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IDENTIFICATION

PRODUCT CODE: AC-F057N-WC
PRODUCT NAME: CXBMCNO BOOTSTRAP ROM MOD
PRODUCT DATE: SEPTEMBER 1978
MAINTAINER: DEC/X11 SUPPORT GROUP

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1. ABSTRACT:

- 1 BMC IS A BKMOD THAT DOES A READ CHECKSUM FOR EACH ROM SELECTED IN ONE OF TWO GROUPS. WITH BIT 15 = 0 IN SR1 ANY COMBINATION OF ROMS IN THE A GROUP CAN BE TESTED BY SELECTIVE SFTTING OF THE OTHER BITS IN SR1. WITH BIT15 = 1 IN SR1, ANY COMBINATION OF ROMS IN THE B GROUP CAN BE TESTED, BY SELECTIVE SETTING OF THE OTHER BITS IN SR1. IF YOUR SYSTEM HAS A ROM OR ROMS FROM EACH OF THE TWO GROUPS, THEN CONFIGURE 2 COPIES OF THE BMC MODULE AND USE ON TO CHECK THE ROMS IN THE A GROUP AND THE OTHER FOR THE ROMS IN THE B GROUP.

2. REQUIREMENTS:

HARDWARE: ANY PDP-11 WITH A ROM.
STORAGE:: BMC REQUIRES:
1. DECIMAL WORDS: 662
2. OCTAL WORDS: 1226
3. OCTAL BYTES: 2454

3. PASS DEFINITION:

ONE PASS CONSISTS OF DOING A CHECKSUM ON EACH ROM 3000(8) TIMES.

4. EXECUTION TIME:

BMC RUNNING ALONE TAKES APPROXIMATELY ONE MINUTE.

5. CONFIGURATION REQUIREMENTS:

SET THE CORRESPONDING BITS IN SRI TO A "1" FOR THE DESIRED ROM.
GROUP A (BIT 15 MUST BE A ZERO)

BIT 0 =YA
BIT 1 =YB
BIT 2 =MR11
BIT 3 =YC
BIT 4 =YF
BIT 5 =YH
BIT 6 =BM873 YA
BIT 7 =BM873 YB
BIT 8 =BM873 YC
BIT 9 =BM873 YD
BIT 10 =M9301YA
BIT 11 =M9301YB
BIT 12 =M9301YC
BIT 13 =BM792YL
BIT 14 =M9400 (NOT A YH)

GROUP B (BIT 15 MUST ALSO BE SET TO A ONE)

BIT 0 =BM873 SF
BIT 1 =BM873 SE
BIT 2 =BM873 SC
BIT 3 =M9301 SB
BIT 4 =M9301 SA
BIT 5 =M9301 YD
BIT 6 =M9400 YH
BIT 7 =M9301 YF
BIT 8 =M9301 YH
BIT 9 =M9301 YE
BIT 10 =M9301 YJ
BIT 11 = OPEN
BIT 12 = OPEN
BIT 13 = OPEN
BIT 14 = OPEN

REMEMBER, FOR GROUP B ROMS, BIT 15 MUST BE SET ALONG WITH ANY OTHER BITS.

6. DEVICE/OPTION SETUP:

M9301 ROMS MUST HAVE THE SWITCH SET WHICH ENABLES THE SECOND
HALF OF THE ROM (165000 - 165777), OR ELSE LOCATIONS MUST BE PATCHED
AS SHOWN:

LOCATION FIX? +2 MUST GO FROM A 177777 TO A 000001
WHERE FIX? IS FIXA FOR M9301 YA, FIXB M9301YB, ETC.
LOCATIONS M93?HI AND M93?LO WHERE ? IS THE Y? OPTION
TO BE TESTED, MUST BE SET TO:

M93AHI: 26634
M93ALO: 74
M93BHI: 53546
M93BLO: 100

M93CHI: 136712
M93CLO: 113

7. MODULE OPERATION:

A READ CHECKSUM ON ALL SELECTED ROMS IN THE ORDER INDICATED
IN STEP #5. THE YA HAS A POSSIBILITY OF TWO CHECKSUM VALUES DEPENDING
ON THE ROM USED. AN APPROPRIATE CHECK IS MADE FOR THIS SITUATION.

8. OPERATING OPTIONS:

NONE

9. NON-STANDARD PRINTOUTS:

NONE


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271 ;NOT REALLY TRUE FOR M9301 BUT EXCLUDED FOR SAKE OF COMMON CODE.
272 BNE 35 ;BRANCH IF NOT
273 TST (R1)+ ;SKIP THAT LOCATION FOR BM873
274 DFC R2 ;CORRECT WORD COUNT
275 ADD (R1)+,LO ;ADD CONTENTS OF ROM LOCATION
276 ADC R3 ;KEEP CARRY BIT
277 DEC R3 ;LIMIT MB??
278 BNE 15 ;NO
279 TST BMFLAG ;WHAT KIND OF ROM?
280 BGE 45 ;BR IF NOT M9301 ON ITS FIRST TRIP THRU
281 MOV #0,BMFLAG ;INDICATE 1ST PART OF M9301 WAS DONE
282 MOV #0,ADR,R1 ;GET OTHER HALF'S ADDR
283 MOV #0,BDCLW,R2 ;SET COUNT UP AGAIN
284 BR DO1 ;GO CHECK OTHER HALF
285
286 4S: NOP
287 CMP R3,LO ;CHECK TOTAL
288 BNE ERR ;BR IF ERROR
289 CMP R4,HI ;CHECK CARRY
290 BNE ERR
291 ENDTTS,BEGIN ;SIGNAL END OF ITERATION
292 ;MONITOR SHALL TEST END OF PASS
293 ALT: TST HOLD ;ANY MORE ROMS?
294 BEQ STR ;NO
295 ADD #4,R0 ;YES MOVE POINTER
296 BR CAL ;GO DO OTHERS
297
298 ;PASS COUNTER
299
300
301
302
303
304
305
306
307 ;ERROR CHECKING AND REPORTING
308 ERR: CMP SAVE,ADDR ;CHECK FOR YA ERROR
309 BNE ERR1
310 CMP LO,ACK ;CHECK ALTERNATE LOW SUM
311 BNE ERR1
312 CMP HI,ACK1 ;CHECK ALTERNATE HIGH SUM
313 BEQ ALT ;OK
314
315 ERR1: MOV SAVE,CSRA ;SAVE ROM ADDRESS
316 MOV LO,ACSR ;SAVE CHECKSUM
317 MOV SAVE1,ASTAT ;SAVE LIMIT
318 CLR ERR1P ;UNKNOWN ERROR
319 *****
320 ORDERS,BEGIN,NULL ;CHECKSUM ERROR
321 *****
322 MSGN$,BEGIN,MES1 ;ASCII MESSAGE CALL WITH COMMON HEADER
323 BIC POINT,HOLD1 ;CLEAR OFFENDING ROM
324 JMP STR
325
326 ;REGISTER SETUP ROUTINE

```

```

327
328
329 000606 016701 001314 SETUP: MOV AADR,R1 ;SET YA REGISTERS
330 000612 016702 001312 MOV ACH,R2
331 000616 016703 001310 MOV ACHK,R3
332 000622 016704 001306 MOV ACHK1,R4
333 000626 016707 000000 MOV #0,BMFLAG
334 000634 000205 RTS R5
335
336
337 000636 016701 001306 MOV BADR,R1 ;SET YB REGISTERS
338 000642 016702 001304 MOV BLM,R2
339 000646 016703 001302 MOV BCK,R3
340 000652 016704 001300 MOV BCK1,R4
341 000656 012767 000000 MOV #0,BMFLAG
342 000664 000205 RTS R5
343
344
345 000666 016701 001256 MOV BADR,R1 ;SET YR-11 REGISTERS
346 000672 016702 001262 MOV BLM,R2
347 000676 016703 001260 MOV BCK,R3
348 000702 016704 001256 MOV BCK1,R4
349 000706 012767 000000 MOV #0,BMFLAG
350 000714 000205 RTS R5
351
352
353 000716 016701 001244 MOV CADR,R1 ;SET YC REGISTERS
354 000722 016702 001202 MOV ACH,R2
355 000726 016703 001236 MOV CCK,R3
356 000732 016704 001234 MOV CCK1,R4
357 000736 016707 000000 MOV #0,BMFLAG
358 000744 000205 RTS R5
359
360
361 000746 016701 001214 MOV CADR,R1 ;SET YF REGISTERS
362 000752 016702 001212 MOV FLM,R2
363 000756 016703 001210 MOV FCK,R3
364 000762 016704 001212 MOV FCK1,R4
365 000766 012767 000000 MOV #0,BMFLAG
366 000774 000205 RTS R5
367
368
369 000776 016701 001200 MOV HADR,R1 ;SET YH REGISTERS
370 001002 016702 001122 MOV ACH,R2
371 001006 016703 001172 MOV HCK,R3
372 001012 016704 001170 MOV HCK1,R4
373 001016 012767 000000 MOV #0,BMFLAG
374 001024 000205 RTS R5
375
376
377 001026 016701 001156 MOV BMADR,R1 ;SET BM873 YA ADDRESS
378 001032 016702 001154 MOV BLM,R2
379 001036 016703 001152 MOV BCK,R3
380 001042 016704 001150 MOV BCK1,R4
381 001046 016767 000001 MOV #0,BMFLAG ;INDICATE TO CHECKSUM ROUTINE
382 001054 000205 RTS R5

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383 001056* 016701 001126      MOV      BMADR,R1      ;SET BM873 YB ADDRESS
384 001082* 016702 001132      MOV      BCDLN,R2
385 001066* 016703 001130      MOV      SBMCK,R3
386 001072* 016704 001126      MOV      SBMCK,R4
387 001076* 012767 000001 001310  MOV      #1,BMFLAG      ;INDICATE TO CHECKSUM ROUTINE
388 001104* 000205
389
390 001106* 016701 001076      MOV      BMADR,R1      ;SET BM873 YC ADDRESS
391 001112* 016702 001102      MOV      BCDLN,R2
392 001116* 016703 001104      MOV      SBMCK,R3
393 001122* 016704 001102      MOV      SBMCK,R4
394 001126* 012767 000001 001260  MOV      #1,BMFLAG      ;INDICATE TO CHECKSUM ROUTINE
395 001134* 000205
396
397 001136* 016701 001046      MOV      BMADR,R1      ;SET BM873 YD ADDRESS
398 001142* 016702 001052      MOV      BCDLN,R2
399 001146* 016703 001060      MOV      SBMCK,R3
400 001152* 016704 001056      MOV      SBMCK,R4
401 001156* 012767 000001 001230  MOV      #1,BMFLAG      ;INDICATE TO CHECKSUM ROUTINE
402 001164* 000205
403
404
405
406 001166* 016701 001016      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
407 001172* 016702 001022      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
408 001176* 016703 001040      MOV      M93AH,R3      ;SET HIGH SUM
409 001202* 016704 001036      MOV      M93AL,R4      ;SET CARRY SUM
410 001206* 012767 177777 001200  FIXA:  MOV      #-1,BMFLAG
411 001214* 000205
412
413
414 001216* 016701 000766      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
415 001222* 016702 000772      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
416 001226* 016703 001014      MOV      M93BH,R3      ;SET HIGH SUM
417 001232* 016704 001012      MOV      M93BL,R4      ;SET CARRY SUM
418 001236* 012767 177777 001150  FIXB:  MOV      #-1,BMFLAG
419 001244* 000205
420
421
422 001246* 016701 000736      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
423 001252* 016702 000742      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
424 001256* 016703 000770      MOV      M93BH,R3      ;SET HIGH SUM
425 001262* 016704 000766      MOV      M93BL,R4      ;SET CARRY SUM
426 001274* 000205 177777 001120  FIXC:  MOV      #-1,BMFLAG
427
428
429
430
431
432 001276* 016701 000640      ;BM792 ROM SETUP
433 001302* 016702 000622      MOV      VLADR,R1      ;VLADR,R1
434 001306* 016703 000632      MOV      ACH,R2        ;ACH,R2
435 001312* 016704 000630      MOV      VLHIGH,R3     ;VLHIGH,R3
436 001316* 012767 000000 001070  MOV      VLOW,R4       ;VLOW,R4
437 001324* 000205
438

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439
440 001326* 016701 000656      ;M9400 ROM SETUP
441 001332* 016702 000652      MOV      BMADR,R1      ;SET M9400 ADDRESS(FIRST HALF)
442 001336* 016703 000716      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
443 001342* 016704 000714      MOV      M94H,R3       ;SET HIGH SUM
444 001346* 012767 177777 001040  FIXD:  MOV      M94L,R4       ;SET CARRY SUM
445 001354* 000205
446
447
448
449 001356*
450
451
452 001356* 016701 000626      ;BM873 SF ROM SETUP
453 001362* 016702 000632      MOV      BMADR,R1      ; SET BM873 SF ADDRESS
454 001366* 016703 000644      MOV      BCDLN,R2      ; SET COUNT FOR 1ST HALF
455 001372* 016704 000642      MOV      SBMCK,R3      ; SET HI CKSUM
456 001376* 012767 000001 001010  MOV      SBMCK,R4      ; SET LOW CKSUM
457 001404* 000205
458
459
460 001406* 016701 000576      ;BM873 SE ROM SETUP
461 001412* 016702 000602      MOV      BMADR,R1      ; SET BM873 SE ADDRESS
462 001416* 016703 000642      MOV      BCDLN,R2      ; SET COUNT FOR 1ST HALF
463 001422* 016704 000640      MOV      SBMCK,R3      ; SET HI CKSUM
464 001426* 012767 000001 000760  MOV      SBMCK,R4      ; SET LOW CKSUM
465 001434* 000205
466
467
468 001436* 016701 000546      ;BM873 SC ROM SETUP
469 001442* 016702 000552      MOV      BMADR,R1      ; SET BM873 SC ADDRESS
470 001446* 016703 000616      MOV      BCDLN,R2      ; SET COUNT FOR 1ST HALF
471 001452* 016704 000614      MOV      SBMCK,R3      ; SET HI CKSUM
472 001456* 012767 000001 000730  MOV      SBMCK,R4      ; SET LOW CKSUM
473 001464* 000205
474
475
476 001466* 016701 000516      ;M9301 SB SET UP
477 001472* 016702 000522      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
478 001476* 016703 000572      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
479 001502* 016704 000570      MOV      M93BH,R3      ;SET HIGH SUM
480 001506* 012767 177777 000700  MOV      M93BL,R4      ;SET CARRY SUM
481 001514* 000205
482
483
484 001516* 016701 000466      ;M9301 SA SET UP
485 001522* 016702 000472      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
486 001526* 016703 000546      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF
487 001532* 016704 000544      MOV      M93AH,R3      ;SET HIGH SUM
488 001536* 012767 177777 000650  MOV      M93AL,R4      ;SET CARRY SUM
489 001544* 000205
490
491
492 001546* 016701 000436      ;M9301 YD SET UP
493 001552* 016702 000442      MOV      BMADR,R1      ;SET M9301 ADDRESS(FIRST HALF)
494 001556* 016703 000522      MOV      BCDLN,R2      ;SET COUNT FOR FIRST HALF

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495 001562 016704 000520      MOV      M93YDL,R4      ;SET CARRY SUM
496 001568 012767 177777      MOV      #-1,BMFLAG
497 001574 000205                RTS      R5
498
499
500
501 001576 016701 000406      ;M9401 YH SET UP
502 001602 016704 000412      MOV      BMADR,R1      ;SET M9401 ADDRESS(FIRST HALF)
503 001605 016703 000416      MOV      BCDLM,R2      ;SET COUNT FOR FIRST HALF
504 001611 016704 000414      MOV      M93YHL,R3     ;SET HIGH SUM
505 001616 012767 177777      MOV      M94YHL,R4     ;SET CARRY SUM
506 001624 000205                RTS      R5
507
508
509
510 001626 016701 000356      ;M9301 YF
511 001632 016702 000362      MOV      BMADR,R1      ;SET M9401 ADDRESS(FIRST HALF)
512 001636 016703 000452      MOV      BCDLM,R2      ;SET COUNT FOR FIRST HALF
513 001642 016704 000450      MOV      M93YHL,R3     ;SET HIGH SUM
514 001646 012767 177777      MOV      M93YFL,R4     ;SET CARRY SUM
515 001654 000205                RTS      R5
516
517
518
519 001656 016701 000326      ;M9301 YH SET UP
520 001662 016703 000332      MOV      BMADR,R1      ;SET M9301 ADDRESS (FIRST HALF)
521 001666 016703 000326      MOV      BCDLM,R2      ;SET COUNT FIRST HALF
522 001672 016704 000424      MOV      M93YHL,R3     ;SET HIGH SUM
523 001676 012767 177777      MOV      M93YHL,R4     ;SET CARRY SUM
524 001704 000205                RTS      R5
525
526
527
528
529 001706 016701 000276      ;M9301 YE SET UP
530 001712 016702 000302      MOV      BMADR,R1      ;SET M9301 ADDRESS (FIRST HALF)
531 001716 016703 000402      MOV      BCDLM,R2      ;SET COUNT FIRST HALF
532 001722 016704 000400      MOV      M93YHL,R3     ;SET HIGH SUM
533 001726 012767 177777      MOV      M93YHL,R4     ;SET CARRY SUM
534 001734 000205                RTS      R5
535
536
537
538
539 001736 016701 000246      ;M9301 YJ SET UP
540 001742 016702 000252      MOV      BMADR,R1      ;SET M9301 ADDRESS (FIRST HALF)
541 001746 016703 000356      MOV      BCDLM,R2      ;SET COUNT FIRST HALF
542 001752 016704 000354      MOV      M93YHL,R3     ;SET HIGH SUM
543 001756 012767 177777      MOV      M93YHL,R4     ;SET CARRY SUM
544 001764 000205                RTS      R5
545
546
547
548
549 001766 016701 000342      ;GROUP B BIT 11 SET UP
550 001772 016702 000340      MOV      GB11ADR,R1    ;SET ADDRESS
551 001776 016703 000336      MOV      GB11LTM,R2    ;SET COUNT
552 001782 016704 000336      MOV      GB11HL,R3     ;SET HIGH SUM
553 002002 016704 000334      MOV      GB11LO,R4     ;SET CARRY SUM

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551 002006 012767 177777      MOV      #-1,BMFLAG
552 002014 000205                RTS      R5
553
554
555
556 002016 016701 000322      ;GROUP B BIT 12 SET UP
557 002022 016702 000320      MOV      GR12ADR,R1    ;SET ADDRESS
558 002026 016703 000316      MOV      GR12LTM,R2    ;SET COUNT
559 002032 016704 000314      MOV      GR12HL,R3     ;SET HIGH SUM
560 002036 012767 177777      MOV      GR12LO,R4     ;SET CARRY SUM
561 002044 000205                RTS      R5
562
563
564
565 002046 016701 000302      ;GROUP B BIT 13 SET UP
566 002052 016702 000300      MOV      GR13ADR,R1    ;SET ADDRESS
567 002056 016703 000276      MOV      GR13LTM,R2    ;SET COUNT
568 002062 016704 000274      MOV      GR13HL,R3     ;SET HIGH SUM
569 002066 012767 177777      MOV      GR13LO,R4     ;SET CARRY SUM
570 002074 000205                RTS      R5
571
572
573
574 002076 016701 000262      ;GROUP B BIT 14 SET UP
575 002102 016702 000260      MOV      GR14ADR,R1    ;SET ADDRESS
576 002106 016703 000256      MOV      GR14LTM,R2    ;SET COUNT
577 002112 016704 000254      MOV      GR14HL,R3     ;SET HIGH SUM
578 002116 012767 177777      MOV      GR14LO,R4     ;SET CARRY SUM
579 002124 000205                RTS      R5
580
581
582
583
584 002126 173000                AADR: 173000           ;YA ADDRESS
585 002130 000040                ACH: 32                ;YA LIMIT
586 002132 172735                ACHR: 172735          ;YA CHECKSUM
587 002134 000010                ACKI: 10               ;YA CARRY
588 002136 087715                ACKI: 07715           ;YA ALTERNATE LOW SUM
589 002140 000010                ACKI: 10               ;YA ALTERNATE HIGH SUM
590 002142 173400                YLADR: 173400
591 002144 066435                YLHIGH: 66435
592 002146 000010                YLLOW: 10
593
594 002150 173100                BADR: 173100          ;YB & NR-11 ADDRESS
595 002152 000032                BLN: 26               ;YB LIMIT
596 002154 171632                BCR: 171632          ;YB LOW SUM
597 002156 000006                BCKI: 6               ;YB HI SUM
598
599 002160 000100                HLM: 64               ;NR-11 LIMIT
600 002162 112021                HCR: 112021          ;NR-11 LOW SUM
601 002164 000020                HCKI: 20              ;NR-11 HI SUM
602
603 002166 173200                CADR: 173200          ;YC ADDRESS
604 002170 124164                CCKI: 5               ;YC LOW SUM
605 002172 000005                CCKI: 5               ;YC HI SUM
606

```


607 002174 000037
608 002176 111603
609 002200 000010
610
611 002202 173300
612 002204 121506
613 002206 000010
614
615
616 002210 173000
617 002212 000200
618 002214 060754
619 002216 000035
620
621 002220 000400
622
623 002222 143524
624 002224 000065
625
626 002226 076101
627 002230 000064
628
629 002232 132040
630 002234 000055
631
632 002236 162074
633 002240 000054
634
635 002242 055367
636 002244 000170
637
638 002246 055471
639 002250 000174
640
641 002252 162214
642 002254 000206
643
644 002256 165000
645
646 002260 022464
647 002262 000203
648
649 002264 146474
650 002266 000063
651
652 002270 015456
653 002272 000117
654
655 002274 146054
656 002276 000207
657
658 002300 025332
659 002302 000175
660
661 002304 132311
662 002306 000177

FLM: 31 ;YF LIMIT
PCK: 111603 ;YF LOW SUM
PCK1: 10 ;YF HI SUM
HADR: 173300 ;YH ADDRESS
HCR: 121506 ;YH LOW SUM
HCR1: 10 ;YH HI SUM
BMADR: 173000
BMLM: 200 ;BM873 YA LIMIT
BMCK: 60754 ;BT SUM
BMCK1: 35 ;LOW SUM
BCDLH: 400 ;BM873 YB,YC,YD LIMIT
BBMCK: 143524 ;BM873 YB HI SUM
BBMCK1: 65 ;RM873 YB LOW SUM
CBMCK: 76101 ;BM873 YC HI SUM
CBMCK1: 64 ;BM873 YC LOW SUM
DBMCK: 132040 ;BM873 YD HI SUM
DBMCK1: 55 ;BM873 YD LOW SUM
SBMCK: 162074 ;BM873 SF HI SUM
SBMCK1: 54 ;BM873 SF LO SUM
M93AHI: 55367 ;M9301YA HI SUM
M93ALO: 170 ;M9301YA CARRY SUM
M93BHI: 55471 ;M9301YB HI SUM
M93BLO: 174 ;M9301YB CARRY SUM
M93CHI: 162214 ;M9301YC HIGH SUM
M93CLO: 206 ;M9301YC CARRY SUM
M93ADR: 165000 ;M9301 LOWER ADDRESS
M94HI: 22464 ;M9400 HIGH SUM
M94LO: 203 ;M9400 CARRY SUM
SEBMC: 146474 ;BM873 SE HI CHECKSUM
SEBMC1: 63 ;LOW
SCBMC: 15456 ;BM873 SC HI CHECKSUM
SCBMC1: 117 ;LOW
M93SBH: 146054 ;M9301 SB HI CHECKSUM
M93SBL: 207 ;LOW
M93SAH: 25332 ;M9301 SA HI CHECKSUM
M93SAL: 175 ;LOW
M93YDH: 132311 ;M9301 YD HI CHECKSUM
M93YDL: 177

663 002310 040774
664 002312 000174
665
666 002314 112445
667 002316 000215
668
669 002320 175261
670 002322 000174
671
672
673 002324 024457
674 002326 000164
675
676 002330 162632
677 002332 000153
678
679 002334 000000
680 002336 000000
681 002340 000000
682 002342 000000
683
684 002344 000000
685 002346 000000
686 002350 000000
687 002352 000000
688
689 002354 000000
690 002356 000000
691 002360 000000
692 002362 000000
693
694 002364 000000
695 002366 000000
696 002370 000000
697 002372 000000
698
699 002374 000000
700 002376 000000
701 002400 000000
702 002402 000000
703 002404 000000
704
705
706
707 002406 000000
708 002410 000000
709 002412 000000
710 002414 000000
711
712
713 002416 002422
714 002420 177777
715
716
717 002422 020045 051104 050117
718 002430 042520 020104 043117

M94VHR: 40774 ;M9400 VH HI CHECKSUM
M94VHL: 174 ;M9400 VH LOW CHECKSUM
M93YFH: 112445 ;M9301 YF HIGH CHECKSUM
M93YFL: 215 ;M9301 YF LOW CHECKSUM
M93VHR: 175261 ;M9301 YH HIGH CHECKSUM
M93VHL: 174 ;M9301 YH LOW CHECKSUM
M93YEH: 24457 ;M9301 YE HIGH CHECKSUM
M93VEL: 164 ;M9301 YE LOW CHECKSUM
M93YJH: 162632 ;M9301 YJ HIGH CHECKSUM
M93YJL: 153 ;M9301 YJ LOW CHECKSUM
GB11ADR: 0 ;BIT 11 ADDRESS
GB11LYM: 0 ;BIT 11 LIMIT
GB11HI: 0 ;HIGH CHECKSUM
GB11LO: 0 ;CARRY CHECKSUM
GB12ADR: 0 ;BIT 12 ADDRESS
GB12LYM: 0 ;BIT 12 LIMIT
GB12HI: 0 ;HIGH CHECKSUM
GB12LO: 0 ;CARRY CHECKSUM
GB13ADR: 0 ;BIT 13 ADDRESS
GB13LYM: 0 ;BIT 13 LIMIT
GB13HI: 0 ;HIGH CHECKSUM
GB13LO: 0 ;CARRY CHECKSUM
GB14ADR: 0 ;BIT 14 ADDRESS
GB14LYM: 0 ;BIT 14 LIMIT
GB14HI: 0 ;HIGH CHECKSUM
GB14LO: 0 ;CARRY CHECKSUM
TEST: 0 ;HOLDS START OF GROUP A OR B ROM SETUPS
HOLD: 0 ;SRI SAVED
SAVE: 0 ;SAVE ADDRESS
SAVE1: 0 ;SAVE LIMIT
HOLD1: 0
PONT: 0 ;DROP POINTER
LO: 0 ;LOW CHECKSUM
HI: 0 ;HIGH CHECKSUM
BMFLAG: 0 ;FLAG TO SKIP LOC 173024 FOR RM873 ROM
MES1: PROP
177777
DROP: .ASCIZ "% DROPPED OFFENDING ROM %"

PSW =	177776	229#			
PUSH =	005746	229#			
PUSH2 =	024646	279#			
RANRCS =	044146	556#			
RANRUM =	000054R	198#			
RESSTR	000224R	217#	232#		
RES1	000056R	200#			
RES2	000060R	201#			
RSTR	000112R	211#			
SAVE	002400R	264*	307	314	701#
SAVE1	002402R	265*	316	702#	
SBADR	000102R	210#			
SBMCK	002236R	454	632#		
SBMCK1	002240R	455	633#		
SCMC	002270R	470	657#		
SCMCI	002272R	471	658#		
SEBMC	002264R	462	649#		
SEBMC1	002266R	463	650#		
SETUP	000606R	238	329#		
SOPCNT	000042R	193#			
SOPFRS=	104406	194#			
SOPPAS	000046R	195#			
SPDINT	000032R	189#			
SPSTZ =	000040	1	222		
SR1	000016R	182#	232		
SR2	000020R	183#			
SR3	000022R	184#			
SR4	000024R	185#			
START	000224R	188	231#		
STAT	000026R	187#			
STR	000260R	236	240#	293	323
SVR0	000062R	202#			
SVR1	000064R	203#			
SVR2	000066R	204#			
SVR3	000070R	205#			
SVR4	000072R	206#			
SVR5	000074R	207#			
SVR6	000076R	208#			
SYSCNT	000052R	197#			
TEST	002374R	234*	238*	244	699#
TRPDFN=	000022	229#			
VECTOR	000010R	178#			
WASADR	000104R	212#			
WDR	000116R	216#			
WDT0	000114R	218#			
XFLAG	000005R	176#			
YLADR	002142R	431	590#		
YLHIGH	002144R	433	591#		
YLOW	002146R	434	592#		

• ARS. 000000 000
002454 001

ERRORS DETECTED: 0

DEFAULT GLOBALS GENERATED: 0

XBMCNO, XBMCNO/SOL/CRF:SYM=DDXCOM, XBMCNO
RUN-TIME: 1 2 4 SECONDS
RUN-TIME RATIO: 18/4=4.3
CORE USED: 7K (13 PAGES)