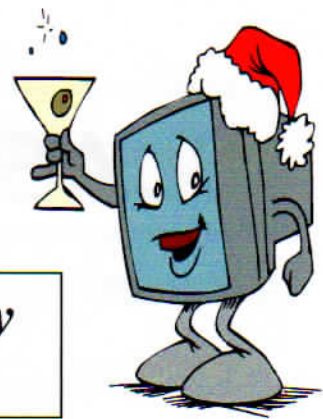


P5 December 2000



Merry Christmas and happy 15th anniversary to the Severnside Television Group



Roger - GW4UGI



Viv
G1IXE



Ian - G6TVJ



Pat - STG Secretary

As Christmas draws near, may I take this opportunity to wish you and your family a Merry Christmas and a Happy New Year.

This years Christmas Social Evening will take place at Elm Park Parish Pavilion, Elm Park Filton On Sat 9th December at 7.30 PM.

You are welcome to bring your family and friends to enjoy the festivities.

A small buffet will be provided by members of the committee, but members are requested to bring along some refreshments to help supplement this. We do not wish to use any of our hard earned funds that we need for additional projects which are in progress. Raffle tickets will be on sale for £1.00 each and the draw will take place at 9.30 P.M.

The proceeds of the raffle will be used to further improve the facilities on the repeaters.

GB3ZZ is regarded in Amateur circles, as one of the most advanced ATV repeaters. It will be on display on the Saturday evening.

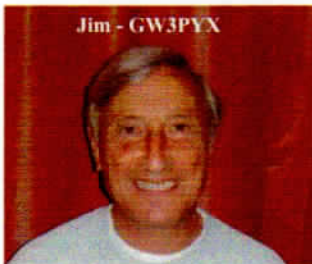
Once again, a BIG THANK YOU to all of you who have helped and supported the Severnside Television Group during the past year. We look forward to seeing as many of you as possible at the Social Evening.

All the best for the New Year

Viv G1IXE.



Ivor - G1IXF



Jim - GW3PYX



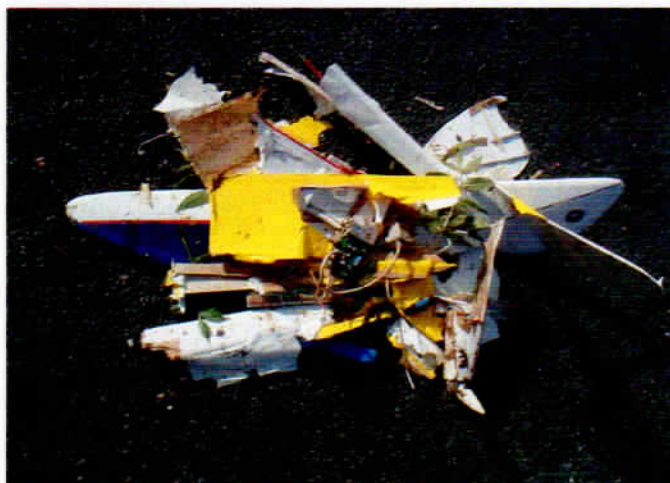
Brian - GW6BWX



Jackie - STG Treasurer



Dave - GW0ROL



ATV Air Disaster!

The photograph to the right shows Adrian's (G4UVZ) model aircraft that made a rather premature landing while sending ATV pictures. Although the fuselage looks very crumpled, Adrian reckons it can be put back in flying order again. The on-board ATV transmitter is one of G1MFG's 23cm modules. Adrian comments on the ruggedness of the module which when given time to dry out, started working again.

Adrian is one of the more distant users of GB3ZZ. His QTH is near Taunton and despite the distance and terrain his signal has to cover, he puts a respectable colour signal through the repeater.

BLAST FROM THE PAST

ROGER GW4UGI

This is an overview of the group taken from old newsletter's / P5 given to me by Viv.

October Newsletter 1986

This being the oldest newsletter found in the file:

The chairman at this time being Roger G4ZQF. He reported that there were approximately 30 paid up members and the group's first project was underway.

The project being 23cm FM television repeater for Bristol and surrounding areas. At this time full technical details approved by the RSGB repeater management group had been passed on to the DTI for issue of licence.

Call sign applied for **GB3ZZ**.

Chief engineer Shaun G8VPG had construction of the repeater well on the way, **Receiver** a gas fet pre-amp and a Wood and Douglas 1250dc. Video If and sound boards by Viv and Ivor.

Transmitter the main transmitter module on order from Wood and Douglas, and construction of the three stage amplifier was well underway. What no Mitsubishi blocks in 1986?

Test card generator and logic, Built but needs debugging these bugs seem to get everywhere

Aerial and filters The aerial an alford slot type now available and ready for site test, and the filter's were in the design stage

News Letter May 1987

The first newsletter called **P5** a resurrected title, P5 used to be a column in the Q5 newsletter of the north Bristol A.R.C. written by Shaun (G8VPG) and its contents being solely on Television.

The big news at this time was the arrival of the **GB3ZZ** licence on the 2nd May 1987, Just in time to announce it at the B.A.T.C. convention at Crick? Do you remember this as it is before my time in ATV.

May 19 the repeater will be in engineering trials using its own callsign.

June 2 Official switch on by the chairman of Filton Parish Council at 8.30 p.m. at Elm Park Pavilion (THE REPEATER SITE) Were you at the cheese and wine reception? A great achievement a licensed ATV Repeater in less than 15 months operating on 1249 MHz input and 1318.5 MHz output with an output of about 13Watt's ERP.

Not forgetting the other club project 23/24 cm ATV beam 18 Elements and a gain of approximately 10 dB, and back in 1987 still only cost £14.75 inc. carriage, Even in the year 2000 the beam still only cost's £15.00 plus £4.00 P&P.

G6TVJ Circuit Notebook: Simple Video Amps

Here is a design for a simple video amplifier, which can be used for a variety of purposes including boosting the output from a satellite receiver. The amplifier may be built from a video operational amplifier IC such as a EL2020 or AD810, other devices could be used provided that they are intended for video operation. Versions of the above op-amps are also available as multiple units inside one IC package.

Fig 1 shows a basic video amplifier, this circuit works on a single supply rail of anything from 6 to 15V. C1 couples the video signal into the IC and blocks a DC current put on by a bias network. R1 and R2 set the DC operating point of the amp at half the supply rails, they also set the AC input impedance at around 1K. R3 and VR1 from a negative feedback network around the amp, which is connected to the inverting input of the IC. VR1 can be used to control the gain up to about 10 times which provides an end to end terminated gain of about 14 dB. Reducing VR1 to zero will provide unity gain (-6 terminated) but caution should be exercised as some IC s may oscillate at unity gain. C2 blocks the DC potential, which is present on the feedback network. C5 AC couples (removes the half supply DC level) the output and R4 sets the output impedance at the usual 75R. HF decoupling is provided by C3 and LF decoupling by C4.

Fig 2 Shows an improved version of the amplifier which runs on split supply rails. By using split supply rails (Separate negative and positive rails with respect to ground) most of the large electrolytics can be dispensed with. This arrangement also has a subtle advantage in the fact the video signal is not passed through any capacitors which create a low frequency distortion effect.

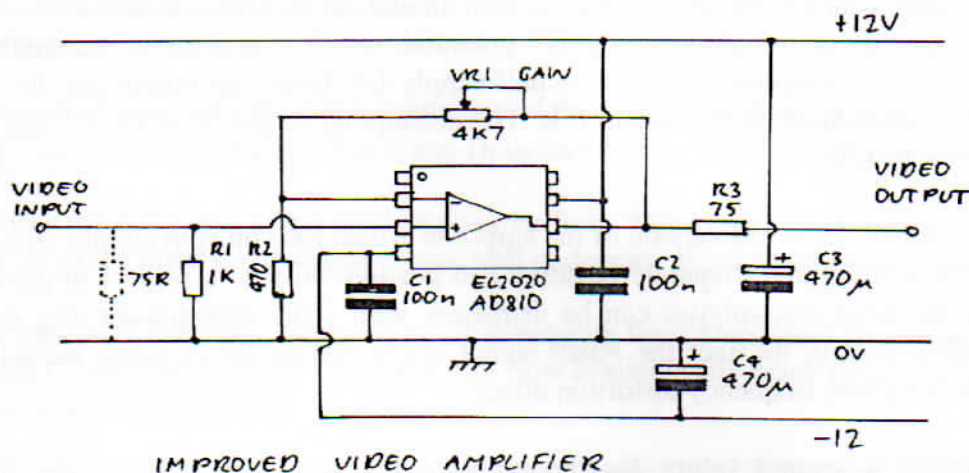
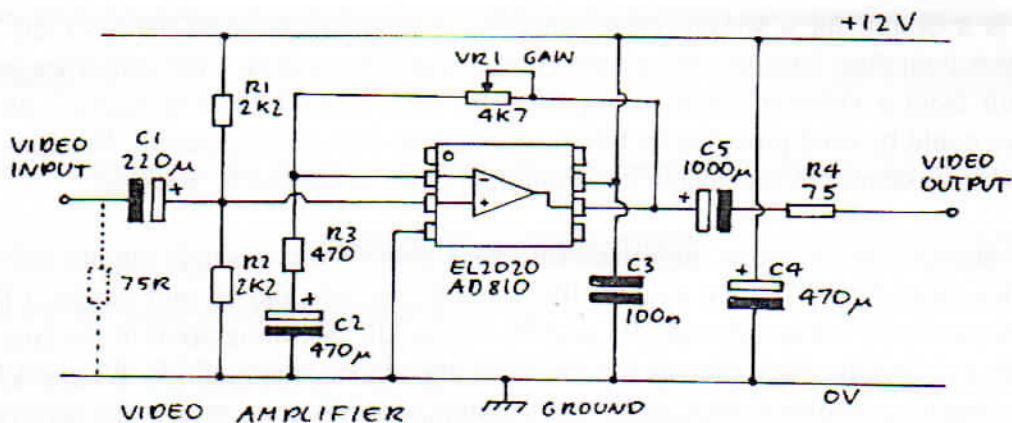
R1 provides a ground return for the input to the amplifier and sets the input impedance at 1K. R2 and VR1 set the amplifier gain in the same way as the first circuit. R3 sets the output at 75R and the other capacitors provide decoupling.

Both amplifiers may have their inputs terminated with a 75R resistor in the positions indicated. Terminating the input is not necessary unless the amplifier is fed from a long length of 75R coaxial video cable. Leaving the termination off will provide some extra gain of 6dB.

If dual supplies are available the second amplifier can be recommended, split rails may in some cases be inconvenient but a negative rail may often be provided by a small low power DC-DC converter which can be purchased as a small miniature module. The ICL7660 or H7662 capacitor inverters will do this job provided they are well decoupled.

Construction of video amplifiers should be treated in the same way as RF amplifiers, ideally the circuitry should be built on a ground plane or at least ground returns should be kept short and plentiful. It should work on strip board if all the ground connections are kept short and all unused tracks are also grounded.

G6TVJ CIRCUIT NOTE BOOK



September International Contest 2000

Results From Logs Sent In:

Place	Call Sign	Locator	QSO	Score	QSO	Score	QSO	Score	Total Score
			24cm	24cm	13cm	13cm	3cm	3cm	
1	G7ATV/P	IO81QG	14	2336	4	1540	7	2050	5926
2	G7SEZ/P	IO91GI	13	2952	4	1485	2	580	5017
3	G7MFO/P	IO93PV	11	1974	1	375	2	400	2749
4	G4LDR	IO91EC	4	324			1	150	474
5	G3RMX	IO93UV	2	128			1	50	178

Final placings:

	23cm	13cm	3cm	Overall
1st	G7SEZ/P	G7ATV/P	G7ATV/P	G7ATV/P
2nd	G7ATV/P	G7SEZ/P	G7SEZ/P	G7SEZ/P

Thanks to all who made the event such a success.

International TV Contest 9th and 10th September 2000

In the months prior to the contest both Ivor G1IXF and Ken G4BVK undertook all the necessary modifications to the equipment, much of which had yet to be used in anger. The final week before the contest was spent confirming arrangements, ensuring that the tower and caravan could be towed safely on to the site without upsetting the farmer's cows, and that we wouldn't be disturbed by a field full of heifers as the day of the contest approached.

We were blessed with a windless, warm evening on the Friday before the contest; perfect conditions for Ivor, Ken and his XYL Pat and Viv G1IXE to level the tower and fit the head unit. The new antenna system was rigged the following morning and proved to be much more manageable and quicker to erect than the old one. Ken's son Mike joined the team just in time to help wind the tower aloft. The antennas were complete by 13:00, and after a quick pub lunch the remainder of the afternoon was spent checking that everything was functioning as it should. We worked a few stations just before the start of the contest, and all seemed well.

As the contest got under way, we noticed that Ivor's 2m rig seemed to be a little deaf – in fact, very deaf, some 30db down. We changed it for Ken's Multi-700EX mobile rig, unfortunately not the most sensitive of receivers. It was somewhat ironic that with all the high-tech kit for the other bands, it was the 2m that caused us problems. Activity was low, but having said that we all felt it had been a highly successful weekend and certainly enormous fun.

<u>Band</u>	<u>Number of contacts</u>	<u>Best DX</u>	<u>Total Points</u>
23cm	14	G7SEZ/P 82 KM	2336
13cm	4	G7SEZ/P 82 KM	1540
3cm	7	G7SEZ/P 82 KM	2050

Our position in the UK section of the contest has now been confirmed. The group has achieved first place on both 13cm, 3cm bands and second on 23cm.



ATV activity website and email reflector

Noel G8GTZ writes:

As most of you are aware I have set up a web page aimed at providing a reference source of ATV related links and material on the internet. See <http://www.qsl.net/g8gtz> and go to *the ATV reference page* for further details.

The aim behind this was to try to encourage ATV activity and construction. However, this web site on its own does not really encourage the interchange of ideas, and I still felt that a way of letting others co-ordinate their activities would be useful. Therefore, I have set up an *email reflector* or link, where we can have discussion on ATV subjects, set up skeds and even ask for help! A lot of ATV people like to go out portable during the year (well, I do!) but are frustrated because they have no way of telling distant stations when and where they will be operating. If we all knew others were going out, we might even go out ourselves, or at least make sure we were active from home!

Please go and have a look at the *ATV Activity* page on my web site, describing the idea in more detail and then subscribe to the list (I recommend the digest!). Then most importantly, contribute, tell your friends, and use it: without your participation it won't work.

As with the Amateur frequency allocations, it's a case of "*use it or lose it!*"

Regards, Noel - G8GTZ

About those Questionnaires....

In the last issue there was a questionnaire, asking what you would like to see in future P5s. A big "thank you" to the six of you who replied. If you still have your copy, please take the time to complete and return it. It isn't too late. The reason P5 contains the articles you see is because they are the articles sent in for publication. Wherever possible, the content is steered in the direction of demand but when submissions are scarce, whatever is available has to be published. To be honest, it can be very difficult to find enough material to make up P5 so your articles are always very welcome. There is no need to send grammatically perfect text or super quality photographs, the editor takes care of tidying things up and in most cases photographs end up as low resolution black and white photocopies anyway. Almost all kinds of presentation can be handled, even handwritten text and hand drawn diagrams. How about sending a photograph of yourself or your shack and adding a few words about yourself. If you send photographs, they can be scanned and returned to you within a few days. Of course, a self addressed and stamped envelope to send them back would be appreciated, as funds are limited.

For interest, the replies so far average out at:

Editorial: 23

ATV Tutorials: 22

Construction & Projects: 29

Contest news: 24

Letters page: 25

These are out of a maximum of 30. Suggestions for other types of content seem to favour a "for sale / wanted" column and the Committee have agreed to this so we await your adverts for the next issues.

Millennium Activity Contest

Sadly, to date there have been only two entries to this event, but there has been a titanic struggle between Phil and me though most of the summer, with the lead switching between us several times. Phil even went to the trouble of travelling all the way up to Winter Hill a couple of times, and operating in the pouring rain, to take advantage of the plentiful ATV activity in the Manchester and Merseyside areas.

No entries have been received from fixed stations, and I'm still waiting to see if Noel G8GTZ submits a score for his cross-channel link-up with Holland on 3cm, but meanwhile here is the latest table:

Latest scores (as at 1st November)						
Entrant	Sessions	Sites	Bands	Contacts	Total distance (km)	Points
G0WJR/P	9	7	3	34	1544	385386
G1HIA/P	6	4	3	44	1405	126505

Final adjudication will be made in early December, and the Trophy will be awarded at the Christmas Party.

I've reproduced here details of all our scoring contacts, to give an idea the distances we've worked, as well as the fun we've been having in the event.

STG Millennium Trophy Contest				Portable section				G0WJR/P		
Session	Date	from location	Station worked	at location	Distance (km)	Frequency (MHz)	Power (mW)	Power (dBm)	Picture identified	Points
1	26th Mar		G1HIA	Bristol	11	10315	10	10	Farm machinery	11347
			G8TVJ	Bristol	15	10315	10	10	Dundry Church	15473
2	9th Apr		G1HIA	Bristol	11	2330	2	3	Banana skin	8514
			G4BVK	Bristol	11	2330	2	3	M1EOL in front of tree	8514
3	24th Apr	Winter Hill (Bolton)	G7WFS	Runcorn	32	1250		29	green jumper	1379
			G3SMU	Bolton	1	1250		29	Burndept microphone	43
			G7IZX	Runcorn	32	1250		29	tree	1379
			G7ROF	Liverpool	30	1250		41	Reebok Stadium	915
			G7LLQ	Liverpool	36	1250		41	Jodrell Bank dish	1098
			G8GTI	Liverpool	29	1250		41	head through car window	884
			G7OAR	Telford	102	1250		41	Public Footpath sign	3110
			G8FHD	Liverpool	28	1250		41	Bolton Town Hall	854
			M1EEV	Birkenhead	37	1250		41	Jaybeam aerial	1128
			MW0ARV	Wrexham	73	1250		41	callsign caption	2226
4	1st May	Tog Hill	G1HIA	Bristol	15	10315	10	10	Rachel's blue wellies	15473
			G1HIA	Bristol	15	1260		29	Battenberg cake	652
			GW8BVI	Caldicot	30	1260		29	red toolbox	1303
			G0SYF	Wotton-u-Edge	22	1260		41	ice-cream van	676
5	8th July	Stinchcombe (Dursley)	G7ATV/P	Mendip	48	1250		29	homemade loop yagi	2069
			G7ATV/P	Mendip	48	2330	3	5	nearby golfer	23441
6	9th July	Chew Hill	G7ATV/P	Mendip	12	10315	10	10	Soifan head and dish	12378
7	5th Aug	Charterhouse (Mendips)	G7JTT/P	Walbury Hill	88	1250		30	John's talking fish	3667
			G8GTZ/P	Walbury Hill	88	1250		30	red microwave dish	3667
			G7JTT/P	Walbury Hill	88	2330		28	Banana	7323
			G8GTZ/P	Walbury Hill	88	2330		28	loop yagi aerial	7323
			G7JTT/P	Walbury Hill	88	10315	10	10	fist microphone	90772
			G8GTZ/P	Walbury Hill	88	10315	10	10	John's red car	90772
			G8GTZ/P	nr. Basingstoke	112	1250		41	Union flag attached to dish	3415
			G8GTZ/P	nr. Basingstoke	112	2330		39	Ross's tee-shirt	6691
8	28th Aug	Cabot Tower (Bristol)	G1HIA	Bristol	4	2330		7	Clifton Suspension Bridge	1331
			G4BVK	Bristol	6	2330		7	tethered gas balloon	1997
9	10th Sep	Stinchcombe (Dursley)	G7ATV/P	Mendip	48	1250		29	The Prisoner tee-shirt	2069
			G7ATV/P	Mendip	48	2330		28	Ordnance Survey map	3994
			G7ATV/P	Mendip	48	10315	10	10	Nibley monument	49512
Total points (after 9 sessions)										385386

STG Millennium Trophy Contest			Portable section					G1HIA/P		
Session	Date	from location	Station worked	at location	Distance (km)	Frequency (MHz)	Power (mW)	Power (dBm)	Picture identified	Points
1	20th May	Winter Hill (Bolton)	G2ECYS	Liverpool	32	1250	25000	44	4x4 vehicle	910
			G7RYW	Kirkby	28	1250	25000	44	Phil in hat	796
			G7WFS	Runcorn	32	1250	25000	44	puddles in car	910
			G7IZX	Runcorn	32	1250	25000	44	Phil & Ross	910
			MW0ARV	Wrexham	73	1250	25000	44	Phil dancing in rain	2075
2	23rd May	Winter Hill	G3SMU	Bolton	1	1250	25000	44	car seat	28
			G1GFK	Bolton	1	1250	25000	44	sun roof	28
			G6OXW	Stockport	33	1250	800	29	amplifier	1421
			G3UVR	Heswall	48	2330	800	29	Tonna antenna	3852
			G6OXW	Stockport	33	2330	800	29	horses	2649
			G8AFC	Flixton	22	2330	800	29	Kate	1766
			G8GHO	Cheadle	35	2330	800	29	bedraggled hair	2809
			G3SMU	Bolton	1	2330	800	29	view of Horwich	80
			G1GFK	Bolton	1	2330	800	29	mess inside car	80
			3	8th July	Waibury Hill (Newbury)	G7BVK	Andover	17	1250	11000
G7ATV/P	Mendip	83				1250	22000	43	mast	2389
G7JTT	Southampton	47				1250	22000	43	amplifier	1353
<i>SWL report via G7JTT</i>	Southampton	47				1250	22000	43	Phil's coat collar turned up	1353
M1DBB	Chandler's Ford	42				1250	22000	43	power meter	1209
4	9th July	Chew Hill (Bristol)	G8GTZ	Basingstoke	26	1250	22000	43	Phil's face	748
			G7ATV/P	Mendip	12	10315	50	17	"man in hat waving a wok"	7286
5	12th July	Winter Hill	G7ATV/P	Mendip	12	2330	800	29	Ross's tongue	963
			G1ZKC	Liverpool	34	1250	11000	40	glasses	1052
			G0OIU	Liverpool	36	1250	11000	40	glove	1113
			G7LLQ	Liverpool	36	1250	11000	40	Robinson's juice bottle	1113
			2E1CYS	Liverpool	32	1250	11000	40	microphone	990
			G3SMU	Bolton	1	1250	11000	40	handheld transceiver	31
			G1GFK	Bolton	1	1250	11000	40	pen	31
			G3SMU	Bolton	1	2330	800	29	map	80
			G1GFK	Bolton	1	2330	800	29	Phil's face	80
			G3UVR	Heswall	48	2330	800	29	Maplin multimeter	3852
			G3UVR	Heswall	48	10315	50	17	white car down hill	29142
			G7WFS	Runcorn	32	1250	11000	40	camera stand	990
			G7WFS	Runcorn	32	10315	50	17	binoculars	19428
			G0RLF	Runcorn	34	1250	11000	40	rubber duck antenna	1052
			G0RLF	Runcorn	34	10315	50	17	spanner	20643
			G7IZX	Runcorn	32	1250	11000	40	coke can	990
			G4ZJY	Telford	102	1250	11000	40	red tape (not metaphorical)	3155
			2E1WAN	Runcorn	34	1250	11000	40	wrench	1052
G8FHD	Liverpool	28	1250	11000	40	aerials	866			
6	18th July	Quantock Hill	G3UVR	Heswall	48	1250	11000	40	pink shirt	1485
			G4UVZ	Taunton	37	1250	800	29	map	1593
			GW4UGI	Penarth	37	1250	18000	43	binoculars	1087
			G4BVK	Bristol	59	1250	800	29	bottle	2540
Total points (after 6 sessions)									126505	

Picture "highlights"



G1HIA/P in the rain again on Winter Hill

Chew Hill: "man in hat waving a wok"

Thanks for joining in, Phil, and being a great sport!

Modifications to the G1MFG Receiver for Continuous Tuning

The MFG receiver is a very sensitive device but has a couple of shortcomings. One of the problems is difficulty involved in changing frequency. Fingers have to be very nimble to switch from 1249 to 1316 and back again each over! For this reason I decided to try to enable continuous tuning also useful when resolving weak signals which may not be exactly on frequency.

I don't pretend to fully understand the workings of the receiver because I don't understand the ins and outs of PICs.....the plug in chip which in conjunction with the dil switches sets the frequency. However, a look in the metal box revealed a chip of similar numbering to the Solent synthesizer. After a bit of prodding around I established that the local oscillator was a PLL controlled by the aforesaid chip. The control voltage to the VCO is also used to track the tuning on the front end.

I decided therefore that I was in with a chance if the VCO was sufficiently stable to free run. So now the fix. All the mods take place in the metal box, so we need to define what is where. There are 4 separate sections in the box, if we start with the section with the SMA connector, this is the front end. Moving along the "long" side of the box the next smaller chamber is the VCO where we will do all the mods. The next small chamber is the synthesizer control and finally moving anti clockwise is IF demodulator etc.

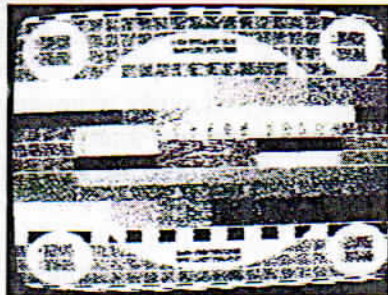
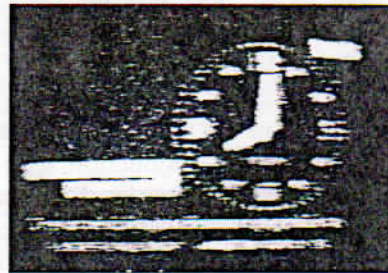
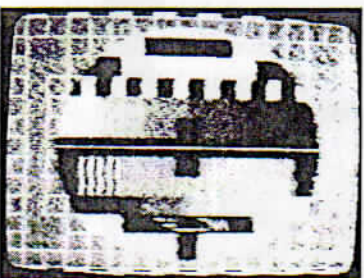
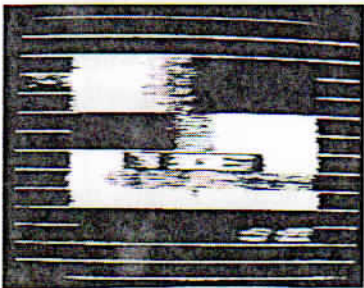
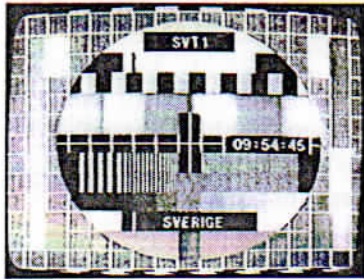
Concentrating on the VCO chamber, there are 2 printed inductors here, you need to identify the one which has 2 diodes ...one at each end. The dc feed to these diodes is via a 68K (683) this needs to be removed from the board. Along the outside of the board (on the opposite side to the printed inductors) is a thin track which feeds the previously removed 683 resistor. Cut this track half way along, then scrape off the lacquer and solder two 4 inch lengths of thin multistrand wire to each side of the track (these will be used to connect onto the tuning control). Nearly there now! Connect a miniature 683 resistor, to replace the one previously removed, but this time connect the feed end to the supply end in the corner of the box. At this stage, if you connected the two 4 inch wires together you should have a fully operational system as before controlled by the dil switches. Route the two cables out of the tin box via the synth IC chamber and onto two of the "spare" unused pins coming off the main pcb NB make sure that they do not contact any of the pins going into the tin box!! Identify the wire which you have connected to the 683 resistor feed to the VCO this is now connected to the center pole of a spco switch. The second wire connected to either of the remaining switch contacts. For the tuning control, you need to create a potential divider fed from the 9-volt regulator. I happened to have a 10k multiturn and used 22k above and below to provide a voltage of 5 volts +or- a volt. The exact voltage may vary depending on your VCO. The slider voltage is now connected to the switch. If all is well, you now have an option of either fixed or continuous tuning.

I have not investigated the extreme ranges of tuning but guess that it would cover the normal Sat rx range so could be useful with an LNB for 3cms. You do need a good pair of eyes and a steady hand to do this job but I think that it is well worthwhile. My unit stabilizes within about 90 secs.

Adrian
G4UVZ

Stephen Michie. G7KXD

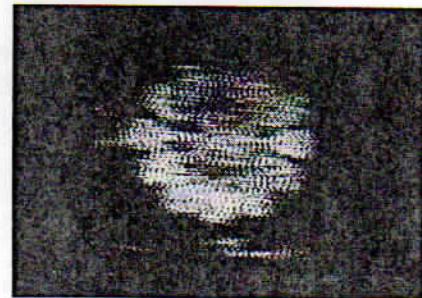
TV DX News



Here are more off-screen photographs from our TV DX enthusiast Stephen Michie, G7KXD. He states "This has been a record spe season some rare stations inc Jordan JTV1 E3 Syria SYR2 E2/4 Romania TVR2 Bucharest R2 TX Other TVR1 TXs are a lot more common" He reports that the spe season was slow starting during May but by the end of the season there had been a record number of openings.

The photographs show (top to bottom):

- SVT1 (June 9th) – note smaller lettering.
- YLE TV1 (ch E3) Finland.
- TVR Bucharest, Romania
- FUBK.
- TVR2 Bucharest R2.
- EESTI TV Tallinn.
- EESTI TV Caption.
- TVS2 Albania.
- PTP Russia.
- G204 Test Card KNYB, Kiev Ukraine.
- YT-1 Logo, Ukraine.
- BT1 Belarus, News ident.
- SYR2 Syria.



P5 is Edited by Brian Kelly, GW6BWX (betwixtbbs@cs.com) and published by Viv Green G1IXE (v.green@freeuk.com). Articles for publication and applications for new editor to : P5 Editor, 12 Cotswold Way, Risca, Gwent. NP11 6QT. © STG 2000