

# KMC-47GPS/48GPS

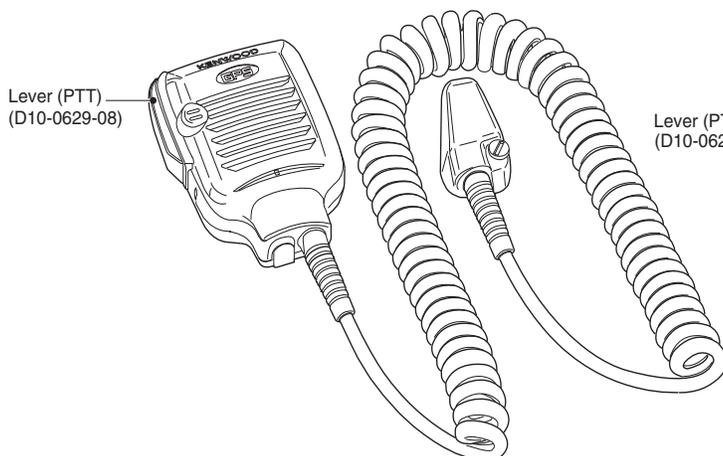
## SERVICE MANUAL

# KENWOOD

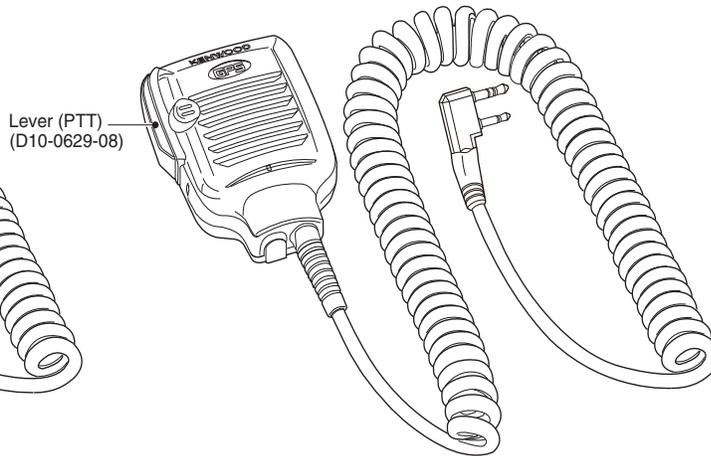
Kenwood Corporation

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### KMC-47GPS



### KMC-48GPS



## SPECIFICATIONS

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### General

Operating temperature range .....-30°C~+60°C  
(-22°F~+140°F)

### Microphone

Impedance ..... 2.2kΩ (max)  
Sensitivity ..... -45dB±5dB at 300Hz

### Speaker

Impedance.....16Ω±15% at 1.2kHz  
Rating input ..... 0.8W  
Maximum input .....1.6W  
Dimensions (W x H x D) ..... 62 x 81 x 36 mm  
(2.44 x 3.19 x 1.42 inches)  
Weight ..... Approx. 230g/ 8.1oz.(KMC-47GPS)  
230g/ 8.1oz.(KMC-48GPS)

### GPS Receiver

Receiver system .....Parallel 12 channels  
Receiver frequency  
..... 1575.42MHz±1MHz, L1 band, C/A code  
GPS data format..... Compatible with NMEA 0183  
GPS data update cycle..... Every 1 second



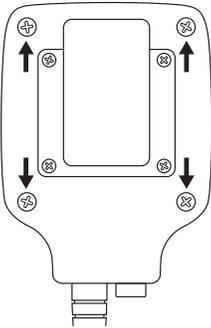
# KMC-47GPS/48GPS

## HOW TO REPLACE THE INTERNAL BATTERY

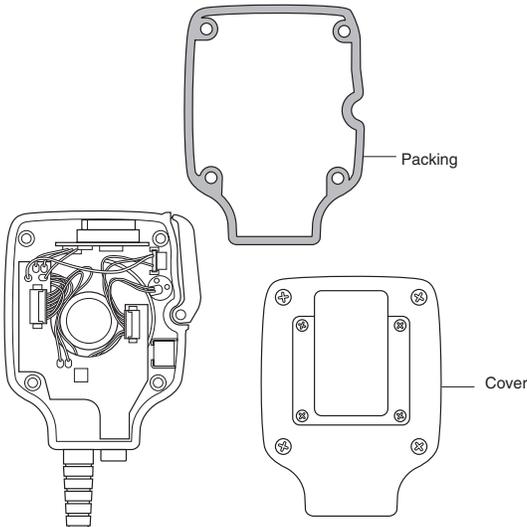
If a Cold Start occurs frequently (the transceiver cannot start GPS positioning after the transceiver is turned ON) even though the transceiver has been continuously used, the internal battery may be degraded. When the internal battery terminal is less than 1.4V after charging, use the following procedure to replace the internal battery.

**CAUTION:** THE OPERATOR MUST WEAR AN ANTISTATIC BAND WHEN REPLACING THE BUILT-IN BATTERY IN ORDER TO PREVENT STATIC DISCHARGE. THE INSTALLED IC MAY BE DAMAGED BY A DISCHARGE OF STATIC ELECTRICITY.

1. Remove the KMC-47GPS/48GPS from the transceiver and 4 screws on the rear panel.

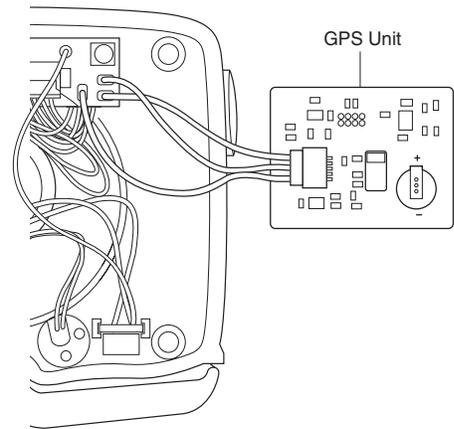
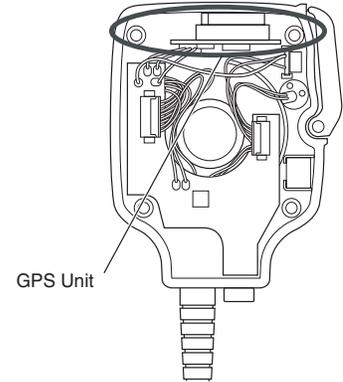


2. Remove the cover and packing.



3. Remove the GPS unit installed in the upper part of the microphone.

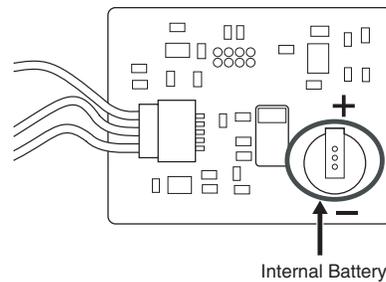
**CAUTION:** DO NOT DAMAGE CABLES WHEN REMOVING THE GPS UNIT.



**Note:** Remove cables connected to the GPS unit, if needed.

4. Remove the internal battery in the GPS unit by using the soldering iron. Replace the battery with a new battery.

**CAUTION:** BE SURE THE POLARITY OF THE BATTERY BEFORE INSTALLING IT.



5. Reinstall the GPS unit, packing and cover.

## CIRCUIT DESCRIPTION

The location data is calculated by the GPS unit and is then sent to the transceiver via the RXD terminal of the connector (universal or 2-pin).

When the transceiver is turned OFF, the GPS unit enters to backup mode and the power is supplied by the internal rechargeable lithium battery.

When the transceiver is turned ON, the GPS unit enters to normal operation mode and the power is supplied from the transceiver via the 5M terminal of the connector (universal or 2-pin). While the transceiver is turned ON, the internal rechargeable lithium battery charges.

It takes approximately 40 seconds to calculate the location data when the GPS unit is "cold started" (full initialization).

## RESETTING THE GPS UNIT

When the KMC-47GPS/48GPS cannot determine the position in a situation where GPS data is received, use the following procedure to reset the GPS unit.

Reset the GPS unit by removing the internal battery and then re-installing it. (To remove the internal battery, refer to "HOW TO REPLACE THE INTERNAL BATTERY".)

## GPS OPERATION CHECK METHOD AFTER REPAIRS

Check the GPS operation according to the following procedures.

1. Prepare the transceiver which incorporate the GPS function. (Set the GPS Position Display to a key, such as the [S] key, with the FPU beforehand.)
2. Connect the KMC-47GPS/48GPS to the connector (universal or 2-pin) on the transceiver.
3. Turn the transceiver power ON.
4. Go outside, then press the [S] key (the key that you previously set as the GPS Position Display) on the transceiver.
5. The "GPS" and latitude information are displayed on the LCD of a transceiver.

### Note:

- The KMC-47GPS/48GPS has an internal battery to back-up the built-in pinpointing data. When the internal battery is charged, the transceiver will retain the pinpointing data (the last positional information) for approximately 20 days. (When used for the first time, it takes approximately 10 hours to fully charge the internal battery.)
- When the internal battery is in the discharged state, pinpointing data returns to its initial value. When the positional information is at its initial value while turning on the transceiver, the life cycle of the internal battery is considered.

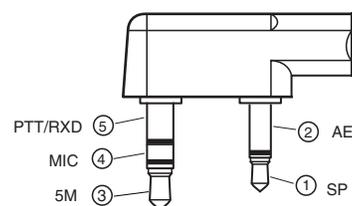
## TERMINAL FUNCTION

### Universal connector (KMC-47GPS)

Pin No.	Name	I/O	Function
1	SSW	O	External speaker switch
2	SP+	I	Speaker input (BTL + side)
3	SP-	I	Speaker input (BTL - side)
4	MSW	O	External MIC switch
5	EMC	O	MIC output
6	ME	-	MIC GND
7	PTT	O	PTT output
8	PF	-	No connection
9	NC	-	No connection
10	E	-	GND
11	5M	I	Input from the power with DC 5V
12	TXD	-	No connection
13	RXD	O	GPS data output
14	E	-	No connection

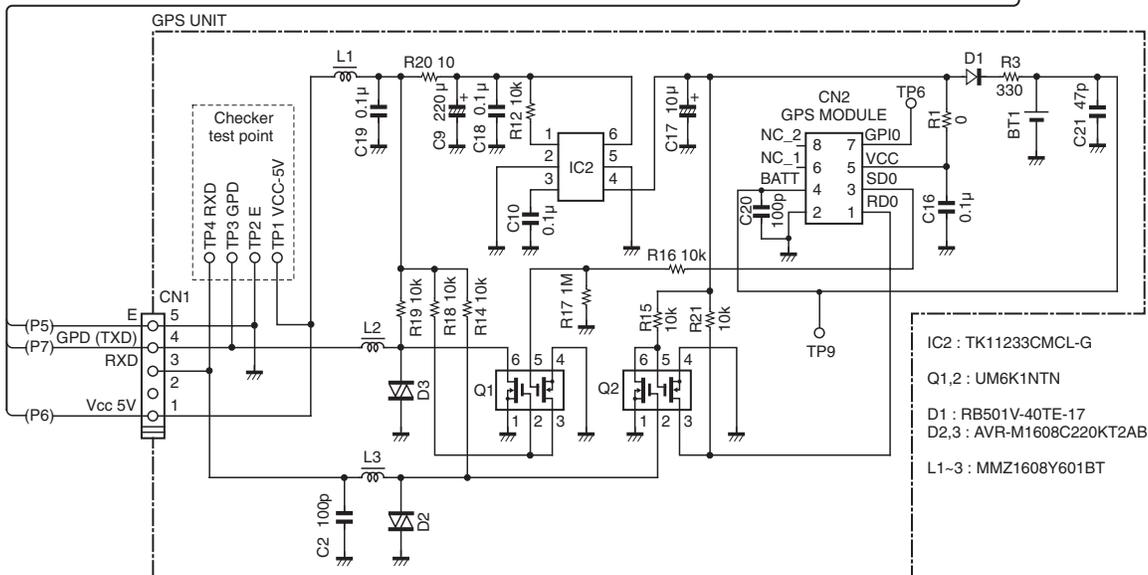
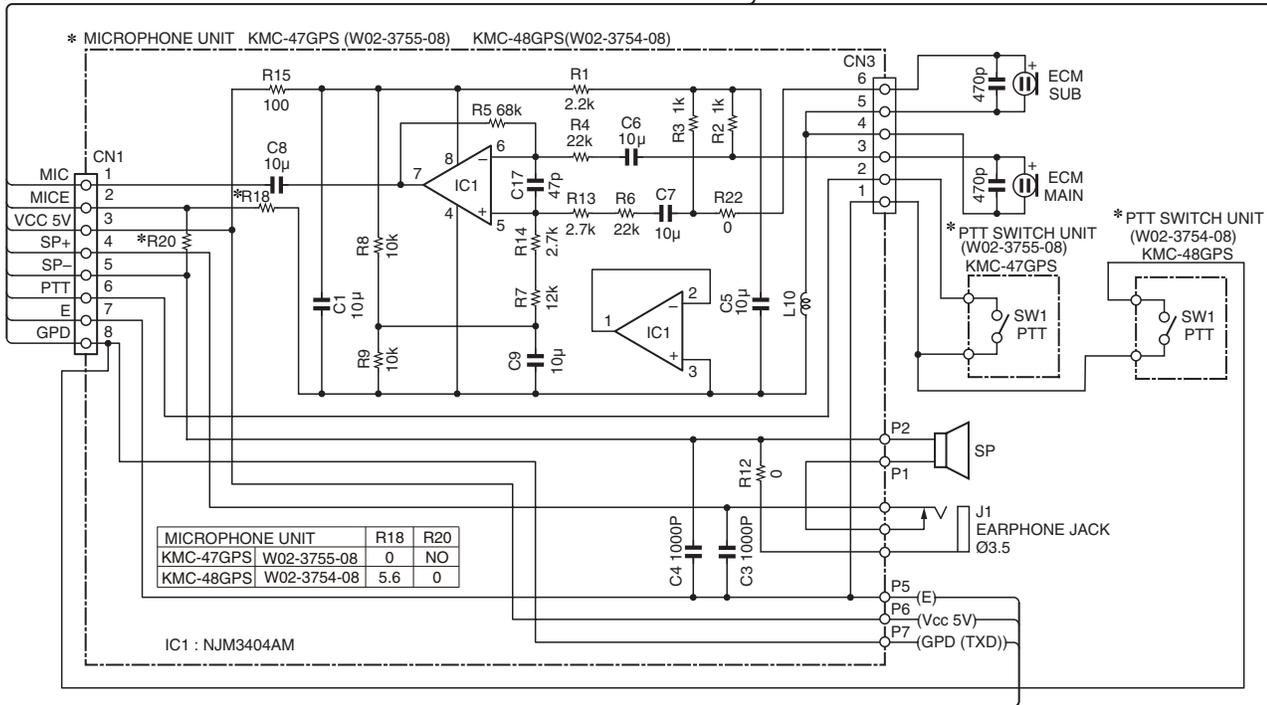
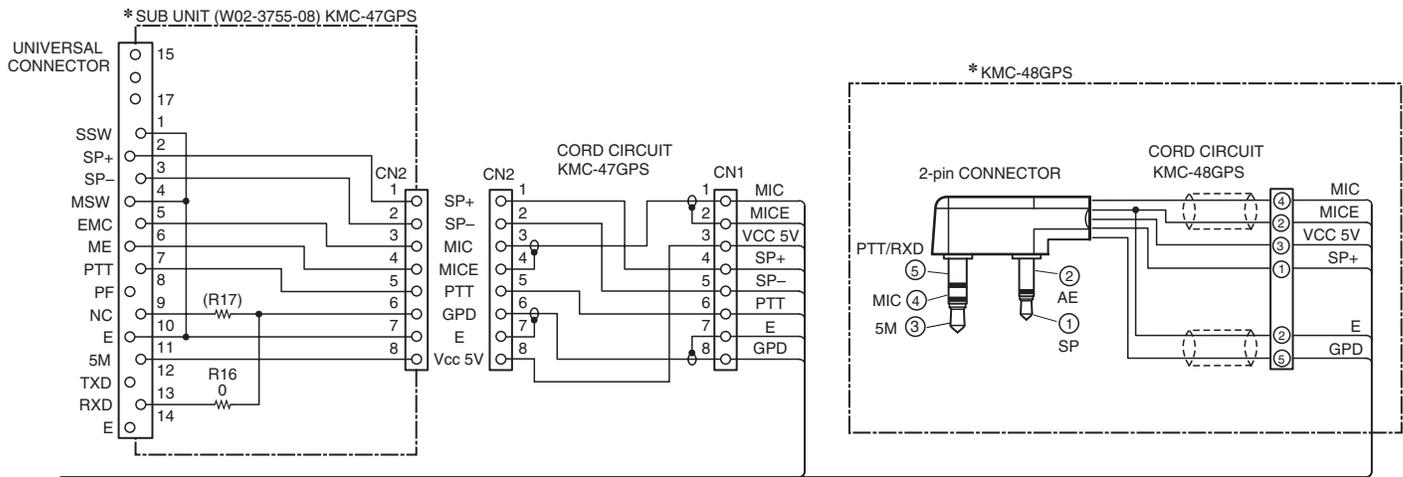
### 2-pin connector (KMC-48GPS)

Pin No.	Name	I/O	Function
1	SP	I	Input from AF AMP
2	AE	-	GND
3	5M	I	5V DC input
4	MIC	O	Microphone output
5	PTT/RXD	O	PTT output/GPS data output



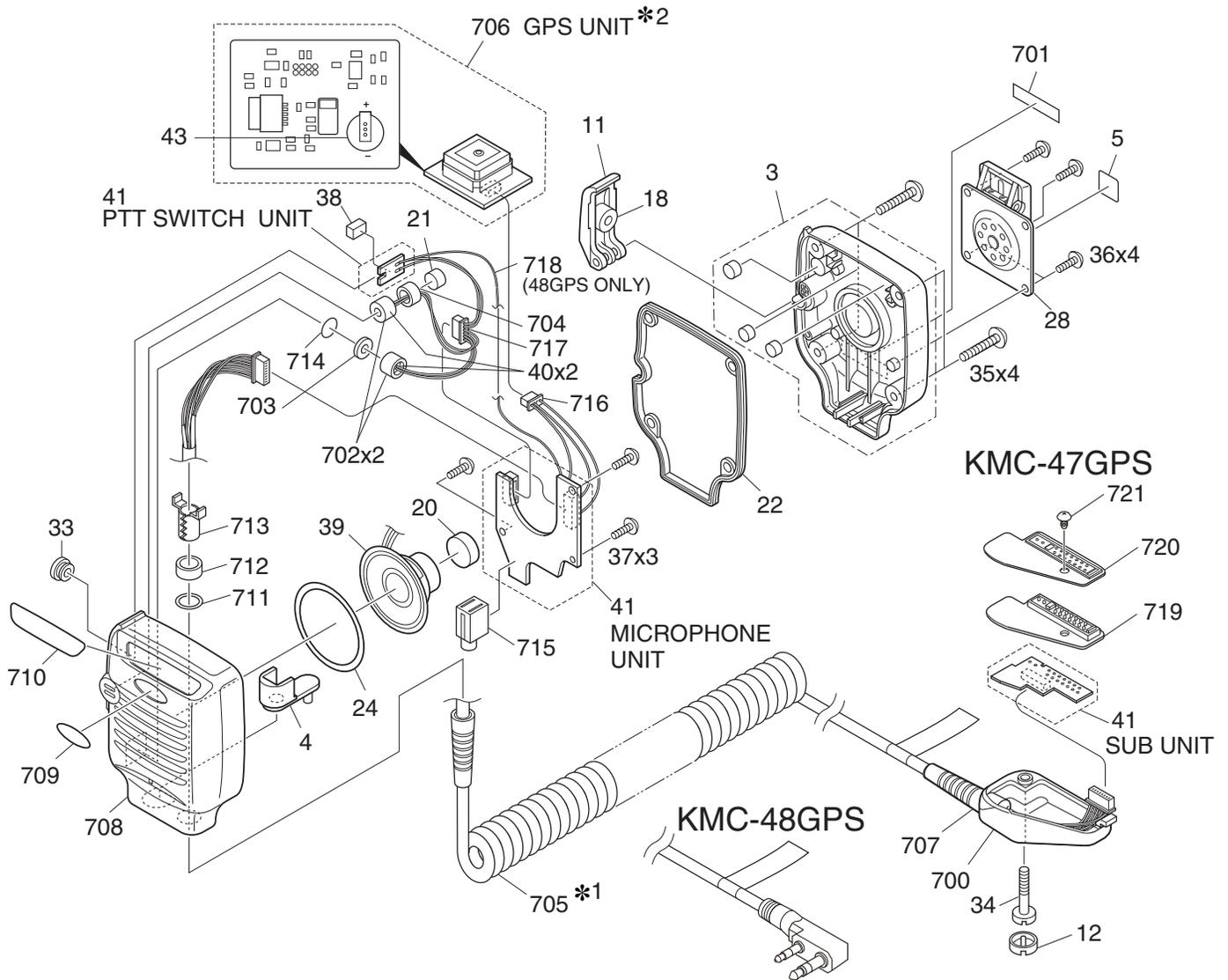
# KMC-47GPS/48GPS

## SCHEMATIC DIAGRAM



# KMC-47GPS/48GPS

## EXPLODED VIEW



\*1: In order to maintain the waterproofing performance, the cord ASSY with plug cannot be replaced.

\*2: The GPS unit cannot be replaced.

Parts with the exploded numbers larger than 700 are not supplied.

# KMC-47GPS/48GPS

## PARTS LIST

### KMC-47GPS/48GPS

Ref. No.	Address	New parts	Parts No.	Description	Destination
<b>KMC-47GPS/48GPS</b>					
3			A02-3988-08	PLASTIC CABINET ASSY (REAR)	
4			B09-0382-08	CAP (PHONE)	
5			B42-7733-04	STICKER (WEEE)	
11			D10-0629-08	LEVER (PTT)	
12			F07-1932-02	COVER	KMC-47GPS
18			G13-1638-08	CUSHION (PTT LEVER)	
20			G13-2201-08	CUSHION (SPEAKER)	
21			G13-2202-08	CUSHION (MAIN ECM)	
22			G53-0820-08	PACKING (CASE)	
24			G53-0834-08	PACKING (SPEAKER)	
28			J29-0644-08	CLIP ASSY	
33			K29-5217-18	KEY TOP (PTT)	
34			N08-0565-08	DRESSED SCREW	KMC-47GPS
35			N09-6542-08	TAPTITE SCREW (CASE)	
36			N46-2605-60	PAN HEAD TAPPING SCREW (CLIP)	
37			N80-2005-43	PAN HEAD TAPTITE SCREW (PCB)	
38			S70-0471-08	TACT SWITCH	
39			T07-0359-18	SPEAKER	
40			T91-0584-08	MIC ELEMENT	
41		*	W02-3754-08	ELECTRIC CIRCUIT MODULE (MIC, PTT SW UNIT)	KMC-48GPS
41		*	W02-3755-08	ELECTRIC CIRCUIT MODULE (MIC, PTT SW, SUB UNIT)	KMC-47GPS
43		*	W09-1072-08	LITHIUM CELL	

## Kenwood Corporation

2967-3, Ishikawa-machi, Hachioji-shi, Tokyo, 192-8525 Japan

### Kenwood U.S.A. Corporation

P.O. BOX 22745, 2201 East Dominguez Street, Long Beach, CA 90801-5745, U.S.A.

### Kenwood Electronics Canada Inc.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

### Kenwood Electronics Deutschland GmbH

Rembrücker Str. 15, 63150 Heusenstamm, Germany

### Kenwood Electronics Belgium N.V.

Leuvensesteenweg 248 J, 1800 Vilvoorde, Belgium

### Kenwood Electronics France S.A.

L' Etoile Paris Nord 2, 50 Allée des Impressionnistes, Bp 58416 Villepinte, 95944 Roissy Ch De Gaulle Cedex

### Kenwood Electronics UK Limited

KENWOOD House, Dwight Road, Watford, Herts., WD18 9EB United Kingdom

### Kenwood Electronics Europe B.V.

Amsterdamseweg 37, 1422 AC Uithoorn, The Netherlands

### Kenwood Electronics Italia S.p.A.

Via G. Sirtori, 7/9 20129 Milano, Italy

### Kenwood Ibérica, S.A.

Bolivia, 239-08020 Barcelona, Spain

### Kenwood Electronics Australia Pty. Ltd.

Talavera Business Park Building A, 4 Talavera Road, North Ryde NSW 2113 Australia

### Kenwood Electronics (Hong Kong) Ltd.

Suite 2504, 25/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road, Tsuen Wan, New Territories, Hong Kong

### Kenwood Electronics Singapore Pte Ltd

1 Ang Mo Kio Street 63, Singapore 569110