UNDERSTANDING THE MARKET POTENTIALS FOR ADVANCED LANGUAGE CALCULATOR/COMPUTER PRODUCTS

FOR: TEXAS INSTRUMENTS

BY: McCANN-ERICKSON
JULY 1981

TI CLASSIFIED
STRICTLY PRIVATE
COPY # 1

ISSUED TO: C.B. WILSON

Background

This study was funded by Texas Instruments Corporate to serve as an example and model of in-depth analysis of the market potential for new TI product concepts, and to provide a sound basis for market planning.

The Major Objectives of the Study

Evaluate three proposed new Texas Instruments products:

RM 1000

RM 2000

RM 3000

As concepts with no price stated, and at three different price levels for each product, to determine.

1. Buying interest - size of market potential

2. Function attributes and feature configuration desired by prospective markets.

Among four target markets:

- Technical/Scientific
- Students/Professors of Business and Engineering
- Business/Financial/Professional
- Calculator Owners

Method of Study

857 carefully selected people were interviewed in ten major markets.*

199	Technical/Scientific	- by appointment
210	Students/Professors	- by appointment
224	Business/Financial/Professional	- by appointment
224	Calculator Owners	- intercept/malls

Each participant was shown two of the three concepts mixed, matched and controlled to insure both monadic and comparative exposures.

* Atlanta
Chicago
Denver
Houston
Minneapolis/St. Paul
Philadelphia
Phoenix
San Francisco
Seattle
San Diego

LENGTH OF INTERVIEW

(BASED ON ¼ SAMPLE COUNT)

	TOTAL SAMPLE	TECHNICAL/ SCIENTIFIC	COLLEGE/ UNIVERSITY	BUSINESS/ FINANCIAL/ PROFESSIONAL	GENERAL POPULATION
SAMPLE	(200)	(50)	(50)	(50)	(50)
30 TO 44"	21%	20%	4%	32%	10%
45 TO 59"	33	32	34	12	41
60 TO 74"	38	44	50	40	40
75" OR MORE	8	4	12	16	9
AVERAGE LENGTH	56"	54"	60"	62"	50"

Sample Quota and Fulfillment

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial Professional	General Population
Goal	900	225	225	225	225
Completed	857	199	210	224	224
	95%	88%	93%	99+%	99+%

Sample Achievement

Engineers	53%	Students	53%	Accountants	18%	Qualified by:	
Civil	14	Business	26	Agents & Brokers	21	●	100% Male
Industrial	14	Engineering	27	Marketing	17	●	17-34 50% 35-60 50%
Aeronautical	6			Sales	13	●	HH Income of $20K plus
Electronic	20			Planners & Analysts	9	●	Own one or more calculators
Scientists	47%	Professors	47%	Banking	9		
Chemists	9	Business	23	Production Managers	9		
Biochemists	10	Engineering	24	Money Managers	4		
Mathematicians	10						
Statisticians	5						
Geophysicists	13						

(Fully-balanced by concepts exposed and price-points adminstered)

Concept Exposure Pattern

(sample count)

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Total Respondents	857	199	210	224	224
• RM 1000					
Total exposed	569	132	136	153	148
Monadic (first)	283	64	66	79	74
After RM 2000	140	34	31	38	37
After RM 3000	146	34	39	36	37
• RM 2000					
Total exposed	567	131	137	149	150
Monadic (first)	287	69	70	74	74
After RM 1000	139	30	32	40	37
After RM 2000	141	32	35	35	39
• RM 3000					
Total exposed	578	135	147	146	150
Monadic (first)	287	66	74	71	76
After RM 1000	144	34	34	39	37
After RM 2000	147	35	39	36	37

Description of the Sample

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Total Respondents	887	199	210	224	224
Men	88%	91%	81%	80%	100%
Women	12	9	19	20	(by quota)
Age					
17 - 25	18%	4%	38%	3%	25%
26 - 35	29	28	24	30	33
36 - 45	28	31	25	32	25
46 - 60	25	37	13	35	17
(Mean Age)	(37)	(42)	(32)	(41)	(34)
Education					
Undergraduates	28%	4%	40%	26%	41%
Graduates	29	37	4	43	31
Postgraduates	12	11	14	11	12
P/G Degree Holders	31	48	42	20	16

Description of the Sample

	Total Sample	Technical/ Scientific	College/ University (excludes students)	Business/ Financial/ Professional	General Population (includes students)
Household Income					
$20 to $29,999.	29%	21%	19%	18%	53%
$30 to $39,999.	32	40	37	26	26
$40 to $49,999.	18	20	26	19	12
$50 or more	21	19	18	37	9
Mean ($)	(41)	(42)	(42)	(49)	(33)
Occupations					
Managers/Supervisors	17%	13%	2%	27%	25%
Owners/Execs/Directors	12	8	2	30	7
Lawyers/Docs/Accountants	4	1	1	11	4
Engineers	12	34	2	1	12
Scientists	4	14	1	-	1
Technicians/Researchers	2	4	1	*	3
Sales/Brokers/Buyers	7	1	1	20	7
Teachers/Professors	15	15	43	1	2
Students	12	-	35	-	13
All Others	15	10	12	10	26

Study Evaluation

We estimate that these carefully selected people represent about 11,000,000 people in the population, or about 7% of adults 18 years of age and older.

To test both the sample estimate and the quality of reporting, we projected claimed ownership of programmable calculators. These estimates give us high confidence in our sample and in the quality of the interviews.

Sample Projection

Sample Quota Groups	Universe Estimates* (000)		Population Estimates for ALCC Market Projections
Technical/Scientific	2,508		2,500,000
Engineers	1,285		
Scientists	1,223		
College/University	2,917		3,000,000
Students	2,521		
- Business/Commerce	1,956		
- Engineering	565		
Instructors/Professors	396		
Business/Financial/Professional	3,367		3,000,000
Accountants	1,045		
Sales Executives/Managers	686		
Banking Executives	620		
Real Estate Agents/Brokers	616		
Production Managers	150	(E)	
Money/Portfolio Managers	100	(E)	
Marketing Executives/Managers	100	(E)	
Corporate Analysts/Planners	50	(E)	
General Population	7,488	(66% duplication with above based on occupation of sample achieved)	2,500,000
Men, 21 to 49 years of age, college educated, HH Income of $20,000 or more who have bought electronic calculators			
			11,000,000 Total

* U.S. National Science Foundation
U.S. National Center for Educational Statistics
U.S. Bureau of the Census
U.S. Bureau of Labor Statistics
Simmons Market Research

Sample Evaluation and Validation

Group	Estimated Population	Own TI Programmables		Own HP Programmables		Total TI & HP Programmables	
		%	#	%	#	%	#
Technical/Scientific	2,500,000	21.1	527,500	21.6	540,000	42.7	1,067,500
Students/Professors	3,000,000	19.5	585,000	11.9	357,000	31.4	942,000
Bus/Fin/Pro	3,000,000	5.4	162,000	4.9	147,000	10.3	309,000
Others/(unduplicated)	2,500,000	7.6	190,000	5.4	135,000	13.0	325,000
TOTAL	11,000,000	13.3	1,464,500	10.7	1,179,000	24.0	2,643,000

Since we know that over 2,300,000 programmable calculators were shipped between 1977 and 1980 we believe our sample estimate is represntative and that reportage is accurate.

The Product Concept Boards

Three different boards were developed to illustrate and describe the product concepts.

All three boards were designed to accomplish the same objectives for each product concept.

The Objectives of the Concept Board

1. Introduce the product.

2. Show the real-life size of the product. Give a good impression of its shape, thickness and styling.

3. Show the appearance, color and capacity of the display. Emphasize clarity and ease of reading.

4. Show the functions and configuration of the keyboard.

5. Describe what the product is; what it can do. Answer the question, "How do I/would I use it".

6. Tell what the benefits are of owning and using the product. Tell people how easy it is to use.

7. Describe the basic characteristics of each product - size, display, keyboard, memory, language, power source and portability. Refer to options available and their potential.

INTRODUCING THE RM 1000. THE POCKET COMPUTER THAT'S EASY TO USE.

The new RM1000 computer is small enough to fit in your pocket, but so powerful that it can solve the most difficult mathematical problems and remember equations and hundreds of numbers or words indefinitely.

The RM1000 helps you solve computer problems in mathematics, engineering and science quickly by finding logarithms, powers of numbers and trigonometric functions with single keystrokes. The RM1000 is the most sophisticated tool for the technical person, yet it is surprisingly easy to use.

You can create your own programs with the RM1000 by using its advanced KEYSTROKE PROGRAMMING language system. Simply press the "Learn" button, then go through the same steps you would use to solve your problem manually... the RM1000 will remember every step...and accurately repeat them each time you use the program in the future.

You don't even have to remember keystrokes to recall the stored information. The RM1000 will prompt you for input and identify answers in plain English.

Saving your programs or data can be done any of three ways with the RM1000. You can keep data in the machine's built-in memory, which holds 125 values or 1000 program steps (expandable to 375 values or 3000 steps), or you can use the optional plug-in CONSTANT MEMORY MODULES that hold information for up to five years (or until erased). Masses of data can also be stored on cassette tape using the accessory cassette adapter.

But you don't have to know how to program to use the RM1000. It is especially designed to accept plug-in, pre-programmed APPLICATIONS MODULES.

There are literally hundreds of pre-programmed *application modules* in a wide range of fields that are already available to help you do computing on the RM1000 without having to write any programs yourself.

Just plug in (for example) the Real Estate application module and the computer asks you (in plain English) ***present value? interest rate? number of payments?*** You type in the answers, press a button and the RM1000 will give you the figure you are looking for. The *application modules* do almost everything for you and you don't have to know how to program to use them. Here are just a few representative examples.

APPLICATION MODULE EXAMPLES

REAL ESTATE
MORTGAGE PAYMENTS
AMORTIZATION SCHEDULES
INVESTMENT DECISIONS
AND MORE

ELECTRICAL ENGINEERING
AMPLIFIER DESIGN
ANTENNA AND RF FIELD CALCULATION
FILTER DESIGN
AND MORE

INVESTMENTS
OPTIONS ANALYSIS
PORTFOLIO ANALYSIS
COMMODITY BUY/SELL SIGNALS
AND MORE

PLUS MANY MORE MODULES SUCH AS
FINANCE
CIVIL ENGINEERING
MECHANICAL ENGINEERING
CHEMISTRY
AGRICULTURE
THERMODYNAMICS
AIR CONDITIONING
PHYSICS
AND MORE

RM1000 TECHNICAL SPECIFICATIONS

SIZE: ..... 6" x 3" x 1" POCKET SIZE

DISPLAY: ..... ONE LINE 16 COLUMNS WIDE 14 SEGMENT LCD DISPLAY UPPER CASE LETTERS AND NUMERALS

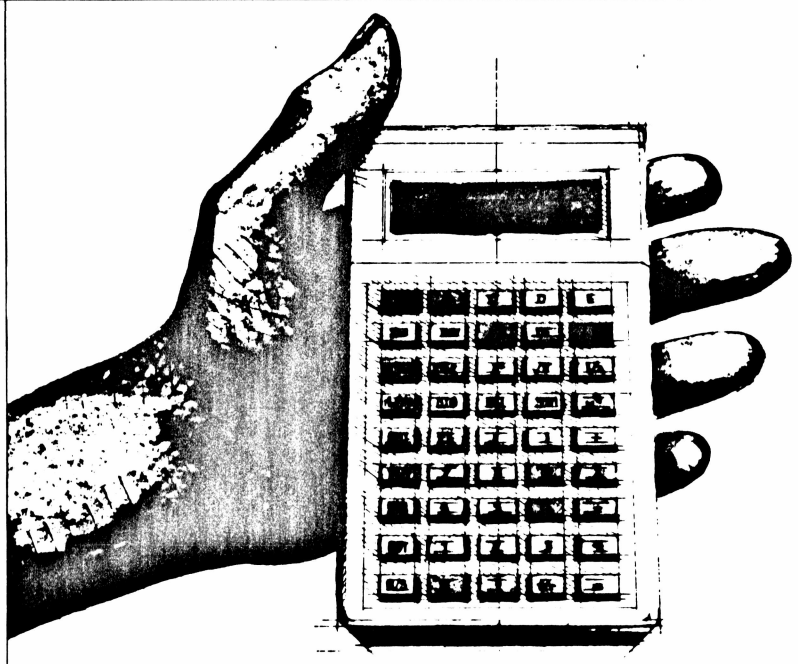
KEYBOARD: ..... 45 KEYS MOSTLY WITH 4 FUNCTION CAPABILITY (FULL ALPHABET AND NUMERALS)

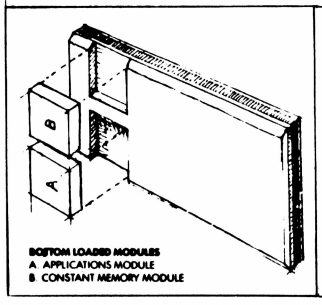
LANGUAGE: ..... KEYSTROKE PROGRAMMING

RAM MEMORY: ..... 1K BYTES (CONSTANT MEMORY) EXPANDABLE UP TO 3K BYTES (1000 to 3000 PROGRAM STEPS OR 125 TO 375 DATA REGISTERS)

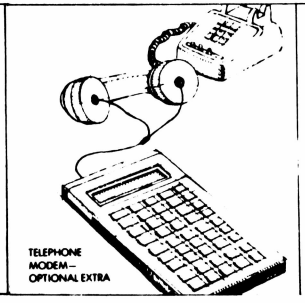
POWER ..... AC ADAPTER, OR 40 HOUR LIFE THROWAWAY BATTERY

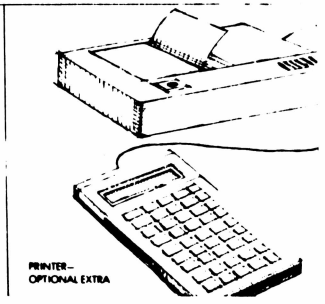
OPTIONS/PERIPHERALS: ..... PRINTER
(AT ADDITIONAL COST) TELEPHONE COMMUNICATIONS ADAPTER (MODEM)
CASSETTE ADAPTER FOR MASS STORAGE
CONSTANT PLUG IN RAM MODULES – FOR PERMANENT STORAGE OF USER'S PROGRAMS OR DATA
PLUG IN ROM MODULES – FOR SPECIAL PRE-PROGRAMMED APPLICATIONS
WAND FOR BAR CODE READING





BOTTOM LOADED MODULES
A. APPLICATIONS MODULE
B. CONSTANT MEMORY MODULE


TELEPHONE MODEM— OPTIONAL EXTRA


PRINTER— OPTIONAL EXTRA

INTRODUCING THE RM 2000. THE POCKET COMPUTER THAT'S EASY TO USE.

The new RM2000 personal computer is small enough to fit in your coat pocket, but so powerful that it can solve the most difficult problems and remember whole paragraphs of written text.

The pocket RM2000 is amazingly simple to use. Its built-in BASIC programming language is the easiest to learn and most widely accepted on the market. In fact, you can use the RM2000 with a special self-teaching plug-in program and a simple workbook to teach yourself or your family BASIC programming in the privacy of your own home.

But, if you don't want to be a programmer, the RM2000 is just the computer for you. It is especially designed to accept plug-in, pre-programmed APPLICATIONS MODULES.

There are literally hundreds of pre-programmed *applications modules* in a wide range of fields already available to help you do computing on the RM2000 ... without having to write any programs yourself. This makes the pocket RM2000 the easiest of all computers for you to use.

Just plug in (for example) the Real Estate applications module and the computer asks you (in plain English) ***present value? interest rate? number of payments?*** You type in the answers, press a button and the RM2000 will give you the figure you are looking for. The *application modules* do almost everything for you and you don't have to know how to program to use them. Here are just a few representative examples.

APPLICATION MODULE EXAMPLES

REAL ESTATE
MORTGAGE PAYMENTS
AMORTIZATION SCHEDULES
INVESTMENT DECISIONS
AND MORE

ELECTRICAL ENGINEERING
AMPLIFIER DESIGN
ANTENNA AND RF FIELD CALCULATION
FILTER DESIGN
AND MORE

INVESTMENTS
OPTIONS ANALYSIS
PORTFOLIO ANALYSIS
COMMODITY BUY SELL SIGNALS
AND MORE

PLUS MANY MORE MODULES SUCH AS
FINANCE
CIVIL ENGINEERING
MECHANICAL ENGINEERING
CHEMISTRY
AGRICULTURE
THERMODYNAMICS
AIR CONDITIONING
PHYSICS
AND MORE

If you want to carry important information along with you on a trip, you can hold up to one half page of text or data in the RM2000's internal memory and up to one page each in optional solid state CONSTANT MEMORY MODULES.

You can write your own text, data or programs on these modules. They will remember the information for as long as five years, even though you turn the computer off and remove the modules. Of course, you can erase the *constant memory modules* and re-use them as often as you like.

If you plug in a telephone connector accessory, your pocket RM2000 becomes a miniature computer DATA TERMINAL. Take it anywhere there's a telephone and you can send to, or receive information from, another computer.

For instance, you could use your pocket RM2000 as a *terminal* to send and receive *electronic mail* (messages), do *computer shopping*, and connect to computer based *information services* like news and stock prices.

The information you obtain from another computer will come scrolling across the RM2000's display window for you to read like a ticker tape. You can save up to one half page of the information you receive for later use in the computer's internal memory, or one page in a plug-in *constant memory module*.

The RM2000 is the latest advancement in miniature electronics. It puts the power of a big computer in your pocket.

RM2000 TECHNICAL SPECIFICATIONS

SIZE: ..... 7½" x 3¼" x ¾" POCKET SIZE

DISPLAY: ..... ONE LINE 32 COLUMNS WIDE UPPER CASE LETTERS AND NUMBERS WITH SCROLLING (CHARACTERS MOVE LIKE "TICKER TAPE" ACROSS DISPLAY)

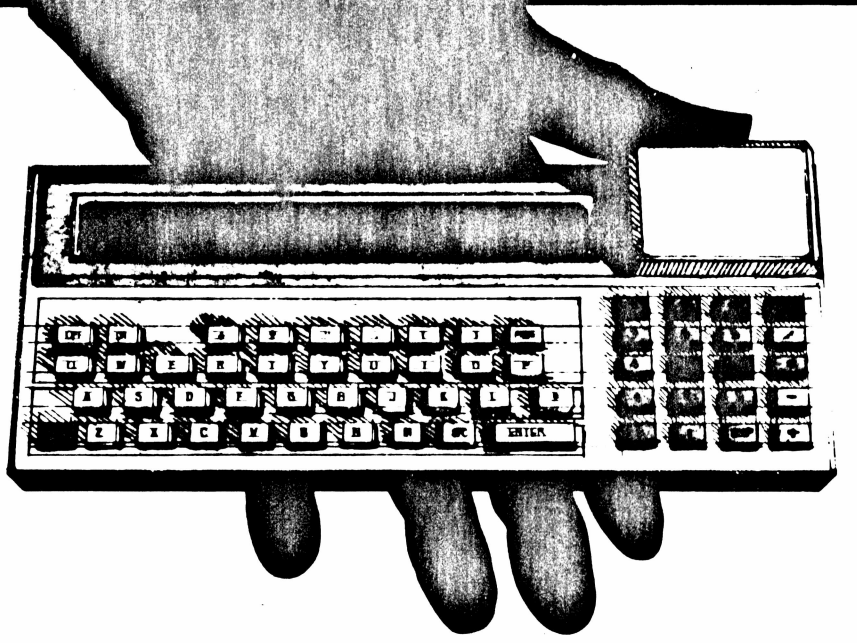
KEYBOARD: ..... SMALL TYPEWRITER STYLE
SEPARATE NUMERIC PAD

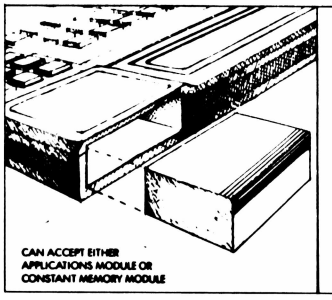
LANGUAGE: ..... BASIC

RAM MEMORY: ..... 1K BYTES (CONSTANT MEMORY)
EXPANDABLE UP TO 8K BYTES
(85 TO 700 LINES OF BASIC PROGRAM, ½ TO 4 PAGES OF WRITTEN TEXT)

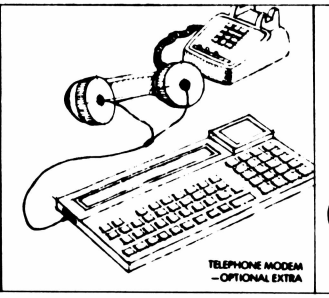
POWER: ..... THROWAWAY BATTERIES - 250 HOURS LIFE

OPTIONS/ PERIPHERALS: ..... PRINTER
(AT ADDITIONAL COST) TELEPHONE COMMUNICATIONS ADAPTER (MODEM)
TV DISPLAY HOOK UP (RF MODULATOR)
CASSETTE ADAPTER FOR MASS STORAGE
CONSTANT PLUG IN RAM MODULES FOR PERMANENT STORAGE OF USER'S PROGRAMS OR DATA
PLUG IN ROM MODULES - FOR SPECIAL PRE PROGRAMMED APPLICATIONS

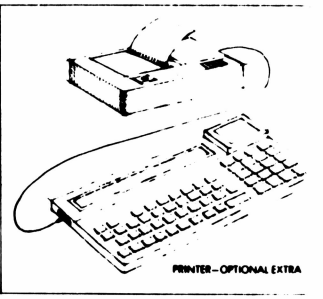




CAN ACCEPT EITHER APPLICATIONS MODULE OR CONSTANT MEMORY MODULE



TELEPHONE MODEM – OPTIONAL EXTRA



PRINTER – OPTIONAL EXTRA

INTRODUCING THE RM 3000.
THE PORTABLE COMPUTER THAT'S EASY TO USE.

The new RM3000 personal computer is small enough to fit in your briefcase, but so powerful that it can solve the most difficult problems and remember whole pages of written text.

That's correct, written text, just like a typewriter, and amazingly the RM3000 is not that much more difficult to use.

You don't have to know computer language or remember keystrokes because the RM3000 is pre-programmed to lead you through each problem with clear English directions, step-by-step, from beginning to end.

Its large six-line alphanumeric display lets you see the whole picture at a glance—you can even adjust the display to the most convenient viewing angle.

The RM3000 has been designed to take four plug-in DEFINITION MODULES and comes with the *definition module* of your choice.

In short, these *definition modules* let you adapt the RM3000 to perform the different types of jobs that you need to do in your particular business or technology.

Definition modules change the "personality" of the RM3000. One module transforms the RM3000 into a *"tablemaker,"* another makes it a *data terminal*, with a third it becomes a *word processor*, and the fourth definition module turns the RM3000 into a BASIC language computer.

Here is a summary of what each of the *definition modules* can do.

1. TABLECOMP DEFINITION MODULE

Once plugged into the RM3000, TABLECOMP lets you analyze and manipulate data in tabular form. It's great for keeping track of sales orders, materials or inventories, and for doing budgets or forecasts.

If the amounts or prices or any other items in your table change, TABLECOMP will automatically update the entire table. Simply press a few buttons and the new corrected table appears.

You can learn to customize your own tabular applications with TABLECOMP in three or four hours. No programming knowledge is required. From then on you can easily play the "What if" games that help you to forecast the future of your business... "What if I hire a new employee?"..."What if I change my prices?"..."What if I can bring production costs down?"...What if? What if? What if?

2. DATACOM DEFINITION MODULE

Plug in the DATACOM *definition module* and your briefcase RM3000 becomes a smart data/information terminal. Take it with you anywhere there is a telephone and you will be able to communicate with another computer.

For instance, with DATACOM plugged in, you could use your RM3000 to enter sales orders directly into your company's own computer while you were still at the customer's office. You could also ask questions of another computer and receive the answers and save them right in the memory of the RM3000. For example: "What is the sales history of the customer I am about to visit?" "What is the inventory in my warehouse available for immediate delivery?"

With DATACOM installed, your RM3000 lets you send and receive *electronic mail*, do *computer shopping* and connect to computer based *information services* like news and stock prices.

3. WORDRITE DEFINITION MODULE

Plug in the WORDRITE *definition module* and your briefcase RM3000 becomes a portable word processor and memory pad. You can type and save entire pages of written text right in the computer.

WORDRITE lets you edit your copy and correct mistakes electronically. You can easily view pages of text that you have written and saved in the memory of the computer. Simply *scroll* the copy back and forth, up and down, in the RM3000's big six-line display window and you can see and correct any part of any page electronically.

Plug the RM3000 into the accessory printer and you will produce letter-quality printed text. If you like, the RM3000 will store in its own memory an entire page of information: notes, dates, phone numbers, etc. for immediate recall at any time. Optional add-on memory can enlarge the storage to eight pages of data or copy that you can take or use anywhere.

4. BASIC LANGUAGE DEFINITION MODULE

Plug in the BASIC *definition module* and your RM3000 is instantly equipped with the easiest-to-learn, most widely-used computer programming language: BASIC. With BASIC you can easily write your own programs, save them in the RM3000's internal memory or optional plug-in CONSTANT MEMORY MODULES and do computing anywhere your briefcase takes you.

The RM3000 with BASIC gives you another great benefit with the use of plug-in *applications* program modules. The computer is designed with two module holes, one for the definition module (BASIC in this case) and the other for pre-programmed *application modules* or extra "permanent" memory modules on which you can write and save your own additional programs. The BASIC definition module works together with *applications modules* to make the RM3000 the easiest of all computers for you to use.

There are literally hundreds of pre-programmed *application modules* in a wide range of fields that are already available to help you do computing on the RM3000 without having to write any programs yourself.

Just plug in (for example) the Real Estate applications module and the computer asks you (in plain English): ***present value? interest rate? number of payments?*** You type in the answers, press a button and the RM3000 will give you the figure you are looking for. The *application modules* do almost everything for you and you don't have to know how to program to use them. Here are just a few representative examples.

APPLICATION MODULE EXAMPLES

REAL ESTATE
MORTGAGE PAYMENTS
AMORTIZATION SCHEDULES
INVESTMENT DECISIONS
AND MORE

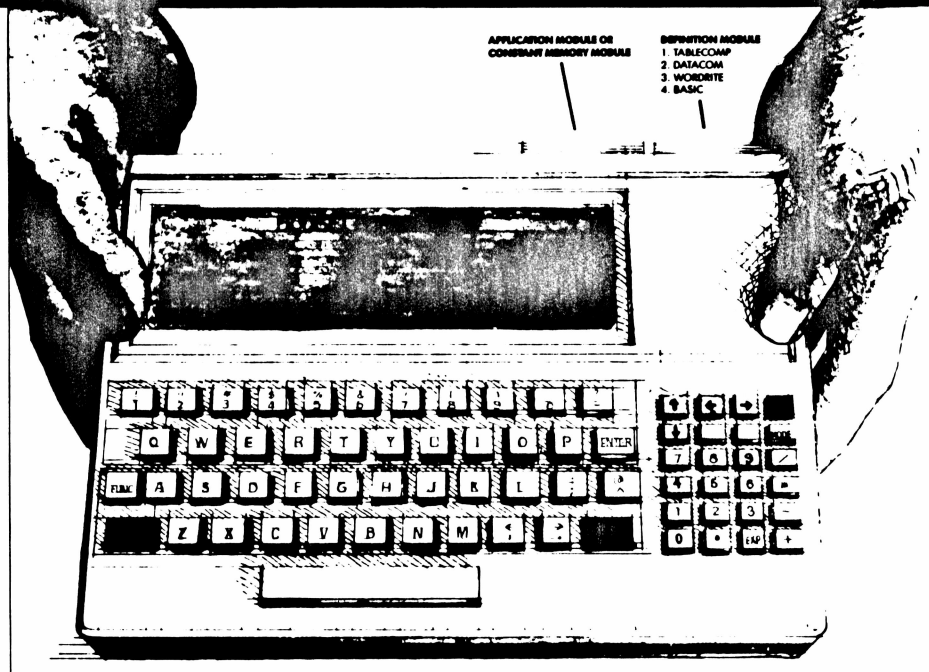
INVESTMENTS
OPTIONS ANALYSIS
PORTFOLIO ANALYSIS
COMMODITY BUY SELL SIGNALS
AND MORE

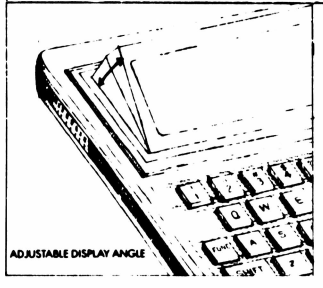
ELECTRICAL ENGINEERING
AMPLIFIER DESIGN
ANTENNA AND RF FIELD CALCULATION
FILTER DESIGN
AND MORE

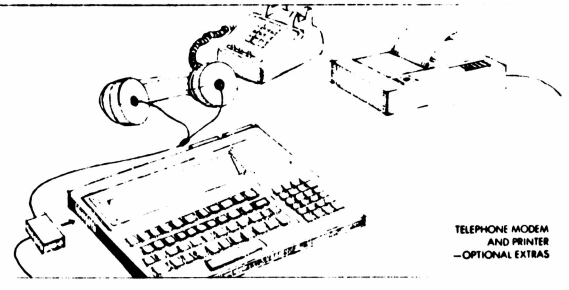
PLUS MANY MORE MODULES SUCH AS
FINANCE
CIVIL ENGINEERING
MECHANICAL ENGINEERING
CHEMISTRY
AGRICULTURE
THERMODYNAMICS
AIR CONDITIONING
PHYSICS
AND MORE

RM3000 TECHNICAL SPECIFICATIONS

SIZE:	8" x 10" x 1" BRIEFCASE SIZE
DISPLAY:	6 LINES HIGH, 40 COLUMNS WIDE UPPER CASE LETTERS AND NUMBERS WITH SCROLLING. THE ENTIRE DISPLAY WINDOW MOVES UP AND DOWN, RIGHT AND LEFT
KEYBOARD:	LARGE TYPEWRITER STYLE (TWO-HANDED USE) SEPARATE NUMERIC PAD
LANGUAGE:	PLUG-IN DEFINITION MODULES BASIC, TABLECOMP, DATACOM, WORDRITE
RAM MEMORY:	2K BYTES (CONSTANT MEMORY) EXPANDABLE UP TO 16K BYTES— 170-1400 LINES OF BASIC PROGRAM 1-8 PAGES OF WRITTEN TEXT 100-800 NUMBER TABLE ELEMENTS
POWER:	THROWAWAY BATTERIES—250 HOURS LIFE
OPTIONS/PERIPHERALS: (AT ADDITIONAL COST)	PRINTER TELEPHONE COMMUNICATIONS ADAPTER (MODEM) TV DISPLAY HOOK UP (RF MODULATOR) CASSETTE ADAPTER FOR MASS STORAGE CONSTANT PLUG-IN RAM MODULES—FOR PERMANENT STORAGE OF USER'S PROGRAMS OR DATA PLUG-IN ROM MODULES—FOR SPECIAL PRE-PROGRAMMED APPLICATIONS




ADJUSTABLE DISPLAY ANGLE


TELEPHONE MODEM AND PRINTER —OPTIONAL EXTRAS

Time Spent Looking at Concept Board (Avg. # Minutes)

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
When concept was in first position (monadic)					
RM 1000	2.8"	2.6"	3.0"	2.7"	2.9"
RM 2000	2.9	2.5	3.2	3.2	2.7
RM 3000	3.3	3.3	3.5	3.4	3.0
When concept was in second position					
RM 1000 after RM 2000	2.4"				
after RM 3000	2.5"				
RM 2000 after RM 1000	2.7"				
after RM 3000	2.6"				
RM 3000 after RM 1000	3.2"				
after RM 2000	2.7"				

Key Issues

I. What do consumers expect to pay for these product innovations?

II. What is the maximum market opportunity for these products?
What is the immediate opportunity (hot prospects)?
What volume might T.I. expect to achieve?

III. What features and benefits do consumers consider important;
What do they want?

IV. Which product, or products, should T.I. manufacture and begin to develop marketing plans for to capitalize on the total available market?

I. Price Expectations

What do consumers expect to pay for these product innovations?

Expected Cost

Pricing an ALCC product should take into account the customers' cost expectations. Pricing the product too high above can result in deferred purchasing, or reducing the buyer's interest. Pricing the product too low can instill doubt about the product, or cast a "bargain" image.

To help optimize the price-point, we asked (before any price-points were mentioned):

> "How much do you think this portable computer would cost <u>without</u> the optional extras?"

THE RM 1000 IS EXPECTED TO COST ABOUT $222. (MEDIAN ESTIMATE).

THE AVERAGE COST ESTIMATED WAS $267., ABOUT 20% HIGHER THAN THE MEDIAN DUE TO A SUBSTANTIAL MINORITY WHO ESTIMATE IT WOULD COST MORE THAN $400.

THE TECHNICAL/SCIENTIFIC COMMUNITY, PERHAPS DUE TO GREATER FAMILIARITY AND OWNERSHIP OF PROGRAMMABLE CALCULATORS (21%), ESTIMATED THE LOWEST AVERAGE COST.

Expected Cost of the RM 1000

Based on FIRST Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Under $100.	19%	16%	21%	18%	22%
$100. to $199.	25	30	20	28	22
$200. to $299.	25	25	26	23	27
$300. to $399.	13	11	21	11	9
$400. or more	17	17	11	18	20
AVERAGE	$267.	$248.	$264	$271.	$282.
MEDIAN	222.	216.	232.	214.	225.

THE ESTIMATED COST OF THE RM 2000 IS CONCENTRATED IN TWO DIFFERENT PRICE CLASSES; $200. TO $299. AND $500. OR MORE. THIS CAUSES A 36% DIFFERENCE BETWEEN THE AVERAGE ESTIMATE OF $406. AND THE MEDIAN COST ESTIMATE OF $299.

AGAIN, THE TECHNICAL/SCIENTIFIC GROUP ESTIMATE THE LOWEST COST, $322. (AVERAGE) AND A MEDIAN OF $283.

Expected Cost of the RM 2000

Based on FIRST Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Under $100.	6%	3%	7%	8%	4%
$100. to $199.	15	14	11	18	16
$200. to $299.	29	39	32	26	22
$300. to $399.	14	16	11	15	15
$400. to $499.	6	6	6	7	4
$500. or more	30	22	32	26	39
AVERAGE	$406.	$322.	$396.	$333.	$567.
MEDIAN	299.	283.	298.	292.	355.

THE RM 3000 YIELDS AN IMPRESSIVE SET OF COST EXPECTATIONS:

AVERAGE COST ESTIMATE	-	$935.
MEDIAN	-	$674.

FULLY ONE-THIRD OF THE SAMPLE EXPECT THIS MACHINE TO COST MORE THAN $1,000.; EVEN THE TECHNICAL/SCIENTIFIC PEOPLE TURN IN A VERY HIGH COST EXPECTATION. THE BUSINESS, FINANCIAL AND PROFESSIONAL MARKET EXPECT THE RM 3000 TO COST $1,314. ON THE AVERAGE ($900. MEDIAN).

Expected Cost of the RM 3000

Based on FIRST Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Under $200.	5%	6%	8%	3%	4%
$200. to $299.	10	9	11	10	9
$300. to $399.	10	9	18	7	8
$400. to $499.	8	12	8	6	8
$500. to $599.	11	12	8	14	10
$600. to $999.	21	17	27	11	28
$1000. or more	33	32	20	48	32
AVERAGE	$935.	$828.	$715.	$1,314.	$890.
MEDIAN	674.	600.	567.	900.	717.

Summary of Cost Expectations

Based on First Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
AVERAGES					
RM 1000	$267	$248	$264	$271	$282
RM 2000	406	322	396	333	567
RM 3000	935	828	715	1,314	890
MEDIAN					
RM 1000	$222	$216	$232	$214	$225
RM 2000	299	283	298	292	355
RM 3000	674	600	567	900	717

AMONG THOSE INTERESTED IN BUYING, CONSUMER PRICE ESTIMATES ARE CLOSE TO THE HIGHEST TEST PRICE.

	MEDIAN ESTIMATED COST (HIGH BUYING INTEREST)	HIGH TEST PRICE (SET BY TI)
RM 1000	$231	$250
RM 2000	350	250
RM 3000	560	550

THE FAMILIAR CONFIGURATION OF THE RM 1000, HOWEVER, GENERATES THE LOWEST PRICE EXPECTATION BY A CONSIDERABLE MARGIN, WHILE THE NEW CONFIGURATIONS GENERATE HIGHER PRICE ESTIMATES.

WHEN WE EXAMINE THE COST EXPECTATIONS OF EACH PRODUCT BY DEGREE OF BUYING INTEREST EXPRESSED, WE FIND THAT THE HIGHER THE INTEREST IN BUYING, THE MORE PEOPLE EXPECT TO PAY. THE LOWER THE INTEREST, THE LESS THEY EXPECT THE PRODUCT TO COST.

THE ONE EXCEPTION TO THIS PATTERN IS THE RM 3000. BOTH THOSE HIGHLY INTERESTED AND MODERATELY INTERESTED EXPECT TO PAY ABOUT THE SAME.

Cost Expectations by Buying Interest

Cost Estimates	Purchase Interest: High (7,8,9)	Moderate (4,5,6)		Low (1,2,3)	
AVERAGE					
RM 1000	$309	$247	(-62)	$228	(-81)
RM 2000	471	390	(-81)	313	(-158)
RM 3000	785	808	(+23)	742	(-43)
MEDIAN					
RM 1000	$231	$213	(-18)	$185	(-46)
RM 2000	350	297	(-53)	269	(-81)
RM 3000	560	588	(+28)	541	(-19)

II. Buying Interest

A. Maximum Potential

B. Hot Prospects

C. T.I. Yield Opportunity

The Buying Interest Question(s)

The buying interest question we used to determine the purchasing probability for each ALCC product concept is based on the "Predictive Pretesting System". This system was developed by McCann and has been employed, with a high degree of both sensitivity and reliability, for more than 20 new products over the past 15 years.

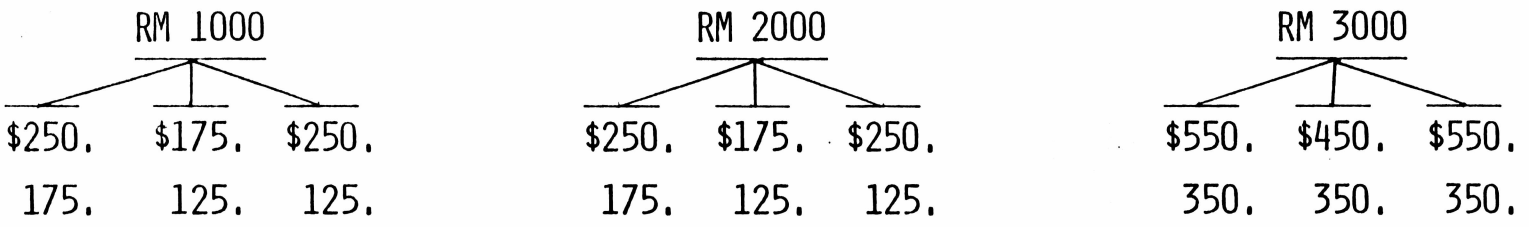
The basic method of determining purchasing probability is derived from the following question:

> "How interested are you in buying this portable computer for your own use? Please indicate your interest with a number. If you are extremely interested in buying this portable computer, you can answer by saying 9. If you are not at all interested in buying this portable computer, you can answer by saying 1. Or, you can give me some number in between. Which number from 1 to 9 best describes how interested you are in buying this portable computer. Remember, the higher the number, the more likely you would be to buy this portable computer. The lower the number, the less likely you would be to buy it. You can use any number from 1 to 9 to express how interested you are in buying this portable computer."
> (CIRCLE RATING BELOW)

Not At All Interested								Extremely Interested
1	2	3	4	5	6	7	8	9

Buying Interest at Specific Price-Points

After determining each person's interest in buying the product "price-free", we repeated the buying interest question at two different price-points, always moving from a higher price to a lower price.



"Now we'd like to know how interested you are in buying this portable computer if you could purchase if for _____ without the optional extras?

We'll use the same one to nine scale as before. The higher the number the more likely you would be to buy this portable computer if you could purchase it for _____. You can use any number from one to nine to express how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras."

WE WILL LOOK AT BUYING INTEREST IN TWO WAYS.

FIRST WE WILL LOOK AT WHAT WE THINK OF AS THE MAXIMUM LEVEL OF BUYING INTEREST WE MIGHT EXPECT TO SEE IF THE MARKET WERE MATURE, IF EVERY POTENTIAL CUSTOMER WERE AWARE OF THE PRODUCT, IF EVERY POTENTIAL CUSTOMER WERE EXPOSED TO THE PRODUCT, AND IF THERE WAS NO COMPARABLE COMPETITIVE ITEM AVAILABLE IN THE MARKET PLACE.

WHILE THIS IS NOT A REALISTIC ESTIMATE OF SALES POTENTIAL FOR THE PRODUCT, IT PROVIDES A MEASURE OF POSSIBLE SCOPE OF THE MARKET.

IT ALSO PROVIDES A MEANS OF COMPARING TARGET MARKET ACCEPTANCE OF THE ALTERNATIVE PRODUCTS IN A LONGER TERM PERSPECTIVE.

THIS MEASURE IS BASED ON THE MEAN OF THE NINE POINT BUYING INTEREST SCALE.

IN EFFECT, IT MAKES THE ASSUMPTION THAT THOSE WHO RATE THEIR BUYING INTEREST AT 9 HAVE A 90% PREDISPOSITION TO BUY UNDER FAVORABLE CIRCUMSTANCES, THOSE WHO SCORE 8 HAVE AN 80% PREDISPOSITION, ETC., DOWN TO THE ASSUMPTION THAT AMONG THOSE WHO SCORE 1 ON THE SCALE MIGHT YIELD A 10% BUYING INTEREST.

THIS PROCEDURE HAS BEEN DEMONSTRATED TO HAVE PREDICTIVE VALUE, BUT MOSTLY FOR LOWER-PRICED ITEMS THAN THOSE INVOLVED HERE.

THE FIRST CHART, FOLLOWING, SHOWS THESE BUYING POTENTIAL SCORES FOR ALL THREE TEST ITEMS, PRICE-FREE, AND AT THE THREE PRICE LEVELS TESTED.

CONSISTENT WITH THE FACT THAT ESTIMATED COST OF THE RM 1000 WAS SLIGHTLY BELOW THE HIGHEST RETAIL PRICE ($231. VS $250.), WE NOTE THAT BOTH THE HIGH AND MIDDLE PRICE RESULT IN LOWER BUYING INTEREST SCORES THAN THE CONCEPT PRICE-FREE. HOWEVER, BUYING INTEREST AT THE LOWEST PRICE RISES SIGNIFICANTLY ABOVE THE PRICE-FREE LEVEL.

FOR THE RM 2000, WHERE THE ESTIMATED PRICE WAS WELL ABOVE THE HIGHEST ACTUAL PRICE ($350. VS $250.), WE SEE LITTLE DEVIATION BETWEEN PRICE-FREE AND HIGH PRICE BUYING INTEREST. BOTH THE MIDDLE PRICE AND THE LOW PRICE RISE SIGNIFICANTLY ABOVE PRICE-FREE BUYING INTEREST.

FOR THE RM 3000, WHERE THE PRICE ESTIMATE WAS ABOVE THE HIGH PRICE ($560. VS $550.), BUT BY A SMALLER MARGIN, ONLY THE LOW PRICE BRINGS BUYING INTEREST ABOVE THE PRICE-FREE LEVEL. WHAT IS MOST IMPORTANT, HOWEVER, IS THAT THE RM 3000 IS FAR LESS PRICE SENSITIVE THAN THE OTHER TWO OFFERINGS.

WE SHOULD ALSO NOTE THAT, PRICE-FREE, ALL THREE ITEMS GENERATE ABOUT THE SAME BASIC LEVEL OF INTEREST IN THE TECHNICAL/ SCIENTIFIC MARKET AND IN THE COLLEGE/UNIVERSITY MARKET.

IN THE BUSINESS/FINANCIAL/PROFESSIONAL GROUP, AND THE GENERAL POPULATION TO A SLIGHTLY LESSER DEGREE, BOTH THE RM 2000 AND THE RM 3000 GENERATE HIGHER LEVELS OF BUYING INTEREST. THIS IS LARGELY THE RESULT OF LESS INTEREST IN THE RM 1000 FORMAT.

IT SEEMS REASONABLE TO SUGGEST THAT THE BUSINESS/FINANCIAL/ PROFESSIONAL MARKET, WHICH WE ESTIMATE TO BE AS LARGE AS ANY OF THE OTHER MARKET SEGMENTS, HAS A DIFFERENT ORIENTATION, AND MAY WELL BE AN IMPORTANT OPPORTUNITY FOR EXPANSION.

Purchase Probability

Based on First or Second Exposure (combined)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
RM 1000					
Price-free	40%	44%	45%	32%	42%
$250.	30	33	31	25	31
$175.	35	37	40	28	34
$125.	44	50	49	34	44
RM 2000					
Price-free	45%	46%	47%	40%	48%
$250.	42	43	42	39	45
$175.	51	51	54	48	51
$125.	56	59	58	50	59
RM 3000					
Price-free	45%	44%	46%	43%	48%
$550.	39	35	37	39	42
$450.	43	39	49	42	43
$350.	46	46	48	42	49

AS A CHECK, WE ALSO EXAMINED BUYING INTEREST FOR THE SMALLER BUT UNCONTAMINATED MONADIC SAMPLE, THOSE WHO SAW EACH ITEM FIRST.

IN GENERAL, THE DIFFERENCES ARE SMALL, AND BUYING INTEREST TENDS TO BE HIGHER FOR ANY GIVEN ITEM BEFORE THE TARGET AUDIENCES ARE EXPOSED TO ALTERNATIVES.

FOR PRACTICAL PURPOSES, HOWEVER, THE LARGER SAMPLE BASE (FIRST AND SECOND EXPOSURE) IS A GOOD AND SLIGHTLY MORE CONSERVATIVE MEASURE OF GLOBAL BUYING INTEREST.

Purchase Probability

Based on First Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
RM 1000					
Price-free	42%	50%	44%	37%	41%
$250.	33	37	31	30	35
$175.	38	41	42	33	36
$125.	48	57	49	39	49
RM 2000					
Price-free	49%	50%	51%	42%	52%
$250.	46	48	44	42	48
$175.	54	52	57	46	60
$125.	58	59	61	50	61
RM 3000					
Price-free	45%	41%	47%	41%	51%
$550.	41	35	38	40	52
$450.	45	37	48	44	51
$350.	48	43	47	44	56

Difference between Monadic Exposure and Paired Exposure Purchase Probabilities

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
RM 1000					
Price-free	-2	-6	+1	-5	+1
$250.	-3	-4	±0	-5	-4
$175.	-3	-4	-2	-5	-2
$125.	-4	-7	±0	-5	-5
RM 2000					
Price-free	-4	-4	-4	-2	-4
$250.	-4	-5	-2	-3	-3
$175.	-3	-1	-3	+2	-9
$125.	-2	±0	-3	±0	-2
RM 3000					
Price-free	±0	+3	-1	+2	-3
$550.	-2	±0	-1	-1	-10
$450.	-2	+2	+1	-2	-8
$350.	-2	+3	+1	-2	-7

IF WE NOW TRANSLATE THESE LEVELS OF BUYING INTEREST BY PROJECTION INTO ESTIMATES OF MAXIMUM MARKET POTENTIAL, WE SEE SOME VERY IMPRESSIVE NUMBERS.

FOR EXAMPLE, THE APPARENT POTENTIAL FOR RM 1000 AT THE HIGHEST PRICE IS LARGER THAN THE TOTAL OF PROGRAMMABLE CALCULATORS SHIPPED TO THE U.S. MARKET THROUGH 1980.

AT THE MID PRICE, THE MARKET POTENTIAL IS 16% LARGER THAN AT THE HIGH PRICE; AND AT THE LOW PRICE, THE MARKET IS 48% LARGER.

ALTHOUGH THE INDICATED SALES POTENTIAL IS LARGE, IT IS NOT UNREASONABLE GIVEN THE CURRENT PENETRATION ESTIMATE OF 24%, AND THERE IS EVERY REASON IN PRIOR EXPERIENCE TO THINK THAT A PRICE BREAKTHROUGH SUCH AS $125 FOR A PROGRAMMABLE CALCULATOR OF THIS QUALITY WOULD RADICALLY ENLARGE THE MARKET OPPORTUNITY.

WE DO CAUTION AGAIN, HOWEVER, THAT THIS IS THE LARGEST POSSIBLE PROJECTION OF MARKET OPPORTUNITY, NOT WHAT WE BELIEVE IT COULD ACHIEVE.

WE SHOULD ALSO NOTE THAT 44% OF THIS PROJECTED MARKET LIES OUTSIDE THE TRADITIONAL TECHNICAL/SCIENTIFIC AND COLLEGE/UNIVERSITY MARKETS.

MAXIMUM BUYING POTENTIAL - RM 1000

GROUP	# IN POPULATION	HIGH PRICE $ (250) BUYING POTENTIAL	HIGH PRICE $ (250) # UNITS	MIDDLE PRICE $ (175) BUYING POTENTIAL	MIDDLE PRICE $ (175) # UNITS	LOW PRICE $ (125) BUYING POTENTIAL	LOW PRICE $ (125) # UNITS	
TECHNICAL/SCIENTIFIC	2,500,000	33%	825,000	37%	925,000	50%	1,250,000	56%
COLLEGE/UNIVERSITY	3,000,000	31	930,000	40	1,200,000	49	1,470,000	
BUS/FIN/PRO	3,000,000	25	750,000	28	840,000	34	1,020,000	44
GENERAL POPULATION	2,500,000	31	775,000	34	850,000	44	1,100,000	
TOTAL	11,000,000		3,280,000		3,815,000 + 16%		4,840,000 +48%	

THE APPARENT MARKET POTENTIAL FOR THE RM 2000 IS VERY IMPRESSIVE, LARGER THAN THAT FOR THE RM 1000.

HERE TOO, WE SEE INCREASED BUYING INTEREST AT THE LOWER PRICE POINTS, BUT NOT QUITE SO RADICAL AS IS THE CASE FOR RM 1000.

IN THIS INSTANCE, 48% OF THE MARKET POTENTIAL LIES OUTSIDE THE TRADITIONAL TECHNICAL/SCIENTIFIC AND COLLEGE/UNIVERSITY MARKET, A BIT MORE THAN WAS THE CASE WITH THE RM 1000.

MAXIMUM BUYING POTENTIAL - RM 2000

GROUP	# IN POPULATION	HIGH PRICE $ (250) BUYING POTENTIAL	HIGH PRICE $ (250) # UNITS	MIDDLE PRICE $ (175) BUYING POTENTIAL	MIDDLE PRICE $ (175) # UNITS	LOW PRICE $ (125) BUYING POTENTIAL	LOW PRICE $ (125) # UNITS	
TECHNICAL/SCIENTIFIC	2,500,000	43%	1,075,000	51%	1,275,000	59%	1,475,000	52%
COLLEGE/UNIVERSITY	3,000,000	42	1,260,000	54	1,620,000	58	1,740,000	
BUS/FIN/PRO	3,000,000	39	1,170,000	48	1,440,000	50	1,500,000	48
GENERAL POPULATION	2,500,000	45	1,125,000	51	1,275,000	59	1,475,000	
TOTAL	11,000,000		4,630,000		5,610,000	+14%	6,190,000	+34%

CONSIDERING THE PRICE, THE GROSS POTENTIAL FOR THE RM 3000 IS CERTAINLY IMPRESSIVE.

IT IS ALSO APPARENT THAT OF THE THREE CONCEPTS, THIS ONE IS LEAST RESPONSIVE TO PRICE. OR, TO PUT IT THE OTHER WAY, IT IS VERY ATTRACTIVE AT THE HIGH PRICE.

FOR THIS UNIT, 51% OF THE POTENTIAL APPEARS TO LIE OUTSIDE THE TRADITIONAL TECHNICAL/SCIENTIFIC AND COLLEGE/UNIVERISTY MARKET. AT THE HIGH PRICE, EVEN MORE OF THE MARKET (53%) LIES OUTSIDE THE TRADITIONAL MARKETS.

MAXIMUM BUYING POTENTIAL - RM 3000

GROUP	# IN POPULATION	HIGH PRICE $ (550) BUYING POTENTIAL	HIGH PRICE $ (550) # UNITS		MIDDLE PRICE $ (450) BUYING POTENTIAL	MIDDLE PRICE $ (450) # UNITS		LOW PRICE $ (350) BUYING POTENTIAL	LOW PRICE $ (350) # UNITS	
TECHNICAL/SCIENTIFIC	2,500,000	35%	875,000	47%	39%	975,000		46%	1,150,000	49%
COLLEGE/UNIVERSITY	3,000,000	37	1,110,000		49	1,470,000		48	1,440,000	
BUS/FIN/PRO	3,000,000	39	1,170,000	53	42	1,260,000		42	1,260,000	51
GENERAL POPULATION	2,500,000	42	1,050,000		43	1,075,000		49	1,225,000	
TOTAL	11,000,000		4,205,000			4,780,000	+14%		5,075,000	+21%

How can we estimate what the maximum TI potential might be?

Three factors are key:

1. Prospect awareness of the availability of the <u>specific</u> model. (Product Awareness)

2. Product availability to the prospect. Will he find the item where he is most likely to shop? (<u>Product Exposure</u>)

3. Availability of competitive models with similar features and price.

At this time, we can make no assumptions about competitive product, but we can make some assumptions about the first two.

AFTER SOME DISCUSSION BASED ON TI KNOWLEDGE AND EXPERIENCE, IT APPEARS THAT BOTH PRODUCT AWARENESS AND PRODUCT AVAILABILITY/EXPOSURE ARE LIKELY TO DIFFER FOR THE FOUR TARGET CROUPS.

TI ESTIMATES ARE AS FOLLOWS; AS GOALS FOR THE END OF FIRST YEAR OF MARKETING:

TARGET GROUP	PRODUCT EXPOSURE	PRODUCT AWARENESS
TECHNICAL/SCIENTIFIC	80%	60%
COLLEGE/UNIVERSITY	80%	60%
BUS/FIN/PRO	70%	15%
GENERAL POPULATION	70%	20%

(THESE ESTIMATES WERE BASED ON TELEPHONE DISCUSSIONS, AND ARE INTENDED ONLY TO PROVIDE GUIDELINES)

MCCANN-ERICKSON, LOOKING AT PAST EXPERIENCE, WOULD JUDGE THE AWARENESS GOALS TO BE QUITE AMBITIOUS, BEARING IN MIND THAT WE ARE HERE TALKING ABOUT SPECIFIC PRODUCTS WITH SPECIFIC FEATURES.

HOWEVER, LET'S PUT THESE ESTIMATES TO WORK.

THE FOLLOWING CHART SHOWS ESTIMATED LONG TERM MAXIMUM POTENTIAL FOR THE TI RM 1000 ON THE BASIS OF THESE AWARENESS AND AVAILABILITY ASSUMPTIONS, WITHOUT TAKING INTO ACCOUNT THE IMPACT OF COMPETITIVE PRODUCTS.

WE THINK THESE OBJECTIVES ARE AMBITIOUS, AND SHOULD BE EVALUATED IN TERMS OF LONG RANGE PLANNING. IN EFFECT, AT THE HIGH PRICE, THE MARKET OPPORTUNITY WOULD APPEAR TO BE SOMETHING LIKE SHIPMENTS ALREADY MADE IN THE PROGRAMMABLE CALCULATOR AREA, JUST ABOUT A MILLION UNITS.

AT THE LOWEST PRICE, THAT COULD BE A MILLION AND A HALF UNITS.

WE SUGGEST, OF COURSE, THAT THIS CAN'T BE AN IMMEDIATE OBJECTIVE. IF AWARENESS IS TO REACH THE INDICATED LEVELS, IT WILL DO SO GRADUALLY. ON THE OTHER HAND, THESE OBJECTIVES SEEN IN THE LONGER TERM, ARE NOT BEYOND REASON.

Maximum TI Potential Estimate for RM 1000

Group	Total Prospective Units	X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield
High Price							
Technical/Scientific	825,000		60%		80%		396,000
College/University	930,000		60		80		446,400
Bus/Fin/Pro	750,000		15		70		78,750
General Population	775,000		20		70		108,500
Total	3,280,000						1,029,650
Mid Price							
Technical/Scientific	925,000		60		80		440,000
College University	1,200,000		60		80		576,000
Bus/Fin/Pro	840,000		15		70		88,200
General Population	850,000		20		70		119,000
Total	3,815,000						1,223,200
Low Price							
Technical/Scientific	1,250,000		60		80		600,000
College University	1,470,000		60		80		705,600
Bus/Fin/Pro	1,020,000		15		70		107,100
General Population	1,100,000		20		70		154,000
Total	4,840,000						1,566,700

AT ALL THREE PRICE LEVELS, THE MARKET POTENTIAL FOR THE RM 2000 IS GREATER THAN THE MARKET POTENTIAL FOR RM 1000.

THE MARKET POTENTIAL FOR LOW PRICE IS A THIRD LARGER THAN THE MARKET FOR THE HIGH PRICE.

AGAIN, THIS IS A MAXIMUM, AND LONG RANGE.

Maximum TI Potential Estimate for RM 2000

Group	Total Prospective Units	X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield
High Price							
Technical/Scientific	1,075,000		60%		80%		516,000
College/University	1,260,000		60		80		604,800
Bus/Fin/Pro	1,170,000		15		70		122,850
General Population	1,125,000		20		70		157,500
Total	4,630,000						1,401,150
Mid Price							
Technical/Scientific	1,275,000		60		80		612,000
College University	1,620,000		60		80		777,600
Bus/Fin/Pro	1,440,000		15		70		151,200
General Population	1,275,000		20		70		178,500
Total	5,610,000						1,719,300
Low Price							
Technical/Scientific	1,475,000		60		80		708,000
College University	1,740,000		60		80		835,200
Bus/Fin/Pro	1,500,000		15		70		157,500
General Population	1,475,000		20		70		206,500
Total	6,190,000						1,907,200

AS NOTED PREVIOUSLY, WE FIND THE MARKET OPPORTUNITY FOR THE RM 3000 CONCEPT PARTICULARLY IMPRESSIVE.

HERE, MOST OF THE DRIVE TO PURCHASE INTEREST SEEMS TO COME FROM THE IDEA ITSELF.

IT LOOKS LIKE A SIGNIFICANT OPPORTUNITY TO SELL AN UPGRADE ITEM.

Maximum TI Potential Estimate for RM 3000

Group	Total Prospective Units	X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield
High Price							
Technical/Scientific	875,000		60%		80%		420,000
College/University	1,110,000		60		80		532,800
Bus/Fin/Pro	1,170,000		15		70		122,850
General Population	1,050,000		20		70		147,000
Total	4,205,000						1,222,650
Mid Price							
Technical/Scientific	975,000		60		80		468,000
College University	1,470,000		60		80		705,600
Bus/Fin/Pro	1,260,000		15		70		132,300
General Population	1,075,000		20		70		150,500
Total	4,780,000						1,456,400
Low Price							
Technical/Scientific	1,150,000		60		80		552,000
College University	1,440,000		60		80		691,200
Bus/Fin/Pro	1,260,000		15		70		132,300
General Population	1,225,000		20		70		171,500
Total	5,075,000						1,547,000

AS WE NOTED PREVIOUSLY, WE BELIEVE THESE ARE AMBITIOUS OBJECTIVES.

EVEN IF TI DID ACHIEVE 60% SPECIFIC AWARENESS OF ITS NEW PRODUCT AT THE END OF THE YEAR, IT WOULD HAVE TO BUILD TOWARD THAT GOAL. MOST PROBABLY, EFFECTIVE DISTRIBUTION COULD BE ACHIEVED QUICKLY, BUT THE DEVELOPMENT OF AWARENESS WOULD TAKE TIME. WE DO FIND, HOWEVER, THAT EACH OF THE CONCEPTS COULD HAVE A SIGNIFICANT MARKET.

WE SAID EARLIER THAT WE'D LOOK AT OPPORTUNITY IN TWO WAYS. THE SECOND LOOK IS MORE IMMEDIATE, WHAT MIGHT BE AVAILABLE IN THE NEAR FUTURE, WHAT WE HAVE CALLED THE "FIRST FLUSH" MARKET IN OTHER DISCUSSIONS.

The Hot Prospect Market

It has been our experience that those who score a nine on our buying interest scale are serious and immediate prospects.

Further, these people are usually the most alert to new products, become aware of them more quickly, seek them out.

Let's look at the hot prospect market.

THE FOLLOWING TABLE SHOWS HOT PROSPECT ESTIMATES FOR ALL THREE CONCEPTS AT ALL THREE PRICE LEVELS.

THE FIRST THING WE SEE IS THAT HOT PROSPECTS ARE MUCH MORE PRICE SENSITIVE THAN THE MARKET AS A WHOLE.

WE ALSO SEE THAT THERE IS A SUBSTANTIAL HOT PROSPECT MARKET FOR EACH OF THE ALCC PRODUCT CONCEPTS.

Hot Prospect Maximum Potential

Group	Est. Population	High Price		Mid Price		Low Price		
		%	Units	%	Units	%	Units	
RM 1000								
Technical/Scientific	2,500,000	3.4	85,000	6.8	170,000	9.2	230,000	
College/University	3,000,000	5.4	162,000	9.3	279,000	16.1	483,000	
Bus/Fin/Pro	3,000,000	2.0	60,000	2.9	87,000	9.7	291,000	
General Population	2,500,000	6.0	150,000	7.1	177,000	13.3	332,000	
Total			457,000		714,000	+56%	1,236,000	+170%
RM 2000								
Technical/Scientific	2,500,000	3.4	85,000	11.5	287,500	20.5	512,500	
College/University	3,000,000	4.3	129,000	8.8	264,000	23.1	693,000	
Bus/Fin/Pro	3,000,000	7.9	237,000	9.2	276,000	17.2	516,000	
General Population	2,500,000	11.0	275,000	20.0	500,000	26.0	650,000	
Total			726,000		1,327,500	+83%	2,371,500	+227%
RM 3000								
Technical/Scientific	2,500,000	4.3	107,500	5.5	137,500	10.3	257,500	
College/University	3,000,000	3.0	90,000	9.9	297,000	13.7	411,000	
Bus/Fin/Pro	3,000,000	9.3	279,000	13.7	411,000	10.0	300,500	
General Population	2,500,000	4.0	100,000	11.8	295,000	13.3	332,500	
Total			576,500		1,140,000	+98%	1,301,000	+126%

AT THE HIGHER PRICE, ABOUT 15% OF THE PROSPECTS ARE HOT PROSPECTS.

AT THE MIDDLE PRICE, 19% TO 24% OF THE PROSPECTS ARE HOT PROSPECTS.

AT THE LOW PRICE, 25% TO 38% OF THE PROSPECTS ARE HOT PROSPECTS.

THERE CAN BE LITTLE DOUBT, THEN, THAT THE LOWER PRICE NOT ONLY SIGNIFICANTLY ENLARGES THE SIZE OF THE MARKET POTENTIAL, BUT ALSO WILL MAKE THE MARKET MOVE TO PURCHASE MORE QUICKLY.

	TOTAL PROSPECTS	HOT PROSPECTS	HOT PROSPECTS AS A % OF TOTAL
RM 1000			
High Price	3,280,000	457,000	14%
Mid Price	3,815,000	714,000	19
Low Price	4,840,000	1,236,000	25
RM 2000			
High Price	4,630,000	726,000	16%
Mid Price	5,610,000	1,327,500	24
Low Price	6,190,000	2,371,500	38
RM 3000			
High Price	4,205,000	576,500	14%
Mid Price	4,780,000	1,140,000	24
Low Price	5,075,000	1,301,000	26

IF OUR ESTIMATES OF AWARENESS AND AVAILABILITY ARE REASONABLY CORRECT, TI SHOULD BE ABLE TO CAPTURE A THIRD OF THE HOT PROSPECT MARKET FOR THE RM 1000.

THE DATA ALSO INDICATE THAT PRODUCTION ALLOCATION AND SCHEDULING MUST BE RESPONSIVE TO FINAL PRICE DECISION, SINCE THE LOW PRICE SHOWS A POTENTIAL VOLUME WHICH IS SUBSTANTIALLY MORE THAN TWICE AS GREAT THAN THE HIGH PRICE POTENTIAL.

Maximum TI Potential Among Hot Prospects RM 1000

Group	Total Prospective Units	X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield	
High Price								
Technical/Scientific	85,000		60%		80%		40,800	
College/University	162,000		60		80		77,760	
Bus/Fin/Pro	60,000		15		70		6,300	
General Population	150,000		20		70		21,000	
Total	457,000						145,860	32%
Mid Price								
Technical/Scientific	170,000		60		80		81,600	
College University	279,000		60		80		122,920	
Bus/Fin/Pro	87,000		15		70		9,135	
General Population	177,000		20		70		24,780	
Total	714,000						249,435	35%
Low Price								
Technical/Scientific	230,000		60		80		110,400	
College University	483,000		60		80		231,840	
Bus/Fin/Pro	291,000		15		70		30,555	
General Population	332,000		20		70		46,480	
Total	1,236,000						419,275	34%

SIMILAR PROJECTIONS SHOW THAT T.I. WOULD GET A LESSER SHARE OF THE RM 2000 MARKET, 23% AT THE HIGH PRICE END, 30% AT THE LOW PRICE END. THIS IS BECAUSE A VERY LARGE PART OF THE HIGH PRICE POTENTIAL (71% AT HIGH PRICE) LIES IN THE BUSINESS AND GENERAL POPULATION MARKET, WHERE T.I. CAN EXPECT TO ACHIEVE LESS AWARENESS AND LESS AVAILABILITY.

ON THE OTHER HAND, SINCE THE TECHNICAL/SCIENTIFIC AND EDUCATION SEGMENTS RESPOND MORE STRONGLY TO PRICE, (51% OF TOTAL POTENTIAL AT LOW PRICE AS COMPARED TO 29% OF POTENTIAL AT HIGH PRICE) T.I. CAN EXPECT A BETTER SHARE OF TOTAL AT THE LOW PRICE LEVEL.

Maximum TI Potential Among Hot Prospects RM 2000

Group	Total Prospective Units		X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield	
High Price									
Technical/Scientific	85,000	} 29%		60%		80%		40,800	
College/University	129,000			60		80		61,920	
Bus/Fin/Pro	237,000	} 71		15		70		24,885	
General Population	275,000			20		70		38,500	
Total	726,000							166,105	23%
Mid Price									
Technical/Scientific	287,500	} 41%		60		80		138,000	
College University	264,000			60		80		126,720	
Bus/Fin/Pro	276,000	} 59		15		70		28,980	
General Population	500,000			20		70		70,000	
Total	1,327,500							363,000	27%
Low Price									
Technical/Scientific	512,500	} 51%		60		80		246,000	
College University	693,000			60		80		332,000	
Bus/Fin/Pro	516,000	} 49		15		70		54,180	
General Population	650,000			20		70		91,000	
Total	2,371,500							723,180	30%

AS WAS THE CASE WITH THE RM 2000, TI IS LIKELY TO GET A SMALLER SHARE OF THE HOT PROSPECT MARKET FOR THE RM 3000 AT THE HIGH PRICE LEVEL THAN AT THE LOW PRICE LEVEL, AND FOR THE SAME REASONS.

Maximum TI Potential Among Hot Prospects RM 3000

Group	Total Prospective Units		X	Estimated Awareness	X	Estimated Availability	=	Maximum Yield	
High Price									
Technical/Scientific	107,500	34%		60%		80%		51,600	
College/University	90,000			60		80		43,200	
Bus/Fin/Pro	279,000	66		15		70		29,295	
General Population	100,000			20		70		14,000	
Total	576,500							138,095	24%
Mid Price									
Technical/Scientific	137,500	38%		60		80		66,000	
College University	297,000			60		80		142,560	
Bus/Fin/Pro	411,000	62		15		70		43,155	
General Population	295,000			20		70		41,300	
Total	1,140,500							292,915	26%
Low Price									
Technical/Scientific	257,500	51%		60		80		123,600	
College University	411,000			60		80		197,280	
Bus/Fin/Pro	300,000	49		15		70		31,500	
General Population	332,500			20		70		46,550	
Total	1,301,500							398,930	31%

THERE IS A LONG RANGE AND IMMEDIATE MARKET OPPORTUNITY FOR ALL THREE OF THE CONCEPTS.

WHILE THE VOLUMES PROJECTED ARE NOT ACHIEVABLE IN THE FIRST YEAR UNLESS BOTH AWARENESS AND AVAILABILITY REACH THEIR OBJECTIVES IMMEDIATELY, THERE IS CLEARLY ENOUGH BUSINESS AVAILABLE.

WE SHOULD NOTE HERE THAT THERE APPEARS TO BE A VERY SIGNIFICANT MARKET POTENTIAL AMONG BUSINESS PEOPLE AND AMONG "OTHERS". IF TI WANTS TO ACHIEVE MAXIMUM SALES POTENTIAL, WE SHOULD DEVELOP PLANS TO REACH THESE SEGMENTS OF THE MARKET.

IT IS ALSO APPARENT THAT IF THERE IS AN ERROR IN OUR ESTIMATE OF AWARENESS, THAT WILL HAVE A DRASTIC EFFECT ON VOLUME PROJECTIONS. WE REPEAT THAT TO US, IN THE LIGHT OF EXPERIENCE WITH OTHER HARDWARE PRODUCTS, AND IN THE LIGHT OF AVAILABLE DATA ON CURRENT TI DEVELOPMENT OF AWARENESS IN OTHER CONSUMER GOODS CATEGORIES, WE BELIEVE THAT THE 60% AWARENESS GOAL IS AMBITIOUS. SUCH A GOAL WOULD REQUIRE VERY STRONG AWARENESS DEVELOPMENT SUPPORT. WE ARE AWARE THAT THERE IS A HIGH AWARENESS OF TI AND TI CALCULATORS IN THE TECHNICAL/SCIENTIFIC AND UNIVERSITY MARKETS, BUT THAT WILL NOT AUTOMATICALLY TRANSLATE TO AWARENESS OF THE NEW ALCC PRODUCT.

Projected market Volume (units)

	Long - Term		Short - Term (hot prospects)	
	Maximum Potential	Maximum T.I. Yield*	Maximum Potential	Maximum T.I. Yield*
RM 1000				
$250.	3,280,000	1,029,650	457,000	145,860
175.	3,815,000	1,223,200	714,000	249,435
125.	4,840,000	1,566,700	1,236,000	419,275
RM 2000				
$250.	4,630,000	1,401,150	726,000	166,105
175.	5,610,000	1,719,300	1,327,500	363,000
125.	6,190,000	1,907,200	2,371,500	723,180
RM 3000				
$550.	4,205,000	1,222,650	576,500	138,095
450.	4,780,000	1,456,400	1,140,000	292,915
350.	5,075,000	1,547,000	1,301,000	398,930

1201
50-60

* Assumes full achievement of T.I. product exposure and specific product awareness goals.

DESPITE OUR RESERVATIONS ABOUT ACHIEVING THE SPECIFIC PRODUCT EXPOSURE/ AVAILABILITY AND THE SPECIFIC PRODUCT AWARENESS LEVELS PROVIDED BY T.I., IT IS READILY APPARENT THAT THERE IS A SUBSTANTIAL IMMEDIATE MARKET FOR ANY OF THE THREE PRODUCT CONCEPTS. WE ESTIMATE THAT THIS MARKET IS WORTH ANYWHERE FROM A MINIMUM OF $35 MILLION (FOR THE RM 1000 AT HIGH PRICE) TO AS MUCH AS $140 MILLION (FOR THE RM 3000) AT THE LOW PRICE.

Summary of "Short-Term" TI Potentials

Retail Price Points	Maximum Unit Yield*	Retail Sales Volume	Distributor Sales Volume**
RM 1000			
$250.	145,860	$36,465,000.	$22,608,300.
175.	249,435	43,651,125.	27,063,698.
125.	419,275	52,409,375.	32,493,813.
RM 2000			
$250.	166,105	$41,526,250.	$25,746,275.
175.	363,000	63,525,000.	39,385,500.
125.	723,180	90,397,500.	56,046,450.
RM 3000			
$550.	138,095	$75,952,250.	$47,090,395.
450.	292,915	131,811,750.	81,723,285.
350.	398,930	139,625,500.	86,567,810.

* Based on "hot" prospects only assuming full achievement of T.I. product exposure and awareness goals.

** Based on current T.I. programmable distributor price ratio.

BEFORE WE LOOK AT THE COMPARATIVE BUYING INTEREST IN EACH OF THE ALCC PRODUCTS, LET'S TAKE INTO ACCOUNT THE FEATURES AND BENEFITS PEOPLE CONSIDER TO BE IMPORTANT.

III. WHICH FEATURES AND BENEFITS DO CONSUMERS WANT?

1. WHICH ONES DO THE MAJORITY CONSIDER "EXTREMELY IMPORTANT"?

2. WHICH ONES HAVE THE MOST LEVERAGE, I.E., SIGNIFICANTLY MORE IMPORTANT TO THOSE WHO EXPRESS HIGH PURCHASE INTEREST?

3. WHICH ONES DRIVE THE HARDEST; ARE EXTREMELY IMPORTANT TO THE THE MAJORITY AND OUTSTANDING TO PROSPECTIVE BUYERS?

To evaluate the features and benefits of each product, we handed a deck of cards containing statements describing each feature to the respondent after he had rated his buying interest in the first product he was exposed to. Each deck was shuffled to minimize any postitioning bias of the features.

We then asked him. . .

"Please tell me how important each feature is to you personally"... on a nine point scale ranging from "Not At All Important (1)" to "Extremely Important (9)".

17 features were evaluated for the RM 1000

20 features were evaluated for the RM 2000

23 features were evaluated for the RM 3000

To help interpret the results, we have clustered the features into five groups:

1. Ease of Use and Learning
2. Display and Keyboard
3. Portability
4. Option Opportunities
5. Miscellaneous Features

EASE OF USE AND LEARNING

LESS THAN A THIRD OF THE PEOPLE EXPOSED TO EACH OF THE PRODUCT CONCEPTS CONSIDER THESE FEATURES AS "EXTREMELY IMPORTANT". AMONG THOSE WHO EXPRESS A HIGH INTEREST IN BUYING (7,8 OR 9 ON THE PURCHASE INTEREST SCALE), THESE FEATURES ARE, AS YOU MIGHT EXPECT, SLIGHTLY MORE IMPORTANT.

THE ENGLISH MESSAGE PROMPTING CAPABILITY IS SIGNIFICANTLY MORE IMPORTANT TO THOSE PEOPLE WHO EXPRESS A HIGH INTEREST IN BUYING THE RM 2000. THE PROSPECTIVE BUYERS OF THE RM 3000 SINGLE OUT THOSE FEATURES FROM AMONG THIS SET THAT "LEAD THEM BY THE HAND". THE OPPORTUNITY TO SOLVE PROBLEMS EASILY USING PLUG-IN, PRE-PROGRAMMED MODULES AND EASILY LEARNING HOW TO PROGRAM USING BASIC WITH A PLUG-IN TRAINING MODULE APPEALS TO THE PROSPECTIVE BUYERS OF THE RM 3000.

EVIDENTLY, THE FAMILIAR CONFIGURATION OF THE RM 1000 WHICH LOOKS LIKE A STANDARD CALCULATOR DOES NOT GENERATE AS MUCH NEED FOR "LEAD THEM BY THE HAND" FEATURES AS DOES THE NEWNESS OF THE RM 3000.

WE DO NOT WISH TO CONVEY THE IMPRESSION THAT FEATURES THAT FOCUS ON EASE OF USE AND LEARNING ARE UNIMPORTANT. WHEN WE LOOK AT HOW PEOPLE RATE THESE FEATURES, IT IS IMPORTANT TO KEEP IN MIND THAT THESE PEOPLE HAD JUST BEEN EXPOSED TO A CONCEPT BOARD WHICH THEY STUDIED FOR NEARLY THREE MINUTES. EACH OF THE CONCEPT BOARDS CARRIES A HEADLINE THAT ENDS WITH ..."EASY TO USE". THE COPY STATEMENTS ALSO CONVEY THE IDEA THAT THE PRODUCTS ARE SIMPLE TO USE AND EASY TO APPLY, THROUGHOUT THE BODY OF THE TEXT.

EASE OF USE & LEARNING

PERCENT SAYING THIS FEATURES IS EXTREMELY IMPORTANT (9)	RM 1000 TOTAL FIRST EXPOSURE	RM 1000 HIGH PURCHASE INTEREST (7,8,9)	RM 1000 Δ	RM 2000 TOTAL FIRST EXPOSURE	RM 2000 HIGH PURCHASE INTEREST (7,8,9)	RM 2000 Δ	RM 3000 TOTAL FIRST EXPOSURE	RM 3000 HIGH PURCHASE INTEREST (7,8,9)	RM 3000 Δ
IT WILL LET ME SOLVE PROBLEMS EASILY WITH PLUG-IN, PRE-PROGRAMMED MODULES	31	37	+ 6	25	30	+ 5	27	41	(+ 14)
IT HAS A PROMPTING CAPABILITY WITH ENGLISH MESSAGES WHICH LEADS YOU THROUGH EACH STEP IN YOUR PROBLEM WITHOUT ANY GUESSING OR REFERENCE TO INSTRUCTION MANUALS	32	33	+ 1	30	40	(+ 10)	35	36	+ 1
I CAN FIND POWERS, LOGS AND TRIG FUNCTIONS ON THIS MACHINE WITH SINGLE KEYSTROKES	25	30	+ 5	--	--	--	--	--	--
IT WILL HELP ME LEARN HOW TO PROGRAM IN BASIC AND OPERATE A PERSONAL/HOME COMPUTER	--	--	--	21	25	+ 4	20	31	(+ 11)
I CAN EASILY LEARN HOW TO PROGRAM USING BASIC WITH A PLUG-IN TRAINING MODULE AND SUPPLEMENTARY WORKBOOK	--	--	--	31	29	- 2	32	45	(+ 13)
AVERAGE EASE OF USE FEATURE	29	33	+ 4	27	31	+ 4	28	38	+ 10

DISPLAY AND KEYBOARD FEATURES

THE ALPHANUMERIC DISPLAY (THAT HANDLES BOTH WORDS AND NUMBERS) IS EXTREMELY IMPORTANT TO NEARLY HALF OF THE PEOPLE WHO ARE HIGHLY INTERESTED IN BUYING THE RM 1000. IT IS EXTREMELY IMPORTANT TO A SUBSTANTIAL MAJORITY OF THOSE INTERESTED IN THE RM 2000 OR THE RM 3000.

WHILE THE "LARGE, EASY-TO-READ" QUALITY OF THE DISPLAY EARNED FAIRLY HIGH IMPORTANCE RATINGS, THIS PARTICULAR QUALITY WAS NOWHERE NEAR AS IMPORTANT TO THE PROSPECTIVE BUYERS OF THE RM 2000 AND THE RM 3000 AS THE SIMPLE AVAILABILITY OF THE ALPHANUMERIC DISPLAY. (AGAIN, THE DISPLAY ITSELF IS HIGHLY READABLE ON THE CONCEPT BOARDS.)

THE "SCROLLING DISPLAY" IS IMPORTANT TO THE PROSPECTIVE BUYERS OF THE RM 3000 BUT NOT AS IMPORTANT TO THOSE WHO ARE INTERESTED IN THE RM 1000. THE ABILITY TO USE BOTH HANDS ON THE KEYBOARD (TESTED AMONG THOSE EXPOSED TO THE RM 3000 ONLY) IS JUST ABOUT AS IMPORTANT AS THE SCROLLING DISPLAY.

THE TILT DISPLAY FOR "EASY READING" IS NOT AN ESPECIALLY APPEALING OR IMPORTANT FEATURE ON THE RM 3000 DESPITE THE DEMO ILLUSTRATION ON THE CONCEPT BOARD.

DISPLAY & KEYBOARD

PERCENT SAYING THIS FEATURES IS EXTREMELY IMPORTANT (9)	RM 1000 TOTAL FIRST EXPOSURE	RM 1000 HIGH PURCHASE INTEREST (7,8,9)	Δ	RM 2000 TOTAL FIRST EXPOSURE	RM 2000 HIGH PURCHASE INTEREST (7,8,9)	Δ	RM 3000 TOTAL FIRST EXPOSURE	RM 3000 HIGH PURCHASE INTEREST (7,8,9)	Δ
IT HAS AN ALPHANUMERIC DISPLAY (HANDLES BOTH WORDS AND NUMBERS)	40	48	+ 8	58	72	+ 14	55	65	+ 10
IT HAS A LARGE, EASY-TO-READ ALPHANUMERIC DISPLAY	41	42	+ 1	37	46	+ 9	39	43	+ 4
IT HAS A SCROLLING DISPLAY WHICH MOVES TO SHOW UP TO 80 CHARACTERS IN A LINE AND MOVES UP AND DOWN TO SHOW OTHER LINES	18	21	+ 3	22	29	+ 7	25	36	+ 11
I CAN USE BOTH HANDS ON THE KEYBOARD BECAUSE IT HAS A STANDARD TYPEWRITER DESIGN	--	--	--	--	--	--	31	36	+ 5
IT COMES WITH A DISPLAY THAT CAN BE TILTED FOR EASY READING	--	--	--	--	--	--	18	24	+ 6
AVERAGE DISPLAY FEATURE	33	37	+ 4	39	49	+ 10	34	41	+ 7

PORTABILITY FEATURES

THE OPPORTUNITY TO USE ANY ONE OF THESE PRODUCTS BOTH AT HOME AND AT WORK HAS SUBSTANTIAL (AND SIGNIFICANT) APPEAL TO THE PROSPECTIVE BUYERS OF EACH OF THE ALCC PRODUCTS. THIS IS IN SHARP CONTRAST WITH THE OTHER PORTABILITY FEATURES THAT FOCUS ON THE PRODUCT'S "CARRYING ABILITY". EVIDENTLY, A SUBSTANTIAL NUMBER OF THE PEOPLE WHO ARE HIGHLY INTERESTED IN THESE PRODUCTS DO WORK AT HOME AND THEY ARE IMPRESSED WITH THE IDEA OF BEING ABLE TO TAKE THEIR COMPUTER HOME WITH THEM (AND BACK AGAIN TO THE OFFICE).

AMONG THOSE FEATURES THAT RELATE PRIMARILY TO "CARRYING ABILITY", THE ONE THAT STANDS OUT IS "I CAN CARRY IT IN MY BRIEFCASE". THE CONCEPT OF POCKETABILITY DOES NOT SEEM TO BE AS IMPORTANT WHEN IT COMES TO ALCC PRODUCTS OF THIS TYPE.

THE "PORTABLE DATA TERMINAL" FEATURE OF THE RM2000 WAS ESPECIALLY IMPORTANT TO THE PROSPECTIVE BUYERS OF THIS PRODUCT (+19 POINTS).

AGAIN, HOWEVER, THE COPY FOR THE RM 2000 READS, "FOR INSTANCE, YOU COULD USE YOUR POCKET RM 2000 AS A TERMINAL TO SEND AND RECEIVE ELECTRONIC MAIL (MESSAGES), TO DO COMPUTER SHOPPING, AND CONNECT TO COMPUTER BASED INFORMATION SERVICES LIKE NEWS AND STOCK PRICES...IT PUTS THE POWER OF A BIG COMPUTER IN YOUR POCKET."

PORTABILITY

Percent Saying This Features is Extremely Important (9)	RM 1000 Total First Exposure	RM 1000 High Purchase Interest (7,8,9)	RM 1000 Δ	RM 2000 Total First Exposure	RM 2000 High Purchase Interest (7,8,9)	RM 2000 Δ	RM 3000 Total First Exposure	RM 3000 High Purchase Interest (7,8,9)	RM 3000 Δ
I can use it both at home and at work	46	(61)	(+ 15)	47	(65)	(+ 18)	40	(58)	(+ 18)
I can carry it in my briefcase	36	(52)	(+ 16)	37	49	(+ 12)	36	48	(+ 12)
I can take it with me on trips	33	43	(+ 10)	31	41	(+ 10)	27	35	+ 8
I can carry it with me in my pocket	28	39	(+ 11)	32	39	+ 7	--	--	--
I can use the computer as a portable data terminal wherever I am	--	--	--	28	47	(+ 19)	29	36	+ 7
Average Portability Feature	36	49	+ 13	35	48	+ 13	33	44	+ 11

OPTION OPPORTUNITIES

We tested seven optional peripherals that were clearly identified on the concept boards as available at additional cost. Of the seven tested, four earned sufficiently high importance ratings among those highly interested in each product to warrant serious consideration in product design and marketing planning.

The idea of buying solid-state modules in which the user can write and save his own programs and information (with a five year memory life) appealed strongly to prospective buyers of all three ALCC products.

The cassette mass memory storage device to expand the storage capability of the machine appealed to prospective buyers of the RM 1000 and the RM 2000, but not to the prospective buyers of the RM 3000. The opportunity to buy solid-state modules with a library of self-prompting programs to solve problems in specific application areas is especially important to prospective buyers of all three products.

The RF modulator for TV set display is also especially important to the prospective buyers of the RM 2000 and the RM 3000.

The hard-copy printer did <u>NOT</u> gain an impressive rating on any of the products. In a sense, this option stands out because it does <u>NOT</u> mean more to prospective buyers than it does to everyone exposed to the product. Evidently, computing, calculating, solving and expanded storage capacity is more important than recording the results.

Neither the "Tablecomp Definition Module" nor the "Wordrite Definition Module" are considered "extremely important" despite the emphasis they received in the body copy of the RM 3000 concept board.

OPTION OPPORTUNITIES

PERCENT SAYING THIS FEATURES IS EXTREMELY IMPORTANT (9)	RM 1000 TOTAL FIRST EXPOSURE	RM 1000 HIGH PURCHASE INTEREST (7,8,9)	Δ	RM 2000 TOTAL FIRST EXPOSURE	RM 2000 HIGH PURCHASE INTEREST (7,8,9)	Δ	RM 3000 TOTAL FIRST EXPOSURE	RM 3000 HIGH PURCHASE INTEREST (7,8,9)	Δ
I CAN BUY SOLID-STATE MODULES IN WHICH I CAN WRITE AND SAVE MY OWN PROGRAMS AND INFORMATION (WITH A FIVE YEAR MEMORY LIFE)	40	55	+ 15	43	53	+ 10	33	45	+ 12
I CAN BUY AS AN OPTIONAL EXTRA A CASSETTE MASS MEMORY STORAGE DEVICE THAT LETS ME EXPAND THE STORAGE CAPABILITY OF THE MACHINE	29	42	+ 13	35	51	+ 16	35	39	+ 4
I CAN BUY SOLID-STATE PERMANENT MODULES WITH A LIBRARY OF SELF-PROMPTING PROGRAMS TO SOLVE PROBLEMS IN SPECIFIC APPLICATION AREAS (LIKE FINANCE, REAL ESTATE, ENGINEERING, MATHEMATICS, MARKETING, SCIENCE, AND OTHERS)	28	40	+ 12	30	42	+ 12	32	41	+ 9
I CAN BUY AN OPTIONAL EXTRA WHICH LETS ME USE MY OWN TV SET TO DISPLAY ANY INFORMATION CONTAINED IN MY COMPUTER	--	--	--	28	41	+ 13	30	41	+ 11
I CAN BUY A HARD-COPY PRINTER TO GO WITH THE MACHINE	28	28	± 0	33	40	+ 7	37	37	± 0
I CAN DO A LIMITED AMOUNT OF WORD-PROCESSING AND TEXT-EDITING USING THE PLUG-IN "WORDRITE DEFINITION MODULE"	--	--	--	--	--	--	20	20	± 0
I CAN STORE, MANIPULATE, AND ANALYZE DATA IN TABULAR FORM USING THE PLUG-IN "TABLECOMP DEFINITION MODULE"	--	--	--	--	--	--	15	20	+ 5
AVERAGE OPTION FEATURE	31	41	+ 10	34	45	+ 11	29	35	+ 6

AMONG THE THREE MISCELLANEOUS FEATURES, ONE STANDS OUT BECAUSE IT IS RATED AS EXTREMELY IMPORTANT AMONG A MAJORITY OF THE PROSPECTIVE BUYERS OF EACH OF THE PRODUCTS. THE FEATURE, "IT HAS A CONSTANT MEMORY WHICH RETAINS INFORMATION EVEN WHEN THE MACHINE IS TURNED OFF" IS ESPECIALLY IMPORTANT TO THOSE PEOPLE WHO EXPRESSED A HIGH LEVEL OF BUYING INTENT FOR THE RM 1000 AND THE RM 2000. WHEN IT COMES TO THE RM 3000, THIS PARTICULAR FEATURE IS JUST AS IMPORTANT TO EVERYONE EXPOSED TO THE CONCEPT AS IT IS TO PROSPECTIVE BUYERS. OBVIOUSLY, IT IS A "MUST HAVE".

THE IDEA OF USING ANY OF THE PRODUCTS AS A NOTE PAD FOR TELEPHONE NUMBERS, APPOINTMENTS AND OTHER REMINDERS DOES NOT APPEAR TO HAVE OUTSTANDING VALUE TO PROSPECTIVE BUYERS (ALTHOUGH ABOUT A THIRD OF EVERYBODY EXPOSED TO THE PRODUCTS RATED THIS FEATURE AS EXTREMELY IMPORTANT).

MISCELLANEOUS

Percent Saying This Features is Extremely Important (9)	RM 1000 Total First Exposure	RM 1000 High Purchase Interest (7,8,9)	Δ	RM 2000 Total First Exposure	RM 2000 High Purchase Interest (7,8,9)	Δ	RM 3000 Total First Exposure	RM 3000 High Purchase Interest (7,8,9)	Δ
It has a constant memory which retains information even when the machine is turned off	49	(58)	+ 9	57	(67)	(+ 10)	56	55	- 1
I can store alphanumeric information like appointments, phone numbers, things to do on certain dates and other reminders	28	31	+ 3	29	36	+ 7	32	34	+ 2
It has a long (250 hours) battery life	21	30	+ 9	25	33	+ 8	18	18	± 0

SUMMARY OF OUTSTANDING FEATURES

SEVEN OF THE 23 FEATURES AND BENEFITS THAT WERE TESTED WERE RATED AS "EXTREMELY IMPORTANT" BY A PLURALITY OF THE PROSPECTIVE BUYERS AND SIGNIFICANTLY MORE IMPORTANT TO THESE PEOPLE THAN TO EVERYONE EXPOSED TO THE PRODUCT. THEY HAVE "LEVERAGE".

THE SEVEN WHICH EMERGE FROM THIS DUAL CRITERIA ARE REMARKABLY FREE OF "FRILLS". PROSPECTIVE BUYERS APPEAR TO BE MORE INTERESTED IN THE "WORKHORSE" QUALITY OF THE MACHINE AND THE BASIC "MEAT AND POTATOES" ASPECTS OF THE PRODUCT. THEY WANT A PRODUCT WHICH THEY CAN USE BOTH AT HOME AND AT WORK, POSSIBLY TO INCREASE THEIR PRODUCTIVITY.

THEY ALSO WANT TO BUY A MACHINE WHICH GIVES THEM PLENTY OF ADDITIONAL OPPORTUNITY TO STORE INFORMATION AND PROGRAMS AS WELL AS EXPANDING THE STORAGE CAPABILITY OF THE PRODUCT.

Summary of Outstanding Features

(Percent with High Purchase Interest who say feature is Extremely Important and "Leverage".)

	RM 1000	RM 2000	RM 3000
Can use both at home and at work	61% (+15)	65% (+18)	58% (+18)
Can carry in my briefcase	52 (+16)	49 (+12)	48 (+12)
Can use as a portable data terminal wherever I am.	-	48 (+19)	-
It has an alphanumeric display.	48 (+ 8)	72 (+14)	65 (+10)
It has a constant memory which retains information even when...turned off.	58 (+ 9)	67 (+10)	55 (- 1)
I can buy solid-state modules in which I can write and save my own programs and information (with a five year memory life)	55 (+15)	53 (+10)	45 (+12)
I can buy as an optional extra a cassette mass memory storage device that lets me expand the storage capability...	-	51 (+16)	-

IN ADDITION TO THE 23 FEATURES THAT WERE TESTED ON THE NINE-POINT SCALE OF IMPORTANCE, TI ASKED THAT WE EXAMINE THE QUESTION OF RECHARGEABLE POWER SOURCE VERSUS THROW-AWAY BATTERIES AND A SIX-LINE DISPLAY VERSUS A TWO-LINER AND A FOUR-LINER.

THESE "TRADE-OFF" FEATURES WERE ISOLATED AND EVALUATED APART FROM THE BATTERY OF 23 FEATURES.

Forced Choice Between Features

"If you had to choose between these two features..., assuming the price was the same, which one would you prefer?"

(followed up by)

"How much do you prefer this feature over the other one. From 'there is really no difference, I prefer them equally' (1) to 'there is an extreme difference, I prefer this one very strongly' (9)"

AMONG PEOPLE EXPOSED TO EACH OF THE PRODUCTS (IN FIRST POSITION), WE COMPARED:

250 HOUR NON-RECHARGEABLE BATTERIES	VS.	40 HOUR RECHARGEABLE BATTERIES

AMONG THOSE WHO WERE EXPOSED TO THE RM 3000 (IN FIRST POSITION), WE ALSO COMPARED:

A DISPLAY WHICH SHOWS 6 LINES WITH 40 COLUMNS OF UPPER CASE LETTERS AND NUMBERS	VS.	A DISPLAY WHICH SHOWS 4 LINES WITH 40 COLUMNS OF UPPER AND LOWER CASE LETTERS AND NUMBERS
A 6 LINE DISPLAY WHICH SHOWS 40 CHARACTERS PER LINE	VS.	A TWO LINE DISPLAY WHICH SHOWS 40 CHARACTERS PER LINE AT A SUBSTANTIALLY REDUCED COST OF APPROXIMATELY 1/3 LESS

THE 40 HOUR RECHARGEABLE BATTERIES ARE CLEARLY PREFERRED BY A MAJORITY OF THE PEOPLE EXPOSED TO EACH PRODUCT. THIS IS ESPECIALLY TRUE OF THOSE EXPOSED TO THE RM 3000.

WHEN WE PROBE THE CLAIMED PREFERENCE BY ASKING PEOPLE TO TELL US HOW STRONGLY THEY PREFER THE RECHARGEABLE BATTERIES, WE FIND SUBSTANTIALLY LESS CONVICTION THAN WE DO AMONG THE SUBSTANTIAL MINORITY WHO VOTED FOR THE 250 HOUR THROWAWAYS IN CONNECTION WITH THE RM 1000 AND THE RM 2000.

FURTHERMORE, WHEN WE MULTIPLY THE STRENGTH OF PREFERENCE BY THOSE PEOPLE WHO PREFERRED EACH TYPE OF POWER SOURCE, WE FIND THAT THERE IS A CLEAR OPPORTUNITY TO DESIGN AND MARKET BOTH TYPES OF PRODUCTS BECAUSE THE POTENTIAL CUSTOMER BASE IS VIRTUALLY EVENLY DIVIDED BETWEEN THOSE PEOPLE WHO WANT A LONG BATTERY LIFE AND THOSE WHO WANT A RECHARGEABLE POWER SOURCE (FOR THE RM 1000 AND THE RM 2000 PRODUCTS). THE RM 3000, PROBABLY BECAUSE OF ITS GREATER CAPACITY AND LARGER SIZE, SHOULD BE MARKETED WITH A RECHARGEABLE POWER SOURCE.

250 Hour Non-Rechargeable Batteries versus 40 Hour Rechargeable Batteries

	RM 1000			RM 2000			RM 3000		
	Total First Exposure	High Purchase Interest (7,8,9)		Total First Exposure	High Purchase Interest (7,8,9)		Total First Exposure	First Purchase Interest (7,8,9)	
Prefer 250 Hour Non-Rechargeable	37%	45%	+ 8	38%	41%	+ 3	31%	28%	- 3
and Prefer Strongly (9)	X 29	X 43	+14	X 31	X 50	+19	X 23	X 23	± 0
	11	19	+ 8	12	21	+ 9	7	6	- 1
Prefer 40 Hour Rechargeable	63%	55%	- 8	62%	59%	- 3	68%	69%	+ 1
and Prefer Strongly (9)	X 32	X 38	+ 6	X 30	X 33	- 3	X 27	X 26	- 1
	20	21	+ 1	19	19	± 0	18	18	± 0

THE PREFERENCE FOR A SIX-LINE DISPLAY IS OVERWHELMING. NEARLY SEVEN OUT OF TEN PEOPLE WHO EXPRESSED A HIGH INTEREST IN PURCHASING THE RM 3000 CLAIM TO PREFER THE SIX-LINE DISPLAY.

NEITHER THE OPPORTUNITY TO GET BOTH UPPER AND LOWER CASE CHARACTERS NOR THE OPPORTUNITY TO SAVE APPROXIMATELY ONE-THIRD OF THE PURCHASE PRICE HAS ANY IMPACT ON THIS PREFERENCE FOR THE LARGER DISPLAY. AS WE SAID, THE RM 3000 IS LEAST RESPONSIVE TO PRICE VARIATIONS.

ALTHOUGH RELATIVELY FEW PEOPLE FEEL STRONGLY ABOUT THEIR PREFERENCE FOR THE SIX-LINE DISPLAY, THE ADVANTAGE LIES IN DESIGNING AND MARKETING A LARGE DISPLAY MACHINE (THAT CAN BE USED BOTH AT HOME AND AT WORK).

6 Line Display with Upper Case
Versus
4 Line Display with Upper and Lower Case

	RM 3000		
	Total First Exposure	High Purchase Interest (7,8,9)	
Prefer 6 line Display	64%	69%	+ 5
and Prefer Strongly	X 13	X 13	± 0
	8	9	+ 1
Prefer 4 Line Display	33%	28%	- 5
and Prefer Strongly (9)	X 9	9	± 0
	3	3	± 0

6 Line Display
Versus
2 Line Display at a Substantially
Reduced Cost of Approximately 1/3 Less

	RM 3000		
	Total First Exposure	High Purchase Interest (7,8,9)	
Prefer 6 lines	60%	68%	+ 8
and Prefer Strongly (9)	X 24	X 22	- 2
	14	15	+ 1
Prefer (less costly) 2 lines	38	30	- 8
and Prefer Strongly (9)	X 10	X 13	+ 3
	4	4	+ 0

IV. WHICH PRODUCT, OR PRODUCTS, SHOULD TEXAS INSTRUMENTS MANUFACTURE AND BEGIN TO DEVELOP MARKETING PLANS FOR TO CAPITALIZE ON THE TOTAL AVAILABLE MARKET?

WE HAVE SAID BEFORE THAT THERE IS BOTH A LONG RANGE AND AN IMMEDIATE MARKET/OPPORTUNITY FOR ALL THREE OF THE PRODUCT CONCEPTS.

ALL THREE PRODUCTS QUALIFY FOR THE 100,000 THRESHOLD LEVEL MENTIONED BY T.I. AS THE MINIMUM NUMBER OF UNITS REQUIRED FOR PRODUCT DEVELOPMENT AND MARKETING. EVEN THE MOST CONSERVATIVE PROJECTIONS OF MAXIMUM T.I. YIELD BASED ON THE ESTIMATED AVAILABILITY OF THE PRODUCT AND SPECIFIC AWARENESS OF THE PRODUCTS AMONG HOT PROSPECTS QUALIFY FOR THE THRESHOLD LEVELS SET BY TEXAS INSTRUMENTS.

THE QUESTION REMAINS WHICH PRODUCT, OR PRODUCTS, SHOULD T.I. DEVELOP, MANUFACTURE AND MARKET?

WHILE THERE ARE SEVERAL INDIRECT MEANS OF ANALYZING THE RESULTS OF THIS MARKET EVALUATION TO REACH THIS DECISION, LET'S LOOK AT HOW EACH OF THE MARKET SEGMENTS BEHAVE WHEN FORCED TO MAKE A CHOICE BETWEEN THE PRODUCTS (GIVEN EQUAL EXPOSURE AND EQUAL AWARENESS TO THE PRODUCTS). IN ONE SENSE, THIS ENABLES US TO SEE HOW THE PRODUCTS WILL FARE UNDER THE IMPACT OF COMPETITIVE PRODUCT AVAILABILITY.

Paired Comparison Preference

After each respondent was exposed to both concepts (and led through the battery of questions), we forced a choice by asking which of the two products he preferred, and measured the intensity (or lack of intensity) of the preference on a nine-point scale ranging from "No Difference/Prefer Equally" to "Extreme Difference/Prefer One Strongly".

THE RM 1000 DOES NOT FARE TOO WELL UNDER THE IMPACT OF EITHER THE RM 2000 OR THE RM 3000. LESS THAN A THIRD OF THE PEOPLE EXPOSED TO THE RM 1000 IN CONTRAST WITH EITHER ONE OF THE OTHER PRODUCTS WALK AWAY WITH A PREFERENCE FOR THE RM 1000.

WHEN UP AGAINST THE RM 2000, THE FALL OFF IN PREFERENCE FOR THE RM 1000 IS PARTICULARLY ACUTE AFTER PEOPLE HAVE BEEN EXPOSED TO THE RM 2000.

ON THE OTHER HAND, THE RM 1000 APPEARS TO DO A BETTER JOB OF HOLDING ONTO ITS PREFERRERS WHEN PUT UP AGAINST THE RM 3000. THIS IS ESPECIALLY TRUE AMONG THE COLLEGE/UNIVERSITY MARKET AND THE BUSINESS/FINANCIAL/PROFESSIONAL COMMUNITY WHERE THE PREFERENCE FOR THE RM 1000 ACTUALLY INCREASES AFTER HAVING BEEN EXPOSED TO THE RM 3000 (AND ITS PRICE-POINTS) IN FIRST POSITION.

Forced Choice Preference for the RM 1000

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Versus the RM 2000					
When seen first	29%	30%	28%	23%	35%
When seen second	19	24	23	16	16
	24	27	25	19	26
Versus the RM 3000					
When seen first	28%	38%	27%	18%	31%
When seen second	30	24	(44)	25	24
	29	31	36	21	27
Overall Preference					
For the RM 1000	27%	29%	31%	20%	27%

NEARLY EIGHT OUT OF TEN PEOPLE EXPOSED TO THE RM 2000 IN CONTRAST WITH THE RM 1000 EMERGE WITH A PREFERENCE FOR THE NEWER CONFIGURATION.

BUT THIS CLEAR-CUT PREFERENCE FOR THE RM 2000 DROPS VERY SHARPLY (FROM ABOUT 76%) TO LESS THAN FOUR OUT OF TEN WHEN THE RM 2000 IS COMPARED WITH THE RM 3000. THE DROP IN PREFERENCE FOR THE RM 2000 IS ESPECIALLY SEVERE AMONG THE TECHNICAL/SCIENTIFIC COMMUNITY AND THE GENERAL PUBLIC WHEN THEY HAVE FIRST BEEN EXPOSED TO THE RM 3000. THE PREFERENCE FOR THE RM 2000 ACTUALLY INCREASES AMONG THE PEOPLE IN THE BUSINESS/FINANCIAL/PROFESSIONAL MARKET WHEN THEY SEE THIS PRODUCT AFTER HAVING BEEN EXPOSED TO THE RM 3000.

BASED ON THIS DIRECT MEASURE OF COMPARATIVE PREFERENCE, WE BELIEVE THAT THE RM 2000 WILL NOT PERFORM VERY WELL IN THE MARKET IF AND WHEN A MORE POWERFUL, LARGER-DISPLAY PORTABLE COMPUTER IS INTRODUCED BY A COMPETITOR.

Forced Choice Preference for the RM 2000

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Versus the RM 1000					
When seen first	81%	76%	77%	84%	84%
When seen second	71	70	72	77	65
	76	73	75	81	74
Versus the RM 3000					
When seen first	42%	40%	36%	36%	57%
When seen second	34	25	40	46	26
	38	33	37	41	41
Overall Preference					
For the RM 2000	57%	53%	55%	62%	58%

THE RM 3000 IS PREFERRED BY A SUBSTANTIAL MAJORITY OF THE PEOPLE IN ALL FOUR MARKET SEGMENTS IN COMPARISON WITH EITHER THE RM 1000 OR THE RM 2000.

THE ONE EXCEPTION TO THIS NEARLY UNIVERSAL PATTERN OF PREFERENCE FOR THE RM 3000 IS AMONG THE GENERAL PUBLIC WHEN THEY HAVE BEEN EXPOSED TO RM 2000 BEFORE SEEING THE RM 3000. THEIR PREFERENCE FOR THE RM 3000 DROPS FROM 74 PERCENT TO 43 PERCENT BUT WE HAVE TO KEEP IN MIND THAT THEIR PREFERENCE FOR THE RM 2000 DROPPED FROM 57 PERCENT WHEN THEY SAW IT BEFORE THE RM 3000 TO A LOW OF 26 PERCENT WHEN THEY SAW THE RM 2000 AFTER HAVING SEEN THE RM 3000 FIRST.

THESE SHARP DIFFERENCES IN PREFERENCE AMONG THE CALCULATOR-OWNING AFFLUENT GENERAL PUBLIC UNDERSCORE THE NEED FOR TEXAS INSTRUMENTS TO ACHIEVE A HIGH LEVEL OF "FIRST IMPRESSION" AWARENESS FOR THE SPECIFIC PRODUCT YOU DECIDE TO INTRODUCE.

Forced Choice Preference for the RM 3000

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Versus the RM 1000					
When seen first	70%	76%	56%	75%	76%
When seen second	72	62	73	82	69
	70	69	63	77	72
Versus the RM 2000					
When seen first	66%	75%	60%	54%	74%
When seen second	58	60	64	64	43
	62	67	63	59	59
Overall Preference					
For the RM 3000	66%	68%	63%	69%	66%

Forced Choice Preferences

	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
RM 1000 Preference					
vs. RM 2000	24%	27%	25%	19%	26%
vs. RM 3000	29	(31)	(36)	21	27
RM 2000 Preference					
vs. RM 1000	76%	73%	75%	81%	74%
vs. RM 3000	38	33	37	41	41
RM 3000 Preference					
vs. RM 1000	70%	69%	63%	(77%)	(72%)
vs. RM 2000	62	67	63	59	59

In order to test the intensity of the claimed preference for each product in the paired comparison, we asked the preferrers of each product to rate their preference for the product on a nine-point scale ranging from "no difference/prefer them equally" (1) to "extreme difference/prefer this one strongly" (9).

Before we look at these results, we need to take into account the observation that members of the business/financial/professional community and the general public are substantially more willing to back their preference for a product with a statement of strong preference than the members of the technical/scientific community and the college/university market.

The RM 3000, as might be expected, earned a higher level of intense preference than either the RM 2000 or the RM 1000, especially among the business/financial/professional and general public markets.

It's worth noting however, that the RM 1000 performed almost as well as the RM 2000 (19% strong preference versus 25% strong preference for the RM 2000). The RM 1000 level of intense preference matched that of the RM 2000 among the business/financial/professional and college/university markets.

Strength of Preference

Based on First Exposure (only)	Total Sample	Technical/ Scientific	College/ University	Business/ Financial/ Professional	General Population
Percent who prefer this model strongly (9) among those who chose this model in forced comparison					
RM 1000	19%	13%	19%	26%	18%
RM 2000	25	25	19	26	30
RM 3000	35	30	25	39	43
		(68)	*(63)*	*(91)*	*(91)*

WHEN WE COMBINE THE CLAIMED PREFERENCE FOR EACH PRODUCT WITH THE INTENSITY OF THAT PREFERENCE, WE HAVE A HARD-CORE GROUP OF ABOUT 5 PERCENT WHO CLEARLY PREFER THE RM 1000. THE COLLEGE/UNIVERSITY CROWD STANDS OUT WITH THEIR DEPTH OF PREFERENCE FOR THE RM 1000.

THE RM 2000 HAS A HARD-CORE PREFERENCE OF ABOUT 14 PERCENT WHILE THE RM 3000 IS STRONGLY PREFERRED BY 23 PERCENT OF THE FOUR MARKET SEGMENTS.

Hard-Core Strong Preference

	Total Sample		Technical/ Scientific		College/ University		Business/ Financial/ Professional		General Population	
Percent of people who chose this model in the forced comparison who have a strong preference for the model.										
RM 1000	4.9%	(12)	3.8%	(10)	5.9%	(19)	5.3%	(11)	4.8%	(10)
RM 2000	14.3	(34)	13.0	(35)	10.0	(31)	16.2	(33)	17.4	(34)
RM 3000	23.0	(54)	20.7	(55)	15.8	(50)	27.1	(56)	28.4	(56)
Total	42.2	(100)	37.5	(100)	31.7	(100)	48.6	(100)	50.6	(100)

CONCLUSIONS

WE BELIEVE THERE IS A SIZEABLE MARKET FOR TWO OF THE THREE ALCC PRODUCTS; THE RM 1000 AND THE RM 3000.

ALTHOUGH THE KEYSTROKE PROGRAMMING LANGUAGE SYSTEM OF THE RM 1000 IS INHERENTLY LESS APPEALING THAN THE ADVANCED LANGUAGE OPPORTUNITIES AFFORDED BY THE RM 2000 AND THE RM 3000, WE BELIEVE THE RM 1000 CAN CAPTURE AN IMPRESSIVE SHARE OF THE MARKET FOR PROGRAMMABLE CALCULATORS AMONG BOTH THE TECHNICAL/SCIENTIFIC COMMUNITY AND THE COLLEGE/UNIVERSITY MARKET, ESPECIALLY AMONG OWNERS WHO WANT TO UPGRADE.

THE TECHNICAL/SCIENTIFIC COMMUNITY IS SENSITIVE TO PRICE AND WE HAVE SEEN THAT BUYING INTEREST IN THE RM 1000 CAN BE HIGHLY LEVERAGED BY PRICE. WE BELIEVE THE RM 1000 SHOULD BE MARKETED AT $125., OR EVEN LOWER, AND POSITIONED AS THE LATEST BREAKTHROUGH IN PROGRAMMABLE CALCULATORS AT A VERY AFFORDABLE PRICE.

We do not believe that T.I. should produce both the RM 2000 and the RM 3000 because they will cannibalize each other among the same markets.

The RM 3000 should be developed and marketed, as soon as possible, because it will give Texas Instruments another opportunity to demonstrate technological innovation and leadership. It gets an unsolicited "wow" response. The RM 3000 is the least price-sensitive of the three products and could possibly be introduced at a slightly higher price-point than the $550. mark set by T.I. As a briefcase computer for doing work both at home and in the office, the RM 3000 can perform as a bridge to the home computer market without waiting for this market to develop.

We believe that the marketing strategy for the RM 3000 should be based on the idea that the RM 3000 is "Power in a Briefcase Computer". The prospective user senses, and gains, a feeling of power when looking at this machine and the visual control inherent in the six-line television-like display screen.

PERUZZI & WALZER RESEARCH SERVICES, INC.
1450 Broadway
New York, New York 10018

PC CONCEPT STUDY
JOB #77341-52
JULY, 1981

The following is a master questionnaire.

The actual questionnaires were shipped to the field in 18 different versions, pre-coded and controlled by our office.

Versions were as follows:

	SEEN FIRST	SEEN SECOND	PRICE VARIATIONS*
1.	RM 1000	RM 2000	H/M
2.	RM 1000	RM 2000	H/L
3.	RM 1000	RM 2000	M/L
4.	RM 1000	RM 3000	H/M
5.	RM 1000	RM 3000	H/L
6.	RM 1000	RM 3000	M/L
7.	RM 2000	RM 1000	H/M
8.	RM 2000	RM 1000	H/L
9.	RM 2000	RM 1000	M/L
10.	RM 2000	RM 3000	H/M
11.	RM 2000	RM 3000	H/L
12.	RM 2000	RM 3000	M/L
13.	RM 3000	RM 1000	H/M
14.	RM 3000	RM 1000	H/L
15.	RM 3000	RM 1000	M/L
16.	RM 3000	RM 2000	H/M
17.	RM 3000	RM 2000	H/L
18.	RM 3000	RM 2000	M/L

*Price Variations	(H)igh	(M)id	(L)ow
RM 1000	$250	$175	$125
RM 2000	$250	$175	$125
RM 3000	$550	$450	$350

PERUZZI & WALZER RESEARCH SERVICES, INC.
1450 Broadway
New York, New York 10018

PC CONCEPT STUDY
JOB #77341-52
APRIL, 1981

SCREENER

RESPONDENT'S NAME: _____

ADDRESS: _____ CITY: _____ STATE: _____

TELEPHONE NO.: _____ AREA CODE: _____ DATE: _____

TIME INTERVIEW STARTED: _____ ENDED: _____

INTERVIEWED BY: _____ VALIDATED BY: _____

CARD-5-1

INTERVIEWER: INDICATE SEX: MALE ..... ( )6 -1 FEMALE ..... ( ) -2

INTERVIEWER: INDICATE QUOTA BELOW

1. TECHNICAL/SCIENTIFIC

ENGINEERS		SCIENTISTS	
Civil	( )7 -1	Chemists	( ) -5
Industrial	( ) -2	Biochemists	( ) -6
Aeronautical	( ) -3	Mathematicians	( ) -7
Electrical/ Electronic	( ) -4	Statisticians	( ) -8
		Geophysicists	( ) -9

2. COLLEGE/UNIVERSITY STUDENTS AND PROFESSORS

BUSINESS	STUDENT	PROFESSOR
Economics	( )8 -1	( )9 -1
Accounting	( ) -2	( ) -2
Marketing	( ) -3	( ) -3
Management	( ) -4	( ) -4

ENGINEERING	STUDENT	PROFESSOR
Aerospace	( ) -5	( ) -5
Civil	( ) -6	( ) -6
Industrial	( ) -7	( ) -7
Electrical	( ) -8	( ) -8

3. BUSINESS/FINANCIAL/PROFESSIONAL

Accountants	( )10-1
Sales managers/vice president of sales	( ) -2
Production manager	( ) -3
Money/portfolio manager	( ) -4
Marketing executives/managers/brand managers	( ) -5
Banking executives/executive vice president/ senior vice president	( ) -6
Commodity future traders	( ) -7
Corporate planners/financial analysts	( ) -8
Real estate agents and brokers	( ) -9

THE ABOVE 3 QUOTA CATEGORIES ARE FOR TELEPHONE SCREENING AND PERSONAL INTERVIEWS.

THE FOLLOWING QUOTA CATEGORY IS FOR MALL INTERCEPT ONLY:

4. MALES ONLY

17 - 34	( )11-1
35 - 60	( ) -2

INTERVIEWER: INDICATE CITY BELOW

ATLANTA	( )12-1	PHILADELPHIA	( ) -6
CHICAGO	( ) -2	PHOENIX	( ) -7
DENVER	( ) -3	SAN FRANCISCO	( ) -8
HOUSTON	( ) -4	SEATTLE	( ) -9
MINNEAPOLIS/ST. PAUL .	( ) -5	SAN DIEGO	( ) -0

FOR TELEPHONE SCREEN ONLY - ASK TO SPEAK TO PERSON ON LIST. IF NOT AVAILABLE, ASK WHEN RESPONDENT WILL BE AVAILABLE. MARK FOR RE-CONTACT, IF NEEDED. WHEN SPEAKING TO LISTED PERSON, VERIFY THAT RESPONDENT'S OCCUPATION IS THE SAME AS ON THE LIST, i.e., THAT HE IS A CIVIL ENGINEER, ECONOMICS PROFESSOR, MONEY/PORTFOLIO MANAGER, ETC. IF OCCUPATION IS NOT VERIFIED, RECORD RESPONDENT'S OCCUPATION ON LIST. THANK AND TERMINATE SAYING THAT YOU MAY RE-CONTACT. GO ON TO NEXT NAME. IF YOU RUN OUT OF NAMES, YOUR SUPERVISOR MAY CALL US TO SEE IF THE UNVERIFIED OCCUPATIONS QUALIFY. IF OCCUPATION VERIFIED, CONTINUE. FOR MALL, PROCEED WITH Q. A.

A. Are you or does any member of your family work for ... (READ LIST. RECORD BELOW)

A market research company ..... ( )
An advertising firm ..... ( )
The media or the press ..... ( )
——— (IF ANY CHECKED, TERMINATE & RECORD IN BOX BELOW)

A company which makes or sells electronic calculators or computers* ..... ( )

*IF YES, ASK WHICH COMPANY. TERMINATE ANYONE WHO WORKS FOR ANY COMPANY LISTED ON INTERVIEWER'S COMPANY CARD.

TERMINATE Q. A - EMPLOYMENT

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	13-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	14-

B. Do you own or use an electronic calculator? (RECORD BELOW)

Yes ..... ( ) ——— (CONTINUE)
No ..... ( ) ——— (TERMINATE & RECORD IN BOX BELOW)

TERMINATE Q. B - DON'T OWN/USE CALCULATOR

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	15-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	16-

C. Which of the following categories best describes your age? (READ LIST. RECORD BELOW)

Under 17 ..... ( ) ——— (TERMINATE & RECORD IN APPROPRIATE BOX BELOW)

17 - 20	( )	17-1
21 - 25	( )	-2
26 - 30	( )	-3
31 - 35	( )	-4
36 - 40	( )	-5
41 - 45	( )	-6
46 - 50	( )	-7
51 - 55	( )	-8
56 - 60	( )	-9

——— (CONTINUE.- FOR MALL ONLY CHECK QUOTAS)

61 or older ..... ( ) ——— (TERMINATE & RECORD IN APPROPRIATE BOX BELOW)

TERMINATE Q. C - UNDER 17										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	18-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	19-
TERMINATE Q. C - 61 OR OLDER										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	20-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	21-
TERMINATE Q. C - 17 - 34 QUOTA FILLED - (MALL ONLY)										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	22-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	23-
TERMINATE Q. C - 35 - 60 QUOTA FILLED (MALL ONLY)										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	24-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	25-

D. Which of the following best describes your current or completed education? (READ LIST. RECORD BELOW)

Graduated high school or less ..... ( ) ——— (TERMINATE & RECORD IN BOX BELOW)

Some undergraduate college or attending undergraduate college now	( )	26-1
Graduated college	( )	-2
Some graduate school or attending graduate school now	( )	-3
Earned a post graduate degree	( )	-4

——— (CONTINUE)

TERMINATE Q. D - NO COLLEGE										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	27-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	28-

(ASK Q. E OF EVERONE EXCEPT STUDENT QUOTAS OF CELL 2)

E. Which of the following best describes your total annual household income? (READ LIST. RECORD BELOW)

Under $20,000 ..... ( ) ——— (TERMINATE & RECORD IN BOX BELOW)

$20,000 - $24,999	( )	29-1
$25,000 - $29,999	( )	-2
$30,000 - $34,999	( )	-3
$35,000 - $39,999	( )	-4
$40,000 - $49,999	( )	-5
$50,000 - $74,999	( )	-6
$75,000 and over	( )	-7

——— (CONTINUE)

TERMINATE Q. E - INCOME UNDER $20,000										
( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	30-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	31-

(FOR MALL INTERVIEW: PROCEED TO MAIN QUESTIONNAIRE. IF RESPONDENT IS ELIGIBLE BUT REFUSED, TERMINATE & RECORD IN BOX BELOW)

(FOR TELEPHONE SCREEN READ:)

I would like to make an appointment to interview you. I can come to your home, your office or any other place that would be convenient. Let me assure you that the interview will be entirely confidential. We are not trying to sell you anything. We just want your opinions concerning electronic calculators and personal computers. The interview will take between 45 minutes and one hour and we think you will find it an interesting experience. Would you be willing to participate in this research? (RECORD BELOW)

Yes ..... ( ) ——— (GET INFORMATION BELOW)

No ..... ( ) ——— (TERMINATE & RECORD IN BOX BELOW)

DATE OF INTERVIEW: _____

TIME OF INTERVIEW: _____

ADDRESS INTERVIEW IS TO BE CONDUCTED: _____

_____

_____

DATE OF TELEPHONE REMINDER FOR INTERVIEW: _____

BE SURE TO VERIFY RESPONDENT'S ADDRESS AND PHONE NUMBER. OBTAIN WORK PHONE NUMBER IF NEEDED FOR REMINDER OR INTERVIEW.

TERMINATE - ELIGIBLE BUT REFUSED - QUOTA 1

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	32-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	33-

TERMINATE - ELIGIBLE BUT REFUSED - QUOTA 2

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	34-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	35-

TERMINATE - ELIGIBLE BUT REFUSED - QUOTA 3

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	36-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	37-

TERMINATE - ELIGIBLE BUT REFUSED - QUOTA 4

( )-01	( )-02	( )-03	( )-04	( )-05	( )-06	( )-07	( )-08	( )-09	( )-10	38-
( )-11	( )-12	( )-13	( )-14	( )-15	( )-16	( )-17	( )-18	( )-19	( )-20	39-

JOB #77341-52

MAIN QUESTIONNAIRE

THIS QUESTIONNAIRE TO BE USED WITH THE FOLLOWING QUOTA ONLY:

QUOTA 1

ENGINEERS ..... ( )40-1

SCIENTISTS ..... ( ) -2

QUOTA 2

BUSINESS

STUDENT ..... ( ) -3

PROFESSOR ..... ( ) -4

ENGINEERING

STUDENT ..... ( ) -5

PROFESSOR ..... ( ) -6

QUOTA 3 ..... ( )40-7

QUOTA 4

17 - 34 ..... ( ) -8

35 - 60 ..... ( ) -9

	CONCEPT SEEN FIRST	CONCEPT SEEN SECOND
RM 1000	( )41-1	( )42-1
RM 2000	( ) -2	( ) -2
RM 3000	( ) -3	( ) -3

FOR QUOTAS 1, 2 AND 3 ONLY:

INDICATE TIME INTERVIEW STARTED: _____

INDICATE TIME INTERVIEW ENDED: _____

DURING THE COURSE OF THE INTERVIEW YOU WILL BE REQUIRED TO ASK OPEN ENDED QUESTIONS. YOU MUST USE DETAILED PROBING FOR ALL OF THESE QUESTIONS. RECORD ALL RESPONSES VERBATIM. IF YOU DON'T UNDERSTAND A WORD OR PHRASE, ASK RESPONDENT TO SPELL IT FOR YOU. DO NOT PARAPHRASE. KEEP PROBING IN DETAIL UNTIL RESPONDENT SAYS HE HAS NO MORE INFORMATION.

1a. When you think of hand-held electronic calculators, what brand names or makes come to mind? (DO NOT READ LIST. RECORD IN ORDER OF MENTION [i.e., PUT A 1 NEXT TO FIRST MENTION, 2 NEXT TO SECOND MENTION, 3 NEXT TO THIRD MENTION, ETC. IF BRANDS ARE NOT RECORDED IN ORDER OF MENTION, THE INTERVIEW WILL NOT BE ACCEPTED] BELOW UNDER Q. 1a, "UNAIDED RECALL") Any others? (CONTINUE TO RECORD IN ORDER OF MENTION)

(ASK Q. 1b FOR EACH BRAND NOT MENTIONED IN Q. 1a)

1b. Have you ever heard of (READ ALL BRANDS NOT CHECKED IN Q. 1a BEGINNING WITH X'ED BRAND AND WORKING DOWNWARD. IF BRAND X'ED IS CHECKED IN Q. 1a, WORK DOWNWARD TO NEXT BRAND NOT CHECKED IN Q. 1a). (RECORD BELOW UNDER Q. 1b, "AIDED RECALL")

FOR Q. 1b START HERE		Q. 1a UNAIDED RECALL	Q. 1b AIDED RECALL
( )	Radio Shack	_____ 43-	( ) 57 -1
( )	APF	_____ 44-	( ) -2
( )	Unisonic	_____ 45-	( ) -3
( )	Sears	_____ 46-	( ) -4
( )	Canon	_____ 47-	( ) -5
( )	Texas Instrument	_____ 48-	( ) -6
( )	Novus/National Semi-Conductor	_____ 49-	( ) -7
( )	Casio	_____ 50-	( ) -8
( )	Sinclair	_____ 51-	( ) -9
( )	Hewlett-Packard	_____ 52-	( ) -0
( )	Sharp	_____ 53-	( ) -X
	Other: _____ (SPECIFY)	_____ 54-	
	_____	_____ 55-	
	_____	_____ 56-	

2. How many different hand-held electronic calculators do you own or use at home, at work or somewhere else? (WRITE IN NUMBER BELOW)

WRITE IN NUMBER: _____ 58, 59

(ASK Q'S. 3a THRU 3e FOR EACH CALCULATOR OWNED/USED IN Q. 2)

(IF MORE THAN ONE, SAY:)

Let's talk about the first calculator.

3a. What is the brand name and model number of this calculator? (PROBE FOR MODEL NUMBER IF RESPONDENT DOES NOT RECALL. RECORD BOTH BRAND AND MODEL NUMBER ON BEIGE GRID PAGE UNDER Q. 3a, "BRAND/MODEL")

3b. What kind of calculator is this? Is it a programmable calculator, a scientific calculator, a simple 4 function calculator or some other type (SPECIFY)? (RECORD ON BEIGE GRID PAGE UNDER Q. 3b, "KIND")

3c. Is this a hand held or desk top calculator? (RECORD ON BEIGE GRID PAGE UNDER Q. 3c, "TYPE")

3d. Is this calculator able to print out your calculations on a paper tape? (RECORD ON BEIGE GRID PAGE UNDER Q. 3d, "PRINT")

3e. Do you use this calculator mainly at home, at work or in both places or somewhere else (SPECIFY). (RECORD AS MANY AS APPLY ON BEIGE GRID PAGE UNDER Q. 3e, "USE")

(GO BACK AND REPEAT QUESTIONS 3a THRU 3e FOR REMAINING CALCULATORS)

(ASK EVERYONE)

4a. Are you thinking of getting a new calculator within the next year? (RECORD BELOW)

Yes ..... ( )60-1 ——— (ASK Q. 4b AND Q. 4c)

No ..... ( ) -2 ——— (SKIP TO Q. 5a)

4b. What kind of calculator are you thinking about getting? (READ LIST. RECORD BELOW)

A programmable calculator ..... ( )61-1

A scientific calculator ..... ( ) -2

A simple four-function calculator ( ) -3

Some other type: _____ ( ) -4
(SPECIFY)

4c. Why are you thinking of getting that particular kind of calculator? (PROBE) What other reasons?

_____

_____

_____

_____

(ASK EVERYONE)

5a. If someone were to design a calculator just for you, to your specifications, what would it be like? (PROBE IN DETAIL). (RECORD ALL RESPONSES VERBATIM, DO NOT PARAPHRASE. KEEP PROBING IN DETAIL UNTIL RESPONDENTS SAY HE HAS NO MORE INFORMATION) What would this calculator do that you can't do with the electronic calculators now available? (PROBE IN DETAIL AS BEFORE)

_____

_____

_____

_____

_____

_____

_____

_____

5b. What features would this calculator have? (PROBE IN DETAIL). (RECORD ALL RESPONSES VERBATIM, DO NOT PARAPHRASE. KEEP PROBING IN DETAIL UNTIL RESPONDENT SAYS HE HAS NO MORE INFORMATION).

_____

_____

_____

_____

Now, let's talk about personal/home or portable computers. By that we mean small computers which can be programmed with computer languages such as Basic, Fortran, Pascal, etc. These are not the same as programmable calculators which are programmed with keystroke programming.

6a. When you think of personal/home or portable computers, what brand names or makes come to mind? (DO NOT READ LIST. RECORD IN ORDER OF MENTION [i.e., PUT A 1 NEXT TO FIRST MENTION, 2 NEXT TO SECOND MENTION, 3 NEXT TO THIRD MENTION, ETC. IF BRANDS ARE NOT RECORDED IN ORDER OF MENTION, THE INTERVIEW WILL NOT BE ACCEPTED] BELOW UNDER Q. 6a, "UNAIDED RECALL"). Any others? (CONTINUE TO RECORD IN ORDER OF MENTION)

(ASK Q. 6b FOR EACH BRAND NOT MENTIONED IN Q. 6a)

6b. Have you ever heard of (READ ALL BRANDS NOT CHECKED IN Q. 6a BEGINNING WITH X'ED BRAND AND WORKING DOWNWARD. IF BRAND X'ED IS CHECKED IN Q. 6a, WORK DOWNWARD TO NEXT BRAND NOT CHECKED IN Q. 6a). (RECORD BELOW UNDER Q. 6b, "AIDED RECALL")

(ASK Q. 7 FOR EACH BRAND CHECKED IN Q. 6a OR Q. 6b)

7. What is your overall opinion of the personal/home or portable computers made by (READ X'ED BRAND CHECKED IN Q. 6a OR Q. 6b. IF BRAND X'ED IS NOT CHECKED IN Q. 6a OR Q. 6b, WORK DOWNWARD TO NEXT BRAND CHECKED IN Q. 6a OR Q. 6b). Would you say that they are excellent, good, fair or poor? (RECORD BELOW UNDER Q. 7, "RATING". REPEAT FOR EACH BRAND CHECKED IN Q. 6a OR Q. 6b WORKING DOWNWARD FROM X'ED BRAND)

(CARD 5-2)

FOR Q'S. 6b & 7 START HERE	Q. 6a UNAIDED RECALL	Q. 6b AIDED RECALL	Q. 7 RATING: EXCELLENT	GOOD	FAIR	POOR
( ) Sinclair	_____62-	( )74-1	( ) 6-4	( ) -3	( ) -2	( ) -1
( ) Apple	_____63-	( ) -2	( ) 7-4	( ) -3	( ) -2	( ) -1
( ) Texas Instrument .	_____64-	( ) -3	( ) 8-4	( ) -3	( ) -2	( ) -1
( ) Ohio Scientific ..	_____65-	( ) -4	( ) 9-4	( ) -3	( ) -2	( ) -1
( ) Atari	_____66-	( ) -5	( )10-4	( ) -3	( ) -2	( ) -1
( ) Panasonic	_____67-	( ) -6	( )11-4	( ) -3	( ) -2	( ) -1
( ) Commodore/Pet	_____68-	( ) -7	( )12-4	( ) -3	( ) -2	( ) -1
( ) Radio Shack/Tandy	_____69-	( ) -8	( )13-4	( ) -3	( ) -2	( ) -1
Other: _____ (SPECIFY)	_____70-		( )14-4	( ) -3	( ) -2	( ) -1
_____	_____71-		( )15-4	( ) -3	( ) -2	( ) -1
_____	_____72-		( )16-4	( ) -3	( ) -2	( ) -1
_____	_____73-		( )17-4	( ) -3	( ) -2	( ) -1

(END CARD 1)

8a. Have you ever visited a computer store or a place where they sell personal/home or portable computers? (RECORD BELOW)

Yes ..... ( )18-1 ——— (ASK Q. 8b)
No ..... ( ) -2 ——— (SKIP TO Q. 9a)

8b. Which store or stores have you visited? (DO NOT READ LIST. RECORD AS MANY AS APPLY BELOW)

Radio Shack/Tandy ..... ( )19-1
Other: (SPECIFY)
_____ ( ) -2
_____ ( ) -3
_____ ( ) -4
_____ ( ) -5
_____ ( ) -6

(ASK EVERYONE)

9a. Have you had experience using a personal/home or portable computer or console? (RECORD BELOW)

Yes ..... ( )20-1 ——— (ASK Q. 9b)
No ..... ( ) -2 ——— (SKIP TO Q. 13a)

9b. Do you currently use a personal/home or portable computer or console at work, home or in school? (RECORD BELOW)

Yes ..... ( )21-1 ——— (ASK Q. 9c)
No ..... ( ) -2 ——— (SKIP TO Q. 12a)

9c. Do you currently own a personal/home or portable computer or console? (RECORD BELOW)

Yes ..... ( )22-1 ——— (ASK Q. 10a)
No ..... ( ) -2 ——— (SKIP TO INSTRUCTIONS BEFORE Q. 11a)

(ASK Q. 10a IF "YES" CHECKED IN Q. 9c. ALL OTHERS SKIP TO INSTRUCTIONS BEFORE Q. 11a)

10a. How many different personal/home or portable computers or consoles do you own? (WRITE IN # BELOW)

OWNED: _____ 23-

- IF RESPONDENT OWNS ONLY 1 COMPUTER IN Q. 10a, SAY: "We'd like to ask you some questions about the personal/home or portable computer you own." PROCEED, ASKING Q'S. 10b THRU 10h.

- IF RESPONDENT OWNS MORE THAN 1 COMPUTER IN Q. 10a, SAY: "we'd like to ask you some questions about the personal/home or portable computer you own that you prefer to use." IF RESPONDENT HAS NO PREFERENCE, SAY: "Then we'd like to ask you about the computer you own that you use most often." INDICATE WHICH BELOW:

COMPUTER PREFER TO USE ..... ( )24-1

COMPUTER USED MOST OFTEN ..... ( ) -2

PROCEED WITH QUESTIONS 10b THRU 10h.

Let's talk about the computer you own that you (INSERT ONE - PREFER TO USE/USE MOST OFTEN)

10b. What is the brand name or make and model number of this personal/home or portable computer? (PROBE FOR MODEL #, IF RESPONDENT DOES NOT RECALL. RECORD BOTH THE BRAND/MAKE AND MODEL # ON YELLOW GRID PAGE UNDER Q. 10b, "BRAND/MODEL")

10c. How much did this computer cost? (RECORD ON YELLOW GRID PAGE UNDER Q. 10c, "COST". IF RESPONDENT DOESN'T KNOW COST, SAY:) How much do you think it cost?

10d. What was the cost of the computer console alone? (RECORD ON YELLOW GRID PAGE UNDER Q. 10d, "CONSOLE COST". IF RESPONDENT DOES NOT KNOW COST, SAY: How much do you think it cost?)

10e. When did you get this personal/home or portable computer? (DO NOT READ LIST. RECORD ON YELLOW GRID PAGE UNDER Q. 10e, "TIME")

10f. What additional equipment, options or peripheral equipment do you have with this computer? (DO NOT READ LIST. CHECK AS MANY AS APPLY ON YELLOW GRID PAGE UNDER Q. 10f, "ADDITIONS")

10g. Do you use this computer at home or at work or somewhere else (SPECIFY)? (CHECK AS MANY AS APPLY ON YELLOW GRID PAGE UNDER Q. 10g, "USE")

10h. What do you consider to be the most rewarding uses of this computer? (PROBE IN DETAIL) What else? (WRITE IN ON YELLOW GRID PAGE UNDER Q. 10h, "REWARDING")

(ASK Q. 11a IF "NO" CHECKED IN Q. 9c. ALL OTHERS SKIP TO INSTRUCTIONS BEFORE Q. 12a)

11a. How many different personal/home or portable computers or consoles do you currently use that you do not own? (WRITE IN NUMBER BELOW)

USED/NOT OWNED: _____ 25-

- IF RESPONDENT USES ONLY 1 COMPUTER IN Q. 11a, SAY: "We'd like to ask you some questions about the personal/home or portable computer you use but do not own." PROCEED, ASKING Q'S. 11b THRU 11g.

- IF RESPONDENT USES MORE THAN 1 COMPUTER IN Q. 11a, SAY: "we'd like to ask you some questions about the personal/home or portable computer you use but do not own, but we'd like to talk about the one that you prefer to use." IF RESPONDENT HAS NO PREFERENCE, SAY: "Then we'd like to ask you about the computer you use most often but do not own." INDICATE WHICH BELOW:

  COMPUTER PREFER TO USE ..... ( )26-1

  COMPUTER USED MOST OFTEN ..... ( ) -2

PROCEED WITH QUESTIONS 11b THRU 11g.

11b. What is the brand name or make and model number of this personal/home or portable computer? (PROBE FOR MODEL NUMBER, IF RESPONDENT DOES NOT RECALL. RECORD BOTH THE BRAND/MAKE AND MODEL NUMBER ON BLUE GRID PAGE UNDER Q. 11b, "BRAND/MODEL")

11c. How long have you had experience using this computer? (DO NOT READ LIST. RECORD ON BLUE GRID PAGE UNDER Q. 11c, "TIME")

11d. What was the cost of the computer console alone? (RECORD ON BLUE GRID PAGE UNDER Q. 11d, "CONSOLE COST". IF RESPONDENT DOES NOT KNOW COST, SAY: How much do you think it cost?)

11e. What additional equipment, options or peripheral equipment do you have with this computer? (DO NOT READ LIST. CHECK AS MANY AS APPLY ON BLUE GRID PAGE UNDER Q. 11e, "ADDITIONS")

11f. Do you use this computer at home or at work or somewhere else (SPECIFY)? (CHECK AS MANY AS APPLY ON BLUE GRID PAGE UNDER Q. 11f, "USE")

11g. What do you consider to be the most rewarding uses of this computer? (PROBE IN DETAIL) What else? (WRITE IN ON BLUE GRID PAGE UNDER Q. 11g, "REWARDING")

(ASK Q. 12a IF "YES" CHECKED IN Q. 9a. ALL OTHERS SKIP TO Q. 13a)

12a. Are there any personal/home or portable computers that you have had past experience with that you do not currently use? (RECORD BELOW)

Yes ..... ( )27-1 ——— (ASK Q. 12b)
No ..... ( ) -2 ——— (SKIP TO Q. 13a)

12b. Please tell me the brand or make and model number of each of these computers and whether you owned it or just used it? (WRITE IN BELOW. PROBE FOR MODEL NUMBER)

BRAND/MAKE	MODEL	OWNED	USED
28-			
29- _____	_____	..... ( )38-1	( ) -2
30-			
31- _____	_____	..... ( )39-1	( ) -2
32-			
33- _____	_____	..... ( )40-1	( ) -2
34-			
35- _____	_____	..... ( )41-1	( ) -2
36-			
37- _____	_____	..... ( )42-1	( ) -2

(ASK EVERYONE)

13a. Are you thinking about getting a new personal/home or portable computer within the next year? (RECORD BELOW)

Yes ..... ( )43-1 ——— (ASK Q. 13b AND Q. 13c)
No ..... ( ) -2 ——— (SKIP TO Q. 13d)

(ASK Q. 13b AND Q. 13c IF "YES" CHECKED IN Q. 13a)

13b. What is the brand name, make and model number of the personal/home or portable computer you are thinking about getting? (WRITE IN BELOW. PROBE FOR MODEL #)

BRAND/MAKE: _____ 44-

MODEL #: _____ 45-

13c. Why are you thinking of getting that one? (PROBE) What other reasons?

_____

_____

_____

_____

(SKIP TO Q. 14)

(ASK Q. 13d IF "NO" CHECKED IN Q. 13a)

13d. Why aren't you thinking about getting a personal/home or portable computer within the near future? (PROBE) What other reasons? What is it about them that does not interest you in getting one? (PROBE) What other reasons?

_____

_____

_____

_____

(ASK EVERYONE)

14. Based on what you've seen or heard or know about personal/home or portable computers, what are they especially good for? (PROBE) What else are they especially good for?

15a. If someone were to design a personal/home or portable computer just for you, to your own specifications, what would it be like? (PROBE IN DETAIL). (RECORD ALL RESPONSES VERBATIM. DO NOT PARAPHASE. KEEP PROBING IN DETAIL UNTIL RESPONDENT SAYS HE HAS NO MORE INFORMATION) What would it do? (PROBE IN DETAIL AS BEFORE).

15b. What features would you especially like to have on this computer? (PROBE IN DETAIL AS BEFORE).

Now, I'd like to show you an illustration and description of a new portable computer that will be introduced by a leading manufacturer of electronic products. Please look at the product and read the description carefully. Take as much time as you like. Hand it back to me when you are finished.

46-

(GIVE CONCEPT BOARD _____ TO RESPONDENT. ALLOW RESPONDENT AS MUCH TIME TO LOOK AT THE BOARD AS HE WANTS. IF RESPONDENT ASKS ANY QUESTIONS ABOUT THE PRODUCT, WRITE DOWN IN THE SPACE BELOW. NOTE DOWN THE LENGTH OF TIME RESPONDENT NEEDS TO LOOK AT AND READ THE CONCEPT BOARD. TAKE BACK CONCEPT BOARD BEFORE PROCEEDING WITH QUESTIONING).

QUESTIONS ASKED BY RESPONDENT:

_____

_____

_____

_____

_____

TIME SPENT LOOKING AT CONCEPT BOARD: _____ 47-

16. What impressions, ideas or thoughts did you have while you were looking at and reading about this portable computer? Just tell me what went through your head while you looked at this portable computer? (PROBE IN DETAIL) What else?

_____

_____

_____

_____

_____

_____

(HAND CONCEPT BOARD BACK TO RESPONDENT. ALSO HAND BUYING INTEREST CARD)

17a. How interested are you in buying this portable computer for your own use? Please indicate your interest in buying with a number. If you are extremely interested in buying this portable computer, you can answer by saying 9. If you are not at all interested in buying this portable computer, you can answer by saying 1. Or, you can give me some number in between. Which number from 1 to 9 best describes how interested you are in buying this portable computer. Remember, the higher the number, the more likely you would be to buy this portable computer. The lower the number, the less likely you would be to buy it. You can use any number from 1 to 9 to express how interested you are in buying this portable computer. (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED								EXTREMELY INTERESTED	
1	2	3	4	5	6	7	8	9	48-

(TAKE BACK BUYING INTEREST CARD)

17b. Why do you feel that way? (PROBE) What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

18. How much do you think this portable computer would cost without the optional extras? (WRITE IN BELOW)

COST: _____ 49, 50, 51, 52

53-

19a. Now we'd like to know how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras? (HAND BUYING INTEREST CARD TO RESPONDENT) We'll use the same one to nine scale as before. The higher the number the more likely you would be to buy this portable computer if you could purchase it for _____. You can use any number from one to nine to express how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras. (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED								EXTREMELY INTERESTED	
1	2	3	4	5	6	7	8	9	54-

19b. Why do you feel that way? What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

20a. Now suppose you could purchase this portable computer for _____ without the optional extras. How interested are you in buying this portable computer for _____ without the optional extras? Which number from one to nine best describes how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras? (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED								EXTREMELY INTERESTED	
1	2	3	4	5	6	7	8	9	55-

(TAKE BACK BUYING INTEREST CARD)

20b. Why do you feel that way? What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

(TAKE BACK CONCEPT)

(SHUFFLE AND LAY OUT PAIR OF WHITE CARDS LISTED BELOW)

B-8 and B-9 56-2

21a. If you had to choose between these two features for this portable computer, assuming the price was the same, which one would you prefer? (FORCE A PREFERENCE, IF NECESSARY. RECORD BELOW)

Prefer B-8 .. ( )57-1

Prefer B-9 .. ( ) -2

(SKIP COL'S. 58-59)

21b. You chose this feature (POINT TO FEATURE PREFERRED IN Q. 21a) for this portable computer. We'd like to know how much you prefer this feature over the other one. To do this we'll use a scale of 1 to 9 with "1" as "There is really no difference, I prefer them equally." We would use a "9" as "There is an extreme difference, I prefer this one very strongly. The lower the number the less strong your preference for that feature is and the higher the number the stronger your preference for that feature is. You may use any number from 1 to 9 to express your opinion. Do you understand? (IF NO, REPEAT. CIRCLE RATING BELOW) BE SURE YOU CIRCLE A RATING ONLY BY THE FEATURE PREFERRED IN Q. 21a)

	NO DIFFERENCE (PREFER EQUALLY)							EXTREME DIFFERENCE (PREFER ONE STRONGLY)		
B-8	1	2	3	4	5	6	7	8	9	60-
B-9	1	2	3	4	5	6	7	8	9	61-

(SKIP COL'S. 62-65)

21c. You chose this feature (POINT TO FEATURE PREFERRED IN Q. 21a) for this portable computer. I'd like you to tell me how desirable this feature would be for you to have in a portable computer. Let's use the same one to nine scale we used before, but this time a "9" is "extremely desirable" and a "1" is extremely undesirable. The higher the number the more desirable the feature would be for you to have. The lower the number the less desirable the feature would be for you to have. You may use any number fron 1 to 9 to express your opinion. Now then, which number from 1 to 9 tells me how desirable this feature is to you in a portable computer? (CIRCLE RATING BELOW FOR FEATURE PREFERRED IN Q. 21a)

	EXTREMELY UNDESIRABLE							EXTREMELY DESIRABLE		
B-8	1	2	3	4	5	6	7	8	9	66-
B-9	1	2	3	4	5	6	7	8	9	67-

(TAKE BACK PAIR CARDS)

(END CARD 2)

YOU WILL BE ASKING QUESTIONS 21a - 21c FOR EACH PAIR OF CARDS LISTED BELOW. FOLLOW DIRECTIONS CAREFULLY.

(SHUFFLE AND LAY OUT PAIR OF WHITE CARDS X'ED BELOW)

START HERE

( ) B-8 and B-9 56-1

( ) C-8 and C-9

( ) D-8 and D-9

21a. If you had to choose between these two features for this portable computer (for pairs B-8 and B-9 or C-8 and C-9 add: assuming the price was the same), which one would you prefer? (FORCE A PREFERENCE, IF NECESSARY. RECORD BELOW FOR APPROPRIATE PAIR)

Prefer B-8 .. ( ) 57-1	Prefer C-8 .. ( ) 58-1	Prefer D-8 .. ( ) 59-1
Prefer B-9 .. ( ) -2	Prefer C-9 .. ( ) -2	Prefer D-9 .. ( ) -2

21b. You chose this feature (POINT TO FEATURE PREFERRED IN Q. 21a) for this portable computer. We'd like to know how much you prefer this feature over the other one. To do this we'll use a scale of 1 to 9 with "1" as "There is really no difference, I prefer them equally." We would use a "9" as "There is an extreme difference, I prefer this one very strongly. The lower the number the less strong your preference for that feature is and the higher the number the stronger your preference for that feature is. You may use any number from 1 to 9 to express your opinion. Do you understand? (IF NO, REPEAT. CIRCLE RATING BELOW UNDER APPROPRIATE PAIR. BE SURE YOU CIRCLE A RATING ONLY BY THE FEATURE PREFERRED IN Q. 21a)

	NO DIFFERENCE (PREFER EQUALLY)							EXTREME DIFFERENCE (PREFER ONE STRONGLY)		
B-8	1	2	3	4	5	6	7	8	9	60-
B-9	1	2	3	4	5	6	7	8	9	61-
C-8	1	2	3	4	5	6	7	8	9	62-
C-9	1	2	3	4	5	6	7	8	9	63-
D-8	1	2	3	4	5	6	7	8	9	64-
D-9	1	2	3	4	5	6	7	8	9	65-

21c. You chose this feature (POINT TO FEATURE PREFERRED IN Q. 21a) for this portable computer. I'd like you to tell me how desirable this feature would be for you to have in a portable computer. Let's use the same one to nine scale we used before, but this time a "9" is "extremely desirable" and a "1" is extremely undesirable. The higher the number the more desirable the feature would be for you to have. The lower the number the less desirable the feature would be for you to have. You may use any number from 1 to 9 to express your opinion. Now then, which number from 1 to 9 tells me how desirable this feature is to you in a portable computer? (CIRCLE RATING BELOW UNDER APPROPRIATE PAIR FOR FEATURE PREFERRED IN Q. 21a)

	EXTREMELY UNDESIRABLE								EXTREMELY DESIRABLE	
B-8	1	2	3	4	5	6	7	8	9	66-
B-9	1	2	3	4	5	6	7	8	9	67-
C-8	1	2	3	4	5	6	7	8	9	68-
C-9	1	2	3	4	5	6	7	8	9	69-
D-8	1	2	3	4	5	6	7	8	9	70-
D-9	1	2	3	4	5	6	7	8	9	71-

(TAKE BACK PAIR CARDS)

(END CARD 2)

(REPEAT Q'S. 21a-21c FOR REMAINING PAIRS, CONTINUING WITH PAIR BELOW X'ED PAIR AND THEN FOR REMAINING PAIR)

22. Here is a deck of cards on which are a number of statements that describe the features of this electronic portable computer. (SHUFFLE WHITE NUMBERED DECK LISTED BELOW ON GRID AND HAND TO RESPONDENT. ALSO HAND RESPONDENT IMPORTANCE RATING CARD)

As you read each statement, please tell me how important each feature is to you personally. If you feel that the feature is extremely important to you, you would give it a "9". If you feel that the feature is not at all important you would give it a "1". You can choose any number from 1 to 9 to tell me how important each feature is to you. Remember, the higher the number, the more important it is to you. The lower the number, the less important it is to you.

Just read the statement to youself, tell me what the number is on the top of the card and then tell me how important that is to you personally by using any number from 1 to 9. (CIRCLE RATINGS BELOW. CONTINUE UNTIL ALL 17 CARDS ARE RATED)

		NOT AT ALL IMPORTANT								EXTREMELY IMPORTANT	5-3 6-3
101	.....	1	2	3	4	5	6	7	8	9	7-
102	.....	1	2	3	4	5	6	7	8	9	8-
103	.....	1	2	3	4	5	6	7	8	9	9-
104	.....	1	2	3	4	5	6	7	8	9	10-
105	.....	1	2	3	4	5	6	7	8	9	11-
106	.....	1	2	3	4	5	6	7	8	9	12-
107	.....	1	2	3	4	5	6	7	8	9	13-
108	.....	1	2	3	4	5	6	7	8	9	14-
109	.....	1	2	3	4	5	6	7	8	9	15-
110	.....	1	2	3	4	5	6	7	8	9	16-
111	.....	1	2	3	4	5	6	7	8	9	17-
112	.....	1	2	3	4	5	6	7	8	9	18-
113	.....	1	2	3	4	5	6	7	8	9	19-
114	.....	1	2	3	4	5	6	7	8	9	20-
115	.....	1	2	3	4	5	6	7	8	9	21-
116	.....	1	2	3	4	5	6	7	8	9	22-
117	.....	1	2	3	4	5	6	7	8	9	23-

(SKIP COL'S. 24 - 29)

22. Here is a deck of cards on which are a number of statements that describe the features of this electronic portable computer. (SHUFFLE WHITE NUMBERED DECK LISTED BELOW ON GRID AND HAND TO RESPONDENT. ALSO HAND RESPONDENT IMPORTANCE RATING CARD)

As you read each statement, please tell me how important each feature is to you personally. If you feel that the feature is extremely important to you, you would give it a "9". If you feel that the feature is not at all important you would give it a "1". You can choose any number from 1 to 9 to tell me how important each feature is to you. Remember, the higher the number, the more important it is to you. The lower the number, the less important it is to you.

Just read the statement to youself, tell me what the number is on the top of the card and then tell me how important that is to you personally by using any number from 1 to 9. (CIRCLE RATINGS BELOW. CONTINUE UNTIL ALL 20 CARDS ARE RATED)

5-3
6-2

		NOT AT ALL IMPORTANT								EXTREMELY IMPORTANT	
201	.....	1	2	3	4	5	6	7	8	9	7-
202	.....	1	2	3	4	5	6	7	8	9	8-
203	.....	1	2	3	4	5	6	7	8	9	9-
204	.....	1	2	3	4	5	6	7	8	9	10-
205	.....	1	2	3	4	5	6	7	8	9	11-
206	.....	1	2	3	4	5	6	7	8	9	12-
207	.....	1	2	3	4	5	6	7	8	9	13-
208	.....	1	2	3	4	5	6	7	8	9	14-
209	.....	1	2	3	4	5	6	7	8	9	15-
210	.....	1	2	3	4	5	6	7	8	9	16-
211	.....	1	2	3	4	5	6	7	8	9	17-
212	.....	1	2	3	4	5	6	7	8	9	18-
213	.....	1	2	3	4	5	6	7	8	9	19-
214	.....	1	2	3	4	5	6	7	8	9	20-
215	.....	1	2	3	4	5	6	7	8	9	21-
216	.....	1	2	3	4	5	6	7	8	9	22-
217	.....	1	2	3	4	5	6	7	8	9	23-
218	.....	1	2	3	4	5	6	7	8	9	24-
219	.....	1	2	3	4	5	6	7	8	9	25-
220	.....	1	2	3	4	5	6	7	8	9	26-

(SKIP COL'S. 27-29)

22. Here is a deck of cards on which are a number of statements that describe the features of this electronic portable computer. (SHUFFLE WHITE NUMBERED DECK LISTED BELOW ON GRID AND HAND TO RESPONDENT. ALSO HAND RESPONDENT IMPORTANCE RATING CARD)

As you read each statement, please tell me how important each feature is to you personally. If you feel that the feature is extremely important to you, you would give it a "9". If you feel that the feature is not at all important you would give it a "1". You can choose any number from 1 to 9 to tell me how important each feature is to you. Remember, the higher the number, the more important it is to you. The lower the number, the less important it is to you.

Just read the statement to youself, tell me what the number is on the top of the card and then tell me how important that is to you personally by using any number from 1 to 9. (CIRCLE RATINGS BELOW. CONTINUE UNTIL ALL 23 CARDS ARE RATED)

		NOT AT ALL IMPORTANT								EXTREMELY IMPORTANT	5-3 6-1
301	.....	1	2	3	4	5	6	7	8	9	7-
302	.....	1	2	3	4	5	6	7	8	9	8-
303	.....	1	2	3	4	5	6	7	8	9	9-
304	.....	1	2	3	4	5	6	7	8	9	10-
305	.....	1	2	3	4	5	6	7	8	9	11-
306	.....	1	2	3	4	5	6	7	8	9	12-
307	.....	1	2	3	4	5	6	7	8	9	13-
308	.....	1	2	3	4	5	6	7	8	9	14-
309	.....	1	2	3	4	5	6	7	8	9	15-
310	.....	1	2	3	4	5	6	7	8	9	16-
311	.....	1	2	3	4	5	6	7	8	9	17-
312	.....	1	2	3	4	5	6	7	8	9	18-
313	.....	1	2	3	4	5	6	7	8	9	19-
314	.....	1	2	3	4	5	6	7	8	9	20-
315	.....	1	2	3	4	5	6	7	8	9	21-
316	.....	1	2	3	4	5	6	7	8	9	22-
317	.....	1	2	3	4	5	6	7	8	9	23-
318	.....	1	2	3	4	5	6	7	8	9	24-
319	.....	1	2	3	4	5	6	7	8	9	25-
320	.....	1	2	3	4	5	6	7	8	9	26-
321	.....	1	2	3	4	5	6	7	8	9	27-
322	.....	1	2	3	4	5	6	7	8	9	28-
323	.....	1	2	3	4	5	6	7	8	9	29-

23. What do you especially like, if anything, about this new portable computer? (PROBE) What else?

24. What do you especially dislike, if anything, about this new portable computer? (PROBE) What else?

25. If you were to own this portable computer, what would you personally use it for? (PROBE) What else?

Now, I'd like to show you another illustration and description of a different new portable computer that will be introduced by a leading manufacturer of electronic products. Please look at the product and read the description carefully. Take as much time as you like. Hand it back to me when you are finished.

30-

(GIVE CONCEPT BOARD _____ TO RESPONDENT. ALLOW RESPONDENT AS MUCH TIME TO LOOK AT THE BOARD AS HE WANTS. IF RESPONDENT ASKS ANY QUESTIONS ABOUT THE PRODUCT, WRITE DOWN IN THE SPACE BELOW. NOTE DOWN THE LENGTH OF TIME RESPONDENT NEEDS TO LOOK AT AND READ THE CONCEPT BOARD. TAKE BACK CONCEPT BOARD BEFORE PROCEEDING WITH QUESTIONING).

QUESTIONS ASKED BY RESPONDENT:

_____

_____

_____

_____

_____

_____

TIME SPENT LOOKING AT CONCEPT BOARD: _____ 31-

27. What impressions, ideas or thoughts did you have while you were looking at and reading about this portable computer? Just tell me what went through your head while you looked at this portable computer? (PROBE IN DETAIL) What else?

_____

_____

_____

_____

_____

_____

(HAND CONCEPT BOARD TO RESPONDENT. ALSO HAND BUYING INTEREST CARD)

28a. How interested are you in buying this portable computer for your own use? Please indicate your interest in buying with a number. If you are extremely interested in buying this portable computer, you can answer by saying 9. If you are not at all interested in buying this portable computer, you can answer by saying 1. Or, you can give me some number in between. Which number from 1 to 9 best describes how interested you are in buying this portable computer? Remember, the higher the number, the more likely you would be to buy this portable computer. The lower the number, the less likely you would be to buy it. You can use any number from 1 to 9 to express how interested you are in buying this portable computer. (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED								EXTREMELY INTERESTED	
1	2	3	4	5	6	7	8	9	32-

(TAKE BACK BUYING INTEREST CARD)

28b. Why do you feel that way? (PROBE) What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

29. How much do you think this portable computer would cost without the optional extras? (WRITE IN BELOW)

COST: _____ 33, 34, 35, 36

37-

30a. Now we'd like to know how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras? (HAND BUYING INTEREST CARD TO RESPONDENT) We'll use the same one to nine scale as before. The higher the number the more likely you would be to buy this portable computer if you could purchase it for _____. You can use any number from one to nine to express how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras. (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED EXTREMELY INTERESTED

1 2 3 4 5 6 7 8 9 38-

30b. Why do you feel that way? What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

31a. Now suppose you could purchase this portable computer for _____ without the optional extras. How interested are you in buying this portable computer for _____ without the optional extras? Which number from one to nine best describes how interested you are in buying this portable computer if you could purchase it for _____ without the optional extras? (CIRCLE RATING BELOW)

NOT AT ALL INTERESTED EXTREMELY INTERESTED

1 2 3 4 5 6 7 8 9 39-

(TAKE BACK BUYING INTEREST CARD)

31b. Why do you feel that way? What made you pick the number you did? (PROBE) Any other reasons?

_____

_____

_____

_____

_____

_____

(TAKE BACK CONCEPT)

One last question before we close with some statistical information.

Please look at both of these products side-by-side.

(HAND BOTH CONCEPTS SEEN TO RESPONDENT)

32a. Which of these portable computers do you prefer? (RECORD BELOW)

Prefer concept RM 1000 ..... ( )40-1

Prefer concept RM 2000 ..... ( ) -2

Prefer concept RM 3000 ..... ( ) -3

32b. Why do you feel that way? What is it about this portable computer that makes you prefer it over the other one? (PROBE) What other reasons?

_____

_____

_____

_____

_____

_____

32c. You chose this portable computer (POINT TO CONCEPT PREFERRED IN Q. 32a). We'd like to know how much you prefer this portable computer over the other one. To do this we'll use a scale of 1 to 9 with "1" as "There is really no difference, I prefer them equally." We would use a "9" as "There is an extreme difference, I prefer this one very strongly." The lower the number, the less strong your preference for that computer is and the higher the number, the stronger your preference for that computer is. You may use any number from 1 to 9 to express your opinion. Do you understand? (IF NO, REPEAT. CIRCLE RATING BELOW) (BE SURE YOU CIRCLE A RATING ONLY BY THE FEATURE PREFERRED IN Q. 32a)

	NO DIFFERENCE (PREFER EQUALLY)								EXTREME DIFFERENCE (PREFER ONE STRONGLY)	
RM 1000	1	2	3	4	5	6	7	8	9	41-
RM 2000	1	2	3	4	5	6	7	8	9	42-
RM 3000	1	2	3	4	5	6	7	8	9	43-

CLASSIFICATION

(ASK Q. 33 OF STUDENTS IN QUOTA CELL 2 ONLY - ALL OTHERS SKIP TO Q. 34a)

33. Which of the following best describes your total annual family income? (READ LIST. RECORD BELOW)

Under $10,000	( )	44-1
$10,000 - $14,999	( )	-2
$15,000 - $19,999	( )	-3
$20,000 - $24,999	( )	-4
$25,000 - $29,999	( )	-5
$30,000 - $34,999	( )	-6
$35,000 - $39,999	( )	-7
$40,000 - $49,999	( )	-8
$50,000 - $74,999	( )	-9
$75,000 or more	( )	-0

(ASK EVERYONE)

34a. What is your marital status? (RECORD BELOW)

Married ..... ( )45-1 ——— (ASK Q. 34b)

Single ..... ( ) -2
Divorced/widowed/separated .... ( ) -3 ——— (SKIP TO Q. 35)

34b. Is your spouse employed ... (READ LIST. RECORD BELOW)

Full time ..... ( )46-1
Part time ..... ( ) -2 ——— (ASK Q. 34c)

Not at all ..... ( ) -3 ——— (SKIP TO Q. 35)

34c. What is your spouse's occupation? Please be very specific. Give me her/his title and the type of industry? (RECORD BELOW)

Title: _____ 47-

Type of industry: _____ 48-

(ASK EVERYONE)

35. What is the size of your family living at home? Please include yourself and all infants but not students living away from home? (WRITE IN # BELOW)

Size of family: _____ 49-

36a. Do you have any children under 18 years of age living at home? (RECORD BELOW)

Yes ..... ( )50-1 ——— (ASK Q. 36b)

No ..... ( ) -2 ——— (SKIP TO Q. 37)

36b. What are their ages? How many are there? (READ LIST. RECORD BELOW. IF NONE IN A CATEGORY, WRITE IN ZERO (0))

Under 2 ..... _____ 51-

2 - 6 ..... _____ 52-

7 - 12 ..... _____ 53-

13 - 17 ..... _____ 54-

37. What is your occupation? Please be very specific. Give me your title and the type of industry? (RECORD BELOW)

Title: _____ 55-

Type of Industry: _____ 56-

(NOTE: Q. 38 HAS 2 VERSIONS, ONE FOR STUDENT QUOTAS OF CELL 2 AND ONE FOR ALL OTHER RESPONDENTS. BE SURE YOU ASK THE RIGHT ONE)

(STUDENT QUOTA)

38. What is your major field of study in school? (WRITE IN BELOW)

_____ 57-
58-

(ALL OTHER QUOTAS)

38. What was your major field of study in school? (WRITE IN BELOW)

_____ 59-
60-

(ASK EVERYONE)

39. Which, if any, of the following electronic products do you own? (READ LIST. RECORD BELOW)

Digital watch	( )	61-1
Quartz watch	( )	-2
Videotape recorder	( )	-3
Microwave oven	( )	-4
Hi-fi/stereo component	( )	-5
Projection T.V.	( )	-6
Electronic learning aids	( )	-7
Video games	( )	-8
(DO NOT READ) - None of the above	( )	-9

40. Which of the following statements best describes your previous experience with computers? (READ LIST. RECORD BELOW)

I have worked directly with computers	( )	62-1
I have worked indirectly with computers	( )	-2
I have had little experience with computers	( )	-3
I have had no experience with computers	( )	-4

41. Which, if any, of the following programming languages do you know? (READ LIST. RECORD BELOW)

Algol	( )	63-1
APL	( )	-2
Assembler	( )	-3
Basic (any type)	( )	-4
Cobol	( )	-5
Forth	( )	-6
Fortran (any type)	( )	-7
Pascal	( )	-8
PL (any type)	( )	-9
RPG	( )	-0
Other: (SPECIFY) _____	( )	-X
_____	( )	-Y
_____	( )	64-1
None/don't know any	( )	-2

INTERVIEWER: INDICATE RACE (BY OBSERVATION)

White	( )	65-1
Black	( )	-2
Oriental	( )	-3
Other: (SPECIFY) _____	( )	-4

(END CARD 3)

(THANK YOU FOR YOUR COOPERATION)

RESEARCH QUESTIONS 7-10-81

1. DIFFERENCES IN OPERATING PLANS

RM 2500 3Q '82 } • 2000 UPGRADE +
RM 3000+ 2H 83 } • DELAYED SCHEDULE
• 3000 32 COL VICE 40 BUT WITH GRAPHICS

MARKET SIZE WITH BOTH VS EITHER ONE COMPARED WITH INCREMENTAL DEVELOPMENT COST.

2. STRENGTH OF UNDERSTANDING OF RM 3000 VS RM 2000 CHOICE

a. RM 3000 VS RM 2000 110/176 ALSO WITH STRENGTH OF PREFERENCE

RM3000 PURCH INT \ RM2000 PURCH INT	HI	MD	LO	
HI	8/8	6/20	5/32	19/60
MD	15/10	8/17	2/25	25/52
LO	24/12	19/16	23/36	66/64
	47/30	33/53	39/93	(2000/3000)

$A(1,1) + A(1,2) + A(1,3) = 19$
$A(2,1) + A(2,2) + A(2,3) = 25$
$A(3,1) + A(3,2) + A(3,3) = 66$
$A(1,1) + A(2,1) + A(3,1) = 47$
$A(1,2) + A(2,2) + A(3,2) = 33$
$A(1,3) + A(2,3) + A(3,3) = 30$
$B(1,1) + B(1,2) + B(1,3) = 60$

b. All RM 2000 vs RM3000 – remove the ones with invalid perceptions of either 2000 or 3000 and ones with queer choices. Compare to original data.

c. RM2500 vs RM 3000 inferred from data

3. Data on annual volume vs SRP – calculators over the years.

PURCHASE INTEREST

2+3 T/S 66 15(H) 287 76H
8 (2&3)
4 (2 ONLY)
3 (3 ONLY)

4. Ask David how we could have so many GP (mall) people who "know" BASIC. Is this a problem in the BPP group also?

RM2000 "WARM" PROSPECTS

HI PRICE (margin note: 250)

		(8+9)%	AWARE	AVAIL	= YIELD	@ 38% CPM $
T/S	2 500 000	18.6	60	80	223,200	63.6M$ (T/S + C/U)
C/U	3 000 000	13.0	60	80	187,200	
BFP	3000 000	19.6	15	70	61,740	
GP	2 500 000	23.5	20	70	82,250	
					554,390	85.9M$

MID PRICE (margin note: 175)

		(8+9)%				
T/S	2500 000	~~21.8~~ 16.7	60	80	200,400	66M$ (T/S + C/U)
C/U	3 000 000	28.3	60	80	407,520	
BFP	3 000 000	24.5	15	70	77,175	
GP	2 500 000	39.6	20	70	138,600	
					823,695	89.4M$

LO PRICE (margin note: 25)

		(8+9)%				
T/S	2500000	40.4	60	80	484,800	84M$ (T/S + C/U)
C/U	3 000 000	41.7	60	80	600,480	
BFP	3000 000	33.4	15	70	105,210	
GP	2500000	47.0	20	70	164,500	
					1,354,990	105M$

TOTAL POTENTIAL RM2000

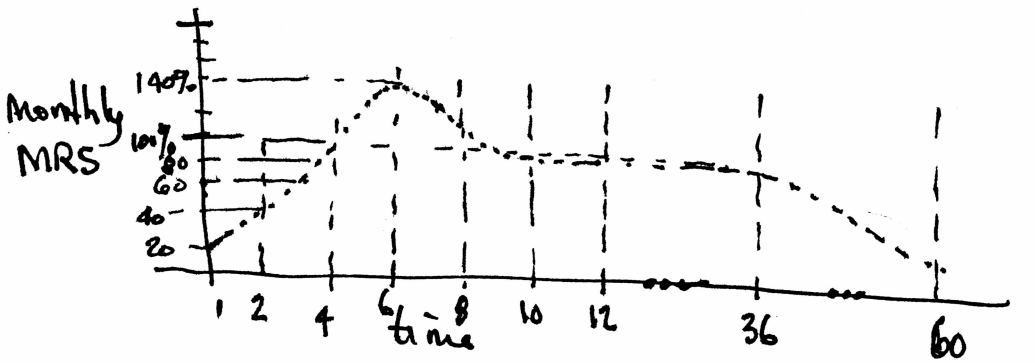
HI	1 401 150	x 250 x .62	= 217 M$
MID	1 719 300	x 175 x .62	= 186 M$
LO	1 907 200	x 125 x .62	= 147 M$

- Time to understand
- 3000 what use it for [illegible]
- 2000/3000 Tech/Sci? [illegible]

1. Assume TI-59 would be more/less/same attractiveness as RM1000.

A. SAME # at $200 = 8K/mo sustained rate.

startup curve.



RM1000 - STRONG INTEREST (8,9) @ $200 = 12.5% ≅ 8K/mo

RM2000 - STRONG INTEREST @ $200 = 23% ≅ 14.72 = 15K/mo.

@ $125 = 41% ≅ 26K/mo

@ $250 = 19% ≅ 12K/mo

K64

FACTOR	PRODUCTION	MRS AT $200	MRS AT $125	MRS AT $250
.2	1	3.0	5.0	2.0
.4	2	6.0	10.0	5.0
.6	3	9.0	16.0	7.0
1.0	4	15.0	26.0	12.0
1.2	5	18.0	31.0	14.0
1.4	6	21.0	36.0	20.0
1.2	7	18.0	22.0	14.0
1.1	8	16.0	29.0	13.0
1.0	9	15.0	26.0	12.0
	10	15.0	26.0	12.0
	11	15.0	26.0	12.0
	12	15.0	26.0	12.0

3 + 30 + 36 + 21 + 57 = 103

5 + 26 + 26 + 52 = 170

2 + 24 + 48 + 37 = 85

45 + 30 + 16 + 46 = 90

26 + 3 + 78 = 156

36 + 72 = 108

180 + 312 + 144

Production MRS at

@ $300 · 16% ≡ 10K/mo
@ $400 · 8% ≡ 5K/mo

FACTOR	$300	$400
.2	2	1
.4	4	2
.6	6	3
1.0	10	5
1.2	12	6
1.4	14	7
1.2	12	6
1.1	11	6
1.0	10	5
1.0	10	5
1.0	10	5
1.0	10	5
1.0	10	5

	300	400
1Q	2	1
2Q	20	10
3Q	69 38+31	35 19+16
1H	60	30
2Q	120	60
4Q		

AT #175

TI-59 8K/mo =

50%	TECH/SCI	×1.37	= 5.48
30%	STA/PROF	×1.55	= 3.72
20%	BUSINESS	×2.7	= 4.32
			13.52

	OLD (.6X) NEW	26 16	17 10	15 9	12 7	10 6	8 5	5 3
	FACTOR	125	175	200	250	300	350	400
					1.4	1.2	1.0	.6
3982	.2	3.2	2	1.8	1.4	1.2	1.0	.6
4982	2.0	32	20	18	14	12	10	6
1483	6.9	110	69	62	48	41	34	21
2483	8.0	96	60	54	42	36	30	18
84	12.0	192	120	108	84	72	60	36

(×1.75) NEW

MARKET SHARE

RM 2000 @ $200 8+9% = 23%

~~W.C. WORKERS 28 M × 23% = 6 MILLION~~

~~PENETRATION 25% (SEE BELOW)~~

~~2½ yr VOLUME = 1.5~~

TECH 10M × 20% × 25% = .5

MGR/SALES(CLER 17M × 23% × 12% = .5

1.0

400K/YR = 30K/MO.

RM 1000 @ $200 8+9% = 12.5%

PROF TECH = 10M × 12½% = 1¼ M

TISG = ½M total (~~100~~ 120K/yr) 240 / 60 / 300

PENETRATION = (2½ yr) = 25%

STRONG INTEREST IN BUYING

	TOTAL (8,9)	TOTAL (7,8,9)	SEEN FIRST (8,9)	SEEN FIRST (7,8,9)
RM1000	9.7	22.3	11.4	23.8
RM2000	14.1	28.6	15.3	34.1
RM3000	14.5	29.9	12.2	27.9

Seen First	FR	HI	MD	LO
RM 1000	11.	10	16	25
RM 2000	15	19	27	41
RM 3000	12	14	18	23

Seen Second	FR	HI	MD	LO
RM 2000		13	28	31
RM 3000		13	28	23
RM 1000		2	5	14
RM 3000		8	16	17
RM 1000		8	13	20
RM 2000		10	22	24

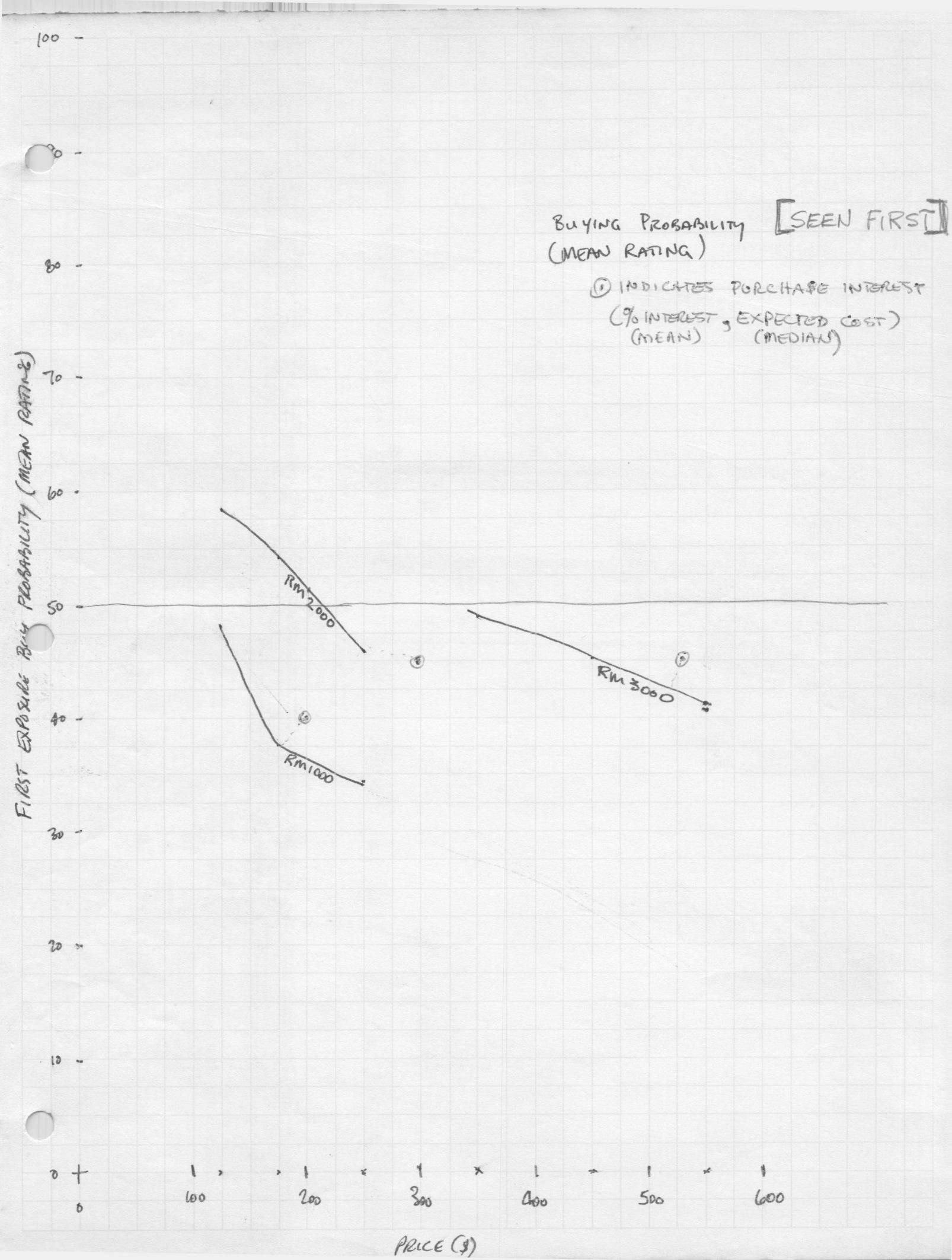
This would show price perception following RM 3000

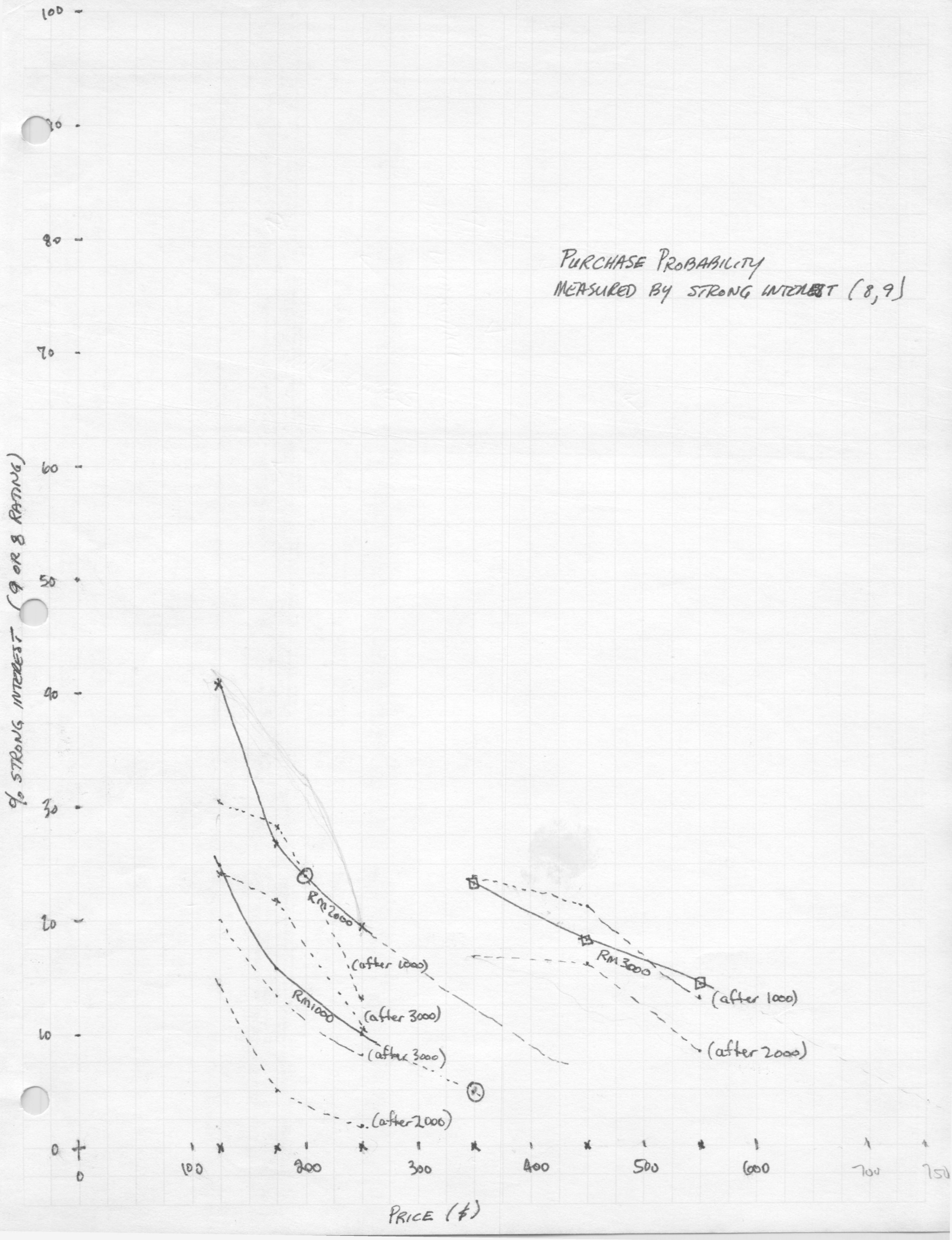
CONCLUSION—

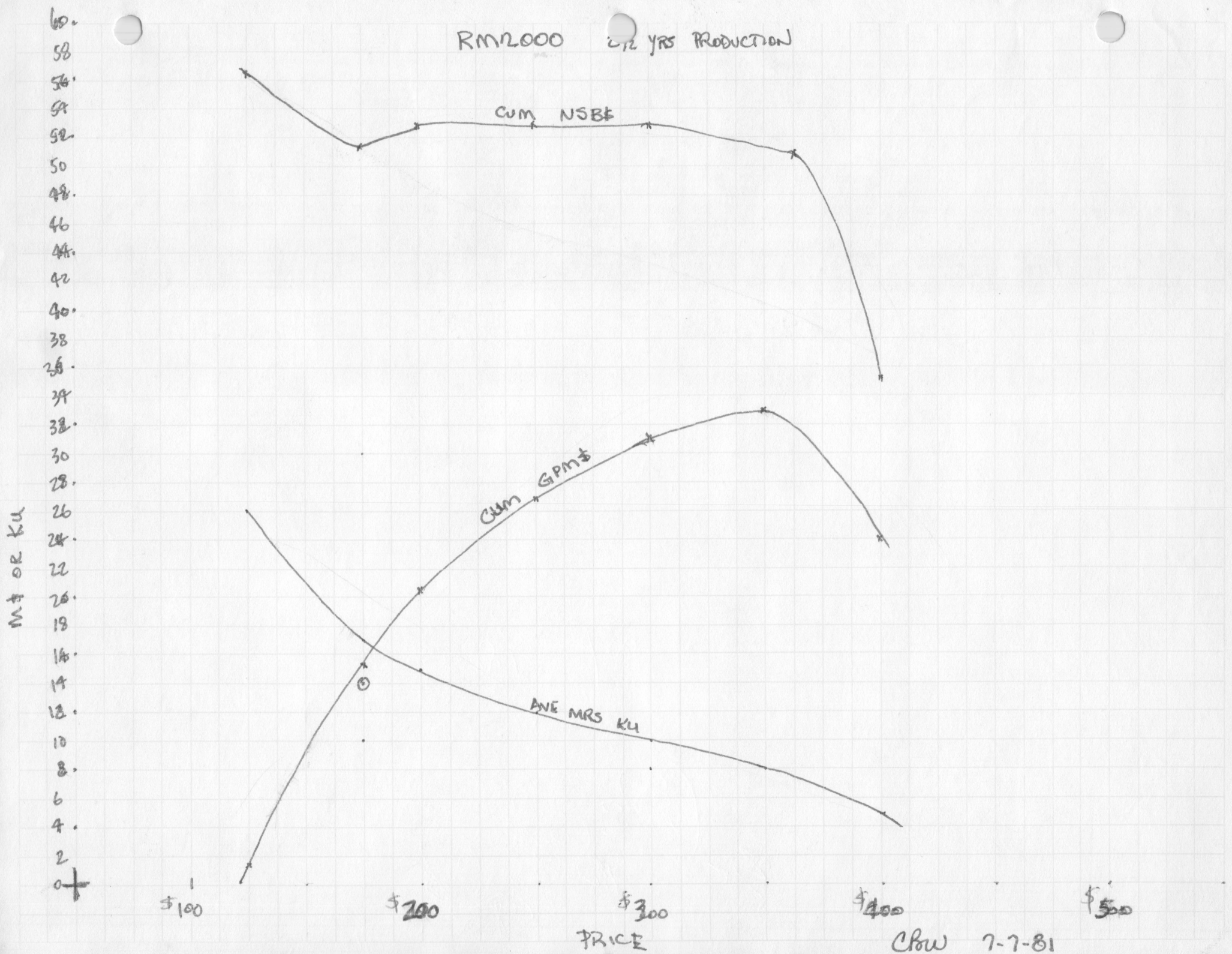
1. Generally liked first concept best
2. 2 - 3x fall off of RM 1000 following 2000
3. Fall off of 1000 following 3000 small — must be perceived as different machines.

			TECH / SCI			STUDENT / PROF			BUS / FINANCE			GENERAL		
			HI	MD	LO	HI	MD	LO	HI	MD	LO	HI	MD	LO
1	RM 1000	MEAN	33.1	37.2	49.7	30.6	40.1	49.0	25.4	27.9	34.4	30.6	34.2	44.4
2	RM 2000	MEAN	43.2	50.9	58.8	41.9	54.0	51.8	39.3	48.0	49.6	44.7	51.0	58.7
3	RM 3000	MEAN	34.8	39.0	46.1	37.3	49.1	48.0	39.4	42.2	42.1	42.3	42.8	49.3
4														
5	RM 1000	8+9	9.0	15.9	25.3	7.6	16.3	25.8	5.0	9.7	16.5	9.0	9.1	22.5
6	RM 2000	8+9	14.9	21.8	38.7	9.7	25.3	40.7	14.8	26.5	32.4	21.0	30.0	40.0
7	RM 3000	8+9	9.7	13.2	18.3	6.0	19.8	23.5	17.5	20.0	17.0	16.0	19.6	26.6
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

OPERATING UNIT: PREPARED BY: DATE:


BUYING PROBABILITY [SEEN FIRST]
(MEAN RATING)
① INDICATES PURCHASE INTEREST
(% INTEREST, EXPECTED COST)
(MEAN) (MEDIAN)
FIRST EXPOSURE BUY PROBABILITY (MEAN RATING)
100
90
80
70
60
50
40
30
20
10
0
RM2000
RM3000
RM1000
0
100
200
300
400
500
600
PRICE ($)


PURCHASE PROBABILITY
MEASURED BY STRONG INTEREST (8,9)
% STRONG INTEREST (9 OR 8 RATING)
100
80
70
60
50
40
30
20
10
0
RM2000
(after 1000)
(after 3000)
RM1000
(after 3000)
(after 2000)
RM3000
(after 1000)
(after 2000)
100
200
300
400
500
600
700
750
PRICE (¢)


RM2000 2½ YRS PRODUCTION
CUM NSBE
CUM GPM$
ANE MRS KU
MM OR KU
60
58
56
54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
$100
$200
$300
$400
$500
PRICE
CRW 7-7-81

PREFERENCE COMPARISON

	RM1000	RM2000	RM3000
RM1000	—	24% / 76%	X
RM2000	X	—	X
RM 3000	71% / 29%	61% / 38%	—

STRENGTH OF PREFERENCE

RM1000	6.37 ± 2(.17)	6.03 – 6.68
RM 2000	6.88 ± 2(.15)	6.54 – 7.02
RM 3000	7.42 ± 2(.09)	7.24 – 7.60

EXPERIENCE WITH COMPUTERS

RM1000 283

RM 2000

RM 3000

BASE = 565 − 5 = (560)

RM2000

$	N(7,8,9)		× P(x) N(x) / ΣN(x)
<100	2	.27	75
100-199	11	2.95	101
200-299	55	52.88	150
300-359	25	15.62	
400-499	13	10.45	
500	21	20.62	
600	9	10.45	
700	7	9.38	
800	4	6.07	
900	3	5.09	
1000-1250	6	12.59	
1251-1500	2	4.91	
>1500	3	8.03	
	161		1.00

WEIGHTED VALUE 159.31 × 3.47 = $554

MRS @

	$350		$175	
.2	2	2	3	3
.4	3		7	
.6	5	16	10	34
1.0	8	—	17	—
1.2	10	47	20	98
1.4	11	31	24	64
1.2	10	—	20	—
1.1	9	56	19	117
1.0	8	25	17	53
1.0	8	—	17	—
		50		100
		100		200
		100		

$350 = 12.5% ≡ 8K
$175 = 27% ≡ 17K

-FEATURE RATING-

		FEATURE		RM 1000	RM 2000	RM 3000
4	1	ALPHA DISPLAY		2	1	1
	2	CONSTANT MEMORY		1	2	2
	3	RAM MODULES		5	3	3
1	4	USE HOME & WORK		3	4	6
	5	LARGE α DISPLAY		4	5	4
	6	CASSETTE MASS STORE	* SF	11	6	7
	7	PROMPTING		6	7	5
	8	SS APPLICATIONS		7	8	9
2	9	CARRY IN BRIEFCASE		9	9	10
3	10	PORTABLE DATA TERMINAL	* MODEM	NA	10	12
	11	PRE PROG MODULES		8	11	11
	12	PRINTER	* RS232	10	12	8
	13					
	14					
	15					
	16					
	17					
	18	OTHERS				
	19	TV DISPLAY	TV	NA	13/20	16/23
	20	LEARN BASIC		NA	17/20	13/23
	21	CARRY IN POCKET		15/17	18/20	NA
	22	LONG BATT LIFE		16/17	19/20	21/23
	23	"TYPEABLE" KEYBOARD		NA	NA	15/23
—	24	VISICALC		NA	NA	19/23
—	25	WORD PROCESSING		NA	NA	20/23
	26	TILT DISPLAY		NA	NA	23/23
	27					
	28					

OPERATING UNIT:

PREPARED BY: CB WILSON

DATE: 6/29/81

TI-9470B

UNIVERSAL PLANNING FORM

(20) * *

			TOTAL MEAN	TOTAL 2SE	TOTAL %9	TOTAL %8	PURCH HI N	PURCH HI 2SE	RANK N	RANK %09	RANK %8+9	RANK HI PURCH		
1	PM 2000 (287)		OVERALL		AVRG INT		7.69	.12						
2	TABLE OF TRIPS		6.41	.32	31	15 46	7.22	.46	16		14	14	14.7	14
3	CARRY BRIEFCASE		6.93	.28	37	17 54	7.56	.42	10		7	10	9	9
4	SCROLL DISPLAY		6.97	.26	32	15 37	7.01	.38	14		19	15	16	16
5	PRINTER		6.74	.28	33	17 51	7.33	.40	11		10	13	11.3	12
6	CONSTANT MEMORY		7.96	.20	57	18 75	8.40	.22	2		2	2	- 2	2
7	ALPHA DISPLAY		8.02	.18	58	17 75	8.48	.22	1		1	1	- 1	1
8	BASIC		6.39	.32	31	14 45	6.55	.48	17		16	19	17.3	17
9	RAM MODULES		7.37	.26	42	21 63	7.80	.36	3		3	5	- 3.7	3
10	CARRY POCKET		6.38	.30	32	10 42	6.91	.46	18		17	17	17.3	18
11	LARGE & DISPLAY		7.34	.22	37	21 58	7.73	.32	4		5	6	- 5	5
12	ALPHA INFO STORE		6.91	.30	29	16 45	6.91	.96	15		15	16	15.3	15
13	CASSETTE MASS MEMORY		7.08	.26	35	21 56	7.96	.28	6		6	3	- 5	6
14	HOME & WORK		7.21	.28	47	15 62	7.85	.38	5		4	4	- 4.3	4
15	250 HR BATT		6.32	.28	25	15 40	6.64	.50	19		18	18	18.3	19
16	BASIC - PERS COMPUTER		5.73	.32	21	14 35	6.19	.52	20		20	20	20	20
17	TV DISPLAY		6.61	.28	28	20 48	7.46	.20	12		12	11	11.7	13
18	PORT DATA TERMINAL		6.56	.30	28	21 49	7.71	.36	13	]	11	9	10.3	10
19	PLUG PROG MODULES		7.01	.22	25	22 47	7.84	.30	7	]	13	12	10.7	11
20	PROMPTING		7.00	.24	30	23 53	7.65	.30	8		8	8	8	7
21	SS APPLICATIONS		6.93	.26	30	22 52	7.62	.38	9		9	9	9	8
22														
23														
24														
25														
26														
27														
28														

OPERATING UNIT:

PREPARED BY: CB WILSON

DATE: 6/29/81

UNIVERSAL PLANNING FORM TI-9470B

			TOTAL MEAN	2S.D.	~~SCORE~~ %9	~~1ST~~ %8	PURCH MI		RANK N	RANK %9	RANK %8+9	RANK HI PURCH	AVG	
1	RM1000 (283)			OVERALL PURCH INT			7.65	.14						
2	TAKE ON TRIPS		6.42	.32	33	13 46	6.81	.64	12		10	12	11.3	12
3	ALPHA DISPLAY		7.27	.26	40	20 60	7.94	.32	4		4	3	3.7	2
4	ALPHA INFO STORE		6.90	.30	28	15 43	6.72	.60	13		13	13	13	13
5	CONST MEMORY		7.71	.22	49	23 72	8.13	.36	1		1	1	1	1
6	LARGE ~~AR~~ DISPLAY		7.51	.22	41	22 63	7.40	.46	2		2	9	4.3	4
7	RAM MODULE		7.09	.26	40	15 55	8.00	.36	6		5	2	4.3	5
8	CARRY IN BRIEFCASE		6.96	.26	36	17 53	7.52	.50	9		7	7	7.7	9
9	SINGLE KEYSTROKES		5.72	.34	25	14 39	6.24	.68	17		15	17	16.3	17
10	CASSETTE MASS STORE		6.53	.28	29	14 43	7.34	.46	11		12	10	11	11
11	HOME $ WORK		7.35	.26	46	14 60	7.69	.52	3		3	6	4	3
12	PRE PROG MODULES		6.98	.24	31	18 49	7.70	.34	8		8	5	7	8
13	PRINTER		6.61	.28	28	16 44	6.94	.96	10		11	11	10.7	10
14	CARRY POCKET		6.17	.32	28	15 43	6.4	.68	15		14	16	15	15
15	DISPLAY SCROLL		6.20	.28	18	17 35	6.5	.56	14		16	15	15	14
16	S.S. APPLICATIONS		6.99	.24	28	20 48	7.84	.32	7		9	4	6.7	7
17	250 HR BATT		5.91	.30	21	12 33	6.57	.60	16		17	14	15.7	16
18	PREMPTING		7.14	.24	32	22 54	7.45	.42	5		6	8	6.3	6
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

OPERATING UNIT:

PREPARED BY: CB WILSON

DATE: 6/29/87

23

			TOTAL N	TOTAL 2SE	%9	%8	PURCH HI N	PURCH HI 2SE	RANK N	RANK %9	RANK %8+9	RANK HI PURCH	AVE	
1	RM 3000 (287)			OVERALL			7.74	.12						
2	TAKE ON TRIPS		6.08	.32	27	13 40	6.69	.58	20		18	19	19	18
3	ALPHA DISPLAY		8.10	.16	55	23 78	8.99	.18	1		1	1	1 1	1
4	LEARN BASIC		6.76	.28	32	20 52	7.12	.52	13		10	15	12.7	13
5	RAM MODULE		7.27	.24	33	24 57	7.79	.38	5		5	3	4 4.3	3
6	CONST MEMORY		7.98	.18	56	18 74	8.00	.34	2		2	2	2 2	2
7	LARGE L DISPLAY		7.46	.20	39	20 59	7.99	.40	3		3	10	3 5.3	4
8	PROMPTING		7.33	.22	34	23 57	7.51	.36	4		4	9 ?	5 5.7	5
9	WORD PROCESSING		6.21	.28	20	14 24	6.64	.46	18		21	21	20	20
10	CARRY BRIEFCASE		6.81	.28	36	12 48	7.72	.38	11		13	4	?! 9.3	10
11	SCROLL DISPLAY		6.76	.24	25	19 44	7.45	.50	12		17	11	13.3	14
12	PRINTER		7.21	.24	37	20 57	7.31	.44	6		6	13	6 8.3	8
13	CASSETTE MASS STORE		7.17	.26	35	22 57	7.56	.38	7		7	7	7 7	7
14	HOME & WORK		7.08	.26	40	16 56	7.71	.46	8		8	5	8 7	6
15	PRE PROG MODULES		6.88	.24	27	18 45	7.65	.38	10		16	6	10 10.7	10
16	TILT DISPLAY		6.02	.28	18	14 32	6.47	.46	22		22	22	22	23
17	S.S. APPLICATIONS		7.03	.26	32	22 54	7.52	.42	9		9	8	9 8.7	9
18	DATA TERMINAL		6.75	.28	30	21 51	7.35	.42	14		11	12	12 12.3	12
19	TWO HAND KYBD		6.65	.28	31	18 49	6.99	.50	15		12	17	14.7	15
20	ALPHA INFO STORE		6.63	.28	32	16 48	6.85	.50	16		14	18	16	17
21	TABLE COMP		6.14	.26	15	16 31	7.04	.40	19		23	16	19.3	19
22	250 HR BATT		6.06	.28	18	20 38	6.17	.52	21		19	23	21	21
23	BASIC-PERS COMPUTER		5.85	.32	20	17 37	6.66	.60	23		20	20	21	22
24	TV DISPLAY		6.54	.30	30	17 47	7.25	.52	17		15	14	15.3	16
25														
26														
27														
28														

OPERATING UNIT:

PREPARED BY: CB NELSON

DATE: 4/29/81

T1-9470B

UNIVERSAL PLANNING FORM

		789 SAW 2000	789 SAW 3000	WELL DEF USE	789 SAW 2000	WELL DEF USE	CHOOSE 2000	CHOOSE 3000	789 SAW 2000	WELL DEF USE	789 SAW 3000	WELL DEF USE	CHOOSE 2000	CHOOSE 3000
1		[illegible]												
2			1101E						1016E	H				
3			1166E						1024E	H				
4			1159E						1011E	H				
5			1107E						1038E	H				
6			1053E	H	5	H			1064E	H				
7			1026E		7	H	Smaller		1062E	H				
8			1031E	H	5	H		Memory	1058E	H				
9			1019E	H L					1071E	H				
10			1049E	H					1055E	H				
11			2036E		8	H			1070E	H				
12			2061E	H	7	H			1056E	H				
13			2069E	Q					2073E	H				
14			2066E	H					2072C	L				
15			2014E	H					2064C	H				
16			2039E	H	9	H PRICE			2040C	H				
17			2028E	H					2051C	H				
18	USES SLIDE RULE		2009C	H	1	Q Toy		Power	2068C	H				
19			2080C						2020C	H				
20			2144C						2029C	H				
21			1089C						2062C	H				
22			3190B	H					2003C	H				
23			3138B						3067B	H				
24			3147B						3112B	H				
25			3141B	H					4189G	H				
26			3012B						4045G	H				
27			3112B		1	H NOT UNIQUE			4034G	H				
28			3063B	Q					4036G	H				

OPERATING UNIT: | PREPARED BY: | DATE:

T1-9470B

UNIVERSAL PLANNING FORM

1			4183G	H					4044G	H				
2			4046G	H					4029G	H				
3			4030G	H	3	H DISP SIZE			4052G	H				
4			4028G	H					4063G	H				
5			4041G	Q	4	H SIZE			4073G	H				
6			4048G	H	9	H SMALL			4053G	H				
7			4065G	H	3	Q TOY			4070G	H				
8			4071G		3	H DISPLAY			4019G	H				
9			4082G	H					4322G	H				
10			4007G	H					3119G	H				
11			4004G	H					4093G	H				
12			3112G						4091G	H				
13			4015G	H					4003G	H				
14			4010G	H					4100G	H				
15									4097G	H				
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

OPERATING UNIT: PREPARED BY: DATE:

2000 VS 3000 FROM VERBATIMS

				PREFER 2000		PREFER 3000			PREFER 2500		PREFER 3000			
1				𝍸		𝍸			𝍸		𝍸			
2				𝍸		𝍸			𝍸		𝍸			
3				𝍸		𝍸			𝍸	1	𝍸			
4				𝍸		𝍸			𝍸	11	𝍸			
5				𝍸		𝍸			𝍸	1	𝍸			
6				𝍸		𝍸			𝍸	1	𝍸			
7				𝍸		𝍸			𝍸	1	𝍸			
8				𝍸		𝍸			𝍸	1	𝍸			
9				1		𝍸			1		𝍸			
10						𝍸			1		𝍸			
11						𝍸			1111		1111			
12						𝍸								
13						𝍸								
14						1								
15														
16														
17				41		66	(107)		53		54	(107)		
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

OPERATING UNIT: PREPARED BY: DATE:

Memo
from

C. B. WILSON

RM 3000	1ST	AFTER RM1000	AFTER RM 2000
$550	41	38	33
450	46	47	39
350	48	46	44

RM ~~2~~000	1ST	AFTER RM 1000	AFTER RM 3000
$250	~~46~~	~~46~~	35
$125	54	50	46
$125	58	59	5~~9~~

RM 1000	1ST	AFTER RM2000	AFTER RM3000
250	33	22	31
125	~~37~~	28	35
125	~~48~~	35	45

TEXAS INSTRUMENTS
INCORPORATED

RECEIVED
JUN 29 1981
PETER BONFIELD

M E M O R A N D U M

June 29, 1981

TO: Pete Bonfield

COPY: Jack Wolbrink
Johnny Barrett
Darrell Whitten
Dan Enzone

FROM: John Dale

SUBJECT: TI-86 VS 702P ON MORTON MARKET SIMULATION MODEL

PLEASE GET WITH C.B. WILSON TO LOOK AT LATEST SURVEY ON ALC. I THINK THIS DATA IS NOW GETTING OUT OF DATE AND SHOULD NOT BE RELIED ON TO CC C.B.

The features of the Casio 702P were input to the Morton model. Three simulations were run.

1. TI-86 @ $250
   Sharp PC-1211 @ $250
   Casio 702P @ $200

2. TI-86 @ $200
   Sharp PC-1211 @ $250
   Casio 702P @ $200

3. TI-86 @ $200
   Sharp PC-1211 @ $200
   Casio 702P @ $200 with accessory 16 column printer available

The results are attached and show that a Basic operating system alone does not attract users. It also shows in the difference between #1 and #2 that a price cut by TI has more of an impact than a price cut by Sharp.

In simulation #3, the addition of printer availability increased Casio's marketshare by .5% reinforcing the original promise that no one feature of any machine is strong enough to have a severe effect on competition in the programmable marketplace. A successful programmable product is a compilation of operating system, display, off-line storage, software, peripheral capability and brand awareness. Casio is lacking in off-line storage, software, peripherals and brand awareness.

We must introduce the TI-86 on time to prevent a reversal of this situation.

Regards,

John Dale /lg

John Dale

CALCULATOR PRODUCTS DIVISION

MODEL	PRICE	MARKET SHARE	PRICE	MARKET SHARE	PRICE	MARKET SHARE
SHARP PC-1211	$250	8.9	$200	9.0	$200	9.0
TI-58C	$80	8.3	$80	8.2	$80	8.1
TI-59	$200	8.2	$200	8.0	$200	8.0
TI-86	$250	13.0	$200	14.3	$200	14.2
TI-66	$90	6.5	$90	6.4	$90	6.4
TI-76	$150	8.3	$150	8.1	$150	8.1
HP-67	$310	4.8	$310	4.7	$310	4.7
HP-97	$595	2.9	$595	2.8	$595	2.8
HP-41C	$200	12.1	$200	12.1	$200	11.8
HP-41CV	$325	11.5	$325	11.3	$325	11.3
CASIO 602P	$145	8.2	$145	8.1	$145	8.0
CASIO 702P	$200	7.3	$200	7.2	$200	7.7

P-V analysis 7/7/81 $125 41% (12.5% = 8K)

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	10.83	0.83	0.41	0.27	0.20
TOT MOH			7.80	39.64	67.71	22.26	9.57	8.34	7.74	7.57
*										
WARRANT							9.00	93.60	306.00	280.80
STORE R						0.30	3.12	10.20	9.36	18.72
RMR SCR						2.25	22.43	67.81	57.83	108.09
RMR MAT						3.21	32.05	96.88	82.61	154.41
RMR RES										
FRT/DUT						6.42	64.09	193.75	165.22	308.83
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	87.18	130.69	462.24	621.02	870.85
OOH/UNI			80.00	80.00	100.00	17.44	2.51	2.72	3.98	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						12.33	8.93	8.23	7.82	7.27
*										
COB			87.80	119.64	167.71	124.39	90.11	83.08	78.89	73.38
*										
AUP						81.25	81.25	81.25	81.25	81.25
*										
GPM	GPM 1.9M		-87.8	-119.6	-167.7	-215.7	-460.8	-311.4	368.59	2455.4
GPM %						-53.10	-10.91	-2.25	2.91	9.69
*										
RETAIL						125	125	125	125	125
RET GPM						35.00	35.00	35.00	35.00	35.00
*	NSB 56.49	1.9M								
MRS					0.00	5.00	52.00	170.00	156.00	312
CUM MRS					0.00	5.00	57.00	227.00	383	695

P-V analysis $175

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	18.06	1.27	0.59	0.42	0.31
TOT MOH			7.80	39.64	67.71	29.48	10.01	8.52	7.89	7.68
*										
WARRANT							5.40	61.20	210.60	180.00
STORE R						0.18	2.04	7.02	6.00	12.00
RMR SCR						1.35	14.67	46.67	37.07	69.29
RMR MAT						1.93	20.95	66.67	52.96	98.98
RMR RES										
FRT/DUT						3.85	41.91	133.35	105.91	197.96
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	82.31	84.97	314.91	412.54	558.23
OOH/UNI			80.00	80.00	100.00	27.44	2.50	2.69	4.13	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						14.22	8.98	8.25	7.85	7.28
*										
COB			87.80	119.64	167.71	143.51	90.59	83.26	79.21	73.50
*										
AUP						113.75	113.75	113.75	113.75	113.75
*										
GPM			-87.8	-119.6	-167.7	-89.29	787.61	3567.7	3453.7	8049.1
GPM %						-26.16	20.36	26.81	30.36	35.38
*										
RETAIL						175	175	175	175	175
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS					0.00	3.00	34.00	117.00	100.00	200
CUM MRS					0.00	3.00	37.00	154.00	254	454

GPM 15.40

NSB 51.64

P-V analysis 7/7/81 $200 23% (12.5% = 8%)

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	18.06	1.44	0.67	0.46	0.35
TOT MOH			7.80	39.64	67.71	29.48	10.18	8.60	7.93	7.72
*										
WARRANT							5.40	54.00	185.40	162.00
STORE R						0.18	1.80	6.18	5.40	10.80
RMR SCR						1.35	12.94	41.09	33.36	62.36
RMR MAT						1.93	18.49	58.70	47.66	89.08
RMR RES										
FRT/DUT						3.85	36.98	117.39	95.32	178.17
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	82.31	75.60	277.35	367.14	502.41
OOH/UNI			80.00	80.00	100.00	27.44	2.52	2.69	4.08	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						14.22	9.00	8.26	7.85	7.29
*										
COB			87.80	119.64	167.71	143.51	90.80	83.35	79.21	73.54
*										
AUP						130	130	130	130	130
*										
GPM	GPM 20.30		-87.8	-119.6	-167.7	-40.54	1176.1	4805.2	4570.8	10162.
GPM %						-10.39	30.16	35.89	39.07	43.43
*										
RETAIL						200	200	200	200	200
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS	NSB 52.78				0.00	3.00	30.00	103.00	90.00	180
CUM MRS					0.00	3.00	33.00	136.00	226	406

P-V analysis 7/7/81 $250 19% (12.5% = 8K)

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	27.08	1.81	0.82	0.58	0.43
TOT MOH			7.80	39.64	67.71	38.51	10.54	8.75	8.05	7.80
*										
WARRANT							3.60	43.20	153.00	129.60
STORE R						0.12	1.44	5.10	4.32	8.64
RMR SCR						0.90	10.35	33.91	26.69	49.89
RMR MAT						1.28	14.79	48.44	38.13	71.27
RMR RES										
FRT/DUT						2.57	29.58	96.88	76.26	142.53
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	79.87	59.76	227.52	298.40	401.93
OOH/UNI			80.00	80.00	100.00	39.94	2.49	2.68	4.14	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						16.59	9.03	8.27	7.87	7.30
*										
COB			87.80	119.64	167.71	167.41	91.16	83.49	79.41	73.64
*										
AUP						162.5	162.5	162.5	162.5	162.5
*										
GPM	GM		-87.8	-119.6	-167.7	-9.817	1712.0	6716.0	5982.2	12796.
GPM %	26.82					-3.021	43.90	48.62	51.13	54.68
*										
RETAIL						250	250	250	250	250
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS	NSB 53.14			1.4M	0.00	2.00	24.00	85.00	72.00	144
CUM MRS					0.00	2.00	26.00	111.00	183	327

P-V analysis 7/9/81 $300 16% (12.5% = 8K)

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	27.08	2.17	1.00	0.69	0.52
TOT MOH			7.80	39.64	67.71	38.51	10.90	8.94	8.16	7.89
*										
WARRANT							3.60	36.00	124.20	108.00
STORE R						0.12	1.20	4.14	3.60	7.20
RMR SCR						0.90	8.63	27.52	22.24	41.57
RMR MAT						1.28	12.33	39.32	31.77	59.39
RMR RES										
FRT/DUT						2.57	24.65	78.64	63.55	118.78
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	79.87	50.40	185.63	245.36	334.94
OOH/UNI			80.00	80.00	100.00	39.94	2.52	2.69	4.09	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						16.59	9.08	8.30	7.88	7.31
*										
COB			87.80	119.64	167.71	167.41	91.60	83.71	79.48	73.74
*										
AUP						195	195	195	195	195
*										
GPM			-87.8	-119.6	-167.7	55.183	2068.0	7678.8	6931.1	14552.
GPM %						14.150	53.03	57.07	59.24	62.19
*										
RETAIL						300	300	300	300	300
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS					0.00	2.00	20.00	69.00	60.00	120
CUM MRS					0.00	2.00	22.00	91.00	151	271

GPM 30.91

NSB 52.84

P-V Analysis $350

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	27.08	2.71	1.24	0.83	0.62
TOT MOH			7.80	39.64	67.71	38.51	11.44	9.17	8.30	8.00
*										
WARRANT							3.60	28.80	100.80	90.00
STORE R						0.12	0.96	3.36	3.00	6.00
RMR SCR						0.90	6.90	22.34	18.53	34.64
RMR MAT						1.28	9.86	31.91	26.48	49.49
RMR RES										
FRT/DUT						2.57	19.72	63.82	52.96	98.98
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	79.87	41.04	150.23	201.77	279.12
OOH/UNI			80.00	80.00	100.00	39.94	2.57	2.68	4.04	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						16.59	9.14	8.32	7.89	7.32
*										
COB			87.80	119.64	167.71	167.41	92.25	83.96	79.58	73.85
*										
AUP						227.5	227.5	227.5	227.5	227.5
*										
GPM	GPM 32.71		-87.8	-119.6	-167.7	120.18	2164.0	8038.1	7396.2	15365.
GPM %						26.414	59.45	63.09	65.02	67.54
*										
RETAIL	NSB 50.96					350	350	350	350	350
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS					0.00	2.00	16.00	56.00	50.00	100
CUM MRS					0.00	2.00	18.00	74.00	124	224

P-V analysis 7/7/81 $400 8% (12.5% = 8K)

MONTH	QTY	PRICE	4Q 81	1Q 82	2Q 82	3Q 82	4Q 82	1H 83	2H 83	YR 84
CPU-MLP	1.00	6.50				6.50	6.00	5.80	5.50	5.00
RAM 2K	1.00	9.00				9.00	8.00	8.00	7.50	7.00
SROM 16	1.00	7.00				7.00	7.00	6.50	5.75	5.50
DECODE	1.00	5.50				5.50	5.50	5.00	4.50	4.00
LCD CON	1.00	7.00				7.00	7.00	6.50	5.50	4.50
LCD DRI	1.00	3.94				3.94	3.94	3.50	3.50	3.50
LCD	1.00	9.00				9.00	8.00	6.00	5.50	5.00
KEYBOAR	1.00	3.50				3.50	3.50	3.25	3.00	3.00
PCB	1.00	2.50				2.50	2.50	2.50	2.50	2.50
XTAL	1.00	0.80				0.80	0.80	0.80	0.80	0.80
XISTOR	1.00	0.10				0.10	0.10	0.10	0.10	0.10
DIODE	5.00	0.02				0.10	0.10	0.10	0.10	0.10
RES	15.00	0.01				0.15	0.15	0.15	0.15	0.15
CAP	4.00	0.05				0.20	0.20	0.20	0.20	0.20
PLASTIC	4.00	0.07				0.28	0.28	0.28	0.28	0.28
BATTERI	1.00	0.45				0.45	0.45	0.45	0.45	0.45
PIEZO	1.00	0.50				0.50	0.50	0.50	0.50	0.50
CONN	4.00	0.20				0.80	0.80	0.80	0.80	0.80
MECH	5.00	0.30				1.50	1.50	1.40	1.30	1.20
MISC	1.00	1.00				1.00	1.00	1.00	1.00	1.00
PACK	1.00	2.50				2.50	2.50	2.50	2.50	2.50
ADDER						0.31	0.30	0.28	0.26	0.24
USAGE						0.62	0.60	0.55	0.51	0.48
YEN PPV						0.96	0.91	0.83	0.76	0.69
TOT MAT						64.21	61.63	56.99	52.96	49.49
*										
LABOR H						1.60	1.20	1.03	0.92	0.81
LABOR R						5.10	5.20	5.50	5.80	6.50
LABOR$						8.16	6.24	5.67	5.34	5.27
*										
CAP TLG			39	167.00	180.00					
MOLD DE			7.80	39.64	67.71	54.17	43.34	69.34	41.60	62.40
CUM CAP			31.20	158.56	270.85	216.68	173.34	104.01	62.40	0.00
*										
APP OH						11.42	8.74	7.93	7.47	7.37
MOLD DE			7.80	39.64	67.71	54.17	4.33	1.98	1.39	1.04
TOT MOH			7.80	39.64	67.71	65.59	13.07	9.91	8.86	8.41
*										
WARRANT							1.80	18.00	63.00	54.00
STORE R						0.06	0.60	2.10	1.80	3.60
RMR SCR						0.45	4.31	13.96	11.12	20.79
RMR MAT						0.64	6.16	19.95	15.89	29.69
RMR RES										
FRT/DUT						1.28	12.33	39.89	31.77	59.39
PCC TOO			80.00	80.00	100.00	75.00				
TOT OOH			80.00	80.00	100.00	77.44	25.20	93.90	123.58	167.47
OOH/UNI			80.00	80.00	100.00	77.44	2.52	2.68	4.12	2.79
COST AD							1.23	1.14	1.06	0.99
PROD SU						23.69	9.32	8.40	7.96	7.36
*										
COB			87.80	119.64	167.71	239.10	94.00	84.79	80.28	74.31
*										
AUP						260	260	260	260	260
*										
GPM	GPM 23.97		-87.8	-119.6	-167.7	20.903	1660.0	6132.4	5391.5	11141.
GPM %						8.0394	63.84	67.39	69.12	71.42
*										
RETAIL						400	400	400	400	400
RET GPM						35.00	35.00	35.00	35.00	35.00
*										
MRS	NSB 35.36				0.00	1.00	10.00	35.00	30.00	60
CUM MRS					0.00	1.00	11.00	46.00	76	136

>>SUBMIT REPORT

QUESTION NUMBER 1: YOUR AGE

	TOTAL	PERCENT
A. UNDER 25	253	.113964
B. 25-35	656	.295496
C. 36-45	586	.263964
D. 46-OLDER	723	.325676

QUESTION NUMBER 2: HIGHEST LEVEL OF EDUCATION COMPLETED

	TOTAL	PERCENT
A. SOME HIGH SCHOOL	15	6.75676E-03
B. HIGH SCHOOL GRADUATE	47	2.11712E-02
C. TRADE/VOCATIONAL SCHOOL	43	1.93694E-02
D. SOME COLLEGE	400	.18018
E. COLLEGE DEGREE	972	.437838
F. MASTER'S	502	.226126
G. PHD	237	.106757

QUESTION NUMBER 3: AREA OF COLLEGE MAJOR OR VOCATIONAL TRANING
(MAY HAVE MORE THAN ONE ANSWER PER SURVEY)

	TOTAL	PERCENT
A. BUSINESS	430	.193694
B. SCIENCE	508	.228829
C. ENGINEERING	1271	.572523
D. MATH	313	.140991
E. COMPUTER SCIENCE	234	.105405
F. OTHER	0	0
1. PHYSICS/CHEMISTRY	14	6.30631E-03
2. BIOLOGICAL SCIENCE	8	3.60360E-03
3. OTHER SCIENCES	8	3.60360E-03
4. LAW	21	9.45946E-03
5. ECONOMICS	24	1.08108E-02
6. EDUCATION	20	9.00901E-03
7. ART AND ARCHITECTURE	41	1.84685E-02
8. ACCOUNTING	7	3.15315E-03
9. MARKETING	0	0
10. HOME ECO	1	4.50450E-04
11. MEDICINE	43	1.93694E-02
12. DENTISTRY	0	0
13. VETERINARY	2	9.00901E-04
14. NURSING	0	0
15. LIBERAL ARTS	21	9.45946E-03
16. SOCIAL SCIENCES	34	1.53153E-02
17. TRADE SCHOOL	8	3.60360E-03
18. OTHER	89	4.00901E-02

QUESTION NUMBER 4:
IN WHAT BUSINESS OR OCCUPATIONAL FIELD ARE YOU PRESENTLY EMPLOYED?

	TOTAL	PERCENT
A. SALES(IN STORE)	33	1.48649E-02
B. SALES (OUT OF STORE)	13	5.85586E-03
C. MANAGERIAL	82	3.69369E-02
D. ADMINISTRATIVE	15	6.75676E-03
E. ENGINEER	835	.376126
F. DESIGNER/ARCHITECT	41	1.84685E-02
G. MEDICAL PROFESSIONAL	65	2.92793E-02
H. LAW PROFESSIONAL	10	4.50450E-03
I. SMALL BUSINESS OWNER	8	3.60360E-03
J. EDUCATION	107	4.81982E-02
K. PUBLIC SERVICE	23	1.03604E-02
L. REAL ESTATE/INSURANCE	42	1.89189E-02
M. TRANSPORTATION	10	4.50450E-03
N. ACCOUNTANT	59	2.65766E-02
O. FINANCIAL ANALYST	29	1.30631E-02
P. MILITARY	48	2.16216E-02
Q. BANKING	14	6.30631E-03
R. HOMEMAKER	0	0
S. STUDENT	108	4.86487E-02
T. LABORER	2	9.00901E-04
U. SKILLED CRAFTSMAN/FMN	19	8.55856E-03
V. OTHER	348	.156757
W. COMPUTER SCIENCE	75	3.37838E-02
X. MANUFACTURING	76	3.42342E-02
Y. CHEMISTRY/SCIENCE	44	1.98198E-02
Z. CONSTRUCTION	7	3.15315E-03

QUESTION NUMBER 5:

INDICATE WITH A CHECK WHICH OF THE FOLLOWING CLASSIFICATIONS YOUR EMPLOYER OR COMPANY FALLS INTO

	TOTAL	PERCENT
A. MANUFACTURING	686	.309009
B. WHOLESALE/RETAIL	129	5.81081E-02
C. BANKING	25	1.12613E-02
D. INSURANCE	43	1.93694E-02
E. ACCOUNTING	60	2.70270E-02
F. REAL ESTATE/INVESTMENT	59	2.65766E-02
G. OTHER FINANCIAL	39	1.75676E-02
H. TRANSPORTATION	76	3.42342E-02
I. ENGINEERING	642	.289189
J. RESEARCH	338	.152252
K. LEGAL SERVICES	20	9.00901E-03
L. ADVERTISING	24	1.08108E-02
M. GOVERNMENT/SCHOOLS	339	.152703
N. ARCHITECTURE/DESIGN ENG	129	5.81081E-02
O. CONSULTING	179	8.06306E-02
P. HEALTH SERVICES	114	5.13513E-02
Q. EDUCATIONAL SERVICES	114	5.13513E-02
R. MILITARY SERVICE	89	4.00901E-02
S. PUBLIC SERVICE	74	3.33333E-02
T. COMPUTER	140	6.30631E-02
U. POSTAL SERVICE	4	1.80180E-03
V. COMMUNICATION	103	4.63964E-02
W. OIL/GAS PROCUCTION	97	4.36937E-02
X. OTHER ENERGY PRODUCTION	61	2.74775E-02
Y. FARMING/RANCHING	37	1.66667E-02
Z. OTHER	179	8.06306E-02

QUESTION NUMBER 6:
HOW MANY EMPLOYEES DOES YOUR COMPANY HAVE?

	TOTAL	PERCENT
A. 1-5	271	.122072
B. 6-10	88	3.96396E-02
C. 11-25	106	4.77477E-02
D. 26-100	227	.102252
E. 101-200	139	6.26126E-02
F. 201-500	211	9.50450E-02
G. 501-1000	145	6.53153E-02
H. MORE THAN 1000	885	.398649

QUESTION NUMBER 7:
WHICH, IF ANY, OF THE FOLLOWING PAKETTES DO YOU OWN?
PLEASE INDICATE OWNERSHIP AND GIVE US YOUR OPINION OF THEM
BY ASSIGNING A RATING VALUE BETWEEN 1 AND 10 AS DESCRIBED BELOW.

	TOTAL	PERCENT	AVERAGE RATING
A. SECURITIES	182	8.19820E-02	6.51648
B. STATISTICAL TESTING	318	.143243	7.00314
C. CIVIL ENGINEERING	130	5.85586E-02	6.26154
D. ELECTRONIC ENGINEERING	264	.118919	6.63258
E. BLACKBODY	36	1.62162E-02	5.27778
F. OIL/GAS/ENERGY	63	2.83784E-02	5.11111
G. PRINTER UTILITY	397	.178829	6.48111
H. ASTROLOGY	53	2.38739E-02	4.86792
I. PROGRAMMING AIDS	215	9.68468E-02	6.4186
J. 59 FUN	235	.105856	6.45106
K. 3D GRAPHICS	109	4.90991E-02	5.91743
L. MATHEMATICS	226	.101802	7.41593
M. FLUID DYNAMICS	110	4.95495E-02	6.59091
N. LAB CHEMISTRY	77	3.46847E-02	6.15584
O. MARKETING/SALES	75	3.37838E-02	6.09333
P. PRODUCTION PLANNING	67	3.01802E-02	5.98507
Q. QUALITY ASSURANCE I	19	8.55856E-03	6.78947
R. QUALITY ASSURANCE II	15	6.75676E-03	7.06667

QUESTION NUMBER 8:
IF THE FOLLOWING PAKETTES WERE OFFERED,WHICH ONES WOULD YOU BE INTERESTED IN PURCHASING?(THEY WOULD BE COMPOSED OF THE MOST POPULAR PPX PROGRAMS.)

	TOTAL	PERCENT
A. CHEMICAL ENGINEERING	226	.101802
B. PHOTOGRAPHY	401	.180631
C. ADVERTISING	80	3.60360E-02
D. 59 FUN 2	403	.181532
E. HEATING, AIR CONDITIONING	370	.166667
F. OPTICS	182	8.19820E-02
G. LAB CHEMISTRY II	153	6.89189E-02
H. STRUCTURAL ENGINEERING	397	.178829
I. FLUID DYNAMICS II	263	.118468
J. HEAT TRANSFER	368	.165766
K. REGRESSION/CURVE FIT	817	.368018
L. CATEGORY	TOTAL	PERCENT
1	12	5.40541E-03
2	23	1.03604E-02
3	5	2.25225E-03
4	13	5.85586E-03
5	9	4.05405E-03
6	7	3.15315E-03
7	42	1.89189E-02
8	15	6.75676E-03
9	10	4.50450E-03

QUESTION NUMBER 9:
NOT ANALYZED ON THIS REPORT

QUESTION NUMBER 10:

WHAT PROGRAM(S) WOULD YOU BE INTERESTED IN PURCHASING IF WE COULD MAKE THEM AVAILABLE THROUGH PPX? PLEASE BE SPECIFIC. ATTACH A PAGE IF NECESSARY.(THE MOST REQUESTED PROGRAMS WILL BE PLACED UNDER 'PROGRAMMING CORNER'.

PROGRAM CATEGORY	TOTAL	PERCENT
1	16	7.20721E-03
2	5	2.25225E-03
3	11	4.95495E-03
4	2	9.00901E-04
5	2	9.00901E-04
6	26	1.17117E-02
7	5	2.25225E-03
8	9	4.05405E-03
9	21	9.45946E-03

QUESTION NUMBER 11:

HAVE YOU PURCHASED ANY PROGRAMS IN THE LAST TWELVE MONTHS?(NOT INCLUDING YOUR COMPLIMENTARY PROGRAMS).

YES	627	.282432
NO	1534	.690991

QUESTION NUMBER 12:
WHICH OF THE FOLLOWING SERVICES WOULD YOU LIKE TO SEE PPX OFFER?

	TOTAL	PERCENT
A. WIRE SERVICE TO TERMINAL	216	9.72973E-02
B. ADVANCED MANUAL	1441	.649099
C. REFERENCE BOOKS	1053	.474324
D. CARRYING CASE FOR MODULES	733	.33018
E. NEW PRODUCT ANNOUNCEMENTS	967	.435586
F. OTHER	0	0
1	56	2.52252E-02
2	6	2.70270E-03
3	30	1.35135E-02
4	38	1.71171E-02
5	11	4.95495E-03
6	15	6.75676E-03

QUESTION NUMBER 13:
DO YOU OWN A PERSONAL COMPUTER?

YES.....
NO.....

WHAT BRAND AND MODEL IS IT?

	TOTAL	PERCENT
1.APPLE.....	114	5.13513E-02
2.RADIO SHACK.....	155	6.98198E-02
3.TI-99/4.....	25	1.12613E-02
4.PET/COMMODORE.....	11	4.95495E-03
5.OHIO SCIENTIFIC.....	5	2.25225E-03
6.HEATH.....	22	9.90991E-03
7.NORTH STAR HORIZON.....	6	2.70270E-03
8.SINCLAIR.....	21	9.45946E-03
9.Z-80 SELF BUILT.....	10	4.50450E-03
10.COMPUCORP.....	0	0
11.VECTOR.....	3	1.35135E-03
12.OTHER.....	88	3.96396E-02

DO YOU HAVE IT AT HOME OR AT WORK, OR SOME OTHER PLACE?

	TOTAL	PERCENT
1.HOME.....	345	.155405
2.WORK.....	94	4.23423E-02
3.OTHER.....	4	1.80180E-03

QUESTION NUMBER 14:
DO YOU HAVE ACCESS TO A DATA TERMINAL, EITHER AT WORK OR AT HOME?

	TOTAL	PERCENT
YES, AT WORK.....	1276	.574775
YES, AT HOME.....	41	1.84685E-02
NO.....	803	.361712

QUESTION NUMBER 15:

WHAT DO YOU FEEL WOULD BE A REASONABLE FEE TO PAY TO BE ABLE TO ACCESS PPX PROGRAMS VIA A DATA TERMINAL OR A FASCIMILE MACHINE

	TOTAL	PERCENT
BY THE SECOND	16	7.20721E-03
BY THE MINUTE	2	9.00901E-04
BY THE HOUR	202	9.09910E-02
BY THE YEAR	75	3.37838E-02
BY THE PROGRAM	98	4.41441E-02
BY THE MONTH	2	9.00901E-04
BY THE PAGE	2	9.00901E-04

	TOTAL	PERCENT
LESS THAN $5.00	146	6.57658E-02
BETWEEN $5 AND $10	80	3.60360E-02
BETWEEN $10 AND $20	49	2.20721E-02
BETWEEN $20 AND $30	39	1.75676E-02
BETWEEN $30 AND $50	39	1.75676E-02
BETWEEN $50 AND $75	3	1.35135E-03
BETWEEN $75 AND $100	6	2.70270E-03
BETWEEN $100 AND $150	2	9.00901E-04
MORE THAN $150	12	5.40541E-03

QUESTION NUMBER 16:
PROGRAMMABLE CALCULATORS ARE BECOMING MORE VERSATILE AND MORE POWERFUL EACH YEAR. HOW IMPORTANT FOR YOUR OWN PERSONAL USE WOULD YOU CONSIDER EACH OF THE FEATURES LISTED BELOW: PLEASE USE THE RATING SCALE PROVIDED

	TOTAL	AVERAGE RATING
A. WAND SENSOR - BAR CODES...	2150	3.69953
B. WAND SENSOR - OCR.....	2150	3.24558
C. ADVANCED LANGUAGE.....	2150	6.76884
D. RAM 1000 STEP MODULES.....	2150	7.85767
E. ROM LIBRARY MODULES.....	2150	6.89907
F. MODEM.....	2150	4.39488
G. CASSETTE STORAGE.....	2150	6.78837
H. ALPHA-NUMERIC DISPLAY.....	2150	6.71581
I. MULTI-LINE A/N DISPLAY....	2150	6.34093
J. 250 HR. BATTERY.....	2150	5.03116
K. 40 HOUR RECHARGEABLE BATT.	2150	.400744
L. PROMPTING.....	2148	.411256

QUESTION NUMBER 17:

WOULD YOU BE INTERESTED IN BEING ABLE TO BUY OTHER TI PRODUCTS THROUG

QUESTION NUMBER 17:

WOULD YOU BE INTERESTED IN BEING ABLE TO BUY OTHER TI PRODUCTS THROUGH THE PPX CLUB?

YES.....
NO.....

WHICH ONES?

	TOTAL	PERCENT
1. WATCHES	577	.25991
2. CALCULATORS	875	.394144
3. LEARNING AIDS	431	.194144
4. HOME COMPUTERS	1226	.552252
5. OTHER	7	3.15315E-03
6. HOME COMPUTER SOFTWARE	17	7.65766E-03
7. INTERFACING 59-HOME COMP.	5	2.25225E-03
8. CARRYING CASE	10	4.50450E-03

QUESTION NUMBER 18:

HOW LONG HAVE YOU BEEN IN PPX-59/PPX-52?

	TOTAL	PERCENT
1. ONE YEAR OR LESS	15	6.75676E-03
2. TWO YEARS	47	2.11712E-02
3. THREE YEARS OR MORE	43	1.93694E-02

1	PETE BONFIELD															
2	MICHAEL MOTRO															
3	DOUG DOBBS															
4	STAV PRODROMOU															
5	DAN ENZONE															
6	PHIL GOODELL															
7	TOM FERRO															
8	RANDY AHLFINGER															
9	JACK WOLBRINK															
10	JIM ARNOLD															
11																
12																
13																
14	CORRECTED SET IN 3RNG BINDERS															
1 45	CB															
2 46	PHIL GOODELL															
3 47	PHIL GOODELL															
4 48	PHIL GOODELL															
19																
20																
21	ORIGINAL 3 RING BINDER															
5 22	DOUG ZEMER															
23																
24																
25																
26																
27																
28																

OPERATING UNIT: | PREPARED BY: | DATE:

T1-9470B

UNIVERSAL PLANNING FORM