

**TechTalk103 - The Second VK3RTV
DATV/ATV QSO Party
by Ken Konechy W6HHC**

Last year, Peter Cossins VK3BFG and the hams associated with the VK3RTV digital-ATV repeater organized the first world-wide DATV QSO Party in August 2011 to help celebrate the 100 Years of the Amateur Radio Victoria organization providing support for ham radio. This year, the Melbourne ATV Group organized a second QSO Party for DATV and ATV stations on August 24th and 25th GMT. The VK3RTV repeater is the second earliest DATV-repeater in Australia, and no longer has any analogue downlink.

Many Ways to Get Video to Australia VK3RTV

In south-eastern Australia, many hams had contact directly line-of-sight by radio frequencies with the VK3RTV DATV-repeater (near Melbourne). In other parts of Australia and the United States, hams relayed their video to Peter VK3BFG by SKYPE video-connections...who then uplinked the video and audio to the VK3RTV digital repeater using the DVB-S protocol for DATV. Let me detail out the many ways that hams participated in the VK3RTV QSO Party this year:

1. Line of sight 1.2 GHz RF DATV or ATV transmission to VK3RTV repeater
2. SKYPE video connection directly via internet to VK3BFG, who then uplinks the video to the VK3RTV repeater by 1.2 GHz DATV RF
3. USA ATVers connect to the ATN Analog-ATV Network by RF and the received RF signal from W6ATN repeater is then SKYPED by KE6BTX to VK3BFG, who then uplinks the video to the VK3RTV repeater by 1.2 GHz DATV RF.



Figure 1 – W6HHC 1.2 GHz DATV Video can be seen being received on SetTopBox/Notebook-Computer

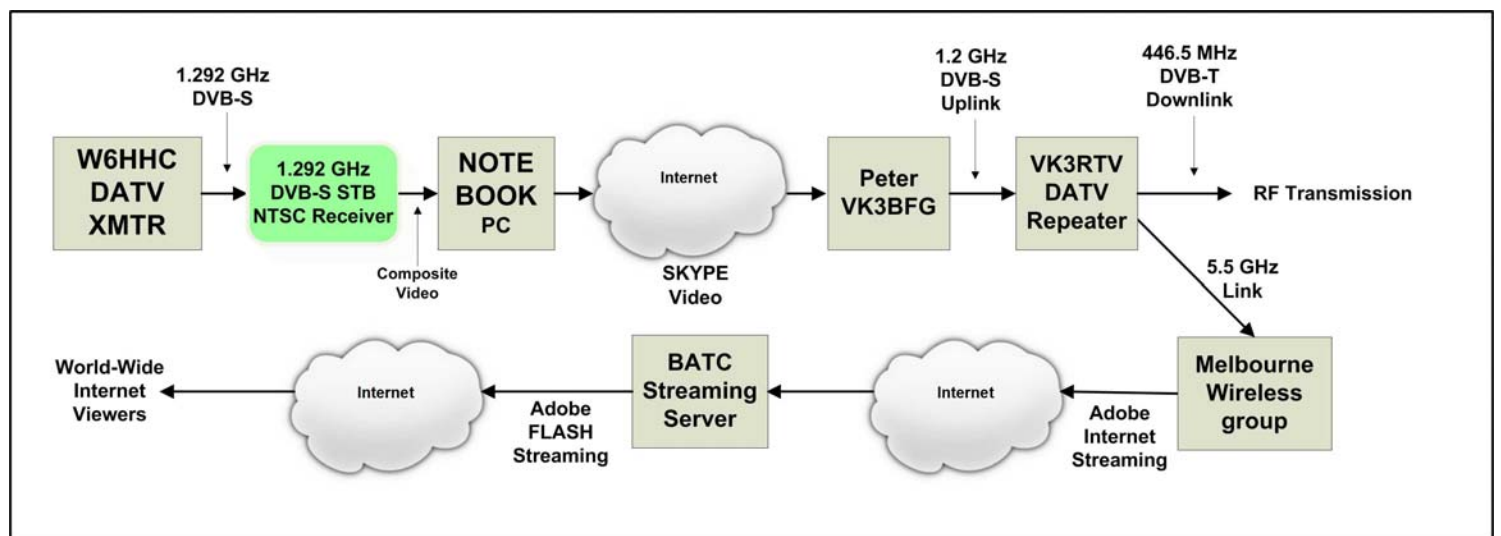
4. SKYPE video connection via internet directly to KE6BXT. Don will simultaneously send your video to the W6ATN ATV Repeater Network by RF and via SKYPE on the internet to VK3BFG, who then uplinks the video to VK3RTV repeater by 1.2 GHz DATV RF

Getting W6HHC 1.2 GHz DATV Signal to Australia

During the QSO Party, the W6HHC digital-ATV signal was transmitted on 1.2 GHz using DVB-S protocol for DATV. The signal was then received on a nearby satellite-SetTopBox receiver that sent the video signal over by USB to a Dell notebook computer to be displayed. See Fig 1 of the W6HHC DATV video being received in Orange, CA on the notebook computer screen.

The next step was to take the video display on the notebook computer and send it over the internet by SKYPE video-connection (called “shared-screen” mode

Figure 2 – Block Diagram Showing W6HHC DATV QSO Straight to Australia VK3RTV



or “shared-desktop”) to Peter VK3BFG, the net control station. W6HHC chose method-2 in the “many ways list” to SKYPE his received DATV video signal to VK3BFG via the internet. See **Fig 2** for a block diagram explaining the complete video signal path. Peter VK3BFG then uplinked the received SKYPE video to the VK3RTV DATV repeater on 1.2 GHz using DVB-S protocol. The VK3RTV repeater in turn downlinked the W6HHC video on 446 MHz using the DVB-T protocol.

As shown in **Fig 2**, a nearby group called Melbourne Wireless also receive a 5 GHz link from VK3RTV and send the video over internet by streaming video to the BATC (British Amateur Television Club) server. Now the VK3RTV video could be seen all over the world through the www.BATC.TV/ internet URL. It was exciting to watch my DATV video come back from the VK3RTV digital-repeater via the BATC streaming server on the internet using my iPad as a monitor! This was an interesting combination of ham radio and internet!

Success and Fun for the VK3RTV QSO Party

The following are some of the photos that I captured from the VK3RTV QSO Party.



Fig 3 – Typical VK3RTV Repeater Test Pattern seen over the Internet

Peter VK3BFG reported that a total 16 ATVers on Friday night (Australian time) and 18 stations checked in on the Saturday’s session. That included SKYPE DX check-ins from South Australia (VK5ADM), Tasmania (VK7OTC & VK7EM) and USA (KE6BXT & W6HHC).

Don KE6BXT in Mission Viejo, CA reported that he had about another 10 different ATV stations check into ATN via RF and about five stations checked in via SKYPE.



Figure 4 – Larger Picture is Peter VK3BFG testing with Don KE6BXT (smaller PIX in lower corner) (photo courtesy of KE6BXT)



Figure 5 – BATC Screen-Shot of QSO Party Announcement before the event.



Figure 6 – BATC Screen-Shot of John Fisher VK3DQ and his wife Jean VK3VIP. Jean is also president of ALARA (the Australian Ladies Amateur Radio Association)

Fig 7 shows a video screen-shot from the “traveling portable DATV station” VK3WWW that visited and set-up DATV at many of the iconic scenic spots around Melbourne during the QSO Party. I am a bit suspicious that that some sort of “green screen” may have been involved with their transmissions? But, I certainly enjoyed a personal tour of Melbourne. Well done!!

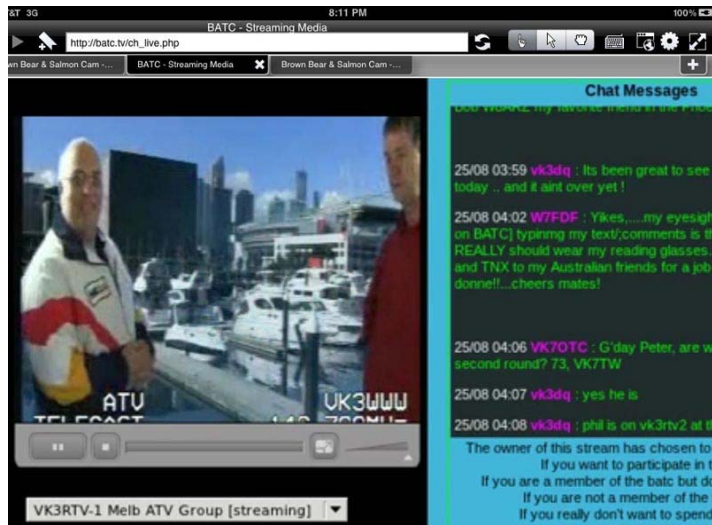


Figure 7 – BATC Screen-Shot of the “traveling DATV portable station” VK3WWW

meant I could send a “video call” with KE6BXT but NOT a “shared screen”. And...that meant I could not send the W6HHC DATV video received on my screen to Don....but I could send my web-camera video from my notebook computer to Don and on to the QSO Party using method-4. More will be discussed about this new “SKYPE issue” a little later in the article.

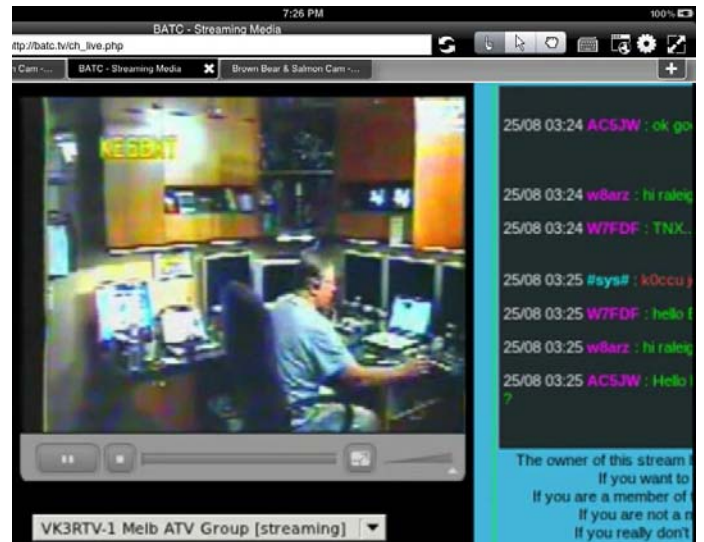


Figure 9 – BATC Screen-Shot of Don Hill KE6BXT at his controls during the VK3RTV QSO Party

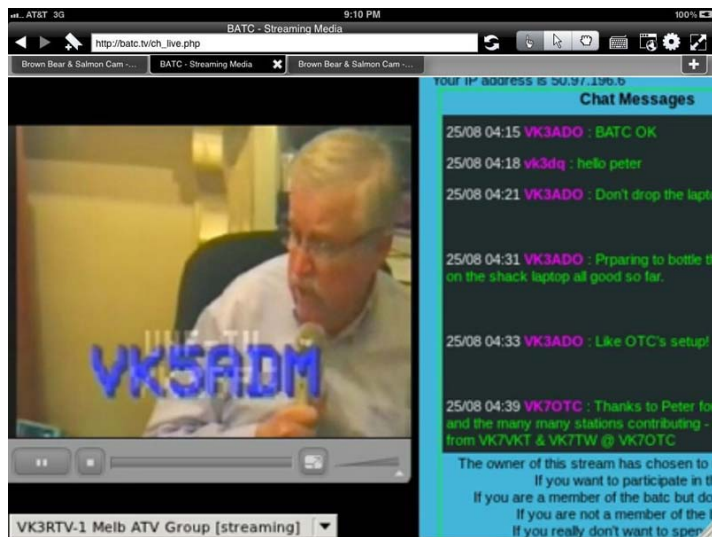


Figure 8 – BATC Screen-Shot of Don VK5ADM checking in via SKYPE from South Australia

ATN video in **Fig 9** could be seen simultaneously on the ATN television network by RF and on VK3RTV via SKYPE. I also checked directly into KE6BXT by SKYPE (method-4 on the “many-ways-list”). I discovered this year that I could no longer do a SKYPE connection “screen share” with KE6BXT. That



Fig 10 – Typical W6ATN Repeater Test Pattern seen over the Internet

Solved some Problems – Found some Problems
Last year I had run into some problems with watching the BATC streaming that annoyed me.

Problem-1 (solved) I discovered last year that I could not use my iPad to monitor the BATC streaming server. This is because BATC streaming uses ADOBE FLASH video and Apple will not allow

FLASH video to be viewed on either the iPad or the iPhone because of security concerns. In the **TechTalk96** article, I reported that I had discovered an "APP" that is sold in the Apple iTunes Store that solves the BATC streaming problem on an iPad. The "APP" product is called Photon Flash Web Browser. This APP is a specialized web browser for an iPad or iPhone and sells for US\$4.99 on the Apple iTunes Application Store. This APP can handle Flash streaming video, as well as interactive Flash games, as well as pre-recorded Flash video like often used on Facebook.

Problem-2 (solved) A second problem with the iPad I had known about was the AUTOLOCK feature that was shutting the iPad down every 15 minutes (or sooner). That is a terrible limitation for a streaming QSO party. A friend of mine had an AUTOLOCK setting available for "Never". But, the "Never" setting did not show up on my iPad? A long search of the Apple Knowledge Database for iPad did not yield any answers to the problem. Thank goodness for the "brick and mortar" Apple Stores!! The Apple "geniuses" at the nearby Apple Store sorted out that because my iPad was used in a corporate environment using Microsoft Exchange Server...Exchange had invoked a security policy that had mandated a password be used for iPad AUTOLOCK. By eliminating the Exchange set-up (temporarily for the QSO Party) on my iPad, I could now remove the AUTOLOCK password and I now could see a "Never" timeout setting.

Problem-3 (newly found and solved) This year I discovered that Don KE6BXT had changed around his SKYPE set-up in his station to make some improvements. But, Don's new set-up (or updates by Skype) was preventing me from setting up my SKYPE in the "share screen mode". My "no cost SKYPE" was obtaining a message that I needed to upgrade in order to use the "share screen mode" with Don's SKYPE. That meant that I could only send my web-cam video to KE6BXT...not the video on my computer screen (such as received DATV video or a

PowerPoint presentation). SKYPE does offer a SKYPE PREMIUM product that allows all parties to be sending shared-screen. The SKYPE PREMIUM is relatively cheap. You can use it for one day for US\$5 or subscribe to it for one month for US\$9. After the QSO Party I used a free trial offered by SKYPE PREMIUM and confirmed the upgrade provides a satisfactory solution with KE6BXT to this new problem. [NOTE – my SKYPE screen-sharing video always has worked well with VK3BFG.]

Problem-4 (newly found) During this QSO Party I discovered another new problem. My iPad monitoring the BATC streaming using the Photon Flash Web Browser would drop out of FLASH streaming after about 6+ minutes. My "work-around" to prevent drop-out was to move the iPad screen around a bit every 5 minutes to keep the "APP" in the FLASH mode. I suspect this is a Photon "APP" setting or a technical issue. I plan to get in touch with Photon technical support and see if I can find a better solution to the drop-out.

Conclusion

The second VK3RTV DATV QSO Party was great fun!! I got to meet (see) a lot of DATV and hams. Combining DATV and SKYPE and internet allows a widespread group of participants and watchers in a QSO party. I think this event was great promotion of DATV!!

I think of the SKYPE function as an "amplifier", that is SKYPE and the internet allow RF video signals to go where they could not have reached before. Peter VK3BFG has a good philosophy to use "balance" during the VK3RTV QSO Parties. As Peter says "...The No 1 premise is to maximise the use of RF and amateur radio frequencies and minimise the use of the internet. We are amateur radio enthusiasts, using computers as tools when required."

I want to thank both Peter Cossins VK3BFG and Don Hill KE6BXT for inviting me to participate and taking the time to allow me to test SKYPE before the QSO Party started. Also, a special thanks to all the folks at BATC who provide the BATC-streaming server.

Interesting DATV Links

- VK3RTV Digital Repeater WEB site – see www.VK3RTV.com
- W6ATN Amateur Television Network (ATN) – see ATN-TV.org/
- Amateur Radio Victoria organization – see www.AmateurRadio.com.au/
- British ATV Club - Digital Forum – see www.BATC.org.UK/forum/
- British ATV Club – select from about 35 streaming repeaters – see www.BATC.TV/
- German ATV portal for streaming repeaters and forum – see www.D-ATV.net/
- OCARC TechTalk95 article on first VK3RTV World-Wide QSO DATV/ATV Party in 2011 – see www.W6ZE.org/DATV/
- Orange County ARC newsletter entire series of DATV articles – see www.W6ZE.org/DATV/
- Yahoo Group for Digital ATV - see groups.yahoo.com/group/DigitalATV/