BAB V

KESIMPULAN

Dalam penulisan ini telah dituliskan beberapa hal yang secara nyata dapat digunakan dalam mengembangkan jaringan komputer di Universitas Darma Persada. Beberapa hal strategis yang dibahas dalam makalah ini, antara lain meliputi:

1. Untuk integrasi ke Internet, terdapat banyak media yang dapat digunakan untuk menghubungkan komputer ke dalamnya. Ada kabel ethernet seperti pada Local Area Network, Radio Microwave yang berkecepatan tinggi, atau saluran telepon yang dipakai untuk dial up ke suatu provider. Dan satu lagi adalah radio paket, yang potensial untuk lembaga pendidikan seperti SMP, SMA, dan juga Universitas, namun belum banyak diketahui apalagi diterapkan. Untuk keperluan pribadi pun media ini tak kalah menariknya sebab bebas pulsa.
2. Dalam mendesain sebuah jaringan radio paket perlu diperhatikan layanan-layanan apa yang akan digunakan di dalamnya. Selain itu juga diperhatikan konfigurasi softwarenya dalam tabel routing untuk penamaan dan pengalamatannya.
3. Untuk sebuah jaringan yang kecil, maka jaringan Unsada hanya memerlukan sebuah node yang aktif terintegrasi ke Internet lewat Internet Service Provider

sebagai gateway. Gateway ini kemudian dihubungkan ke LAN dalam kampus sehingga setiap PC user di dalam kampus dapat mengakses fasilitas Internet.

4. Untuk mempermudah user di luar kampus dalam mengakses Internet, maka diberikan PC gateway radio paket di dalam LAN kampus dengan network address dan broadcast address IP privat dan IP yang dikenal di Internet.

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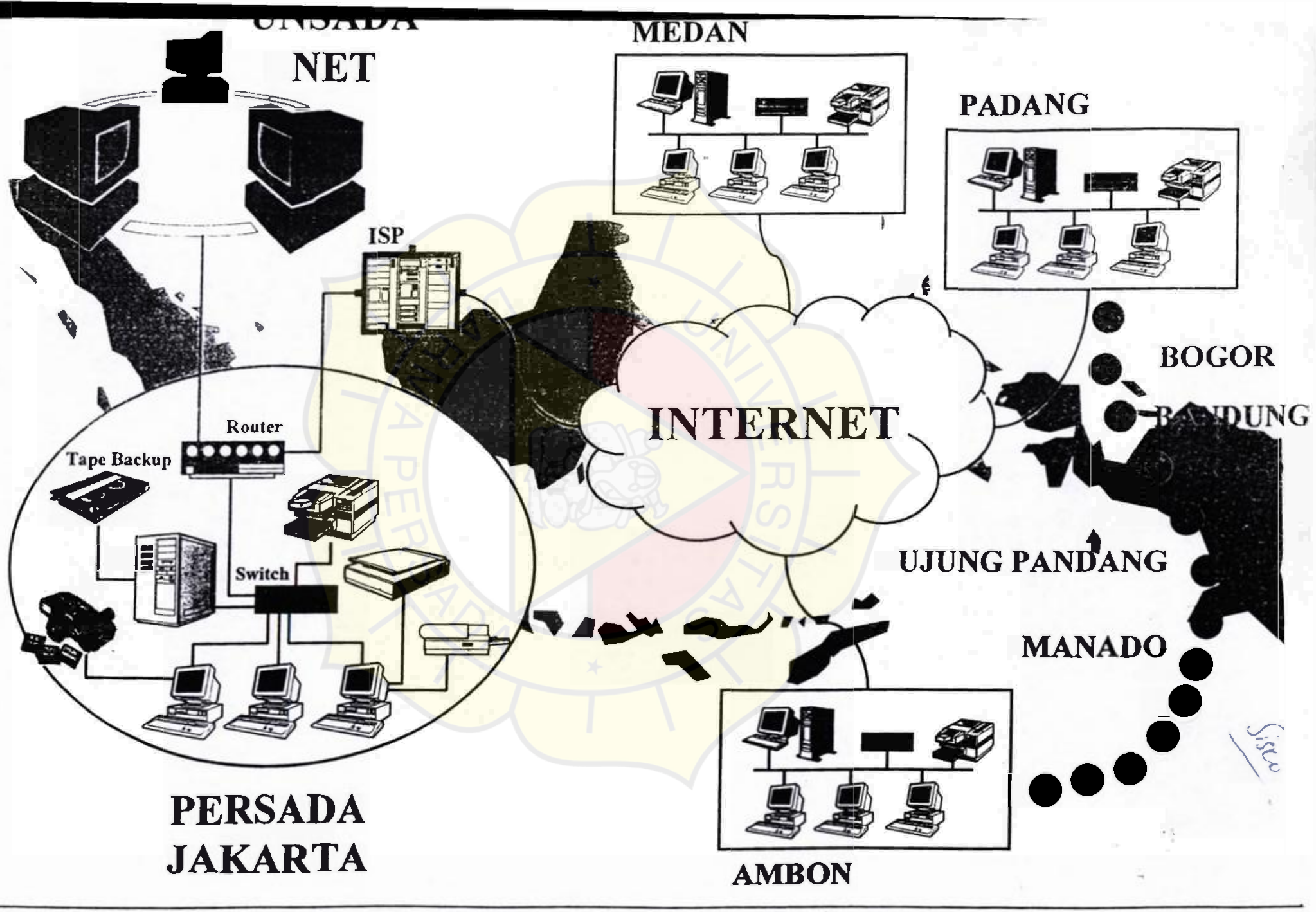
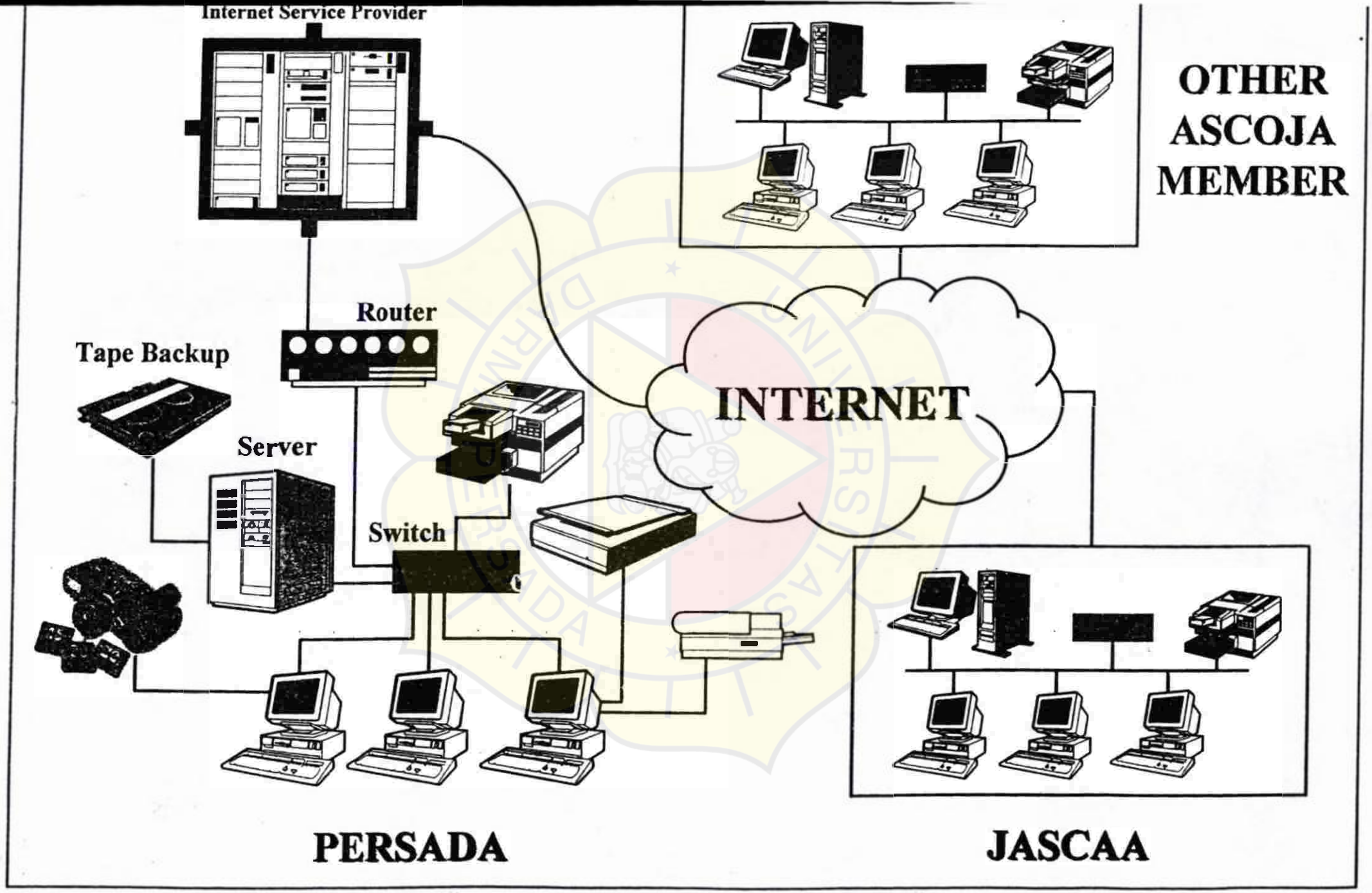
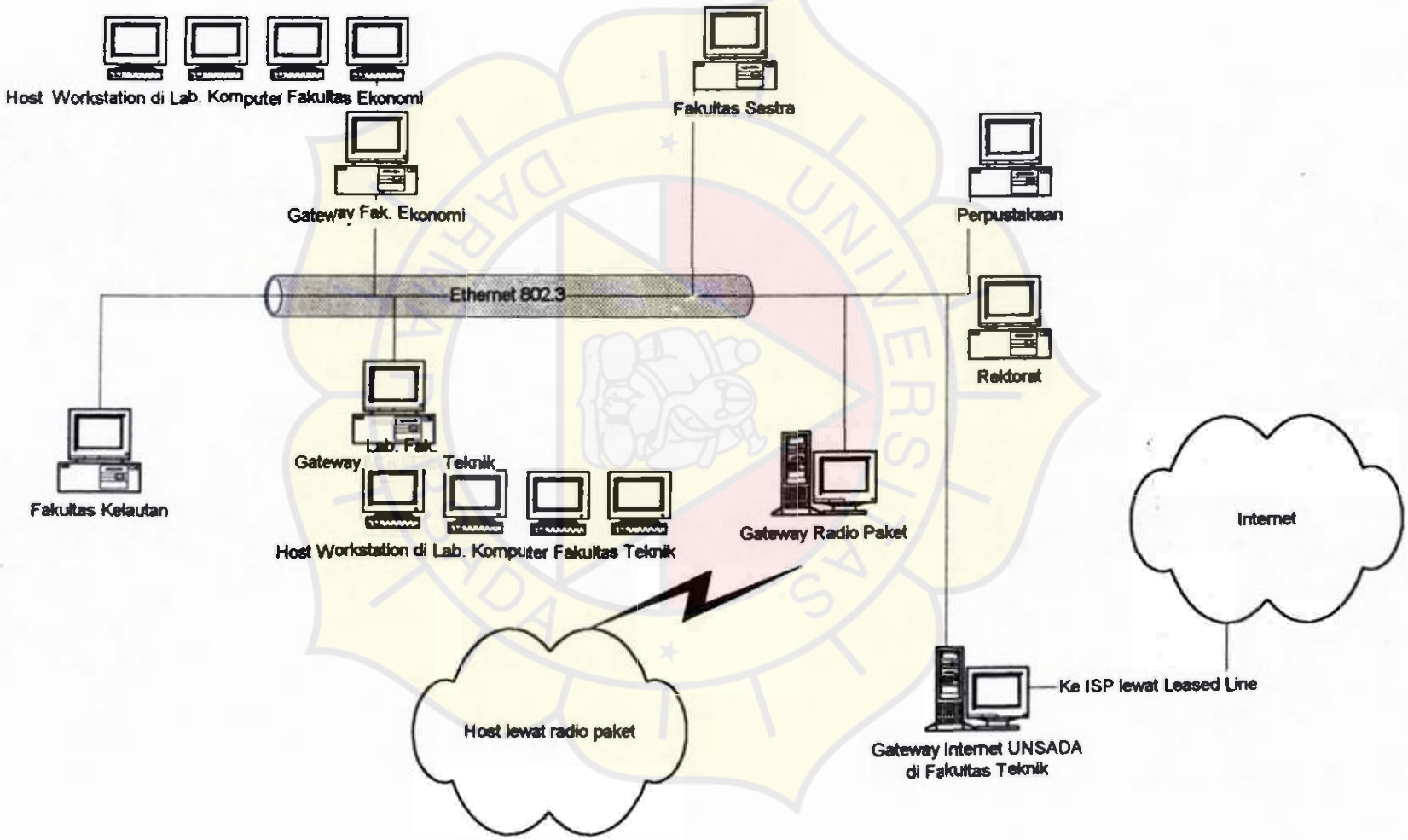
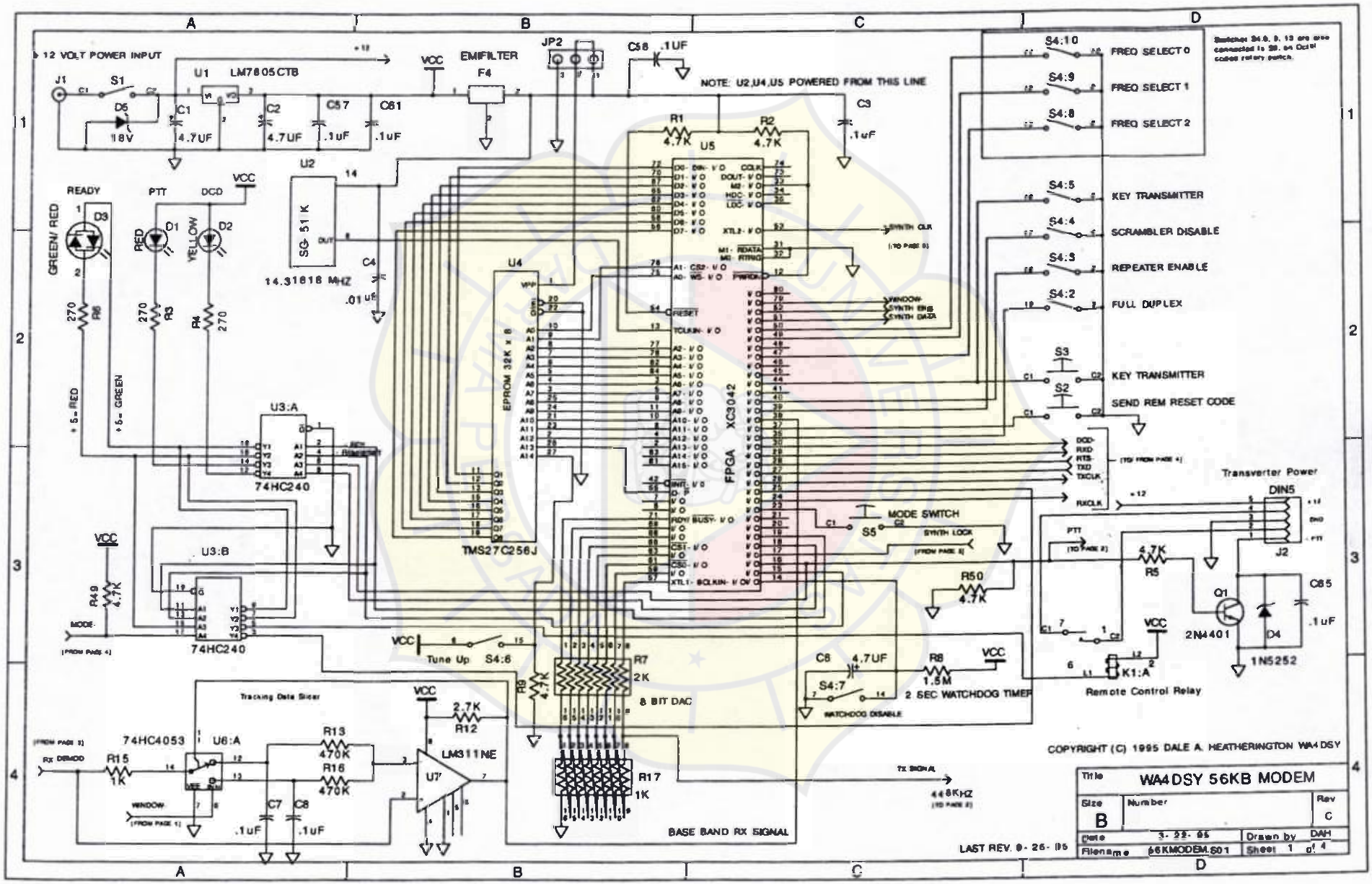

UNSADA
NET
MEDAN
PADANG
ISP
INTERNET
BOGOR
BANDUNG
Router
Tape Backup
Switch
UJUNG PANDANG
MANADO
PERSADA
JAKARTA
AMBON

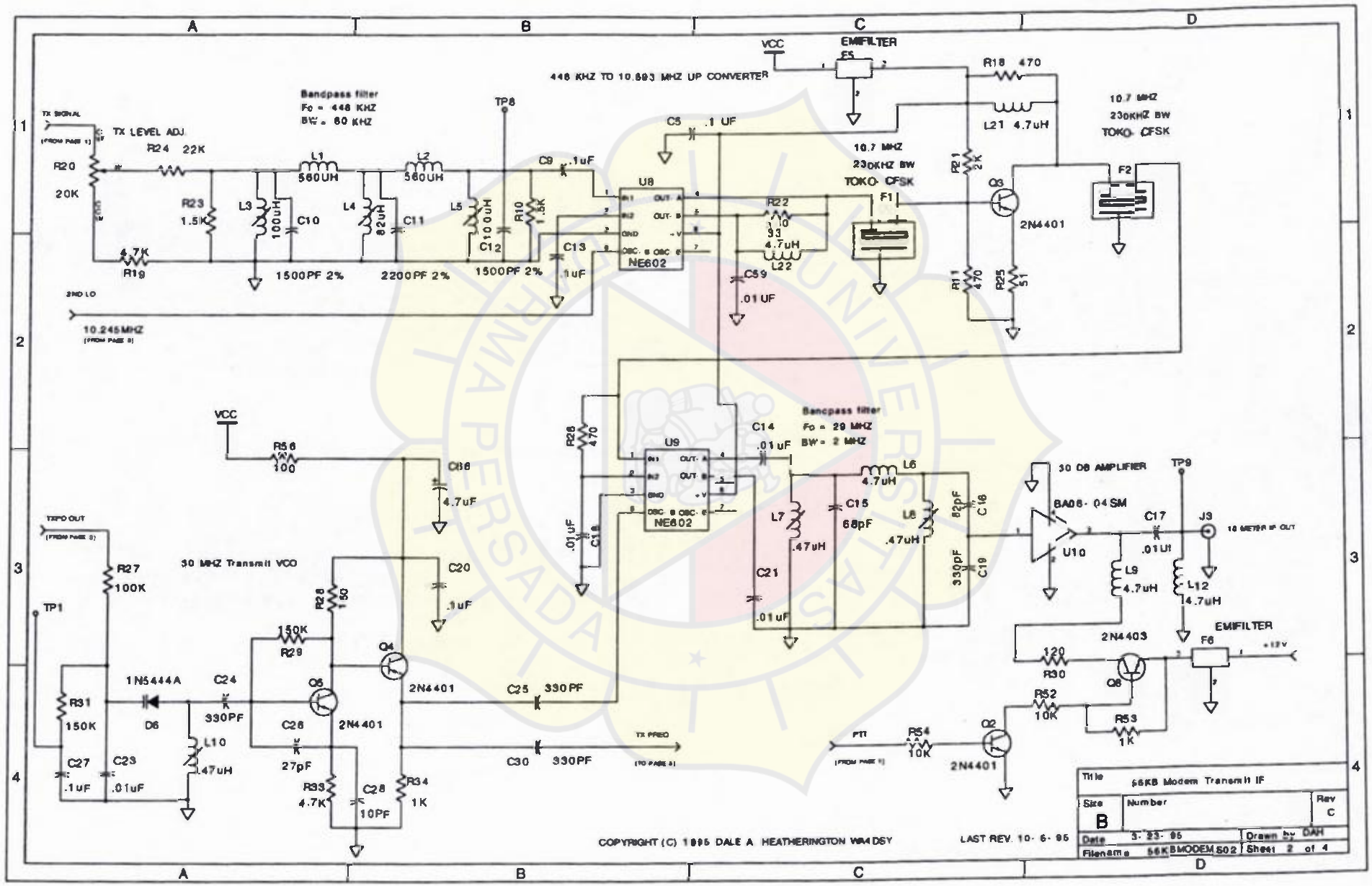

Internet Service Provider
OTHER ASCOJA MEMBER
Router
Tape Backup
INTERNET
Server
Switch
PERSADA
JASCAA

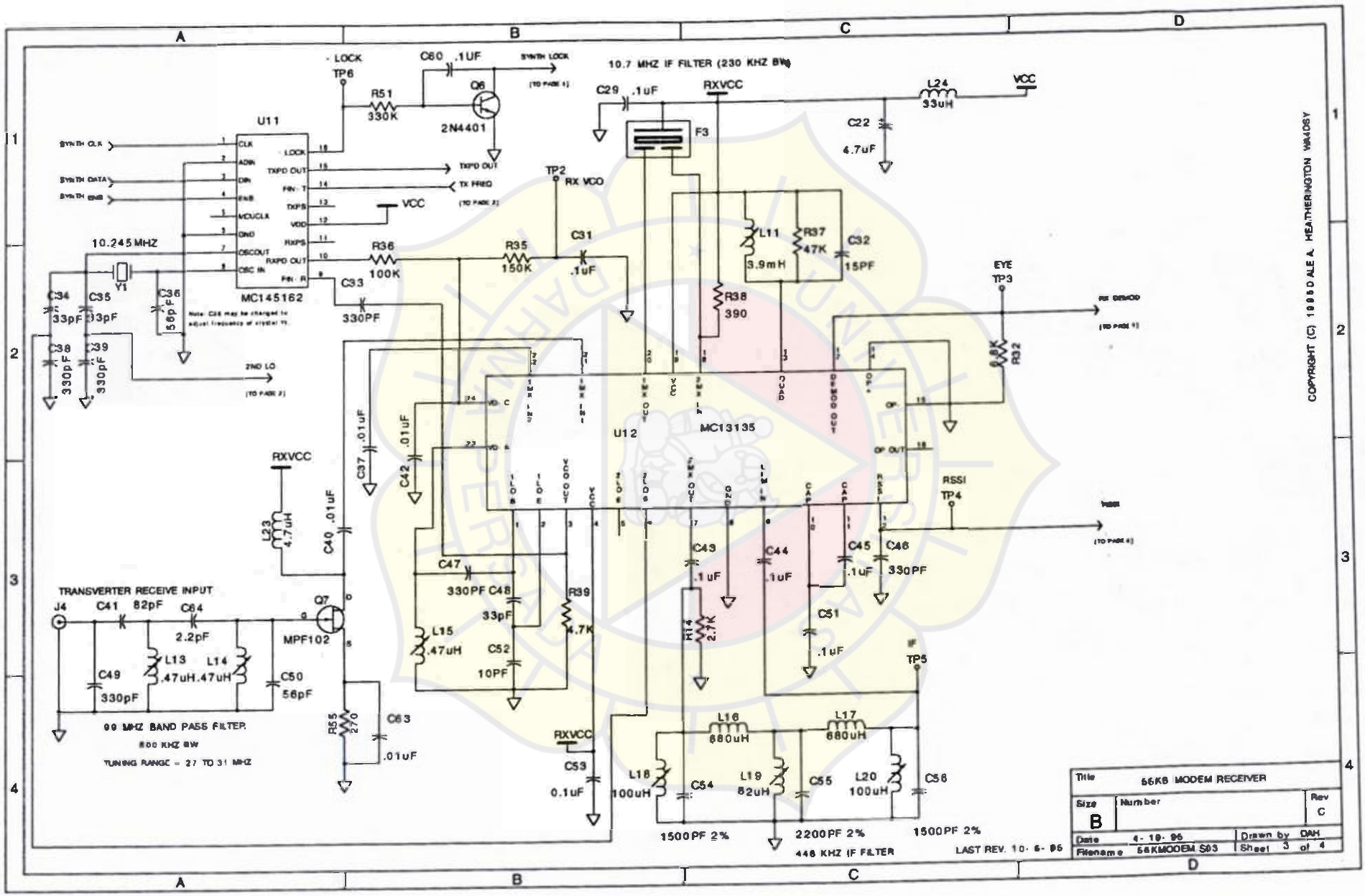

Host Workstation di Lab. Komputer Fakultas Ekonomi
Fakultas Sastra
Gateway Fak. Ekonomi
Perpustakaan
Ethernet 802.3
Rektorat
Lab. Fak.
Gateway
Teknik
Fakultas Kelautan
Gateway Radio Paket
Internet
Host Workstation di Lab. Komputer Fakultas Teknik
Host lewat radio paket
Ke ISP lewat Leased Line
Gateway Internet UNSADA
di Fakultas Teknik

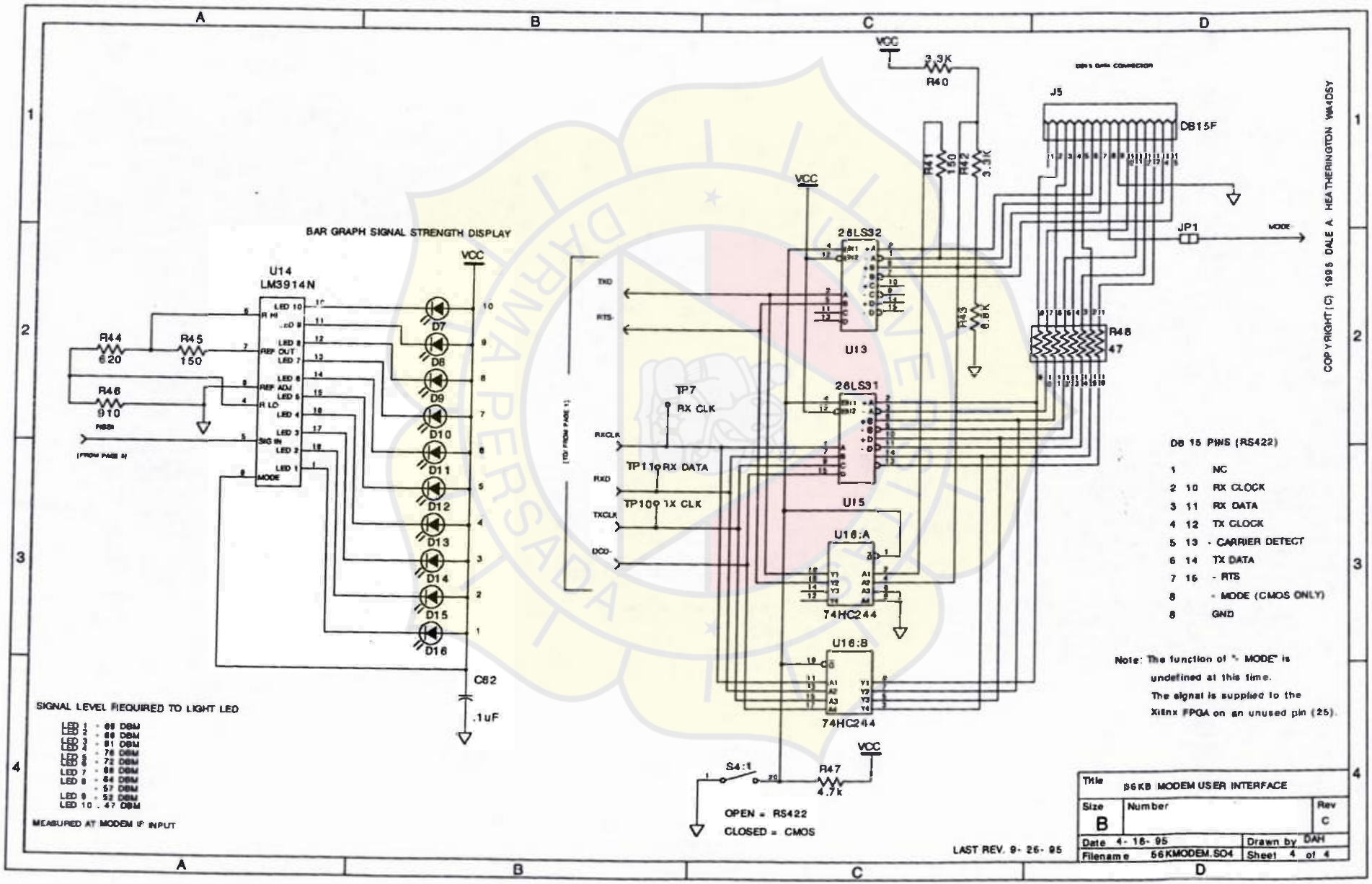
LAMPIRAN B

RANGKAIAN MODEM RADIO 56KB


12 VOLT POWER INPUT
U1 LM7805CTB
EMIFILTER
JP2
C58 .1UF
NOTE: U2,U4,U5 POWERED FROM THIS LINE
U5
FPGA XC3042
U4
EPROM 32K x 8
TMS27C256J
U2
SG 51 K
14.31818 MHZ
READY
PTT
DCD
GREEN/ RED
RED
YELLOW
74HC240
U3:A
U3:B
74HC4053
U6:A
LM311NE
U7
8 BIT DAC
2 SEC WATCHDOG TIMER
Remote Control Relay
Transverter Power
MODE SWITCH
Tune Up
FREQ SELECT 0
FREQ SELECT 1
FREQ SELECT 2
KEY TRANSMITTER
SCRAMBLER DISABLE
REPEATER ENABLE
FULL DUPLEX
KEY TRANSMITTER
SEND REM RESET CODE
Tracking Data Slicer
BASE BAND RX SIGNAL
COPYRIGHT (C) 1995 DALE A. HEATHERINGTON WA4DSY
WA4DSY 56KB MODEM
LAST REV. 9-26-95


446 KHZ TO 10.693 MHZ UP CONVERTER
VCC
EMIFILTER
F5
R18 470
L21 4.7uH
10.7 MHZ
230KHZ BW
TOKO CFSK
F2
F1
Q3
2N4401
R21 2K
R11 470
R25 51
Bandpass filter
Fo = 446 KHZ
BW = 60 KHZ
TP8
TX SIGNAL
TX LEVEL ADJ
R24 22K
R20 20K
R19 4.7K
L1 560UH
L2 560UH
L3 100uH
L4 82uH
L5 100uH
C10
C11
C12
1500PF 2%
2200PF 2%
1500PF 2%
R23 1.5K
R10 1.5K
C9 .1uF
C13 .1uF
U8
NE602
C5 .1 UF
R22 10 33
4.7uH
L22
C59 .01 UF
2ND LO
10.245MHZ
VCC
R56 100
C86 4.7uF
Bandpass filter
Fo = 29 MHZ
BW = 2 MHZ
C14 .01uF
R26 470
U9
NE602
C18 .01uF
L6 4.7uH
L7 .47uH
C15 68pF
L8 .47uH
C21 .01uF
82pF C16
330pF C19
30 DB AMPLIFIER
BA06-04SM
U10
TP9
C17 .01UF
J3
10 METER IF OUT
L9 4.7uH
L12 4.7uH
TXFO OUT
30 MHZ Transmit VCO
R27 100K
TP1
R31 150K
1N5444A
D6
C24 330PF
L10 .47uH
C27 .1uF
C23 .01uF
R28 50
150K R29
Q4
Q5
2N4401
C26 27pF
C25 330PF
C30 330PF
TX FREQ
R33 4.7K
C28 10PF
R34 1K
C20 .1uF
2N4403
EMIFILTER
F6
+12V
R30 120
Q8
R52 10K
R53 1K
PTT
R54 10K
Q2
2N4401
COPYRIGHT (C) 1995 DALE A. HEATHERINGTON WA4DSY
LAST REV. 10-6-95
Title 56KB Modem Transmit IF
Size B
Number
Rev C
Date 3-23-95
Drawn by DAH
Filename 56KBMODEM.S02
Sheet 2 of 4


- LOCK
TP6
C60 .1UF
SYNTH LOCK
(TO PAGE 1)
R51
330K
Q6
2N4401
10.7 MHZ IF FILTER (230 KHZ BW)
C29 .1uF
RXVCC
L24
33uH
VCC
C22
4.7uF
F3
U11
SYNTH CLK
SYNTH DATA
SYNTH ENB
CLK
ADIN
DIN
ENB
MC/UCLK
GND
OSCOUT
OSC IN
- LOCK
TXPD OUT
FIN - T
TXPS
VDD
RXPS
RXPD OUT
FIN - R
TXPD OUT
TX FREQ
(TO PAGE 2)
VCC
TP2
RX VCO
10.245 MHZ
Y1
C34 33pF
C35 33pF
C36 68pF
C38 330pF
C39 330pF
MC145162
Note: C36 may be changed to adjust frequency of crystal Y1.
2ND LO
(TO PAGE 2)
R36
100K
R35
150K
C31
.1uF
C33
330PF
L11
3.9mH
R37
47K
C32
15PF
R38
390
EYE
TP3
RX DEMOD
(TO PAGE 4)
R32
6.8K
U12
MC13135
C37 .01uF
C42 .01uF
RXVCC
L23
4.7uH
C40 .01uF
RSSI
TP4
(TO PAGE 4)
C43 .1uF
C44 .1uF
C45 .1uF
C46 330PF
C47 330PF
C48 33pF
R39 4.7K
L15 .47uH
C52 10PF
R14 2.7K
C51 .1uF
IF
TP5
TRANSVERTER RECEIVE INPUT
J4
C41 82pF
C64 2.2pF
Q7
MPF102
C49 330pF
L13 .47uH
L14 .47uH
C50 56pF
90 MHZ BAND PASS FILTER
800 KHZ BW
TUNING RANGE = 27 TO 31 MHZ
R55 270
C63 .01uF
RXVCC
C53 0.1uF
L16 680uH
L17 680uH
L18 100uH
C54 1500PF 2%
L19 82uH
C55 2200PF 2%
L20 100uH
C56 1500PF 2%
446 KHZ IF FILTER
LAST REV. 10-6-95
COPYRIGHT (C) 1995 DALE A. HEATHERINGTON WA4DSY
Title 56KB MODEM RECEIVER
Size B
Number
Rev C
Date 4-19-95
Drawn by DAH
Filename 56KMODEM.SCH
Sheet 3 of 4


BAR GRAPH SIGNAL STRENGTH DISPLAY
U14
LM3914N
R44
620
R45
150
R46
910
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
C82
.1uF
SIGNAL LEVEL REQUIRED TO LIGHT LED
LED 1 = 69 DBM
LED 2 = 66 DBM
LED 3 = 61 DBM
LED 4 = 76 DBM
LED 5 = 72 DBM
LED 7 = 68 DBM
LED 8 = 64 DBM
= 57 DBM
LED 9 = 52 DBM
LED 10 . 47 DBM
MEASURED AT MODEM IF INPUT
VCC
3.3K
R40
R41
150
R42
3.3K
R43
6.8K
R48
47
J5
DB15F
JP1
MODE
28LS32
U13
28LS31
U15
U16:A
74HC244
U16:B
74HC244
TP7
RX CLK
TP11
RX DATA
TP10
TX CLK
TXD
RTS-
RXCLR
RXD
TXCLK
DCD-
S4:1
R47
4.7k
OPEN = RS422
CLOSED = CMOS
DB 15 PINS (RS422)
1 NC
2 10 RX CLOCK
3 11 RX DATA
4 12 TX CLOCK
5 13 - CARRIER DETECT
6 14 TX DATA
7 15 - RTS
8 - MODE (CMOS ONLY)
8 GND
Note: The function of "- MODE" is undefined at this time. The signal is supplied to the Xilinx FPGA on an unused pin (25).
COPYRIGHT (C) 1995 DALE A. HEATHERINGTON WA4DSY
Title 56KB MODEM USER INTERFACE
Size B
Number
Rev C
Date 4-16-95
Drawn by DAH
Filename 56KMODEM.SCH
Sheet 4 of 4
LAST REV. 9-26-95