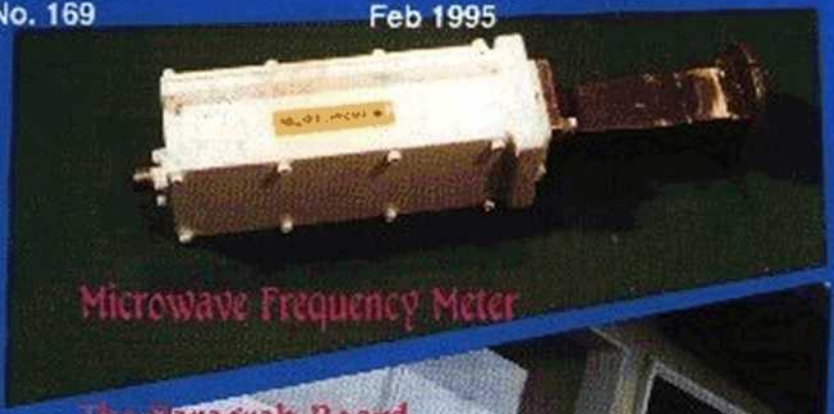
CQ-TV

No. 169 Feb 1995



Microwave Frequency Meter

The Paragrab Board

23CM Pre-Amp

Sync Tip AFC

Converting the RKU10 LNB for 9CM

A Simple 24GM TV Transmitter

BRITISH AMATEUR TELEVISION CLUB

The Comittee Would Like To Wish All Our Members a Happy and Prosperous New Year

We Also Trust That You Had a Wonderful Christmas!

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Who To Write To

Members of the BATC Committee are available to help and advise Club members on any ATV related subject. Please remember that all Club work is done in spare time, so please try to keep such queries to a minimum.

CQ-TV MAGAZINE - Anything destined for publication in CQ-TV or forthcoming publications; articles; review items; advertisements; other material. EDITOR: CHRIS SMITH G1FEF, 36 Grasmere Green, Wellingborough, Northants, NN8 3EJ. Tel: 01933-676054; Fax: 01933-274367

RALLY 95 - MIKE WOODING G6IQM, 5 Ware Orchard, Barby, Nr.Rugby, CV23 8UF. Tel: 01788-890365; Fax: 01788-891883. Cellphone: 0860-857434.

CLUB AFFAIRS - Video tape library; technical queries, especially related to Handbook projects: TREVOR BROWN G8CJS, 14 Stairfoot Close, Adel, Leeds, LS16 8JR. Tel: 01132-670115.

MEMBERS' SERVICES - PCB's; components; camera tubes; accessories; etc., (other than publications). PETER DELANEY G8KZG, 6 East View Close, Wargrave, Berkshire, RG10 8BJ. Tel: 01734-403121.

MEMBERSHIP - Anything to do with membership, including new applications; queries and information about new and existing membership; non-receipt of CQ-TV; subscriptions; membership records; data protection. DAVE LAWTON G0ANO, 'Grenehurst', Pinewood Road, High Wycombe, Bucks., HP12 4DD. Tel: 01494 528899.

GENERAL CLUB CORRESPONDENCE & LIBRARY - Any general Club business. Queries relating to the borrowing or donation of written material. PAUL MARSHALL G8MJW, Fern House, Church Road, Harby, Nottinghamshire, NG23 7ED. Tel: 01522 703348.

PUBLICATIONS - Anything related to the supply of BATC publications. IAN PAWSON G8IQU, 14 lilac Avenue, Leicester, LE5 1FN. Tel: 01533 769425.

EXHIBITIONS - Also arrangements and information about lectures and talks to clubs; demonstrations, etc. PAUL MARSHALL G8MJW (address above).

CLUB LIAISON - And anything of a political nature; co-ordination of ATV repeater licences. GRAHAM SHIRVILLE G3VZV, The Hill farm, Potsgrove, Milton Keynes, Buckinghamshire., MK17 9HF. TEL: 01525 290 343.

CONTESTS - RICHARD GUTTRIDGE G4YTV, Ivy House, Rise Road, Skirlaugh, Hull, North Humberside, HU11 5BH. Tel: 01964 562498.

BATC TELEPHONE BBS SYSOP - Brian Kelly GW6BWX, 12 Cotswold Way, Risca, Gwent, NP1 6QT. Tel Voice: 01633 614376; Tel BBS: 0633 614765

CQ-TV AWARDS - BOB WEBB G8VBA, 78 Station Road, Rolleston-on-Dove, Burton-on-Trent, Staffordshire., DE13 9AB. Tel: 01283 814582

SATELLITE TV NEWS - PAUL HOLLAND G3TZO, Chatterton, Chapel Lane, Threapwood, Nr.Malpas, Cheshire, SY14 7AX. Tel: 01948 81429.

TV ON THE AIR - ANDY EMMERSON G8PTH, 71 Falcutt Way, Northampton, NN2 8PH. Tel: 01604 844130.

Where possible, it is better to telephone rather than write. Please do not call at unsocial hours. As a guide, try to call between 1830 & 2130, and not before 1130 at weekends... Thank you.

POST & NEWS

ATV RECORD? - YOUR GUESS IS AS GOOD AS MINE!!

As seen in CQ-TV 168 in its original form, thanks to Jose Robat for the translation. (Can you understand it now Mike?!?!)

Dear Sir,

2 way contact ATV - 432MHz between the Iberian Peninsula and the Canary Islands.

On July 10th 1994, several 2 way QSO's were realised between 11:00 and 13:00 UTC on the 432MHz band between EA8FT, EA8HZ, EA8BEE, EA8AMD and EA8AOM from the QTH of the latter, situated at 'La Esperanza' Tenerife (Canary Island) at the altitude of 1,100 metres (loc. IM18TK) and the Spanish stations EA7CPT (loc. IM66VM), EA7BI (loc. IM66IM) and EA7FWG (loc. IM66VO) this last station only in receive mode. The approximate distance between the squares is 1312km.

Controls were of P4-5 during the two hours, using hybrid modules of the SA-U4 series as power amplifier and the antennas were 21 element TONNA (F9FT).

On the receiving side no pre-amplifiers were used and the receivers were simple 6 standards TV sets. On the transmission side, the gear was, for all these calls, home made material. Of all that precedes we made photos and also video tapes. On that 10th of July, which was a Sunday, I went with my family to the seaside and did not take part in these QSO's, but if I, instead, was in my shack, I certainly would have been able to make the contact, as I am QRV on 432MHz and 1.2GHz (Hi, Hi).

Greetings ... Jose Luis Sanchez EA7WJ.

APATHY RULES ... I SUPPOSE

Dear Chris,

With reference to Mike's letter concerning the apathy apparently prevalent in the club, I would like to say this is not confined just to this club but is universal and has been for years...

The point is that there is always a small group who will, a large group who won't and another small group who have read the book, seen the film, worn the tee-shirt and wouldn't do it again in a month of Sundays...

Still good luck to you Chris and my regards and thanks to Mike for all his sterling work in the past.

D.A. (Slim) Haines G4IPZ

PROBLEM GONE AWAY?

Dear Chris,

Pleased to hear that you are the new editor, good luck with the project. I have read and heard much recently about problems within the club, but my own feeling is that the main problem may now have gone away. I feel the club magazine is no place to express feelings and show bad attitude...

Bob Webb G8VBA

THANKS MIKE

Dear Chris,

May I offer a word of thanks for volunteering, agreeing or being coerced into the editors chair. I'm sure it is one of those jobs where you can only please some of the people for some of the time, so I hope your skin is sufficiently thick...

Lastly, I hope I will not be the first to suggest a vote of thanks to Mike. I don't suppose I would believe how much time you've put into the club, Mike, but it is appreciated.

Yours Sincerely, Pete Carliell

INDECENT BEHAVIOUR

Dear Chris,

The British have a reputation of being very courteous and helpful but a certain group of G-stations is now spoiling their good name on 80meters.

It concerns a group that is using 3738KHz every morning around 0600 UTC thereby lessening the pleasure of several SSTV nets.

As you may know, there is a recommendation by the IARU Region 1 for SSTV to use the segment 3730-3740. Within these narrow 10KHz there is the German SSTV net on 3730, the French net on 3734.5 and the Swedish/Danish net on 3736KHz. Furthermore we have to stand commercial stations and a lot of Russian military stations (some are even jamming stations) with heavy key clicks and very bad modulation. There are also a number of illegal ex-Yougoslav stations operating phone patch.

So anyone who knows a little bit about SSTV understands that we have a terrible QRM situation. We have asked the British hams to use a frequency outside of the SSTV segment but they refuse and seem to regard us as intruders. They have informed us that 3738KHz is their private property since 20 years.

So what do we do? One solution is of course the WE move out of the SSTV segment on 80meters and operate SSTV anywhere in the phone portion. We are allowed to do that according to the national regulations but have refrained from it because we want to behave like gentlemen.

73... Art Backman SM1BUO

I have withheld the callsigns of the three British stations involved, but you know who you are and if you are reading this - play the game gentlemen.

CAMBRIDGE VIDEO GROUP

Dear Chris,

With regards to CAT94 and Norman Ash's comments in CQ-TV 168, I would like to inform all members of the BATC (and anyone else who might read CQ-TV) about the Cambridge video group.

The Cambridge video group was officially formed at CAT94 by Sid (G6FKS). Formal members I believe started with Sid and myself and has since grown to five fully active mem-

bers. These members at the time of writing consist of, Sid (G6FKS), Ian (G3KKD), Ian (G8RYL), Andy (G6OHM) and finally myself, Bob (G1XIE). We run regular video nets on a Thursday night from 19:30 local time until we finish! Vision is transmitted on the 23cms band through GB3PV in Cambridgeshire with talk-back on 144.750MHz in the 2m band.

Prospective members are encouraged to join us on either PV or 144.750MHz on a Thursday evening. Any novice licence holders can be catered for on GB3PY in the 70cm band for talk-back but may like to make themselves known to me in writing first so I can be fully prepared in advance on 70cm.

Membership requirements, at a minimum, are to be able to receive ATV, preferably from GB3PV but 70cm vision can be catered for. There is no joining or annual fee to pay so it's cheap to join. Any help required in setting up a station can be provided within limits and if anyone would like to see what it's all about before embarking on expensive equipment then I will willingly show them my shack in operation by prior appointment.

Yours Sincerely, Bob Dyer G1XIE

25 Mays Avenue, Balsham, Cambridge CB1 6ER

Don't Forget The New Address

The Editor CQ-TV,
36 Grasmere Green,
Wellingborough,
Northants, NN8 3EJ

CAT 94 revisited

Dear Chris,

Just a short note on our trip to CAT 94... Congratulations and thanks to Trevor G8CJS, Mike G6IQM and Peter G4LXC for a fantastic weekend. (*What about poor old Paul, who organised the event???*). Our first meeting was with Hans PE1ECO and Fred PE1EXM who produced 3cm's equipment that took our breath away... We were very impressed when we visited the BATC OB van, that is some machine! Our next move was the boot sale where we bought very interesting goodies, all of which is not available over here. The real fun and confusion started when the ladies arranging our rooms wanted to know which of us was Mrs. Murphy! (but that's another story). We were very pleased with our accomodation, food and bar! One culture shock was the bar closing at eleven o' clock on the dot. However being Irish we returned to our room and entertained some friends and finished off our duty free's. The range of equipment in the main hall was very enlightening, so nice to see how other people do things. We must say that everybody, without exception, was more than helpful and forthcoming giving information. One more interesting chat was with John GW3JGA re the GB3TM ATV repeater. John what are the chances of moving the antenna to favour E.I.? Our saturday night ended with a delightful dinner and discussion with so many friends we will be back!

73's Dermot EI2AK, Mike EI5GG & Ronnie EI9ED.

CLUB HANDBOOK?

Dear Chris,

Do we have a club handbook, similar to the G-QRP club's which lists callsign, first name and membership number for all current members?

John Beech G8SEQ

No we don't John, but perhaps it's a thought? Anyone object to a publication of this kind?

HELP WAS OFFERED!

Dear Chris

As promised, a bit for your first edition of CQ-TV.

Beginning with the Biennial General Meeting and Mike's final editorial in which he says that not one member volunteered for the committee. Well, when I received the camping details and the Stop Press appeal for a new editor, I phoned Paul Marshall at about 8.30 THAT MORNING and expressed a keen interest in the post. Paul thanked me and said that two other members had volunteered also. In some organisations, the editor is not, need not, be on the committee; in CQ-TV it is the first job on the list, so I had assumed that I and the others had volunteered for the committee, which is why I did not offer again at the BGM. Mind you, all the comms. I am on meet monthly and cover local groups. Does the BATC committee meet in one place? If so, how often and where etc?

Of course, naturally, I wish you every success in the job, I would probably not have been an ideal choice anyway. However, after the BGM I also expressed an interest, to the Secretary, in any sub-editor post - particularly for trying to entice more copy from the repeater groups. I await any response from the new committee. So, Mike, help was indeed offered!

73 From Graham Hankins G8EMX

To start with Graham, thanks for your offer of help, I assure you it did not fall on deaf ears. There were, I believe three offers put forward (including yours) but the committee made the final decision and here I am! As for your offer to entice more information out of the repeater groups - I think it's a wonderful idea and look forward to receiving lots of material for the magazine. As for the position of Sub-Editor, well there are still some folk sending in articles handwritten, which I do not have the time to type in to the computer, if you would like to take over these jobs, please give me a call!

Members ads and short items for this Post & News column can be Faxed to me on 01933 - 274367

Anything else on disc please (Any PC format) as a plain ASCII file. If that's not possible, then a printed copy, using LARGE, CLEAR and DARK typeface can be scanned in.

Handwritten articles... I'll let you know what Graham's reply is!

EDITORIAL

Chris Smith G1FEF

Here it is, my first CQ-TV. I hope I can follow in Mike's footsteps adequately (although not too precisely!) I intend to make a few changes, but lets do it gradually - eh!

You may have noticed from the Post & News pages that a few members have reacted rather strongly to Mike's comments in CQ-TV 168 - the last issue with Mike as editor. Mike told me at CAT94 that he intended to go out with a bang. well, here I am Mike, picking up the pieces! On the whole though, the response from you, the members, was a positive one. The majority of you wanted to say a big **THANK-YOU** to Mike for his efforts over the past years as editor. I would like to re-iterate all those votes of thanks and say, **THANK YOU MIKE, FOR A JOB WELL DONE.** (PS: I take it that tenner's in the post Mike?!?!)

Right, enough of the old, now in with the new... I have a few idea's for CQ-TV and as editor I have full control, if the committee doesn't like anything I do, they can always sack me! More to the point, CQ-TV is for you members and I would like to think that the magazine is ultimately shaped and controlled by YOU. To this end, I welcome any new idea's and if I do something you don't like, please write in and let me know.

On the subject of writing in... If you have an article for CQ-TV, there are preferred formats for presenting it. Ideally, I would like to receive the text on any PC format disc, as a plain ASCII file. Any drawings should also be on disc, in either TIFF or PCX format (although I can convert most standard formats). If you can't send it on disc, then a CLEAR printout using a LARGE typeface, with the print as DARK as possible will suffice, I can then scan it in and use text recognition software to retrieve the ASCII. Diagrams can also be scanned in, even hand drawn ones, as long as the contrast is good, IE. Black ink on white paper. Also, please keep the diagrams separate from the text if you send in a printed copy. Articles that are handwritten may get in the magazine EVENTUALLY, if I have the time to type it all in (although this may change... see Graham Hankins letter in the Post & News section).

Finally, an idea put forward by the committee some time ago: Would you like to receive MORE editions of CQ-TV per year? It was suggested that we go from four to six a year. This means more work for me, but if it is what you want, I don't mind the extra work. If so, then we either need more copy to fill the extra pages, or you get a thinner magazine, but more often. Please write in and let me know what you think...

73's for now, Chris Smith G1FEF

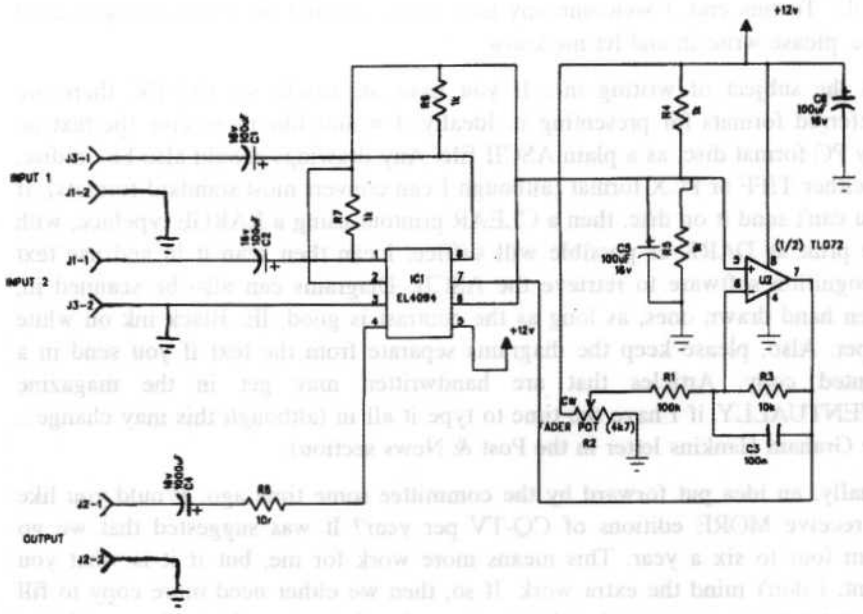
Simple Video Fader

By Bob Dyer GIX1E

Having acquired a genlockable camera from the Harlow rally and having built a synclock board for my BBC computer I wondered how I could use this locking facility to its full advantage.

It is all well and good to be able to switch from one source to another whilst transmitting on A.T.V. without the picture jumping but very few people notice that your sources are locked. Having invested good money and time locking up video sources you want people to notice it!. Saying "did you know that I have a locked system" is ok but a bit unprofessional and very boring after a time so a video fader system is required. This allows two sources to be smoothly faded from one to the other or overlaying of two signals e.g. call-sign and live video.

The video fader shown here was built for its simplicity of construction, operation and modification. The circuit its based on an Elantec, the EL094, which is a video fader I.C.



The EL094 in its simplest form requires two video inputs, a control input for the fade and a split rail power supply. As split rail supplies are not common in many amateur's shacks I have overcome this problem by using a single 12v source and creating a false ground using two lk resistors r4 and r5. Another two lk resistors (r6 and r7) are used to offset the incoming video to this pseudo ground and supply some biasing current for the fader chip. The 10r resistor (r8) on the output is to reduce any resonance in a long video output cable.

The control input (pin 7) to the video fader device requires + O.5v to -O.5v at a low impedance. It is possible to do this by lacing a pot across the supply rails and scaling it using fixed resistors but due to the high impedance of such a system the fader can give problems with hysteresis where it jumps into the fade so an op-amp has been used to create a low impedance input. Any op-amp will do, I used a TL072 because it was available in the shack. A feed back network consisting or rl and r3 has been employed so that the control variable resistor can have a rail to rail swing whilst the output from the op-amp only swings by lv around 6v (the pseudo ground). The capacitor in the feedback network is there to filter out any noise from the pot.

The only truly critical components are the two resistors in the feedback network and the video fader chip. There is no setting up required, just apply power, two locked video sources and connect the output to your transmitter, vcr, tv etc. and start fading.

The Elantec device is available from,

Maplin electronics

Telephone :- (0702)554161

Order No. :- AJ60Q

Microwave Frequency Meter

By Alan Page G6WJJ

A cheap and cheerful front end to read 3cm band frequencies directly on a 500Mhz counter.

Having been given an Amstrad Fidelity LNB and being a long way off completing my 3cm station, I wondered what other use could be made of the LNB. The idea came to mind of using it as a convertor to read 10.XX GHz by connecting the IF output to a standard frequency counter.

The first step was to be certain of the frequency of the YIG local oscillator in the LNB. A colleague who is set up for satellite reception very kindly tweaked the YIG for me to exactly 10GHz. This he did by tuning to a satellite of known frequency and adjusting the YIG tuning screw (clockwise for higher frequency) to give the correct frequency reading on the receiver.

The next step was to power the LNB via a separate DC feed so that the IF could be connected directly to the frequency meter. The back was removed from the LNB and a 2mm clearance hole drilled through the T0220 regulator retaining screw. This is very easy as the screw has a clearance hole already. A thin wire was passed through this hole and soldered to the input pin of the three terminal regulator. The printed DC choke was cut where it joins the printed line to the output socket, see diagram.

Initial results when linked to the frequency counter were very disappointing as the high noise level was giving spurious readings even with no input to the LNB. The supply voltage was reduced in an effort to reduce the overall gain of the LNB, with some success. A condition was achieved when there were no spurious readings on the frequency counter and a steady reading was obtained when a microwave source was pointed at the LNB input. The drawback was that the supply voltage level was very critical.

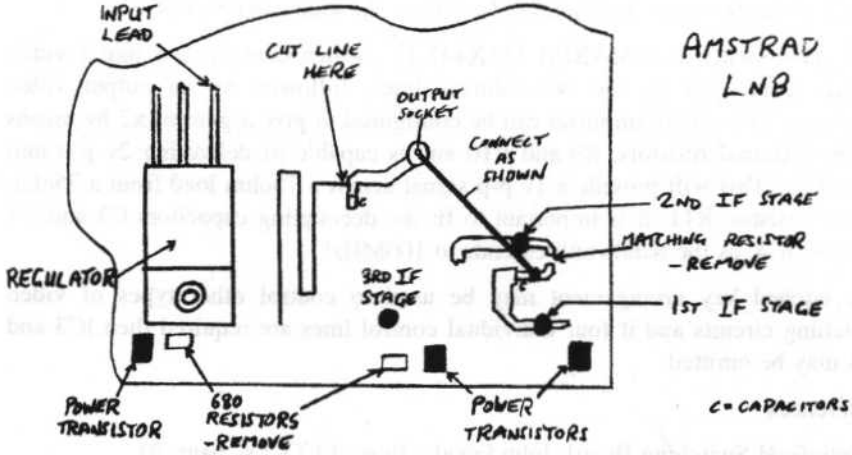
The Amstrad LNB has three stages of IF amplification so I decided to try reducing the number of stages to reduce the gain instead. A surface mount matching resistor was removed and the output socket linked to the output from the 2nd IF stage. The supply voltage was returned to the normal +12v but the gain (noise) was still too high. Another matching resistor was removed and the output socket was connected to the output from the first IF stage. This did the trick, no spurious readings, but reasonable sensitivity to microwave signals.

I was fortunate to find a crystal controlled RF source at a recent rally that gives 1-2mW at 9.280GHz. This gave a reading of 720MHz on the frequency counter as expected. (10 - 9.28 = 0.72 GHz).

The now functioning microwave frequency counter was tried with a few gunn oscillator sources and checked against a micrometer wavemeter with each one, with very close results of plus or minus a few megahertz achieved.

I was delighted with these results and guess the ultimate sensitivity for stable readings is of the order of a couple of hundred micro watts. To reduce the power consumption slightly I then removed two 68 ohm series supply resistors to the 2nd and 3rd IF stage regulators. See diagram for all the components to remove. The final current consumption at +12v supply was 206mA.

The final modification was to cut off the horn on the top of the LNB but this will be a matter of taste in how the unit will be used. With the horn removed the LNB can be secured against a waveguide flange with bolts and oversize washers. The LNB is sensitive in the horizontal plane, i.e. with the long axis of the waveguide parallel to the short side of the LNB. Happy measuring!



Circuit Notebook No. 53

By John Lawrence GW3JGA

A 4-Input, Latched Key, Video Switching Unit.

The video switching unit uses a professional 4-to-1 video switch I.C. controlled by a 4 key latched control circuit. The keyboard switches, S1 to S4 are single pole change-over rocker types with a built-in LED indicator (R.S./Electromail 337-347 red LED or 337-380 green LED). Other types of keyboard switches may be used, with separate LED indicators.

When key S1 is depressed, a logic high is presented to pin2 of IC1, a 74HC75 quad latch. D1 conducts and a logic high appears across R1. R2 and C1 form a key bounce filter, the rising slow edge is sharpened by IC2 a and b and differentiated by C2 and R4 producing a positive spike which is cleaned up by IC2 c and d. The resultant delayed 1ms latch pulse is applied to the latch enable inputs of IC1 and the logic high presented to pin2 is latched and held at pin16. This output is fed to LED1 which indicates that S1 has been pressed.

The latching sequence applies equally to all key switches. The key switches 1 to 4 are connected in series to the +5v supply to provide priority to the upper switch, should two keys be pressed simultaneously. The four outputs from IC1 are taken to the respective LEDs and to the inputs of IC3, a 4532 encoder, which generates a two line address to control the video switch IC4.

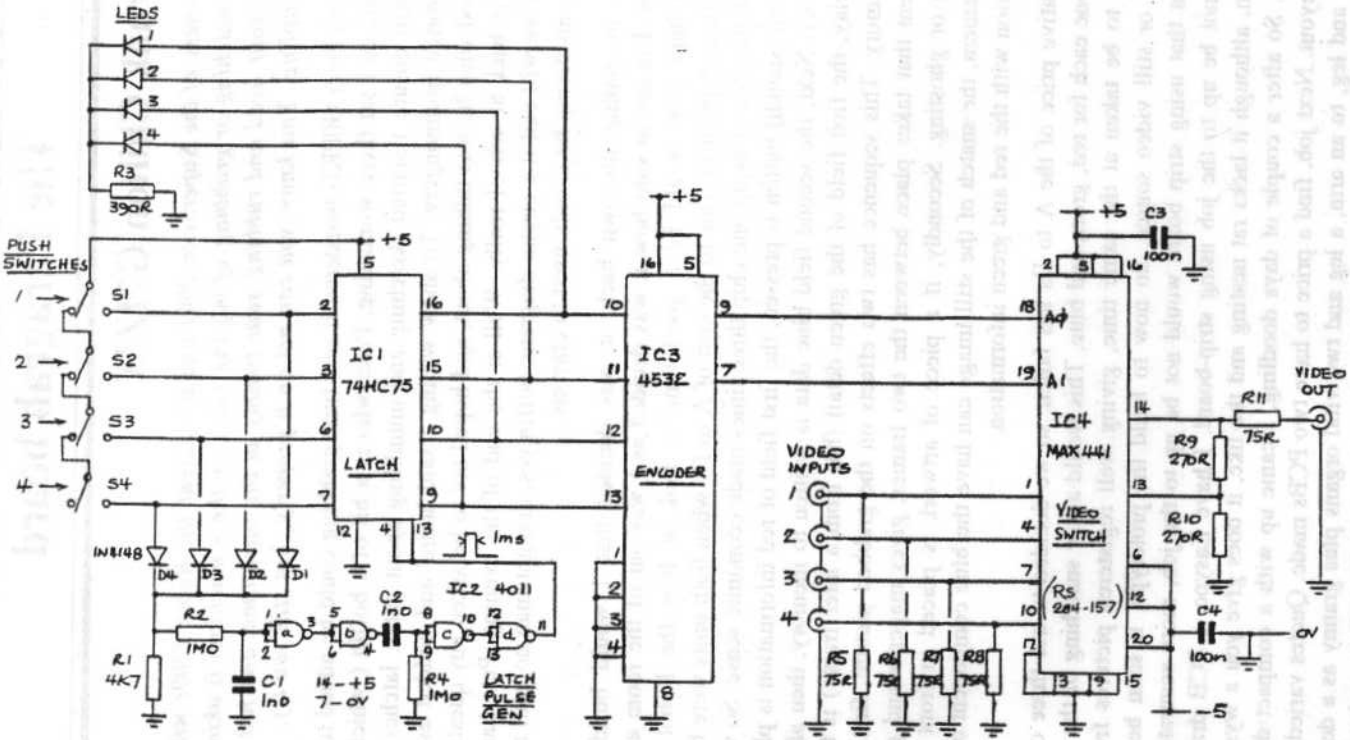
The video switch is a MAXIM MAX441 I.C. which contains a 4 into 1 video switch, controlled by the two address lines, followed by an output video amplifier. The output amplifier can be configured to give a gain of x2 by means of two external resistors, R9 and R10 and is capable of delivering 2v p-p into 150 ohms. This will provide a 1v p-p signal across a 75ohm load from a 75ohm source resistor, R11. It is important to fit the decoupling capacitors C3 and C4 close to IC4, as the bandwidth extends to 100MHz!

The latched key arrangement may be used to control other types of video switching circuits and if four individual control lines are required then IC3 and IC4 may be omitted.

References.

1. Interfield Switching Board, John Goode, Best of CQ-TV, page 70.

2. MAXIM 1993 New Releases Data Book Volume II, page 8-5. MAXIM Integrated Products (UK) Ltd.,21C Horseshoe Park, Pangbourne, Reading, RG8 7JW. Tel. 01734.845255. Fax. 01734.843863.


LEDS
R3
390R
PUSH SWITCHES
S1
S2
S3
S4
+5
IC1
74HC75
LATCH
IC3
4532E
ENCODER
IN5148
D4
D3
D2
D1
1ms
IC2 4011
R2
1MΩ
R1
4K7
C1
1nΩ
14-+5
7-0V
C2
1nΩ
R4
1MΩ
LATCH PULSE GEN
VIDEO INPUTS
R5
75R
R6
75R
R7
75R
R8
75R
IC4
MAX441
VIDEO SWITCH
RS
284-157
C3
100n
R9
270R
R10
270R
R11
75R
VIDEO OUT
C4
100n
0V
-5

The Paragrab board

By Frank Chilton G7IZW

As owners of the SuperScan 2001 and it's parent the Robot 1200c will know, snatching or grabbing of moving video on these machines is akin to patting your head and rubbing your tummy at the same time, and just as rewarding. You know you can not do it properly, but still you try.

Myself and Peter G0PKH wondered if real time grabbing could be added to the SuperScan, as I sat there wondering, Peter who is a bit of a boffin (which bit we are still unsure) started sketching and mumbling about gates, latches and other assorted ironmongery. To show willing I said 'umm' and nodded as if I understood what he was talking about, and hoped not to be asked any questions, like being back at school really. Well at the end of the evening, Pete handed me, well we will call it a circuit diagram, boffin yes, draughtsman no, still not a bad try considering he is only used to crayons.

By way of getting his own back, it was decided that I would build the prototype, I'm not to sure how it was decided as I was out of the room at the time. Perhaps now would be a good time to look at how the Robot and SuperScan grab pictures. Due to the cost of A to Ds when both units were being designed, the idea of using one chip three times made economic sense. So when the camera (snatch) button is pressed, the first field of red information is placed in memory. Next, the second field blue data is written to memory, then after a short delay, the first field of the green detail (but from a later frame) is taken into memory. This sequence has two effects on the grabbed picture, first, any movement that takes place between the two frames, gives magenta and green fringing or ghosting. Secondly, if a piece of artwork is placed in front of a video camera, the snatch of the still image can have the blue component out of registration with the red and green information.

The relative price of the A to Ds has fallen. so we decided to use three of the chips, one each for red, green and blue, This would allow snatching of the three colours to be taken at the same time, giving well registered pictures from a moving or still video source. So now to build the prototype, it soon became apparent that using strip board would not be up to the job, more accurately, I would not be up to the job using strip-board. I have Easypc, a PCB drawing program, although it lacks rat nesting and the like, it does give you a wysiwyg display. So after a couple of days doodling, I came up with a compact double sided layout. Next job, find a price to have two PCBs made. Quotes varied from an arm and leg, to an arm, a leg and two vital organs plus granny as a deposit. Deep breath, decide to have a small batch made, hands in wallets and crossed everything.

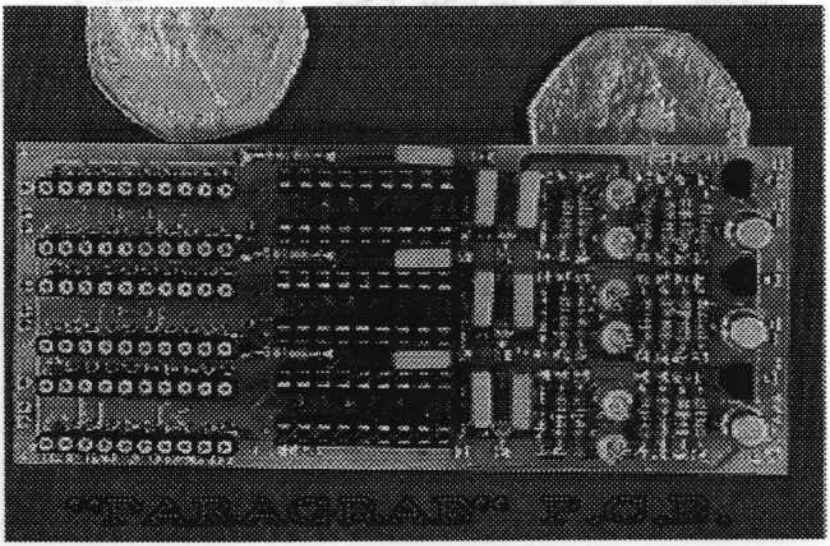
Three weeks later a small package lands on the door mat, open to find some nicely made boards. The components had already been ordered, and quickly soldered into the three hundred odd holes. With fingers crossed the board is soon plugged into the SuperScan, and switched on, leds light up and no smoke, always a good sign. Next, connect up the camera to the SuperScan, and in no time, have four pictures in memory of self, with silly grin, waving at the camera, without any ghosting. Peter carries on testing the other functions of the SuperScan, while I go and get something to drink. All OK apart from the SuperScan now only receives in monochrome, Pete dives into my junk box, and with the aid of a toggle switch, a couple of IC sockets and some sticky back plastic, we can now have frame grabbing and colour receive. A few days later Pete pops in with an automatic switch using a cmos chip, and a very nice job it does as well. Also pleased that now I do not have to take a drill to the back panel.

So that's the state of play at the moment, the Paragrab (short for parallel grabbing) board and auto-switch can be fitted too any SuperScan without track cutting in a long winter evening. The next job is to finish the interface board, so that the Paragrab can be fitted in the Robot 1200c but that's another story.

We would both like to express our thanks to Jad, the SuperScan designer, his help, encouragement and most of all his patience! If anyone would like one of the few remaining boards, give me a ring on:-

(01279) 420755 between 20.30 and 21.30 GMT for a chat.

Cheers and happy slow scanning 73 de Frank G7IZW @ GB7DAA.

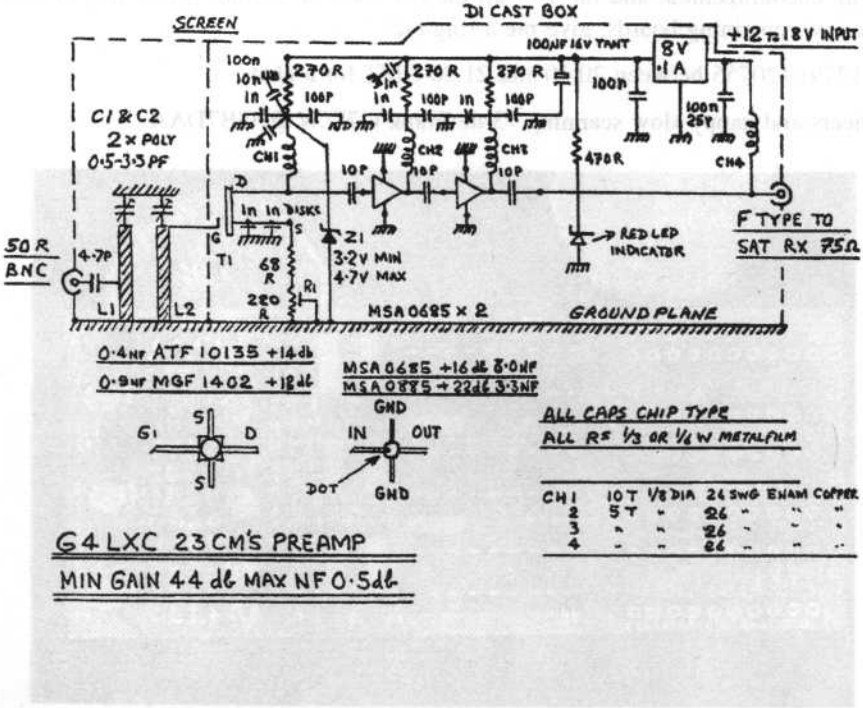


23CMS PRE-AMP

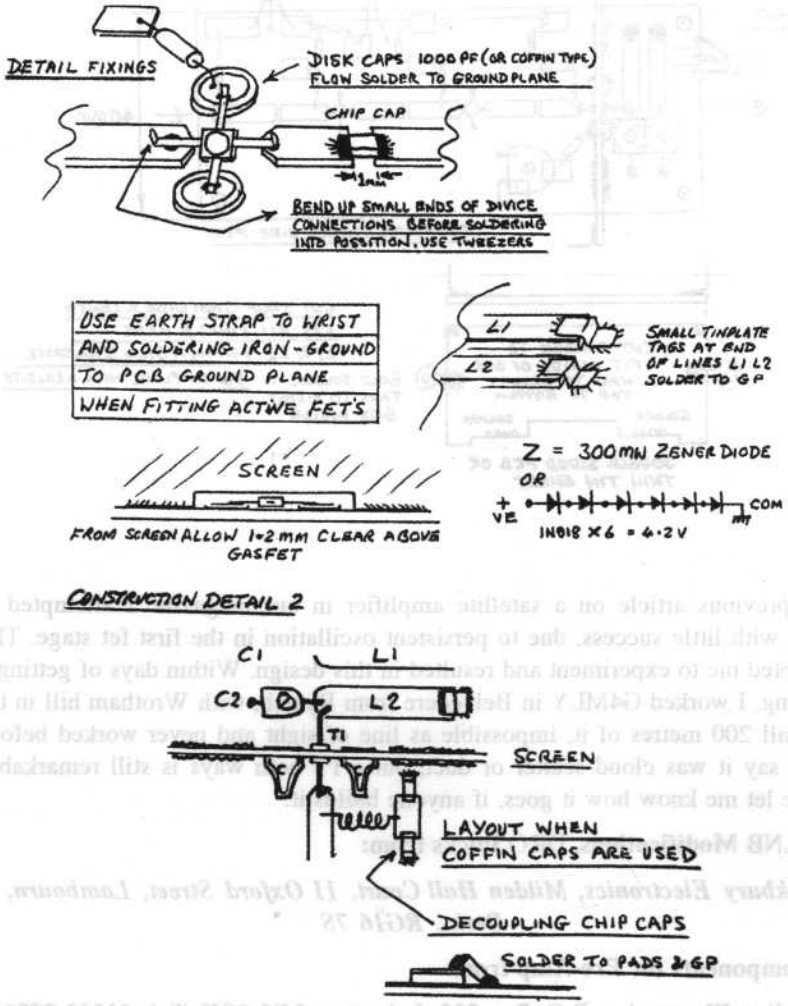
By G4LXC

Once again the surface mount ground plane method of construction is used because it does not require so much effort and skill to produce good results This circuit is not new but works extremely well.

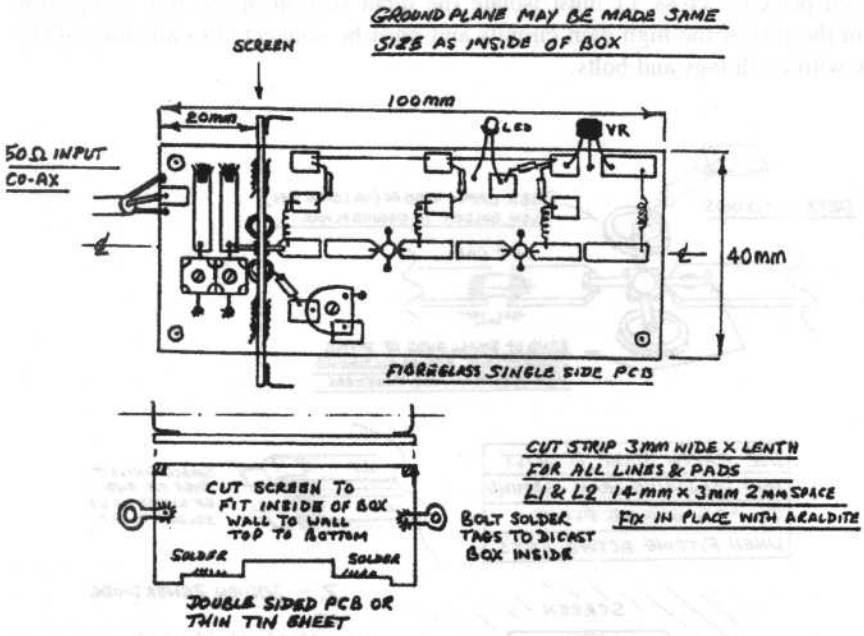
The important components C1,C2 are Mainline stock CDX5AP 0.3-5 PF.Pink or type 11-0558, 1.2-6 PF.Grey. Lines L1 ,L2 0.14mm x 3mm or 12mm x 3mm for the 1.2-6 PF Trimmers . DO HOT USE PISTON TYPE TRIMMERS. The two disk capacitors used may be replaced with coffin caps type CF1000, 1nF see detail 2. Single sided fibreglass pcb 1.8mm thick is used for tracks and groundplane, double sided for the screen, or thin tin plate may be used. T1 Gas-fet is selectable between NE32184A, ATF10135, AND MGF1402. Note the gain figs for these devices 18dB - NF 0.4, 14dB - NF 0.5 & 12dB - NF 0.5.



MIMICS, those brilliant amplifiers M5A0685 16dB gain NF 3.0dB, and M5A0885 22dB gain 3.3dB NF. Both of these may be used in this design. The chip caps should be soldered in place as shown in detail 2 a selection of values are required to decouple Tl at the junction of CH-1, lOpF, l00pF, 1nF, lOnF, l00nF. This will stop any oscillation from LF to Shf. The overall gain that is possible is 44 db to 60 db !. Depending on the combination of devices used. The screen placed accross T1 must isolate the input section of the box completely from the rest of the high gain circuits and must be connected to all sides of the box with earth tags and bolts.



L1 and L2. Tune L1 at 1250MHz and L2 at 1300MHz this should provide the correct bandpass for 23cms. Adjust R1 for min. noise/max. gain. Z1, 4.7 Volts 300mW protects the fets from over volts, and allows about 18mA of fet current to flow. The 68 ohm in the source limits the volts and current to safe values.



In a previous article on a satellite amplifier in our magazine I attempted to build, with little success, due to persistent oscillation in the first fet stage. This prompted me to experiment and resulted in this design. Within days of getting it working, I worked G4MLY in Belvedere from Ryarsh, with Wrotham hill in the way, all 200 metres of it, impossible as line of sight and never worked before. Some say it was cloud scatter or duct, but a P3 both ways is still remarkable. Please let me know how it goes, if anyone builds it.

For LNB Modifications, DRO Pucks from:

Oakbury Electronics, Milden Hall Court, 11 Oxford Street, Lambourn, Berks. RG16 7S

All components for Pre-Amp from:

Mainline Electronics, P.O. Box 235, Leicester, LE2 9SH. Tel: 01533 777648

Connecting to BetWiXt BBS.

Brian Kelly GW6BWX

Thanks to everyone who went to Shuttleworth and for the positive comments many of you gave about the BBS. However, there are still a few people having problems getting connected so here are suggestions based on the problems reported to me.

The Wildcat! BBS software is very flexible and does its best to adjust to the modem and software being used at your end of the link. With over 200 types of modems on the market and even more types of communication software there are bound to be some problems. BetWiXt's modems can operate at all speeds from 300 right up to 28,800 baud in V.21, V.22, V.32, V.32bis, V.32terbo, V.34, V.FC and HST modes so there is very little chance they will fail to connect unless your phone line is particularly poor.

Most difficulties seem to be with software configurations and incompatible protocols. To get best results from BetWiXt you should use these settings:

Data bits: 8. Stop bits: 1. Parity: None. Emulation: Ansi or RIP (Remote Imaging Protocol). Protocol: Kermit, Ascii, Xmodem, Ymodem but Zmodem is preferred.

Your serial port speed depends on your modems capability and to some extent on your computers capability. I've never come across a computer that can't work at 19,200 baud, I seen a few PCs that struggle at 38,400 baud but unless you have or can fit a 16550 UART chip I wouldn't attempt anything faster. If you must use Windows I suggest you crawl along at 9,600 baud to avoid losing characters. I understand Windows 3.11 is better than 3.1 but there's no way I'm spending my hard earned cash to find out!

If your modem does NOT have built in compression (MNP5 or V42bis) you should normally set the serial port speed to match the line data speed, 1200 baud for a 1200 baud connection etc. If it does have compression and most modern modems do, set it to the highest speed possible bearing in mind the previous comments. On compressing modems it is absolutely essential to maintain a higher port speed than line speed if the compression is to work properly.

Internal modems only need port number and interrupt lines set correctly and their instruction books will advise on which jumper positions to use. On an external modem the cable connecting it to the serial port must also be wired properly to get best results. On the commonly used 25 way "D" connector the

wires should connect 1-to-1 between the two plugs, on 9 pin "D" connectors the signals are still wired straight through but the pins are rearranged. The connection details should be available in the computers handbook.

When transferring files I strongly recommend Zmodem as the best protocol to use. The others will work but in most cases will be considerably slower. Under no circumstances try to download files using "ascii" protocol, as it only works on text, not on program data.

In my opinion the best communication program on the market is QmodemPro. It correctly supports all the major protocols and emulations including RIP for those of you who like fancy graphics. It is available from Telesystems Ltd. (tel: 01240 66365) or in "test-drive" version on the BBS itself. If you need it before you can call BetWiXt, send me a formatted disk and return postage and I'll send it back with the program on it. My address is in the members services pages.

RS-232 PINOUTS

Pin Name	25-pin	9-pin	Description
DCD	8	1	Data Carrier Detect
RxD	3	2	Receive data
TxD	2	3	Transmit data
DTR	20	4	Data Terminal Ready
GND	7	5	Ground
DSR	6	6	Data Set Ready
RTS	4	7	Request To Send
CTS	5	8	Clear To Send
RI	22	9	Ring Indicator

Most PC to modem cables require a 1-to1 connection. For 9-pin connectors, connect all the pins. For 25-pin connectors, only the ones shown above are normally required.

Sync Tip AFC

By John Stockley G8MNY

In an attempt to keep out the radar from 24cm receivers, and save bandwidth on amateur grade TV, 24cm ATV uses low transmitter deviations and narrow receiver IF bandwidth.

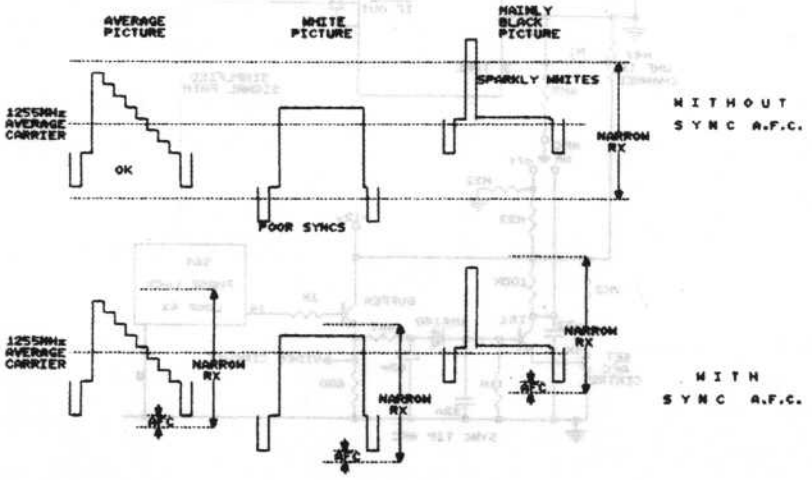
NARROW FM ATV

On the receiver this can be as low as +/- 3MHz (-3dB) for the IF bandwidth on weak signals, with stronger signals using the IF skirts to handle the sound at -10dB. This is not as bad as it sounds, as the 6 MHz intercarrier S/N ratio is little affected by IF filtering, and a sensitive sound demodulator has no difficulty with it.

Such a narrow ATV receiver, with it's sharp tuning, is a long way from the poor results of standard Satellite receivers, which are designed for +/- 8 MHz deviation and a 27MHz (-3dB) IF bandwidth (due to the use of multiple of sound carriers).

TX FREQUENCY

Unlike AM, with FM TV signals there is a DC (Brilliance) content that is not transmitted. This causes a tuning drift (see Video diagram) between dark and light pictures that is shown up with narrow bandwidth receivers. The effect is to get "sparkles" on whites with a dark picture and poor syncs on a bright picture. The effect is made worse by the standard 10dB CCIR video pre-emphasis (not shown on diagram) of the video signal giving "sparkle" black to white edges as well!



The receiver needs to be kept tuned so the syncs are kept at the low frequency (standard +ve mod) of the IF bandwidth window, and not just tuned to the mean frequency.

RX SYNC AFC

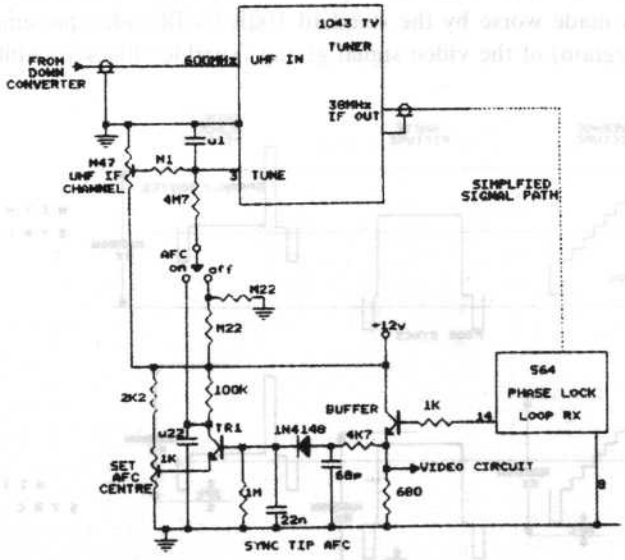
This circuit is one design that achieves this. The DC and video from the NE564 demodulator, is roughly de-emphasized in the CR after the DC coupled video buffer, then it is peak sync diode detected with the 1N4148. This voltage is used to drive a threshold set amplifier, to generate AFC voltage. When AFC is off a half rail voltage is substituted.

In the diagram, the AFC is working on the 600MHz 1st IF tuning voltage by simple addition to the preset channel (image free!) voltage. Alternative arrangements for a tunable IF or RF converter are quite usable.

SETTING UP Tune in to a normal ATV signal with the AFC off. With a digital voltmeter or scope, measure the AFC switch centre contact voltage. Switch the AFC on, and adjust the AFC threshold preset to get the same voltage.

When working correctly, the tuning can be moved about +/- 3Mhz with no effect, and the re-tuning to stop "sparkles" and poor syncs should be unnecessary.

As with normal TVs, the AFC should be disabled until the station is correctly tuned. Otherwise it will "Lock on" to any signal (eg sound image) instead of the main video carrier.



10GHz ATV Experiments

By Steen Bruby OZ9ZI

During the Danish Microwave Activity Week 1994 we made some of the first Danish tests with ATV on 10 GHz. This resulted in a QSO over a distance of 90 km from Spodsbjerg to Trehøje near Ebeltoft. Prior to this, attempts had been made to establish connection from Skagen to Spodsbjerg, but in vain.

On 04/07/1994 OZ1UM and myself made a new attempt at establishing connection from Skagen to Spodsbjerg, this time with considerably better luck.

As "talk back" we used 10GHz SSB where the team at Spodsbjerg had to work without a dish - i.e. with an open waveguide as OZ1UM had left the dish at home. Nevertheless, the SSB connection was 5-6 both ways, so there was nothing wrong with the conditions.

Connection with ATV was first established from Spodsbjerg to Skagen at approx. 20:30 local time. To begin with there was much QSB on the signals but in the course of half an hour conditions became more stable. At approx. 21:00 we changed directions and transmitted pictures from Skagen to Spodsbjerg.

The reports were 5-7-5 both ways.

The following equipment was used for the tests :

Transmitter:

Frequency-modulated DSO directly on the frequency (10.400 GHz), followed by 0.5 Watt PA. Picture/sound separation 5.5 MHz. Bandwidth 16 MHz.

Receiver:

Standard satellite down-converter adapted to our purpose, NF approx. 1 dB .

Aerial:

PROCOM 50-cm dish, gain approx. 29 dB.

Sitting in the dunes at Skagen watching OZ1UM, 0Z3VC, OZSDI and OZ1JLA appear on ATV with Spodsbjerg lighthouse in the background was a very fascinating experience and in colour too .

Unfortunately, my photographs of the pictures from Spodsbjerg suffer from the very bright light in Skagen and the lack of something with which to cover the monitor, but it is possible to use the photographs as "valid proof".

70CMS - USE IT OR LOSE IT

Using Television Part 6

By Norman Ash G7A5H

In part 5 I looked at the basic technical aspects of Editing, from a users point of view. I conclude this series by taking a brief look at some basic techniques of Editing programme content.

There has been a recent article in CQTV No. 162 on Editing from the technical point of view: **'Smith Blocks to Non-Linear'** by Trevor Brown. Trevor has kindly pointed out some areas he feels are not clear, or misleading in part 5 . It appears that some of this basic technical explanation is too basic! [Sorry if I've over-simplified - I particularly did not want to get diverted into long technical diatribes, within an article about ***using*** television].

I cannot hope to give proper explanations over these technical aspects, in such articles - they are the subject of articles and series in their own right. The further information I give here, can clarify, but it is more likely to raise more questions than it answers without going into it fully. Maybe there's scope for a follow-up article Trevor?

[Many members are expert in and write interesting articles on the technical side. I hope they will continue to 'have a go' at writing material for CQTV - as I have done and support the stalwarts like Trevor, who keep your club active and running -the scope is inexhaustiblel]

Commenting on part 5

Concerning *synchronising* (particularly wrt Insert Editing): The workings of a VTR's servo system can be complex, with many variants. On record, the VTR's 'servo system' locks the speed and phase of the video head(s) to the input signal; these are normally mounted upon a (spinning) **'drum'** and the videotape is then drawn over the drum at an angle, by a **'capstan'** drive.

The VTR's servo detects 'tacho' pulses from the drum & the capstan (and the videotape - on playback), it then references these in order to generate error signal(s) to correct either, or both, the drum motor and the capstan motor.

The videotape has a separate 'Control Track' for recording its '*Control Pulses*', these are used to synchronise videotaped material to the machine, on playback [Thus providing a means 'synchronisation' for video to be 'Insert Edited'].

Part 5 refers to how *timing errors* may be reduced from (any) video signal source. Trevor Brown quite rightly points out that the conventional 'Time Base Corrector' (TBC) varies the length of a variable delay line in series with the video signal, specifically to remove jitter caused by a VTR's video head drum.

The use of devices such as a suitable (stable sync.) field store, or Processing Amplifier, etc. might permit improvements to *timing errors* sufficiently well to make these worth using ***as*** TBC's; particularly when working with signal sources well below Broadcast specifications (i.e. coping with large timing swings and poor sync. shaping in the ATV studio and where no original TBC was built into the equipment). The term 'TBC' may refer to the conventional corrector device, rather than *any* 'means of correction', to which I was referring, but you can get discrete 'stand alone' devices (called 'Time Base Correctors'), which work between machines and using *sync. & advanced sync.* inputs & outputs [Jarvis in 'Teletalk' defines a TBC as; *"a device that accepts unstable signals (e.g. from a VTR) or from a non-synchronised source and produces an output that is stable and synchronised to local sources.* " So (as with a lot of these things in television) it's possibly better to look at what it does rather than *what it's called!*

Trevor is an ITV man and it is interesting to note that the BBC have a different set of jargon from ITV (*some say, from anyone else!*). BBC Television Training have published a book called 'Teletalk' (1991) a compilation (of such terms as *'Dope Sheets'*) by Peter Jarvis. You can decide which terminology suits you best; or make your own up - anyone for BATC standard jargon?!!

Editing Programme Content

We have now come full circle and if you remember part 1 referring to the qualities of television, you will recall how, by the use of television, effective television selects and manipulates, in order to bring about a predicted viewer response.

In part 2 we considered the factors surrounding this means of communication; the importance of accounting for the audience characteristics and the two principal methods of producing television presentation material. Multi-Camera Method was seen to be a method in which '*Editing*' occurred as the event took place and that in order to do this, it was necessary to predict what will happen as closely as possible.

It is with Single Camera Method of production that most Editing is therefore involved. The need for Editing was demonstrated in Part 2 *Introducing Techniques*, examples of situations where first your viewer may wish the presentation was varied and secondly, where you certainly would wish to censor!

Single Camera Method is much more like feature film production and it was shown how you can plan and prepare in great detail using this method. The Editing stage is where this all comes together, where all this effort you have put into your production really pays off. The more practice you get the better; the more experience you have, the more you will become aware of the possibilities and limitations of television production.

This series has been about guidance in this respect, rather than any fixed rules being handed down from on high. When artists use television as their chosen art medium, they often use the Editing process as an important creative tool; some of you may be aware of the well known 'fireplace' recording [though I wouldn't expect this required much Editing!!]

Other artists have experimented with various approaches to Editing along the lines of *Scratch Videos* (where segments from various existing production material is re-Edited into a new production, with a new purpose, or audience affect).

Experimenting with strict formal treatments of existing material in the Editing maybe used, or the artist may go to the other extreme and pick totally random actions, treatments and combinations in the Editing process. Surprisingly (to me!), the results are *often* very interesting and provocative, they stimulate ideas in production techniques, which I find worth investigating. Maybe you would find such experimentation likewise?

The more formal approach to Editing leads on naturally from my coverage in this series. In part 3 we saw how framing the picture, subject size and camera angles create a 'visual dialogue' and in part 4, we saw how the use of this, suggests particular messages to the viewer, by its picture content and by the way in which a 'shot' is used in context within a sequence of shots.
Editing can be simply a matter of putting all these pre-planned and pre-produced bits together like a jigsaw puzzle, but the same guidance rules apply, in order to achieve a particular affect upon a particular viewing audience.
Think about your own television presentations: Do they work? If so why? If not why? Use this guidance to get to the stage where you *know* the answer automatically every time: Remember the *establishing* shot (general view Ist) - middle shot - then close-up rule and why it is used? When Editing, this would be just one principle involved out of many.

We saw in this case that breaking rules - once you are aware of and competent with them, can be very creative (as in the 'cutting' between extremes of shot size for affect). The Editor needs to have this awareness of the fact that it is not just the pictorial content of the shots, but it is also the medium and the techniques involved in creating their context in the presentation on the screen..

The media is the message as much as the material content

Cut Rate

Changing the 'cutting' rate between 'shots' illustrates this 'media treatment' affect well:

This is another important aspect to be aware of when Editing. Increasing the number of 'cuts' per minute will cause the sequence to become more visually exciting to watch, where slowing down the number of shots per minute will cause a relaxing effect of the visual image: If you are interested in developing Editing skills, watch how these techniques are used by the professionals; the love/dream scene (slow - low cut rate), the climax to a dramatic sequence (fast - high cut rate).

Study the Broadcast adverts, often these are made better than the programmes between (*in terms of the 'craft of television production'*)! Notice how they turn these basic techniques for manipulating the viewer response into a highly sophisticated piece of work [It is in fact more difficult in most cases to make something as short as a television advertisement, a few tens of seconds long well, than a longer production].

A good television advertisement will have carried out all of the basic planning and preparation mentioned in the earlier articles. Watch how once they know their target audience, they are able to apply these basic production techniques in very precise and sophisticated targeting, often getting the targeted viewers to 'identify' with the advertisement. Various techniques targeted at emotional persuasion might be used to establish the message, including the corresponding emotion this response should instil!

Iust as in spoken language, visual language has it's own grammar. Like linguistic forms, it is not a fixed language, it evolves and changes through time. The more advanced you get (with television presentation), the more able you will become at creating your own 'visual dialogue' - once the viewer accepts what you are expressing by a particular presentation technique, or style.

Remember how changing the sound track (part 1) directed the viewer to respond by completely changing the interpretation of the *same* visual sequence. This is often sighted as a *'willing illusion'* on the part of the viewer. Like juggling, your presentation has to maintain this illusion and once any small aspect is out of place, the illusion is shattered and your sequence *(maybe the whole production)* fails.

The Editor is possibly more involved in this aspect than even the Director. It is often the poor old Editor who has to 'patch and mend' when others have failed to achieve this when preparing the production material (Just ask Trevor!).

Continuity

Continuity is an obvious factor in terms of shattering the visual illusion, which is built up by the techniques which you employ.

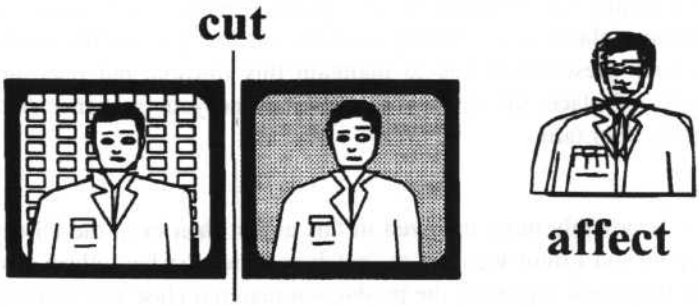
You may shoot a sequence over a number of days and something changes in the scene, or you miss an object which is out of place. Wearing the same clothes is the common concern in this respect.

A professional production may employ a 'Continuity Assistant' to make notes regarding all the details of each shot, in order to avoid this.

Continuity of the visual content is one aspect, but you also need to be aware of the continuity of visual context and movement. Part 4 showed how the *moving frame* 'cutting' has to conform to particular Edit/'cut' positioning to avoid a visual discontinuity, jarring the viewer out of the visual illusion.

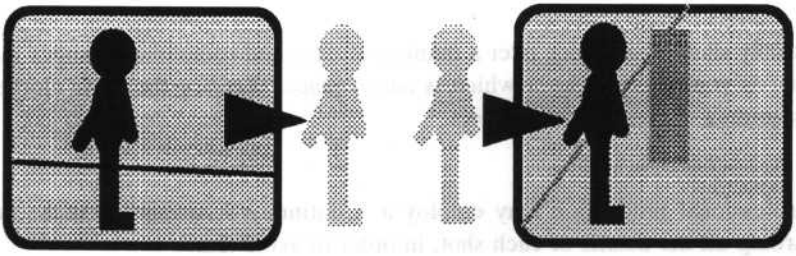
Under the normal production presentation circumstance, the viewer should not notice the 'cuts' at all, if they are well accomplished [Ironic for us, but the better we are at this, the less our job is noticed by the viewer!].

The 'Jump' Cut



This is the classic 'jump' cut situation, to avoid! Not only does it show the presenter instantly in a different location, but it also shows the presenter's image instantly in a slightly different pose; it is because the two images are so close (in terms of size of shot and content), that the affect of a sudden jump on the cut between the two shots is most marked.

Continuity - From A - B



So how do you get your presenter from one location to another -instantly- without the viewer noticing?

A close look at how this is done will show you that the person goes out of camera shot, in one scene and is seen to come into the new scene's shot. Simple but effective. They say seeing is believing and although if you stop to think about it, this is physically impossible, the viewer accepts this, because they read the whole visual message: Yes she did move out - yes she did come in - it comes back to deciding what is important about your message and what can be left out: The visual storyline only requires an explanation that 'the subject moved from the scene' they are viewing and 'came into the next scene'

Sound to Picture - Picture to Sound

Your awareness of which medium carries the message and which is the supporting medium is another important aspect of Editing.

If the dialogue is the important message source and the vision is reinforcing and clarifying, it would suggest that it may be best to 'cut the pictures to the sound'.

You may decide therefore, that you will '**Assemble Edit**' all the sound track of this sequence first, then '**Insert Edit**' the pictures back in over this '*Assembled*' sound sequence.

[The importance of planning ahead will show up at this stage - if you haven't considered how you are going to Edit before you went out to 'shoot' the material]

Cutting the vision to the sound, means that you will need more vision of each shot than you are actually going to use. This is to allow you to fit in the 'cutting' of the pictures during this sequence, with the appropriate timing of the sound track.

'Editing'

- **vision to the sound - requires longer visual material**
- **sound to the vision - requires longer sound material**

In addition, there is the recording of *extra material*, which is not specifically planned for, within your storyboading [It is always best to do this, unless you are very confident that you *will not* require it].

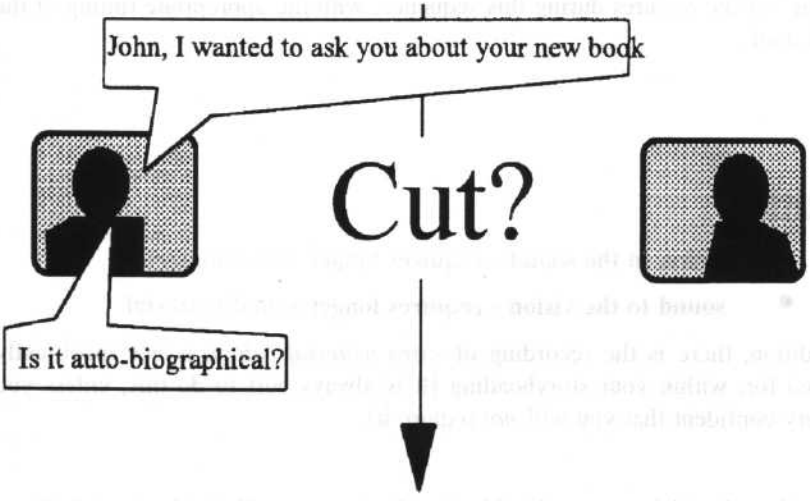
Regarding the vision, you should 'shoot' what are called 'Cut-Away' Shots. These are extra views of the scene which the sound synchronisation is not important; this might involve the view of an interviewer nodding in response to the replies being given by an interviewee, the interviewee has been seen for too long and is not animated in vision. The Editor may decide to 'Insert Edit' this 'cut-away' shot to add visual interest and remind the viewer how *interested* (?) the interviewer is! [this is known in the trade as the 'noddy' shot by the way!]

Regarding the sound, you should record (*what has a number of jargon terms*): 'Buzz' / 'Wild' track or 'Atmos'.. refers to the background sound from the location of a 'sound shoot', the Editor will use this to 'pad out', or get rid of unwanted sound from a shot/take; particularly needed when Editing the sound to the picture *(as in the case of describing what is going on in the vision - often we have to wait to see an event happen before continuing with the dialogue)*.

[Note that we do not simply take the sound out totally. This is because the viewer will notice the loss of 'ambience', in addition to any continuous noise which is occurring at the time of the recorded sound track]

'Wild Sound' is used as a term for non-synchronous sound recording of various locations / sounds, often used as added sound tracks, to create background atmosphere and / or an impression of a particular location to a sequence.

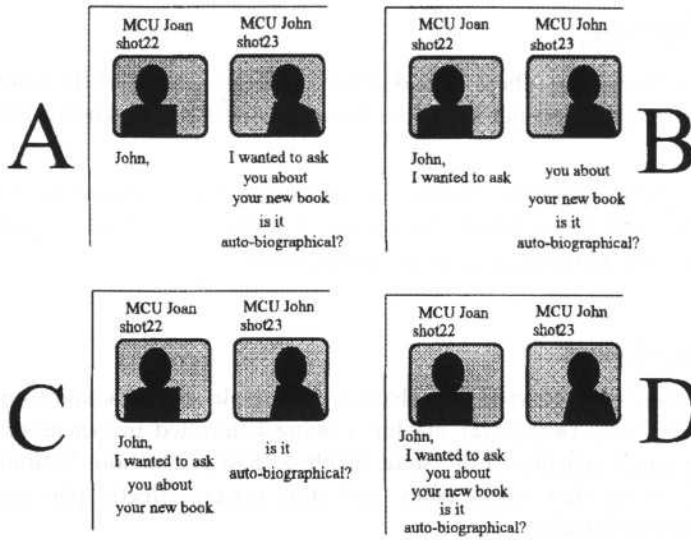
Dialogue and 'Cut' Position



Where would you place the cut in the above example?

Note where to put the 'cut' in the presentation.

See how it is far less noticeable placed at the beginnings and ends of sentences &/or beginnings & ends of visual movements.



Most often, there will not be an absolute answer. Think about the effect in the context of the sequence. Will '**A**' look right -just flashed on and off the screen? What effect will '**B**' have on the viewer? Would the viewer really be wanting to see John at that point? Would they want to see what Joan had to say? Just as you wouldn't naturally stop amid-sentence, you would not naturally stop visually amid an event.. either a visual one (movements etc.), or audible ones.

'C' would work, it is a natural break in the sentence and the viewer would accept the **'cut'** without notice. However, the directors choice may depend upon the context of the interview. If it is a '*short fire*' type of interview and the director is expecting a short answer she may choose '**B**' (you will notice this used a lot in Broadcast, where there hasn't been time to put an '**establishing shot**' of the interviewee in at the start of the sequence, the need to get onto the person ASAP is important, as the viewer wants to see who is being talked to - not see the known interviewer).

Where a longer reply is expected, the director may take into account the fact that she is likely to be on John's shot longer than she wants to be (*remember it takes only a few seconds to read all the information in a visual picture ', where nothing else occurs*). '**D**' would generally be the best place to '**cut**' and would work in most circumstances.

Split Editing

It must be apparent from these considerations that the Editing of the sound and the vision together need not coincide. When it doesn't it is known as 'Split Editing'.

A typical example of where you may see this being used is where we here the sound of the next scene before we see it. It tends to be used as part of a presentation style, particularly in *genre* productions.

Three Machine Editing

Finally, we have only covered the selection of a single shot or sound source for a single Edit. Using two player machines being controlled in synchronisation, permits the three machine Edit suite (with a post-production Vision/sound mixer) to Edit in slow cross fades and split screen effects, plus multiple synchronous sound tracks.

Just think what this can mean on a complex Edit where various levels and cross fades happen all at once and you have a good idea of how valuable modern computer-based Editing can be, though there is still much to be said for manual purpose built Edit controllers, especially if you aren't wanting Non-Linear Editing.

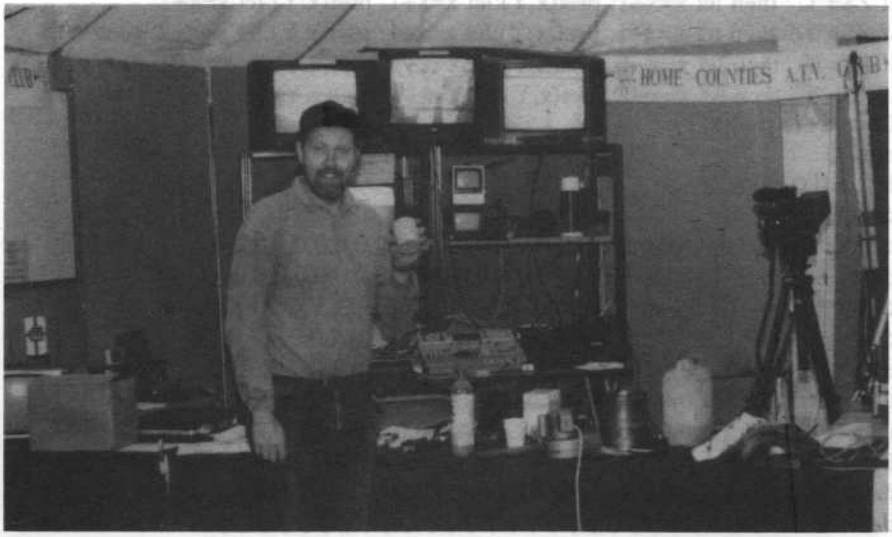
Good Luck Let us all know how you get on!

Norman

Beyond TTL

By Trevor Brown G8CJS

In Beyond TTL CQTV 168 we covered plotting Eprom data for the superimposing caption generator (ATV Compendium). The BASIC programme that follows enables you to run that data and preview the result prior to committing it to Eprom, for the character generator. The programme was written for the PC in Turbo Basic. If you do not have a copy I can strongly advise you to add it to your shopping list. The programme can be run under GW Basic by adding line numbers. The Eprom data is entered in the data statements as part of the programme. I have included example data requested by one of our USA readers, so if you run the programme as is, you will come up with his QTH. To enter your own data simply replace the hex in the data statements with your own hex calculated as per Beyond TTL CQTV 168.



John G8MNY at the 1994 Middlesex County Show

Character Generator Verify Programme

```
rem Character Generator Verify by Trevor Brown G8CJS
Screen 2
cls
let x=100
for Y= 1 to 16
for L=1 to 32
read Z$
if Z$="0" then let x=x+4
if Z$="1" then let x=x+4: pset(x,Y):
if Z$="2" then let x=x+3: pset(x,Y):let x=x+1
if Z$="3" then let x=x+3: pset(x,Y):let x=x+1: pset(x,Y)
if Z$="4" then let x=x+2: pset(x,Y):let x=x+2
if Z$="5" then let x=x+2: pset(x,Y):let x=x+2: pset(x,Y)
if Z$="6" then let x=x+2: pset(x,Y):let x=x+1: pset(x,Y):let x=x+1
if Z$="7" then let x=x+2: pset(x,Y):let x=x+1: pset(x,Y):let x=x+1: pset(x,Y)
if Z$="8" then let x=x+1: pset(x,Y):let x=x+3
if Z$="9" then let x=x+1: pset(x,Y):let x=x+3: pset(x,Y)
if Z$="A" then let x=x+1: pset(x,Y):let x=x+2: pset(x,Y):let x=x+1
if Z$="B" then let x=x+1: pset(x,Y):let x=x+2: pset(x,Y):let x=x+1: pset(x,Y)
if Z$="C" then let x=x+1: pset(x,Y):let x=x+1: pset(x,Y):let x=x+2
if Z$="D" then let x=x+1: pset(x,Y):let x=x+1: pset(x,Y):let x=x+2: pset(x,Y)
if Z$="E" then let x=x+1: pset(x,Y):let x=x+1: pset(x,Y):let x=x+2: pset(x,Y)
if Z$="F" then let x=x+1: pset(x,Y):let x=x+1: pset(x,Y):let x=x+1: pset(x,Y):
let x=x+1: pset(x,Y)
next L
let x=100
next Y
data  0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
data  0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
data 0,0,4,0,1,1,1,0,0,8,0,2,0,8,4,0,1,0,3,F,C,3,F,C,1,F,C,0,8,0,2,0
data  0,0,4,0,1,1,1,0,0,C,0,6,0,8,4,0,1,0,4,0,4,0,4,0,4,0,2,0,8,0,2,0
data  0,0,4,0,1,1,1,0,0,C,0,6,0,8,6,0,1,0,4,0,0,0,4,0,4,0,2,0,C,0,2,0
data  0,0,4,0,1,1,1,0,0,A,0,A,0,8,5,0,1,0,4,0,0,0,4,0,4,0,2,0,A,0,2,0
data  0,0,4,0,1,1,1,0,0,9,1,2,0,8,4,8,1,0,4,0,0,0,4,0,4,0,2,0,9,0,2,0
data  0,0,4,0,1,1,1,0,0,8,4,2,0,8,4,4,1,0,4,0,0,0,4,0,4,0,2,0,8,8,2,0
data  0,0,4,0,1,1,1,0,0,8,4,2,0,8,4,2,1,0,4,0,0,0,4,0,4,0,2,0,8,4,2,0
data  0,0,4,3,1,1,1,0,0,8,0,2,0,8,4,1,1,0,4,3,C,0,4,0,4,0,2,0,8,2,2,0
data  0,0,4,3,1,1,1,0,0,8,0,2,0,8,4,0,9,0,4,0,4,0,4,0,4,0,2,0,8,1,2,0
data  0,0,4,4,9,1,1,0,0,8,0,2,0,8,4,0,5,0,4,0,4,0,4,0,4,0,2,0,8,0,A,0
data  0,0,4,8,5,1,1,0,0,8,0,2,0,8,4,0,3,0,4,0,4,0,4,0,4,0,2,0,8,0,6,0
data  0,0,5,0,3,1,1,0,0,8,0,2,0,8,4,0,1,0,4,0,4,0,4,0,4,0,2,0,8,0,2,0
data 0,0,6,0,1,1,1,F,8,8,0,2,0,8,4,0,1,0,3,F,8,0,4,0,3,F,C,0,8,0,2,0
data  0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
```

Converting The Rediffusion RKU10 LNB For 3CMs

By BOB PLATTS G8OZP

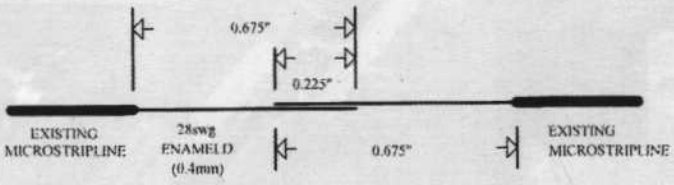
A quantity of Rediffusion RKU10 LNB,s appeared on the surplus market during 1994. The asking price was £12 each or £30 for three, but I bet the price goes up now the word is out they are convertible for 3CMs.

Inside the larger than usual white housing is a 3 stage GASFET preamp with a noise figure at 11GHz of around 2.2db. This feeds via a bandpass filter to a mixer. The local oscillator is of the fairly conventional DRO. type. A conventional IF strip and PSU is located in the rear half of the unit. The LNB is manufactured by JRC. (Japan Radio Corporation)

The conversion involves re-tuning the preamp, modifying the BPF. and converting the LO to 9.1GHz.

Devices within the unit are static sensitive so the appropriate precautions should be taken. I use a length of wire with a crock clip at each end. One clips to the metal strap of my watch and the other clips to the LNB. When soldering, a second lead connects the strap to the soldering iron.

Remove the eight screws that fix the lid on the side furthest from the F connector. The cover can stick so prize open if required.Remove the six screws and the cast screening cover for the LO and mixer. The bandpass filter must be removed and replaced with a new wireline bandpass filter. With a very sharp knife cut through the micro strip lines at the points indicated on the photo. The pcb. is fairly soft. Little pressure is required. Again with the sharp knife peel up the end of all the tracks between the cuts and pull of with pliers. Cut two lengths of 0.4mm (28swg) enamelled copper wire as per fig 1.



WIRELINE BANDPASS FILTER

COURTESY OF CHARLES SUCKLING G4WDG

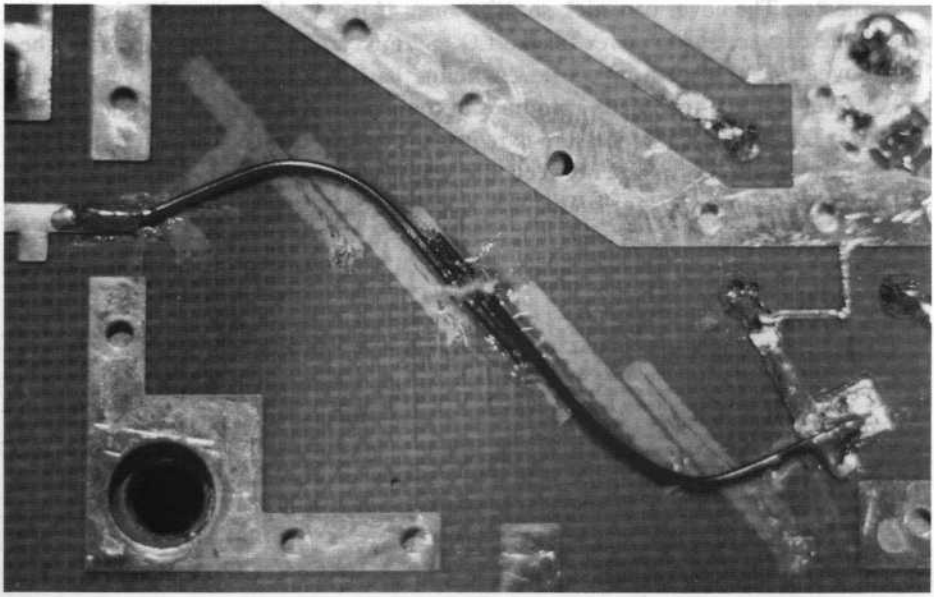
Fig 1

Scrape off the enamel at just one end of each for about 1.5 - 2mm. Lay them down with the other end overlapping by 14mm. Secure the overlapping section with a single tie of thin cotton. Do not be tempted to bind the full length of the overlapping section. Lay the wires flat on a piece of thin polythene and apply a spot of clear nail varnish over the length of the overlap. Blue tak or similar is handy to hold it down. Allow to dry. Once dry check to ensure the two wires have not shorted together. Whilst this is drying we can turn our attention to the local oscillator.

The LO requires converting to run at a lower frequency. 9GHz would be ideal, however the nearest readily available DRO. resonator frequency is 9.1GHz. The existing 10GHz DRO puck is secured by a plastic screw, this will probably break as you attempt to unscrew it. Do not worry if it does as it is not required. If the screw breaks with more than about 1mm protruding above the PCB, cut it back with a sharp scalpel or cutters.

The new puck must be mounted on a spacer. This should be made from a black plastic insulating bush of the type used when mounting TO220 tab transistors. With a sharp scalpel or file remove and discard the smaller diameter end of the insulating bush. Using clear nail varnish sparingly as an adhesive place the spacer in the position of the old puck. Surprisingly the 'adhesive' may take an hour or so to dry. Do not fix the new puck in yet.

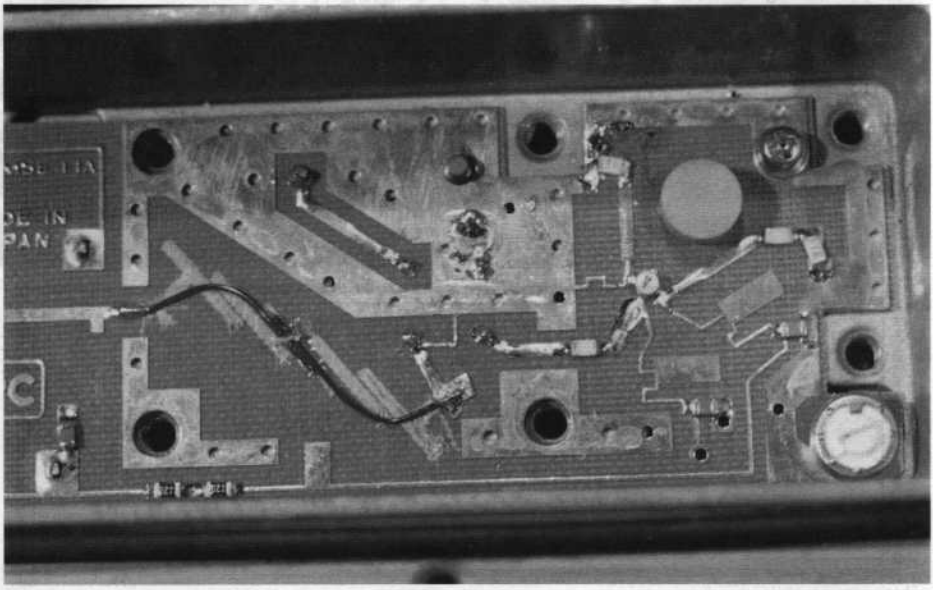
The filter must be bent as in the photograph so it will fit in the space available. Take care and make sure the overlapping section remains intact and that the filter is flush against the PCB before soldering.



Connect the LNB to the RX and set up a signal source. Place the DRO puck centrally over the spacer. Carefully replace the cover and secure with just a couple of screws. The LO should run at about 9.1GHz or just below. If all is well a strong signal will be found. Should the LO appear not to be running, move the puck a few mm towards or away from the micro strip lines until oscillation occurs. If you are happy with the position, note the position and secure with a small spot of nail varnish. Allow plenty of time for it to set. Screwing in the brass tuning screw will increase the oscillator frequency.

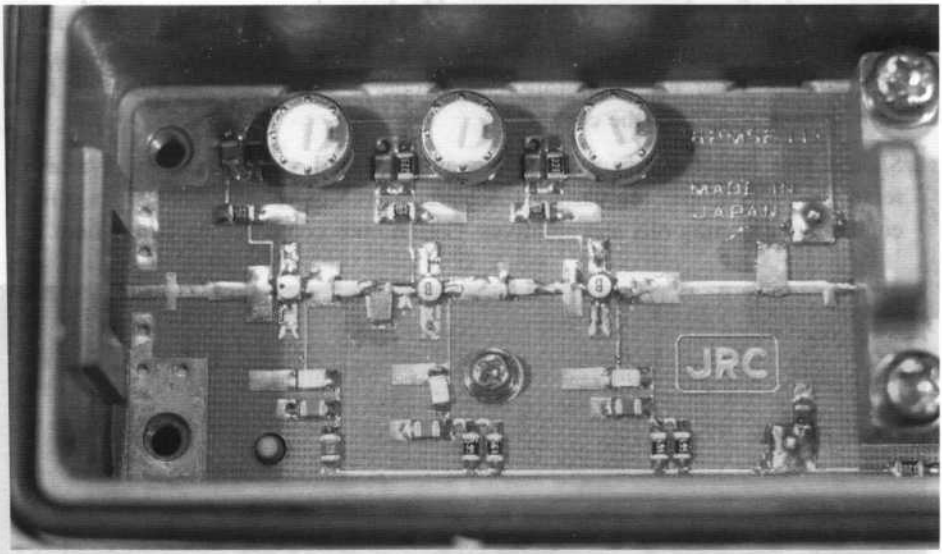
For maximum performance the RF front end requires retuning with small 0.005" to 0.010" brass foils. If this cannot be scrounged, try model shops as they often stock such material. A small sheet could last years. To tune for best performance a weak signal is required, this is where attenuators come in handy. My article in CQTV 166 may give you some tips. Remove the two screws that locate the machined aluminium plate at the input to the unit and discard. With sharp scissors cut the foils to size. Each one must be set in order as numbered. On a noisy signal place the foil in the appropriate position. With a sharpened match stick or similar carefully move the foil up or down until the optimum point is found. With a pin or thin wire apply a very small spot of nail varnish to secure. Repeat for the other foils. When one is satisfied allow time for the varnish to dry and refit the covers.

Should you unfortunately need to remove any nail varnish use nail varnish remover. The cheaper the variety the better as the more expensive types often contain conditioning oils and additives. Cotton buds come in very handy here.



The input to the unit is WG17 to couple to the normal WG16 a transition is required. The method of construction will depend on the facilities available. All that is required is a short length of wave guide tapering from one internal dimension to the other over a distance of at least two wavelengths. The taper need not be symmetrical, but should be even. Any solder getting on the inside of the guide should be removed as it is lossy at 3CMs. Several forms of construction are possible. Filing one or both side walls from a length of WG16 then fitting new ones made from copper brass, or pcb material is one way. Alternatively, a tapered length of guide can be made by tightly wrapping copper or brass foil around a hardwood former cut to the required size, then fitting home made flanges. The same basic technique can also be used with aluminium foil and epoxy resin. Electrical continuity along the guide is not important, but an even transition is.

Acknowledgement. I wish to thank Charles Suckling for permission to reproduce his filter, the basis of which is used in this design.



DON'T FORGET THE RALLY

SUNDAY APRIL 30TH

AT THE 'SPORTS CONNEXION' - COVENTRY

Computer Aided Logging Programs

By Mike Wooding G6IQM

I came to the conclusion some time ago that constantly having to write-up radio contacts into a logbook that could never be found was becoming a somewhat irksome task. So, what was the answer?

Forget it and risk losing ones licence after that 'surprise' visit from the RA? No, that was not on. Perhaps a Dictaphone? No. Not really allowed. Hang on a minute, as many of you know I am somewhat overflowing with computers here at KM, so why not use some of the spare capacity and investigate computerised logging. After all, the Powers-that-be now allow logbooks to be maintained on computer, providing that a hard copy can be provided with reasonable notice. That was it then, let's have a look at the various programs available and see which I prefer.

After sampling a few of the dozen or so programs available, which is often difficult when all you get is a limited 'demo' version (when reviewing anything for a magazine, if all I am supplied with is a limited use, restricted version of the full-blown product, then I simply do not do a review of that product!). However, I managed to opt for a particular system, not only because it was the only one that was supplied complete as sold, but also because it seems to be about the most comprehensive package available.

My requirements for a logging program were:

1) it would work on a 286 IBM compatible with 640k RAM (anything better being a bonus)

2) it would allow post-event and real-time logging without having to go into complex routines

3) it would allow several separate logs to be held on file

4) it would have extensive search-and-find and database manipulation facilities

5) it would print reports and dumps of the log in a form acceptable to the authorities

6) it wouldn't require a Ph.D. to learn how to drive!

7) it would not be snail powered, but be at the very least as fast as the machine it was being run on.

I would also have like the program to be Windows™ based, but I suppose for that I would have to write my own! So, what did I get, TurbLog II.

TurboLog II

TurboLog II is much more than just a computer logging program, it is more of a station management system. With TurboLog you can control your transceiver frequency and mode, connect to a Packet Cluster or the usual packet services, maintain your DXCC records, send Morse Code and, of course, log your QSO's! The computer requirements for TurboLog II are any IBM compatible PC with a minimum of 512k RAM and a hard disc. To run the external databases that are available, or use TSR's such as BPQ code for your Packet TNC, then you will need at least 640k of RAM. Colour and mono displays are fully supported.

Logging Features

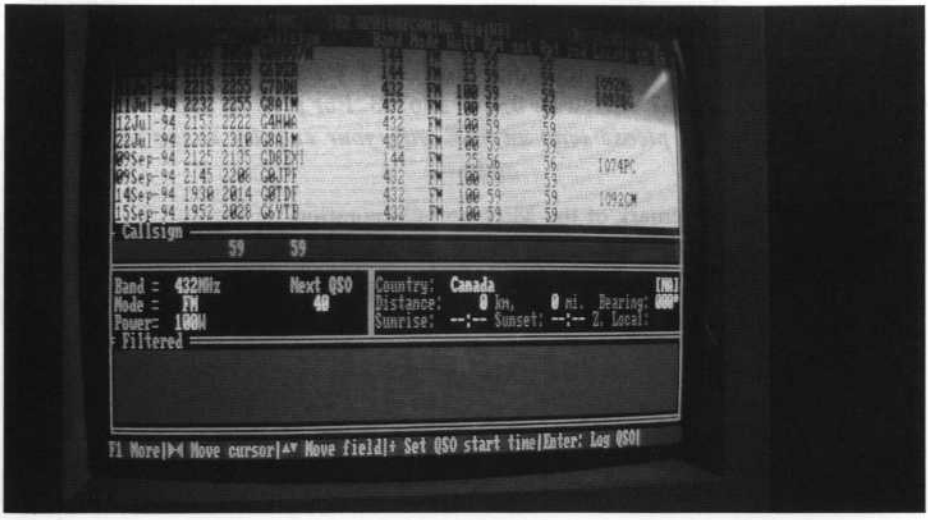
The photograph shows a typical logging screen. Just like using a paper-based log book previous QSO's can reviewed simply by looking up the screen and scrolling up to previous pages. (In fact by using the search format you can find particular QSO's virtually instantly, no matter how long ago they were!). The current QSO is featured in the red strip at screen centre. For a live logging session all you need to do is enter the callsign of the station you are working and hit the + key, the start time of the QSO is then automatically entered into the log along with the date. (It is important to stress here that the time and date are the computer's system parameters, and as such should be regularly checked for accuracy and the system time maintained at GMT). The current band and mode selected is also automatically logged. All that remains for you to do is enter the reports, Maidenhead locator and any comments you wish to be recorded. As soon as the QSO is ended simply press the ENTER/RETURN key, the finish time is recorded and the QSO is logged into the log book and saved to hard disc. Simple! If you find that you have made a mistake in that, or any other, log entry then post-event editing is possible simply by pressing the F6 key, whereupon the edit mode is selected and the active line becomes the last entry in the current log book. Scroll up the log book until the required QSO is highlighted and then a further press of the F6 key opens up the edit window with the details of that QSO in it for you to amend. Upon completion pressing the F10 key accepts and logs the changes to disc.

A very important feature of a computerised log book is the facility to back it up to a separate disc, tape or whatever. Whenever you leave a log book then TurboLog prompts you to backup the log and offers you the ability to do so simply at the press of a key to a predetermined disc drive. However, what if you want to back up the log whilst live. Simply press the F8 key, select BACKUP from the drop-down menu list under the FILE heading, again TurboLog will back up the current log to the predetermined disc drive. There are many other

logging features of TurboLog that I have not covered - let's face it the A4 manual is around 150 pages long! I have mentioned a couple of times predetermined parameters. These are all set in the user editable configuration file, TURBOLOG.cnf. In this file you can set all the parameters that will customise the system to your requirements and thus make all the tasks that TurboLog does totally automatic.

Other Features

Apart from basic logging, which is obviously the most important consideration, TurboLog also has many other capabilities. Packet: It will allow you to link to your Packet system directly, without leaving the active log, and it displays the packet screen in the lower blue part of the screen (see photograph). It allows you to conduct, from within the live log, full packet communications with the outside world. Transceiver Control: Should you be fortunate (???) enough to own one of the wonders of the modern world, a fully computer controllable transceiver, then TurboLog will allow you to do just that, again from with a live log. If you change the band in the log (by pressing F1 or F2 to scroll through the predefined bands available) then the transceiver will track with you as you go. You set from within the active log any parameter on your radio that you could set from computer Morse: You can send CQ calls or predefined strings in Morse simply at the press of a key - if you so desire of course, being a mere G6 such things are beyond me !!! Reports: You can format all sorts of reports based on any of the log books on file and print them or save them to disc. You can set up and print your QSO cards. You can maintain your DXCC status and print reports of your progress. As before in the log book section, there is so much to TurboLog that I have only skimmed the surface of the facilities available.



User Report

You have probably already guessed from the above, I am sold on TurboLog, I did after all choose it to be the best for a review, so naturally it is now the log book that I use. (The only problem for me is that Mr.B.Gates had nothing to do with it!! - I'm hooked on Windows™). At present I run the log book on a ropy old HP Vectra 286 with 640k of RAM and a good old solid (and big!) MFM 20M hard drive. TurboLog II is reasonably fast on this set-up, although as the log book gets bigger then its initialisation takes longer, but acceptably so. I found it very easy to use after only an hour or two. The manual supplied is excellent, as is the quick-reference crib card. There are some features I have not explored and I dare say a few I have yet to find! Having looked at quite a few of the alternatives and allowing for in some case the seemingly large price differential, I would suggest that TurboLog is by far the best computerised logging and station management system currently available. If you want computerised logging - get TurboLog is my advice.

TurboLog III

As I am writing this review the latest version of TurboLog is now on release. This version is TurbLog III, with a whole host of additional features (over 100 additions) to enhance the station management aspect. The major change to the requirements is the need for a 386 based IBM compatible with a minimum of 2M of RAM.

TurboLog is priced at £60.00 (inclusive of UK postage) and is available from:

Canberra Communications, c/o Mr.T.Kirby, 19 Sidney Street, Cheltenham, Gloucestershire, GL52 6DJ. Tel: 01242 236723. For pricing and availability of TurboLog III please send an SAE with your enquiry to the above address.

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Our address is:

CHRIS@BATC.DEMON.CO.UK

BATC MEMBERS' SERVICES PUBLICATIONS

PUBLICATION	EACH	QTY	TOTAL
AN INTRODUCTION TO AMATEUR TELEVISION (255gm) by Mike Wooding G6IQM & Trevor Brown G8CJS The latest handbook full of detailed information on how to set up your ATV station, plus lots of new video and RF construction projects.	5.00	.....	.....
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THE AMATEUR TV COMPENDIUM (155gm) by Mike Wooding G6IQM. The BATC handbook featuring construction articles on video units, 24cm and 3cm ATV, a Digital Frame Store, and much more.	£3.50	.....	.....
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41	.....	I2C VDU PCB	8.50	0.43	.....
81	.....	I2C 27256 EPROM (quote callsign & mem. no.)	8.25	0.30	.....
42	.....	13.875 MHz crystal	4.00	0.30	.....
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TOTAL GOODS THIS PAGE £.....

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46	.....	4 rail power supplies PCB	3.00	0.43	.....
47	.....	70cm downconverter PCB	9.00	0.30	.....
83	.....	70cm ATV transmitter PCB	12.50	0.43	.....
50	.....	108.875 MHz crystal	7.00	0.30	.....
51	.....	ATV up converter PCB**	2.25	0.30	.....
52	.....	Amateur television AM IF PCB	1.50	0.30	.....
53	.....	FM TV demodulator PCB	3.00	0.43	.....
54	.....	24cm GaAsFET converter PCB	3.50	0.43	.....
84	.....	24cm ATV receiver PCB	14.00	0.43	.....
87	.....	ASTEC AT2352V module	45.00	0.90	.....
	Items 84 and 87 **only** supplied as a set				
88	.....	XR215 phase lock loop IC	3.00	0.30	.....
85	.....	24cm ATV transmitter PCB	15.00	0.43	.....
86	.....	24cm solid state amplifier PCB	8.00	0.43	.....
55	.....	Gunn diode modulator PCB	2.50	0.30	.....
56	.....	10GHz head unit PCB set	2.50	0.30	.....
57	.....	Tunable if PCB	2.50	0.30	.....
58	.....	6MHz audio subcarrier generator PCB	2.50	0.30	.....
59	.....	G3WCY SSTV scan converter PCB set	10.00	0.65	.....
60	.....	G4ENA colour etc. SSTV mods PCB set	5.00	0.43	.....
61	.....	G4ENA SSTV transmit mod to WCY PCB	6.00	0.43	.....
62	.....	G4ENA auxiliary PCB	2.00	0.30	.....
63	.....	SSTV sync and pattern gen PCB	3.00	0.43	.....
64	.....	SSTV spg/pattern 2732 EPROM	12.00	0.30	.....
66	.....	TEA2014 video switch IC	1.10	0.30	.....
67	.....	TEA5114 video switch IC	1.50	0.30	.....

TOTAL GOODS THIS PAGE £.....

	QTY	STATIONERY & STAT10N ACCESSORIES	EACH £	P&P £	TOT £
48	.....	13.14 MHz crystal	5.00	0.30	.....
68	.....	4.433618 MHz crystal	2.75	0.30	.....
69	.....	5.0 MHz crystal	2.75	0.30	.....
70	.....	6.0 MHz Teletext crystal	1.50	0.30	.....
71	.....	BATC diamond buttonhole badge	0.40	0.30	.....
72	.....	BATC round lapel badge	0.50	0.30	.....
73	.....	BATC blue diamond clutchpin badge	1.50	0.30	.....
74	.....	BATC cloth badge	3.50	0.30	.....
75	.....	BATC equipment label (6)	0.20	0.30	.....
76	.....	BATC square windscreen sticker	0.10	0.30	.....
77	.....	Set of ferrite cores for VSB TX	0.20	0.30	.....
78	.....	BATC test card	0.50	0.43	.....
79	.....	BATC reporting chart	0.12	0.43	.....

TOTAL GOODS THIS PAGE £.....
TOTAL GOODS FROM PREVIOUS PAGES £.....
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PLEASE MAKE CHEQUES PAYABLE TO BATC

Items marked thus: ** are available only until present stocks are exhausted. **ORDERS PLEASE TO: Mr. P.Delaney. 6 East View Close, Wargrave, BERKS RG10 8BJ, England**. Tel: 0734 403121 (evenings/weekends only please).

We reserve the right to change prices without notice.

name:	mem no:	callsign:
country:	zip/post code:	

MEMBERS SERVICES ORDERS PLEASE TO: Mr. P.Delaney, 6 East View Close, Wargrave, BERKS RG10 BBJ, England. Tel: 0734 403121 (evenings/weekends only please). BATC Members Services does not hold stocks of BATC publications, and vice versa. **OVERSEAS MEMBERS** should ask for a quotation of postage costs and acceptable forms of payment **BEFORE** ordering from Members Services. Please enclose an International Reply Coupon for reply. **CHEQUES** should be made payable to "BATC" and should be for British banks only please, in pounds sterling.

MEMBERS SERVICES Items from these lists can ***ONLY*** be supplied to **CURRENT** members of the **BATC.** Please note that ***ONLY*** the items listed in the **CURRENT** "Services for Members" leaflet are available - a description of most of the various PCBs and components can be found, in the "What's What" supplement sent with CQ-TV 149. Components for club projects are not available from Members Services unless contained within these lists. All Club crystals are HCLB/U (wire ended). Items marked thus: ** are available only until present stocks are exhausted. Payment should be by cheque or crossed postal order in favour of BATC - do NOT send cash or stamps please.

VIDICONS

1" vidicon tubes are available in different heater ratings (95 and 3OOmA) - 6" long; 2/3" tubes have 95mA heaters). These tubes are all of separate mesh construction, with magnetic focus. Tubes available to special order include electrostatic focus or deflection, and low light types not previously available to club members. Prices vary depending on the size, type and grade of tube. A tube guide appears in CO TV 149 and 150. Please contact Members Services for further information. The stripe filter tubes used in domestic type colour cameras are not available through BATC, and normally must be ordered direct from equipment supplier. Members requesting information on prices or other types of tube or equivalents are asked to send a stamped, addressed envelope for their reply.

CIRCUIT DETAILS can be found as follows:

Revised ATV Handbok: PCBs 7, 17, 21, 22, 23, 24, 53, 63
Amateur TV Handbook (vol.2): PCBs 52
An Introduction to ATV: PCBs 10, 18, 25, 40, 41, 36, 47, 82, 83, 84, 85, 86
TV for Amateurs: PCBs 19, 49, 51
Slow Scan TV Explained: PCBs 59, 60, 61, 62
Amateur TV Compendium: PCBs 11, 12, 27, 28, 29, 30, 31, 54, 55, 56, 57
Micro and TV projects: PCBs 14, 33, 34
CQ-TV(xxx): PCBs 13(128), 16(134), 20(130), 26(142), 35(143), 58(139)
Item 46 is supplied with circuit details, etc.

EVENT : **The BATC 1995 Rally**

VENUE : **The Sports Connexion**

LOCATION : **Coventry**

DATE : **Sunday April 30th**

CONTACT : **Mike Wooding G6IQM**
5 Ware Orchard,
Barby,
Nr. Rugby,
CV23 8UF

TEL : **01788 890365**

FAX : **01788 891883**

Repeater Update

I am hoping to prick the conscience of everybody involved with ATV repeaters up and down the country (or indeed, overseas as well). By running a regular feature on what is happening in this circle of interest.

I was going to start by leaving this page blank, as that is the normal amount of information received from repeater groups, when you ask for it! However, you have been saved from total disgrace by (as usual) the GB3ZZ group who sent me this update on repeater activity in the Bristol area...

GB3XG the South Bristol repeater was switched on at 11:00 on Saturday, December 10th. Located at Dundry, about five miles south of Bristol city centre, it serves a similar area to GB3ZZ, the North Bristol repeater.

It receives on 10.278GHz and re-transmits on 10.150GHz. Both receive and transmit antennas are omnidirectional.

Within hours of being activated, a signal report of P3 from Malvern, about 50 miles away was received. From my QTH near Newport in South Wales, I am receiving P5 pictures on a 35cm ex-BSB dish. Its coverage has exceeded everyone's expectations and we are now seeing an upturn in ATV activity again, much as was seen when GB3ZZ was activated almost eight years ago.

The transmitter is a PLL stabilised source on 1127.7MHz frequency multiplied by nine, then fed to a FET P.A. producing about 200mW of RF at 10.150GHz.

The receiver is a retuned satellite LNB and receiver system.

Brian Kelly

Well that's all folks, but hopefully there will be a lot more next time. Graham Hankins G8EMX has volunteered to extract information from the various groups, so if you are a member of an ATV repeater group, please send your info either to myself, or Graham...

Graham Hankins G8EMX
11 Cottesbrook Road,
Acocks Green,
Birmingham,
B27 6LE

SATELLITE TV NEWS

By Paul Holland G3TZO

The new year was ushered in with a crop of newly launched (and newly damp) satellites and prospective satellite delivered TV services. In this the first 1995 edition of "Satellite TV News" I am gazing into my liquid crystal ball in an attempt to guess what is going to happen and what may happen during the forthcoming year in the world of Satellite TV.

LAUNCH NEWS

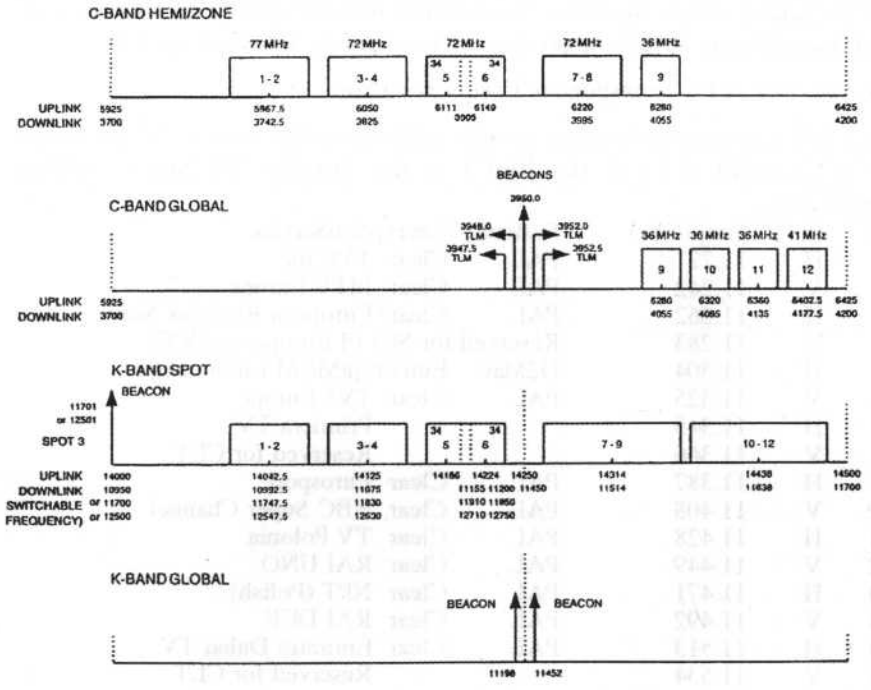
The failure of Ariane Flight 70 carrying PanAmSat 3 in early December was a considerable blow to Arianespace being the second launch failure of the year. Arianespace released the following statement immediately afterwards - " After normal ignition of the 3rd stage rocket and a proper functioning of the igniter, when the gas generator injection valve opened, the pressure in the gas generator was low, resulting in an engine performance which stabilised at only 70% of its nominal steady state value. This thrust was not sufficient to complete the mission after a total flight time for the 3rd stage of 740 seconds". This flight marked the first flight of a new and more powerful 3rd stage rocket which used an improved oxygen - hydrogen mixture. The first flight enquiry results were due just after the CQTV deadline passed. It seems certain now that the whole Ariane launch schedule will be delayed pending a full examination of the enquiry board findings.

Not withstanding the above - the following major TV carrying satellites are scheduled for launch during 1995.

Date	Satellite	Launch	Vehicle	Position
10/1/95	Intelsat 704(VII)	Atlas	11AS	66.0 E
15/2/95	Intelsat 706(VII-A)	Ariane	44LP	53.0 W
4/95	Intelsat 705(VII)	Ariane	44LP	18.0 W
6/95	Astra 1E	Ariane	42L	19.0 E
8/95	Telecom 2C	Ariane	44L	3.0 E
10/95	Intelsat 707(VII-A)	Ariane	44LP	50.0 W
10/95	Intelsat 708(VII-A)	Long March	3B	1.0 W

INTELSAT NEWS

As can be seen from the above launch programme for 1995 the most prolific satellite operator in terms of new capacity is Intelsat. Somewhat of a landmark decision for Intelsat was taken late last year when agreement was reached to re-define Intelsat's view of "public telecommunications services ". Their new definition includes - " television services provided in the fixed satellite service (FSS) bands using high power FSS satellites for reception by small antennas (which includes services commonly known as DTH services)". The introduction of the series VII and VII-A satellites will enable Intelsat to deliver these DTH services and achieve much greater coverage than the Series V satellites together with greater flexibility and reliability. Series VII transponder EIRP can be configured to either high power (47.0 dBW) or low power (44.5 dBW). Whereas Series VII craft have 10 Ku Band Tp's the Series VII-A have 14, each operating at 47.0 dBW EIRP. The frequency plan below shows both Ku and C band transponder uplink and downlink frequency arrangements.



EUTELSAT NEWS

Eutelsat have announced that they have placed an order for "Hot Bird 3" with Matra Marconi. Hot Bird 3 will have 20 Tp's in the DBS band with both Wide and Super Beam coverage. No launch date was given in the press release. Eutelsat have also announced plans for what will effectively be their Eutelsat III series of satellites. No detailed information is currently available except that each satellite will be equipped with 24 Ku Band transponders each with a bandwidth of 72 Mhz. The coverage area will be the entire European continent and the Mediterranean basin.The first of the seven planned Series III satellites will be launched in late 1997.

ASTRA 1E NEWS

Canal Plus have announced that they have booked two transponders to launch up to 20 digital channels in October this year pending a successful launch of Astra 1E. The American Hughes Communications Company has also announced it intends to launch a digital 20 channel European DTH pay-tv service in much the same way as their 150 channel US DirecTV service. The Hughes service will launch in the middle of the year and, according to Hughes, may expand to a 150 channel service over time. It is possible that all capacity on both Astra 1E and Astra 1F may already be pre-booked for digitally delivered services.

EUTELSAT II F6 Transponder Frequency Plan

Although reproduced elsewhere in other publications this was the latest channel list for Eutelsat II F1 & Hot Bird 1 as the "Satellite TV News" deadline approached.

Tp	Pol	Freq (Ghz)	System	Encryption	Service
1	H	11.221	PAL	Clear	TVE Int
2	V	11.242	PAL	Clear	MTV Europe
3	H	11.262	PAL	Clear*	European Business News
4	V	11.283	Reserved for SCI FI Europe or ARTE		
5	H	11.304	D2Mac	Eurocrypt	MCM Euromusique
6	V	11.325	PAL	Clear	TV5 Europe
7	H	11.345			Primiera TV
8	V	11.366			Reserved for CLT
9	H	11.387	PAL	Clear	Eurosport
10	V	11.408	PAL	Clear	NBC Super Channel
11	H	11.428	PAL	Clear	TV Polonia
12	V	11.449	PAL	Clear	RAI UNO
13	H	11.471	PAL	Clear	NPT (Polish)
14	V	11.492	PAL	Clear	RAI DUE
15	H	11.513	PAL	Clear	Emirates Dubai TV
16	V	11.534			Reserved for CLT

* Likely to encrypt sometime after launch

Future Eutelsat II F1 Transponder Frequency Plan

Tp	Pol	Freq (Ghz)	System	EncryptionService
20a	H	10.972	PAL	Clear Viva 2
20b	H	11.006	PAL	Clear Viva
21a	H	11.055	D2Mac	EurocryptKabel
21b	H	11.095	PAL	Clear RTL2
22a	H	11.146		Vacant
22b	H	11.181	PAL	Clear TRT Int
25	V	10.987	PAL	Clear NBC Super Channel
26	V	11.080	PAL	Clear TV5
27	V	11.163	PAL	Clear Deutsche Welle TV
32	H	11.554	PAL	Clear MBC
33	H	11.596	PAL	Clear RTL
34a	H	11.638	PAL	Clear Emirates Dubai TV
34b	H	11.678	PAL	Clear Polonia 1 TV
37	V	11.575	PAL	Clear Euronews
38	V	11.617	PAL	Clear BBC 24 Hr News
39	V	11.658	PAL	Clear VH1 (German Version)
40	H	12.521	PAL	VideoCryptReuters TV
41	H	12.563		OCC Use for TV
45	V	12.542		Digital Radio
46	V	12.548	PAL	Clear Maxat

ORION F1 (37.5 Deg W) Transponder Frequency Plan (European Beams)

Vertical				Horizontal			
Tp	No	Freq (Ghz)		Tp	No	Freq (Ghz)	
1	Lower	12.514 }		9	Lower	12.514 }	
1	Middle	12.528 }	54 Mhz B/W	9	Middle	12.528 }	54 Mhz B/W
1	Upper	12.541 }		9	Upper	12.541 }	
2	Lower	12.577 }		10	Lower	12.577 }	
2	Middle	12.591 }	54 Mhz B/W	10	Middle	12.591 }	54 Mhz B/W
2	Upper	12.604 }		10	Upper	12.604 }	
5	Lower	11.469 }		14	Lower	11.469 }	
5	Middle	11.483 }	54 Mhz B/W	14	Middle	11.483 }	54 Mhz B/W
5	Upper	11.496 }		14	Upper	11.496 }	
6	Lower	11.532 }		15	Lower	11.532 }	
6	Middle	11.546 }	54 Mhz B/W	15	Middle	11.546 }	54 Mhz B/W
6	Upper	11.559 }		15	Upper	11.559 }	
7	Lower	11.595 }		16	Lower	11.595 }	
7	Middle	11.609 }	54 Mhz B/W	16	Middle	11.609 }	54 Mhz B/W
7	Upper	11.622 }		16	Upper	11.622 }	

8	Lower	11.685 }		17	Lower	11.685 }	
8	Middle	11.672 }	54 Mhz B/W	17	Middle	11.672 }	54 Mhz B/W
8	Upper	11.685 }		17	Upper	11.685 }	
3	Lower	12.604 }		11		12.645	36 Mhz B/W
3	Middle	12.654 }	54 Mhz B/W	12		12.685	36 Mhz B/W
3	Upper	12.667 }		13		12.726	36 Mhz B/W
4	Lower	12.703 }					
4	Middle	12.717 }	54 Mhz B/W				
4	Upper	12.730 }					

CHANNEL 4 ON SATELLITE ?

Channel 4 together with a group of other European broadcasters is currently examining the possibility of launching a UK based satellite channel carrying independent and Third World programming. Dubbed "Mondiale" the channel aims to cover Europe from either an Astra or Eutelsat feed. No date has yet been fixed for a launch.

Indian Channel Launch

Indian state broadcaster Doordarshan has announced plans to launch a new channel for Indian residents in Europe, Canada and the USA. The channel to be known as Doordarshan World Service and will launch by the end of November via Eutelsat (possibly Eutelsat II F4).

TRANSPONDER REPORT

TURKSAT 1B 42.0 Deg E

The Turkish beam from this satellite is not receivable in the UK on sub 2.0 m antennas. Due to my septic tank the European beam is no better - though I am informed good signals are receivable on a 1.5m antenna at other locations in the UK.

ASTRA 1A,1B,1C & 1D 19.2 Deg E

As forecast in the last issue of "Satellite TV News" there are now a number of channel moves planned in addition to and in conjunction with the launch of Astra 1D. Expect a number of existing non UK primarlily cable oriented channels to re-locate on Astra 1D to allow other new services to take their place on Astra's 1A,1B & 1C. An example of this is RTL 4 which will remain on Astra 1B until March when Super RTL will take its transponder.

Astra 1D prelimary allocations are as follows;

Horizontal			Vertical		
Tp 49	10.714 Ghz	ARTE	Tp 50	10.729 Ghz	NBC Super
Tp 51	10.743 Ghz	CLT	Tp 52	10.758 Ghz	RTL4
Tp 53	10.773 Ghz	BSkyB	Tp 54	10.788 Ghz	TV Asia
Tp 55	10.802 Ghz	Kabel 1	Tp 56	10.817 Ghz	Kirch
Tp 57	10.832 Ghz	BSkyB	Tp 58	10.847 Ghz	BSkyB
Tp 59	10.861 Ghz	TBA	Tp 60	10.876 Ghz	TBA
Tp 61	10.891 Ghz	Shopping ch	Tp 62	10.906 Ghz	Kabel Plus
Tp 63	10.920 Ghz	Filmnet	Tp 64	10.935 Ghz	RTL 5

Eutelsat II F3 16.0 Deg E.

Satisfaction Club Television commenced test transmission on Tp 22 11.163 GHz (H) in late November. The Italian based adult channel has audio at 6.60 Mhz and says it will encrypt in Nokia LS256 line shuffling encryption system. LS256 is not a smart card based encryption system but uses a directly addressable analogue decoder.The LS256 encryption system is currently used by the EBU on 7.0 Deg E. TV Erotica is also due to launch a six hour per night service about now on Tp 20 10.987 Ghz (H), TV Croatia's frequency. The late night service will be encrypted in EuroCrypt M initially but will go digital as equipment becomes available. Canal Plus Poland started testing in December on Tp 38 11.616 Ghz (V). The channel will be encrypted in Nagravision.

Eutelsat II F1 & II F6 13.0 Deg E.

Many changes will be taking place at this and other Eutelsat orbital slots following the launch of Eutelsat II F6. Given the problems of Arianespace following the ditching of PanAmSat 3 it is likely that the original December launch will be delayed until late January or even early February .The new BBC WSTV news and current events "BBC World" channel launched on Eutelsat II F1 Tp 38 11.617 Ghz (V) on 26th January. The new European Business News channel will launch an 18 hr per day service on 27th February assuming a successful launch of Hot Bird 1. A German version of VH1 may take MTV's Eutelsat II F1 transponder when it launches in April.

Telecom 1C 3.0 Deg E

France Telecom are due to place Telecom 1C in an inclined orbit as it reaches the end of its life in a few months time. Telecom 2C will take over at this position following its planned launch in August this year. The Cine Cinemas D2Mac Eurocrypt service formerly on Telecom 2B is due to move in the near future to Telecom 1C to allow for digital tests on its former Telecom 2B frequency 12.669 Ghz (h)

Intelsat 702 1 Deg W.

Intelsat 708 is to replace Intelsat 702 a this position later this year with Intelsat 702 moving to 56.0 Deg W. This is due to the high demand for Ku Band Tp's at this location. Intelsat 708 has 14 Ku Band Tp's - 4 more than Intelsat 702. Two new Norwegian channels are likely to launch at this position soon with the transfer of the two Israeli channels to Israel's Amos satellite which should launch in May and be located at 4 Deg W. TV Plus, a Norwegian general entertainment channel, and NRK's new prime time channel have both received Norwegian licences. A new D2Mac Scandinavian Film channel called TV1000 Cinema launched on 24th December.Encrypted in Eurocrypt M it will be uplinked from West Drayton near London and is a "free" bonus channel for TV1000 subscribers (and some non subscribers I suppose !).

Telecom 2B 5.0 Deg W.

RTL TV will move from 12.732 Ghz (V) to 12.543 Ghz (H) to clear the former frequency for VSAT purposes. La Chaine Info encrypted in Syster during December to form part of the Canal Plus owned Canal Satellite package of channels mostly located on Telecom 2A. The French Channel "La Cinquieme" is now using ARTE's downtime on 12.606 Ghz (V).

Stat 11/Gorizont 11 11.0 Deg W.

Look out for either Gorizont 11, or 15 (14 deg W) to be replaced by the new Russian Express 1 Satellite launched from Baykonur back in October. The Express series of satellites have 10 C Band and 2 Ku Band transponders. Check 11.526 Ghz and 11.566 GHz (RHC). Express 1 was originally scheduled for 40.0 Deg E. Russia's TV3 channel was due to launch on Express around new year time although no Tp allocation was available at the time of writing.

TV SAT 19 Deg W.

Confusion still exists over the future of TV Sat. Initial rumours of one or other of the Scandinavian operators looking to move TV Sat to either 3.0 Deg E or 1.0 Deg W have been overtaken by reports that Eutelsat may now be looking to use the Satellite for digital testing. If this is so then TV Sat may remain at 19.0 Deg or move to 13 Deg E. TV SAT has a remaining lifetime of 4 years.

Intelsat K 21.5 Deg W

Due to launch in January was the Spanish channel Gemini 4. This new 24 hr cable and DTH service will encrypt in Videocrypt II. According to reports the channel will offer 2 smart cards - one for a general film and entertainment service during the day and early evening and the other for late night adult programming. No transponder details were available at the time of writing.

Intelsat 601 27.5 Deg W

BBC WSTV's new general entertainment channel launched on Tp 71 10.995 Ghz (V). Known as "BBC Prime" the D2Mac Eurocrypt service replaces the former BBS World Service.

Orion F1 37.5 Deg W

Orion F1 was successfully launched on an Atlas 11A Rocket in November. Orion F1 has 34 Ku band transponders and is aimed principally at carrying digital broadcast and business TV services between the US and Europe. The first customers include RTL TV which will be using Orion F1 for programme and news feeds from New York into RTL's Cologne broadcasting centre. Other digital services for Orion are the French Teleachat and Club Teleachat cable channels. It is quite probable that Orion F1 will carry broadcast services originating in the US for European DTH reception - possibly retransmitted via Astra or Eutelsat feeds. Discussions have already taken place it is reported with USA Networks for carriage of the Sci-Fi channel.

TECHNOLOGY UPDATES

NTL VCS4000 Video Compression

NTL have now launched an update to their MPEG 1 based VCS2000. Known as VCS 4000 the system provides an end to end MPEG 2 digital multi-channel TV system conforming to European Digital Video Broadcasting Group (DVB) standards. VCS4000 is the result of collaboration between NTL (specialising in video compression), News Datacom (Conditional Access and Subscriber Management) and Comstream (Transmission & Modulation systems).The fully integrated system is capable of supporting up to 18 channels under the control of a single computer work station for configuration management. As an indication of the flexible approach necessary to sell these first digital systems NTL are developing the conditional access and encryption technology to include Videocrypt (through collaboration with News Datacom) and Irdeto. NTL have sold a 10 channel IRDETO system for a new South African DTH service due to have launched via PanAmSat 3 in mid 1995. New satellite capacity will need to be found if this service is to go ahead following the demise of PanAmSat 3.

DigiCipher II in Europe

General Instruments have introduced their DigiCipher II 625/525 system to Europe. The system offers GI's proprietary DigiCipher encryption together with

MPEG 2 compression. Digicipher II is an all digital system designed to digitise, compress, packetise, encrypt, multiplex, forward error correct and modulate a number of mixed format PAL, SECAM, NTSC or component video signals for transmission via a single satellite transponder.

Set Top Digital IRD's

Manufacturers such as Thomson and Pace have been busy developing their set top cable and DTH digital IRD's ready for the launch of digital broadcasting in Europe in late 1995. Although most of the domestic DTH units demonstrated at shows such as the International Broadcasting Convention in Amsterdam have been mock ups, it is becoming clearer what the basic specification for these IRD's will be. A typical IRD will include a tuner, demodulator, a packet based demultiplexor unit, MPEG 2 video de-compression, MPEG 2 audio de-compression, up to two smart card slots (see below) and a telephone modem. The receivers will offer Video on Demand, Interactive TV, Musicam digital radio and full on screen graphics .

Digital Standards Update

The debate rumbles on as to whether Europe will have a choice of conditional access systems for new digital services or if existing major pay-tv operators will maintain their existing monopoly. In late November the Digital Video Broadcasting Group (DVB) voted for introduction of a single pan-European conditional access system (Simulcrypt). Following considerable opposition from some major European broadcaster who are not keen to see the existing B-Sky-B & Canal Plus monopoly continue the European Council of ministers voted in December for a draft EC Directive recommending that more than one system must be available. The directive also calls for a standardised introduction of 16:9 format widescreen. The 1995 Cable and Satellite Show will hopefully reveal how far manufacturers and broadcasters have gone in translating the current confusion into commercial and consumer products.

Conclusion

That's all for this edition of Satellite TV News. Can I take this opportunity of wishing all CQ-TV readers a happy new year and please do write in to let me hear your news and views about what interests you in the world of Satellite TV.

Paul Holland - 'Chatterton', Chapel Lane, Threapwood, Nr. Malpas, Cheshire, SY14 7AX

A Simple 24cm Transmitter

By GIHBE

A few months ago, I found in my junk box an old satellite TV front end, the type that converts down to 480 MHz. At the time, I was mucking about with a 13cms converter, and some sort of signal was required to aid the tuning-up process. It occurred to me that here was the ideal signal generator.

If the IF is 480 MHz, and the tuner covers 900 to 1750 MHz, then the local oscillator must tune the range 1380 to 2230. The application of 12 volts supply and a variable 25 volt tuning bias soon had a healthy carrier radiating around the shack, and after getting the 13cm job out of the way I decided to see how low the LO would go, as an idea was forming in my mind. Turning the tuning volts down to zero put the LO on 1250 MHz, consderably below it's 'official' lower limit, and ideal for what I had in mind.

Twice a year, I help out with JOTA and TDOTA at the scout hut across the road, and for the last four years we have had a 3cm duplex TV link to make a change from the usual HF and VHF operations. I thought a small 'belt pack' portable TV TX would add to the fun and the idea of FM'ing the satellite LO seemed a good way to start.

My trusty BBC computer was persuaded to generate a test card which, after pre-emphasis, was poked into the same pin as the tuning bias in order to frequency modulate the oscillator. A nearby 24cm receiver confirmed that the idea was sound, but the picture was badly smeared and my 'scope showed nasty, rounded syncs and a complete absence of chroma burst. There was obviously some decoupling on the tuning line. A quick session with a magnifying glass revealed three tiny surface mount capacitors shunting the line to deck, and after removing these the picture was as clear and crisp as could be wished for, and the 'scope now showed nice, square syncs and pots of burst.

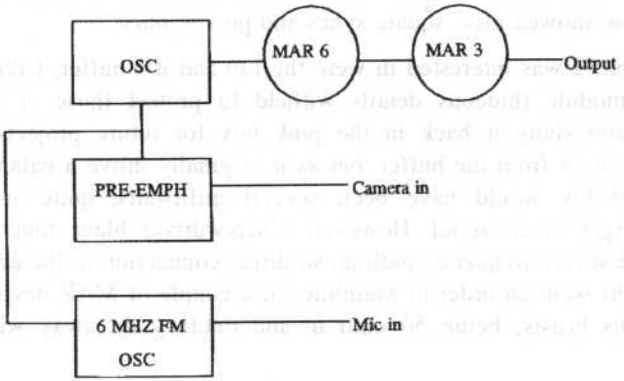
As the only bits I was interested in were the LO and it's buffer, I removed the rest of the module (hideous details witheld to protect those of a nervous disposition) and slung it back in the junk box for future projects. I didn't measure the output from the buffer, but as it originally drove a balanced diode mixer it probably would have been several milliwatts, quite suitable for applying straight to an aerial. However, a screwdriver blade touched to the output caused severe frequency pulling, so direct connection to the aerial was a non-starter. Off went an order to Mainline for a couple of MAR devices. These are marvellous beasts; being 50 ohm in and out,they do away with all the

wailing and gnashing of teeth normally associated with the coupling of RF to the outside world, and at just a couple of pounds each they're not too dear either. The final arrangement is shown in the diagram. As you can see, there's a 6 MHz subcarrier oscillator to carry the sound from the camera's built in microphone. The MAR's were mounted on a piece of double-sided copper board, into which had been cut 50 ohm lines, and apart from a strip along one edge, which carries the 12volts, the rest of the board is grounded. 'Pin-throughs' near the MAR's and surface mount chip capacitors for coupling and decoupling ensure good stability. The entire board measures about 3 ins by 4 ins and lives inside an aluminium case of just slightly larger dimensions and just over an inch deep. On the 'bottom' (this clips on one's belt, remember) are sockets for the camera, aux video and audio inputs and a flying lead which clips onto the 12 volt sealed lead-acid battery, also belt worn.

The JOTA weekend saw a flurry of activity, with G3WFK, G3WGQ, 2E18UX, 2E18V5, GONAJ and myself all doing their bit. The excellent HF operation by Mark, 2E18UX (under supervision as G82DG5) could form the basis for an article in itself, but I'll concentrate on our TV doings.

The active 24cms dipole, another MAR 6, was wedged into the gutter just outside the scout hut, feeding the homebrew receiver and colour monitor positioned inside. The fact that the hut was constructed of corrugated steel caused some concern, but in the event the coverage inside the building was good, with just a couple of nulls evident. Outside, things were even better, with strong colour pictures and sound from almost anywhere on the site. As a quick experiment, contact was made with GOPUR, 1km away, who pointed his indoor 'biscuit tin' aerial at us, and after some careful positioning, we achieved a P2 to P3. Not bad for 10 milliwatts out !

Improvements for next time will include a 'spot the loony' hat mounted transmit aerial (we reckon most of the RF was being absorbed by my beer-belly) and better siting of the RX aerial. Today the scout hut, tomorrow the world !



TV On The Air

Andy Emmerson G8PTH

We pillage repeater group newsletters this time; they're a most valuable source of news and I am most grateful to the various groups' secretaries for sending them through to me. If you're wondering why your repeater group doesn't get mentioned in these pages, it's probably because I don't receive their newsletter!

Success for Men of Kent Ian Vincent G4MLY, secretary of the Kent Television Group, writes: "We are at last getting somewhere with setting up an ATV repeater in north Kent. Thanks also for the coverage in your columns which we greatly appreciate. We were present at CAT 94 and we thoroughly enjoyed meeting everybody. We were kept busy answering questions on the repeater and on our home-brew projects which were on display. Sales of donated small items raised £10 and a new member was enrolled. A good day was had by all and we look forward to next year's event."

The good news on the repeater front is that following successful site tests, the KTG committee has decided to go ahead with establishing the Kent Television Group repeater on the Isle of Sheppey. A letter of intent has been sent to the RSGB Repeater Management Group via the BATC, in the hope that KTG will be given the go-ahead to submit the application in full. The understanding is that the application could take at least six months to be cleared.

During the vetting period the committee will be preparing the site. Due to a more stringent repeater specification, new filters will need to be constructed and tested. The group will be experimenting with new aerials to give improved east and west coverage.

During the summer once again enhanced conditions aided the appearance of several continental stations on the KTG repeater, Walt ON5NY was one, who says he is often able to see the repeater. Other welcome visitors were Jean F1ESA and Jeff F5RZC, both from the Pas de Calais region.

The committee visited the proposed repeater site on the 3rd September and met the site owner to discuss how and where the repeater will be accommodated. The aerials will rise above the apex of the roof, putting them close in height to the ill-fated water tower site, which is very close by. There is a possibility that either bow-tie or flat plate antennas may be used pointing east and west, and Chris G8GHH has suggested that these be installed on the existing site at Herne Bay so that they get a good test.

Also in the latest Kent newsletter is an anonymous (not surprising!) report as follows: "A commercial 13cm ATV converter purchased in Germany produced some interesting pictures on 28 & 29th of August. The unit, which is directly coupled to a 44 element loop yagi, tunes between 2300 and 2600MHz. When beaming west I was treated to some excellent aerial views of the Notting Hill Carnival, although unidentified I suspect the pictures came from a Metropolitan Police helicopter.

Snippets SCART, the Southampton Club for Amateur Radio Television, is in the process of building a 23cm television repeater at Park Gate, near Southampton. The callsign allocated is GB3AT, according to Alan Daw G1APD, who will be pleased to give further information to anyone interested. You can ring Alan on 01703-476029.

GB3HV at High Wycombe has received another maintenance visit from John G8MNY, Mike G8LES and Frank G3ZMF. The visit followed repair of the VCR tape eject problems, Mike's redesigning the aerial choice logic, and a week of interference on the south aerial (which may have been due to an oscillating pre-amp). Needless to say, the QRM never occurred the whole day! So the video detector was tuned up and its bandwidth narrowed to 15.1 to 16.2kHz, as a precaution against the QRM opening the repeater. The Aston teletext generator was also tested, but as with all 'professional' kit, it was super fussy about syncs, so more work needed on that (but now believed fixed. After leaving the site at 20.30hr., a no-video transmit fault developed, but our local shut-down operator, Bob, came to the rescue at 22.30 and fixed the video cable.

The Pan & Tilt head, aerial, camera housing, and 70cm ATV receiver are all built, but still outstanding are the camera to be mounted at the top of the repeater mast, lens and steel mast mounting system.

The GaAsFET pre-amp previously manufactured by G4BVK under the Aztex Electronics banner is back in production, now from Electro-Mechanical Assembly of Dorset. .Designed to fit between your receive antenna and your receiver, it offers a gain of 17db with a noise figure of only 1db. The gain is flat across the 23/24cm band and has an 8db roll-off at around 700MHz to help reduce broadcast TVI. A highly stable design based on the ATF10135 GaAsFET and using surface mount technology components, it is boxed and aligned. The DC supply can either be via the co-ax or external and the unit is built to your requirement. RF switching is not provided. A 70cm version is said to be available in the near future. Price is £67.00 + £2.00 p&p and the unit is available from Electro-Mechanical Assembly, 18 Mandeville Close, Wyke Regis, Weymouth, Dorset, DT4 9HP (phone 01305-778575).

'P5', the newsletter of the Severnside Television Group, was the source of that last news item and also of the following one.

Severnside ATV Contest Phil G1HIA sends the following report. I suspect few contest expeditions go any more smoothly!

This is a brief summary of the STVG contest. Two weeks prior to the contest date the collation of equipment begins. Phone calls to various members who store our 4 x 48 element 24cm and 4 x 21 element 70cm antennas, and power supplies, transmitters, amplifiers and the rest of the tons of equipment. The begging 'phone calls to people without whose help we could not stage the contest. The farmer's wife, to remind her that another invasion is about to descend on her, and allow her time to move the cows (but alas not the cow-pats).

To Ken, the generator owner, who would rather receive a pleading 'phone call from our Viv, than a big burly me (he was persuaded to part with it). Finally to Tony at the Gordano Radio Group, who not only loan us the portable tower, but also deliver it to site (what a service!).

Wednesday prior to contest date sees us towing the two caravans, one an operators' van and the other, the 'hospitality'-cum-sleeping caravan, both of which were donated to the contest group. Along with the generator and several cars, loaded with equipment, winding our way through the country lanes of the Mendip hills.

Friday afternoon. Assembling the aerial arrays, checking generator and other numerous tasks. Leaving two members on the Mendips overnight for security.

Saturday morning. Another steady stream of helpers arrive to secure cables to the mast and to help crank up the tower. This task was repeated three times in all, once for a broken pre-amp wire, the next for a broken video cable, and finally for trapped cables at the mast head. We all took turns at cranking the tower up and down, working up an appetite for the forthcoming barbecue. We polished off the food in record time, about eighteen members and wives tucking in, thanks again to June and Alan for the long black burnt??? No seriously, many thanks.

We started the contest around two hours late, and had the usual line up of locals, and surprisingly, our first contact on 3cm to Nigel sporting a GW call. Sad to say, our 3cm activities were all one-way, later we discovered our 3cm transmitter was rather sick, never mind, 70cm and 24cm contacts from his location were helpful. We ran the contest through the night, three of us called between 02.30 and 05.30, sad to say that everyone else had retired to bed, or so it seemed, as we didn't make a single contact between these times. As you can tell, we were either serious, or seriously mad???

I would like to express my thanks to all those who loaned, helped in any way, and to all stations that were there to give us the points and even more to the

stations we could not see, but the fun was in the trying, without you all there would be no contest.

Oh, the name of the contest, 'Summer fun' and it certainly was that. Oh no! Oh yes! We had to dismantle it all again, cables neatly rolled, caravans packed up and the farmer's field left as we found it (minus a few cow-pats). Whatever happened to portable back-pack operating? See you at the next contest!

Repeater news The Leicester repeater GB3GV is back on the air. It's actually located at Markfield, close to the M1 motorway north of the city of Leicester, in fact you can see the aerial (on the right going north) if you look carefully. Don't mistake it for the BT and Home Office masts a mile further north at Copt Oak, though!

Currently the repeater is transmitting in beacon mode only but the receiver will be reconnected as soon as time permits, G8OBP is the man in charge and you'll find him in the callbook.

The 10GHz machine covering Milton Keynes, GB3TG, is changing its input frequency, to 10.278GHz, in line with new band planning policy. The previous frequency was too close to the one used by police cameras on the motorways, so this move should ensure there is no possibility of interference.

Auckland repeater re-equipped And now a letter from Michael Sheffield ZL1ABS in New Zealand.

He writes:"The Auckland ATV repeater station ZL1BQ has operated steadily for about three months now with a new exciter. It is a VSB exciter made by the Hills company. The output frequency is 615.25 MHz. The output is very pure spectrally. The exciter is followed by a three stage linear TV amplifier constructed by Wayne Griffin ZL1UJK. It comprises a BFR96, a BFQ68 and a BLW34. The power output is a very linear 2 watts. The amplifier has two power supply rails, 15V and 24V. The input frequency is 443.25 MHz which is within the New Zealand 70cm amateur allocation of 430 to 449 MHz. The site that the repeater operates from is only 400 metres away from the main TV transmission site for Auckland. This is good because the viewing public will be beaming in the right direction. The lowest power commercial UHF TV channel "MAX" (Music Television) is 20dB more powerful than us. So affordable options for increasing the power output are being discussed.

"Graham Baker ZL1TOF is undertaking to write new software for a Tandata viewdata terminal. It is an item has been available cheaply, from the local surplus store, for use as a TV typewriter by ATV operators."

Mike continues: "Good news from other parts of New Zealand. The ATV operators in Christchurch (South Island) have got their repeater ZL3AC running

on Channel 39 (615.25MHz in the New Zealand 50cm amateur band) with 100mW output. The input is 443.25 MHz (70cm amateur band) with the usual (for New Zealand) 5.5 MHz sound carrier. Wayne ZL1UJK built the amplifier they are using. A 5-watt stage is under construction. Pete ZL3TJH is the trustee and chief engineer. He lives high up in the Port Hills above Christchurch, which is a very flat place otherwise. So in spite of the QRP output power, the test card is being seen over a good area. The ATV operators in the Manawatu area (Central North Island) are getting closer to getting an ATV beacon (prelude to a repeater) on air. The organiser Michael ZL2UKW reports that all the transmitter modules are now in separate shielded boxes. The exciter output is quite low, needing a driver stage to get to the 100mW minimum useful level. Another one of Wayne ZL1UJK's BFR96S amplifiers is likely to be used. Trevor Browns' teletext video pattern generator circuit is being used to have a multi-page video message board from the ATV beacon.

That's it for this time. I wish you all a prosperous and productive new year, with lots of amateur television activity (and hopefully lots of reports from you to me for this column!).

Please send all correspondence for TV on the Air to:

Andy Emmerson, 71 Falcutt Way, Northampton, NN2 8PH

SUBSCRIPTION RENEWALS FOR 1995 HAVE YOU RENEWED YET ?

If not, this will be the last CQ-TV Magazine you will receive. Subscriptions for 1995 were due in January and those who were due to renew should have received a form at the beginning of January.

You can easily check to see if you still have not renewed. Check the first two digits of your membership number on the address label from this CQ-TV. If it is 94, then your subscription is still due, 95 and above, you are fully paid up.

The subscription rates are as follows: 1995 only..... £9.00; 1995&96..... £17.00; 1995, 96&97..... £25.00; 1995, 96, 97&98..... £31.00

Remember the multi-year discounts saves YOU money and helps in administration time and costs which in turn helps keeps the subscription at its present rate.

Overseas Members wishing to pay for the magazine to be sent airmail, see CQ-TV 168, page 61 for details.

REMEMBER IF YOU STILL HAVE NOT RENEWED, THIS WILL BE YOUR LAST CQ-TV, SO DON'T DELAY . . . . . RENEW TODAY.

CONTEST NEWS

By Richard Guttridge G4YTV

Just four entries for the Summer Fun contest although many more stations did come on to give a few points away and many thanks to them. It's obvious from inspecting the logs that the stations that can muster the local troops to come on parade will do well, especially now the balance of entries is now favouring 24cm.

Let's start with John G8MNY who was without his right-hand man Andy G4WGZ and could only manage a few hours from home as he was on repeater maintenance duty on the Sunday. John found it very quiet on all bands with poor conditions. Ray G4AGE came on to give a few points away and to send in logs for 70 & 24cms. The G7ATV group were out in force with a good local following which is very encouraging for them. They took the honours on 70cm with some excellent DX for the flat conditions. According to Philip G1HIA their scribe they even managed to enjoy themselves on top of the Mendips. G8EQZ Clive, Richard G7MFO, Dave G3ZTR and I paid our third visit to our High Warrendale site and the sun shone on us for the first time. And we were able to raise the mast to its full height for the first time this year. Well, conditions could have been better but also they could have been an awful lot worse. Like our friends on the Mendips we had more contacts on 24cm than 70cm. Clive took first place on 24cm with four two-way contacts over 120km. And while the G7ATV/P group made their best DX to the east into Holland to work PA3DLS, Clive went west to the Emerald Isle and worked EI6EV.

Bob G1XIE in Balsham Cambridge was looking around to work someone on 24cm but had no luck but worked four on 2m SSTV. Would someone out there like to join him?

The Summer Cumulatives are not a success in their present form. I think it clashes with the bucket and spade brigade. I only had one entry this year from Bob for SSTV, were you all on your hols? If so I will try again. Every last Sunday in the months from April through to September go forth to them there hills. The time is 0800 hrs. GMT to 1300 hrs. GMT each session. Please send in as many logs as you can, up to four can be selected. It's for FSTV & SSTV TX/RX all bands from fixed and portable stations. I know it will clash with the rallies, hols, trips to the seaside, mowing the lawn, painting the house and your partners birthday and not just in that order, but the dates are wide spread enough to get some operating in. I hope! Let's see those logs please.

The International, well we did have our own problems, which were self inflicted, with the clash of dates with a bit of a do at Shuttleworth, but most of you didn't turn up there either! The report from Veron the Dutch Amateur Radio Society who were the organisers of last summer's event on behalf of the IARU was not at all encouraging. Entries were way down from all countries, on 70 cm by over 50%. Ladies and Gentlemen if we do NOT use ATV on all the bands we are entitled to, we could lose them. The dreadful thing is I don't think you care. Please prove me wrong this coming year. The guy who did all the graft was Paul PA0SON who is well known to many of us in BATC.

Rules and contest log sheets from:-

Richard Guttridge, Ivy House, Rise Road, Skirlaugh. HULL. Humberside. HU11 5BH. England. Tel.:- 0964-562498

SUMMER FUN 1994

70cm RESULTS

Place	Callsign	QSO's	Points	Best DX	at km.
1	G7ATV/P	12	2795	PA3DLS	493
2	G8EZQ/P	10	2221	EI6EV	361
3	G8MNY	4	1022	G8EQZ/P	291
4	G4AGE	2	252	G8EQZ/P	88

24cm RESULTS

1	G8EQZ/P	14	1921	G3UVR	174
2	G7ATV/P	18	1191	G4ZJY	158
3	G4AGE	3	262	G8EQZ/P	88
4	G8MNY	3	132	G0PIA	29

3cm RESULTS

1	G8EQZ/P	4	334	G4RNA	
				G6LIC/P	78
2	G7ATV/P	3	174	G8KUW/M	64

2m (SLOW-SCAN) RESULTS

1	G1XIE	4	442	G3NAQ	137

SUMMER CUMULATIVES 1994

2m (SLOW-SCAN) RESULTS

Place	Callsign	QSO's	Points	Best DX	at km.
1	G1XIE	11	774	G4PAD	68

INTERNATIONAL 1994

70cm SECTION 1

1	F8MM	15	4241	F6CMB	401
2	PA3DLS	29	4214	DC6KI	213
3	ON5ID	18	3509	F5MQB	274
4	F5AGO	10	3491	F1GTP	329
5	PI4NYV	21	3476	DF0RB	292
6	DH8YAL/P	26	2853	DF0RB	242
7	F1ACA	8	2543	F5RZC	291
8	PA3CVM	12	2079	PE1HXD	255
9	ON6AJ/P	16	2046	PE1HXD	301
10	PA0ERW	16	1699	DC6KI	134
11	PA3DYF	14	1696	PE1HXD	192
12	DF0RB	9	1600	PI4NYV	292
13	F6IQG	6	1404	F5AGO	208
14	OS1ANK	15	1239	DC6KI	114
15	ON5NK	6	1237	F8MM	238
16	G8MNY/P	?	1159	G8EQZ/P	250
17	F1CIA	6	1151	F5AGO	175
18	G8EQZ/P	7	1110	G8MNY/P	250
19	PA0BOJ	10	1041	PE1HXD	197
20	ON1WW/P	9	1008	PA3DLS	112
21	DJ7JG	8	981	PI4NYV	171
22	DL6SL	11	937	HB9AP	139
23	OS5IE	12	893	ON6AJ/P	109
24	F5DCB	3	885	F1BPS	200
25	DG9KS/P	10	829	DH8YAL/P	120
26	F1JSR	4	781	F1DWW	176
27	F1GTP	4	715	F5AGO	329
28	F1LWN	9	653	ON5ID	196
29	F5SRP	8	625	F1ESA	74
30	ON5LK	8	551	PA3DLS	158
31	PE1MVQ	6	461	ON6AJ/P	157
32	ON4KBF	6	418	PA3DLS	137
33	F1DTQ	6	334	F5MQB	60
34	F1GTU	3	315	F5AGO	204
35	PA3ESB	4	252	PI4NYV	59
36	PE1HNG	3	174	OS1ANK	55
37	DC6CF	2	130	DJ7JG	48
38	DG1RNG	6	112	DL7AKE	17
39	DL7UWO	5	71	DG1RNG	11
40	F6KFA	2	50	F1LWN	26
41	PE1OPQ	1	15	PA3GCV	15
42	DJ4AT	1	6	DB1FD	6

24cm SECTION 1

Place	Callsign	QSO's	Points	Best DX	at km.
1	ON6AJ/P	25	8456	PI4NYV	206
2	PI4NYV	22	6910	ON6AJ/P	206
3	DH8YAL/P	25	5520	DF0RB	242
4	ON1WW/P	17	4414	PA3ECU	148
5	PA3DLS	12	3786	ON6AJ/P	178
6	F1JSR	11	3716	F1DWW	176
7	DF9XB/P	14	3374	DJ7JG	201
8	DJ7JG	11	3216	DF9XB/P	201
9	PA3DZA	13	3198	PA3DLS	120
10	PE1OPQ	13	2590	PA3DLS	212
11	PA3CVM	11	2414	PI4NYV	161
12	F8MM	6	2304	F5AGO	277
13	DL1EBR	13	2108	ON6AJ/P	139
14	DJ7KL	13	1936	DK8IG	74
15	PA0ERW	10	1874	PI4NYV	122
16	DC4UU/P	11	1628	F6CMB	138
17	DF0RB	8	1358	DH8YAL/P	242
18	G8EQZ/P	8	1342	G3LSA	99
19	PA0BOJ	7	1226	ON6AJ/P	130
20	ON5ID	9	1204	F5RZC	89
21	G8MNY/P	6	1146	G8EGG	61
22	DJ7SX	9	1116	DK7UG	63
23	PE1MVQ	4	894	ON6AJ/P	157
24	DL1JAA/P	2	852	DL6YYM	132
25	DK6SL	7	732	DL2MBE	52
26	DC6VY	4	700	DB4BX	54
27	F1CIA	1	644	F8MM	161
28	F5AGO	1	544	F8MM	277
29	F1GTP	2	524	F6ELI	115
30	PE1HNG	3	476	PA3DZA	69
31	DJ4AT	6	366	DJ8QL	46
32	HB9PXN	5	316	F1JSR	87
33	F1RZL	2	288	F8MM	49
34	DC6CF	3	274	DJ7JG	48
35	HB9DLH/P	6	260	F1JSR	53
36	PE1ORZ	3	184	PE1MVQ	46
37	HB9STX	5	178	HB9PXN	46
38	ON4KBF	1	94	ON5ID	47
39	DH9FAC	1	36	DJ4AT	9
40	OS5IE	1	10	OS7WP	5

3cm SECTION 1

Place	Callsign	QSO's	Points	Best DX	at km.
1	DJ4LB/A	3	1860	DL4FAE	83
2	DL4FAE	4	1400	DJ4LB/A	83
3	DL3DB	4	1330	DJ4LB/A	56
4	DJ4AT	4	1210	DJ8QL	48
5	ON1WW/P	2	905	DC0DO	11
6	PA0BOJ	1	250	ON1WW/P	50
7	G8EQZ/P	1	95	G4HJD/P	19
8	PA3DLS	2	70	PA3GJG/P	7
9	DJ7JG	1	40	DL9BAE	8

CONTEST CALENDAR

SPRING VISION 95

Saturday 11th to Sunday 12th March Time 1800 GMT Sat. to 1200 GMT Sun. Slow & Fast Scan TX & RX all bands. Entries to be posted by 3rd April.

MAY MICROWAVE 95

Saturday 13th to Sunday 14th May Time 1800 GMT Sat. to 1200 GMT Sun. Fast Scan 24cm and above TX & RX only. Entries to be posted by 5th June.

SUMMER FUN 95

Saturday 10th to Sunday 11th June Time 1800 GMT Sat. to 1200 GMT Sun. Slow & Fast Scan TX & RX all bands. Entries to be posted by 3rd July.

SUMMER CUMULATIVES 95

NOTE CHANGE OF DATES, TIME AND FORMAT

Last Sunday in the month. 30th April, 28th May, 25th June, 30th July, 27th August & 24th September. Time 0800 hrs GMT to 1300 hrs GMT. Slow & Fast Scan TX & RX all bands. Please send logs of ALL the sessions you are active and indicate a maximum of four logs you want to include in your entry. Entries to be posted by 16th October.

THE INTERNATIONAL 1995

Saturday 9th to Sunday 10th September Time 1800 GMT Sat. to 1200 GMT Sun. Slow & Fast Scan TX & RX all bands. Entries to be posted by 25th September. Rules available from the contest manager.

INTERNET

By Chris Smith G1FEF

We do our best to keep the BATC up to date with modern technology and now we've joined the information superhighway, to help us communicate better!

We've got the telephone, and the fax. We even have computers (this magazine was produced on one) and for some time now, we have had the BBS (Bulletin Board System). The BBS has been very successful, lots of interested members now access it on a regular basis, to leave messages for each other or download/upload interesting software, but it's only one computer, in one place and if you live in America or Australia, it's one expensive phone call! Enter Internet...

Internet was started around 25 years ago by government departments and universities. It was designed to allow communication, even in the event of a nuclear strike, where a large chunk of the network would be destroyed, because it routes around missing nodes. It is a decentralised network, no-one is 'in charge', no-one owns it, and now computers and modems are readily available, anyone can join.

Most people access Internet by calling another computer that is actually on the network (rather than becoming part of the network itself), anyone with a PC compatible computer and modem can do this (provided you've paid the owners of the computer the appropriate fee!) and Bingo, you're on Internet.

What can Internet do for you? E-MAIL (Electronic Mail), is the obvious answer, now someone in Washington DC can make a local phone call and e-mail his friend in Aberdeen. But that's just the beginning, with nearly 25 million users, Internet is the largest computer network in the world and has 'newsgroups' on almost any subject you can think of (literally!).

So, if you have access to Internet, you can e-mail the BATC now. If you don't have access, but would like to, give me a call! For all Internet users, the electronic address for e-mail is:

CHRIS@BATC.DEMON.CO.UK

Replace my name 'CHRIS' with any committee members first name and you can e-mail anyone on the committee! Compuserve users can also e-mail us. I'm waiting to hear from you.

Calibrating the BATC 1296 Receiver

By Bob Platts G8OZP

The BATC 1296 RX has proved a very popular and successful project. However once constructed the tuning dial requires calibration and not all of us may posses a signal generator that covers the RX's tuning range of approximately 950MHz - 2GHz.

There is however a simple method that only requires a frequency counter or a calibrated short wave RX that will go up to about 20MHz.

The local oscillator of the RX is provided with a divide by 128 pre scalar. The output of which is brought out at the edge of the board at the connection marked PS (by the tuning volts input).

Connect the frequency meter or SW RX. to this point. Set the BATC RX to minimum frequency, (minimum tuning volts) and measure the frequency. Multiply the frequency by 128 then subtract the IF frequency of 479.5MHz. and this will give you the receive frequency. Repeat the procedure for different points through the tuning range and Bobs your uncle, there you have it.

Simple eh....

!!!CONGRATULATIONS!!!

Congratulations to Bob (Gunn Diode) Platts and his wife Sue, on the birth of their daughter Helen, who weighed in at only 5.5lbs and according to Bob is doing all the 'right' things JE: "...Sleeping all day and preventing us to at night"!

(All that exposure to microwaves didn't do any harm after all!)

A Power Supply Checker

By Eric Edwards GW8LJJ

When a power supply is built it is designed for a specific task or for general shack use. In either event, it is thought out before construction. The voltage and current ratings are catered to the needs. In pre-constructed or commercial psu 's that is not always the case. The usual way of callibration is by selecting various wirewound resistors and measuring the voltage and current under load. This relatively simple perf'ormance takes time due to searching f'or suitable resistors and meters. If, however, a unit was built specifically to measure the ratings of power supplies, the job would be made easier. The unit to be described does exactly that.

IN THEORY

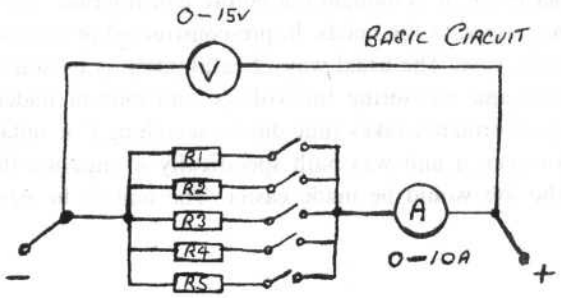
A voltmeter is connected across the power supply terminals with resistors in series with an ammeter wired in parallel. The value of the resistors are selected to give different current readings when monitoring zero drop in voltage. The resultant current reading before the voltmeter dips is the current rating of the power supply. By OHMS LAW the current depends upon the resistance placed across the power supply terminals. If, for example, the power supply delivered 14.8 volts with a resistor of 16 ohms as a load the current would be V/R = 14.8/16 = 0.925Amps.

By using different voltages and selecting different resistors the current read would be as per OHMS LAW. This is true as long as there is no significant voltage drop during on and off load.

IN PRACTICE

A voltmeter of say 0-I5volts is wired across the input terminals of this power supply checker with an ammeter in series with a number of switches to select resistor values. The power supply under test is wired in parallel with the checker. With a reading on the voltmeter place the LOW switch in the on position and monitor the current on the ammeter. If the voltage remains constant switch no.2 on whilst leaving no.l switch in the on position. Continue switching others 3,4 etc. until the voltage starts to drop on the voltmeter. The switch BEFORE the last one on will give the correct current capability of the power supply.

The two meters, switches etc. shold be mounted in a suitable case, I used a small loud speaker enclosure with an alluminium front panel. When selecting the meters, make sure they are designed f'or the purpose. These can be obtained ready calibrated from most component suppliers. An old car battery charger is a source f'or the ammeter. My unit has a times two switch on the volts and amp meters so that I can select 0-15 or 0-50 volts and 0-10 or 0-20Amps.



R1 — 16 OHM
R2 — 16 OHM
R3 — 8 OHM ALL 10 WATT
R4 — 8 OHM TYPES
R5 — 8 OHM OR GOLD TYPES
WITH HEATSINK FITTINGS

Another view of Eric's (GW8LJJ) Shack

Some Aspects of 23cm Repeater Design

By Ian Waters G3KKD

The Cambridge 23 cm ATV repeater GB3PV has just returned to service after extensive re-engineering. During the course of this work a number of technical issues came to light which the writer had not previously appreciated. In case there are others who may find our experience useful the following notes describe what was found.

CHROMA AMPLITUDE

It was not realised that our 23 cm ATV system can not reproduce the 4.43 MHz chroma and burst information at full amplitude. This appears due to the bandwidth of typically 14 MHz which is determined mainly by the receivers. Whereas this can pass several pairs of f.m. sidebands of the lower frequency luminance information only the first pair of sidebands of the chrominance can be accommodated. The result is that the chroma is reduced by some 9 dB.

Usually this is of little consequence due to the amount of chroma gain and AGC available in modern receivers which enables them to reproduce good colour with a very reduced chroma input. Unfortunately in a repeater system there are two links in cascade so that the problem is cumulative.

A CHROMA BOOST AMPLIFIER

To compensate for this problem as much as possible a boost amplifier, the circuit of which appears in fig 1, was included in the video feed to the transmitter. It is adjusted to enhance the level of the chroma as much as possible (up to 6 dB) but short of causing overmodulation at the sub-carrier frequency.

Transmitter deviation is adjusted on this unit with the control in the transmitter itself being left pre-set.

Video from the deviation potentiometer passes through a network consisting of a 10 k Ohm resistor shunted by a series L, C, R combination. The video signal is attenuated generally by the potential divider formed by the 10 k resistor and the 15 and 33 k resistors, which provide the base bias for the first transistor, in parallel. The L and C are series resonant at 4.43 MHz and thus present a low impedance at this frequency.

The 22 k boost potentiometer is thus effectively in parallel with the 10 k at the sub-carrier frequency and so controls the amount of boost.

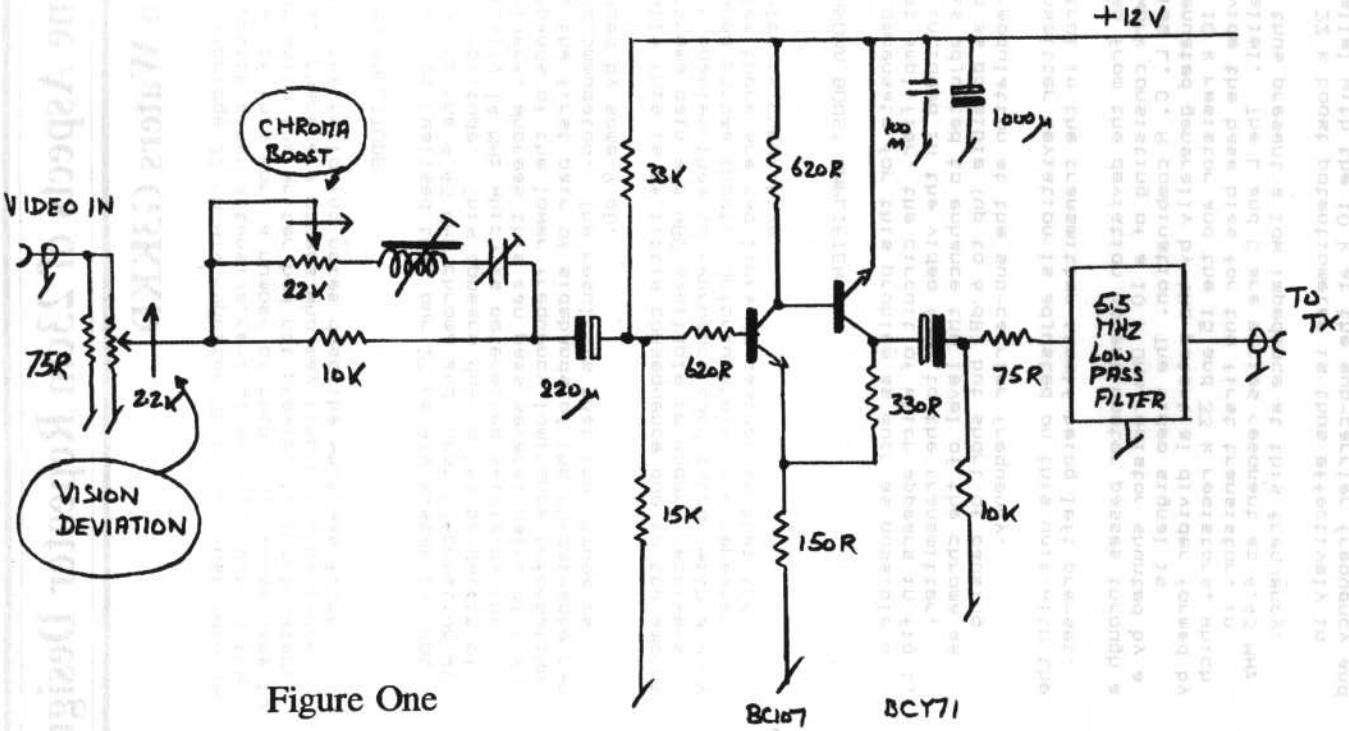

+12 V
CHROMA BOOST
VIDEO IN
22K
75R
22K
10K
VISION DEVIATION
220µ
33K
620R
100n
1000µ
620R
330R
15K
150R
10K
75R
5.5 MHZ LOW PASS FILTER
TO TX
BC107
BCY71

Figure One

It is important that the series resonant circuit has a high L to C ratio. If the C is too high, as this is in parallel with the 10 k, it will give a generally rising frequency response which will result in overshoots on the edges of picture detail and on the sync. A small amount of overshoot can be beneficial.

The subsequent amplifier needs little comment as it is of a type having a high input and low output impedance which is used extensively. The output impedance is padded with a 75 R to give the correct terminating impedance for the video filter. The coupling capacitors are large to preserve low frequency response.

The filter used is flat to 5.5 MHz and then falls to be -10 dB at 6 and -20 dB at 6.5 MHz. It is included to suppress video components at 6.0 MHz which would interfere with the sound sub-carrier and also to suppress video components above 5.5 MHz generally which could give rise to excessively wide vision modulation sidebands.

TRANSMITTER DEFICIENCY

The chroma loss problem, described above, was made much worse by an unsatisfactory aspect of the commercial transmitter used. The relevant part of the circuit is shown in fig 2.

Video from the pre-emphasis circuit was passed through a 4.7 k resistor and applied via an r.f. choke to the vari-cap modulator diode. Control volts from the phase locked loop were also applied via a 10 k. The end of the choke remote from the diode was decoupled by a 39 pF capacitor. Assuming 5 pF for the vari-cap etc it will be seen that the 4.7 k and say 44 pF formed a low pass filter with a response 16 dB down at chroma and more at sound sub-carrier!

It was found that the 4.7 k was essential and that the 39 pF could not be removed without upsetting the oscillator. It was however possible to reduce the 39 pF to 4.7 and then put a 27 pF in parallel with the 4.7 k to provide a flat frequency response without otherwise disturbing the operation of the transmitter.

A look at some other published circuits shows a similar arrangement but with less drastic values and thus less loss, so this simple modification may be of use elsewhere.

Figure Two

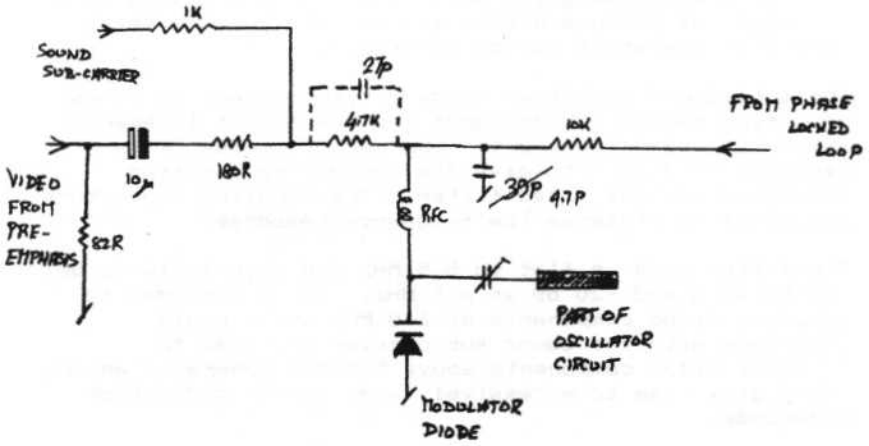
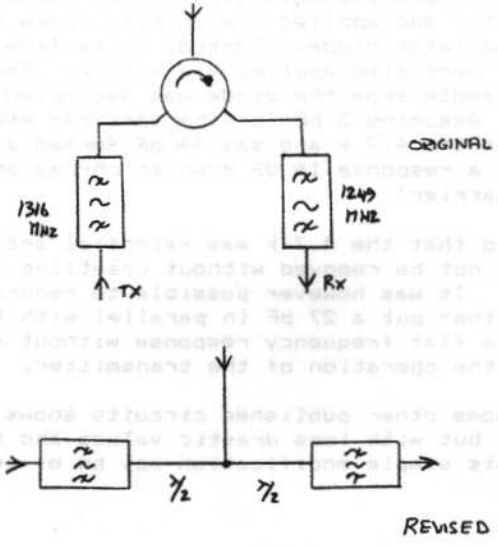


Figure Three



THE MITSUBISHI RF POWER MODULE M 57762

This module seemed to be the ideal choice for the transmitter power amplifier. It should deliver enough power to give the desired 25 W ERP after allowing for diplexer and feeder loss and antenna gain.

The data sheet specifies it for use between 1.24 and 1.3 GHz and we know it works well at say 1249 MHz. It was found that the output power and efficiency fall and the drive requirement rise rapidly above 1.3 GHz. However given the correct bias of 9.0 V and 1.5 W of drive it was found that the module would deliver 13 W at 1316 MHz. This was adequate to run the full ERP. In this connection the recent instruction to move the repeater output frequency from 1318.5 to 1316 MHz proved to be a benefit.

In addition it was found that the module was not too happy running into the somewhat reactive load of the diplexer transmitter filter. This difficulty was overcome by ensuring that the drive was applied to the PA before its supply volts.

CIRCULATOR NOISE

GB3PV uses a single antenna for transmit and receive so a diplexer is necessary. The logical starting point for designing such a unit seemed to be a circulator and we were fortunate in obtaining a sturdy looking item designed for 1.3 GHz and fitted with N connectors. For an insertion loss of 0.5 dB it gave a transmitter / receiver isolation of 20 dB before adding any filters. When two 7 pole comb line filters were fitted in the transmitter and receiver paths the isolation was measured at 120 dB which should be enough. See circuit in fig 3.

The diplexer worked well but when receiving a P 1 signal (the receiver has a noise figure of less than 1 dB) and the transmitter was turned on the received picture was blotted out by noise. The received signal had to be increased by 10 dB to overcome this and it made rather a nonsense of a good receiver!

When looking at the signal in the receiver i.f. chain on a spectrum analyser it was observed that the wanted signal did not decrease but the noise level rose up around it. The problem was not therefore normal de-sensing.

After much investigation, during which the phase locked loop was a prime suspect yet innocent, the noise was traced to the circulator. It seems that with a transmit signal of +40 dBm in one path and a received signal of -110 dBm in the other the circulator contributes noise.

When the circulator was replaced with a "T" splitter the problem was solved. The splitter works well because each filter exhibits a high impedance in its stopband. These are transferred by the half wave long lines connecting each filter to the junction so that neither disrupts the signal in the other path. The filters were found to give enough isolation without the 20 dB contribution of the circulator.

SUB AUDIBLE TONE

GB3PV is provided with a sub-audible tone generator which adds a low level 33 Hz signal to the transmitted sound channel when and only when the repeater is being accessed.

This enables suitably equipped stations to be alerted to the fact that someone is accessing without the need to sit watching a monitor all day!

The circuit of the access alarm unit, which may be added to any receiver, is being finalised. If the editor agrees it could be published at a later date.

In conclusion after nearly a year in re-engineering GB3PV is working well. The writer is a little more grey and much wiser. Perhaps these notes will help others.

Don't forget all correspondence for CQ-TV should now be sent to:

Chris Smith G1FEF

CQ-TV Editor

36 Grasmere Green,

Wellingborough,

Northants NN8 3EJ

A Trip To England

By Ken Wood G0/K6IIS

This is a reciprocal to the article by Grant Dixon which appeared in CO-TV 163 of August 1993.

This past May, when Grant Dixon GBCGK visited us on his second trip to the U.S. he finally convinced the XYL and myself to visit England as his guests. Actually the convincing was via Telephone later in the summer with our arrival date to be the day before CAT 94 commenced. So with bags packed we departed Fontana for Los Angeles International Airport and England.

We were met at Heathrow and immediately whisked to Windsor Castle via the Blue Trout for a light lunch. After our visit to Windsor and as we were walking back to the car park we had our first introduction to English Weather, a bone soaking downpour. We then proceeded up the A1 to Biggleswade, Old Warden and Shuttleworth College.

After settling in, we wandered around the exhibition area watching the preliminaries taking place. I was introduced to Paul Marshall. We had a short chat and then he was off to take care of CAT 94 operations. I wish to thank him again for providing for our accommodations at the Manor House and an enjoyable and informative conference.

We then proceeded on to Ross via Penn and a visit with Malcom Sparrow G3KOJ. Here I had a chance to see some of the exceptional desktop publishing he was doing. The four of us then went to a local flower show Malcoms XYL was involved with and to a private garden close by which was absolutely fantastic. After this visit and a cup of tea we continued on to Ross.

We had a couple of days to catch our breath then on to Sheffield to Visit Grants son Peter and his family. We were treated to two days of touring around the countryside with visits to some very interesting and beautiful sites. Then it was back to Ross for a couple of days, then we were off to Gwynedd, North Wales as the guests of Richard Wilmot GW3RRI and his YL Barbara who prepared a fantastic meal for us. This was a very enjoyable visit and we toured around to many interesting spots soaking up a lot of history and culture (Richard would make a fantastic tour guide). Then it was back to Ross for a quick breather.

Grant took me down to Bristol where we visited with Phil Smith G1HIA and Paul Stevens G8YMM of the Severnside Repeater Group. After a few minutes in the 'Hot Seat' and a nice chat we headed over to the Repeater site to see the workings of the system. The ability of a user to switch antenna directions

electronically and access text information was very interesting. Here in our part of the U.S. we are blessed with repeater sites normally high up on a mountain top so we have never experimented with directional switching of antennas. We are also cursed at times with these mountains and no amount of antenna switching would cure this problem. Most of our effort here has been in linking numerous areas together to provide wider coverage. The inclusion of 'Teletext' is in the works and will be implemented sometime in the future. I left a video of some of our operations with Phil which from what I've heard has been shown over the repeater.

After our return from Bristol I helped Grant change out the Meteosat 1.6 Gig yagi for a dish and repaired a connector on the 137 Mhz Turnstile. What a difference the dish makes. Full 'Crunch' signal from Meteosat and no interference from adjacent satellites.

Had a chance to work some of the locals on the VHF SSTV net and 2 Meters. Based on conditions and distance the video was quite good with quality approaching P5 on some stations. The Saturday before we were leaving for London, we went to the Radio Rally at Malvern. If I had been totally prepared for this, and a big enough suitcase, I would have really 'Bent the Plastic'. I never saw so many goodies in one spot. A lot of what was there used to be available here but not anymore. This was a real 'Home Brewers' Paradise. On Monday we said Goodbye to Grant and boarded a bus for a three day stay in London. Did all the things a tourist does and had an enjoyable time.

The one person who we did not get a chance to visit was Martin Emmerson G30AD, due to lack of time and his schedule.

To finalize, this was one of the best vacations the XYL and I have had. The weather cooperated about 70 percent of time, the food was excellent. The warmth, friendliness, hospitality of the people we met will not be forgotten nor will the beauty of the country. We have almost 3 hours of video and 15 rolls of photos to remind us of this time. This was one vacation where I was not ready to come home, but work was beckoning... Maybe next year....

QUESTION : **How Can I Contact CQ-TV's Editor, Chris Smith ?**

ANSWER : **By writing to his home address (see page two);**
By telephone on 01933-676054;
By fax on 01933-274367;
By e-mail on Internet address 'chris@batc.demon.co.uk';
By leaving a message on the BBS on 01633-614765

The Microwave Round Table

and the BATC

Are pleased to invite you all to a joint event on

Sunday 5th March 1995

at the Rutherford Appleton Laboratory

10:00 - 17:00

There will be a lecture program aimed at modifying existing 10GHz wideband equipment for ATV use, as well as a discussion on 10GHz repeaters. There will also be a wide range of test equipment available, so bring along your microwave gear for test, calibration or repair.

There will be an exhibit area to 'show off' your prized equipment, a bring and buy area, but no commercial traders, so it's a purely amateur event.

You can find the venue off the A34 in Chilton, near Didcot. There will be plenty off signposts to point the way. Car parking is available outside the entrance, the lecture theatre/restaurant complex being a short walk away. Disabled persons or anyone with heavy equipment should see the gate warden for vehicular access to the complex.

There are excellent restaurant and snack facilities in the complex. You are requested not to 'wander off' away from the building the event is being held in and all children must be accompanied by an adult at all times.

For further details, please contact Geoff Grayer G3NAK on 0488-638792

Camtech Electronics

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Features 130 MHz IF input frequency, Plessey video demodulator, Switchable CCIR video de-emphasis + video invert and switchable meter functions, signal strength / tuning meter. Video output - 75Ω composite video. Audio demodulated outputs available are 600Ω 0dBm and 0.5 Watt loud speaker amplifier. This unit is to the highest quality construction using plate-through hole PCBs with selective solder resist finish. Available in kit form or ready assembled.

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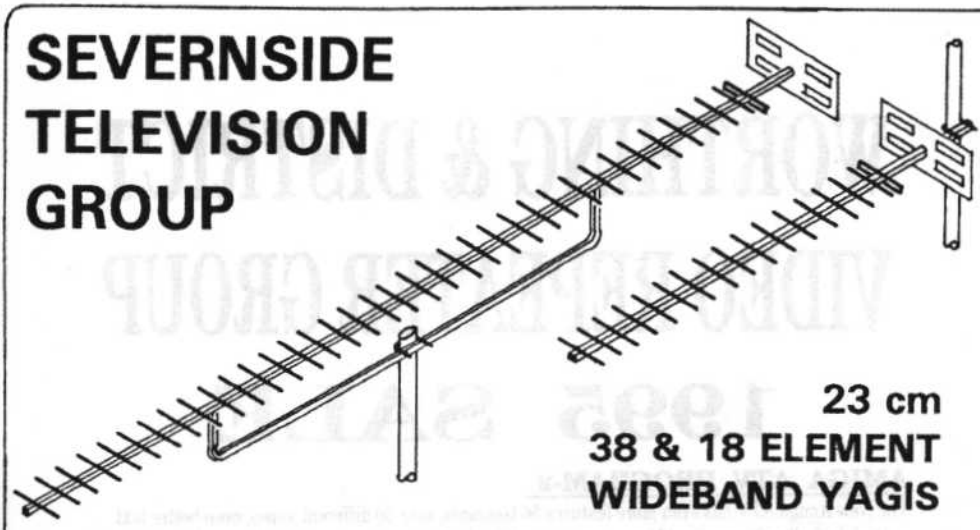
Features the very latest in commercial microwave integrated circuits and surface mount technology. Ultra low noise PHEMT GaAsFET front end followed by stripline image filter and MMIC amplifier to a 5 GHz Gilbert cell mixer. Exhibits 35dB conversion gain and tunes (LO) 800 to 1600 MHz, with an IF output up to 200 MHz. Also features an external LO output to drive a synthesiser, such as Camtech 2.4 GHz synth board. Unit comes completely ready assembled with instructions.

TV Audio Modulator.

A full featured audio modulator to compliment your video station. Contains microphone amplifier, 50μs pre-emphasis filtering, speech compressor, 15 kHz low pass filter and modulator / 5.5 to 6.0 MHz oscillator. Output is fully buffered and filtered to provide 0dBm @ 75Ω modulated ± 50 kHz. Available in kit form or ready assembled.

For details on these items or a copy of our latest Catalogue, please write or phone to the address above. Credit card facilities available.

SEVERNSIDE TELEVISION GROUP



23 cm 38 & 18 ELEMENT WIDEBAND YAGIS

All of our 23 cm Aerials are specifically designed for ATV use - although they can be used for other modes aswell. Wideband characteristics mean that you need only *one* aerial to cover the repeater input and output channels. Our famous wideband yagis come fully assembled in two versions :

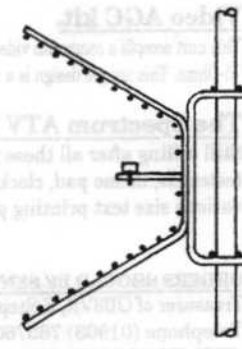
38 ELEMENT HIGH GAIN : 14 dB gain, 1.8 m long, £26.00 plus postage.
18 ELEMENT STANDARD : 10 dB gain, 0.9 m long, £15.00 plus postage.
Don't forget our **20 ELEMENT CONVERSION KIT**, which converts your existing 18 element aerial to the full 38 element high gain specification : £13.00 plus postage.

Our 23 cm **TROUGH REFLECTOR** is quite unique, combining 11 dB gain with wide bandwidth *and* wide beamwidth. It's also compact, just 0.55 m high, 0.35 m wide and 0.3 m deep. Supplied as a kit of predrilled and preformed parts, for easy "screwdriver" assembly : £19.00 plus postage.

All aerials feature an SWR of less than 1.5:1 and are supplied with mast clamps suitable for masts up to 55 mm diameter. Mast poles shown are not supplied.

POSTAGE : £3.75 for one aerial, £5.00 for two or more. Telephone orders with cash on delivery : £2.75 supplement per order. Orders from outside of the UK - please write for carriage quotation.

CHEQUES payable to "SEVERNSIDE TELEVISION GROUP" and send to 18, Linnet Close, Patchway, Bristol BS12 5RN. Telephone (evenings & weekends only please) 0117 969 8136. Please allow 28 days for delivery.



TROUGH REFLECTOR SIDE VIEW

WORTHING & DISTRICT VIDEO REPEATER GROUP

1995 SALE

AMIGA ATV PROGRAM-2

The New Amiga ATV has even more features 56 testcards, over 20 different wipes, even better text control, including 30 screens of text messages, QRA calc, Testcard music, selectable displays, and now with a DTMF tone pad to control your repeater (including security tones if required). All test cards are over-scan ie the whole screen is used. Load in your own customised testcards (users your palette), Super Large Text, Silky smooth scrolling text, 24Hr clock, callsign extensions, Hot key operation, Doc reader, ATV Cli, Cross Hatches, Purity, and a comprehensive section for genlock users.
If you have an Amiga then this is the program for you, if you don't, go and buy one. This is a three disk set, the program, extra testcards, and the music disk. 1meg min required, state callsign and QRA (if known) when ordering. This program was £20.00 but is on sale at only **£15.00.**

1W FM-TV 24cm TRANSMITTER

This transmitter generates its signal directly at the wanted frequency which can be set anywhere in the band, colour or B/W. On board intercarrier sound and fixed pre-emphasis are standard features. The kit includes di-cast box and costs not £80.00 but only **£60.00,** but hurry limited numbers on this one.

Two channel phased locked loop kit.

This add-on kit vastly improves the overall stability of the 1 watt transmitter. Two crystal locked channels and a third free running tuning position are available. Kit price was £30.00 but now only **£25.00.**

Video AGC kit.

This unit accepts a composite video signal in the range of 0.15v to 2v P-P and out puts a constant 1v P-P across 75-Ohms. This unique design is a must for TV stations and repeaters. This kit was £16.00 now only **£12.00.**

The Spectrum ATV Program.

Still selling after all these years, this 48k version has over 60 commands which include 7 testcards, memo pad, clock, maps, tones, locator calc (old & new), UK flag, X-Hatch, various size text printing plus disk transfer command and more. Now only **£5.00.**

ORDERS SHOULD BE SENT TO:-
Treasurer of GB3VR, R.Stephens G8XEU, 21 St. James Ave., Lancing, Sussex, BN15 0NN, UK.
Telephone (01903) 765760 7 to 8 pm. Cheques payable to:- **"W&DVRG"**

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Copy should be sent to 'The Editor' at: 36 Grasmere Green, Wellingborough, Northants, NN8 3EJ. Tel: 01933-676054 Fax: 01933-274367

FOR SALE

GOOD HOMES WANTED for two large ex-BBC items, ideal for museum display or break up for parts (shame to see them scrapped)! BBC Series A audio mixer, 6ft wide, 3ft deep, seven inputs, using rotary stud faders, peak programme meter, outside source selector (which can drive uniselector). Electronics are in separate cabinet 7ft tall, 2'6" wide. Also a 24volt power supply in 5ft tall cabinet with lead-acid accumulators. Badge on front says 'Automat', would make good PSU for small telephone exchange. Small donation expected. Phil Coogan, North Staffs. Hospital Radio, 24 High Street, Kingsley, Stoke-on-Trent, ST10 2AE

Arrow pointer generator on professional PCB, suitable for overlaying an arrow on any 625-line TV picture. Professional-quality product, already assembled, you just add 5V PSU, case connectors, switches and joystick. Paperwork supplied, £25. One item only, ring Andy Emmerson G8PTH first on. 01604- 844130.

Potential OB Van, as seen at CAT-94, Shuttleworth. Ex-GPO support van, fully insured and MoT until next Spring. Currently gutted with considerable potential for fitting your own racking and equipment. Based on Karrier chassis, built 1962, 2.2 litre petrol engine. Relatively compact (size of bread van or small mobile shop) with plenty of room to walk around inside. Low mileage, mechanically sound, aluminium body so no rust, needs only repaint and minor touch-up jobs. Workshop manuals and history, photos supplied. Price highly negotiable to good home, else may have

to sell for its cherished numberplate. If you can match £2000 it's yours. Camera pedestal: Dennard 275 small studio-type steerable camera pedestal, complete and fully functional. Complete with pan and tilt head, wedge plate. Maximum load 38.5kg, stands about 4ft tall for travelling, 'footprint' of triangular base occupies area 70cm square. Bargain at £100. Lenses: selection of Vidital and Vidiac lenses (1.5" mount, not C-mount) surplus to requirements at bargain prices, also a 400mm Ortal (big!): enquire. Books: ELECTRONIC COUNTING: CIRCUITS, TECHNIQUES, DEVICES (Mullard, 1967). Well used copy, £3 post-paid. YEAR ONE, the story of Granada Television's first year of operation. Mint copy in slightly worn dust jacket, £6 post-paid. First come, first served so please enclose SAE for return of cheque if unlucky. If you are first, your SAE will be returned of course!. Andy Emmerson G8PTH, 71 Falcutt Way, Northampton, NN2 8PH. 01604- 844130.

PHILIPS VIDEO 2000 for repair or spares £15.00. PHILIPS PORTABLE 2000 system, 2 boxes (Tuner and recorder) with leather carry case. Has 10-pin camera socket, top third of picture has noise on vision/folded picture. £25.00. SHARP PORTABLE VHS-C has 10-pin camera socket, good working order with spare tapes, £50.00. REVOX VALVE TAPE RECORDER (audio) reel to reel, old heavy and working offers around £70.00 (I have a few other reel to reels too). And finally a very interesting device, 1947 bakelite (brown) valve magnetic disc (audio) recorder/player (by Recordon) with all leads and microphone, headphone and about 20 discs. Note that these dIscs are about 10inch diameter and are magnetic coated paper! All original playback is ok, but slight fault in circuit on record. Don't know the history, but think it may be an early dictation machine? Given its age and rarity it must be worth £100.00. John Smith, TEL: 051-426 0086

TEKRONIX 511 dual beam storage scope, Y amp modules, differential amp (5A22N) and differential comparator (5A13N), dual timebase (5812N), full manual set £150.00. TEKRONIX storage display type 603, no amplifiers or timebase but a good quality storage screen, suitable for slow-scan £50.00. MARCONI VHF transmitter (153MHz) 2x 4CX250B in final stage, 19" rack mount, needs work £50.00. LENSES 16mm f1.6 fixed iris 'C' mount £5.00. APPLE II Europlus computer, dual disc drives, with manuals £15.00. COMMODORE CBM 4032 computer integral 12" B/W monitor £20.00. 2x9" monochrome monitors mounted in 19" rack unit, tubes showing signs of age £20.00 each. DATA GENERAL dumb terminal 6502 £10.00. 2x flight cases, top opening 12"x18"x32" approx. £20.00 each. EMI Camera channel, all valve, collectors item, was working when last used (8 years ago) nominal sum if it goes to a good home. DECCA CTV25 large hybrid dual standard colour set, almost working, free to anyone who wants it. Prices negotiable on all the above. I can deliver within the Bristol area. M. Cooper G8KGH, 35 Cote Lea Park, Westbury-on-Trym, Bristol, BS9 4AH. TEL: 0272-620510

TWO TEKRONIX double beam scopes £25.00 each. Electron multipliers Marconi 9734A with bases £1.00 each. Seimens nixie tubes 2M124D £0.50 each. Mains transformer 24V, 125A, OR 12V, 250A OR 6V, 500A £35.00 Dave StGeorge G4IOY, QTHR, TEL: 081-455 0540

40 foot, Lightweight Tower, wind-up/Crankover by Strumech. Ideal for ground-mount, trailer or pickup. Unused, new cost over £400. First sensible offer collects. Bryan Dandy G4YPB, 8 Woodbury Park, Holt Heath, Worcester, WR6 6NT. TEL: 01905-620616

MONOCHROME MONITORS, 2x9" green screen composite and 4x9" white screen composite, various ages, all were working ok. £10.00 each, Or £50.00 for all including free delivery within 50 miles. WHITE MONITOR 5" - Includes built in CQTV video level indicator £25.00 CANON VR30 (Panasonic NV180 clone) portable VHS recorder, with 12volt battery, car lead, carry case and PSU/charger £225.00 PANASONIC WV-BL200 monochrome CCD camera with 6mm f1.4 auto iris lens and technical manual, genlockable and VERY low light levels £150.00 David Wilson, 7 Massie Close, Milton Keynes, Bucks., MK15 9HG TEL: 01908-665106

CONNEXIONS manual tune satellite RX, all polariser controls, man. tune audio, bandwidth filter, gain control and signal meter £45.00 VIDEOCRYPT decoder, working order, as new £50.00 65cms MASPRO dish with matching horn, pole mount, no rust £20.00 90cms DISH, pole mount, no rust £35.00 BANDWIDTH filter, 'Satview' brand, variable control with gain control, as new £50.00 All plus p&p at cost, please phone for full details. Oliver Rogers, Lower Polgrain, St. Wenn, Bodmin, Cornwall, PL30 5PS TEL: 01637-880404

4 MELFORD 12" grade one BW mons, 3 Philips 12" green screen with audio monitors, Grass Valley 3259 SC/H phase meter, Probel 8x16 video matrix, Teletext data bridge, 2 four wire switchers, Leitch SPG c/o unit with remote control panel, 24volt PSU's, Tektronix 521A vectorscope, Philips LDK5 base station spares, Schneider 30:1 zoom lens for Philips LDK5 cameras, Link 221 DA's, Link 700 series intercom rack unit - with manual. Please phone for details, Simon Gough TEL: 01234-852789

WANTED: Camera cable for Hitachi FP/SK series cameras, TV36 camera cable, LS & microphone panels for Marconi Mk V111 series cues & comms system. Please telephone Simon Gough on 01234-852789

WANTED: Info or circuit for JVC TK60 camera. Dave StGeorge G4IOY, QTHR, TEL: 081 455 0540

WANTED: C-mount camera lenses by Dallmeyer and Taylor Hobson without focussing mount (i.e. iris is the only adjustment). Almost certainly these will be black and marked TV or TELEVISION LENS. Happy to pay premium price for the

right article. My thanks to all who have already helped with my specialised requirements! Also a Reslo ribbon microphone. Andy Emmerson G8PTH, 71 Falcutt Way, Northampton, NN2 8PH. 01604- 844130.

WANTED: Philips N1500 VCR for spares. Threading drive must be ok. G3VXZ QTHR, Maidenhead 01628- 27350.

WANTED: Any information (esp. circuit diagram) to enable me to fix my Fortop 24cms converter, model TVC 1300. Jeremy Mills G4NOY, 16 The Planters, Greasby, Wirral, L49 2QY. TEL: 051-678 1035. Any costs refunded.

WANTED: Early pocket and portable micro TV, especially made by Sinclair, Sony, Standard, Sanyo, Sharp, Nivico, etc. Non workers preferred (if price is right). Please TEL/FAX: 01273- 410749.

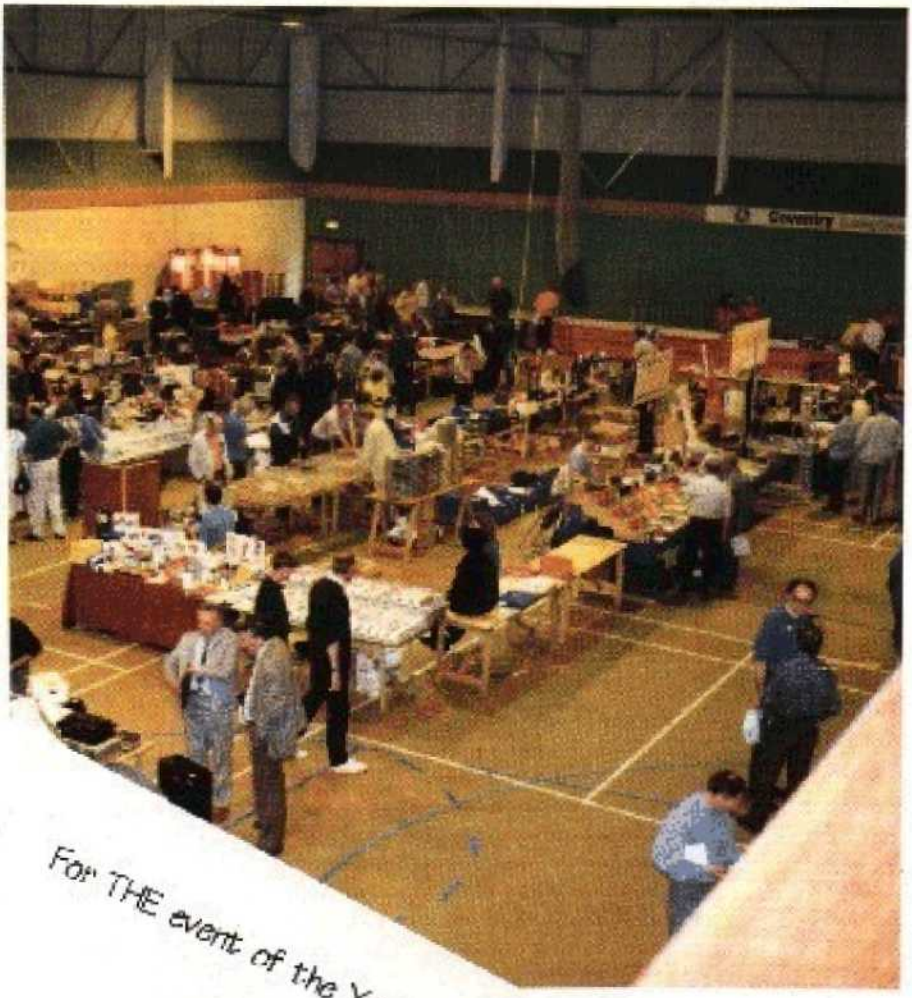
WANTED: Your old long persistance SSTV monitor, 5" or 7" magnetic deflection preferred - WHY? ALSO WANTED: Replacement CRT tube type CV5164 19 CDD 43/21 Mullard & CV4104. John Beech G8SEQ, Phone or Fax 0203-617367, or contact G8SEQ@GB7COV.

WANTED: Service manual or alignment information, circuits etc. for an Advance Storage Scope OS2200A main frame, particularly relating to the storage circuitry and tube connections. Also circuit diagram for the 'B' Timebase of OS2005X plug-in. (Should be section 6, figure 4, page 39 of service manual but missing from my copy). Malcolm Perry G8AKX, 216 Marlpool Lane, Kidderminster, WORCS. DY11 5DL.

WANTED: Philips televisions: 383 (9" table model), 2405 (9" table model), 2407 (9" console model), 2412 (9" console model with radio), 2415 (12" console model with radio) and projection TV with radio. Pre-war CRT of EMI (Marconi or HMV); pre-war television; cabinet for Ekco TA201; pre-war television brochures. I can collect. Does anyone know of the existence of a Philips experimental TV (with radio) type SG860A (c. 1947-1948)? Thank you for your kind help. Jac Janssen PE1OCE, HogeHam 117D, NL-5104 JD DONGEN, The Netherlands. TEL: 010 31 1623 18158. FAX: 010 31 13 624664 (Please mark fax's as 'PRIVATE').

OFFERRED: Help with documentation of Dutch(mainly Philips) TV's from 1930s to approx. 1960; various TV-sets of 40's and 50's. Jac Janssen PE1OCE.

Are You Ready ?



The BATC 1995 Rally - Will you be there ?