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DATE: September 21, 1984

REVISION DATE: October 25, 1984

BULLETIN NO.: 1200:01

PRODUCT: 25-3000 Tandy 1200

SUBASSEMBLY: Hard Drive Alignment

PURPOSE: Outline Tandy 1200 Hard Drive alignment procedure.

DISCUSSION/PROCEDURE: To align the Tandy 1200 Hard Drive follow the following procedure:

Motor Speed:

Attach the Frequency Counter probe to Test Point 3 of the drive logic board. Adjust R5 on the bubble servo board for a 16.58 msec to 16.74 msec count.

VCO Adustment on the Hard Drive Controller Board:

1. Remove the E17-E18 jumper to set the VCO in an open loop condition.
2. Short the pins of crystal (Y1) together to stop the write oscillator.
3. Attach the Frequency Counter probe to J4 pin 1 and adjust the variable capacitor (C23) for a 10.000MHz signal plus or minus .200MHz.

DATE: October 19, 1984

REVISION DATE: November 6,1984

BULLETIN NO.: 1200:2

PRODUCT: 25-3000 Tandy 1200 HD

SUBASSEMBLY: Main processor board

PURPOSE: Proper switch setting (S1 and S2) on main processor PCB

DISCUSSION: There are two dip switches located on the main processor board. These switches must match the system configuration with respect to type of monitor, amount of RAM and where it is located, and whether or not the co-processor 8087 is installed.

PROCEDURE: The following is a list for the switch settings for S1 and S2.

S1-1 In OFF position it allows booting from floppy drive "A".
THIS MUST BE LEFT IN THE OFF POSITION AT ALL TIMES

S1-2 In OFF position when co-processor 8087 is installed.
In ON position if 8087 socket (U-17) is empty.

S1-3 &
S1-4 Both in OFF position for 256K of RAM on the main processor board.

S1-5 &
S1-6 Determine the setting according to the type of video monitor being used:

S1-5	S1-6	Function
OFF	OFF	Monochrome monitor or more than one monitor.
OFF	ON	Color monitor in 40X25 color mode
ON	OFF	Color monitor in 80X25 color mode

S1-7 In ON position denotes one floppy drive and one hard disk drive.

S1-8 Must be set in **ON** position at all times.

S2 switch determines the amount of RAM installed in expansion slots according to the table below.

Amount of RAM in Expansion Slots	S2-1	S2-2	S2-3	S2-4	S2-5
None	OFF	OFF	OFF	OFF	OFF
64K	OFF	ON	ON	ON	ON
128K	ON	OFF	ON	ON	ON
192K	OFF	OFF	ON	ON	ON
256K	ON	ON	OFF	ON	ON
320K	OFF	ON	OFF	ON	ON
384K	ON	OFF	OFF	ON	ON

Model 25-3000 recognizes a maximum of 640K of RAM for system use. Since 256K exists on the Main Processor Board, only 384K of RAM can be added in expansion slots.

When installing expansion RAM, the addresses on the add-on board must be set such that it will be picked up at the end of the Main Processor Board's memory. RAM must be in a single block of addresses and may not be fragmented into non-continuous address blocks.

DATE: November 16, 1984

REVISION DATE: November 16, 1984

BULLETIN NO.: 12ØØ:Ø3

PRODUCT: 25-3ØØØ Tandy 12ØØ

SUBASSEMBLY: AXX-5Ø44 Bubble Assembly

PURPOSE: To correct intermittent Read/Write errors.

DISCUSSION:

On early production units the bubble assembly does not have a good chassis ground. This can cause intermittent errors ranging from Read/Write errors to not formating and locking up.

PROCEDURE:

Install a ground wire from the spade lug on the bubble assembly to the metal chassis.

A ground wire with the appropriate end connectors is available from National Parts under part number AW-3238 and catalog 26-5125.

DATE: December 4, 1984

REVISION DATE: December 4, 1984

BULLETIN NO.: 1200:04

PRODUCT: 25-3000 Tandy 1200

SUBASSEMBLY: ATA-1073

PURPOSE: To explain the purpose of the brackets used on the power supply.

DISCUSSION/PROCEDURE: There are two brackets used to secure the power supply (ATA-1073) to the frame inside the Model 1200. Should it become necessary to replace the power supply, these brackets **should be retained** with the Model 1200 and not returned with the power supply. The replacement power supply will not have these brackets.

One of these brackets is the base of the power supply, the other is an "L" bracket that fits the top rear edge of the power supply case. Both of these are of critical importance in as much as they support and brace the power supply. They also serve as RFI shielding.

Without these brackets, not only will it be difficult to safely secure the power supply inside the computer, the power supply will interfere with normal operation of the computer through RFI radition.

Should it become necessary to replace either of these brackets, they can be ordered using Catalog Number 25-3000 and part numbers:

ART-5666 RF sheild upper
ART-5667 RF sheild lower

DATE: December 21, 1984

REVISION DATE: December 21, 1984

BULLETIN NO.: 1200:5

PRODUCT: 25-3000

SUBASSEMBLY: AX-9527

PURPOSE: Provide an explanation of the power up diagnostics for the Model 1200.

DISCUSSION/PROCEDURE: The Model 1200 has built in diagnostics that are executed on the computer every time the power is applied. This diagnostic routine tests various individual modules, and should an error or problem be detected, it will issue a series of beeps that will act as an initial guide in troubleshooting the computer.

Successful completion of the diagnostic routine is denoted by a display of the maximum amount of system memory on the video monitor and a short audio beep signal. The program then boots from the floppy or the hard disk.

Should the power on diagnostic detect an error the computer will issue a series of beeps that can serve as an indication of the failed component or circuit. The beeps are decoded as follows:

Fault Indication	Module Under Test	Signal
System halts, no Display	8259 Interrupt Controller	2 beeps
Same as above	8253 CTC Controller	3 beeps
Same as above	8237 DMA Controller	4 beeps
Same as above	RAM Page 0 (0-16K)	5 beeps
System Continues Test no display	Color Video Card	1 long beep & 2 short beeps
System Continues Test no display	Monochrome Video Card	1 long beep & 1 short beep

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DATE: March 8, 1985

REVISION DATE: July 9, 1986

BULLETIN NO: 12ØØ:Ø6

PRODUCT: 25-3ØØØ, 25-3ØØØA
Tandy 12ØØ, 12ØØA HD

SUBASSEMBLY: AX-9528 FDC board, and AX-9215 Main logic board

SUBASSEMBLY REVISION: All Revisions

PURPOSE: To explain how to disable the internal printer port in order to use the add on printer port adapter as LPT1 (Eg. Hercules board, Captain Board).

DISCUSSION: The printer port in the Tandy 12ØØ is hard wired to LPT1. In some installations users have asked to have the LPT1 reassigned to the expansion board printer port. The following procedure will allow this. Please note that the internal port is not useable after completion of this modification. The modification can be reversed to re-enable the internal port.

NOTE: The customer must be informed that after this modification, the printer port on the FDC or the built in printer port cannot be used unless the modification is reversed.

**** NOTE ****
Implement this change on request only

PROCEDURE: For the 25-3ØØØ (Tandy 12ØØ) cut and lift pin 12 of U38 on the FDC board from it's hole. Run a jumper from the now unused trace vacated by pin 12 to pin 16 of U38.

For a 25-3ØØØA (Tandy 12ØØA), check the left hand side of the board between RP6 and U41 for a jumper labled LPT1. If this jumper is present, it will need to be moved onto the two staking pins towards the rear of the board in order to disable the port. If this jumper is not present, cut and lift pin 1Ø of U11 from the board.

Run printer port diagnostics on LPT1 to insure that our printer port has been disabled.

DATE: November 6, 1985

REVISION DATE: November 6, 1985

BULLETIN NO: 1200:08

PRODUCT: 25-3000A Tandy 1200A HD

SUBASSEMBLY: AX-9215 Main logic board

PURPOSE: Installation of memory upgrades in 1200A main logic board.

DISCUSSION: The main logic board in the 1200A has sockets to enable the RAM to be upgraded to 384K or 640K without using external expansion boards. The following switch settings and jumper must be set to enable the upgrade.

PROCEDURE: Remove the 64K RAM from sockets U79-U87 and U100-U108. Move jumper JP1 from position 2-3 to 1-2. The jumper is located between U51 and U64. JP1 Pin 1 is closest to U51. If only 2 pins are present at JP1 then remove the jumper from the board.

For 384K install 9 256K RAMs in sockets U79-U87. Set SW1-3 off and SW1-4 on.

For 640K install 9 256K RAMs in sockets U79-U87 and 9 256K RAMs in U100-U108. Set SW1-3 off and SW1-4 off.

Run all memory diagnostics to insure proper operation.

DATE: August 8, 1986

REVISION DATE: August 8, 1986

BULLETIN NO: 12ØØ:9

PRODUCT: 25-3ØØØ Tandy 12ØØ

SUBASSEMBLY: ATA-1Ø73 Astec Power Supply

SUBASSEMBLY REVISION: AC 9531

PURPOSE: To correct low output voltages.

DISCUSSION:

Some of the AC 9531 Astec power supplies used in the Tandy 12ØØ may be producing voltages which are too low to allow reliable operation of the computer. This may manifest itself as random memory problems, hard drive "17Ø1" errors, system lockups, failures during initialization sequences, and I/O errors.

PROCEDURE:

1) Measure the +5 volt supply at the hard drive (the red wire on the DC connector), and on the card cage connector at pins B3 and B29. If the voltage is less than +5.Ø5 volts then proceed to step (2). If it is greater than +5.Ø5 volts, then the modification is not necessary.

2) Add a 22ØK 1/4W resistor at empty position R38.

3) Check the voltage at the drive again. It should now be between +5.Ø5 and +5.2Ø volts. If it is too high, try a higher value for the resistor that was added, and if it is too low, try adding a 22ØK 1/4W resistor at empty position R39 in addition to the resistor at R38. If after adding both resistors the voltages are still too low, the power supply should be replaced.

The resistor is available as:

22ØK 1/4W resistor, part # N-Ø396EEC, cat. # 26-9999R