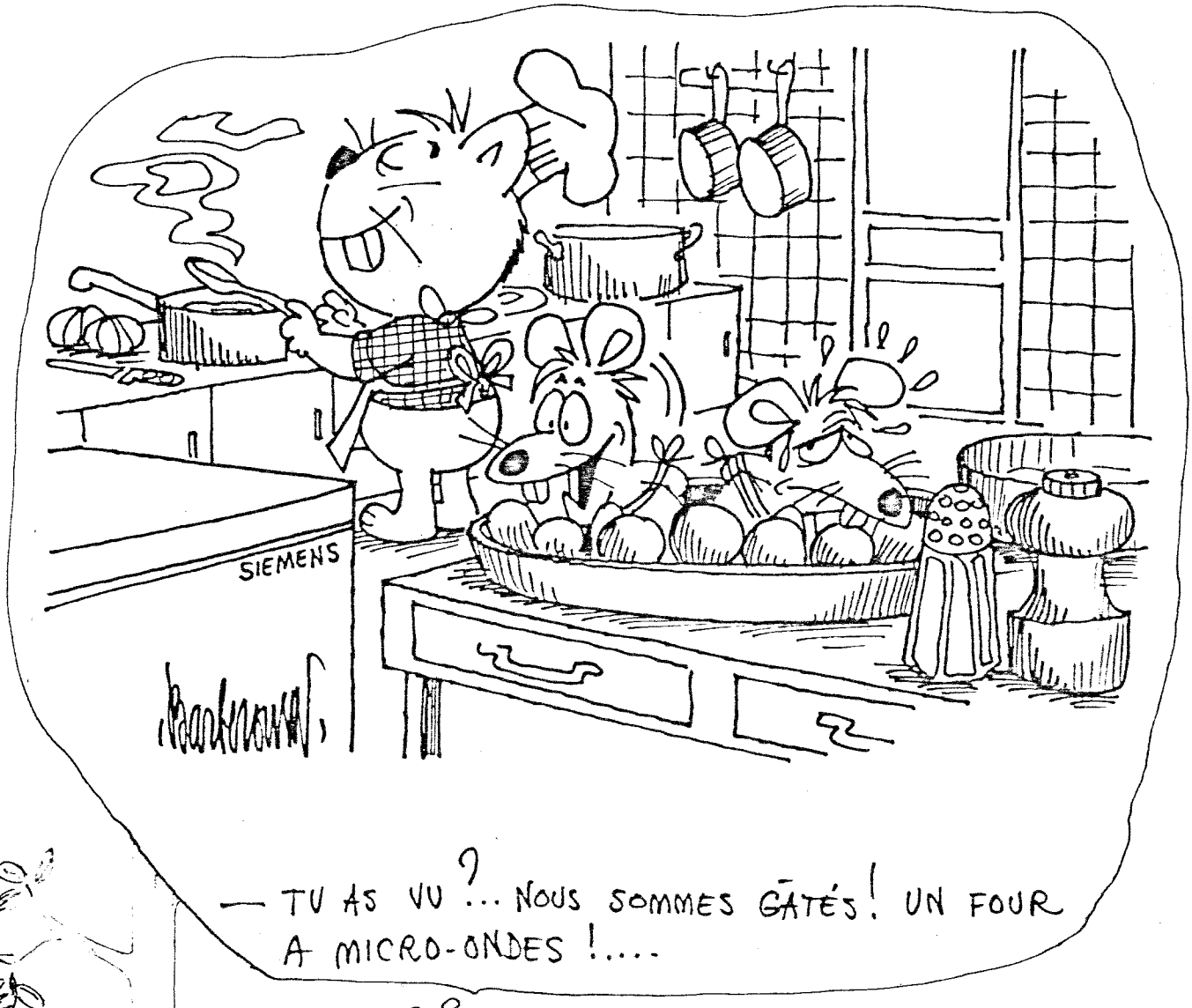
GROUPE SHF (H)URC INFOS

N° 6 AOUT - SEPTEMBRE 82



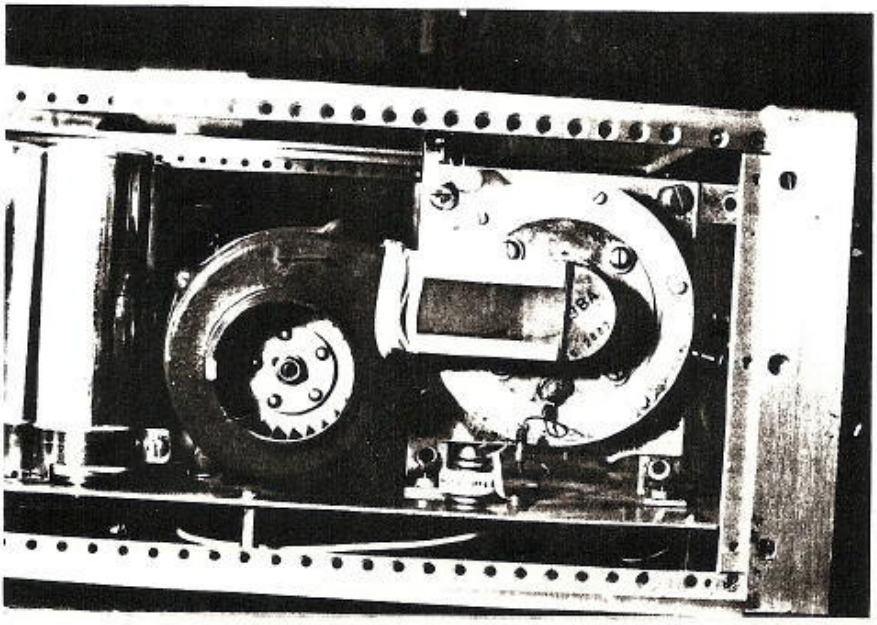
SOMMAIRE

FRIEDRICHSHAFEN 82 (suite du n°5)

- La pellicule de Fried ayant été bousillée chez Kodak vous serez obligés d'aller à Weinheim pour voir les nouveaux Kits SSB et à Robertsfors - Suède pour YCwa et les antennes !

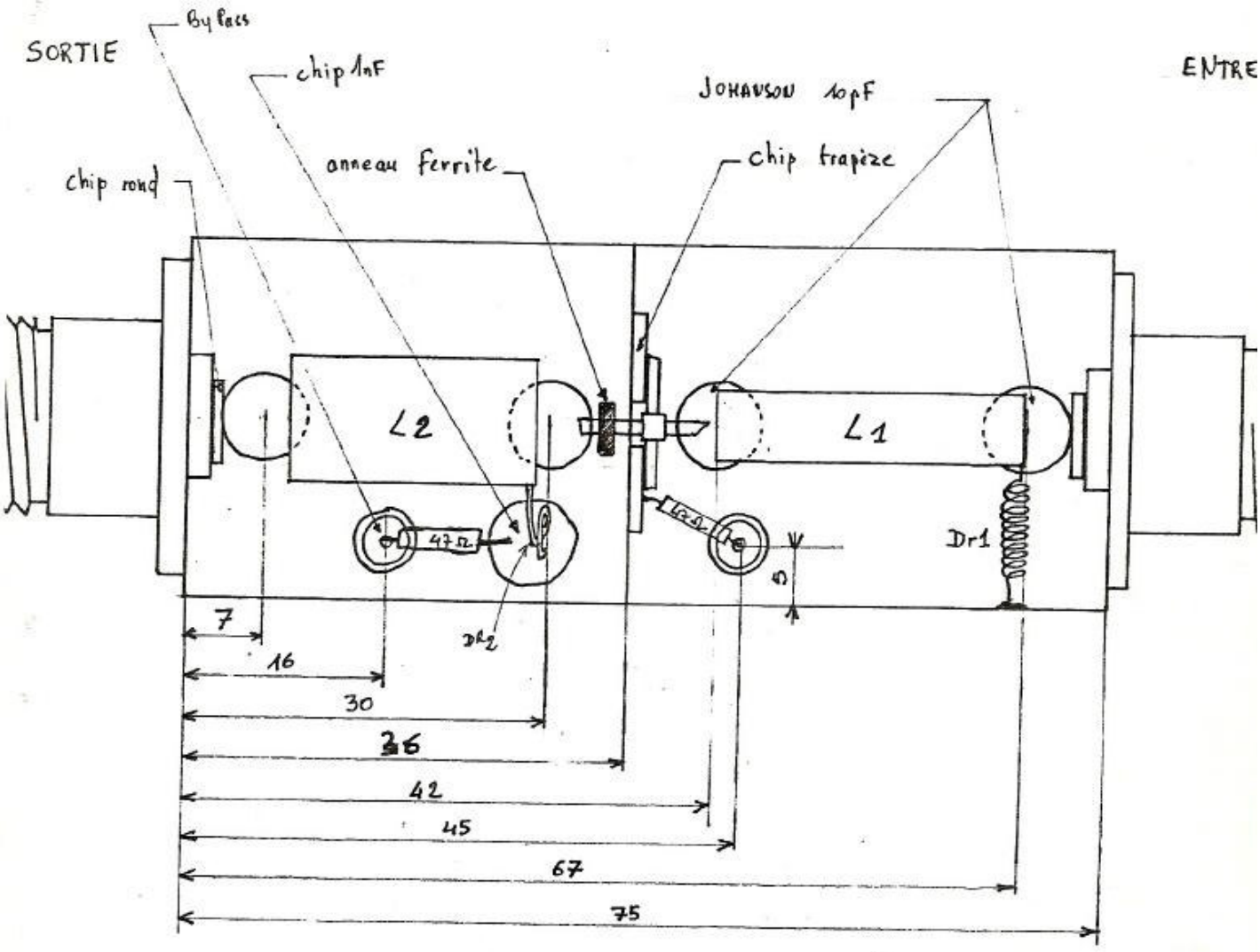
- Quelques précisions sur le transverter 13 cm SSB
  - oscillateur local classique (U310 + BFR30 + BFR91)
    sortie TX 3dBm
    sortie RX 1dBm
  - Emission 500 mW 3 x S3030 + 4 bipolaires
  - Reception 2,8 dB typ. MGF 1200 en tête HF + MGF1100 en mélangeur !
  - Préampli ASGA du même type que le 23 cm :
    2 versions 1,3 dB / 13 dB et 0,8 dB / 16 dB

L'ampli 1296 MHz F1FHR (voir n°5)

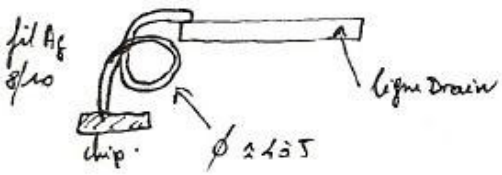


ECHELLE : 2

PREAMPLI 1296 MHz SSB Electronic DX1296

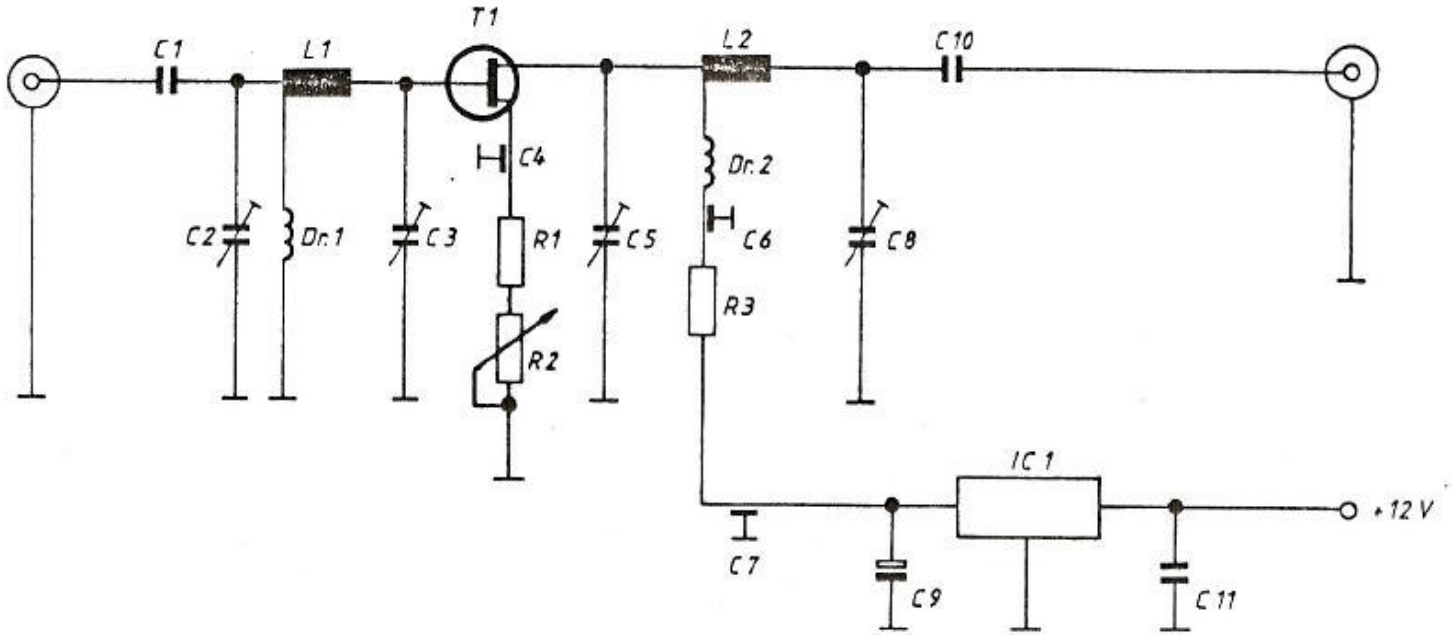


DR1 : 10 spires fil émaillé 35/100 jointives ⌀ 3mm.
DR2 :



Largeur de la boîte 29mm.
Hauteur : 34mm - il y a une cloison sur toute la longueur de la boîte à 11mm du fond - le reste des composants est collé en dessous.

DX 1296



C2,C3,C5,C8 = Johanson (High Q)

R3 = optimiert auf min. noise

IC 1 = 78 L 05

T 1 = MGF 1400 (MGF 1402, MGF 1412)

	Datum	Name
Bearb.	3.12.80	Rieg
Gepr.		
Norm		

Zeichn.-Nr. 001280

23-cm GaAs - Fet

Blatt 01

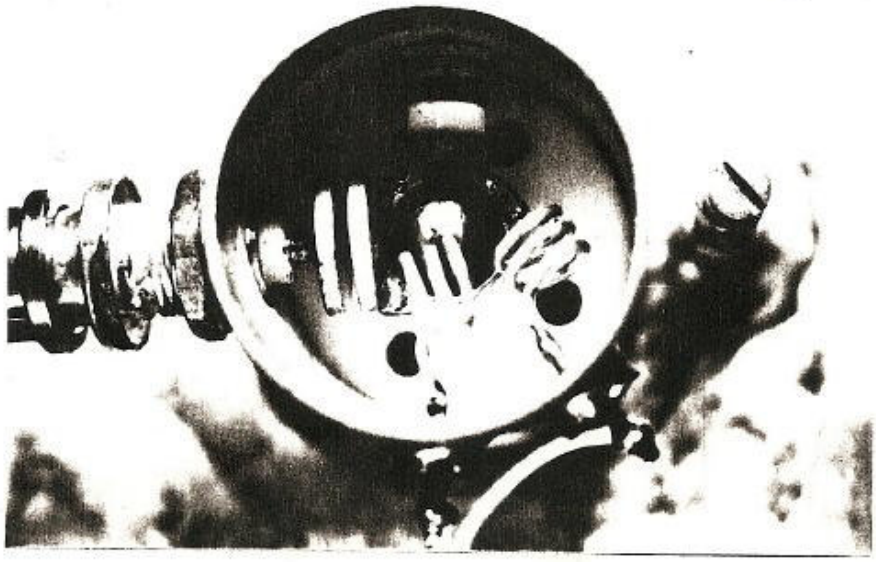
SSB - ELECTRONIC ISERLOHN

1 Bl

RECALÉ POUR LA DIXIÈME FOIS A LA LICENCE
IL SE PEND!

Ampli 1296

circuit d'entrée



ANALYSES DE REVUES

• VHF Communications 2/82

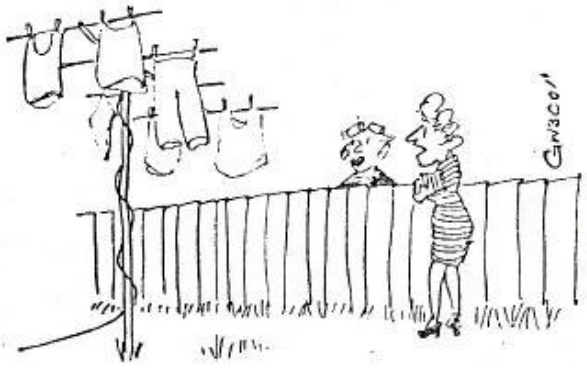
La suite de la série de SM5BSZ sur les "noise sidebands" cette fois IC211 et 245

• QST june 82

« Low noise preamplifiers for 1296 MHz » par WA2GFP
Résultats de 3 ans d'essais pendant lesquels l'auteur a réalisé 47 préamplis 23cm avec 25 types de transistors ! Une description de montage universel ; avec un pi à l'entrée (comme SSB Electronic) Certains se souviennent de WA2GFP ? Ou qui doit des tests de 30 à 432 MHz sur une dizaine de transistors dans Ham Radio de Décembre 79.

• Short Wave Magazine August 82

- A morse tutor and memory keyer using the ZX81.
- D'après G3FPK sur une info de DK3UZ une station allemande de DL aurait contacté 5T5RR sur 2m (≈ 5000 Km) !!?!? Qui a des nouvelles de Jean-Pierre ?



". . . no, he doesn't mind when he's on Top Band . . ."

ANALYSE de REVUES (Suite)

QST Aug. 82 Allez savoir pourquoi le nº d'août est généralement intéressant (voir 81!)

- Un transverter 220 MHz : moderne mais classique ; sans doute un Futur montage du Handbook. Préampli NE64535 et linéaire MRF 309 dans le prochain nº.
- "The care and Feeding of Linear amplifiers For ATV" W6QPG K2RIW, 2C39 on transistors ; comparaison tubes-transistors, l'art et la manière de les utiliser en TV
- "Go For the Gain, NBS Style" W1LJ : antennes VHF/UHF du National Bureau of Standards (5 à 17 El) ; Franchement je n'ai pas encore eu le temps de lire!
- "Phase III with a tetrode UHF amplifier" W2GH. Ampli 435 monotube destiné au trafic satellites de la phase 3 - En Fait c'est quasiment un DETYC à part, que la ficelle mardique a laissé la place à un Flapper au dessus de la ligne commandable par le haut par un système encore pas très evolué ; Pourquoi tout le monde il pompe sur K2RIW et pas K1AGB ou F6CER?!
- une photo de la parabole de 8 m de la bande à I2COR (TFI and Co) 432 et 1296 ! (Results 5th ARRL EME Competition)
- The new Frontier ; en bas de page des résultats de mesure (1296 et 2304) à la conference du Massachusetts. comme quoi on peut Faire bien avec un GaAsFet pas cher et plus mauvais avec des GaAsFets de luxe!

WIRELESS WORLD Aug 82

D.C. INPUT OR R.F. OUTPUT?

In "Amateur radio" for June, 1982, Pat Hawker laments the replacement of "d.c. input power" regulations by new limitations on "dBW carrier power" in the revised Amateur Licence Schedule. While I tend to agree that the dBW is not particularly welcome, the change to an "r.f. output" criterion is long overdue.

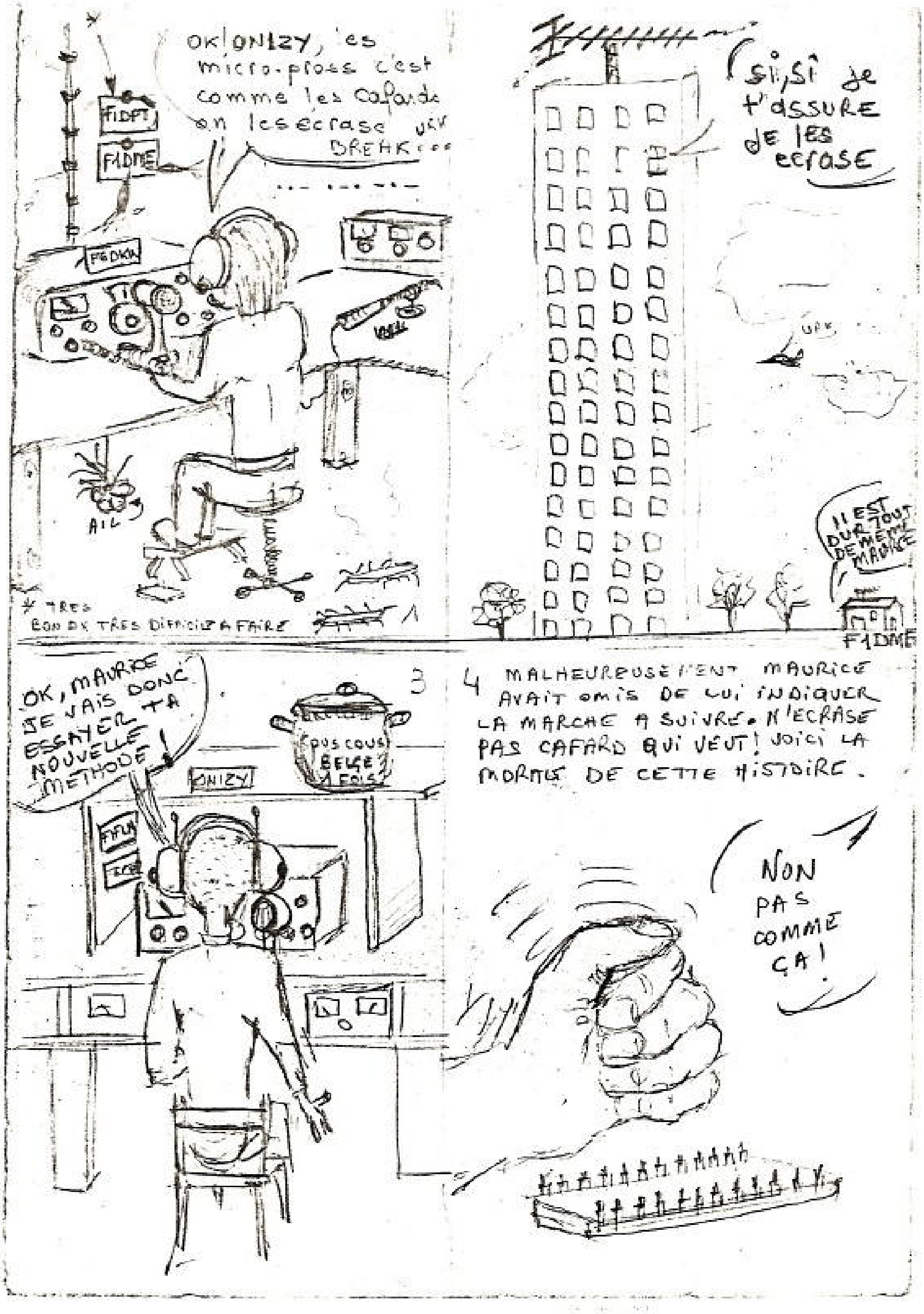
"D.c. input" was firmly rooted in the days of valve transmitters and constant-carrier modes, when both h.t. voltage and anode current were metered, and the meter needles would stay still to be read! For most radio amateurs – like it or not – those days are gone. Either our transmitters tend to be solid-state and have only r.f.-output metering, or they are primarily designed for s.s.b. In both cases it makes more sense to measure r.f. output, and this can be done with acceptable accuracy for the Amateur Service. At low powers, the accuracy requirement is minimal (at least for regulatory purposes), and at higher powers either commercial power meters can be used, or extremely simple home-made equipment, such as an existing s.w.r., meter can be calibrated accurately by transfer.

Although a d.c.-input limit does encourage high-efficiency amplifiers, is that what we really need? In today's crowded bands, the most important characteristic of a signal is its quality, and an r.f.-output limit allows amateurs to operate their transmitters in a more linear, though less efficient, manner.

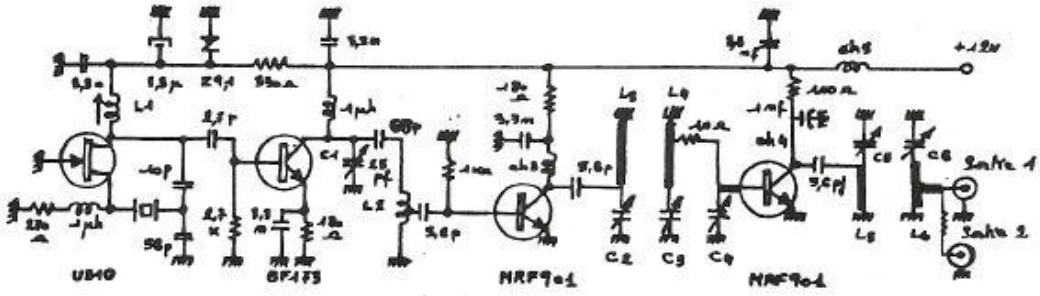
The demise of d.c.-input limits is a welcome advance, but other relics of the past remain in the new Schedule: for example, the 6dB difference between the power limits for c.w. (A1A/B) and for s.s.b. (J3E). Can anyone explain how a c.w. signal with a well-shaped keying waveform differs significantly in interference potential from an s.s.b. (J3E) signal of the same peak envelope power, and why the power limits for the two modes should not be the same? The 6dB penalty against c.w. is a legacy of the transition to s.s.b. from plate-and-screen modulation, and has no current relevance. In any further revisions of the Schedule it deserves a decent burial, alongside d.c. input limits.

Ian F. White, G3SEK

Abingdon


OK! ON1ZY, les micro-proos c'est comme les cafards on les écrase UKV BREAK...
F1DPT
F1DME
F6DKN
AIL
* TRÈS BON DX TRÈS DIFFICILE A FAIRE
1
Si, si je t'assure de les écrase
IL EST TOUT DUR DE MÊME MAURICE
F1DME
OK, MAURICE JE VAIS DONC ESSAYER TA NOUVELLE MÉTHODE !
ON1ZY
COUSCOUS BELGE 1 FOIS
3
4 MALHEUREUSEMENT MAURICE AVAIT OMIS DE LUI INDIQUER LA MARCHE A SUIVRE. N'ECRASE PAS CAFARD QUI VEUT! VOICI LA MORALE DE CETTE HISTOIRE.
NON PAS COMME ÇA !

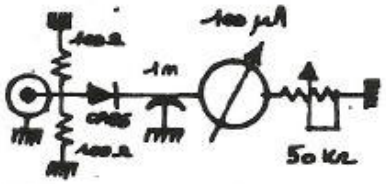
Oscillateur 1152 MHz F6CER nouvelle version

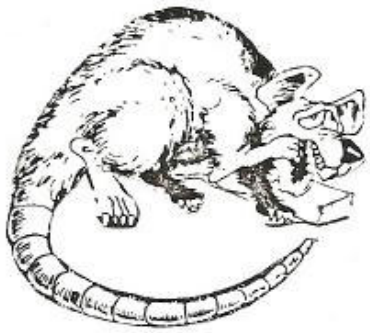


F6CER 9-82

Ch 3 : 4 tours ϕ 3 mm
fil 3/10e
L1 = 5,5 tours fil machine ϕ 5
l = 7 mm
L2 = 2 tours ϕ 5 fil 1/2 1,0/10e
l = 10 mm. Prise médian

détail ch 4





InFo
F1DPU - F1FHI

CATALOG - APRIL 1982

APPLIED INVENTION

THE SOURCE FOR SOLID STATE STATE OF THE ART

JULIUS MADEY
SALES - APPLICATIONS

RD 2 RT 21 BOX 390
HILLSDALE, N.Y. 12529
518-325-3911

****

GAAS FET PRICE BREAKTHROUGH !!!!!

****

ANNOUNCING SIGNIFICANT PRICE REDUCTIONS ON SEVERAL POPULAR MITSUBISHI MGF1400 SERIES FETS...MITSUBISHI MAINTAINS PRICE/PERFORMANCE LEADERSHIP!

TYPE		OLD PRICE	NEW PRICE
MGF1200	- (VHF THRU 6GHZ, 1 MU GATE, TYP 4GHZ NF 2.2DB)	$ 13.00	$ 10.20
MGF1400	- (1.0 MU GATE, TYP 4GHZ NF 2.0DB)	$ 19.25	$ 13.90
→ MGF1402	- (0.7 MU GATE, TYP 4GHZ NF 1.1DB)	$ 34.00	$ 15.00
MGF1412-11-10	- (0.7 MU GATE, MAX 4GHZ NF 1.0DB)	$ 45.50	$ ~~33.50~~ 25.75
MGF1412-11-09	- (0.7 MU GATE, MAX 4GHZ NF 0.9DB)	$ 56.75	$ ~~51.40~~ 38.50
MGF1412-11-08	- (0.7 MU GATE, MAX 4GHZ NF 0.8DB)	$ 85.50	$ ~~85.50~~ 60.25
*MGF1403-11-09	- (0.5 MU GATE, MAX 4GHZ NF 0.9DB)	$ 97.00	
*MGF1403-11-08	- (0.5 MU GATE, MAX 4GHZ NF 0.8 DB)	$ 187.00	
* REPLACED BY: MGF1403 (4GHZ NF 0.8-0.9 DB)			$ 93.50
MGF1403-11-07	- (0.5 MU GATE, MAX 4GHZ NF 0.7DB)	$ 161.75	$ 148.75
THE 1403 IS RATED THROUGH 18 GHZ WITH 1.0DB TYP NF AND 10.5 DB GAIN AT 12GHZ			
A LIMITED NUMBER OF OLDER STOCK 1403'S (MIX OF 0.7 TO 1.9 DB NF AT 4GHZ) ARE AVAILABLE AT $85 EACH			
MGF1801	- (MEDIUM PWR GAAS FET, 18GHZ LINEAR PO 150 MW)	$ 54.25	$ 54.25

NEW LOW PRICES FOR MITSUBISHI SINGLE MODE CW LASER DIODES!

#ML3001	- (830 NM, ITH=30 MA TYP, 3 MW OUT, BUILT IN MONITOR)	WAS $ 200.00	NOW $ 100.00
#ML4001	- (780 NM, ITH=30 MA TYP, 3 MW OUT, BUILT IN MONITOR)	WAS $ 260.00	NOW $ ~~120.00~~ 146.00

MITSUBISHI MICROWAVE MODULES DIELECTRIC RESONATOR STABILIZED GAAS FET OSCILLATORS

#FO1010X	10.4 GHZ (TUNEABLE +/- 150 MHZ MIN) TRANSMITTER, 15 MW OUT AT 6VDC 70 MA, WR90 FLANGE	$ 37.50
#FO1210X	11.5 OR 12.5 GHZ (TUNEABLE +/- 150 MHZ MIN) TRANSMITTER, 15 MW OUT, WR75 FLANGE	$ 37.50
#FOUP11KF	HETERODYNE RECEIVER MODULE (LO=10.448 GHZ, TUNEABLE +/- 150 MHZ MIN). USE HIGH OR LOW SIDE INJECTION. WITH TYPICAL IF OF 0-100 MHZ. -20DBM IN GIVES 40 MV(PP) OUT INTO 600 OHMS AT 60 MHZ. WR90 FLANGE	$ 34.50
#DP13KF	DOPPLER MODULE, 10.525 GHZ OPERATIONAL FREQUENCY, WR90 FLANGE	$ 41.00
#DP12KF	DOPPLER MODULE WITH DIRECTIONAL OUTPUT, 10.525 GHZ OPERATIONAL FREQUENCY, WR90 FLANGE	$ 58.75
THESE MODULES CAN BE VOLTAGE MODULATED APPROXIMATELY +/- 4MHZ OR OPTICALLY MODULATED WITH AN IR LED SUCH AS THE LD271		
18 GHZ HORN ANTENNA	DIE CAST 15DB GAIN HORN, MATES WITH WR90 FLANGE	$ ~~16.40~~ 17.0

OTHER ACTIVE DEVICES AND MODULES

2SC2876	BIPOLAR TRANSISTOR, MRF901 REPLACEMENT, FT=7GHZ, 2.2DB NF, 18DB GAIN AT 1GHZ	$ 1.50
01.7-2.35GHZ PREAMP	MATC 2.0L (1.7-2.1) MATC 2.0M (2.0-2.35) 13DB GAIN, 2DB NF GAAS FET PREAMP, BNC IN/OUT	$ 40.00
NEW RETICON R5620 UNIVERSAL ACTIVE FILTER	SWITCHED CAPACITOR TYPE, NO EXTERNAL COMPONENTS NEEDED. DIGITALLY PROGRAMMABLE, Q 0.57 TO 150, FO 0.05 TO 25,000 HZ. HP, LP, BP, NOTCH, ALLPASS. 16 PIN DIP	$ 8.00
	WITH APPLICATION NOTES:	$ 10.00

OTHER OPTOELECTRONIC DEVICES

LD271	SIEMENS HIGH EFFICIENCY INFRARED LED; 16MW OUT (950NM) AT 100 MA DRIVE	$ 0.75
BPW-34	SIEMENS LARGE AREA PHOTODIODE, 7.6 SQ MM AREA, 12NS RISE TIME, 80NS.- 0.6 A/W AT 850NM	$ 3.00

PASSIVE COMPONENTS

HOT CARRIER DIODE	MOTOROLA MBD102 MINI-L PACKAGE, MIXER NOISE FIGURE 5.5DB AT 1GHZ	$ 1.00
CHIP CAPS	VITRAMON VEE JEM LOW INSERTION LOSS MICROWAVE CHIP CAPS FOR COUPLING OR BYPASS. 7000P/7000 1.1-1.7 GHZ 7000PT004 1.9-2.6 GHZ 7000P7001 2.5-4.2 GHZ	5 / $ 5.00
	RMC UNCASED DISKS ('SOLDER INS') FOR VHF/UHF BYPASS. 100 - 220 - 470 - 680 PF. 10 /	$ 2.50
TRIM CAPS	VOLTRONICS STRIPLINE 'SHUTTLE' TRIMMERS: CP2 0.1-2.5PF CP10 0.5-9PF	$ 3.15
	VOLTRONICS SEALED PISTON TRIMMERS, Q=5000 AT 100MHZ: EQTY 0.5-9PF	$ 3.40
THERMOELECTRICS	MELCOR FRIGICHIP HEAT PUMPS (PELTIER EFFECT) FOR PRECISE THERMAL CONTROL FC-87-12-05L PUMPS 1.6 WATTS AT 1.5 VOLTS/1.4 AMPS. SIZE - 4.6/6.9/6.9 MM	$30.00
	CP-1.4-71-10L PUMPS 19 WATTS AT 8.6 VOLTS/3.6 AMPS. SIZE - 30/30/4.8 MM	$21.00

TERMS: PREPAY. INCLUDE $2.50 SHH ($3.50 ON ITEMS MARKED WITH @). N.Y. RESIDENTS ADD 4% SALES TAX. OVERSEAS NET 30 DAY BILLING AVAILABLE TO COMMERCIAL AND INSTITUTIONAL ACCOUNTS ON APPROVAL. 5+H 9 6.50

LARGEUR D'UNE LIGNE A AIR EN FONCTION DE LA HAUTEUR

il vous arrive de faire des calculs à l'abaque de smith pour des amplis ou des préamplis ? voici quelques valeurs mécaniques pour la réalisation pratique :

largeur approximative (en mm) d'une ligne 0,5 mm à air

Impédance ↓	hauteur à la masse en mm							(Johansons) 7,5	8	10
	1	2	3	4	5	6	7			
110 Ω	/	/	/	/	/	/	9,5	10	10,5	13,5
100 Ω	/	3,2	5	6,5	8	9,5	11,5	12	13	16
90	/	4	6	8	10	12	14	15	15,5	20
80	/	4,8	/	9,5	12	14,5	17	18	19	24
75	2,7	5,4	8	10,5	13,5	16	19	20	21,5	26,5
70	3	6	9	12	15	18	21	22,5	24	30
60	3,8	7,5	11,5	15	19	22,5	26,5	28	30	
50	5	10	14,5	20	24	29,5	34	37		
40	6,5	13	20	26	33					
35	8	16	23,5	31	/					
30	9,5	19	28,5	/	/					
25	12	25	/	/	/					
20	15	30	/	/	/					
15	21,5	/	/	/	/					
10	33,5	/	/	/	/					

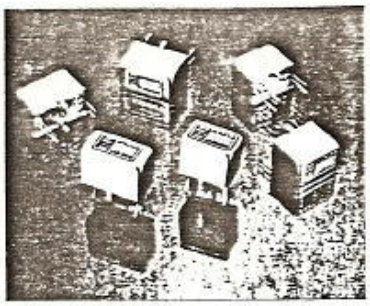
et s'il vous manque des valeurs :

pour $W/h \geq 1$ $\quad Z_0 = \dfrac{120\,\pi}{W/h + 1{,}393 + 0{,}667\,\ln(W/h + 1{,}444)}$

DU NOUVEAU CHEZ BERIC

un Filtre Xtal SSB 9MHz en remplacement de l'ITK dont l'importation est toujours bloquée →

Miniature Crystal Filter for SSB Transceiver



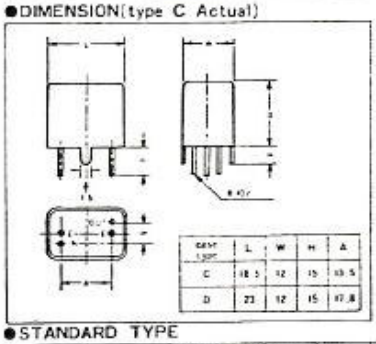
- Superior Carrier Suppression
- Minimized Insertion Loss
- Sharp Attenuation Characteristics
- Very compact size and light weight

220 F

●SPECIFICATION

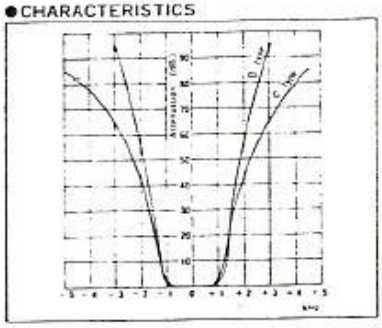
Model	M22C	M22D
Frequency	9 MHz	
Pass-Band at 6dB	6dB ± 1.5kHz min	
Ripple	2 dB max	
Loss	4 dB max	5 dB max
Attenuation	20dB ± 1.55kHz max	20dB ± 1.5kHz max
Characteristics	60dB ± 3.0 kHz max	60dB ± 2.4kHz max
Spirous Response	60dBmin	80dBmin
Impedance	500 – 700 Ω / 18pF	
Temperature Range	−20 – 70°C	
Weight	6.5 g	8 g

●DIMENSION(type C Actual)



CASE TYPE	L	W	H	A
C	18.5	12	15	17.5
D	23	12	15	17.8

●CHARACTERISTICS



●STANDARD TYPE

Model	Frequency	Pass-Band Width CB	Pass-Band Width dB min	Ripple dB max	Loss dB max	Attenuation dB	Attenuation min	Spurious Response dB min	Terminal Impedance	Temperature	Case Type
9 M 22 D	9000 kHz	6	±1.5kHz	2.0	5.0	60	±2.4 kHz	80	700 Ω // 18 pF	−20 – 70°C	D
10 M 22 C	10.1 MHz	6	±1.5kHz	2.0	4.0	60	±3.0 kHz	60	500 Ω // 18 pF	−20 – 70°C	C
10 M 22 D	10.1 MHz	6	±1.5kHz	2.0	5.0	60	±2.4 kHz	80	500 Ω // 18 pF	−20 – 70°C	D

et 2 mélangeurs à diodes moins chers que les Anzac →

DOUBLE BALANCED MIXERS

Equivalent MD151 Mini-Circuits SRA-1-H

Miniature type

240 F

Model CB303M

High level double-balanced mixer
+ 13 dBm Typical compression level

PIN CONNECTIONS TYPE A

LO	1
RF	8
IF	5, 6
Ground	2, 3, 4, 7
Case ground	7

Pins 5 and 6 must be connected together

GUARANTEED SPECIFICATIONS*
(From − 20°C to + 80°C)

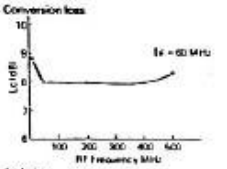
Frequency range	
R, L Ports	5 – 500 MHz
IF Port	DC – 500 MHz
Conversion loss**,	9 dB max
Isolation	
L to R	25 dB min.
L to I	25 dB min.
R to I	20 dB min.

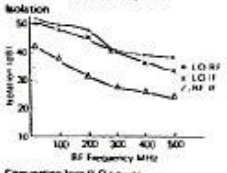
OPERATING CHARACTERISTICS

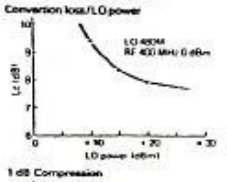
Impedance	50 Ohms nominal
Maximum input:	
Total power***	200 mW max @ 25°C
X Port current	40 mA max.
RF Input for 1 dB compression:	+ 13 dBm Typical
SSB Noise figure	Within 1 dB of conversion loss
Two tone IM ratio (with + 10 dBm input, each tone and 60 MHz IF)	25 dB Typical at 400 MHz

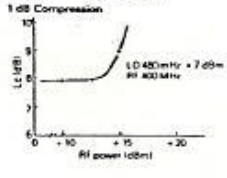
* All specifications apply when operated at + 23 dBm available LO power, with 50 ohm source and load impedance

*** Derated to 80° @ 30 mW/°C









DOUBLE BALANCED MIXERS

Equivalent MD108 IE500

Miniature type

80 F

Model CB303M1

Low level double-balanced mixer
+ 1 dBm Typical Compression Level

PIN CONNECTIONS TYPE A

LO	1
RF	8
IF	5, 6
Ground	2, 3, 4, 7
Case ground	7

Pins 5 and 6 must be connected together

GUARANTEED SPECIFICATIONS*
(From − 20°C to + 80°C)

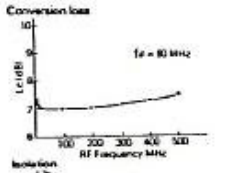
Frequency range	
R, L Ports	1 – 500 MHz
IF Port	DC – 500 MHz
Conversion loss**	8.0 dB max.
Isolation	
L to R	25 dB min.
L to I	23 dB min.
R to I	20 dB min.

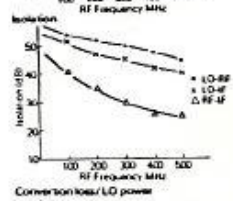
OPERATING CHARACTERISTICS

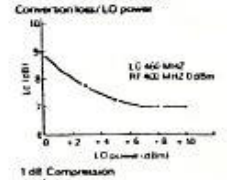
Impedance	50 Ohms nominal
Maximum input	
Total power***	200 mW max. @ 25°C
X Port current	50 mA max.
RF Input for 1 dB compression	+ 1 dBm Typical
SSB Noise figure	Within 1 dB of conversion loss
Two tone IM ratio (with − 10 dBm input, each tone and 60 MHz IF)	55 dB Typical at 400 MHz

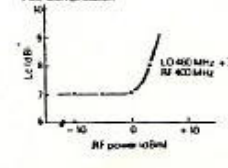
* All specifications apply when operated at + 7 dBm available LO power, with 50 ohm source and load impedance

*** Derated to 80° @ 1 mW/°C

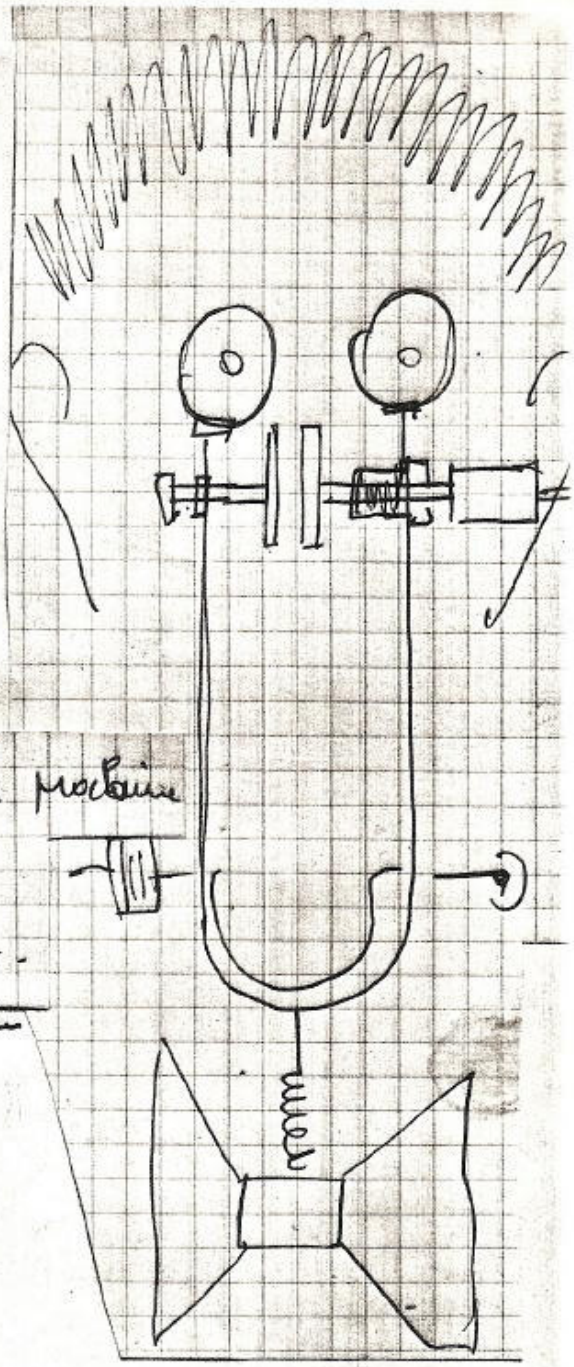








AROUND THE WORLD WITH MICROWAVES

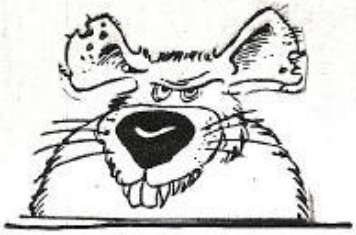


EXPEDITION CN2BL

— c'était bien —
— nous pensons revenir l'année prochaine
— A bientôt —

F6CIS F1FAR F6EVT -

Note de l'éditeur : Si vous voulez en n° d'octobre il faudrait peut-être vous « Fille » ?!



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