ACTION ITEMS

LCD III POWER-UP PROBLEM

I. PROBLEM:

THE SUBROUTINE STACK IS CLEARED ON POWER-UP. SINCE WE TURN OFF BETWEEN EACH KEY PUSH IT IS POSSIBLE TO HAVE SOMETHING STILL IN THE STACK. THIS OCCURS ON FIELD INSTRUCTIONS.

POSSIBLE SOLUTIONS:

IMPACT

1. MODIFY TPO485 TO NOT CLEAR SUBROUTINE STACK.

2 WEEKS MIN.

2 MODIFY ALGO TO AVOID PROBLEM.

1 WEEK

3. DON'T TURN OFF ON FIELD INSTRUCTIONS.

1 DAY/POWER?

ACTION: PCC DECISION ON WHICH SOLUTION SHOULD BE IMPLEMENTED.

II. PROBLEM:

SEVERAL PEOPLE HAVE COMMENTED THAT OUR BUZZER SOUNDS "SILLY" OR "UNPROFESSIONAL" AND THE SOUND LEVEL IS VERY LOW COMPARED. TO SIMULATION IN PCC LAB.

ACTION: PCC DECISIONS ON ACCEPTABILITY OF LOUDNESS AND "QUALITY" OF SOUND.

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PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

EXT: 2371

PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

各种环境各种技术的基础设施的基础设施的工作。

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

THE DECISION WAS MADE TO ELIMINATE THE NOTATION OF SIN 2 (SIN SQUARED) ON 10/20/80. THIS HAS BEEN COMPLETED AND SOLVES THE ROM PROBLEM ON THE ARITHMETIC CHIP. FIXES FOR KNOWN BUGS HAVE ALL BEEN IDENTIFIED EXCEPT FOR THE ONES WHICH WE CONSIDER ACCEPTABLE. ALEX IS SCHEDULED TO START 10/27/80 AND WILL TAKE 2 WEEKS. GPD IS SCHEDULED FOR 11/7/80. THERE IS A POSSIBLE RISK IN THE GPD DATE DUE TO THE HARDWARE USED FOR CHECKING OUT THE CASSETTE OPS WHICH SEEMS TO BE SOMEWHAT UNRELIABLE.

WEEK ENDING 10/24/1980

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ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
MEMORY CONTROLLER KEYBOARD/ARITHMETIC SYSTEM CROM	4210 4160 14980	4219 4219 15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
1.37	1 (14)	127

NAME: ART HUNTER

WEEK ENDING 10/31/1980

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EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

ALEX WAS DELAYED UNTIL NEXT WEEK. A NEW VERSION OF LOW BATTERY TEST WAS DEFINED AND IMPLEMENTED AND A POSSIBLE LOCKUP CONDITION IN THE PERIPHERAL I/O CODE WAS CORRECTED. LINDA IS IN HOUSTON TO HELP DEBUG A NEW PASS OF TPO475 PARTS.

SCHEDULED TO START 10/31/80 AND WILL TAKE 2 WEEKS. GPD IS SCHEDULED FOR 11/14/80. THE GREATEST PROBLEM FOR TI-88 SOFTWARE COMPLETION IS AVAILABILITY OF SIMULATOR TIME. SIMULATORS WILL BE SCHEDULED FROM 6:00 AM UNTIL MIDNIGHT, BUT THIS WILL STILL LIMIT THE TIME AVAILABLE FOR THESE ACTIVITIES:

- 1. ALEX AND ALGORITHM CORRECTIONS
- 2. CROM LIBRARY DEVELOPMENT
- 3. CASSETTE INTERFACE DEVELOPMENT

- 4. PRINTER DEVELOPMENT
- 5. PCC EVALUATION
- 6. USER MANUAL WRITERS

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
ANDER ANDRE -1923 SANS ANDRE FRANCE FAMILY SANS SANS AND SANS SANS SANS SANS SANS	Appeal Idital about types befor ander threat books above taken these pates.	TAKEN BORDS COOMS CTOUR BOTHS MOVED BOOMS ANABY SURESP SURESP SOURCE MOVED SAFETY SAFETY SAFETY
MEMORY CONTROLLER	4210	4219
KEYBOARD/ARITHMETIC	4165	4219
SYSTEM CROM	14990	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
MATTING ARROWS (SPOY) SAFANG ADDITED SAFAND ARROWS		Figure 60000 madels delays offers capite score 70000 supple sorest 55000
142	136	127

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 11/21/1980

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

THE SYSTEM CROM GPD WAS SHIPPED ON 11/17/80 AND BOTH 485 GPD'S WERE SHIPPED 11/18/80 AS SCHEDULED. ALL IDENTIFIED BUGS WERE FIXED FOR THIS RELEASE. A WORKING CD2901 BAR WAS FOUND THAT COMMUNICATED WITH THE SIMULATOR (CD2902). NO NEW CHIP PROBLEMS WERE DETECTED. ALEX PERTAINING TO THE PRINTER, CASSETTE, COMMUNICATION BETWEEN TI88'S, AND THE MEMORY FUNCTIONS IS STILL GOING ON.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
again appear and a page appear appear appear of the chart		
MEMORY CONTROLLER	4212	4219
KEYBOARD/ARITHMETIC	4180	4219
SYSTEM CROM	14999	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
156	156	156

PERSONAL PROGRESS REPORT -- WEEKLY

************************** NAME: TOM KOSLOSKI EXTENTION: 3498

WEEK ENDING 12/12/1980

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PROGRAM(S): CA-800

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WEEK'S ACCOMPLISHMENTS:

THE LOW BATTERY INDICATOR (LBI) CONNECTION OF THE X1123 POWER SUPPLY CHIP HAS BEEN TRANSFERED FROM /KON TO K1, TO SIMPLIFY TESTING.

IMPLEMENTING ERROR DETECTION AND CORRECTION ROUTINES. DATA IS RECOREDED TWICE WITH A CHECK SUM FOR EACH DATA BLOCK.

NEW CA-800 BOARD WORKES A LOT BETTER WITH SHIELDED CABLE.

NEXT WEEK'S PLANS:

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 12/12/1980

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

ALEX PERTAINING TO THE CASSETTE, COMMUNICATION BETWEEN TI88'S, AND THE MEMORY FUNCTIONS IS STILL GOING ON. SEVERAL NEW BUGS WERE FOUND AND FIXED. CHANGED SO THAT FUNCTIONS NOT RELATED TO EOS NEVER STAY IN THE DISPLAY LONGER THAN THE TIME IT TAKES TO EXECUTE THE FUNCTION AS REQUESTED BY THE PUBLICATIONS GROUP. ERROR DETECTION WENT FROM 3.2 TO 2.4 SECONDS BY REWRITING THE CROM CODE INVOLVED. BASED ON THE POSSIBILITY OF SMART RAMS BEING IMPLEMENTED, FIXES FOR EQN MODE, THE OFF KEY, AND SPEED UPS IN THE MICROCODE FOR ERRORS WERE DETERMINED.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
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MEMORY CONTROLLER	4217	4219
KEYBOARD/ARITHMETIC	4187	4219
SYSTEM CROM	14980	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
163	160	159

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

REVISED THE ORDER OF EXECUTION FOR ROUTINES ON THE ARITHMETIC CHIP AND REWROTE THE KEYBOARD SCAN AND TIME UPDATE ROUTINES IN ORDER TO REDUCE THE AMOUNT OF TIME THE MEMORY CONTROLLER HAS TO WAIT FOR A RESPONSE DURING H/W FUNCTIONS OR USER PROGRAM EXECUTION. THIS PRODUCED A SPEEDUP OF ABOUT 35 PERCENT FOR ALL OF THESE OPERATIONS. CONTINUED PACKING THE MEMORY CONTROLLER CHIP IN ORDER TO IMPROVE THE OPERATION OF SOME FEATURES OR FURTHER IMPROVE THE SPEED OF SOME FUNCTIONS.

WEEK ENDING 01/09/1981

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NEED PCC DIRECTION ON WHICH FEATURES TO CHANGE AND WHICH SPEED IMPROVEMENTS ARE MOST DESIRABLE.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
WHITE Made reads folds block hand filled access such books spice about books about books about		
MEMORY CONTROLLER	4234	4219
KEYBOARD/ARITHMETIC	4199	4219
SYSTEM CROM	14950	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
COURT SECRET WITHIN COURT	manus chains graph above delibr spirit spirit \$5000 annib black 10000	
167	163	162

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 01/16/1981

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EXT: 2371

PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

ADDED SEVERAL MORE CHANGES TO IMPROVE FEATURES AND EXECUTION SPEED. CHANGED DFN RCL A TO DFN A.

THIS CHANGES THE WAY OPS ARE DEFINED TO INV OP INSTEAD OF 2ND DFN OP WHICH IS FEWER KEY STROKES FOR EACH OPERATION. SPEEDED UP ERRORS AND FURTHER SPEEDED UP USER PROGRAMS BY ABOUT 10 PERCENT.

CONTINUED PACKING THE MEMORY CONTROLLER CHIP IN ORDER TO IMPROVE THE OPERATION OF SOME FEATURES OR FURTHER IMPROVE THE SPEED OF SOME FUNCTIONS.

NEED PCC DIRECTION ON WHICH FEATURES TO CHANGE AND WHICH SPEED IMPROVEMENTS ARE MOST DESIRABLE.

ROM WORDS USAGE	\$ 3 \$ 2 \$ 2 \$ 2	WORDS USED	TC	TAL AVAILABLE
Budge Straig Julian Spiller wheat within March 19001 cours Marks 19032 years Server Server Ching	**** **	and smeat spoke think major arms forth wasjo joint their round	Berton 100	the googs come these sages gones ments tooks there make agest anone agent agent
MEMORY CONTROLLER		4202		4219
KEYBOARD/ARITHMETIC		4210		4219
SYSTEM CROM		14975		15000
# OF ERRORS FOUND	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CORRECTED	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	CONFIRMED
decid onder antit bich week dough force maker thing bints pages young down cascs files books auch		con scant colve 64500 facer acres 55440 coast afres Alves	*****	the packs state truck teams taken pager title earth
171		166		162

NAME: TOM KOSLOSKI EXTENTION: 3498

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WEEK ENDING 01/24/1981

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ON SCHEDULE? NO

PROGRAM(S): CA-800

* WEEK'S ACCOMPLISHMENTS:

INCORPERATED HAND SHAKING BETWEEN TI-88 AND CA-800 FOR WRITE ID# AND FIND ID#. SOME SPEED PROBLEMS ENCOUNTERED.

TESTING PROTOTYPE 455 BARS ON WAFER WITH STEVE EASLEY. MOST CHIPS HAVE VERY FAST MOS CLOCKS. THE INSTRUCTION TIMES HAVE BEEN BETWEEN 8 TO 11.7 MICRO. SEC.

THE WORKING CHIPS RESPOND TO THE COMMANDS SENT THEM, BY TURNING ON THE MOTOR CONTROL, TRANSMITTING DATA TO CASSETTE PLAYER, TURNING OFF MOTOR CONTROL, TURN ON MOTOR FOR READ FROM CASSETTE. DATA FREQ. IS FAST. ABOVE 4KHZ FOR THE 3KHZ SIGNAL. WHEN STEVE EASLEY SLOWED DOWN THE MOS CLOCK THE CHIP STARTED TO READ SOME DATA FROM CASSETTE. STILL TESTING.

NEXT WEEK'S PLANS:

**************** PERSONAL PROGRESS REPORT -- WEEKLY

NAME: SUSAN BAILEY

EXTENTION: 2413

WEEK ENDING 01/24/1981

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ON SCHEDULE? YES

PROGRAM(S): MBAII

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**************** WEEK'S ACCOMPLISHMENTS:

FINISHED KEYING IN THE IRR AND NPV CALCULATIONS AND IRR SEEMS TO WORK.

STARTED WORKING ON THE NEC CALCULATIONS

PC800:

WE DECIDED THAT THE PC800 MOTOR CAN NOT HANDLE EXTRA LONG PULSES. THEREFORE I MADE EXTENSIVE ALGORITHM CHANGES WHICH APPEAR TO HAVE FIXED THE MOTOR ADVANCE PROBLEM AS WELL AS INCREASED THE PRINT SPEED. THERE HAVE BEEN SOME DESIGN CHANGES WHICH WILL REQUIRE MORE ALGORITHM CHANGES IN BOTH THE 1300, AND THE 1000 CHIP.

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NEXT WEEK'S PLANS:

MBA-II:

FINISH THE NEC KEY.

35-PERSONAL PROGRESS REPORT -- WEEKLY NAME: ALICE MYERS -85-WEEK ENDING 01/23/1981 * EXT: 3496 × PROGRAM: TI-82 æ. × ¥-* *************** * WEEK'S ACCOMPLISHMENTS: I AM CURRENTLY INCORPORATING CHANGES IN THE 485'S 45 AND THE 532 WHICH ARE BEING MADE IN THE TI-88. * I AM MAKING SPEED IMPROVEMENTS ON DOWNLOAD ON THE TI-88 AND THE TI-82. I AM HELPING TO DEBUG THE CASSETTE INTERFACE. I RETIMED THE CROM FUNCTIONS FOR THE TI-88. THE SPEEDS ARE ALSO VALID ON THE TI-82. ķ. -85--8-× × * × * -Ķ * -84 * **-8**-*********************

PROBLEMS ENCOUNTERED AND/OR COMMENTS:

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****************** PERSONAL PROGRESS REPORT -- WEEKLY

************************ NAME: ART HUNTER WEEK ENDING 01/23/1981

EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301) CONTINUED EVALUATING AND IMPLEMENTING CHANGES TO REDUCE COMPLEXITY AND IMPROVE USABILITY. REMOVED TIME FROM THE ON KEY AND CHANGED IT TO ON/OFF ONE DIRECTION AND PROMPT THE OTHER. REMOVED UNARY MINUS AND MOVED READ TO THE OP CODES.

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CONTINUED PACKING THE MEMORY CONTROLLER CHIP IN ORDER TO IMPROVE THE OPERATION OF SOME FEATURES OR FURTHER IMPROVE THE SPEED OF SOME FUNCTIONS.

NEED PCC DIRECTION ON WHICH FEATURES TO CHANGE AND WHICH SPEED IMPROVEMENTS ARE MOST DESIRABLE.

# WORDS USED	TOTAL AVAILABLE

4198	4219
4207	4219
14960	15000
# CORRECTED	# CONFIRMED
1 4 9	167
	4198 4207 14960

PERSONAL PROGRESS REPORT -- WEEKLY NAME: ALICE MYERS WEEK ENDING 01/30/1981 EXT: 3496 ¥. PROGRAM: TI-82 Ķ. -8-5% WEEK'S ACCOMPLISHMENTS: I AM CURRENTLY INCORPORATING CHANGES IN THE 485'S .Ŋ. AND THE 532 WHICH ARE BEING MADE IN THE TI-88. -36-I ALTERED MY CASSETTE OP CODES TO HELP CHECK OUT 455 CHIPS FOR THE CASOO. 4 I AM RENUMBERING THE OP CODES AND REWRITING THE CASSETTE OPS FOR BOTH THE 86 AND THE 88. -놙-¥., .g. -8ąς. PROBLEMS ENCOUNTERED AND/OR COMMENTS: 8 * 35. 8 ж.

NAME: SUSAN BAILEY EXTENTION: 2413

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WEEK ENDING 01/31/1981 ON SCHEDULE? VES

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EXTENTION: 2413 ON SCHEDULE? YES PROGRAM(S): MBAII

WEEK'S ACCOMPLISHMENTS:

STARTED DOING CLEAN UP WORK ON THE ANNUITIES, SO THAT THE ALGORITHM CAN BE CHECKED OUT EARLY.

STILL WORKING ON THE NEC CALCULATIONS

PC800:

MADE THE REQUESTED ALGOORITHM CHANGES

1. CHANGED THE MESSAGES WHICH ARE SENT TO THE TI-88

2. CHANGED THE CHARACTER SET, "-" AND "+".

THE CHANGES WORK BUT THE COMMUNICATIONS NEED

TO BE CHECKED OUT AT ALL FREQUENCIES, BEFORE

NEXT WEEK'S PLANS:

MBA-II:

FINISH THE NEC KEY, AND CLEAN UP FOR ANNUITIES.

PC800:

RESHIP GPD AFTER ALEX.

* PROBLEMS ENCOUNTERED AND/OR COMMENTS:

RESHIPPING.

************************* PERSONAL PROGRESS REPORT -- WEEKLY

*********************** NAME: TOM KOSLOSKI WEEK ENDING 01/30/1981

EXTENTION: 3498 PROGRAM(S): CA-800

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ON SCHEDULE? NO

WEEK'S ACCOMPLISHMENTS:

CHANGED CA-800 ERROR PROCEDURES.

IF AN ERROR HAS OCCURED, CA-800 WILL FILL THAT REGISTER WITH F'S AND SEND IT TO THE TI-88 AS DATA. AT THE END OF THE TRANSMISSION AN ERROR INDICATOR WILL BE SENT BACK WITH THE END OF DATA CODE.

THE FREQUENCY SENT TO THE CASSETTE PLAYER IS BEING LOWERED FROM 3KHZ TO 2.4KHZ AND 1KHZ TO 0.8KHZ TO SEE IF THE DATA RECOGNITION IMPROVES AT SLOW CHIP SPEEDS.

NEXT WEEK'S PLANS:

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 01/30/1981

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EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301) CONTINUED EVALUATING AND IMPLEMENTING CHANGES TO REDUCE COMPLEXITY AND IMPROVE USABILITY. REMOVED SPECIAL ALPHA CHARACTERS FROM OVERLAY AND REDEFINED HOW THEY ARE ENTERED. MOVED SEVERAL KEYS TO IMPROVE USABILITY.

> CONTINUED PACKING THE MEMORY CONTROLLER CHIP IN ORDER TO IMPROVE THE OPERATION OF SOME FEATURES OR FURTHER IMPROVE THE SPEED OF SOME FUNCTIONS. NEED PCC DIRECTION ON WHICH FEATURES TO CHANGE AND WHICH SPEED IMPROVEMENTS ARE MOST DESIRABLE.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
erein sugal denir Tatul water core reads along strong states pages acres blocks player cores	ances today pract could drove copper make those shoes enter there assets	neved figure wacon rives that anome those three month bloom four's productional fields the bit
MEMORY CONTROLLER	4202	4219
KEYBOARD/ARITHMETIC	4183	4219
SYSTEM CROM	14960	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
	years seems accept essent fourte sector matter matter tribute desemp forten	codes break (dods Rosen backs oness taken score separa brand debris
173	171	167

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EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371,LINDA 2368,ALICE 3496,ELAINE 3301)
CONTINUED EVALUATING AND IMPLEMENTING CHANGES
TO REDUCE COMPLEXITY AND IMPROVE USABILITY.
COMPLETED THE REVISION TO ALLOW CHANGE SIGN (+/-)
TO BE ENTERED BEFORE OR AFTER THE OPERAND. BEGAN
CHANGING QUE OR R/S MODE TO ELIMINATE ACCIDENTALLY
TRAPPING AN UNFAMILIAR USER.

BEGAN TESTING THE CASSETTE INTERFACE FOR GPD RELEASE WITH THESE NEW FEATURES:

- 1. LOWERED THE FREQUENCIES ON THE TAPE FOR BETTER STABILITY WITH CASSETTE SPEED VARIATION.
- CHANGED THE PROCEDURE WHEN AN ERROR IS DETECTED TO ALLOW THE USER TO RECALL AS MUCH DATA AS POSSIBLE.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
contac ances prices contac cours contac energy nature decire energy prices decide prices contac		
MEMORY CONTROLLER	4187	4219
KEYBOARD/ARITHMETIC	4204	4219
SYSTEM CROM	14895	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
179	179	1.4.7

35. PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER WEEK ENDING 02/20/1981

EXT: 2371

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PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS.

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301) CONTINUED EVALUATING AND IMPLEMENTING CHANGES TO REDUCE COMPLEXITY AND IMPROVE USABILITY. COMPLETED CHANGE IN EQN MODE SO THAT THE END OF THE EQUATION IS SHOWN WHEN GOING BACK INTO EQN INSTEAD OF THE BEGINNING, COMPLETED CHANGES TO QUE OR R/S MODE TO AUTOMATICALLY CANCEL INSTEAD OF SHOWING AN ERROR CONDITION.

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SHIPPED GPD FOR CA-800 CASSETTE INTERFACE.

WILL BEGIN ALEX TESTING AS SOON AS OP CODE ORDER IS DETERMINED AND IMPLEMENTED.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
-Shire based Shire Irine tapes drawn Shirle Address bear Dated State Sprin Marin 20162 ISLAM	y mean embre podul weeks object water death dente object color boute object	eriory minds, about easing house integer origin heave local assem cours some source court stude
MEMORY CONTROLLER KEYBOARD/ARITHMETIC	4199 4211	4219 4219
SYSTEM CROM	14995	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
THE THE STATE AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF T	erous Johns bende en us Number shape ablies dhark beight Bound NoAAL	gorça hidde tuddi shoub dinam tooti dunde taure inghi decen tiddi
	172	171

PROBLEMS ENCOUNTERED AND/OR COMMENTS:

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ALIGE MYERS

EXT: 3496

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PROGRAM: TI-86, TI-88

WEEK ENDING 03/13/1981

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WEEK'S ACCOMPLISHMENTS:

CODED CHANGES IN MOTOR CONTROL AND ALPHA MESSAGES IN CASSETTE OPS, NOW IMPLEMENTING CHANGE IN CASSETTE OPS TO CHANGE DISPLAY WHILE READING IN DATA.

FIXING BUGS AS THEY ARE FOUND.

CODING CHANGE IN PROGRAM WHICH SETS THE CHIP SELECT.

CHANGING PROMPTING SEQUENCE TO PUT O IN SWAP REGISTER AND IN DISPLAY BEFORE ASKING ANY QUESTION.

CURRENTLY ATTEMPTING TO SQUISH 30-40 STEPS OF CODE IN ORDER TO FIT IN THE CHANGES BEING MADE.

ALSO READING THE MANUAL TO CHECK IT FOR INACCURACIES AND STYLE PROBLEMS.

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 04/09/1981

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-×-÷ PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301) CONTINUED ALEX TESTING. BEGAN CHANGES TO ALLOW PROTECTED CRAMS. PCC DECIDED TO REMOVE MEMORY EXPANSION CAPABILITY IN ORDER TO ADD CRAM PROTECTION CAPABILITY. THESE CHANGES WILL TAKE ABOUT TWO WEEKS WITH ABOUT TWO WEEKS OF ADDITIONAL ALEX NECESSARY AFTERWARDS. GPD COULD BE RELEASED AROUND MAY 6,1981.

ALEX FOUND 6 BUGS THIS WEEK.

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
Didno assers pages books whole comes fifting about pages books angue from against against		tages divide codes amper diffit pares sease conta about tales filles acces arous foots access
MEMORY CONTROLLER	4216	4219
KEYBOARD/ARITHMETIC	4203	4219
SYSTEM CROM	14988	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
71	4.77	д.д.
/ 1	W/	7-7

PERSONAL PROGRESS REPORT -- WEEKLY

EXT: 2371

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PROGRAM: TI-88

NAME: ART HUNTER

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

ALICE AND LINDA COMPLETED THE DELETION OF MEMORY EXPANSION CAPABILITY IN ORDER TO ADD CRAM PROTECTION CAPABILITY. THE CALCULATOR WILL HAVE PROTECTED CRAMS WITH OR WITHOUT ENCODING. A NEW OP CODE WILL SET A PROTECTION BIT, AND A SPECIAL SSS LIBRARY MAY BE USED FOR FURTHER PROTECTION BY ENCODING THE DATA. ALGO CROM IS OVER THE ROM LIMIT. WORKED WITH THE LOGIC ANALYZER TO DETERMINE THE ROM PROBLEM ON THE PROTOTYPE SYSTEMS. IT WAS DETERMINED THAT SOME OF THE TPO532'S WILL NOT WORK UNLESS THE LOW SPEED CLOCK IS HELD HIGH IN THE CALCULATOR IDLE STATE. GAYER WILL START PROBING SLICES TO DETERMINE WHAT CAUSES THIS PROBLEM.

WEEK ENDING 04/16/1981

4

ROM WORDS USAGE	# WORDS USED	TOTAL AVAILABLE
safely segan state south state about state annu seas office annu about thirty state boom		
MEMORY CONTROLLER	4181	4219
KEYBOARD/ARITHMETIC	4203	4219
SYSTEM CROM	15120	15000
# OF ERRORS FOUND	# CORRECTED	# CONFIRMED
		ations atoms filme office appeal from bear many appeal evilar, appeal
74	68	45

PERSONAL PROGRESS REPORT -- WEEKLY

NAME: ART HUNTER

WEEK ENDING 04/30/1981

-15

-84

-14-

EXT: 2371

PROGRAM: TI-88

ART, LINDA, ALICE, ELAINE

WEEK'S ACCOMPLISHMENTS:

* TI 88 - (ART 2371, LINDA 2368, ALICE 3496, ELAINE 3301)

ALICE AND LINDA CONTINUED CODING AND TESTING
THE CHANGES WHICH HAVE BEEN MADE FOR CRAM PROTECTION
CAPABILITY. THE CALCULATOR WILL HAVE PROTECTED
CRAMS WITH OR WITHOUT ENCODING. A NEW OP CODE
WILL SET A PROTECTION BIT, AND A SPECIAL SSS
LIBRARY MAY BE USED FOR FURTHER PROTECTION BY
ENCODING THE DATA. ALGO CROM IS NOW WITHIN THE
LIMIT FOR ROM WORDS. OP CODE ORDER WAS SLIGHTLY
REVISED TO ADD THE PROTECT OP CODE AND TO ELIMINATE
THE OP CODES THAT REMOVED AND REPLACED THE LEARN
PROGRAM COUNTER. ALEX WILL RESUME ON 05/04/81
WITH A GOAL OF SHIPPING GPDS ON 05/15/81. MORE
ALEX WILL BE NEEDED AFTER THIS RELEASE TO INSURE
A LOW PROBABILITY OF ERRORS IN FINAL PRODUCT.

A LUW PRUBABILITY UP	EKKUKD	IN FINAL FRU	JUAN I.
ROM WORDS USAGE	**************************************	WORDS USED	TOTAL AVAILABLE
dicts send perts that were cook offer mean know that each sont state for small field	entas to	CM payes gordy nebry sease rest; too'd proof these about made	SORGO MATION NAVOS NORPE VELTAS ELEGAD MATION SORGA MATERIA PORTAM PRATTY ELEGAD INCOME PROTES AND A
MEMORY CONTROLLER		4180	4219
KEYBOARD/ARITHMETIC		4210	4219
SYSTEM CROM		14960	15000
# OF ERRORS FOUND	# 6 0 # 20 0 0 0 0 10 0 0 0 0 10 0 0 0	CORRECTED	# CONFIRMED
Shale among sheek thefth pages access bogot spage enter tender trapp entry ident edges silved (0.00) unions	00/100 111	of women manual define parms nicks (41MF remem miles (485)	proce target aread assist payon have copie begon poder accor ands
76		71	45

TO: JERRY BROWN
DON O'GRADY
DAVE THOMAS
IVAN ZOTTICH

JOHN DALE JOHN SEDMAK DARRELL WHITTEN

CC: JOHNNY BARRETT

DAN ENZONE

PETE BONFIELD

FROM: ART HUNTER

SUBJECT: TI-88 FEATURE CHANGES

* REVISED *

AFTER REVIEWING THE COMMENTS OF PEOPLE USING THE TI-88 SIMULATOR, WE HAVE MADE A NUMBER OF FEATURE CHANGES TO IMPROVE THE USABILITY OF THE PRODUCT. THIS IS A LIST OF ITEMS WHICH HAVE BEEN CHANGED AND THOSE UNDER CONSIDERATION. PLEASE INFORM THE PEOPLE IN YOUR ORGANIZATIONS WHO WILL BE AFFECTED BY THESE CHANGES.

	FEATURE	SCHEDULE
	1. REMOVE TIME AND PROMPT FROM ON KEY TOGGLE ON/OFF TO THE RIGHT TOGGLE PROMPT ON AND OFF TO THE LEFT	COMPLETE
Ē	2. MOVE READ TO OP CODES AND REPLACE WITH TIME ON THE OVERLAY	COMPLETE
	3. REMOVE UNARY MINUS AND ADD TRACE TO OVERLAY (INV TRACE TO TURN OFF)	COMPLETE
	4. MOVE DMS TO OP CODES AND ADD FF TO OVERLAY (WAS INV RST)	COMPLETE
	5. CHANGE DFN RCL A SEQUENCE TO DFN A AND DFN OP CODES TO INV OP CODES	COMPLETE
	6. REMOVE SPECIAL ALPHA CHARACTERS FROM OVERLAY AND REDEFINE A SIMPLER ENTRY METHOD - BLOCK FUNCTION MOVED FROM = TO R/S	COMPLETE
	7. REORGANIZED OF CODE ORDER FOR BETTER CONSISTANCY BY TYPES AND GROUPING OF TI-86 OF CODES	ON GOING/AWAITING PCC APPROVAL
	8. REDEFINE EQN AS A KEYBOARD MODE	UNDER CONSIDERATION
		EVALUATING POSSIBLE CHANGES ***********
	AND CONT KEYS *	MOVED BACK TO ORIGINAL * POSITIONS 2/12/81 * ***********************************

SWAPPING THESE KEYS CAUSED INCONSISTANCIES IN THE DEFINITION OF THE QUE FUNCTIONS WHEN THEY ARE PROGRAMMED BY THE USER. MANY PEOPLE COMPLAINED, AND WE MOVED ENT AND CONT BACK TO THEIR ORIGINAL POSITIONS ON 2/12/81.

11. CHANGE EXPONENT NOTATION TO SMALL RAISED NUMBERS WITH SIGNS. ELIMINATED; CHARACTER.

COMPLETE

12. CHANGED THE INV DISPLAY INDICATOR
TO EGN MODE INDICATOR (INV TRACES
IN THE DISPLAY)

COMPLETE

13. CASSETTE OPS WHICH READ FROM TAPE
DO NOT SPECIFY AMOUNT OF DATAASSUMES THE SAME AMOUNT SPECIFIED
WHEN DATA WAS RECORDED.
ERRORS DETECTED DURING READ ALLOW
GOOD PORTIONS TO BE READ AND REPLACE
BAD DATA WITH #######
(E8E8E8E8E8E8E8) SO THE USER CAN
FIND THE BAD PORTIONS.

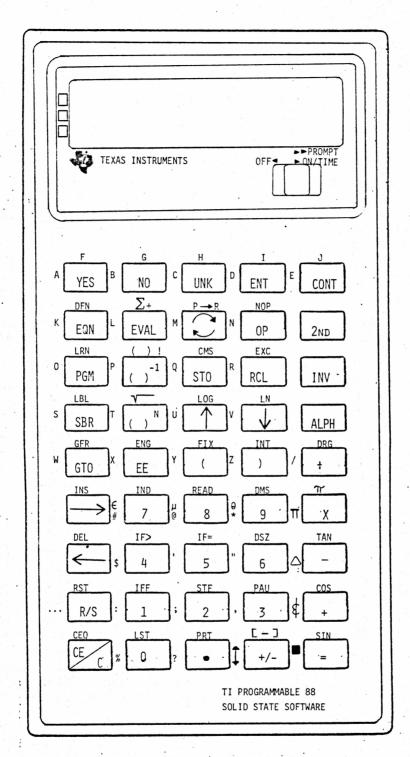
COMPLETE 2/11/81

A REVISED COPY OF THE KEYBOARD LAYOUT IS ATTACHED.

TI-88 CHANGES : 1981

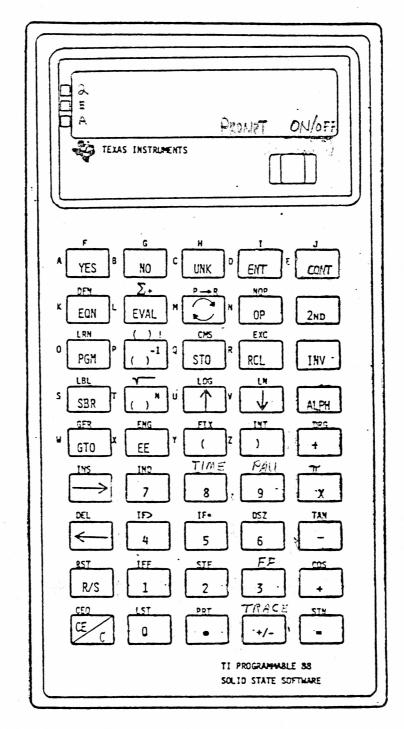
-to-	REVISED EXECUTION ORDER TO SPEED UP RUN MODE 40 PER CENT	1/09/81
2.	DFN RCL A WAS CHANGED TO DFN A DFN OP'S WERE CHANGED TO INV OP'S ERROR DETECTION SPEED WAS IMPROVED	1/16/81
3.	MOVED KEYS AROUND ON KEYBOARD TO AVOID PROBLEMS WITH ON KEY UNARY MINUS WAS REPLACED WITH THE TRACE KEY	1/23/81
4.	REDEFINED ALPHA MODE ADDED AN OP CODE FOR A LIST OF ALPHA CHARACTERS ADDED AN OP CODE TO SHOW FLAG DEFINITIONS	1/30/81
5.	CHANGE SIGN WAS REDEFINED TO INCLUDE UNARY MINUS FEATURES	2/06/81
6.	THE INV INDICATOR WAS REPLACED BY THE EQN INDICATOR CHANGED SCIENTIFIC NOTATION TO DISPLAY SUPERSCRIPT NUMBERS CASSETTE OPS WERE CHANGED SO THE USER NO LONGER SPECIFIES THE AMOUNT TO BE READ AND THE ENTIRE AMOUNT IS READ WHEN AN ERROR IS DETECTED	2/16/81
7.	CUE OR R/S MODE NO LONGER GENERATES AN ERROR EQN DISPLAY SHOWS END OF EQUATION	2/20/81
8.	OP CODES WERE REARRANGED	2/27/81
	CASSETTE OPS WERE CHANGED TO ALLOW THE USER TO MOVE THE TAPE WHILE CONNECTED TO THE CA-800	3/13/81
10.	REMOVE EXPANSION MEMORY TO MAKE ROOM FOR PROTECTED CRAMS	4/10/81
11.	REMOVE THE 2 OP CODES TO SHOW AND ELIMINATE LRN PC TO MAKE ROOM FOR 1 OP CODE TO PROTECT CRAMS	4/27/81
	ACH 397639 4727781	

ACH 39/639 4/27/81



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5/19/80 OK July 1980



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2/09/81 5/13/80

OK March 1981

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OP CODE LIST

OP#	FUNCTION	INV FUNCTION
0	List Op Code Definitions	
1	Set Default States	
2	Recall error code	
3	Set Partition	Set Default Partition (26 Regs.)
4	All Response Que	
5	Yes/No Que	
6	Ent/Cont Que	
7	Cont Que	
8	Octal Conversion	
9	Recall Alpha	
10	Decimal Conversion	
11	Module # in Master Slot	
12	Angular mode	
13	Round display	
14	Save Status & User Flags	Exchange Status & User Flags
15	A/N Right Circular Shift	A/N Left Circular Shift
16	Hex -Conversion	
17	Set Implied Multiply	Reset Implied Multiply
18	Degrees -> Radians -	Radians -> Degrees
19	Radians -> Grads	Grads → Radians
20	Grads -> Degrees	Degrees -> Grads
21	Self Test #1	Self Test #2
22	Clear Statistics	
23	Intercept ₹≥ Slope	
24	Correlation Coefficient	
25	Y Prediction	X Prediction
26	Means	Standard Error of Means
27	Standard Deviation (N-1)	Standard Deviation (N)
28	Absolute Value	Signum Function

OP CODE LIST (continued)

OP#	FUNCTION	INV FUNCTION
29	Show Which Flags Are Set	
30	24 Hour Mode	12 Hour Mode
31	Set Pause Timing	Default Pause Timing (1.5 sec)
32	List Program Labels	
33	Read Cassette into	Write Main Memory to Cassette
	Main Memory	
34	Read Cassette into	Write Numbered Module to Cassette
	Numbered Module	
35	Read Cassette into	Write Program Memory to Cassette
	Program Memory	
36	Read Cassette into	Write Data Memory to Cassette
	Data Memory	
37	Display -> PGM Counter	PGM Counter -> Display
38	Display -> PGM Step	PGM Step -> Display
39	Exchange Display with PGM	Exchange Display with PGM Step
	Step & Increment PC	& Decrement PC
40	Soft Partitioning	Hard Partitioning
41	Cancel Number Formatting	Normal Number Formatting
42	Display -> I/O	I/O -> Display
43	Round to 13 Digits	
44	Set Alarm HH.MMSS	Reset Alarm
45	Tone	
46	Tone on Error	Don't Tone on Error
47	Tone on Cue	Don't Tone on Cue
48	Copy CRAM	
49	Number CRAM	Un-number Numbered CRAM
50	Eliminate LRN PC	Restore LRN PC
A-Z	Increment Register A-Z	-Decrement-Register A=Z

Key Sequence	Function Name	[Dfn] [OP] Message
[OP] 00	DEFINE OP CODES	OP DEFINITIONS
[OP] 01	SET DEFAULTS	SET DEFAULTS
[OP] 02	DEFAULT PARTITION	480 PGM STEPS
[OP] 03	SET PARTITIONING	SET PARTITION
[OP] 04	ALL RESPONSE CUE	ALL CUE
[OP] 05	YES/NO CUE	YES/NO CUE
[OP] 06	ENT/CONT CUE	ENT/CONT CUE
[OP] 07	CONTINUE CUE	CONT CUE
[OP] 08	RECALL ERROR CODE	ERROR MESSAGE/a
[OP] 09	RECALL ALPHA	RECALL ALPHA
[OP] 10	ABSOLUTE VALUE	ABSOLUTE VALUE
[OP] 11	SIGNUM FUNCTION	SIGNUM FUNCTION
[OP] 12	ANGULAR MODE	ANGLE MODE
[OP] 13	ROUND DISPLAY REGISTER	ROUND DISPLAY
[OP] 14	RIGHT CIRCULAR SHIFT	->ALPHA->
[OP] 15	LEFT CIRCULAR SHIFT	←-ALPHA←-
[OP] 16	HEXIDECIMAL MODE	HEX MODE
[OP] 17	DECIMAL MODE	DECIMAL MODE
[OP] 18	TURN ON IMPLIED MULTIPLICATION	IMPLIED MULTIPLY
[OP] 19	CANCEL IMPLIED MULTIPLICATION	NO IMPLIED MULT
[OP] 20	SAVE USERS FLAGS	SAVE FLAGS
[OP] 21	EXCHANGE FLAGS	EXCHANGE FLAGS
[OP] 22	CONVERT DEGREES TO RADIANS	D-→R CONVERSION
[OP] 23	CONVERT RADIANS TO DEGREES	R-→D CONVERSION
[OP] 24	CONVERT RADIANS TO GRADS	R-→G CONVERSION
[OP] 25	CONVERT GRADS TO RADIANS	G-→R CONVERSION
[OP] 26	CONVERT GRADS TO DEGREES	G-→D CONVERSION
[OP] 27	CONVERT DEGREES TO GRADS	D-→G CONVERSION
[OP] 28	CALCULATOR TEST 1	TEST 1
[OP] 29	CALCULATOR TEST 2	TEST 2
[OP] 30	DISPLAY CALCULATOR SETTINGS	SHOW STATUS
[OP] 31	CLEAR STATISTICS REGISTERS	CLEAR STATISTICS
[OP] 32	COMPUTE INTERCEPT AND SLOPE	INTERCEPT<=>SLOPE
[OP] 33	COMPUTE CORRELATION COEFFICIENT	CORRELATION COEF
[OP] 34	Y PREDICTION	Y=mX + b

Late July 1980

Key Sequence	Function Name	[Dfn] [OP] Message
[OP] 35	X PREDICTION	X=(Y-b)+m
[OP] 36	COMPUTE MEANS	MEANS (Y<=>X)
[OP] 37	COMPUTE STANDARD ERROR OF MEANS	STD ERR OF MEAN
[OP] 38	COMPUTE STANDARD DEVIATION (N)	N STD DEV (Y<=>X)
[OP] 39	COMPUTE STANDARD DEVIATION (N-1)	N-1 STD DEV (Y<=>X)
[OP] 40	LIST PROGRAM LABELS	LIST PGM LABELS
[OP] 41	TEST PRIMARY PORT MODULE NUMBER	PRIMARY MODULE α
[OP] 42	NORMALIZED NUMBER MODE	NORMALIZED α'S
[OP] 43	UNNORMALIZED NUMBER MODE	UNNORMALIZED α'S
[OP] 44	HARD PARTITIONING	HARD PARTITION
[OP] 45	SOFT PARTITIONING	SOFT PARTITION
[OP] 46	SET PROGRAM COUNTER	DISP-→PGM COUNTER
[OP] 47	READ PROGRAM INSTRUCTION	PGM STEP-→DISP
[OP] 48	WRITE PROGRAM INSTRUCTION	DISP-→PGM STEP
[OP] 49	READ CASSETTE INTO MAIN	READ CASSETTE
	MEMORY	MAIN MEMORY
[OP] 50	WRITE MAIN MEMORY TO	WRITE CASSETTE
	CASSETTE	MAIN MEMORY
[OP] 51	READ CASSETTE INTO NUMBERED	READ CASSETTE
	CONSTANT MEMORY MODULE	NUMBERED MODULE
[OP] 52	WRITE NUMBERED CONSTANT	WRITE CASSETTE
	MEMORY MODULE TO CASSETTE	NUMBERED MODULE
[OP] 53	READ CASSETE INTO PROGRAM	READ CASSETTE
	MEMORY	PROGRAM STEPS
[OP] 54	WRITE PROGRAM MEMORY TO	WRITE CASSETTE
	CASSETTE	PROGRAM STEPS
[OP] 55	READ CASSETTE INTO DATA	READ CASSETTE
	REGISTER MEMORY	REGISTERS
[OP] 56	WRITE DATA REGISTER MEMORY	WRITE CASSETTE
	TO CASSETTE	REGISTERS
[OP] 57	TRANSMIT DISPLAY DATA	DISPLAY-→I/O
[OP] 58	RECEIVE DISPLAY DATA	I/O->DISPLAY
[OP] 59	12 HOUR MODE	12 HOUR CLOCK
[OP] 60	24 HOUR MODE	24 HOUR CLOCK
[OP] 61	DEFAULT PAUSE TIMING	SET PAU TO 1.5

Late July 1980

Key Sequence	Function Name	[Dfn] [OP] Message
[OP] 62	SET PAUSE TIMING	SET PAU TIMING
[OP] 63	TURN ALARM ON	SET CLOCK ALARM
[OP] 64	TURN ALARM OFF	CLOCK ALARM OFF
[OP] 65	TONE	TONE
[OP] 66	TURN ON ERROR TONE	TONE ON ERROR
[OP] 67	TURN OFF ERROR TONE	NO TONE ON ERROR
[OP] 68	TURN ON CUE TONE	TONE ON CUE
[OP] 69	TURN OFF CUE TONE	NO TONE ON CUE
[OP] 70	DISPLAY FLAGS SET	SHOW FLAGS SET
[OP] 71	13 DIGIT DISPLAY FORMAT	SHOW 13 DIGITS
[OP] 72	ERASE PRIMARY PORT MODULE	ERASE MODULE
[OP] 73	NUMBER PRIMARY PORT MODULE	NUMBER MODULE
[OP] 74	COPY PRIMARY PORT MODULE	COPY MODULE
[OP] 75	DISPLAY MODULE STATUS	MODULE STATUS
[OP] 76	RESTORE PROGRAM COUNTER	SHOW LRN PC
[OP] 77	ELIMINATE PROGRAM COUNTER	ELIMINATE LRN PC

March 1981

APPENDIX D LIST OF OP CODES

Key Sequence	Function Name	[INV] [OP] Message
[OP] 00 [OP] 01	DEFINE OP CODES SET DEFAULTS	OP DEFINITIONS SET DEFAULTS
[OP] 02	DISPLAY CALCULATOR SETTINGS	SHOW STATUS
[OP] 03	RECALL ERROR CODE	ERROR MESSAGE/α
[OP] 04	ALL RESPONSE CUE	ALL CUE
[OP] 05	YES/NO CUE	YES/NO CUE
[OP] 06 [OP] 07	ENT/CONT CUE CONTINUE CUE	ENT/CONT CUE CONT CUE
[OP] 08	ALPHA ENTRY TABLE	ENTRY TABLE
[OP] 09	RECALL ALPHA	RECALL ALPHA
[OP] 10	RIGHT CIRCULAR SHIFT	->ALPHA->
		<-ALPHA<-
[OP] 12		SHOW 13 DIGITS
[OP] 13	ROUND DISPLAY REGISTER	ROUND DISPLAY
	UNFORMATTED DISPLAY MODE	*UNFORMATTED MODE
LOPJ 15 [OP] 16	FORMATTED DISPLAY MODE HEXIDECIMAL MODE	*FORMATTED MODE HEX MODE
[OP] 10 [OP] 17	DECIMAL MODE	DECIMAL MODE
[OP] 17		FLAG DEFINITIONS
[OP] 19	DISPLAY FLAGS SET	SHOW FLAGS SET
[OP] 20	SAVE USERS FLAGS	SAVE FLAGS
[OP] 21	EXCHANGE FLAGS	EXCHANGE FLAGS
[OP] 22	DEFAULT PAUSE TIMING	SET PAU TO 1.5
[OP] 23	SET PAUSE TIMING	SET PAU TIMING
[OP] 24	TURN ON IMPLIED MULTIPLICATION	
[OP] 25	CANCEL IMPLIED MULTIPLICATION	
[OP] 26 [OP 27	ABSOLUTE VALUE SIGNUM FUNCTION	ABSOLUTE VALUE SIGNUM FUNCTION
[OP] 28	CONVERT D.MS TO DECIMAL DEGREES	D.MMSS->D.d
[OP] 29	CONVERT DECIMAL DEGREES TO D.MS	
[OP] 30	ANGULAR MODE	ANGLE MODE
[OP] 31	CONVERT DEGREES TO RADIANS	D-→R CONVERSION
[OP] 32	CONVERT RADIANS TO DEGREES	R-→D CONVERSION
[OP] 33	CONVERT RADIANS TO GRADS	R-→G CONVERSION
[OP] 34	CONVERT GRADS TO RADIANS	G→R CONVERSION
[OP] 35 [OP] 36	CONVERT GRADS TO DEGREES CONVERT DEGREES TO GRADS	G-→D CONVERSION D-→G CONVERSION
[OP] 37	CLEAR STATISTICS REGISTERS	CLEAR STATISTICS
[OP] 38	COMPUTE INTERCEPT AND SLOPE	INTERCEPT<>SLOPE
[OP] 39	COMPUTE CORRELATION COEFFICIENT	CORRELATION COEF
[OP] 40	Y PREDICTION	Y=mX + b
LOPJ 41	X PREDICTION	X=(Y-b):m
[OP] 42	COMPUTE STANDARD ERROR OF MEANS	MEANS (Y<>X)
[OP] 43	COMPUTE STANDARD ERROR OF MEANS COMPUTE STANDARD DEVIATION(N)	STD ERR OF MEAN N STD DEV(Y<>X)
[OP] 44 [OP] 45	COMPUTE STANDARD DEVIATION(N) COMPUTE STANDARD DEVIATION(N-1)	N-1 STD DEV(Y<>X)

 $[\]star$ Changed from unnormalized and normalized.

Key Sequence	<u>Function Name</u>	[INV] [OP] Message
[OP] 46 [OP] 47	SET PROGRAM COUNTER COPY PROGRAM INSTRUCTION	DISP-→PGM COUNTER PGM STEP-→DISP
LOPJ 48	TO DISPLAY COPY PROGRAM INSTRUCTION TO PROGRAM STEP	DISP-→PGM STEP
[OP] 49 [OP] 50 [OP] 51 [OP] 52 [OP] 53 [OP] 54 [OP] 55 [OP] 56 [OP] 57 [OP] 58 [OP] 59 [OP] 60 [OP] 61 [OP] 62 [OP] 63 [OP] 64 [OP] 65 [OP] 66	TO PROGRAM STEP DEFAULT PARTITION SET PARTITIONING SOFT PARTITIONING HARD PARTITIONING ELIMINATE PROGRAM COUNTER RESTORE PROGRAM COUNTER LIST PROGRAM LABELS CALCULATOR TEST 1 CALCULATOR TEST 2 COPY CASSETTE TO MAIN MEMORY COPY MAIN MEMORY TO CASSETTE COPY CASSETTE TO PROGRAM MEMORY COPY PROGRAM MEMORY TO CASSETTE COPY CASSETTE TO DATA MEMORY COPY DATA MEMORY TO CASSETTE COPY CASSETTE TO MODULE COPY MODULE TO CASSETTE COPY MODULE TO CASSETTE	SOFT PARTITION HARD PARTITION ELIMINATE LRN PC SHOW LRN PC LIST PGM LABELS TEST 1 TEST 2 TAPE->MAIN MEMORY MAIN MEMORY->TAPE TAPE->PGM MEMORY PGM MEMORY->TAPE TAPE->DATA MEMORY DATA MEMORY->TAPE TAPE->MODULE MODULE->TAPE MODULE PGM>MAIN
[OP] 67 [OP] 68 [OP] 69 [OP] 70 [OP] 71	COPY PROGRAM TO MODULE TEST PRIMARY PORT MODULE NUMBER DISPLAY MODULE STATUS NUMBER PRIMARY PORT MODULE ERASE PRIMARY PORT MODULE	
86 ends here [OP] 72 [OP] 73 [OP] 74 [OP] 75 [OP] 76 [OP] 77 [OP] 78 [OP] 79 [OP] 80 [OP] 81 [OP] 82 [OP] 83 [OP] 84	COPY MODULE TO MODULE 24 HOUR MODE 12 HOUR MODE SET ALARM TIME TURN ALARM ON TURN ALARM OFF TONE TURN ON ERROR TONE TURN OFF ERROR TONE TURN ON CUE TONE TURN OFF CUE TONE TRANSMIT DISPLAY DATA RECEIVE DISPLAY DATA	COPY MODULE 24 HOUR CLOCK 12 HOUR CLOCK SET ALARM TIME CLOCK ALARM ON CLOCK ALARM OFF TONE TONE ON ERROR NO TONE ON ERROR TONE ON CUE NO TONE ON CUE DISPLAY—>I/O I/O—>DISPLAY