THE INTELLIGENT MODEM. BY NINO BENCI.

Well here it is, as promised in the December issue of KAOS. The Intelligent Modem. The design presented is of a minimum type eg, this is the simplest configuration possible. As can be seen from the circuit diagrams presented, the circuit requires only nine IC's. This can be reduced to eight by eliminating the external hybrib and implementing the internal hybrid (I know I said six in the December edition of New Products, that was just to grab your attention). Note #1 shows how this can be done.

Now down to basics. The main operational components for the modem are the SC11014 and the SC11008. This two chip set carries out all the operations for a Hayes type smart modem. The SC11014 has the provision for use of the internal hybrib, but I have shown that if required an external hybrib can be implemented. The SC11008 can be configured to operate in one of many different modes at power on. this is done by setting of the DIP switches. The power on mode can be altered by use of the Hayes command set provided. This modem will operate in either the BELL mode or CCITT mode, thus making it useful for calling bulletin boards in the states.

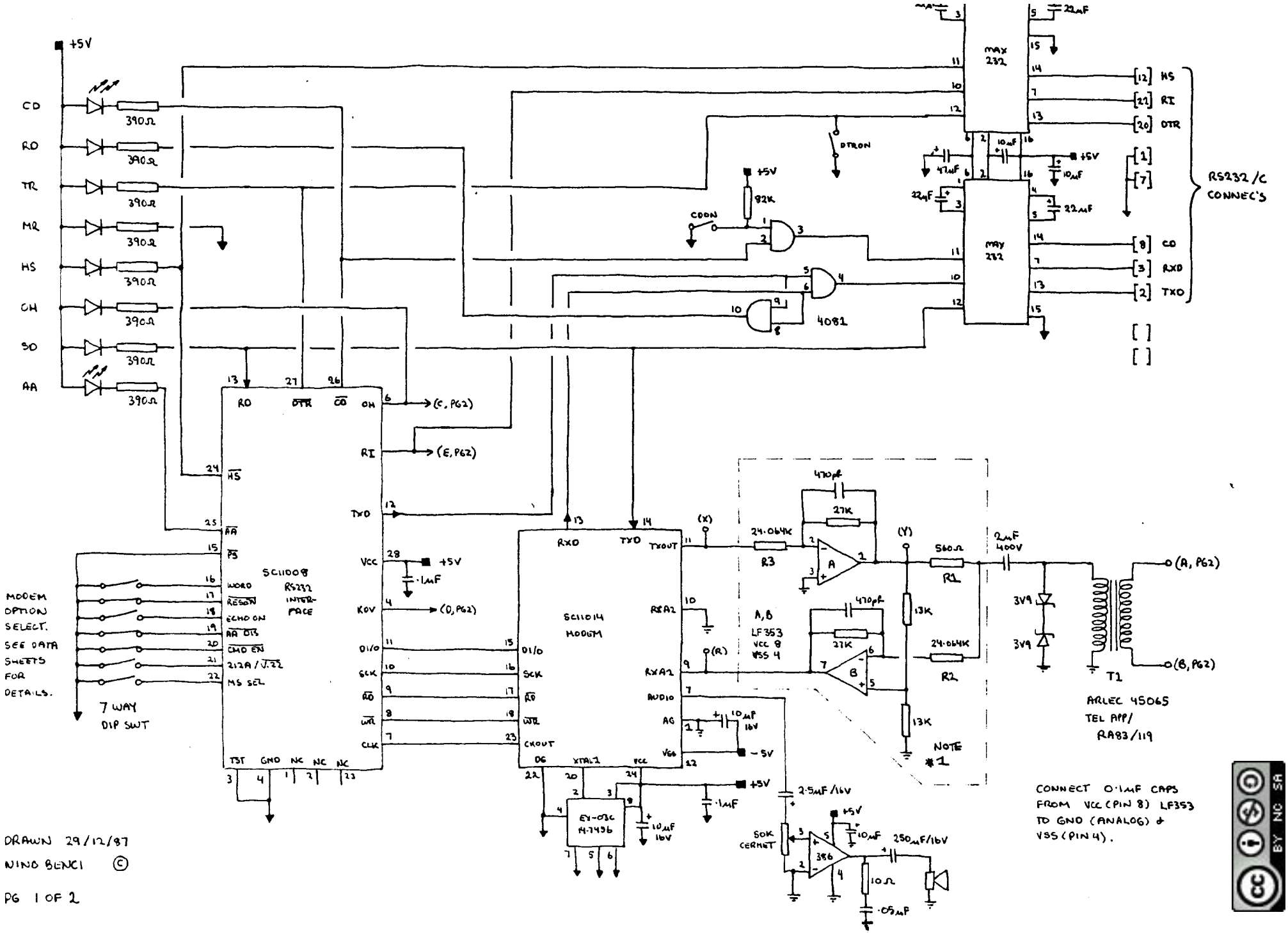
As provided, the one mode that this modem cannot operate in is V.23 . It will operate in both V.21 and V.22. This is adequate for most general uses. The hybrid and the line interface design is implemented to follow the Telecom recommendations as close as possible. A word of warning, this circuit is NOT TELECOM APPROVED so if you plan to build one, you must obtain type approval before connecting it to the Telephone network. You can connect it to a private network with no restrictions. No power supply design is given. The choice is yours. The units power consumption is low enough for it to run approximately 2 hours from a 12v/1.2A gel cell. Note though, this circuit requires +5V and -5V.

An added bonus for the design is that the modem will operate with most of the current comm's packages available that support the Hayes command set. So therefore there is little to worry about in the area of software. Even though, the command set is fairly straight forward and easy to use. It allows the user to alter the operating parameters for the modem whilst it is in use. The modem also has the capability for both tone dialing and decatic dialing.

For those budding hackers that are really intrested the full command set details and data sheets plus more info is available from me. Either call me at home on 543 1383 (AH) or see me at the next KAOS meeting. Happy hacking.

NOTE. This is a original design by author, with pieces and ideas taken from many various data sheets and designs. It is published in the intrest of presenting something new. Permission is given for constuctors to build units for their own use and NOT to be SOLD commercially. Any commercial intrests can contact me at home (AH).

A footnote, the modem chips will be available from the new Sierra distributors, ACD-ITRONICS. Their phone number is 720 2711. Address is 1/59 Malvern Rd, Bayswater.


+5V
CD
RD
TR
MR
HS
CH
SD
AA
390Ω
MAX 232
4081
DTRON
CDON
82K
10µF
47µF
22µF
RS232/C CONNEC'S
SC11008 RS232 INTERFACE
SC11014 MODEM
7 WAY DIP SWT
MODEM OPTION SELECT. SEE DATA SHEETS FOR DETAILS.
A,B LF353 Vcc 8 Vss 4
24.064K
470pF
27K
R3
R1
R2
560Ω
13K
2µF 400V
3V9
T1
ARLEC 45065
TEL APP/ RA83/119
NOTE *1
CONNECT 0·1µF CAPS FROM Vcc (PIN 8) LF353 TO GND (ANALOG) & Vss (PIN 4).
2·5µF/16V
50K CERMET
250µF/16V
10Ω
·05µF
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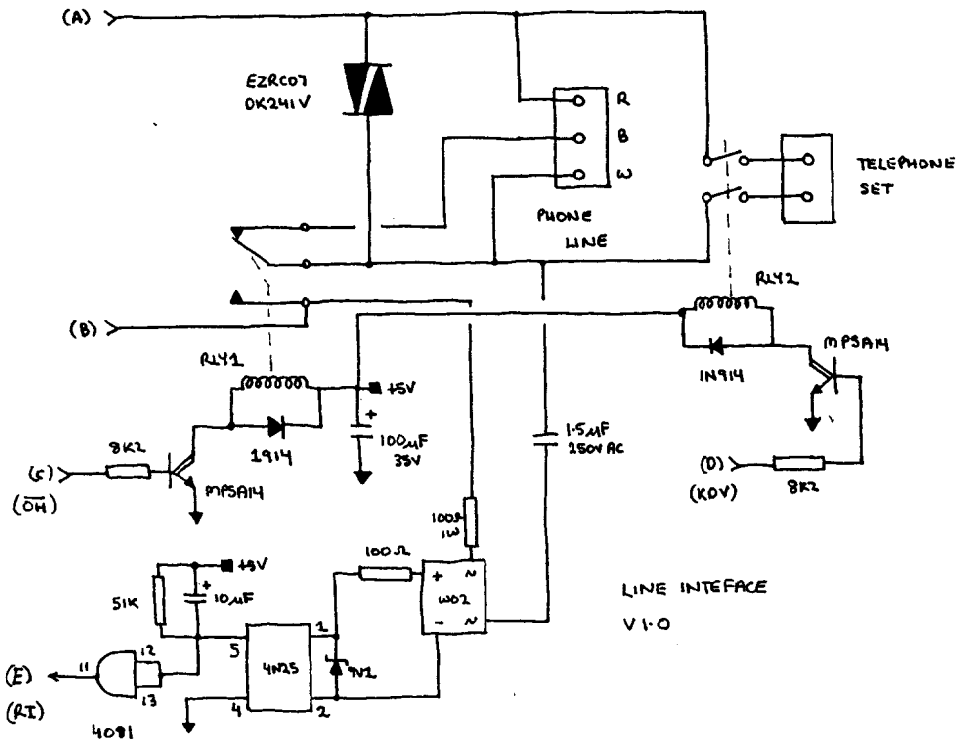
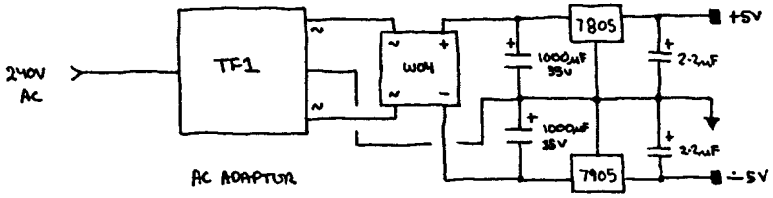
PG 1 OF 2



RLY 1 NATIONAL HAIS (STEWART ELECTRONICS)

RLY 2 NF2DC5



AC ADAPTOR

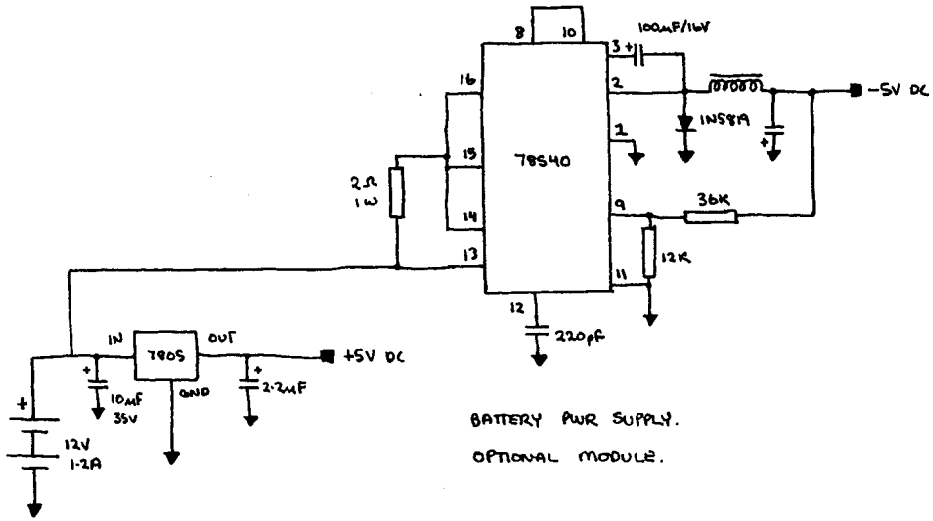
12V AC

@ 1A. MIN.

6-0-6VAC.

EG USE PL15/5VA.

MAINS SUPPLY.



BATTERY PWR SUPPLY.

OPTIONAL MODULE.

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