HYPER

BULLETIN D'INFORMATIONS
DES RADIOAMATEURS ACTIFS
EN HYPERFREQUENCES

Issue 143 December 2008

THANK YOU to all those who were willing to give a little of their time to contribute to the sections of **OUR HYPER newsletter.**

Thanks again and please let the “others” think about participating!
Happy Holidays to all

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This thing is driving me crazy! It's our Jean Marie F6ETU of course!

SUMMARY Summary

All HYPER bulletins http://dpmc.unige.ch/hyper/index.html *(by* Patrick F6HYE) or http://f1chf.free.fr/hyper.htm The 2009 HYPER subscription for the full year **€26**
for France €30 for the rest of Europe
(postal order or cash, no Euro check) this in the direction of Jacques GUIBLAIS F6GYJ (see above)

BEACONS:

F5ZPH/56: After restoration, F5ZPH/56/IN87KW in 432.408 MHz was put back in place on Thursday, November 5 by F5SGT. (Info F6ETI).

F1BDB/06: Back on 10000! After a few days of rest, she's coming on strong!!! Thanks to Alex and his team. (Info F6BVA).

GB3VHF: will switch to QRT in December as the site rental price has become too high (Info G0FDZ).

Various News:

G4BAO has compiled articles from the Microwave newsletter and scatterpoint (1999-
2006) called BACKSCATTER and comprising 445 pages. Available from the UK microwave group.

VK3UM sort une nouvelle version de son EME calculator avec bugs corrigés et des améliorations : The latest release of the VK3UM
EME Calculator Ver 5.38 is now available from http://sm2cew.com/download.htm and
http://www.ve1alq.com/vk3um/ Significant additions and improvements have been added to this
release that include in part, - Selectable Dish Feed Types (6 in total) that are linked to user f/D and directly calculate the values of spillover and efficiency.

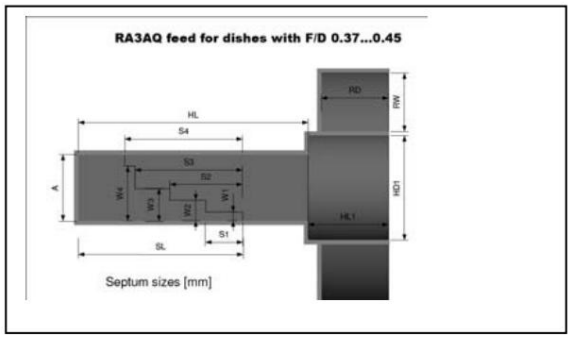
- Linear / circular polarisation correction calculations implemented.
- Moon and Sun aperture / beam fill beam correction calculations refined. (applicable to large antennae).

- Real time Source (Quiet and Noise) position Screen added with improved calculation accuracy of Moon and Sun positions.
- additional coaxial types and user Station
data files. - updated Help file which now includes hints where

appropriate.

Relcomm WR28 Switch: In the latest Scatterpoint (Nov/Dec 2008), 2 articles concerning this switch, one resolving a problem sometimes encountered, the other describing a specialized driver/ sequencer.

Feed 23cm septum for dish f/D=0.37> 0.45



New version of the RA3AQ feed, this time using a VE4MA resonator instead of one W2IMU for the other existing version. The usable f/D is therefore lower.
The septum part is square in section http://www.ok1dfc.com/eme/technic/septum/ra3aq-042.pdf ***doc***

24Ghz:

For info see:
http://myweb.tiscali.co.uk/g4nns/24GBits01.html

Softrock 6.2 :
20€ at Inter-technologies and on eBay (from Italy) (tnx F6BSW)

In the next issue....

Adaptation wedge - part 3 (continued and end)
DC/DC conv for F5UAM
Site/azim positioner by F1HDI
Amateur Radio Tale (continued and end) by F9HX

Don't forget no PARTICIPATE

Don't forget to subscribe

The little hands "HYPER"
You wish
Happy Holidays
Lots of gifts
Super health
Lots of projects (articles and traffic)

See you soon

***HEADINGS** by F6HGQ*

CLASSIFIEDS Nothing this month. Not even gifts!

I READ FOR YOU (copy of articles from F6HGQ except for the following magazines:
QST, QEX, VHF Comm. F8NP - SCATTERPOINT F2HI, and for VHF reports, F1VL)

VHF Communications - Autumn 2008 :

-The harmful effects of local oscillator noise - by F9HX - 10 pages A5

-Project: Noise measurement using a spectrum analyzer "Practical project: Noise factor measurements with older spectrum analysers'' - Part 2 - par DG8GB - 15 pages A5

-76GHz sextupler and amplification - by DL9MFV - 4 A5 pages

-GPS-LCD ; an add-on to the GPS Disciplined Oscillator - par S53KS - 6 pages A5

-Attenuators - by DD5FT - 10 A5 pages

-Beacon controller using an ATmega 32 and Bascom - by DJ8ES - 8 A5 pages

QEX September - October 2008 ;

-The Rechargeable Battery " Cycler " - par VE2ZAZ 7 pages A4

-Press- n - Peel Circuits Boards par WA9PYH - 4 pages A4

QST October 2008 :

Sequencer for transceiver control (SHF) by W1GHZ 2 A4 pages

SCATTERPOINT Oct 08

- Construction of a 10GHz ATV station taken from an article in "CQ VHF" , Spring 2009 by W3HMS 4 pages

- A Hyper group has taken an initiative to encourage activity on the 24GHz, namely the supply at OM prices of complementary elements to the DB6NT modules and those of the white boxes. 4 pages Brian G4NNS and Graham G4FSG offer the following articles:

A: WG22 to WG20 adapter, supplied ready to use and tuned ''This is the WG 22 to WG20 adapter with matching screws. This is supplied complete and tuned for my RelCom WG switch. Some final tuning may be needed for yours."

B : Sectiond e guide WG22 avec 2 brides ''WG22 section with 2 flanges. We do not currently stock the parts for these and they are only required if you are using a WG22 antenna and don't have suitable guide yourself. Let me know if there is a demand for this.''

C : Filtre en guide avec 2 SMA, assemblé et accordé sur 20,048GHz ''This is the filter fitted with 2 SMA sockets as required for the Alcatel based system. It is supplied assembled and tuned to 24048MHz. It consists of Item G with blanking plates, 2 SMA sockets and tuning screws. Matching screws are not supplied as they are not needed.''

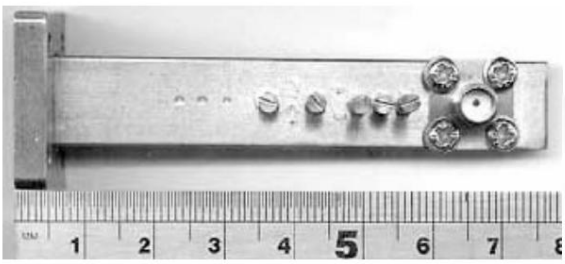
D : Filtre avce une bride à une extremité et une SMA à l'autre. Pret à l'emploi. ''This is the filter with a WG20 flange at one end and SMA socket at the other. This is required for the DB6NT transverter system. It is supplied built and tuned to 24048MHz. It does not include matching screws as these are not normally required. You can add them if required. Flanges for WG20 and WG22 may be difficult to find and the UKuG can help by supplying these.''

E: WG20 Flange F: ''Waveguide 20 Flange.''

A special WG22 flange but to be used on a WG20 guide "A special flange with WG22 fixings but to fit WG20 guide. To make adapters."

G : Bride WG22 ''Waveguide 22 Flange. Note that waveguide holes in these flanges are made slightly under size so may need filing to fit the guide. Copper Guide can usually be pressed into the flange using a vice, G Clamp or press before soldering.''

Some examples:



The costs :

	Members Price	Non Members Price
Item A WG22-WG20 adapter	£ 20.00	£ 25.00
Item B WG22 section with flanges	POA	POA
Item C Filter with 2 x SMA	£ 28.00	£ 33.00
Item D Filter with WG20 Flange and SMA transition	£ 28.00	£ 33.00
Item E WG20 Flange	£ 5.50	£ 6.00
Item F Special flange WG22 fixing holes WG20 Guide hole	£ 5.50	£ 6.00
Item G WG22 flange	£ 5.50	£ 6.00
RelCom WG 22 Switch	£ 37.00	£ 42.00
Postage and Packing any item	£ 2.50	£ 2.50

Orders by email to Brian G4NNS: **brian-coleman@tiscali.co.uk**
and with the title of your email: **"UKuG 24GHz initiative"**

Payment possible by Pay-Pal….

***HEADINGS** by F6HGQ*

continued from page 4

I READ FOR YOU

MICROWAVE ENGINEERING EUROPE Nov08

-Description of a dual mixer from 18 to 40GHz MMIC, IF from 0.1 to 17GHz - 5 pages
-Discussion on the 71-76 and 81-86 GHz bands. Effects of rain on communications, fog and clouds, particles...4 pages

DIVERS

Not particularly hyper, but it's Christmas. F1EHX found a bright site!
In these times of the Avant, where everyone talks about ecology, but where it is about who will have the most beautiful illuminations, I cannot resist the pleasure of showing you a luminous site: It is the site of a receiver, where its manufacturer used light-emitting diodes (LED) each time he had to put a diode. So much so that his receiver while receiving short waves modulates into micrometric waves (light). Who will be able to decode the light signal of this receiver?

http://www.pan-tex.net/usr/r/receivers/
73's to all, Bernard, F1EHX.

An event in Holland in January 2009:

The 2009 edition of the **"Heelweg Microwaves Meeting "** will take place on Saturday, January 17, 2009
Germany, Belgium, Austria. We hope to welcome amateurs from UK 2008 from Switzerland from the United Kingdom and the Netherlands were present in will We are pleased to announce that on site, a large number of measuring positions OZ Finnish Championship 2009!
be available.

The measurement team will consist of the following OMs: PE1BMC, PE1FOD, PA0EHG, PA7JB, PA3EXV, PA3CEG, PE1NFE, PE1FYB, PB0AOK and PA3ACJ

The measuring equipment will be: - Sweeper
18-26 GHz - Spectrum Analyzer 26 GHz. - Spectrum Analyzer 10KHz - 3.8GHz + Tracking generator - Generator 10Khz - 3.3 GHz (AM, FM, CW, puls) - SWR bridge 5MHz - 3.0 GHz (RF-SWR Bridge)
- Spectrum Analyzer with external mixers up to 325 GHz - 20 GHz Vector Network Analyzer (With the possibility of saving on 3.5" floppy disks)

- Tektronix video generator (sin x/x signal) - Tektronix VM700 video analyzer - Barco receiver / video demodulator for 23cm, 13c, 3cm, - NKF video demodulator, baseband input for signal measurements
ATV in baseband. - Spectrum analyzer 3GHz. - Noise meter 24 GHz - Noise meter 47 GHz - Power meter up to 76 GHz - Sweeper for 24 GHz filters There will be other equipment and do not hesitate to send us an
email if you have a specific need.
Some information about the 2008 meeting can be found (a video) **http://www.ch73.net/player.php?id=206&table=1**
Feel free to also visit: DUTCH Microwaves Forum **http://www.pamicrowaves.nl/website/forum/**

We are waiting for you at the HEELWEG 2009 meeting on January 17, 2009
ADDRESS: CAFE ZAL " DE VOS" Halseweg 2 7054 BH WESTENDORP PAYS BAS

If you have any questions or comments, please write to us : **pa7jb@xs4all.nl** or **info@pamicrowaves.nl**
73's, PA3CEG, PA0BAT, PA7JB, PE1FOT.

- A discussion group has just started on the subject: measurements, procedures, instrument capabilities...
http://groups.yahoo.com/group/rftest
''just started this group to discuss RF/Microwave testing, this is mainly a group to discuss testing procedures and feasability of certain instruments for certain tests.''

HAPPY HOLIDAYS

HYPER BEACONS

Code Freq. Dep. Altit.	PAR Angle Antenna	Site	Remarks
F5XBH 1296.739 67 1070 m Clover	4 W omni	JN38PJ	F6BUF
F1XBI 1296.812 68 1278 m Yagi 4 el F1ZTF 1296.816 16 125 m	1 W 135° JN37NX		F1AHO
Clover F5ZRS 1296,825 38 1700 m Dièdre slot F5XBK 1296,847	10 W omni IN95VO		F1MMR - F1IE
m Alford 77 m	0.1 W 240° JN25UD		F5LGJ
	10 W omni	JN18JS	F6ACA
F1XAK 1296.860 13 114 m Slotted guide 200 W omni JN23MM			F1AAM
F2CT/b 1296.864 64 926 m yagi	50 W 20°	IN93HG	F2CT (tests)
F1ZMT 1296.872 72 85 m Panel/tref. 20 W omni JN07CX			F1BJD
FX3UHX 1296.875 29 121 m Quad 8 W 90° IN78UK F1XBC 1296.886 86 230 m Alford slot 25 W omni JN06JG			F6CGJ
F5XAJ 1296.905 60 JN 52 om à fentes m W 315°			F1AFJ
			F2SF – F6HTJ
TK5ZMV 1296.917 2A 635 m yagi		JN41JS-F1AAM-F5BUU-TK5EP	
F5XBF 1296.933 33 90 m 2 x clovers	20W omni IN94UW		F6DBP
F5ZWX 1296.983 83		JN23	F5PVX (project)
F1ZQU 2320.816 16 125 m Slots F5XAC 2320.838 66 2400 m	18 W omni IN95VO		F1MMR-F1IE
Panel F1MOZ/b 2320.840 40 Panel F1ZUM 2320.855 45	10 IN NNE JN12LL		F1VBW - F6HTJ
	30 W N	IN93RS	F1MOZ
	20 W	JN07WV	F1JGP
F5ZVY 2320.864 64 926 m yagi	50 W 20°	IN93HG	F2CT (tests)
F1ZRI 2320.872 72 260 m Loop 14 el F5ZMF 2320.886 86 230 m	80 W 190° IN98WE		F1BJD
Slots	40W omni JN06JG		F5BJL
F6DWG/b 2320.900 60 265 m Slots F6DPH/b 2320.902 77	10 W omni JN09XJ 12 W 180°		F6DWG
Sign	JN18IM F1XAO 5760.060 22 326 m		F6DPH (via planes)
Slotted guide 10 W omni IN88HL F5XBE 5760.820 77 160 m Slotted guide 120 W omni			F1GHB-F1LHC
		JN18JS F5HRY-F6ACA – F1EBN	
F1XBB 5760.845 45 170 m Slotted guide 200 W omni JN07WV			F1JGP-F5UEC
F5ZPR 5760.855 33 83 m Horn 8dB 100 W 130° IN94QT F5ZUO 5760.866 66 1100 m Slotted guide 10 W omni			F6CBC – F5FLN
JN12LL F5ZWY 5760.883 83 780 m Slotted guide 10 W omni JN23XE HB9G 5760.893 1600 m Slotted guide			F6BVA–F6HTJ
40 W omni JN36BK F6DWG 5760.904 60 265 m Slotted guide 80 W omni JN09XJ F6APE/b 5760.949 49			F6BVA
Slotted guide 30 W omni IN97QI			F5JWF
			F6DWG
			F6APE (provisional)
F1ZWJ 5760.951 81,625 m 2 W omni slotted guide JN03RM F1EIT-GQG-DRO-CXO			
F6BVA/b 10368.031 83 Parable	1 KW NO JN33BD		F6BVA (carrier)
F5XBD 10368.072 77 160 m Slotted guide 60 W omni F1XAP 10368.108 22 326 m Slotted		JN18JS F5HRY-F6ACA – F1EBN	
guide 10 W omni IN88HL F5ZPS 10368.282 33 83 m 2x Horns 1/0.5K 130/20° IN94QT F5ELY/b 10368.320 50			F1GHB
10 W SSE IN99IO			F6CBC – F5FLN
Cornet			F5ELY - F6KPL
F1XAU 10368.825 21 13W omni slotted guide JN27IH			F1MPE
F5ZTR 10368.842 60 10W Slotted Guide 70W Omni JN09WI			F6DWG
F1BDB/b 10368.850 06 1200 m Slotted guide	1 W omni JN33KQ F5XAD 10368.860		F1BDB
66 1100 m Slotted guide 2 W omni JN12LL F1XAI 10368.836 45 170 m Slotted guide 10 W omni JN07WT			F2SF – F6HTJ
HB9G 10368.854 1600 m Slotted guide 5 W omni JN36BK F5XAY 10368.900 23 700 m Slotted guide 20 W			F1JGP
omni JN06WD F1NYN-F6DPH (tests)			F5AYE
F5ZWM 10368.919 19 578 m Slotted guide 2 W omni JN05VE			F6DRO-F6ETI
F1URI/b 10368.928 73 1660 m Parabole 1.2m 2200W Mt White JN35FU F1URI (together with F6BSJ)			
F5ZTT 10368.950 81 625 m Slotted guide 10 W omni JN14EB F1ZXJ 10368,957 57 JN39KD F5XBG 10368.994			F6CXO
71 Slotted guide 5 W omni JN26KT 1 KW NE(50°) JN09XJ F6DKW/b 24048.180 78 230 m Slotted guide 15			F1ULQ (tests)
W omni JN18CS			F6FAT
F5ZTS 24048.170 60 265 m Parabola			F6DWG
			F6DKW
F1XAQ 24048.252 22 326 m Slotted guide 0.4 W omni IN88HL F1ZPE 24048.050 45 170 m Slotted guide			F1GHB-F1LHC
3/15 W 360+53° JN07WV			F6DPH-F1JGP

In **bold :** Beacons in service.

Table updated: **Dec. 2008** All changes should be reported to : NB: This list is certainly not up to date. f6htj@amsat.org

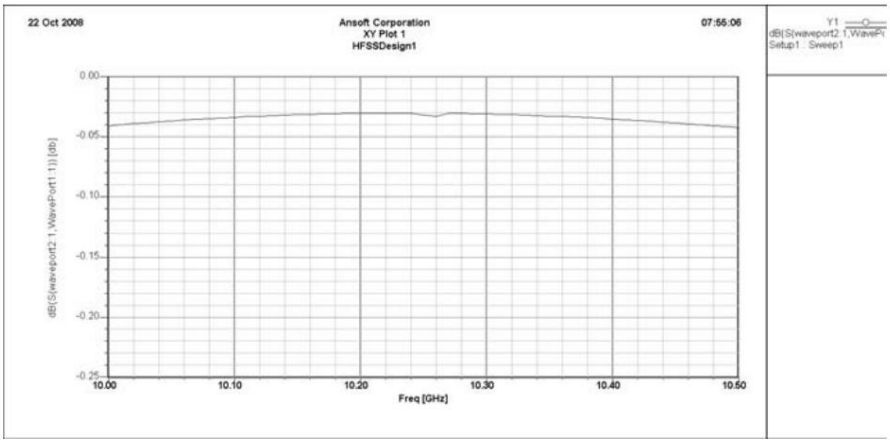
Cornet SQG: F1JRZ adapter shim

(Second part)

F1JRZ, F5JWF,F6DRO

Adaptation is an important feature, provided it is combined with the lowest possible transmission loss for our application. Let's see how it works.

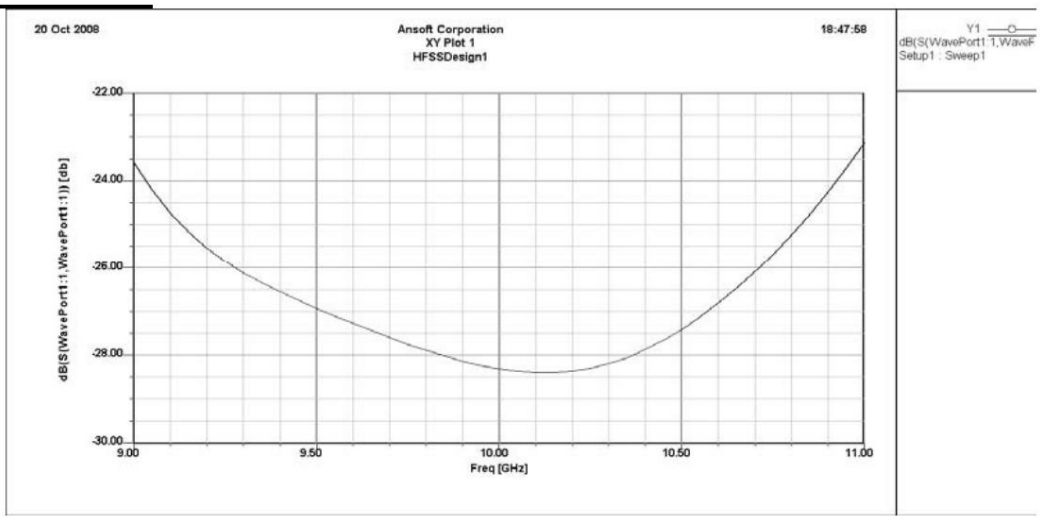
Adapter insertion losses:



Losses are minimal (note the 2 adapter access guides are included), less than 0.1db in simulation (probably a little more in reality)

After studying the adapter under ideal conditions, that is, the circular guide loaded by its characteristic impedance, we will examine what will happen to the horn. First of all, what does the horn give on its own?

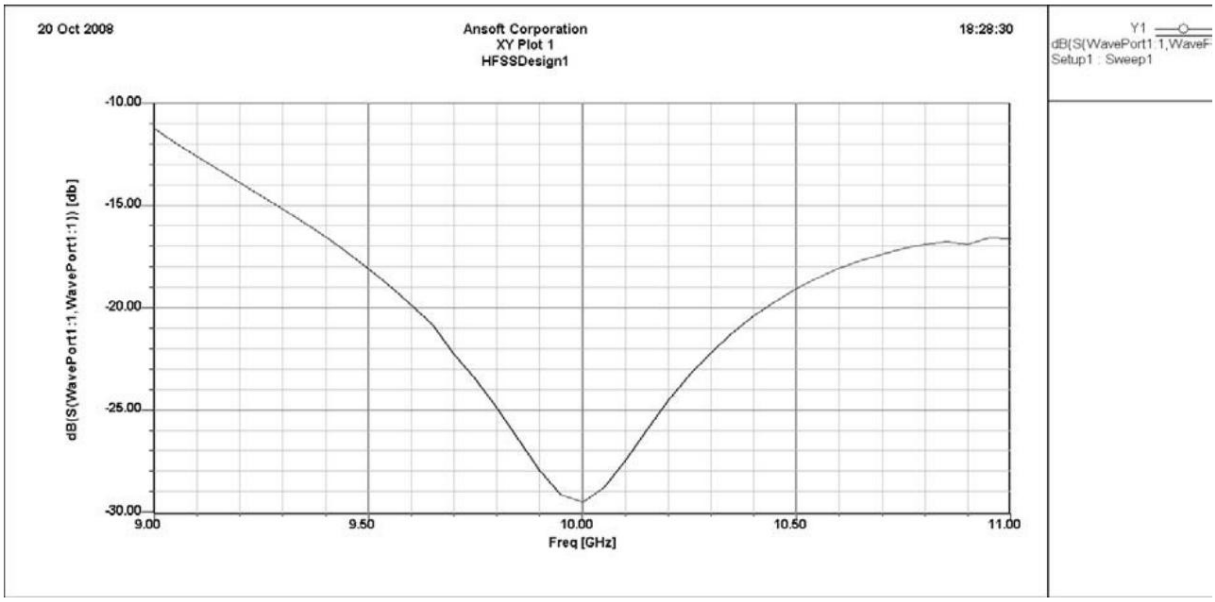
The cornet alone:



The adaptation is almost centered on our band. It should be noted that it is less good (but still excellent) than the "professional" version studied previously (hyper 141).

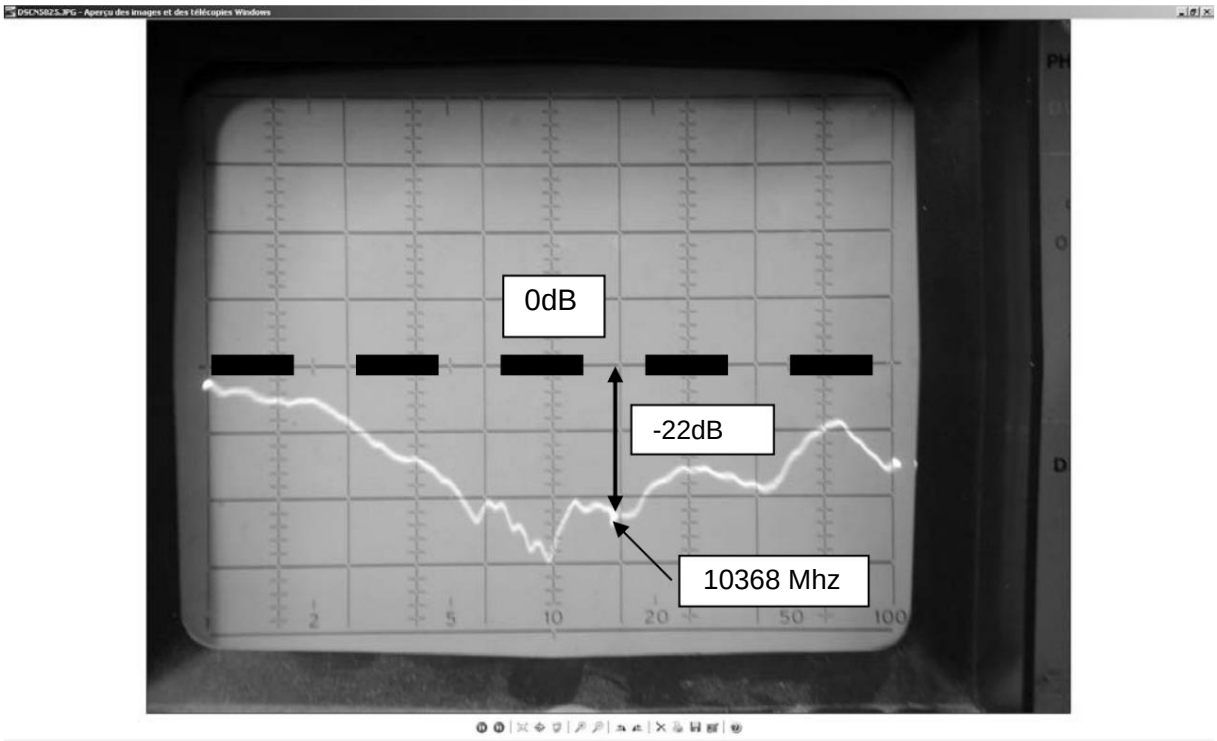
Now let's add its adapter.

The horn and its adapter:



Of course, since the impedance transformer is a narrowband device, the matching range is reduced. Matching -21.5dB at 10368Mhz. Quite acceptable, if confirmed on the actual horn. The length seems to be reworked
(shorten).

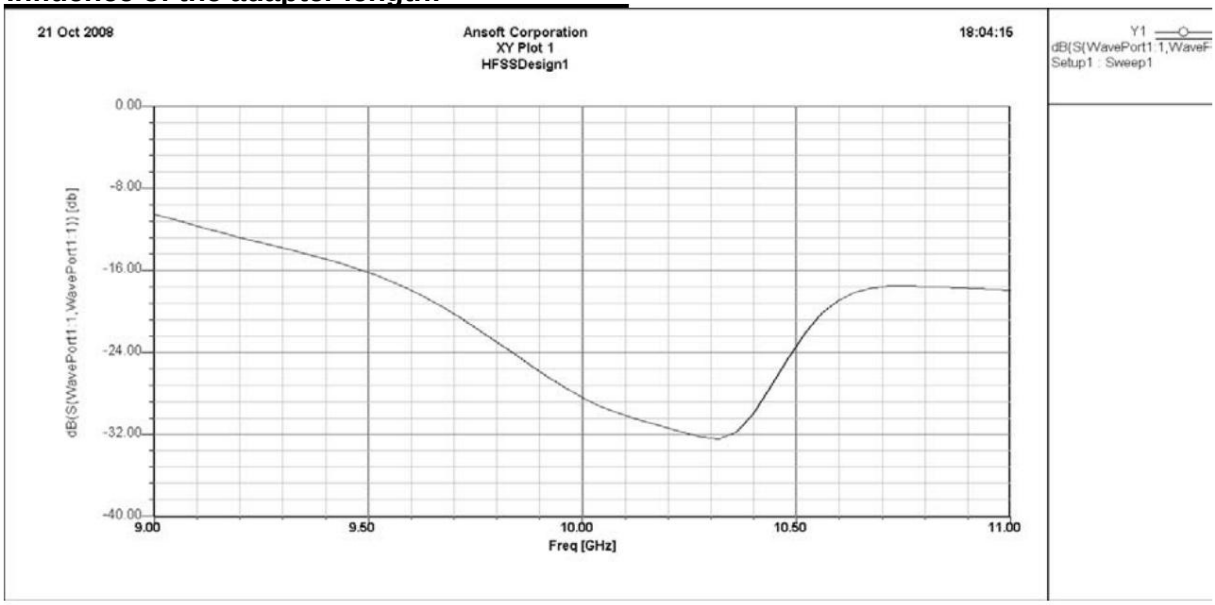
Validation by measurement:



10mm thick shim measured by F1JRZ, return loss not far from the simulation. Reflections in the measurement room are visible, we also see that the shim is clearly too long.

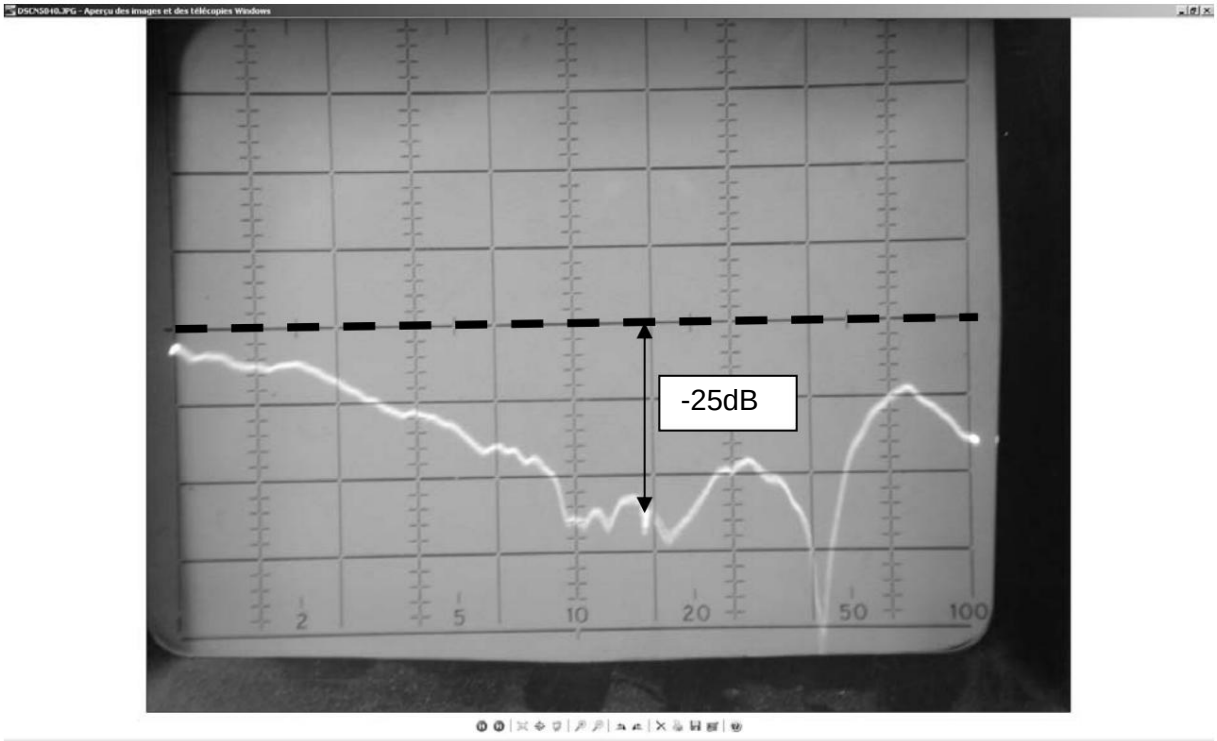
Back to the simulation, looking for a better shim thickness.

Influence of the adapter length:



Here we are testing a 9.4mm shim. It seems that this thickness allows us to refocus the optimal adaptation on our band.

Validation by measurement:



The improvement is confirmed. However, the adaptation is less good than the simulated value. This question should be investigated further, for example by characterizing the directivity of the measurement coupler, and the influence of reflections caused by the horn's environment. There is also the influence of the coaxial adapters used for the measurement. The reason for the "dip" at -45dB (11.2Ghz) is unknown and not reproducible on the simulator. Is it due to the measurement?

To be continued…..

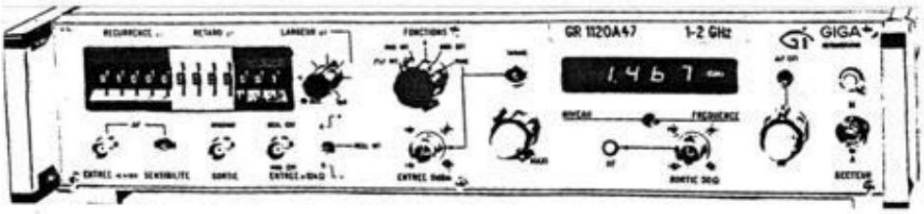
REPAIR OF HP 33322 / WEINSCHEL 157-110 ATTENUATORS

F5VFT - ON5FQ r.vanherle@wanadoo.fr

For several years now, GR1100A/GR1300A series microwave generators, manufactured in large numbers by **GIGA INSTRUMENTATION** for the army during the 1980s, have been found in military surplus and flea markets.

Considered by some as unusable devices , because of their lack of frequency stability, others, including myself, are happy to own one, or even several. The first, who look at these devices with disdain, are often found among the OM who, through their professional occupations, have access to high-end synthesized generators and who can no longer imagine that one can still make measurements today with an instrument that is almost thirty years old and whose frequency in the GHz is generated by a free oscillator oscillating directly on the output frequency. Certainly, it is not the ideal instrument to measure, for example, the sensitivity of a 23 cm Rx with a narrow IF, but there are many other applications for which its performance is perfectly acceptable. To name just a few; - Feed RF into a split line for VSWR measurements, (e.g. with the HP 805 and its SWR Meter 415E.
Of course, the *synthesizer* OM mentioned above does this with its *network analyzer,* but there are still a few of us who have to make do with less than that.)

- Measure the gain of a pre-amp or other stage, record the response curve of a filter, or evaluate the insulation of a coaxial relay by connecting a diode detector + logarithmic amplifier to the output of the measurement object, measure the loss of a coaxial cable, etc., etc.



The generator series GR1100A /1300A includes many models, three of which are particularly interesting for the experimental OM:

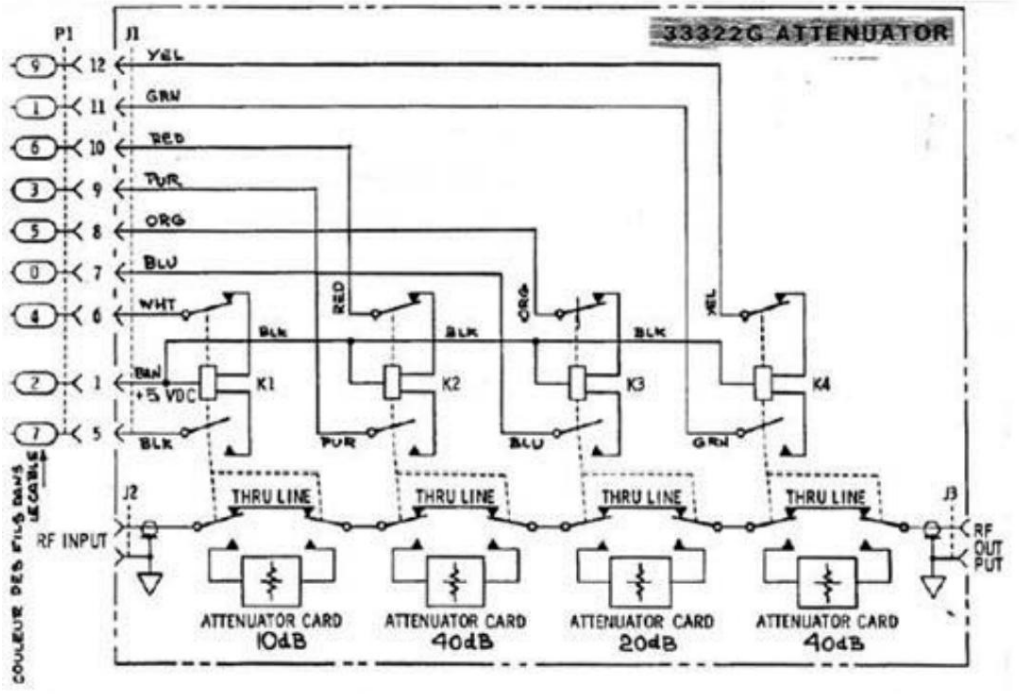
GR1120A 1-2 GHz, **GR1110A** 2-4 GHz, et **GR1106A** 4-8 GHz.
They all have in common a calibrated adjustable output level from -120 dBm to 0 dBm and can output up to >+10 dBm in uncalibrated mode. They are equipped with a very elaborate pulse modulation section acting on a PIN diode modulator allowing recurrence, delay and width adjustments which are not useful to us as such, but which allow us to output a modulated RF at 1000 Hz by choosing a recurrence at 1000 µS and a pulse duration of 500 µS (e.g. for measurements such as the one mentioned with the split line). They are also equipped with a 50 Ohm SHF diode detector which allows to compensate (via a calibration attenuator also with PIN diode) the attenuation of the connecting cable to the measurement object.

This article is not, however, intended to praise this series of generators but to help those who own one (or have the opportunity to obtain one) to remedy a common defect which (this is the good side of things) means that these generators are generally found at ridiculously low prices: in the order of 50 to 100 Euros. This defect is in fact often mentioned on the *Technical Intervention Sheet* or the *Registration Sheet* that the army service in charge of decommissioning the equipment sticks on the case. The mention of this defect by a reliable authority considerably reduces the market value of the device. So much the better for us.

The fault in question is manifested by **a lack of output signal on certain positions of the 0-110 dB attenuator.** When an OM with a little experience in metrology but with a pessimistic tendency is faced with this observation, the first idea that comes to him is that a distracted operator would have sent RF power or a DC voltage into the generator output with the consequence of the volatilization of one or more resistances of the attenuation cells that were in service at that time. If, on the other hand, the OM is optimistic by nature, he will think that this is perhaps only a mechanical problem in the system that controls the insertion or removal of the cells in the line.

If we look at the generator's block diagram, the first assumption, that of the pessimist, seems unlikely at first: The *output* attenuator is not actually at the generator output at all, but on the contrary, it is located directly at the oscillator output (YIG or transistor depending on the range covered), then come, in order, an isolator (circulator), the 0-10dB PIN attenuator, the PIN modulator, a second isolator, the PIN calibration attenuator, a third isolator and then only the output N jack. An excessive level (RF or DC) applied by mistake to the output connector therefore finds many obstacles to overcome before reaching the 0-110 dB attenuator. If the generator's output level is normal on certain attenuator positions, it is because these elements are not dead, and therefore the attenuator probably not either.

It remains to be seen whether the problem is simply mechanical. There's no getting around it: we have to get our hands dirty, open the generator, remove the attenuator, and open it.



A brief description of these attenuators is appropriate here. These are programmable attenuators with 4 PI cells (10, 40, 20, 40 dB) allowing the attenuation to be varied from 0 to 110 dB in 10 dB steps. Each cell is equipped with a double-wound electromagnet associated with a permanent magnet. The midpoint of the coil is permanently connected to the +5V of the power supply.

By placing one end of the coil in the Neg. position, the plunger core moves and inserts the cell, via two tiny insulating pushers. During its movement, just before reaching its end-of-travel position, the movement of the core causes the opening of a contact which is in series with the half-coil which has just caused this movement. The current in the coil is cut off but the permanent magnet attracts the core to its end-of-travel position and keeps it there. If the other end of the coil is placed in the Neg. position, the core returns, by the same stratagem, to its initial position and inserts in place of the cell a piece of 50 Ohm line (Slab-line). This bistable mechanism has the great advantage that switching requires only a brief pulse outside of which the coil consumes no current, whether the attenuation cell is selected or not.

I don't know if this is always the case, but in the case of the three generators I use, the 1-2 GHz and 2-4 GHz generators are equipped with HP 33322G attenuators (0-110 dB DC-4 GHz) while the 4-8 GHz generator contains a WEINSCHEL 157-110 attenuator (0-110 dB DC-18 GHz). Apart from the nameplate, these HP and WEINSCHEL attenuators are absolutely identical. The 18 GHz version also exists from HP under the number 33322H. It is therefore possible that some copies of the 4-8 GHz generators contain the latter.

To conclude this description, let us note that these same attenuators also exist in a 24V version. They then carry the reference 8496G/H and that, still in the same case, there are 0-11 and 0-70dB versions which are still available today from Agilent (for those who can afford them...).

Let's return to the attenuator we just removed from the generator. There's no need to get out the ohmmeter at this point: because of the bistable mechanism, there's nothing to tell us whether a cell is inserted or not, nor what resistance value we should expect. We need to open it up.

Start by unscrewing the 4 socket head cap screws on the end plate on the side opposite the end that has the control connector (J1) using a 5/64" Allen wrench. Don't have a 5/64" Allen wrench? Never mind. 5/64" is 1.98 mm. A 2 mm wrench will do.
Carefully arrange the screws. They look exactly like M2 screws. But they are not. They are 2-56 American system screws: Size No. 2 with 56 TPI (56 threads per inch) from the *Standard Series of Unified Threads,* the first 12 sizes of which are often called *American Radio Screws.* They are 2.1 mm in diameter with a pitch of ~0.45 mm, compared to 0.40 for M2.
Also carefully retrieve the thin mesh that provides RF sealing between the end plate and the attenuator body. You can now remove the U-shaped cover by sliding it toward the side you just opened. If it resists, insert a thin blade between the plate that carries J1 and the edge of the cover to leverage it.

If we now lay the attenuator open flat in front of us with the multi-pin connector J1 on the left and the SMAs facing us, we have before our eyes the subtle mechanics of the 4 electromagnets with their bistable cores and the 8 switches. First of all, carefully identify the very thin flexible blades (4 per coil) that make up these switches. These blades are very fragile. A careless finger could quickly deform them irreparably. Also, to handle the attenuator with the cover removed, hold it by the part that carries the SMAs and not by the coils.
Now it's time to test the coils and mechanics. Connect the + side of a 5V source to one of the four solder terminals. It doesn't matter which one it is; they're all connected together by a single (black) wire. This is the common point to which the midpoints of the 4 double windings are connected. Now locate the place on the left of each coil where the colored wires are soldered to the end of the flexible blades. By putting the Neg. of the 5V source on the top connection, the core goes down (if it is not already down). By putting the Neg. on the bottom one, it goes up. (For the rest of this text, *Up* and *Down, Up* and *Down* refer to the position in which you have just placed the attenuator in front of you: J1 on the left and the SMAs towards you. To further simplify the text, I will use the abbreviations from the 33322 *Operating and Service Manual* from here on . The active part of an attenuation cell is called *an Attenuator Card* (AC) and the 50 Ohm line by which the signal bypasses an unused cell is called a *Thru Line* (TL).)
Remember that when a core is down, the signal passes through the AC, when it is up it passes without attenuation through the TL.
Before continuing any disassembly, it is advisable to ensure that the operation of the 4 electromagnets is truly flawless. It is important to do this at this stage, because if their operation is satisfactory, it is unnecessary, **or even completely inadvisable,** to unscrew or disassemble anything from the mechanical part. Successively put the Neg. of the source on a top connection then on the bottom one on each of the 4 cells. Do this a large number of times. The movement of the core must be clear, without any hesitation. Be careful. Hold the body of the attenuator firmly in place, otherwise the slight recoil due to the movement of the core (the coil takes 300 mA) can result in the contact you make with the Neg. wire on the connection not being clear, which can in turn give the impression that it is the core that is not moving in a clear manner.

The top and bottom end position of the cores is defined by the disc at each end of the core: they must absolutely come to a stop against the metal frame surrounding the coil, without leaving any space (air gap) in each of the two positions. Without this, the pushers will not be able to move the movable contacts of the attenuator between the AC and TL connections over a sufficient distance.

If after this test we are convinced that the movement of the 4 cores is done without fault, it is time to conclude that the problem of our attenuator is not here but probably in the RF part. Time therefore also to push our surgery further. Let's slide the cover back into place so that we can temporarily hold the attenuator in hand by the long side opposite the SMAs, because it is on the SMA side that we will intervene now.
Unscrew the two nuts on the SMAs. Don't be afraid. (Am I plagiarizing?) These nuts are only there to hold the nameplate. Use a 5/16" wrench to uncover . or failing that one of 8. Under this plate we the heads of 18 screws similar to those seen above: 2-56, with a hex socket head. This

A large number of screws on a surface that is only 2 x 12 cm suggests that we are dealing with serious matters here. Go around all the screws, gradually loosening them a little.

one after the other to release the mechanical stress evenly, but leave one screw in place at each end to prevent the two parts of the attenuator body from separating before you decide to. Now remove the cover again because the elasticity of the two lips strongly pinches the part that carries the two SMAs that you will have to remove, which can make separation difficult. (Note that there are 10 screws of ~9 mm length and 8 of ~7 mm. Identify their location.) Remove the two remaining 2-56 screws. Insert a screwdriver blade into the groove where the lips of the cover were housed and with a slight turning movement at the four corners separate the two parts of the attenuator body. Once you have recovered from the wonder you will undoubtedly have felt at the precision and ingenuity of the contents of what you have just opened, you will notice that the "Attenuator Cards" are in fact tiny glass (or sapphire?) plates on which metal deposits less than 1 mm wide constitute the PI cell resistances. The contacts, in gold deposits, are 0.5 x 1.5 mm. The length of the "cards" is ~2 mm for the 10 dB, ~3 mm for the 20 dB and ~4 mm for the two 40 dB. On either side of the ACs, two metal blades ensure the ground contact of the cards and hold them firmly in place, so that you can handle this part of the attenuator without risk of them falling. The other part of the attenuator, the one that carries the electromagnets, is the one that contains the movable contacts and the TL in the form of a *Slab Line.*

I remember that in 2007 when I first undertook the repair of one of these attenuators, having reached this stage, I was very perplexed. An ohmmeter measurement on the board between the input and output of each cell gave values entirely consistent with the theoretical values. A careful visual observation under a binocular microscope (x 10) showed no notable anomalies on the surface of the contacts. No wear, no dirt, neither on the AC side nor on the moving contacts side. For the sake of conscience, I had nevertheless rubbed the contacts, under the microscope, with the tip of a (clean) toothpick.

After reassembling the assembly and testing at 1 GHz it became clear that the problem was not solved. The only difference noted was that of the three defective cells, two continued to have an open circuit when selected, while the third, during a large number of activations, had an open circuit most of the time but on a few rare occasions gave the attenuation it was supposed to give.

From this point on, things became clear. It was now certain that if some cells presented an open circuit when they were selected, it was neither their electrical integrity nor the surface quality of the contacts that was in question. The only possible explanation therefore remained a lack of magnitude of movement of the moving contacts between the fixed contacts of the TL and those of the AC.
After a re-disassembly and new separation of the two parts of the attenuator body, it was the turn of a rigorous inspection of the position of the moving contacts. The two stable positions that they can take are determined by the arrival at the top and bottom stop of the plunger cores in the coils as described above, as well as by the length of the pushers, which is invariable. There, no possibility of intervention therefore. It is only after having positioned the 4 cores in their low position, (i.e. in the position where the moving contacts of the selected cells must touch the golden islands of the ACs when the attenuator is assembled) that it became visible to the naked eye that the end of certain moving contacts emerged clearly (~ 1/4 mm) above the edge of the groove which constitutes the outer conductor of the slab line while others were barely flush with this edge. Risking everything, using very fine-nosed tweezers, I slightly increased the curvature of these blades, then I checked in the upper position of the cores, where the moving contacts must touch the fixed contacts of the TL, if the electrical continuity of the TL remained assured. Too much curvature would indeed result in a cut-off of the TL at the level of the unselected cells. Everything was fine, and after reassembling everything, an RF test confirmed that the 4 cells of the attenuator had become operational again.

To date, as of early November 2008, eight of these generators have passed through my hands. Three of them had the problem described in these pages, and all three have been repaired using the procedure described.

Who among HYPER readers can provide me with an explanation? Is the phenomenon attributable to metal fatigue? The intact drop of red varnish on the two screws that secure the attenuators to the generators proves that they had never been disassembled since their manufacture.

The fact that on one of the attenuators 3 of the 4 cells had this problem proves that the fault occurred, or worsened, after the device had been removed from service because I cannot imagine that a military laboratory continues to use a generator with one or two defective attenuator cells. Let us not forget that e.g. a single open-circuit 40dB cell prevents RF from reaching the output jack in 8 of the 12 attenuator positions.

Some readers may find this article too long and full of unnecessary details. In my defense, I argue that even the manufacturer HP did not intend for these attenuators to be repaired at the distributor's lab or local brand representative in the user country, but had to be returned to the factory in the USA.

There is also this: New, these attenuators (DC-4GHz version) cost US $ 1,600 (excluding VAT). Used ones can be found on eBay for ~ 475 Euros. I'll let you guess what the 33322H or a Weinschel 157-110 that do DC-18GHz and are found in the 4-8GHz generator might have cost...

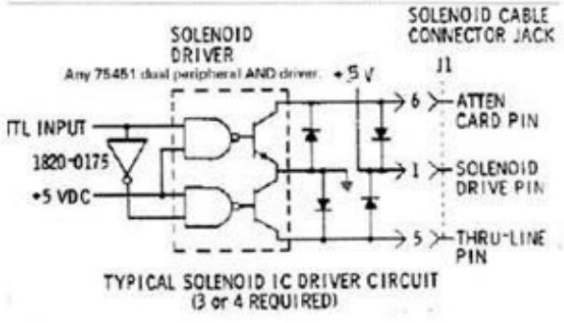
So, don't hesitate. If you find one of these **GIGA INSTRUMENTATION** generators for 50 Euros, buy it, even if you don't use the YIG oscillator, the PIN modulator and attenuators, the 50 Ohm diode SHF detector, or the three circulators that cover an octave. The HP 33322 **G** or **H** attenuator is well worth it, even if the registration sheet claims it is defective.

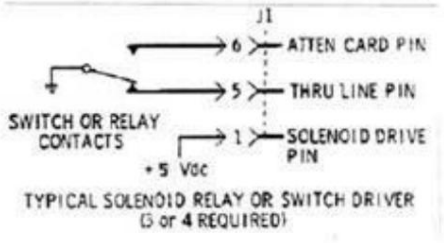
For OMs who want to use these attenuators off the generator, here is the control cable connection and two ways to attack the *"latch solenoids".* (I prefer the English term: Latching)

Section	Section 1 10dB		Section 3 20dB		Section 2 40dB		Section 4 40dB		Power
Solenoid Coil	Thru-Line	Atten Card	Thru-Line	Atten Card	Thru-Line	Atten Card	Thru-Line	Atten Card	V+
Cable Wire Color Code[1]	PUR	YEL	BLK	GRN	ORN	BLU	BRN	WHT	RED
Connector Plug Pin Number[2]	5	6	7	8	9	10	11	12	1

JACK, FRONT VIEW

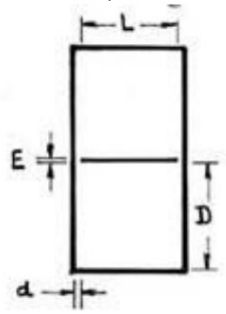
PLUG, FRONT VIEW





PS: Sorry for the somewhat convoluted phrasing of some sentences or for their construction based on the Germanic model, but French is not my mother tongue. Thank you for your indulgence.

Editor's note: No, we must not be indulgent, we must be grateful! Hats off!



For those wondering what a "Slab Line" is, a quick explanation. A *slab line* is a coaxial (air) line with a rectangular cross-section whose flat central conductor has a negligible thickness compared to its width and which is arranged with its edges facing the long sides of the rectangle.

E<<<L et d<<<D

Raymond, F5VFT - ON5FQ

Who can tell me the formula that gives the characteristic impedance of such a line?

This is a fictional tale for radio amateurs. The characters and situations are entirely imaginary, as in all tales! Although it doesn't directly involve microwaves, we are all concerned.

The minister, Loulette, the businessman, the satellites and the 144!

André Jamet F9HX

So, we are on the famous Saint-Nom-la-Bretelle golf course. After noticing that his ball has landed in the bunker, Pierre Boxe, Minister of Defense, gives his club to the caddy and says: *- Now, leave us, I'm going to stop here, my friend and I have something to talk about.*

- Dear friend, I'm a little tired at the moment and I can't get past the seventh hole.

- Is it because of Loulette this weariness, dear friend? answers Bernard Tatami, the famous businessman.

- What, you know?
- You know, in my circle, we like to tell each other stories about the whole of Paris.
- Fine, but I don't think you asked me to meet here this morning to talk about my sentimental happy hour. Let's get to the point.

- You know that, among my many companies, space electronics is one, particularly for transmissions. Now, a serious danger threatens us and it also concerns National Defense. First of all, have you heard about satellite glare?

- Oh, you know, I was Minister of Agriculture in the previous government and I don't know any more about plowing and grazing than I know about cannon barrels! Coming out of the ENA like almost all my colleagues, we don't know how to do anything, but we're made to do everything!

- So, I will enlighten you with the simplest possible explanations. If a brush, a beam of energy, like a "tongue of fire", is launched against a satellite, temporarily or even permanently damaging its electronic circuits. This beam can be produced by an aerial nuclear explosion, by a laser or by a very high-power radio broadcast.

- Yes, I seem to have read something about this and that planes could also be affected by intense jamming.

- So, you're ready to hear the rest.

Let us suspend the course of this interesting conversation and, between us, connoisseurs of electronics and especially radioelectricity, let us take a look at this dazzling "tongue of fire."

Today, everything is based on transistors and integrated circuits, which can contain up to millions of them on a single chip. All this technology is based on the use of semiconductors in which very low-level charge carrier exchanges occur. Consequently, they are very susceptible to surrounding magnetic and electric fields: this is the problem of electromagnetic compatibility: not to disturb and not to be disturbed by others. It is therefore obvious that a powerful radio frequency emission, a laser beam, lightning, discharges due to static electricity, ionization of the air surrounding the insulators of the lines

High voltage electrical currents, switching spikes from switching power supplies, computer clock signals, etc. can disrupt and even destroy the microelectronics of chips, if the energy they receive is sufficient.

We know all this well, having suffered from it at one time or another.
To confirm the importance of the danger of deliberate blinding by laser or aerial nuclear explosion, we must recall what happened when a rogue pilot landed in Japan with a fighter jet of the latest model.

(I wrote this text before 2000 and this event was then in the news). Before returning it to its country of origin, it is quite obvious that engineers and technicians took the time to "skin" the aircraft to note all its particularities. It was then that a rumor circulated causing the hilarity of "experts": a good part of the on-board equipment used tubes, grandpa's old lamps and not semiconductors! So, and laughter: - *They are still there!*

In fact, this was a deliberate use to avoid disturbances. Tube circuits are very insensitive to external influences, the tube itself being very "hard" because it works at energy levels considerably higher than those of semiconductors.

So, when the real experts learned of the fact, they explained the reasons for this choice. No one laughed anymore, especially in the general staff who had been told that their own aircraft contained nothing but chips! Now you see the importance of the interview between our two high-ranking figures, even if the Cold War has thawed...

- Dear friend, our civil and military communications satellites can be affected by deliberate interference from unfriendly countries.

Although these, which I will not name, are generally located quite far from our hexagon and even from Europe, this distance does not prevent this dazzling. The satellites are in high orbits and are reachable because electromagnetic waves, like light, can follow the

curvature of the Earth and reach distances greater than simple direct vision.

Do you see the danger?
- Yes, I follow you, it's a little complicated, but I follow.

- So, I'm going to tell you about the remedy. Our strategic communications, whether military or civilian, must use a network of low-altitude satellites. In this case, the altitude is no longer sufficient to ensure a connection over very long distances.

- Yes, but what's the problem? Just launch more satellites at lower altitudes.

Our country still has the resources to renew all or part of the current fleet.

- The problem is different, and I'm going to bore you with more technical details, but I'll be brief and simplistic. For reasons related to the whims of radio wave propagation, if we want to establish links between low-altitude satellites and the ground, we have to use certain frequencies. And, that's where the problem lies, these frequencies are already occupied.

- I'll stop you, I don't understand this story about frequencies, their availability and what I'm doing there.

- Patience, dear friend, let time take its course, in high places, it has already been recommended to you!

The problem with frequencies is their allocation, and that is quite complicated.
It turns out that the frequencies usable for links with low-frequency satellites

altitude belong to the VHF domain which is widely used today by various services. A very large part is allocated to radio amateurs, the so-called 144 MHz.

- Ah! Yes, I see, it's the Ci-Bi. My driver brings his in my car because he says it's useful for avoiding traffic jams because other CB drivers tell him where the traffic jams are and how to get around them. He also told me it would allow me to avoid the QRM 22, but I didn't understand.

- No, radio amateurs are different, and CB is practiced on short waves, so it's out of our scope. Radio amateurs had their moment of glory because they discovered the possibility of making connections with high frequencies, which the theory of the time excluded.

Today, given the evolution of technology, their role seems very limited to me and I will speak of leisure activities.
So, dear friend, you must obtain the possibility of using this 144 band for our satellite links.

- It shouldn't be very difficult because I suppose that radio amateurs bring nothing to the State. And I am sure that you are ready to pay a lot for what we would give you. Moreover, military liaisons are, of course, an unquestionable priority. But, tell me, how can we get rid of these radio amateurs and put ourselves in their place?

- It's a bit complicated and I don't even know the intricacies of the regulations which are both national and international.
Today I've laid out the problem for you. Now it's your turn.
- Well, I will study, or rather have this file studied, as soon as possible and will speak to you about it again.

- It's understood, dear friend, and take care of your health, it's for our common interest!

- See you soon.

Back at the ministry, Minister Pierre Boxe calls his chief of staff and explains to him, as best he can, what he has just learned. He asks him to submit a report within eight days.

Indeed, a week later, the report was produced. Rather than read it, the minister requested a verbal summary.

So his chief of staff briefly explains to him what is going on.
- It is not easy to dislodge radio amateurs from 144 because the various regulations grant them almost imprescriptible or rather inalienable rights. But, we could study what radio amateurs actually do in this famous 144 band. We would then see if there is not a bias to dislodge them.

Give me another month, Minister, and I will certainly be able to offer you a solution.

- Yes, but two weeks should be enough, I'm in a hurry now.

The minister's chief of staff asks the radio surveillance service for a report on the traffic carried out in the band in question. Then, technicians listen to band 144. The result is conclusive and the chief of staff can say to his minister: *- As requested, I bring you the solution. The monitoring of band 144 by our official services has shown that it is practically not used. At most, three to four amateurs occupy the band, and that, less than a hundred kilometers from Paris. So, you can imagine, in rural France, what it must be like!*
And then, the amateurs that our technicians listened to did not only talk about technology and their conversations were at the limit tolerated for their authorization. Some were even insulting or rude. Moreover, the majority did not traffic directly among themselves, which requires a minimum of technical expertise, but through intermediaries

NEWS IN THE REGIONS by F6DRO The crow only wanted one page...Get out your glasses!

RHONE-ALPES :

F5AYE (74): I am currently building the same dual-band set as Philippe (and without prior consultation!) ***(editor's note: see below).*** For the W5LUA dual-band feed, look at the W1GHZ online book, for the 5.7 F/D 0.35 and 10GHz F/D 0.55, I will make a ring around the feed to see if it lengthens the F/D for the 5.7???

F5JWF (74): Here are a few lines concerning my activity during the EME contest of the ARRL 2008. As usual, this competition takes place over 3 weekends. As for me, I was active on 13cm and 3cm the weekend of September 20/21 and on 23cm only on October 18/19 and November 15/16.

This year, conditions were good, with mild weather for all three rounds and a good turnout. I had no technical issues to report.

My geographical location, on an east-facing hillside, allows me good visibility at moonrise. I can already hear my echoes at 2° elevation. On the other hand, the moon disappears for me, to the west, when it passes below 28° elevation. It's a shame that there are far fewer active stations on the east side (Japan, Australia, etc.) compared to the west.23cm: 36 stations contacted including 10 initialK1RQG, SP6JLW, DL4MEA, K1JT, LA9NEA, ES5PC, SV3AAF, OK1CA, DL0SHF, HB9QTU, SM4DHN, VK3UM, HB9DGK, F5FEN, OH2DG, F2TU, G3LTF, SD3F, IK2MMB, I5MPK, RA3AQ, DF3RU, HB9Q, DL1YMK, OZ4MM, DF3RUC, OK1DFC, WA6PY, IK3COJ, UT5JCW, PI9CAM, ON5RR, IQ4DF, K5JL, HB9GR13cm: 7 stations contacted F2TU, G3LTF, G4CCH, OH2DG, OK1CA, ES5PC, SD3F3cm: 13 Stations contacted IQ4DF, OKCA, G4NNS, HB9BHU, WA6PY, F2TU, IK2RTI, RW1AW, W5LUA, K1JT, ES5PC, OK1KIR,

WA7CJOTraffic conditions:23cm: 3.7m dish 250W NF~0.4dB EIRP~190kW ,13cm:3.7m dish 170W NF~0.4dB EIRP~537kW 3cm:3.7m dish 45W NF~0.9dB EIRP~4MW I have a multitude of areas for improvement to optimize these 3 stations. The septums I use on 23cm and 13cm are original versions as described by OK1DFC. By adding their respective chokes I hope to be able to scratch a
little. On the PA side on 23cm I have 4 MRF286 in parallel to output 250w with 3.7m of dish it is a little tight and I often have trouble making myself heard in the melee and contacting small stations. I am looking for possibilities to mount more powerful transistors to have about 400w. On 13cm, I use a UMTS type PA with 4 MRF21085 in parallel. I am limited, for the moment by the hybrid output coupler to about 170w.

I am considering installing an external coupler to be able to take full advantage of the 4 MRFs and perhaps reach 400w. I have already planned the 28V/50A power supply (F5UAM design) to allow this evolution. What penalizes me the most on this band is not being equipped with crossband. That is to say, being able to listen to the portions of frequencies used in other countries (2424, 2304, 2301,...). I am currently on the subject and hope to be QRV next spring.

LORRAINE-ALSACE :

F2TU (88) :23cm: not 100% qrv (07:00-moonset, moonrise-23:00. Qso K3JNZ/O, HB9GR, ON5RR, RK3MMF, UT5JCW, OK1DFC, I5MPK, JA8CZD, JA4HZN, K5JL, VE4SA, IQ4DF, SM3JQU, WA6PY, K2DU. Heard RWPX . N9JIM failed, 0.5° error in AZ and EL! And then: a tree. Strong echoes: 09:30 - 10:15 (moonset), but nobody .. 92 qsos for the contest .70cm: 7 qso in 45 minutes .

LIMOUSIN CENTER:

F6ETI (19): The project, which had been in the pipeline for some time, to create a compact dual-band 5.7 GHz -10 GHz station, came to fruition at the end of October 2008 following the recovery of a radiator "fall" which has two flat faces. The idea is
so to mount the 6/3 transverters on the sides and the PAs on the faces of the radiator of the radiator. Situation on November 9, the 5.7 GHz part is operational (12W out, NF 0.8 dB at the transverter input). The 10 GHz part is not yet mounted.

MIDI PYRENEES -LANGUEDOC ROUSSILLON :

F5UBZ (12): On the occasion of the ARRL EME I was only able to enjoy the 23cm EME station for a few minutes at moonset (from 5 to 0 degrees elevation, and again, behind a tree), the time to arrive at the location of the station, to set up the cables etc... I was only able to decode VA7MM in JT65C, no time to listen to anything else! No broadcast yet. I'm working on my tube, I have all the elements of my HT 2 Kv power supply *F1VL (82):* I just worked on the slotted antenna at . It's not so bad!
F8BTP. Velvet!! It's set up like in the books.
No need for tuning screws (you'll have to plug the holes! HI!) And what's more, it radiates what it should!!
What more can I say?? Thank you Mr. Phillipes!! (yes with an "S") Now the little question of use: Who has an idea to block the two adjustment shims??? I surrounded them with self-adhesive copper to make the sliding "hard" but that is not enough to satisfy my mind.
All this because I worked again on the Italian dual band. Having mounted the manipulation which goes well to measure the radiation pattern I noted that on 10 GHz it opens wide.....So unusable on my offset of 0.65 of F/D. On 5.7 I did not measure, but given the "coffee box" technology it cannot be in the narrow style.
So: it works, it is adjusted with a lot of interaction between 5.7 and 10 GHz (nothing to do with the adjustment of the slot antenna mentioned above for example ...). It is enough to modify the load on the 5.7 SMA to see everything move on the 10..To be reserved for low F/D prime focus *F6DRO (31):* Not much traffic, given the total absence of
propagation, and not much work on the antennas, given the uninterrupted rain for 1 month. Work in progress: EME: Thanks to the help of F4CKM there is a problem to resolve at the level of the copy. Then will
come the realization of the sources for . a good part of the eme antenna mount is in place, the rotation works . more
the various bands.
Tropo: The new 23cm is finished at the 15W level. Still to be done: the source for the 2m dish and a remote PA.
Simulations: I've been working on the source mentioned above, and for me it's a last resort. The spillover is too high, it's unusable on an offset, and there are some oddities in the interactions between the two bands. Of course, it's always better to be active with this than not to be active at all.
I also worked on the guide/microstrip transitions and managed to get some improvements compared to the designs encountered, but these simulations would need to be validated.
I am currently working on the 23/13 source mentioned above (double loop OM6AA).

COMMENTS FROM THE ACTIVITY DAYS OF OCTOBER 25 AND 26, 2008

Already not very motivated given the WX at the start in the morning, I had to give up after an hour at the high point: fleet, fog, too much wind on 3cm. Negative tests on 5.7Ghz with F1JGP and F1BZG QSO and 47 GHz negative tests with F1NYN/P 23 will remain for me one of the best seasons and without this catastrophic result of the month of October no more contacts after 2006 F1JGP 45. The JAs of the year 2008 on a total of 11 participations. 73 F1GHB/P IN88IN:

I set up my cell phone in the fog and, surprise, the propagation seemed good on the 2 m and the hyper beacons were coming in strong. Good last hyper day with two new personal records on 10 and 5.7 F2CT/p64 (632km). In the same QRB order, QSO also in 10 GHz with F5BUU/p09 and F4BXL/p09 (619km).

One regret, I heard Michel F6BVA on the VdS and I called him but he didn't hear me!
73 Alain F6FAX / 91/ JN18DP

Saturday: lousy propagation, Sunday morning: super tropo towards the southwest, none towards the southeast. The Bordeaux beacon was arriving at least 55 in the 95!!!! BUU & BXL /P09 were arriving super well (peaks at 59). 73, see you soon. Patrice F4CKC

What a beautiful JA despite the slightly chilly morning fog.
Even though my clearance is limited to the northern part of France, I have never made so many QSOs in 10 GHz.
Too bad that in 5.7 GHz there was almost no one QRV because the signals were very strong...
See you next year with 24 GHz in addition....???. 73 by Jean-Louis F1HNF/49

What a great last JA in the company of Jack F6AJW/P from a new summit in the Basque Country called Erregelu, in IN93IH and please, in "full portable"!!! - 3 bands activated; - 10 GHz: dx F1NPX/P/51 at
726 km; average: 447
km/qso; 4 new stations; 3 new dpts - 5G7: dx: F6FAX/P/91 at 631 km; average: 480 km/qso; 2 new stations; 2 new dpts - 24 GHz: dx: F6DRO/31 at 236 km The morning had started badly with the observation of the dish; while we had arrived at the summit around 8:30 local time!!!
unfortunately late from forgetting the main tool that constitutes the

Then the PA of the vds which went into safety mode because of the voltage delivered by the generator!!!
Thanks to the efficient help of our wives, we are finally operational at 10:50 local time!!!
I'll leave it to Jacques to tell you the rest...
Conclusion :
I STILL SAY THAT JAs MUST BE ORGANIZED 12 MONTHS AGO TO BE ABLE TO TAKE ADVANTAGE OF THESE SPLENDID PROPAGATION CONDITIONS WHICH ONLY OCCUR DURING THE MONTHS OF OCTOBER TO MARCH, ESPECIALLY IN SHF!!!

THEREFORE, NOTHING PREVENTS US FROM COINCIDE 4 WITH THE SHF COMPETITIONS OF MARCH AND JULY. SORRY TO INSIST SO MUCH BUT AUGUST AND OCTOBER!!!
IT IS ONLY TO SUPPORT AND DEVELOP OUR ACTIVITY. Kind regards to all. Guy Gervais / + 33 6 08 17 40 82 guy-gervais@tersa.fr F2CT/ IN93HG Mont Artzamendi
926 m asl F2CT@wanadoo.fr

Finally, a day full of propagation... Impressive signals... The 5AQC team arrived super qro on the 3 bands.
Even on the horn only on their side the signal remained at 59. It was the same with Fabien F8ESA from 08 The stations at altitude in the Pyrenees were also very qro...
Just one regret, the few QRV 5.7 stations... Will 2009 see better activity on this band which is nevertheless magical in results... Once again contacted Michel BVA from 04 at 615 Kms I don't know how many stations participated in 10 during this last day, but I think that it was
possible to make more than 30 qso from quite a few corners of France, especially for the stations at altitude. 73 and see you next year JN F6APE

a real pleasure this last JA of the year in the 09 from the Prat d'Albis in JN02SV and in the company of Jean Louis F6ABX and Frédéric F4BXL.

Superb wx and exceptional 10 GHz propagation. Many stations in the Paris region were between S7 and 9. After 2A, happy to have allowed André PYR to add a new department. I think this will cost him dearly at CJ's bar!

Some nice early qsos: F4BUC/P-78, F8ALX-36 and F1NPX/P-51.
For once, comfortable qsos with Jean Luc F1BJD/P, Jean Noel F6APE and Pierrot F5NXU.
And to top it all off, excellent QSO on 24 ghz with F6BVA/P-04 at 368 km.

COMMENTS FROM THE ACTIVITY DAYS OF OCTOBER 25 AND 26, 2008

We want more JAs like this! It makes up for the generally poor conditions of the other JAs of 2008.
But always a lot of pleasure to contact the usual stations and especially the new arrivals.
Have a good winter and see you in March 2009 on 24 ghz. 73's qro
Jean Claude F5BUU

Arriving at 5:45 a.m. local time at the portable QTH, I found conditions for this last JA clearly above average.
A quick tour of the beacons from 1296 to 5760 MHz confirms this good morning impression.
The 5.7 GHz F5ZPR/33 horn beacon facing southeast was 57 in IN98WE (370 km).
The propagation was north-south; attempts to the east and south-east at equal distance failed to contact the following stations: (F1EJK/P/90 - F1JRZ/71 and HB9AMH/
P/JN37).
Listening at the gates, I heard on 10 GHz Eric F8ALX/36 in QSO with F1RJ/78, he was 52 to 57 (QSB) with his dish at 90° from my direction.

The QSO was made directly on 3 cm. My signals were so strong at 216 km that Eric had trouble getting to the max!
I had never contacted Jean-Claude F5BUU/P/09 with such QRO signals at this distance (602 km) on 10 GHz. 2 new stations contacted: F1NPX/P/51 and F4BXL/P/09 on 10 GHz.
BIILAN: 18 QSOs on 3 cm, but only 6 QSOs on 6 cm. Why? DX 602 km on 10 GHz, 320 km/QSO - 10 QSOs above 300 km. 73 to all Jean-Luc F1BJD

Another very nice weekend in Creuse for this last JA, and if there was only one JA to do in the year it was
Well, that one: propagation not at all great on Saturday afternoon but on Sunday a great corridor RP, Pays de Loire and South West allowed us fantastic reports. I was almost in the middle and unfortunately I did not find stations in the far north to increase the distance. On the other hand it did not work so well with the West and the South East nor with the neighboring departments. Heard no one towards the East. 23 QSOs with my 750mW, that ends the
season well.
Thank you to all the participants. Best 73, Jean Yves / F1NYN

WEATHER: white frost in the valley at 08:00, but at 1150 m 10 °C on the high point a splendid view of Mont Blanc and the Bernese Alps with a sea of fog in the plain TRAFFIC: On 3cm: Only 4 QSOs, failures: F1HNF 49, F5BUU/P 09,
F1FDD/P 26, F6APE 49, F1BJD/P 72 & F1BZG 45 but to finish, a BEAUTIFUL QSO with F1HNF 49, Jean Louis, for 524 km at the third attempt On 1.2cm: my usual QSO with HB9AMH/P, listening to the HB9MPU beacon at 152 km with QRKs from 52 to 57, first time with
such strong signals my 73 very QRO to ALL MICHEL F1EJK/P 90 JN37KT

RESULTS OF THE DAYS OF OCTOBER 25 AND 26, 2008

10Ghz 10/2008	DX Km	POINTS QSO Locator
F5BUU/P	692	24697 30 JN02SV X X X
F4BXL/P	692	21652 28 JN02SV XXX
F2CT/P	726	21102 24 IN93IH
F6APE	524	14322 25 IN97QI
F1PYR/P	696	14032 20 JN19BC
F6DKW	664	13873 17 JN18CS
F4CKC/P	696	13315 18 JN19BC
F6BHI/P	412	11866 21 JN15JO
F5AQC/P	391	11153 21 JN05TO X
F1BJD/P	602	11117 18 IN98WE
F1NYN/P	398	10787 23 JN06RH X X
F6BVA/P	576	9610 14 JN24VC
F1NPX/P	726	9202 10 JN18WS X
F1BZG	559	8808 19 JN07VU
F5NXU	572	8242 15 IM97MR X X
F6FAX/P	632	7918 14 JN18CK
F1HNF	523	7270 14 IN97XF
F8ALX	408	5905 12 JN06RN X X
F4BUC/P	X 668	3732 6 JN08WV
F1FDD/P	X 520	3254 4 JN24NV
F4CKM	320	3236 580 8 IN94PV
F5NZZ/P	3158	440 2838 6 JN23WE X
F4EXB/P	523	2264 385 6 JN33KQ X
F1EJK/P	860	393 741 4 JN37KT 2
F1GHB/P	263	649 172 IN88IN
F1JRZ	414	23 118 3 JN26EJ O
F1JGP		4 JN17CX
F5AYE		2 JN36DH
F5IWN/P		3 JN18CV

5,7Ghz 10/2008	DX Km	POINTS QSO locator
F6APE	615	7368 11 IN97QI X X
F2CT/P	631	5676 6 IN93IH X
F6BVA/P	615	5384 7 JN24V C
F6BHI/P	392	4268 10 JN15JO X
F5AQC/P	368	4031 8 JN05T OX
F1PYR/P	392	3802 7 JN19B C X
F6FAX/P	632	3742 7 JN18CK X
F1BZG	559	3338 8 JN07VU
F1BJD/P	549	2972 6 IN98WE
F1HNF	263	1852 5 IN97XF X X
F1GHB/P	273	475 1 IN88IN X
F1JGP	188	444 98 2 JN17CX X
F4EXB/P	196	1 JN33K Q

24Ghz 10/2008	DX Km	POINTS QSO Locator	P5BUU/	P5NZZ/	P6BVA/	F6DRO	RB9AMH/
F5BUU/ P	368	849			X	X	
F6BVA/ P	368	940					
F2CT/P	236	472 74 IN93IH				X	
F1EJK/ P	148	102					X
F5NZZ/P	204				X		

7th JA complete 2008.

Very good propagation on a southwest / northwest axis with good scores.

Average participation in 10 and 24 GHz, low in 5.7 GHz -10 GHz 46 F stations, 1 HB.

-5,7 GHz 18 stations F.

-24 GHz 6 F, 1 HB.

73 Jean-Paul F5AYE

HYPER 2009

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You've noticed that we're asking you to contribute to the maintenance of the beacons. This request is not mandatory. The funds collected will be shared among all applicants who are responsible for a HYPER beacon in France.

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