

Brief Introduction

Thank you for buying handheld two-way radio XM-700. The XM-700 provides cost-effective communications totally unlicensed for a variety of business and personal communication solutions. The XM-700 operates on 5 special FCC designated frequencies free for you to use all across the USA.

Please read this manual carefully in order to know how to properly operate the radio before use.

Content

Unpacking and Checking Equipment -----	1
Parts List -----	2
Preparation -----	2
Basic operations -----	3
LCD Icons Instructions -----	4
Channel Information -----	5
Optional Items-----	5
VOX -----	7
Battery -----	7
Emergency Call -----	8
First /Quick Channel -----	9
Information Input-----	9
Power On Setting -----	9
Troubleshooting -----	11
Specification -----	11
Appendix II CTCSS (Hz) -----	11
Appendix III DCS -----	12

Unpacking and Checking Equipment

Welcome to use TEKK radios, before using we suggest you:

- Please check the packing box of this product and see if there are signs of damage.
- Please open the packing box carefully. We recommend that you identify the items listed in the following packing list. if you find that our product and its accessories in handling are lost or damaged during the shipment. Please immediately contact TEKK dealers.

Parts List

Item	Quantity
Rubber Antenna	1
Li-ion Battery Pack	1
Desktop Charger	1
Power Adapter	1
Belt Clip	1
User's Manual	1

Preparation

Charging the Battery

1) Using the battery

The battery is not completely charged at the factory, please charge it before using.

To extend the battery life time, please power off the battery when you don't use two way radio, and save battery in a cool (temperature less than 25°C)and dry place.

2 Precautions of Charging Equipment

1. Do not expose the charger to rain or snow.
2. Do not operate the charger if it has received a sharp blow, or has been dropped or damaged in any way.
3. Do not disassemble the charger if it has received a sharp blow, or has been dropped or damaged in any way.
4. Never alter the AC cord or plug provided with the unit. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician. An improper condition can result in a risk of electric shock.
5. To reduce the risk of damage to the cord or plug, pull the plug rather than the cord when disconnecting the charger from the AC receptacle.
6. To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
7. Use of an attachment not recommended or sold by **TEKK** may result in a risk of fire, electric shock, or personal injury.
8. Make sure the cord is located so it will not be stepped on, tripped over, or subjected to damage or stress.
9. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and/or electric shock. If an extension cord must be used, make sure that:
 - The pins on the plug of the extension cord are the same number, size, and shape as those on the plug of the charger.
 - The extension cord is properly wired and in good electrical condition.
 - The cord size is 18 AWG for lengths up to 100 feet, and 16 AWG for lengths up to

150feet.

10. Do not replace charger's power cord. If the power cord damages, you must stop using charger immediately.

3. Charging the Battery

Please use the battery charger designated by TEKK to charge battery. After purchase or extended storage (more than two months), the first time to charge battery cannot make battery reach its normal operating capacity. After repeating charge /discharge it two or three times, the operating capacity will increase to its normal capacity.

4. Please Charge the Radio According to Operation Steps as Follows:

1. Insert power adapter into power supply socket.
2. Insert output terminal of power adapter into DC jack behind the charging kit, now the charging orange indicator lights about 2 seconds then goes out.
3. Insert the battery or radio equipped with battery into the charging kit.
4. Confirm the battery and charging kit terminal contact reliably, when charging indicator light turns into red and charging starts.
5. After completion of charge (charging time about 5 hours), light turns to be green.

5. Indicators Display As Following:

Status	Indicator
Power Connected	Orange light is on about 2 seconds then goes out
No battery(temperature end judges)	All go out
Charge normally	Red light is on
The battery is fully charged	Green light is on
Fault (over temperature, battery short circuit or over discharge state)	Red light flashes

Note: Before charging, please turn off radio power equipped with battery. When charging, using radio will interfere with normal charge of battery and transceiver effect.

Basic operations

1) Power On/Off

Turn the power switch knob clockwise to turn on radio power; to turn it off ,turn the power switch knob counter-clockwise.

2) Volume Control

Turn the volume switch knob clockwise to increase volume; to decrease the

volume, rotate the volume switch knob counter-clockwise.

3) TX

1. According to different settings of monitor ,please monitor the radio for some while .Ensure there is no radio transmitting at the chosen channel .
2. Press PTT and face to microphone talking .
 - 1) Please make the distance between your lip and microphone at 2.5-5 cm ,and talk as usual to get the best voice quality .
 - 2) Press and hold PTT, LED red light is on .
 - 3) Release PTT to receive information .
3. When using earphone with VOX function ,users can hands-free talking .
4. Also users can active the IVOX function which no need to use earphone .

4) RX

When radio receiving information ,green LED lights .

- 1) Only same signaling and CTCSS setting can receive information .
- 2) May not receive any calling if radio is at lower signal and set high level SQL.
- 3) Local dealer maybe program your radio with CTCSS/DCS . Users can receive the same signaling information if chosen channel with CTCSS/DCS . Or it can not get any calling .

Radio with CTCSS/DCS will help you to ignore ineffective calling. Although there seems special channel for CTCSS/DCS ,radio also can communicate with other radio which programmed the same CTCSS /DCS .

LCD Icons Instruction

	ICON	ILLUSTRATION
1		Key lock
2		CTCSS
3		DCS
4		Battery Gauge Indicator
5		Narrow band

6	LOW	Lower power
7	VOX	VOX
8	PRI	First Scan
9	SCN	Scan
10		Channel No. Menu NO.
11		Signal Level for TX and RX

Program Settings

Channel Information

■ Radio Basic Information

1) Channels

Please choose desired channel number as working channel.

2) Turn On SP

Turn on speaker, you can hear sound from radio when it receives correct signaling .

Function 1

■ Optional Items

■ TOT

This function can prevent users occupied the present channel for long time and limit TX time, meanwhile prevent radio from damage by long time transmitting .

■ Alarm before TOT

You can set an alert tone sounds from the speaker before TOT is cut.

■ Voice Report

Your radio can choose different languages voice report : English ,Chinese ,Off .

■ Beeper of Power On

Choose desired beeper to sound when turn on the radio .

■ SQL

The purpose of the squelch is to mute the speaker when no signals are present. With the squelch level (0-9) correctly set , you will hear sound only while actually receiving signal. The higher the selected squelch level, the stronger the signals must be when receive. The appropriate squelch level depends on ambient RF noise conditions.

■ Key Lock

- 1.By manual :long press the key with lock icon .
- 2.Auto-lock: Set time to active auto-lock .It will be invalid when re-turn on radio .
- 3.Auto-lock + memory : Set time to active auto-lock .It will be valid when turn on radio again.

■ **Tail Elimination**

You can eliminate tail by reversed CTCSS Signal or phases state after ending transmitting with CTCSS signaling .

Item	Description
FRE	Tail elimination by frequency
120FRE	Tail elimination by 120 degree phasing+ Frequency
180FRE	Tail elimination by 180 degree phasing + Frequency
240FRE	Tail elimination by 240 degree phasing + Frequency
OFF	NO tail elimination
120	Tail elimination by 120 degree phasing
180	Tail elimination by 180 degree phasing
240	Tail elimination by 240 degree phasing

■ **Back Light**

- 1.Off: Turn off the LCD back light.
- 2.ON :Turn on LCD back light and keep lighting at certain time.

Duration : choose desired duration for keeping lighting duration .The number after AUTO icon is duration.(Unit: second)

■ **Channel Name Display**

Tick √: Display
Not tick √ : No Display

■ **Beeper**

Turn beeper on/off . If turn off beeper ,key tone and power on tone will not be available .

■ **End-of-Transmission Tone**

Turn End-of-Transmission tone on/off . If enabled ,your two way radio will transmit a tone when you finish transmitting .

■ **Monitor End-of- Transmission Tone**

If enabled this monitor function ,you can hear the indicating sound when finish transmitting.

■ **Decode tail elimination by frequency without CTCSS/DCS decode**

Tail elimination by frequency at channel without CTCSS/DCS decode .

■ **Encode tail elimination by frequency without CTCSS/DCS encode**

Tail elimination by frequency at channel without CTCSS/DCS encode .

- **Key Lock**

Enable the key lock function.

- **UP/DOWN Lock**

Enable UP/DOWN lock function .

VOX

- **VOX level**

Choose your desired VOX level.

- **VOX Level Comparing Value**

You can choose 0-180 branch setting in every VOX level for your radio.

- **VOX Delay Time**

This function helps you to make fluent communication by avoiding quickly back to TX mode without transmitting the last sentence .

- **No VOX During RX**

When radio is receiving , VOX/IVOX are not available .

Battery

- **Battery Save**

The battery saver function decreases the amount of power used when a signal is not being received and no operations are being performed (no keys are being and no switches are being turned). But when your radio receives information first time ,the delay time will be longer .

- **Low Battery Beeper Type**

You can choose the desired beeper for low battery alert.

- **Low Battery Alert**

Set the interval by every low battery alert .

- **APO**

Radio will automatically turn off power if there is no operation within 5 minutes and alarm at interval time before APO .Under APO mode, user can active radio by operating it again.

Off : Turn off APO function

APO Time : Turn on this function and set the time to auto power off as requested .

- **Low Battery Voice Report**

Radio will report low battery status if active this function.

■ **Low Battery Orange Indicator**

Orange indicator lights when TX at low power.

■ **TX Available at Lower Battery**

Set the certain voltage value to enable radio TX at lower battery (if battery lower than certain value ,radio turns off power automatically)

■ **APO at High Voltage**

Radio automatically power off if the voltage higher than pre-set voltage value.

■ **APO at Low Voltage**

Radio automatically power off if the voltage lower than pre-set voltage value.

Function 2

Emergency Call

1) Emergency Call Types

Local Emergency : Alert from radio .

Local Emergency + Remote Emergency: Alert from radio ,same as other radios with same frequency and same signaling .

2) Emergency Duration

Continuous : Keep alerting

Duration : Choose desired duration

3) Remote Emergency TX Duration

Continuous : Keep alerting

Duration: Choose desired duration

4) Remote Emergency RX Duration

Continuous : Keep alerting

Duration :Choose desired duration

5)Emergency Call Circle Duration

Choose desired circle duration to make emergency call.

6) Channel Select

Assigned Channel : Suppose assigned at Channel 3 ,no matter what the present channel is ,alarm always goes from Channel 3.

Present Channel: Suppose present channel is No.5 ,alarm from Channel 5.
Present channel is No.6 ,alarm goes from Channel 6.

7) Emergency Channel NO.

You can select desired channel to make emergency call.

First /Quick Channel

1) First Channel

Your radio can choose desired channel as first channel.

2) Quick Channel

Your radio can choose desired channel as quick channel.

3) First Channel Back Duration

Your radio can choose desired duration to return to first channel.

Information Input

This function allow radio input and store at most 16 letters or numbers , Chinese words. It also can be used to store SN-code, identification for Program ID ,ID and so on .

Power On Settings

1) Display Method

Off: display all functions' icons.

Voltage :only display voltage value.

Display Information : edited by users .

2) Power on Message

Please edit the desired information by program software .

3) Pass word to Power on

Your radio is default to be no password ,Users can freely set.

4) Password to Reset All Settings

Enable this function ,radio will back to pre-set status.

4) Scanning

Press this key to start scanning memorial channels .Press any keys except   to quit

scanning.

5) VOX

You can turn on/off VOX function.

6) Monitor

Your radio can disable/enable monitor CTCSS /DCTCSS, simultaneously will active SQ once receives carrier frequency.

7) Emergency Call

You can make an emergency call by programmed key.

9)First Channel

You can exchange to first channel by pressing programmed key.

10)Quick Channel

You can exchange to quick channel by pressing programmed key.

11) SQ Cancel Function

You can active SQ and keep at SQ status when receiving carrier frequency by shortly pressing programmed key .

13) Instant SQ Cancel

Active this SQ and keep at SQ status when receive carrier frequency by holding this programmed key.

14)1750Hz

Press and hold 1750hz key to transmit, release to receive.

15) Back Light

You can turn on back light by pressing programmed key.

Troubleshooting

Symptom	Try This
No power	<ul style="list-style-type: none">● Battery power may have run out, please update battery or recharge it.● Battery may not be properly installed, please take it off and re-install.
Battery lasts a short time after charge	<ul style="list-style-type: none">● The battery life is over, please replace new battery.

Can not talk to other members of your group.	<ul style="list-style-type: none"> ● Verify transmitting is within effective operating range. ● Verify channel, frequency and code settings are correct.
Hearing other conversation on a channel (not group members')	<ul style="list-style-type: none"> ● Please change code settings, including all two way radio settings of your group.

Appendix II CTCSS (Hz, Supported Non-Standard)

1-67.0	14-103.5	27-159.8	40-199.5
2-69.3	15-107.5	28-162.2	41-203.5
3-71.9	16-110.9	29-165.5	42-206.5
4-74.4	17-114.8	30-167.9	43-210.7
5-77.0	18-118.8	31-171.3	44-218.1
6-79.7	19-123.0	32-173.8	45-225.7
7-82.5	20-127.3	33-177.3	46-229.1
8-85.4	21-131.8	34-179.9	47-233.6
9-88.5	22-136.5	35-183.5	48-241.8
10-91.5	23-141.3	36-186.2	49-250.3
11-94.8	24-146.2	37-189.9	50-254.1
12-97.4	25-151.4	38-192.8	
13-100.0	26-156.7	39-196.6	

Appendix III DCS (Supported Non-Standard)

023	071	143	225	266	356	452	532	664
025	072	145	226	271	364	454	546	703
026	073	152	243	274	365	455	565	712
031	074	155	244	306	371	462	606	723
032	114	156	246	311	411	464	612	731
036	115	162	245	315	412	465	624	732
043	116	165	251	325	413	466	627	734
047	122	172	252	331	423	503	631	743
051	125	174	255	332	431	506	632	754
053	131	205	261	343	432	516	645	
054	132	212	263	346	445	523	654	
065	134	223	265	351	443	526	662	

Keys

Status	Key	Method	Function
1	F1	Short Press	No
2		Long Press	FM Radio on/off
3	F2	Short Press	No
4		Long Press	Reverse frequency on /off
5	F3	Short Press	No
6		Long Press	Key Lock on /off
7	SK1	Short Press	Instant SQ Cancel
8	SK2	Short Press	Back Light On

Specifications

General Specification	
Device Number(D/N)	XM-700
Frequency Range	151.820/151.880/151.940/154.570/154.600MHz
Output Power	≤2w
Channel	5 channels
Channel Spacing	11.25KHz /20KHz
CTCSS/DCS	50 CTCSS / 105 DCS
Antenna Impedance	50 Ohm
Working Temperature	-20°C to +50°C
Working Voltage	DC7.4V
Battery Type	Li-ion battery
Dimension(antenna excluding)	112.5(H)×59(W)×37(D) mm
Weight (include antenna, battery)	About 230 grams

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

Note:” Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.”

Compliance with RF Exposure Standards

XM-700 complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR §§ 1.1307, 1.1310, 2.1091 and 2.1093
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 2.5cm between the radiator & your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

Your Tekk International Inc. 2-way radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) for human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE and ICNIRP exposure limits for general/uncontrolled RF exposure environment at operating duty factors of up to 50% transmitting and is authorized by the FCC for occupational use only. In terms of measuring RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode. Note: The approved batteries supplied with this radio are rated for a 5-5-90 duty factor (5% talk-5% listen - 90% standby), even though this radio complies with the FCC occupational RF exposure limits and may operate at duty factors of up to 50% talk.

Operating Instructions:

- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).
- Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
- When worn on the body, always place the radio in a Tekk International Inc. approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Tekk International Inc. or other manufacturer's non-approved accessories may result in exposure levels, which exceed the FCC's general/uncontrolled environment RF exposure limits.
- If you are not using a body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept at least 2.5 cm (one inch) from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.
- Use only Tekk International Inc. approved supplied or replacement antennas, batteries, and accessories. Use of non-*manufacturer-name* approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.