

COST ESTIMATE

SUMMARY MTL-392-H

TOY NAME PHONE MODEM	INTRO SEA SON	BY YEAR F1	TOY NUMBER
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TOY DESCRIPTION							
GENERAL DATA	DATE	8/20/80	8/20/80	8/20/80			
	STATUS	FEAS	FEAS	FEAS			
	SOURCE	US-VFWDON	US-VFWDON	US-VFWDON			
	'A' PRICE	100.00	140.51	93.86			
	QUOTA	5M	5M	30M			
	SALES @ QUOTA	500.0	702.6	2815.8			
VARIABLE COSTS	SALES VAR. %/S	12.0/ 12.000	12.0/ 16.861	12.0/ 11.253			
	ROYALTY %/S	- / -	- / -	- / -			
	RETURNS %/S	5.0/ 5.550	5.0/ 7.798	5.0/ 5.209			
	MFG. VAR. COSTS	46.817	46.817	46.817			
	FRT. & SHIPPING	.055	.055	.055			
	TOTAL VAR. COST	64.422	71.532	63.344			
PRODUCT CONTRI-BUTION	PROD CONTR. %	35.6	49.1	32.5			
	PROD CONTR. \$	35.577	68.978	30.516			
	CONTR. @ QUOTA	177.9	344.9	915.5			
MARKETING CONTRI-BUTION	MFG. FIXED COSTS	- / -	- / -	- / -			
	MKTG CONTR. %	35.6	49.1	32.5			
	CONTR. @ QUOTA	177.9	344.9	915.5			
DIRECT FIXED COSTS	R&D PROJECT COST	50.0	50.0	50.0			
	R&D NON-REPORTING	—	—	—			
	FREE ASSIST	—	—	—			
	TOOLING	105.2	105.2	105.2			
	NEW PROD. DEVP. COST	—	—	—			
	ADVERTISING	—	—	—			
	TOTAL FIXED	155.2	155.2	155.2			
NET CONTRI-BUTION	NET CONTR. \$	W/ADV / W.O. ADV / 22.7	W/ADV / W.O. ADV / 189.7	W/ADV / W.O. ADV / 760.3	W/ADV	W.O. ADV	
	NET CONTR. %	W/ADV / W.O. ADV / 4.5	W/ADV / W.O. ADV / 27.0	W/ADV / W.O. ADV / 27.0	W/ADV	W.O. ADV	
COST SH. DISTRIBUTION							
MATH CHECK BY/DATE							
PREPARED BY/DATE		2/18/81		2/18/81		2/18/81	
APPROVED BY/DATE							

MANUFACTURING SUMMARY MTL-434-L

TOY NAME PHONE MODERN			TOY NUMBER		PREPARED BY: TIM R NESBIT		DATE 8/26/72
DOMESTIC COMPONENTS			MFQ. SOURCE	MAT'L \$ EA.	LABOR \$ EA.	TOTAL \$ EA.	G & A/ PROFIT
INJECT MOLD			HFH	1.168			
ELECTRONICS				21.464			
5% CONT ON 9.400				.470			
10% CONT ON 25.348				2.535			
LABOR					11.368		
PACKAGE				.457			
SUBTOTAL				26.094			
VENDORS SCRAP @ 3%				.783			
VENDORS MAT'L HANDLING 10% (26.577)				2.688			
SUBTOTAL				29.565			
VENDORS GSA @ 9%				2.661			
SUBTOTAL				32.226			
VENDORS Profit @ 10%				3.223			
TOTAL				35.449			
PACKAGE							
LANDED COST ORIENT COMPONENTS							
SUB-TOTAL (PRIME COST)				35.449	11.368	46.817	
SCRAPE & NON STANDARD COST							
VAR. OVERHEAD	BASE	STD. HRS.	AMOUNT	FACTOR	SEACH		
	DOM PRIMARY HOURS						
	DOM ASSY. HOURS						
	DOM CUBE						
	NO. OF PARTS						
LINE TOOLING			M +	M - UNITS			
PRIMARY LINE TOOLING				HRS X			
MFG. COMPLEXITY			PTS X \$	M/PT ÷	M-UNITS		
VALUE ADDED/SOURCE OVERHEAD				% X			
MANUFACTURING PROFIT 3.1% OF (A+B+C+D)							
TOTAL MFG. COST (=MFG. VARIABLE + MFG. FIXED)						46.817	46.817
FREIGHT & SHIPPING			CU. FT. X		CTN/TOYS X		.055
TOTAL HARD COST							46.872
ECONOMICS							
TOOLING SUMMARY	COMMENTS	ITEM NO.	\$M	TOTAL HARD TOOLING		99.2	
		10	69.2	PRINT (ITEM 60)		6.0	
				CAPITAL	PRODUCT WT.	TOTAL TOOLING	
	TEST		34.0			105.2	
	GAGES & FIXTURES	90					

COMPONENT COST WORKSHEET-LABOR

MTI-911-D

TOY NAME PHONE MODEM	R&D NO -
PREPARED BY TIM R MESSIT	TOY NO -
DATE 8/20/80	

COMPONENT DESCR		ASS'Y				PACK OUT							
DEPT. OR CC	EFF.	STD. HRS.	ACT. HRS.	RATE	S/M	STD. HRS.	ACT. HRS.	RATE	S/M	STD. HRS.	ACT. HRS.	RATE	S/M
	85	4128	4427	22.00	10840								
	85					150	240	22.00	528				
TOTAL LABOR					10840					528			

LABOR DETAIL		STD HRS/M
OPERATION DESCRIPTION		
<u>PCB SUBASS'Y</u>		
INSERT 140 COMP @ 2.0"/MCA		600.0
WAVE SOLDER		5.0
INSPECT 10%		28.8
TEST 10%		28.5
REWORK 10%		25.1
TEST		374.4
<u>GENERAL ASS'Y</u>		
TOTAL		44.4

LABOR DETAIL		STD HRS/M
OPERATION DESCRIPTION		
<u>PACK OUT</u>		
TOTAL		150

RAW GOODS (INVENTORY) LISTING

08/20/80
PAGE 1

PHONE MODEM

REC	P/N	REV	DESCRIPTION	QTY	U/M	COST	STD. HRS	TOTAL CODE
1	1		IC 74LS00	0	EA	\$.200	0.000	\$.000
2	2		IC 74LS05	0	EA	\$.360	0.000	\$.000
3	3		IC 74LS138	0	EA	\$.350	0.000	\$.000
4	4		IC CD4059AE DIV BY N COUNT	1	EA	\$2.000	0.000	\$2.000
5	5		OPEN	1	EA	\$.000	0.000	\$.000
6	6		IC MC6821	0	EA	\$2.000	0.000	\$.000
7	7		IC MC6850P ACIA	0	EA	\$2.000	0.000	\$.000
8	8		ROM 2316, 2K X 8	0	EA	\$2.500	0.000	\$.000
9	9		IC PROM 74S288, 32 X 8	0	EA	\$1.050	0.000	\$.000
10	10		IC XR2206CP TONE GENERATOR	1	EA	\$2.250	0.000	\$2.250
11	11		IC XR2211CP DEMODULATOR	1	EA	\$2.600	0.000	\$2.600
12	12		IC MC4741CP QUAD OP AMP	1	EA	\$.500	0.000	\$.500
13	13		RESISTORS, 1/4W 5%	30	EA	\$.008	0.000	\$.240
14	14		RESISTORS, 1/4W 1%	15	EA	\$.012	0.000	\$.180
15	15		CAP .01MFD 25VDC +-5%	6	EA	\$.100	0.000	\$.600
16	16		CAP .1MFD 25VDC CER DISC	10	EA	\$.030	0.000	\$.300
17	17		CAP .10MFD 25VDC-ELECTRO	5	EA	\$.050	0.000	\$.250
18	18		TRIM POTS 5K LINEAR +-20%	5	EA	\$.350	0.000	\$1.750
19	19		CABLE HARNESS, MODEM-KEYBD	1	EA	\$1.000	0.000	\$1.000
20	20		AUDIO. CONN + CABLE	0	EA	\$.500	0.000	\$.000
21	21		TELEPHONE CORD + CONN	0	EA	\$.250	0.000	\$.000
22	22		PCB 3X7 NO GOLD	1	EA	\$2.520	0.000	\$2.520
23	23		EDGE CONN	1	EA	\$.860	0.000	\$.860
24	24		ROCKER SWITCH 4POT LAMP	1	EA	\$.350	0.000	\$.350
25	25		RELAY DPDT 1 AMP	1	EA	\$1.000	0.000	\$1.000
26	26		AUDIO TRANSFORMER 3 WINDING	1	EA	\$1.600	0.000	\$1.600
27	27		QUAD SWITCH CD4066BC	0	EA	\$.800	0.000	\$.000
28	28		QUAD OP AMP 741 TYPE	1	EA	\$.650	0.000	\$.650
29	29		DUAL OP AMP 741 TYPE	1	EA	\$.600	0.000	\$.600
30	30		ZENER DIODE	1	EA	\$.500	0.000	\$.500
31	31		SIG DIODE, 1N914 OR 1N4148	5	EA	\$.050	0.000	\$.250
32	32		RESISTORS 1/4W 5%	40	EA	\$.008	0.000	\$.320
33	33		RESISTORS 1/2W 5%	4	EA	\$.015	0.000	\$.060
34	34		CAP CER DISC 50V	5	EA	\$.030	0.000	\$.150
35	35		CAP ELECT 2.2MFD 100V	2	EA	\$.035	0.000	\$.070
36	36		CAP .01MFD 1400V	1	EA	\$.060	0.000	\$.060
37	37		TRANSISTOR NPN 2N2222	1	EA	\$.050	0.000	\$.050
38	38		INSTRUCTION BOOK	1	EA	\$.090	0.000	\$.090
39	39		INLAY ALUMINUM LABEL	1	EA	\$.100	0.000	\$.100
40	40		KRATON FEET	4	EA	\$.008	0.000	\$.032
41	41		SCREWS	8	EA	\$.004	0.000	\$.032
42	42		MISC PARTS	1	EA	\$.500	0.000	\$.500
43	43		UPPER HSG ABS	1	EA	\$.584	0.000	\$.584
44	44		LOWER HSG ABS	1	EA	\$.584	0.000	\$.584
45	45		MASTER CTN	1	EA	\$.077	0.000	\$.077
46	46		INDIV CTN	1	EA	\$.180	0.000	\$.180
47	47		LABEL 11.5 X 15.5	1	EA	\$.100	0.000	\$.100
48	48		BUBBLE PACK	1	EA	\$.050	0.000	\$.050
49	49		CONTINGENCY--PACKAGE	1	EA	\$.050	0.000	\$.050
50	50		5% CONT ON CHIPS	1	EA	\$.729	0.000	\$.729
51	51		10% CONT ON MAT'L	1	EA	\$2.899	0.000	\$2.899
52	52		LABOR	1	EA	\$11.940	0.000	\$11.940
53	53		VENDOR SCRAP AT 3%	1	EA	\$1.465	0.000	\$1.465
54	54		VENDOR MAT'L HANDL	1	EA	\$5.028	0.000	\$5.028
55	55		VENDOR G & A	1	EA	\$4.978	0.000	\$4.978
56	56		VENDOR PROFIT AT 10%	1	EA	\$6.029	0.000	\$6.029
57	57		FRT & SHIPPING	1	EA	\$.055	0.000	\$.055

56,212
34,748

FRT → 21,464

TOTAL \$56,212

Competitive Product
Modems

6/17/83
Scott Klymas

General Information	Atari Model 830	Radio Shack Interface II	Novations D-CAT	Universal Data Systems UDS 103 LP	Apple - D.C. Hays Micromodem II
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- | | | | | | |
|-------------------|--|--|-----------------------------------|-----------------------|----------|
| 1. Type: | Acoustic | Acoustic | Direct | Direct | Direct |
| 2. Controls: | a) Full/Half/Test (Duplex)
b) Originate/Answer
c) On/Off | a) Full/Half/Test (Duplex)
b) Originate/Answer
c) On/Off | a) Data/Talk
b) Monitor In/Out | a) Data/Talk | None |
| 3. Indicators: | a) Power
b) Ready | a) Power
b) Ready | a) Power
b) Ready | a) Data On | None |
| 4. Size: | 10.2" x 4.7" x 2.5" | 10.2" x 4.7" x 2.3" | 10" x 4.7" x 1.2" | 5.5" x 3.25" x 1.375" | |
| 5. Weight: | 1.5 lbs | 1.5 lbs | --- | --- | --- |
| 6. List Price: | to be announced | \$199.00 | \$199.00 | \$195.00 | \$199.95 |
| Interface Module: | --- | \$ 99.00 | --- | --- | \$190.00 |
| Expansion Module: | to be announced | \$299.00 | --- | --- | --- |

Competitive Product
Modems

6/17/80
Scott Klynas

Electrical Information Atari Model 830 Radio Shack Interface II Novations D-CAT Universal Data Systems UDS 103 LP Apple - D.C. Hays Micromodem II

1. Type:	Acoustic	Acoustic	Direct	Direct	Direct
2. Data Rate:	up to 300 Baud	up to 300 Baud	110 - 300 Baud	0 - 300 Baud	110 or 300 Baud
3. Compatibility:	Bell 103/113 series	Bell 103/113 series	Bell 100 series	Bell 103 series	Bell 103
4. Connector:	RS232C	RS232C	RS232C	RS232 and TTY	Special interface to Apple
5. Receive Sensitivity:	-45 dbm	-45 dbm	-45 dbm	-46 dbm	-50 dbm
6. Duplex:	Half/Full	Half/Full	Half/Full	Full	?
7. Originate/Receive:	Both	Both	Both	Originate only	Both
8. Auto Answer:	No	No	No	No	Yes
9. Auto Call:	No	No	No	No	Yes
10. Power Supply:	24VAC/150mA Uses external transformer	24VAC/150mA Uses external transformer	117VAC/15W Uses external transformer	Uses phone line	Uses power supply from Apple

7/29/80
Scott Klynas

Modems

A modem is a device that allows a computer to communicate over the telephone lines. This gives the home computer access to thousands of prewritten programs and general information by telephoning a time-share service.

Types of Time-Share Services to be Available

A) General Data Processing:

Share the capabilities of a much larger computer.
Share special mathematical, business, or engineering programs.
Share entertainment programs (i.e. games).

B) Electronic Newspaper:

Use the home computer to display the latest news reports.

C) Banking Services:

From your home computer, you can make transactions with your checking and savings account.

D) Electronic Mail:

Send or receive messages or pictures.

E) Department Store Services:

Use the home computer to see sales merchandise and place purchase orders.

F) Entertainment:

Games, etc.

G) Public Library:

As time goes on, printed material will become available to the public.

H) Stock Market Reports:

Available as they happen.

I) Weather Report

J) Farm Report

7/29/80
Scott Klynas

Modem - Special Features

A) Auto Dial:

Use the home computer to store telephone numbers and dial the telephone. If the number is busy, the computer can be told to redial.

B) Auto Answer:

Use the Intellivision as an automatic telephone answering service. Messages could be stored on tape.

C) Security PROM:

This device would contain a built-in password for making transactions with a bank.

D) Direct Coupled to the Telephone:

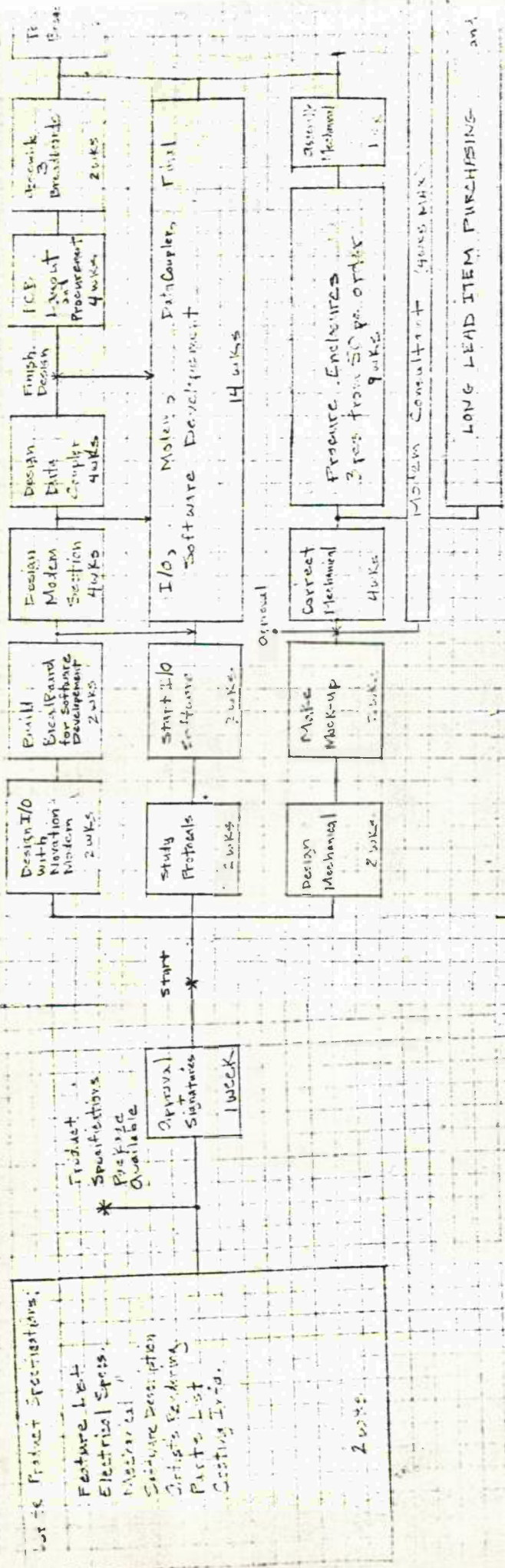
This method is better than the standard "acoustic coupler" used in competitors products. Data can be transmitted with a lower error rate.

E) Directly Attached to the Keyboard Component:

Most commercially available modems will not directly attach to the home computer. These types require the purchase of an interface module (up to \$200.00).

The Intellivision modem will plug directly into the keyboard.

Modem Schedule



Lot 10 Product Specifications:
 Feature List
 Electrical Specs.
 Mechanical
 Software Description
 Sigs's Scheduling
 Parts List
 Costing Inv'd.
 2 wks

* Product Specifications Package Available
 Approval Signatures
 1 week

Start *

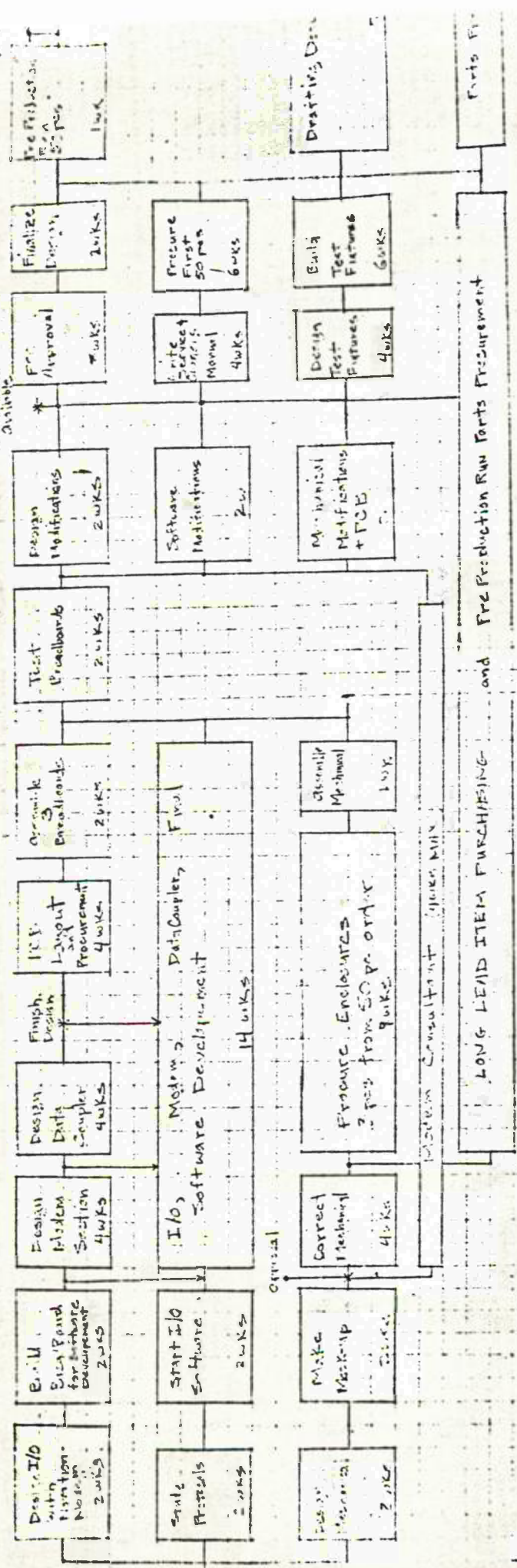
2 wks

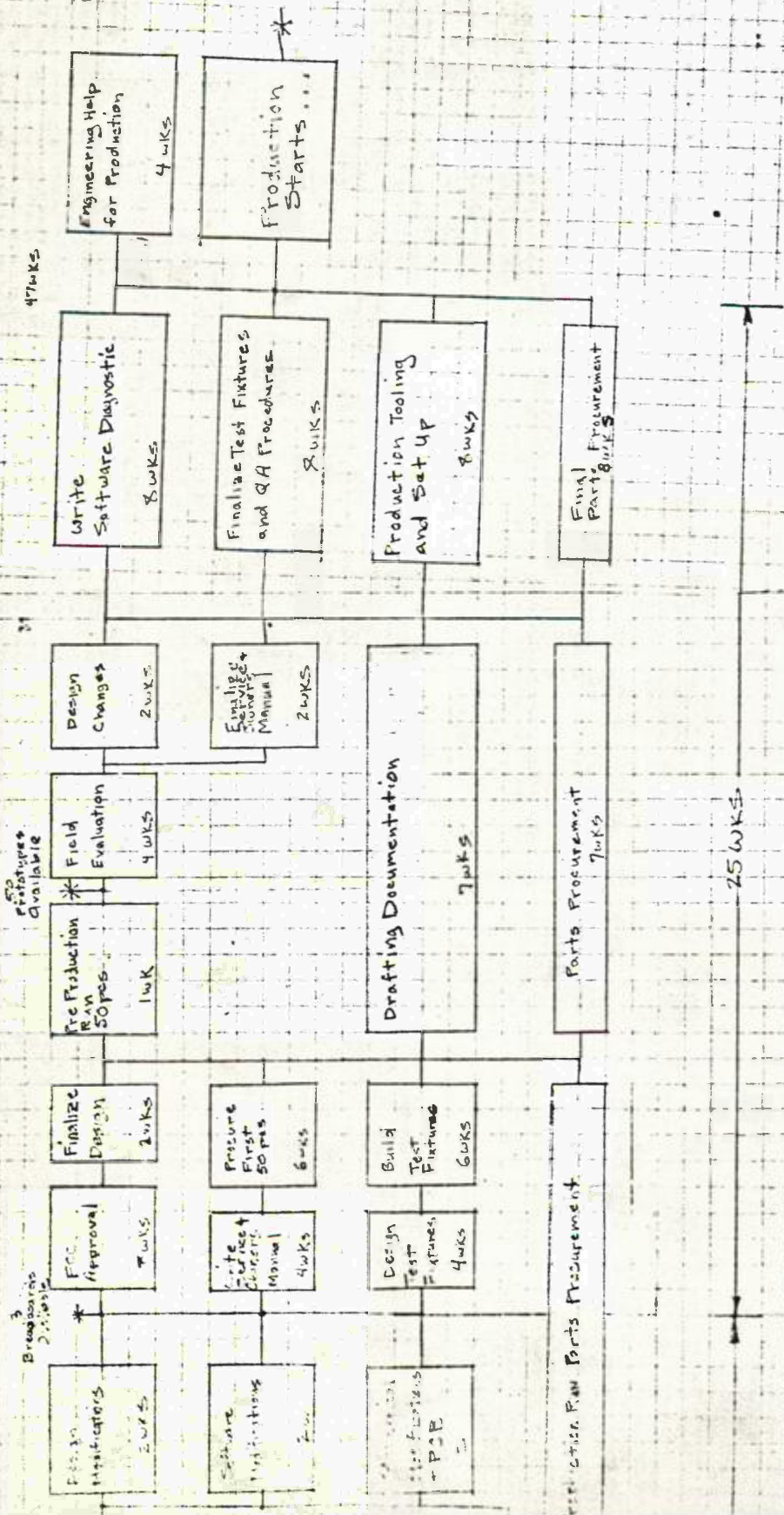
LONG LEAD ITEM PURCHASING

1-21-80

PHENIX

3
Broadbands Available





1. NOVATION

18664 Oxnard Street
Tarzana, CA 91356
(213) 996-5060

Contact: Agi Nagy (Vice President, Administrations)

Comments: This company makes modems for Atari, Radio Shack, and Apple. They also market modems under their own name. In 10K quantity their product would be roughly \$75.00 to \$100.00.

2. UNIVERSAL DATA SYSTEMS

5000 Bradford Drive
Huntsville, AL 35804
(205) 837-8100
(714) 972-4619

Contact: A. Rich Woolard (District Sales Engineer)

Comments: While they market modems under their own name, they claim 60% of their business is private label. In 10K quantity their product would be approximately \$90.00 to \$110.00.

3. PRENTICE CORPORATION

266 Caspian Drive
Sunnyvale, CA 94086
(408) 734-9810

Contact: Perry Lindburg (Vice President, Marketing)

Comments: They have private label also.

Other Potential Private Label Sources (not contacted):

4. RACAL-MILGO, INC.

8600 N.W. 41st Street
Miami, FL 33166
(305) 592-8600

5. GENERAL DATACOM INDUSTRIES

One Kennedy Avenue
Danburg, CT 06810
(203) 797-0711

1. Question: Do you make IC Modems?
2. Question: Do you make Modem Filters?

<u>Question One</u>	<u>Question Two</u>	<u>Company</u>	<u>Comments</u>
No	No	National Semiconductors	
No	No	Fairchild	
No	No	Signetics	
No	No	Texas Instruments	
-	-	Intel	No Response
No	Yes	Reticon	They make CCD filters.
Yes	No	EXAR	They make modulator/demodulators
No	Yes	CTS	
Yes	Yes	Motorola	They are developing a CCD filter.
Yes	-	Rockwell	They only make 2400 baud modems.
No	Yes	Sprague	They make laser trimmed filters
Yes	Yes	Advanced Micro Devices	They are making a 1 chip modem that <u>includes</u> all digital filtering. Available in 1982.

8-20-80

S.K.

Modem Size Estimate

Data Coupler	24.6 sq"
Modem Section	22.1 sq"
Address Decoder	5 sq"
Interface (Counter, PIA, ACIA...)	10 sq"
ROMs	4 sq"
Chassis space	10 sq"

Total 75.7¹/₅

7-24-80

S. Klynes

Modern System Layout

