

# UV-3R FAQ

Version 2011-10-12

An amazing user community collaboration project..



# Table of Contents

GENERAL.....	4
What is the Baofeng UV-3R?.....	4
What is the Baofeng UV-3R Mark II?.....	4
How much does UV-3R cost?.....	4
Where can I buy UV-3R?.....	5
What warranty is offered?.....	5
How long does it take to get it (from Hong Kong)?.....	5
What is in the UV-3R box?.....	5
What are the differences between UV-3R, UV-100 and UV-200?.....	6
Are there clones/similar devices?.....	6
12 vs 18 menu settings?!.....	6
How do I reset the radio to factory settings?.....	6
Is there a display protective film?.....	6
Colors. Are they painted or mass coloured?.....	7
Battery pack, possible replacement type?.....	7
How long does it take to charge the battery?.....	7
Battery care and charging.....	7
ANTENNA.....	8
What is the antenna connector type?.....	8
Which dual-band antenna can I buy?.....	8
Is the SRH805 antenna any good?.....	8
MEMORIES.....	9
How do I manually program memories?.....	9
How does the programming software work?.....	10
Programming does not work. Help!.....	11
Can I use the programming software without the radio?.....	11
Software Install - Mark II Upgrade.....	12
How do I delete a memory channel?.....	12
How do I skip memories during scanning?.....	12
Does Dual-Watch work during scanning?.....	12
How do I set alphanumeric tags to memories?.....	12
How do I get 99 memories?.....	12
Can I operate on AMSAT/LEO satellites?.....	12
Can I operate cross-band?.....	13
Can I copy a memory to VFO?.....	13
How does the LED torch work?.....	13
FEATURES.....	14
What is the transmit frequency range?.....	14
What is wide/narrow setting?.....	14
What does RelayM do?.....	14

What does the Save function do?.....	14
How can I do “reverse” on a repeater?.....	14
How do I generate DTMF tones?.....	15
How do I set frequency scan limits?.....	15
Squelch Settings.....	15
Can I use the UV-3R while the charger is connected?.....	15
Can I use the programming cable to remote control UV-3R?.....	15
Can I update the firmware with the programming cable?.....	15
Can I use Yaesu programming cables?.....	15
FM radio reception gets interrupted with VHF/UHF signal.....	16
TIPS&TRICKS.....	17
KNOWN PROBLEMS (and fixes), MODS.....	18
The Usual Disclaimer.....	18
Low power on VHF “low” setting.....	18
How to increase output power?.....	18
VHF second harmonics.....	18
Loud volume and 1750Hz access tone.....	19
TX lock on VHF using the supplied earpiece.....	19
My VHF/UHF receiver does not work.....	19
My VHF/UHF transmitter does not work.....	20
What is the strong signal on 156 MHz?.....	20
The FM radio does not work.....	20
Help! Display shows DDD.D25!.....	21
CONTRIBUTORS.....	23

# GENERAL

## What is the Baofeng UV-3R?

The Baofeng UV-3R is a compact<sup>(\*)</sup> transceiver for the VHF and UHF amateur bands, as well as many of the public service bands. It uses a unique pair of microprocessor - one for the radio itself, and the other as a control computer: this makes it an SDR (Software Defined Radio). Further, being a low power unit (2 watts, more or less), it is able to use commonly available lithium ion batteries, such as are found in digital cameras. As a consequence it is very compact, easily fitting in a shirt or pants pocket.

The transceiver is fully functional with CTCSS and DCS codes, offset, and shift settings for use to access repeaters. With the programming cable and software, it is possible to set the “splits” for use with amateur FM satellites.

Further, the transceiver contains a listen-only FM receiver for the FM broadcast band on a dedicated chip.

(\*) The transceiver is 47x81x23 mm, and weights about 120g (radio with battery and antenna). That's about the same size as a standard 20 cigarette pack, which non-smokers should also be familiar with.

## What is the Baofeng UV-3R Mark II?

The UV-3R Mark II is a second release of “R” that appeared at the beginning of September 2011. The most obvious difference is a dual-frequency display and that it comes with a dual-band antenna, for about 5 USD more.

On 2011 September 20, the first user review has rolled in. See <http://groups.yahoo.com/group/UV-3R/message/2095> and subsequent messages in the thread.

Also a word of caution if using the programming cable: data format has changed from UV-3R and UV-3R MarkII. A new version of the programming software has been released, so make sure you are using the latest available program!

## How much does UV-3R cost?

As of September 2011 the radio comes shipped from Hong Kong for 45 USD. Local/national sources may be selling it too, at a higher price but with added customer protection measures and/or accessories (read below).

## Where can I buy UV-3R?

(IMPORTANT: no ADs of your shop here!)

At the time being, there are several sources, the cheapest being the known auction website.

As of September 2011 the radio comes shipped from Hong Kong for 45 USD. There are combined packages with a dual-band antenna, a car charger, a second battery, USB programming cable ... which cost a little bit more but will save you on future shipping costs. Orders from Hong Kong can be shipped with DHL or other express courier, which means the box hits your door in a few days, at the costs of few more bucks.

In many countries local HAM radio shops are selling the UV-3R as well, usually offering better warranty options, faster shipping and no customs fees. Check your local/national sources UV-3R price and availability.

You may want to order it with the USB programming cable. The software is a free download.

## What warranty is offered?

(IMPORTANT: no ADs of your shop here!)

If buying directly from Hong Kong you should get a repair/replacement upon return of the faulty item. You have to pay for the shipping cost for returning the faulty item to HK. Check the rules with the seller before buying!

If the UV-3R has been bought new from a local/national source, check with the seller for his warranty policy in advance. Warranty rules depend on your country and shop, so it is impossible to list them here.

## How long does it take to get it (from Hong Kong)?

The answer to this question depends on too many factors. If not ordered with an express courier and the UV-3R is in stock at the HK seller, it will probably leave Far East within a week from payment. So far they have been shipped as registered letter, so you can track it on Hong Kong Post website and then on your country's Post website.

Depending on your country's customs, the parcel might get stuck there, so the total travel time can be anywhere between 2 and 6 weeks. Certain countries may expect more delay. All Far East sellers are well aware of shipping times and usually mention it on their pages.

If you are in a hurry, then pay for express courier delivery (DHL and such). You may group with local HAMS to split the extra cost. DHL usually does apply VAT and import duties, so consider taking advantage of a group buy.

## What is in the UV-3R box?



You usually get (copied from an auction description):

- 1 x BAOFENG UV-3R (VHF136-174 / UHF 400-470 MHz Dual Band)
- 1 x 3.7 V Li-ion Battery
- 2 x Antenna (one for VHF and one for UHF), new versions have a dual band antenna
- 1 x Belt Clip
- 1 x English Manual
- 1 x Charger with Cable (with plug for your Country)
- 1 x PTT Earpiece (see note about problem with this with RF pickup)
- 1 x Wrist/neck strap

Additional items can be added in case of combined orders (a dual-band antenna, second battery, USB programming cable, etc. ).

## **What are the differences between UV-3R, UV-100 and UV-200?**

The three models are said to be electrically identical, just with a different exterior look and external port. UV-100 and UV-200 share a compatible with speaker-mic (409shop item 41-75B), UV-3R does not.

## **Are there clones/similar devices?**

UV-100 and UV-200 are said to be almost identical to UV-3R (see previous question). UV-3R can also be found under brand names other than Baofeng, like Vero, Magiksun, ...

## **12 vs 18 menu settings?!**

First UV-3R transceivers had only 12 settings accessible through the keypad menu. Settings 13-18 could be changed only via the programming software.

Sometime in Spring 2011 UV-3Rs were produced with a new firmware that gives access to all 18 settings via the onboard menu.

## **How do I reset the radio to factory settings?**

Hold down the VHF/UHF button while powering up the radio.

## **Is there a display protective film?**

Yes, it is there: the display comes with a protective film on it. It has been cut to the exact shape of the display, so it is hard to notice (and to peel-off on its own).

## Colors. Are they painted or mass coloured?

UV-3R are all mass-coloured, not painted.

The camouflaged type is... **TBC**

## Battery pack, possible replacement type?

The battery pack is a standard NP60 type which is used in many digital cameras of Sony, Nikon or Ricoh. NP60 is available from many spare part dealers but check the indicated capacity before purchasing. The stock pack has 1550 mAh (18 menu version) capacity. Note that the Casio NP60 battery is not the same type....

## How long does it take to charge the battery?

Some people say 5 hours, some people say 2 hours. To be measured...

## Battery care and charging

There is a charging controller chip inside the radio but if you charge a battery in the base there is no controller but relies on the safety chip in the battery. The wall power adapters with color changing LEDs (green/red) sense current flow and change colors when the internal battery safety chip shuts down and do not actually have a charge controller. Some cheap replacement batteries may not have this chip. Some users have installed a MAX1811 charge control IC in the charging base. See the picture section and search the messages for MAX1811. In Europe maybe it's cheaper to use MCP73831.

The battery used is a Li-ion type. **For longevity of this type of battery it should be recharged when the battery level has fallen to just one third full i.e. one little bar left in the battery icon.** Li-ion batteries do not like being fully discharged before charging and their lifespan will be reduced. Also, they do not like being left in a fully charged state in hot conditions. See Battery University for full details.

# ANTENNA

## What is the antenna connector type?

The UV-3R mounts a SMA-Female antenna connector, therefore you need to buy SMA-Male terminated antennas. You may also get BNC(f)-to-SMA(m) adapters to use your existing whips or cables. A PL-to-SMA works too, but it might put too much strain on the antenna connector. Some of the adapters are a tight fit, and it may be necessary to remove a small amount from the case near the LED with a hobby knife to get firm seating.

## Which dual-band antenna can I buy?

Not all SMA-male antennas fit on the UV-3R: if their base is too large it will get stuck against the LED.

The new ones (Mark II) come with a dual band antenna.

Favorite after-market antennas are the SMA-male Nagoya NA-666 and NA-701 (most popular) from eBay. Some of the Comet and Diamond (USA) antennas work nicely as well. In the UK the Watson WHSM270 dual-band antenna has been found to work well. Sold packaged with UV-3R is usually the A3SM-UV, which performs like the standard single-band antennas, or better.

The issue is that some of the aftermarket antennas are fairly bulky, and can put a strain on the SMA connector. If you plan on connecting your Baofeng UV-3R to an external antenna, use one of the SMA to UHF or BNC jumper cables.

Some suggested brand models: MFJ-1716S, MFJ-1713S, Diamond SRH815, Diamond SRH519, Maldol MH-511, Comet SMA503.

## Is the SRH805 antenna any good?

The short answer is: NO.

The long answer is that an antenna needs to be long to perform (in the case of UV-3R, close to a quarter of wave at the operating frequency), and this dual-band antenna is just 4.5cm tall.

Beware of Fake SRH805 on eBay. They are even worse but see the picture section for a mod.

# MEMORIES

## How do I manually program memories?

First, get a list of the repeaters or simplex frequencies you wish to program into the UV-3R. You will need:

1. Receive frequency for the repeater.
2. PL tone, if needed. Omit for the simplex frequencies, of course.
3. Offset direction - plus or minus. Zero for simplex.
4. Shift value for transmit. Usually 600 kHz for 2 meters, 1.6 or 5 MHz for 70 cm.

Make sure you are in VFO mode for 2 meters. Display should show NO channel number. In case, press/hold U/V key long enough to get there -- it will cycle through memory mode, UHF, VHF.

To set the receive frequency, lift knob and rotate to get desired value. For 1 MHz steps (saves some time!), press and release function key, then rotate knob by 1 MHz increments. Do that same sequence again to get back into normal frequency setting mode.

From here on, you need to set some menu items. The sequence for setting menu items is:

- Press Menu key.
- Rotate knob to desired menu item.
- Press U/V key to select that menu for alteration.
- Rotate knob to desired value.
- Press the PTT button to lock in the desired value.

All menu items are set up this way.

You may need to set the step value to 5 or 10 kHz, as the default is 12.5 kHz (12.5 kHz is the standard in IARU Region 1, that is Europe and Africa). There is a menu item for this.

Select the desired PL tone from the TX tone menu. See the above sequence for setting up a menu selection. No PL tone is required for simplex channels.

Set the transmit offset to 600 kHz, 1.6 or 5 MHz, as appropriate. Check your repeater directory for non-standard offsets. For 1 MHz steps you can use the Function tip described above.

Set shift to "+", or "-" as appropriate. For simplex, the value is zero.

Now, test your settings. Pressing PTT should bring up your repeater. If not, check you settings. Just the receive frequency should be enough to hear your repeater. If you have another HT properly programmed, use that to key up the repeater for testing. I know, "kechunking" the repeater is bad manners, but....

If all is well, then store your setup in memory. Press F/A button on side, then U/V. Rotate knob to desired channel (you should have made a list), press U/V again to store the channel.

Repeat for all other channels. If the PL tone, shift, or offset values are the same, you don't need to change them. This is why a list is useful. Keep a copy of the channel list with your HT, as there are no channel labels with the Baofeng, such as are found with the Wouxun and other HTs.

## How does the programming software work?

First, get a list of the repeaters or simplex frequencies you wish to program into the Baofeng. In addition, you will need:

- A programming cable - USB connector on one end, the four-conductor plug on the other end. Yaesu programming cords will not work, as the connections are different.
- Programming software for the Baofeng. Download it from various sites. You will also need the driver software for your cable.

You also need the information to enter into the program:

- Receive frequency for the repeater.
- PL tone, if needed. Omit for the simplex frequencies, of course.
- Offset direction - plus or minus. Zero for simplex.
- Shift value for transmit. Usually 600 kHz for 2 meters, 1.6 or 5 MHz for 70 cm. You then add or subtract this from the receive frequency, as appropriate. No shift is needed for simplex channels.

First plug the USB connector into your computer. We are running Windows, of course. Your computer should detect the connector. If it asks for the driver software, set to the location where you have downloaded the driver software and install the driver software, as prompted. This will only need to be done once.

Open up the computer system settings and find out which COM port has been assigned to the USB connector. Make a note of this. In the future, save yourself some trouble and always plug the USB connector into the same jack on the computer.

Now, plug the four pin connector into the microphone jack on the Baofeng HT, and turn it on.

Bring up the Baofeng programming software. Set the port drop-down to the value you found before. Clicking on a previously saved file won't work. You have to open the file from within the control program.

Now, you are ready to program your Baofeng. Key in, line at a time, the receive, transmit, transmit tone (if needed), power (high, usually), and wide/narrow - wide setting. You will not need the receive tone, unless you have a repeater that uses tone controlled squelch.

The option functions at the top are self-explanatory. The "Priority Channel" is the equivalent of a "dual watch" on most other HTs. If you want this feature, set that box to the desired channel number. The time-out-timer (TOT) should be set to something like 120 seconds. The VOX should be off, unless you like VOX. A squelch level of 2 or 3 usually works well. For LEO satellites, set this to zero. The frequency range should be set to V+UHF1.

Save the file you have created with a convenient name for future use. The "Device Write" option writes to your HT. If you already have something stored in your HT, do a "Device Read" and save this before you do the "Device Write."

It is convenient to have a number of different memory files for such things as locations you regularly visit, weather channels (NOAA in the USA), LEO satellites, or public service monitoring frequencies (if allowed).

When you are done, exit the program and disconnect the cable from the computer and the HT.

## **Programming does not work. Help!**

Do a system reset. Set up PL tone, offset, shift, and power level. Set frequency. Press F/S, then VHF/UHF to store in memory. Rotate knob first, if you don't like the default channel.

It is easier to use the programming cable and software in the event that you have more than a few channels to program. In this way, you can have different sets of channels for the areas to which you travel.

## **Can I use the programming software without the radio?**

So, you are waiting for your "R" and programming cable to hit your doormat but you have free time to prepare the memory file? No worries, install the correct software package on your computer, type in all your memories and save to a local file. Once the radio+cable arrives, install proper drivers (for the cable), load the saved .dat or .3r file and upload it to the radio.

In other words: you don't need the UV-3R to play with the programming software.

It should also be noted that the “Chirp” software will allow you to transfer most of your setting from most other HTs that you own to the Baofeng.

## **Software Install - Mark II Upgrade**

See the procedure described further below on how to fix the DDD.D25 problem.

## **How do I delete a memory channel?**

Either over write it with a different channel, or use the programming software to clear the channel.

## **How do I skip memories during scanning?**

See the Tips&Tricks section.

## **Does Dual-Watch work during scanning?**

Dual watch is a misnomer. If you program a “priority” channel with the software, during scanning, this channel will be checked. The “dual watch” feature documented only works when in VFO mode, checking the other VFO. For example, if you are listening on VHF, it will check your UHF VFO periodically.

## **How do I set alphanumeric tags to memories?**

As of September 2011AD neither MarkI nor MarkII support alphanumeric tags on memories, even though the latest programming software shows a column for tagging. Nobody knows if that will come in a future UV-3R version.

## **How do I get 99 memories?**

There are actually 100 memories. Memory 100 appears to be the “Emergency” channel. Programming through the keypad/selector knob only gets you locations 1 through 99. The radio only displays the channels that have been programmed. The software lets you see all 99 channels as you edit them.

If your brand new UV-3R has pre-programmed memories and you cannot get to program beyond location #20 (from the radio keypad), do a full reset before you begin storing your frequencies: it will clear all memories too.

## **Can I operate on AMSAT/LEO satellites?**



Yes, but you need programming cable to program memories. Setting crossband memories is not possible from keyboard. You need to use 6 memories per satellite because of uplink/downlink doppler effect.

Memory programming example for AO-51 secondary repeater (we do not consider the uplink effect):

Memory #	TX	RX
1	145.880	435.160
2	145.880	435.155
3	145.880	435.150
4	145.880	435.145
5	145.880	435.140

During pass, change receiver frequency as signal shifts out of the channel.  
AOS mem 1 -> mem 2 -> TCA (CENTER) mem 3 -> mem 4 -> mem 5 LOS

There are currently active satellites: AO-51 (end of life! Enjoy while you can!), AO-27, SO-50.

When operation satellites please turn squelch OFF !!

More info about operating satellites with HT can be found on: <http://www.amsat.org/amsat-new/echo/EchoHT.php>

## Can I operate cross-band?

Yes, it is possible! Use the programming software to record a VHF TX and a UHF RX frequency (or the other way around). Unfortunately this configuration cannot be done via the radio keypad.

## Can I copy a memory to VFO?

No.

## How does the LED torch work?

Press the L/R orange button on the left side to switch on and off the top cover LED. This control is also active when the RTX is switched off (but a battery is connected).

# FEATURES

## What is the transmit frequency range?

The UV-3R receives AND transmits on the whole VHF&UHF specified range (136-174 MHz, 400-470 MHz). It is not possible to restrict transmission to HAM allocations only, therefore this little radio might be illegal in your Country.

## What is wide/narrow setting?

This setting controls RX bandwidth and FM deviation. These have been measured to be:

*TX, max deviation wide, +/- 4.8kHz*

*TX, max deviation narrow, +/- 2.4kHz*

*Apparent RX -6dB bandwidth wide +/- 8kHz*

*Apparent RX -6dB bandwidth narrow +/- 4kHz*

*Adjacent channel selectivity measured as ETS300-086 was 70dB wide and 58dB narrow.*

## What does RelayM do?

Apparently it delays the return-to-receive after transmitting. This should cut the roger beep on repeaters that add it automatically.

See <http://groups.yahoo.com/group/UV-3R/message/1921> for a possible answer.

Note: some older models and manuals refer to "ElayM" instead of "RelayM".

## What does the Save function do?

While the user's manual says it reduces the transmitted power when the received signal is strong, that seems to be a wrong copy-and-paste from a Yaesu manual.

Measurements have been made on the receive current consumption, and confirmed that the Save function switches off and on the RX circuitry.

## How can I do "reverse" on a repeater?

You can not. UV-3R does not carry the “reverse” command. Instead you can write your repeater memories alternating *normal* and *reverse*.

## **How do I generate DTMF tones?**

You can not. The radio chip is capable, but the firmware does not support it.

## **How do I set frequency scan limits?**

You can not. UV-3R will scan the entire VHF or UHF band.

As a workaround you can program memories with simplex channels (spaced 10 kHz in IARU region 2 - Americas - and 12.5 kHz in IARU region 1 - EU/Africa -) and run a memory scan instead.

## **Squelch Settings**

Settings 1, 2, 6, 7, 8 and 9 are all the same - they let through weak signals and a signal can reduce to nothing before the squelch closes. Settings 3, 4 and 5 are all the same and do not allow weak signals through. Setting 0 opens the squelch fully, as does pressing and holding the VOL button.

## **Can I use the UV-3R while the charger is connected?**

Yes you can. But be aware that the charger is a switched-mode type, and this type always emanates RFI. The RFI in this case is so strong that a 5.9+ signal can sound like a 5.2 one.

## **Can I use the programming cable to remote control UV-3R?**

No. Only memories can be read and written with the programming cable.

## **Can I update the firmware with the programming cable?**

No. Only memories can be read and written with the programming cable.

## **Can I use Yaesu programming cables?**

No, pinout is different.

## FM radio reception gets interrupted with VHF/UHF signal

This is a feature. To avoid it, set your radio to a fairly unused channel or set an unused CTCSS/DCS code before going to FM. However, if you like to monitor traffic on your local repeater while listening to the FM radio, just set it to your favorite repeater.

## Chirp Software?

Works with the UV-3R.

CHIRP is a FREE cross-platform, cross-radio programming tool. It works on Windows and Linux (and MacOSX with a little work). It supports a growing list of radios across several manufacturers and allows transferring of memory contents between them.

You can get more info and download it [HERE](#)

# TIPS&TRICKS

During scanning, turn the dial. You can change the direction of scanning “on the fly” from low-high to high-low channel numbers.

When a stored frequency becomes a nuisance, switch the RX to an unused CTCSS/DCS code and it skips that channel in the scan. You can do a similar setup for scan groups. Kind of labor intensive but it keeps weak stations and interference from interrupting scans.

# KNOWN PROBLEMS (and fixes), MODS

## The Usual Disclaimer

Q&As mentioned in the following paragraphs may require an electrical modification of the UV-3R. As with any other electric/electronic device, **opening the radio or any associated accessory voids the warranty**. If you decide to try procedures documented hereafter you do it at your own risk of damaging the UV-3R, your tools, your environment, yourself.

## Low power on VHF “low” setting.

Many UV-3Rs users experience a very low power output on the VHF HAM band in “low” setting. It has been measured to be at around 100mW at 145 MHz and thereabout instead of the advertised 1W. This behavior is normal and there is no hardware fix.

## How to increase output power?

There are no known modifications to increase the output power. Besides, there would probably be too little heatsink to dissipate the excess heat (making it a good “pocket warmer”) and surrounding components and PCB traces might not be designed for the excess current drain (turning the UV-3R into a smoke signals transmitter). Let alone a much shorter battery life.

Remember: one S-point is 6dB; doubling the power means adding 3dB to your output. So with an increase from 2W to 4W you would gain half S-unit.

If you need more power:

- buy a more powerful transceiver
- buy an external power amplifier
- use a better antenna

## VHF second harmonics.

All UV-3Rs VHF transmitters exhibit a very strong second harmonic ( $145 * 2 = 290$  MHz). A fix has been published in the Yahoo Group Files section and consists in adding a capacitor to the output low pass filter.

Note that when using a VHF resonant antenna the effectively radiated power on the 2nd harmonic *probably* lies within required FCC/CE specs.

## Loud volume and 1750Hz access tone

Many users are irritated by the volume difference between the ham bands, the FM broadcast radio, and the various beeps. While the two ham bands and the beeps are already pretty loud at the minimum volume setting, volume has to be increased for the FM broadcast radio.

There are two possibilities:

1. increase the AF amp feedback circuit - this reduces the overall amplification and is only useful when the FM broadcast radio volume is less important. This mod is described in detail at <TBC>. R15 (100k) is decreased down to at least 33k, to provide stronger feedback and hence less total amplification (a 27k soldered across R15 brings the total resistance to 22k).
2. modify the balance of the audio being mixed, by reducing both the levels of the ham bands path and the beep audio path. For the ham bands path R13 (10k) may be increased up to 27K or 33K. For the tone beeps path R10 (100K) can be replaced by 220K or greater.

However, the 1750Hz tone, which is used for accessing repeaters, is sent via the loudspeaker and picked up by the microphone. If R10 is increased too much the level of this access tone sent by the mic to the repeater will be too low.

The solution by DD5XL is to reduce R10 to 660k (2 x 330k), add a 100nf capacitor across the unused PCB pads of C47, and add a 220k resistor across the unused pads of R46. This now directly feeds the 1750Hz tone into the modulation input of the RDA1846 chip - an added benefit is that the 1750Hz tone is sent even with the earpiece plugged in.

Note that the 1846 chip with the 4MHz master oscillator cannot deliver 1750Hz exactly, it's actually 1736Hz so some repeaters may balk at this.... (GTP)

## TX lock on VHF using the supplied earpiece.

This appears to be due to RF being picked up on the cord. Get one of the larger ferrite choke sleeves from Radio Shack or the equivalent in your country. Take two turns of the earpiece cord through the core right next to the plug. It isn't pretty, but it works. Others have suggested a SMT bypass capacitor of about 100pF internally on the PTT line.

## My VHF/UHF receiver does not work.

The only known (through the Yahoo Group mailing list) out-of-the-box problem on a VHF receiver was experienced by IK1ZYW on a UV-3R bought in July 2011. The problem has been traced down to a cold solder joint in the switching diodes. The problem has been fixed with a hot-air (re)soldering station which brought back the RTX to 100% full functionality.

Procedure to identify cold solder joints:

- work on a non-conductive surface (wood and plastic are OK)
- identify, with another receiver, a constant signal source in the band you experience the fault
- leave the other receiver on the active frequency
- tune UV-3R to the frequency located few steps above
- make sure SQL/squelch is set to one
- make sure no CTCSS/DCS are set
- switch UV-3R off
- open up the UV-3R as described elsewhere;
- solder about 10cm of wire in place of the antenna connector
- connect the earpiece
- connect the charger to UV-3R, the radio will power up
- gently lay the bare board on the flat, non-conductive, surface
- using a plastic needle gently press down components until the squelch opens

Congratulations, you have successfully identified the fault. Now you need to fix it, but that requires an expert technician and specialized tools.

## **My VHF/UHF transmitter does not work**

RF is generated by the SDR chip inside UV-3R. Then applied to a buffer stage and switched to a dedicated amplifying chain, one per band. Each amplifier is composed of a driver and a final. Can you hear your transmission on a nearby receiver? Is there a difference between high and low power? Do you get the expected power on the other band? If so, the SDR chip is working and the fault is in the amplifier chain.

Could it be that there is a cold solder joint in the VHF/UHF transmitter chain?

TBC

## **What is the strong signal on 156 MHz?**

The carrier on 156.000 MHz (marine channel 0) is caused by the 6th harmonic of the internal 26 MHz oscillator. This oscillator is used to run the main radio SDR chip so there is no cure.

Other spurious signals can be heard on UHF as well, every few MHz. Fortunately they all stay out of the HAM bands.

## **The FM radio does not work**

Hold the orange button on the side for about 2 seconds to get into FM radio mode. When FM mode is attained "FM" will appear on the lower left side of the display. Hold it again for about 2 seconds to get back to UHF/VHF mode. The letters "FM" will disappear when you exit "FM" mode.

You can store favorite FM stations just like you do for VHF/UHF memories. Scanning through the FM band for stations is like scanning in VHF/UHF.

Don't forget to connect an antenna to the UV-3R!

If no FM broadcast can be received, try the procedure described above for looking for cold solder joints.

## Help! Display shows DDD.D25!

This happens when a UV-3R Mark II is programmed with an old version of the programming software. Download the newest software version and try re-programming your UV-3R: it should return to normal operation.

A solution from John WB1GCQ follows, posted on the UV-3R mailing list and reproduced here with his authorization.

Here is what I did using the information provided by the Group.

- 1) If you have preciously installed the software for the UV-3R; delete it from the computer before you start this procedure for the Mark II.
- 2) Download from the Files Section the Mark II software. I also found this software on the 409shop site. Not sure if both are the same version.
- 3) Download the driver you require from the 409shop site. I downloaded the usb driver for Windows XP. I did this even though I had the original driver installed. The install will inform you if you have current driver or newer version available for install. In my case I installed tthe newer driver.
- 4) Plug usb cable nto computer. Go to Device Manager.Click on Ports and determine Comm port assigned to Prolific usb to serial comm. Mine was Comm 6.
- 5) Run the UV-3R Mark II software from the shortcut on the Desktop. Click on Settings and select an available Comm port. In my case I selected Comm 6 and clicked Ok to close.
- 6) On the grid at top it indicates Freq Range. The range 136-174/400-470 is presently selected. Click on down arrow to right and another range 144-146/430-440 is shown. Click on this range so it is now slected.
- 7) At this point my grid filled in the Channel 1 with a rx Freq of 146.0000.

8) My display on the UV-3R had DDDD25 on upper and DDDD25 on lower line at this point. Its been that way for a week looking for a solution!

9) I clicked on Program on top line of grid and selected "Write to Radio". Got a dialogue box. Clicked on Ok and program began writing to radio. Upon completion the DDDD25 disappeared from the first and second lines of the display. My display now shows 146.0000 on first line and 440.0000 on second line.

10) I clicked on Program on top line of grid and selected "Read from Radio". Got dialogue box. Clicked on Ok and program began reading from radio.

11) Success! things are going back to normal! Clicked on Files on top of grid and save As. The Mark II software format is \*.3R. Original software was \*.dat. The original Baofeng Memory Files are still on the computer so I saved this file as UV-3RMarkIIinitialread.3R.

12) Back to the grid and the Freq Range. Click on down arrow and select 136-174/400-470. When I did this Channel 1 was filled in with a frequency of 136.0000.

13) Clicked on Program on top of grid and selected "Write to Radio". Got dialogue box. Clicked on Ok. and program began to write to radio.

14) Upon completion my display showed 136.0000 on first line and 400.0000 on second line.

15) Clicked on Program on top line of grid and selected "Read from Radio". Got dialogue box. Clicked on Ok and program began reading from radio.

16) Clicked on Files on top of grid and save As. The Mark II software format is \*.3R. Original software was \*.dat. The original Baofeng Memory Files are still on the computer so I saved this file as UV-3RMarkIIrevisedread.3R.

# CONTRIBUTORS

Feel free to add your callsign / name / nick here.

Paolo, IK1ZYW, Italy, JN35tc :-)

Paul, W3FIS in "Slower Lower" Delaware, USA, FM28KL

Lee, N9LO, central Wisconsin USA, EN44vp

Bert, DD5XL, Germany, JO41VX

Horace, YO2LQL, Romania, KN05os

Oliver, SWL 2220530, Germany, JN39LT

David, G4TUP/9H3CU, United Kingdom, IO83MQ (GTP)

Ondra, OK1CDJ, Czech Republic, JO70VA