalier and headworn microphones for R200 systems to perfectly meet any requirement.

## Cobalt® Instrument Systems

Most wireless guitar systems are just a microphone bodypack with a 1/4-inch connector. The Cobalt instrument systems are designed specifically to bring out the transient detail and wide dynamics of a guitar. The companding circuit provides wide dynamic range and accurately captures the "plugged in" essence of the instrument's sound. Frequency response to 20 Hz for outstanding reproduction of down-tuned 7-string guitars or bass.

## R200 XTU Universal Plug-On UHF Transmitter

With EV's XTU UHF transmitter, you can turn most any dynamic or electret microphone into a wireless by simply plugging it into the XLR connector. The XTU has a gain adjustment control with wide range to allow optimum level matching to your microphone.

### SPECS

#### R100

#### R200

RF Frequency Range:	174.100-203.200 MHz (11 stock frequencies)	710.100-721.350 MHz (8 stock frequencies)
Audio Frequency Response:	20 Hz-15 kHz +/- 2 dB	20-15 kHz +/- 2 dB
Harmonic Distortion:	<0.5%	<0.5%
Radiated RF Output:	35-45 mW typical, 50 mW maximum	35-45 mW typical, 50 mW maximum
Audio Output Level:	.775 V rms into 100 kΩ load	.775 V rms into 100 kΩ load
Battery Life:	8-12 hours typical	8-12 hours typical
Available Systems:	R100VHC7 Electro-Voice Co7 Handheld Dynamic R100VHC11 Electro-Voice Co11 Handheld Condenser R100VL Electro-Voice OLM10 Lavalier Condenser R100VE Electro-Voice HM2 Headworn Condenser R100VG Electro-Voice Guitar System	R200UHC7 Electro-Voice Co7 Handheld Dynamic R200UHC11 Electro-Voice Co11 Handheld Condenser R200UL Electro-Voice ULM20 Lavalier Condenser R200UE Electro-Voice HM2 Headworn Condenser R200UG Electro-Voice Guitar System R200UT Electro-Voice Plug-On System



# Wireless Accessories

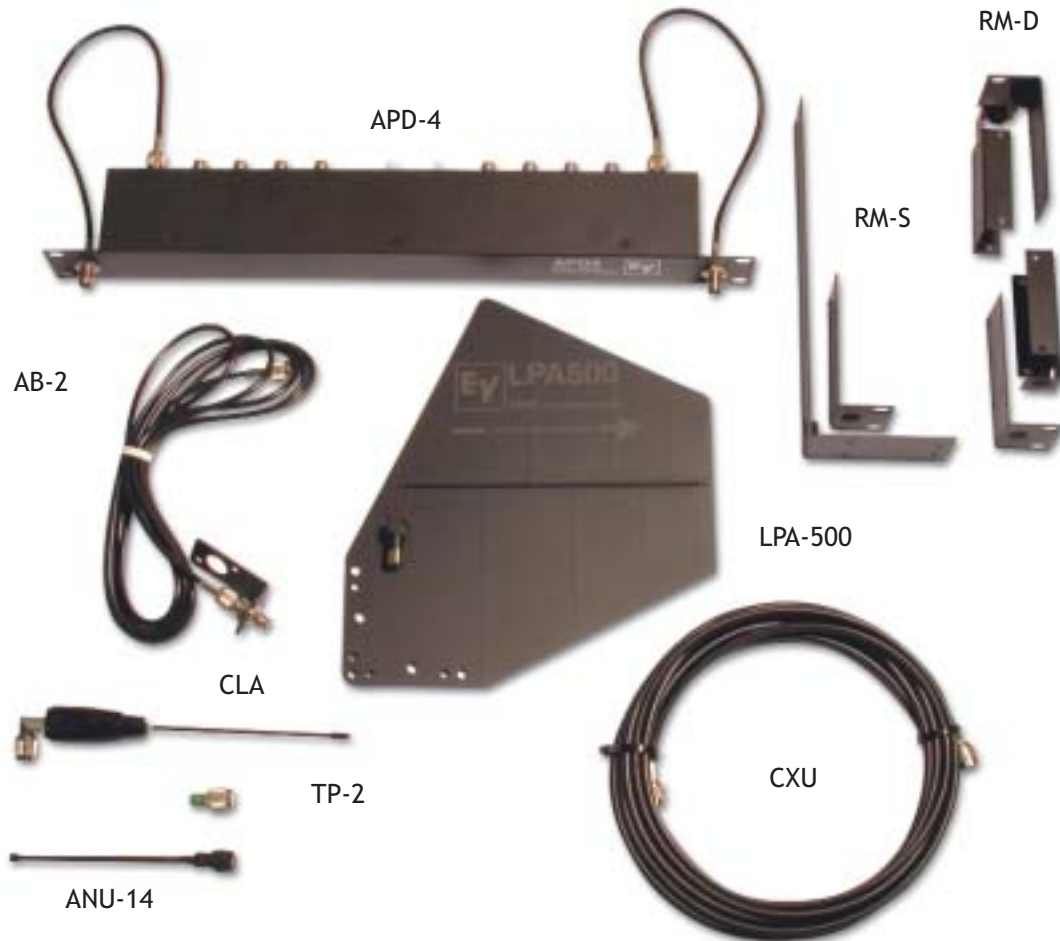


## Electro-Voice Wireless Mic Accessories

- OLM10** Omnidirectional lavalier mic with TA4F
- RC767a** Dynamic N/D 767a mic cartridge for use with RE-1 wireless system
- RC510** Condenser RE510 mic cartridge for use with RE-1 wireless system
- AN-Flex X** 1/4-wave RE-1 bodypack transmitter antenna - semi flexible (X denotes frequency band)
- AN-Sflex X** 1/4-wave RE-1 bodypack transmitter antenna - very flexible (X denotes frequency band)
- RCSA** Mic stand adapter for handheld transmitters (NDYM, MS3000, R100/200) black
- MSSA** Deluxe mic stand adapter (RE-1 and others)
- BC1000** Beltclip with tab and screw for use with CSB-1000
- WP1000** Leather pouch for RE-1 bodypack transmitter
- HM2** Headworn cardioid mic with TA4F
- ULM20** Unidirectional lavalier mic with TA4F
- MAC-2** XLR to TA4F adapter cable
- HM311** Crown model CM-311 touring level headworn cardioid mic with TA4F
- HM7** Touring grade headworn cardioid mic with TA4F
- MAC-G2** George L's® guitar cable for RE-1 bodypack transmitter (TA4F to 1/4" plug, incl. right angle & straight)
- CS200TEX** Cardioid lavalier mic with TA4F
- RE90TX** Premium omnidirectional lavalier mic with TA4F
- MAC-G** Guitar cable, 3ft length, TA4F to 1/4-inch, for use with N/DYM® guitar transmitters



# Wireless Accessories



**WIRELESS MICROPHONES**

## Electro-Voice Wireless Accessories - Antennas etc.

- APD-4**            UHF Antenna/power distribution system (provides power and RF signals for 4 units) for use with NRSCU, MS3000 & RE-1
- RM-S**            Rack-mount kit - single (for one receiver) works with NDYM, RTM-1 and MS3000 receivers
- RM-D**            Rack-mount kit - double (for two receivers) works with NDYM, RTM-1 and MS3000 receivers
- RM-R**            (not pictured) Rack-mount kit for one or two Cobalt® receivers
- AB-2**            Universal mounting bracket for 1/2-wave antennas, with 10-foot coax cable
- LPA500**        Directional log periodic antenna with mounting hardware and 10-foot coax
- CLA-X**        1/2-wave UHF antenna (X denotes frequency band)
- TP-2**            50 ohm TNC termination plug for use with APD-4
- CXU-X**        Low-loss coax cable (X designates length, 25, 50, 75 or 100) for use with mote mount antennas
- ANU-14**        1/4-wave UHF antenna for use with MS3000 and NRSCU (part # 879010)



## FMR-1000 Wireless System

The FMR-1000 UHF wireless microphone system is a breakthrough frequency-agile system that mixes the power of fully programmable channels with the simplicity of Advanced ClearScan™.

With a push of two buttons, Advanced ClearScan™ finds the clearest group of channels and you can set up 16 system installations in minutes with confidence you

have the clearest channels in the clearest group. A unique sound check screen allows one person to walk test a transmitter with tangible results. For clear vocals, the HT-1000 handheld microphone features a choice between two Electro-Voice® microphone elements, the N/DYM® 767a dynamic with VOB™ (Vocally Optimized Bass) technology and the new RE 510 professional condenser element.

### System Features

- Up to 16 systems can operate simultaneously from the preset channels. For more than 16 channels, Telex can help you with the coordination and channel selection.
- Advanced ClearScan™, automatic group and channel selections, for quick and simple system setup.
- Over 950 possible channels.
- Front panel parametric equalizer with Level, Q, and frequency controls for sound shaping without a mixing board.
- Backlit LCD Display shows the Group/Channel, transmitter battery status, diversity operation, RF and Audio level meters, and space for a custom label.
- Cast magnesium bodypack transmitter, and over molded Warm-Grip™ handheld transmitter with detachable microphone elements.
- Unique battery circuit means there is no way to put the battery in wrong.
- Patented DSP Posi-Phase™ Diversity System.
- Three Year Warranty

### FMR-1000L

#### BODYPACK SYSTEM

- FMR-1000 950 channel UHF receiver
- WT-1000 bodypack transmitter
- ELM-22 micromini omni lav mic
- Rack mount hardware for single/dual mount
- Two 1/4-wave antennas
- In-line power supply

### FMR-1000H/L

#### COMBO SYSTEM

- MR-1000 950 channel UHF receiver
- HT-1007 EV 767a NDYM handheld transmitter
- WT-1000 bodypack transmitter
- ELM-22S Omni Lapel microphone
- Rack mount hardware for single/dual mount
- Two 1/4-wave antennas
- In-line power supply

### FMR-1000WT

#### BODYPACK SYSTEM

Same as above without microphone

### FMR-1000

#### SYNTHESIZED WIRELESS MIC RECEIVER

### FMR-1000HD

#### HANDHELD SYSTEM

- FMR-1000 950 channel UHF receiver
- HT-1007 EV 767a NDYM handheld transmitter
- Rack mount hardware for single/dual mount
- Two 1/4-wave antennas
- In-line power supply
- Posi-Phase Diversity\*
- Adjustable amplitude squelch
- 950 selectable channels
- Balanced XLR output
- 1/4" adjustable line output
- Rack mount hardware
- Two 1/4-wave antennas and in-line power supply



WIRELESS MICROPHONES

**SPECS**

**FMR-1000**

**Receiver**

<b>Controls</b>	
Front Panel:	On/Off, menu, set, up, down buttons, parametric EQ (level -12 dB to + 12 dB, Q 3.0 - 0.1, frequency 100 - 2 kHz)
Rear Panel:	1/4 inch output level
<b>Indicators</b>	
LCD Backlit Display:	Group, channel, diversity, label, squelch, set-up screen, transmitter battery level, audio signal amplitude, RF signal strength.
<b>Connectors</b>	
Back Panel:	1/4 inch unbalanced adjustable output XLR balanced output USB programming port 5 pin strip connector Pin 1: Transmitter "On" TTL signal Pin 2: Battery low TTL signal Pin 3: Logic ground Pin 4: Unbalanced line level audio output Pin 5: Audio common (ground)
Antennas	Detachable 1/4-wave
<b>RF Specifications</b>	
Frequency Range:	A Band 680 – 704 MHz (TV Channels 49, 50, 51, 52) B Band 722 – 746 MHz (TV Channels 56, 57, 58, 59)
Number of Channels:	950 possible (programmable in 25kHz steps)
Diversity:	DSP PosiPhase true diversity
Receiver Type:	synthesized PLL agile UHF
RF Sensitivity:	<0.8uV for 12 dB SINAD
Agency Approvals:	FCC, IC
<b>Audio Specifications</b>	
Frequency Response:	100 – 15 kHz +/- 2 dB microphone 30 – 15 kHz +/- 2 dB instrument
<b>Audio Output Level:</b>	
Line Level	8 mV - 0.775V RMS into a 100 k ohm load
Balanced	-20 dBV max (@40kHz deviation)
Distortion:	Less than 0.5% (@1kHz, 40kHz deviation)
Signal to Noise Ratio:	>110 dB (A)
Dynamic Range:	>100 dB
<b>General Specifications</b>	
Power Supply:	External 12 VAC 750mA in-line with cord
Size:	1.72" H x 7.50" W x 8.38" D 43.69mm H x 190.50mm W x 212.85mm D

**SPECS**

**HT-1000**

**Transmitter**

<b>Controls</b>	
	Power on/off Audio gain adjustment with 26 dB range Transmit power switch Menu, set, up, down buttons
<b>Displays</b>	
	LCD display (channel and group, frequency, battery level), red LED battery low indicator
Battery Life	8 hours with 9V alkaline (typical)
Antenna	Internal 1/2- wave
Microphone Elements	EV N/D 767a Dynamic or RE 510 Condenser
<b>RF Output</b>	
Normal	5 mW (typical)
High	50 mW (typical)
Size	10.5 in. long (26.8 cm)

**SPECS**

**WT-1000**

**Handheld Transmitter**

<b>Controls</b>	
	Power on/off switch Audio gain adjustment with 40 dB range Transmit power switch Microphone/Instrument switch (0, -20 dB) Menu, set, up, down buttons
<b>Indicators</b>	
	Red LED low battery indicator LCD display (channel/group, frequency, battery level)
Battery Life	8 hours with 9V alkaline (typical)
Antenna	External 1/4-wave detachable
<b>Connector</b>	
	TA4M input for microphone Pin 1 ground, pin 2 mic input Pin 3 +5V bias, pin 4 +5V through 3k ohm
<b>RF Output</b>	
Normal	5 mW (typical)
High	50 mW (typical)
Case Material	Cast magnesium
Size	4.4 in. x 2.6 in. x .9 in. 111 mm x 66 mm x 23 mm



## FMR-10 Frequency Agile UHF Wireless System

The Telex® FMR-10 UHF wireless microphone system is a 10-channel, frequency-agile system that provides superb sound and pro-quality features at a truly amazing price.

The FMR-10 offers the latest wireless technology innovations, including ClearScan™ automatic channel selec-

tion. At the push of a button, ClearScan™ scans for and selects a clear channel for trouble-free operation. And for clear vocals, the HT-10D handheld microphone transmitter features an Electro-Voice® N/DYM® 767a dynamic mic element with VOB™ (Vocally Optimized Bass) technology.

### Key features

- 10-channel UHF frequency-agile system with ClearScan™ auto channel selection allows quick set-up, transmitter matching, and new channel selection if RF conditions change.
- Optimized channel frequencies allow up to 10 systems to operate simultaneously by combining channels from low and high bands, or up to 7 channels within one band.
- Posi-Phase™ Diversity receiver technology provides clear, drop-out-free audio.
- Front panel RF and audio level indicators.
- Rack-mount hardware included.
- Three-year warranty.



#### SPECS

#### FMR-10

##### Receiver

Front panel:	Channel-set button increments channel setting by one; also activates ClearScan™ and channel-change lockout.
Rear panel:	Squelch adjust.
Channel set:	7-segment LCD.
Diversity:	A and B LEDs indicate when diversity circuitry switches antennas.
RF Signal Strength:	4-segment LED indicates strength of received signal.
Audio Signal Strength:	4-segment LED indicates audio signal amplitude.
	XLR mic-level balanced output.

##### Antennas

1/4-wave, detachable from rear panel. Remote antennas and the UAD-2 antenna splitters can be used with FMR-10 receiver.

##### RF Specifications

Frequency range:	710–734 MHz in two bands
Number of channels:	10
Diversity technology:	True diversity with Posi-Phase™
Receiver type:	Synthesized PLL
RF sensitivity:	< 0.8 µV for 12 dB SINAD
FCC type acceptance:	Approved under Part 15.

##### Audio Specifications

Frequency response:	50–15,000 Hz ±2 dB
Audio output:	-20 dBV (balanced XLR, 600-ohm load)
Distortion:	Less than 0.5%
Signal-to-noise ratio:	≥ 94 dB
Dynamic range:	100 dB

##### General Specifications

Size (receiver housing):	7.5 in (190 mm) x 5.75 in (145 mm) x 1.7 in (43 mm)
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#### SPECS

#### HT-10D

##### Handheld Transmitter

Controls	Power on/off switch. Audio mute switch. Audio gain adjust with 40 dB adjustment range. Channel select rotary switch.
Battery Life	Approximately 8–10 hours with 9V alkaline.
Antenna	Internal 1/2-wave.
RF Output	10–15 mW typical.
Size	10.75 in (273 mm) long.

#### SPECS

#### WT-10

##### Bodypack Transmitter

Controls	Power on/off switch. Audio mute switch. Audio gain adjust with 40 dB adjustment range. Channel select rotary switch.
Displays / Indicators	Power on/low battery LED. Red LED flashes on power-up to indicate good battery. LED stays on to indicate low battery voltage.
Battery Life	Approximately 8–10 hours with 9V alkaline.
Antenna	External 1/4-wave.
Connectors	TA4F input for mic or guitar. Pin 1: ground. Pin 2: mic input. Pin 3: +5V bias. Pin 4: +5V bias fed through 3k Ω resistor for two-wire electret mics.
RF Output	10–15 mW typical.
Size	2.5 in (63.5 mm) x 4.375 in (111.125 mm) x 0.875 in (22.225 mm)

# ENG-100 Portable UHF Wireless

The versatility of the Telex ENG-100 makes it the UHF receiver of choice for a wide range of environments. Designed to perform reliably under the harsh conditions of news gathering, the ENG-100 is also appropriate for event or corporate video, industrial and institutional applications. This rugged, compact receiver, which offers 100 channel frequency agility, delivers superior audio performance on any of 100 selectable channels in the 668 to 746 MHz RF frequency range. Two integral antennas and a built-in Posi-Phase diversity system assure reception in the most difficult situations. Two AA alkaline batteries supply power to the unit. The ENG-100 also features an internal headphone amplifier and an adjustable audio output control to accommodate any

situation from news gathering operations to live performances.

You're making a sound decision when you choose Telex ENG products. From news gathering operations to live performance communications to event videography, we've got your wireless audio needs covered. Acclaimed for superior RF and audio performance, the Telex line of portable UHF receivers and accessories is built to withstand the rigors of delivering audio for video under any circumstance you may encounter. You'll also enjoy the ultimate in flexibility because Telex ENG products are designed to interface with nearly any audio system or camera.

## Key features

- Frequency-agile 1000-channel ENG-100 UHF receiver mounts on and interfaces with virtually all professional camcorders.
- Dual integral antennas and Posi-Phase diversity assures clear, superior RF quality & drop-out free audio.
- ENG-100 Receiver features side-mounted controls, XLR mic level output, headphone output and operation via either two AA batteries or external power supply.
- UT-102 universal plug-on transmitter works with any dynamic and most condenser mics. Ideal for use with Electro-Voice RE50 – the classic TV reporters handheld ENG mic.



### SPECS

### ENG-100

RF Frequency Range	668 to 680 MHz & 734 to 746 MHz
RF Sensitivity	Less than 1.0 mV for 12 dB SINAD
RF Stability	0.005% or better
Channels	100
Modulation Type	FM, 40 KHz nominal
Receiver Type	Single conversion, 10.7 MHz I.F.
Image Rejection	65 dB or better
Hum and Noise	-100 dB
Squelch	Fixed, internal, 31.250 KHz tone + amplitude
Squelch Quieting	100 dB
Squelch Level	1.5 mV
Ultimate Quieting	90 dB
Diversity	Phase Diversity
Audio Output	
Headphone	16 to 32 Ohms
Line Out	None
Mic Out	-10 to -60 dBV into 200 Ohms
Audio Frequency Response	50 to 15,000 Hz +/- 1 dB
Audio Distortion	Less than 1%
Signal-to-Noise Ratio	110 dB
Input Power	2 AA Size alkaline batteries or 9 to 17 vDC external
Temperature Range	-4°F to 130°F (-20°C to 55°C)
Battery Life (Alkaline)	6-8 Hours
FCC	Part 15

# FMR-70 Wireless System

A truly professional level system, the FMR-70 offers the affordability and reliability of VHF in an advanced full diversity radio. The FMR-70 is perfect for any fixed installation and can be mixed with UHF product to maximize the number of simultaneous systems without breaking the budget.



WIRELESS MICROPHONES

**SPECS**

**FMR-70**

Receiver	
RF Frequency Range:	165 – 216 MHz
Audio Response	50 – 15,000 Hz +/- 1 dB
Signal to Noise	100dB, Typical
RF Sensitivity	<0.5uV, 12dB SINAD
Squelch Quieting	90dB
Ultimate Quieting	>94dB
Audio Output	-60 dBm to -10dBm
Output Type	Balanced XLR
Visual Displays	4 segment Audio Meter
	2 segment diversity
	Transmit On Indicator
Power Requirements	13Vac
Weight	1 lb, 8 oz.
Size (WDH)	7.5 in. x 8 in. x 1.75 in.
	19.2 cm x 20.5 cm x 4.5 cm
Agency Approvals	FCC, IC

**SPECS**

**HT-200**

**WT-55**

	Handheld Transmitter	Bodypack Transmitter
RF Output Power	45mW	50mW
Antenna Type	Internal Omnidirectional	wave pigtail
Battery Type	9 Volt Alkaline	9 Volt Alkaline
Battery Life	10 – 12 Hours (Alkaline)	8 - 9 Hours (Alkaline)
Audio Input		Low Z, 100 – 10k ohm
Audio Controls	Mic Gain Level	Mic Gain Level
Microphone	Telex 65 Condenser	
	EV N/D 767a Dynamic	

## Key Features

- Outstanding audio quality with 100 dB signal-to-noise ratio (104 dB A weighted)
- Advanced audio companding
- Posi-Squelch Auto Suppression system featuring a true noise squelch for optimum system quieting.
- Patented Posi-Phase Auto-Diversity circuitry to eliminate drop-outs and noise-ups from phase cancellation and multipath. Computer matched IF filters for maximum filtering and audio quality.
- Balanced mic level audio output with variable level control
- Front panel audio, carrier detector, and diversity phase indicator LED's



# UR-700 UHF Wireless System

There are many applications where a fixed frequency wireless system has some advantages. The UR-700 is the perfect mix of modern features and crystal frequen-

cy control. With professional quality transmitters and high-end audio performance, the UR-700 is a mainstay for many contractors and installers.

## UR-700

### Receiver

A back-lit front panel provides an easily distinguishable display of RF, Diversity, and Audio Level status. Additionally, a front mounted squelch adjustment provides for fine tuning of precise squelch levels. The rear panel features dual TNC connectors for antenna mounting. These provide superior electrical and mechanical performance to other connectors. This is especially important when employed with UHF frequencies. Balanced XLR Mic Level and adjustable unbalanced line level outputs make the UR-700 adaptable to almost any P.A. system. A power cord retainer helps prevent inadvertent removal of power supply.



## HT-700

### Handheld Microphone Transmitter

The HT-700 Handheld Microphone Transmitter features a tapered design, with a slip resistant rubberized finish. This provides for a positive feel, as well as a reduction in handling noise. A recessed power switch and raised mic on/off switch provide tactical feel for both operations. A low battery indicator alerts user when a change is necessary. Internally, a 9 volt battery provides 8 to 12 hours of use under normal operating conditions. A gain control allows adjustment to the level of the audio circuit. The HT-700 is available with a choice of both dynamic and condenser heads.

## WT-700

### Beltpack Transmitter

The WT-700 Beltpack Transmitter is a compact, rugged design suitable for most any portable application. A sliding, recessed power switch inhibits inadvertent turn off. A raised bat handle style audio toggle switch provides positive feel when worn on belt or concealed under clothing. A TA4 style mic connector adapts to virtually any type of lapel microphone, and provides a locking connection to keep microphone in place. The metal belt clip is a 90 degree, rotatable design that allows vertical or horizontal orientation. The captive style battery door opens to provide access to the 9 volt battery that powers the unit. Typical battery life of the WT-700 is 8 to 12 hours under normal operating conditions. A top mounted low battery light alerts user when battery requires changing.

### SPECS

### UR-700

RF Frequency Range:	690 to 725 MHz
Channels:	One (within TV Channels 50 to 56)
RF Stability:	0.005%
Modulation Type:	FM, 40 KHz nominal
Type:	Double Conversion, 65.75 MHz and 10.7 MHz
IF Bandwidth:	230 KHz, -3 dB points
Image Rejection:	65 dB or better
Squelch:	Amplitude, adjustable
Audio Output:	XLR Jack (mic level) 22 mV RMS/200 ohm (max) 1/4" Jack (line level) adjustable 0.775 V RMS/100k load (max)
Receiver Sensitivity:	Less than 0.8 µV for 12 dB S/N
Diversity:	Full Time True Diversity. Both antennas are employed at all times to maximize signals.
Signal-to-Noise Ratio:	104 dB
Approvals:	FCC, IC
Dimensions:	7.5" W x 1.25" H (no antenna) x 7.75" D
Weight:	2 lb., 1 oz.

### SPECS

### HT-700

Power Output:	10 m W
Antenna:	Permanently attached
Modulation:	FM, ± 40 KHz Deviation nominal, 50 µs pre-emphasis
Frequency Response System:	50 Hz to 15000 Hz
Microphone:	Dynamic N/D 969a
DC Power:	9 VDC
Battery Life:	8 - 12 Hours
Battery Indicator:	LED
DYNAMIC:	
Dimensions:	9.75" L (no antenna) x 2" max Dia.
Weight:	9.7 oz. (no battery)

### SPECS

### WT-700

Power Output:	10 m W
Antenna:	Permanently attached
Modulation:	FM, ± 40 KHz Deviation nominal, 50 µs pre-emphasis
Frequency Response System:	50 Hz to 15000 Hz
Microphone:	Dynamic or Electret, +5 VDC Bias DC Power: 9 VDC
Battery Life:	8 - 12 Hours
Battery Indicator:	LED
Dimensions:	2.6" W x 4.5" H (no antenna) x 1.25" D
Weight:	3.5 oz.

WIRELESS MICROPHONES



**PRO  
STAR**  
by Telex®

Telex ProStar practically invented the genre of affordable wireless microphones. Simple to use, great sounding, and highly portable, the ProStar UHF and VHF systems continue to be a great value. When you need professional quality in a basic wireless, think ProStar.

## ProStar VHF

### Handheld System

The VR12N1 system features the VR12 receiver and a VH12N1 dynamic mic with an Electro-Voice® N/D 167 neodymium dynamic cartridge. The engineers at Telex designed a very innovative built-in antenna that eliminates interference and substantially increases the range of the system.



VR12N1

### Bodypack Systems

The VR12L lapel mic or VR12H headworn mic system give you the freedom to move — at a conference, aerobics class, or on a concert stage.



VR12L/VR12H

### Guitar System

The VGR12S system was conceived, designed, and constructed for one instrument only — the guitar. The VGR12S captures everything from the window-rattling lows and searing highs of a solid body, to the subtlety and nuances of a jazz guitar or acoustic/electric.



VGR12S



## ProStar UHF

## Handheld System

The UR12N1 and the UR12N2 include a well-balanced transmitter/mic body with an Electro-Voice® N/D 167 and an EV N/D 267a neodymium dynamic cartridge. These advanced elements have Voice-Optimized Bass (VOB™) for crisp, clear vocals.



**PRO  
STAR**  
by Telex®

UR12

## Bodypack Systems

The UR12L system comes with a Telex WLM-10 mic and lightweight, convenient UB12 beltpack transmitter. The UR12H features the Electro-Voice® HM2 uni-directional electret headworn mic with the UB12 beltpack. Telex's legendary performance and reliability are built into every system.

## Plug On System

The UR12T includes a unique transmitter that plugs onto any dynamic microphone and and +5V condenser microphone and makes it wireless. The UT-12 transmitter is a great way to provide a wireless microphone for occasional applications.

### SPECS

	VR12	UR12
RF Frequency Range:	174.100-185.350 MHz (8 stock frequencies)	710.100-721.350 MHz (8 stock frequencies)
Audio Frequency Response:	20 Hz-15 kHz +/- 2 dB	20-15 kHz +/- 2 dB
Harmonic Distortion:	<0.5%	<0.5%
Radiated RF Output:	35-45 mW typical, 50 mW maximum	35-45 mW typical, 50 mW maximum
Audio Output Level:	775 V rms into 100 kΩ load	.775 V rms into 100 kΩ load
Battery Life:	8-12 hours typical	8-12 hours typical
Available Systems:	VR12N1 Electro-Voice N/D 167 Handheld Dynamic VR12C AT 831b Lavalier unidirectional Condenser VR12L WLM10 Omnidirectional Lavalier Condenser VR12H Electro-Voice HM2 Headworn Condenser VR12A Aerobics WP-23 Headworn Condenser VR12S Bodypack Guitar System	UR12N1 Electro-Voice N/D 167 Handheld Dynamic UR12N2 Electro-Voice N/D 267a Handheld Dynamic UR12L WLM10 Omnidirectional Lavalier Condenser UR12C AT-831b Unidirectional Lavalier Condenser UR12H Electro-Voice HM2 Headworn Condenser UR12S Bodypack Guitar System UR12T ProStar Plug-On System



WIRELESS MICROPHONES

# SoundMate™

## Assistive Listening Systems

Telex SoundMate™ personal listening systems help overcome background noise and poor building acoustics that can make listening difficult for the hearing impaired listener. A Telex base station, portable belt pack transmitter, your choice of receivers, and a wide assortment of accessories allow you to meet the needs of individuals who require hearing assistance.



### ST-200

Transmitter

The ST-200 Base Transmitter features 16 user selectable frequencies controlled by a front mounted selector switch, a headphone jack with adjustable level for input signal monitoring, and a peak reading LED display for visual input monitoring. On the back of the unit is a balanced XLR-3F with selectable mic, line, and 70 volt input options, as well as an unbalanced 1/4" input. An input attenuator and hi/low RF power switch as additional back panel features.



### PST-16

Transmitter

The PST-16 Belt Pack Transmitter may be set to any one of the 16 channels, and operates on frequencies in the 72-76 MHz band. It is lightweight, battery operated and includes a small electric lapel microphone for convenient portable use. The PST-16 has two audio input jacks. The Auxiliary input is designed to allow audio devices such as teacher's aids or tape players. The second jack is normally used for microphone and is located on the top panel.



### SR-100

Receiver

THE SR-100 16 CHANNEL RECEIVER is the perfect solution to multiple transmitter hearing assistance systems. The SR-100 features an advanced digital PLL synthesizer to tune all 16 narrow-band frequencies offered in the 72-76 MHz band. The receiver also includes a special high frequency contour filter and boost switch to increase the intelligibility of the audio signal. Additional features include a battery saving automatic power shut-off when the earphone is unplugged.



### SR-50

Receiver

THE SR-50 SINGLE CHANNEL RECEIVER provides clear reception and the simplicity of a fixed channel. This economical receiver operates on one of 16 fixed narrow-band frequencies in the 72-76 MHz band. Ergonomic raised volume control knob make level adjustments easily accessible by feel. Recessed headphone jack provides extra protection for earphone connections. Two AA batteries give up to 30 hours continuous battery life.

# SoundMate™



WIRELESS MICROPHONES



## SM-1 SYSTEM

SM-1 SYSTEM Includes:

- (1) ST-200 base transmitter,
  - (4) SR-50 receivers
  - (4) SEB-1 earbuds
  - (1) SoundMate wall plaque.
- (SM case sold separately).

## SMP-1 SYSTEM

- (1) PST-16 portable belt pack transmitter
- (6) SR-50 single channel receivers
- (6) HED-2 collapsible headphones
- (14) AA Alkaline batteries
- (1) Deluxe system carrying case
- (1) SCHS-745 head worn microphone
- (1) User manual for SR-50 and PST-16

### SPECS

#### ST-200

##### 16-channel Transmitter

RF Frequency Range	72 to 76 MHz
Modulation: FM	±25 KHz deviation
Signal-To-Noise Ratio	58 dB (64 dB A weighted)
Maximum Deviation	±25 KHz
Maximum Rated Power	50 mW
Audio Input	Balanced XLR-3F plus unbalanced 1/4"
Antenna	1/4" wave omnidirectional whip
Audio Controls	Audio input level, monitor jack volume
Power Requirements	15-24 Vdc or 13 Vac; 115Vac 60 Hz @ 300 mA plug-in wallpack power supply
Dimensions	H 1-3/4" (4.5 cm) x W 7-1/2" (19.2 cm) x D 6-7/8" (17.5 cm)
FCC ID	B5DM508
Visual Indicators	5 segment audio level LED, power ON indicator
RF Power Switch	80K µV/m @ 3 m in hi 25K µV/m @ 3 m in low

### SPECS

#### SR-200

##### 16-channel RECEIVER

Power Requirements	(2) AA batteries, Alkaline or NICAD 30 hours Alkaline, 10 hours NICAD
Audio Frequency Response	<3 dB Variation (100 Hz-10 KHz)
Modulation: FM	±25 KHz deviation
Sensitivity	0.5 µV typical, 1.0 µV maximum, 12 dB SINAD
Image Rejection	>65 dB
Signal-To-Noise Ratio	>65 dB
Distortion	<2% T.H.D.
Audio Output @ 10% distortion	into 8 Ohms: 2.0V / 15mW 3.0V / 80mW into 32 Ohms: 2.0V / 10mW 3.0V / 50mW
Antenna Type	1/4-wave omnidirectional, in earphone cord
Audio Controls	Volume, On/Off, High frequency boost control
Earphone Connector Type	3.5 mini stereo or mono
Dimensions	H 4" (101 mm) x W 2-3/4" (70 mm) x D 1" (25 mm)
Visual Indicators	Backlit On/Tuning indicator
External Jack	Audio Output/Charger
FCC ID	B5DE405

### SPECS

#### PST-16

##### 16-channel Transmitter

Audio Input Characteristics	Mic TA4M connector, 7.75 mV RMS input for ±25 KHz deviation. Impedance, 10K Ohms, nominal. Aux. Input, Female 1/8". 100 mV Unbalanced, 10K Ohms, nominal
Antenna	Permanently attached trailing wire
Modulation: FM	±25 KHz deviation
Frequency Response (System)	100 Hz to 10,000 Hz
Automatic Gain Control Range	30 dB
System Signal-To-Noise	58 dB
Preemphasis	100 µ seconds
Maximum Power	80K µV/m @ 3 m
Power Requirements	(2) AA batteries, Alkaline or NICAD 8 hours Alkaline, 4 hours NICAD
FCC ID	B5DM509

### SPECS

#### SR-50

##### Receiver

Power Requirements	(2) AA batteries, Alkaline or NICAD 30 hours Alkaline, 10 hours NICAD
Audio Frequency Response	<3 dB Variation (100 Hz-10 KHz)
Sensitivity	0.5 µV typical, 1.0 µV maximum, 12 dB SINAD
Signal-To-Noise @ 1 mV Input	>60 dB
Distortion	<2% T.H.D.
Audio Output @ 10% distortion	into 8 Ohms: 2.0V / 15mW 3.0V / 80mW into 32 Ohms: 2.0V / 10mW 3.0V / 50mW
Controls	Volume/On/Off Switch
Dimensions	H 4" (101 mm) x W 2-3/4" (70 mm) x D 1" (25 mm)
Visual Indicators	Backlit On/Tuning indicator
External Jack	3.5mm Audio Output/Charger
FCC ID	B5DE401

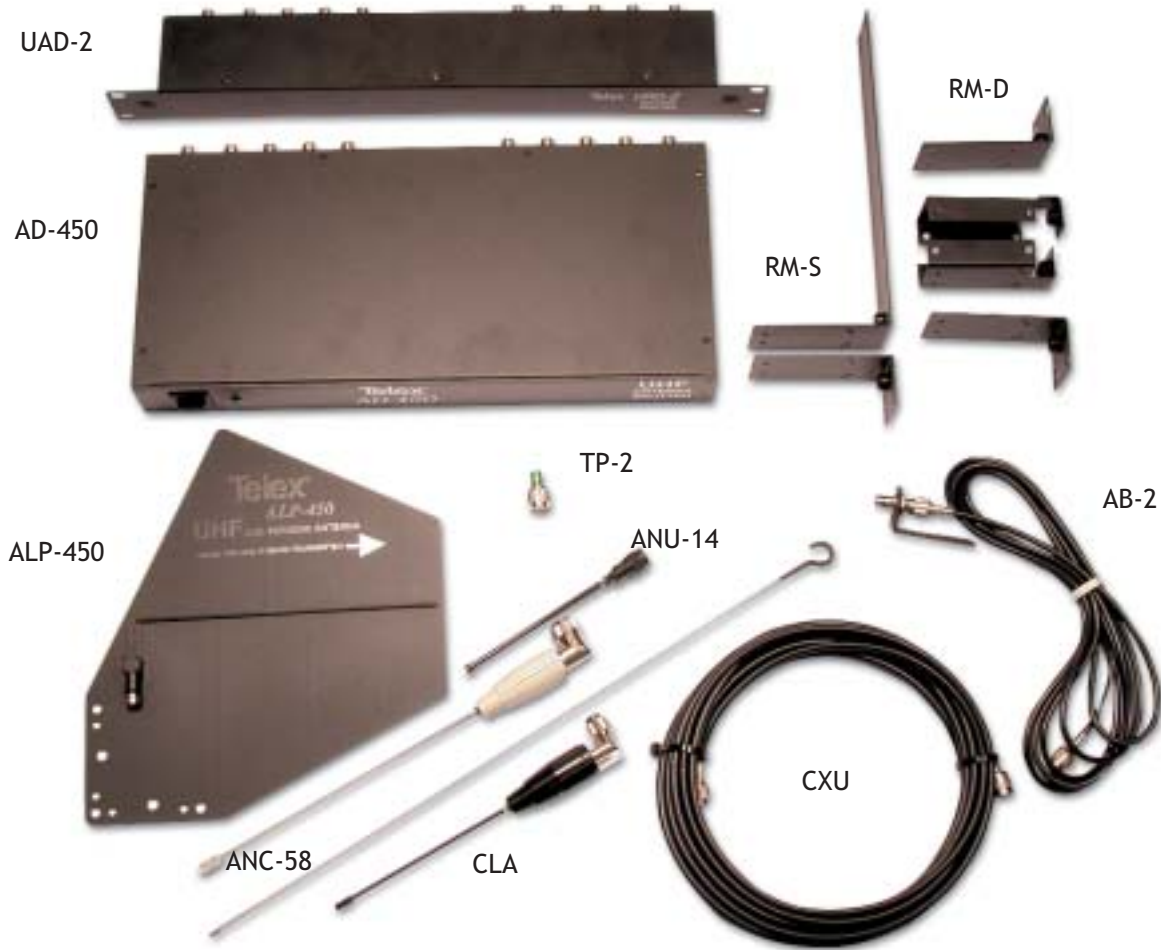


# TELEX Wireless Accessories



## TELEX Wireless Microphones Accessories

- MAC-2** XLR to TA4F adapter cord
- RSB-2** Referee mic switch box (TA4F) (RSB-1 with Lemo connector)  
note: bodypack transmitters must be modified for use with RSB switch box.
- PH23** Headworn unidirectional mic with TA4F
- WLM-200** Omnidirectional lapel mic with TA4F
- AT-Pro8** Headworn mic with AT dynamic element with TA4F
- AT-831B** AT unidirectional lapel mic with TA4F
- WLM50** Omnidirectional lapel mic with TA4F
- PH21** Headworn unidirectional mic with TA4F
- SCHS-745/746** Special Projects headworn mics with TA4F  
(746 is water-resistant/for aerobics use)
- ELM-22S** Premium omnidirectional lapel mic with TA4F
- ELM-33S** Premium unidirectional lapel mic with TA4F
- WP-23** Aerobics sports pouch for use with bodypack transmitter
- WP-1000** Leather bodypack pouch for use with WT-1000



## TELEX Wireless Accessories - Antennas, Coax & Hardware

- UAD-2** UHF narrowband (600-780 MHz) antenna splitter/combiner, provides RF and power for 4 receivers
- RM-D** Rack-mount kit - double (for two receivers) works with FMR-1000, FMR-10, FMR-70 and UR-700 receivers
- AD-450** UHF wideband (520-760 MHz) antenna splitter/combiner, provides RF and power for 4 receivers
- RM-S** Rack-mount kit - single (for one receiver) works with FMR-1000, FMR-10, FMR-70 and UR-700 receivers
- 12-RM** (not pictured) Rack-mount kit for one or two ProStar® receivers
- ALP-450** Directional log periodic UHF antenna (450 - 900 MHz) with mounting hardware & 10-foot coax
- TP-2** 50 ohm TNC termination plug for use with UAD-2, AD-450
- ANU-14** 1/4-wave UHF antenna for use with FMR-1000, FMR-10, FMR-70 and UR-700
- AB-2** Universal mounting bracket for 1/2-wave antennas, with 10-foot coax cable
- ANC-58X** 5/8 wave VHF antenna w/ right angle connector (X designates freq band)
- CLA-X** 1/2-wave UHF antenna (X denotes frequency band)
- CXU-X** Low-loss coax cable (X designates length, 25, 50, 75 or 100) for use with remote mount antennas
- AD-200** (not pictured) VHF wideband (150-234 MHz) antenna splitter/combiner, provides RF and power for 4 receivers
- ALP-1** (not pictured) Directional log periodic VHF antenna (150 - 234 MHz) with mounting hardware and 10-foot coax



# Microphone Technologies

In 1934, Electro-Voice invented the hum-bucking coil for microphones, which is still an industry standard almost 70 years later. The invention was the beginning of EV's success in building microphones, but not the end. Electro-Voice continues to set new standards for microphone design today. Electro-Voice was the first manufacturer to use neodymium-based magnet structures (N/DYM®) in its microphones, thus achieving higher output and condenser-like qualities such as crystal clarity and reliable performance. Electro-Voice's 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 continuing the company's tradition of legendary reliability and warranty support. Its long list of patents attests to its success in meeting these goals.

## Variable-D®

Normal microphones generate increased bottom end when used close up. This is typically called the "proximity effect." While some lead vocalists like this effect and use it to enhance their performance, it is attainable only in closeup situations. When the distance between the microphone and the source is extended, the sound quality changes dramatically. 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

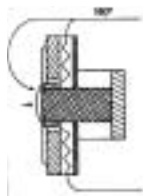
slots at set distances. The duct provides maximum damping which is completely uncoloured and undistorted at 180-degree off-axis, ensuring the same frequency response as if the source was nearly on-axis.

Variable-D® designed microphones can be used very close to other sound sources with no loss in clarity or definition. This makes them the preferred choice for tight vocals and challenging instruments such as brass. Variable-D® microphones like the RE20 and RE27 are favorites with broadcast show hosts, vocal booths, voice-over studios, and professional touring or rental companies.

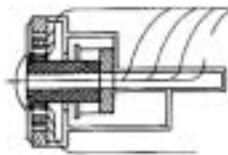
## VOB™

Electro-Voice's unique VOB™ technology (Vocally-Optimized Bass) reduces low-frequency distortion in the microphone's output. 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."

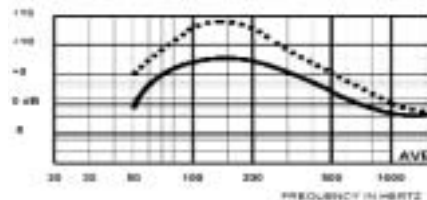
VOB™ counteracts proximity effect, sibilance, and P-popping, thus assuring maximum vocal intelligibility and musical clarity.



Normal mic



Variable-D® mic



— with VOB™  
----- without VOB™



# Microphone Use & Placement Guidelines

## General Microphone Use Guidelines

1. Always point the microphone at the desired source and away from the sources of any unwanted sound.
2. The microphone should be located close to the sound source to minimize interference from other potential sound sources.
3. Use the 3-to-1 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 foot away from the sound source, it should be 3 feet 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. These are merely guidelines to assist in the placement of the microphone to achieve optimal performance.

Usage	Best Mic Placement & Suggested EV mic for this usage
<b>Snare Drum</b>	Place mic 1-3" above the heads, 1-2" in from the rim. 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 2nd mic under the drum aimed up at the bottom head. Suggested mics: N/D 478, N/D 468, Co4
<b>Electric Guitar</b>	Place microphone approximately 1-2" from and at a 90 degree angle to the speaker cone. To reduce boominess, move the Bass microphone off axis to the cone from 90 degrees to 45 degrees, or move mic from center of cone to the edge. Suggested Guitar Amplifier mics: RE20, N/D 868, N/D 468, Co4
<b>Tom-Toms</b>	On double headed toms, place mic 1-3" over the top of the drum head at a 45 degree 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 degree angle from the center of head, 3-5" away. Suggested mics: N/D 468, for floor tom - RE20, N/D 868
<b>Cymbals</b>	Place microphone one to two feet above the top of cymbals. Suggested mics: RE200, RE1000
<b>High-Hat</b>	Place 5" above outside edge at a 45 degree down angle. Suggested mics: RE200, RE1000
<b>Brass</b>	6-24" away, and on axis with the bell of the instrument. Suggested mics: RE20, Co4, N/D 468
<b>Acoustic Guitar</b>	Place mic 6-12" from where finger board joins the body. Suggested mics: N/D 468, N/D 478, Co4, RE20, RE200, RE1000

# Guidelines and Recommendations for Best Wireless Performance

## Compatibility

The transmitter and receiver must be of the same frequency band and set to the same group and channel or frequency in order to work together. Frequency agile products are usually available in several frequency bands. Fixed frequency products must match exactly. The band or fixed frequency information is available on the back label of the receiver, the bottom label on the handheld transmitter, and on the back panel label on the body-pack.

## Using Multiple Wireless Systems

If two or more systems and/or other UHF/VHF wireless systems are being used in the same location, proper frequency coordination is necessary to avoid interference. Contact your dealer or Telex/EV for assistance if you are planning multiple systems or using new Telex/EV systems with other existing wireless equipment.

## Potential Sources of Interference

There are many potential sources of interference for your wireless system. Any electronic product that contains digital circuitry including digital signal processors (reverb/multi-effects units), electronic keyboards, digital lighting controllers, CD and DVD players, and computers, all emit RF energy that can adversely affect the performance of your wireless system. It is always best to place the receiver as far away as possible from these devices to minimize potential problems.

Analog and Digital Television stations can also interfere with your wireless system. It is always best to consult the local authorities (like the FCC in the US) and find out what TV channels are operating and plan for the future in the area of intended use. Once you know what TV channels to avoid, you can select a fixed frequency or band of frequency agile product to work in your area.

## Battery Recommendations

Fresh 9-volt alkaline batteries from a quality manufacturer will yield the best performance from your transmitters. Rechargeable 8.4-volt Ni-Cad batteries can be used but will result in much shorter operational time.

When any Telex/EV transmitters are turned on, the red battery LED will flash once if the battery is good. If the light does not light or stays lit continuously, the battery is weak or dead. If the light comes on during use, the battery is weakening and should be replaced as soon as possible. If sound quality degrades during use, it may be the result of a weakening battery.

## Receiver and Antenna Placement

Do not place the receiver near a large metal object or surface. Locate the receiver as close as possible to the area where the transmitter will be used. Ideally, position the receiver/antennas within sight of the transmitter. When using multiple systems, do not allow antennas to cross or touch each other. For best results with multiple receivers, use an appropriate antenna splitter.



**KARL DENSON**

uses RE20



**THERESA ANDERSON**

uses RE510



**FISHBONE**

use N/D 767a



**STATIC-X**

use N/D 767a



**NEIL McCOY**

uses RE1



**TELEX**



## America

USA: Telex Communications Inc. 12000 Portland Ave South, Burnsville, MN 55337, USA, Phone: 952-884-4051, Fax: 952-884-0043  
Canada (East): Acoustik GE Inc. 5715 Kincourt, Montréal, PQ H4W 1Y7, Canada, Phone: 866-369-2864, 514-369-2864, Fax: 514-487-9525  
Canada (Ontario): HEK Marketing Inc. 27 Fearn Crescent, Ajax, ON L1S 5L7, Canada. Phone: 800-494 6770, Fax 905-619-0366  
Canada (West): KMT Pro Audio. 04-301 Nassau Street North, Winnipeg, MB R3L-2J5, Canada, Phone: 888-850-8811, Fax: 204-489-7614  
Mexico: Telex de Mexico S.A. de C.V., Av. Parque Chapultepec 66-202, Col. El Parque, Edo. de Mexico, Phone:+52 (55) 5358-5434, Fax:+52 (55) 5358-5588  
Latin America: Telex Communications Inc. 12000 Portland Ave South, Burnsville, MN 55337, USA, Phone: 952-887-5532, Fax: 952-736-4212

## Europe, Africa & Middle-East

Germany: Telex EVI Audio GmbH. Hirschberger Ring 45, D 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: Telex Communications Ltd. 4, The Willows Centre, Willow Lane, Mitcham, Surrey CR4 4NX, UK, Phone: +44 208 646 7114, Fax: +44 208 640 7583  
Africa & Middle-East: Telex EVI Audio GmbH. Hirschberger Ring 45, D 94315, Straubing, Germany, Phone: +49 9421-706 0, Fax: +49 9421-706 265

## Asia & Pacific Rim

Japan: EVI Audio Japan Ltd. 5-3-8 Funabashi, Setagaya-Ku, Tokyo, Japan 156-0055, Phone: +81 3-5316-5020, Fax: +81 3-5316-5031  
Australia: EVI Audio (Aust) Pty Ltd. Slough Business Estate, Unit 23, Silverwater, N.S.W. 2128, Australia, Phone: +61 2-9648-3455, Fax: +61 2-9648-5585  
China: EVI Audio (HK) Ltd. 7th Floor China Minmetals Tower, No. 79 Chatham Road South, Tsim Sha Tsui, Kowloon, HK, Phone: +852 2351-3628, Fax: +852 2351-3329  
Singapore: Telex Pte. Ltd. 3015A Ubi Road 1, 05-10 Kampong Ubi Industrial Estate, Singapore 408705, Phone: +65 6746-8760, Fax: +65 6746-1206