



HP-41 MAXX

ANNOUNCEMENT

CREATED BY
MONTE J. DALRYMPLE

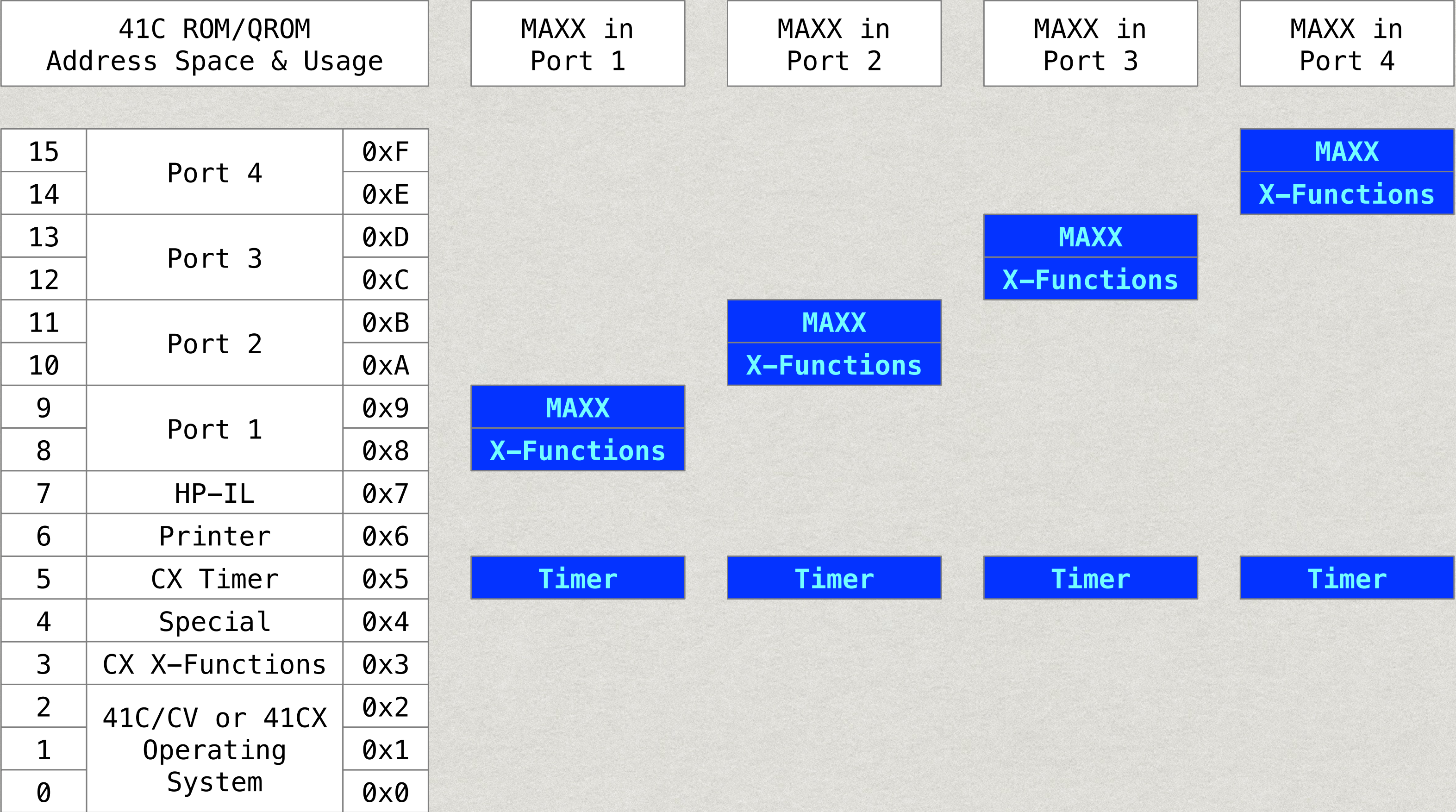
PRESENTATION BY
SYLVAIN CÔTÉ

²⁰²²
Allschwil

Bring 41CL technologies to all 41s

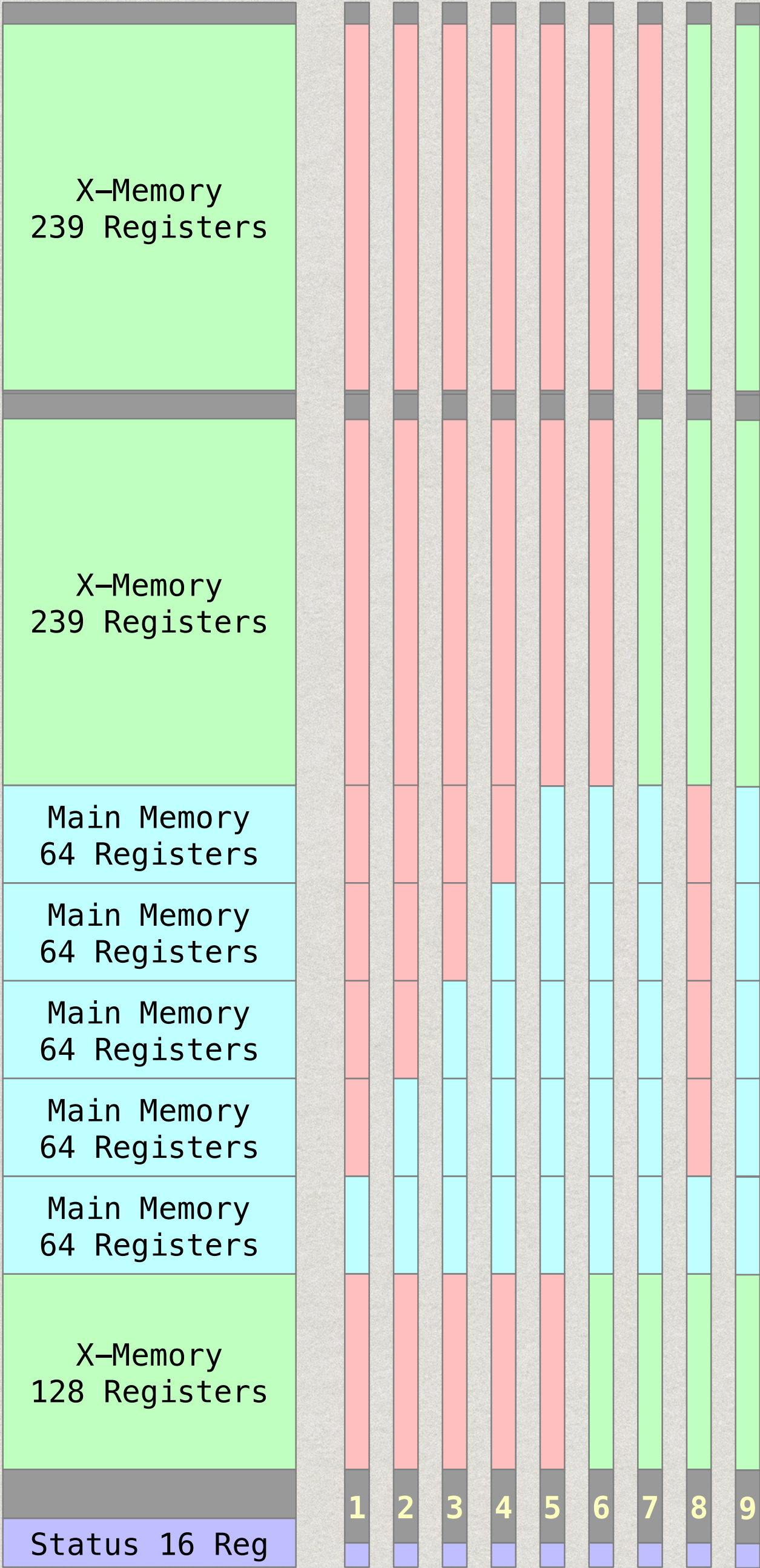
| Feature | Target |
|--|-------------|
| * Add the MAXX ROM. | CX : CV : C |
| * If missing, add up to four memory modules. | C |
| * If missing, add a Time module. | CV : C |
| * If missing, add a X-Functions/Memory module. | CV : C |
| * If missing, add up to two X-Memory modules. | CX : CV : C |
| * Add three blocks of 1024 Expanded registers memory. | CX : CV : C |
| * Add up to eight 4K pages of 10 bits RAM (QROM). | CX : CV : C |
| * Add up to four 4K pages of banked 10 bits RAM. (banked QROM) | CX : CV : C |

HP-41 MAXX ROM Images



If inserted into a CX or if there is a X-Functions module and/or a Timer module plugged in, the MAXX module will disable his own X-Functions and/or Timer ROM+hardware.

HP-41 MAXX RAM Registers



MAXX Module : RAM registers fill-in

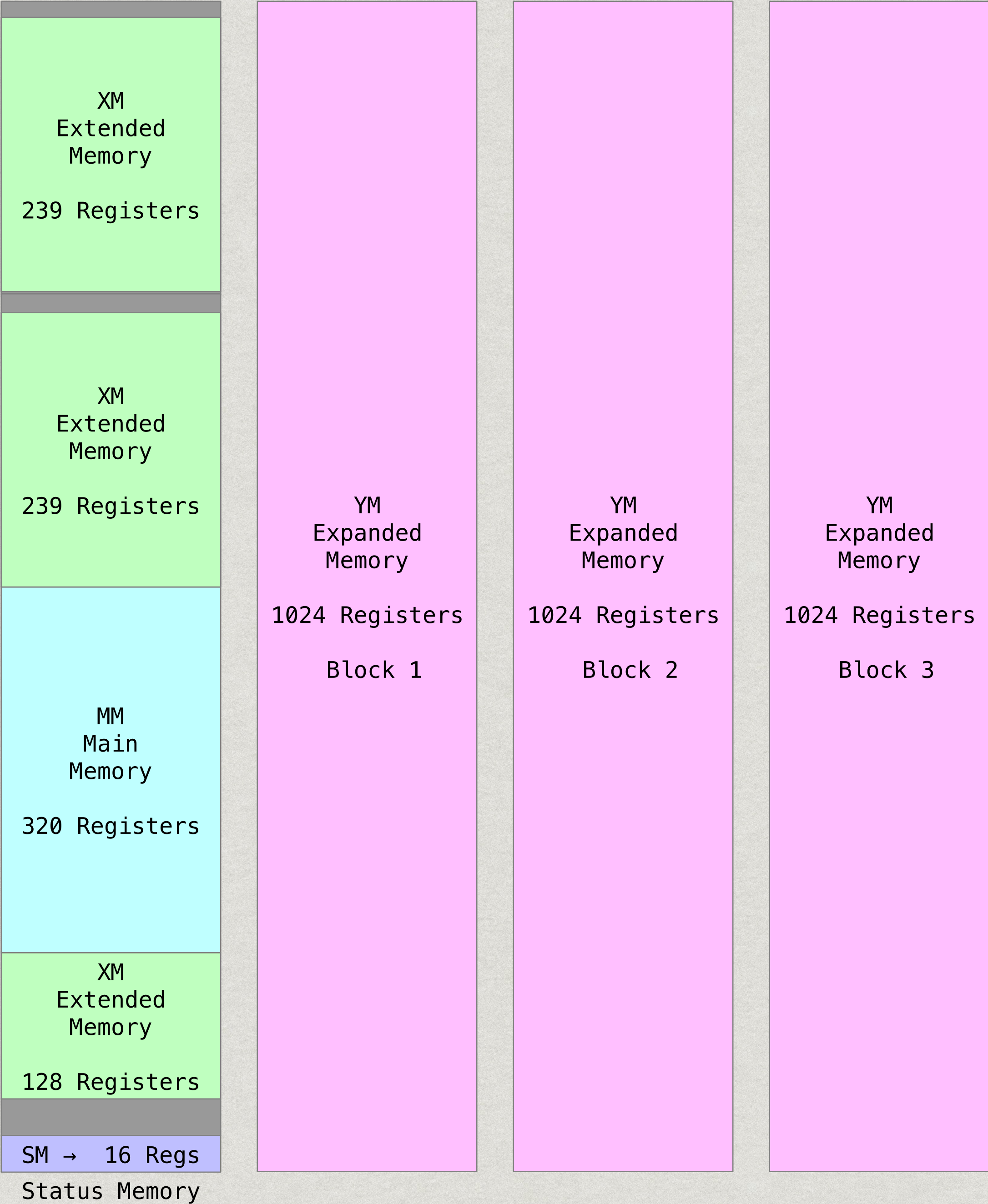
Memory Holes

| Configurations | | | |
|----------------|------|---------------|--------|
| 1) 41C | | | + MAXX |
| 2) 41C | + MM | | + MAXX |
| 3) 41C | + MM | x2 | + MAXX |
| 4) 41C | + MM | x3 | + MAXX |
| 5) 41C | + QM | | + MAXX |
| 5) 41CV | | | + MAXX |
| 5) 41C | + QM | | + MAXX |
| 5) 41CV | | | + MAXX |
| 6) 41C | + QM | + XFM | + MAXX |
| 6) 41CV | | + XFM | + MAXX |
| 6) 41CX | | | + MAXX |
| 7) 41C | + QM | + XFM + XM | + MAXX |
| 7) 41CV | | + XFM + XM | + MAXX |
| 7) 41CX | | + XM | + MAXX |
| 8) 41C | | + XFM + XM x2 | + MAXX |
| 9) 41CV | | + XFM + XM x2 | + MAXX |
| 9) 41CX | | + XM x2 | + MAXX |
| ... | | | |

MM = 82106A Memory Module
QM = 82170A Quad Memory Module
XFM = 82180A X-Functions/Memory Module
XM = 82181A X-Memory Module
TM = 82182A Time Module

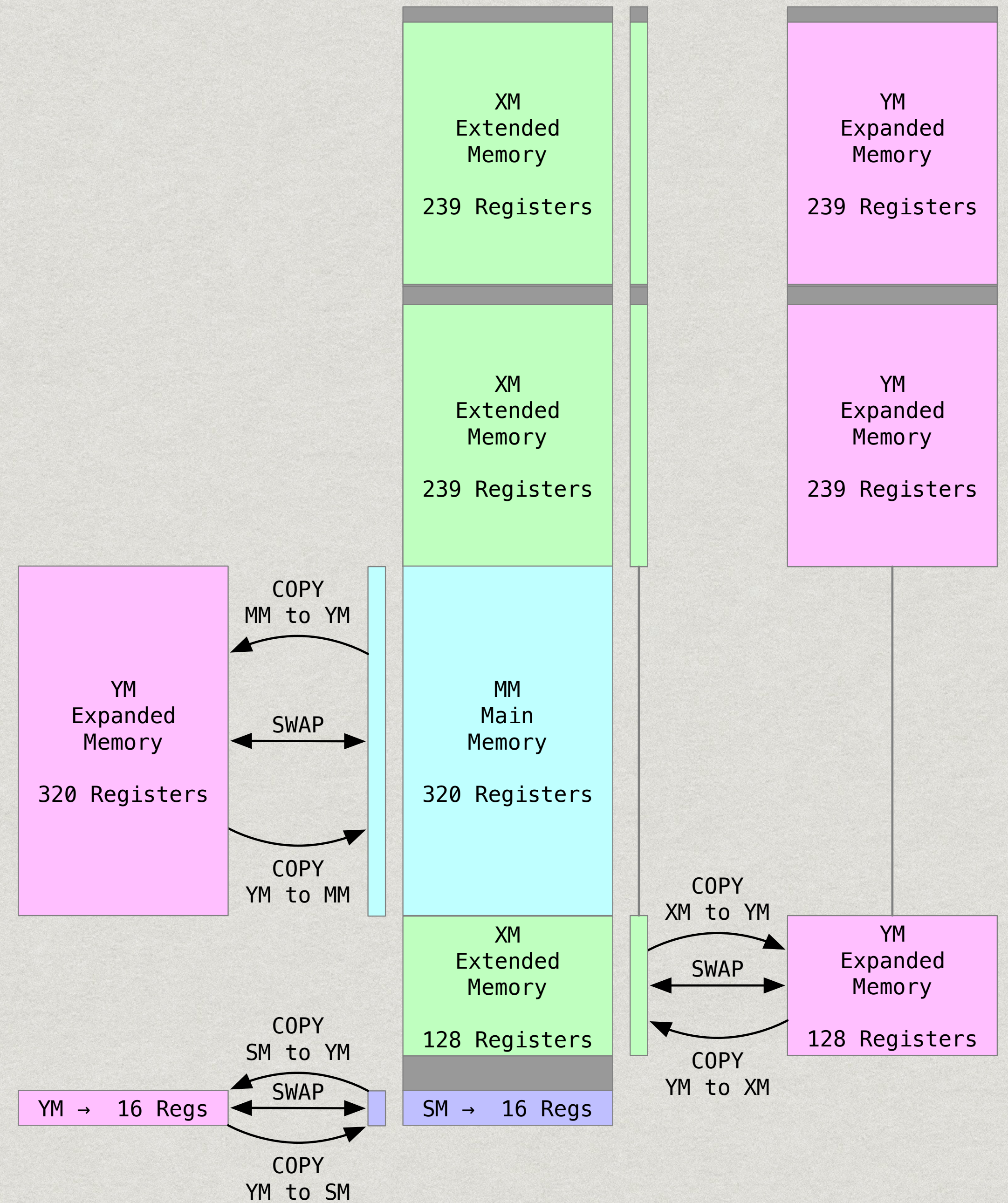
HP-41 MAXX

Expanded Memory



Expanded Memory Backup & Restore

| Function | Description |
|----------|---|
| ST>YM | Move Status Block to Expanded Memory |
| ST<>YM | Exchange Status Block with Expanded Memory |
| YM>ST | Move Expanded Memory to Status Block |
| MM>YM | Move Main Memory to Expanded Memory |
| MM<>YM | Exchange Main Memory with Expanded Memory |
| YM>MM | Move Expanded Memory to Main Memory |
| XM>YM | Move Extended Memory to Expanded Memory |
| XM<>YM | Exchange Extended Memory with Expanded Memory |
| YM>XM | Move Expanded Memory to Extended Memory |
| YM<>YM | Exchange Expanded Memory Blocks |
| YMCLR | Clear Expanded Memory |

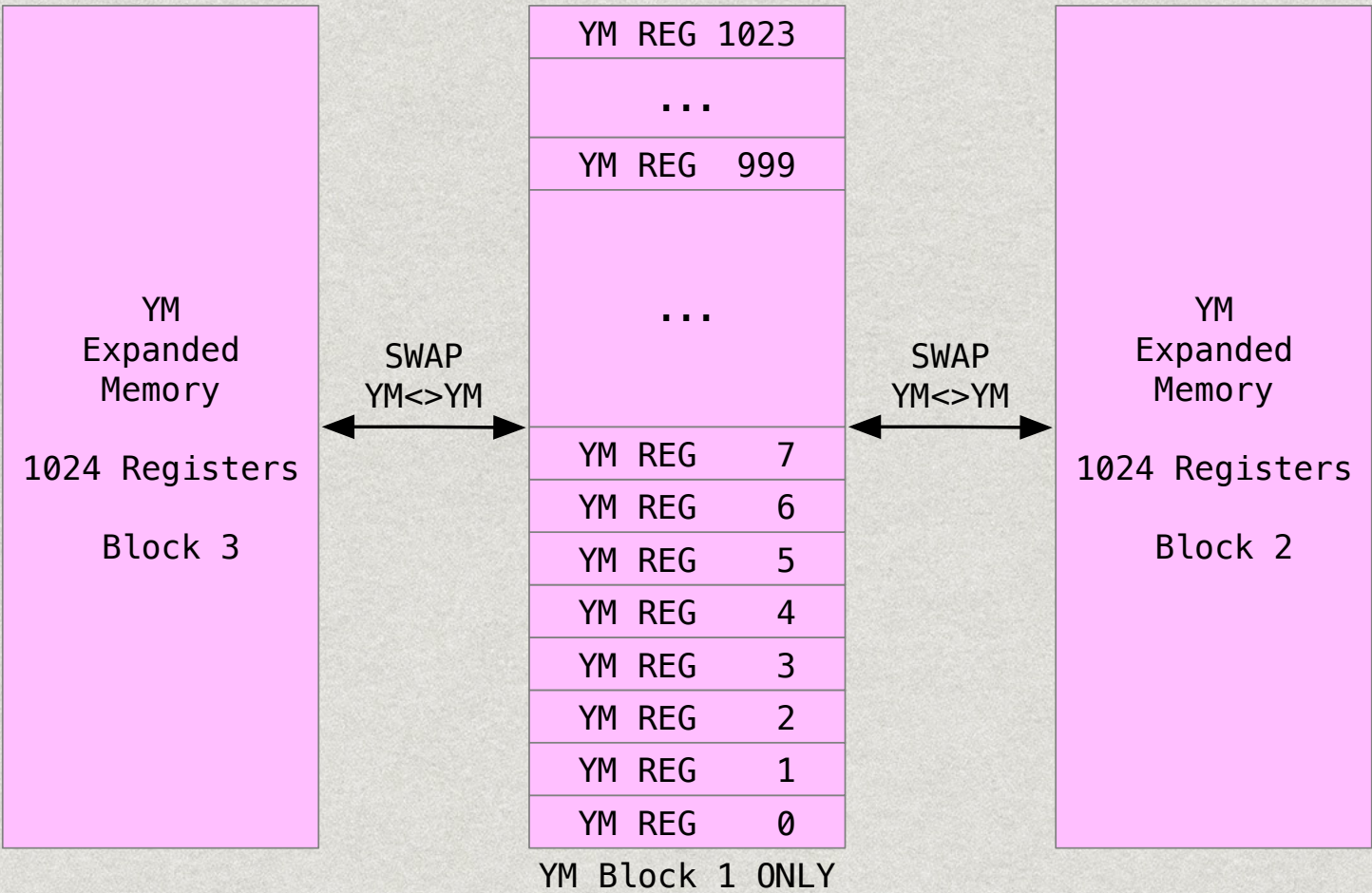


HP-41 MAXX

Expanded Memory

Data Registers

| Function | Description | Function | Description |
|----------|--|----------|---|
| YARC | Expanded Register Alpha Recall | YRGMOV | Move Expanded Register Block |
| YAST | Expanded Register Alpha Store | YRGSWP | Exchange Expanded Register Blocks |
| YDSE | Expanded Register Decrement, Skip If Equal | CLYRG | Clear Expanded Register Block |
| YISG | Expanded Register Increment, Skip If Greater | CLYRGX | Clear Expanded Register Block by X-register |
| YRCL | Expanded Register Recall | A<>YRG | Exchange Alpha with Expanded Register Block |
| YRC+ | Expanded Register Recall and Add | ST<>YRG | Exchange Stack with Expanded Register Block |
| YRC- | Expanded Register Recall and Subtract | | |
| YRC* | Expanded Register Recall and Multiply | | |
| YRC/ | Expanded Register Recall and Divide | | |
| YSTO | Expanded Register Store | | |
| YST+ | Expanded Register Store with Add | | |
| YST- | Expanded Register Store with Subtract | | |
| YST* | Expanded Register Store with Multiply | | |
| YST/ | Expanded Register Store with Divide | | |
| YVEW | Expanded Register View | | |
| YX<> | Expanded Register Exchange with X-register | | |



| | |
|--------|------|
| YM REG | 1023 |
| ... | |
| YM REG | 999 |
| ... | |
| YM REG | 7 |
| YM REG | 6 |
| YM REG | 5 |
| YM REG | 4 |
| YM REG | 3 |
| YM REG | 2 |
| YM REG | 1 |
| YM REG | 0 |

YM Block 1 ONLY

HP-41 MAXX

Port Memory

| Function | Description |
|----------|---------------------------|
| PMINI | Port Memory Initialize |
| PMCLR | Port Memory Clear |
| PMDIS | Port Memory Read Disable |
| PMEN | Port Memory Read Enable |
| PMWE | Port Memory Write Enable |
| PMWP | Port Memory Write Protect |

Port Memory
Bank 1 Only

| |
|----------|
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |
| PM Q-ROM |

↑
Each of
the above
Port Memory
Quasi-ROM can
be enabled
or disabled

41C ROM/QR0M
Address Space & Usage

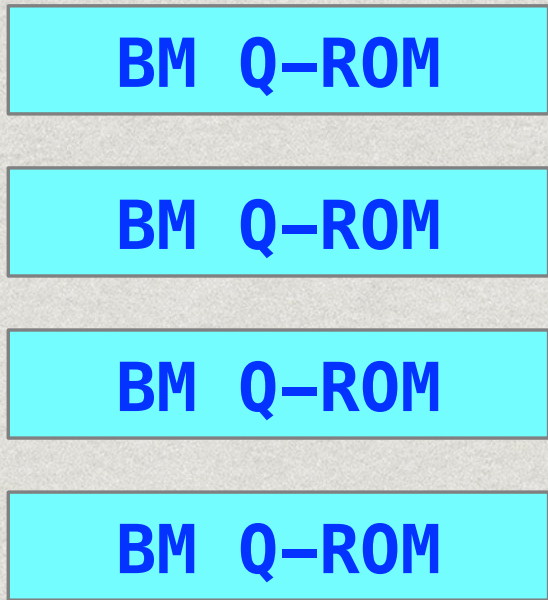
| | | |
|----|---------------------------------------|-----|
| 15 | Port 4 | 0xF |
| 14 | | 0xE |
| 13 | Port 3 | 0xD |
| 12 | | 0xC |
| 11 | Port 2 | 0xB |
| 10 | | 0xA |
| 9 | Port 1 | 0x9 |
| 8 | | 0x8 |
| 7 | HP-IL | 0x7 |
| 6 | Printer | 0x6 |
| 5 | CX Timer | 0x5 |
| 4 | Special | 0x4 |
| 3 | CX X-Functions | 0x3 |
| 2 | 41C/CV or 41CX Operating System | 0x2 |
| 1 | | 0x1 |
| 0 | | 0x0 |

HP-41 MAXX

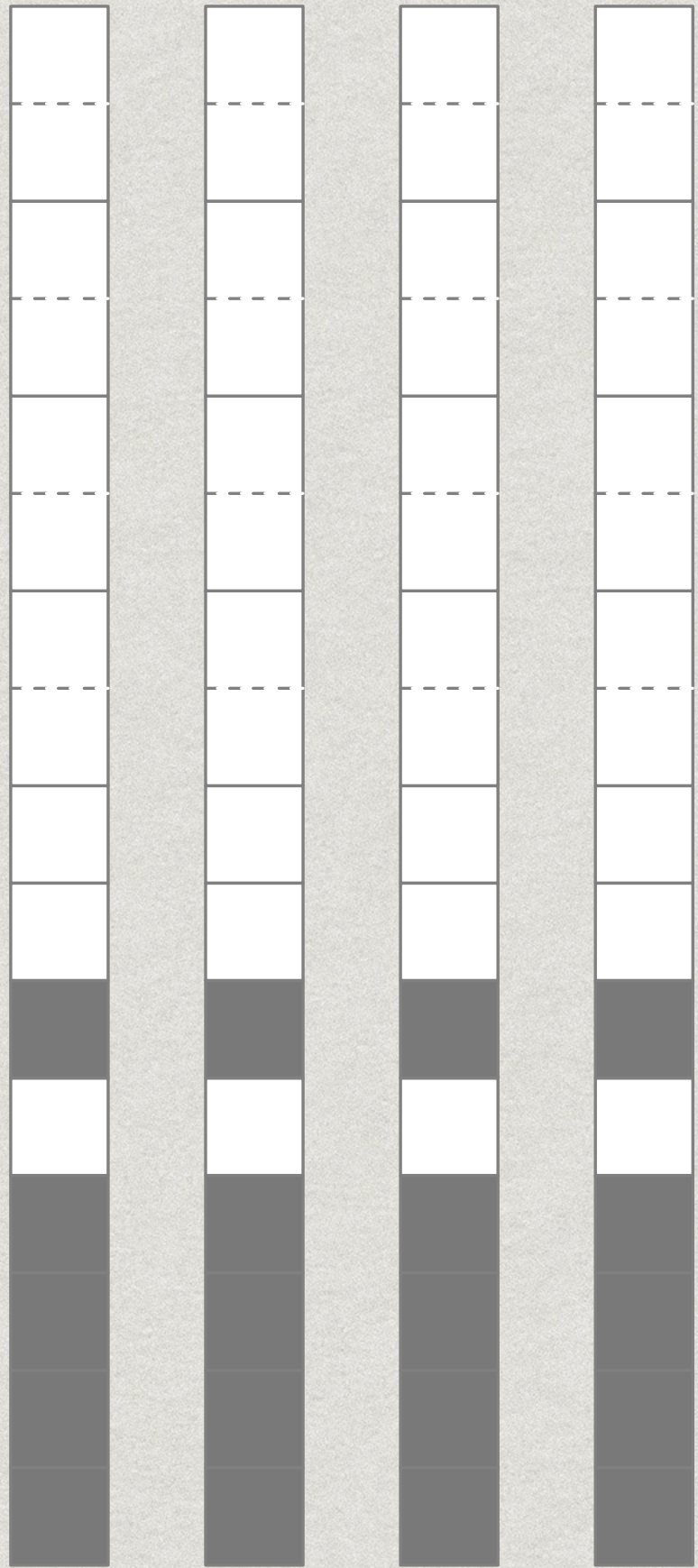
Banked Memory

Function Description

| | |
|-------|--|
| BMINI | Banked Memory Initialize |
| BMCLR | Banked Memory Clear |
| BMABX | Banked Memory Set Address/Bank by X-register |
| BMDIS | Banked Memory Read Disable |
| BMEN | Banked Memory Read Enable |
| BMWE | Banked Memory Write Enable |
| BMWP | Banked Memory Write Protect |



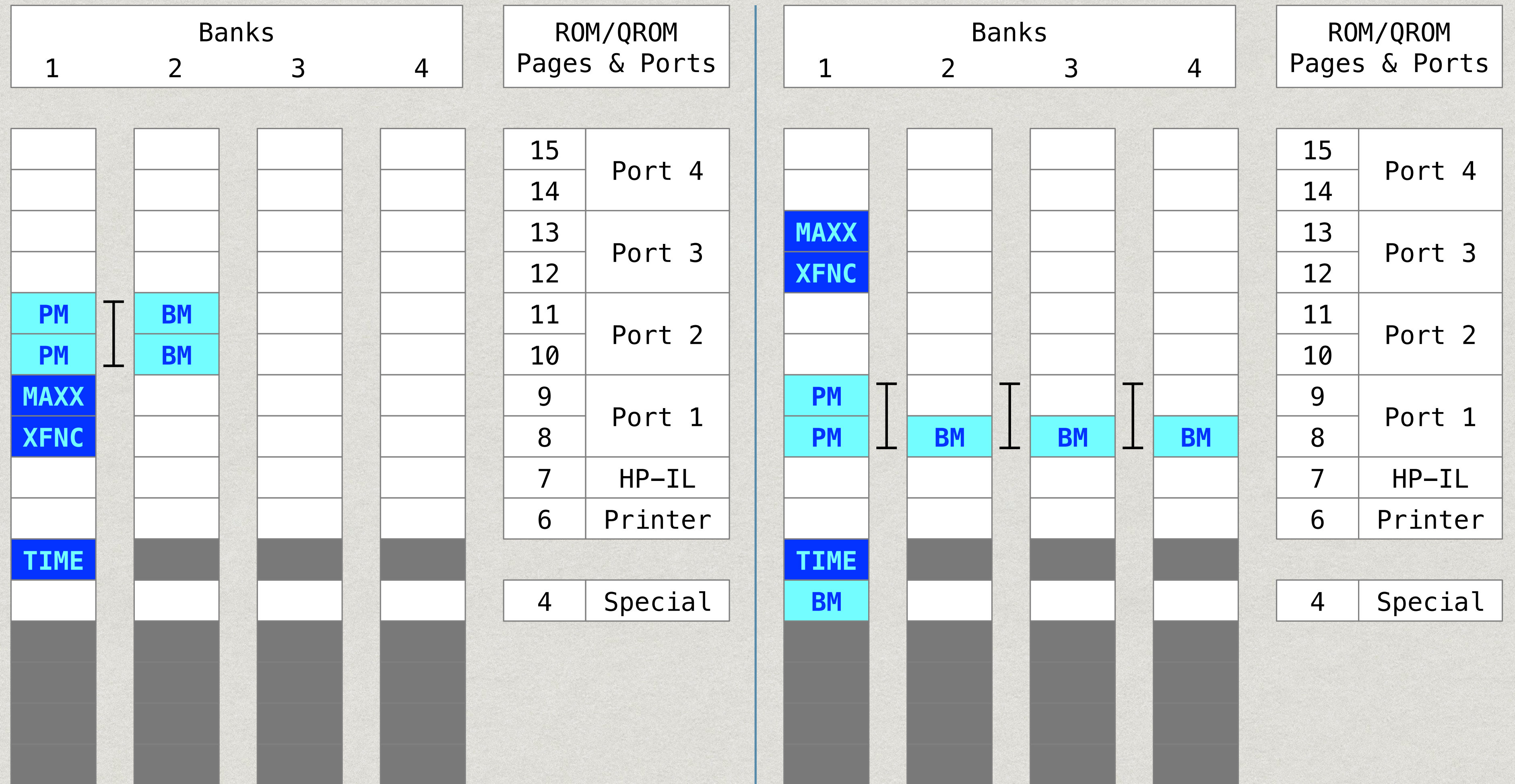
| Banks | | | |
|-------|---|---|---|
| 1 | 2 | 3 | 4 |



| 41C ROM/QROM | | |
|-----------------------|--|--|
| Address Space & Usage | | |

| | | |
|----|---------------------------------------|-----|
| 15 | Port 4 | 0xF |
| 14 | | 0xE |
| 13 | Port 3 | 0xD |
| 12 | | 0xC |
| 11 | Port 2 | 0xB |
| 10 | | 0xA |
| 9 | Port 1 | 0x9 |
| 8 | | 0x8 |
| 7 | HP-IL | 0x7 |
| 6 | Printer | 0x6 |
| 5 | CX Timer | 0x5 |
| 4 | Special | 0x4 |
| 3 | CX X-Functions | 0x3 |
| 2 | 41C/CV or 41CX Operating System | 0x2 |
| 1 | | 0x1 |
| 0 | | 0x0 |

Config. Samples



HP-41 MAXX

Misc. Functions

| Function | Description |
|----------|---|
| MXST? | MAXX Hardware Status? |
| PMST? | Port Memory Status? |
| BMST? | Banked Memory Status? |
| AH>XD | Hex Address/Data to Decimal Address/Data |
| XD>AH | Decimal Address/Data to Hex Address/Data |
| AHPEEK | Instruction Memory Read using Hex Address/Data |
| AHPOKE | Instruction Memory Write using Hex Address/Data |
| XDPEEK | Instruction Memory Read using Decimal Address/Data |
| XDPOKE | Instruction Memory Write using Decimal Address/Data |
| CPYBNK | CopyBank |
| IL>ROM | Load ROM page via HP-IL |
| ROM>IL | Store ROM page via HP-IL |



Systemyde

QUESTIONS ?



How Much and When ?

- * The expected selling price is:
 - * TDB + shipping → with a donor module from the customer
 - * TDB + shipping → without a donor module
- * The expected production date is:
 - * A first batch is planned before April 2023
 - * Future batches will depend of parts availability
- * Website → <https://www.systemyde.com/hp41/>



HP-41 MAXX

THANK YOU!