

NewBrain Add. card.

Changing the NewBrain Main Board.

1. The following copper path must be broken.
 - 1 Between M3 pin 9 and heading. 6 (+12)
 - 2 Between M3 pin 7 and heading. 7 (+5 V)
 - 3 Copper course into pin 9 on the IC 402.
 - 4 Between pin 10 and 11 of the IC 402.
 - 5 Copper course into pin 13 on the IC 402.
 - 6 Between IC 407 pin. 22 and IC 442 pin 9 Bryde's close to IC 407 pin 22 (-ROM1) or close to IC 442 pin 9
 - 7 Between pin 4 and pin 5 of IC 442 (-MREQ)
 - 8 Between Exp.- connector pin 39 and IC 409 pin 5 (A15)
 - 9 Between M1 pin 8 and IC 426 pin 6 (-A14M)
2. The following places down a wire.
 - 1 Between M3 pin 9 and heading. 7 plus side. (+5 V)
 - 2 Between IC 406 pin 22 and IC 407 pin 22 (-ROM2) or using through platinum ring from IC 442 pin 10, this can be found by IC 440 pin 7 and through platinum ring from IC 442 pin 9 that exist between pin 8 and 9 of IC 441, however, only if one has broken copper path between this and pin 9 of IC 442.
 - 3 Between IC 402 pin 9 and M3 pin 7
 - 4 Between pin 8 and pin 13 of IC 402 (0V)
 - 5 Between IC 402 pin 11 and IC 428 pin 9.
 - 6 Between IC 408 pin 26 and IC 428 pin 4.
3. Second cooked.
 - 1 Jumper between IC 428 and heading. 54 removed if it is there.
 - 2 Place a set of 22pF capacitor on pin 7 and pin 8 of IC 402, 403, 404 and 405
 - 3 Place a set of 4k7 resistance between IC 408 pin 26 and +5 V
 - 4 EPROM IC 406 is removed.
 - 5 EPROM IC 408 is replaced by an 27128 containing the new firmware.
 - 6 EPROM IC 407 is replaced by an graphic ROM V2,0
 - 7 Memory card replaced with new 128Kb card.
4. All connections between ADD card and main card installed according to Fig. 1

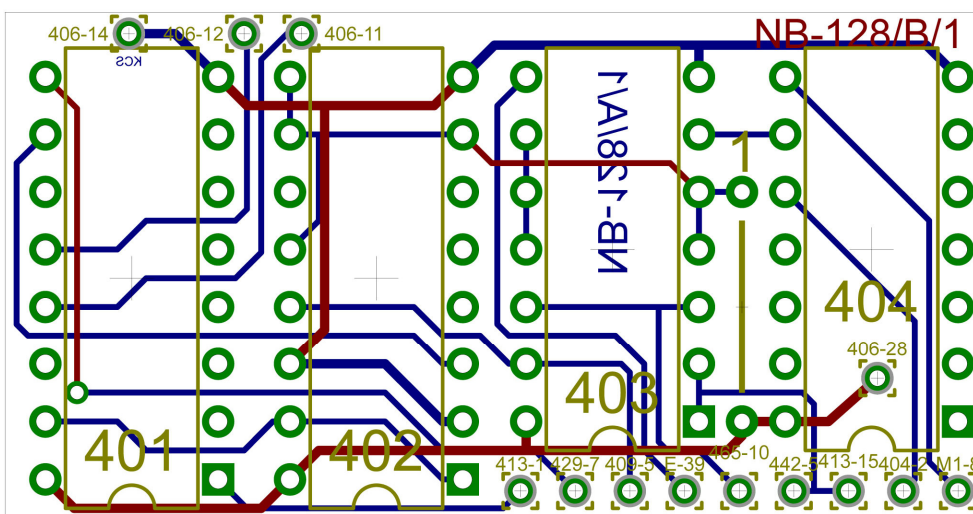
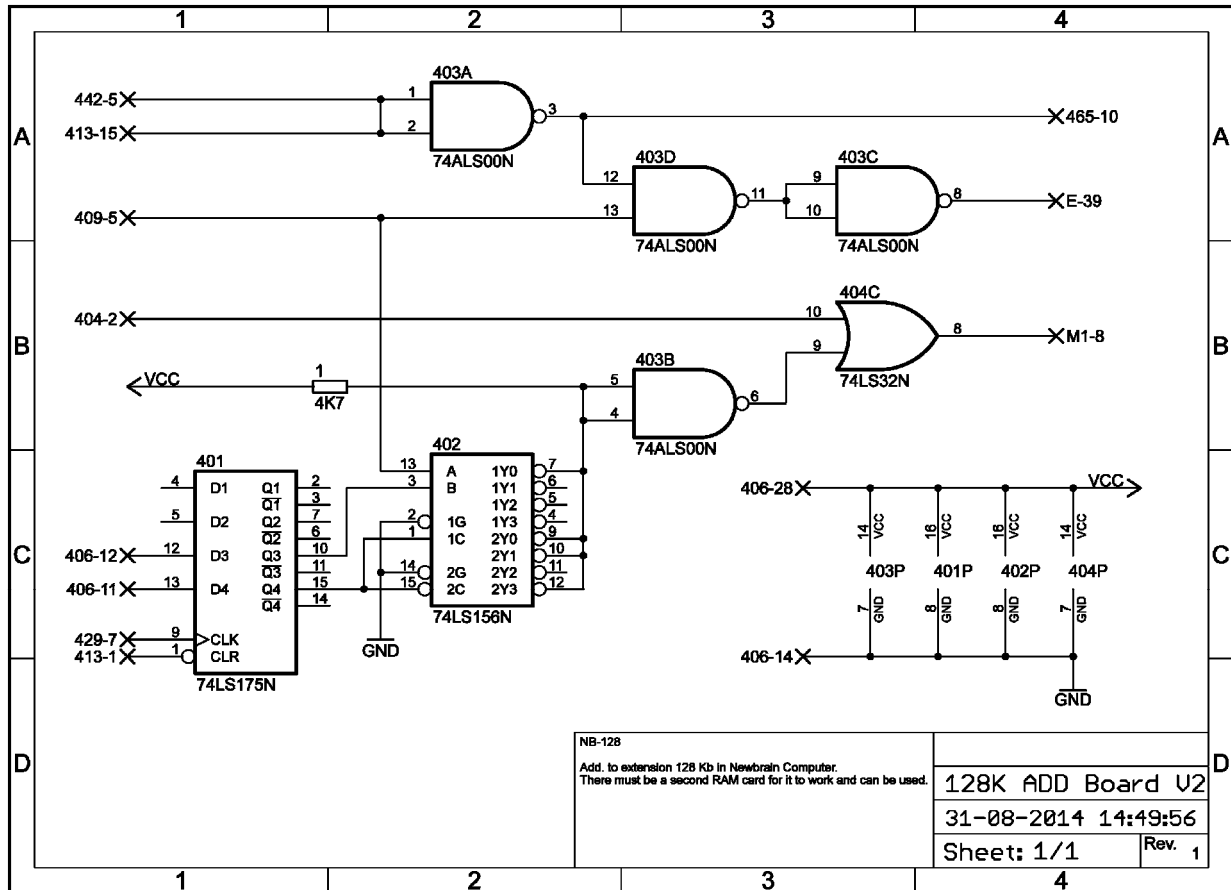


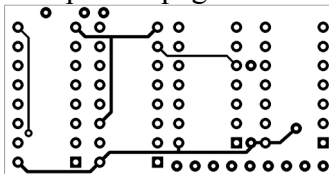
Fig 1. Connection and component placement.

Diagram of 128Kb ADD card.

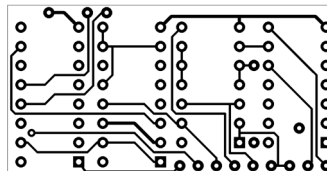


Print Outlays

Component page



Solder Side



Component list

R1 = 4K7

401 = 74LS175

402 = 74LS156

403 = 74LS00

404 = 74LS32

Change In NewBrain RAM Board (Rev. 10)

Copper Line between IC 416 pin 9 and IC 423 pin 14 is broken close to the IC 416 pin 9, which added a wire from copper pitch in to pin 8 of IC 416 and the copper track that goes to IC 423 pin 14 (+5 V)

All decoupling capacitor RAM circles removed except for the following pos. 2, 5, 8, 11, 14, 17, 20, 23 and 28 (old +5 V). Decoupling heading. 29-45 can also be removed, it is 5V is not used.