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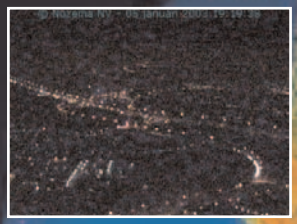

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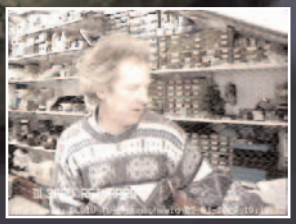

PI6ALK

A “Seriously Magic” Review

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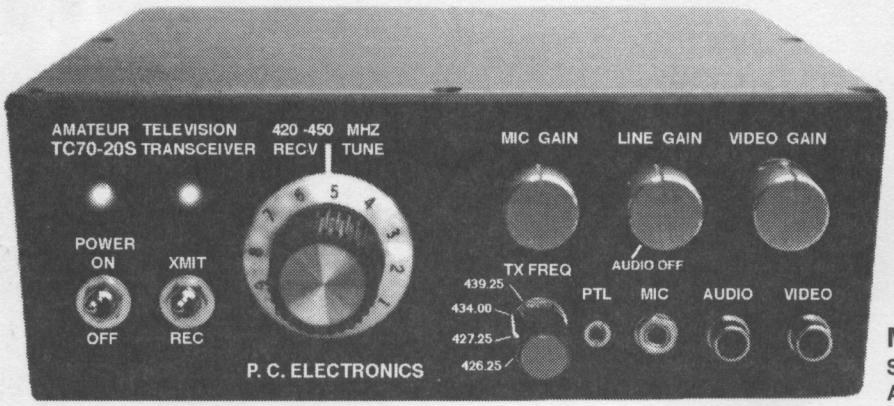

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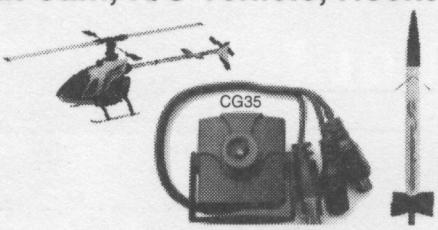
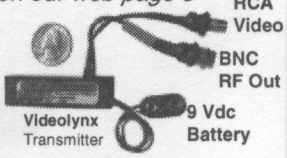


App notes available on our web page 3



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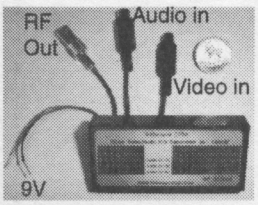

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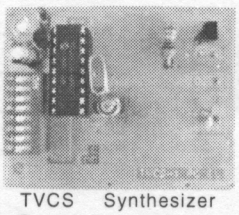

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Amateur Television Quarterly

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Editors Notes

Harlan Technologies has been in business for 10 years this year! We have not always been doing the same thing, but we have had a lot of fun doing different things related to ham radio.

It all started when Shari, N9SH, my beautiful other half, bought me a Sound Blaster sound card for Christmas. I started thinking as to what I would use it for, other than listening to 'stuff". I had played with SSTV in the past and wondered if SSTV could be done with a sound card. Maybe not, since no one else had done it yet. Well, it took a while, but I finally got 8 second B&W working. When I went on the air with it for a test at the end of 1992, everyone told me that 8 second B&W was obsolete, but, yes, they would send a picture. And then I would send a picture to them. I put it out as shareware and people were willing to pay for this new program, and this was the start of Harlan Technologies. Of course, I had to add the color modes to keep it interesting.

It also started Shari and I going to Dayton every year since. I received a phone call asking if I would speak at the SSTV presentation at Dayton about doing SSTV with the Sound Blaster! Since I never had been to Dayton, I did not have a clue what it meant, but when I went to bed at night, I tossed and turned thinking about it. Yes, I was a little nervous!

The IVCA invited me to join them in their booth as well, and I was able to meet John Langner, WB2OSZ, a real asset to SSTV! What a ball we had talking to people about slow scan TV. Who would have thought that so many people would be interested? And because of this, I learned to program in 'C'. Of course, I have forgotten most of what I learned since then.

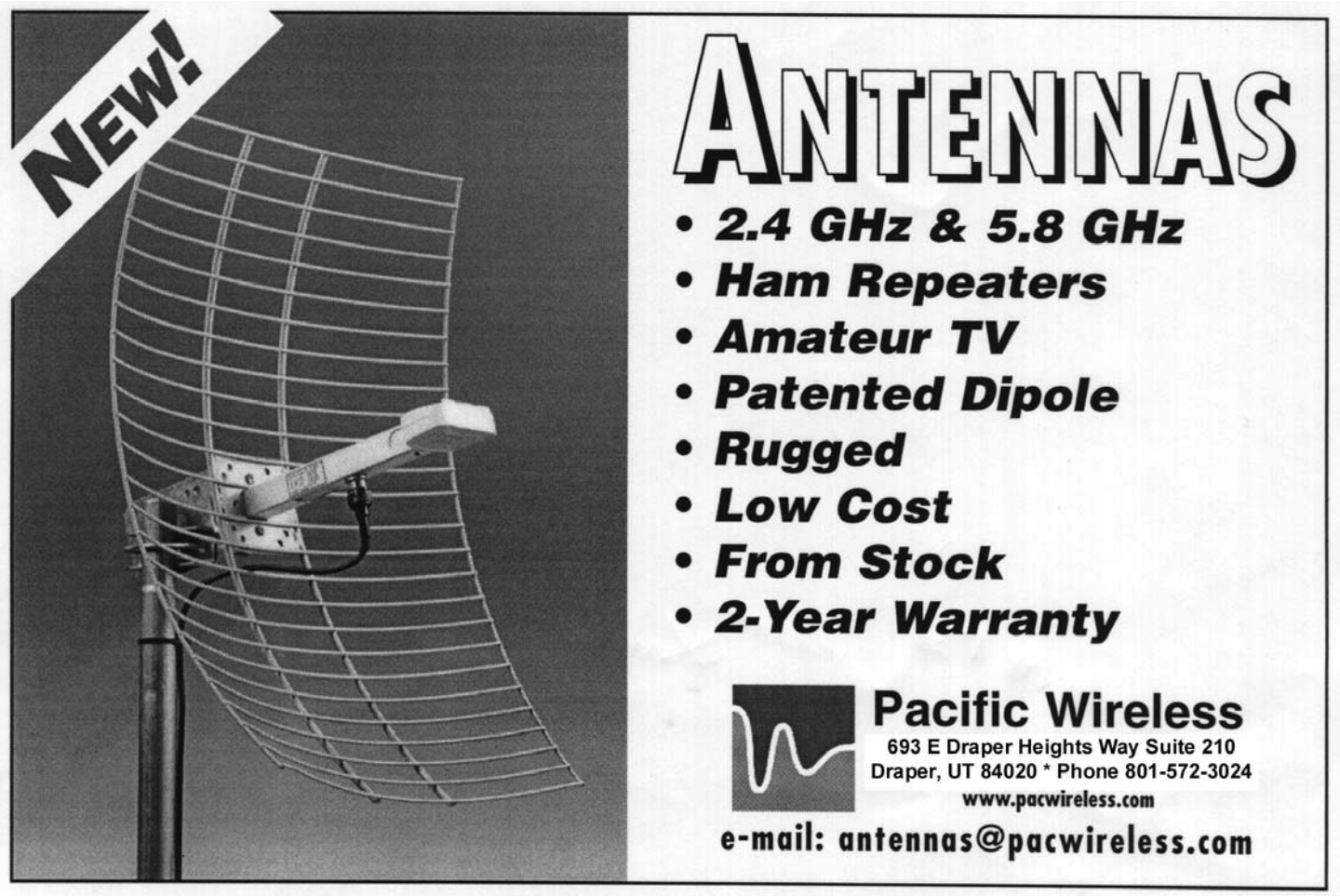
Today the program to use is, including me, MMSSTV written by Mako, JE3HHT. The web site is: **http://groups.yahoo.com/group/MM-SSTV/**.

So, that was the start of our little company. Some people think this is a full time business, but I still have a real job as well as doing ATVQ which is still going strong. OSCAR Satellite Report has been declining and we decided to stop accepting renewals late last year. A few more issues and I will have 6 or more days/nights of time to do other things every month, like play with grandchildren! Recently we have started doing name tags, so we can justify going to more hamfests.

What else will Harlan Technologies do in the future? Even I do not know, so we will have to wait and see.

Gene Harlan - WB9MMM

ATVQ



Worldwide ATV - Contacts Using Internet Radio Linking And The Internet For Talkback

Ian Abel - G3ZHI - Email: g3zhi@hotmail.com
52 Hollytree Ave
Maltby, Rotherham
Yorkshire
UK, S66 8DY

Ian bicycle mobile using IRLP

A number of ATV repeaters around the world now stream their 'off air' video on the Internet so anybody anywhere in the world who is connected to the Internet can view the video.

The next step for hams was to make a talkback facility available for two-way communications.

There are a number of ways talkback can happen, either by using the Internet itself and one of the voice/video communications programs or by using your local Internet voice gateway – where a local fm vhf/uhf repeater or simplex channel is linked to the Internet.

If you wish to use a computer chat program to talk to someone on the Internet your computer must have a sound card microphone and speakers. Next download one of the chat programs such as Microsoft MSN Messenger or Net Meeting, Both are free and allow you to call an individual or groups of people and talk to them. Net Meeting also allows streaming video so you can exchange your off air ATV video.

The refresh rate of the video depends on your Internet connection – 1mb broadband means faster refresh than a 56k dialup.

After first downloading MSN Messenger and installing the program the next step is to sign up for an Hotmail account - if you do not have one already. The person you wish to talk to also has to do the same. I use my callsign for my account name so I am **g3zhi@hotmail.com**.

On MSN Messenger there is a facility to add people to your address list by adding their email address so to add me to your contact list you would just insert my email address in the box provided.

I will then receive a notification on my MSN that you have done this and I click OK to add you to my contact list.

When you go online you can check your contact list and it informs you who - at that moment is on line and who is not – so it is very useful to see if your friends are about for a live chat.

Using MSN you can chat on the keys or you can use voice - which works on full duplex.

So if you were looking at the streaming video on a web site from say an ATV repeater in Sydney Australia and the ham sending it was on your MSN Messenger list you could just call him and tell him what you are seeing.

As MSN messenger only has text and voice, if you wanted to send him some ATV video you could use Net Meeting or the iPHONE program to do this.

You could take your off air ATV repeater video and transmit them to the ham you are talking to or you could stream them on a web site so that many hams around the world could view them.

There are basically 4 methods of Internet radio linking.

Three run on Microsoft Windows: iPHONE, eQSO and EchoLink and can be downloaded free from my web site. These programs allow you talk ham to ham over the internet who is talking on a computer at the distant end or on a radio link which could either be on a repeater or a simplex channel, or radio to radio i.e. you could be on the radio at your end and use a local internet voice gateway provided by another ham near you.

The fourth Internet linking system is called IRLP - this does not permit you to talk from your computer. Indeed the system is very secure to prevent this. It works under Linux, Redhat 6.2 or 7.3, and links over 750 repeaters around the world. The user can call up each repeater on demand. There are IRLP gateways around UK and in a number of countries around the world. Most are in the USA Canada and Australia.

Any ham with an Intermediate or Full class of license can install a voice Internet gateway you just need an NOV from the RA.

I would be very happy to answer any questions on Internet linking and I can be contacted by email.

The following is published in the RSGB 2003 callbook:

Internet Linking
It is now commonplace for those on the Internet to communicate with friends and family around the world using voice and video, which requires their computer to have a camera, microphone and sound card fitted. For radio amateurs the next step was to link their FM, VHF, or UHF transceiver to the computer sound card, enabling audio from their transceiver onto the Internet. If a similar link was taking place on a remote computer and both computers were linked together via the Internet (in the UK or anywhere in the world) you could have a radio-to-radio QSO with the Internet providing the link in the middle. The transceiver could be operating on either a local VHF or UHF repeater, or an FM simplex channel. All Internet linking on repeaters takes place in the shack of the amateur providing the link, nothing is done at the repeater site. The audio quality is normally excellent, with DX stations sounding just like locals.

With the more liberal amateur radio laws in the USA and Canada, Internet repeater linking has been in use there for more than six years. The first program used was IPHONE from Vocaltec, but any program that allows audio over the Internet, e.g. MSN Messenger or Paltalk, can be used for linking and to provide basic radio communication. This would be done by holding the transceiver's microphone to the computer's speaker and transmitting the audio off the Internet over the air, then holding the computer's microphone to the transceiver's speaker and transmitting the audio over the Internet. TX/RX changeover would be made by manually pressing the PTT, but with more sophisticated programs like IRLP, changeover is done automatically using an interface board and the transceiver's 'COS' (carrier operated switch) data line, allowing repeaters to be connected to the Internet 24 hours a day. In the UK, permission had to be obtained from the Radiocommunications Agency to link amateur radio to the Internet and a personal request to do so was made by Ian Abel, G3ZHI, to RA Chief Executive David Hendon at their Road Show in Leeds October 1999. Permission was granted in January 2000.There are currently four Internet linking systems in use: IPHONE, iLINK, eQSO and IRLP. The first three run under Windows 95® and above, and each program can be downloaded from G3ZHI's web site. IRLP runs under Linux Redhat6.2 (this version only). For those not familiar with Linux, the UKIRLP Group is willing to help with installing Linux and the IRLP software. Using Linux is straightforward when the Graphical User Interface (GNOME) is also installed, as the Desktop looks similar to that of Windows. As of April 2002, 186 NoVs had been issued for simplex Internet gateways, 74 on 2m, 111 on 70cm, and one 70cm 7.6MHz split repeater.

Getting Connected

If you wish to install an Internet gateway, you first need to apply to the RA for a Notice of Variation (NoV) to your Amateur Radio License. For a simplex link the application can be made online the RSGB DCC web site. It lists all the 2m and 70cm frequencies available. If you wish to put the link on a repeater, you must first obtain written permission from the keeper which must then be forwarded with the application to the RSGB RMC Chairman Carlos Eavis, G0AKI, QTHR, supplying all the information required for a simplex link, plus the call sign of the repeater you wish to put the link on, a copy of your license validation document and the written permission of the keeper. Alternatively, you could apply to install your own Internet linked repeater as the changes to the channel spacing on 2m and the 7.6MHz split on 70cm have increased the number of available frequencies. Some software changes will probably have to be made to the repeater logic, because no repeater identification may be sent over the Internet as it causes problems with the other repeaters that are connected, producing a 'ping- pong' effect (repeaters continuously keying each other on and off). The logic must also be capable of operating CTCSS. As Internet linking is worldwide, amateurs in many different time zones help to police the links 24 hours a day, with any problems being reported to the stations providing the links.

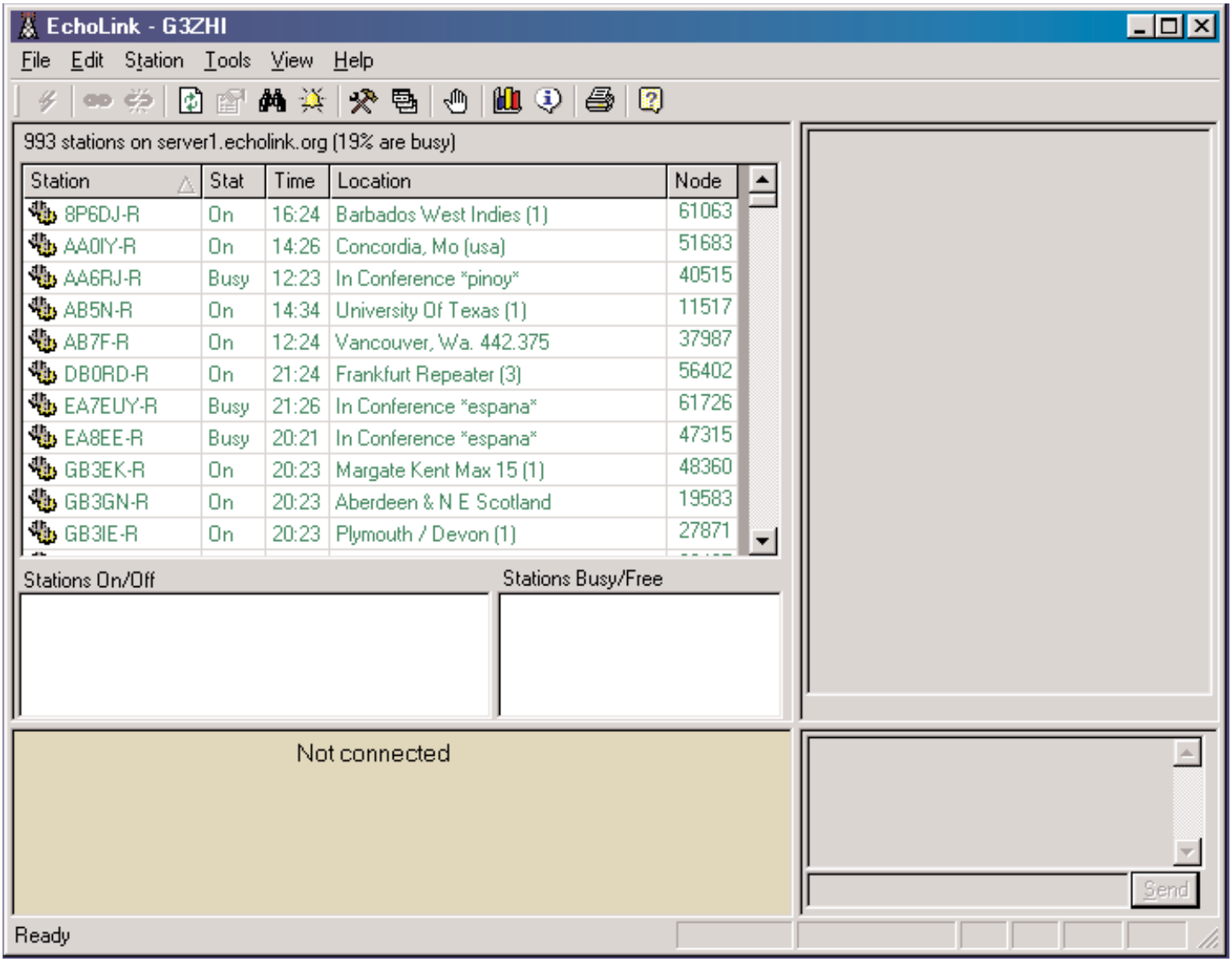
Contacts

Using an Internet link, DX stations can be worked from home, while out walking, or bicycling using a handheld transceiver. A typical example is to have a round-table QSO with amateurs on repeaters in the USA, Canada, South Africa, the Caribbean and Australia, all in the same QSO. Some American repeaters transmit simultaneously on multiple frequencies (e.g. 2m, 6m, 10m, 220MHz and 70cm), so you can be transmitting on many different frequencies all at the same time. The most remote place on IRLP is the American McMurdo Base in Antarctica. The base has a 'live cam' (**http://live7.truelook.com/rasa/mcmurdo/index.jsp**), which you can control. The picture quality is very good. For six months of the year the base is in 24-hour daylight, so, with a little organization, it would be possible to see the person you were talking to if they stood in front of the camera. Some overseas repeater linked systems are very sophisticated, with many repeaters linked together by radio. In New Zealand for instance, they have the 70cm National System that has 19 repeaters linked together, providing nearly full coverage of both the North and South Islands. In 2001, when Tony Whitaker, G3RKL, was walking the length of the country (1,300 miles from top to bottom), G3ZHI was able to keep in touch with him daily while he was on his walk and patch him through to his local repeater, GB3US, in Sheffield to talk to his friends (Tony is actually the keeper). In the USA and Canada there are a number of linked systems. One example is the Winsystem in California, which links San Diego to San Francisco via 17 mountain top repeaters (some over 8,000ft high) all linked together. Another US repeater with excellent coverage is the Tram repeater in Palm Springs, California, so called because the tram goes to the top of the mountain where the repeater is located. Also on the top of the mountain there is a 'live cam' which is next to the repeater site, which you can view from the Tram web site

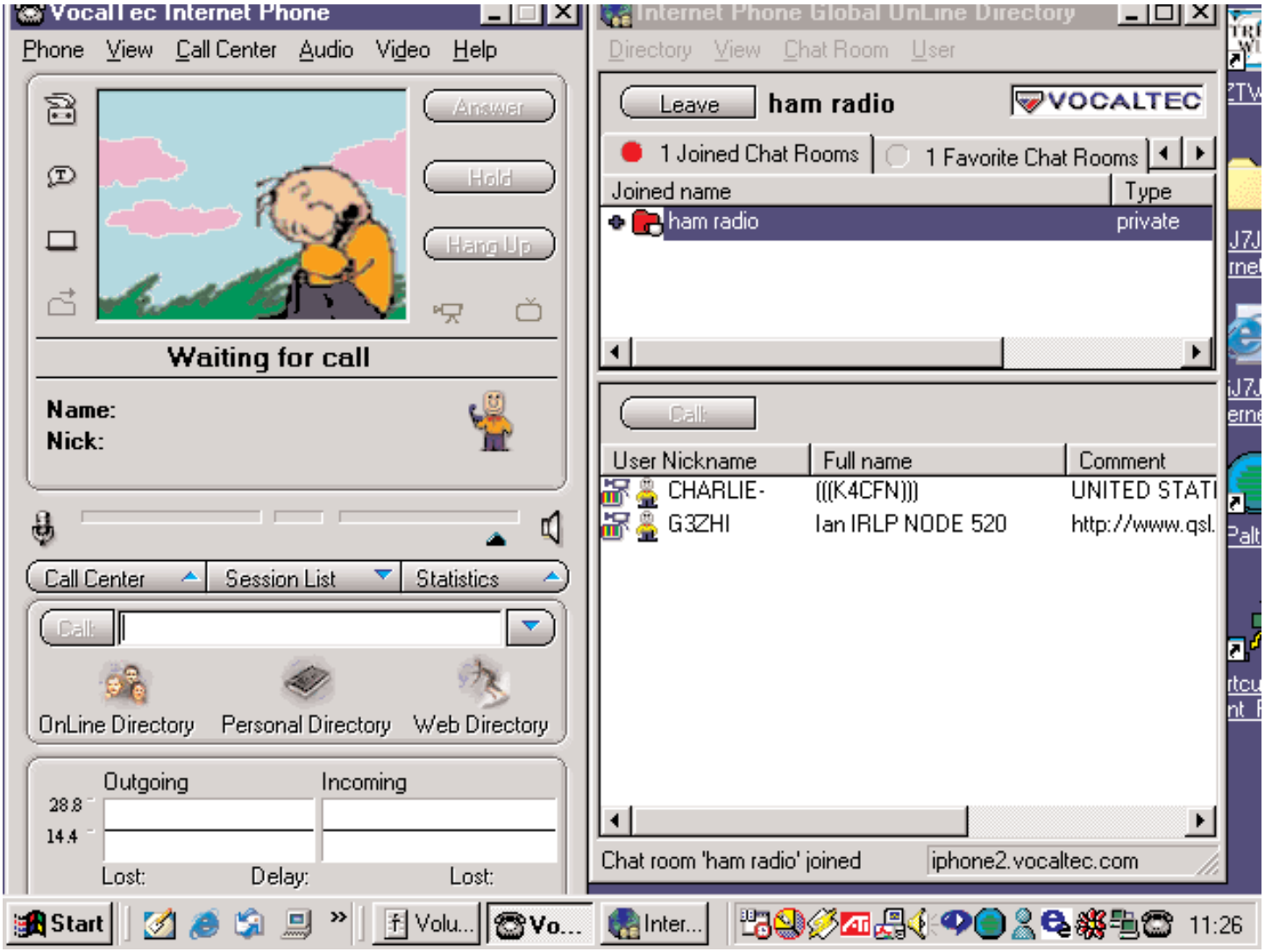
(**www.pstramway.com**) and enjoy the beautiful scenery and see the repeater coverage. In the future maybe all repeaters in the world will be linked to the Internet, enabling amateurs to keep in touch with friends visiting any city in the world that has a repeater. Internet linking is ideal for DX QSOs, making it possible to have in depth discussions unaffected by QRM or QSB. Contacts can be 'one to one' or in a 'round table' where many repeaters are linked together. Sometimes on IRLP, 30 repeaters can be linked and all the users on each repeater are able to hear each other. For the elderly, who are no longer able to look after their aerials and towers, or amateurs that go into retirement homes, this is an excellent way for them to keep in touch with friends. While at work, university, school or at an Internet cafe, provided the computer you are using has a microphone and sound card, you can talk or just listen to your amateur friends without having access to a radio. Internet linking will work on a 56k-dialup modem, but a high-speed connection is best. Repeaters represent a big investment in both time and money and the aim of the Internet radio-linking project is to increase activity on repeaters and simplex channels. Using IPHONE 4.5, one of the memorable QSOs G3ZHI had, was with the Motorola Museum club station in Chicago, Illinois, USA, K9MOT.

While talking to K9MOT over the N9EP-R repeater, a radio amateur passenger in a light aircraft joined the QSO, working aeronautical mobile (which is permitted in the USA). Just at that time the aircraft was flying above the museum and the radio amateur in the plane was sending live video to the club. They then forwarded it via the IPHONE program, so G3ZHI was able to see the video from the plane. G3ZHI has also worked another radio amateur passenger in a light aircraft, this time while out cycling and using a handheld on GB3DV, the70cm repeater in Maltby, which was connected to N9EP-R in Chicago via IRLP. With the consent and co-operation of the repeater keepers, a UK repeater system could be developed providing full coverage of each motorway, e.g. the M1 could have several repeaters all linked together, providing continuous coverage from London to Leeds.

To use the Internet linking programs on a computer it must have a microphone, sound card and speakers fitted. It is a good idea to first test that your microphone and sound card are working



EchoLink Status Page



IPHONE

correctly, by using the sound recorder program located in Windows Accessories.

Further information

Check **http://dcc.rsgb.org/ShowGates.asp?call=ALL** to see if you have a local gateway near you. If you live within 10 miles of a gateway you should be able to hear it when it is active. They are not all 24 hours a day and you may need to contact the keeper to check when the link is available.

Echolink

Developed by K1RFD, EchoLink is software that allows Amateur Radio stations to communicate with one another over the Internet, using voice-over-IP (VoIP) technology. The program allows worldwide connections to be made between stations, from computer to station, or from computer to computer. There are more than 38,000 registered users worldwide!

For licensed hams, EchoLink opens up new possibilities for communicating around the world with other amateurs. Your PC links you or your local repeater to any of more than 45,000

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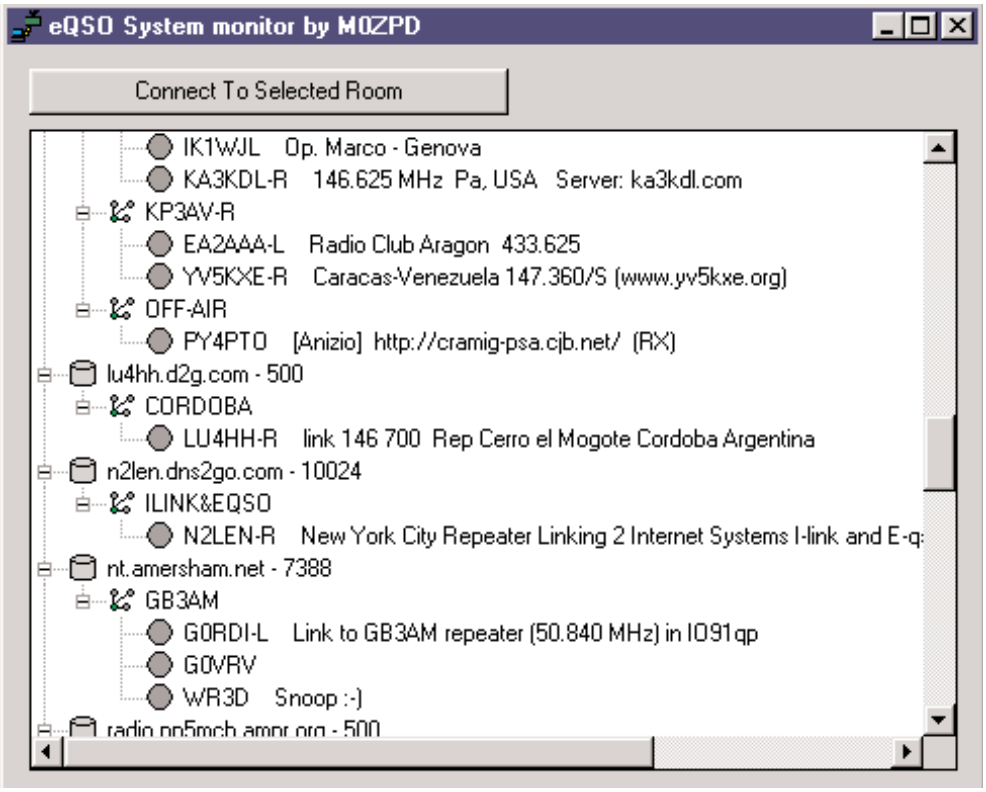


eQSO

other stations over the Internet. The station-list screen keeps running tabs on who's currently on the system. Stations, which have recently come on or off, are noted separately. Sort the list any way you like. You can set up any number of "alarms" which will sound when your favorite stations come online.

In Sysop mode, EchoLink connects to a conventional FM transceiver using either the custom-designed linking interface boards from WB2REM (**http://ilinkboards.com**) and VA3TO (**http://www.teepeecomm.com/ilink**), or general-purpose digital-mode interfaces such as the RIGblaster from West Mountain Radio. The board connects to your computer's sound card and serial

The program includes a number of important security features, such as the ability to restrict access by country, to help comply with your nation's third-party traffic or reciprocal operating rules.

There can be 800 users on the EchoLink list at any one time. You can then call any station on the list, or any station could call you. The station you call could be someone sitting at his or her computer using a headset, a repeater or a simplex radio link. There are also several different conference rooms, with all stations in the room able to hear each other. When you have finished your QSO click on 'END', which disconnects. There is no SWL listen facility, so you must be licensed to download and use the program. Each station is given a unique number and using DTMF on a radio you can call an individual station. However, when you are mobile and not able to see the list of stations connected on a computer screen, you do not know who is on line as stations come and go at random (although some are on-line 24 hours a day). You have to use your experience to gauge which stations are likely to be on line at any particular time. You can dial '00' to connect randomly to any station that is on-line at that time, or '02' to connect you to any free conference server. The '#' will disconnect, while '0' checks the on-air node status. For those using computers there is also a text chat facility, which is very useful if you are having audio problems or don't have a microphone. The audio quality is very good and the servers are very reliable. To transmit you press the space bar once and then press it again to listen. There is an 'info text' file, which you can edit, so when someone connects to you the information is displayed on his or her computer.

For more information

http://www.synergenics.com/el/

Yahoo egroups:
http://groups.yahoo.com/

There are a number of 'egroups' on Yahoo, which have discussions about Internet linking which you can join. For sites on repeater Internet linking, search using Google (**www.google.com**).

eQSO

eQSO FAQ:

http://www.2elehm.freeserve.co.uk/RSGB

Guidelines on Internet linking:
www.rsgb.org/extra/intlinks.htm

This was developed by M0ZPD in 2001. It is available as a 400k download. Installation is straightforward. When you join a server, everyone in the room you select can all hear each other. You can change servers, change rooms on that server; view the full list of all servers and rooms and who is in them. eQSO can be installed on any computer, including a laptop, anywhere in the world, to have QSOs with fellow amateurs. SWL stations are welcome to listen and should identify that they are SWLs. They must not speak unless they are in an SWL-only room, which is off air and has no radio attached. There are three levels of security in place and people can be 'kicked', 'banned' or 'muted' by controlling stations that are monitoring around the clock. Amateurs across the world are using eQSO, and some are in very remote areas. Part of the fun is you never know whom you

Internet link ATV Talkback Voice path

Internet link ATV Video path

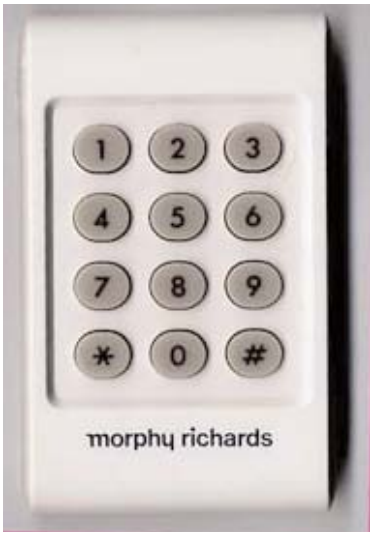
will find on the system. Recently the Chinese have started to use the program, and one Chinese amateur has just installed the first RF 70cm Internet gateway in China.

IPHONE

IPHONE has been used for amateur radio linking since about 1996 and offers audio and video. After downloading (5MB), the first chat room you connect to will be the default 'General' room that can be deleted. You need to join the 'ham radio' private chat room. To do this, first click on the drop-down menu 'Chat Room' on the 'Global On Line Directory' then click on 'New/Private', type in 'ham radio' (all lowercase), then click 'join'. You will then see a list iPhone screen shot. Click on a call sign to call the station, which could either be an individual who is using a computer, a repeater, or a simplex link. Non-licensees can also use the program, enabling SWLs to talk to licensed operators (this is fine, provided there is no radio link involved). You can link a transceiver to the Internet with the IPHONE program by using a VOX unit to operate the TX/RX function. Ready built VOX units are available from CPC (**http://www.cpc.co.uk**) part number HK00035, priced at £16. Vocaltec no longer sells the IPHONE program and they will not allow you to register it. However, it can be uninstalled and reinstalled as many times as you wish (it only takes a couple of minutes) on a 7-day free trial basis. IPHONE also has a 'white board' facility that allows you to exchange text, photos and diagrams with the person you are talking to. Unfortunately, if you are on a handheld that is connected to the Internet via IPHONE, you have no way of knowing who has joined or left the room. Therefore you are not able to call stations, you must rely on people that join the room who are using their computer and can see the list, calling you. When someone clicks on your callsign and calls on your link, their audio triggers your VOX unit and tells your transceiver to transmit. When they stop transmitting, your transceiver returns to receive and the transceiver's audio is passed straight on to Internet. Consequently, when you transmit they hear your audio. IPHONE provides little security, so links need to be monitored when the program is being used. IPHONE used to support conference rooms but the facility is no longer available.

IRLP

Developed by Dave Cameron, VE7LTD, in 1977, Internet Radio Linking Project is available from **http://www.irlp.net**. It is primarily a worldwide Internet linked repeater network with over 400 repeaters connected together 24 hours a day. The number grows almost daily. It is a totally secure system running under Linux Redhat 6.2 (not later versions). You cannot speak on the IRLP system from a computer that is connected to the Internet. You can using the Windows programs, because IRLP was designed just to link repeaters around the world (although there are a few links that are on simplex channels). When using IRLP, you call a repeater by using DTMF tones. There is a directory list of all repeaters giving their individual 3-digit number. You use the number to connect and disconnect from the repeater you wish to call, adding a control digit '0' to turn a link 'on' and a '1' to turn a link 'off'. Example: To call VK2RBM in Sydney, tune your radio to a local Internet linked gateway frequency and key 6000 to turn the link 'on' and 6001 to turn it 'off'. You will hear a voice announcement identifying which repeater you are connected to. When you disconnect you get another voice announcement, saying 'you are now disconnected', again identifying the repeater you have left. You can use a 'touch tone' DTMF microphone costing about £50, or buy a DTMF keypad costing £2.50 including P&P available from UKIRLP. You can call individual repeaters or connect to a Reflector, which is a 'conference room' that can have as many as 30 repeaters in the room. Anyone speaking on any one the repeaters can be heard by all the other repeaters, so it is vital that no CW indents or courtesy tones pass from a repeater on to the Internet as it would cause problems. To connect your repeater to the IRLP network requires an IRLP interface board costing US $60 plus $15 shipping. To order an IRLP board, visit:
www.irlp.net/



Keypad

UKIRLP (United Kingdom Internet Radio Linking Project) will help anyone unfamiliar with Linux DTMF keypad to install the hardware and software. You can view the 'live' status page of all the repeaters on the system by visiting status on **www.irlp.net/**. Dialup connections can be used for IRLP, and Linux will automatically reconnect if you are disconnected abruptly or if you get disconnected after every two hours. However, if you are using a dialup connection you will not able to connect to reflectors, so a high-speed connection is the best option. Some repeaters connected to IRLP are connected to multiple linked systems, e.g. the Winsystem in California and the New Zealand National System. You can listen to the 'live' audio on reflector 9200 at

IRLP Board

http://www.live365.com/stations/253404 and on the Winsystem.

Useful links:

www.irlp.net

www.qsl.net/g3zhi/ukirlp.htm

www.radio.gov.uk/topics/amateur/document/linking.htmRSGB

Data communications Committee:
www.dcc.rsgb.org

RSGB Repeater Management Committee:
www.coldal.org.uk/rmc.htm

List of All simplex UK Internet gateways:
www.dcc.rsgb.org/ShowGates.asp?call=ALLCallChannel

List of repeaters with links

GB3BN RU240 (RB0) Bracknell
GB3CL RU258 (RB9) Clacton
GB3DS RU266 (RB13) Worksop
GB3DV RU242 (RB1) Rotherham
GB3EE RU264 (RB12) Chesterfield
GB3GN RV62 (R7) Aberdeen
GB3HH RV56 (R4) Buxton
GB3LI RU260 (RB10) Liverpool
GB3LM RV58 (R5) Lincoln
GB3LV RU244 (RB2) Enfield
GB3NA RV54 (R3) BarnsleyGB3PZ 7.6 Manchester
GB3SY RU252 (RB6) Barnsley
GB3TP RV58 (R5) KeighleyGB3US RU240 (RB0) Sheffield
GB3WJ RU250 (RB5) Scunthorpe
GB3XN 430.925 7.6 Worksop UK

Irlp links

5100 G4CUI Sheffield
5120 GB3EE Sheffield
5130 GB3DV Maltby
5140 G0FUO Mexborough
5150 GB3US Sheffield
5170 G6YHW Middleton, Leeds
5200 G4NJI Rotherham
5210 G8UVE Burnley
5220 G4EID Southport
5230 G4EID Southport
5240 GB3LI Liverpool
5280 G6PHF Lancaster, Lancs
5300 M5GUY Carlisle
5350 G7PCT Melton Mowbray
5400 G0XEL Manchester
5500 M1ERS Sheffield – Experimental
5510 MM0GEQ Edinburgh
5600 GB3LV London

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db0vox live steam
http://db0fhn.efi.fh-nuernberg.de/db0vox/strem.pls

17 live ATV repeaters
http://lea.hamradio.si/~s51kq/ATVrptLIVE.HTM

Some of the above first appeared in the 2003 RSGB CallBook

The images below and on the cover are from the 17 live ATV Repeater site listed above.

ATVQ

PI6ATV - Lopik, Netherlands

GB3VR - Brighton, Susses England

S55TVA - Gora, Celje - Slovenia

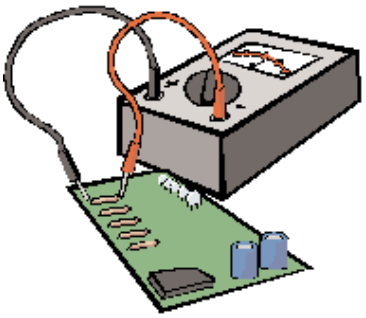
GB3VV - Brighton, Sussex England

DB0HEX - Brocken, Germany

WR0ATV - Kansas City, USA

KC0LTR/R - St. Paul, Minnesota, USA

PI6ALK - Heerhugowaard, Netherlands



Sparks from the Bench

by Ron L. Sparks - AG5RS - Email: atvq@sparkles.com
P.O. Box 945
Katy, TX 77492

HATS Repeater
Regular Featured Column!

Well, it happened again. No sooner had I committed to make the CarCam project number one, than things changed. But, often changes present great opportunities and this time is no different. I am a proud member of the Houston Amateur TV Society (HATS) and find working the HATS ATV projects both interesting and rewarding. Hopefully, this column will give you a little understanding as to why. So, as usual, if you were following the CarCam project, a little patience will be needed as we take a "side trip" into the world of ATV repeaters.

A Little Background

Back in February 2000 HATS got a bit of serious and difficult news. It seems that the building that served as the primary transmit site for the repeater was installing new elevator controls. Many of you might not know it, but the city Fire Marshall has a responsibility for approving such installations. After a visit by the Fire Marshall, the building management was informed that the elevator upgrade would not be permitted in the presence of high energy RF. It seems that the Fire Marshall was uncomfortable with the RF shielding capabilities of the new computerized elevator controls. In the interest of a "better safe than sorry" policy in matters of public safety, he required the elevator control room to be cleared of RF devices. Certainly a position we can all appreciate.

But, that instantly forced relocation of several amateur repeaters, and a number of commercial pager, and two-way systems. HATS considered itself quite lucky as the building management was kind enough to give us a couple of weeks to decommission our equipment as well as providing after hours and weekend access for us. An additional boon came on the day of decommissioning when we discovered several runs of abandoned hardline. Naturally we asked the building manager if we could be of assistance in removing the unused material. The manager was happy to get it off his building, and we were very happy to acquire a batch of hardline that could be reconditioned and put to future use.

Making Lemonade

To use the old cliché once more, that was just the start of turning lemons into lemonade. The hardline was the first bit of lemonade from the squeeze.

Another upside of moving the repeater was that it could be refitted. If you have never been responsible for keeping a repeater going, I recommend you volunteer to help someone perform that task. It is often a thankless, uncomfortable, and rushed task. Maintaining the HATS repeater was no different. Over the eight, or so, years that HATS had been operating the ATV system it had grown and evolved into a functional, but Frankensteinian machine. Certainly the HATS technical gurus had done a wonderful job of keeping the machine up-time at nearly 100%, but some things suffered as a result. It had been repaired and modified and reconfigured "on the fly" many times over the years and was in sore need of some thoughtful refurbishment and redesign.

At the same time, however, HATS had a very difficult challenge - finding another repeater site. There would be no point in redoing the repeater if there was no place to put it. So the entire group began looking for a site. Since the group decided that a new site would be located, even if it took years, they had the foresight and fortitude to start a technical group and actually fund them in a redo of the repeater before a new site was located. I personally think this was unusual for a volunteer group and can only hope you will be as fortunate with your groups.

I was heavily involved on the technical side of the repeater redo, largely because I had a barn big enough for it to fit in along with the necessary tools for repackaging things. The first step was to dump all the equipment from the old site into a large heap and wait until we could all get back together and take stock of it all. A number of repeater workdays followed over the next two years. Obviously the first was to sort, clean, identify, inventory, and test what we had.

Next came the process of redesigning the system. The major blocks would stay the same (receiver, controller, modulator, driver, power amp, etc.) but the hookup and configuration was investigated from scratch. During this process it was determined which bits of equipment performed best over the years and which ones had been problematic. We strove, during the planning process, to design out the troublesome bits. For example, the input filters tended to drift in the uncontrolled temperature of the elevator house. So, the new design included a method to enclose them and help stabilize their temperature.

A long period of construction then ensued. Various major blocks were given to the club members who wanted to work on them. During this phase there was something for everyone. Jobs ranged across the board: from Bill Rister, W5CYP, cleaning corroded antenna mounts and secondhand hardline connectors to

Rick Pense, WD5BQN, doing a modification project on the VS-100 controller and its microcontroller. From Charlie Keng, K5ENG, helping with the rack modifications to Ed Manuel, N5EM, taking all the receiver components (power supplies, pre-amp, filters, downconverter, IF, and demodulator) and packaging them into a nice two-rack unit box. And many more that I just do not have the space to mention.

Every member of the club had something to contribute, and many did so above and beyond the call of duty. But, I do need to vent a little bit though. Like all clubs we had some people who were very vocal and critical of the project. Another upside of the difficulties is that the whole process weeded them out. If you have not already discovered it, the complainers are very rarely contributors. We found the most vocal people never attended meetings, never worked at the work projects, and never renewed their membership. My advice to any club is to not get bogged down by non-contributors, no matter how vocal they may be.

During the redesign and reconstruction the group made another brave commitment that turned out, ultimately, to be a significant factor in our successful redeployment. When we lost the main transmitter site, the building management did not require us to remove our receiving equipment from a nearby building. HATS waited to be sure that ongoing modifications were not going to effect the receive site, and when it looked like we might be able to keep it, the group voted to add a 2.4 GHz transmitter to the receive site. This used a very small, unobtrusive transmit antenna and could be configured easily around the existing receive equipment. In addition, the location was on the air handling and emergency generator room, well away from the elevator control house.

While our experiments with this new setup (1.2 GHz in and 2.4 GHz out), were not a solid success, they were very helpful. This process allowed us to become more familiar with what our users needed and what items needed close attention to work effectively. When you have a high power 70 cm AM ATV output, things are pretty forgiving. But when you move to a low power 12 cm FM ATV output, the details matter.

About this time, the 9/11 tragedy struck. So HATS made arrangements to formally meet with the building management for the receive site. We felt that in the ensuing new security environment it was important that management understand who we are, what we do, and what our relationship over the years had been. One fact of life is building management changes quite often and over time becomes unfamiliar with unobtrusive roof tenants. By renewing this relationship, we were able to develop a rapport with our sponsors. Especially in today's world, this relationship is crucial and needs the same care and support that the technical projects do. By paying attention to the human and corporate details, the group was able to maintain our receive site with the added transmit capabilities.

HATS' willingness to experiment with the 2.4 GHz system and to fund the repeater development thus led to having a much needed site with the support of building management. One other positive that arose from the 2.4 GHz experiment was a better understanding of our power sources and requirements for the repeater. This will become evident a little further along in the column.

Site Review

Once the repeater site became a reality, we had a big push to finish the repeater construction and begin planning to replace the 1.2 GHz-2.4 GHz system with the newly constructed 1.2 GHz-70 cm machine. Step one was a complete site review. This included lots of digital photos, inventory and documentation, measurements, power assessments, and safety evaluations. From this information we were able to plan feedlines, antenna mounts and placement, and repeater location.

Out of all this we discovered that the existing power source for our receiver was inadequate. This was truly sad news. It was time to use our new building contacts to ask what could be done. The net result was that we could have our own dedicated power circuit - if we would pay for its installation. We felt that was a very fair offer and began the process of getting bids from building approved commercial electrical firms. This type of work requires a city permit and supervision of a Master Electrician. Can you say, "Really expensive?"

Photo 1

HATS raised the funds for the new power source and had it installed. While the outlet in Photo 1 (thanks to Andy MacAllister W5ACM for all the photos) may seem ordinary and unexciting, it certainly was anything but that for HATS. When it was finally installed we held our next meeting at a local establishment specializing in good food and libation and passed the photo around admiringly. The wait staff seemed pretty cautious in it's handling of the group of weird old guys who were looking at a picture of an outlet like it was their grandchild.

Now we had a suitable site, approved access, dedicated power, reconditioned hardline, and a new machine. It was time for the changeover. No, wait. First we had to PARTY! It turned out that everything was ready for the change in October 2002. That is the tenth anniversary of HATS so a party was definitely in order. I am happy to report that we had no difficulties in performing that activity.

The Changeover

Several dates were selected for possibly doing the equipment change out. As the first couple of these passed by with miserable weather, we began to wonder if we would ever get the installation done. Finally a date arrived with a weather predic-

Photo 2 - Ron Spark, AG5RS

tion for calm winds and no rain. That was exactly what we needed and plans were made with the building personnel. Photo 2 shows yours truly (AG5RS) preparing to unload the new machine, the new feedlines, and the reconditioned 70 cm horizontally polarized transmit antenna. All of this as well as tools, terminating connectors, and lots of other stuff had to be moved up the freight elevator and then up two flights of stairs. It then moved across the roof to the "generator penthouse", over two large barriers, and into place.

Photo 3 - HATS President Don Pappas, WB2GWV, Tony Summerville, N5RPQ, N5EM and AG5RS

Photo 3 shows HATS President Don Pappas, WB2GWV, Tony Summerville, N5RPQ, N5EM and AG5RS. If you are really observant you can figure out that AG5RS does not really have three feet. The extra foot belongs to our V.P. Mike Scarcella, WA5TWT, who shows up much better in Photo 4, along with N5EM and N5RPQ. That photo shows the new machine in its place, where the old 1.2 GHz-2.4 GHz machine had been.

During the changeover the group broke into roughly three teams of two. Andy and Ed managed the new feedlines and ran them out of the building. Mike and Don handled the external routing

Photo 4 - V.P. Mike Scarcella, WA5TWT

and raising, and Tony and I did the outside connections and topside cable dressing and jumpers. Photo 5 shows three of the five hardline ends ready for connection to their respective antennas. There are three 7/8" hardlines to provide connection to the 70 cm. transmit antenna, the 1.2 GHz receive and control antenna, and a future 2.4 GHz transmit antenna. Two 1/2" hardlines were run to provide future connections for repeater linking.

You can see the antennas on their "candelabra" in Photo 6. All the antennas to the left of Don and in the background belong to other tenants. I could not resist including Photo 7 for all of you north of the 35th parallel. It is just another typical December day in Houston, Texas and is our payback for having such hot, humid, mosquito riddled Field Days in June.

While we now have the equipment all in place, there are still plenty of To-do's. We came out short two hardline connectors and once these are obtained we need to finish the last of the cable terminations. We also need to build short jumpers from the repeater to the hardline and to tune up everything. Hopefully this will all be complete by the time you read this.

Photo 5 - Connecting hardline

Photo 7 - The view from the antennas

Photo 6 - Working on antennas

The Future

Before we even finished the changeover, HATS was talking about new directions and what we could do for the future. We are currently planning another rack to sit beside the 70 cm machine and connect to it via baseband video and audio. The design of the 70 cm unit included the necessary distribution amplifiers to make this possible.

In the new rack we plan to reconfigure the 2.4 GHz transmitter and add a power amplifier. We will also include a computer with on screen display for providing either regular club information or emergency data. Depending on a lot of other factors there are plans for 912 MHz ATV linking to other repeaters and possibly links in the 2.4-10 GHz range to allow data transfer.

If there is anything this all adds up to, it is that patience, foresight, and cooperation will eventually sort out even big problems. This whole project has been a great example of the fun that can be had in ATV just by working together and solving problems. I hope you can be lucky enough to enjoy the same thing some day.

ATVQ

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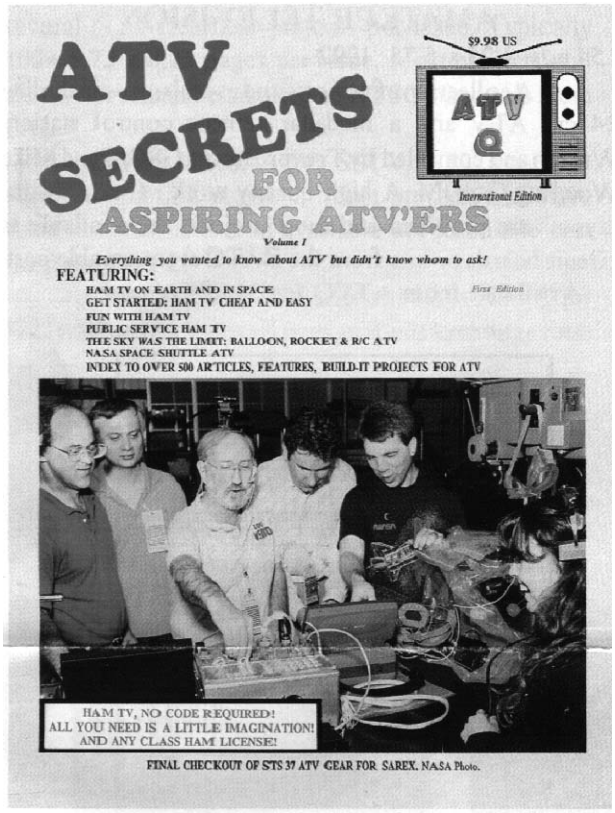

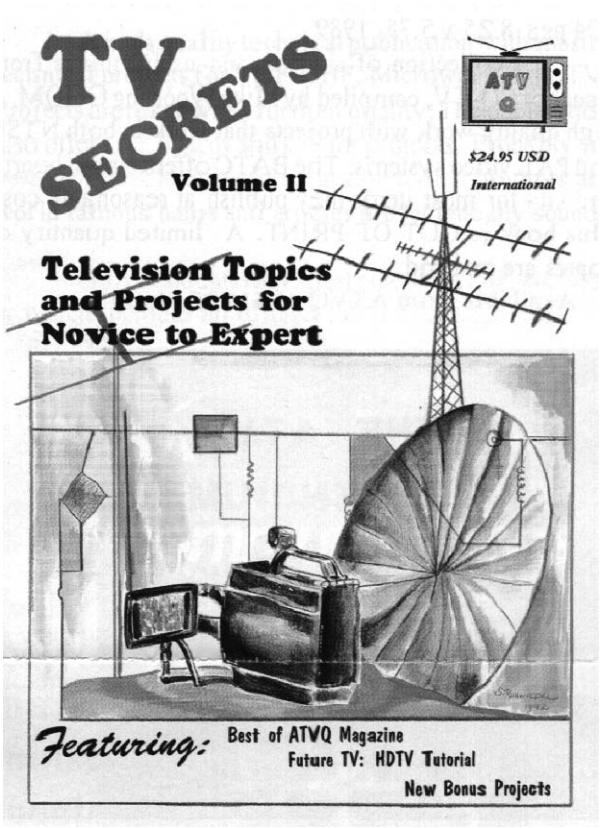

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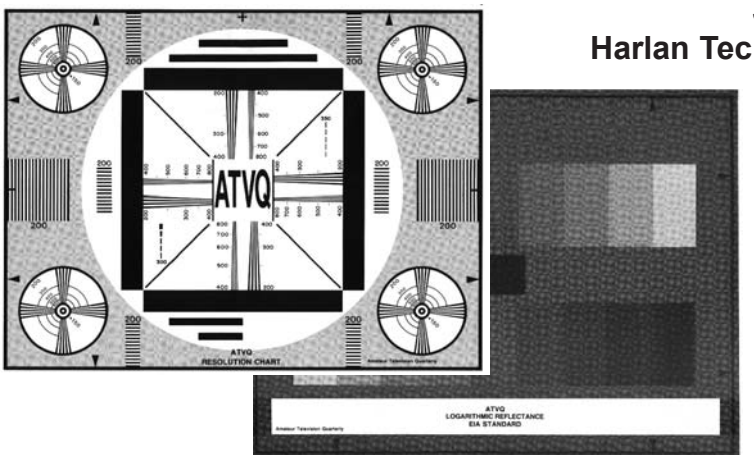

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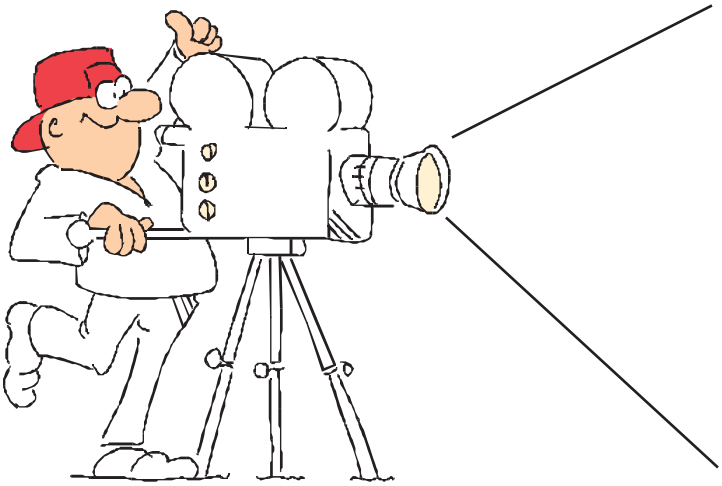

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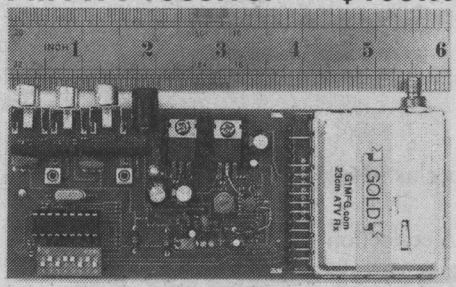
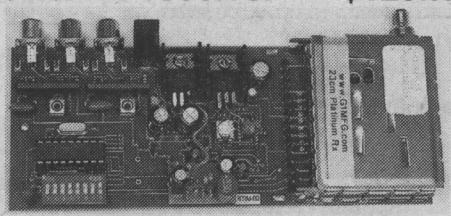
'Gold' 23cm (1.24-1.36GHz) FM ATV receiver $109.99



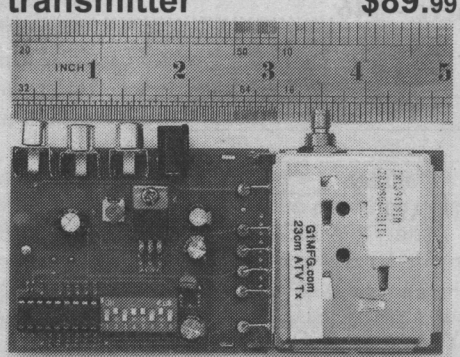
Incredibly sensitive, fully synthesized, covers the 23cm band (and beyond) in 500kHz steps. Includes 6.0 & 6.5MHz intercarrier sound. Runs from 12-15V DC, RCA sockets for audio & video, SMA RF socket. Built & tested.

'Platinum' 23cm FM ATV receiver $129.99



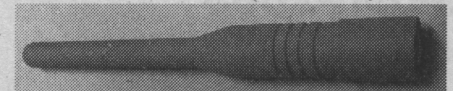
Includes video de-emphasis circuit, all other specifications similar to the Gold receiver (above). Built & tested.

23cm FM ATV transmitter $89.99



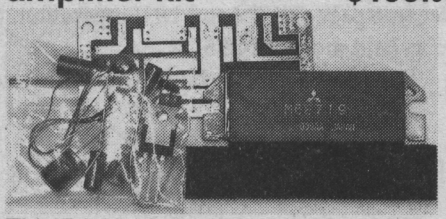
Fully synthesized, covers the whole 23cm band (and beyond) in 500kHz steps. Includes 6.0 & 6.5MHz intercarrier sound. Runs from 12-18V DC. RCA audio & video connections, SMA RF socket. Typically 50mW RF output.

13cm rubber duck $14.99



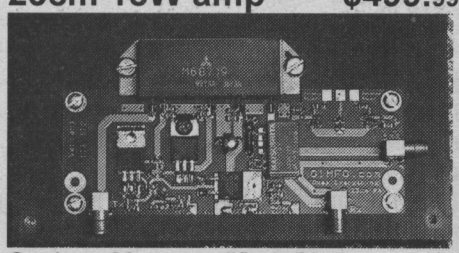
2.4GHz Sleeve dipole with integral SMA plug. Suitable for Rx or low power Tx.

23cm 18W high gain amplifier kit $199.99



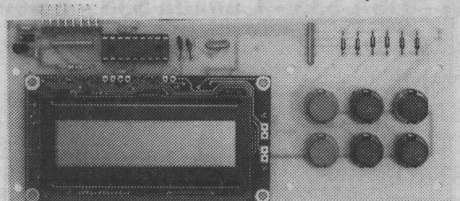
This PA kit gives up to 18W from our 23/24cmTx. Needs 0.5°C/W heatsink (not supplied), runs on 12-14V @ 5A.

'Does everything' 23cm 18W amp $499.99



Our best 23cm amplifier! Gives up to 18W out for 50mW drive. **On-board co-ax relay** to switch between Tx and Rx, includes a **directional coupler** for power indication. SMA sockets for Tx, Rx and antenna. Built & tested, mounted on a large heatsink. 12-14V DC @ 5A.

23cm LCD transceiver controller $89.99



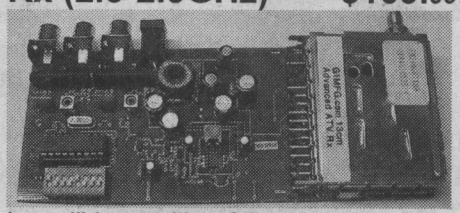
Connects to our receiver and transmitter for pushbutton frequency control in 125kHz steps. Adds 3 VFOs for Tx, 3 for Rx. Can auto-tune the receiver to the transmitter frequency (for checking your input to the repeater). Many more features including wideband receive from 800-1800MHz! Built & tested.

Will not work a transmitter without a receiver.

13cm magmount $89.99

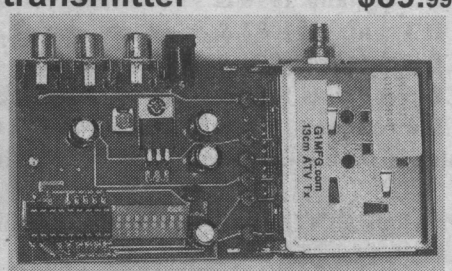
Professional quality 5dBi gain co-linear. Complete with 2m of LMR-240 co-ax and fitted SMA plug.

'13cm Advanced' FM ATV Rx (2.3-2.5GHz) $109.99



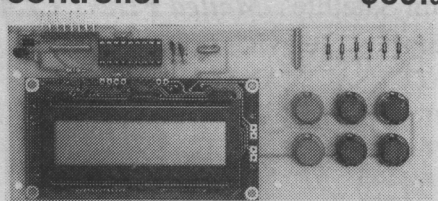
Incredibly sensitive, fully synthesized, receives 2.305-2.559GHz in 1MHz steps. Includes 6.0 & 6.5MHz sound. Runs on 12-15V DC. RCA's for audio & video, SMA RF socket. Built & tested.

13cm FM ATV transmitter $89.99



Fully synthesized, covers 13cm band & beyond in 1MHz steps. Includes 6.0 & 6.5MHz sound. Runs on 12-18V DC. RCA audio & video connections, SMA RF socket. Typically 20mW RF output.

13cm LCD transceiver controller $89.99

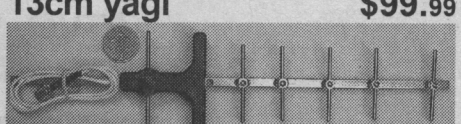


Connects to our Rx & Tx for pushbutton frequency control. Features like our 23cm controller but receives 2.200 - 2.700GHz. Built & tested.

Will not work a transmitter without a receiver.

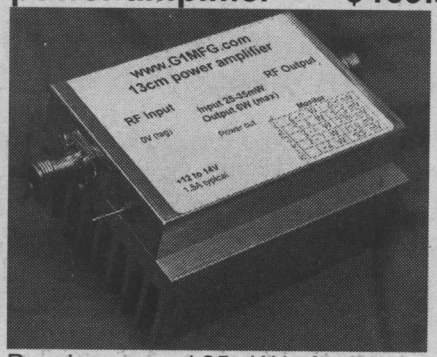
Did you know that FMTV can give P5 pictures with up to 20dB less signal than is needed for AM? Or that your amplifier doesn't need to be linear, so you get more bang per buck?

13cm yagi $99.99



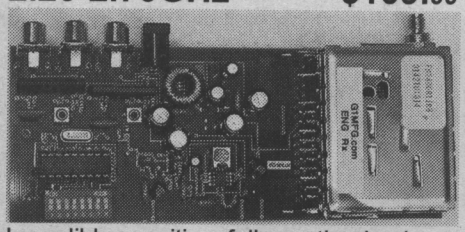
Only a foot long, yet it gives 13dBi gain. Includes 18" of co-ax with fitted SMA plug, and the antenna is supplied with a full mast mounting kit (not shown).

6W 13cm high gain power amplifier $469.99



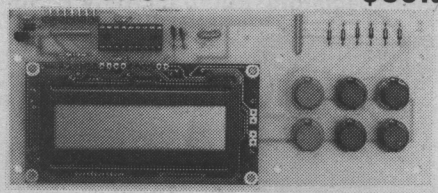
Requires around 25mW in for 6W out, typically gives 5W from our 13cm Tx. Runs on 12-14V. Fairly broadband - covers whole 13cm without re-tuning. Built, tested and aligned.

'ENG' FM TV receiver 2.20-2.70GHz $109.99



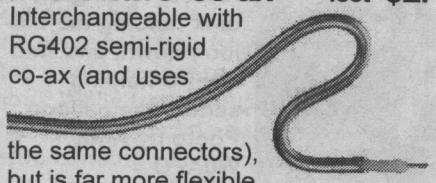
Incredibly sensitive, fully synthesized, receives 2.2-2.7GHz in 2MHz steps. Covers a lot of the outside broadcast frequencies, video senders and lots of other interesting stuff. All other specs similar to our 13cm Advanced receiver. Runs on 12-18V DC. Built & tested.

"ENG" LCD receiver controller $89.99



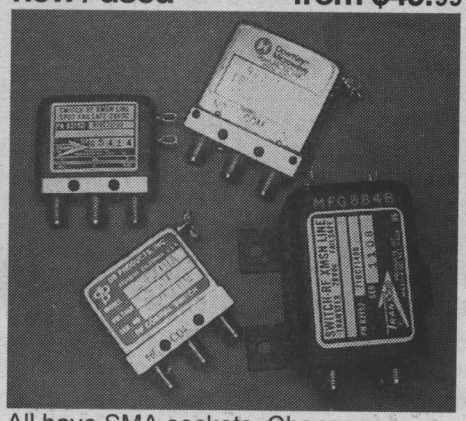
Connects to either our 13cm Advanced or ENG Rx. Receive frequency range 2.2-2.7GHz in 125kHz steps. Adds 10 memories plus memory scan and band scan modes. Built & tested.

Quickform 141 microwave co-ax foot $2.49



Interchangeable with RG402 semi-rigid co-ax (and uses the same connectors), but is far more flexible and easier to use. Good to 18GHz. Shipping $1.50 (any length).

Microwave coax relays new / used from $49.99



All have SMA sockets. Changeover (3 port) and transfer (4 port) types available. Typically 0.1dB loss and 70dB isolation at 13cm - detailed specifications are given on our web site at www.TVHAM.com.

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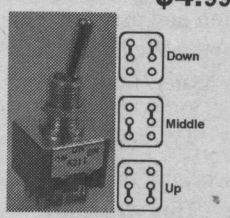
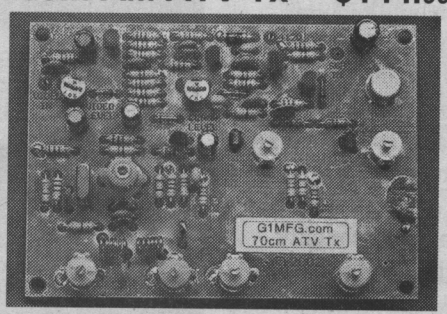
Tx/Rx sequencer switch $4.99

Special switch for simple Tx/Rx sequencing. Full details on web site. Please add $1.50 shipping (free shipping if bought with any other item.)



70cm AM ATV Tx $144.99

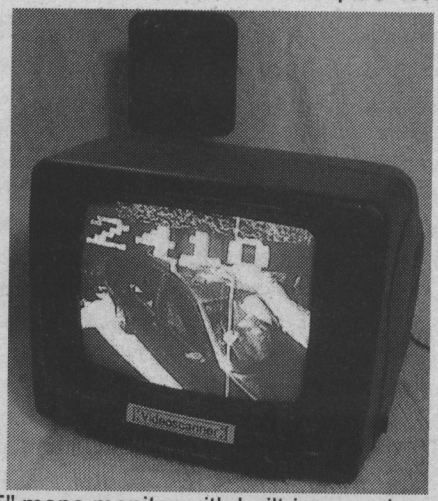


Transmits 435.5MHz DSB AM, 50-100mW output. Crystal controlled - other frequencies are available by arrangement. Runs from 12-14V DC, supplied built & tested. ~2.8"x3.9"

70cm 10W amp kit $159.99

This PA kit gives around 15W peak sync up from our 70cm Tx. Requires 0.5°C/W heatsink (not supplied), and runs on 12-14V at about 5A.

Scanning microwave FM TV receiver $294.99



5" mono monitor with built-in scanning receiver for 2.3-2.5GHz FM video. On-screen frequency display (while scanning), very sensitive, built-in patch antenna. Demodulates 6MHz sound. Runs on 12-14V DC @ 1A, includes cigar lighter power lead. Built & tested.

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HABITAT SkyLab 2002 Update

Don Pfister - KA0JLF Email ka0jlf@earthlink.net
5200 W 79th St.
Prairie Village, KS 66208

In the Fall 2002 issue of ATVQ I wrote an article/story on a High Altitude helium balloon flight by the groups Project Traveler, from Hutchison, KS and HABITAT SkyLab, from the Kansas City area. These flights were a part of the Herington Airport's Open House in Herington, KS. This truly was a cooperative flight between the two groups. Project Traveler had balloons but no helium. HABITAT SkyLab had helium but only a small balloon. The leaders of each group, Zack W0ZC from PT and Don KA0JLF from HABITAT arranged a swap - a tank of Helium for a 1200-gram balloon. This worked out well for both groups. Zack on his web page mentioned this was their most successful flight to date. That is Great!

Both groups are again discussing another dual launch, possibly in the first quarter of 2003. Both groups want to fly their ATV equipment. I'm not sure what equipment or frequency Project Traveler has but information will be on their web site, I'm sure. One ATV transmitter HABITAT has transmits on 439.25 MHz. This happens to be the input frequency of the KC ATV Group's repeater. The KCATVG has given us permission and assistance in using their repeater for these flights. I believe a Wichita, KS ATV group also has this as an input to their repeater. I am trying to contact them to discuss our plans.

Another future project HABITAT SkyLab is working on may include a (simulated?) crossband ATV repeater. This will allow video from a dual capsule to be seen on one output frequency, not to mention possible ground stations. This would require coordination and planning. I have not researched the rules to fully know what we can do. Hopefully we will be repeated through the KCATVG repeater. As can be seen from the SkyLab Footprint graphic an antenna at this altitude has a large coverage area. Do any of you know of other ATV repeaters using this input frequency covered or near this footprint? This should open an opportunity for participation from a large ham community. Working with these weak signals pre-planning can increase our chances of success. We are trying to schedule flights, and maintain a list of interested hams.

We are working on several projects that could be of interest to ATVQ readers. Currently I'm working on the 4 port video switcher, the video overlay board, SBC (Single Board Computer) and GPS programming. As you can see from the callsigns and web sites this is a national activity all helping each other. Thank you for your interest and support. 73 - Don

Interestingly, when I received a copy of the Fall 2002 issue of ATVQ I saw the article, by Paul KD4STH, on the GPSL. I found it so interesting that I tied my story into that article purely by accident. Paul mentioned one of my capsules, on Bill N3KKM's balloon, was temporarily lost at the GPSL 2001. My story had additional information on that flight and how it tied to the Herington Airport. Actually, Bob K0FPC, Dave KC0KCI, Dean, Cris N0XZB and I searched all afternoon that day looking for the capsules. We were separated from the other groups and didn't find out some of the details until later. We visited several of the small airports in the search area, leaving notes in the pilot lounges where we didn't find pilots. Paul and I have a great story about asking pilots to let us ride with them searching for lost capsules. I think Paul wrote about it in one of his articles. My experience on a twin seater ultralight was very funny looking back. <grin>

I am including photos, maps and other information here, that should have been included in the previous issue of ATVQ. I

Project Traveler group on the left, HABITAT SkyLab in the center filling their balloons. Also in the shot are some of the Wichita BEARS and other spectators. Photo by Andy W0AFQ.

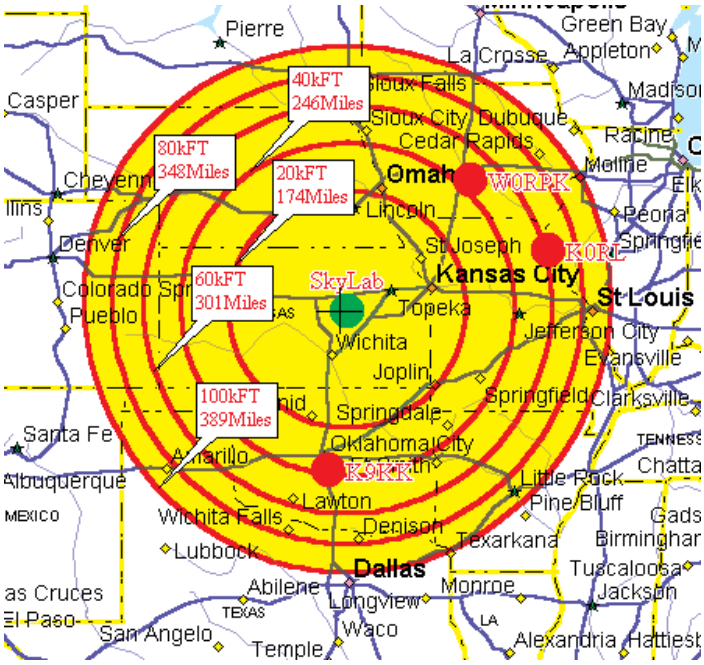
The HABITAT SkyLab group takes a reading to determine lift in the balloon. Not enough for the ATV too bad. Left to right is: Charlie, supporting the balloon, Dean squatted down reading the scale, Will KC0KEL with the digital camcorder, Don KA0JLF sitting on the tank holding the balloon down, and Bob K0FPC helping secure the balloon. Photo by Andy W0AFQ

HABITAT SkyLab moves to the launching area. Left to right: Don KA0JLF with capsule in hand, Dean and Bob K0FPC supporting antennas and shroud ring on the load line, the parachute puffing up a little, Will KC0KEL video taping, and Charlie holding the balloon. Photo by Andy W0AFQ.

Both groups are in launch position. Project Traveler on the right used a halyard method, running a line through a ring on the neck of the balloon they are able to feed the line out while maintaining control. HABITAT SkyLab on the left uses the hand over hand method. Unfortunately this time it caused both J-Pole antennas to be broken loose and hang down rather than being held up by the load line. Andy W0AFQ photo.

This photo is from the Project Traveler capsule. Frame 18 was taken at 75,032 feet altitude. In the upper right corner is the Herington Airport (looks like a triangle) The main runway runs N/S the point is to the East. The black thing on the right is one of the antennas below the capsule. This photo matches the flight map very well, the bottom middle is Herington, KS. This just minutes before burst. HABITAT SkyLab should be just W maybe SW of here. The landing sites would be just to the bottom left corner, just outside the photo. While both groups flew a little further south before landing, as you can see on the flight path they came back north. Landing sites were probably just about a mile WSW of the bottom of this photo. Each of the main squares in the photo are 1 mile square made by the roads.

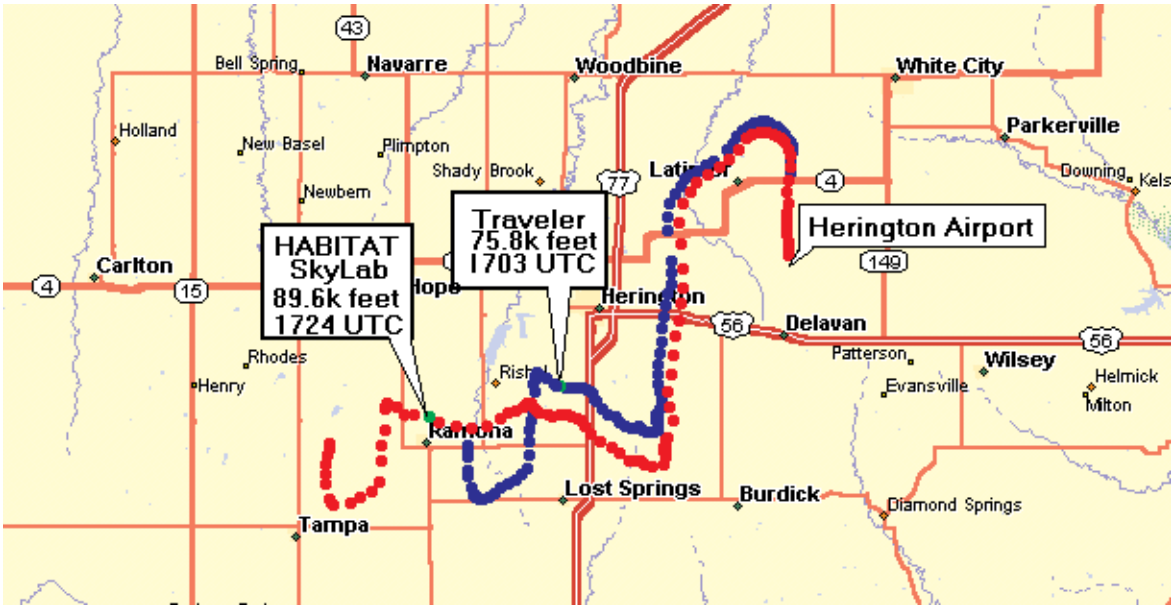
Another SUCCESSFUL FLIGHT and RECOVERY for HABITAT SkyLab, a good track record for over 5 years. Someone asked how much of the balloon was left, we held it up to show them. You can see our small parachute in the lower left corner. Our parachutes, and other groups, were made by Cris N0XZB - THANKS Cris! Left to right: Will KC0KEL, Don KA0JLF, Charlie Callahan and Dean Scott. Andy W0AFQ photo. Let me tell you, that Kansas wheat stubble can scratch up the bare legs. <grin>



Ralph W0RPK made this graphic of our RF footprint at various altitudes. As you can see there are lots of opportunities with these flights for long range contacts. The three stations listed are our long distance records made with this flight. Ralph keeps the records web page. I counted 12 states in our footprint. With a little effort and planning we could touch a few more. If we have stations interested we can try to include you in our footprint on future flights - contact us.

failed to get my updates and photos in on time. This is an attempt to correct that. My thanks to Gene and ATVQ for giving me this opportunity to correct my mistake.

Missing callsigns, hopefully in order they appeared in the story, there are others I should include but I don't have them all here, please check websites for more:



Map showing flight path of both balloons, with burst point notes, courtesy of Hank N1LTV. Note the burst altitude of Project Traveler about 800 feet above the photo altitude. It can be fun matching up this map to the photo. You can see the town of Herington, Hiway 77 and 56 in the photo. The water is a little harder to determine. Get the color versions of these from the listed website if you want to compare.

Charlie Callahan is studying for his license
Will, KC0KEL
Bob, K0FPC
Andy, W0FAQ
Dean Scott, hopefully will study when he has spare time <grin>
Zack, W0ZC, head of Project Traveler
Wichita BEARS - Boeing Employees Amateur Radio Society
Dave, KC0KCI, - BEARS
Randy, N0LD, - BEARS
Dexter, KB0YWM, - BEARS

Web sites of groups mentioned, we appreciate their help and support:
http://habitat.netlab.org - HABITAT SkyLab's home page - email: **habitat@netlab.org**
http://www.rckara.org/project_traveler/2002d/analysis - Project Traveler flight analysis on this flight
http://www.ourtownusa.com/~bears/ - Wichita BEARS web site.
http://www.kcatv.org - KC ATV Group
http://www.geocities.com/CapeCanaveral/3161/hablic.htm - HABLIC - Hank N1LTV High Altitude Balloon Launch Info Center
http://users.crosspaths.net/wallio/RECORDS.html - Amateur High Altitude Ballooning Mission Records Ralph W0RPK also hosted a GPSL web site for info on GPSL.

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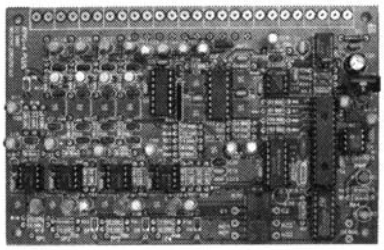

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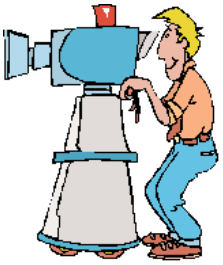

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Visual Comminicator

A "Serious Magic" Review

by Gene Harlan - WB9MMM Email:ATVQ@hampubs.com
5931 Alma Dr.
Rockford, IL 61108

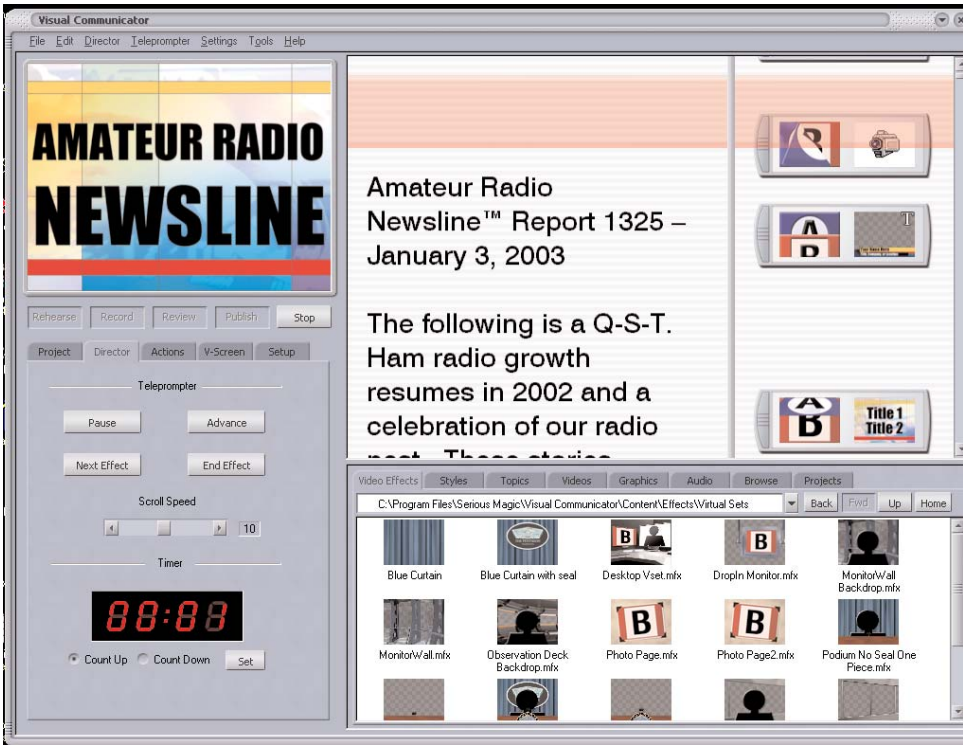


Photo 1 - The main screen of Visual Communicator

Well, many of you know how much I like toys. Today is not any different! When I saw this program from Serious Magic advertised in another publication (heaven forbid), I had to go to their web site to see if it did all that I thought it might from the ad. I had thought of writing such a program but in a different manner for ATV'ers. But this one has it's good points and lots more in features than I could have ever done. So, I got the program direct from Serious Magic.

So, what does this program do? Visual Communicator will allow you to make 'serious' (get it) professional like presentations. You have the capability to use a green screen behind you that can fill with all the graphics that you might dream up. I have a particular use in mind that I will get to later.

As shown in Photo 1, your screen on your monitor has a place where you can see the recording or rehearsal live, complete with all graphics! There is a teleprompter in the top middle, and the action area on the right of the teleprompter. When you enter the program, there is a Wizard that helps you set up parts of the presentation that you are about to produce. The first screen will ask if you want to make a show based on Topic or Style. When you select one, the next screen gives you many other choices based on what you first selected. You will make choices for how the opening screen looks and title, closing screen looks and text, text and looks of the bar that shows your name and opening and closing music (not for ATV use!).

You have the ability to type the text into the teleprompter, or copy and paste from another application such as notepad or Word. Once your text is in place, you can drag the actions into place close to the text that would be spoken when you want the effect to happen. The program comes with lots and lots of fun action things. One of the neatest ones is where it looks like there is a picture on one side and a monitor on the other with you in the monitor. But the monitor is not straight on as the picture and the monitor are tilted towards each other. The graphics just does what it is supposed to do.

Each little bar on the right is called an action bar. You can drag pictures (your own or use some that come with the program), videos, titles, or music into the action bars. When you choose to rehearse, the teleprompter and the action bars will start to scroll towards the top. You would say the words as they cross the shaded area at the top. The actions take place when they cross this area as well.

The first thing that you have to concerned with is the computer hardware that you have and does it meet their specifications. That was my hang up getting started. I had a 500 MHz mainboard that just did not want to co-operate. I tried the program on another machine with the same motherboard and it did run, but was slow. So, I decided to upgrade my 300 MHz machine that I use to work on ATVQ. I got a Athalon 1700 XP which runs at 1.455 GHz. But, then I discovered that the sound card plugged into an ISA slot that the new motherboard did not have. And the video card was not up to par. So, a couple of more trips to the store, and the new computer was up and running. OK, I won't lie. It really was not that easy. There were at least two weeks of work updating everything and just getting what ran before to run again the way it did.

The camera can be a USB camera or if you have a video capture card with a NTSC video camera, that will work as well. I started by trying the cheapest camera I could find which was $9.95 after rebates at our local Office Max. Another I have tried is made by Creative Labs and works very well.

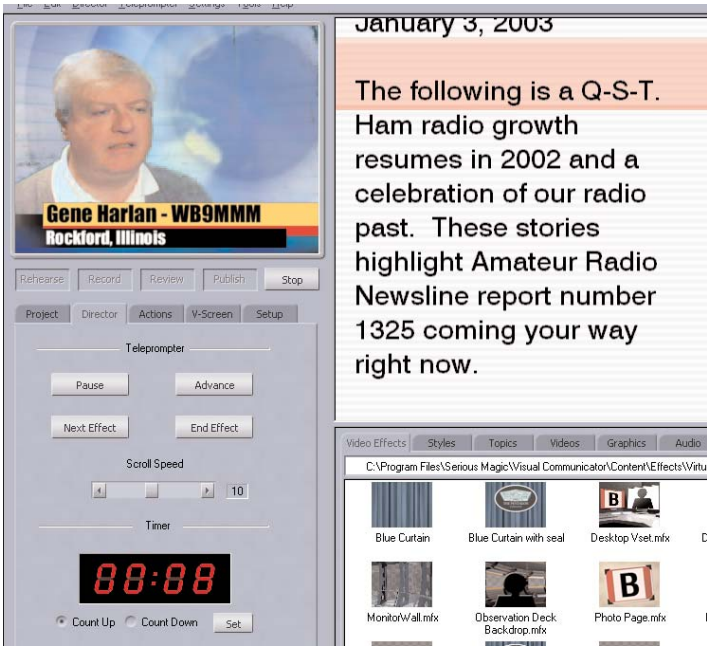
The minimum PC hardware requirements are:

Windows 98, 98SE, ME, 2000 and XP.
Intel Pentium III or equivalent (Including Pentium 4, Celeron 2, AMD Athlon and Duron).
128 MB Ram.
CD ROM Drive.
650 MB available hard drive space for application installation.
16 MB AGP graphics card with 3D acceleration.
Webcam or camcorder:
Webcams require standard DirectShow-compatible driver.
Camcorders require compatible input on PC

Recommended PC configuration:

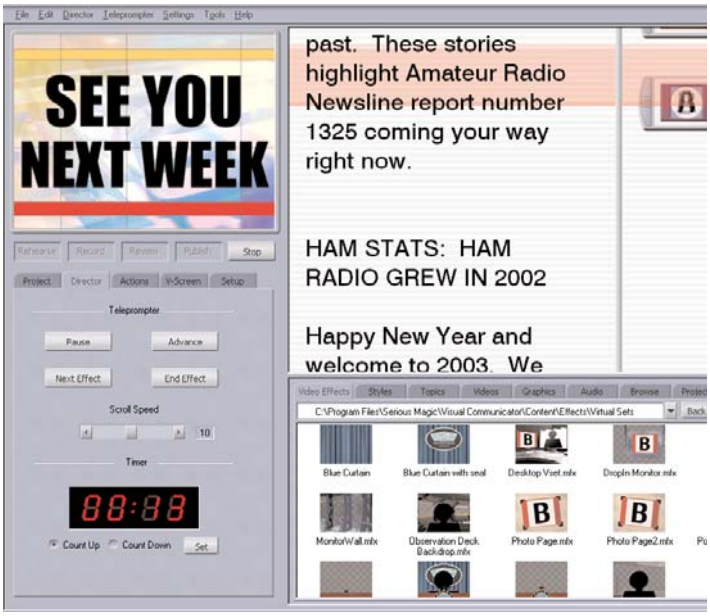
all of the above plus:
800 MHz or faster processor.
Audio card with PC microphone.

Up to this point, I have not mentioned the price of this neat program. You can get the basic program for only $99.95. Then you can get a package for $149.95 that also includes a green screen and lapel microphone. I got the $149 package, but if you have a microphone for your sound card, you can get the green background by either getting green cloth or if you can paint a spare wall that the spouse would not mind being green! There is a tear out color sample that you can take to the store for matching colors. They also just came out with the PRO version for $349 and I will tell you more about that later.



Nice graphics for the title block

One thing this program is not is that you can not do real time and get NTSC out. The program is designed for making CD or web presentations. But you can create file formats that can be imported into other programs that would allow NTSC output to



The program gives you nice closing title

put over ATV or to tape. You can save the show as an uncompressed .AVI which will work in other 3rd party programs or compressed .ASF which you can use for websites and emails. Once you have it loaded on your computer you will want to be connected to the Internet. There is a large (5MB) update to download which gives you many more features than came on the original CD. With the update you can do 640x480 AVI's.

So, earlier I stated that I have an idea for how to use with ATV. In your area, you probably hear Newsline being broadcast once a week on the local two meter repeater. Why not do it on ATV? I have thought that this was a neat idea after I visited the ATV'ers in Munich, Germany, which I wrote up in the Spring 1999 issue of ATVQ. They had a Monday night net at 8 PM where they did something just like this.

Newsline comes out at the end of every week, and can be emailed to you by signing up on the Newsline website. All you need to do is copy the Newsline into the teleprompter, and do a small amount of editing to get rid of some of the email things that you would not speak. Then, you need to evaluate each article to see what would be interesting to show while you are speaking, possibly to one side of you, the newscaster, to add to the story. If you had a story about the FCC, maybe you could find a picture of Riley Hollingsworth to show while you read what rulings he has made. If you do not have a picture for a story, there is always a byline at the end of the story, so you could make a title showing the name and callsign of who reported the news. Always give credit where credit is due.

If you have a local story, you could do a short video clip that Video Communicator allows you to import. You will need another device, such as an ATI video card with video in or RF in connection. Or you can scan pictures of local events, or take your digital camera along to local club events. Are you going to tell me that club members won't tune into your broadcast when they find out that their picture will be on TV! If you are on 440,

Wow, virtual studio. You can have a still or video on one side with your live video on the other. The picture on the left is from page 6.

How about trying to interest youngsters in ATV. You can be filling them with all kinds of technical information, or should I say, Mr. Bear can!

remind the members that they can use cable channels to see your broadcast. In Munich, they tell me that they have up to 100 listeners on a net night.

Now, in Germany, after the net, they take checkin's. This part you would need a titler of some sort as it needs to be done live. As they get checkin's, they type their callsigns in so it scrolls at the bottom of the screen. Another reason for them to stay around after the news. People love to see their callsign and would go the extra mile to set up the required equipment if you put together a production like this.

When I first found the Video Communicator would not do it live, I thought that my idea would not work as well. However, I have re-thought the situation and now think it is the way to go as you can reshoot if you mess up and the bad part does not have to go on the air. Also, you put the work into it once, but you could play the news on more than one night of the week and just stick in the tape to do it.

I also thought of a story that I have heard where puppets were used to lure others to ATV. Well, here again, I think that Video Communicator could be used. Picture setting up a puppet show. You need something in front of the puppets at the bottom so not to see the arms (you mean these things are really not alive by themselves). Now you can use the green background for all types of effects. Let's say that the puppets are in front of the homes. Well, a picture, or drawing would make a great background. Or maybe you need clouds. Remember, the background can be a video, so you can place the puppets in what appears to be a live situation. Here in Rockford, Illinois, and in another town close, McHenry, Illinois, we have lots of young people getting into ham radio. It seems that it was a long time coming, but maybe the internet is finally wearing off!. This could be something that you as the ATV station can do to get the younger generation involved. I think they would love to help.

Another use for Video Communicator would be to make promotional videos for your club. Tape is cheap, or use a CD, when someone contacts your club and asks for information. You can make a presentation that will make them want to join your organization. Let them see field day, emergency use of ham radio, weather spotting, club picnics, club meetings, ham radio classes and on and on.

I mentioned that they just came out with Video Communicator PRO. It is just a software upgrade, but it will allow higher resolution DV recording and output for TV playback, DV editing and projector presentations. The program has 100 new instantly customizable effects and six new StudioStyles templates and you can transform PowerPoint slide shows into your video presentations. The resolution can be up to 720 x 480 with the PRO version. The update also comes with Pinnacle Expression CD/DVD authoring software at no extra cost. There are three whole new types of effects - PRO FX, Spark FX and MegaMoves. You have to see the demo at www.seriousmagic.com to see what all it does.

If you try this program with ATV or your local ham club, I would love to see what you have done. Please send a copy to ATVQ and I will share with others.

You can get more information from:
http:www.seriousmagic.com

ATN WINTER NEWSLETTER 2003

On the Air to Everywhere
W5ATN W6ATN W7ATN www.atn-tv.org

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K7AED	WQ6I	AA9XW	KB7BY	N8TV

WINTER MEETINGS:
To be able to have room for the rest of the ATN information, the meeting dates and location information has been removed. The winter meetings will have happened by the time this is in your hands.

Our ATN winter meetings are your opportunity to participate in system technical discussions, ATN polices and renew your dues ($75 per year) to help offset site rent fees and insurance. If you are not able to attend the meeting in your chapter you can renew by mail by sending your dues donation to the ATN chapter secretary/treasurer in your state listed below:
ATN-AZ: Fran Sibert P.O. Box 505, Tonopah, AZ 85354
ATN-CA & NV: Mike Collis P.O. Box 1594, Crestline, CA 92325
ATN-NM: Darlene Campbell P.O. Box 864, Mountainair, NM 87036
ATN-IN: Henry Ruhwiedel 5317 W. 133rd Street, Crown Point, IN 46307

Come participate and meet your fellow ATVers. Many of the ATN management and trustees from the other chapters attend each other's winter meetings.

NEW REPEATER COVERAGE MAPS AND UPDATED WEBSITE:
Thanks to Matt, KC7GSA, for producing several great new coverage maps for each ATN repeater and a new system map. The maps give signal strength into a receive dipole antenna at 3 meters above ground from the ATV repeater based on the individual repeater technical parameters.

Don, KE6BXT, has done a great job this year with the website and making several updates and consolidating all the chapters into one website. Don took the new coverage maps from Matt and added them to the website. Log on to **www.atn-tv.org** and check it out!

DIGITAL ATN LINKS COMING:
Brett, WA6SXU, has worked on a video server specifically set up for linking to ATN chapters to far away for analog microwave linking. The picture quality is great with up to 30 frames per second and good resolution. The quality is only limited to the size of the internet pipe. Brett is working on signaling to allow the repeater to be keyed up at the far end and visa versa. The server can handle up to 10 circuits at a time.

ATN-AZ NEWS:
Thanks to Jim AA7KC for running the ATN-AZ Tuesday Night nets.

USERY MT:
It is with great regret that the Usery ATN repeater was taken down. The site rent was very expensive and the trustee decided not to renew the site lease. Brian and others had worked hard to keep the repeater running well over the three years it was at that site.

WHITE TANK MT:
Some of the planned projects for White Tank have been completed. Ward purchased a better 2.4 GHz preamp and Mike, WA6SVT, and Harold, K7AED, installed it into the equipment box at the top of the tower next to the 2.4 GHz antenna. Ward provided a test signal.

We also changed out the receiver. The combined result is snow free 2441.5 MHz pictures from 25 miles away running 800 mw into a Conifer 24 dBi dish. Most of the east valley members should be able to access White Tank on 2.4 GHz with 5 watts and a 24 dBi dish mounted above the buildings and trees.

The voice repeater's controller was checked for proper de-emphases jumpers and we took out the jumper to provide crisper audio. A 100-watt amplifier is built and Harold is working on mounting it to a large heat sink before it is installed to provide a 7 dB increase in the output of the voice repeater.

MT. LEMMON:
Some planned projects for Mt. Lemmon has been completed. Harold, K7AED, is the new trustee. Ward, WB7VVD, donated an 8 bay, 16 dipole, 434 antenna to replace the old 4 bay antenna. He also donated an outside tower mounted equipment box. Mike, WA6SVT, donated a 434 MHz bandpass filter. Mike assembled the filter and preamp into the box. Harold, K7AED, Ward, WB7VVD, and Mike, WA6SVT, installed the box and antenna on the tower and changed out the temporary equipment rack with a newer and taller rack with locking doors. We ran out of time to run coverage testing.

On a later weekend Harold, K7AED, changed the 434 MHz receiver and added a new ID disk to the Amiga computer and added a UPS unit to keep continuous power to the computer and controller during power interruptions. Coverage tests were done with about a 1 to 2 "P" unit improvement in received on the repeater's 434 MHz receiver.

Near future plans include a link between White Tank Mt. and Mt. Lemmon and to add a 440 MHz voice repeater at Mt. Lemmon donated by Mike, WA6SVT. He picked it cheap at the Ft. Tuthill Hamfest near Flagstaff last summer. Mark your calendar for next year's Ft. Tuthill hamfest on July 25-27, 2003.

HAYDEN PEAK:
ATN is working on a linking project and ATV repeater to cover the tri-state area near Kingman to connect White Tank to Potosi. This will bring the Arizona system into the California and Nevada system, more details at the meetings.

ATN-CA NEWS:
Thanks to Jim, K6CCC, for running the Monday night Mt. Wilson ATN net. Tom, W6ORG, and Doug, K6KMN, also help run the net if Jim is not available.

Thanks to Dave, KA6DPS, for running the Tuesday night main ATN net. Dave has been doing a great job running the net for several years.

SANTIAGO:
The ATV repeater has been working well. Mike, WA6SVT, has been repackaging the 2.4 link receivers and main 2.4 input receiver into dicast boxes with identical layouts and setup to mount onto a single 5 1/4" high rack plate, Brian, WB7UBB, donated the frequency chips for the Wavecom 2.4 GHz receivers.

Mike added a receiver voter to the 1286.15 MHz control and voice repeater. Each of the California ATN repeaters except Santa Barbara

has a 1274.15 MHz (our voice repeater input) receiver that is used for control of each ATV repeater, now that the link system was upgraded to a Wavecom unit with two audio channels he added the raw audio from each site via the unused audio channel. The raw audio is passed into a CTCSS (PL) tone decoder for signaling and then is de-emphasized and fed into the voter. The voter selects the site that has the best signal to noise/interference ratio. Oat, Santiago, Blueridge and San Gorgonio are the voted sites.

OAT MT:
Allen, W6IST, and Mike, WA6SVT, provided weed abatement at the site late last spring and provided preventive maintenance to the repeater. Allen donated a new cooling fan and installed it into the rack.

BLUERIDGE MT:
This site is in transition of moving next door to another building. Abel, N6ENL, of the SCRN 440 MHz repeater group purchased a building that was in disrepair. Several of the ATN members, WA6SVT, KD6OMV, K6IOJ, W6MAF, WA6SXU, KA6DPS (I hope I remembered all who helped) and members from SCRN stripped the building to its core and sealed the block walls, roof and painted, replaced the ceiling and resurfaced the floor. The tower was cleaned up and the center antenna mast replaced with a larger more heavy duty one.

This spring after the snow melts we plan to move next door. The new site gives ATN a much better link antenna location that is fully clear of the trees and the site has 8-foot open bay racks that will relieve the small equipment box we are in now. The tower has a 10 ft radome covered dish already aimed at Mt. Potosi, We just need to transfer the feed horn.

MT. WILSON:
Doug replaced the repeater driver amplifier that had failed with a newer amplifier donated by Mike, WA6SVT. ATN is in final planning for a link between Blueridge and Mt. Wilson. The link should be installed after the Blueridge move. A large dish is already installed on the new site at Blueridge and aimed at Mt. Wilson. As weather permits this winter or spring the 434 and 1241 antennas will be moved off the front tower bracing and onto the tower leg in preparation of the major tower work so the TV station can add DTV antenna. The building will undergo major remodeling for DTV and the repeater most likely will need to be stored away while construction takes place. Mike has a new 1241 MHz antenna for the repeater and most of the mounting brackets.

San Gorgonio:
The amount of electrical power is at a premium at this site and commercial clients have priority. ATN may have to relocate the repeater to a new location or workout a new solution. Moody and Mike are looking into our options at this time.

SANTA BARBARA:
Rod, WB9KMO, and Paul, W6VLM, worked on some repeater projects and weed abatement this year. Mike, WA6SVT, and Rod ran 2.4 GHz loss tests on the long cable run from the link dish to the equipment rack and took physical measurements for the 2.4 GHz link equipment for the back link to Santiago. Mike has the amplifier and bias tee ready. Rod has the repeater controller ready for adding the link.

Mike is working on the link transmitter Rod sent him and the amplifier he built up to fully test the link transmitter-separate amplifier combination before it is installed later this winter. Rod provided and operated an ATV station at the Santa Barbara ARC field day site this summer.

Mt. Palomar (Palomar ARC)
Some major internal changes have taken place with our affiliated group. Bill, KB6MCU, is no longer connected to the repeater and the link was turned off. I have sent a letter to the Palomar club to address the repeater and have received a response that the Palomar ARC is interested in getting the ATV repeater back up. Art, KC6UQH, and I have offered to help. The ATV repeater issues will be discussed mid January at the Palomar ARC board meeting.

ATN-IN NEWS - CROWN POINT:
Henry, AA9XW, has secured a new location for the old Chicago repeater that used to reside in the Sears Tower downtown. The new location is about a mile south of his new QTH at PBS channel 51 in Northwest Indiana where Henry is the Chief Engineer. The TV station has a 1,000 tower and has a communications antenna bays at 500 and 550 ft. Henry had 1 5/8" heliax run installed to each location, one for the receive antenna (550 ft) and one for the transmit antenna. Andrew Corporation built him a commercial 11.5 dBd slot antenna for 70cm.

Mike, WA6SVT, tuned up a CATV modulator for 421.25 MHz, the repeater output frequency and sent it to Henry. Henry is currently repackaging the repeater and hopes to have it on the air soon. Future plans are to add a 1.2 or 2.4 GHz alternate input later this summer and a link or two to other ATV repeaters. Northwest Indiana-Chicago Illinois is the newest area joining the ATN Team.

ATN-NV NEWS - Mt. POTOSI:
Last summer Geoff, KB7BY, and Mike, WA6SVT, made a trip to the mountain to make repairs to the 2.4 GHz receiver and main transmitter. Mike had repackaged the receiver and changed the frequency to 2441.5 MHz then brought up the receiver to Mt. Potosi. Geoff and Mike removed the down converter from the tower mounted box and left in the filter and preamp after retuning it to 2441.5 MHz.

Geoff replaced the main repeater transmitter. At the present time the local power company is trenching the roadbed and replacing the main underground power feed to the mountain. News Flash! I was just informed the power is back on and the power company just finished the project. Ken, KC7DEN, is now getting the group back together and is planning to organize a group trip to the ATN-CA & NV winter meeting. Contact Ken at kc7den@lvcm.com to RSVP for the trip.

ATN-NM NEWS - Ben's Bluff:
ATN has a working repeater installed on Ben's Bluff 11 miles west of Estancia, NM. Earl, N8TV, Darlene, KD7HPN, and Mike, WA6SVT, installed the repeater last summer. This fall Mike donated a bigger better 1253 MHz transmit antenna. Coverage is to the communities east of the mountains near Albuquerque. Plans in the near future are to locate a suitable site on Capilla Peak to cover both sides of the mountains including Albuquerque.

THANK YOU:
The ATN Trustees and management want to thank all of the members who donated items, designed and built items, helped at the sites. It is your efforts that greatly help make ATN the network that it is. ATN is the world's largest & successful ATV repeater club thanks to your help and support of the Membership.

The newsletter is a collaboration of the ATN trustees and management with editing from Harold, K7AED, Darlene, KD7HPN and Mike, WA6SVT.

ATV Meeting At Fort Wayne, IN Hamfest

Jim Pliett, K9OMA at the Fort Wayne Indiana Hamfest and Computer Expo, November 17, 2002, put on an excellent Amateur Television (ATV) program. Approximately 40 hams and friends of amateur radio enjoyed the program. After a brief introduction period Mr. Pliett went on to explain ATV.

ATV modes of operations come in two flavors, they are fast scan am and fm which is real time video and slow scan, scottie which can be run in ssb, am and fm, this mode is still pictures. ATV operating frequencies for fast scan include all amateur voice bands above 420 MHz (70cm). Slow Scan can be operated on all amateur voice bands. One still picture can be sent or received in 30 seconds almost anywhere in the world on HF.

Fast scan common frequencies on the 70cm band include, 439.25 MHz simplex and input to a majority of ATV repeaters and 434 MHz simplex using a horizontal polarized antenna. The frequencies used mostly for repeater outputs are 421.25 MHz and 425.25 MHz. 144.34 MHz and 147.42 MHz are the associated 2-meter frequencies for communications and repeater control.

ATV activity can be found scattered over most of our Mid-West region. Rural areas do good to use the simplex mode for best results while large cities do better with repeaters. ATV Fast Scan operations on simplex on a typical day can expect contacts up to 30 miles and UHF enhancements can extend contacts up to 500 miles (as well as some really good atmospheric conditions).

Minimum requirements for an ATV Station: A cable channel ready TV for receiver tuned to channel 60= 439.25 MHz. You'll need a video source, a camera, camcorder or a computer with n.t.s.c. (standard video output) would be a good choice. Next is the ATV transmitter making sure it's a 70cm am mode and has at least 10 watts output. A 70cm yagi antenna with at least 12 dBi gain and RG/8U coax or better is suggested. A tower and rotor at least 25 feet high with NO major obstructions such as a neighbor's house or tall trees. For voice communications with your partner and the repeater controller you will need a two-meter transceiver and antenna.

Mr. Pliett, K9OMA went on to say that the advantages for having ATV repeaters is to lessen the requirements for antennas and transmitter power and saves wear and tear on your rotor as you don't have to change antenna directions for multi-ham QSO's. The repeater also allows for continuous monitoring which promotes ATV and your system.

The different types of ATV repeaters include a 70 cm inband and the antenna polarization can be horizontal or vertical. You may choose cross band repeaters operating on different bands for transmit and receive this would allow the operator to see his own signal being sent. ATV repeater controllers usually have a two-meter receive frequency that will allow you to send touch tone commands to it to do such things as activating the ATV transmitter to I.D. itself for a minute or so. This is helpful in assessing the reception of the repeater. Other things that are being done with ATV, transmitting pictures from balloon launches as high as 100,000 feet, model rockets and aircraft. Both fast and slow scan are being used on the Space Shuttle to communicate with other Hams. Even law enforcement has used ATV for useful and instant information.

In conclusion Mr. Pliett stated, "Amateur fast scan television while diverse and very interesting is not for everyone. Amateurs just getting on the air will find this mode a bit to complicated and contacts will be limited compared to many other forms of Ham communications. Another group of Hams who would have serious problems are those living in apartments or in housing additions with antenna restrictions. A QTH that is surrounded by heavy woods or tall buildings would also present difficult problems. For the rest of us though, ATV is a great way to show off our photos, art and great cinema productions (not to mention our great looks). And if you're ever lucky enough to catch a big temperature inversion or troposphere duct, it is one of the greatest DX adventures of all time!

Below is a partial listing of ATV repeaters in a 120-mile radius of Fort Wayne, Indiana

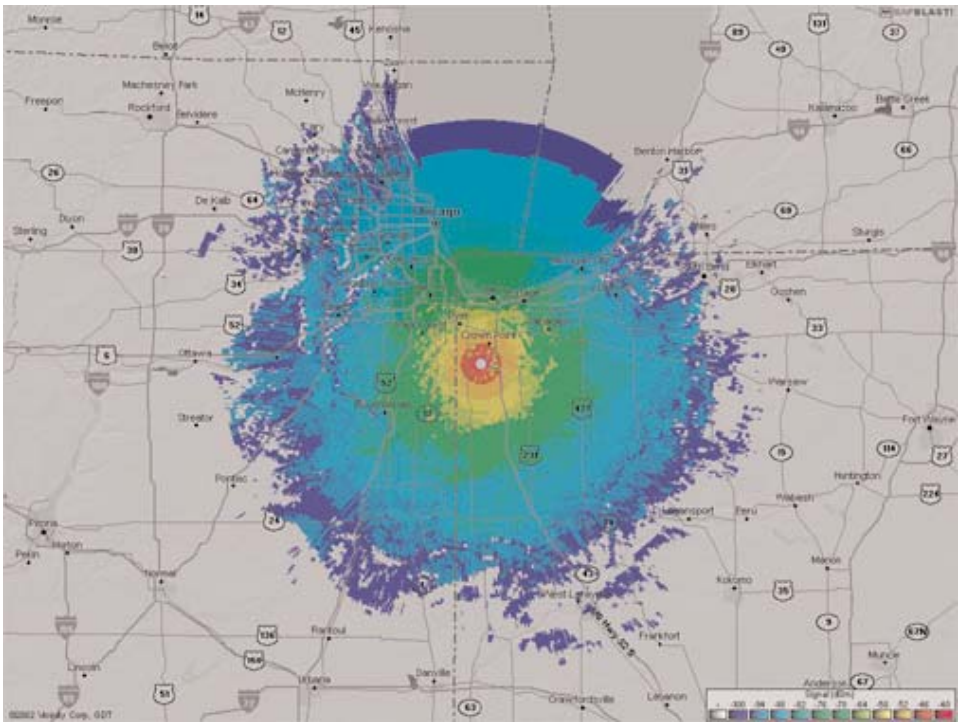
CONTACTS:
Fort Wayne, IN Jim Pliett, K9OMA, k9moa@netusa1.net
Indianapolis, IN Don Miller, W9NTP http:\www.svs.net\wyman
Dayton, Ohio Dick Goode, W8RVH w8rvh@glasscity.net

William D. Lower, KB9RUB - kb9rub@arrl.net

ATV signal reporting in picture units.

P0: Mostly snow but sync bars are visible.
P1: Sync lock with some picture jumping, can just read call sign through snow
P2: Snowy picture but stable
P3: Some snow but color is usually present on signal
P4: Good picture and color, occasional flecks of snow
P5: Perfect Picture

Call Sign	Location	Type	Input	Output	Communications/Control	Polarization
W9TE	Fort Wayne, IN	Cross Band	439.25	910.25	144.34	Horizontal
K9LPW	Indianapolis, IN	In Band	439.25	425.25	UNKNOWN	Vertical
WB8ULC	Lima, Ohio	In Band	439.25	421.25	UNKNOWN	UNKNOWN
W8BI	Dayton, Ohio	In Band	439.25	421.25	144.34	Horizontal



Crown Point, IN - AA9XW

Indiana Chapter President is Henry Rue, AA9XW

COVERAGE: Located Crown Point, Indiana, (South of Chicago, Illinois Covers South Chicago and Northwest Indiana.
LOCATION: Lat 41-20-56 N
Long 087-24-02 W
ALTITUDE: 729 ASML Feet
Tower 1000 Feet
ANTENNAS: (70cm) 550 Feet above ground
9 DB omni Andrew slot antenna for TX
(1.2GHz) 200 Feet above ground
12 db vertical FM (Bensat receiver)
OUTPUT: 421.25 MHz (VSB) 100 Watts Horizontal
INPUT: 439.25 MHz (VSB-lower side),
2nd Rx on 1200 MHz
OTHER: Video zoom camera on site

ATVQ

Different ATV Cabinet

I thought you'd be interested in my different ATV cabinet. This spring we had that bad flooding (worse 30 miles west in Roseau, MN) and one of my Macintosh computers got totally wet (and muddy) out in my garage (I'd only used it a couple times anyway). I decided this fall that the case would make a good portable ATV cabinet. Here's a couple pics of it now that I have the TC70-1 and D26 mounted. I still have to do some wiring (including maybe a nite lite inside over the TX panel). There's plenty of room under the amp to put some batteries if I want to do self contained portable ATV (without amp, of course).

Elliott - N0UKF ejolson@wiktel.com

On-Screen ID Overlay

OSD-ID (PC) is an on-screen display board that overlays user defined text onto either an incoming video source or self generating background screen. Every position on the 28 column by 11 row screen (308 characters total) can contain a user selected character. All information is stored in non-volatile eeprom memory so even with loss of power OSD-ID (PC) retains all screen information. The on-screen text is created using a robust editor called IdMaker which runs under Microsoft Windows. IdMaker includes an integrated upload utility which sends the user created screen to the OSD-ID (PC) board through a supplied RS-232 serial cable. OSD-ID (PC) has two screen modes, a "mixed" (black and white text overlaid onto an incoming video source) mode and a "full page" (OSD generated color background) mode. OSD-ID (PC) supports screen background, character border, and character background color selection. Character border and pixel offset can be set for each of the eleven rows. In addition, programmable character zoom levels, horizontal and vertical pixels positioning, individual color and blink character attributes can also be set. And finally, the user can define OSD-ID (PC)'s text triggering method. 3.5" x 2.5" $139 includes serial cable and 3 1/2" diskette.

Intuitive Circuits, LLC
Voice: (248) 524-1918
http://www.icircuits.com

New ATV Repeater DB0SCS In Nuremberg, Bavaria

In 1999 we (Stephan DG7NDV, Germar DG7NDQ, Andreas DG9NDZ, Andreas DL4NCV) met with Jann DG8NGN who made a contact with the telecomm. facility TELEKOM in Nuremberg, and OM Ott paved the way for our ATV repeater site on the local TV transmitter tower (antenna height 270 m).

The assets of this location are not only its height ASL but also its relation to other existing ATV repeaters: line of sight to Schneeberg (Fichtelgebirge), Schneekopf (Thuringia), Hesselberg, Ingolstadt and Tegelberg. This is an optimum condition for building a wide ranging network of ATV repeaters in northern and southern Germany. We are lucky to be able to reuse cables and antenna sites of the older "C-Net" (analog mobile phone). The "shack" is at 200 m ASL and our antenna site on top of the tower at 270 m ASL. So the cable length of 80 m required to install a 13 cm converter and all 10 GHz equipment at the top. A real obstacle were the slot antennas for 23 and 13 cm, as the antenna carrier was 0,5 m in diameter and thus too thick for 360 degrees horizontal pattern with only one slot antenna. So we had to build two of them for each band with 180 degrees pattern on either side.

Because of the height of the tower we feared to "blow" too much power away above the roofs of the Nuremberg residents. DG7NDQ had the idea to bow down the vertical antenna diagram by 1,5 degrees. By this measure we are winning a lot near by and loosing only 0,5 dB farther away. How is it done technically? The 10 slots are arranged a bit closer to each other in order to tilt the vertical pattern. After completing the prototype antenna we tested it by receiving a distant beacon transmitter, and it performed like intended. The same message was valid for gain and 180 degrees horizontal pattern.

In July 2002 the antenna set was installed at the top of the tower (after using an elevator for the first 200 m, then climbing a staircase and a ladder at last). First transmissions with low power presented a range we never thought of, so the effort was well worth it.

Technical data:
1. output 1278 MHz with sound subcarrier 5,5 MHz, 2. output 10220 MHz with sound 6,0 MHz, input 2335 MHz with sound 5,5 MHz, DTMF control at 431,850 MHz.

The heart of the repeater is a 19 inch case built by DL4NCV containing the 23 cm TX, 23 cm RX, video- and audio matrix controlled via I2C commands by a PC, which detects incoming signals, AGC and AFC with a grafical display. Control of in- and outputs is done by DTMF commands on 70 cm, later on also all ATV linking control. At present DB0HTG at Hesselberg is "monitored" on 10 GHz, and a full duplex link to the "Schneeberg" (Fichtelgebirge) with 93 km length is being tested. Another link to the "Schneekopf" (Thuringia) over 140 km is at work, and an adjacent 130 km link will follow to the "Brocken" (DB0HEX). Going south via another TELEKOM tower we can see the ATV repeater Ingolstadt (DB0ITV) and a free view (by camera) at the Alps. DB0QI (23 cm) from Munic and repeater Tegelberg (10 GHz) can be received from there. More on this linking project at **www.atvlink.de**
DB0SCS webpage: **www.qsl.net/db0scs**

75 years DARC Chapter Bonn G03

From the first german experiments in ATV some G03 members have engaged in this mode. No other mode has changed that much by technological innovations. After using AM-ATV (A5) in the beginning with a separate sound TX and then FM-ATV the analog way, recently the digital breakthrough has arrived with QPSK modulation (DVB-S) in German ATV.

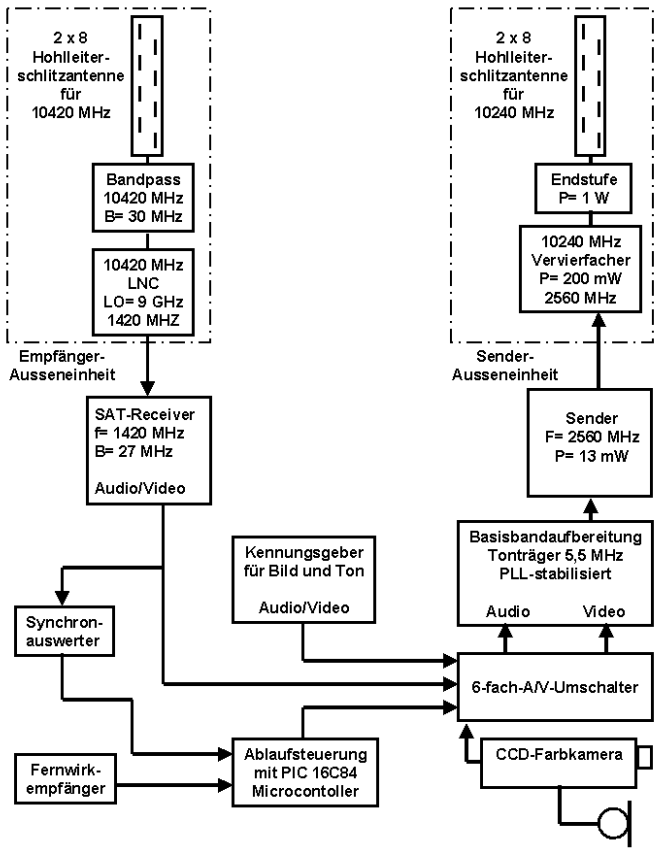
The start of (official) ATV in Germany dates back to 1967, and in 1969 already the AGAF (amateur radio television working group) was founded by the G03 members DC9DR and DC0KI. Nowadays AGAF has about 2000 members and the club magazine TV-AMATEUR is named just like in the beginning. Citing the former newsletter of G03 "Bonn-Sked" from March 1972, already 8 members were active then in ATV, for instance DJ7RA, DC0KI and DJ6TA, besides another 5 receiving stations.

1992 the G03 committee decided to install ATV equipment at the club station "Burg Limperich". At first receiving from the Cologne ATV repeater DB0KO (on top of the "Deutsche Welle" building) should work by installing a 44 element yagi antenna and an ATV downconverter from 23 cm with a propositioned 5 tap filter. Later on Martin DG9KS built a 23 cm FM-ATV TX with integrated 16 watt PA in order to enable transmitting video via DB0KO.

The weekly ATV bulletin sent out from there can be seen far away, it is produced and recorded on video cassettes by 8 different teams in turn. From the start a G03 team was integrated, until 1999 with DL6KAA, DL3KDO and DG9KS. Now they are DH2KF, DL2KTS, DL3KAA and DG3KHS. Memories go back

to a special feature by DL3KBQ/5T5EV produced at the ground station DP0RIM in Mauretania on the occasion of the "Spacelab-D2-Mission". Reactions of viewers were overwhelming after showing this video! Another highlight were videos by DL3KAU (sk) who recorded G03 events with his camera and made portable live ATV excursions to the "Seven Hills" east of Bonn.

ATV-Relais DB 0 SB auf dem Drachenfels bei Bonn



One night at the club station DB6KH and DG9KS raised the idea to install a 10 GHz ATV repeater on the "Drachenfels" ruin (340 m ASL). It should fill a gap between DB0KO in Cologne and DB0NWD in Mayen (north of Koblenz) and supply the Bonn and "Seven Hills" area with 3 cm ATV. After a futile repeater application (wrong frequencies) our DB0SB call was approved, and the equipment built by DL2KCL went on air October 1999. Input is on 10420 MHz, output on 10240 MHz, antenna polarization horizontal, 24/7 with an idle mode camera looking down the Rhine river. The range of DB0SB is very high even at this frequency, it has been seen in PA0 (Netherlands) already!

Translations from **TV-AMATEUR 127**
translation Klaus, DL4KCK
www.agaf.de

ATVQ

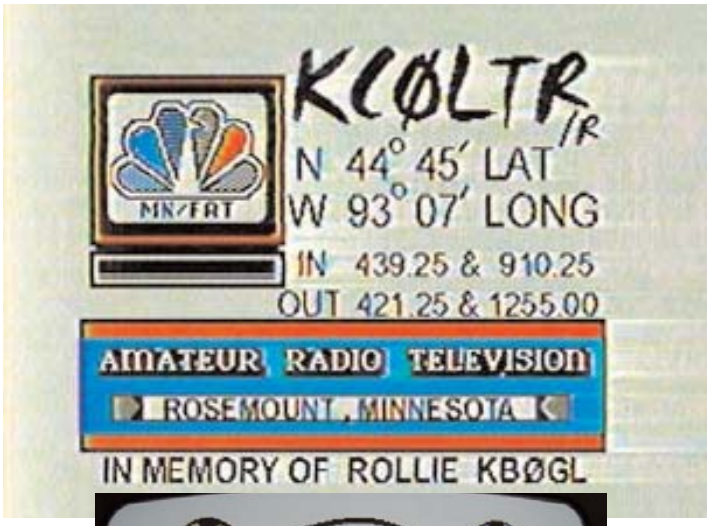
New ATV Repeater In Minnesota

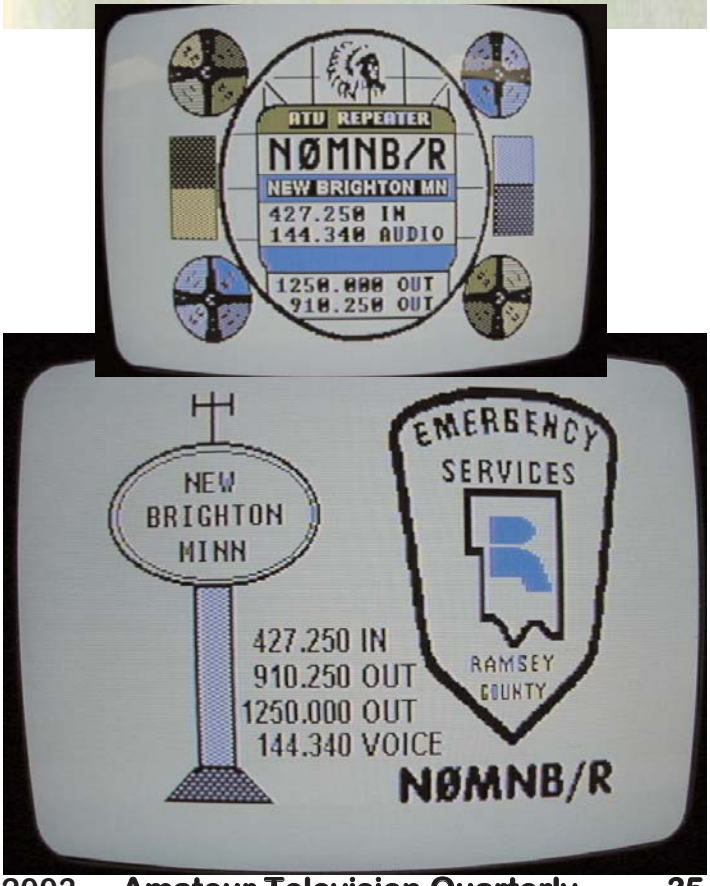
We have a new repeater in New Brighton, MN. The input is 427.250 AM Vert. Outputs are 1250 MHz FM Vert, and 910.250 AM Vertical all at 35 watts. The callsign is N0MNB.

Also for your information KB0GL is now the KC0LTR/R since Rollie passed away last year. Visit our web page for more information:
http://come.to/amateur/amateurtv.mn
or
http://www.qsl.net/nomnb

ATVQ

73'S Bill Frovik, N0MNB
n0mnb@email.msn.com





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24 hr FAX order line 1-626-447-0489 Email: tomsmb@aol.com
Web site: http://www.hamtv.com

PC ELECTRONICS

QC-40 Color Quad

Color Quads have now gone below $200 thanks to lower cost video frame storage IC's. But what's a Color Quad and why use it on ATV? This device takes up to 4 color or B/W video inputs and puts them all on one video output. While designed for multiple camera security applications, they are great for ATV public service events, repeaters or home station when you have more than one video source to transmit or watch all at the same time on only one monitor.

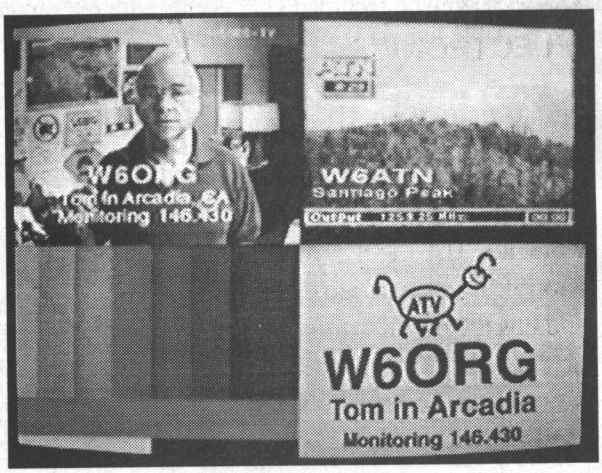
I use mine to monitor and set up my primary ATV station camera, one of the local ATV repeaters, video test pattern generator and secondary camera on my ATV Bug ID. I some times change one of the inputs to the VCR output if I'm going to show a tape. This way I can have my primary camera transmitting and hit the VCR video input channel button right when I see the actual start of the tape rather than plugging and unplugging video coaxes or making those watching have to wait as I fumble with the VCR controls looking for the right place on the tape.

K6CCC used one of these QC-40 Color Quads from atop a building at the Rose Parade with one camera pointing west and another pointing east. Depending on which direction the ATV net control wanted to see, all he had to do was push the respective video channel button. He also did not have to lug separate monitors and cables for each camera or be off the air temporarily to switch video coaxes, focus or position the cameras - often an annoying factor at public service events.

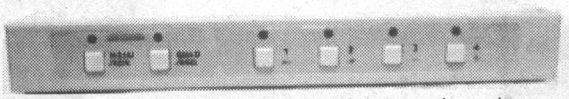
There are actually 2 video outputs. One always has the quad video present (VCR Out) and the other (Monitor) has the front panel selected quad, individual channel or sequenced video. Normally you would watch the quad picture and connect the selectable output to the ATV transmitter.

The loss of video alarm function can be a bit nerve racking for ATV applications, so I found the alarm buzzer driver transistor base and put a 100 Ohm pull down resistor to ground to defeat it - the resistor is soldered from the lower side of a 1K chip resistor and the other side to an open ground plane pad.

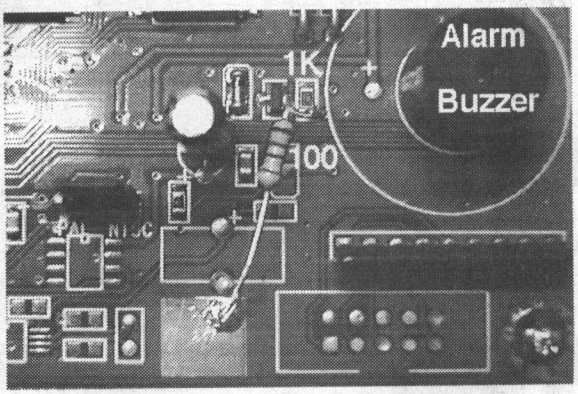
At a repeater site, the QC-40 would let users see all at one time the repeater receive video, shuttle video, link video or tower cam. Then by a DTMF-8 tone controller connected to the front panel buttons, select a single source if desired. It might be a good idea to bypass each video jack with a 33 to 100 pF disc cap to keep any conducted RF out as shown on one of the output jacks.



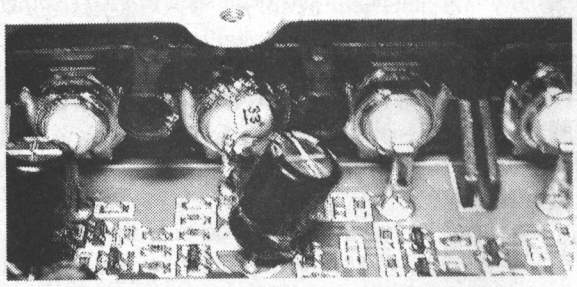
QC-40 Rear view BNC video jacks& 12 Vdc jack. 8.6 x 1.1 x 6.25 inches. Metal case. Imported, $190 from P. C. Electronics.



Front view 4 channel and modecontrol push buttons



Add a 100 Ohm resistor to defeat the loud loss of video alarm buzzer.



Added 33 pF RF bypass disc ceramic cap.

W6ORG (c) 2003

Say you saw it in ATVQ!

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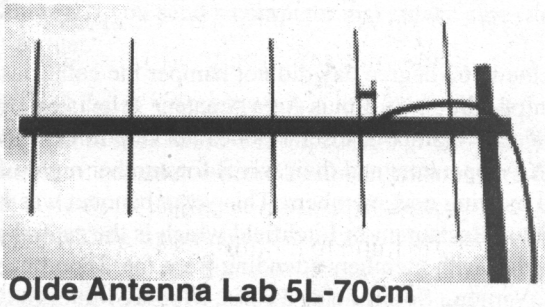
5L+5

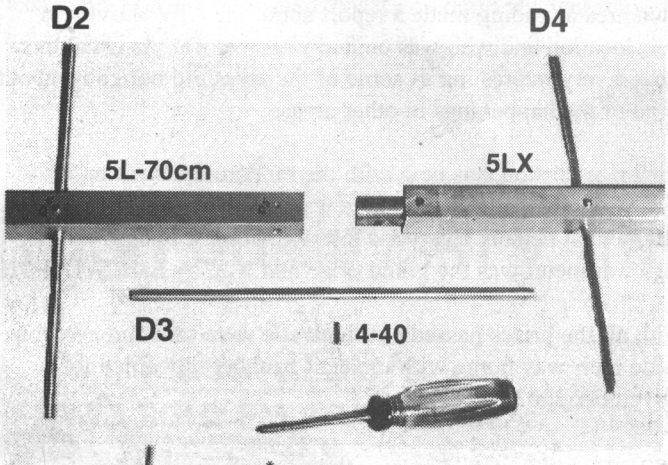
Get 3 More DB with this 5 Element beam extension

The Olde Antenna Lab 5L-70cm is a very popular beam antenna for public service events or fixed on a tower to work just the local repeater. Its short 31 inch boom is small enough to be carried for portable applications inside a car and has the advantage of 8 dBd gain, end mounting horizontal or vertical, 60 degree beamwidth and a good front to back ratio that helps cut down multipath ghosting vs. an omni

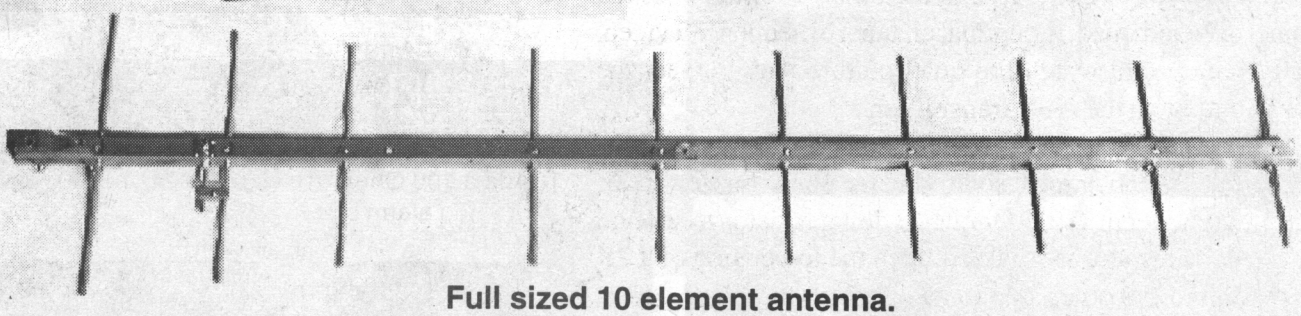


Olde Antenna Lab 5L-70cm

But there are times when it would be nice to have a little more gain and narrower beamwidth. Dave, W6OAL, antenna guru and owner of the Olde Antenna Lab, has come up with a 5 element extension for the 5L-70cm beam that retains low VSWR over the whole 420-450 MHz band and adds 3 dB. Beamwidth reduces down to 48 degrees which is still wide enough to be very forgiving as far as blind aiming. The 3 dB added gain (11 dBd total) will improve a less than P5 picture by 1/2 a P unit.



The 5LX extension can easily be added in the field if needed with a Phillips screwdriver. Unscrew the 4-40 screw holding the 3rd director (D3) in place and remove the director rod. Remove the plastic end cap. Push and twist the 5LX circular tubing into the 5L-70cm square tubing and align the holes. This is a tight fit so take some time to twist and align together. Reinsert the 3rd director and align the threaded hole in the director rod for the 4-40 screw. Tighten the screw down on the boom and you are ready to go.



Full sized 10 element antenna.

Total boom length of the 10L or 5L + 5LX is 61.5 inches. Some of the other features are a 50 Ohm type N jack on the boom and a mast clamp that will accept up to 2 inch diameter masts with the holes drilled on the boom for horizontal or vertical polarity. Ideally, the coax should be run back at a right angle to the driven element and taped to the mast.

The 5 element, 5 element extension or full 10 element antenna can be purchased separately. The 5L-70cm is $75, 5LX extension is $60 and the 10L-70cm is $125. These prices include priority mail shipping anywhere in the USA and can be ordered through P. C. Electronics. (c) 9/02

2002 SEVENTEENTH ANNUAL ATV BANQUET
LITCHFIELD, ILLINOIS November 10, 2002

Central Illinois/St. Louis Area ATV Club
Scott Millick K9SM Email:smillick@wamusa.com

A cloudy 62 degree day did not hamper the enthusiasm for the Central Illinois/St. Louis Area Amateur Television Club's annual banquet. Weather or distance does not stop this dedicated group of ATV operators and their wives for another night of friendship and meeting new members. This years banquet was held at the Ariston Restaurant in Litchfield which is the central point for the club with members attending from the Bloomington, Mt..Vernon, Springfield, Peoria, Moline, Illinois and the St. Louis, Missouri areas. There were 32 members attending.

The activity began at 4 PM with Happy Hour and members making and renewing acquaintances telling stories about their last years activities.

Scotty, K9SM, called the group to order at 5 PM for dinner. After a few announcements the clatter of dishes, glasses, and utensils and chit chat continued during the course of the main meal and dessert.

The twelfth annual Central Illinois/St. Louis Area ATV Operator of the Year was presented to Bob Delaney KA9UVY from Mt. Vernon, Il. Bob is one of the most active ATV operators in central and southern Illinois and is responsible for spreading the ATV bug to many new operators in that area.

Each area attending made a report about the ATV activity in their location and who was on and who was not. As usual this proved very interesting as some of the areas did not know about some of the happenings in other areas.

The prize portion was next with the random draw for prizes. This year when a person's name was called he picked the prize for the next person. Everyone left with at least two prizes. A Bird wattmeter was the grand prize and won by Earl, WD0FCH

With all the prizes passed out farewells were said and everyone made their way home with the next banquet scheduled for November 2003.

ATVQ

ATVQ TO PAY FOR ARTICLES! CONTRIBUTORS GUIDE

Payment for Technical Articles

ATVQ will pay for certain articles that it publishes. I will outline the policy here, but it will be subject to change as needed to make sure that ATVQ continues to be an ongoing publication. ATVQ will pay $25.00 for technical articles that are published and are a minimum of 2 pages. While this is not a great amount, I hope it will encourage more technical type articles to be written. Exceptions will be articles that are written by a manufacturer/seller of equipment that is being written about. While I do not want to discourage this type of article, the article itself is an advertisement of the product. Articles from clubs will be encouraged, and I would expect they would like to share their information with the ATVQ readership. Information gathered from the Internet will not be paid for and is mostly small filler items.

Ideas

Do you have an idea for an article that you've said to yourself that you wanted to write, but never did. Feel free to check with us to see if it is of interest, or write and send it in. No guarantees that it will get published, but if you don't try, you will never know. I'll be looking to see what you can do!

Preferred method of receiving articles is from **Microsoft Word**, however **Wordperfect** is OK too. Next preference would be **ASKII text**, followed by **typewritten** or **hand written** (clearly). Diagrams or pictures (B&W or Color) can be sent in hard copy, or if you scan them in, save to PCX or JPG formats (actually I can read about anything). If you send a computer disk, make sure it is PC (not MAC) format.

When sending in articles in Microsoft Word, please SAVE with FASTSAVE OFF and save in Word 6 format. Also, articles written in any word processor, consider what will happen when it is re-formatted to fit the style that I might put it in. An example would be setting up tables or adding figures into the article. They can be very hard to strip out. If possible, put the tables, figures, each in a file by itself. This will help me to be able to import into the magazine format.

Articles can be sent to:
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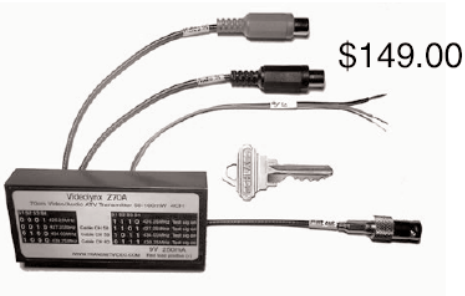

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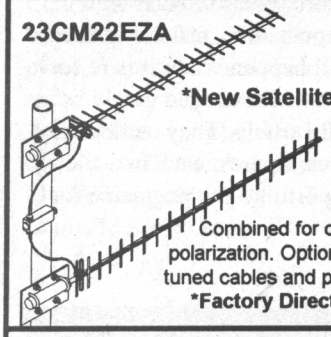

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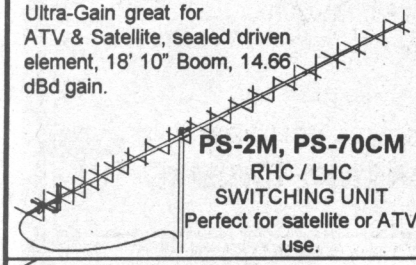

PS-2M, PS-70CM
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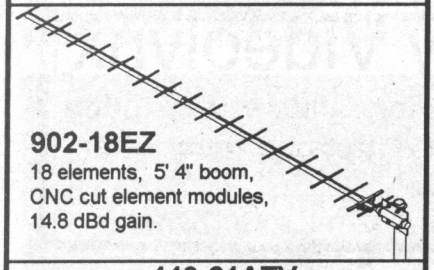

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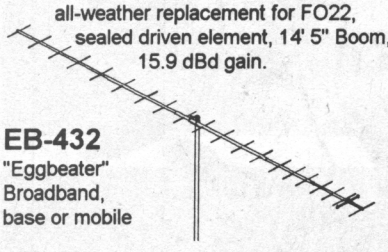

EB-432
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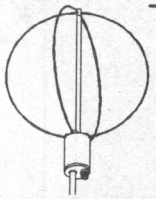

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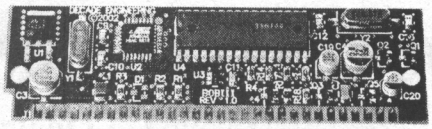

Decade Engineering's **new** BOB-3 module easily overlays text on video. BOB-3 displays up to seventeen lines of forty characters, including sixty-three custom characters. Other features include vertical scrolling, a stand-alone display option, faster serial communication, automatic video generation, and much more.

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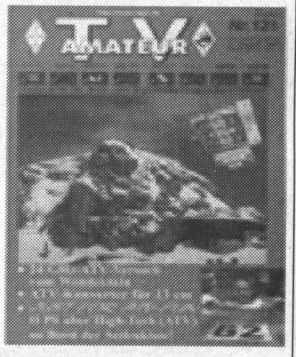

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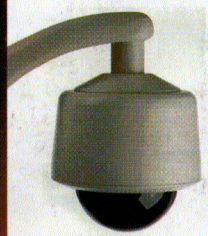

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