```
     501          0>
>P.$2B00
>
```

Port B

Bit 0   Carrier Detect
    1   75 Bits/sec
    2   1200 Bits/sec
    3   Mute _____ haven't written in yet
    4   Not used
    5   ~~Ato~~ Impulsing } Invented. — possibly temporary.
    6   Sieze
    7   Not used

Link

CB1 to detect −ve edge start bit.

```
    2 3100
   10 3100              \ @@@ @@@  @
   11 3100              \  @   @   @@
   12 3100              \  @   @@   @
   13 3100              \  @   @    @
   14 3100              \ @@@ @    @@@
   15 3100              \
  500 3100 4C 1C 33   JMP KK1 INITIALISE & LOGON
  600 3103 4C 15 3C   JMP VV28 DISPLAY FRAME OFF LINE
  610 3106            \FOR USE BY TELESOFTWARE PROGRAM:
  620 3106 4C 64 38   JMP QQ32 PUT CHAR IN A INTO K/B BUFFER
  630 3109 4C 7F 38   JMP QQ20 SEND CHAR IN K/B BUFFER TO PRESTEL
  640 310C 4C 8E 3B   JMP VV25 REDISPLAY SCREEN
  650 310F            \
 1000 310F            \CONTROL SECTION
 1010 310F            :UU1
 1030 310F 20 7F 38   JSR QQ20 SEND ANY CHAR WAITING IN K/B BUFFER (THIS ROUTINE
 1035 3112            \ALSO CALLED FROM RR1)
 1038 3112 20 08 38   JSR QQ13 CHECK FOR CHAR BEING TYPED
 1039 3115            \(THIS ROUTINE ALSO CALLED FROM JJ1)
 1050 3115 20 3E 39   JSR RR1 TRANSFER PRESTEL BUFFER TO #2C70 W/S (THIS ROUTINE
 1055 3118            \ONLY CALLED FROM HERE)
 1060 3118 AD 00 B8   LDA #B800
 1061 311B 4A         LSR A
 1063 311C 90 F1      BCC UU1 CARRIER STILL PRESENT
 1064 311E A9 60      LDA @#60 DROP LINE
 1065 3120 8D 00 B8   STA #B800
 1066 3123 4C 0F 31   JMP UU1
 1067 3126            \
 1068 3126            \AUTO DIAL
 1070 3126            :BB27
 1070 312E
 1070 312E EA         NOP
 1071 312F 20 D1 F7   :BB1 JSR #F7D1 FF & MESSAGE
 1076 317E
 1076 317E EA         NOP
 1077 317F A9 31      LDA @BB27/256 LOAD TEL & LOGON NOS
 1078 3181 85 7B      STA WW13+1
 1079 3183 A9 26      LDA @BB27&255
 1080 3185 85 7A      STA WW13
 1081 3187 A9 2B      LDA @#2B
 1082 3189 85 7D      STA WW14+1
 1083 318B A9 00      LDA @0
 1084 318D 85 7C      STA WW14
 1085 318F A2 7A      LDX @WW13
 1086 3191 58         CLI
 1086 3192 20 E0 FF   JSR #FFE0
 1086 3195 78         SEI
 1087 3196 A9 00      :BB0 LDA @0
 1088 3198 85 6A      STA WW5
 1090 319A A5 66      :BB3 LDA WW3
 1090 319C 29 01      AND@1
 1090 319E 85 66      STA WW3
 1090 31A0 20 D1 F7   JSR#F7D1
 1110 31C3 EA         NOP
 1120 31C4 A9 10      LDA@#10
 1120 31C6 85 62      STA WW1
 1130 31C8 A9 2B      LDA@#2B
```

Handwritten annotations:

JMP EE0 WARM START.

inreal in existing JS1.

prestel

doesn't work *COS.

atomtel etc loading file etc.

OSload

atomtel (c) Acornsoft.

```
1130 31CA 85 63        STA WW1+1
1130 31CC A0 00        LDY@0
1130 31CE A2 31        LDX@#31
1140 31D0 A5 66         LDAWW3
1140 31D2 F0 06        BEQ BB4
1140 31D4 A0 10        LDY@#10
1150 31D6 A9 FF         LDA@#FF
1150 31D8 85 66        STAWW3
1160 31DA E6 66        :BB4 INC WW3
1170 31DC 8A           :BB9 TXA  ←
1170 31DD 20 F4 FF JSR#FFF4
1180 31E0 A9 20         LDA@#20
1180 31E2 20 F4 FF JSR#FFF4
1180 31E5 20 F4 FF JSR#FFF4
1180 31E8 20 F4 FF JSR#FFF4
1180 31E8 20 F4 FF JSR#FFF4
1200 31EE B1 62        :BB7 LDA(WW1),Y GET DIGIT
1210 31F0 C9 3A        :"
1210 31F2 D0 02        BNE BB5
1210 31F4 A9 30        0"
1220 31F6 90 02        :BB5 BCC BB6
1220 31F8 A9 20        LDA@32
1230 31FA 20 F4 FF :BB6 JSR#FFF4
1230 31FD C8           INY
1230 31FE 98           TYA
1240 31FF 29 0F         AND@#F
1240 3201 D0 EB        BNE BB7
1240 3203 20 ED FF JSR#FFED
1240 3206 20 ED FF JSR#FFED
1250 3209 98            TYA
1250 320A C9 60        CMP@#60
1250 320C F0 0C        BEQ BB11
1260 320E C9 31         CMP@#31
1260 3210 B0 03        BCS BB8
1260 3212 18           CLC
1260 3213 69 10        ADC@#10
1270 3215 A8           :BB8 TAY
1270 3216 E8           INX
1270 3217 4C DC 31 JMP BB9
1280 321A A5 6A        :BB11 LDAWW5
OUT OF RANGE:
1280 321C D0 00        BNE BB19
1280 321E 20 D1 F7 JSR#F7D1
1300 3237 EA           NOP
1300 3238 20 E6 FF JSR#FFE6
1300 323B B5 68        STAWW4
1310 323D C9 31        1"
1310 323F 90 73        BCC BB26
1320 3241 C9 35        5"
1320 3243 B0 6F        BCS BB26
1321 3245 48           PHA
1322 3246 20 D1 F7 JSR#F7D1
1326 325F EA           NOP
1326 3260 68           PLA
1330 3261 38           :BB16 SEC
1330 3262 E9 30        0"
1330 3264 A8           TAY
1330 3265 A9 10        LDA@#10
1340 3267 A6 66         LDX WW3
1340 3269 D0 02        BNE BB12
1340 326B A9 20        LDA@#20
1350 326D 88           :BB12 DEY
```

Print phonet/5

oscrlf.

589

did which no.
orecho.

```
1350 326E F0 0D     BEQ BB13
1360 3270 18         CLC
1360 3271 69 10     ADC@#10
1360 3273 C9 41     CMP@#41
1360 3275 D0 F6     BCSBB12
1370 3277 18         CLC
1370 3278 69 10     ADC@#10
1370 327A 4C 6D 32 JMP BB12
1380 327D 85 62    :BB13 STA WW1
1390 327F A9 02     LDA@#2
1390 3281 8D 00 B8 STA#B800
1390 3284 A2 F0     LDX@240
1390 3286 20 83 FB JSR#FB83 SEIZE LINE AND WAIT
1395 3289 20 D1 F7 JSR #F7D1
1398 32AD
1398 32AD EA        NOP
1400 32AE 20 CD 32 JSR BB20    DIAL
1410 32B1 4C A4 33 JMP EE1     LOGON
1490 32B4 4C 96 31 :BB26 JMP BB0 ILLEGAL NUMBER
1491 32B7 20 D1 F7 :BB19 JSR#F7D1
1492 32C7 EA        NOP
1493 32C8 A5 68     LDA WW4
1493 32CA 4C 61 32 JMP BB16
1500 32CD           \ AUTO DIAL ROUTINE
1510 32CD           \ DIALS NUMBER ->WW2
1520 32CD A0 00    :BB20 LDY@0
1530 32CF B1 62    :BB21 LDA(WW1),Y
1540 32D1 C9 3F CMP ?"
1540 32D3 F0 1B     BEQ BB22
1550 32D5 C9 3E CMP >"
1550 32D7 F0 17     BEQ BB22
1560 32D9 C9 3B
1560 32DB F0 19     BEQ BB24
1561 32DD 48        PHA
1562 32DE 20 F4 FF JSR #FFF4 PRINT NUMBER
1563 32E1 68        PLA
1565 32E2 C9 30 CMP 0"
1565 32E4 D0 02     BNE BB2
1565 32E6 A9 3A CMP :"
1570 32E8 38       :BB2 SEC
1570 32E9 E9 30 SBC 0"
1570 32EB 85 64     STA WW2
1570 32ED 20 FE 32 JSR BB25
1580 32F0 C8       :BB22 INY
1580 32F1 C0 10     CPY@16
1580 32F3 D0 DA     BNE BB21
1590 32F5 60       :BB23 RTS
1595 32F6 A2 3C    :BB24 LDX@60
1595 32F8 20 83 FB JSR#FB83
1595 32FB 4C F0 32 JMPBB22
1600 32FE           \ DIAL ONE DIGIT IN WW2
1620 32FE A9 22    :BB25 LDA@#22
1620 3300 8D 00 B8 STA#B800
1630 3303 A2 02     LDX@2
1630 3305 20 83 FB JSR#FB83
1630 3308 A2 02     LDX@#02
1640 330A 8E 00 B8 STX#B800
1640 330D A2 04     LDX@4
1640 330F 20 83 FB JSR#FB83
1650 3312 C6 64     DEC WW2
1650 3314 D0 E8     BNE BB25
1660 3316 A2 32     LDX@50
```

```
1660 3318 20 83 FB  JSR&FB83
1660 331B 60         RTS
$    1 331C
  10 331C             \ @@@ @@@  @@        change
  11 331C             \  @  @   @  @
  12 331C             \  @  @@     @
  13 331C             \  @  @      @
  14 331C             \ @@@ @    @@@@
  15 331C             \
1000 331C             \INITIALISE
1001 331C A9 00      :KK1 LDA @0
1002 331E 85 88       STA WW20 CLR WHITE SCREEN FLAG
1003 3320 BA          TSX
1006 3321 86 70       STX $70
1035 3323 A9 00       LDA @0
1036 3325 85 B4       STA ZZ19 HOME CURSOR
1045 3327 85 B6       STA ZZ20
1050 3329 85 86       STA WW19 CLR REVEAL PAGE FLAG
1060 332B 85 98       STA ZZ5 CLR CHAR ARRIVING FLAG
1070 332D 85 9A       STA ZZ6 CLR CHAR BEING SENT FLAG
1110 332F 85 BC       STA ZZ23 CLR LAST CHAR WAS ESC FLAG
1113 3331 85 BA       STA ZZ22 CURSOR OFF
1120 3333 A9 FF       LDA @$FF
1130 3335 85 A2       STA ZZ10 SET KEY RELEASED FLAG
1140 3337 A9 30       LDA @$30 INITIALISE BUFFERS
1150 3339 85 AD       STA ZZ15+1
1160 333B 85 AF       STA ZZ16+1
1170 333D 85 A5       STA ZZ11+1
1180 333F 85 A7       STA ZZ12+1
1190 3341 85 A6       STA ZZ12
1205 3343 85 A4       STA ZZ11
1210 3345 A9 60       LDA @$60
1220 3347 85 AE       STA ZZ16
1235 3349 85 AC       STA ZZ15
1240 334B A9 2C       LDA @$2C INITIALISE POINTER TO 2ND HALF OF D.H. FLAGS
1250 334D 85 8B       STA WW21+1
1260 334F A9 50       LDA @$50
1270 3351 85 8A       STA WW21
1280 3353 A9 03       LDA @3 SET UP BAUD RATE TIMES
1290 3355 85 97       STA ZZ4+1
1300 3357 A9 41       LDA @$41
1310 3359 85 96       STA ZZ4
1320 335B A9 34       LDA @$34
1330 335D 85 95       STA ZZ3+1
1340 335F A9 15       LDA @$15
1350 3361 85 94       STA ZZ3
1360 3363 A9 6A       LDA @$6A SET UP PORT B
1361 3365 8D 02 B8    STA $B802
1362 3368 A9 62       LDA @$62
1363 336A 8D 00 B8    STA $B800 IDLE AT LOGIC 1
1364 336D A9 04       LDA @$4 1.5 BITS @ 1200 BAUD
1366 336F 85 A8       STA ZZ14+1
1368 3371 A9 0A       LDA @10
1369 3373 85 AA       STA ZZ14
1374 3375 8D 0C B8    STA $B80C SET UP PB1 FOR START BIT INTERRUPT
1376 3378 A9 90       LDA @$90
1378 337A 8D 0E B8    STA $B80E ALLOW PB1 TO INTERRUPT
1379 337D AD 05 02    LDA $205
1380 3380 C9 A0       CMP @$A0
1381 3382 D0 12       BNE KK2 ECONET
1382 3384 AD 04 02    LDA $204
1383 3387 D0 0D       BNE KK2 ECONET
```

why load A twice?

needs adjusting for parity errors.

```
1384 3389 A9 38       LDA @QQ25/256 SET INTERRUPT VECTOR
1385 338B 8D 05 02     STA #205
1390 338E A9 F2        LDA @QQ25&255
1391 3390 8D 04 02     STA #204
1391 3393 4C A0 33 JMP KK0
1393 3396 A9 38        :KK2 LDA @QQ25/256
1394 3398 8D 1D 02     STA #21D
1395 339B A9 F2        LDA @QQ25&255
1396 339D 8D 1C 02     STA #21C
1397 33A0 78           :KK0 SEI DO NOT ALLOW INTERRUPT    why?
1398 33A1 4C 2F 31     JMP BB1
1399 33A4              \LOGON
1400 33A4 AD 04 B8 :EE1 LDA #B804
1400 33A7 AD 08 B8 LDA #B808
1400 33AA AD 00 B8 LDA #B800 CLR INTERRUPT FLAGS
1400 33AD 58           CLI
1401 33AE A0 F0        LDY @240 WAIT 20 SEC FOR CARRIER TONE
1402 33B0 AD 00 B8 :EE2 LDA #B800
1402 33B3 4A           LSR A
1402 33B4 90 1E        BCC EE3 CARRIER PRESENT
1405 33B6 A2 05        LDX @5
1406 33B8 20 83 FB     JSR #FB83 WAIT 5/60TH SEC
1408 33BB 88           DEY
1408 33BC D0 F2        BNE EE2
1409 33BE A9 42        :EE5 LDA @#42
1410 33C0 8D 00 B8     STA #B800    wait
1411 33C3 A2 FF        LDX @255
1412 33C5 20 83 FB     JSR #FB83 DROP LINE & REDIAL
1413 33C8 A9 01        LDA @1
1413 33CA 85 6A        STA WW5
1414 33CC A9 02        LDA @2
1414 33CE 8D 00 B8 STA #B800
1415 33D1 4C 9A 31     JMP BB3    — not working.
1416 33D4              :EE3
1417 33D4 20 D1 F7     JSR #F7D1    "logging on"
1418 33ED EA           NOP
1420 33EE AD 00 B8 LDA #B800
1420 33F1 4A           LSR A
1420 33F2 B0 E0        BCS EE3 CHECK CARRIER STILL PRESENT
1421 33F4              \WAIT FOR AN ENQ
1422 33F4 A2 FF        LDX @#FF
1422 33F6 A0 FF        LDY @#FF
1425 33F8              :EE4
1430 33F8 A5 AE        LDA ZZ16
1440 33FA C5 AC        CMP ZZ15
1450 33FC D0 1A        BNE EE6 SOMETHING IN BUFFER
1455 33FE A5 AF        LDA ZZ16+1
1456 3400 C5 AD        CMP ZZ15+1
1457 3402 D0 14        BNE EE6
1460 3404 88           DEY
1460 3405 D0 F1        BNE EE4
1470 3407 CA           DEX
1470 3408 D0 EE        BNE EE4
1475 340A 4C BE 33     JMP EE5 REDIAL  — drop through for manual logon as
1490 340D 20 A0 3A :EE0 JSR UU4 CLEAR ALL H/G &VIDEO    warm start? alternative
1491 3410 A9 F0        LDA @#F0                          an
1492 3412 8D 00 B0     STA #B000 HIGH RES GRAPHICS MODE
1493 3415 4C 0F 31     JMP UU1 RUN
1500 3418 A0 00        :EE6 LDY @0
1505 341A B1 AE        :EE7 LDA (ZZ16),Y GET CHAR
1510 341C A4 AE        LDY ZZ16
1520 341E D0 02        BNE EE8
```

```
1530 3420 C6 AF      DEC ZZ16+1
1540 3422 C0 60      :EE8 CPY @#60
1550 3424 D0 06      BNE EE9
1560 3426 A4 AF      LDY ZZ16+1
1570 3428 C0 30      CPY @#30
1580 342A F0 2E      BEQ EE12 BUFFER NEEDS WRAP AROUND
1590 342C C6 AE      :EE9 DEC ZZ16
1600 342E 29 7F      :EE10 AND @#7F STRIP PARITY
1610 3430 C9 05      CMP @#5
1620 3432 D0 C4      BNE EE4 NOT AN ENQ
1630 3434 A0 00      LDY @0
1670 3436 A9 00      LDA @#00
1680 3438 85 7C      STA WW14
1690 343A A9 2B      LDA @#2B
1700 343C 85 7D      STA WW14+1
1710 343E B1 7C      :EE11 LDA (WW14),Y TRANSFER USER NUMBER TO K/B BUFFER
1715 3440 84 7A      STY WW13
1716 3442 C9 3F      ?"
1717 3444 F0 0A      BEQ EE13
1720 3446 20 64 38   JSR QQ32 SIMULATE KEYBOARD ENTRY
1721 3449 A5 9A      :EE14 LDA ZZ6
1722 344B D0 FC      BNE EE14 PREVIOUS CHAR STILL BEING SENT
1724 344D 20 7F 38   JSR QQ20 SEND IT
1725 3450 A4 7A      :EE13 LDY WW13
1730 3452 C8         INY
1735 3453 C0 10      CPY @16
1740 3455 D0 E7      BNE EE11
1790 3457 4C 0D 34   JMP EE0
1800 345A A0 FF      :EE12 LDY @#FF
1810 345C 84 AE      STY ZZ16
1820 345E A0 32      LDY @#32
1830 3460 84 AF      STY ZZ16+1
1840 3462 4C 2E 34   JMP EE10
$      1 3465
  10 3465            \ @@@ @@@ @@@@
  11 3465            \  @   @      @
  12 3465            \  @  @@      @
  13 3465            \  @   @    @ @
  14 3465            \ @@@ @      @@
  15 3465            \
1000 3465            \
1010 3465            \CONTROL CODE IN A - SET APPROPRIATE FLAG
1020 3465            \& REPLACE CODE BY A SPACE IN A
1025 3465            :GG1
1030 3465 C9 11       CMP @#11 GRAPHICS?
1040 3467 90 0F       BCC GG3
1050 3469 C9 18       CMP @#18
1060 346B B0 0B       BCS GG3
1065 346D A4 7C       LDY WW14
1066 346F D0 04       BNE GG16 ALREADY SET
1070 3471 E6 7C       INC WW14 SET GRAPHICS FLAG
1076 3473 E6 81       INC WW16+1 SET FLAG TO CLR HOLDABLE CHAR AFTER DISPLAY
1080 3475 4C F6 34   :GG16 JMP GG2
1090 3478 C9 01      :GG3 CMP @#01 ALPHANUMERICS?
1100 347A 90 0D       BCC GG4
1110 347C C9 08       CMP @#08
1120 347E B0 09       BCS GG4
1130 3480 A0 00       LDY @0
1140 3482 84 7C       STY WW14 CLEAR GRAPHICS FLAG
1145 3484 E6 81       INC WW16+1 SET FLAG TO CLR HOLDABLE CHAR AFTER DISPLAY
1150 3486 4C F6 34   JMP GG2
1160 3489 C9 1A      :GG4 CMP @#1A SEPARATED
```

insert a wait for FF to be sent

30.

Not wanted >

```
1170 3488 D0 05        BNE GG5
1180 348D E6 7A        INC WW13 SET SEPARATED FLAG
1190 348F 4C F6 34     JMP GG2
1200 3492 C9 19        :GG5 CMP @#19 CONTIGUOUS?
1210 3494 D0 07        BNE GG6
1220 3496 A0 00        LDY @0
1230 3498 84 7A        STY WW13 CLEAR SEPARATED FLAG
1240 349A 4C F6 34     JMP GG2
1250 349D C9 0D        :GG6 CMP @#0D DOUBLE HEIGHT?
1260 349F D0 16        BNE GG7
1262 34A1 A4 7E        LDY WW15
1263 34A3 D0 0F        BNE GG17 ALREADY SET
1265 34A5 E6 7E        INC WW15 SET DOUBLE HEIGHT FLAG
1271 34A7 E6 81        INC WW16+1 SET FLAG TO CLR HOLDABLE CHAR AFTER DISPLAY
1272 34A9 A4 B4        LDY ZZ19 PRESENT LINE
1273 34AB B1 8A        LDA (WW21),Y GET 2ND HALF OF D.H. FLAG FOR PRESENT LINE
1274 34AD D0 47        BNE GG2 (SET)
1275 34AF C8           INY NEXT LINE
1276 34B0 A9 01        LDA @1
1278 34B2 91 8A        STA (WW21),Y SET 2ND HALF OF D.H. FLAG FOR THAT LINE
1280 34B4 4C F6 34     :GG17 JMP GG2
1290 34B7 C9 0C        :GG7 CMP @#0C SINGLE HEIGHT?
1300 34B9 D0 0D        BNE GG8
1305 34BB A4 7E        LDY WW15
1306 34BD D0 06        BNE GG18 FLAG ALREADY SET
1310 34BF A0 00        LDY @0
1320 34C1 84 7E        STY WW15 CLEAR DOUBLE HEIGHT FLAG
1326 34C3 E6 81        INC WW16+1 SET FLAG TO CLR HOLDABLE CHAR AFTER DISPLAY
1330 34C5 4C F6 34     :GG18 JMP GG2
1335 34C8 C9 1E        :GG8 CMP @#1E HOLD GRAPHICS ?
1336 34CA D0 05        BNE GG9
1337 34CC E6 80        INC WW16 SET HOLD
1338 34CE 4C F6 34     JMP GG2
1340 34D1 C9 1F        :GG9 CMP @#1F RELEASE GRAPHICS?
1350 34D3 D0 07        BNE GG10
1360 34D5 A0 00        LDY @0
1370 34D7 84 80        STY WW16 CLEAR HOLD GRAPHICS FLAG
1380 34D9 4C F6 34     JMP GG2
1430 34DC C9 08        :GG10 CMP @#08 FLASHING?
1440 34DE D0 05        BNE GG11
1450 34E0 E6 82        INC WW17 SET FLASHING FLAG
1460 34E2 4C F6 34     JMP GG2
1470 34E5 C9 09        :GG11 CMP @#09 STEADY?
1480 34E7 D0 07        BNE GG12
1490 34E9 A9 00        LDA @0
1500 34EB 85 82        STA WW17 CLEAR FLASHING FLAG
1510 34ED 4C F6 34     JMP GG2
1520 34F0 C9 18        :GG12 CMP @#18 CONCEAL?
1540 34F2 D0 02        BNE GG2
1550 34F4 E6 84        INC WW18 SET CONCEAL FLAG
1560 34F6 A4 80        :GG2 LDY WW16
1570 34F8 F0 0B        BEQ GG15 HOLD GRAPHICS FLAG?
1580 34FA A4 7C        LDY WW14
1590 34FC F0 07        BEQ GG15 GRAPHICS FLAG ALSO?
1600 34FE A5 8D        LDA WW22+1 HOLD GRAPHICS - GET LAST POSSIBLE HELD CHAR
1610 3500 29 7F        AND @#7F REMOVE ITS SEPARATED GRAPHICS STATUS FLAG
1620 3502 E6 9C        INC WW22 SET CHAR HELD FLAG
1630 3504 60           RTS
1640 3505 A9 20        :GG15 LDA @#20 PRINT A SPACE INSTEAD
1650 3507 60           RTS
$    1 3508
  10 3508              \ @@@ @@@   @
```

```
   11 3508                  \    @   @      @@
   12 3508                  \    @   @@    @ @
   13 3508                  \    @   @    @@@@@
   14 3508                  \   @@@  @       @
   15 3508                  \
 2800 3508                  \DISPLAY LINE OF PRESTEL POINTED TO BY ZZ19
 2810 3508                  \(DESTROYS ALL REGISTERS)
 2860 3508                  :SS1
 2870 3508 A4 B4             LDY ZZ19
 2880 350A B1 8A             LDA (WW21),Y 2ND HALF OF D.H. THIS LINE?
 2890 350C F0 01             BEQ SS7 (NO)
 2960 350E 60                RTS
 2970 350F 20 F1 3A :SS7 JSR VV10 CALCULATE WW7
 2980 3512 20 DC 3A         JSR VV8 CALCULATE WW2
 2990 3515 20 2A 35         JSR SS2 DISPLAY LINE
 3000 3518 A4 B4            LDY ZZ19
 3010 351A C8               INY NEXT LINE
 3020 351B B1 8A            LDA (WW21),Y 2ND HALF OF D.H. NEXT LINE?
 3030 351D F0 0A            BEQ SS8 (NO)
 3040 351F E6 B4            INC ZZ19
 3050 3521 20 DC 3A         JSR VV8 CALC WW2
 3060 3524 20 2A 35         JSR SS2 DISPLAY LINE
 3070 3527 C6 B4            DEC ZZ19 BACK TO PRESENT LINE
 3080 3529 60       :SS8 RTS
 3084 352A                  \DISPLAY LINE (DATA FROM WW7 POINTER TO WW2 POINTER)
 3085 352A                  :SS2
 3090 352A A0 00            LDY @$00 (NEW LINE) CLEAR Y & RESET FLAGS
 309
**  TIME  OUT  **
```