



DMR Tier 2

TK-D200(G)/D300(G)

VHF/UHF DIGITAL & FM TRANSCEIVER

Kenwood introduces DMR Portable Radios

The TK-D200(G) (VHF) and TK-D300(G) (UHF) radios are the first models in KENWOOD's new digital radio range complying with the ETSI DMR air interface protocol specification in Tier 2*.



Likely Markets

These radios are designed to meet the requirements of users who operate small-scale communication systems and/or who require an ETSI compliant product.

Key Features

A sunlight readable display with 18 hour battery life (with KNB-57 battery) complement the advanced features offered by the TK-D200(G)/D300(G) series radios.

Kenwood Digital Range

The new DMR radios join KENWOOD's award winning NXDN-based NEXEDGE® digital radio range which now boasts in excess of 700,000 units in service with customers worldwide, as well as our recently launched dPMR range of products.

*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)

How will Kenwood market DMR?

The introduction of DMR to the Kenwood digital line-up completes our representation in all sustainable and popular digital radio technologies and protocols and reinforces our commitment to offer you and your customers the widest possible choice of products.

In developing our DMR range, we have taken the Kenwood approach and have launched with products which bring interest and value back into DMR. To complete the first phase of our DMR line-up, the hand-portables

will be joined by Tier 2 compatible repeaters during March 2014.

We will support the introduction of DMR through advertising in the UK, online and in PR activity.

The advertisement makes a clear statement to the market of the key benefits of our new DMR hand-portable radios.

The success of NEXEDGE®, achieving sales of over 700,000 devices in under six years from launch, proves that the Kenwood digital proposition is compelling and with the addition of DMR to our range, more customers than ever will discover the benefits of Kenwood technology, quality and performance.

If you would like a copy of this advertisement to use in your own promotional activities, please contact Anthony Merrick, Marketing Manager, by email to order your materials.

KENWOOD

A new way of looking at DMR

DMR GPS

Digital Radio

Kenwood introduces its new DMR range headed by the TK-D200(G)/300(G) which boasts a host of advanced features, including:

- 5-Tone Enc/Dec format
- Built-in GPS (GE and GE2 Models)
- Enhanced Staff Safe Functions
- Mixed Mode - RX/TX in both FM & Digital
- Multi-pin adaptors for Kenwood accessories
- 18 hours battery life with KNB-57L

And with an impressive 2" full colour, sunlight readable display, it's sure to redefine the way you look at DMR radios in the future.

Find out more about Kenwood DMR at www.kenwoodcommunications.co.uk

Digital Analogue ATEX Amateur

Scheduled / 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 Accessory

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 based DMR systems are ideally suited to low-complexity applications and where the user would like to continue to use their current 12.5kHz radio license; the DMR protocol doubles the channel capacity for 1 carrier when 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(G)/D300(G) 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.

Display - Easy Visible 2 inch Colour TFT QVGA Transflective LCD Display

Provides good visibility even under strong sun light or at night. Additionally, the display is recessed to reduce the risk of damage and scratches.

*Non-display versions also available.

Mixed Mode - Permits RX/TX in both FM and Digital

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

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

The TK-D200(G)/D300(G) provides a data capability to send text messages to designated individuals or groups securely and clearly.

Rugged and Durable

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

FEATURES

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 situations.

- Standard Man-down

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

- Advanced Motion Detection (Software License Option*) *Requires 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*
- Busy Channel lockout
- Time-out-timer
- Low Battery Alert
- Battery Saver
- 2 Side PF Keys and Emergency/AUX Key
- BER and/or RSSI Display
- Contacts List Mode: Individual ID/ GID
- Message Mode

*Newer/Older distinction: Defined on ETSI TS 102 361-1 V2.2.1 later/older than Feb 2013

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 for Ni-Cad, Li-Ion, Alkaline Battery
KSC-25L	RAPID CHARGER for Li-Ion Battery
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 Non LCD models	512ch 64ch
Zones per Radio	LCD models Non LCD models	128 zone (Max 250ch/zone) 4 zone (Max 16ch/zone)
Channel Spacing	Analog Digital	12.5 / 20 / 25 kHz 12.5 kHz
Operating Voltage	7.5V DC +/- 20%	
Battery Life (5-5-90): Digital	(Save Off) KNB-55L(1480) KNB-57L(2000)	(Save On) More than 13h 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 with KNB-57L	56.0 x 131.0 x 36.1 mm 56.0 x 131.0 x 38.1mm
Non LCD models	with KNB-55L with KNB-57L	56.0 x 131.0 x 37.1 mm 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

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	Analog@25/12.5kHz	76dB/ 68dB
Intermodulation	Analog	65dB
Spurious Response rejection	Analog	75 dB
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	
TTF Cold Start	<1 minute
TTF 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