

## ■ Troubleshooting

Problem	Solution
The transceiver does not work when switched on.	The battery is low. Please recharge the battery pack and make sure the battery pack is properly fitted or insert a fresh battery, refit it if necessary. Swap the battery onto another radio to check if one is available.
The battery runs out in a short time.	The battery is no longer in good condition and needs to be replaced with a new one.
The radio can't communicate with other units in the same user group.	The radio is out of usable range, is not on the same channel, is not of the same model type, or the CTCSS/DCS/CC Code/Group ID settings and/or frequencies are incorrect and do not match. Please re-set it.
The radio receives unwanted transmissions from other radio users.	Change the channel of all the radios in the required group to a quiet channel, or change CTCSS/DCS of all the radio in the required group.

## ■ Maintenance and Cleaning

Do not carry the transceiver by the antenna or attached audio accessories. Always turn the transceiver OFF when attaching or detaching audio accessories. Clean the buttons, control knob and radio body with a dry cloth when it has been unused for a long time or becomes dirty.

General	
Frequency range	400-470MHz EN / 400-480MHz USA
Channel capacity	32CH
Channel Zone	2
Operating voltage	7.4V DC $\pm 10\%$
Battery capacity	Li-Ion battery 2000mAh 20 hours according to 5-5-90
Operating temperature Frequency stability	0°C to + 40°C $\pm 1\text{ppm}$ (-20°C to + 60°C)
Antenna impedance	50 $\Omega$
Dimensions	53x28x116mm (exclude projection)
Weight	about 265g (including battery and antenna)

Transmitting	
RF power output	$\leq 5\text{W}$
4SK Modulation	7K60FXD for Data Only; 7K60FXW for Data and Voice
Adjacent channel power	$\leq -60\text{dB}(\pm 12.5\text{KHz})$
Spurious RF sponderance	-36dBm $\leq 1\text{GHz}$ -30dBm $\geq 1\text{GHz}$
Frequency response	+1~ 3dB
Audio distortion	$\leq 5\%$
Vocoder	AMBE+2™

Receiving	
Frequency sensitivity	5% BER:0.25 $\mu\text{V}$
Audio distortion	$\leq 5\%$
Spurious restraint	$\geq -8\text{ dB}$
Adjacent-channel selectivity	$\geq 55\text{ dB}$
Inter-modulation distortion	$\geq 55\text{ dB}$
Frequency response	+1~ 3dB
Jam-up	$\geq 85\text{ dB}$

## Sub-tone Table

### 50 Groups CTCSS

67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1
69.3	88.5	110.9	141.3	167.9	189.9	218.1	
71.9	91.5	114.8	146.2	171.3	192.8	225.7	
74.4	94.8	118.8	151.4	173.8	196.6	229.1	
77.0	97.4	123.0	156.7	177.3	199.5	233.6	
79.7	100.0	127.3	159.8	179.9	203.5	241.8	
82.5	103.5	131.8	162.2	183.5	206.5	250.3	

### 110 Groups DCS(N/I)

017	053	122	165	246	311	371	455	546	664
023	054	125	172	251	315	411	462	565	703
025	065	131	174	252	325	412	464	606	712
026	071	132	205	255	331	413	465	612	723
031	072	134	212	261	332	423	466	624	731
032	073	143	223	263	343	431	503	627	732
036	074	145	225	265	346	432	506	631	734
043	077	152	226	266	351	445	516	632	743
047	114	155	243	271	356	446	523	645	754
050	115	156	244	274	364	452	526	654	760
051	116	162	245	306	365	454	532	662	765

**Noted: Only valid in Analog Mode**

## Warranty and Service

Quanzhou SFE Electronic Technology Co.,Ltd warrants against defects in material or workmanship, for a period of 18 months for radio body, and for a period of 6 months for batteries and accessories, from the date of original purchase. This warranty is limited to repair or replacement of defective parts only and is not valid if the equipment has been tampered with, misused or damaged.

This manual is special for transceiver SD530/SD360/SD300/SD330/SD350/SD580/SD590/SD600/SD660/SD690.

Use this SD530 Digital Portable radio in the environment with temperature between 0-40°C, otherwise, it may damage your Digital portable radio. It can be operating under 2000m. Hereby, Quanzhou SFE Electronic technology Co.,Ltd. declare that the radio equipment type SD850 Digital portable radio is compliance with Directive 2014/53/EU.

For safe operating, the antenna for the product shall be least 25 mm away from your face and 0 mm from your body with belt clip.

The product supplied by Li-ion battery and charged from approved travel Charger.



## WARNING

**WARNING!** Read this information before using the radio. In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters.

Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of the radio complies with the FCC guidelines and these international standards.

Never allow children to operate the radio without adult supervision and the knowledge of the following guidelines.

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

For a transmitter that can only be operated with an FCC license, warnings concerning compliance with applicable licensing requirements and information concerning license application procedures.

Our radio generates RF electromagnetic energy during transmit mode.

This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards.

This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, our radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

---IEEE Std. 1528:2013 and KDB447498, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

---American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

---American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields-RF and Microwave.

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.

### Electromagnetic Interference/Compatibility

During transmissions, our radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

### Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

### Attention:

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC for occupational use only. An appropriate warning label is affixed to all units. In order to comply with RF exposure requirements, a minimum distance of 2.5cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip) a minimum distance of 0 mm. Do not use this device when antenna shows obvious damages.

This product is in compliance with FCC RF Exposure requirements and refers to FCC website

<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> search for FCC ID: 2AYFQ-SD530K to gain further information include SAR Values.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.**

## WARNING

**WARNING!** It is up to the user to properly operate this radio transmitter to insure safe operation. Please adhere to the following:

Use only the supplied or an approved antenna (max gain 2.15dBi). Unauthorized antennas, modifications, or attachments could impair call quality, damage the radio, or result in violation of FCC regulations.

If a damaged antenna comes into contact with the skin, a minor burn may result. Please contact your local dealer for a replacement antenna.

### ■ FCC Compliance Statements:

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:** 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.

### ■ Licensing Information

Use of our radio in the USA is subject to the rules & regulations of the FCC. Changes or modifications not expressly approved by us may void the user authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

**Note:** Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

**Important:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. Your radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the radio to exceed those limitations. Any adjustments to your radio must be made by qualified technicians.