

JOTA HF Station Operator's Guide

(Yaesu FT-840)



1. Automatic Level Control (ALC)/Power Meter Selector
2. Power (On/Off)
3. RF Attenuator (12dB)
4. AGC-Fast (On/Off)
5. Meter – Power Output, ALC and S-Meter
6. Mic Gain (knob) / RF Power Gain (ring)
7. AF Gain/Volume (knob) / Squelch (ring)
8. VFO
9. Emission mode selector (set to SSB – press to toggle between LSB and USB).
10. (Transmit) frequency lock
11. Band Up/Down
12. IF shift (generally leave in the centre position)
13. Clarifier/Receiver Incremental Tune (RIT)
14. Clarifier on/off

Notes

1. Please use Clarifier/RIT control to dial in (micro-tune) receive frequency and NOT the VFO. This will prevent continuous adjustments needing to be made and ‘walking’ across the band.
2. For SSB operation, set MIC GAIN so that ALC is in the thick part of the blue zone of the lowest meter scale.
3. Keep an eye on the SWR (separate, external meter) when changing frequencies and bands. Adjust tuner as required to minimise SWR. DO NOT adjust the **INDUCTANCE** knob on tuner while transmitting.

Following is a list of HF frequencies for voice operation both internationally and local in Australia. These are call frequencies. Once contact has been established, stations should move away (QSY) to a nearby clear frequency.

HF Band	International (Phone)	VK Aussie (Phone)
80 m	3.690 MHz & 3.940 MHz	3.650 MHz
40 m	7.090 MHz & 7.190 MHz	7.090 MHz
20 m	14.290 MHz	14.190 MHz
15 m	21.360 MHz	21.190 MHz

JOTA VKDMR Operating Sheet

Zone: SHS-VK (TS2)

TG30 – VK/ZL JOTA Calling Channel

TG31-39 – VK/ZL JOTA Chat Channels

TG3801-3809 - (VK Chat Channels – cross-linked to BrandMeister TGs 5051-5059 and ZL (for 3801-3804 only).

TG5505 (cross linked to BrandMeister 505 calling channel)

TG9990 – Parrot

TG777 – Scan (can be used to monitor TG30 so you don't have to keep triggering it).

TG400 – Disconnect

TG505 – VK Calling Channel

Note:

1. There are other zones programmed into the radio in case of specific failure of equipment (nominally hotspots). For general use, do not select those zones.

JOTA BrandMeister Operating Sheet

Zone: DHS-BM

TG50598 (TS1) - VK JOTA TAC (Chat Channel)

TG9071-9078 (TS1)- JOTA TAC (Chat Channels)

TG5051-5059 (TS1) – VK Chat Channels (by state) Cross-linked to VKDMR TG3801-3809)

TG901-903 (TS1) - Worldwide TAC (Chat Channel)

TG310-319(TS1) - US TAC (Chat Channels)

TG913 (TS1) - English TAC (Chat Channels)

TG923 (TS1) - European English TAC (Chat Channels)

TG4000 (TS1) - Disconnect

TG50597 (TS2) - VK JOTA Calling Channel

TG907 (TS2) - Worldwide JOTA Calling Channel

TG505 (TS2) – VK Calling Channel - links to VKDMR TG5505

ID9990 (TS2) - Parrot – Note: This is a private call to ID9990 NOT a TG call.

ID505997 - VK Parrot - Note: This is a private call to ID505997 NOT a TG call.

TG4000 (TS2) – Disconnect

In addition, the following TGs may be programmed into the radio:

TG50297 (TS1) - JOTA Malaysia - Malay speaking

TG50298 (TS1) - JOTA Malaysia – Malay speaking

TG90710 (TS1) - JOTA DACH – German speaking

TG204907 (TS1) - JOTA NL CQ – Dutch speaking

TG235907 (TS1) - JOTA UK – English speaking

TG240907 (TS1) - JOTA SE - Sweden

TG250907 (TS1) - JOTA RU – Russian speaking

TG263907 (TS1) - JOTA DL – Germany – German speaking

TG268907 (TS1) - JOTA PT – Portugal, Portuguese speaking

TG272907 (TS1) - JOTA IRL – Ireland (English speaking)

Note:

1. There are other zones programmed into the radio in case of specific failure of equipment (nominally hotspots). For general use, do not select those zones.

Working VK JOTA stations - BrandMeister:

SGARS encourages appropriate and considerate operator etiquette – remember, we are demonstrating proficient operating skills to potential future operators (and in some cases, the general public). To this end, we encourage the following:

1. If attempting to contact an VK JOTA Station: Utilise TG50597 as the PRIMARY VK JOTA Calling Channel. (Reasoning: This keeps available TG505 for other amateur radio operators using both the BrandMeister and VKDMR networks but not involved in JOTA).
2. Once a contact has been established, move from TG50597 to TG50598 (the VK JOTA TAC) (Reasoning: This keeps TG9071-9078 available for international JOTA traffic)
3. If TG50598 is already in use in 2 above, move to one of the TG9071-9078 Chat channels to have your QSOs.
4. Further to 2 & 3 above, IF and only IF none of TG50598 and TG9071-9078 are available, once a contact has been established – move to either
 - a. one of TG901-903 (if the other station is overseas) chat channels, or
 - b. one of TG5051-5059 (if the other station is within VK) chat channels,to have your QSOs. (Reasoning: (a) Only if the primary BrandMeister JOTA TGs are in use are we moving the limited number of ‘generic’ international TGs (which the overseas station is most likely to already have programmed into their radio) OR triggering cross-system links, and (b) refer 6 below).
5. If in 1 TG50597 is busy AND TG505 is not, consider using TG505 to make your CQ JOTA call, remembering that most stations will be listening on TG907 and/or TG50597 for these calls. Once a contact is established, vacate TG505 as soon as possible by moving to a TG per guidance in 2-4 above. (Reasoning: Minimising the disruption to the BrandMeister and VKDMR National Calling TGs imposed by JOTA and keeping the both the BrandMeister and VKDMR networks available for other amateur use).
6. The VKDMR network predominately covers the eastern seaboard. DMR repeaters in other parts of Australia are generally connected to the Brandmeister network. When moving to a BrandMeister TG5051-TG5059, VKDMR users may refer to these as TG3801-3809 so be aware of the mapping.
7. In all cases, once a QSO is complete on any talkgroup, please TG4000 (Disconnect) for the benefit of all.
8. Please leave a 3 second gap between overs – in particular if you are jumping on a calling channel as the previous stations move to another TG (QSY). This allows for IP network propagation and repeater timers to operate and to give the moving stations the clear time to trigger their ends to change TGs (QSY).
9. The radio programming has included the recommendation of TG9 for repeater use – if you make contact with another JOTA station on the same repeater – then it is recommended to move the QSO to TG9 to minimise BrandMeister network traffic.

Working overseas JOTA stations - BrandMeister:

SGARS encourages appropriate and considerate operator etiquette – remember, we are demonstrating proficient operating skills to potential future operators (and in some cases, the general public). To this end, we encourage the following:

1. Utilise TG907 as the PRIMARY (World Wide) JOTA Calling Channel. (Reasoning: This keeps available TG505 for other amateur radio operators using both the BrandMeister and VKDMR networks but not involved in JOTA).
2. Once a contact has been established, move from TG907 to one of the TG9071-9078 Chat channels to have your QSOs. (Reasoning: This keeps TG907 available for the next 'CQ JOTA Call').
3. IF and only IF none of TG9071-9078 are available, once a contact has been established – move to one of TG901-903 (if the other station is overseas) chat channels to have your QSOs. (Reasoning: Only if the primary BrandMeister JOTA TGs are in use are we moving the limited number of 'generic' international TGs (which the overseas station is most likely to already have programmed into their radio))
4. In all cases, once a QSO is complete on any talkgroup, please TG4000 (Disconnect) for the benefit of all.
5. Please leave a 3 second gap between overs – in particular if you are jumping on a calling channel as the previous stations move to another TG (QSY). This allows for IP network propagation and repeater timers to operate and to give the moving stations the clear time to trigger their ends to change TGs (QSY).
6. The radio programming has included the recommendation of TG9 for repeater use – if you make contact with another JOTA station on the same repeater – then it is recommended to move the QSO to TG9 to minimise BrandMeister network traffic.

Following the above guidance maximises the opportunity for the DMR networks to be utilised effectively and efficiently to support JOTA across VK – establishing and maintaining contacts for Scouts and Guides (the primary purpose of JOTA) and given them the best chance of a great 'on air' experience, whilst also allowing non-JOTA traffic to still utilise the DMR networks.

Working VK and ZL JOTA stations - VKDMR:

SGARS encourages appropriate and considerate operator etiquette – remember, we are demonstrating proficient operating skills to potential future operators (and in some cases, the general public). To this end, we encourage the following:

1. Utilise TG30 as the PRIMARY VK/ZL JOTA Calling Channel. (Reasoning: This keeps available TG505 and TG5505 for other amateur radio operators using the VKDMR and BrandMeister networks but not involved in JOTA).
2. Once a contact has been established, move from TG30 to one of the TG31-39 Chat channels to have your QSOs. (Reasoning: This keeps TG30 available for the next 'CQ JOTA/CQ Jamboree Call').
3. Further to 2, IF AND ONLY IF none of TG31-39 are available, once a contact has been established – move to one of TG3801-3809 chat channels to have your QSOs. (Reasoning: (a) Only if TG31-39 are in use are we now triggering cross-system links (b) refer 5 below).
4. If in 1 TG30 is busy AND TG505 is not, consider using TG505 to make your CQ JOTA/CQ Jamboree call, remembering that most stations will be listening on TG30 for these calls. Once a contact is established, vacate TG505 as soon as possible by moving to a TG per guidance in 2 and 3. (Reasoning: Minimising the disruption to the VK DMR National Calling Frequency imposed by JOTA and keeping the VK DMR network available for other amateur use).
5. The VKDMR repeater network predominately covers the eastern seaboard (hotspots are everywhere). DMR repeaters in other parts of Australia are generally connected to the BrandMeister network. To establish contact with those repeaters – call 'CQ JOTA' / 'CQ Jamboree' on TG5505. Once contact is established, move off the 'calling channel' to TG3801-3809 as these are the only cross-linked (VKDMR<->BrandMeister) chat channels for VK. BrandMeister stations may refer to these as TG5051-TG5059, so be aware of the mapping.
6. In all cases, once a QSO is complete on any Talkgroup, please TG400 (Disconnect) for the benefit of all.
7. Please leave a 3 second gap between overs – in particular if you are jumping onto a calling channel as the previous stations move to another TG (QSY). This allows for IP network propagation and repeater timers to operate and to give the moving stations the clear time to trigger their ends to change TGs (QSY) – especially those that may be using simplex hotspots.
8. The radio programming has included the recommendation of TG9 for repeater use – if you make contact with another JOTA station on the same repeater – then it is recommended to move the QSO to TG9 to minimise VKDMR network traffic.

Following the above guidance maximises the opportunity for the VKDMR network to be utilised effectively and efficiently to support JOTA across VK – establishing and maintaining contacts for Scouts and Guides (the primary purpose of JOTA) and given them the best chance of a great 'on air' experience, whilst also allowing non-JOTA traffic to still utilise the VKDMR network.

JOTA DMR Station Operator's Guide for hotspot use (Anytone 878)



1. Talk Group Selector knob
2. Power (On/Off) & Volume knob
3. Press-to-talk (PTT)
4. Menu/Select
5. Exit
6. Menu selection up/down
7. Display

Notes:

1. If you want to use VKDMR, Zone Selection is to be SHS-VK.
2. If you want to use BrandMeister(BM), Zone Selection is to be DHS-BM.
3. The select zone, press MENU(4) button then UP/DOWN(6) button until 'Zone' is highlighted, then press MENU(/SELECT) button, then press MENU(4) button, then use UP/DOWN buttons(6) until your required SHS-VK/DHS-BM is displayed, then press MENU(4) button. Press EXIT(/BACK)(5) button to get back to main display.
4. To change TalkGroups, rotate knob(1) to display TG400(VKDMR) or TG4000(BM) to disconnect from current Talkgroup and key transmitter(PTT(3)) briefly. Then, rotate knob(1) to select your desired talkgroup and key up using PTT(3).
5. For radio configs with regards to Zones and Talkgroups – please refer operating sheet.

JOTA DMR Station Operator's Guide

for hotspot use

(Bridgecom Maverick – AT-890)



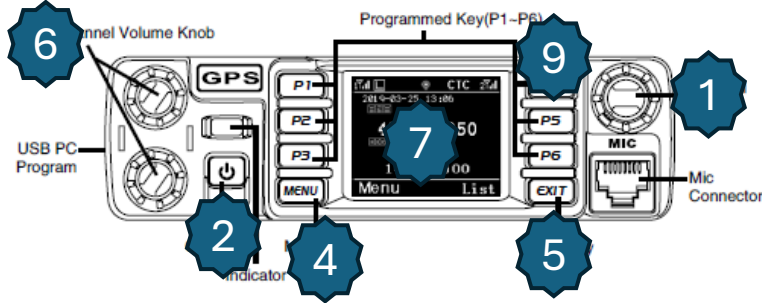
1. Talk Group Selector knob
2. Power (On/Off) & Volume knob
3. Press-to-talk (PTT)
4. Menu/Select
5. Exit
6. Menu selection up/down
7. Display

Notes:

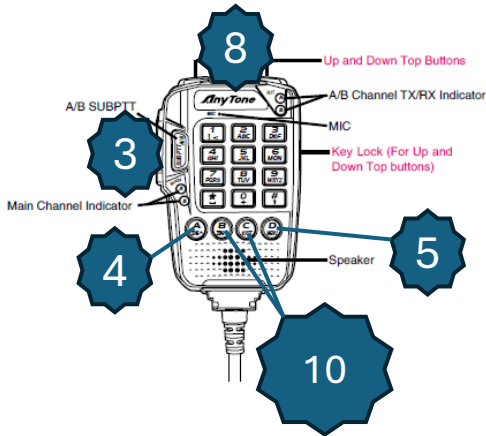
1. If you want to use VKDMR, Zone Selection is to be SHS-VK.
2. If you want to use BrandMeister(BM), Zone Selection is to be DHS-BM.
3. The select zone, press MENU(4) button then UP/DOWN(6) button until 'Zone' is highlighted, then press MENU(/SELECT) button, then press MENU(4) button, then use UP/DOWN buttons(6) until your required SHS-VK/DHS-BM is displayed, then press MENU(4) button. Press EXIT(/BACK)(5) button to get back to main display.
4. To change TalkGroups, rotate knob(1) to display TG400(VKDMR) or TG4000(BM) to disconnect from current Talkgroup and key transmitter(PTT(3)) briefly. Then, rotate knob(1) to select your desired talkgroup and key up using PTT(3).
5. For radio configs with regards to Zones and Talkgroups – please refer operating sheet.

JOTA DMR Station Operator's Guide for hotspot use (Anytone 578)

3.1 Radio



3.3 Microphone



1. Talk Group Selector knob
2. Power (On/Off)
3. Press-to-talk (PTT)
4. Menu/Select
5. Exit
6. Volume (Channel A & B)
7. Display
8. UP/DOWN (on top of mic)
9. TG4000 Select (P4 button)
10. Zone up/down (B/C) buttons

Notes:

1. If you want to use VKDMR, Zone Selection is to be SHS-VK.
2. If you want to use BrandMeister(BM), Zone Selection is to be DHS-BM.
3. The select zone, press MENU(4) button then UP/DOWN(10) buttons (B&C on mic) your required SHS-VK/DHS-BM is displayed.
4. To change TalkGroups:
 1. Press TG4000 Select(9) (radio button P4) TG4000(BM) to disconnect from current Talkgroup.
 2. Key transmitter(PTT(3)) briefly.
 3. Wait to hear "Not Linked" reply.
 4. Rotate knob(1) or use UP/DOWN Buttons (8) (on TOP of mic) to select your desired talkgroup and key up using PTT(3).
5. For radio configs with regards to Zones and Talkgroups – please refer operating sheet.

JOTA DMR Station Operator's Guide for hotspot use (GD77)



1. Not Used
2. Power (On/Off) & Volume knob
3. Press-to-talk (PTT)
4. Menu/Select
5. Exit
6. Menu selection up/down/left/right
7. Display

Notes:

1. If you want to use VKDMR, Zone Selection is to be SHS-VK.
2. If you want to use BrandMeister(BM), Zone Selection is to be DHS-BM.
3. The select zone, press MENU(4) button then UP/DOWN(6) button until 'Zone' is highlighted, then press MENU(/SELECT) button, then press MENU(4) button, then use UP/DOWN buttons(6) until your required SHS-VK/DHS-BM is displayed, then press MENU(4) button. Press EXIT(/BACK)(5) button to get back to main display.
4. To change TalkGroups, use LEFT/RIGHT buttons(6) to display TG400(VKDMR) or TG4000(BM) to disconnect from current Talkgroup and key transmitter(PTT(3)) briefly. Then, use LEFT/RIGHT buttons(6) to select your desired talkgroup and key up using PTT(3).
5. For radio configs with regards to Zones and Talkgroups – please refer operating sheet.

JOTA DMR Station Operator's Guide for hotspot use (Motorola DP4601e)



1. Talk Group Selector knob
2. Power (On/Off) & Volume knob
3. Press-to-talk (PTT)
4. Menu/OK
5. Exit
6. Menu selection up/down
7. Display

Notes:

1. If you want to use VKDMR, Zone Selection is to be SHS-VK.
2. If you want to use BrandMeister(BM), Zone Selection is to be DHS-BM.
3. The select zone, press MENU/OK(4) button then UP/DOWN(6) buttons until 'Zone' is highlighted, then press MENU/OK(4) button, then press MENU/OK(4) button, then use UP/DOWN buttons(6) until your required SHS-VK/DHS-BM is displayed, then press MENU(4) button.
4. To change TalkGroups, rotate knob(1) to display TG400(VKDMR) or TG4000(BM) to disconnect from current Talkgroup and key transmitter(PTT(3)) briefly. Then, rotate knob(1) to select your desired talkgroup and key up using PTT(3).
5. For radio configs with regards to Zones and Talkgroups – please refer operating sheet.

JOTA Foxhunt Operator's Guide

Assembly Instructions - Tracker

- 1. Remove antenna contents from bag.**
- 2. Install elements to make 3 element yagi noting all elements to be on same side of boom and mounting point for receiver. Driven element to have cable facing rear of antenna.**
- 3. Unscrew rear cover of receiver and install batteries in correct polarity order. Screw cover back on.**
- 4. Connect antenna lead to receiver.**
- 5. Mount receiver.**

FUTURE PHOTO OF COMPLETE SETUP TO GO HERE

Disassembly Instructions - Tracker

- 1. Unmount receiver.**
- 2. Disconnect antenna lead from receiver.**
- 3. Unscrew rear cover of receiver and remove batteries returning to snap lock storage bag. Screw cover back on.**
- 4. Disassemble 3 element yagi replacing nuts/wingnuts on elements.**
- 5. Bundle antenna contents together, insert into garbage bag, wrap and secure.**

JOTA Foxhunt Operator's Guide

Foxes

- 1. SGARS currently has four(4) fox transmitters across three frequencies as follows:**
 - 1. Fox #1 – 144.025MHz**
 - 2. Fox #2 – 144.075MHz**
 - 3. Fox #3 – 144.150MHz**
 - 4. Fox #4 – 144.150MHz**

FUTURE PHOTOS(3) OF COMPLETE SETUP TO GO HERE

Assembly Instructions - Fox

- 1. Remove fox transmitter from storage container.**
- 2. Collect battery from storage container.**
- 3. Remove antenna cable (and adapter if required) from snap lock bag in storage container.**
- 4. Select antenna from snap lock bag in storage container, there are two types being:**
 - 1. Handheld whip**
 - 2. Wire dipole**
- 5. Connect antenna to antenna cable.**
- 6. Connect antenna cable to fox transmitter.**
- 7. Connect fox transmitter to battery.**
- 8. Take complete unit to hidden location.**
- 9. Place battery on ground, transmitter adjacent and install antenna (hidden as best you can) at some desirable height.**
- 10. On fox transmitter, switch power to ON position.**
- 11. On fox transmitter, switch PTT to ON position.**
- 12. Ideally,**
 - 1. Fox on frequency #1 to be installed to the EAST of the campsite,**
 - 2. Fox on frequency #2 to be installed to the WEST of the campsite,**
 - 3. Fox on frequency #3 to be installed in a location close to and opposite JOTA tent.**

JOTA Foxhunt Operator's Guide

Operating Instructions - Tracker

1. Press ON/OFF(M) button to turn on tracker.
2. Press ON/OFF(M) button repeatedly until the display shows 't'.
3. Press button 1—3 to select fox frequency:
 1. 1 for 144.025MHz,
 2. 2 for 144.075MHz, or
 3. 3 for 144.150MHz.The display will flash the last four (4) digits of the selected frequency.
4. Press 9 to reduce speaker volume, 0 to increase it.
5. If necessary, there is a 'reduced functionality (Scout)' mode available which disables the majority of the buttons and associated functions. To enter this mode, HOLD DOWN the 'F' button while powering on the unit. The display will show 'S' on startup. To disable this mode, HOLD DOWN the '7' key while powering on the unit.



Fox Frequencies

1. The tracker/receivers are programmed as follows:
 1. Frequency #1 – 144.025MHz
 2. Frequency #2 – 144.075MHz
 3. Frequency #3 – 144.150MHz

JOTA Foxhunt Operator's Guide

Briefing Group

- 1. Ensure group has their leader present. (Scouts 'TWO DEEP' policy)**
- 2. Assembly group in a suitable area and have them be quiet to listen.**
- 3. Explain event: 'You are about to go on a fox-hunt where we are going to use this tracker/receiver to find a hidden transmitter. First, I need to explain how to do this and some safety rules'**
- 4. Continue: 'We have to make sure that this activity is done safely so we have three rules.**
 - 1. Rule #1: Only one person is to operate the tracker/receiver at a time.**
 - 2. Rule #2: Everyone else not using the tracker/receiver is to be at least one metre (3 big steps) behind the person using the tracker**
 - 3. Rule #3: Watch where we are going. Do not run. Do not go through campsites.'**
- 5. The tracker/receiver gives us two indications on whether we are going in the right direction and getting closer to the fox.**
 - 1. The first is the pitch/tone of the audio signal. As we get closer to the fox or are pointing in the right direction – the pitch/tone goes up.**
 - 2. The second is the number on the display – the higher the number, the closer we are to the fox.**
- 6. So what will happen is, the tone will rise, and then the number will change up by one. When the number changes up, the tone will drop down and then start to rise again – we keep doing this until we find the fox.**
- 7. Any questions?**
- 8. 'OK, so who is going to go first?'**

JOTA Foxhunt Operator's Guide

Before Taking a Group Out

1. Turn on receiver.
2. Select Fox number being hunted (preset 1 or 2).
3. Check that you are on the correct receiver frequency by quickly doing a 'sanity check' on direction of the fox.

Hints while taking out the Group

1. STOP the group if they are getting too close to the person operating.
2. Rotate person operating the tracker every 10-15 steps.
3. Remind person operating the tracker to sweep (left-to-right and back again) SLOWLY so they can get a better bearing by listening to the tone change.
4. Ensure everyone gets a turn (including leaders) – most Scouts/Guides love seeing their leaders 'get involved'.
5. Once they have found the fox, explain the components – transmitter, antenna, battery.
6. Once they have found the fox, if there is sufficient time, ask if they want to find another. If so, change frequency to preset 3 (this fox is located close to the JOTA tent so they will track back to the start).

After Taking a Group Out

1. Turn off receiver, unless you are about to take another group out immediately.
2. Place tracker in a safe storage location.