

New Product Release Information

Dec, 2013



TK-D200/D300

VHF/UHF DIGITAL & FM TRANSCEIVER

DMR Tier 1&2

Kenwood introduces DMR Portable Radios

The TK-D200 (VHF) and TK-D300 (UHF) radios are the first models in KENWOOD's new digital radio range complying with the ETSI DMR air interface protocol specification in (Tier 1 and Tier 2). These radios are designed to meet the requirements of users who need small-sized communication systems and/or who require an ETSI protocol based product. A sunlight readable display and industry leading 18h battery life (with KNB-57 battery) complement the advanced features offered by the TK-D200/D300 series radios.



Meanwhile KENWOOD's award winning NXDN-based NEXEDGE® radio business now exceeds 700,000 units shipment to customers worldwide.

The open NXDN protocol will continue to grow with users who require versatile, reliable, resilient and expandable IP network based digital radio systems now and in the future.

**Complying with the definition " ETSI TS 102 361-1, -2, -3".
(ETSI TS 102 361-1:DMR Air Interface Protocol. -2: Voice and Generic Services. -3: Data Protocol)*

<SCHEDULE / TYPES>

MODEL	Type	MP	LAUNCH	2.0" LCD	FRONT KEYPAD		GPS	CH	Freq.	TX PWR	MAIN MARKET	INST. MANU.	SUPPLIED ACC.
					with	w/o							
TK-D200G	E	Jan. 2014	Jan. 2014	Y	Y	-	Y	512	136-174	5W / 1W	EU, UK EXP. (RUSSIA, S.AFRICA, TURKEY)	English, French, Spanish, Russian, German, Dutch, Italian, Turkish, Greek	Belt Clip (KBH-10), Cap, Pamphlet
	E2			-	-	Y	Y	64					
TK-D200	E			Y	Y	-	-	512					
	E2			-	-	Y	-	64					
TK-D300G	E			Y	Y	-	Y	512	400-470	4W / 1W			
	E2			-	-	Y	Y	64					
TK-D300	E			Y	Y	-	-	512					
	E2			-	-	Y	-	64					

New Optional Accessories

MODEL	Type	MP	LAUNCH
KPG-166D	M	Jan. 2014	Jan. 2014

REPEATER

DMR Tier 2 compatible repeaters will be available in March/ 2014

<FEATURES>

TDMA - 2 slot for 1 carrier in 12.5kHz

TDMA systems are ideally suited in low-complexity applications and in cases in which the user would like to continue to use their current 12.5kHz radio license; the DMR protocol doubles the channel capacity for 1 carrier compared to analogue 12.5kHz operation. The 2 speech paths with 1 carrier operation also helps to reduce infrastructure costs per channel.

Dual Modes Operation - "Analogue FM + Digital"

TK-D200/D300 radios can operate in either analogue FM or digital mode. They are compatible with existing analogue FM systems, ensuring a smooth analogue-to-digital migration at the customers own pace.

Easy Visible Display - 2.0-inch Colour TFT QVGA Transflective Colour LCD

Allowing good visibility even under strong sun light or at night. The display is resessed to reduce the risk of damage and scratches.

*Non-display versions also available.

Mixed Mode - Permits RX/TX in both FM & digital

"Mixed mode" operation provides automatic switching between analogue FM and digital calls. Ideal for a gradual system migration from legacy analogue.

Built-in GPS - Improves Efficiency and Safety

The built-in GPS module supports positioning data transmission to other local resources.

*Non-GPS versions also available.

Integrated Voice and Text Messages

Taking advantage of digital protocols, the TK-D200/D300 provides a data capability to send text messages to designated individuals or groups securely and clearly.

Rugged and Reliable

Compliant to MIL-STD-810 C/D/E/F/G (11 categories) & IP54/55 .

Voice Announcement

Allows users to identify channels and zones without looking at the display.

*Language: English/ Spanish/ French/ German/ Dutch/ Italian/ Russian changeable via FPU.
(FPU also accepts other languages as users' need)

Ready for Various Emergency Scenarios

These functions provide security and safety for users who work remotely as well as for those who work in hazardous areas.

- **Standard Man-down**

Standard Man-down function is available as a factory setting.

- **Advanced Motion Detection (Software License Option*)**

* Need activation file

-- **Stationary mode**

When the radio does not move for a pre-set period, an alert signal is transmitted.

-- **Motion mode (Panic)**

When the radio moves excessively for a certain period, an alert signal is transmitted.

- **Lone Worker Function**

Provides an extra layer of security for individuals in potentially risky environments or when working alone.

Extensive Analogue Signalling

Supports QT/DQT & 5-tone Encode / Decode, to facilitate gradual migrations.

No need for extra and expensive option boards.

■ OTHER FEATURES

- PC Protocol
 - *Only KAS-10 capable at launch
- Single slot data timing
- Queue Incoming call
- Hold off
- Emergency Status
- Individual Call with Acknowledge
- Improved GPS TX Data:
 - Able to select destination by Zone and/or Ch.
- Scrambler: Bit Scramble Only on Voice
- Direct Mode (P2P): Selectable from ETSI
- Newer or Older Definition
- *Newer/Older distinction: Defined on ETSI TS 102 361-1 V2.2.1 later/older than Feb. 2013
- Busy Channel lockout
- Time-out-timer
- Low Battery Alert
- Battery Saver
- 2 Side PF Keys and Emergency/AUX Key
- <LCD models Functions>
- BER Display
- Contacts List Mode: Individual ID/ GID
- Message Mode

OPTIONAL ACCESSORIES

New Optional Accessories

KPG-166D	PROGRAMMING SOFTWARE (FPU)
KMC-41D*	SPEAKER MICROPHONE
KMC-42WD*	SPEAKER MICROPHONE(IP67)
KMC-47GPSD*	GPS SPEAKER MICROPHONE
KMC-51D*	SPEAKER MICROPHONE
KMC-52D*	SPEAKER MICROPHONE(IP67)

* New speaker microphone for DMR terminals.

Existing Optional Accessories

KNB-55L	Li-ion Battery Pack (1480mA)
KNB-56N	Ni-MH Battery Pack (1400mA)
KNB-57L	Li-ion Battery Pack (2000mA)
KSC-25	RAPID CHARGER
KSC-25L	RAPID CHARGER
KSC-30	CHARGER
KSC-256	MULTIPLE CHARGER
KRA-22	VHF HELICAL ANTENNA
KRA-23	UHF HELICAL ANTENNA
KRA-26	VHF HELICAL ANTENNA
KRA-27	UHF WHIP ANTENNA
KRA-41	VHF STUBBY ANTENNA
KRA-42	UHF STUBBY ANTENNA
KRA-43G	VHF HELICAL ANTENNA
KRA-44G	UHF HELICAL ANTENNA
KAS-10	AVL/DISPATCH SOFTWARE
KBH-10	BELT CLIP
KBH-12	BELT CLIP

Programming Accessories for Dealers

KPG-36U	USB Programming interface cable
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ALL SPECIFICATIONS MAY VARY WHEN AVAILABLE

SPECIFICATIONS

GENERAL		TK-D200/D200G	TK-D300/D300G
Frequency Range		136-174MHz	400-470MHz
Number of Channels	LCD models	512ch	
	Non LCD models	64ch	
Zones per Radio	LCD models	128 zone (Max 250ch/zone)	
	Non LCD models	4 zone (Max 16ch/zone)	
Channel Spacing		12.5 / 20 / 25 kHz	
		12.5 kHz	
Operating Voltage		7.5V DC +/- 20%	
Battery Life (5-5-90): Digital	(Save Off)	(Save On)	
	KNB-55L(1480)	More than 9 h	More than 13h
	KNB-57L(2000)	More than 13 h	More than 18h
Operating Temp. Range		-30°C to +60°C	
Frequency Stability		+/-1.5 ppm	
Antenna Impedance		50 Ω	
Dimensions (W x H x D) Projections not included			
LCD models	with KNB-55L	56.0 x 131.0 x 36.1 mm	
	with KNB-57L	56.0 x 131.0 x 38.1mm	
Non LCD models	with KNB-55L	56.0 x 131.0 x 37.1 mm	
	with KNB-57L	56.0 x 131.0 x 39.1mm	
Weight (net)			
LCD models	with KNB-55L	approx. 353 g	
	with KNB-57L	approx. 380 g	
Non LCD models	with KNB-55L	approx. 353 g	
	with KNB-57L	approx. 380 g	

* Operating temp. range of the KNB-55L/57L : -10°C to +60°C

* Analog measurements made per EN 300 086 and 219.

Digital measurements made per EN 300 113.

* R&TTE & Safety Standard

EN 300 086-2, EN 300 113-2, EN 300 219-2, EN 301 489-5,

EN 300 440-2 *1

EN 60065, EN 60950-1, EN 60215, EN 62209 (SAR)

*1: Receiver Category 3

RECEIVER		TK-D200/D200G	TK-D300/D300G
Sensitivity	Digital@12.5kHz	0.3µV (5% BER)	
		-4.5dBµVemf (5% BER)	
		0.45µV (1% BER)	
		-1dBµVemf (1% BER)	
Analog @25kHz		0.28µV (EIA 12 dB SINAD)	
		-3dBµVemf (EN 20 dB SINAD)	
	Analog @12.5 kHz	0.32µV (EIA 12 dB SINAD)	
		-1dBµVemf (EN 20 dB SINAD)	
Adjacent CH Selectivity		76dB/ 68dB	
Analog @25/12.5kHz			
Intermodulation		65dB	
Analog			
Spurious Response rejection		75 dB	
Analog			
Audio Distortion		Less than 3%	
Audio Output		500 mW/8Ω	
TRANSMITTER		TK-D200/D200G	TK-D300/D300G
RF Power Output		5 / 1W	4 / 1W
Modulation Limiting		+/-5.0kHz at 25kHz	
@Analog		+/-2.5kHz at 12.5kHz	
Spurious Emission		-36dBm <= 1 GHz, -30dBm > 1GHz	
FM Noise (EIA)			
Analog@25 /12.5kHz		45 dB/ 40 dB	
Modulation Distortion		Less than 3%	
Vocoder Type		AMBE+2™	
Modulation		16K0F3E, 14K0F2D, 14K0F3E 12K0F2D, 8K50F3E, 7K50F2D 7K60FXD, 7K60FXE	

GPS	
TTFF Cold Start	<1 minute
TTFF Hot Start	< 10 seconds
Horizontal Accuracy	< 10 meters
GPS Receiver Category	3

Environmental Specifications and IP

MIL-STD	Method / Procedures					
	810C	810D	810E	810F	810G	
Low Pressure	500.1/Procedure I	500.2/Procedure I, II	500.3/Procedure I, II	500.4/Procedure I, II	500.5/Procedure I, II	
High Temperature	501.1/Procedure I, II	501.2/Procedure I, II	501.3/Procedure I, II	501.4/Procedure I, II	501.5/Procedure I, II	
Low Temperature	502.1/Procedure I	502.2/Procedure I, II	502.3/Procedure I, II	502.4/Procedure I, II	502.5/Procedure I, II	
Temperature Shock	503.1/Procedure I	503.2/Procedure I	503.3/Procedure I	503.4/Procedure I, II	503.5/Procedure I	
Solar Radiation	505.1/Procedure I	505.2/Procedure I	505.3/Procedure I	505.4/Procedure I	505.5/Procedure I	
Rain	506.1/Procedure I, II	506.2/Procedure I, II	506.3/Procedure I, II	506.4/Procedure I, III	506.5/Procedure I, III	
Humidity	507.1/Procedure I, II	507.2/Procedure II, III	507.3/Procedure II, III	507.4	507.5/Procedure II	
Salt Fog	509.1/Procedure I	509.2/Procedure I	509.3/Procedure I	509.4	509.5	
Dust	510.1/Procedure I	510.2/Procedure I	510.3/Procedure I	510.4/Procedure I, III	510.5/Procedure I	
Vibration	514.2/Procedure VIII, X	514.3/Procedure I	514.4/Procedure I	514.5/Procedure I	514.6/Procedure I	
Shock	516.2/Procedure I, II, V	516.3/Procedure I, IV	516.4/Procedure I, IV	516.5/Procedure I, IV	516.6/Procedure I, IV	
International Protection Standard						
Dust & Water Protection	IP54 IP55					

*To meet MIL810 and IP grade, the universal connector has to be connected.

*Take test reports