CF568

User Manual

SHEN ZHEN KINGSUN TECHNOLOGY CO., LTD

Foreword

We are pleased that you have chosen the KingSun CF568 CDMA Product.

Key features:

Ultra-thin fashion appearance

1.8" TFT, 65K color display

MP3/MP4 player

VGA digital camera

Max support 2G T-F card to expand、

WAP2.0/MMS/OTA/LMS

Built-in FM radio

Caution: Handset may get hot when under long time talking or charging, which is caused by the CDMA network specifications.

CONTENTS:

1. SAFETY PRECAUTIONS

IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION. READ THIS INFORMATION BEFORE USING YOUR PHONE.

Charger
USE ONLY KINGSUN ORIGINAL CHARGERS to keep the phone in the best state. Otherwise KingSun will not take the responsibility of the property danger or damages.

Battery
Batteries can cause property damage and/or bodily injury such as burns if a conductive material touch exposed terminals. USE ONLY KINGSUN ORIGINAL BATTERIES. Otherwise KingSun will not take the responsibility of the property danger or damages.

Battery disposal
Do not dispose of the battery pack in a fire. It may explode. Separate the battery from the normal waste Check with local waste management codes for disposal instructions.

Kids
Keep away the Phone and UIM card from Kids. It may cause danger with the bodily injury or may be result in malfunction with the handset.

Aircraft
When instructed to do so, turn off your phone when on board an aircraft. Any use of a phone must be in accordance with applicable regulations per airline crew instructions

Caution
Do not use the phone in the vicinity of volatile gases or blasting operations. Leave the area before using the phone. Obey the signs and instructions. Failure to leave the area can result in the risk of fire or an explosion

Driving

Check the laws and regulations on the use of phones in the area where you drive. Always obey them.

When using your phone while driving, please:

- Give full attention to driving and to the road.
- Use hands free operation, if available.
- Pull off the road and park before making or answering a call if driving conditions so require.

Facilities

Turn off your phone in any facility where posted notices instruct you to do so. These facilities may include hospitals or health care facilities that may be using equipment that is sensitive to external RF energy.

Hot

Do not heat up the batteries or handset when in the damp state. It may be resulted in leaking, hot, exploding or causing the burn.

Back up

Back up your important data between Flash and UIM card.

2. MAINTENANCE

- Do not ear by the handset when in operating the handset. The operation may cause uncomfortable tones.

- Avoid prolonged exposure to temperatures below 5°C or in excess of 35°C.

- Do not disassemble or modify the phone, charger, or battery. Incorrect modifications, reassembly, or tampering may result in malfunction or personal injury. Contact us if you do so.

- Keep the stability of the battery in the camp. Do not shaking the handset.

- Avoid using in under the heavy sun shooting. And keep away from the wet environment.

- Do not store or operate the phone or charger in hot, damp, or dusty areas, which can damage electrical and mechanical components.

- Keep all sharp metal objects (pins, nails, hairpins etc.) away from the phone handset. The handset earpiece contains a strong magnet that can attract and hold metal objects. Remove any objects from the handset earpiece before using, to avoid personal injury.

- Do not charge the battery under the sun and the environment those temperatures below 5°C or in excess of 35°C.

- Your battery or phone may require recycling in accordance with local laws. Contact your local regulatory authorities for more information.

3. PHONE SPECIFICATIONS

Dimensions: 109 X 46 X 13 mm

Weight: 85 g (With battery)

Battery: Li-ion battery (3.7V 800mA)

Charger: Input 220VAC; Output 5.0V DC 500mA

Standby Time: 100~200 hours (Due to the Network)

Charging Time: 2~3 hours

LCD: 1.8   TFT

Talking Time: 3~7 hours (Due to the Network)

4. USER SPECIFICATIONS

4.1 About

Symbols below show the specific limitations:

1. Due to the UIM card.
2. Due to the Network
3. Due to the Network Service Provider.

4.2 Display indicator

1. 信号强度　　　　Shows the CDMA signal strength.
2. 表示没有信号　　Means no CDMA signal or lost signal
3. 表示通话　　　　Indicates the User is under talking state
4. 表示振动模式　　Means the Ring Mode is set to Vibration
5. 表示静音模式　　Means the Ring Mode is set to Silent
6. 表示普通模式　　Means the Ring Mode is set to General
7. 表示电池电量　　Indicates the battery capability
8. 表示新信息　　　Indicates a new message
9. 表示信息已满　　Message flow indicates
10. 表示闹铃　　　　Indicates the Alarm function is active
11. 在耳机模式下，自动接听　　Means the earphone is attached and auto answer the call.
12. 表示户外模式　　Means the Ring Mode is set to Outdoor.

4.3 Key pad definitions

Details refer to the actual product.
1. Receiver
2. LCD displayer
3. L-Soft key
4. R-Soft key
5. Talk key
6. Power/End key
7. Navigation key
8. OK key
9. Digital key

Speaker/Camera/ Battery cap/ Top/ Bottom/ Mic /USB Connector

1. [L-Soft] key ：Performance the specific function lays on the left bottom of the LCD displayer.
2. [R-Soft] key ：Performance the specific function lays on the right bottom of the LCD displayer.
3. [OK] key: Active the selected functions.
4. [Navigation] key: Scroll the high light items or play short cut functions in the idle state.
5. [Talk] key: Make out going calls / Receive the incoming calls.
   Active the call log list in idle state.
6. [End] key: Hung up the call / back to the idle state. Long press to power On/Off the handset.
7. [Digital] key: Key to input the related numbers/ symbols/ characters.
8. [*] key: Performance the related specific functions. Long press to lock the keypad.
9. [#] key: Performance the related specific functions.

Notes: In this manual, "Press the key" means to release the key after you press it; "Long press" means to press the key for over 2 seconds before releasing it

4.4 Earphone

Please insert the earphone to auto active the earphone function.

Pictures display in this guide are for demonstration only and may differ slightly from the actual product displays. KingSun reserves the right to make changes and improvements.

5. GETTING STARTED

5.1 Battery

Please use the battery authenticated by KingSun.

5.1.1 Battery install / uninstall / charge
Install:

- Push the battery into the container
- Cover the battery cap

Uninstall:

- Power off the handset, open the back cover as shown (Fig.1)
- Take out the battery (Fig.2)

Charge:

- Connect the charger adapter to the handset via the USB connector. (Fig.3)

- Connect the charger with the AC power supplier

- The handset will flash the charging animations when in power off state and refresh the battery bar when in standby mode.

Notes:
-The assembly battery can be used when you get it, and please completely charge it for 3 times.
-It will cost 3~4 hours to charge the battery, and we suggest you to charge the new battery for 12 hours as to get higher performance.
-When the battery is being charged, it is normal that your charger and phone become warm to touch.
-Pull out the charge when in charging completely state.

5.2 Insert the UIM card

Please insert the validated UIM card with your personal information from the Network operator before using it.

Keep the card away from the electronic or magnetic field.

Make sure you have power off the handset, Slide the UIM card under the retention strap to insert it into the card slot as shown above:

5.3 Power ON/OFF

Power ON

Long press the () key, it will enter the idle state after flashing the power on animation.

Power OFF

Long press the () key, it will power off after flashing the power off animation.

Please input the PIN code when have set the PIN protection as ON.

5.4 Customize the personalities.

5.4.1. Language
You can set the language via the language menu.

5.4.2 Silent mode
Long press [#] to access the silent mode when in idle state.

5.4.3 Keypad lock / unlock
Long press [*] to lock the keypad and group send the [Unlock]+[*] key to unlock the keypad.

6. CALL

6.1 Make out going call

6.1.1   Input the calling number in Idle state.
6.1.2   Long press [0] to input [+], repeat press [*] to switch between [*]/P/T.
6.1.3   Press [Talk] key to start the call.
6.1.4   Press [End] key to end the call.

6.2 Calls from call log

6.2.1   Press [Talk] key when in Idle state to enter the call log list.
6.2.2   Roll & select an item, press [Talk] to active the call.

6.3 Calls from the contacts

Select a contact from the list & press [Talk] to active the out going call.

6.4 Calls from speed dial

-Active the function from the follow path: Setting→Call→Speed dialing.
-Assign the contact to the speed dial number, and input the related number in the Idle state,
press the [Talk] key to make the out going call.
Notes: Only support flash contact.

6.5 Receive an incoming call

- Press the [Talk] key can access into the talking state when incoming a new call.

6.6 View the missed calls

There will be missed calls display if you have lost getting the call.

6.6.1   Press [OK] to display the missed call list.

6.6.2   Press [Back] to idle state.

6.7 Call functions

List the call functions as bellow:

6.7.1   Adjust the talking volume

6.7.2   Call waiting (Support by the network)

6.7.3   Three part call.(Support by the network)

6.7.4   Call options

Select the Option item to active the call function

- Handsfree
- Mute
- New call
- End all calls
- Send DTMF
- Contacts
- Messages
- Log
-

7. INPUT METHOD

CF588 supports Symbol, Digit, English and Intelligent English input method, in order to provide easy input for letters, symbols and digits in the text editing mode.

7.1 Switch input method

In text-editing mode, you can press [#] to switch between input methods. The current input method indicator will be displayed at the higher right side of the screen.

7.2 ABC/abc input method

Switch the input method to English ABC/abc
- Press the key to enter the corresponding letter labeled on the respective key. To input a letter, press the corresponding key repeatedly until the letter appears.
- After you have entered the intended letter, press any other key on the keypad to input the next letter. If the next letter and current letters share the same key, simply wait for two second to input again.
-Press [0] to insert space key.
-Press [*] to enter the symbols list
-Long press [*] to group entering the symbols like: http:// .com/ .com.cn /.net/.cn
-Press [Clear] to cleat the previous input.

7.3 Intelligent English

Switch the input method to Intelligent English
- To enter words, press digit key one time for the letters labeled on the respective key; a word matching the input letters will be displayed automatically.
- Select a word via scrolling up/down.
- Enter the selected word: Press the left soft key to confirm the selected word and to remove the underline.

7.4 Digit

Switch to digit input method;
To enter digits, press the corresponding number keys.

8. MESSAGE

This function provides you to send, receive and store the SMS/MMS.

8.1 SMS

8.1.1 New messages
Edit new messages and send to the receptors.

-Edit the messages in the text area

-Select the options to insert quick text/ number/contact/smiley/

-Custom the emergency and delivery report settings.

-Input the terminal numbers, and you have also active the group sending features.

-Press [OK] to send the message.

Note: Please active this function via the local service provider before you start.

8.1.2 Inbox
Inbox stores the incoming SMS news.

It will vibrate or play message tone when incoming a new message

Select to view the details.

Select options to active the detail features as bellow:

-Reply SMS   Reply the SMS to the sender

-Reply MMS   Reply the sender as MMS type.

-Call back   Call back to the sender

-Erase   Delete the SMS

-Use detail   Pick up the details like number, email address etc.

-Move   Move the message to the archive box

-Forward   Forward the original message to another receptor

-Lock/Unlock   Lock or unlock the message, locked message will be protect from deleting.

-Copy to UIM / Flash   Copy the message to UIM/Flash\

-Mark   Mark and high light the item.

-Mark all   Mark all the items.

-Detail info   Display the details about the message

8.1.3 Sent box
Sent box stores the successfully sending messages.

Select options to active the detail features as bellow:

-Erase   Delete the SMS

-Resend   Resend the SMS again

-Forward   Forward the original message to another receptor

-Move   Move the message to the archive box

-Lock/Unlock   Lock or unlock the message, locked message will be protect from deleting.

-Use Detail   Pick up the details like number, email address etc

-Copy to UIM/Flash   Copy the message to UIM/Flash

-Mark   Select the specific items

-Mark all   Select all the items

-Detail info   Display the details about the message

8.1.4 Out box
Store the messages that sending failed.

Details refer to the sent box functions.

8.1.5 Draft box
Store the un-completely messages, you can re-edit the content and send again.

8.1.6 Archive box
Provide to store some classic & important messages.

8.1.7 Quick-text
We provide you 10 quick common texts for your needs, and you can edit for 20 more as self-design.

8.1.8 Erase messages
Delete the messages in the related box or delete all the messages.

8.1.9 Voice mail
The function need to support by the Network Service Provider.

8.1.10 Message settings
Custom the message options as bellow selections:

Send options

        -Priority

        - Validity

        -Delivery report setting

        -Save sent message

        -Call back number

Signature setting

Other Settings

-

8.1.11 Memory state
You can check all the memory status via this function.

8.2 MMS

Note: Please active this function via the local service provider before you start.

8.2.1 Create new MMS

You can customize the follow options in the MMS edit screen.

-Recipients

-CC

-BCC

-Subject

-MMS content

You can add audio / video / image and also insert a new page.

Select send / save / exit when gets finished.

8.2.2 Inbox

We provide the follow options:

-View the MMS contents: Check the MMS content

-Reply as SMS: Reply the sender as SMS type

-Reply as MMS: Reply the sender as MMS type

-Reply all: Reply MMS to all the senders.

-Forward: Forward the MMS to a new recipient.

-Call: Make a out going call to the sender.

-Erase: Delete the MMS

-Pick up: Pick up the number information.

-Pick up objects: Pick up the detail information in the MMS content.

-Details info: View the details of the MMS

8.2.3 Sent box

Save the sent MMS contents, and detail options please refers to the inbox.

8.2.4 Draft box

Save the un-finished / on-edited MMS contents, you can send them again.

8.2.5 Out box

Save the fail sending MMS contents, you can send them again.

8.2.6 Delete all

This function provides you to delete the specific box or delete all the messages.

8.2.7 MMS settings

We provide you the options as follow:

1. Receive setting
2. Send setting
3. Server setting
4. Memory status
5. Resume default setting

Notes: The detail configurations please contact your network provider.

9. CALL LOG

Your phone records missed, received and dialed calls as well as their call durations.

There is 150 items as maximum including missed, received and dialed calls records.
Detail options list as bellow:

-Time of call   List the last 5 call durations

-Send message   Send message to the regarding phone number.

-Use number   Pick the number to the idle dial list.

-Save   Save the record to the new contact list

-Add to contact   Save the record to the contact list

-Delete   Delete the selected call log record.

-Call   Make an original call to the related number.

9.1 Missed call

This function enables you to check the details of the missed calls.
Display the caller name if that is existed in the phone book.

9.2 Received call

This function enables you to check the details of the received calls.
Display the caller name if that is existed in the phone book.

9.3 Dialed call

This function enables you to check the details of the dialed calls.
Display the caller name if that is existed in the phone book.

9.4 Delete recent call

This function enables you to delete the call logs.

9.5 Call duration

This option enables you to view the approximate duration of the last call and also the total time.

-Last call duration:　　　　　You can check the last call's duration through this option.

-Dialed call duration:　　　　You can check the all the dialed call's duration through this option.

-Received call duration:　　You can check the all the received call's duration through this option.

-All call duration:　　　　　You can check the all call's duration through this option.

-Clear timers:　　　　　　　Click to reset all the time durations.

Note: The real time maybe a bit different with the service provider. That's according to the actually count rate.

9.6 Message log

You can check the message log through this function.

10. SETTINGS

From this submenu, you can perform various phone settings.

10.1 Screen display

-Wallpaper   Select and setting your favorite wallpaper.
-Backlight   Customize the backlight time.

10.2 Time and date

This option enables you to set the phone's date and time.

10.3 Call setting

-Any key answer   Any key will answer the incoming call when active this function.
-Speed dialing   Enable/ disable the speed dial function.
-International prefix   Setting and edit the international prefix.
-Voice privacy   Enable/ disable the voice privacy function.
-Roam call alert   Enable to alert when in roaming state.
-Network service
        Call divert
        Call waiting
        Voice call first
        CNR
-Answer machine enable   Enable/disable the answer machine function
-Call restrictions   Enable & edit to restrict the user defined calls.

10.4 Phone setting

-Language   This option enables you to select the language of the phone's text display.
-Memory Status   You can check the memory status via this option.
-Automatic key guard   Enable/disable the auto keypad lock function.
-DTMF tones   Set the DTMF modes
-Welcome   Provide to self-design the welcome displays.

-Power On/Off volume   Adjust the power On/Off volume

-Airplane mode   Enable/disable the RF module

-Schedule power on/off   This option provides you to set the time to auto power on / off.

10.5 Security

This password protected option enables you to set the security level to protect your phone from unauthorized use.

Before accessing this option, you will be prompted to enter the user definable security code.

Input the security code and press[ok] key. If correct, the following options will be available

Note: The initial default security code is "12345"

The regarding option are:

-Lock phone   Enable to lock/unlock the phone

-Change lock code   Change the lock code

-PIN management   This option enables you to protect or change the PIN code.

Note: If you input the incorrect PIN code for three times, PIN card will be locked. PUK code will be needed to unlock the PIN. And if failed for 10 times, the card will be invalid.

-Reset to default   This option enables you reset the settings as default.

11. CONTACTS

This function provides you to quick search, add and delete contact information.

11.1 Names

-Details   View the details of the contact
-Search   Support   letters matching search.
-Add new contact   Add new contact to the flash/UIM
-Delete contact   Delete the selected contact.
-Move contact   Move the contact to a new location
-Copy contact   Copy the contact to the other location
-Mark   Mark the select contacts
-Mark all   Mark all the contacts

11.2 Settings

This option provides you to set the save location of the contacts, and options list as bellow:
-Memory in use   Customize the saving location
-Memory status   Check the memory status.

11.3 Groups

Create and customize the groups to share the specific design ring tones and images.

11.4 My numbers

- Check and edit the own phone numbers of UIM

11.5 Speed dials

- Enable / disable the speed dials
- Assign / modify speed dials
Notes: Only contact in flash can be set as speed dials.

11.6 Delete all contacts

-This option will delete all the contacts in flash or UIM

11.7 Move contacts

-This function moves the contacts between flash and UIM

11.8 Copy contacts

-This function copies the contacts between flash and UIM

12.PROFILES

This submenu enables you to customize the phone's ring settings to suit a variety of environments.

We provide six modes:

12.1 General

12.2 Silent

12.3 Meeting

12.4 Outdoor

12.5 My style 1

12.6 My style 2

-
You can customize the following configurations in the each style (expect silent):

-Incoming call alert
-Ring tone
-Ringing volume
-Vibrating alert
-Message alert tone
-Key pad tones
-Warning tones

13. APPLICATIONS

13.1 MP3 player

CF588 only supports audio as mp3 format.
- Play list :   Add new play list items from the TF card. Options refer to the player guider.
- EQ setting: We provider you the follow EQ modes:
  DBB
  Rock
  Jazz
  Pop
  Live

13.2 Mp4 player

This function provides you mp4 player.

- Play list: Add new play list items from the TF card. Options refer to the player guider.

Notes: CF588 only supports specific mp4 format. User needs to make the mp4 file via the convert tool. Please visit our website: www.szkingsun.com to download the tool and guider.

13.3 Games

13.3.1 Kongming chess

- Start game   Start the new game
- Resume game   Resume the previous game
- Select game   Select the game start level
- Instructions   Game instructions

13.3.2 Memory game

- Level   Select the game level
- Last view   Check the last view.
- Continue   Continue the last game.
- New game   Start a new memory game
- Top score   Check the top score of the game history
- Instructions   Game instructions

13.4 FM radio

This function provides you to joy the FM music journey. Please insert the FM earphone to active the FM radio.

- Switch off   Switch off the FM radio
- Edit channels   Edit the channels as your favorite.
- Auto scanning   Auto scanning the channels to select a new one.
- Reset all   Reset all the settings and back to default setting.

13.5 WAP

Notes: We provide you to access the data service via the WAP function. Please ask your network provider for the detail configurations.

- Home   Access to your default home page
- Add bookmark   Add your current website as bookmark
- Favorites   Set the website as favorites.
- History   The visit list will be saved as in history
- Push message   This box store the push messages.
- Reload   Re-load the web information.
- Go to URL   Direct access to the current URL.
- Show URL   Show the current URL.
- Advanced   Provides settings of the WAP.
- About   Display the WAP version.
- Exit   Exit the WAP.

13.6 Camera

This function enable you to active the camera, you can capture and save the images.

The photo images will save in the TF card.

13.7 Media data

This function provides you to create, edit, delete the files as you wanted.

14. ORGANISER

This submenu provides you world clock, calendar and alarm functions.

14.1 Alarm

This function enables you to set the alarm for a specified time. We provide four alarms to suitable your needs.

-Alarm time: The active time of the alarm.

-Repeat alarm: This function enables you to set alarm repetition days

Alarm Tone: This function enables you to customize the alarm tone that you intend.

Snooze time-out: This function enables you to set the snooze time-out.

14.2 Calendar

This function enables you to view the calendar as your intended.

After accessing this option, you can check the lunar calendar as your desired day.

14.3 Scratchpad

-This function provides you a note book feature.

14.4 U-Disk

This function provides you to start the U-disk function

- Make sure you have inserted the TF card.

- Connect the handset with PC via the data cable.

- Press to active the U-disk function

Notes: Maximum to support 2G T-F card.

14.5 Calculator

-This function enables you to add, subtract, multiply and divide.

14.6 Stopwatch.

- This function provides you a stopwatch to simulate a timer.

14.7 World clock

-[Left]/[Right] to select the cities, and the time zone will be changed.
-Select a time zone and set as default.

15. UTK

UTK function is supports by the network service provider, and details please contact with the official service center.

10. MEDIA DATA

This document includes folders such as Musics / Graphics /   My Video / Downloads.
You can check the details, sort, add folder and view the memory status via this function.

10.1 Musics

This folder includes the alert tones and ring tones files

10.2 Graphics

This folder includes wallpaper images.

10.3 My video

This folder contains video files.

10.4 Downloads

This folder contains files download from the WAP.

16. TROUBLESHOOTING

When using this phone, if you run into malfunctions, please refer to the following troubleshooting techniques before requesting help:

Symptom	Diagnosis	Solution
The phone can not be switch on	Have you pressed [Power] and held it for more than 2 seconds?	Press and hold [Power] for more than 2 seconds.
	Is the battery connector reversed?	Insert the connector correctly.
	Is the battery low?	Charge the battery.
Cannot make calls	Is the phone outside of the service area?	Move into the service area for better signal strength.
	Is the phone number correct?	Enter the correct number to make the call.
	Is the phone out of service?	Charge to keep the phone under service.
Strong interference noise during call; or call interrupted	Is there an obstacle nearby that is preventing signals from passing?	Move to another area.
	Is the call under the high speed moving state?	Slow down or keep static talking.
The battery cannot be charged (The battery indicator bar does not scroll)	Is the charger properly connected to the phone?	Connect the charger and phone correctly.
	Is the charge connected to a 220V AC wall outlet?	Connect the charger to a 220V AC wall outlet correctly.

The items list as bellow will affect to the handset's standby time.

-In signal weak area, high/low temperature or out of the service area.

-Weak signal, high speed or lose signal will cause the handset to search the CS or hand over to a new CS.

-Long talking.

-Frequently using the SMS or Game functions.

-Activate the alarm or backlight.

-The highest ring tone.

-Frequently calls.

-PS will recharge when in battery full state and with the adapter connected.

17. RF Exposure Information

  The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types W200 (FCC ID: X2EW200) has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use at the ear is 0.821 W/kg and when properly worn on the body is 0.625 W/kg. This device was tested for typical body-worn operations with the back of the handset kept 1.5cm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a 1.5cm separation distance between the user's body and the back of the handset. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

  This device complies with part 15 of the FCC rules. 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: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

  NOTE: 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