

CITY OF MATTOON, ILLINOIS
SPECIAL CITY COUNCIL AGENDA
November 23, 2010
8:00 A.M.

Pledge of Allegiance

Roll Call

Motion - Permitting electronic attendance by Commissioner Rankin due to employment purposes.

NEW BUSINESS:

- 1. Motion – Adopt Special Ordinance 2010-1416: Approving placement of the annual property and casualty insurance and workers compensation coverage for a term beginning December 1, 2010; and authorizing the Acting Mayor to sign all documents. (Gover)**
- 2. Motion – Adopt Special Ordinance 2010-1417: Authorizing a renewal contract with PersonalCare for the Administration of the self-insured health plan and Delta Dental of Illinois for the Administration of the self-insured dental plan for employees and retirees of the municipality; and authorizing the Acting Mayor to sign all documents. (Gover)**
- 3. Motion – Approve Council Decision Request 2010-1165: Authorizing the Mattoon Fire Department to purchase narrowband radio equipment from Craig Antenna in the amount of \$18,801 in order to be compliant with upcoming Federal mandates. (Hall)**

Adjourn

NEW BUSINESS:

CITY OF MATTOON, ILLINOIS

SPECIAL ORDINANCE NO. 2010-1416

AN ORDINANCE AUTHORIZING PLACEMENT OF THE CITY'S PROPERTY & CASUALTY, AND WORKERS COMPENSATION INSURANCE COVERAGE

WHEREAS, Arthur Gallagher Risk Management Services, Inc., the City's broker of record, solicited proposals from insurance companies that underwrite property, casualty and workers compensation insurance for municipal government exposures; and

WHEREAS, the combination of proposals received from Argonaut Insurance Company for Property, General Liability, Auto Liability, Auto Physical Damage, Excess Liability, Law Enforcement Liability, Public Officials Liability, Employment Practices Liability, Commercial Crime, and Fiduciary Liability, Lawyers E&O, and Volunteers AD&D and the proposals received from the Illinois Public Risk Fund for Workers Compensation. These proposals have been determined to be the most cost effective and secure solutions for managing the City's property & casualty and workers compensation exposures.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Mattoon as follows:

Section 1. The Mayor, City Clerk and Arthur Gallagher Risk Management Services, Inc. are hereby authorized to take such administrative action necessary to bind the City of Mattoon's coverages with Argonaut Insurance Company for Property, General Liability, Auto Liability, Auto Physical Damage, Excess Liability, Law Enforcement Liability, Public Officials Liability, Employment Practices Liability, Commercial Crime, and Fiduciary Liability, Lawyers E&O, and Volunteers AD&D for the policy year beginning December 1, 2010 and ending December 1, 2011 and the proposal received from the Illinois Public Risk Fund for Workers Compensation for the overlap in policy year beginning December 1, 2010 and ending December 15, 2010 and policy year beginning December 15, 2010 and ending December 15, 2011 pursuant to a proposal attached hereto and incorporated herein by reference.

Section 2. This ordinance shall be deemed published as of the day of its adoption and approval by the City Council.

Section 3. This ordinance shall be effective upon its approval as provided by law.

Upon motion by _____, seconded by _____, adopted this _____ day of _____, 2010, by a roll call vote, as follows:

AYES (Names): _____

NAYS (Names): _____
ABSENT (Names): _____

Approved this _____ day of _____, 2010.

Tim Gover, Acting Mayor
City of Mattoon, Coles County, Illinois

ATTEST:

APPROVED AS TO FORM:

Susan J. O'Brien, City Clerk

J. Preston Owen, City Attorney

Recorded in the Municipality's Records on _____, 2010.

Premiums/Fees Comparison: Expiring to Recommended Carriers

Line of Coverage	Travelers Expiring 2009-2010	Option I Travelers	Option I Travelers IPRF	Option II OneBeacon IPRF	Option III Argonaut IPRF
1. Property (including Flood/Earthquake)	\$43,304	\$41,389	\$41,389	\$58,975	\$68,325
2. Equipment Breakdown	6,694	Included	Included	Included	Included
3. Inland Marine	11,916	3,686	3,686	15,469	5,595
4. General Liability	36,836	42,821	42,821	24,863	13,703
5. Automobile Liability	15,699	17,209	17,209	32,050	16,615
6. Auto Physical Damage	6,467	7,196	7,196	Included	11,072
7. Law Enforcement Liability	25,540	23,711	23,711	Included	9,370
8. Public Officials' Liability	5,976	5,560	5,560	41,597	2,093
9. Employment Practices	24,394	6,148	6,148	Included	4,370
10. Employee Benefits Liability	Included	343	343	Included	Included
11. Excess Liability	26,480	32,063	32,063	32,577	17,413
12. Workers' Compensation ⁽¹⁾	528,059	556,533	460,501	460,501	460,501
13. Crime	3,850	4,043	4,043	4,043	4,043
14. Fiduciary Liability	3,400	3,570	3,570	3,570	3,570
15. Employed Lawyers' Liability	1,500	1,500	1,500	1,500	1,500
16. Flood	9,840	9,394	9,394	9,394	9,394
17. Volunteers AD&D	1,730	443	443	443	443
18. Brokerage Fee	23,750	12,000	12,000	12,000	12,000
19. Total Premium	\$775,435	\$767,609	\$671,577	\$696,982	\$640,007
20. Cost Savings		\$7,826	\$103,858	\$78,453	\$135,428

Note: Surplus Lines Taxes, if applicable, are included in the "Bindable Quote and Compensation" pages. These taxes are in addition to the above fees.

⁽¹⁾ The Illinois Public Risk Fund Programs effective date is 12/15/2010. Therefore, the Illinois Public Risk Fund premium above is effective from 12/15/2010 to 12/15/2011. The short-rated premium from 12/1/2010 to 12/15/2010 is \$18,680, and the annual premium effective 12/15/2010 to 12/15/2011 is \$460,501.



Arthur J. Gallagher Risk Management Services, Inc.

CITY OF MATTOON, ILLINOIS

SPECIAL ORDINANCE NO. 2010-1417

AN ORDINANCE AUTHORIZING A RENEWAL AGREEMENT WITH PERSONALCARE INSURANCE OF ILLINOIS FOR THE ADMINISTRATION OF THE SELF-FUNDED MEDICAL AND PHARMACY BENEFIT PLAN AND DELTA DENTAL OF ILLINOIS FOR THE ADMINISTRATION OF THE SELF-FUNDED DENTAL BENEFIT PLAN FOR EMPLOYEES AND RETIREES OF THE MUNICIPALITY

WHEREAS, the City of Mattoon, Illinois employee and retiree group has demonstrated exceptional health insurance experience, and

WHEREAS, this group health insurance history has resulted in favorable renewal premium rates, and

WHEREAS, it is the desire of the Mattoon City Council to maintain and continue the relationship with the Personal Care Insurance of Illinois and Delta Dental plans currently offered through the Checkley Agency to its employees and retirees, and

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF MATTOON, COLES COUNTY, ILLINOIS, as follows:

Section 1. The Acting Mayor is authorized to sign a renewal agreement with PersonalCare Insurance of Illinois, Inc. for the administration of the self-funded medical and pharmacy benefit plan and the Delta Dental plan for employees and retirees of the municipality, copies of which are attached and incorporated by reference.

Section 2. This ordinance shall be deemed published as of the day of its adoption and approval by the City Council.

Section 3. This ordinance shall be effective upon its approval as provided by law.

Upon motion by _____, seconded by _____, adopted this _____ day of _____, 2010, by a roll call vote, as follows:

AYES (Names): _____

NAYS (Names): _____

ABSENT (Names): _____

Approved this _____ day of _____, 2010.

Tim Gover, Acting Mayor
City of Mattoon, Coles County, Illinois

ATTEST:

APPROVED AS TO FORM:

Susan J. O'Brien, City Clerk

J. Preston Owen, City Attorney & Treasurer

Recorded in the Municipality's Records on _____, 2010.

City of Mattoon
 Medical Insurance PersonalCare Renewal
 Calendar Year 2011

75 Single Participants
 191 Family Participants

Specific Deductible	Current		150,000.00 Renewal	175,000.00 Alternate #1	200,000.00 Alternate #2			
Admin Fees	36.76		36.76	36.76	36.76			
Single		2,757.00	2,757.00	2,757.00	2,757.00			
Family		7,021.16	7,021.16	7,021.16	7,021.16			
Stop Loss Agg	4.11		4.30	4.32	4.33			
Single		308.25	322.50	324.00	324.75			
Family		785.01	821.30	825.12	827.03			
Stop Loss Specific								
Single	24.71	1,853.25	26.98	2,023.50	22.50	1,687.50	19.02	1,426.50
Family	59.86	11,433.26	65.37	12,485.67	54.88	10,482.08	46.24	8,831.84
Monthly Totals:		24,157.93	25,431.13	23,096.86	21,188.28			
Annual Totals:		289,895.16	305,173.56	277,162.32	254,259.36			



Renewal Package

for

CITY OF MATTOON

Presented by:

**Deb Ulmer
Account Manager
Delta Dental of Illinois
111 Shuman Boulevard
Naperville, IL 60563**

**Phone 630-718-4936
Fax 630-983-4536
Email dulmer@deltadentalil.com**

This renewal is for January 1, 2011 to December 31, 2011.

Confidentiality Agreement

By accepting this renewal, you agree that all information is confidential and has been provided by Delta Dental of Illinois for your use or that of the specified client only. Therefore, you agree not to disclose any information (except to the specified client, broker, consultant or agent) without the express written permission of Delta Dental of Illinois. It is acknowledged that information to be furnished in this renewal is in all respects confidential in nature, other than information that is available in the public domain through other means. Use or disclosure of information contained in this plan is strictly forbidden without obtaining written consent of Delta Dental of Illinois.

Upon request, this document is to be immediately returned to Delta Dental of Illinois, 111 Shuman Boulevard,, Naperville, IL 60563.

Delta Dental of Illinois
111 Shuman Boulevard
Naperville, IL 60563

**Proposed Renewal
Self Insured**

Delta Dental PPO With Delta Dental Premier "Safety Net"			
	Current Rate	Proposed Rate	Rate Change
Administration Fee	\$4.29	\$4.43	3.3%
	Current Premium Equivalent	Recommended Premium Equivalent	% Change
Single	\$12.28	\$13.82	12.5%
Family	\$41.13	\$46.29	12.5%

Underwriting Assumptions

1. The proposed renewal ASO fees will be in effect from: January 1, 2011 to December 31, 2011.
2. The projection is based on 70 singles and 195 families.

Projected Annual Incurred Claims:	\$105,043
Projected Annual Administration Fee:	\$14,093
Projected Annual Total Cost:	\$119,136

3. All of our standard processing policies, limitations and exclusions apply.
4. During the current experience period of January 1, 2010 to December 31, 2010, CITY OF MATTOON averaged 265 enrollees. If enrollment changes by more than 10% we reserve the right to revise our ASO fees.
5. Please acknowledge your acceptance of these terms and rates by signing below and returning this page. You can fax this letter to 630-983-4536, or mail attn: Deb Ulmer, Delta Dental of Illinois, 111 Shuman Boulevard, Naperville, IL 60563.

If we do not receive notification from you by December 1, 2010, Delta Dental of Illinois will assume you agree to the proposed ASO fees and renew your current dental benefit plan.

AGREED AND ACCEPTED:

CITY OF MATTOON, Contract #10067

By: _____ Date: _____

Title: _____

**City of Mattoon
Council Decision Request**

MEETING DATE: 11/23/2010 CDR NO: 2010-1165

SUBJECT: Purchase of Narrowband Radio equipment

SUBMITTAL DATE: 11/16/2010

SUBMITTED BY: Anthony Nichols, Fire Chief

APPROVED FOR Sue McLaughlin
COUNCIL AGENDA: City Administrator Date of Approval: _____

EXHIBITS: Specification sheets

EXPENDITURE	AMOUNT	FUNDS	CONTINGENCY
ESTIMATE:	BUDGETED:	REMAINING:	FUNDING:
\$18,801.00	\$48,000.00	\$29,199.00	\$ -0-

IF IT IS THE WISH OF THE COUNCIL TO SUPPORT RECOMMENDATIONS CONTAINED IN THIS REPORT, THE FOLLOWING MOTION IS SUGGESTED:

“I move to authorize the Mattoon Fire Department to purchase narrowband radio equipment from Craig Antenna in the amount of \$18,801 in order to be compliant with upcoming Federal mandates.”

SUMMARY OF THE TOPIC FOR WHICH A COUNCIL DECISION IS REQUESTED:

Federal government has mandated that all radios become narrowband compliant by January 2013. By purchasing this radio equipment, the equipment will give us the capability of being wideband and narrowband until such a time when we must convert to narrowband only, (May 2012 is State of Illinois projected date) which will require a simple programming change to the new radio equipment. The narrowband radio equipment consists of 32 portable radios, 2 base radios (station 1 and station 3), 1 mobile truck radio (Engine 23) and a repeater for station 1.

KENWOOD

Listen to the Future

TKR-750/850

VHF/UHF FM Repeater-Base Units

A versatile unit, the TKR-750/850 is a 16-user group conventional repeater, a simplex or full duplex base station or the RF core of a trunking system. Advanced features include DSP audio processing, DTMF over-the-air remote control and programmable Auxiliary I/O's.

CONVENTIONAL REPEATER OPERATION

The TKR-750/850 are "community repeater-ready" with a built-in internal 16 QT/DQT group controller and programmable repeater functions such as CW Transmitter ID, Hang-Timer, Time-Out-Timer and Repeat Enable/Disable Key. The 15W-to-50W (TKR-850: 15W-to-40W) adjustable output power is ideal for on-site low power repeater applications.

CONVENTIONAL OR TRUNKING SYSTEM USE

The TKR-750/850 can serve as the core element of any conventional or trunking repeater system. The internal conventional controller can be used, or an external conventional or trunking logic controller can be easily interfaced for advanced systems.

SIMPLEX OR DUPLEX BASE STATION OPERATION

The TKR-750/850 can be operated in simplex or full-duplex base station mode with up to 16 channels and priority scan. Internal solid state antenna switching is provided for simplex single-antenna base station operation. The accessory connectors provide remote control interface. Also programmable are the six PF function keys, LED indicators, control/warning/alert/power-on tones and tone volume for facilitating any remote site installation.

DTMF OVER-THE-AIR REMOTE CONTROL

All front panel PF Key functions and AUX Input functions can be remotely activated and deactivated over-the-air via DTMF codes (up to 16 digits each) and provide an acknowledgement single tone or custom DTMF transpond code. Also AUX Inputs, upon activation and deactivation will encode unique DTMF codes for monitoring and alarm purposes.

LED DISPLAY & INDICATORS

The enhanced 7-segment/2-character front panel LED provides 2-character alphanumeric channel designator and scan indicator for base station operation, a PLL unlock indicator and a PC program mode status. Front panel dual-color LED's provide Transmit, Busy, Primary/Backup DC Power indications.

BACKUP POWER FEATURES

The Backup Battery Warning Tone transmits an over-the-air 5-second tone after DC supply has switched from "main" to "backup" power. Optionally a reminder Operation Tone can be transmitted while on backup power. These tones can be triggered when either DC power is connected to the "backup" DC input line or when the supplied voltage is lower than the programmed Power Supply Level DC voltage setting.

REPEATER FEATURES

- Full-Duplex Operation
- Built-in 16 QT/DQT Tone/Code Pair Community Repeater Operation
- External Controller Interface
- Conventional or Trunking Controller Compatible
- Repeat Enable/Disable
- 8 CW Transmitter IDs
- Repeat Hold Timer (hang timer)
- Time Out Timer

BASE STATION FEATURES

- 16 Channel
- Simplex or Full Duplex Operation
- Antenna Switch For Simplex/Single Antenna Operation
- Priority Scan
- Remote Control Inputs
- 7-Segment 2-Character Channel & Scan LED
- 2 Character Alphanumeric Channel Designator
- Power/Transmit/Busy LED Indicators
- 6 Lighted PF Keys
- Local Takeover/Remote PF Key
- Channel Up/Down PF Keys
- Volume Control Knob
- Courtesy Tone
- Front Microphone Jack
- Front Panel Speaker
- Voice Encryption Port

GENERAL

- 19" Rack Mount Design
- Primary DC Input Connector
- Auto-Switched Back-up DC Input Connector
- Backup Battery Warning/Operation Tones
- Rear External Speaker Output (4 Watts Audio)
- Rear Test-Speaker-AUX Connector (15-Pin)
- Built-in Cooling Fan (temperature or continuous)
- Programmable AUX Input/Output Functions
- BCD Remote Channel Selection (4 lines)
- Toggle or Momentary Operation on AUX Input Ports
- Pre-Emphasis On/Off Control (at TA AUX input)
- DSP Processed QT/DQT
- DSP Processed Companded Audio
- QT/DQT Squelch-Tail Elimination
- Beep Tones for Control, Warning, Alert & Power On
- Electronic Serial Number (ESN)
- Embedded Message with Password Protection
- High Stability Oscillators (TCXO)
- Windows® 98/2000/Me/XP PC programming & tuning
- Flash Memory



Options

■ KMC-27A

Microphone
(with Noise Canceling)



■ KMC-27B

Microphone



■ KMC-9C

Desktop Microphone



■ KES-5

External Speaker



* Not all accessories may be available, please contact dealers for details.

Specifications

	TKR 750	TKR 850
GENERAL (Measurements made per TIA/EIA-603)		
Frequency Range		
Type 1:	146 ~ 174 MHz	450 ~ 480 MHz
Type 2:	136 ~ 150 MHz	480 ~ 512 MHz
Type 3:	—	400 ~ 430 MHz
Number of Channels	16	
Channel Spacing		
Wide	30, 25 kHz	25 kHz
Narrow	15, 12.5 kHz	12.5 kHz
(PLL channel stepping)	(2.5, 5, 6.25 kHz)	(5, 6.25 kHz)
Operating Voltage	13.6 V DC ±15%	
Current Drain		
Standby	0.8 A	
Standby (w/power save)	0.3 A	
Receive	Operating mode; DC-IN: Backup, FAN: Temp, SAVE: On, DISP: Off	
Transmit/Receive	1.2 A	
Duty Cycle	Less than 12 A	
Frequency Stability	Receive: 100%, Transmit: 100% at 25 watts	
Operating Temperature Range	Less than ±0.0002% (-22° F ~ +140° F)	
Dimensions (W x H x D)	Less than ±0.00015% (-22° F ~ +140° F)	
Weight (net)	-22° F ~ +140° F (-30° C ~ +60° C)	
FCC ID	19 x 3-1/2 x 13-1/3 in. (483 x 88 x 340 mm)	
Type 1:	21.4 lbs. (9.7 kg)	
Type 2:	—	
Type 3:	—	
FCC Compliance		
Type 1:	ALH31103110	ALH31113110
Type 2:	ALH31103120	ALH31113120
Type 3:	—	ALH31113130
IC Certification		
Type 1:	22, 74, 90, 90.210	22, 74, 90, 90.210, 95
Type 2:	90, 90.210	90, 90.210
Type 3:	—	90, 90.210
RECEIVER (Measurements made per TIA/EIA-603)		
Antenna Impedance	50 Ω	
Sensitivity:		
12 dB SINAD	0.35 μV (-116 dBm)	
20 dB Quieting	0.45 μV (-114 dBm)	
Selectivity		
Wide	85dB at ±30 kHz	83 dB at ±25 kHz
Narrow	80 dB at ±15 kHz	75 dB at ±12.5 kHz
Intermodulation		
Wide	77 dB at ±12.5 kHz	
Narrow	80 dB at ±30,60 kHz	78 dB at ±25,50 kHz
Hum & Noise		
Wide	75 dB at ±15,30 kHz	75 dB at ±12.5,25 kHz
Narrow		
Audio Output (Ext. Speaker)	4 W (at 4 Ω, less than 5% distortion)	
Spurious & Image Rejection	90 dB	
Audio Distortion (Ext. Speaker)	Less than 2.5% at 1000 Hz	
Band Spread		
Type 1:	3 MHz	5 MHz
Type 2:	3 MHz	5 MHz
Type 3:	—	3 MHz

	TKR 750	TKR 850
TRANSMITTER (Measurements made per TIA/EIA-603)		
Antenna Impedance	50 Ω	
RF Power Output		
Hi	50 W	40 W
Low	25 W	25 W
	(100% duty at 15-25 W) (100% duty at 15-25 W)	
APC Variable Range	15-50 W	15-40 W
Type of Emission		
Wide	16K0F3E	
Narrow	11K0F3E	
Spurious Response	80 dB	
FM Hum & Noise		
Wide	50 dB	
Narrow	45 dB	
Microphone Impedance	600 Ω	
Audio Distortion	Less than 3% at 1000 Hz	
Band Spread		
Type 1:	28 MHz	30 MHz
Type 2:	14 MHz	32 MHz
Type 3:	—	30 MHz
REPEATER CONTROL (Measurements made per TIA/EIA-603)		
Signaling (simultaneously)		
Max. Number of Tones	16	
QDT Decoder/Encoder		
Tone Frequency	67.0 – 210.7Hz (0.1Hz step)	
Decoder Response Time	250 ms or less	
Squelch Tail Elimination Time	140 to 200 ms	
Encoder Frequency Error	±0.3% or less	
Sensitivity	SINAD 8 dB or less	
DQT Decoder/Encoder		
DQT code	23 bits total: a 3-digit octal number (0 – 7, 12 bits) with error correction (11 bits)	
Decoder Response Time	250 ms or less	
Turn-off Code Transmission Time	140 to 200 ms	
Sensitivity	SINAD 8dB or less	
Time out Timer	Off to 30 min.	
Repeat Hold Time	Off to 10 sec.	
EXTERNAL CONTROL		
CW ID		
Maximum Modulation	Maximum deviation of 40%±10%	
CW Tone Frequency	400Hz to 2000Hz, (default 800Hz)	
Morse Code Speed	5 to 30 words per minute, (default 20WPM)	
Maximum Character Memory	Up to 32 characters (includes space)	
CW Message		
Maximum Character	Up to 32 characters per bank (includes space)	
Number of Banks	8 banks	
Test Tone		
Maximum Modulation	Maximum deviation of 60%	
Test Tone Frequency	300Hz to 3000Hz (default 1000Hz)	

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KENWOOD

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 1-800-TRUNKING (878-6546) Main: (678) 474-4700 Web Site: kenwood.net

Order Administration/Distribution
 P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745



KENWOOD

Listen to the Future

TK-2180/3180

VHF/UHF FM Portable Radios

FleetSync[®]
A KENWOOD

GENERAL FEATURES

- 5 W (136-174 MHz) Models
- 5 W (450-520, 400-470 MHz) Models
- Conventional & LTR[®] Zones
- 12 Character Alphanumeric Aliases
- Backlit Dot Matrix LCD
- 3-Digit Sub-Display
- Function / Status LCD Icons
- RSSI Indicator
- Date & 12/24 Hour Time Clock
- Transmit / Busy / Call Alert / Warn LED
- 4 Front Panel PF keys
- 2 Side PF Keys
- Orange Emergency / AUX Key
- 12-Key DTMF / PF Keypad¹
- 500 mW Audio Power
- Enhanced Kenwood Audio
- Companded Audio
- VOX Ready
- Voice Inversion Scrambler Built-in
- Encryption / ANI Board Control
- Easy Option Port
- VGS-1 Voice Guide / Storage Option
- Emergency Call Features
- Emergency Man-Down Option
- DTMF Encode / Decode²
- Special Alert Tone Patterns³
- Call Key⁴
- Time Out Timer
- Busy Channel Lockout
- LCD Battery Status Indicator
- Low Battery Alert
- Battery Saver
- Weather-sealed ACC Connector
- MIL-Spec Speaker Mic Option
- Windows[®] Programming & Tuning⁵
- Windows[®] Firmware Uploading⁵

- Front Panel Test/Tune
- Cloning
- MIL-STD-810 C/D/E/F
- MIL-STD "Driven-Rain"
- IP-54/55 Water & Dust Intrusion
- Intrinsically Safe Option

CONVENTIONAL ZONES

- 512 Channels / 128 Zones⁶
- QT / DQT
- Two-Tone Decode⁷
- Single / Two-Tone Encode⁷
- Operator Selectable Tone⁷
- Dual Priority Scan
- Single & Multi-Zone Scan
- List Scan

TRUNKED ZONES

- 512 GID / 128 Zones⁶
- Kenwood LTR[®] Features⁸

FleetSync[®]

- FleetSync[®] or FleetSync[®] II⁹
- PTT ID Digital ANI
- Selective Call & Group Call
- Status Messaging
- Emergency Status
- Caller ID Display
- Short Text Messages¹⁰
- Power On/Off Status Messages
- PC Serial Interface

MDC-1200¹¹

- PTT ID Digital ANI
- Caller ID Display
- Emergency Status
- Radio Check
- Radio Inhibit

Two models available:
With or without keypad.
(Not actual size proportion)

Options

<ul style="list-style-type: none"> ■ KNB-33L Li-ion Rechargeable Battery Pack (2000 mAh) ■ KNB-54N Ni-MH Rechargeable Battery Pack (2500 mAh) ■ KNB-41NC Ni-MH Battery Pack Intrinsically Safe (2500 mAh) ■ KSC-32 Tri-Chemistry Rapid Charger ■ VGS-1 Voice Guide & Storage Unit 	<ul style="list-style-type: none"> ■ KRA-22 VHF Helical Antenna ■ KRA-23 UHF Helical Antenna ■ KRA-26 VHF Helical Antenna ■ KRA-27 UHF Whip Antenna ■ KRA-16 VHF Stubby Antenna ■ KRA-17 UHF Stubby Antenna ■ KRA-25 VHF High Gain Antenna 	<ul style="list-style-type: none"> ■ KMC-25 Speaker-Microphone ■ KEP-1 Heavy Duty Earphone ■ KHS-11 2-Wire Palm Mic with Earphone ■ KHS-12 3-Wire Mini Lapel Mic with Earphone 	<ul style="list-style-type: none"> ■ KHS-14 Lightweight Single Muff Headset ■ KHS-15-BH Heavy Duty Behind-the-Head Headset ■ KHS-15-OH Heavy Duty Over-the-Head Headset ■ KBH-10 Low Profile Belt Clip ■ KBH-11 Belt Clip (2.5")
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All accessories and options may not be available in all markets. Contact an authorized Kenwood dealer for details and complete list of all accessories and options.

Specifications

Model	TK-2180	TK-3180
GENERAL		
Frequency Range		
Type 1	136-174 MHz	450-520 MHz
Type 2		400-470 MHz
Number of Channels*		
Zone	Max. 128 per Radio	
Ch/GID	Max. 250 per Zones	
	(Max. 512 [Conv. Ch's + GID's] total per Radio)	
Channel Spacing		
Wide	25, 30 kHz	25 kHz
Narrow	12.5, 15 kHz	12.5 kHz
Battery Voltage	7.5 V DC ± 20 %	
Battery Life (5-5-90 duty cycle, during hi-power)		
with KNB-33L (2000 mAh)	Approx. 11 hours	
with KNB-54N (2500 mAh)	Approx. 14 hours	
Operating Temperature Range	-22 °F ~ +140 °F (-30 °C ~ +60 °C)	
	[+14 °F ~ +140 °F (-10 °C ~ +60 °C) when KNB-32N/33L in use]	
Frequency Stability	±0.00025 % (-22 °F ~ +140 °F)	
Antenna Impedance	50 Ω	
Channel Frequency Spread		
Type 1	38 MHz	70 MHz
Type 2		70 MHz
Dimensions (W x H x D), Projections not included		
Radio Only	2-5/16" x 5-3/8" x 7/8" (58 x 136 x 21.5 mm)	
with KNB-33L	2-5/16" x 5-3/8" x 1-5/16" (58 x 136 x 33 mm)	
with KNB-54N	2-5/16" x 5-3/8" x 1-9/16" (58 x 136 x 39.5 mm)	
Weight (net)		
Radio Only	9.17 oz. (260 g)	
with KNB-33L	14.1 oz. (400 g)	
with KNB-54N	19.75 oz. (560 g)	

Model	TK-2180	TK-3180
GENERAL		
FCC ID		
Type 1	ALH37323110	ALH37333110
Type 2	-	ALH37333120
IC Certification		
Type 1	282D-37323110	-
Type 2	-	282D-37333120
RECEIVER (Measurements made per TIA/EIA-603)		
Sensitivity (12 dB SINAD)		
Wide	0.25 μV	
Narrow	0.28 μV	
Selectivity		
Wide	70 dB	70 dB
Narrow	65 dB	63 dB
Intermodulation Distortion	70 dB (±50, 100 kHz)	
Wide/Narrow	70 dB	
Spurious Response	70 dB	
Audio Output (8 Ω impedance)	500 mW with less than 3 % distortion	
TRANSMITTER (Measurements made per TIA/EIA-603)		
RF Power Output		
High	5 W	5 W
Low	1 W	1 W
Spurious Response	70 dB	
Type of Emission		
Wide	16K0F3E	
Narrow	11K0F3E	
FM Hum & Noise		
Wide	45 dB	
Narrow	40 dB	
Audio Distortion		
Wide/Narrow	3 %	

Kenwood follows a policy of continuous advancement in development. For this reason specifications may be changed without notice.

*Maximum capability depends on the number of programmed Zones and repeater channels. FleetSync® is a registered trademark of Kenwood Corporation. LTR® is a registered trademark of Transcript International.

Applicable MIL-STD & IP

Standard	MIL 810C Methods/Procedures	MIL 810D Methods/Procedures	MIL 810E Methods/Procedures	MIL 810F Methods/Procedures
Low Pressure	500.1/Procedure I	500.2/Procedure I, II	500.3/Procedure I, II	500.4/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
Low Temperature	502.1/Procedure I	502.2/Procedure I, II	502.3/Procedure I, II	502.4/Procedure I, II
Temperature Shock	503.1/Procedure I	503.2/Procedure I	503.3/Procedure I	503.4/Procedure I, II
Solar Radiation	505.1/Procedure I	505.2/Procedure I	505.3/Procedure I	505.4/Procedure I
Rain	506.1/Procedure I, II	506.2/Procedure I, II	506.3/Procedure I, II	506.4/Procedure I, III
Humidity	507.1/Procedure I, II	507.2/Procedure II, III	507.3/Procedure II, III	507.4
Salt Fog	509.1/Procedure I	509.2/Procedure I	509.3/Procedure I	509.4
Dust	510.1/Procedure I	510.2/Procedure I	510.3/Procedure I	510.4/Procedure I, III
Vibration	514.2/Procedure VIII, X	514.3/Procedure I	514.4/Procedure I	514.5/Procedure I
Shock	516.2/Procedure I, II, V	516.3/Procedure I, IV	516.4/Procedure I, IV	516.5/Procedure I, IV
International Protection Standard				
Dust & Water Protection	IP54/55			

Footnotes from Front:

- ¹ Keypad models only.
- ² DTMF includes PTT ID, Emergency ANI, Manual Encode (keypad models), Auto-Dial List (32 numbers 16-Digits each) & Stun.
- ³ Special Alert Tone Patterns operate for 2-Tone, DTMF, FleetSync™ selective call decode.
- ⁴ Call Key: 6 keys max.; operates for 2-Tone, DTMF and FleetSync™ status encode.
- ⁵ KPS-89D required: Windows® 98/NT 2000/ MeXP compatible; English/Spanish screen languages.
- ⁶ Conventional Zones: 512 Channels / 128 Zones max. per radio; 250 CH max. per Zone.
- ⁷ Trunked Zones: 512 GID / 128 Zones max. per radio; 250 GID max. per Zone.
- ⁸ Two-Tone Decode (4 sets x 4 pairs each); Single / Two-Tone Encode (32 tones); Operator Selectable Tone (40 OT:DOT code pairs).
- ⁹ Kenwood LTR Features include: GID Delete/Add, LTR Talk Around / Scan Revert Group Display, System Scan, Group Scan, Auto Search.
- ¹⁰ FleetSync™ & FleetSync™ II are not compatible.
- ¹¹ Short Text Messages are radio stored & LCD displayed.
- ¹² Either MDC-1200 or FleetSync™ can be activated per radio.

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www.kenwood.com



ADS#14610 Printed in USA

KENWOOD

Listen to the Future

TK-7160(H)/8160(H)

Compact VHF/UHF FM Mobile Radios

FleetSync®
KENWOOD

GENERAL FEATURES

- 25 / 50 W (136-174 MHz) Models
- 25 / 45 W (450-490 MHz) Models
- Conventional Zones
- 128 Channels / 128 Zones
- Single Priority Scan
- Single / Multi-Zone Scan
- 8-Character Alphanumeric Aliases
- Backlit LCD & Keys
- Function/Status LCD Icons
- Transmit /Busy / Call Alert LED
- 9 Programmable Function Keys
- Emergency / AUX Key
- Enhanced Kenwood Audio
- Front Panel Speaker
- Companded Audio
- Voice Inversion Scrambler Built-in
- Encryption / ANI Board Control
- Emergency Call Features
- QT / DQT
- Operator Selectable Tone
- Two-Tone Decode
- Single & Two-Tone Encode
- DTMF Encode / Decode¹
- Special Alert Tone Patterns²
- Call Key²
- Busy Channel Lockout
- Time Out Timer
- Timed Power Off
- Accessory Interface Cable Option⁴
- 8 Programmable I/O Ports⁴
- Ignition Sense⁵
- Public Address / Horn Alert Option⁶
- MIL-Spec Standard Mic
- MIL-Spec 12-Key DTMF Mic Option
- Windows® Programming & Tuning⁷
- Front Panel Field-Program Mode
- Cloning
- MIL-STD-810 C/D/E/F

FleetSync®

- PTT ID Digital ANI
- Selective Call & Group Call
- Status Messaging
- Emergency Status
- Caller ID Display
- Input / Output Status Messages
- FleetSync® GPS Ready⁸
- Send GPS PF Key
- PTT ID & Emergency GPS Reporting⁸
- Ignition On/Off GPS Reporting^{5, 8}



Options

<p>■ KMC-35 Microphone (supplied microphone)</p> 	<p>■ KCT-36 3m Extension Cable (for KCT-39)</p> 	<p>■ KES-5 External Speaker (requires KAP-2)</p> 	<p>■ KPS-15 DC Power Supply</p> 
<p>■ KMC-36 Keypad Microphone</p> 	<p>■ KCT-39 Connection Cable</p> 	<p>■ KMB-10 Key Lock Adapter</p> 	<p>■ KDS-100 Mobile Data Terminal (requires KCT-39 option)</p> 
<p>■ KMC-9C Control Station Desktop Microphone</p> 	<p>■ KAP-2 Horn Alert/Public Address Relay Unit</p> 	<p>■ KLF-2 Line Noise Filter</p> 	<p>■ KGP-2A/2B GPS Receiver / Modem Unit (requires KCT-39 option)</p> 
<p>■ KCT-18 Ignition Sense Cable (requires KCT-39 option)</p> 	<p>■ KES-3 External Speaker</p> 	<p>■ KPS-10A DC Power Supply</p> 	

Specifications

All accessories and options may not be available in all markets. Contact an authorized Kenwood dealer for details and complete list of all accessories and options.

Model	TK-7160	TK-7160H	TK-8160	TK-8160H
GENERAL				
Frequency Range	136-174 MHz		450-490 MHz	
Number of Channels	Max. 128 per Radio Max. 128 per Zone			
Channel Spacing	25 kHz, 30 kHz		25 kHz	
Wide	25 kHz, 30 kHz		25 kHz	
Narrow	12.5 kHz, 15 kHz		12.5 kHz	
Operating Voltage	13.6 V DC ± 15 %			
Current Drain				
Standby	0.4 A	0.4 A	0.4 A	0.4 A
Receive	1.0 A	1.0 A	1.0 A	1.0 A
Transmit	8.0 A	14.0 A	8.0 A	14.0 A
Duty Cycle	Transmit: 20 %			
Operating Temperature Range	-22 °F ~ +140 °F (-30 °C ~ +60 °C)			
Frequency Stability	±0.00025 % (-22 °F ~ +140 °F)			
Antenna Impedance	50 Ω			
Channel Frequency Spread	38 MHz		40 MHz	
Dimensions (W x H x D), Projections not included	6-5/16" x 1-11/16" x 5-3/8" (160 mm x 43 mm x 137 mm)			
Weight (net)	2.6 lbs. (1.18 kg)			
FCC ID	K4437663110	K4437663210	K4437673110	K4437673210
IC Certification	282F-37663210		282F-37673210	

* FleetSync® is not compatible with FleetSync® II offered in some Kenwood products.
 ** The 20-pin 160-Series Easy Option Port is not compatible with the Kenwood 26-pin Easy Option Port connector/options.
 The traditional PCB connections are available for wired-in boards not having a 20-pin Easy Option Port connector.
 FleetSync® is a registered trademark of Kenwood Corporation.
 Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.
 All other trademarks are property of their respective owners.

Model	TK-7160	TK-7160H	TK-8160	TK-8160H
RECEIVER (Measurements made per EIA/TIA-603)				
Sensitivity (12dB SINAD)			0.28 µV	
Wide			0.35 µV	
Narrow				
Selectivity			75 dB	
Wide			65 dB	
Narrow				
Intermodulation Distortion			70 dB	
Wide			60 dB	
Narrow				
Spurious Response			75 dB	
Audio Output (4 Ω Impedance)	4 W with less than 5 % distortion			
TRANSMITTER (Measurements made per EIA/TIA-603)				
RF Output Power	5 W / 25 W	25 W / 50 W	5 W / 25 W	25 W / 45 W
Spurious Response	70 dB			
Type of Emission			16K0F3E	
Wide			11K0F3E	
Narrow				
FM Hum & Noise			45 dB	
Wide			40 dB	
Narrow				
Microphone Impedance	600 Ω			
Audio Distortion			3 %	
Wide			5 %	
Narrow				

Kenwood follows a policy of continuous advancement in development.
 For this reason specifications may be changed without notice.

Applicable MIL-STD

Standard	MIL 810C Methods/Procedures	MIL 810D Methods/Procedures	MIL 810E Methods/Procedures	MIL 810F Methods/Procedures
Low Pressure	500.1/Procedure I	500.2/Procedure I, II	500.3/Procedure I, II	500.4/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
Low Temperature	502.1/Procedure I	502.2/Procedure I, II	502.3/Procedure I, II	502.4/Procedure I, II
Temperature Shock	503.1/Procedure I	503.2/Procedure I	503.3/Procedure I	503.4/Procedure I, II
Solar Radiation	505.1/Procedure I	505.2/Procedure I	505.3/Procedure I	505.4/Procedure I
Rain*	506.1/Procedure II	506.2/Procedure II	506.3/Procedure II	506.4/Procedure III
Humidity	507.1/Procedure I, II	507.2/Procedure II, III	507.3/Procedure II, III	507.4
Salt Fog	509.1/Procedure I	509.2/Procedure I	509.3/Procedure I	509.4
Dust	510.1/Procedure I	510.2/Procedure I	510.3/Procedure I	510.4/Procedure I, III
Vibration	514.2/Procedure VIII, X	514.3/Procedure I	514.4/Procedure I	514.5/Procedure I
Shock	516.2/Procedure I, II, III, V	516.3/Procedure I, IV, V	516.4/Procedure I, IV, V	516.5/Procedure I, IV, V

* MILSTD-810 506.X Procedure II "rain drip" specifications are conditional on installed KMC-35/36 microphones and supplied accessory connector covers.

footnotes from front:

- ¹ DTMF includes PTT ID, Emergency ANI, Manual Encode (KMC-36), Auto-Dial (9 numbers) & Stun.
- ² Special Alert Tone Patterns operate for 2-Tone, DTMF, FleetSync® selective call decode.
- ³ Call Key 1 & 2: operates for 2-Tone, DTMF and FleetSync® status encode.
- ⁴ KCT-39 required for 4 CH remote control, ignition sense (KCT-18), KGP-2A/B, KDS-100, data modems, external GPS interface.
- ⁵ KCT-39 & KCT-18 ignition sense cable options required.
- ⁶ KAP-2 required: Horn Alert operates for FleetSync®, 2-Tone or DTMF selective call decode.
- ⁷ KPG-990 program software required: Windows® 98/NT/2000/ MeXP compatible; English/Spanish program screen languages.
- ⁸ FleetSync® GPS features require a KCT-39 and an external GPS receiver with NMEA TTL level serial data output; set Port 1 & 2 (Inputs) to "GPS NMEA."

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