Version 2.1
November 2018

NXDN™

dPMR™

IC-F3400D
IC-F4400D
SERIES

PRODUCT GUIDE

PREFACE

This product guide is made to promote our new products, the IC-F3400D/IC-F4400D transceivers. The new product's technology components are described in this document, and you will understand the target users, built-in functions, and sales points of these transceivers. In addition to the NXDN™ version, the dPMR™ version is also written in this product guide. This product guide's target users are dealer sales staff members who are going to sell these transceivers for the first time.

Icom hopes this product guide will help you to promote sales of the IC-F3400D/IC-F4400D series transceivers.

Trademarks
Icom, Icom Inc. and the Icom logo are registered trademarks of Icom Incorporated (Japan) in Japan, the United States, the United Kingdom, Germany, France, Spain, Russia, Australia, New Zealand, and/or other countries.
AQUAQUAKE is a trademark of Icom Incorporated.
NXDN is a trademark of Icom Incorporated and JVC Kenwood Corporation.
dPMR and dPMR logo are trademarks of the dPMR MoU Association.
The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Icom Inc. is under license.
LTR is a trademark of the E.F. Johnson Technologies, INC.
3M, Peltor, and WS are trademarks of 3M Company.

All other trademarks are the properties of their respective holders.

© 2016–2018 Icom Inc.

TABLE OF CONTENTS

SECTION 1 PRODUCT OUTLINES 4

1-1 ABOUT THE PRODUCT OUTLINES, SALES POINTS, AND TARGET USERS 4

1-2 NXDN™ MODEL'S SPECIFICATIONS 8

1-3 dPMR™ MODEL'S SPECIFICATIONS 10

SECTION 2 PRODUCT RANGE 12

SECTION 3 COMPARISON WITH EXISTING MODELS 13

3-1 NXDN™ MODEL'S COMPARISON 13

3-2 dPMR™ MODEL'S COMPARISON 18

SECTION 4 COMPARISON WITH OTHER MANUFACTURE'S PRODUCTS 22

4-1 DIMENSION COMPARISON BETWEEN THE IC-F3400D/IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS 22

4-2 FUNCTION COMPARISON BETWEEN THE IC-F3400D/IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS 23

4-3 SPECIFICATION COMPARISON BETWEEN THE IC-F3400D AND OTHER MANUFACTURE'S PRODUCTS 24

4-4 SPECIFICATION COMPARISON BETWEEN THE IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS 25

SECTION 5 NEW FUNCTION INTRODUCTION 26

SECTION 6 ACCESSORIES 32

APPENDIX REQUIRED EQUIPMENT FOR SYSTEM CONSTRUCTION 36

1 FOR NXDN™ TYPE-D 36

2 FOR dPMR™ 37

SECTION 1 PRODUCT OUTLINES

1-1 ABOUT THE PRODUCT OUTLINES, SALES POINTS, AND TARGET USERS

About the IC-F3400D/IC-F4400D series transceivers
The IC-F3400D/IC-F4400D series transceivers have a drastically changed appearance from traditional Icom land mobile transceivers, and operability that adapts a diversified operating style. In addition, the transceivers are compatible with both NXDN™ and dPMR™ Single-site trunking/Multi-site trunking systems by utilizing an activation license.

Sales point
- **Model line-up suitable for various operating purposes.**

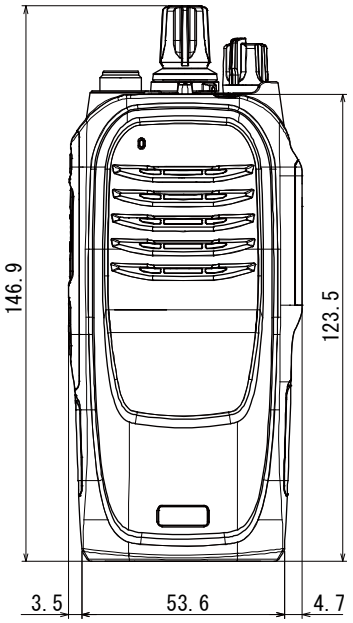
IC-F3400D/IC-F4400D
No LCD or 10-keypad.

IC-F3400DS/IC-F4400DS
Equipped with an LCD, but no 10-keypad.

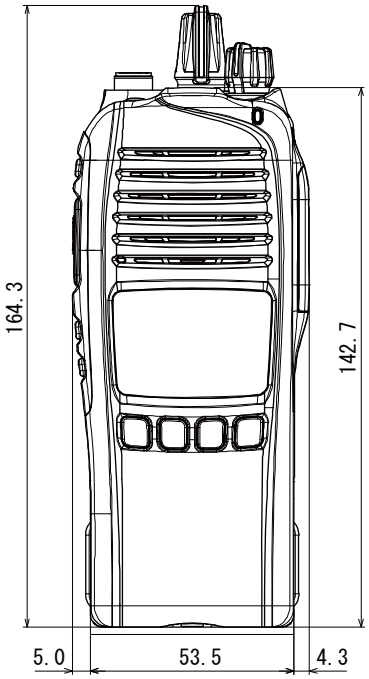
IC-F3400DT/IC-F4400DT
Equipped with an LCD and a 10-keypad.

• **Slim and compact body**
Smaller body size and weighs approximate 60 g (2.1 oz) less. Smaller, lighter in weight compared to the IC-F3260D/IC-F4260D series transceivers. These improve the operator's mobility. The waterproof and dustproof rating is improved from IP67 to IP68. In addition, the antenna attachment strength is improved by using a new antenna connector.

Front view and size comparison

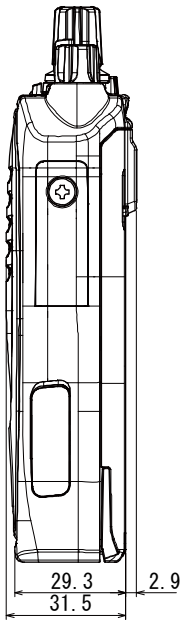


IC-F3400D/IC-F4400D

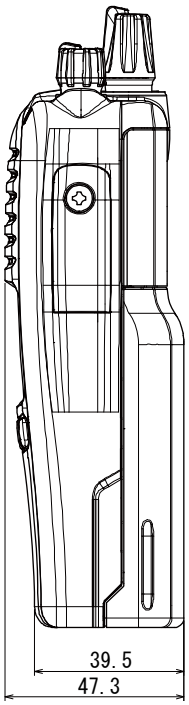


IC-F3260D/IC-F4260D

Side view and size comparison



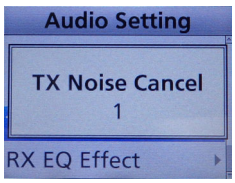
IC-F3400D/IC-F4400D



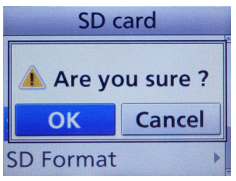
IC-F3260D/IC-F4260D

• **A 1.75 inch large size color LCD**
You can easily see a lot of information on the 296 × 222 dot color LCD display.
You can set whether the menu items are visible or invisible in the programming software.

Menu screen



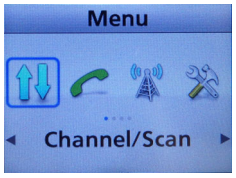
Message screen



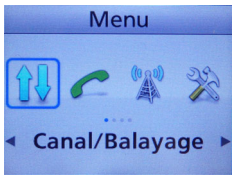
Execution confirmation screen

Night mode screen

• **Local language support**
Menu item names and messages can be displayed in local languages other than English.
NOTE: Names and messages in local languages can be preprogrammed using the programming software.
If the firmware is Rev. 1.6 or later, English, German, French, Spanish, Russian and Chinese are usable.



English



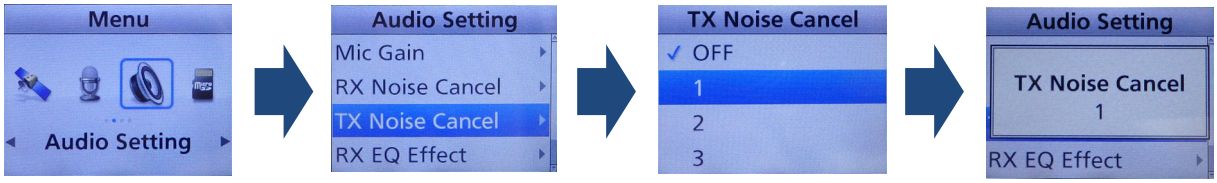
French

German

• **A user interface improves the operability compared with previous Icom land mobile transceivers.**
You can reach desired operations and/or settings by selecting only the icon, or from a list* on the menu screen.
*The list display is also selectable using the programming software.

USB mode selecting example

TX noise canceling setting example



Target ID selecting example

Target users

B&I market (Hotel, factory, and so on)

Public works (Electric power industry, Water services, and so on)

Public safety

Security services

Plants

Construction

- Users who require the AES/DES encryption function.
- Users who require displaying in languages other than English.

1-2 NXDN™ MODEL'S SPECIFICATIONS

Model name			IC-F3400D	IC-F4400D
Version (Destination)			#01 (USA-01), #11 (USA-11), #21 (USA-21)	#01 (USA-01), #11 (USA-11), #21 (USA-21), #31 (USA-31), #41 (USA-41), #51 (USA-51)
			#02 (EUR-01), #12 (EUR-11), #22 (EUR-21)	#02 (EUR-01), #12 (EUR-11), #22 (EUR-22)
Supplied battery pack			BP-283	
GENERAL				
Frequency coverage			136 ~ 174 MHz	380 ~ 470 MHz 450 ~ 520 MHz
Number of conventional channels			• IC-F3400DT/DS, IC-F4400DT/DS 1,024 ch/128 zones (500 ch/zone) 4,000 ch/128 zones* (500 ch/zone) A license is needed. • IC-F3400D/IC-F4400D 32 ch/2 zones (16 ch/zone)	
Type of emission		For USA	A: 11K0F3E (15.0 kHz) D: 4K00F1E (6.25 kHz); 8K30F1E (12.5 kHz)	
		For EUR	A: 16K0F3E (25.0 kHz); 14K0F3E (20.0 kHz) 8K50F3E (12.5 kHz) D: 4K00F1E (6.25 kHz); 8K30F1E (12.5 kHz)	
Intermediate frequency			1st: 49.95 MHz, 2nd: 450 kHz	
Power supply requirement			7.5 V DC nominal, Negative ground	
Current drain (approximate)	TX High (at 5 W)		1.5 A	1.8 A
	RX	Maximum audio	580 mA (Internal speaker)	
		Stand by	140 mA	
Antenna impedance			50 Ω nominal	
Microphone impedance			2.2 kΩ	
Audio impedance			8 Ω	
Operating temperature range			–30 °C ~ +60 °C; –22 °F ~ +140 °F	
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm; 2.1 × 4.9 × 1.2 inches (with BP-283)	
Weight (approximate)			180 g; 6.3 oz (without MB-133, BP-283, and antenna)	
TRANSMITTER				
Output power (at 7.5 V DC)			5 W	
Modulation			Frequency modulation, FSK modulation	
Maximum frequency deviation		For USA	±2.5 kHz	
		For EUR	±2.5 kHz (N), ±4.0 kHz (M), ±5.0 kHz (W)	
Frequency error			±1.0 ppm	
Spurious emissions		For USA	80 dB typical	
		For EUR	0.25 µW (≤ 1 GHz), 1.0 µW (> 1 GHz)	
Adjacent channel power		For USA	A: 63 dB typical D: 66 dB typical (6.25 kHz), 63 dB typical (12.5 kHz)	A: 63 dB typical D: 65 dB typical (6.25 kHz), 63 dB typical (12.5 kHz)
		For EUR	A: 63 dB typical (N), 75 dB typical (W) D: 66 dB typical (6.25 kHz), 63 dB typical (12.5 kHz)	A: 63 dB typical (N), 74 dB typical (W) D: 65 dB typical (6.25 kHz), 63 dB typical (12.5 kHz)
Audio harmonic distortion			0.5% typical @ AF 1 kHz 40% Deviation	0.4% typical @ AF 1 kHz 40% Deviation
FSK error			1% typical (D: 6.25 kHz/12.5 kHz)	
FM hum and noise (without CCITT filter)		For USA	55 dB typical	59 dB typical
		For EUR	55 dB typical	59 dB typical (N), 60 dB typical (W)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	

A: Analog, D: Digital
Specifications: Measurements made in accordance with TIA-603, EN301 166, EN300 086, and EN300 113.

Model name		IC-F3400D	IC-F4400D
RECEIVER			
Version (Destination)		#01 (USA-01), #11 (USA-11), #21 (USA-21)	#01 (USA-01), #11 (USA-11), #21 (USA-21), #31 (USA-31), #41 (USA-41), #51 (USA-51)
		#02 (EUR-01), #12 (EUR-11), #22 (EUR-21)	#02 (EUR-01), #12 (EUR-11), #22 (EUR-22)
Sensitivity	**For USA**	• 0.22 µV typical @ 12 dB SINAD • –5.5 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz) • –4.0 dBµV (EMF) typical @ 1% BER (D: 12.5 kHz)	• 0.23 µV typical @ 12 dB SINAD • –4.0 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz) • –4.0 dBµV (EMF) typical @ 1% BER (D: 12.5 kHz)
	For EUR	• –2.5 dBµVemf typical @ 20 dB SINAD (N) • –5.5 dBµVemf typical @ 20 dB SINAD (W, M) • –5.5 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz) • –4.0 dBµV (EMF) typical @ 1% BER (D: 12.5 kHz)	• –2.0 dBµVemf typical @ 20 dB SINAD (N) • –5.0 dBµVemf typical @ 20 dB SINAD (W, M) • –4.0 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz) • –4.0 dBµV (EMF) typical @ 1% BER (D: 12.5 kHz)
Audio power output		INT SP: 1.3 W typical @ 5% distortion into 8 Ω EXT SP: 1.0 W typical @ 5% distortion into 8 Ω	
Adjacent channel selectivity	**For USA**	A: 63 dB typical D: 66 dB typical (6.25 kHz), 63 dB typical (12.5 kHz)	A: 72 dB typical D: 66 dB typical (6.25 kHz), 66 dB typical (12.5 kHz)
	For EUR	A: 76 dB typical (N), 80 dB typical (W, M) D: 71 dB typical (6.25 kHz), 70 dB typical (12.5 kHz)	A: 72 dB typical (N), 75 dB typical (W, M) D: 66 dB typical (6.25 kHz), 66 dB typical (12.5 kHz)
Spurious response rejection		81 dB typical	76 dB typical
Intermodulation	**For USA**	A: 75 dB typical D: 72 dBµV (EMF) typical (6.25 kHz), –41 dBµV (EMF) typical (12.5 kHz)	A: 74 dB typical D: 73 dBµV (EMF) typical (6.25 kHz), –41 dBµV (EMF) typical (12.5 kHz)
	For EUR	A: 67 dB typical, D: 72 dBµV (EMF) typical (6.25 kHz), –41 dBm typical (12.5 kHz)	A: 68 dB typical, D: 73 dBµV (EMF) typical (6.25 kHz), –41 dBm typical (12.5 kHz)
Hum and noise (without CCITT filter)	**For USA**	49 dB typical	
	For EUR	49 dB typical (N), 54 dB typical (W)	49 dB typical (N), 55 dB typical (W)
Squelch sensitivity (Threshold)		0.16 µV typical	0.18 µV typical

A: Analog, D: Digital
Specifications: Measurements made in accordance with TIA-603, EN301 166, EN300 086, and EN300 113.

1-3 dPMR™ MODEL'S SPECIFICATIONS

Model name			IC-F3400DP	IC-F4400DP
Version			#01, #11, #21	#01, #11, #21
Destination			EUR-07, EUR-08, EUR-09	EUR-07, EUR-08, EUR-09
Supplied battery pack			BP-283	
GENERAL				
Frequency coverage			136 ~ 174 MHz	380 ~ 470 MHz
Number of conventional channels			• IC-F3400DPT/DPS, IC-F4400DPT/DPS 1,024 ch/128 zones (500 ch/zone) 4,000 ch/128 zones* (500 ch/zone) *A license is needed. • IC-F3400DP, IC-F4400DP 32 ch/2 zones (16 ch/zone)	
Type of emission			A: 16K0F3E (25.0 kHz); 14K0F3E (20.0 kHz) 8K50F3E (12.5 kHz) D: 4K00F1E (6.25 kHz)	
Intermediate frequency			1st: 49.95 MHz, 2nd: 450 kHz	
Power supply requirement			7.5 V DC nominal Negative ground	
Current drain (approximate)	**TX High (at 5 W)**		1.5 A	1.8 A
	RX	**Maximum audio**	580 mA (Internal speaker)	
		Stand by	140 mA	
Antenna impedance			50 Ω nominal	
Microphone impedance			2.2 kΩ	
Audio impedance			8 Ω	
Operating temperature range			–30 °C ~ +60 °C	
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm (with BP-283)	
Weight (approximate)			180 g (without MB-133, BP-283, and antenna)	
TRANSMITTER				
Output power (at 7.5 V DC)			5 W	
Modulation			Frequency modulation, FSK modulation	
Maximum frequency deviation			±2.5 kHz (N), ±4.0 kHz (M), ±5.0 kHz (W)	
Frequency error			±1.0 ppm	
Spurious emissions			0.25 µW (≤ 1 GHz), 1.0 µW (> 1 GHz)	
Adjacent channel power			A: 63 dB typical (N), 75 dB typical (W) D: 66 dB typical (6.25 kHz)	A: 63 dB typical (N), 74 dB typical (W) D: 65 dB typical (6.25 kHz)
Audio harmonic distortion			0.5% typical @ AF 1 kHz 40% Deviation	0.4% typical @ AF 1 kHz 40% Deviation
FSK error			1% typical (D: 6.25 kHz)	
FM hum and noise (without CCITT filter)			55 dB typical	59 dB typical (N), 60 dB typical (W)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	

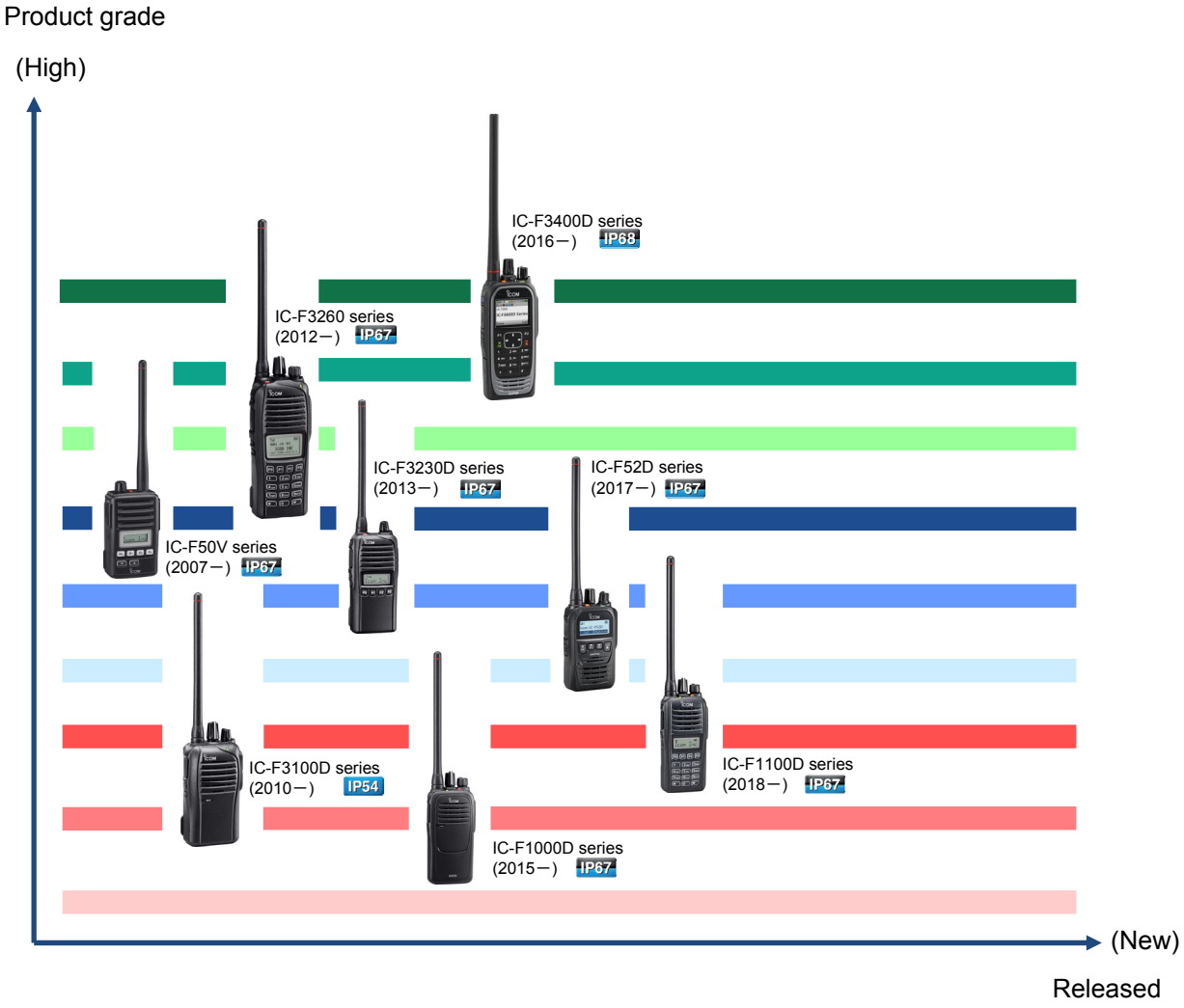
A: Analog, D: Digital
Specifications: Measurements made in accordance with EN301 166, EN300 086, and EN300 113.

Model name	IC-F3400DP	IC-F4400DP
RECEIVER		
Version	#01, #11, #21	#02, #12, #22
Destination	EUR-07, EUR-08, EUR-09	EUR-01, EUR-11, EUR-21
Sensitivity	• –2.5 dBµVemf typical @ 20 dB SINAD (N) • –5.5 dBµVemf typical @ 20 dB SINAD (W, M) • –5.5 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz)	• –2.0 dBµVemf typical @ 20 dB SINAD (N) • –5.0 dBµVemf typical @ 20 dB SINAD (W, M) • –4.0 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz)
Audio power output	INT SP: 1.3 W typical @ 5% distortion into 8 Ω EXT SP: 1.0 W typical @ 5% distortion into 8 Ω	
Adjacent channel selectivity	A: 76 dB typical (N), 80 dB typical (W, M) D: 71 dB typical (6.25 kHz)	A: 72 dB typical (N), 75 dB typical (W, M) D: 66 dB typical (6.25 kHz)
Spurious response rejection	81 dB typical	76 dB typical
Intermodulation	A: 67 dB typical D: 72 dBµV (EMF) typical (6.25 kHz),	A: 68 dB typical D: 73 dBµV (EMF) typical (6.25 kHz),
Hum and noise (without CCITT filter)	49 dB typical (N), 54 dB typical (W)	49 dB typical (N), 55 dB typical (W)
Squelch sensitivity (Threshold)	0.16 µV typical	0.18 µV typical

A: Analog, D: Digital
Specifications: Measurements made in accordance with EN301 166, EN300 086, and EN300 113.

SECTION 2 PRODUCT RANGE

The IC-F3400D/IC-F4400D series transceivers are excellent in operability, built-in functions, and scalability. So, the transceivers are positioned as high grade land mobile handheld transceivers, as shown in the following positioning map. You can see that the series transceivers are a higher grade than the IC-F3260D/ IC-F4260D series transceivers on the map.



SECTION 3 COMPARISON WITH EXISTING MODELS

3-1 NXDN™ MODEL'S COMPARISON

3-1-1 FUNCTION COMPARISON BETWEEN THE IC-F3400DT/IC-F4400DT AND EXISTING MODELS

Functions \ Models	IC-F3400DT IC-F4400DT SERIES	IC-F3261D IC-F4261D SERIES	IC-F3210D IC-F4210D SERIES	IC-F3101D IC-F4101D SERIES	IC-F1100DT IC-F2100DT SERIES	IC-F3230D IC-F4230D SERIES
NXDN™ Type-D Single-site trunking	YES*3	YES	YES	YES	YES	YES
NXDN™ Type-D Multi-site trunking	YES*3	YES	YES	—	—	YES
PTT ID	YES	YES	TX only	TX only	YES	YES
Individual List	YES (Total 1,000 IDs)	YES (Max. 500 IDs)	YES (Max. 500 IDs)	YES (Max. 500 IDs)	YES (Total 500 IDs)	YES (Max. 500 IDs)
Talkgroup List		YES (Max. 500 IDs)	YES (Max. 500 IDs)	YES (Max. 500 IDs)		YES (Max. 500 IDs)
RX Group	YES	—	—	—	YES	—
Call Log	YES	YES	—	—	YES	YES
Block Decode	YES	YES	YES	YES	YES	YES
RAN code	YES	YES	YES	YES	YES	YES
Status	YES	YES	YES*6	TX only*1	YES	YES
SDM (Short Data Message)	YES	YES	—*6	—	YES	YES
Call Alert	YES	YES	YES	RX only	YES	RX only
Radio Check	YES	YES	RX only	RX only	RX only	RX only
Stun/Revive/Kill	YES	YES	RX only	RX only	RX only	RX only
Emergency	YES	YES	YES	YES (No ACK TX)	YES	YES
Remote Monitor	YES	YES	RX only	RX only	RX only	RX only
Digital voice scrambler	YES	YES	YES	YES	YES	YES
DES (4 or less keys)	YES	—	—	—	—	—
DES (5 or more keys)	YES*4	—	—	—	—	—
AES	YES*5	—	—	—	—	—
GPS unit	Built-in	Built-in*2	Optional HM-171GP	Optional HM-171GP	Optional HM-171GPW	—
GPS position data TX/RX	TX/RX	TX/RX	TX only	TX only	TX/RX	RX only

*1Power ON/OFF status only. *2Depending on the version. *3Optional ISL-UGMTR is required.
*4Optional UT-134 is required. *5Optional UT-134 and ISL-AKAES are required.
*6Beeps sound and the LED indicator blinks when the transceiver receives an SDM or Status message.
TX: Transmit, RX: Receive

3-1-1 FUNCTION COMPARISON BETWEEN THE IC-F3400DT/IC-F4400DT AND EXISTING MODELS (Continued)

Models / Functions	IC-F3400DT IC-F4400DT SERIES	IC-F3261D IC-F4261D SERIES	IC-F3210D IC-F4210D SERIES	IC-F3101D IC-F4101D SERIES	IC-F1100DT IC-F2100DT SERIES	IC-F3230D IC-F4230D SERIES
OAA (Over-the-Air Alias)	YES	—	—	—	YES	—
OTAP (Over-The-Air-Programming)	Optional	—	—	—	—	—
OTAR (Over-The-Air-Rekeying)	Optional	—	—	—	—	—
EMERGENCY FUNCTION						
Emergency key	YES	YES	YES	YES (No ACK TX)	YES	YES
Man Down	YES	YES	—	—	YES	—
Lone Worker	YES	YES*2	YES	YES (No ACK TX)	YES	YES
Stationary Detection	YES	—	—	—	YES	—
Motion Detection	YES	—	—	—	YES	—

*2 Depending on the version.

3-1-2 FUNCTION COMPARISON BETWEEN THE IC-F3400DT/IC-F4400DT AND IC-F3260D/IC-F4260D

FUNCTION	IC-F3400DT/F4400DT SERIES	IC-F3260D/F4260D SERIES
OPERATION TYPE		
Single-site conventional	YES	YES
Multi-site conventional	YES	YES
Single-site trunking	Optional	YES
Multi-site trunking	Optional	YES
Analog mode	YES	YES
6.25 kHz Digital mode	YES	YES
12.5 kHz Digital mode	YES	None
12.5 kHz Analog mode	YES (Except [USA])	YES (Except [USA])
15.0 kHz Analog mode	YES ([USA] only)	YES ([USA] only)
20.0 kHz Analog mode	YES ([EUR] only)	YES ([EUR] only)
Analog/Digital mix mode	YES	YES
25 kHz bandwidth operation	YES (Optional for [USA])	YES (Except [USA])
VOICE FUNCTIONS		
Voice announcement	YES	None
VOX function	YES	YES
Voice Recording/Playback function	YES (A microSD or microSDHC* card is required.)	None
Active Noise Cancelling (ANC)	YES	None
Multiple languages announcement	YES	None
DIGITAL FUNCTIONS		
Lone worker function	YES	YES
Man down function	YES	YES
Motion detection function	YES	None
Radio check	YES	YES
Stun/Kill/Revive	YES	YES
Remote monitor	YES	YES
Call alert	YES	YES
Emergency	YES	YES
Short data message (SDM)	YES	YES
Status message	YES	YES
Digital voice scrambler	YES	YES
56 bit DES encryption	YES (4 or fewer keys: Default) (5 or more keys: Optional)	None
256 bit AES encryption	Optional	None
Transparent Data mode	YES	None
OAA (Over-the-Air Alias)	YES	None
OTAP (Over-The-Air Programming)	Optional	None
OTAR (Over-The-Air-Re-keying)	Optional	None
ANALOG FUNCTIONS		
CTCSS	YES	YES
DTCS	YES	YES
2 Tone	YES	YES
5 Tone	YES	YES
DTMF	YES	YES
MDC1200	YES	YES
LTR™ trunking	YES	YES
HARDWARES		
GPS receiver	YES	YES (Depending on the version)
Vibration	YES	None
Bluetooth	YES	None
microSD/SDHC memory card slot	YES	None

*Hereinafter called microSD card.

3-1-3 SPECIFICATION COMPARISON BETWEEN THE IC-F3400D AND IC-F3260D

SPECIFICATIONS			IC-F3400D SERIES	IC-F3260D SERIES
GENERAL				
Channel Capacity			1,024 Channels/128 Zones (Maximum: 4,000 channels)	512 Channels/128 Zones
Type of emission			A: 11K0F3E D: 4K00F1E, D (6.25 kHz) 8K30F1E, D (12.5 kHz)	A: 11K0F3E D: 4K00F1E, D (6.25 kHz)
Intermediate frequency			1st: 49.95 MHz 2nd: 450 kHz	1st: 46.35 MHz 2nd: 450 kHz
Current drain (approximate)	**TX High (5 W)**		1.5 A	
	RX	**Maximum audio**	580 mA (Internal speaker)	550 mA (Internal speaker)
		Stand by	140 mA	160 mA
Battery life (approximate) (TX:RX:Standby= 5:5:90 duty cycle, Power save is ON)			10 hours* (with BP-283)	10.5 hours (with GPS using) 12 hours (without GPS using) (with BP-232WP)
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm 2.1 × 4.9 × 1.2 inches (with BP-283)	53.5 × 142.7 × 39.5 mm 2.1 × 5.6 × 1.6 inches (with BP-232WP)
IP rating			IP68	IP67
Weight (approximate)			180 g; 6.3 oz	240 g; 8.4 oz
TRANSMITTER				
FM hum and noise (without CCITT filter)			55 dB typical	43 dB typical
Spurious emissions			80 dB typical	78 dB typical
Adjacent channel power			A: 63 dB typical D: 66 dB typical (6.25 kHz) 63 dB typical (12.5 kHz)	A: 70 dB typical D: 66 dB typical (6.25 kHz)
Audio harmonic distortion			0.5% typical	1.5% typical
FSK error			1% typical (D)	2% typical (D)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	60% to 100% of maximum deviation
RECEIVER				
Sensitivity			A: 0.22 µV typical @ 12 dB SINAD D: –5.5 dBµV (EMF) typical @ 1% BER (6.25 kHz) –4.0 dBµV (EMF) typical @ 1% BER (12.5 kHz)	A: 0.23 µV typical @ 12 dB SINAD D: –8.0 dBµV (EMF) typical @ 5% BER (6.25 kHz)
Adjacent channel selectivity			A: 76 dB typical D: 71 dB typical (6.25 kHz) 70 dB typical (12.5 kHz)	A: 68 dB typical D: 60 dB typical (6.25 kHz)
Spurious response rejection			81 dB typical	76 dB typical
Intermodulation			A: 75 dB typical D: 72 dBµV (EMF) typical (6.25 kHz) –41 dBµV (EMF) typical (12.5 kHz)	A: 75 dB typical D: 66 dB typical (6.25 kHz)
Hum and noise (without CCITT filter)			49 dB typical	47 dB typical
Squelch sensitivity (Threshold)			0.16 µV typical	0.2 µV typical
Audio output power (INT SP)			1.3 W typical @ 5% distortion into 8 Ω	0.8 W typical @ 5% distortion into 12 Ω

A: Analog, D: Digital
*When GPS, Bluetooth, Active Noise Cancelling, and Backlight functions are set to OFF.

3-1-4 SPECIFICATION COMPARISON BETWEEN THE IC-F4400D AND IC-F4260D

SPECIFICATIONS			IC-F4400D SERIES	IC-F4260D SERIES
GENERAL				
Channel Capacity			1,024 Channels/128 Zones (Maximum: 4,000 channels)	512 Channels/128 Zones
Type of emission			A: 11K0F3E D: 4K00F1E, D (6.25 kHz) 8K30F1E, D (12.5 kHz)	A: 11K0F3E D: 4K00F1E, D (6.25 kHz)
Intermediate frequency			1st: 49.95 MHz 2nd: 450 kHz	1st: 46.35 MHz 2nd: 450 kHz
Current drain (approximate)	**TX High (5 W)**		1.8 A	
	RX	**Maximum audio**	580 mA (Internal speaker)	550 mA (Internal speaker)
		Stand by	140 mA	160 mA
Battery life (approximate) (TX:RX:Standby= 5:5:90 duty cycle, Power save is ON)			10 hours* (with BP-283)	10.5 hours (with GPS using) 12 hours (without GPS using) (with BP-232WP)
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm 2.1 × 4.9 × 1.2 inches (with BP-283)	53.5 × 142.7 × 39.5 mm 2.1 × 5.6 × 1.6 inches (with BP-232WP)
IP rating			IP68	IP67
Weight (approximate)			180 g; 6.3 oz	230 g; 8.1 oz
TRANSMITTER				
FM hum and noise (without CCITT filter)			59 dB typical	34 dB minimum
Spurious emissions			80 dB typical	70 dB minimum
Adjacent channel power			A: 63 dB typical D: 65 dB typical (6.25 kHz) 63 dB typical (12.5 kHz)	A: 60 dB minimum D: 60 dB minimum (6.25 kHz)
Audio harmonic distortion			0.4% typical	3% typical
FSK error			1% typical (D)	5% typical (D)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	60% to 100% of maximum deviation
RECEIVER				
Sensitivity			A: 0.23 µV typical @ 12 dB SINAD D: –4.0 dBµV (EMF) typical @ 1% BER (6.25 kHz) –4.0 dBµV (EMF) typical @ 1% BER (12.5 kHz)	A: 0.24 µV typical @ 12 dB SINAD D: –8.0 dBµV (EMF) typical @ 5% BER (6.25 kHz)
Adjacent channel selectivity			A: 72 dB typical D: 66 dB typical (6.25 kHz) 66 dB typical (12.5 kHz)	A: 60 dB minimum D: 50 dB minimum (6.25 kHz)
Spurious response rejection			76 dB typical	70 dB minimum
Intermodulation			A: 74 dB typical D: 73 dBµV (EMF) typical (6.25 kHz) –41 dBµV (EMF) typical (12.5 kHz)	A: 70 dB minimum D: 65 dB minimum (6.25 kHz)
Hum and noise (without CCITT filter)			49 dB typical	34 dB minimum
Squelch sensitivity (Threshold)			0.18 µV typical	0.2 µV typical
Audio output power (INT SP)			1.3 W typical @ 5% distortion into 8 Ω	0.8 W typical @ 5% distortion into 12 Ω

A: Analog, D: Digital
*When GPS, Bluetooth, Active Noise Cancelling, and Backlight functions are set to OFF.

3-2 dPMR™ MODEL'S COMPARISON

3-2-1 FUNCTION COMPARISON BETWEEN THE IC-F3400DPT/IC-F4400DPT AND EXISTING MODELS

Functions \ Models	IC-F3400DPT IC-F4400DPT SERIES	IC-F3262D IC-F4262D SERIES	IC-F3102D IC-F4102D SERIES	IC-F1000D IC-F2000D SERIES
dPMR™ Single-site trunking	YES*3	YES	YES	YES
dPMR™ Multi-site trunking	YES*3	YES	YES	—
PTT ID	YES	YES	TX only	TX only
Call List	Max. 1,000 IDs	Max. 500 IDs	Max. 500 IDs	Max. 500 IDs
RX Talkgroup	YES	YES	YES	YES
Log for Individual Call	YES	YES	—	—
Block Decode	YES	YES	YES	YES
CC	YES	YES	YES	YES
Status	YES	YES	TX only*1	TX only*1
SDM (Short Data Message)	YES	YES	—	—
Stun/Revive/Kill	YES	YES	RX only	RX only
Emergency	YES	YES	YES (No ACK TX)	YES (No ACK TX)
Ambience Listening	YES	YES	RX only	RX only
Digital voice scrambler	YES	YES	YES	YES
OAA (over-the-Air Alias)	YES	—	—	—
OTAP (Over-The-Air-Programming)	Optional	—	—	—
OTAR (Over-The-Air-Rekeying)	Optional	—	—	—
DES (4 or less keys)	YES	—	—	—
DES (5 or more keys)	YES*4	—	—	—
AES	YES*5	—	—	—
GPS unit	Built-in	Built-in*2	Optional HM-171GP	Optional HM-171GPW
GPS position data TX/RX	TX/RX	TX/RX	TX only	TX only
EMERGENCY FUNCTION				
Emergency key	YES	YES	YES (No ACK TX)	YES (No ACK TX)
Man Down	YES	YES	—	YES (No ACK TX)
Lone Worker	YES	YES*2	YES (No ACK TX)	YES (No ACK TX)
Stationary Detection	YES	—	—	YES (No ACK TX)
Motion Detection	YES	—	—	YES (No ACK TX)

*1Power ON/OFF status only. *2Depending on the version. *3Optional ISL-UGMD3 is required.
*4Optional UT-134 is required. *5Optional UT-134 and ISL-AKAES are required.
TX: Transmit, RX: Receive

3-2-2 FUNCTION COMPARISON BETWEEN THE IC-F3400DPT/IC-F4400DPT AND IC-F3260D/IC-F4260D

FUNCTION	IC-F3400DT/F4400DT/ IC-F3400DPT/F4400DPT SERIES	IC-F3260D/F4260D IC-F3262D/F4262D SERIES
OPERATION TYPE		
Single-site conventional	YES	YES
Multi-site conventional	YES	YES
Single-site trunking	Optional	YES
Multi-site trunking	Optional	YES
Analog mode	YES	YES
6.25 kHz Digital mode	YES	YES
12.5 kHz Analog mode	YES	YES
20.0 kHz Analog mode	YES	YES
Analog/Digital mix mode	YES	YES
25 kHz bandwidth operation	YES	YES
VOICE FUNCTIONS		
Voice announcement	YES	None
VOX function	YES	YES
Voice Recording/Playback function	YES (A microSD is required.)	None
Active Noise Cancelling (ANC)	YES	None
Multiple languages announcement	YES (in the near future)	None
DIGITAL FUNCTIONS		
Lone worker function	YES	YES
Man down function	YES	YES
Motion detection function	YES	None
Radio check	YES	YES
Stun/Kill/Revive	YES	YES
Ambience Listening	YES	YES
Call alert	YES	YES
Emergency	YES	YES
Short data message (SDM)	YES	YES
Status message	YES	YES
Digital voice scrambler	YES	YES
56 bit DES encryption	YES (4 keys: Default) (64 keys: Optional)	None
256 bit AES encryption	Optional	None
Transparent Data mode	YES	None
OAA (Over-the-Air Alias)	YES	None
OTAP (Over-The-Air-Programming)	Optional	None
OTAR (Over-The-Air-Rekeying)	Optional	None
ANALOG FUNCTIONS		
CTCSS	YES	YES
DTCS	YES	YES
2 Tone	YES	YES
5 Tone	YES	YES
DTMF	YES	YES
BIIS	YES	YES
HARDWARES		
GPS receiver	YES	YES (Depending on the version)
Vibration	YES	None
Bluetooth	YES	None
microSD/SDHC memory card slot	YES	None

3-2-3 SPECIFICATION COMPARISON BETWEEN THE IC-F3400DP AND IC-F3260D

SPECIFICATIONS			IC-F3400DP SERIES	IC-F3262D SERIES
GENERAL				
Channel Capacity			1,024 Channels/128 Zones (Maximum: 4,000 channels)	512 Channels/128 Zones
Intermediate frequency			1st: 49.95 MHz 2nd: 450 kHz	1st: 46.35 MHz 2nd: 450 kHz
Operating temperature range			–30 °C ~ +60 °C	–20 °C ~ +55 °C
Current drain (approximate)	**TX High (5 W)**		1.5 A	
	RX	**Maximum audio**	580 mA (Internal speaker)	550 mA (Internal speaker)
		Stand by	140 mA	160 mA
Battery life (approximate) (TX:RX:Standby= 5:5:90 duty cycle, Power save is ON)			10 hours* (with BP-283)	10.5 hours (with GPS using) 12 hours (without GPS using) (with BP-232WP)
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm (with BP-283)	53.5 × 142.7 × 39.5 mm (with BP-232WP)
IP rating			IP68	IP67
Weight (approximate)			180 g	240 g
TRANSMITTER				
FM hum and noise (without CCITT filter)			55 dB typical (N), (W)	43 dB typical (N) 48 dB typical (W)
Adjacent channel power			A: 63 dB typical (N) 75 dB typical (W) D: 66 dB typical (6.25 kHz)	A: 70 dB typical (N) 74 dB typical (M), (W) D: 66 dB typical (6.25 kHz)
Audio harmonic distortion			0.5% typical	1.5% typical
FSK error			1% typical (D)	2% typical (D)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	60% to 100% of maximum deviation
RECEIVER				
Sensitivity			A: –2.5 dBμV (EMF) typical @ 20 dB SINAD (N) –5.5 dBμV (EMF) typical @ 20 dB SINAD (W), (N) D: –5.5 dBμV (EMF) typical @ 1% BER (6.25 kHz)	A: –4.0 μV typical @ 20 dB SINAD D: –8.0 dBμV (EMF) typical @ 5% BER (6.25 kHz)
Adjacent channel selectivity			A: 76 dB typical (N) 80 dB typical (W), (M) D: 71 dB typical (6.25 kHz)	A: 68 dB typical (N) 78 dB typical (W), (M) D: 60 dB typical (6.25 kHz)
Spurious response rejection			81 dB typical	76 dB typical
Intermodulation			A: 67 dB typical D: 72 dBμV (EMF) typical (6.25 kHz)	A: 67 dB typical D: 73 dBμV (EMF) typical (6.25 kHz)
Hum and noise (without CCITT filter)			49 dB typical (N) 54 dB typical (W)	50 dB typical (N) 54 dB typical (M) 55 dB typical (W)
Squelch sensitivity (Threshold)			0.16 μV typical	–8.0 dBμV (EMF) typical
Audio output power (INT SP)			1.3 W typical @ 5% distortion into 8 Ω	0.8 W typical @ 5% distortion into 12 Ω

A: Analog, D: Digital
*When GPS, Bluetooth, Active Noise Cancelling, and Backlight functions are set to OFF.

3-2-4 SPECIFICATION COMPARISON BETWEEN THE IC-F4400DP AND IC-F4260D

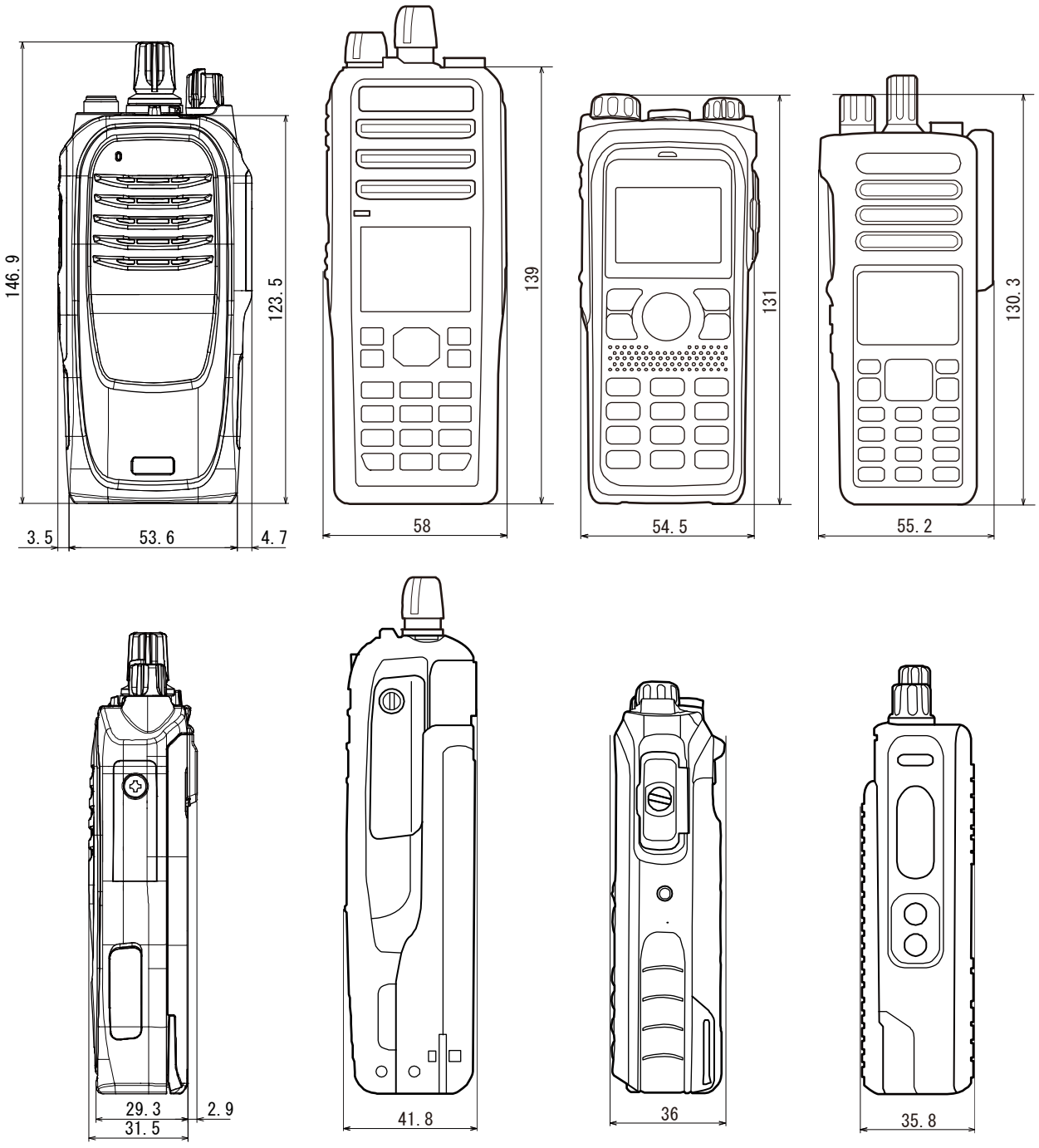
SPECIFICATIONS			IC-F4400DP SERIES	IC-F4262D SERIES
GENERAL				
Channel Capacity			1,024 Channels/128 Zones (Maximum: 4,000 channels)	512 Channels/128 Zones
Intermediate frequency			1st: 49.95 MHz 2nd: 450 kHz	1st: 46.35 MHz 2nd: 450 kHz
Operating temperature range			–30 °C ~ +60 °C	–20 °C ~ +55 °C
Current drain (approximate)	**TX High (5 W)**		1.8 A	
	RX	**Maximum audio**	580 mA (Internal speaker)	550 mA (Internal speaker)
		Stand by	140 mA	160 mA
Battery life (approximate) (TX:RX:Standby= 5:5:90 duty cycle, Power save is ON)			10 hours* (with BP-283)	10.5 hours (with GPS using) 12 hours (without GPS using) (with BP-232WP)
Dimensions (W × H × D) (Projections not included)			53.6 × 123.5 × 29.3 mm (with BP-283)	53.5 × 142.7 × 39.5 mm (with BP-232WP)
IP rating			IP68	IP67
Weight (approximate)			180 g	230 g
TRANSMITTER				
FM hum and noise (without CCITT filter)			59 dB typical (N) 60 dB typical (W)	34 dB minimum (N) 40 dB minimum (W)
Adjacent channel power			A: 63 dB typical (N) 74 dB typical (W) D: 65 dB typical (6.25 kHz)	A: 60 dB minimum (N) 70 dB minimum (M), (W) D: 60 dB minimum (6.25 kHz)
Audio harmonic distortion			0.4% typical	3% typical
FSK error			1% typical (D)	5% maximum (D)
Limitation characteristics of the modulator			70% to 100% of maximum deviation	60% to 100% of maximum deviation
RECEIVER				
Sensitivity			A: –2.0 dBµV (EMF) typical @ 20 dB SINAD (N) –5.0 dBµV (EMF) typical @ 20 dB SINAD (W), (N) D: –4.0 dBµV (EMF) typical @ 1% BER (6.25 kHz)	A: –4.0 µV typical @ 20 dB SINAD D: –8.0 dBµV (EMF) typical @ 5% BER (6.25 kHz)
Adjacent channel selectivity			A: 76 dB typical (N) 80 dB typical (W), (M) D: 71 dB typical (6.25 kHz)	A: 68 dB typical (N) 78 dB typical (W), (M) D: 60 dB typical (6.25 kHz)
Spurious response rejection			76 dB typical	70 dB minimum
Intermodulation			A: 68 dB typical D: 73 dBµV (EMF) typical (6.25 kHz)	A: 65 dB minimum D: 71 dBµV (EMF) minimum (6.25 kHz)
Hum and noise (without CCITT filter)			49 dB typical (N) 55 dB typical (W)	40 dB minimum (N) 43 dB minimum (M) 45 dB minimum (W)
Squelch sensitivity (Threshold)			0.18 µV typical	–8.0 dBµV (EMF) typical
Audio output power (INT SP)			1.3 W typical @ 5% distortion into 8 Ω	0.8 W typical @ 5% distortion into 12 Ω

A: Analog, D: Digital
*When GPS, Bluetooth, Active Noise Cancelling, and Backlight functions are set to OFF.

SECTION 4 COMPARISON WITH OTHER MANUFACTURE'S PRODUCTS

4-1 DIMENSION COMPARISON BETWEEN THE IC-F3400D/IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS

The dimension comparisons between the IC-F3400D/IC-F4400D, NX-5200, PD98X, and XPR7550 are as shown below.



IC-F3400D/IC-F4400D NX-5200 PD98X XPR7550

4-2 FUNCTION COMPARISON BETWEEN THE IC-F3400D/IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS

FUNCTION	IC-F3400D IC-F4400D	NX-5200	PD98X	XPR7550
CALL TYPE				
Group Call	YES	YES	YES	YES
Individual Call	YES	YES	YES	YES
All Call	YES	YES	YES	YES
VOICE FUNCTIONS				
Voice announcement	YES	YES	YES	YES
Voice Recording/Playback function	YES	YES	Optional	None
Active Noise Cancelling (ANC)	YES	YES	YES	Optional
Multiple languages announcement	YES	None	None	None
DIGITAL FUNCTIONS				
Lone worker function	YES	YES	YES	YES
Man down function	YES	YES	YES	Optional
Motion detection function	YES	YES	Unclear	Optional
Radio check	YES	YES	YES	YES
Stun/Kill/Revive	YES	YES	YES	YES
Remote monitor	YES	YES	YES	YES
Call alert	YES	YES	YES	YES
Emergency	YES	YES	YES	YES
Short data message (SDM)	YES	YES	YES	YES
Status message	YES	YES	YES	YES
Digital voice scrambler	YES	YES	YES	YES
56 bit DES encryption	YES	YES	None	None
256 bit AES encryption	Optional	Optional	Optional	Optional
Data transmission	YES	YES	Unclear	YES
OAA (Over-the-Air Alias)	YES	YES	None	None
OTAP (Over-The-Air Programming)	Optional	Optional	Optional	YES
OTAR (Over-The-Air-Re-keying)	Optional	None	None	None
6.25 kHz Digital mode operation	YES	YES	None	None
HARDWARES				
GPS receiver	YES	YES	Optional	YES
Vibration	YES	Optional	YES	Optional
Bluetooth	YES	YES	Optional	Optional
microSD/SDHC memory card slot	YES	Optional	Optional	None

4-3 SPECIFICATION COMPARISON BETWEEN THE IC-F3400D AND OTHER MANUFACTURE'S PRODUCTS

Model name	IC-F3400D	NX-5200	PD98X	XPR7550
GENERAL				
Number of conventional channels	1,024 ch/ 128 zones (Maximum: 4,000 channels)	1,024 ch/ 128 zones	1,024 ch/ 64 zones	1,000 ch/ 250 zones
Power supply requirement	7.5 V DC	7.5 V DC	7.4 V DC	7.5 V DC
Operating temperature range	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F
Weight (approximate)	305 g; 10.8 oz (with MB-133, BP-283, and antenna)	440 g; 15.5 oz (with KNB-L1)	335 g; 11.8 oz (with battery)	355 g; 12.5 oz (with PMN4409)
TRANSMITTER				
Output power (at 7.5 V DC)	5 W	5 W	4 W	5 W
Maximum frequency deviation	±2.5 kHz	Unclear	±2.5 kHz	±2.5 kHz
Adjacent channel power	63 dB typical (N) 75 dB typical (W)	Unclear	60 dB @ 12.5 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 25 kHz
Audio harmonic distortion	0.5% typical	2%	3%	3%
FM hum and noise (without CCITT filter)	55 dB typical	40dB @ 12.5 kHz 45dB @ 25 kHz	40 dB @ 12.5 kHz 43 dB @ 20 kHz 45 dB @ 25 kHz	–40dB @ 12.5 kHz –45dB @ 25 kHz
RECEIVER				
Sensitivity	· 0.22 µV typical @ 12 dB SINAD · –5.5 dBµV (EMF) typical @ 1% BER (D: 6.25 kHz) · –4.0 dBµV (EMF) typical @ 1% BER (D: 12.5 kHz)	· 0.25 µV @ 12 dB SINAD · 0.2 µV (EMF) @ 3% BER (D: 6.25 kHz) · 0.25 µV (EMF) @ 3% BER (D: 12.5 kHz)	· 0.22 µV @ 12 dB SINAD · 0.22 µV (EMF) @ 5% BER	· 0.22 µV typical @ 12 dB SINAD · 0.19 µV (EMF) typical @ 5% BER
Audio power output	INT SP: 1.3 W typical @ 5% distortion into 8 Ω EXT SP: 1.0 W typical @ 5% distortion into 8 Ω	INT SP: 0.5 W @ 3% distortion into 8 Ω EXT SP: 1.0 W @ 5% distortion into 8 Ω	INT SP: 0.5 W typical @ 3% distortion	INT SP: 0.5 W typical @ 3% distortion
Hum and Noise	49 dB typical (N) 54 dB typical (W)	Unclear	40 dB @12.5kHz 43dB @ 20kHz 45dB @ 25kHz	–40 dB @ 12.5kHz –45 dB @ 25 kHz
Adjacent channel selectivity	76 dB typical (N) 80 dB typical (W,N)	67 dB @ 12.5 kHz 73 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 20 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 25 kHz
Intermodulation	75 dB typical	75 dB	Unclear	70 dB
Spurious response rejection	81 dB typical	85 dB	70 dB	70 dB

4-4 SPECIFICATION COMPARISON BETWEEN THE IC-F4400D AND OTHER MANUFACTURE'S PRODUCTS

Model name	IC-F4400D	NX-5300	PD98X	XPR7550
GENERAL				
Number of conventional channels	1,024 ch/ 128 zones (Maximum: 4,000 channels)	1,024 ch/ 128 zones	1,024 ch/ 64 zones	1,000 ch/ 250 zones
Power supply requirement	7.5 V DC	7.5 V DC	7.4 V DC	7.5 V DC
Operating temperature range	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F	–30 °C ~ +60 °C; –22 °F ~ +140 °F
Weight (approximate)	300 g; 10.6 oz (with MB-133, BP-283, and antenna)	440 g; 15.5 oz (with KNB-L1)	335 g; 11.8 oz (with battery)	355 g; 12.5 oz (with PMN4409)
TRANSMITTER				
Output power (at 7.5 V DC)	5 W	5 W	4 W	4 W
Maximum frequency deviation	±2.5 kHz	Unclear	±2.5 kHz	±2.5 kHz
Adjacent channel power	63 dB typical (N) 74 dB typical (W)	Unclear	60 dB @ 12.5 kHz 70 dB @ 20 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 25 kHz
Audio harmonic distortion	0.4% typical	2%	3%	3%
FM hum and noise (without CCITT filter)	59 dB typical (N) 60 dB typical (W)	40dB @ 12.5 kHz 45dB @ 25 kHz	40 dB @ 12.5 kHz 43 dB @ 20 kHz 45 dB @ 25 kHz	–40dB @ 12.5 kHz –45dB @ 25 kHz
RECEIVER				
Sensitivity	· 0.23 µV typical @ 12 dB SINAD · –4.0 dBµV (EMF) typical@ 1% BER (D: 6.25 kHz) · –4.0 dBµV (EMF) typical@ 1% BER (D: 12.5 kHz)	· 0.25 µV @ 12 dB SINAD · 0.2 µV (EMF) @ 3% BER (D: 6.25 kHz) · 0.25 µV (EMF) @ 3% BER (D: 12.5 kHz)	· 0.22 µV @ 12 dB SINAD · 0.22 µV (EMF) @ 5% BER	· 0.22 µV typical @ 12 dB SINAD · 0.19 µV (EMF) typical@ 5% BER
Audio power output	INT SP: 1.3 W typical @ 5% distortion into 8 Ω EXT SP: 1.0 W typical @ 5% distortion into 8 Ω	INT SP: 0.5 W @ 3% distortion into 8 Ω EXT SP: 1.0 W @ 5% distortion into 8 Ω	INT SP: 0.5 W typical @ 3% distortion	INT SP: 0.5 W typical @ 3% distortion
Hum and Noise	49 dB typical (N) 54 dB typical (W)	Unclear	40 dB @12.5kHz 43dB @ 20kHz 45dB @ 25kHz	–40 dB @ 12.5kHz –45 dB @ 25 kHz
Adjacent channel selectivity	72 dB typical (N) 75 dB typical (W,N)	60 dB @ 12.5 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 20 kHz 70 dB @ 25 kHz	60 dB @ 12.5 kHz 70 dB @ 25 kHz
Intermodulation	74 dB typical	75 dB	Unclear	70 dB
Spurious response rejection	81 dB typical	85 dB	70 dB	70 dB

SECTION 5 NEW FUNCTION INTRODUCTION

The new functions are included in the NXDN™ main firmware revision 2.6 and the dPMR™ main firmware revision 1.7. The functions are not included in the IC-F3260D/IC-F4260D series transceivers.

• **Vibration function**
When the transceiver receives a signal, or any key is pushed, the transceiver vibrates, depending on the setting. Therefore, you will know when you receive a call, or a key is pushed.

• **Bluetooth® function**
A third party Bluetooth® headset (3M™ PELTOR™ WS™ Headset XP, 3M™ PELTOR™ WS™ ProTac XP, or 3M™ PELTOR™ WS™ Alert XP, and so on)* can be used for wireless headset operation. This allows you a flexible installation style, and will not restrict operator's activity caused by a connection cable and its length. The adopted Bluetooth® is compatible with Class 1 and Bluetooth® version 2.1+EDR, and the details of the compatible profile are as shown in the table below.
*Only PTT switch action is checked. Icom does not guarantee all functions and performance of the Bluetooth® headset.

Table 5-1. Compatible profile

Profile	Application
HFP (Hands-Free Profile)	Used when transmitting/receiving a signal, hands free.
HSP (Headset Profile)	Used with a connected headset.
SPP (Serial Port Profile)	Used when connecting two devices using a virtual serial port. (Used for programming the transceiver without a programming cable.)

• **Active Noise Cancelling function**
The Active Noise Cancelling function, which is already used in Icom marine transceivers, can suppress background noise. By using this function, you can transmit clear voice audio, even in a noisy environment such as in a downtown area, or near a high traffic main road. The function can also be activated while receiving a call. The suppression level of the Active Noise Cancelling function can be set to one of three levels. Up to 30%* of noise for transmit audio, and up to 90%* of noise for receive audio will be suppressed.
*Theoretical value.

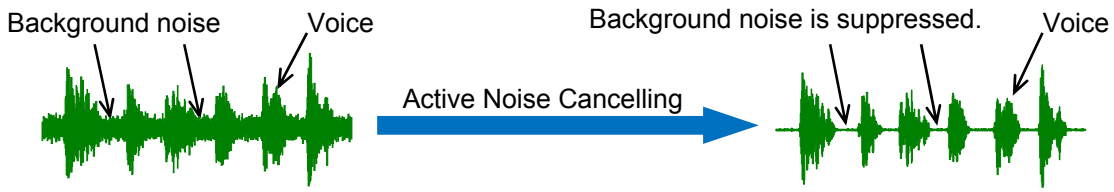


Figure 5-1. Active Noise Cancelling function's image

• **Voice Recorder function**

The Voice Recorder function can record both transmitting and receiving voice audio onto a microSD*. The recorded voice audio can be played back on the transceiver or a PC.
In addition, the operating frequency, operating system type (NXDN™/dPMR™, digital conventional/digital trunking/analog), transmit/receive state, position information, transmit output power level, RSSI, and audio volume level are also recorded at the same time. These are provided by the main firmware revision 2.0 (NXDN™)/1.6 (dPMR™) or later.
*User supplied.

The Voice Recorder function specifications are as follows.

- ♦ Digitization method: PCM
- ♦ Sampling frequency: 8 kHz
- ♦ Number of bits: 16 bit
- ♦ File format: WAVE format

The recordable time for various microSD card's capacity is shown in the following table.

Table 5-2. The recordable time (theoretical value)

Card type	Card capacity	Recordable time
microSD	512 MB	8 hours
	1 GB	15.6 hours
	2 GB	31.3 hours
microSDHC	4 GB	62.5 hours
	8 GB	125 hours
	16 GB	250 hours
	32 GB	500 hours

• **Emergency call transmission by the Man Down function and Motion Detection**

The IC-F3400D/IC-F4400D series transceivers can transmit an emergency call with the Man Down function. The Motion Detection allows you to make an emergency call when the operator moves excessively fast. In addition, the transceiver has Stationary Detection that can transmit an emergency call when the transceiver remains in the same position, regardless of the 10-keypad operation.

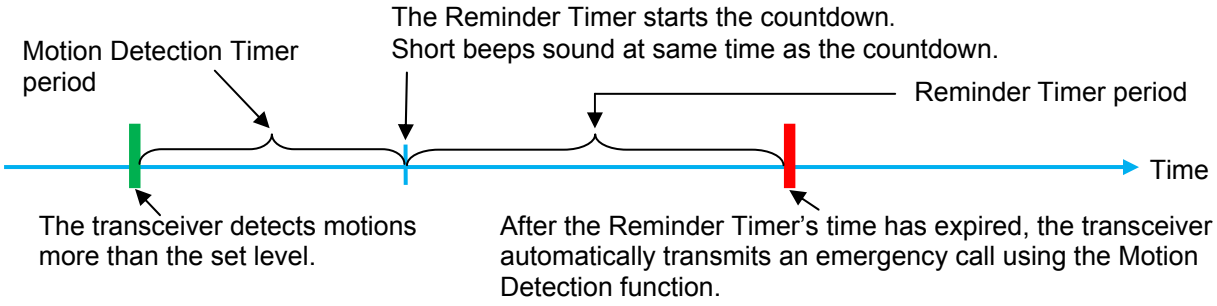


Figure 5-2. Emergency call process using Motion Detection

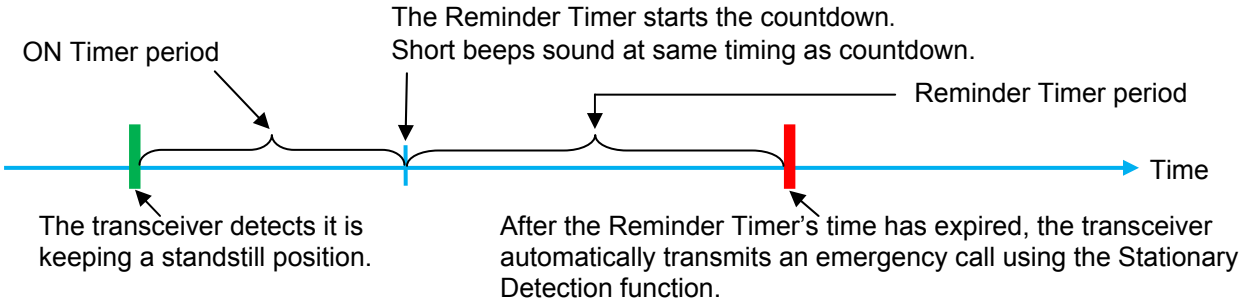


Figure 5-3. Emergency call process using Stationary Detection

• **The DES/AES Encryption function**

A 56 bit DES Encryption function can be used. (The IC-F3400D/IC-F4400D series transceiver has 4 DES keys by default.)
When the optional UT-134 is installed in the transceiver, the function will be upgraded as follows.
To use the UT-134, update the NXDN™ main unit firmware to revision 1.6 or later, and program the DES key with the optional CS-KLD2. (In case of dPMR™, usable the function in main unit firmware revision 1.0.)

- ♦ The number of DES encryption keys has been increased from 4 to 64.
  When the optional UT-134 is installed, the originally used 4 DES keys must be reentered.
- ♦ If you purchase the Activation key, 256 bit AES encryption can also be used. In this case, a total of 64 encryption keys that include both AES and DES can be used.

The required items to use the DES/AES Encryption function are described in Table 5-3.

Table 5-3. The required items to use the DES/AES Encryption function

	To use 4 or less DES encryption keys.	To use 5 or more DES encryption keys.	To use AES encryption.
Transceiver's default function.	YES	NO	NO
Activation key is required.	NO	NO	YES (ISL-AKAES)
The optional UT-134 is required.	NO	YES	YES
Required software to enter the key.	CS-F3400D (NXDN™) CS-F3400DP (dPMR™)	CS-KLD2	CS-KLD2

• **Transparent Data mode**

The IC-F3400D/IC-F4400D series transceivers have the Transparent Data mode. The Transparent Data mode enables data transmission at 3600 bps. So, this function allows you to transmit simple measuring data, such as air temperature, or still images for remote monitoring.

Office PC
(Viewing the received picture)

Sending a picture

Figure 5-4. Transparent Data mode application example

• **OAA (Over-the Air Alias) function**
Even if the IC-F3400D/IC-F4400D series transceivers receive a signal that is not programmed into the Call List, this function can automatically display and program the caller's name with an ID. When you add new transceivers in your system, the transceiver can display the name corresponding to an Individual ID on the display without reentering, by using this function. If the caller's name that is set in the transceiver is changed, the receiving transceiver automatically changes the ID name.

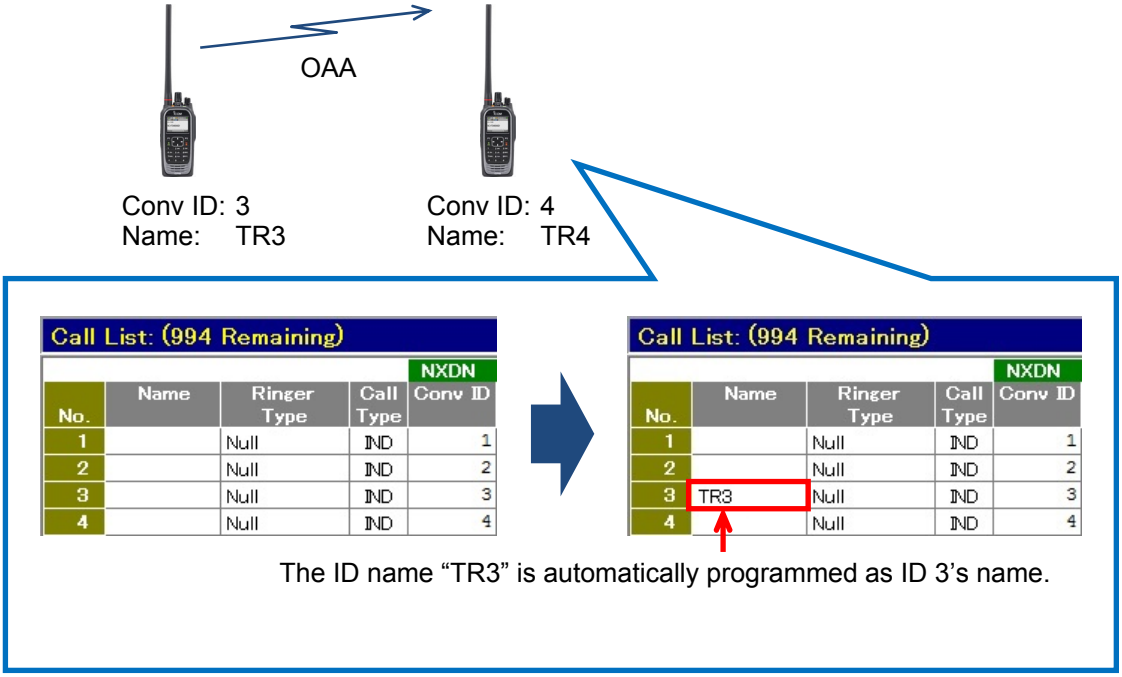


Figure 5-5. OAA example

• **AQUAQUAKE™ function**
The IC-F3400D/IC-F4400D series transceivers have the AQUAQUAKE™ function, which is already used in the Icom marine transceivers. The function can forcibly drain the water that comes in through the speaker grill. Therefore, you can hear the received voice clearly, even in heavy rain.

• **12.5 kHz Digital mode operation**
You can select the channel spacing between 6.25 kHz and 12.5 kHz in the digital mode using the programming software.

• **Field programming by Over-The-Air programming (OTAP) can be done**
Even if you have to change the transceiver setting, you can remotely do it without asking your dealer to do it, by using the OTAP function. Installing the software (CS-OTPM1) for the OTAP function onto the PC is required.
This function is provided by the main firmware revision 1.8 or later for NXDN™, and 1.6 or later for dPMR™. The CS-OTPM1 revision 1.20 or later is also required for dPMR™.

• **Expanding functions by activation licenses**

The IC-F3400D/IC-F4400D series transceivers can expand their functions using an activation license. You can upgrade the transceiver using the programming software. The license is linked to the transceiver's serial number. Therefore, a unique license is required for each transceiver. The following licenses are sold, or will be sold in the near future.

Table 5-4. License list

License name	Expanding function	NXDN™	dPMR™
ISL-UGMTR	For NXDN™ Type-D trunking operation.	YES	NO
ISL-UGMD3	For dPMR™ Mode3 operation.	NO	YES
ISL-CHEX	To increase channel number from 1,024 to 4,000.	YES	YES
ISL-AK25K	For 25 kHz (Wide) operation ([USA] only).	YES	YES
ISL-AKAES	For AES encryption operation.	YES	YES
ISL-AKSTM	For access to the dealer set mode.	YES	YES

• **Programming by using microSD card**

You load the saved settings from the microSD card into the transceiver. Therefore, you can change the settings in the field without using the programming software. So, when multiple operators share one transceiver, you can easily change the transceiver's settings for each operator with this function. A microSD card is required.

• **GPS position indication**

The IC-F3400D/IC-F4400D series transceivers have a built-in GPS receiver, and current position information can be displayed on the transceiver's LCD display, as shown in figure 5-6. You can know your own position using the information.

You can transmit your position information. The transmitted position is used to display the transceiver's position on a map, using a third party AVL system.

In addition, other transceivers' relative positions can be displayed on the display. For example, when your transceiver receives position information from a transceiver whose Individual ID name is ID 2, its position information is displayed, as shown in figure 5-7.

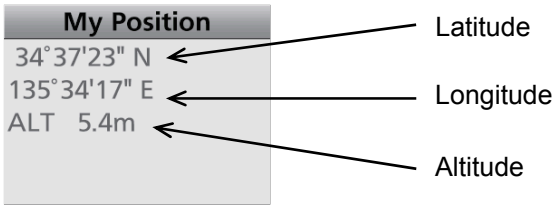


Figure 5-6. Position information display example

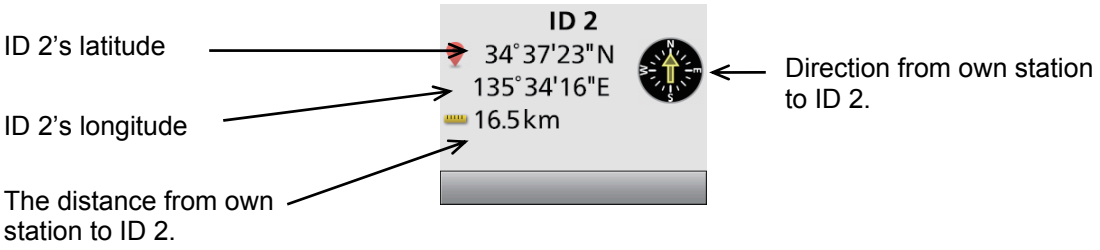


Figure 5-7. ID 2's position information display example

• TX/RX Audio Equalizer function
This function can improve the TX/RX audio readability by increasing or decreasing particular audio frequency components. This function is provided by the main firmware revision 1.6 or later for NXDN™, and 1.0 or later for dPMR™.

• Hot DTMF function
The IC-F3400DT/IC-F4400DT/IC-F3400DPT/IC-F4400DPT transceivers have the Hot DTMF function that can transmit DTMF signals without holding down [PTT] when you push the 10-keypad. This function is provided by the main firmware revision 1.6 or later for NXDN™, and 1.0 or later for dPMR™.

• Dealer Set mode function
The Dealer Set mode can change the frequency without using the programming software. To use this function, an optional license (ISL-AKSTM) is required. The following operation is required to enter the Dealer Set mode.
- ♦ Turn OFF the transceiver's power.
- ♦ While holding down [P1] and [UP], turn ON the power.

This function is provided by the main firmware revision 1.6 or later for NXDN™, and 1.0 or later for dPMR™.

• Encryption Key Changing function by OTAR
The OTAR (Over The Air Re-keying) function enables you to remotely change the programmed encryption key. So, highly secured communication system will be provided. Installing the CS-OTAR1 (revision 1.10 or later for dPMR™) onto the PC, and the UT-134, AES/DES UNIT, onto the transceiver are required.
This function is provided by the main firmware revision 2.5 or later for NXDN™, and 1.7 or later for dPMR™.
The CS-F3400D #01 revision 1.9 or later for NXDN™, and the CS-F3400DP #11 revision 1.50 or later is required for dPMR™.

• Multiple languages announcement
The channel number announcement in other than English can be made.
When using this function, create WAVE format voice files for the announcement, and then copy them into the Announce folder in the Setting folder of a microSD card.
This function is provided by the main firmware revision 1.7 or later for NXDN™, and 1.6 or later for dPMR™.
A microSD card is required.

• Intelligent battery pack
The BP-283 and BP-284 are intelligent battery packs. The intelligent battery packs have various information, such as output voltage, remaining power, number of charging/discharging cycle, battery health, battery pack model name. However, they can be checked only when using the BC-225 and RS-BC225. But now, they can be checked in the transceiver's menu. Therefore, the battery information can be checked even in the field.
This function is provided by the main firmware revision 2.5 or later for NXDN™, and 1.7 or later for dPMR™.

SECTION 6 ACCESSORIES

Current optional accessories available for the IC-F3400D/F4400D series transceivers are shown below.
(Some accessories may not be available in some countries.)

SPEAKER-MICROPHONE & PTT SWITCH + HEADSETS

- **VS-4MC** PTT Switch (non-waterproof)

- **HS-94** HEADSET Earhook type with boom Microphone

- **HS-95** HEADSET Behind the head type

- **HS-97** HEADSET Throat Microphone type

- **HM-222** Speaker Microphone with Emergency button and earphone jack (*Meets IP68 construction)

ANTENNAS

For VHF

- **FA-S81V** 136~150 MHz
- **FA-S82V** 148~162 MHz
- **FA-S83V** 160~174 MHz
- **FA-S81VS** 136~150 MHz Stubby
- **FA-S82VS** 148~162 MHz Stubby
- **FA-S83VS** 160~174 MHz Stubby
- **FA-S67VC** 134~174 MHz Cut-type

For UHF

- **FA-S81U** 380~430 MHz
- **FA-S82U** 430~480 MHz
- **FA-S83U** 470~520 MHz
- **FA S81US** 400~450 MHz Stubby
- **FA-S82US** 450~490 MHz Stubby
- **FA-S76UC** 380~520 MHz Cut-type

BATTERY PACKS

- **BP-283** Li-ion battery pack
  7.2 V/2010 mAh typical (1950 mAh minimum)
  Meets IP68 waterproof/dustproof

- **BP-284** Li-ion battery pack
  7.2 V/3350 mAh typical (3250 mAh minimum)
  Meets IP68 waterproof/dustproof

BP-283 **BP-284**

BATTERY CHARGERS

- **BC-219/N** Desktop Charger
  + **BC-123SA/SE/SUK/SV** AC Adapter

BC-123

BC-219/N

- **BC-214** Multi-charger
  + **BC-157S** AC Adapter

BC-214

BC-157S

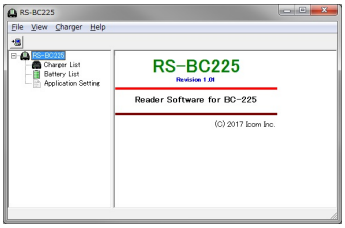
- **AD-132/N** Charger adapter for the BC-214

- **BC-225** Intelligent desktop charger
  + **BC-123SA/SE/SUK/SV** AC Adapter

BC-123SA/SE/SUK/SV

BC-225

- **RS-BC225** Reader software for the BC-225



- **CP-23L** Cigarette Lighter Cable for the BC-219/N

- **OPC-515L** DC Power Cable for the BC-219/N

- **OPC-656** DC Power Cable for the BC-214 Multi-charger

OTHER ACCESSORIES

- **LC-184/LC-186** Carrying case

LC-184
(For LCD versions)

LC-186
(For non-LCD version)

- **OPC-1870** Zone Copy Cable
  14-pin Handheld to 14-pin Handheld
- **OPC-2362** Zone Copy Cable
  Mobile to 14-pin Handheld

OPC-1870

OPC-2362

- **AD-118** 14-pin Accessory Adapter
  Connector converter for the Hirose type

- **UT-134** AES/DES UNIT

- **OPC-2338** Programming Cable
- **CS-F3400D** Programming Software (For NXDN™)
  Including adjustment software
- **CS-F3400DP** Programming Software (For dPMR™)
  Including adjustment software
- **CS-KLD2** Key-Loader (PC software)
- **CS-OTPM1** OTAP Manager Software
- **CS-OTAR1** OTAR Manager Software

- **ISL-UGMTR** NXDN™ Trunking Upgrade Key
- **ISL-UGMD3** dPMR™ Mode3 Upgrade Key
- **ISL-CHEX** Channel Expansion Key
- **ISL-AK25K** 25 kHz (Wide) Activation Key
  ([USA] only)
- **ISL-AKAES** AES Activation Key
- **ISL-AKSTM** Dealer Set Mode Activation Key

BELT CLIPS & BELT HANGERS

- **MB-133** Belt Clip with alligator-type clip

- **MB-136** Belt Clip Revolving type

- **MB-96F** Belt hanger

- **MB-96FL** Belt hanger

- **MB-96N** Belt hanger

APPENDIX REQUIRED EQUIPMENT FOR SYSTEM CONSTRUCTION

1 FOR NXDN™ TYPE-D

• Required equipment for a Single-site conventional system construction

Items	Product name
Repeater	IC-FR5000, IC-FR6000, IC-FR5200H, IC-FR6200H

• Required equipment for a Multi-site conventional system construction

Items	Product name
Repeater	IC-FR5000, IC-FR6000, IC-FR5200H, IC-FR6200H
Trunking/Network controller	UC-FR5000(#02) (The CF-FR5000MC is installed.)

• Required equipment for a Single-site trunking system construction

Items	Product name
Repeater	IC-FR5000 (UR-FR5000), IC-FR6000 (UR-FR6000), IC-FR5200H, IC-FR6200H
Trunking/Network controller	UC-FR5000(#01)
NXDN™ Trunking Upgrade Key	ISL-UGMTR (The same number of keys as the number of transceivers is required.)

• Required equipment for a Multi-site trunking system construction

Items	Product name
Repeater	IC-FR5000 (UR-FR5000), IC-FR6000 (UR-FR6000), IC-FR5200H, IC-FR6200H
Trunking/Network controller	UC-FR5000(#03) (The CF-FR5000MT is installed.)
NXDN™ Trunking Upgrade Key	ISL-UGMTR (The same number of keys as the number of transceivers is required.)

NOTE:
The NXDN™ Trunking/Network controller may or may not be mounted in a repeater, depending on the repeater model and/or version. Therefore, the Single-site, Multi-site, Conventional or Trunking default operation mode may differ, depending on the repeater model and/or version.

2 FOR dPMR™

• Required equipment for a Single-site conventional system construction

Items	Product name
Repeater	IC-FR5100/H, IC-FR6100/H, IC-FR5200H, IC-FR6200H

• Required equipment for a Multi-site conventional system construction

Items	Product name
Repeater	IC-FR5100/H, IC-FR6100/H
Trunking/Network controller	UC-FR5000(#12) (The CF-FR5000MC #12 is installed.)

• Required equipment for a Single-site trunking system construction

Items	Product name
Repeater	IC-FR5100/H (UR-FR5100), IC-FR6100/H (UR-FR6100), IC-FR5200H, IC-FR6200H
Ethernet board	UC-FR5000SE
dPMR™ controller	IC-FC5000E
Channel license (Required when you construct the system with more than four traffic channel.)	ISL-CHL* The license will be sold as follows. For 5~6 channels. For 7~8 channels. For 9~12 channels. For 13~24 channels. For 25~32 channels.
dPMR™ Trunking Upgrade Key	ISL-UGMD3 (A license key is required for each transceiver.)

• Required equipment for a Multi-site trunking system construction

Items	Product name
Repeater	IC-FR5100/H (UR-FR5100), IC-FR6100/H (UR-FR6100) IC-FR5200H, IC-FR6200H
Ethernet board	UC-FR5000SE
dPMR™ controller	IC-FC5000E
Multi-site license	ISL-CHL* (A license is required for each site.)
dPMR™ Trunking Upgrade Key	ISL-UGMD3 (A license key is required for each transceiver.)
Control server (The CS-FC5000SCS is installed.)	–

*The license sales method may be changed without notice.

NOTE:
The dPMR™ Ethernet Board may or may not be mounted in a repeater, depending on the repeater model.

The revision record

Version	Date	The revised content
Version 1.0	October, 2016	1st issued.
Version 2.0	May, 2017	• Added the dPMR™ version information. • Added a comparison to competitors. • Added new functions that are provided with the main firmware revision 1.9 for NXDN™.
Version 2.1	November, 2018	• The current drain and audio output power are changed. • The positioning map in SECTION 2 is revised. • The 3-1 NXDN™ MODEL'S COMPARISON in SECTION 3 is revised. • The 3-2-2 FUNCTION COMPARISON BETWEEN THE IC-F3400DPT/IC-F4400DPT AND IC-F3260D/IC-F4260D in SECTION 3 is revised. • The COMPARISON WITH OTHER MANUFACTURE'S PRODUCTS in SECTION 4 is revised. • The dPMR™ compatible revisions are written to OTAP, OTAR, and Multiple languages in SECTION 5. • The CS-OTAR1 is added in SECTION 6.

Icom Inc. 1-1-32, Kami-minami, Hirano-ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013 www.icom.co.jp/world

Count on us!

Icom America Inc.
12421 Willows Road NE,
Kirkland, WA 98034, U.S.A.
Phone : +1 (425) 454-8155
Fax : +1 (425) 454-1509
E-mail : sales@icomamerica.com
URL : http://www.icomamerica.com

Icom Canada
Glenwood Centre #150-6165
Highway 17A, Delta, B.C.,
V4K 5B8, Canada
Phone : +1 (604) 952-4266
Fax : +1 (604) 952-0090
E-mail : info@icomcanada.com
URL : http://www.icomcanada.com

Icom Brazil
Rua Itororó, 444 Padre Eustáquio
Belo Horizonte MG,
CEP: 30720-450, Brazil
Phone : +55 (31) 3582 8847
Fax : +55 (31) 3582 8987
E-mail : sales@icombrazil.com

Icom (Europe) GmbH
Communication Equipment
Auf der Krautweide 24
65812 Bad Soden am Taunus, Germany
Phone : +49 (6196) 76685-0
Fax : +49 (6196) 76685-50
E-mail : info@icomeurope.com
URL : http://www.icomeurope.com

Icom Spain S.L.
Ctra. Rubi, No. 88 "Edificio Can Castanyer"
Bajos A 08174, Sant Cugat del Valles,
Barcelona, Spain
Phone : +34 (93) 590 26 70
Fax : +34 (93) 589 04 46
E-mail : icom@icomspain.com
URL : http://www.icomspain.com

Icom (UK) Ltd.
Blacksole House, Altira Park,
Herne Bay, Kent, CT6 6GZ, U.K.
Phone : +44 (0) 1227 741741
Fax : +44 (0) 1227 741742
E-mail : info@icomuk.co.uk
URL : http://www.icomuk.co.uk

Icom France s.a.s.
Zac de la Plaine,
1 Rue Brindejonc des Moulinais, BP 45804,
31505 Toulouse Cedex 5, France
Phone : +33 (5) 61 36 03 03
Fax : +33 (5) 61 36 03 00
E-mail : icom@icom-france.com
URL : http://www.icom-france.com

Icom (Australia) Pty. Ltd.
Unit 1 / 103 Garden Road,
Clayton, VIC 3168 Australia
Phone : +61 (03) 9549 7500
Fax : +61 (03) 9549 7505
E-mail : sales@icom.net.au
URL : http://www.icom.net.au

Asia Icom Inc.
6F No. 68, Sec. 1 Cheng-Teh Road,
Taipei, Taiwan, R.O.C.
Phone : +886 (02) 2559 1899
Fax : +886 (02) 2559 1874
E-mail : sales@asia-icom.com
URL : http://www.asia-icom.com

Shanghai Icom Ltd.
No.101, Building 9, Caifuxingyuan Park,
No.188 Maoting Road, Chedun Town,
Songjiang District, Shanghai, 201611, China
Phone : +86 (021) 6153 2768
Fax : +86 (021) 5765 9987
E-mail : bjicom@bjicom.com
URL : http://www.bjicom.com

Your local distributor/dealer: