

The logo for Starcomm Wireless features a red bullseye target icon above the word "starcomm" in a bold, black, sans-serif font. Below "starcomm" is the word "wireless" in a smaller, black, sans-serif font.

starcomm
wireless

A nighttime photograph of an industrial facility, possibly a refinery or chemical plant, with numerous lights and structures illuminated against a dark sky.

KENWOOD
Intrinsically Safe
& Non-Incendive
Two-Way Portable **Radios**





What is Intrinsically Safe (IS) and Non-Incendive (NI)?

Intrinsically Safe and Non-Incendive are protective certifications to ensure safe operation of electronic equipment in explosive atmospheres and under irregular operating conditions.

Intrinsically Safe, required for Division 1 operations, refers to equipment that is incapable of releasing sufficient electrical or thermal energy under normal or abnormal operating conditions to cause ignition of a specific hazardous mixture and air.

The Non-Incendive (N.I.) rating is required for equipment to be used in Division 2 environments. N.I. equipment is incapable of releasing sufficient electrical or thermal energy under normal operating conditions only which cause ignition of a specific hazardous mixture and air.

Intrinsically Safe and Non-Incendive approvals are classified by Class, Division, Groups. The Intrinsically Safe (IS) rating is required for equipment to be used in Division 1 environments and the Non-Incendive (NI) rating is required for equipment to be used in Division 2 environments.

Kenwood provides the largest offering of CSA Intrinsically Safe portables.

Approved by CSA as Intrinsically Safe for use in Class I, II & III, Division 1, Groups A, B, C, D, E, F, and G.

Kenwood offers a **COMPREHENSIVE** Intrinsically Safe and Non-Incendive product offering including VHF, UHF, 700/800, 800 and 900 MHz models. Operational at 12.5kHz & 25kHz (narrow & wide) analog and 6.25kHz & 12.5kHz (very narrow & narrow) NEXEDGE® and P25 digital, conventional and trunked mode operations, to outfit countless requirements.



Class is defined by relating to the industry type in which the equipment will operate.

Class I: Petroleum / Gas / Oil

- Division 1:** Where ignitable concentrations of flammable gases, vapors or liquids can exist *all* or *some* of the time under normal operating conditions.
- Division 2:** Where ignitable concentrations of flammable gases, vapors or liquids are not likely to exist under normal operating conditions.

**Class II: Heavy Engineering (Iron Ore / Magnesium / Coal / Charcoal)
Food Industry (Starch / Grain processing)**

- Division 1:** Where combustible dust is or may be in suspension in air continuously, intermittently, or periodically under normal operating conditions in quantities sufficient to produce explosive or ignitable mixtures.
- Division 2:** Where combustible dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, but such dust would be present in insufficient quantities.

Class III: Industries dealing with fibers (Saw mills, Textile mills, Flax processing plants)

- Division 1:** Where readily ignitable fibres or materials producing combustible flyings are handled, manufactured or used.
- Division 2:** Where readily ignitable fibres other than those in process of manufacture are stored or handled.

Groups are types of atmosphere and ranges from Group A through to Group G.

- Group A** - Consisting of atmospheres containing Acetylene gas.
- Group B** - Consisting of atmospheres containing Butadiene, Ethylene Oxide, Hydrogen, (or gases or vapors equivalent in hazard to hydrogen, such as a manufactured gas) or Propylene Oxide.
- Group C** - Consisting of atmospheres containing acetaldehyde, cyclopropane, diethyl ether, ethylene, hydrogen sulphide, or unsymmetrical dimethyl hydrazine (UDMH), or other gases or vapours of equivalent hazard.
- Group D** - Consisting of atmospheres containing acetone, acrylonitrile, alcohol, ammonia, benzene, benzol, butane, ethylene dichloride, gasoline, hexane, isoprene, lacquer solvent vapours, naphtha, natural gas, propane, propylene, styrene, vinyl acetate, vinyl chloride, xylenes or other gases or vapors of equivalent hazard.
- Group E** - Consisting of atmospheres containing combustible metal dust, including aluminium, magnesium, and their commercial alloys, and other metals of similarly hazardous characteristics.
- Group F** - Consisting of atmospheres containing carbon black, coal, or coke dust.
- Group G** - Consisting of atmospheres containing flour, starch, or grain dust, and other dusts of similarly hazardous characteristics.



NOTE: For description outlining Classes, Divisions and Groups for using communications equipment in Hazardous Locations in Canada please refer to the Canadian Electrical Code, Part I. Safety Standard for Electrical Installations.



Class I Division 1 Groups A & B

NX-200/300

NXDN® FleetSync®    MPT1327



Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D



- 136-174 MHz, 2W (ABP Models) & 5W (ISP Models)
 - 400-470 MHz, 2W (ABP Models) & 5W (ISP Models)
 - 512 CH-GID / 128 Zones
 - 14-Character Alphanumeric LCD
 - NXDN® Digital Conventional / Trunked
 - 6.25, 12.5 & 25 kHz Channels
 - Over-the Air Alias
 - Over-the Air Programming
 - Paging Call / Emergency Call
 - AES & DES Encryption Module
 - All Group Call
 - Status Messaging
 - Remote Stun/Kill & Check
 - FleetSync® II, MDC-1200
 - Short & Long Data Messages
 - NXDN® Scrambler Included
 - MPT Option
 - 5 / 6 Tone Firmware Available
 - *P25 Digital Upgradable
 - IP54/55
 - IP67 Immersion Option
- Colour Cases Option Available on 6 Front PF Key Models Only.

NX-210/410/411

NXDN® FleetSync®    MPT1327



Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D

- 136-174 MHz, 2W (ABP Models) & 5W (ISP Models)
- 806-870 MHz, 2W (ABP Models) & 3W (ISP Models)
- 896-902, 935-941 MHz, 2W (ABP Models) & 3W (ISP Models)
- 512 CH-GID / 128 Zones
- 14-Character Alphanumeric LCD
- NXDN® Digital Conventional / Trunked
- 6.25, 12.5 & 25 kHz Channels
- Over-the Air Alias
- Over-the Air Programming
- Paging Call / Emergency Call
- AES & DES Encryption Module
- All Group Call
- Status Messaging
- Remote Stun/Kill & Check
- FleetSync® II, MDC-1200
- Short & Long Data Messages
- NXDN® Scrambler Included
- MPT Option
- IP54/55
- 5 / 6 Tone Firmware Available





Class I Division 1 Groups A & B



TK-5220/5320



Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D

- 136-174 MHz, 2W (ABP Models) & 5W (ISP Models)
- 400-470 MHz, 2W (ABP Models) & 5W (ISP Models)
- 128 Zones / 512 Channels
- P25 Conventional
- P25 Trunked Option
- 12-Keypad Models
- 14-Character Alphanumeric LCD
- 8 Programmable Function/LCD menu keys
- 16-Position Selector Knob with detent feel & mechanical stop
- FleetSync® II, MDC-1200
- Emergency Features
- AES & DES Encryption Module
- VGS-1 Option / Easy Option Port
- IP54/55
- IP67 Immersion Option

Class I Division 2 Groups A & B

TK-2180/3180



Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D

- 136-174 MHz, 5W
- 400-470 MHz, 5W
- 512 CH/128 Zones/512 GID
- 12 Character Alphanumeric LCD
- 6 PF Keys
- Dual Priority Scan
- FleetSync® II
- DTMF & Two-Tone Decode/Encode
- Voice Inversion Scrambler Built-In
- Encryption / ANI Control
- VGS-1 Option / Easy Option Port
- PassPort® NTS Option
- MPT Option
- IP54/55
- 5 / 6 Tone Firmware Available





Class I Division 2 Groups A & B

TK-5210/5310



Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D



- 136-174 MHz, 5W
- 400-470 MHz, 4W
- 100 Zone / 1024 Channels Models
- 32 Zone / 128 Channels Models
- FM Conventional
- P25 Conventional
- P25 Trunked Option
- Basic, 4-Key & 4-Key / DTMF Models
- 16-Character Alphanumeric LCD
- 3 Side PF Keys, Emergency Key
- FleetSync® II, MDC-1200
- Toggle & 3-Position Switches
- DES, AES & OTAR Options
- VGS-1 Option / Easy Option Port
- IP54/55
- IP67 Immersion Option

TK-5410



Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G; Class III, Division 1; Class I, Division 2, Groups A, B, C and D

- 700/800 MHz, 3W
- 1024 Channels, 100 Zones
- P25 Conventional
- P25 Trunked
- 4-Key & 4-Key / DTMF Models
- 16 Character Alphanumeric Aliases
- 16-Position Selector Knob
- 3 Side PF Keys, Emergency Key
- Toggle & 3-Position Switches
- Priority Monitor Scan
- Dual Priority Scan
- Limited Talk Group Scan
- Talk Group ID Lists
- Individual ID Lists
- Caller ID Display
- DTMF Encode
- Emergency Call Features
- AES & DES Encryption Module
- VGS-1 Option / Easy Option Port
- IP54/55
- IP67 Immersion Option



CSA Portable Matrix

Model	A & B Division 1	A & B Division 2*	C & D Division 1	E, F & G Division 1	RF Power Watts	Battery	Chemistry	Capacity	Modes	Band
INTRINSICALLY SAFE PORTABLES: CLASS I, DIVISION 1, GROUPS A&B RATING										
NX-200 & NX-300 Series Portables A&B Division 1 Rating										
NX-200ABP	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	NEXEDGE & Analog	136-174MHz
NX-200ABP2	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	NEXEDGE & Analog	136-174MHz
NX-300ABP2	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	NEXEDGE & Analog	403-470MHz
NX-300ABP4	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	NEXEDGE & Analog	403-470MHz
NX-210 Series Portables A&B Division 1 Rating										
NX-210ABP2	•	•	•	•	2	KNB-66LC	Li-Ion	1,880mAh	NEXEDGE & Analog	136-174MHz
NX-410 & NX-411 Series Portables A&B Division 1 Rating										
NX-410ABP2	•	•	•	•	2	KNB-66LC	Li-Ion	1,880mAh	NEXEDGE & Analog	806-870MHz
NX-411ABP2	•	•	•	•	2	KNB-66LC	Li-Ion	1,880mAh	NEXEDGE & Analog	896-941MHz
TK-5220 & TK-5320 Series Portables A&B Division 1 Rating										
TK-5220ABP	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	P25 & Analog	136-174MHz
TK-5220ABP2	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	P25 & Analog	136-174MHz
TK-5320ABP2	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	P25 & Analog	403-470MHz
TK-5320ABP4	•	•	•	•	2	KNB-61LC	Li-Ion	1,880mAh	P25 & Analog	403-470MHz
NON-INCENDIVE PORTABLES: CLASS I, DIVISION 2, GROUPS A&B RATING										
NX-200 & NX-300 Series Portables										
NX-200ISP	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	NEXEDGE & Analog	136-174MHz
NX-200ISP2	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	NEXEDGE & Analog	136-174MHz
NX-300ISP2	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	NEXEDGE & Analog	403-470MHz
NX-300ISP4	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	NEXEDGE & Analog	403-470MHz
NX-210 Series Portables										
NX-210ISP2**	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	NEXEDGE & Analog	136-174MHz
NX-410 & NX-411 Series Portables										
NX-410ISP2**	-	•	•	•	3	KNB-41NC	NiMH	2,500mAh	NEXEDGE & Analog	806-870MHz
NX-411ISP2**	-	•	•	•	3	KNB-41NC	NiMH	2,500mAh	NEXEDGE & Analog	896-941MHz
TK-2180 & TK-3180 Series Portables										
TK-2180ISP	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	Analog	136-174MHz
TK-2180ISP2	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	Analog	136-174MHz
TK-3180ISP2	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	Analog	403-470MHz
TK-3180ISP4	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	Analog	403-470MHz
TK-5210 & TK-5310 Series Portables										
TK-5210ISP	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	136-174MHz
TK-5210ISP2	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	136-174MHz
TK-5210ISP3	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	136-174MHz
TK-5310ISP4	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	403-470MHz
TK-5310ISP5	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	403-470MHz
TK-5310ISP6	-	•	•	•	5	KNB-41NC	NiMH	2,500mAh	P25 & Analog	403-470MHz
TK-5220 & TK-5320 Series Portables										
TK-5220ISP	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	P25 & Analog	136-174MHz
TK-5220ISP2	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	P25 & Analog	136-174MHz
TK-5320ISP2	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	P25 & Analog	403-470MHz
TK-5320ISP4	-	•	•	•	5	KNB-50NC	NiMH	2,000mAh	P25 & Analog	403-470MHz
TK-5410 Series Portables										
TK-5410ISP2	-	•	•	•	3	KNB-41NC	NiMH	2,500mAh	P25 & Analog	763-869MHz
TK-5410ISP3	-	•	•	•	3	KNB-41NC	NiMH	2,500mAh	P25 & Analog	763-869MHz

Batteries

	KNB-41NC**	KNB-50NC**	KNB-61LC*	KNB-66LC*
	Ni-MH Battery 2500 mAh (I.S.)	Ni-MH Battery 2000 mAh (I.S.)	Li-Ion Battery 1880 mAh (I.S.)	Li-Ion Battery 1880 mAh (I.S.)
				
TK-2180/3180	•	-	-	-
TK-5210/5310/5410	•	-	-	-
NX-200/300, TK-5220/5320	-	•	•	-
NX-210/410/411	•	-	-	•










Approved by CSA as Intrinsically Safe (I.S.) for use in Class I, II & III, Division 1, Groups A, B, C, D, E, F & G and are also approved for Non-Incendive (N.I.) use in Class I, Division 2, Groups A, B, C & D hazardous locations (exception: KMC-47GPS is approved for Class I, II, III, Division 1, Groups C, D, E, F & G). Radios as listed above are approved at -30°C, ** except NX-210/410/411 ISP portables which are approved for -20°C. ABP refers to Intrinsically Safe (I.S.) Class I, Division 1, Groups A&B and ISP refers to Intrinsically Safe (I.S.) Class I, Division 1, Groups C, D, E, F & G and Non-Incendive (N.I.) Class II, Division 2, Groups A, B, C & D.

With the exception of the ABP, ABP2 & ABP4 models above all other portables require a leather case to be used in A & B Division 2 environments. When I.S. and N.I. portables are used with a KMC-47GPS the approval rating is reduced to Class I, II, III, Division 1, Groups C, D, E, F & G.

Using an Intrinsically Safe battery on a radio does not constitute an Intrinsically Safe (I.S.) radio. All Kenwood I.S. radios must be certified at Kenwood by inspection, logging & proper labeling. The appropriate I.S. labor code must be specified (L994) on all I.S. radio orders and the proper model I.S. battery must be used with the radio. Kenwood I.S. batteries can be purchased separately for existing Kenwood certified I.S. radios. Kenwood I.S. radios are approved with Peltor™ 3M™ Communication I.S. Headsets, for additional information please visit your local Authorized Dealer or visit www.csa.ca. Intentionally or inadvertently representing a Kenwood radio as I.S. without proper Kenwood certification can result in serious safety and/or legal liability issues for your company.

 *CSA Radio Class I, Division 1, Groups A&B Certification. **CSA Radio Class I, Division 2, Groups A&B Certification.

Audio Accessories

	KEP-1*	KHS-11BL*	KHS-12BL*	KHS-14*	KHS-15-BH/OH*	V4-10388*	KMC-47GPS**	KMC-41*	KMC-42W*
	3.5mm Earphone Kit	2-Wire Palm Mic. with Earphone	3-Wire Mini Lapel Mic. with Earphone	Lightweight Single Muff Headset	Over-the-Head Heavy Duty Headset	Behind-the-Head w/Earpup PTT	GPS Speaker Microphone	IP-55 Speaker Microphone	IP-67 Speaker Microphone
									
TK-2180/3180	•	•	•	•	•	•	•	•	•
TK-5210/5310/5410	•	•	•	•	•	•	•	•	•
NX-200/300, TK-5220/5320	•	•	•	•	•	•	•	•	•
NX-210/410/411	•	•	•	•	•	•	•	•	•

 *CSA Radio Class I, Division 1, Groups A&B Certification. **CSA Radio Class I, Division 1, Groups C&D Certification.

■ Applicable MIL-STD & IP

MIL Standard	MIL 810C Methods/Procedures	MIL 810D Methods/Procedures	MIL 810E Methods/Procedures	MIL 810F Methods/Procedures	MIL 810G Methods/Procedures
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

■ Ingress Protection

FIRST NUMBER		SECOND NUMBER	
Protection against solid bodies		Protection against liquid	
0	No protection		No protection
1	Objects greater than 50 mm		Vertically dripping water
2	Objects greater than 12 mm		75° to 90° dripping water
3	Objects greater than 2,5 mm		Sprayed water
4	Objects greater than 1 mm		Splashed water
5	Dust-protected		Water jets
6	Dust-tight		Powerful water jets
7			Temporary immersion
8			Continuous immersion



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Specifications are subject to change without notice, due to advancements in technology.

LTR® is a registered trademark of Transcript International.

FleetSync® is a registered trademark of JVC KENWOOD Corporation.

P25 (P25 Tech Interest Group).

CSA is a registered trademark of the Canadian Standards Association.

MPT-1327 is an industry standard for trunked radio communications networks
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Peltor™ 3M™ Communication Headsets are a trademark of 3M™.

NXDN® is a registered trademark of JVC KENWOOD Corporation and Icom Inc.

NEXEDGE® is a registered trademark of JVC KENWOOD Corporation.

KENWOOD

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www.kenwood.ca

