

Endura Single Desktop Rapid Charger

Endura rapid chargers use a fully interchangeable cup system to support most new and discontinued two way radios. This provides ultimate flexibility for mixed radio fleets and a cost effective route when migrating to a new radio platform. Batteries can be charged on or off the radio.

All units incorporate individual microprocessors that fully and safely support NiCd, NiMH and LiIon battery chemistries. This is the most versatile, cost effective and user friendly charger system available today.

Features

- Tri-chemistry: Fully supports NiCd, NiMH and LiIon batteries
- External switched mode power supply (included)
- Rugged case
- Exterior On/ Off power switch on six bay charger
- Tri-colour status LED

Endura Single Desktop Charger



Specifications

Battery Chemistries	NiCd/ NiMH/ LiIon
Weight	275g
Dimensions	115 x 136 x 86 mm
Operating Temperature	15°C to 30°C
Power supply	240v AC nominal With power adaptor
Charge rate	700mA
Approvals	UL, C-Tick

Please see charger cup selection list for supported radio at the end of this section

Endura Single Vehicle Charger

Mobile Systems rapid chargers use a fully interchangeable cup system to support most new and discontinued two way radios. This provides ultimate flexibility for mixed radio fleets and a cost effective route when migrating to a new radio platform. Batteries can be charged on or off the radio.

All units incorporate individual microprocessors that fully and safely support NiCd, NiMH and LiIon battery chemistries. This is the most versatile, cost effective and user friendly charger system available today.

The single **vehicle** charger comes complete with a metal mounting bracket, tie down straps, and a vehicle power adaptor.

Features

- Tri-chemistry: Fully supports NiCd, NiMH and LiIon batteries
- 12v DC capable
- External switched mode power supply (included)
- Rugged case
- Exterior On/ Off power switch on six bay charger
- Tri-colour status LED
- Complete with vehicle mounting kit

Endura Single Vehicle Charger



Specifications

Battery Chemistries	NiCd/ NiMH/ LiIon
Weight	320 g
Dimensions	116 x 98 x 106 mm
Operating Temperature	15°C to 30°C
Power supply	12 – 24v DC nominal
Charge rate	700mA
Approvals	UL, C-Tick

Please see charger cup selection list for supported radio at the end of this section

Endura Six Bay Rapid Charger

Mobile Systems rapid chargers use a fully interchangeable cup system to support most new and discontinued two way radios. This provides ultimate flexibility for mixed radio fleets and a cost effective route when migrating to a new radio platform. Batteries can be charged on or off the radio.

All units incorporate individual microprocessors that fully and safely support NiCd, NiMH and LiIon battery chemistries. This is the most versatile, cost effective and user friendly charger system available today.

The six bay charger has been designed to minimize the area required for charging six batteries – on or off the radio – making it perfect for rental operations or anywhere space is at a premium.

Features

- Tri-chemistry: Fully supports NiCd, NiMH and LiIon batteries
- 12v DC capable
- External switched mode power supply (included)
- Rugged case
- Exterior On/ Off power switch on six bay charger
- Tri-colour status LED
- Wall mount & vehicle mount kits with radio restraints available for six bay charger

Endura Six Bay Charger



Specifications

Battery Chemistries	NiCd/ NiMH/ LiIon
Weight	3.1 Kg
Dimensions	510 x 172 x 80 mm
Operating Temperature	15°C to 30°C
Power supply	240v AC nominal With power adaptor
OR	12 – 24v DC With vehicle adaptor
Charge rate	700mA per bay
Approvals	UL, C-Tick

Mounting Bracket & Vehicle Power Adaptor



Please see charger cup selection list for supported radio at the end of this section

Endura Charger Cup List

	Radio Model	Part Number
MOTOROLA	GP328 / GP329 / GP338 / GP339 / GP328Plus	LETWP-MT2
	GP300	LETWP-MT7
	GP900 / MTS2000	LETWP-MT9
	XTS3000 / XTS5000	LETWP-MT13
	MOTOTRBO	LETWP-MT16
ICOM	IC-F3 / F4	LETWP-IC2
	IC-F11 / F21	LETWP-IC1
	IC-F14 / F24 / F33GT / F43GT / F3343GS	LETWP-IC3
	IC-F50 / F60 / M88	LETWP-IC4
KENWOOD	TK270 / TK280 / TK370 / TK380	LETWP-KW1
	TK2140 / TK3140 / TK2160 / TK3160	LETWP-KW3
	TK2180 / TK3180	LETWP-KW4
	TK2207 / TK3207	LETWP-KW6
TAIT	TAIT ORCA 5000	LETWP-TA1
	TP8100	LETWP-TA2
VERTEX	VX160 / VX420	LETWP-VX1
	VX820 / VX920	LETWP-VX3
	VX350	LETWP-VX4

Other charging cups are available for other radio models – please contact us for further information

ACT Intelligent Single & Dual Desktop Chargers

The Advanced Charger Technologies (ACT) charger range is the most advanced intelligent charging and conditioning solution available.

If two-way radio batteries compromise your radio communications or tie up manpower with complicated maintenance programs, ACT provides a solution to battery headaches. ACT chargers are used extensively across Australia and New Zealand with many public safety and large radio fleet users benefiting from this unique technology.

ACT intelligent chargers use patented adaptive pulse charging to offer the fastest fully automated conditioning charge available. Batteries are conditioned during every charge and feature very precise termination with NO trickle charge to ensure batteries are never overcharged. Battery shift and product life are extended without any user intervention.

Features	i30 Single Bay Desktop Charger
----------	--------------------------------

- Ultra fast charge time – NiCd in 30-40 minutes
- Extends battery life
- Eliminates memory effect
- Automatically conditions battery during EVERY charge
- Interchangeable adaptors
- No user training or discipline required
- Precise termination of charge
- Patented DEW™ adaptive pulse charging
- Optional iGauge provides analyzing capability



Specifications	i40 Dual Bay Desktop Charger
----------------	------------------------------

AC Input Voltage:	115 / 230 VAC, 50 / 60 Hz
DC Input Voltage :	19v (power pack supplied)
Battery range:	4 – 10 cell NiCd 4 – 10 cell NiMH 1 – 3 cell LiIon
Charge Time	NiCd – 30 min/ Ah typical NiMH – 40 min/ Ah typical LiIon – 50 min/ Ah typical
Weight	0.75 Kg (i30) 1.2 Kg (i40)
Approvals	UL, CE, CSA, e11, C-Tick



ACT Intelligent Vehicle Chargers

The ACT i35 single & i45 dual in-vehicle chargers operate from 12V and 24V DC and is ideal for emergency response vehicles and mobile communication units. The i35 single charger is supplied complete with a vehicle mounting bracket and the dual bay i45 has a very low profile making it particularly suitable for public safety vehicles where equipment space is at a premium. The dual bay configuration also allows 2 different radio models to be charged at the same time.

Both ACT vehicle chargers can be hardwired into the electronics of any vehicle for fast, reliable battery charging that returns two-way radios to service quickly.

ACT vehicle chargers include a 'maintenance' mode to ensure batteries are always kept fully charged without overcharging.

Features

- Ultra fast charge time – NiCd in 30-40 minutes
- Extends battery life
- Eliminates memory effect
- Automatically conditions battery during EVERY charge
- Interchangeable adaptors
- No user training or discipline required
- Precise termination of charge
- Patented DEW™ adaptive pulse charging
- Operates from 10-30v DC

i35 Single Bay Vehicle Charger



Mounting kit supplied

Specifications

Input Voltage:	10 – 30v DC
Standby current (Maintenance mode)	~ 1mA
Charge Time	NiCd: 30 to 90 mins depending on battery capacity
Weight	0.8 Kg (i35) 1.2 Kg (i45)
Approvals	UL, CE, CSA, e11, C-Tick

i45 Dual Bay Vehicle Charger



ACT Intelligent Six Bay Desktop Chargers

The Advanced Charger Technologies (ACT) charger range is the most advanced intelligent charging and conditioning solution available.

ACT intelligent chargers use patented adaptive pulse charging to offer the fastest fully automated conditioning charge available. Batteries are conditioned during every charge and feature very precise termination with NO trickle charge to ensure batteries are never overcharged. Battery shift and product life are extended without any user intervention.

In addition to the standard features on all ACT products, the i75 'Maintainor' has been specifically designed for use by Emergency Response teams or anyone storing batteries for days, weeks or even months but require fully charged batteries at a moments notice.

After charging is complete, batteries are maintained at full charge. In addition, over the course of two weeks, each individual battery is fully discharged and then re-charged to exercise the battery. This keeps the battery in optimal health and charged to its maximum capacity.

ACT chargers are used extensively across Australia and New Zealand with many public safety and large radio fleet users benefiting from this unique technology.

Features	i70 Six Bay Desktop Charger
----------	-----------------------------

- Ultra fast charge time – NiCd in 30-40 minutes
- Extends battery life
- Eliminates memory effect
- Automatically conditions battery during EVERY charge
- Interchangeable adaptors
- No user training or discipline required
- Precise termination of charge
- Patented DEW™ adaptive pulse charging
- Optional iGauge provides analyzing capability



Specifications	Additional i75 Features
----------------	-------------------------

AC Input Voltage: 115 / 230 VAC, 50 / 60 Hz

Charge Time: NiCd – 30 min/ Ah typical
NiMH – 40 min/ Ah typical
LiIon – 50 min/ Ah typical

Weight: 10 Kg

Approvals: UL, CE, CSA, e11, C-Tick

- Specifically designed for backup & emergency batteries
- Maintains battery at full charge without damage
- Periodic & automatic cycling to ensure batteries are kept in optimal condition.



ACT Intelligent Capacity Gauge

The iGauge is the perfect companion to an ACT intelligent charger.

The iGauge is an intelligent capacity display unit that fits underneath ANY existing adaptor plates and delivers precise milliamp readings of a battery's capacity – regardless of battery chemistry.

The iGauge also features deep conditioning through three complete discharge/ re-charge cycles – virtually eliminating all memory effects and restoring lost capacity in NiCd and NiMH batteries.

Due to long term capacity loss effects associated with LiIon cells, the reACTivate cycle is not available for this type of battery.

Features

- Intelligent capacity gauge
- Fits under any adaptor on ACT six bay chargers
- Easy to use
- Battery recovery program (reACTivate)
- **Must be used with ACT i30, i70 or i75 chargers**

iGauge



Function Summary

Charge/ Discharge

The default mode is the charge and automatic condition mode. If a battery is placed on the adaptor this mode is started automatically after 30 seconds. Pressing 'Next' accesses the other modes.

Capacity Check

The capacity check function is used to ascertain the energy stored in a battery. Once the capacity function is selected the battery is discharged, accurately measured and then recharged. Capacity is displayed in mAh

ReACTivate

The reACTivate function discharge and re-charge cycles the battery three times terminating with a fully charged battery. At the end of each individual cycle a capacity measurement is displayed which allows a user to determine if capacity is being recovered. (NiCd & NiMH batteries only).

ACT Battery Adaptor List

	Radio Model	Type	Battery Type	Part Number
MOTOROLA	GP300	NiCd / NiMH	HNN9628A	LEiMOT12-NN
	GP328 / 338 / 329 / 339 GP700 / 760 / 780	NiCd / NiMH	HNN9008AR HNN9009AR	LEiMOT18-NN
	GP328 / 338 / 329 / 339 GP700 / 760 / 780	LiIon	HNN9013	LEiMOT18-LIN
	GP328 PLUS / 338 PLUS GP329 PLUS / 339 PLUS	LiIon	JMNN4023 JMNN4024	LEiMOT25-LIN
	GP900 / MTS2000 / MTX838 MTX8000 / PTX1200	NiCd / NiMH	NTN7143 NTN7144	LEiMOT10-NN
	SABER	NiCd		LEiMOT14-NCD
	XTS2500	NiCd / NiMH	NTN9815 NTN9816	LEiMOT32-NN
	XTS2500	LiIon		LEiMOT32-LIN
	XTS3000 / 5000	NiCd / NiMH	NTN8923AR	LEiMOT17-NN
	XTS3000 / 5000	LiIon		LEiMOT17-LIN
	MotoTRBO	NiCd / NiMH		LEiMOT34-NN
	MotoTRBO	LiIon		LEiMOT34-LIN
	APX7000	NiCd / NiMH		LEiMOT35-NN
	APX7000	LiIon		LEiMOT35-LIN
ICOM	IC-F3 / F4 / F3S / F4S	NiCd	BP196	LEiCOM10-NCDs
	IC-F11 / F21 / F30 / F40 IC-F3GT / F4GT	NiCd / NiMH	BP209 BP210	LEiCOM11-NN
	IC-F11 / F21 / F30 / F40 IC-F3GT / F4GT	LiIon		LEiCOM11-LIN
	IC-F14 / F24 / F33 / F43 IC-F3023 / 4023 / 3063 / 4063	LiIon	BP231 BP232	LEiCOM13-LIN
	IC-F50 / F60	LiIon	BP227Li	LEiCOM14-LIN
	KENWOOD	TK-250 / 350	NiCd / NiMH	
TK-260 / 270G / 370G TK-280 / 380 / 480		NiCd / NiMH	KNB-15A / KNB-17A KNB-20N / KNB-21N	LEiKEN11-NN
TK-2140 / 3140 TK-2160 / 3160		NiCd / NiMH	KNB-25A KNB-26N	LEiKEN12-NN
TK-2140 / 3140 TK-2160 / 3160		LiIon	KNB-24L KNB-35L	LEiKEN12-LIN
TK 2180 / 3180		NiCd / NiMH	KNB-31A / KNB-32N	LEiKEN15-NN
TK 2180 / 3180		LiIon	KNB-33L	LEiKEN15-LIN
TK 2207 / 3207		NiMH	KNB-29	LEiKEN16-NN
TK 2202L / 3202L		LiIon	KNB-45L	LEiKEN16-LIN
TAIT		Orca & 5000 Series	NiCd / NiMH	TOPB200 / TOPB500
	Orca & 5000 Series	LiIon	LETOPB900	LEiTAI10-LIN
	TP7000 Series	LiIon		LEiTAI40-LIN
	TP8100 Series	LiIon	TPK-BA-100	LEiTAI30-LIN
VERTEX	VX-160 / VX-180 / VX-210 VX-410 / VX-420 / VX-800	NiCd / NiMH	FNB-V57 / FNB-V64 FNB-V83 / FNB-V94	iVER11-NN
	VX-160 / VX-180 / VX-210 VX-410 / VX-420 / VX-800	LiIon	FNB-V67Li	iVER11-LIN
	VX-820	LiIon	FNB-V87Li	iVER820-LIN
	VX-820 I.S. Battery	LiIon	FNB-V92LI/IS	iVER820-LIN

Other battery adaptors are available for other radio models – please contact us for further information

Charging Technology

Historically PMR users have had little choice when their batteries need to be recharged. Some methods still used today can be traced back to the invention of the rechargeable battery. While conventional charging techniques successfully put energy back into batteries they do not take into account the individual chemical state of each battery. In other words traditional chargers simply push energy in to the battery without regard to what the battery really requires.

The main problem with traditional battery charging is that the discipline of the operator must be relied upon to ensure the procedure is carried out to best effect without degrading the battery. OEM chargers detail a variety of rules that need to be followed. Few users have the time or the patience to stick to the complicated regime recommended by manufacturers. As a result many organisations invest significant resources on battery management to combat the problems caused by antiquated charging methods.

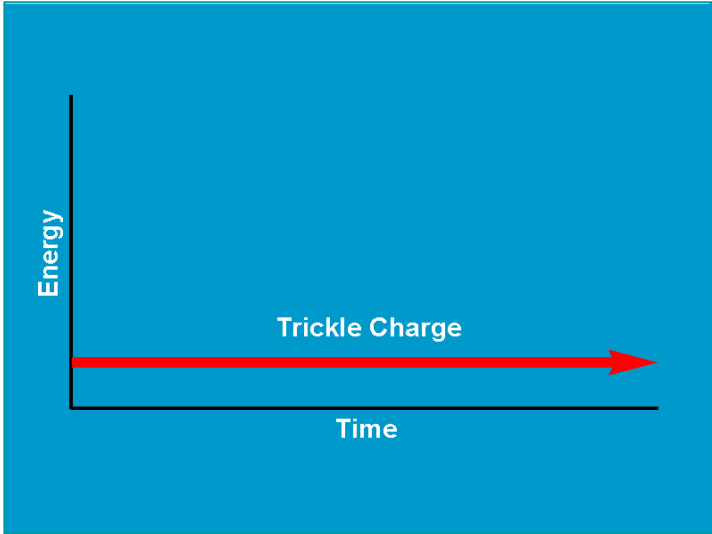
The following section gives a brief overview of the different battery charging methods available.

Trickle Charger

The trickle or slow charger is the standard unit provided by most handset manufacturers. The unit works by pushing a steady current in to the battery at a rate which is normally 10% of the battery's capacity. So for example a 1700mAh battery will be charged at 170mAh. Typical charge times range from 8 to 12 hours.

It is left to the user to terminate the charge at the correct time. Failure to remove the battery from the charger means that more energy enters the battery than it can absorb. This causes a host of degenerative chemical processes within the battery that lead to reduced capacities and premature failure. In the worst cases the temperature inside the cells will become so high that the battery vents off the gas build up.

Benefits	Drawbacks
<ul style="list-style-type: none"> Lowest Cost Often included with radio 	<ul style="list-style-type: none"> Long charge times Requires user discipline Constant rate of charge No conditioning process Long formation times No termination of charge Detrimental to the battery



Charge profile for trickle charger showing constant current input

Fast or Rapid Charger

As the name suggests this type of charger is quicker than the standard trickle charger. Rapid chargers work by providing a high rate of constant energy into the battery until a reference voltage is reached. Although the green ready LED illuminates the battery is usually only charged to 80% of its capacity. The charge is then dropped to a trickle rate that is approximately one tenth of the battery capacity. It is then up to the user to guess when the battery is charged to full capacity.

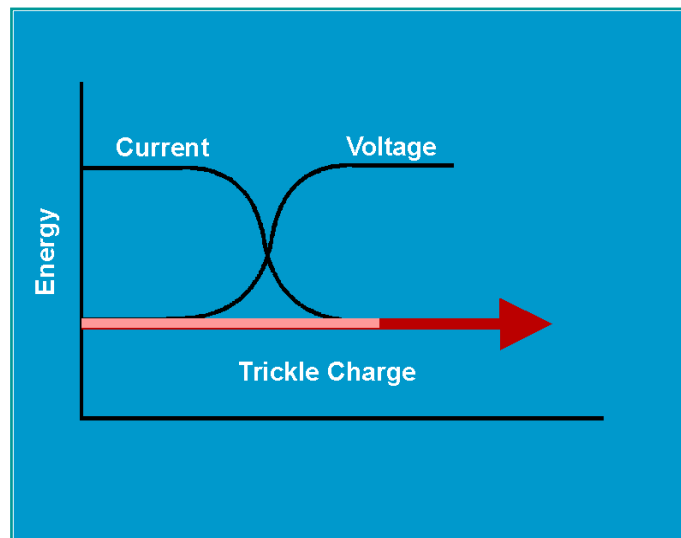
Many manufacturers stipulate that the battery should be left on the charger for between 1 and 2 hours after the green light comes on. With no termination the rapid charger has a tendency to quickly overcharge and damage batteries.

Benefits

- Shorter charge times
- Can be multi-chemistry

Drawbacks

- Poor battery life
- Inaccurate charge indication
- No conditioning process
- Long formation times
- Requires user discipline
- Detrimental to the battery



Charge profile for rapid charger showing high current rate then trickle charge at 90%

Pulse Charger

Pulse charging techniques were pioneered at the turn of the 20th Century with the last significant patent issued in 1967. The patent has now expired and a variety of pulse chargers are available from a number of manufacturers. The pulse charger works by subjecting the battery to a sequence of pre-programmed current pulses. The advantage of the pulse charger is that it provides for rest periods during charge.

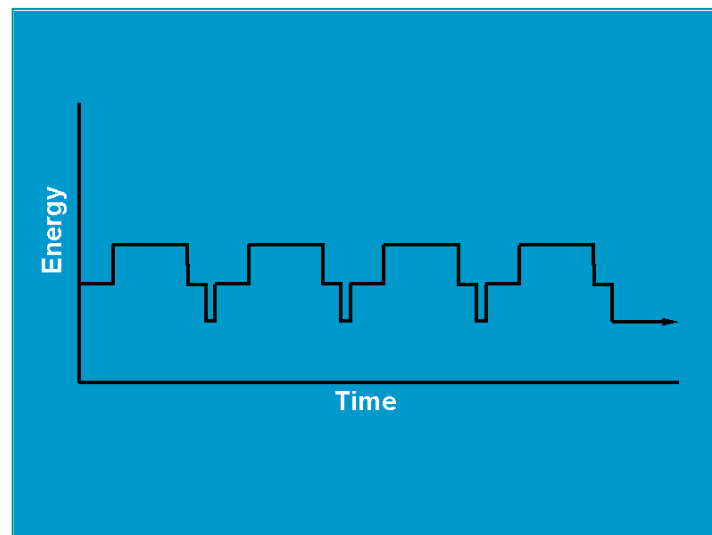
This type of charger can also help to break down dendrite growth, a contributor to the memory effect. However pulse chargers do not take into account the internal state of the battery. They merely subject the battery to a series of repetitive pulses. Some units even revert to a potentially damaging trickle charge once the battery approaches full capacity.

Benefits

- Shorter charge times
- Reduces memory effect

Drawbacks

- No feed back or control
- Repetitive charge sequence
- Poor or no conditioning process
- Long formation times
- Can require user discipline



Charge profile for pulse charger showing uniform pulse widths & height

ACT Intelligent Charging

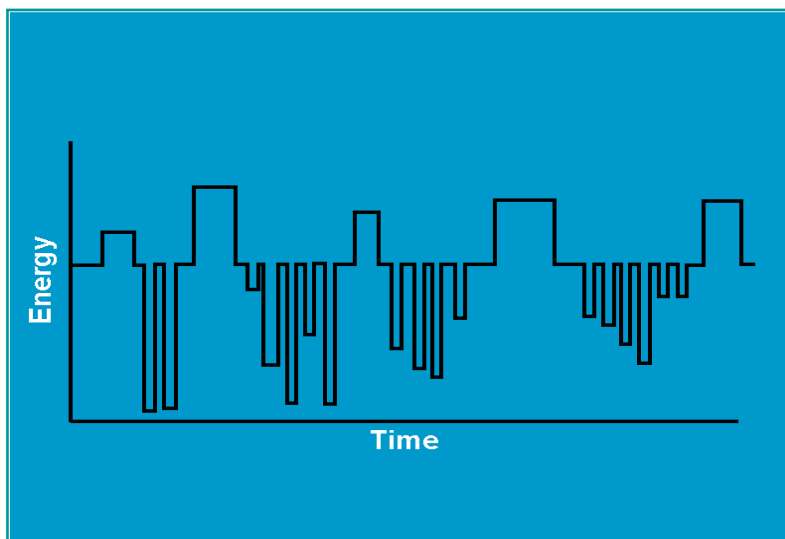
Advanced Charger Technology has invested over \$40 Million to solve the battery problems experienced by professional mobile radio users. The result is a unique, fully patented technology that actually responds to the chemical state of each battery. A charging and conditioning waveform is simultaneously applied to the battery ensuring the longest and most reliable performance possible. Another benefit of ACT's truly intelligent system is its ability to keep batteries in a charge receptive state. This translates into the world's fastest charge times. The charging and conditioning process is completely automatic and requires no intervention on the part of the user. There's no charging rules with ACT, simply put the battery on and remove it at any time.

Benefits

- Fastest possible charge times
- Conditions batteries during charge
- Exceptional battery life spans
- Elimination of memory problems
- Precise termination of charge
- Short formation times
- No user discipline required
- Reduced battery management and cost
- Reduced battery disposal costs
- Supports multiple battery types & chemistries

Drawbacks

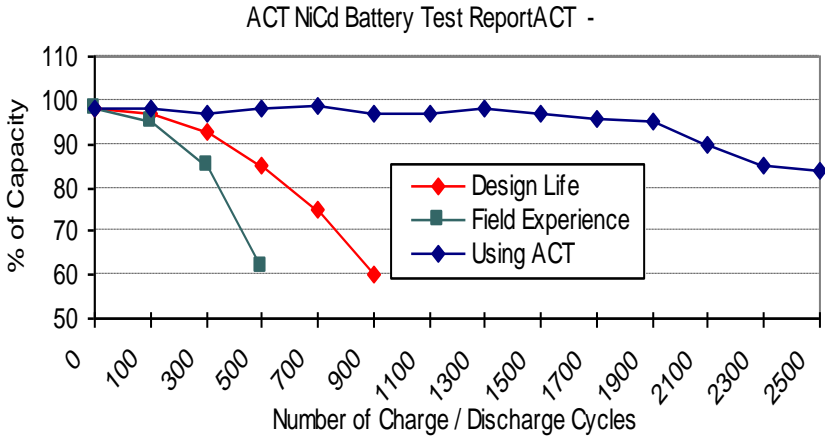
- Initial Cost



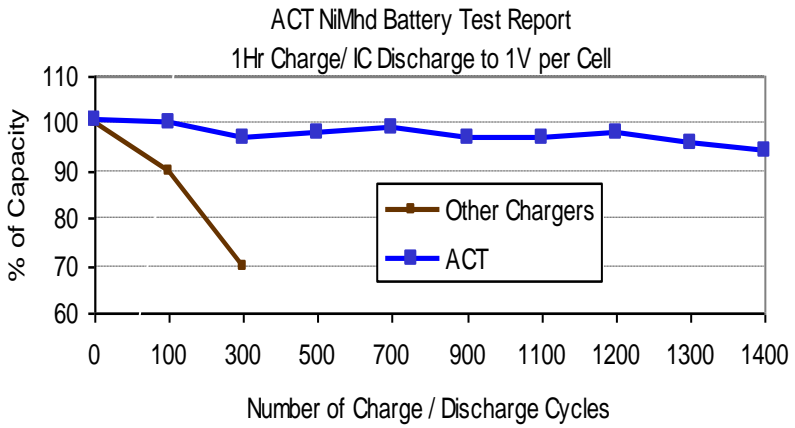
Charge profile for ACT pulse charger showing ADAPTIVE pulse width and heights

Cycle Life Improvements with ACT Charging

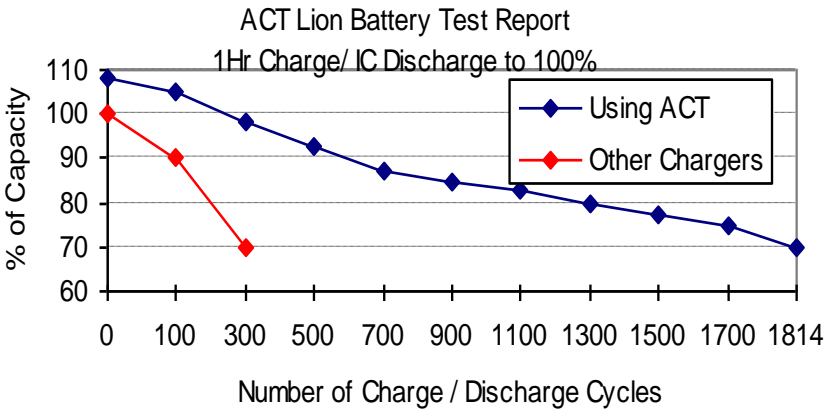
The following graphs show the cycle life gains for the 3 main battery chemistries in use in the two-way radio industry. These cycle life tests were performed by the US military in the late 1990's when evaluating ACT's patented adaptive charging. Operational use has shown a minimum gain of 2-3 times the charge cycle life compared to standard rapid charging techniques.



NiCd Batteries



NiMH Batteries



LiIon Batteries

Replacement Batteries

	Radio Model	Chemistry	Capacity (mAh)	OEM Battery Part Number	Part Number
MOTOROLA	GP300	NiCd	1200	HNN9628A	LE9628UNC
		NiMH	1500		LE9628MH
	GP328 / 338 / 329 / 339	NiMH	1450	HNN9008AR	LE9008
			2000	HNN9009AR	LE9009
			2700		LE9008HC
		LiIon	1700	HNN9013	LE9013
	GP328 PLUS / 338 PLUS	NiMH I.S.	1800		LE9010
		LiIon	1700	JMNN4023 JMNN4024	LE4024LI
	GP900 / MTS2000 / HT1000 / PTX1200	NiMH	1500	NTN7144	LE7144
		NiMH	2000		LE7144MH
SABER	NiCd	1500		LE4595	
XTS3000 / 5000	NiMH	2000	NTN8923AR	LE8299	
		2700		LE8299MH	
		3600		LE8299MHUC	
ICOM	IC-F3 / F4 / F3S / F4S	NiCd	1100	BP196	LE196
		NiMH	1450	BP196	LE196MH
	IC-F11 / F21 / F30 / F40 / IC-F3GT / F4GT	NiCd	1100	BP209	LE209
		NiMH	1650	BP210	LE210
		LiIon	2000	BP211	LE211
	IC-F14 / F24 / F33 / F43 IC-F3023 / 4023 / 3063 / 4063	LiIon	2000	BP231 BP232	LE232
LiIon		1800	BP227Li	LE227	
KENWOOD	TK-260 / 270G / 370G	NiCd	1500	KNB-15A	LE5615
		NiMH	1800	KNB-20N	LE5615MH
	TK-2140 / 3140 TK-2160 / 3160	NiMH	2000	KNB-26N	LE5626
		LiIon	1900	KNB-35L	LE5635L
	TK 2180 / 3180	NiMH	2000	KNB-32N	LE5632
		LiIon	1900	KNB-33L	LE5633L
	TK 2207 / 3207	NiMH	1450	KNB-29	LE5629N
	TK 2202L / 3202L	LiIon	1900	KNB-45L	LE5645L
Nexedge NX200	LiIon	1900	KNB-47L	LE5647L	
TAIT	Orca & 5000 Series	NiCd	1500	TOPB200	LETOPB200
		NiMH	2150	TOPB500	LETOPB500
		LiIon	2400		LETOPB900
	TP8100 Series	LiIon	1950	TPK-BA-100	LETPKBA100
SIMOCO	SRP8000 / 9000	NiCd	1700		LEASI8000-17
		NiMH	2150		LEASI8000N
VERTEX	VX-160 / VX-180 / VX-210 VX-410 / VX-420 / VX-800	NiCd	1100	FNB-V57	LEFNBV57
		NiMH	2500	FNB-V94	LEFNBV94
		LiIon	2000	FNB-V67Li	LEFNBV67LI
	VX-820	LiIon	2000	FNB-V87Li	LEFNBV87LI

Replacement Batteries

The replacement batteries used enjoy a well earned reputation for performance and durability. That's because they incorporate features like matched cells from top Japanese manufacturers, gold plated contacts, premium ABS housings, and nickel plated tabs. Our batteries can be counted on to power your radio under the most demanding field conditions and are backed by our no fuss 12 month warranty.

Replacement Batteries - Examples



Tait Orca 5000 Series

- Large gold plated contacts.
- Mobile Systems only uses matched cells from Japan
- Internal flex PCB for reliability & performance
- High quality plastics provide durable housing



Icom BP-232Li



Motorola XTS5000








Motorola GP328



Kenwood Nexedge NX200

Listen Only Earphone Options

Earphone Options	Connector / Cable	Part #
 <p>D-Earhanger</p>	2.5mm / Curly Cord	LE25MMCCDEH
	3.5mm / Curly Cord	LE35MMCCDEH
	2.5mm / 90cm Straight Cord	LE25MM90DEH
	3.5mm / 90cm Straight Cord	LE35MM90DEH
 <p>Flexible Ear-Hook</p>	2.5mm / Curly Cord	LE25MMCCFEH
	3.5mm / Curly Cord	LE35MMCCFEH
	2.5mm / 90cm Straight Cord	LE25MM90FEH
	3.5mm / 90cm Straight Cord	LE35MM90FEH
 <p>Acoustic Tube Earphone- quick disconnect</p>	2.5mm / Curly Cord	LE25MMCCAT
	3.5mm / Curly Cord	LE35MMCCAT
	2.5mm / 90cm Straight Cord	LE25MM90AT
	3.5mm / 90cm Straight Cord	LE35MM90AT

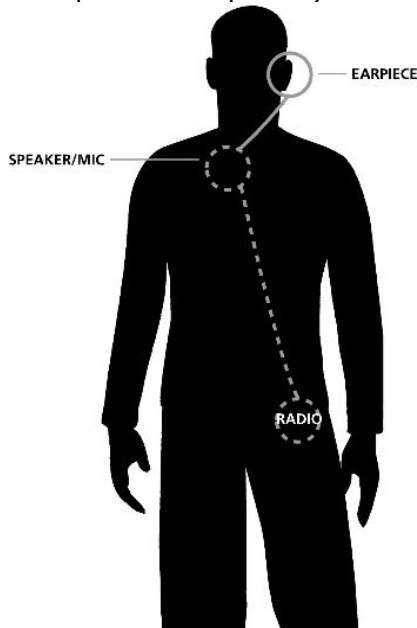
OTTO Earphone Options	Connector / Cable	OTTO Part #
 <p>Acoustic Tube Earphone- quick disconnect</p>	2.5mm / Curly Cord	V1-10432
	3.5mm / Curly Cord	V1-10433
 <p>D-Earhanger</p>	2.5mm / Curly Cord	V1-EH22R131
	3.5mm / Curly Cord	V1-EH23R131

Listen Only Earphone Options

Commercial

Listen Only Earphones

- Available with 2.5 or 2.5mm single pin plug
- 3 earpiece styles - Soft D-Earhanger, Flexible Earhook & Acoustic Tube
- 2 connector options available: Long cable (for direct connect to radio) or Short curly cable (for use with speaker microphones)



D-Earhanger Earphone



Flexible Earhook Earphone



Acoustic Earphone

Professional

Earphones for use with Speaker Microphones

OTTO
Expect Excellence.

- Available with 2.5 or 3.5mm connectors
- Soft rubber D-Earhanger or
- Acoustic Tube with quick disconnect





Acoustic Earphone with Quick Disconnect




D-Earhanger Earphone

One Wire Surveillance Kits

One-Wire Speaker Earhook	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300SEH-1W
		GP328	Multipin	LEGP328SEH-1W
		GP328 Plus	Multipin	LEGP328PSEH-1W

One-Wire Flexi-Earhook	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300FEH-1W
		GP328	Multipin	LEGP328FEH-1W
		GP328 Plus	Multipin	LEGP328PFEH-1W
		GP328 Plus	3.5mm Threaded	LEMOT35TFEH-1W
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PFEH-1W
		IC-F14 IC-F24	2-pin 2-screw	LEICOMFEH-1W
		Kenwood	TK2 / 3160 TK2 / 3170 TK2 / 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300FEH-1W
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXFEH-1W

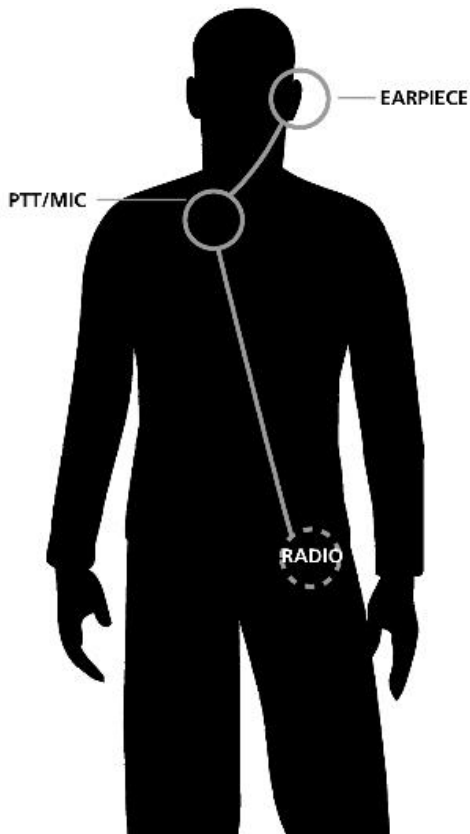
One-Wire D-Earhanger	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300DEH-1W
		GP328	Multipin	LEGP328DEH-1W
		GP328 Plus	Multipin	LEGP328PDEH-1W
		GP328 Plus	3.5mm Threaded	LEMOT35TDEH-1W
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PDEH-1W
		IC-F14 IC-F24	2-pin 2-screw	LEICOMDEH-1W
		Kenwood	TK2 / 3160 TK2 / 3170 TK2 / 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300DEH-1W
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXDEH-1W

One Wire Surveillance Kits

Mobile Systems provides a range of One Wire Surveillance Kits, perfect for security companies, film crew and hotel staff.

Commercial Grade	Commercial Grade One Wire Kits
------------------	--------------------------------

- Speaker Ear Hook Kit – with large speaker and foam cover
- Flexible Ear Hook Wire Kit – iPod style with rubber ear hook
- D Shape Rubber Earphone Wire Kit – soft D-shell with speaker that sits on outer ear.
- All three kit options use rugged Kevlar re-enforced cabling and heavy duty strain reliefs



Speaker Earhook: SEH Kit






Flexible Earhook: FEH Kit



D-Earhanger: DEH Kit

Two Wire Surveillance Kits

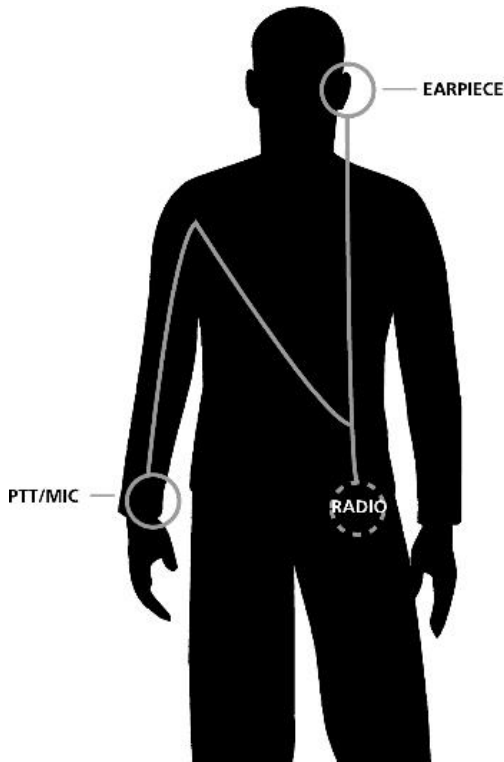
Acoustic Tube	Radio		Connector	Part #	OTTO Part #
	Motorola	GP300	2-pin	LEGP300AT-2W	V1-10176
		GP328	Multipin	LEGP328AT-2W	V1-10669
		GP328 Plus	Multipin	LEGP328PAT-2W	V1-10778
		GP328 Plus	3.5mm Threaded	LEMOT35TAT-2W	V1-10172
		XTS5000	Hirose	LEHIROSEAT-2W	V1-10166
	ICOM	IC-F14 IC-F24	2-pin 2-screw	LEICOMAT-2W	V1-10756
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin	LEKENAT-2W
	TK2/ 3140 TK2/ 3180		Multipin		V1-10695
	TAIT		Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300AT-2W
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXAT-2W	V1-10617
		VX-820	Multipin		V1-10815
		Two-Wire Flexible Earhook		Radio	Connector
	Motorola	GP300	2-pin	LEGP300FEH-2W	
		GP328	Multipin	LEGP328FEH-2W	
		GP328 Plus	Multipin	LEGP328PFEH-2W	
		GP328 Plus	3.5mm Threaded	LEMOT35TFEH-2W	
	ICOM	IC-F14 IC-F24	2-pin 2-screw	LEICOMFEH-2W	
		Kenwood	TK2 / 3170 TK2 / 3207	2-pin	LEKENFEH-2W
	TAIT		Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300FEH-2W
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXFEH-2W	
Two-Wire D-Earhanger		Radio	Connector	Part #	
	Motorola	GP300	2-pin	LEGP300DEH-2W	
		GP328	Multipin	LEGP328DEH-2W	
		GP328 Plus	Multipin	LEGP328PDEH-2W	
		GP328 Plus	3.5mm Threaded	LEMOT35TDEH-2W	
	ICOM	IC-F14 IC-F24	2-pin 2-screw	LEICOMDEH-2W	
		Kenwood	TK2 / 3170 TK2 / 3207	2-pin	LEKENDEH-2W
	TAIT		Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300DEH-2W
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXDEH-2W	

Two Wire Surveillance Kits

Mobile Systems provide two tiers of Two Wire Kit; 1. **Commercial** Grade Kits which are ideal for security companies, film crew, hotel staff; 2. OTTO **Professional** Grade Kits which set the standard in durability, reliability and performance. Maintain high-clarity, two-way radio transmissions that are unnoticed by others around you.

Commercial Grade	Commercial Two Wire Kit
------------------	-------------------------

- Combined microphone & PTT module
- Separate earpiece options as follows: Acoustic tube, Flexible Earhook or D-Earhanger.
- All three kit options use rugged Kevlar re-enforced cabling and heavy duty strain reliefs.



Acoustic Kit: AT



Flexible Earhook Kit: FEH



D-Earhanger Earphone Kit: DEH

Professional Grade	Professional Two Wire Kit
--------------------	---------------------------

OTTO[®]

Expect Excellence.

- Quick disconnect earphone adapter for easy replacement of any one component
- Low-profile, flexible, transparent acoustic tube
- Flexible, high-grade cable for demanding applications



Otto 2-Wire Kit: Otto V1 Kit

Three Wire Surveillance Kits

Three-Wire Acoustic Tube Kit	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V1-10284
		GP328	Multipin	V1-10710
		GP328 Plus	Multipin	V1-10779
		GP328 Plus	3.5mm Threaded With adaptor	V1-10170
		XTS5000	Hirose	V1-10164
	ICOM	IC-F14 IC-F24	2-pin 2-screw	V1-10757
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TK2/ 3140 TK2/ 3180		Multipin	V1-10357
	TAIT		Orca TP7100 TP8100	2-pin With audio adaptor
	Vertex	VX-420 VX-350	Single pin screw	V1-10618
		VX-820	Multipin	V1-10817

Three Wire Surveillance Kit

Mobile Systems supplies high grade Three Wire Kits for use by professional users with-in the public safety and covert communications sector. These kits can be combined with wireless ear piece options to provide true covert communications.

Professional Grade

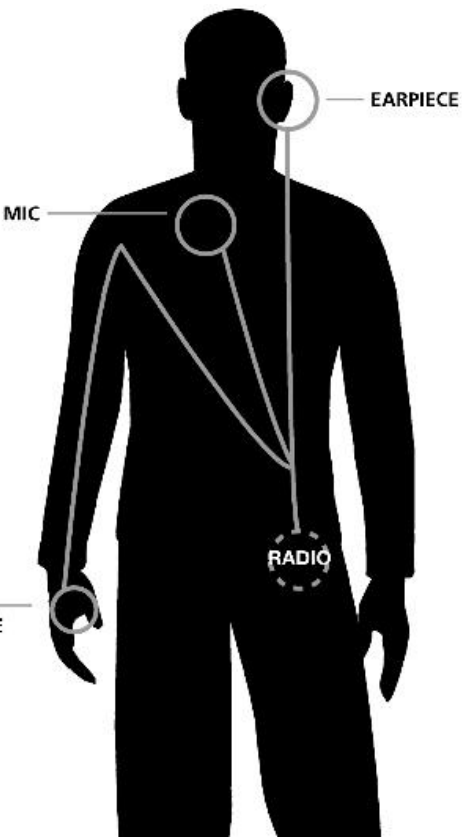
OTTO Three Wire Kit

OTTO
Expect Excellence.

- Lightweight earphone, rubber ear-tip, radio connector and clothing clip
- Quick disconnect earphone adapter for easy replacement of any one component
- Low-profile, flexible, transparent acoustic tube
- Flexible, high-grade cable for demanding applications



Quick Disconnect Assembly



OTTO Surveillance Earpiece Options





Flexible Ear Insert



Acoustic Tube with noise attenuating plugs

Commercial Speaker Microphones

Standard Speaker Microphone	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300RSM
		GP328	Multipin	LEGP328RSM
		GP328 Plus	Multipin	LEGP328PRSM
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PRSM
		IC-F14 IC-F24	2-pin 2-screw	LEICOMRSM
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300RSM
Vertex	VX-420 VX-350	Single pin screw	LEVERTEXRSM	

Noise Cancelling	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300RSM-NC
		GP328	Multipin	LEGP328RSM-NC
		GP328 Plus	Multipin	LEGP328PRSM-NC
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PRSM-NC
		IC-F14 IC-F24	2-pin 2-screw	LEICOMRSM-NC
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300RSM-NC
Vertex	VX-420 VX-350	Single pin screw	LEVERTEXRSM-NC	

Earphone Options	Connector / Cable	Part #
Acoustic Tube Earphone– quick disconnect	2.5mm / Curly Cord	LE25MMCCAT
	3.5mm / Curly Cord	LE35MMCCAT
Flexible Ear-Hook	2.5mm / Curly Cord	LE25MMCCFEH
	3.5mm / Curly Cord	LE35MMCCFEH
D-Earhanger	2.5mm / Curly Cord	LE25MMCCDEH
	3.5mm / Curly Cord	LE35MMCCDEH

Commercial Speaker Microphones

Mobile Systems provides two tiers of Commercial Speaker Microphones. These two tiers are ideal for security companies, film crew, hotel staff, lite construction workers and factory or warehouse users. The Noise Cancelling microphone is ideal for noisy factory environments where the users need to be heard clearly.

Commercial Grade

- 3.5mm Earphone Jack
- Environmental PU cable with Kevlar reinforcement
- Heavy duty strain relief
- Replaceable belt clips

Standard Speaker Microphone



Noise Cancelling Speaker Microphone



Commercial Earphone Options – for use with Remote Speaker Microphones



Acoustic Earphone




Flexible Ear-hook Earphone



D-Earhanger Earphone

Professional Speaker Microphones

Profile Speaker Microphone	Radio	Connector	OTTO Part #	
	Motorola	GP300	2-pin	V2-L2MG11
		GP328	Multipin	V2-L2MJ11
		GP328 Plus	Multipin	V2-L2MM11
		XTS5000	Multipin	V2-L2MA11
	ICOM	IC-F11	2-pin Right Angle	V2-L2CC11
		IC-F21		
		IC-F14	2-pin 2-screw	V2-L2CS11
		IC-F24		
	IC-F50/ 60	Multipin	V2-L2CM11	
	Kenwood	TK2/ 3170	2-pin	V2-L2KA11
		TK2/ 3207		
		TK2/ 3140	Multipin	V2-L2KB11
TK2/ 3180				
TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V2-L2MG11	
Vertex	VX-420	Single pin screw	V2-L2VD11	
	VX-350			
	VX-820	Multipin	V2-L2VJ11	

Evolution Speaker Microphone	Radio	Connector	OTTO Part #	
	Motorola	GP300	2-pin	V2-10026
		GP328	Multipin	V2-10228
		GP328 Plus	Multipin	V2-10295
		XTS5000	Multipin	V2-10031
		XTS5000	Multipin	V2-10286 (emergency button)
	ICOM	IC-F11	2-pin Right Angle	V2-10200
		IC-F21		
		IC-F14	2-pin 2-screw	V2-10288
	IC-F24			
	IC-F50/ 60	Multipin	V2-10314	
	Kenwood	TK2/ 3170	2-pin	V2-10030
		TK2/ 3207		
		TK2/ 3140	Multipin	V2-10068
	TK2/ 3180			
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V2-10026
	Vertex	VX-420	Single pin screw	V2-10169
VX-350				
VX-820		Multipin	V2-10318	

OTTO Earphone Options	Connector / Cable	OTTO Part #
Acoustic Tube Earphone– quick disconnect	2.5mm / Curly Cord	V1-10432
	3.5mm / Curly Cord	V1-10433
D-Earhanger	2.5mm / Curly Cord	V1-EH22R131
	3.5mm / Curly Cord	V1-EH23R131

Professional Speaker Microphones

OTTO's professional grade speaker microphones are designed to be used in the harshest of environments. Both Profile and Evolution microphones have been designed to exceed MIL810 specifications and are sealed to IP54 rating making them ideal for public safety officials, for construction site foremen or plant engineers to relay instructions clearly.

Professional Grade

- **2.5mm** Earphone Jack
- Profile and Evolution rated IP54
- Both options meet MIL810 specifications
- Environmental PU cable with Kevlar re-enforcement
- Heavy duty strain relief
- Replaceable belt clips
- Evolution also has Hi/ Lo volume control

OTTO Profile Speaker Microphone



OTTO Evolution Speaker Microphone



OTTO[®]
Expect Excellence.

OTTO Earphone Options





Acoustic Earphone



D-Earhanger Earphone

Waterproof Speaker Microphones

IP68 Speaker Microphone	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300RSM-H2O
		GP328	Multipin	LEGP328RSM-H2O
		GP328 Plus	Multipin	LEGP328PRSM-H2O
		XTS5000	Multipin	LEXTSRSM-H2O
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PRSM-H2O
		IC-F14 IC-F24	2-pin 2-screw	LEICOMRSM-H2O
		IC-F50/ 60	Multipin	LEICOMF50RSM-H2O
	Kenwood	TK2/ 3170 TK2/ 3207	2-pin	LEKENRSM-H2O
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300RSM-H2O
	Vertex	VX-420 VX-350	Single pin 2-screw	LEVERTEXRSM-H2O

OTTO Storm Speaker Microphone	Radio		Connector	OTTO Part #
	Motorola	GP328	Multipin	V2-S2MJ11111
		GP328 Plus	Multipin	V2-S2MM11111
		XTS5000	Multipin	V2-S2MA11111
	ICOM	IC-F14 IC-F24	2-pin 2-screw	V2-S2CS11111
		IC-F50/ 60	Multipin	V2-S2CM11111
	Kenwood	TK2/ 3170 TK2/ 3207	2-pin	V2-S2KA11111
		TK2/ 3140 TK2/ 3180	Multipin	V2-S2KB11111
	Vertex	VX-420 VX-350	Single pin 2-screw	V2-S2VD11111
		VX-820	Multipin	V2-S2VJ11111

OTTO Storm options are available which add LED and Emergency button functionality are available for some radio models – please contact us for availability

Waterproof Speaker Microphones

Mobile Systems supplies two fully immersion rated speaker microphones designed to withstand prolonged exposure to water and temperature extremes. The IP68 rating also provides excellent protection against dirt and dust and allow for the microphones to be washed without affecting performance.

These units are designed for rugged environments including Public Safety Markets (police, fire and EMT services), maritime law enforcement, heavy-duty manufacturing and any other environment with harsh conditions.

Waterproof Speaker Microphone

- Waterproof - Immersion rated for 2 meters for 1 hour
- Waterproof Hirose accessory connector available on some models
- Self Draining Speaker Compartment - flush accumulated dirt and grime away with tap water
- Huge Mylar Speaker – exceptional audio quality and impervious to water damage
- Extra Large Belt Clip - Spring-loaded for secure attachment to uniforms



Waterproof Speaker Microphone

Waterproof Speaker Microphone

OTTO[®]


Expect Excellence.


- One meter Immersion rating IP68 (Mil- 810), 31 minutes with the earphone jack seal closed
- Larger push-to-talk (PTT) with positive tactile feedback
- Push-button volume control
- Earphone jack
- Contoured design for easy handling
- Field-replaceable belt clip
- Lightweight for easy wearing

OTTO Storm Speaker Microphone



Lightweight Headsets

Breeze Lightweight Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-BA2MG1
		GP328	Multipin	V4-BA2MJ5 (mini PTT)
		GP328 Plus	Multipin	V4-BA2MM5 (mini PTT)
		GP328 Plus	3.5mm Threaded	V4-BA2MA1
		XTS5000	Hirose	V4-BA2MD1
	ICOM	IC-F11 IC-F21	2-pin Right Angle	V4-BA2CC1
		IC-F14 IC-F24	2-pin 2-screw	V4-BA2CS1
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TK2/ 3140 TK2/ 3180		Multipin	V4-BA2KB1
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V4-BA2MG1
	Vertex	VX-420 VX-350	Single pin screw	V4-BA2VD1
		VX-820	Multipin	V4-BA2VJ5 (mini PTT)

Lightweight Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-10053
		GP328	Multipin	V4-10433 (no PTT)
		GP328 Plus	Multipin	V4-10494
		GP328 Plus	3.5mm Threaded	V4-10050
		XTS5000	Hirose	V4-10190
	ICOM	IC-F11 IC-F21	2-pin Right Angle	V4-10393
		IC-F14 IC-F24	2-pin 2-screw	V4-10479
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TK2/ 3140 TK2/ 3180		Multipin	V4-10076
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V4-10053
	Vertex	VX-420 VX-350	Single pin screw	V4-10407
		VX-820	Multipin	V4-10521

Lightweight Headsets

OTTO sets the standard in performance, reliability and durability for lightweight headsets. These headsets allow for high-clarity, discrete two-way radio communications while providing the additional comfort necessary for extended wear.

These headsets are compatible with a most radio makes and models, which makes Otto’s lightweight headsets perfect for continuous use in many markets. These include: Hospitality, Retail, Recreation, Public Safety, restaurant and other hospitality staff, movie crews and others in the entertainment industry, retail sales personnel, and many others working in active, moderate-noise environments.

Professional Grade

Breeze Headset



- Behind-the-head style with single left earphone
- Designed for extended wear in active environments
- Ultra Lightweight frame for superior comfort and fit
- Flexible, electret boom microphone with replaceable windscreen


Professional Grade


Lightweight Headset




- Flexible, electret boom mic with replaceable windscreen
- Comfortable, adjustable foam cushion headband
- Fully rotating boom microphone for left or right side positioning
- Replaceable foam ear cushions with optional cloth covers

Heavy Duty Over-the-Head Headsets

Commercial Over-the-Head Headset	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300HDHS
		GP328	Multipin	LEGP328HDHS
		GP328 Plus	3.5mm Threaded	LEMOT35THDHS
	ICOM	IC-F11	2-pin Right Angle	LEICOM2PHDHS
		IC-F21		
		IC-F14 IC-F24	2-pin 2-screw	LEICOMHDHS
	Kenwood	TK2/ 3170 TK2/ 3207	2-pin	LEKENHDHS
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300HDHS
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXHDHS

Professional Over-the-Head Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-10146
		GP328	Multipin	V4-10430
		GP328 Plus	3.5mm Threaded	V4-10145
		XTS5000	Hirose	V4-10148
	ICOM	IC-F11	2-pin Right Angle	V4-10394
		IC-F21		
		IC-F14 IC-F24	2-pin 2-screw	V4-10480
	Kenwood	TK2/ 3170 TK2/ 3207	2-pin	V4-10018
		TK2/ 3140 TK2/ 3180	Multipin	V4-10080
		TAIT	Orca TP7100 TP8100	2-pin With audio adaptor
Vertex	VX-420 VX-350	Single pin screw	V4-10404	
	VX-820	Multipin	V4-10519	

ClearTrak Over-the-Head Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-10390
		GP328 Plus	3.5mm Threaded	V4-10364
	Kenwood	TK2/ 3170 TK2/ 3207	2-pin	V4-10413
		TK2/ 3140 TK2/ 3180	Multipin	V4-10415
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V4-10390

Heavy Duty Over-the-Head Headsets

Heavy-duty headsets offer high clarity sound and additional hearing protection necessary for consistent, clear communication in high noise environments. Perfect for use by manufacturing plant engineers, industrial processing technicians, construction teams, airport personnel, racing crews or anyone in a high noise environment.

ClearTrak Extreme Noise Cancelling Headset

The ClearTrak headsets offer high clarity sound and additional hearing protection necessary for consistent, clear communication in very high noise environments.

Commercial Grade

- Certified noise reduction of 24dB
- Flexible, noise-cancelling, boom microphone with replaceable windscreen
- Comfortable ear seals
- PTT on earcup
- Full range of replacement parts available

Over-the-Head



Professional Grade

OTTO
Expect Excellence.

- Certified noise reduction of 24dB
- 3dB Noise cancelling microphone
- Flexible, noise-cancelling, boom microphone with replaceable windscreen
- Comfortable, cloth-covered ear seals
- Fully rotating boom mic for left or right side positioning

OTTO Over-the-Head



Professional Grade


- Heavy-duty headset with certified noise reduction rating(NRR) of 24dB
- Built with an extreme noise-canceling (**19dB**) microphone
- PTT switch located on the earcup
- Flexible, heavy-duty coil cord
- Full range of replacement parts available

OTTO Cleartrak Over-the-Head



Heavy Duty Behind-the-Head Headsets

Behind-the-Head Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-10003
		GP328	Multipin	V4-10431
		GP328 Plus	Multipin	V4-10570
		GP328 Plus	3.5mm Threaded	V4-10002
		XTS5000	Hirose	V4-10001
	ICOM	IC-F11	2-pin Right Angle	V4-10395
		IC-F21		
		IC-F14	2-pin 2-screw	V4-10481
		IC-F24		
	IC-F50/ 60	Multipin	V4-10516	
	Kenwood	TK2/ 3170	2-pin	V4-10019
		TK2/ 3207		
		TK2/ 3140 TK2/ 3180	Multipin	V4-10081
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V4-10003
Vertex	VX-420	Single pin screw	V4-10405	
	VX-350			
	VX-820	Multipin	V4-10523	

ClearTrak Behind-the-Head Headset	Radio		Connector	OTTO Part #
	Motorola	GP300	2-pin	V4-10047
		GP328 Plus	3.5mm Threaded	V4-10024
		XTS5000	Hirose	V4-10455
	Kenwood	TK2/ 3170	2-pin	V4-10025
		TK2/ 3207		
		TK2/ 3140 TK2/ 3180	Multipin	V4-10388
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	V4-10047
	Vertex	VX-420 VX-350	Single pin screw	V4-10406

Heavy Duty Behind-the-Head Headsets

Standard Noise Cancelling Headset

The OTTO heavy-duty headsets offer high clarity sound and additional hearing protection necessary for consistent, clear communication in high noise environments. Perfect for use by manufacturing plant engineers, industrial processing technicians, construction teams, airport personnel, racing crews or anyone in a high noise environment.

ClearTrak Extreme Noise Cancelling Headset

The ClearTrak headsets offer high clarity sound and additional hearing protection necessary for consistent, clear communication in very high noise environments. The ClearTrak headset provides racing pit crews, driving teams and racetrack management with clear consistent communications for the entire race day.

Standard Noise Cancelling Headset	OTTO Behind-the-Head
-----------------------------------	----------------------




- Certified noise reduction of 24dB
- 3dB Noise cancelling microphone
- Flexible, noise-cancelling, boom microphone with replaceable windscreen
- Comfortable, cloth-covered ear seals
- Full range of replacement parts available


ClearTrak Extreme Noise Cancelling	OTTO Cleartrak Behind-the-Head
------------------------------------	--------------------------------


- Heavy-duty headset with certified noise reduction rating(NRR) of 24dB
- Built with an extreme noise-canceling (**19dB**) microphone
- PTT switch located on the earcup
- Flexible, heavy-duty coil cord
- Full range of replacement parts available



Hardhat Attach Headsets

Commercial Hardhat Attach Headset	Radio		Connector	Part #
	Motorola	GP300	2-pin	LEGP300HDHH
		GP328	Multipin	LEGP328HDHH
		GP328 Plus	3.5mm Threaded	LEMOT35THDHH
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PHDHH
		IC-F14 IC-F24	2-pin 2-screw	LEICOMHDHH
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300HDHH
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXHDHH

Professional Hardhat Attach Headset	Radio		Connector	Part #
 <p>PTT on Earcup</p>	Motorola	GP300	2-pin	LEGP300HDHH-P1
		GP328	Multipin	LEGP328HDHH-P1
		GP328 Plus	3.5mm Threaded	LEMOT35THDHH-P1
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PHDHH-P1
		IC-F14 IC-F24	2-pin 2-screw	LEICOMHDHH-P1
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300HDHH-P1
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXHDHH-P1

Professional Hardhat Attach Headset	Radio		Connector	Part #
 <p>Detachable PTT Option</p>	Motorola	GP300	2-pin	LEGP300HDHH-P2
		GP328	Multipin	LEGP328HDHH-P2
		GP328 Plus	3.5mm Threaded	LEMOT35THDHH-P2
	ICOM	IC-F11 IC-F21	2-pin Right Angle	LEICOM2PHDHH-P2
		IC-F14 IC-F24	2-pin 2-screw	LEICOMHDHH-P2
		Kenwood	TK2/ 3170 TK2/ 3207	2-pin
	TAIT	Orca TP7100 TP8100	2-pin With audio adaptor	LEGP300HDHH-P2
	Vertex	VX-420 VX-350	Single pin screw	LEVERTEXHDHH-P2

Hardhat Attach Heavy Duty Headsets

Mobile Systems's hardhat attach headsets have been developed in close collaboration with end users (off-shore oil) and are manufactured in Scandinavia. Using the latest technology, these headsets provide excellent hearing protection and communications, combined with high durability to meet the demands of the most extreme environments.

Commercial Grade

- Connects directly to most two-way radios
- Lighter weight noise cancelling headset option
- Padded headband and soft cushions provides high comfort.
- Quick positioning noise cancelling boom microphone for clear communications even in noisy areas
- Features integrated PTT on earcup with straight radio download.
- Weight: 292g

Hardhat Attach Headset



Professional Grade

- Industrial – Heavy Duty Headset
- All metal parts are stainless steel for increased durability
- All cables are manufactured tested to 1 million flexes
- External connectors have waterproof strain relief's
- Quick positioning noise cancelling microphone
- All internal electrical components are manufactured in modules so are easily replaced
- Two PTT Options:
 - Ear Cup PTT (-P1 option)
 - Detachable Nexus PTT switch (-P2 option)

Hardhat Attach Headset



Detachable or Ear Cup PTT Options

Ear-Defender Communications Kit

Features

- Single Speaker Earmuff Upgrade Kit
- Simple upgrade kit for existing Ear Defenders
- Designed to be plugged into remote speaker microphone
- A single hole needs to be drilled in the bottom of existing or new ear defenders – rubber grommet supplier
- Two wire solder joint – heat shrink supplied
- Comes with curly cord or straight cable with 2.5mm or 3.5mm right angle plug



Ear Defender Communications Kit

Ear-Defender Kit	Part #
2.5mm Connector & Curly Cord	LEEDKIT25MM-L
3.5mm Connector & Curly Cord	LEEDKIT35MM-L
2.5mm Connector & 90cm Straight Cord	LEEDKIT25MM90-L
3.5mm Connector & 90cm Straight Cord	LEEDKIT35MM90-L

Audio Adapters

Features	Motorola
----------	----------

- Audio adapters allow users to swap audio accessories without having to upgrade the complete accessory.



LEBDN4455 – GP328 PLUS 3.5mm Threaded Adapter
LE9718C – GP328 PLUS Two-Pin Adapter



LE9716C – GP328 Two-Pin Adapter



LE9717C – GP328 3.5mm Threaded Adapter



LEV1-10335 - Motorola XTS 3.5mm Threaded Adapter
LEV1-10540 - Motorola XTS 6 Pin Hirose Adapter

Tait	Icom
------	------







LE9720C - TP7000 / TP8000 Two-Pin Adapter
TOPA-AA-005 - Orca Two-Pin Adapter
TOPA-AA-005G – Orca Two-Pin Adapter (Green)



LEMRC-I2-S(R) - F50/60 Two-Pin Adapter

Earphone Spares

Earphone Spares	Description	Part #
	Soft Rubber Eartips – Pack of 10	LEEB-10
	Spare Acoustic Tube / Eartip – Pack of 5 (please note this tube does not fit Otto acoustic earphone)	LEQDAT-5
	Flexible Ear Insert – Left, Medium	LEEAC-EF1-ML
	Flexible Ear Insert – Right, Medium	LEEAC-EF1-MR

OTTO Earphone Spares	Description	Part #
	Soft Rubber Eartips – Pack of 10 (use part #)	LEEB-10
	Spare Acoustic Tube / Eartip – Pack of 5	LEC101199-05
	Noise Attenuating Plugs (NRR 25dB)	LEC100733
	Flexible Ear Insert – Left, Medium	LEC806573-LM
	Flexible Ear Insert – Right, Medium	LEC806573-RM

Full Duplex Bluetooth Headsets

Mobile Systems Bluetooth headsets allow hands-free, full duplex encrypted communication up to 120 metres apart. Manufactured in Norway in close collaboration with end users, these headsets use the latest technology to ensure excellent hearing protection, DUPLEX communications and very high durability to meet the demands of extreme environments.

Headsets operate in pairs. Paired headsets will not interfere with other Bluetooth headsets working in the same area.

Features	Bluetooth Over-the-Head
----------	-------------------------



- Headsets work in pairs
- Noise cancelling microphone ensures speech clarity
- Class 1 Bluetooth enables **100m** range
- Encrypted full duplex between headsets
- Headsets can be paired with other Bluetooth devices e.g. mobile phones.
- Modular design allows for easy replacement of parts
- Powered from 2x AA Batteries (re-chargeable can be used)
- Over-head and **hardhat** helmet versions available



Full Duplex 100-120m

Specifications	Bluetooth Helmet Attach
----------------	-------------------------

Range	up to 100m
Communication	Full Duplex
Attenuation	SNR = 28 dB H = 31 dB, M = 26 dB L = 18 dB



Full Duplex 100-120m

Full Duplex Wireless Headsets	Part #
Over-the-head Headset	LEHDHS-BT
Helmet Attach Headset	LEHDHH-BT

Please note: this headset needs to be paired to a second headset for full duplex communications. This headset is not designed to be used in-conjunction with a two-way radio.

Wireless Aviation Groundcrew Headset System

The A-Kabel headset and adaptor allow wireless communications between ground mechanic and flight deck. The ground mechanic has total freedom to walk within a 50 metre* radius of the dongle and still communicate with the flight deck.

Once the headset and dongle have been paired (takes a few seconds) the user simply turns the units on and they automatically connect to each other - no repairing is required when turning on/ off.

The A-KABEL Bluetooth Wireless Ground Mechanic headset and Dongle can use re-chargeable batteries which can be charged without having to remove them from the headset or Dongle.

Features	Wireless Groundcrew Headset
----------	-----------------------------

- Instant DUPLEX communication when PTT is pressed
- Class I Bluetooth enables up to 100 metres working distance between headset and dongle*
- Bluetooth Piconet ensures headset and dongle cannot cross talk with other units accidentally
- On/Off Volume control are positioned on the ear shell for ease of use
- High attenuation ear cups ensure excellent hearing protection
- Dongle can be connected to nose wheel safety pin to ensure removal before take-off.
- Headset and dongle are powered by 2 x AA batteries (re-chargeable batteries can be used)
- Headset can be charged via external socket



Wireless Headset



Wireless Aircraft Adaptor



Wireless Aviation Headset	Part #
Over-the-head Wireless Headset	LEHDS-BT-AV
Wireless Aircraft Adaptor	LE-BT-AVDONGLE

Temco Commercial VOX Solution

This solution allows for true hands-free voice activated two way radio communications. The Voiceducer ear microphone picks up bone conduction sound vibration from the vocal chords in the external auditory canal and converts it into sound. The use of a bone conduction microphone having a high tolerance to noise enables clear communication even in extreme noise environments and also allows the unrestricted use of breathing apparatus and helmets.

The radio interface module (SD) includes a built-in filter amplifier function to correct and amplify the audio signals from the Voiceducer bone conduction earphone. It also has a PTT button is located on the front of the interface for should VOX not be required at all times.

Use of a single AAA battery allows continued operation for up to 350 hours (SB) & 250 hours (SD).

Commercial Grade	Temco Earpiece Bone Conduction & VOX
------------------	--------------------------------------



- Two-way communications using one ear.
- Clear audio in noisy environments
- Enables use of masks/ helmets and respirators
- Discreet, safe & comfortable
- Radio interface (SD) amplifies audio for clear exceptionally voice communications
- Durable & compact die-cast body
- Hands-free operation using VOX (SD)



Bone Conduction Earpiece & Radio Interface Module





Temco Commercial VOX System	Part #
Bone Conduction Earpiece & Radio Interface Unit	LEVOX-EBM

Temco Professional VOX Solution

Temco professional headsets dramatically reduce external noises by using bone conduction technology. By transmitting voice signals through the skull or jawbone, audio clarity is greatly improved and still allows a user to hear ambient noise if required. Alternatively, hearing protection can be provided by using earplugs without impeding radio communications in either direction.



The Professional VOX solution uses a DSP controlled radio interface module (DM19) that activates only on human speech preventing false activation from ambient or other vocal noises (e.g. coughing). In addition, the radio interface prevents speech clipping normally associated with VOX systems. All Temco radio interfaces provide audio amplification to the users voice signals.

Professional Grade	Ear Bone Conduction VOX
<ul style="list-style-type: none"> Total two way radio handsfree operation in VOX mode DSP controlled VOX activation on voice signal ONLY – does not activate on other vocal signals e.g. coughing Store and forward (microseconds) eliminates voice clipping at start of speech. Waterproof – IP67 Rechargeable battery – charger supplied Highly sensitive bone conduction microphone picks up audio as vibration from vocal chords Clear audio in noisy environments Enables use of masks/ helmets and respirators 	 <p style="margin-top: 10px;">Bone Conduction Earpiece & Radio Interface Module</p>


Professional Grade	Headset Bone Conduction VOX
<ul style="list-style-type: none"> Noise cancelling boom microphone Bone conduction temple transducer speakers locate in front of ear Comfortable lightweight behind the head style fitting Total two way radio handsfree operation in VOX mode DSP controlled VOX activation on voice signal ONLY – does not activate on other vocal signals e.g. coughing Store and forward (microseconds) eliminates voice clipping at start of speech. Waterproof – IP67 Rechargeable battery – charger supplied 	 <p style="margin-top: 10px;">Bone Conduction Headset & Radio Interface Module</p>




Temco Professional DSP VOX System	Part #
Bone Conduction Earpiece & DSP Controlled VOX Radio Interface	LEVOX-DSP-EBM
Temple Transducer Headset & DSP Controlled VOX Radio Interface	LEVOX-DSP-THS

Two-Way Mobile Handsfree

Control Units		Part #
	MOBILE Radio Control Unit Kit (includes Mini Gooseneck Mic and choice of PTT)	LEHF-MCU-KIT
	MOBILE Radio Control Unit Only	LEHF-MCU

Radio Interface Leads		Part #
MOTOROLA	Radio interface cable for Motorola GM Mobiles	LEHF-M-MOT
ICOM	Radio interface cable for ICOM Mobiles	LEHF-M-ICOM
KENWOOD	Radio interface cable for Kenwood Mobiles	LEHF-M-KEN
TAIT	Radio interface cable for Tait TM800 Mobiles	LEHF-M-TM8000

Microphone Options		Part #
	Mini Gooseneck Directional Noise Cancelling Microphone	LEHF-MIC
	400mm Long Gooseneck Directional Noise Cancelling Microphone	LEHF-MIC-GN

PTT Options		Part #
	Panel PTT - Raised PTT Switch	LEHF-PTT-P1
	Panel PTT - Dome Switch - Requires Wiring	LEHF-PTT-P2
	Gearlever / Joystick PTT - includes velcro band	LEHF-PTT-L

Two-Way Mobile Handsfree Solution

The Mobile Systems handsfree unit has been designed by a leading European manufacture of products for emergency services vehicles. It has been developed as an interface to most common two way radios to provide a safe and responsible way of communicating whilst driving. The handsfree unit is specifically designed for vehicle use meeting the requirements of haulers, couriers, taxis, utilities and emergency services users.

Please note these units require the user to press a PTT switch which can be conveniently mounted and does not require the user to pickup a fist microphone

Features

- Simple to install – Fit and forget
- Microphone acoustically designed for vehicle applications
- Microphones fit discretely on visor, mirror or A-pillar
- Control unit can be hidden under dash
- Compatibility with most mobile and portable two way radios.
- Approved to European standards
- Press-to-talk (PTT) switch can be dash or gear lever mounted.

Handsfree Control Unit



Specifications

Input Voltage:	10 – 16v DC
Operating current	380mA at 13.8v DC
Audio Out put	1.25 Watts / Channel Nominal (8 Ohms)
Dimension	115 x 76 x 32mm

Microphone Options



Mini Gooseneck Microphone

Interface Cables

- **Icom** – connects via fist microphone jack
- **Kenwood** - connects via fist microphone jack
- **Tait TM8000** - connects via fist microphone jack
- **Motorola** – connects via rear connector

PTT Options



Panel Mount PTT Options



Gear Lever/ Joy Stick PTT