



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**Request for
 Quotation**

RFQ NUMBER
 DJS010281

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 JOHN ABBOTT
 304-558-2544

*709043551 01 304-273-2790

**Lloyd's Electronics
 Black Bear Paging & Internet
 10057 Emerson Ave.
 Parkersburg, WV 26104**

**DIVISION OF JUVENILE SERVICES
 SECOND FLOOR
 1200 QUARRIER STREET
 CHARLESTON, WV
 25301 304-558-6029**

DATE PRINTED 10/06/2009	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
BID OPENING DATE: 10/14/2009	BID OPENING TIME		01:30PM	

LINE	QUANTITY	UOP	GAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM #02						
THIS ADDENDUM IS ISSUED TO ANSWER VENDOR QUESTIONS AND CLARIFY THE ORIGINAL REQUEST FOR QUOTATION SPECIFICATIONS, PER THE ATTACHED DOCUMENT; AND EXTEND THE BID OPENING.						
REVISED BID OPENING DATE: 10/14/2009; 1:30 PM						
NO ADDITIONAL QUESTIONS WILL BE ACCEPTED.						
0001	1	LS		725-74		
TWO-WAY RADIOS, PORTABLE						
***** THIS IS THE END OF RFQ DJS010281 ***** TOTAL:						<u>\$76,611.13</u>

RECEIVED
 2009 OCT 14 PM 12:49
 WV PURCHASING
 DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS		
SIGNATURE <i>Crystal Padgett</i>	TELEPHONE 304-464-5670	DATE 10-14-09
TITLE <i>Sales Rep.</i>	FAX 55-0724815	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

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2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

ADDENDUM TO BID DJS010281

The intent of bidding the Kenwood, model NX-300 or equivalent is based on the current situation for the Division of Juvenile Services. We are currently operating with the Motorola HT 1000's (analog only radio) in the majority of our facilities. To avoid replacing all radios at the same time we have requested a radio with the capability of operating as an analog unit or a digital unit. With this capability we can purchase replacement radios and supplement our existing facilities without converting the entire radio stock at one time. In the future when we are required to convert to the digital standard we will be well on the way with the conversion.

Clarification in regards to the question about the timing of the delivery of the radios.

The base stations and repeaters need to be delivered and installed within 90 days of the time the order is placed. If the order includes both a base station and repeater as well as hand held radios they should all be delivered together. If the order is for the hand held radios or accessories, only those items must be delivered within 30 days of the date the order is placed.



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10057 Emerson Ave.
Parkersburg, WV 26104

DIVISION OF JUVENILE SERVICES
SECOND FLOOR
1200 QUARRIER STREET
CHARLESTON, WV
25301 **304-558-6029**

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/21/2009				

BID OPENING DATE: **10/07/2009** BID OPENING TIME: **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		725-74		
<p>TWO-WAY RADIOS, PORTABLE</p> <p>OPEN-END CONTRACT TO PROVIDE PORTABLE UHF DIGITAL TWO-WAY RADIOS FOR THE WEST VIRGINIA DIVISION OF JUVENILE SERVICES, PER THE SPECIFICATIONS.</p> <p>EXHIBIT 3</p> <p>LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *Crystal Padgett* TELEPHONE **304-464-5670** DATE **10/14/09**
 TITLE *Sales Rep.* FEIN **55-0724815** ADDRESS CHANGES TO BE NOTED ABOVE

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ADDRESS CORRESPONDENCE TO ATTENTION OF
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304-558-2544

RFQ COPY

VENDOR

Lloyd's Electronics
Black Bear Paging & Internet
10057 Emerson Ave.
Parkersburg, WV 26104

SHIP TO

DIVISION OF JUVENILE SERVICES
SECOND FLOOR
1200 QUARRIER STREET
CHARLESTON, WV
25301 304-558-6029

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/21/2009				

BID OPENING DATE: **10/07/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Crystal Padgett</i>	TELEPHONE 304-464-5670	DATE 10/14/09
TITLE <i>Sales Rep.</i>	FAX 55-0724815	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.</p> <p>REV. 05/26/2009</p> <p>EXHIBIT 4</p> <p>LOCAL GOVERNMENT BODIES: UNLESS THE VENDOR INDICATES IN THE BID HIS REFUSAL TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO COUNTY, SCHOOL, MUNICIPAL AND OTHER LOCAL GOVERNMENT BODIES, THE BID SHALL EXTEND TO POLITICAL SUBDIVISIONS OF THE STATE OF WEST VIRGINIA. IF THE VENDOR DOES NOT WISH TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO ALL POLITICAL SUBDIVISIONS OF THE STATE, THE VENDOR MUST CLEARLY INDICATE SUCH REFUSAL IN HIS BID. SUCH REFUSAL SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.</p> <p>REV. 3/88</p> <p>PURCHASING CARD ACCEPTANCE: THE STATE OF WEST VIRGINIA CURRENTLY UTILIZES A VISA PURCHASING CARD PROGRAM WHICH IS ISSUED THROUGH A BANK. THE SUCCESSFUL VENDOR MUST ACCEPT THE STATE OF WEST VIRGINIA VISA PURCHASING CARD FOR PAYMENT OF ALL ORDERS PLACED BY ANY STATE AGENCY AS A CONDITION OF AWARD.</p> <p style="text-align: center;">NOTICE</p>						

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RFQ COPY

S U B M I T T E D

Lloyd's Electronics
Black Bear Paging & Internet
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Parkersburg, WV 26104

S H I P T O

DIVISION OF JUVENILE SERVICES
SECOND FLOOR
1200 QUARRIER STREET
CHARLESTON, WV
25301 304-558-6029

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: JOHN ABBOTT-----</p> <p>RFQ. NO.: DJS010281-----</p> <p>BID OPENING DATE: 10/07/2009-----</p> <p>BID OPENING TIME: 1:30 PM-----</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: ----- 304-464-4146 -----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY): ----- CRYSTAL PADGETT -----</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Crystal Padgett</i>	TELEPHONE 304-464-5670	DATE 10-14-09
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RFQ COPY

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***** THIS IS THE END OF RFQ DJS010281 ***** TOTAL:						

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SPECIFICATIONS FOR RADIOS & EQUIPMENT

1.	UHF Digital Portable 5 Watt Radio Kenwood <i>NEXEDGE NX-300</i> or equivalent. Must be compatible with Motorola HT-1000 radios and must be narrow band compliant. NXDN Digital Air Interface or equivalent. To include: Emergency call feature, Fleet Sync or equivalent, & voice Scrambler. Antenna, Lithium Ion battery, 2.5" belt clip, individual charger, standard remote microphone and first time programming included. Radio must also be adaptable to use metal swivel belt clip.
2.	3-wire mini lapel mic/with earphone, universal connector (Black) Intrinsically Safe Approved Accessory. Kenwood or Equal
3.	Standard remote microphone Kenwood or Equal. Must have a spring clip to allow it to be clipped to clothing. The microphone shall be capable of extending a minimum of 24" inches.
4.	Multi-Unit Charger, Non-Display to operate in a standard 110V US Plug. Must support lithium ion & Ni-cad batteries. Batteries shall be charged to full capacity in four (4) hours or less. The battery shall have the capacity to provide eight (8) hours of operation when utilizing a duty cycle of 5% transmit, 5% receive, and 90% standby. All equipment shall function without unintended interaction and interference to other components.
5.	Multi-Unit Charger -110V US Plug With Display must support lithium ion & Ni-cad batteries. Batteries shall be charged to full capacity in four (4) hours or less. The battery shall have the capacity to provide eight (8) hours of operation when utilizing a duty cycle of 5% transmit, 5% receive, and 90% standby. All equipment shall function without unintended interaction and interference to other components.
6.	High Capacity Lithium Ion Battery O. E. M. must be compatible with Item #1 above
7.	25 Watt Repeater installed in 30" Indoor Cabinet. Must be compatible with NEXEDGE Digital Technology or equivalent.
8.	Fiberglass Antenna will be compatible with Item #7 above.
9.	Cable ½" LDF HELIAX POLY JKT per foot. Must be compatible with Nexedge Digital Technology OR the equivalent.
10.	40 Watt Control Station, including Power Supply, Control Station Mount & Control Station Microphone
11.	Outside Control Station Fiberglass Antenna must be compatible with Item # 10 above.
12.	Replacement Plastic Belt Clips compatible with Item #1
13.	UHF Stubby Antenna Must be compatible with Item # 1 above.
14.	UHF Whip Antennas. Must be compatible with Item # 1 above.
15.	Leather Carrying Case is to be provided with each radio and be Black in color must be compatible with Item # 1 above
16.	Leather Swivel belt loop clip with portable D-Ring Attachment Compatible with Item #1

17. Installation of repeater and mobile stations must be performed by the winning vendor. Hours for installation are additional, and the estimated number of hours will be submitted for each location by using the hourly rate bid in #17 on the bid sheet. Vendor must supply any and all hardware to assist in the installation of the Repeater, and Control Station. Surge Suppressor and Jumpers will be included and must be compatible with System Installed. All vendors bidding on the equipment listed in the specifications are required to submit in writing that the product meets or exceeds the specifications set forth. If a vendor bids a product which does not meet the specifications as outlined for that item, but they believe exceeds the specifications, then the vendor is required to submit their exceptions in writing, specifically listing the item and line specification(s) which they are taking exception to.

Vendors should submit a product sheet with their bid that includes each item listed and at a minimum: Manufacturer, Model number and general specifications for each item. The vendor shall provide this documentation within 3 days upon request.

All first time programming and delivery to be included in the price. Vendor must be able to deliver repeater, antenna and mast within 90 days; & all other equipment within 30 days of date order is placed.

Vendor must be able to supply All Items Listed.

BID FORM

Item #	Description	Estimated Initial Order	Unit Price	Extended Price	Future Unit Price for One (1) Each
1	Digital 5 Watt Radio + Programming	110	\$ 503.94	\$ 55,433.40	\$ 503.94
2	3-wire mini-lapel mic/w earphone	50	\$ 145.00	\$ 7,250.00	\$ 145.00
3	Standard Speaker Microphone	35	\$ 55.22	\$ 1,932.70	\$ 55.22
4	Multi Unit Charger Non Display	9	\$ 336.91	\$ 3,032.13	\$ 336.91
5	Multi Unit Charger With Display	3	—	—	—
6	High Capacity Lithium Ion battery	12	\$ 38.91	\$ 466.92	\$ 38.91
7	25 Watt Repeater in 30" Cabinet	1	\$ 4,397.53	\$ 4,397.53	\$ 4,397.53
8	Fiberglass Antenna	1	\$ 200.00	\$ 200.00	\$ 200.00
9	Cable 1/2" LDF Heliax Poly Jkt per ft	100	2.00	\$ 200.00	\$ 2.00/ft.
10	40 Watt Control Station & Accessories	2	\$ 495.73	\$ 991.46	\$ 495.73
11	Fiberglass Antenna for Control Station	2	\$ 200.00	\$ 400.00	\$ 200.00
12	Replacement Belt Clip	12	\$ 6.28	\$ 75.36	\$ 6.28
13	UHF Stubby Antenna	6	\$ 8.79	\$ 52.74	\$ 8.79
14	UHF Whip Antenna	6	\$ 8.79	\$ 52.74	\$ 8.79
15	Leather Carry Case	6	\$ 25.10	\$ 150.60	\$ 25.10
16	Leather Swivel beltloop clip/w port. D-Ring attachment	35	\$ 17.57	\$ 614.95	\$ 17.57
17	Installation- hourly rate	6hr.	\$ 600.00 /hr.	\$ 3600.00	\$ 7500
TOTAL BID				\$ 715,611.13	

Lloyd's Electronics has been authorized to
Match Tom's GSA Pricing.

ICOM

VHF AND UHF TRANSCEIVERS

IC-F3161DT
 IC-F3161T
 IC-F3161DS
 IC-F3161S

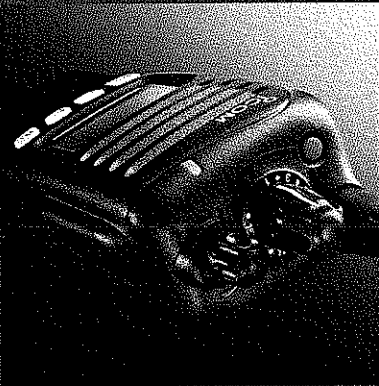
IC-F4161DT
 IC-F4161T
 IC-F4161DS
 IC-F4161S

Rugged
 MIL-STD 810

MDC 1200
 Compatible

IP54/55

IDAS
 COM DIGITAL DVANCED SYSTEM



LTR™
 Conventional
 IDAS Digital
 IDAS Trunking



- 512 ch / 128 zones
- Conventional / LTR™ mode
- IDAS digital (With UT-126H)
- IDAS Trunking (With UT-126H)
- 2-Tone, 5-Tone CTCSS, DTCS
- VHF 5W UHF 5W output
- 14 hrs. operating time with BP-232N
- Full dot-matrix LCD

Conventional/LTR™ /IDAS Digital/IDAS Tru Multi-Mode Land Mobile!

* With UT-126H installed. Already installed to the I



▲ IC-F3161DT/T

▲ IC-F4161DS/S

VHF TRANSCEIVERS

IC-F3161DT/T

IDAS digital/analog FM with 10-keypad

IC-F3161DS/S

IDAS digital/analog FM without 10-keypad

UHF TRANSCEIVERS

IC-F4161DT/T

IDAS digital/analog FM with 10-keypad

IC-F4161DS/S

IDAS digital/analog FM without 10-keypad

Basic LTR™/conventional mode operation

Both LTR™ trunking and conventional channels are programmable on a radio. Group, selective (DTMF), and phone call are available in LTR™ mode.

IP55 dust-protection and water jet resistance

The IC-F3161/D series meets IP55 requirements for dust-protection and water jet resistance. Its durable construction is backed up by the aluminum die-cast chassis and polycarbonate casing, allowing reliable operation under harsh weather and environmental conditions.

Lithium-Ion battery pack

The supplied 2000mAh Li-Ion battery pack, BP-232N, provides 14 hours* of operating time. The optional battery case BP-240 provides a convenient back up and great reassurance in an emergency.

* Typical operation Tx:Rx:Stand-by=5:5:90, power save on

Most popular signalings built-in

The 2-Tone, 5-Tone, CTCSS, DTCS and MDC signaling capabilities are built-in for group communication or selective calling. The radio can decode ten 2-Tone codes or eight 5-Tone codes on a channel. When a matched tone is received, the following actions are programmable for each code.

- Beep sound
- Answer back call
- Radio stun/kill/revive
- Bell icon
- Auto TX
- Scan

MDC 1200 Compatible

The following selective calling and ANI features are available with the built-in MDC signaling.

- PTT ID
- SelCall
- Radio check
- Radio stun/revive
- 500 Aliases
- Status message/request
- Call alert
- Emergency, emergency mic monitoring

Voting mode scanning

The voting mode scanning detects the signal strength level of repeater stations and automatically selects the strongest station, useful for roaming between 2 or more repeater sites. Once you program the voting mode to a memory zone, you can easily start voting mode operation by changing the zone setting.

Inking —

D-F3161/F4161 "D" versions.

Full dot-matrix LCD

Using a large full dot-matrix LCD (32 × 18 mm), the IC-F3161/D series shows upper and lower case characters clearly. The display setting is selectable from 1 line, 12 characters or 2 lines 24 characters via programming. The bottom row shows assigned functions to the [P0] to [P3] buttons.



Enhanced audio

The IC-F3161/D series employs a BTL amplifier that increases the audio output and the built-in audio compander provides clear, low noise communications.

Lone worker function

When the radio is not operated for a preset period, a beep sounds and a button push is required. If no button is pushed within that preset time, an emergency signal automatically transmits and alerts your co-worker or dispatcher to any potential trouble.

Built-in inversion-type voice scrambler

The built-in inversion type voice scrambler* provides secure conversation as standard. When a more secure system is required, the 32 code non-rolling-type voice scrambler UT-109R and 1020 code rolling type UT-110R are available as an option.

* Inversion type voice scrambler is not compatible with UT-109/UT-110 voice scrambler.

Other features

- 512 memory channel with 128 zones
- 8 DTMF autodial memories
- 2 step reduced power setting
- Power on password
- Busy, repeater lockout functions
- Escalating alarm
- Mode dependent scan
- Surveillance function temporarily turns off the LED backlight and beep sound
- Powerful 5W output both in VHF and UHF
- Flash CPU for future upgrade and more...

OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.

BATTERY PACKS AND CASE

▲ BP-230N ▲ BP-232N ▲ BP-240

Battery packs	Type and capacity	Operating time*	Output power
BP-230N	Li-Ion 7.4V/ 980mAh	7.35 hours	5W
BP-232N	Li-Ion 7.4V/2000mAh	14 hours	5W
BP-240	AAA (LR03) batteries × 6	—	1W

* Operating time is approximate time (at 20°C). Tx: Rx: standby=5.5:9:0. Power save on.

REGULAR CHARGER

BC-147A BC-171

BC-171 DESKTOP CHARGER + BC-147A AC ADAPTER
Charges the BP-232N in 10 hours. (approx.).

RAPID CHARGER

BC-145A BC-160

BC-160 DESKTOP CHARGER + BC-145A AC ADAPTER
Charges the BP-232N in 3 hrs. (approx.).
BC-119N + AD-106 + BC-145A is also available.

BELT CLIPS

MB-93 MB-94

MB-93 : Swivel type. A fast and easy way to remove the transceiver from your belt.
MB-94 : Alligator type. Same as supplied.

MULTI-CHARGER

BC-121N+AD-106 (6 pcs.) OPC-656 BC-157

BC-121N MULTI-CHARGER + AD-106 CHARGER ADAPTER + BC-157 AC ADAPTER
Rapidly charges up to 6 battery packs (Six AD-106s are required).
Charging time: 3 hours (approx.) when BP-232N is attached.
OPC-656 DC POWER CABLE : For use with the BC-121N. (12-20V DC required).

LEATHER BELT HANGERS

MB-96N MB-96F

MB-96N : Swivel type belt hanger. Swivel joint of the MB-93 supplied.
MB-96F : Fixed type belt hanger. For use with MB-94.

SPEAKER-MICROPHONES

HM-168 HM-169 HM-170GP HM-159SC

HM-168 : Compact type speaker-microphone. Equivalent to IPX7.
HM-169 : Rugged type speaker-microphone. Equivalent to IP57.
HM-170GP : GPS speaker-microphone. Equivalent to IP57.
HM-159SC : Full size durable speaker microphone with revolving clip.
HM-131SC : Compact type speaker microphone.

INTERNAL UNITS

UT-109R UT-110R UT-124R UT-126H

UT-109R : Non-rolling type voice scrambler.
UT-110R : Rolling type voice scrambler.
UT-124R : Man down unit. Automatically sends an emergency signal when the transceiver is left in a horizontal position for a preset time.
UT-126H : Digital unit. Provides IDAS digital capability.

HEADSETS AND PTT/VOX UNIT

HS-94 HS-95 HS-97 VS-15C

HS-94 : Earhook headset with flexible boom microphone.
HS-95 : Behind-the-head headset with flexible boom microphone.
HS-97 : Throat microphone fits around your neck and picks up speech vibration.
VS-15C : PTT/VOX unit. Required when using these headsets.

EARPHONE

AD-52 SP-13

SP-13 : EARPHONE.
AD-52 : EARPHONE ADAPTER
Provides clear audio even in noisy environments.

STUBBY ANTENNAS

- FA-SC56VS : 150-162MHz
- FA-SC57VS : 160-174MHz
- FA-SC73US : 450-490MHz

CUT ANTENNAS

- FA-SC61VC : 136-174MHz
- FA-SC61UC : 380-520MHz

Cut the antenna element to tune to a specific center frequency.

ANTENNAS

- FA-SC25V : 136-150MHz
- FA-SC55V : 150-174MHz
- FA-SC25U : 400-430MHz
- FA-SC57U : 430-470MHz
- FA-SC72U : 470-520MHz

IDAS system digital mode ready

DIGITAL

The IDAS (Icom Digital Advanced System) is Icom's digital conventional and trunking system using the NXDN™ common air interface. It has useful calling features including selective calling, status message, radio stun/kill/revive, etc.

The IC-F3161 series provides 2 optional slots: one optional slot for the UT-126H digital unit and one for an additional option board. See the IDAS brochure for details.



SPECIFICATIONS

GENERAL

- Frequency range :
 - IC-F3161T/S 136–174MHz
 - IC-F4161T/S 400–470MHz
 - 450–512MHz
- Number of channels : 512 channels/128 zones
- Channel spacing : 12.5kHz/25kHz, 15kHz/30kHz, 6.25kHz (option)
- PLL channel step : 2.5kHz, 3.125kHz
- Antenna impedance : 50Ω
- Usable temperature range : -30°C to +60°C; -22°F to +140°F
- Power supply requirement : 7.2V DC
- Current drain (at 7.2V DC; approx.):
 - Transmit VHF/UHF 1.5A/1.8A (at 5W/5W)
 - Receive stand-by 100mA
 - 150mA (With UT-126H)
 - rated output 600mA
- Dimensions (with BP-232N): 53 (W) x 136 (H) x 38.9 (D) mm; (projections are not included) 2³/₃₂ (W) x 5¹/₃₂ (H) x 1¹⁷/₃₂ (D) in
- Weight (approx.) : 338g; 11.9oz (with BP-232N)

TRANSMITTER

- Output power : 5W (VHF), 5W (UHF)
- Max. frequency deviation : ±5kHz (Wide) ±2.5kHz (Narrow)
- Frequency error : ±1.0ppm
- Spurious emissions : 75dB typ.
- Adjacent channel power : 80dB typ. (Wide), 70dB typ. (Narrow)
- FM Hum and Noise : 46dB typ. (Wide), 40dB typ. (Narrow)
- Audio harmonic distortion : 3% typ. (AF 1kHz, 40% deviation)
- Modulation limiting : 60–100% of max. deviation
- External microphone connector : 9-pin multi connector/ 2.2kΩ

Measurements made in accordance with EIA-152C/204D, TIA-603 for analog. All stated specifications are subject to change without notice or obligation.

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RECEIVER

- Intermediate frequency : 46.35MHz/450kHz (1st/2nd)
- Sensitivity FM (W, N) : 0.25µV typ. (at 12dB SINAD)
- Digital : 0.20µV typ. (at 5% BER)
- Squelch sensitivity : 0.25µV typ. (at threshold)
- Adjacent channel selectivity : 75dB typ. (Wide), 68dB typ. (Narrow)
- Spurious response : 70dB min.
- Intermodulation : 74dB typ.
- Hum and noise ratio : 46dB typ. (Wide), 40dB typ. (Narrow)
- Audio output power : 500mW typ. (at 5% distortion with an 8Ω load)
- External speaker connector: 9-pin multi connector/ 8Ω

Applicable U.S. Military Specifications & IP Rating

Icom makes rugged products that have been tested to and passed the following MIL-STD requirements and Ingress Protection standards.

Standard	MIL 810F	
	Method	Procedure
Low Pressure	500.4	I, II
High Temperature	501.4	I, II
Low Temperature	502.4-3	I, II
Temperature Shock	503.4	I
Solar Radiation	505.4	I
Rain Blowing/Drip	506.4	I, III
Humidity	507.4	-
Salt Fog	508.4	-
Dust Blowing	510.4	I
Vibration	514.5	I
Shock	516.5	I, IV

Also meets equivalent MIL-STD-810-C, -D and -E.

Ingress Protection Standard

Dust & Water	IP55 (Dust-protection and water jet resistance)
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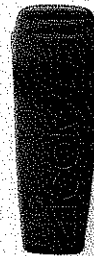
SUPPLIED ACCESSORIES (May differ according to version)



• VHF Antenna



• UHF Antenna



• Belt clip, MB-94



• Battery pack, BP-232N

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**Lloyd's Electronics
Black Bear Paging & Internet
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Parkersburg, WV 26104**

ICOM

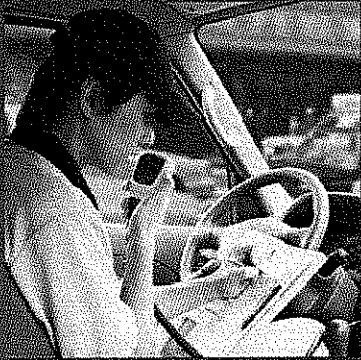
VHF AND UHF TRANSCEIVERS

IC-F5061D

IC-F6061D

IC-F5061

IC-F6061



LTR™
Conventional
IDAS Digital
IDAS Trunking

IDAS
ICOM DIGITAL ADVANCED SYSTEM



- 512 ch / 128 zones
- Conventional / LTR™ mode
- IDAS Trunking (With UT-126H)
- IDAS digital (With UT-126H)
- 2-Tone, 5-Tone CTCSS, DTCSS
- VHF 50W, UHF 45W Output
- IP54 (Controller only)
- Full dot-matrix LCD

Conventional/LTR™/IDAS Digital*/ IDAS Trunking* – Multi-Mode Land Mobile!

*With UT-126H installed. Already installed to IC-F5061, IC-F6061 "D" versions.

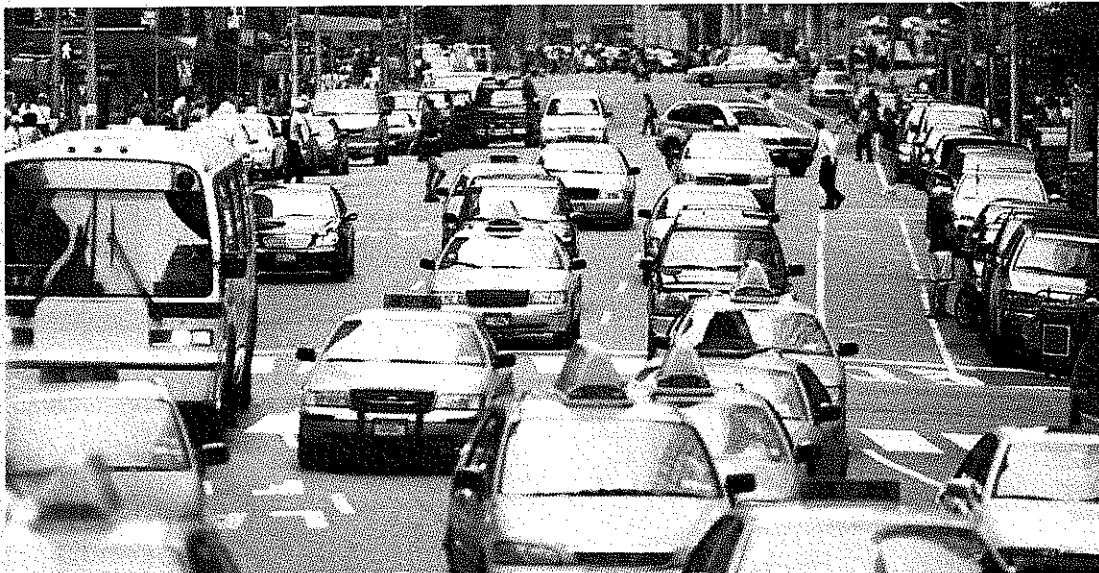
The IC-F5061/D series is ideal for public safety, business & industry, transportation and delivery service users. It offers advanced multi-mode operation, improved scanning and flexible installation that is suitable for mobile and base stations.



The above photo includes optional separation kit, RMK-3, and separation cable, OPC-609.

VHF TRANSCEIVERS **50W**
IC-F5061/D

UHF TRANSCEIVERS **45W**
IC-F6061/D



MDC 1200 compatible

PTT ID, selective call (Selcall) and emergency call features are available with the built-in MDC signaling.

The PTT ID function sends your unit ID number when you push (or release) the PTT button. The received ID number can be decoded as a user name using the alias table. Selective calling enables you to call individuals or groups, depending on your needs. The emergency call feature allows you to send and repeat an emergency message to dispatch until the dispatch responds to it. In these situations, the radio can transmit anything the microphone hears and the dispatcher can monitor the background sounds. Radio check, status, message, radio stun/revive and call log features are also available.

IDAS system digital mode ready

IDAS (Icom digital Advanced System) is Icom's digital conventional and trunking system using the NXDN™ common air interface. It has useful calling features including selective calling, status message, radio stun/revive/kill, etc. The IC-F5061 series provides 2 optional slots: one for the UT-126H digital unit and one for an additional option board. See the IDAS brochure for details.



Detachable front panel

With the optional remote control kit, RMK-3 and separation cable, the front panel of the radio can be detached from the main unit. It allows for flexible installation even in limited installation space. Separation cable length is selectable from 1.9m, 3.0m and 8.0m*.

* 6.2ft, 9.8ft and 26.2ft respectively.

Dot matrix, multi-function LCD

With a high contrast dot matrix display, upper and lower case characters can be easily distinguished. You can change the display setting to show one line and 12 characters, or two lines and 24 characters via programming. LCD backlighting is standard.



Two line setting display example.

Front mounted speaker

4 watts (typ.) front mounted speaker delivers clear and loud audio. The built-in audio compander improves the signal to noise ratio.

IP54 dust-protection and splash resistance (Controller only)

The rugged die-cast chassis and polycarbonate front panel are resistant to shock and vibration. When used with the optional separation kit, the remote control head has dust-protection and splash resistant construction, equivalent to IP54.

Wide frequency range and large channel capacity

The IC-F5061 series covers a wide frequency range in one version (VHF 136-174 MHz, UHF 400-470MHz or 450-512 MHz). The 512 memory channel capacity with 128 zones allows you to divide and store a variety of flexible channel groupings.

Basic LTR™/Conventional mode operation

Group, selective, and phone calls are all available in LTR™ mode. Get efficient trunking operation without the need for any optional module.

Multiple 2-Tone, 5-Tone signalings

The built-in 2-Tone and 5-Tone capabilities allows you to send a tone code with your call and decode multiple tone codes on a channel. 40 pairs of CTCSS/ DTCSS memory channels are available.

Voting operation

The voting operation detects the signal strength level of repeater sites and automatically selects the strongest station or the first station to exceed the preset signal level. This is useful for roaming between 2 or more repeater sites.

Enhanced scanning

While scanning, you can program which Tx channel you want when you press PTT button. Start channel, last detected channel, priority or a preprogrammed channel are selectable. In addition, the nuisance delete function temporary removes a busy channel from the scanning list.

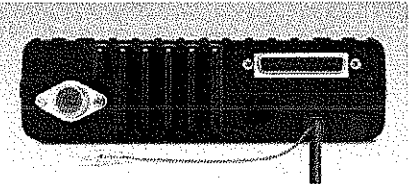
Built-in inversion-type voice scrambler

The built-in inversion type voice scrambler provides secure conversation. When a more secure system is required, the 32 code non-rolling-type voice scrambler UT-109R and 1020 code rolling type UT-110R are available as an option.

* Inversion type voice scrambler is not compatible with UT-109/UT-110 voice scrambler.

D-sub accessory connector

The IC-F5061 series has a D-SUB 25 pin ACC connector for connecting various external devices.



Other features

- Advanced scanning functions including Tx channel, talk back and mode dependent scan
- 8 DTMF autodial memories and ANI function with DTMF
- Self grounding microphone HM-148G
- Power on password • Embedded ESN
- Radio stun, kill and revive functions disable or re-enable a lost or stolen unit over the air
- Busy repeater lockout function
- Surveillance function temporarily turns off the LED backlight and beep sound
- Convenient key assign sticker is supplied
- Microphone hanger action programmable
- Ignition sensing line
- ±1ppm frequency stability
- Lone worker function
- Escalating alert
- Flash CPU for future upgrade and more...

SPECIFICATIONS

GENERAL

- Frequency range : 136-174MHz
IC-F5061 400-470MHz,
IC-F6061 450-512MHz
- Number of channels : 512 channels/ 128 zones
- Channel spacing : 12.5/25kHz, 15/30kHz
6.25kHz (option)
- PLL channel step : 2.5kHz, 3.125kHz
- Antenna impedance : 50Ω
- Operating Temp. range : -30°C to +60°C,
-22°F to +140°F
- Power supply requirement : 13.6V DC nominal
- Current drain (approx) :
Tx 50W/45W 14.0A
Rx Max. audio 1200mA
Stand-by 300mA
- Dimensions (W×H×D) : 160×45×150 mm
(projections not included) ; 6¹/₁₆ × 1⁷/₁₆ × 5⁷/₁₆ in
- Weight (approx.) : 1.31kg; 2.9lb

Measurements made in accordance with EIA-152C/204D, TIA-603 (for Analog). All stated specifications are subject to change without notice or obligation.

TRANSMITTER

- Output power (approx) : 50W (VHF)
45W (UHF)
- Max. frequency deviation : ±5.0/2.5kHz (Wide/Narrow)
- Frequency error : ±1.0ppm
- Spurious emissions : 75dB typ.
- FM Hum and Noise : 46/40dB typ. (Wide/Narrow)
- Adjacent channel power : 70/60dB min. (Wide/Narrow)
- Audio harmonic distortion : 3% typ. (40% deviation)
- Modulation limiting : 70-100% of Max. deviation
- Ext. microphone impedance : 600Ω (8-pin modular)

Applicable U.S. Military Specifications

The IC-F5061/F6061 and RMK-3 have been tested to and passed the following MIL-STD requirements and strict environmental standards:

Standard	Method	Proc.
Low Pressure	500.4	I, II
High Temperature	501.4	I, II
Low Temperature	502.4	I, II
Temperature Shock	503.4	I
Solar Radiation	505.4	I
Rain (Blowing/Drip)*	506.4	I, III
Humidity	507.4	--
Salt Fog	508.4	--
Dust Blowing	510.4	I
Vibration	514.5	I
Shock	518.5	I, IV

* Rain tests were performed on the controller and RMK-3 only. Also meets equivalent MIL-STD-810-C, -D, and -E.

RECEIVER

- Sensitivity FM (W/N) : 0.25μV typ. (at 12dB SINAD)
Digital : 0.20μV typ. (at 5% BER)
- Squelch sensitivity : 0.25μV typ. (at threshold)
- Adjacent channel selectivity : 85/75dB typ. (Wide/Narrow)
- Spurious response : 90dB typ.
- Intermodulation : 77dB typ.
- Hum and noise ratio : 50/45dB typ. (Wide/Narrow)
- Audio output power : 4W typ. at 5% distortion with a 4Ω load
- External speaker connector : 2-conductor 3.5 (d) mm (1/8")/4Ω

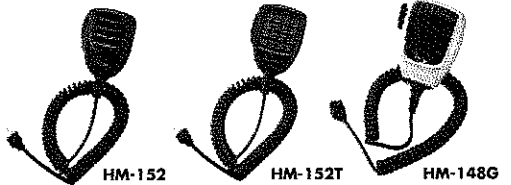
Supplied Accessories

- Hand microphone, HM-148G • DC power cable
- Microphone hanger • Mounting bracket kit
- Key assign stickers

OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.

HAND MICROPHONES



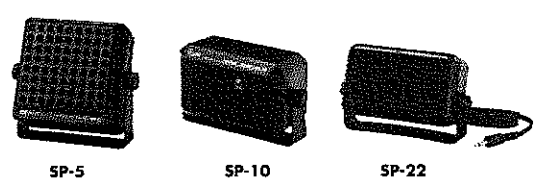
- HM-152 : Regular hand microphone.
- HM-152T : DTMF microphone.
- HM-148G : Heavy duty dynamic microphone. Same as supplied.

DESKTOP MICROPHONE



Convenient for dispatching, equipped with monitor switch.

EXTERNAL SPEAKERS



- SP-5 : Large external speaker.
- SP-10 : Mid sized external speaker.
- SP-22 : Compact and easy-to-install external speaker.

SEPARATION KIT



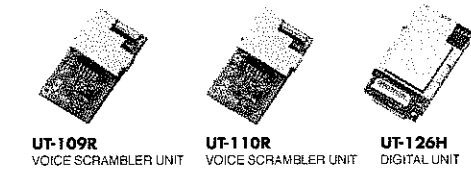
RMK-3 : For front panel detachment installation.

SEPARATION CABLES



Use with one of the following cables: OPC-609 (1.9m; 6.2ft), OPC-607 (3m; 9.8ft), or OPC-608 (8m; 26.2ft).

INTERNAL UNITS



- UT-109R : Non-rolling type. Up to 32 scrambling codes are available.
- UT-110R : Rolling type. Up to 1020 scrambling codes are available.
- UT-126H : Digital unit. Provides IDAS digital capability.

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URL: <http://www.icomamerica.com>

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URL: <http://www.icompolska.com.pl>

Base Station Antennas

MFB UHF Omnis

MAXRAD

MFB Series, UHF Fiberglass Omnidirectional Antennas

The MFB UHF series consists of base matched half wave antennas encapsulated in heavy duty fiberglass radomes with a thick walled aluminum mounting base for reliable long term use. All models are DC grounded and are UPS shippable.

Features

- UPS shippable
- Effective "J" pole design requires no radials or ground plane
- Exceptional value

General Specifications:

Radiator Material:

Coated steel wire

Radome Material:

Pultruded white fiberglass

Termination:

N male with 16" jumper;

N female and SO-239 are optional

Lightning Protection:

DC grounded

Wind Survival:

100 mph

Mounting Base Diameter:

1-5/16"

Maximum Power:

250 Watts

Mounting Hardware:

MMK1: light duty mast mounting for antennas under 30"

MMK3: light duty mast mounting for antennas over 30"

MMK4: heavy duty mast mounting bracket

MMK6: cast mount bracket

Hardware is sold and ordered separately

MMK9: Aluminum mast mount for 1-5/16" OD antennas

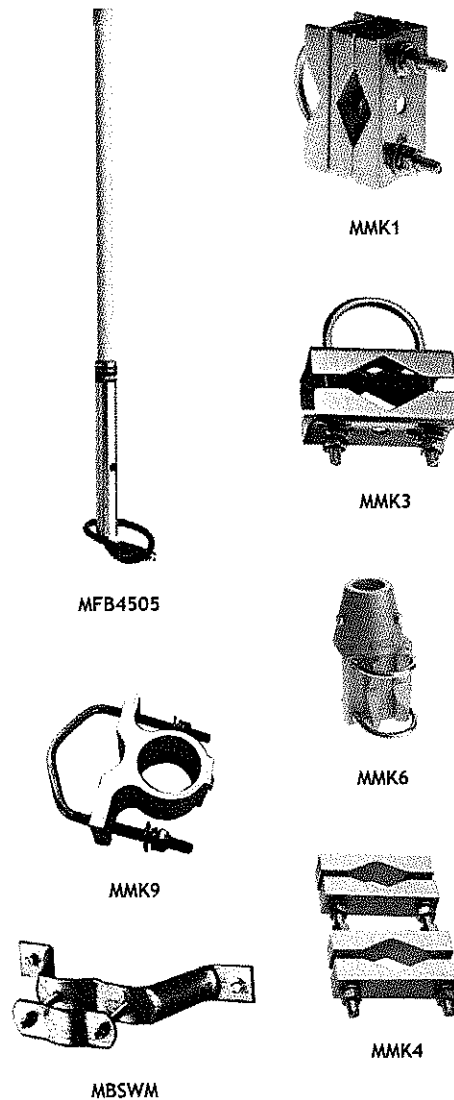
(two required with the 10" sleeve antenna models)

MBSWM: wall mounting bracket for antennas over 30"

(2 required)

Nominal Impedance:

50 Ohms



Specifications



MFB Series, UHF Fiberglass Omnidirectional Antennas

Electrical Specifications

Model #	Frequency Range	Factory Tuned Frequency	Gain	Bandwidth @ 1.5:1	Vertical Beamwidth @ 1/2 Power
MFB3400	340-360 MHz	350 MHz	Unity	10 MHz	90°
MFB4060	406-416 MHz	411 MHz	Unity	10 MHz	90°
MFB4100	410-420 MHz	415 MHz	Unity	10 MHz	90°
MFB4200	420-430 MHz	425 MHz	Unity	10 MHz	90°
MFB4300	430-440 MHz	435 MHz	Unity	10 MHz	90°
MFB4400	440-450 MHz	445 MHz	Unity	10 MHz	90°
MFB4500	450-460 MHz	455 MHz	Unity	10 MHz	90°
MFB4600	460-470 MHz	465 MHz	Unity	10 MHz	90°
MFB4700	470-480 MHz	475 MHz	Unity	10 MHz	90°
MFB4800	480-490 MHz	485 MHz	Unity	10 MHz	90°
MFB4900	490-500 MHz	495 MHz	Unity	10 MHz	90°
MFB5000	500-512 MHz	506 MHz	Unity	10 MHz	90°
MFB3883	388-398 MHz	393 MHz	3dB	10 MHz	38°
MFB4063	406-416 MHz	411 MHz	3dB	10 MHz	38°
MFB4103	410-420 MHz	415 MHz	3dB	10 MHz	38°
MFB4203	420-430 MHz	425 MHz	3dB	10 MHz	38°
MFB4303	430-440 MHz	435 MHz	3dB	10 MHz	38°
MFB4403	440-450 MHz	445 MHz	3dB	10 MHz	38°
MFB4503	450-460 MHz	455 MHz	3dB	10 MHz	38°
MFB4603	460-470 MHz	465 MHz	3dB	10 MHz	38°
MFB4703	470-480 MHz	475 MHz	3dB	10 MHz	38°
MFB4803	480-490 MHz	485 MHz	3dB	10 MHz	38°
MFB4903	490-500 MHz	495 MHz	3dB	10 MHz	38°
MFB5003	500-512 MHz	506 MHz	3dB	10 MHz	38°
MFB3955	390-400 MHz	395 MHz	5dB	10 MHz	27°
MFB4065	406-416 MHz	411 MHz	5dB	10 MHz	27°
MFB4105	410-420 MHz	415 MHz	5dB	10 MHz	27°
MFB4205	420-430 MHz	425 MHz	5dB	10 MHz	27°
MFB4305	430-440 MHz	435 MHz	5dB	10 MHz	27°
MFB4405	440-450 MHz	445 MHz	5dB	10 MHz	27°
MFB4505	450-460 MHz	455 MHz	5dB	10 MHz	27°
MFB4605	460-470 MHz	465 MHz	5dB	10 MHz	27°
MFB4705	470-480 MHz	475 MHz	5dB	10 MHz	27°
MFB4805	480-490 MHz	485 MHz	5dB	10 MHz	27°
MFB4905	490-500 MHz	495 MHz	5dB	10 MHz	27°
MFB5005	500-512 MHz	506 MHz	5dB	10 MHz	27°

UHF

Specifications



MFB Series, UHF Fiberglass Omnidirectional Antennas

Mechanical Specifications

Model #	Equivalent Flat Plate Area	Lateral Thrust @ Rated Wind	Bending Moment @ Rated Wind	Height	Weight
MFB3400	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4060	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4100	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4200	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4300	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4400	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4500	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4600	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4700	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4800	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB4900	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB5000	.11 sq ft	5 lbs	5.2 ft-lb	30"	1.0 lbs
MFB3883	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4063	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4103	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4203	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4303	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4403	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4503	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4603	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4703	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4803	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB4903	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB5003	.30 sq ft	10.8 lbs	29.0 ft-lb	71"	4.0 lbs
MFB3955	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4065	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4105	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4205	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4305	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4405	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4505	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4605	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4705	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4805	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB4905	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs
MFB5005	.35 sq ft	12.6 lbs	40.4 ft-lb	77"	4.5 lbs

Mount sold separately (see above). For SO-239 connector add \$27.00; for N female connector add \$10.00

ICOM

BELT HANGER
MB-96

INSTRUCTIONS

Thank you for purchasing the Icom MB-96 BELT HANGER. The MB-96 allows a transceiver to be attached to your belt with swivel capability, reducing interference during operation.

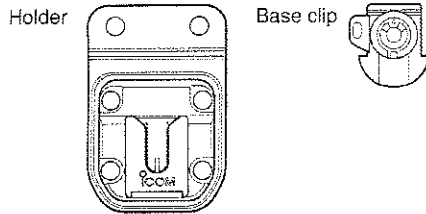
■ Applicable transceivers

MB-96 is designed for the following Icom transceivers;

- IC-F3/S series
- IC-F4TR
- IC-F3GT/GS series
- IC-F30GT/GS series
- IC-F41GT/GS MT series
- IC-F11/S series
- IC-V8/T3H

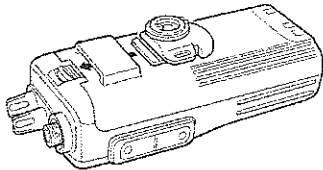
(MB-96 will also be compatible with future transceiver models.)

■ Supplied items



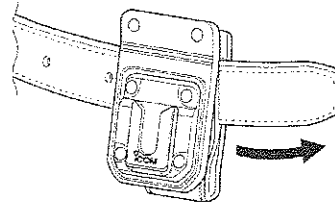
■ Base clip attachment

Slide the base clip into the plastic loop on the back of the transceiver as illustrated below.



■ Fitting the holder on your belt

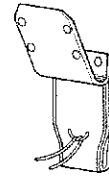
Pass the belt through the leather loop on the back of the holder.



For your information!

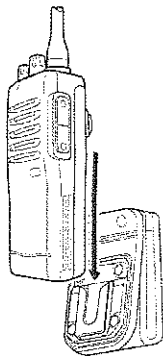
When fitting the holder using a narrow belt, the holder may be easily lifted up with the transceiver when detaching the transceiver.

To reduce this play, fasten with string, wire etc. through the holes as shown below.



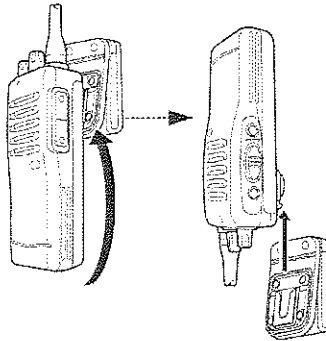
◇ Attaching the transceiver

Insert the transceiver into the holder until the base clip fitting into the groove.



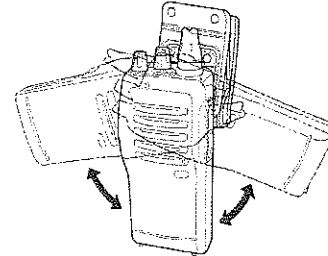
◇ Detaching the transceiver

Turn the transceiver up side down in the direction of the arrow and pull out from the holder.



◇ Swivelling the transceiver

Once the transceiver is locked in place, it will swivel as illustrated below.



NOTE: HOLD THE TRANSCEIVER TIGHTLY, WHEN HANGING OR DETACHING THE TRANSCEIVER FROM THE HOLDER. Otherwise the transceiver may not be attached to the holder or swivelled properly if the transceiver is accidentally dropped and the base clip is scratched or damaged.



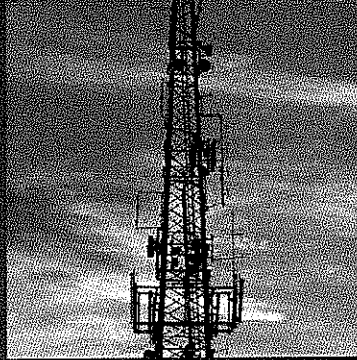
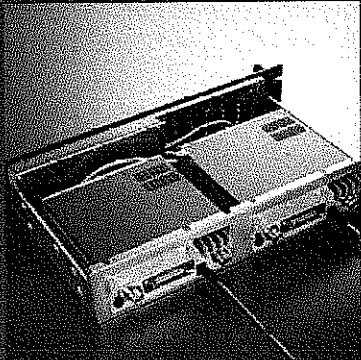


ICOM

VHF AND UHF REPEATER

IC-FR5000 IC-FR6000

IDAS™
COM DIGITAL ADVANCED SYSTEM

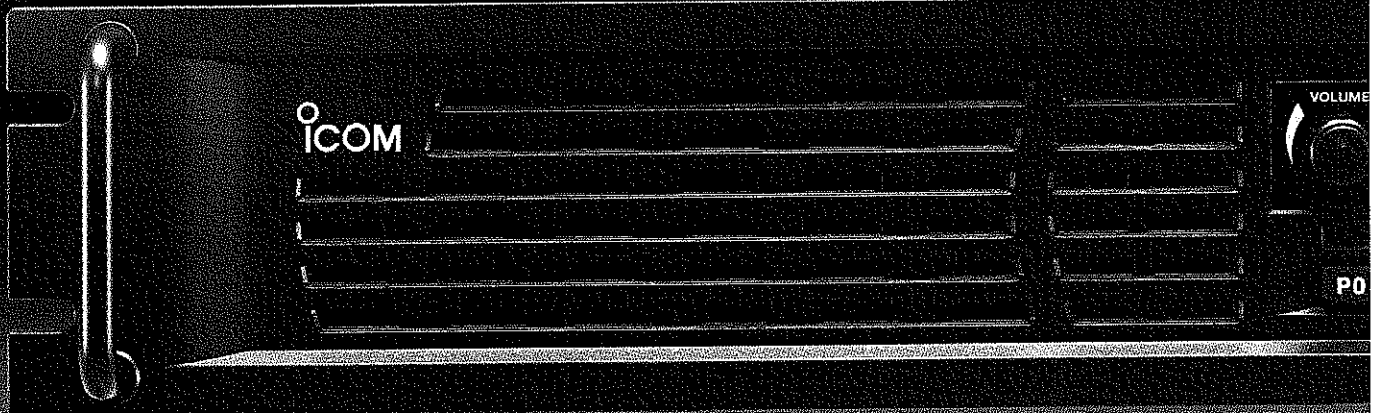


Dual mode Double Channels

- IDAS digital/
analog FM
- IDAS Trunking
(With UC-FR5000)
- Two RF modules
in one unit (option)
- 50W output
25W full duty
- 5-Tone, DTMF
CTCSS, DTCS
- 2U height
rackmount
- 32ch memory,
dot-matrix LCD



Value, Performance and



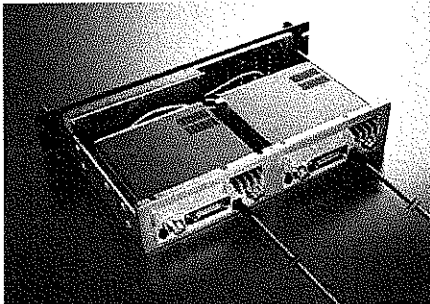
19-inch rack mount, 2U height low profile design

The IC-FR5000 series uses only 2U height. This low profile configuration allows you to stack multiple units in an industry standard 19-inch rack and provides great space efficiency.

Two RF modules in one unit

The IC-FR5000 series has an internal space for installing another RF unit. Two RF modules* can be installed and can be programmed and operated independently. LEDs on the front panel show both channel conditions.

* Optional UR-FR5000/UR-FR6000 required.



Two RF units can be installed inside. (Left side is an option.)

50W output at 50% duty cycle, 25W 100% duty cycle operation

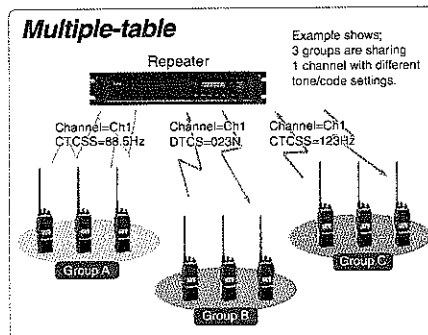
Employing a high stability ± 0.5 ppm oscillator and high performance power amplifier, the IC-FR5000 series provides a reliable 100% duty cycle operation at 25W output. When operated at the high power setting of 50W, the repeater operates with a 50% duty cycle.

32 channel capacity and 5 programmable buttons

The 12-digit dot-matrix display, 5 programmable buttons, 32 memory channels and internal speaker allow you to use the repeater as a simple base station or to check repeater activity.

Multiple CTCSS, DTCS tone and RAN code decode

The IC-FR5000 series decodes multiple CTCSS and DTCS as well as digital RAN (Radio Access Number) codes on a per channel basis (up to 16 tones/codes) and downlinks the received signal with a specified tone/code. This function is useful for sharing a channel with multiple groups and provides quiet stand-by while using other groups.



D-SUB 25-pin accessory connector

The IC-FR5000 series has a programmable D-SUB 25-pin accessory connector for connecting various trunking controllers or external remote control devices. Also, modulation/demodulation signals can be input/output from the D-SUB connector.

Superior receiver performance

The IC-FR5000 series has class leading receiver performance of selectivity and intermodulation rejection. It improves the quality of the repeater service even under congested band conditions.

Voice scrambler

The built-in inversion type* voice scrambler provides secure conversation as standard. When a more secure system is required, the 32 code non-rolling type voice scrambler UT-109R* and 1020 code rolling type UT-110R* are available as an option. In IDAS digital mode, a 15-bit encryption key provides over 32,000 scrambling codes.

* These voice scramblers (inversion type, UT-109R and UT-110R) are available with analog mode only.

Built-in audio compander*

The built-in audio compander improves the signal to noise ratio and provide clear audio. * Analog mode only.

Other features

- PTT priority setting (Local Mic., external PTT or repeater operation)
- 5-Tone and DTMF encoder/decoder*
- CW ID transmitter
- Analog wide/narrow (12.5/25kHz) channel spacing programmable*
- Wide frequency range: VHF 136–174MHz, UHF: 400–470 or 450–520MHz
- Normal and priority scan
- Convenient key assign stickers supplied
- Quick and easy programming from a PC
- Beat cancel capability
- Low voltage alert*

* For analog mode only

Flexibility: All Standard



VHF Repeater

IC-FR5000

UHF Repeater

IC-FR6000

IDAS™

ICOM DIGITAL ADVANCED SYSTEM

The IC-FR5000 series is ready for IDAS™ digital and IDAS™ trunking.

Flexible migration path from analog to digital

The IC-FR5000 series can receive both analog and digital mode signals on a single channel. You can partially introduce IDAS digital radios, while still maintaining the existing analog radios in the system.

Spectrum efficiency

The IDAS system utilizes 6.25kHz narrow channel spacing, which complies with the FCC mandate for narrow banding capability by 2011.



Flexible IP network possibilities

Being digital, integration and convergence with IP technology will be possible soon to enhance the basic system.



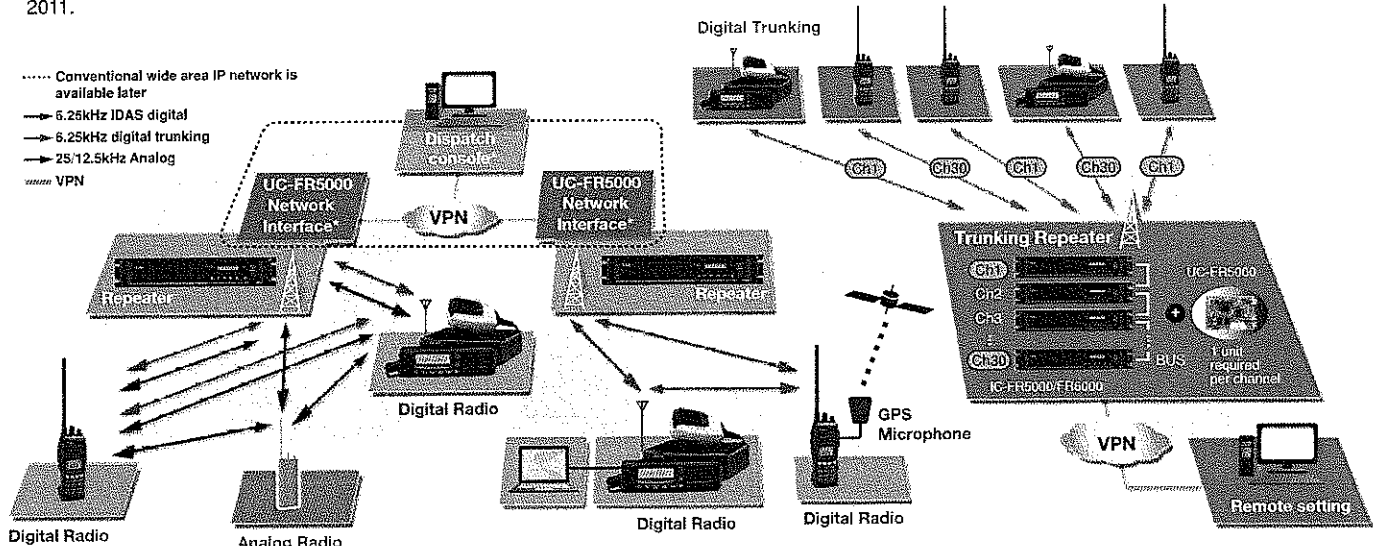
Improved audio quality and coverage

Enjoy low noise audio over a greater comparable area to analog FM. The IDAS radio uses the AMBE+2™ codec, the latest evolution in vocoding technology.



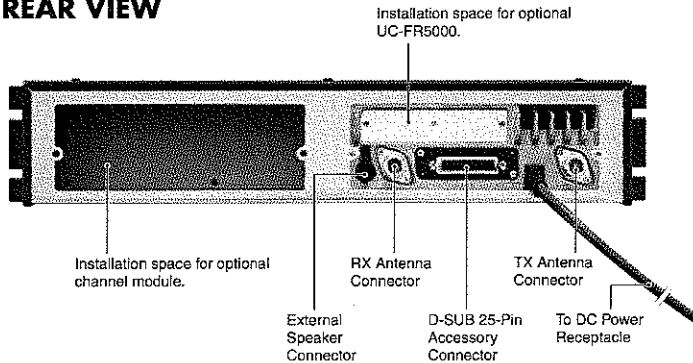
IDAS trunking with optional UC-FR5000

The optional UC-FR5000 offers single site digital trunking capability for effective channel management. Its distributed system (similar to analog LTR™ trunking) does not require a dedicated control channel. Up to 30 channels (RF units) per site can be set up.



The above is a system image only. Actual release timing and system capabilities are still to be decided.

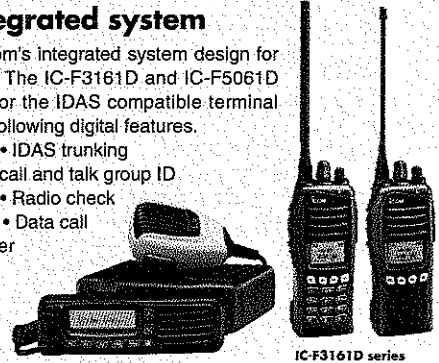
REAR VIEW



Offers an integrated system

Take advantage of Icom's integrated system design for a total digital system. The IC-F3161D and IC-F5061D series are designed for the IDAS compatible terminal components with the following digital features.

- IDAS conventional
- IDAS trunking
- Selective call, group call and talk group ID
- Status call/request
- Radio check
- Radio stun/kill/revive
- Data call
- Digital voice scrambler
- Emergency call
- Call alert
- Call log



SPECIFICATIONS

GENERAL

- Frequency coverage : 136-174MHz, IC-FR5000
400-470, 450-512, IC-FR6000
450-520MHz
- Number of channels : Max. 32 channels
- Channel spacing : 6.25/12.5/25kHz
7.5/15.0/30kHz
- PLL channel step : 2.5, 3, 125kHz
- Frequency stability : ±0.5ppm
- Operating temperature range : -30°C to +60°C
; -22°F to +140°F
- Power supply voltage : 13.6V DC
- Current drain (at 13.6V DC):
TX 50W 15A
RX Max. audio 1.9A
Stand-by 500mA
400mA (FAN, LCD backlight off)
- Antenna impedance : 50Ω (Type-N x 2)
- Dimensions (WxHxD) : 483x88x260 mm
; 19 1/2 x 3 1/2 x 10 1/4 in
- Weight : 5.6kg ; 12.3lb (approx.)

TRANSMITTER

- Output power : 50W (adjustable to 5W)
25W at 100% duty cycle
- Max. frequency deviation : ±5.0/2.5kHz (wide/narrow)
- Spurious emissions : 80dB typ.
- Adjacent channel power : 73/67dB typ. (wide/narrow)
- FM hum and noise : 50/45dB typ. (wide/narrow)
- Audio harmonic distortion : 1% typ. (40% deviation)
- Microphone impedance : 600Ω (8-pin modular)

RECEIVER

- Sensitivity FM (W/N) : 0.30μV typ. (at 12dB SINAD)
Digital 0.25μV typ. (at 5% BER)
- Spurious response : 90dB typ.
- Intermodulation rejection : 78dB typ.
- Hum and noise ratio : 50/45dB typ. (wide/narrow)
- Audio output power : 4.0W typ. at 5% distortion with a 4Ω load
- External speaker connector : 2-conductor 3.5 (d) mm (1/8")/4Ω

Supplied Accessories

- DC power cable
- Handle kits
- Key assign sticks

Measurements made in accordance with TIA-603 (for Analog FM). All stated specifications are subject to change without notice or obligation.

Applicable U.S. Military Specifications

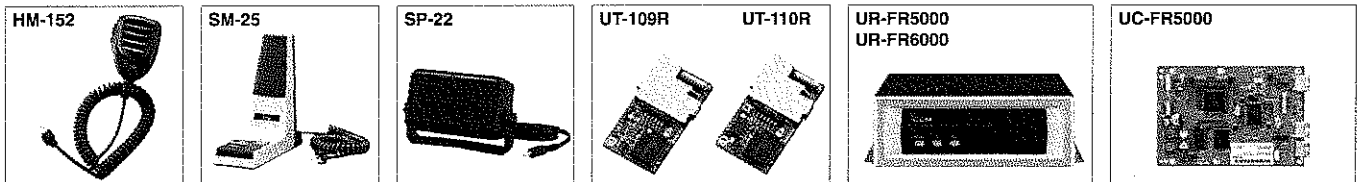
Icom makes rugged products that have been tested to and passed the following MIL-STD requirements and strict environmental standards.

Standard	Method	MIL 310 F	Procedure
High Temperature	501.4	I	I
Low Temperature	502.4	I	I
Dust	510.4	I	I
Vibration	514.5	I	I
Shock	516.5	I	I

Also meets equivalent MIL-STD-810-C, -D and -E.

OPTIONS

- **HM-152 HAND MICROPHONE**
Regular hand microphone.
- **SM-25 DESKTOP MICROPHONE**
Equipped with a monitor switch.
- **SP-22 EXTERNAL SPEAKER**
Compact and easy-to-install.
- **UT-109R VOICE SCRAMBLER UNIT***
Provides operating security. Up to 32 non-rolling scrambling codes are available. (Analog mode only)
- **UT-110R VOICE SCRAMBLER UNIT***
Up to 1020 rolling scrambling codes are available. (Analog mode only)
- * UT-109R/UT-110R voice scramblers are not compatible with Inversion type voice scrambler.
- **UR-FR5000 VHF CHANNEL MODULE**
136-174MHz, 50W
- **UR-FR6000 UHF CHANNEL MODULE**
400-470MHz, 450-520MHz, 50W
- **UC-FR5000 IDAS TRUNKING/NETWORK CONTROLLER BOARD**
Provides IDAS digital trunking capability. The IDAS trunking system can have up to 30 channels per site. One UC-FR5000 is required per channel. Most of the UC-FR5000 settings can be configured from a web browser.



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