MINIDART v3

Technical Manual

Rev. 080428

COMPUMATIC

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1- IMPORTANT RECOMMENDATIONS

WARNING!

1.- Please be extremely careful with static electricity, due to the whole system is CMOS based. The people that have been inside a car, walking on carpets, or wear synthetic clothes, must discharge it's static electricity on a metal object connected to earth before touching any electronic board.

Otherwise, the electrostatic discharge can destroy the components of the boards almost completely.

2.- Check that all connectors are correctly placed, in case they moved during transport.

3.- Check the electric instalation of the wall outlet. An acurate ground connection and security systems for electric shock must be installed.

4.- You must turn-off the machine before disconnecting any internal part.

5.- The RS485 wires between machines can't exceed 3 meters (118,11'').

1.1- COMPUMATIC AND THE ENVIRONMENT

Compumatic cares about the environment and promote the conscious elimination of industrial remainders and leftovers.

Once the machine reaches the end of its lifetime, please dispose off properly, with respect to the environmental laws in your country.

The CPU contains a Nickel-Hydride battery, for data back-up purposes.

Please check this battery at least once a month. If any kind of leakage is observed, replace the battery for a brand new one, of the same model and manufacturer.

The defect battery should be sent back to Compumatic or delivered to a proper company for recycling. **NEVER** dispose off by yourself.

1.2- RECYCLING

This product has been designed and produced with materials and components of high quality, that can be recycled and reused.

The electric and electronic products include substances that could be harmful for the environment if they are not recycled correctly.

This symbol means that this electronic equipment, at the end of its life cycle, must not be disposed off together with domestic waste.

Please, deposit your old Minidart machine in an appropriate waste pickup point, or contact your local administration.

In the EU, there are specific pickup systems for electric and electronic equipment waste.

Please help us to preserve the environment!

Please do not scrap batteries together with domestic waste.

Inform yourself in your distributor or local administration about disposing off used batteries.

2- INTRODUCTION AND OBSERVATIONS

Dear customer, all the team at COMPUMATIC want to thank you very much for purchasing this electronic dart machine. With it you have purchased a superb Dart Machine with all the 'state of the art' innovations. We recommend you to read carefully all the instructions contained in this manual, in order to operate the electronic system correctly and to get the maximum profit from it. If you have any suggestion to communicate us we want to encourage you to fax it or e-mail it to us. If reasonable, be sure that we will take it into account the earliest possible. Connect the main wire in the lower part of machine.

When you turn on the machine, it will start automatically. It will work in show attractive mode or stand by. **You can locate the main switch in the left part of the machine.**

If you want to introduce a new programming with the desired setting, you will have to turn on the test switch *(see Connexion Plan, page 58).* It is placed next to the volume V.R. and the Ni-MH battery, or by the other side of the display connector (the bigest of the Minidart CPU). To change settings go to the **section 3**.

2.1- THE MINIDART SYSTEM

Minidart CPU it's a four layer compact PCB CPU, designed by our technical team, very reliable, thought to be the heart of simple machines. (Direct coin acceptor interface, Displays and Leds system control,...).
Minidart is a simple system full of innovations. Thanks to the new REF97 full custom IC, the Minidart CPU provides the following advantages.

-Small size suitable for low weight hanging machines.

-Card Reader: Player identification and special functions *(see pag. 13).*

-Simple player interface, with one number per every game, and a telephone style keyboard for game 'calling'.

-RS485 network connection with other Minidart machines.

-Game number showed on display.

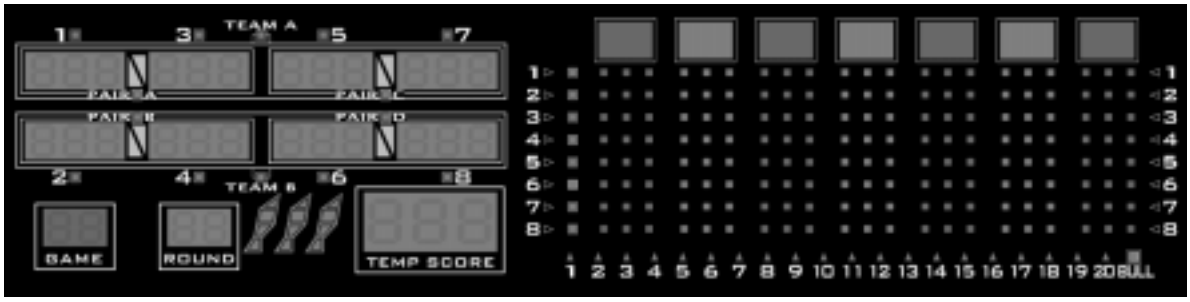
-It can have 2 kinds of targets, easy to change into European and American target.

-Target ilumination "without shadows" by electroluminescent diodes ring.

-Volume Sound Adjust Potenciometer *(see pag. 58)*.

-Easy wiring, assembling and service.

-Big display PCB.



2.2- CHANGE TARGET TYPE

Minidart machine has two types of target:

-The small target, also known as "European".

-The big target, also known as "American"

Please follow enclosed instructions step by step how to change the target:

2.2.1- REMOVING THE TARGET.

1- Take out 4 wing nuts which are marked with letter **B**.

2- Disconnect the flat cable **A** from the Target.

3- Take out the set from the door.

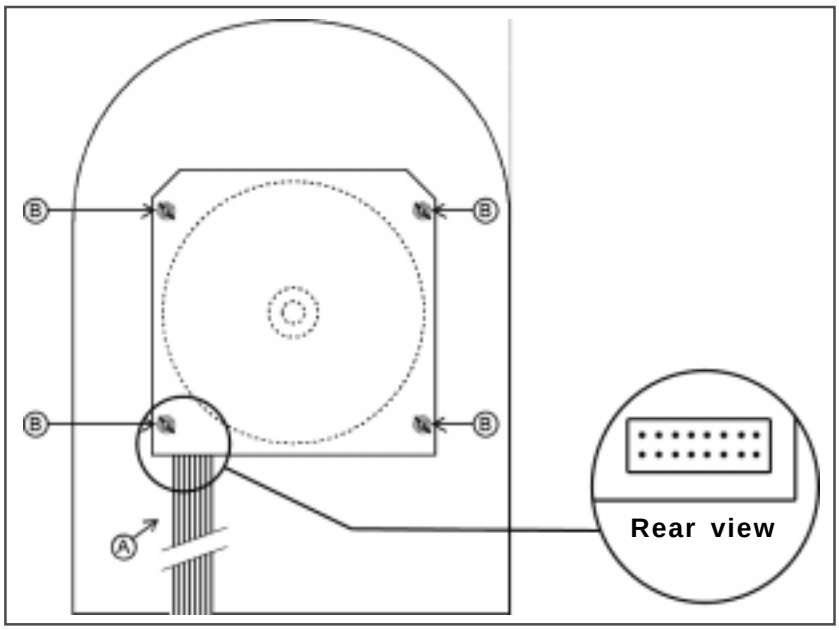


FIGURE 1
(Inside machine)

2.3- HOW TO FIX THE MACHINE TO THE WALL AND THROW LINE

Minidart machine can be fixed to the wall using the security machine hanger (Part number 00-000-116). See **figure 2**.

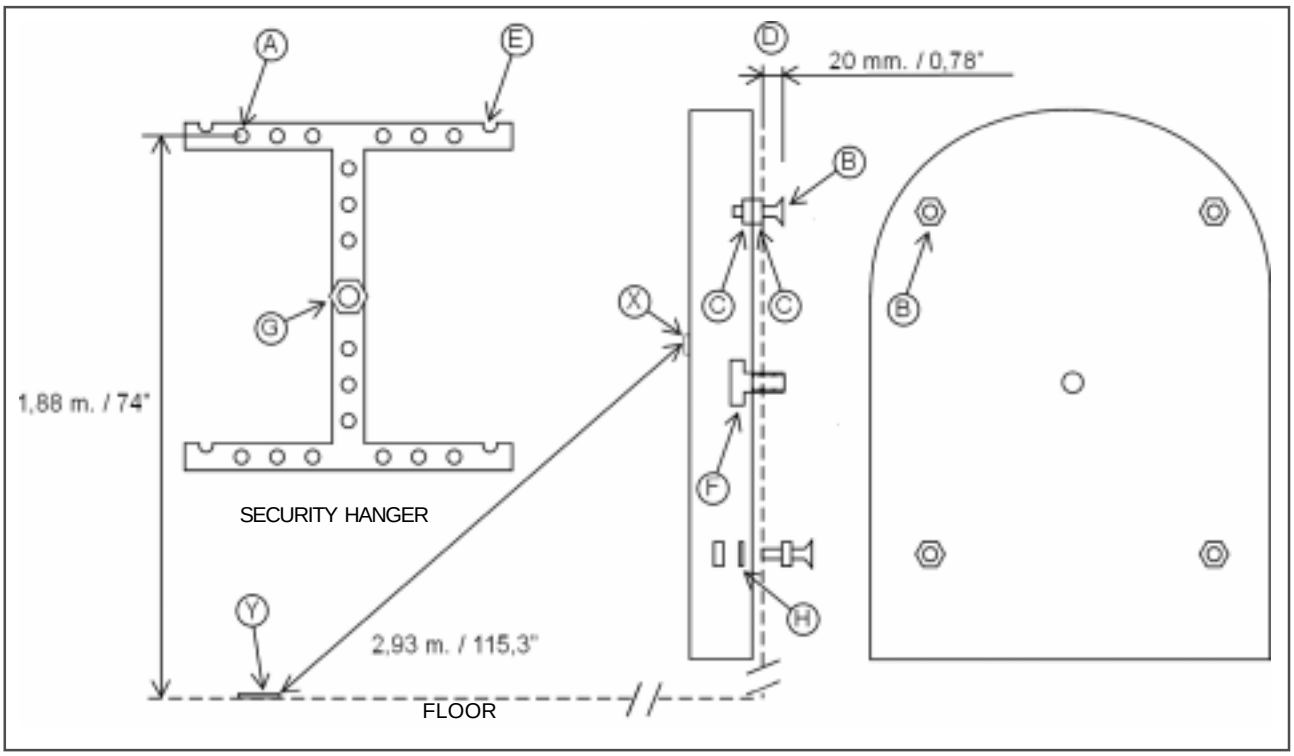


FIGURE 2

1- Fix the security machine hanger to the wall by the screws introducing them through the 18 holes marked with **A**.

ATTENTION: Check the stiffness of the wall and use the corresponding screws. The security hanger has to resist the 40 kg./87 pounds weight.

2- Take out the inner target following the steps in (*see paragraph 2.2.1*).

3- 1,88 m / 74" is the exact height from hole **A** (security hanger) to the floor. **See figure 2.**

4- Put the 4 screws (cone head hex screw m10x18 mm./0,70") marked **B** following the **figure 2**, with two nuts **C**, each one at both sides of the metal case. Add the four washers **H.** Check that the distance **D** is about 20 mm./0,78".

5- Put the machine on the security hanger. The screws **B** have to fit inside mooring charge marked with **E**.

6- Put the security screw **F** (hexagonal m10x20 mm./0,78") and fix it by the nut **G**.

7- Put the extracted target again on its place, following the inverse procedure already described (*see paragraph 2.2.1*).

8- Measure the 2,93 m. / 115,3" from center of the target **X** to the edge of throw line **Y.** See **figure 3**.

9- Check the surface of the floor, it should be flat (unadorned). Any other surface can't be suitable for the adhesive.

10- Clean the zone of the floor with alcohol or some appropiate product.

11- Take out the cover of adhesive side and put the throw line parallel to the wall. See **figure 3**.

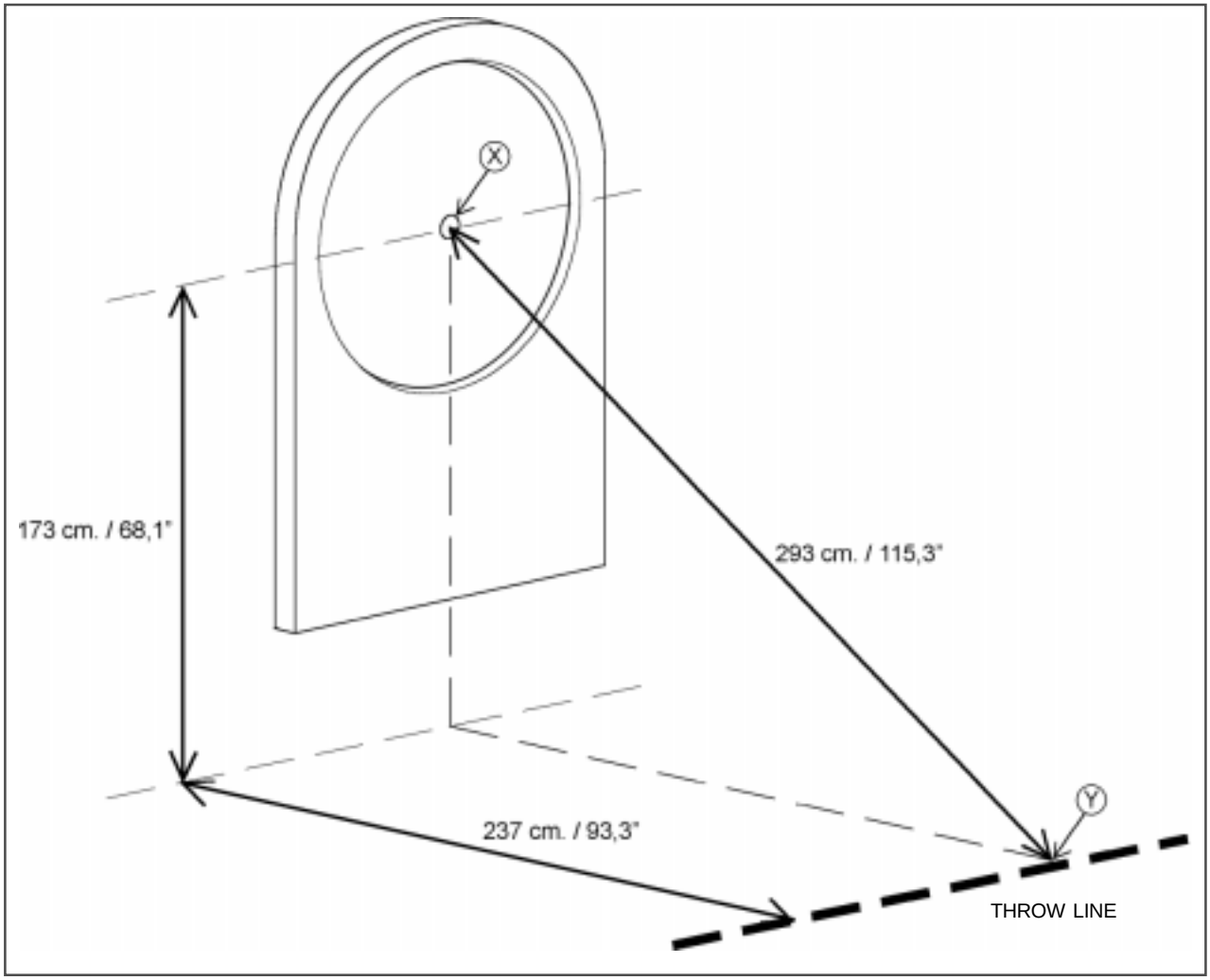
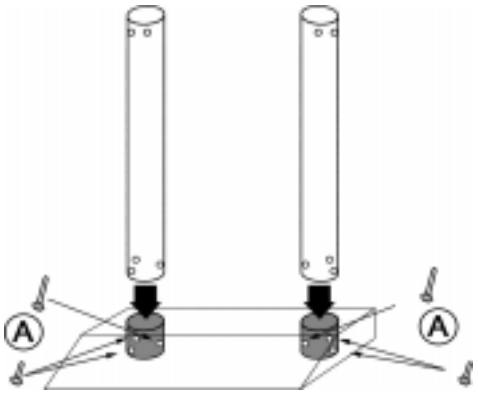


FIGURE 3

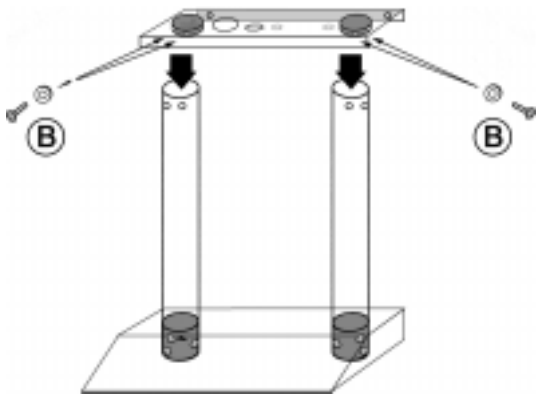
2.4- ASSEMBLE OF THE METALLIC STAND

Minidart machine can be mounted in the optional metallic stand.

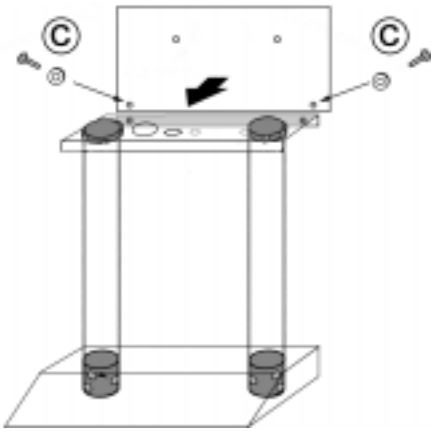
The procedure of assembling is detailed below. See **figure 4**.



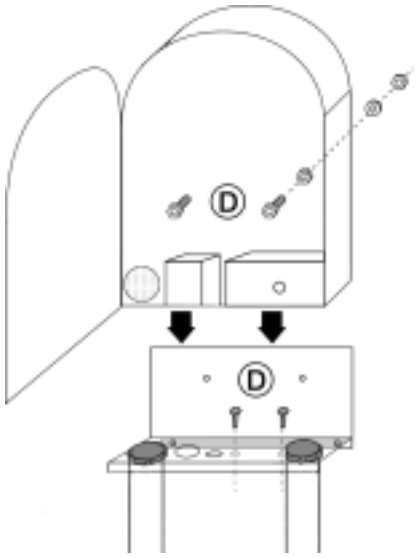
1.- Insert the metallic cylinders in the base and fix it with the screws **A.**

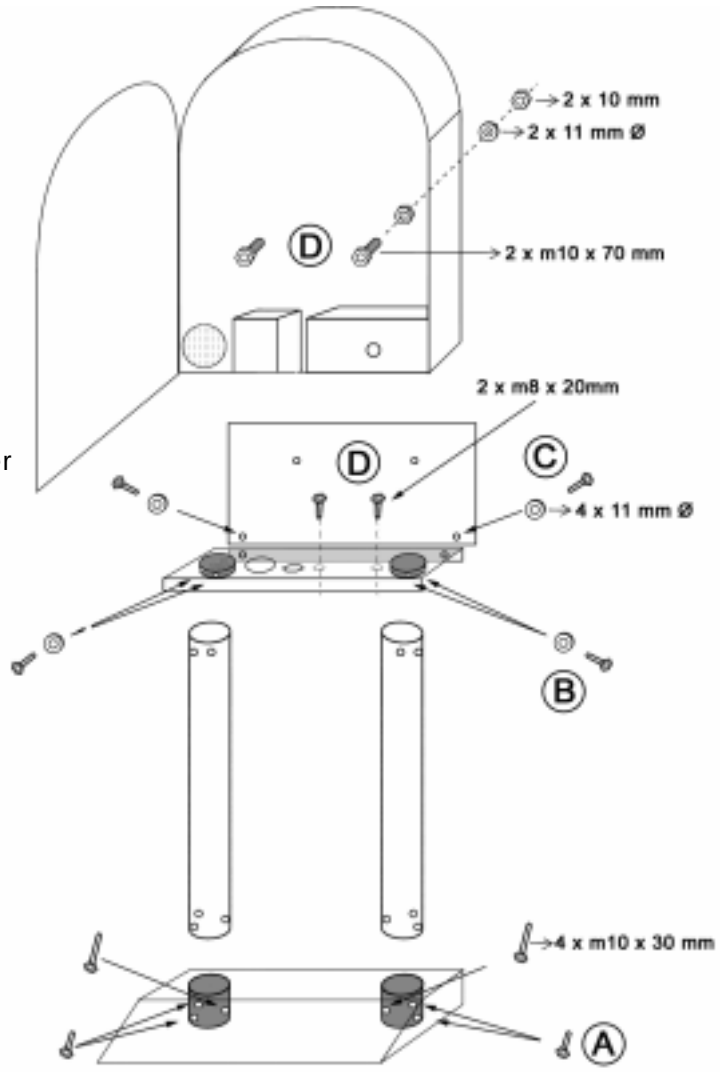


2.- Fix the upper base to the metallic cylinders with the screws **B.**



3.- Join the back support to the upper base with the screws **C.**





4.- Join the machine to the upper base and the back support with the screws **D.**

FIGURE 4

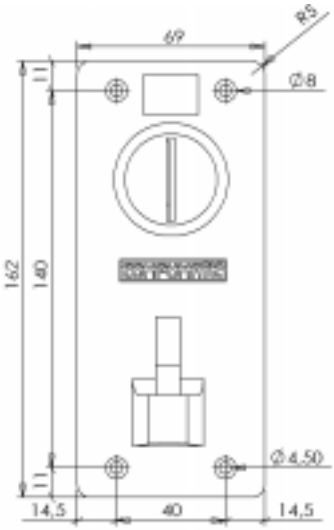
2.5-AUTO PROGRAMMABLE MULTI COIN ACCEPTOR

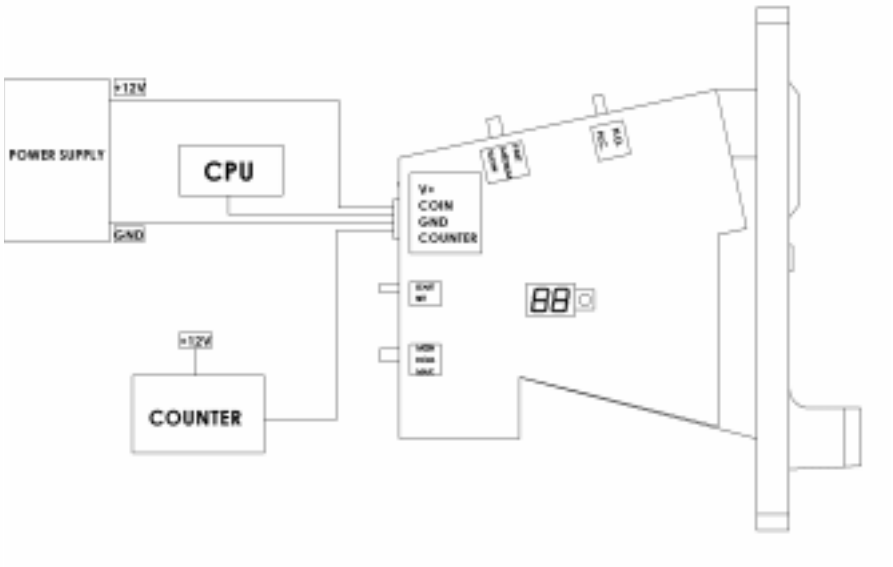
2.5.1-FEATURES

-Standard front plate measures.
-The microprocessor identifies the coin.
-Identifies 3 different kind of coins. Up to 15 coins must be programmed to complete the self learning routine.
-Easy adjustement of 3 levels of sensibility.
-Safety system CPU with manipulation prevention for a reliable and safe operation.
-Mechanical coin counter output (120 ppm). (counter not included).
-2 diferent size of pulses to adapt to any device.

2.5.2-SPECIFICATIONS

Coin diameter: 18mm - 29mm
Coin width: 1,2mm - 3 mm
Voltage: DC 12 V +/- 20 %
Operating temperature: 10 º ~ 45 º
Power consumption: 50 mA (no counter)
Note: Turn-on the unit for 10 minutes before programming, to allow temperature to stabilize in the components.





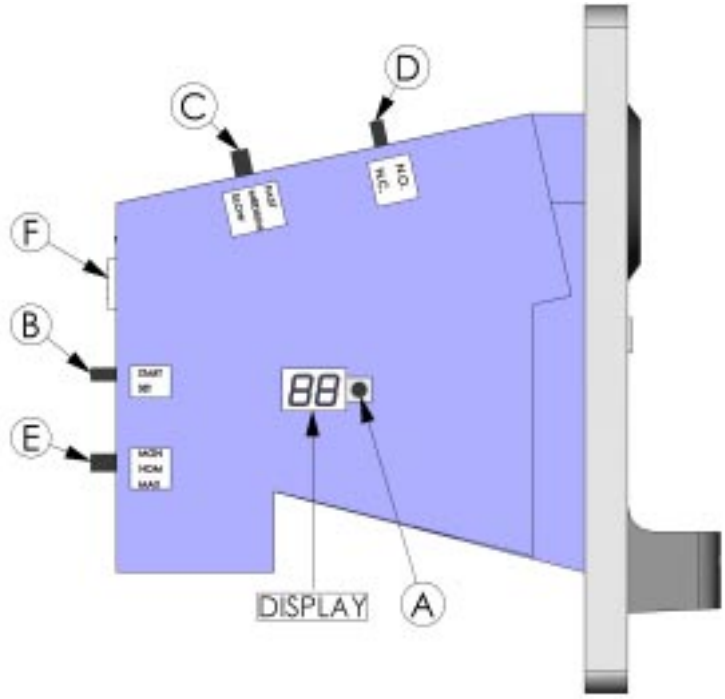
2.5.3-. PROGRAMMING

The programming mode shows in display the diferent registers of memory. Every register match with the number of pulses given. So if we program register number 2 means the coin introduced will give 2 pulses.

1. At the beginning put the switch E in «normal» position, put mode switch B in «set».

The display shows «00».

2. press and release «A» button every time for reaching the desired register. The display will show 1.2.3...99
3. Insert 15 diferent coins (same value). When finishing the unit will show «F» and a «beep» can be heard.
4. Put the switch «B» in «start» position for normal operation



2.5.4- CLEANING REGISTERS

1- To clean only one register put the switch B in “set”(display 00), select the desire register throught button A , then press button A and keep pressed until you hear a “beep” (2 seconds).
2. To clean ALL registers press button A for 2 seconds when display shows «00». Then it shows «C».
3 return switch B to «start» position when finishing for normal operation.

2.5.5- SWITCH OPTIONS

B. Mode of operation: «Start» normal operation «SET» Programming. 1- 99 reg/pulses
C. Width of pulse: Fast 25ms. Medium 45ms Slow 65 ms
D. Output pulse type: NO normally open (0),(standar). NC normally closed (1)
E. Accuracy window acceptance: «mgn» = big. «nom» = normal. «max» = small.

2.6- CARD READER

The IC Card can be used in this machine to identify players, payment, bonus, etc.

A Computer and its software must be connected in order to use all this features.

2.7- NETWORKING MACHINES

Up to 32 machines can be connected to play in RS485 network. Connect a wire with 2 connectors RJ11 to the CPU (CN20,CN21).

Connect a RS485/USB converter to the computer. See **figure 10**.

The TOTAL lenght of the wire can't exceed 100 m. (3937"). Wires between machines can't exceed 3 m. (118,11").

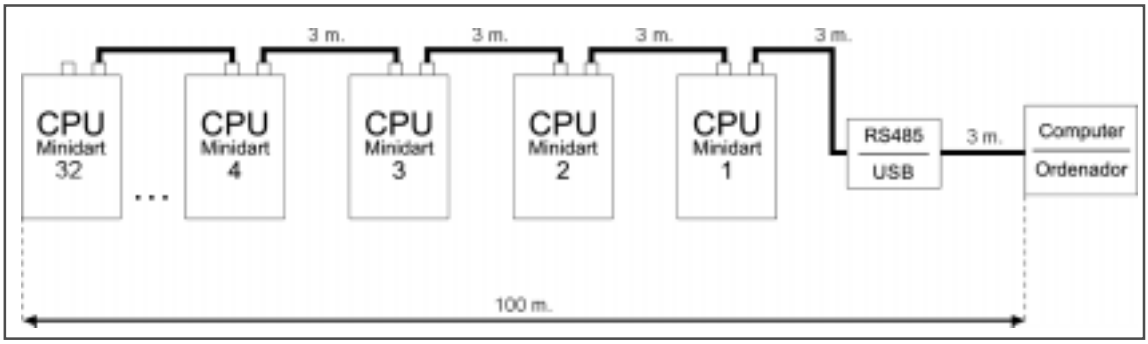


FIGURE 10

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3- PROGRAMMING

Programming your CPU correctly will make your machine operate perfectly forever. Incorrect programming will make the machine uncomfortable to play, or will produce mistaken results from the player's action. The following paragraphs explain how to program the machine correctly.

3.1- HOW TO PROGRAM THE CPU

We will get into the programming menu moving the test switch to the left. The menu items appear on the players displays of the display board, summarized in seven segment expressions.

If just after the activation of the test switch, you enter the code 5-2-9-2, by pressing on the target sectors with your finger, you will access **ALL** the menu points. This code is **only for manufacturers**. **If you give this code to your customers, then they will be able to modify critical values that alter your peripheral information**, and maybe you will have to send your service engineers to reprogram the machine.

Anyway, see menu point 'RESET VALUES' (page 34) for help.

If just after the activation of the test switch, you do nothing, you will access **ONLY** the highlighted and underlined menu points. These points correspond to the normal machine servicing. The menu points are:

PRICE ADJUST
TIME LIMIT
ACCEPTOR TYPE
CREDIT IN 1
CREDIT IN 2
CREDIT IN 3
CREDIT IN 4
CREDIT IN 5
CREDIT IN 6
CREDIT IN KEY
BONUS AT
BONUS ABS
IN 1 PULSE
IN 2 PULSE
IN 3 PULSE
IN 4 PULSE
IN 5 PULSE
IN 6 PULSE
KEY PULSE
LOTTERY
LOTER PERCEN
TEST TARGET
TEST LEDS
ROUND HIGH SCORE
ROUND 180
ROUND 301
ROUND 501
ROUND 501 FIVE
ROUND 701
ROUND CRICKET
PLAYER CHANGE
DELAY TIME
ATTRACT
BUST LIMIT
TYPE TARGET
PLAY-OFF
LANGUAGE
PUBLICITY
SOUND TYPE
RETURN DART
FIRST DART
TYPE DIGIT
END PLAY
CLASSIFY
BLINK PLAYER
AVERAGE
ROUND WINNER
THROW ON LED
GAME ON LED
ALARM VOL
LOTTO VOL
RESET VALUES
INFO SPEED
RESET BAR
EQUAL ALL
LAMP MODE
SINGLE BULL
DISPLAY TYPE
HOUR ADJUST

MINUTE ADJUST
DAY ADJUST
MONTH ADJUST
YEAR ADJUST
H HOUR START
H MIN START
H HOUR STOP
H MIN STOP
H DAY ACTIVE
REV KEYBOARD
TEAM CRICKET
PARCHIS MODE
PPD ON
ROUND BULMAS
CRAZY MODE
CUT THROAT TEAM MODE
NUM MACHINE
FREE PLAY
LED RING

After connecting the test switch, on the display you can see

Now we can change the menu item with the buttons

1

2

When we have decided the item that we want to change or check, then we have to press the button

TEAM

To confirm and enter into the submenu.

Once inside the submenu, we can change the options with the buttons

1

2

If the submenu has another submenu under it (like Price Adjust), we can change the additional submenu items with the button

PLAYERS

And when we want to confirm and store the values we have to press the button

TEAM

3.2- PRICE ADJUST

When we see the submenu name we have to press the button

TEAM

to enter into this submenu, where we will see the name of the first game

Here we have an additional submenu, which is the game whose price we want to change. We change the game with the button

PLAYERS

while with

1

2

We are able to change and fix the price in credits for each GAME in the machine. The price can be adjusted to any value of credits between

1 CREDIT 

and

20 CREDIT 

the price is shown in the temp score displays, if a strange symbol 

appears during price selection of a concrete GAME (for example 180), this GAME can be adjusted for 'half credit'. If you adjust price= ½, two players can play with one credit, and that the minimum number of players for this GAME will be two, since the machine cannot hold half of credit.

Once we are finished with all the price adjustments, to confirm and store the values we have to press the button

TEAM

and return to root menu (see page 15).

3.3- TIME LIMIT

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the maximum time that the player has for throwing each dart to the target.

With

1

2

we change the time limit between

NO TIME LIMIT 

and

60 SECONDS 

in 10 seconds increments. The time is shown in the temp score displays, if we choose '0', then the player has unlimited time for all darts.

Once we are finished with the time limit adjustment, to confirm and store the values we have to press the button

TEAM

3.4- ACCEPTOR TYPE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the type of acceptor used. With

1

2

we change the acceptor type between

PARALLEL  *CORRECT*

SERIAL PIN 7  *NOT USED*

SERIAL PIN 8  *NOT USED*

SERIAL PIN 9  *NOT USED*

SERIAL PIN 10  *NOT USED*

SERIAL PIN 3  *NOT USED*

and

SERIAL PIN 4  *NOT USED*

Serial means that there is an electronic acceptor mounted with a serial output connected to this pin. Only one coin input can be set to serial.

The pin number (0,7,8,9,10,3,4) is also shown in the temp score displays, '0' means Parallel acceptor.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.5- CREDIT IN 1

Press

1

and display will show

This input refers to pin 7 of connector CN13, and also to the 2 pin connector CN6 (used in this machine), when you plug the acceptor to this connector. When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the number of credits

and bonus per every pulse received in the coin input 1 pin. With

1

2

we change the number of credits per pulse between

and

finally with button

PLAYERS

we change the number of bonus.

The values are also shown in the temp score and round displays.

Once we are finished with the 'credit in 1' adjustment, to confirm and store the values we have to press the button

TEAM

NOTE: This system only works if we select the Parallel Acceptor Type.

3.6- CREDIT IN 2

Not used in this model.

3.7- CREDIT IN 3

Not used in this model.

3.8- CREDIT IN 4

Not used in this model.

3.9- CREDIT IN 5

Not used in this model.

3.10- CREDIT IN 6

Not used in this model.

3.11- CREDIT IN KEY

Not used in this model.

3.12- BONUS AT

Not used in this model.

3.13- BONUS ABS

Not used in this model.

3.14- IN 1 PULSE

Press

1

and display will show

This input refers to pin 7 of connector CN13, and also to the 2 pin connector CN6, when you connect a acceptor to this connector.

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the number of mechanical meter steps per every pulse received in the serial pin 7.

With

1

2

we change the number of mechanical meter steps per pulse between

and

The pulse value is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.15- IN 2 PULSE

Not used in this model.

3.16- IN 3 PULSE

Not used in this model.

3.17- IN 4 PULSE

Not used in this model.

3.18- IN 5 PULSE

Not used in this model.

3.19- IN 6 PULSE

Not used in this model.

3.20- KEY PULSE

Not used in this model.

3.21- LOTTERY

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we'll be able to activate the lottery option.

A random number is displayed on the temp score displays at the end of the game.

If this number matches the points of one or more of the players, the number of credits spent by the fortunate players in that particular GAME are returned to the credit meter.

With

1

2

we choose between

NO LOTTERY 

and

LOTTERY 

(The payout percentage can be adjusted in 'LOTER PERCEN' test menu item)

The equivalent 0, or 1 are also shown in the temp score displays.

Once we are finished with the lottery setting, to confirm and store the values we have to press the button

TEAM

3.22- LOTER PERCEN

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we select the payout percentage of the lottery system (if activated).

This payout is calculated on a credit basis. That means, if the percentage is set to 30%, 30 free credits would be given for every 100 credits played in the machine.

With

1

2

we set the percentage between

1 PERCENT 

and

50 PERCENT 

in 1 % increments.

The value selected is also shown in the temp score displays

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.23- TEST TARGET

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to test the correct connection of all the target segments to the foil matrix sensor in the machine.When we press a sector, for example double 15, we see

you can use the display board, where the ‘game’ display indicate if the sector is single, double or triple by indicating 1, 2 and 3 respectively, while the correct sector number is displayed on the ‘round’ display.

3.24- TEST LEDS

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to test the correct lighting of all the LEDS in the machine.

We change the test mode with the button

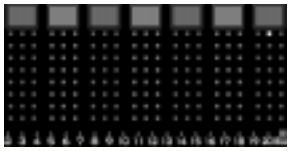
PLAYERS

and with

1

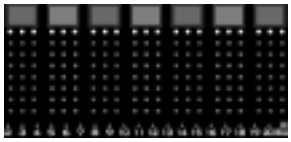
2

we move up and down between



LED BY LED TEST

where we test the led's one by one.



HORIZONTAL LINES

where the led's turn on by horizontal lines.

DIGIT UNITS

where led seven segment displays turn on display by display with all the segment lighted.

DIGIT SEGMENTS

Here the first segment 'a' is turned on in all the displays, then segment 'b', and so until segment 'g'.

ALL LED

All display board LED's are lit at same time, including displays and leds ring on target.

Once we are finished with all the tests, to leave the submenu we have to press the button

TEAM

3.25- ROUND HI-SCORE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the round limit for the HI-SCORE, LO-SCORE and SUPER-SCORE games of the machine.

With

1

2

we change the maximum number of rounds between

7 ROUNDS

and

10 ROUNDS

The value is also shown in the temp score displays.

Once we are finished with all the round limit adjustment, to confirm and store the values we have to press the button

TEAM

3.26- ROUND 180

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the 180 games of this machine.

With

1

2

we change the option between

and

NO ROUND LIMIT

in increments of 5 rounds.

95 ROUNDS

The value is also shown in the temp score displays.

The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for all the game's options and variations (in, out, masters, equal...).

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.27- ROUND 301

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the 301 games of this machine.

With

1

2

we change the option between

NO ROUND LIMIT 

and

95 ROUNDS 

in increments of 5 rounds.

The value is also shown in the temp score displays. The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for all the game's options and variations (in, out, masters, equal...).

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.28- ROUND 501

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the 501 games of this machine.

With

1

2

we change the option between

NO ROUND LIMIT 

and

95 ROUNDS 

in increments of 5 rounds.

The value is also shown in the temp score displays. The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for all the game's options and variations (in, out, masters, equal...).

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.29- ROUND 501 FIVE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the 501 FIVE games of this machine. With

1

2

we change the option between

NO ROUND LIMIT 

and

95 ROUNDS 

in increments of 5 rounds.

The value is also shown in the temp score displays. The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for all the game's options and variations (in, out, masters, equal...).

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.30- ROUND 701

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the 701 games of this machine.
With

1

2

we change the option between

NO ROUND LIMIT 

and

95 ROUNDS 

in increments of 5 rounds.

The value is also shown in the temp score displays. The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for all the game's options and variations (in, out, masters, equal...).

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.31- ROUND CRICKET

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to decide if we want an extra round limit for the CRICKET games of this machine.
With

1

2

we change the option between

NO ROUND LIMIT 

and

30 ROUNDS 

in increments of 5 rounds.

The value is also shown in the temp score displays.

The value '0' means that the rounds are unlimited. In the case that we set a number, this number is the round limit for CRICKET, CRICKET CUT THROAT and BLACK OUT JOE.

Once we are finished with the setting, to confirm and store the values we have to press the button

TEAM

3.32- PLAYER CHANGE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate different options for the automatic player change.

With

1

2

we choose between

MANUAL 

The automatic player change option is cancelled (manual change by pushing the players button).

AUTO NC 

Not used in this model.

AUTO NO 

Not used in this model.

AUTO NC + TIMER 

Not used in this model.

AUTO NO + TIMER 

Not used in this model.

TIME 5 SECONDS 

Player change is produced 5 seconds after last dart of previous player reaches the target.

TIME 6 SECONDS 

Player change is produced 6 seconds after last dart of previous player reaches the target.

TIME 7 SECONDS 

Player change is produced 7 seconds after last dart of previous player reaches the target.

TIME 8 SECONDS 

Player change is produced 8 seconds after last dart of previous player reaches the target.

TIME 9 SECONDS 

Player change is produced 9 seconds after last dart of previous player reaches the target.

The correspondent value (0...9) is also shown in the temp score displays.

Once we are finished with the player change setting, to confirm and store the values we have to press the button

TEAM

3.33- DELAY TIME

Not used in this model.

3.34- ATTRACT

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate the attract music option.

If the option is activated, the music will play after some minutes without credits in the machine.

With

1

2

we choose between

NO ATTRACT 

to cancel the attract music option

AMERICAN MUSIC 

to activate the American music option

EUROPEAN MUSIC 

to activate the European music option, or

NO WOW 

for 'I Feel Good' music.

The equivalent 0, 1, 2 or 3 are also shown in the temp score displays.

Once we are finished with the attract setting, to confirm and store the values we have to press the button

TEAM

3.35- BUST LIMIT

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate the possibility of a player being out of the game (only for '01 type games) when he produces the fifth bust.

If the option is activated, after one player produces the bust number five, this player comes automatically out of the game.

With

1

2

we choose between

NO BUST LIMIT 

to cancel the bust limit option, or

MAXIMUM 5 BUST 

to activate the bust limit option.

The value is also shown in the temp score displays. In this case the value '0' means that there is no bust limit.

Once we are finished with the bust limit setting, to confirm and store the values we have to press the button

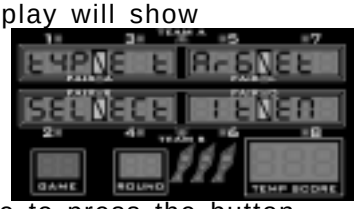
TEAM

3.36- TYPE TARGET

Press

1

and display will show



We have to press the button

TEAM

where we are able to set the sensor matrix orientation in 90 degrees increments for 16x4 (20 pins) sensor models. With

1

2

in the classic target we choose between

0 DEGREE NORM	00	NOT USED
90 DEGREE NORM	01	NOT USED
180 DEGREE NORM	02	NOT USED
270 DEGREE NORM	03	NOT USED

to activate 0º, 90º, 180º or 270º turning option, and

0 DEGREE REV	04	NOT USED
90 DEGREE REV	05	CORRECT
180 DEGREE REV	06	NOT USED
270 DEGREE REV	07	NOT USED

to activate 0º, 90º, 180º or 270º turning option with reverse connection on the Microdar CPU board.

In a posible target receiver for steel darts we would choose between

8X8 TYPE 0	08	CORRECT
8X8 TYPE 1	09	NOT USED
8X8 TYPE 2	10	NOT USED
8X8 TYPE 3	11	NOT USED

to activate 0º, 90º, 180º or 270º turning option, and

8X8 TYPE 4	12	NOT USED
8X8 TYPE 5	13	NOT USED
8X8 TYPE 6	14	NOT USED
8X8 TYPE 7	15	NOT USED

to activate 0º, 90º, 180º or 270º turning option with reverse connection on the Microdar CPU board.

The correspondent value (0 ... 7) or (8..15) is shown in the temp score displays. During this menu you are able to press on the target sectors, in order to check if it is correct or not.

Once we are finished with the target setting, to confirm and store the values we have to press the button

TEAM

3.37- PLAY-OFF

Press

1

and display will show

We have to press the button

TEAM

to enter into this submenu, where we are able to activate or cancel the play-off option.

When more than one player have the same points at the end of the game, one extra round is allowed with only one dart, in order to decide which player is the winner.

With

1

2

we choose between

NO	00

and

YES	01

The correspondent 0 (NO) or 1 (YES), is shown in the temp score displays.

Once we are finished with the play off setting, to confirm and store the values we have to press the button

TEAM

3.38- LANGUAGE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to set the language for the information sent to the player with the cricket led's.

With

1

2

we choose between

The correspondent value (1 ... 11) is shown in the temp score displays.

Once we are finished with the language setting, to confirm and store the values we have to press the button

TEAM

3.39- PUBLICITY

Press

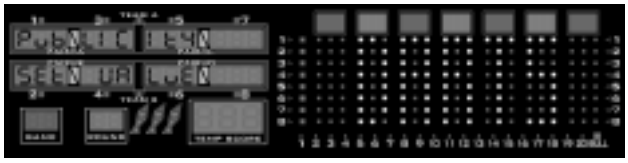
1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu where we are able to set the word that will appear alternatively with the word 'DARTS' during the machine attract mode show, the last programmed text will appear in the display:



With

1

2

we change the letter alphabetically up or down, while with the button

PLAYERS

we change the letter cursor, indicated on the same Cricket led's.

Once we are finished with the publicity setting, to confirm and store the values we have to press the button

TEAM

3.40- SOUND TYPE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to choose between different sound types.

With

1

2

we choose between

PEEP ALL 

to activate the 'peep' American sound in all sectors

PEEP SOME 

for 'peep' American sound only in some sectors

MIDDLE EUROPEAN 

for 'Middle European' sound, or

PEEP ALL LOW 

same as 'Peep All' but half of volume.

The correspondent 0, 1 or 2 are shown in the temp score displays.

Once we are finished with the sound type setting, to confirm and store the values we have to press the button

TEAM

3.41- RETURN DART

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate or cancel the return dart option.

If the option is activated, the player can rewind the game '1 dart backwards' by pressing the key 'BULL' during 5 seconds.

With

1

2

we choose between

NO RETURN 

to cancel the option

ONLY FIRST 

to return the first dart of the player turn

ROUND RETURN 

to return the first dart of the current round.

The equivalent 0, 1, or 2 are shown in the temp score displays.

Once we are finished with the return dart setting, to confirm and store the values we have to press the button

TEAM

3.42- FIRST DART

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate or cancel the first dart option.

If the option is activated, the 'false dart' signal (the dart impacts on the door) is accepted on the first dart of the game (first dart of first round of first player).

In this case, because the game has not started yet, if the player changes the game again and hits the buttons on the door strongly, the detector can be activated and the machine will remove one dart.

If the option is cancelled, the 'false dart detector' is not operational on the first dart, to avoid detecting the push-button mechanical noise. With

1

2

we choose between

NO 

to cancel the first dart option, or

YES 

to activate the first dart option.

The equivalent 0 or 1 is shown in the temp score displays.

Once we are finished with the first dart setting, to confirm and store the values we have to press the button

TEAM

3.43- TYPE DIGIT

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate or cancel the leading zeros suppression on the player meters.

If the option is activated, the meaningless zeros are removed from the meters, then, for example, 5 points are shown as

If the option is cancelled, all meaningless zeros are shown building up to three digits per active player, then, for example, 5 points are shown as

With

1

2

we choose between

BLANKED 

to cancel the type digit option, or

NOT BLANK 

to activate the type digit option.

The correspondent 1 or 2 is shown in the temp score displays.

Once we are finished with the type digit setting, to confirm and store the values we have to press the button

TEAM

3.44- END PLAY

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to change and fix the number of minutes of total machine inactivity needed for the machine to self cancel the current game.

With

1

2

we choose between

NEVER 

and

30 MINUTES 

in 5 minutes increments.

If the value is set to 'n', and the machine is on the middle of a game, after 'n' minutes of no activity (nobody playing), the current game will be finished, and the players will never be able to continue the interrupted game again.

After '2 times n' minutes, all the credits in the machine will be removed, and the credit meter will be set to zero. For example, if the value is set to 10, after '10' minutes of no activity, the current GAME will finish, and after '20' minutes of no activity all the credits in the machine will be removed.

The correspondent value (0 ... 30) is shown in the temp score displays. If the value is set to '0' the current GAME is never reset.

Once we are finished with the end play adjustment, to confirm and store the values we have to press the button

TEAM

3.45- CLASSIFY

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to show the provisional classification of the players at the beginning of a round. If the option is activated, the classification is shown during the first five seconds of the 'throw darts' time of the first player, ONLY FOR GAMES where the 'team totals' are not needed.

The classification, providing player 2 is the provisional winner, is shown somehow like

If the option is cancelled, no provisional classification is shown.

With

1

2

we choose between

NO 

to cancel the classify option, or

YES 

to activate the classify option.

The equivalent 0 or 1 is shown in the temp score displays.

Once we are finished with the classify setting, to confirm and store the values we have to press the button

TEAM

3.46- BLINK PLAYER

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to activate or cancel the blinking (ON and OFF) of the current player's points during the 'throw darts' time.

If the option is activated, the current player's points blink during the 'throw darts' time. If the option is cancelled, only the player number led blinks.

With

1

2

we choose between

NO 

to cancel the blink player option, or

YES 

to activate the blink player option.

The equivalent 0 or 1 is shown in the temp score displays.

Once we are finished with the blink player setting, to confirm and store the values we have to press the button

TEAM

3.47- AVERAGE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to show the average points of the three darts of the player at the end of every turn.

If the option is activated, the average is shown in the temporary score displays preceded by a letter 'A'. For example, if the result of the first dart is 5 points, the second 11 points, and the third 14 points, the temporary score is 30 points, and the average is 10 points, which are shown like

With

1

2

we choose between

NO 

to cancel the average option, or

YES 

to activate the average option.

The correspondent 0 or 1 is shown in the temp score displays.

Once we are finished with the average setting, to confirm and store the values we have to press the button

TEAM

3.48- ROUND WINNER

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to show the provisional winner of every round. This menu point is totally different from the 'Classify' option. Here, we refer to the winner of ONLY the last round, and in the 'Classify' option we refer to the provisional winner of all previous rounds up to now.

If the option is activated, the provisional winner points meter shows the character string

(from round), after the last player of the round has finished, and until the 'throw darts' light is activated for the first player of the next round. If the option is cancelled, no round winner is shown.

With

1

2

we choose between

NO 

to cancel the round winner option, or

YES 

to activate the round winner option.

The correspondent 0 or 1 is shown in the temp score displays.

Once we are finished with the round winner setting, to confirm and store the values we have to press the button

TEAM

3.49- THROW ON LED

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we decide if the words 'Throw' and 'Remove' are displayed or not on the cricket Led's, in the specified language. With

1

2

we choose between

NO 

'Throw' and 'Remove' aren't displayed, or

YES 

'Throw' and 'Remove' are displayed on the cricket Led's, in the specified language.

The equivalent value (0,1) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.50- GAME ON LED

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we are able to show or cancel some additional messages in the cricket led's. If the option is activated, all the possible messages are shown on the cricket led's. If the option is cancelled, only the basic messages (Throw-Remove) are shown.

With

1

2

we choose between

NO 

to cancel the 'game on leds' option, or

YES 

activate the 'game on leds' option.

The equivalent 0 or 1 is shown in the temp score displays.

Once we are finished with the 'game on leds' setting, to confirm and store the values we have to press the button

TEAM

3.51- ALARM VOL

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we adjust by software the volume of the alarm sound (The sound that the machine produces when somebody is playing without paying credits for the game).

We choose the desired volume with

1

2

as follows:

HIGH 

The alarm volume is set to twice the normal game sound volume.

LOW 

The alarm volume is set to the same level as the normal game sound volume.

The equivalent value (0,1) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.52- LOTTO VOL

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we adjust by software the volume of the lottery sound (The sound that the machine produces after a game, when making the random number selection for free credits or no lottery. See item 9 of this menu).

We choose the desired volume with

1

2

as follows:

HIGH 

The lottery volume is set to twice the normal game sound volume.

LOW

The lottery volume is set to the same level as the normal game sound volume.

The equivalent value (0,1) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.53- RESET VALUES

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where, and just after entering it, the machine **ask us to introduce a code** through the target.

Then we can introduce a 4 digit code by pushing with the fingers on the surface of the target sectors.

After that, **ALL THE VALUES FROM THIS TEST MENU** will be reset to a determinate set of values.

This is an emergency solution when someone has manipulated the test points incorrectly and has recorded an incoherent set of values.

Ask the manufacturer of your machine about his RESET CODE.

With the code **'5 - 8 - 9 - 5'** the machine is reset to 'Compumatic' original reset values, which are the following:

PRICE ADJUST:

Pub and all 180's = half credit.

Scram, all 501's and Cricket's = 2 credits.

All 701's =3 credits.

Bull Master and Black out Joe = 2 credits.

All other games = 1 credit.

- **TIME LIMIT** 0
- **ACCEPTOR TYPE** 0
- **CREDIT IN 1** 1
- **CREDIT IN 2** 1
- **CREDIT IN 3** 1
- **CREDIT IN 4** 1
- **CREDIT IN 5** 1
- **CREDIT IN 6** 1
- **CREDIT IN KEY** 1
- **BONUS AT** 0
- **BONUS ABS** 1
- **IN 1 PULSE** 1
- **IN 2 PULSE** 1
- **IN 3 PULSE** 1
- **IN 4 PULSE** 1
- **IN 5 PULSE** 1
- **IN 6 PULSE** 1
- **KEY PULSE** 1
- **ROUND HI SCO** 7
- **ROUND 180** 5
- **ROUND 301** 10
- **ROUND 501** 20
- **ROUND 501F** 10
- **ROUND 701** 25
- **ROUND CRICKET** 30
- **LOTTERY** 0
- **LOTER PERCEN** 10
- **PLAYER CHANGE** 3
- **ATTRACT** 0
- **BUST LIMIT** 0
- **TYPE TARGET** 5
- **LANGUAGE** 3
- **PUBLICITY** 'DARTS'
- **SOUND TYPE** 1
- **RETURN DART** 1

- PLAY OFF 1
- FIRST DART 0
- DELAY TIME 1
- TYPE DIGIT 1
- END PLAY 0
- CLASSIFY 1
- BLINK PLAYER 1
- AVERAGE 1
- ROUND WINNER 1
- GAME ON LED 0
- ALARM VOL 1
- LOTTO VOL 1
- THROW ON LED 1
- INFO SPEED 3
- RESET BAR 1
- EQUAL ALL 0
- LAMP MODE 0
- SINGLE BULL 0
- DISPLAY TYPE 0
- HOUR ADJUST NO CHANGE
- MINUTE ADJUST NO CHANGE
- DAY ADJUST NO CHANGE
- MONTH ADJUST NO CHANGE
- YEAR ADJUST NO CHANGE
- H HOUR START 0
- H MIN START 0
- H HOUR STOP 0
- H MIN STOP 0
- H DAY ACTIVE 0
- REV KEYBOARD 0
- TEAM CRICKET 0
- PARCHIS MODE 0
- PPD ON 1
- ROUND BULMAS 20
- CRAZY MODE 0
- CUT THROAT TEAM MODE 0

Once the code is accepted the machine will indicate

Wait until the process is finished before continuing.

3.54- INFO SPEED

Not used in this model.

3.55- RESET BAR

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we decide if we allow the bar tender to cancel the current game, or to reset the credits, in the actual machine.

We change the value with

1

2

as follows:

NO

The bar tender <u>cannot</u> cancel the current game, or reset the actual credits.

YES

The bar tender can cancel the current game and reset the actual credits, in the following way:

Keeping the key

1

in the keyboard permanently pressed during **10 seconds**, player button light will flash. At this moment, the bar tender can enter the following codes:

With his finger, on the target <u>TRIPLE</u> sectors:

-Code **'1 - 2 - 3'**, Finishes the current game completely at any moment.

-Code **'4 - 5 - 6'**, Resets the credits to zero.

The equivalent numerical value (0,1) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.56- EQUAL ALL

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we decide if the EQUAL option is offered to the player automatically when selecting any '01 game (301, 501,701).

We change the value with

1

2

as follows:

NO 

The EQUAL option is offered to the player automatically ONLY with 180. The player can de-select the EQUAL option for 180 game if he wants. The player must select the EQUAL option for Parchessi, 301's, 501's, 501 five's and 701's if he wants to play '01 EQUAL.

YES 

The EQUAL option is offered to the player automatically when selecting any '01 game (180's, Parchessi, 301's, 501's, 501 five's and 701's). The player can de-select the EQUAL option if he wants.

The equivalent numerical value (0,1) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.57- TARGET ILUMINATION

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we decide how the target ilumination works.

We change the value with

1

2

as follows:

OFF IF NO CREDIT 

The target ilumination turn off 10 seconds after the game is over if there are no credits.

ON IF NO CREDIT 

The target ilumination is always on.

At the end of each game it blinks.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.58- SINGLE BULL

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we decide the behaviour of the double bull system on the target. We change the value with

1

2

as follows:

25-50

The bull is offered initially as full double (50 points inside and 25 points outside).

The player can reverse to 'single 50 points bull mode' manually with the key

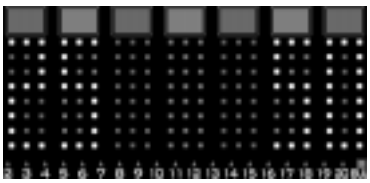
BULL

before the game starts. Pushing the key

BULL

shortly after the game starts the cricket display will show how is the Bull programmed.

For example:



25-25

The bull is offered initially as full double (25 points inside and 25 points outside).

The player can reverse to 'single 50 points bull mode' manually with the key

BULL

before the game starts. Pushing the key

BULL

shortly after the game starts the cricket display will show how is the Bull programmed.

50-50

The bull is offered initially as full double (50 points inside and 50 points outside). The player can reverse to 'single 50 points bull mode' manually with the key

BULL

before the game starts. Pushing the key

BULL

shortly after the game starts the cricket display will show how is the Bull programmed.

50-50 SEVEN ONLY

The bull is offered initially as 'single 50 points bull' in any discount point case games (50 points inside and 50 points outside). The player can reverse to 'full double bull mode (25-50)' manually with the key

BULL

The equivalent numerical value (0,1,2,3) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.59- DISPLAY TYPE

Not used in this model.

3.60- HOUR ADJUST

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the hour.

We change the value with

1

2

as follows:

HOUR ADJUST 0

HOUR ADJUST 23

The equivalent numerical value (0,23) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.61- MINUTE ADJUST

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the minute.We change the value with

1

2

as follows:

MINUTE ADJUST 0

MINUTE ADJUST 59

The equivalent numerical value (0,59) is also shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.62- DAY ADJUST

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the day. We change the value with

1

2

as follows:

DAY ADJUST 1

DAY ADJUST 31

The equivalent numerical value (1,31) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.63- MONTH ADJUST

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the month.We change the value with

1

2

as follows:

MONTH ADJUST 1

MONTH ADJUST 12

The equivalent numerical value (1,12) is shown in the temp score displays. Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.64- YEAR ADJUST

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the year. We change the value with

1

2

as follows:

YEAR ADJUST 00

YEAR ADJUST 99

The equivalent numerical value (0,99) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.65- H HOUR START

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the start hour of the Happy Hour."*Happy hour"* means that every coin introduced count as double credits.

We change the value with

1

2

as follows:

H HOUR START 0

H HOUR START 23

The equivalent numerical value (0,23) is shown in the temp score displays. Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.66- H MIN START

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we set the start minute of the Happy Hour.

We change the value with

1

2

as follows:

H MINUTE START 0

H MINUTE START 59

The equivalent numerical value (0,59) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.67- H HOUR STOP

Press

1

and display will show

We have to press the button

TEAM

to enter in this submenu, where we set the stop hour of the Happy Hour. We change the value with

1

2

as follows:

H HOUR STOP 0

H HOUR STOP 23

The equivalent numerical value (0,23) is shown in the temp score displays.Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.68- H MIN STOP

Press

1

and display will show

We have to press the button

TEAM

to enter in this submenu, where we set the stop minute of the Happy Hour.We change the value with

1

2

as follows:

H MINUTE STOP 0

H MINUTE STOP 59

The equivalent numerical value (0,59) is shown in the temp score displays.

Once we are finished with the adjustment, to confirm and store the values we have to press the button

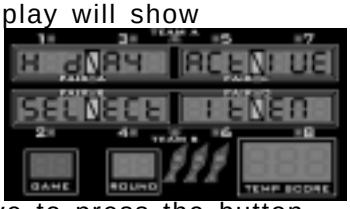
TEAM

3.69- H DAY ACTIVE

Press

1

and display will show



We have to press the button

TEAM

to enter in this submenu, where we can adjust the days of the week with active Happy Hour.

We change the value with

1

2

as follows:

ALL DAYS

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

SUNDAY

SATUR-SUN

FRI-SUN

for Friday, Saturday and Sunday.

MON-WED

for Monday, Tuesday and Wednesday.

MON-THU

for Monday, Tuesday, Wednesday and Thursday.

MON-FRI 

for Monday, Tuesday, Wednesday, Thursday and Friday.

The equivalent numerical value (0,12) is shown in the temp score displays.Once we are finished with the adjustment, to confirm and store the values we have to press the button

TEAM

3.70- REV KEYBOARD

Press

1

and display will show

We have to press the button

TEAM

to enter into this submenu, where we are able to choose the reverse connection of the keyboard. With

1

2

we choose between

0 DEGREE  *CORRECT*

to cancel the option, or

180 DEGREE 

to activate the option.

The equivalent 0 or 1 is shown in the temp score displays.Once we are finished with the reverse keyboard setting, to confirm and store the values we have to press the button

TEAM

3.71- TEAM CRICKET

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can adjust the condition for one team or pair, to be the winner in the Cricket games. Some Country federation follow one rule, and some Country follow the other. The first option is the most popular.

We change the value with

1

2

as follows:

WIN IF ALL CLOSED

WIN IF 1 CLOSED 

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.72- PARCHIS MODE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can adjust the condition for one player, to kill when scoring back in the Parchis games.Some Country federation follow one rule, and some Country follow the other. The first option is the most popular.

We change the value with

1

2

as follows:

NO KILL BACK

KILL BACK 

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.73- PPD ON

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can adjust the digit view of the temp score display of the PPD value (average score by dart) when the game finish.

We change the value with

1

2

as follows:

NO

YES

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.74- ROUND BULMAS

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can adjust the round limit of the Hi-Score Masters game.

We change the value with

1

2

between:

10 ROUNDS

or

20 ROUNDS

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.75- CRAZY MODE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can adjust the necessary impact number to avoid changing a number between rounds.

We change the value with

1

2

as follows:

NUM FIX ON ONE

fixed on one

NUM FIX ON THREE

fixed on three.

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.76- CUT THROAT TEAM MODE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can choose that it happends when player of a team hits on one of the numbers of cricket having closed it.

We change the value with

1

2

We can choose between

NORMAL 

where the score that is obtained adds the same to all the members of the opposite team, or

DIVIDE 

where the score that is obtained divides between all the members of the opposite team.

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.77- FREE PLAY

When we see the submenu name, we have to press the button

TEAM

to enter into this submenu, where we will see

Here we can configure the machine in Free Game mode.

We change the value with

1

2

We can choose between

NUMBER 

and

NUMBER 

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

NOTE: Option  **means "normal" playing.**

3.78- LED RING

When we see the submenu name we have to press the button

TEAM

to enter into this submenu, where we will see

Here we can change the way of illumination of the Leds during the game.

We change the value with

1

2

We can choose between

NUMBER 

and

NUMBER 

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

3.79- NUM MACHINE

Press

1

and display will show

When we see the submenu name, we have to press the button

TEAM

to enter in this submenu, where we can choose the number of machine in a RS485 network.

We change the value with

1

2

We can choose between

NUMBER 

and

NUMBER 

Once we finished with the adjustment, to confirm and store the values we have to press

TEAM

NOTE: Option  **means "normal" playing. Otherwise machine is waiting for computer control.**

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4- ELECTRONIC BOOKEEPING

This electronic system includes a safety battery free, double accounting system for a permanent control of the machine incomes.

After, and only after connecting the test switch, a four digit code must be introduced sequentially through the target.

4.1- CODE 1-2-3-4

Total credits entered through coin input 1 and coin input 2 since last reading, are shown in the meters.These electronic meters are automatically reset to zero each time that they are read.

For 1,569.- credits entered through coin input 1, and 8,901.- credits entered through coin input 2, we would see on the players meters as follows:

Pushing the button

PLAYERS

we see the meters for coin 3 and coin 4.

Pushing one more time the button

PLAYERS

we see the meters for coin 5 and coin 6.

Pushing one more time the button

PLAYERS

we see the meters for the credits entered with the electronic key (not used in this machine), and the total credits.

That means, 34.813 total credits entered since last reading.

NOTE: Coin 2 to Coin 6 are not used in this model.

4.2- CODE 6-7-8-9

Total credits entered through coin input 1 and coin input 2 during the machine life, are shown in the meters.

For 48.215.- credits entered through coin input 1, and 38.664.- credits entered through coin input 2, we would see on the players meters as follows:

Pushing the button

PLAYERS

we see the meters for coin 3 and coin 4.

Pushing one more time the button

PLAYERS

we see the meters for coin 5 and coin 6.

Pushing one more time the button

PLAYERS

we see the meters for the credits entered with the electronic key (not used in this model), and the total credits.

That means, 167.006 total credits entered since last reading.

NOTE: Coin 2 to Coin 6 are not used in this model.

5- DART ADVANCE

To advance a dart on the Minidart System, just keep the button

PLAYERS

pressed for **three seconds**.

6- PLAYER ADVANCE

To advance to the next player push the button

PLAYERS

shortly at any time of the play **except for three seconds after the throw dart** indication appears.

7- HOW TO ABORT THE GAME

To abort the current game turn on and off the test switch while keeping the button

OUT CHANCE

pressed.

8- HOW TO CANCEL THE CREDITS

To cancel all the credits turn on and off the test switch while keeping the button

IN PICKIT

pressed.

9- HOW TO SWITCH THE LED RING ON/OFF (ONLY EUROPEAN AND AMERICAN TARGETS)

The player can switch the Led Ring off or on, at any moment by keeping the button

OUT

pressed 6 seconds.

10- HOW TO MUTE THE MACHINE SOUND

The player can mute the machine sounds at any moment by pressing 6 seconds the button

EQUAL

11- HOW TO ADJUST THE DATE AND THE HOUR WITHOUT OPENING THE MACHINE

You can change the date and the hour without entering in test.This is the procedure:

1.- You have to keep the button

1

pressed **10 seconds** of the numeric keyboard. After this time, the button

PLAYERS

will blink quickly.

2.- Keeping the button pressed, you have to introduce the next code:
Triple 20 - Triple 5 - Triple 12 pressing the target. Release the key pressed.

3.- In the cricket leds, you will see the hour. You have to introduce four numbers, to correct the hour. For example, to introduce 9:04, you have to push the numbers '0','9','0' and '4'. The changes will be reflected in the cricket leds, simultaneously.

4.- To change from hour to date, you have to push the button

PLAYERS

To adjust the date, you have to proceed by the same way, but you have to introduce 6 numbers, which it will indicate the day, month and year.

5.- You can exit not pressing anything during 5 seconds.

NOTE: This system will only be active, if the 'RESET BAR' setting is adjusted to 'Yes' or '1'.

You can't accede if the machine is not in show (with or without credits).

12- COMPETITION MANAGEMENT SYSTEM

12.1- DESCRIPTION

The system is based on the control and management of 32 Minidart machines in competition interconnected through an electrical link type RS485 that communicates with a PC that controls the game development.

12.2- CHARACTERISTICS

-The interconnected network functions at 38400 bits/s.

-The bytes transmitted are made up of:

1 BIT OF START

8 BIT OF DATA

1 BIT OF STOP

NO BYTE PARITY IS USED

The general functioning of the communication system is based on the constant interrogation of the PC to the machines (one by one). The general rules are:

-Each machine has a unique identification number (that is programmed in the test, in the 'Num. Machine' point. (*see pag. 44*).

-The PC continually interrogates, in a cyclical form, all of the machines (maximum 32).

-The PC detects, in consequence, the presence or disconnection of the machines attending to the answer of these interrogations.

-No machine directly addresses the PC. The machine can only answer when the PC sends it an interrogation command.

-According to the machines that the PC considers connected, it will assign 'MATCHES' to each machine.

-The machines, once assigned a Match, will play autonomously the group of games and limit themselves to informing the PC of the data they generate, how the darts are thrown and the winners of each game. The assignment of a Match to a machine has the following characteristics:

-Once the Match has started, it cannot be cancelled by remote form. If the command is sent to free the machine from the PC, the machine will send a blocking code.

-If once the Match has started, the communication is lost, the games will continue if the player notices.

When the connection is reestablished, the data is sent to the PC.

-When the PC detects that it has reached the end of the Match, it sends acommand 'END MATCH', that blocks the machine until there is a new assignment.

12.3- MESSAGE TYPES

INTERROGATION MESSAGES

The PC continuously interrogates the machines.

The machines can answer with:

-A simple message

-Information messages. These messages can be:

-Message informing the winner of the game.

-Informing that player 1 has appeared

-Informing that player 2 has appeared

-Informing the start of a game

-Informing the darts thrown in a turn

If the machine returns a message with information, wait during the next100 ms for a confirmation message to be returned. In the case that it is not received, it will be resent with the next interrogation that the PC receives.

ASSIGNMENT MESSAGES

The PC can send the following assignment messages to the machine:

-Information with the name of player 1
-Information with the name of player 2
-Synchronization of flashes
-Hour synchronization message
-Match assignment
-Cancellation of a Match in a Machine
-Elimination or disqualification of a player

The last three provoke the machine to return an additional message confirming that it has been received. The PC, in case this confirmation is not received should be sent the command again.

12.4- MESSAGE FORMAT

In general, the message format that the PC sends to the Machines is:

DLE LEN IDMACH COMMAND+DATA CRC

-DLE: The byte of fixed heading that always has the value 10H.

-LEN: The total length, including DLE and CRC.

-CRC: The sum of all the bytes of the message (Len-1), excluding CRC.

-ID: The Machine number. So that the machine 'listens' to a message, the number of the programmed machine in the test adjustment 'Num Machine' should coincide with the one sent here. The valid values are 1 to 32.

-COMMAND+DATA: The codes of the different commands that can be sent to the machines.

The format of the answer of the machines to the PC is:

ACK LEN IDMACH COMMAND+DATA*(IF THEY EXIST)* CRC

-ACK: The fixed heading byte in all responses that always have the value 06H.

12.5- COMMANDS TO MACHINE

00H NN ST FLG

Message that the PC sends and that obligates the machines to respond, serves as a presence test and also informs of the status of the machine.

-NN: The number of the machine that will receive the message.

-ST: Status of the machine. This byte is made up of two fields:

Bit 7: Activates / deactivates game simulation. Should always be 0 during the competition. If a 1 is transmitted in this position, the machine will simulate the receipt of darts and advance the game quickly. (Note: Not all versions of the MINIDART program incorporate this function).

Bits 0 ..2: indicates status of the machine:

Status :

000 - Machine Free. (Blocked) (Not Assigned)
001 - Machine Assigned. (Wait presentation)
010 - Machine Warm-up. (After presentation)
011 - Machine in Play. (Competition game)
100 - Game Over. (Between games / busy)
101 - Machine Blocked. (Forces the block)
110 - Machine for external use. (Normal machine)

-FLG: In this message a byte called flg is used, that is made up of the following bits:

bit 0: Activates / Deactivates the sending of darts. If it is activated (1), the machine will transmit the darts that they player has thrown throughout the game.

10H NPLH NPLL PT1 COUNTRY NAME

Message that send information to player 1.

-NPLH: Digit superior number of player in ASCII.

-NPLM: Digit middle number of player in ASCII.

-NPLL: Digit inferior number of player in ASCII.

-PT1: Current points of player 1 in the MATCH.

-COUNTRY: Country code (According to table).

-NAME: Up to 8 bytes with the name of the player.

11H NPLH NPLL PT2 COUNTRY NAME

Message that send information to player 2.

-NPLH: Digit superior number of player in ASCII.

-NPLM: Digit middle number of player in ASCII.

-NPLL: Digit inferior number of player in ASCII.

-PT2: Current points of player 2 in the MATCH.

-COUNTRY: Country code (According to table).

-NAME: Up to 8 bytes with the name of the player.

24H

Simple message that synchronizes the flashing of all the machines. It is recommended to send every 10 seconds, only for esthetical reasons, that way the light buttons of the machines flash simultaneously.This message is directed to all the machines and none of them have to respond to the PC.

25H SEG MIN HOUR DAY MONTH YEAR

Simple message that synchronizes the hour of all the machines. It is recommended to send at the beginning of the day. After, it is not necessary because the machines save the time even when turned off.

-**SEC:** Current seconds.

-**MIN:** Current minutes.

-HOUR: Current hour.

-**DAY:** Current day.

-**MONTH:** Current month.

-**YEAR:** Last two digits of the current year.

30H NN AA BB START GAME

Message that assigns a Match to a machine.

-**NN:** Maximum number of games that make up a Match (3 games normally or 5 in the semifinals and finals)

-AA: Current points of player A in this Match. (Normally it will be 0, but if the Match is interrupted and another machine, here it would indicate the points obtained before. For example, 1 if a game was already won in the first assignment of this Match.

-**BB:** Same as the anterior, but for player B.

-**Start:** This is a byte made up of 3 types of information.

Start.7: The bit 7 determines the order of the start pre-established for the players. A '0' indicates that player A will be the one for the first game and a '1' indicates player B.

Start [2..3]: The bits 2 and 3 determine the round within a quadrant of the Match. It is only useful to send this information if there is a printer for each machine.

Start [0..1]: The bits 0 and 1 determine the quadrant phase of the Match. It is only useful to send this information if there is a printer for each machine.

-**Game:** Code of the game to be played.These codes are referenced in a separate table.

This message provokes a response from the machine in this format:

ACK LEN MACH (80H+30H) CRC

if the machines accepts the Match, or

ACK LEN MACH (40H+30H) CRC

if the machine does not accept the Match.

31H PA PB

Message that unassigns a Match to a machine. After the receipt of the message, the machine is available to be assigned.

-**PA:** Points that the PC has for player A in the Match played. These points will remain visible in the machine until there is a new assignment.

-PB: Same, but with player B.

This message provokes a response from the machine with the following format:

ACK	LEN	MACH (80H+31H)	CRC

37H	NPLH	NPLM	NPLL	TYPE

Message that informs the machine if a certain player is eliminated, ending the match.

-NPLH: Digit superior number of player in ASCII.

-NPLM: Digit middle number of player in ASCII.

-**NPLL:** Digit inferior number of player in ASCII.

-TYPE: Informs the machine of the type of elimination that is applied to the player. There are two types:

> **0– Simple elimination:** The player loses the Match, but can still play another if the competition is a double ko.
>
> **1– Complete elimination or disqualification:** The player cannot continue playing in this competition.

These types of elimination only affect the information that shows on the machine's alphanumerical display.

This message provokes a response from the machine with the following format:

ACK	LEN	MACH (80H+37H)	CRC

12.6- RESPONSES TO THE PC

The general format is

ACK	LEN	ID (COMMAND+DATA)	CRC

ID is the number of the machines, from 1 to 32. When receiving an interrogation from the PC (command 00H), if a machine wants to communicate something, it does it through the following messages:

80H	NUMHI	NUMLO	SUM	CRC

Gives the winner of a game at the end in the machine.

-**NUMHI:** High part of player number (N/256).

-**NUMLO:** Low part of player number (N%256).

-**SUM:** Number of games played in the match.

81H

Informs the PC that a player showed up to the machine, inserting his/her card.

-81H: Player A shows.

82H

Informs the PC that a player showed up to the machine, inserting his/her card.

-82H: Player B shows.

85H

Informs the PC that a game just started.

-**85H:** Start game.

86H	HHLL	ROUND	D1	D2	D3

Informs the PC the darts thrown by a player.

-HHLL: This is a number made up of two bytes, which sends two types of information:

The bits 14 and 15: indicate which darts belong to which player (can be from 0 to 3, taking into account the team Matches).

The bits 0 to 13 (14 bits): indicate the number of the player (for example, 321).

-ROUND: Informs of the round that the darts were thrown.

-**D1:** First dart of the round. Value dart received in the bits 0 to 5. If it is a double number, it will receive the number and the bit 6 to 1. If it is a triple number, it will receive the number and the bit 7 to 1.

-**D2:** Same as previous, but for the second dart thrown.

-**D3:** Same as previous, but for the third dart thrown.

The PC should inform the machine immediately sending a message like the following:

DLE 5	MACH	COD	CRC

where **COD** is the code that the machine receives.

GAME CODES

501 DOUBLE OUT	23
TRIPLES 701	29
501 DOUBLE OUT PAIR	151
TIMBA CRICKET	171
CRICKET CUT THROAT	43

12.7- TABLE OF COUNTRY CODES

The function of these codes is to inform the machine of the nationality of the player so that the message **"THROW PLAYER"** appears in the player's language.

COUNTRY	CODE	LANGUAGE (represented in the display)
UNKNOWN	0	ENGLISH
CROATIA	1	SERBO-CROAT
UK	2	ENGLISH
SPAIN	3	SPANISH
AUSTRIA	4	GERMAN
SERBIA	5	SERBO-CROAT
FRANCE	6	FRENCH
ITALY	7	ITALIAN
SWITZERLAND	8	ITALIAN
CZECH REP	9	CZECH
SLOVENIA	10	CZECH
PORTUGAL	11	ENGLISH
HUNGARY	12	HUNGARIAN
POLAND	13	CZECH
BULGARIA	14	BULGARIAN
RUSSIA	15	RUSSIAN
LATVIA	16	RUSSIAN
UKRAINE	17	RUSSIAN
BELGIUM	18	FRENCH
YUGOSLAVIA	19	SERBO-CROAT
LITHUANIA	20	RUSSIAN
TURKEY	21	ENGLISH
DENMARK	22	ENGLISH
LUXEMBOURG	23	FRENCH

13- CARD INITIALIZATION

13.1- DESCRIPTION

The mechanism for the initialization of cards, to be used in competition mode, consists in running a program in a standard PC, which has connected an adaptor programmer card to a parallel port.

13.2- HOW TO INITIALIZE CARDS

The process is the following:

A **KEY card** should be introduced that allows access to initialize cards. Each time the program is executed, it is obligatory to insert the **KEY card**. Initially, when the program starts will ask for the key card.

Once in place and verified, it should be removed in order to insert new cards or modify existing ones.

When inserting a card, the PC will let us know if we are initializing by showing the assigned player number.

To program the player number shown on the screen, **press the 'G' key**.

If it is not initialized, the player number shown on the screen will be automatically programmed.

When removing a card, the number will increase **automatically**.

To modify the number, **press the 'N' key**.

To exit the program, **press the "ESC" key** once or more depending on the status of the program.

APPENDIX A- DESCRIPTION OF THE GAMES

1 - PUB GAME

* Game for 2 to 8 players.

* Each player throws three darts in only one round.

* A discounting number, beginning by ten, appears in the cricket led's. The dart points are multiplied by this number, and the player must fit the three darts the faster possible into the target.

* The player with the highest score is the winner.

2 - HIGH SCORE

* Game for 1 to 8 players

* Each player throws three darts every time up to seven or ten rounds. (see programming)

* The player with the highest score is the winner.

3 - LO SCORE

* Same as Hi Score but the player with the lowest score is the winner.

4 - SUPER SCORE

* Same as Hi Score but only the 'double' and 'triple' sectors produce score. 'Single' sectors produce no score at all.

5 - BULL MASTERS

* Game for 2 players or 2 Teams.

* Each player throws three darts every time up to seven or twenty rounds.

* During the first 10 Rounds the first player (Team) must throw only the Bull, and the second player (Team) the whole target. The second player (Team) has 40 points less.

* During the second 10 Rounds the second player (Team) must throw only the Bull, and the first player (Team) the whole target. The first player (Team) has 40 points less.

* The player with the highest score is the winner.

6 - SCRAM

* Game for an even number of players.

* 7 rounds of 6 darts each player.

* The Game is played in pairs. All the numbers hit by the first player of one pair (stopper) are locked for the second player of the same pair (scorer), that, in order to score, must choose from the numbers that the first player has not hit.

* Each player in one pair plays as <<stopper>> and as <<scorer>> alternatively.

* The player with the highest score is the winner

7 - SHANGAI

* Game for 1 to 8 players.

* Each player has 3 darts every round up to seven rounds.

* All 21 numbers in the target must be hit sequentially, beginning with number 1 and finishing with number 20 and the Bull. A throw only scores if the correct number is hit.

* The player who has the highest score or reaches <<Shangai>> wins the Game. <<Shangai>> happens when the three darts in the same round hit three correlative

numbers in one turn, each dart hitting a different sector, that is, one dart in single, one in double, and one in triple.

8 - ROULETTE

* Game for 1 to 8 players.
* Each player has three darts every round.
* The leds ring starts moving and stops on a number between 1 and 20 or in the Bull. The players must hit the number where the roulette stops
* A single hit counts 1 point, a double counts 2 points and a triple counts 3 points.
* After 7 rounds the player with the highest score is the winner.

9 - BASEBALL

* Game for 1 to 8 players.
* Each player has three darts every round.
* The player must hit the sector whose number is the same as the number of the current round and all the other sectors are ignored.
* A single hit counts 1 point, a double counts 2 points and a triple counts 3 points.
* After 9 rounds the player with the highest score is the winner.

10 - 301 PARCHESSI

* Game for 1 to 8 players.
* Each player has three darts every round.
* All players begin initially with 0 points. The score reached in each dart is added successively to the original score.
* When a player reaches, after one dart, the same points of another player, the score of this other player resets to zero points. In the case of 'TEAM' only the players that belong to the other team can have their score reset.
* The first player who reaches number 301 exactly is the winner. When a player scores over 301, then a <<burst>> is produced, and the new score value for the player is 301 minus the excess score (The value exceeded from 301). After the fifth <<burst>> the player is out of the Game. (See programming Burst Limit)

11 - 180

* Game for 1 to 8 players.
* Each player has three darts every round.
* All players begin initially with 180 points. The score reached in each dart is subtracted successively from the original score.
* The first player who reaches number 0 is the winner. In the case of 'TEAM' playing, for a team to win, the total score of this team must be lower than the total score of the other team.
* When a player scores over 0, then a <<burst>> is produced, and the total score of the current round is cancelled. After the fifth <<burst>> the player is out of the Game. (See programming Burst Limit)

.*. In the case of EQUAL option, when one player reaches '0' points, the round is followed until the end, and in the case that several players have reached '0' points in the same round, the player that has used LESS DARTS is the winner.

.*. In the case of END option, the Game goes on and on until only ONE PLAYER is left, so we always have a looser.

180 DOUBLE IN

* Same as 180 but the subtraction begins when one dart hits double.

180 DOUBLE OUT

* Same as 180 but the discount to zero must finish with a double.

180 MASTER OUT

* Same as 180 but the discount must be finished with a double, triple or bull.

180 DOUBLE IN - MASTER OUT

* Same as 180 double in, but the discount must be finished with a double, triple or bull.

180 DOUBLE IN - OUT

* Same as 180 but the subtraction begins when one dart hits double and the discount to zero must finish with a double.

EQUAL

* When a player reaches 0 the round is followed until the end. The player who has used less darts is the winner.

END

* When a player reaches number 0 the round is followed until there is only one player (the looser).

12 - 301, 13 - 501 AND 14 - 701

* This games are exactly as 180 but all players begin with 301, 501 or 701 points respectively.

15 - 501-FIVE

* This Game is identical to 501 except that the target segments that normally perform as triple, here perform as 'five times' since the beginning of the Game until the first round when one or more players have 301 points or less.

16 - CRICKET

* Game for 1 to 8 players.

* Each player has three darts every round.

* The players must hit segments 15,16,17,18,19,20 and Bull. Every number is closed when the player hits it three times.

* If the player chooses the 'Pick it', 'Chance it' or 'Shuffle it' variable cricket options, then the cricket numbers will be chosen by the player (Pick it), decided by the first darts (Chance it) or picked at random by the processor (Shuffle it).

* Closed numbers score at its value while opened for another player.

* The first player who closes all six numbers, the Bull, and has the highest score, is the winner.

17 - CRICKET CUT THROAT

* The same rules as in Cricket, except that the hits in a closed number will score for all the other players who have this number still opened.

* The first player who closes all six numbers, the Bull, and has the lowest score, is the winner.

18 - BLACK OUT JOE

* Game for 1 to 8 players.
* It is a variation of Cricket Cut Throat
* Initially all players must hit the first number of the Cricket Displays, on the left (20 for Standard Cricket)
* NOT ANY player can go to the next number, until this number is closed by ALL players.
* If one player has the current number closed, all points made by hitting this number, are entered to ALL the other player that have the current number not closed yet.
* If one player hits any number other then the current, the points are entered to his point meter.
* The player with all numbers closed, and the lowest score, is the winner.

19 -SOLO 301

* 301 for only one player.
* SOLO is always limited to ten rounds.
* After the Game, the machine will give the player a 'HANDICAP NUMBER' to orientate him about his level of qualification for the Game. Minimum handicap is 0 and maximum is 99. This handicap number can be used to classify the players in the beginning of a league.

VARIABLE CRICKET: PICK-IT

* In all cricket games, the player can choose the cricket numbers by pressing on the target segments. This is FULL VARIABLE CRICKET, so the player can choose the seven numbers.

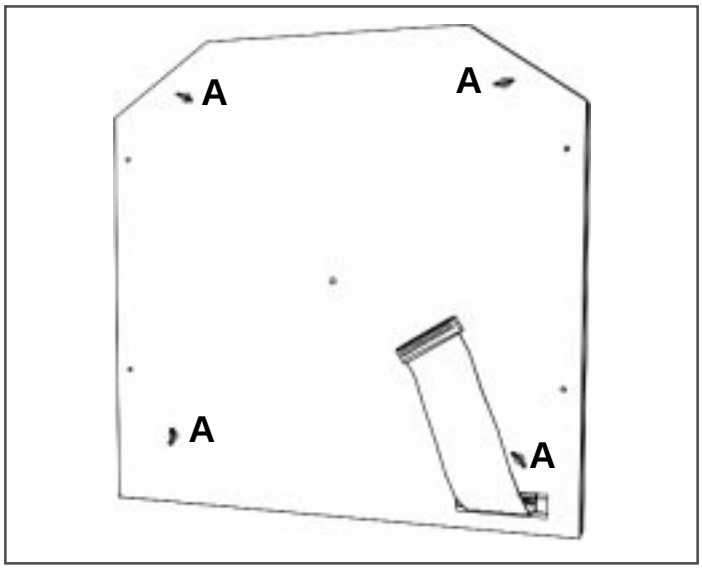
VARIABLE CRICKET: CHANCE-IT

* In all cricket games, the cricket numbers will be the first 7 different numbers hit on the game. This is FULL VARIABLE CRICKET, so seven numbers will be chosen.

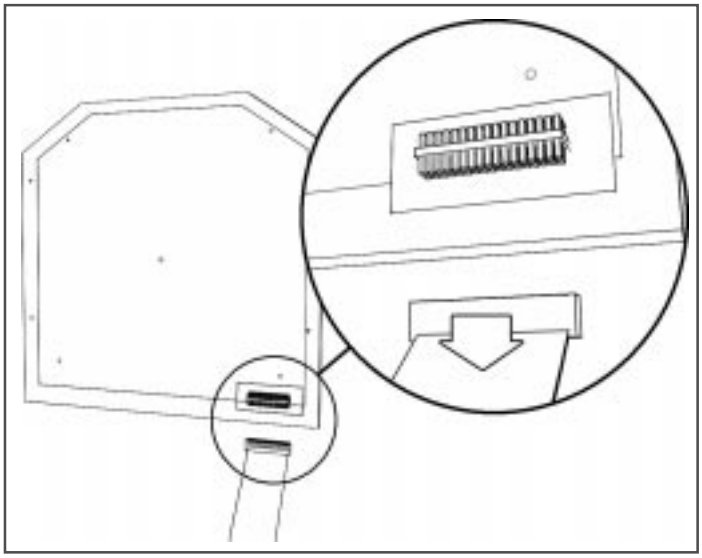
VARIABLE CRICKET: SHUFFLE-IT

* In all cricket games, the machine will choose the cricket numbers at random. This is FULL VARIABLE CRICKET, so the machine will choose the seven numbers.

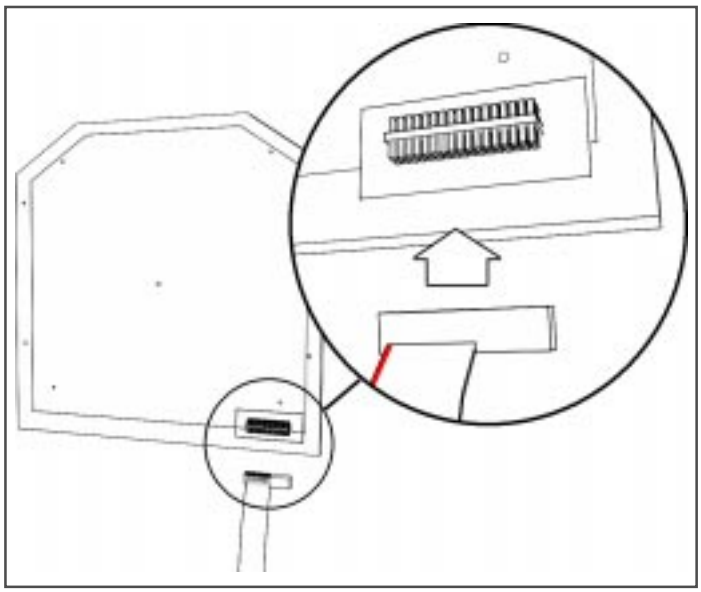
APPENDIX B- HOW TO MAKE MINIDART V2 DARTBOARD COMPATIBLE WITH THE MINIDART V3



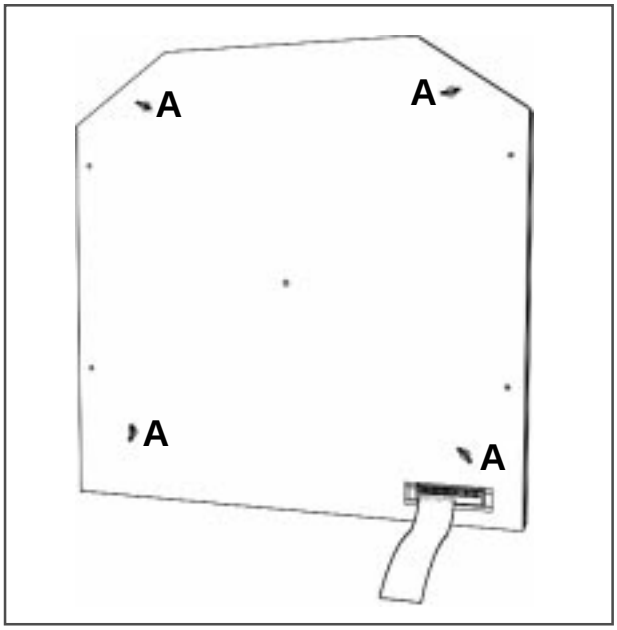
1- Unscrew the nuts **A** from the back cover and separate from the dartboard.



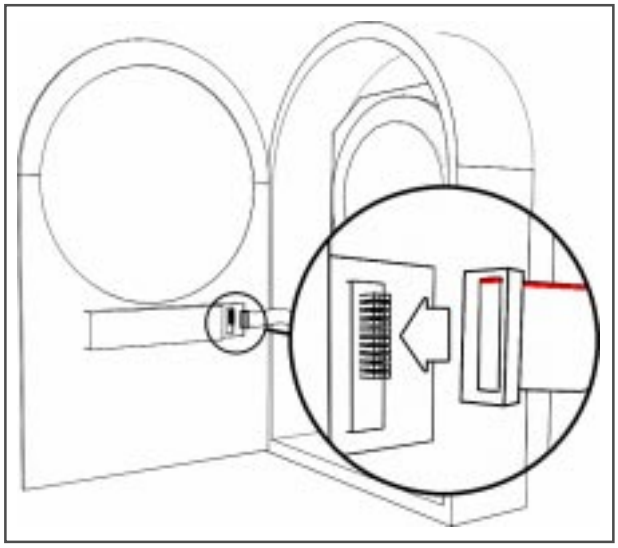
2- Disconnect the 34 ways cable.



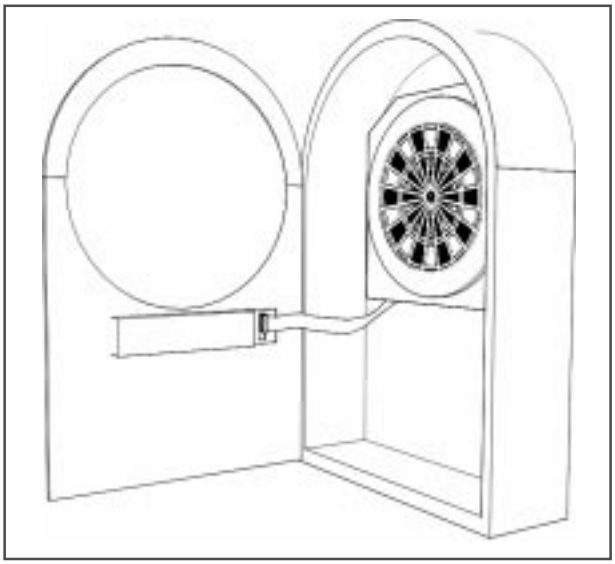
3- Connect the 20 ways cable, with the 1st PIN (red line) seeded in the left side, now it's compatible with V3.



4- Close the cover and screw back the nuts **A**.

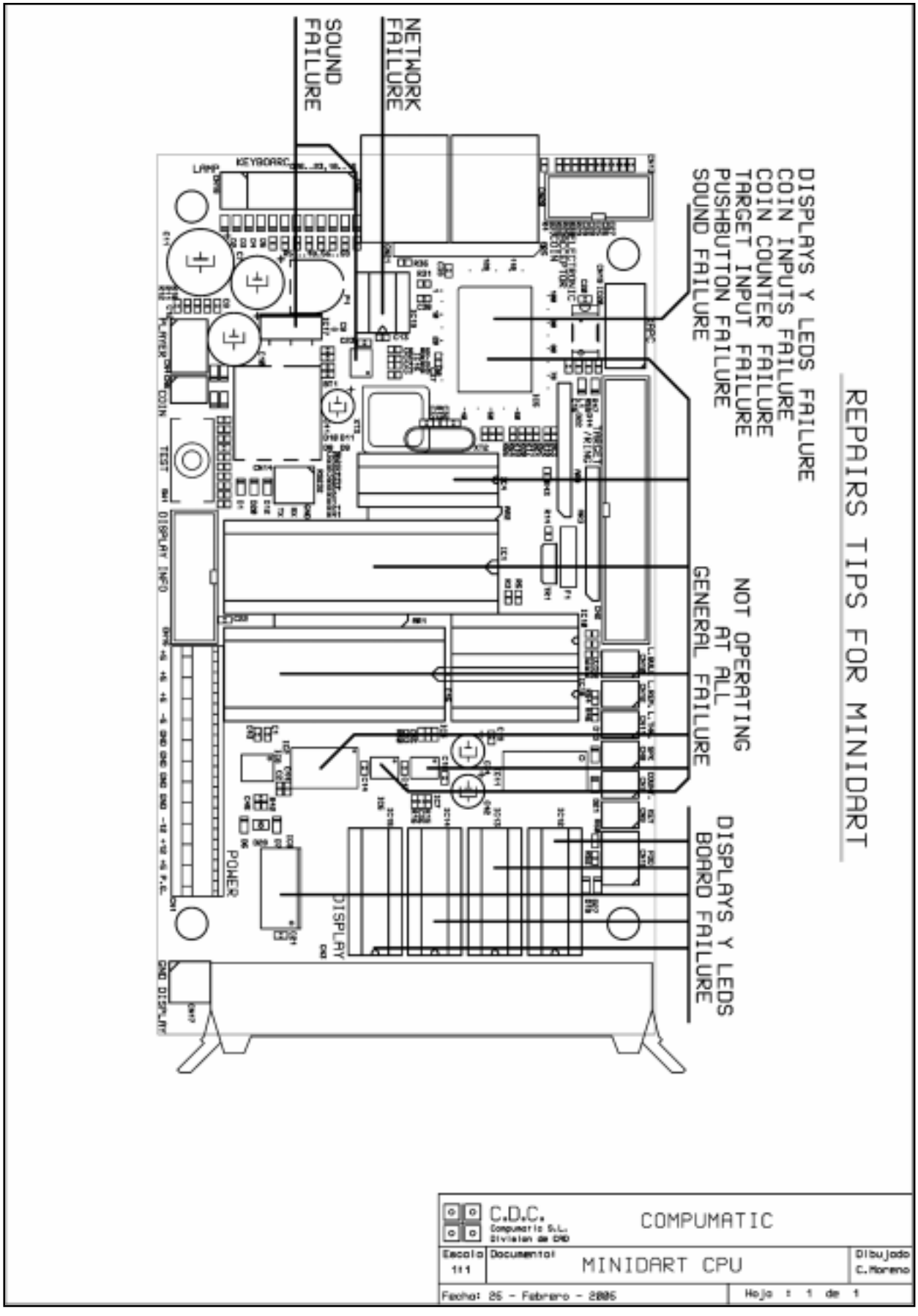


5- Connect the other end of the cable with the 1st PIN (red line) upper side.

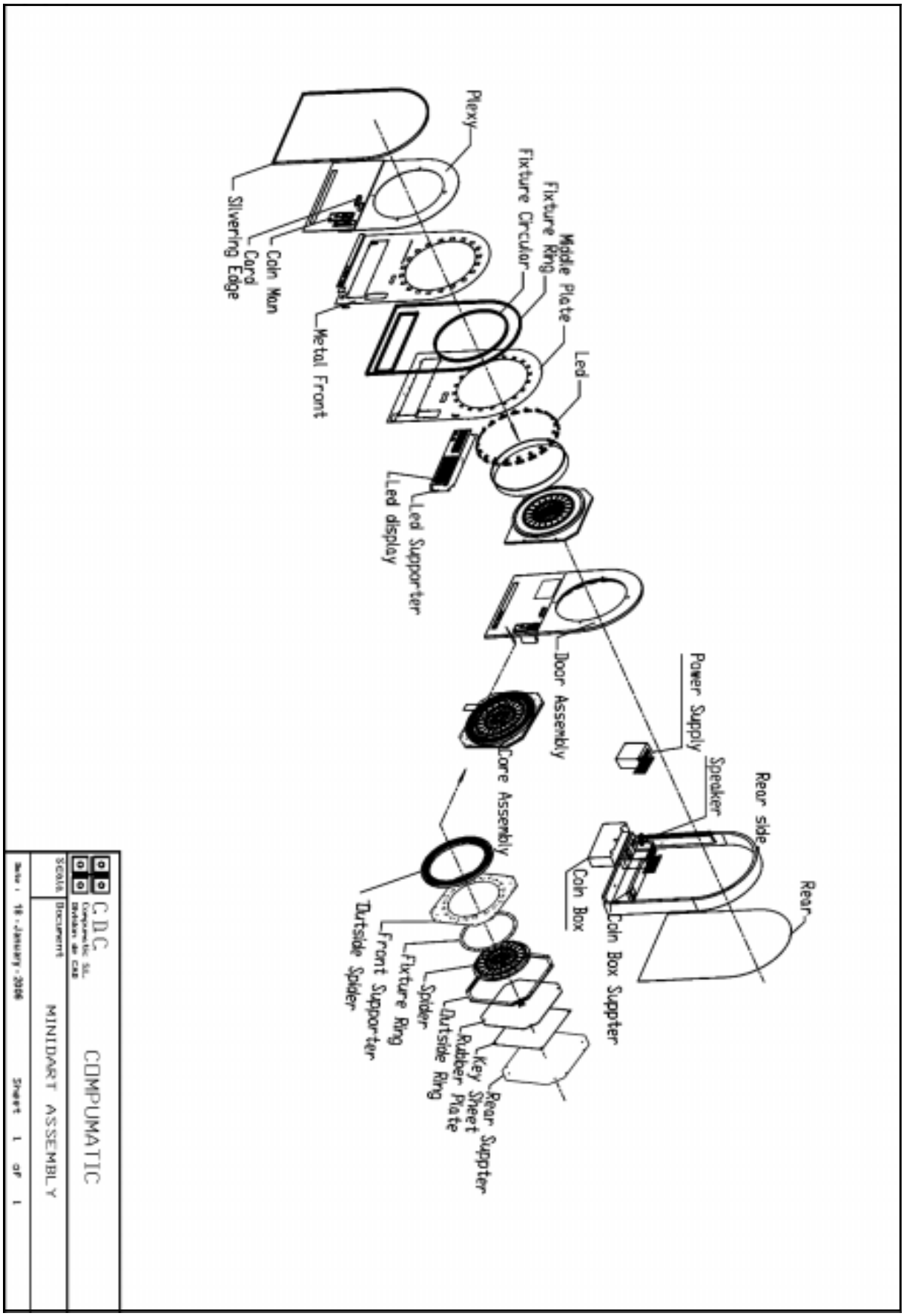


6- Place the dartboard on the machine.

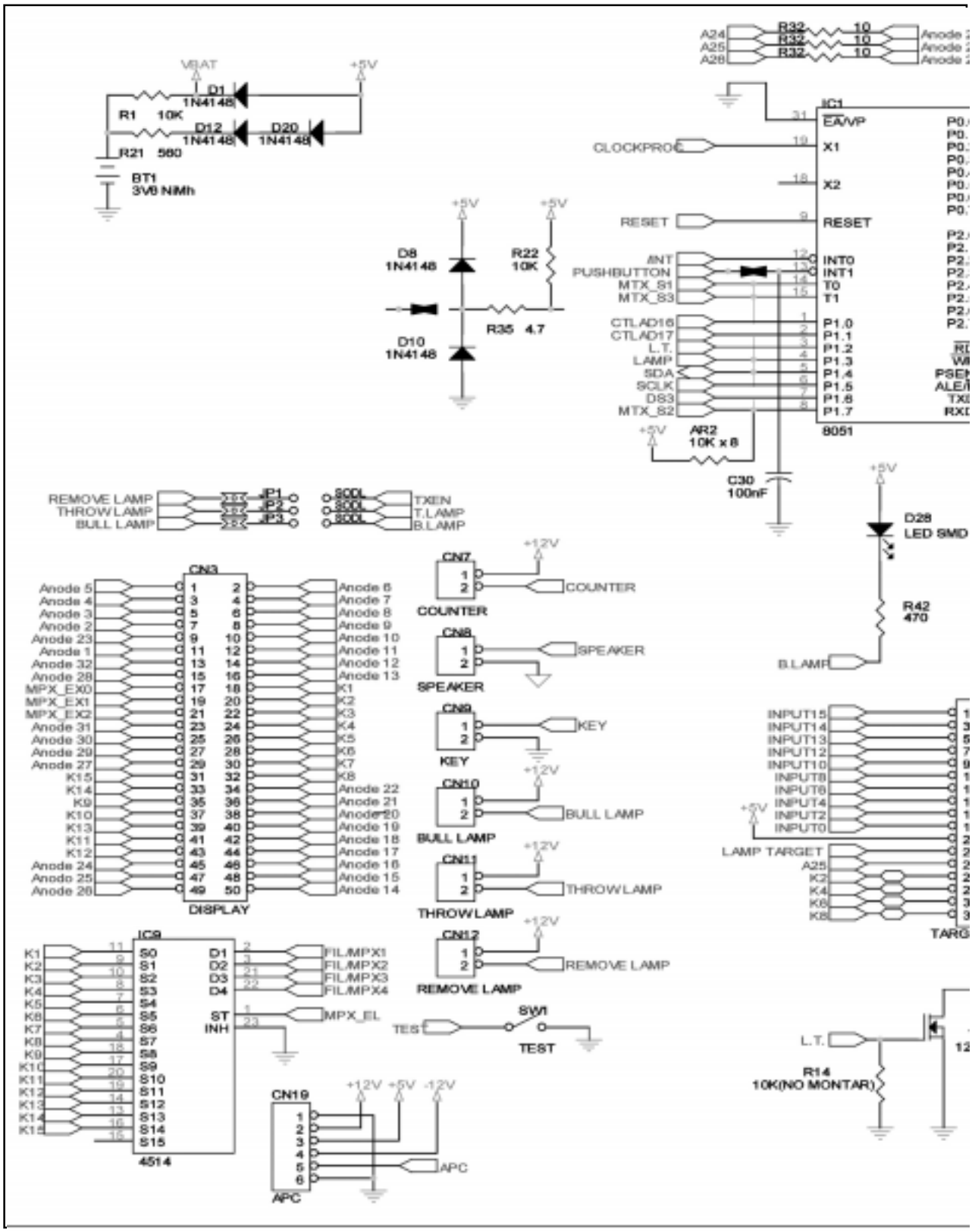
APPENDIX C- MINIDART CPU REPAIR TIPS

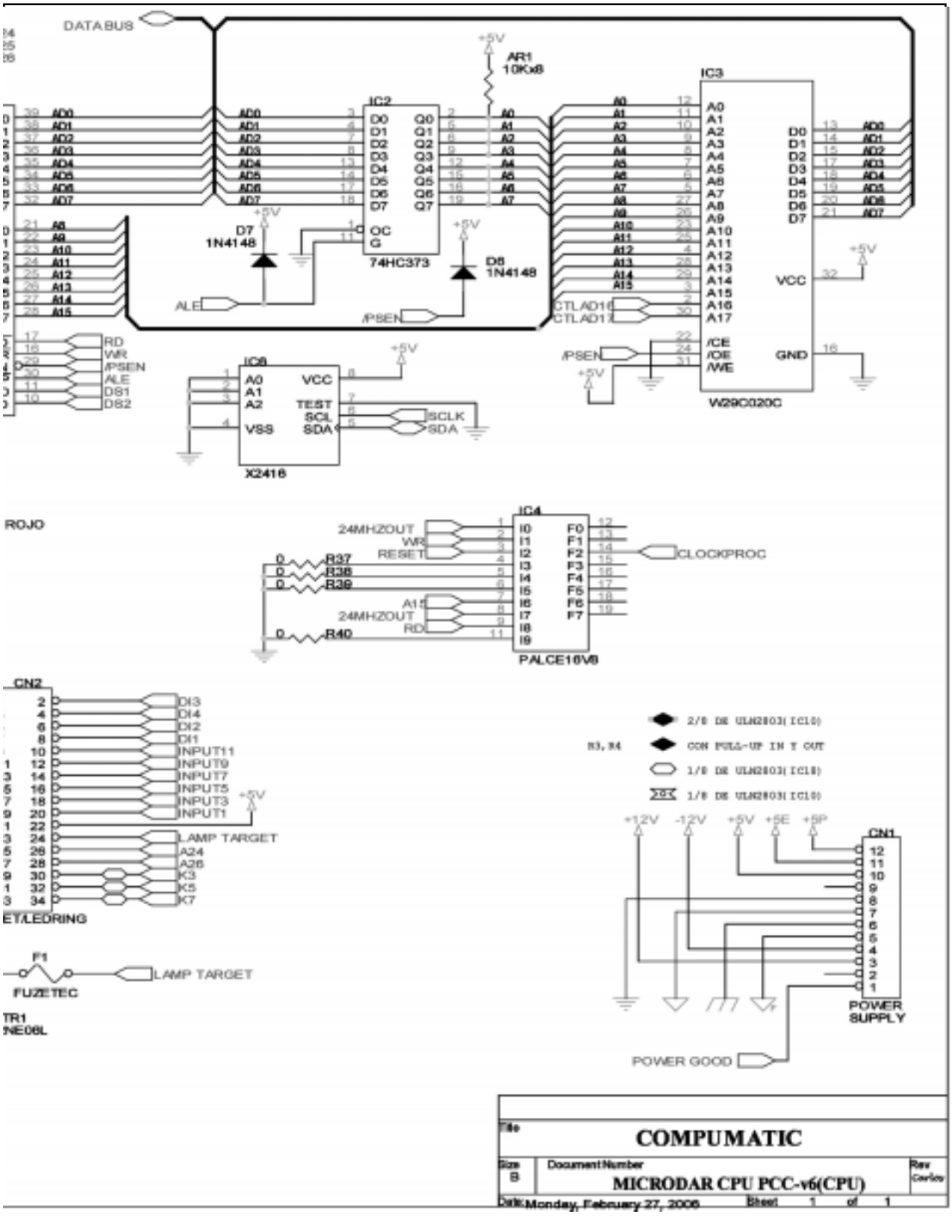


APPENDIX D- MINIDART ASSEMBLY DRAWING

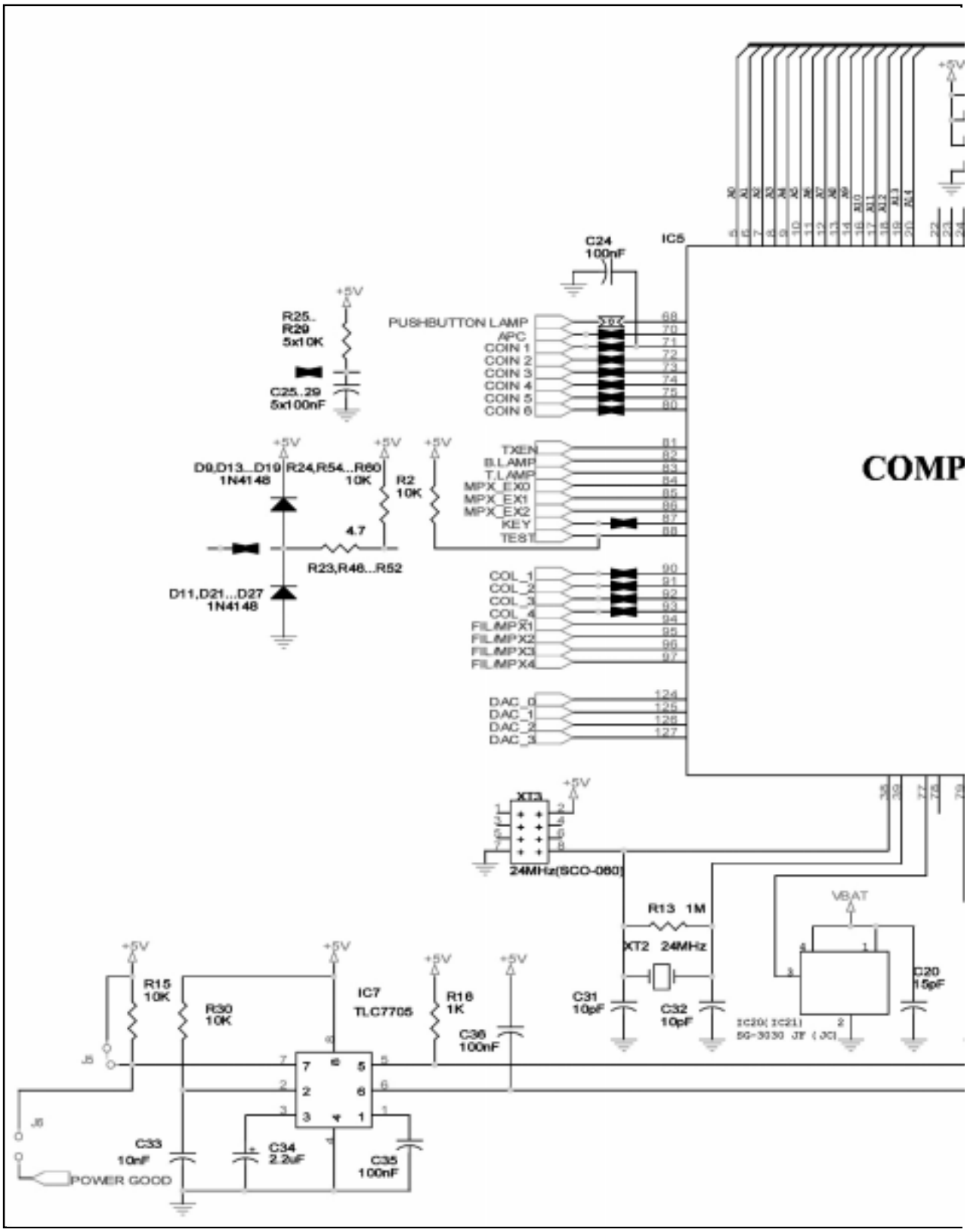


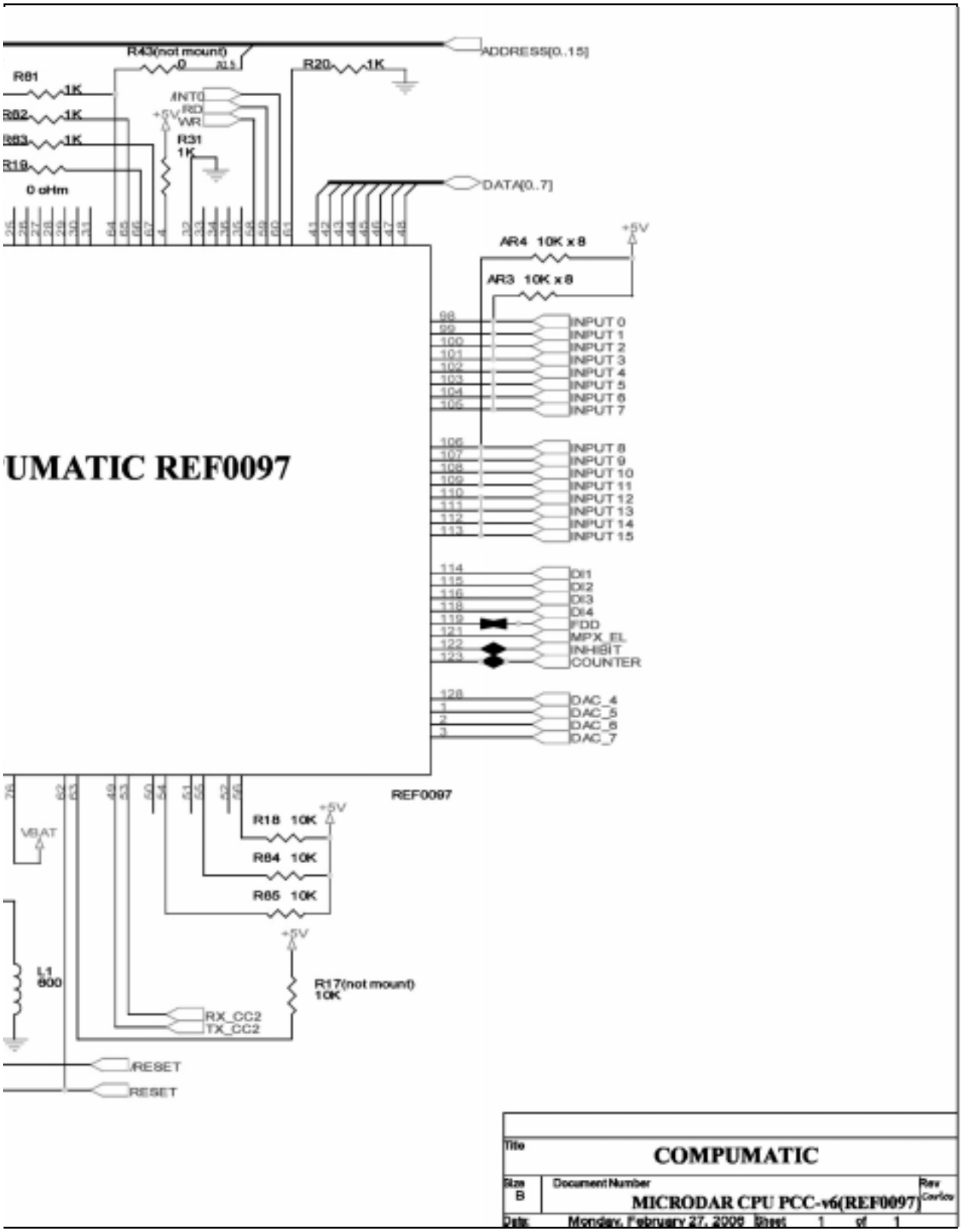
APPENDIX E- MINIDART CPU ELECTRONIC SCHEMATIC



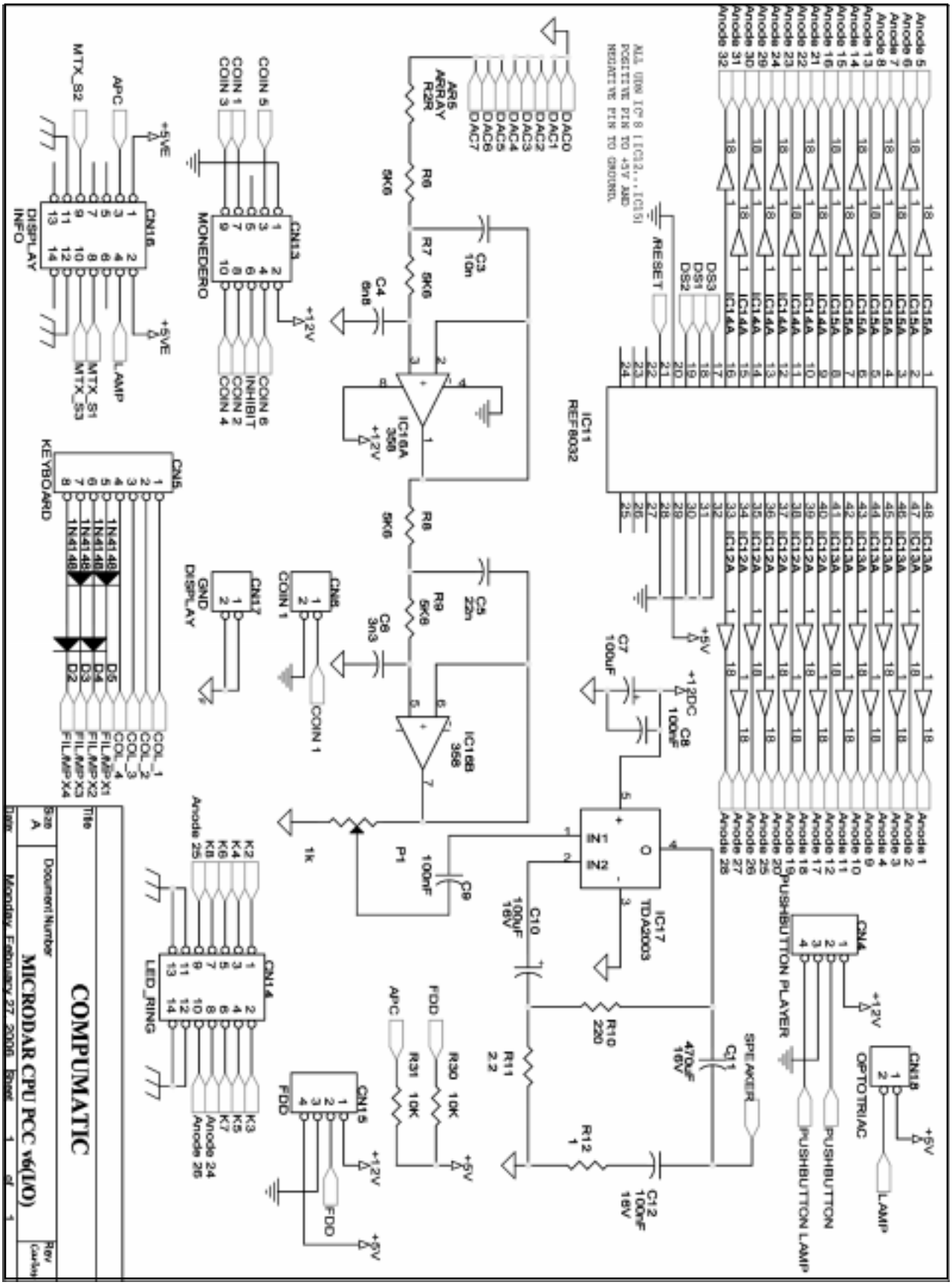

DATABUS
AR1
10Kx8
IC2
74HC373
IC3
W29C020C
D7
1N4148
D8
1N4148
ALE
/PSEN
RD
WR
/PSEN
ALE
DS1
DS2
IC6
X2416
SCLK
SDA
ROJO
IC4
PALCE16V8
24MHZOUT
RESET
R37
R38
R39
R40
CLOCKPROC
CN2
INPUT11
INPUT9
INPUT7
INPUT5
INPUT3
INPUT1
LAMP TARGET
A24
A26
K3
K5
K7
ET/LEDRING
F1
FUZETEC
LAMP TARGET
TR1
NE08L
CN1
POWER SUPPLY
POWER GOOD
+12V
-12V
+5V
+5E
+5P
COMPUMATIC
MICRODAR CPU PCC-v6(CPU)
Monday, February 27, 2006

APPENDIX F- MINIDART CPU (REF0097) ELECTRONIC SCHEMATIC

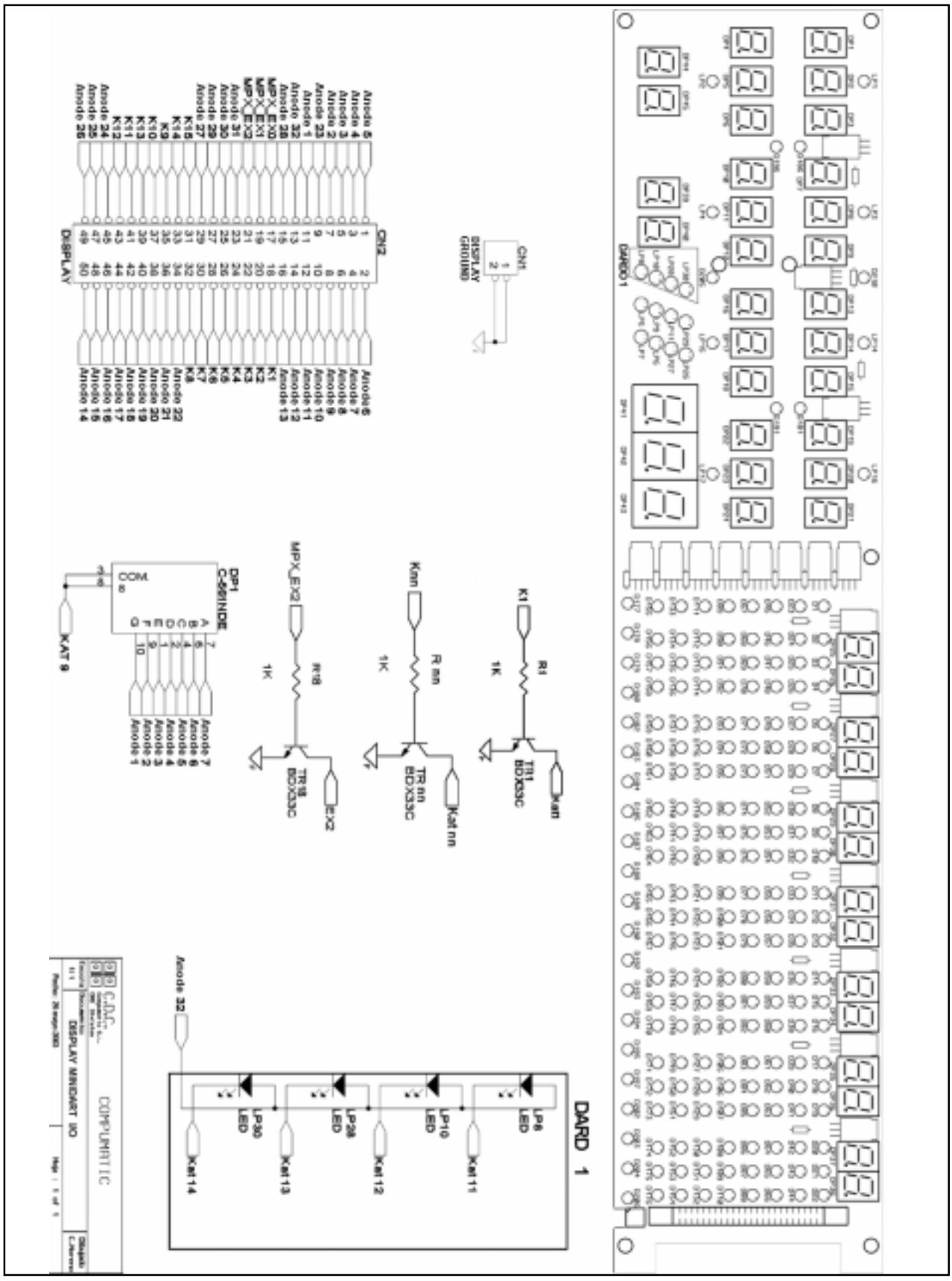



R43(not mount)
0
ADDRESS[0..15]
R20
1K
R81
1K
R82
1K
R83
1K
R19
0 ohm
INT0
RD
WR
+5V
R31
1K
DATA[0..7]
AR4 10K x 8
AR3 10K x 8
+5V
INPUT 0
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
INPUT 6
INPUT 7
INPUT 8
INPUT 9
INPUT 10
INPUT 11
INPUT 12
INPUT 13
INPUT 14
INPUT 15
UMATIC REF0097
DI1
DI2
DI3
DI4
FDD
MPX_EL
INHIBIT
COUNTER
DAC_4
DAC_5
DAC_6
DAC_7
REF0097
VBAT
R18 10K
R84 10K
R85 10K
+5V
L1
600
R17(not mount)
10K
RX_CC2
TX_CC2
RESET
RESET
Title
COMPUMATIC
Size
B
Document Number
MICRODAR CPU PCC-v6(REF0097)
Rev
Date:
Monday, February 27, 2006
Sheet
1
of
1

APPENDIX G- MINIDART CPU (I/O) ELECTRONIC SCHEMEMATICS



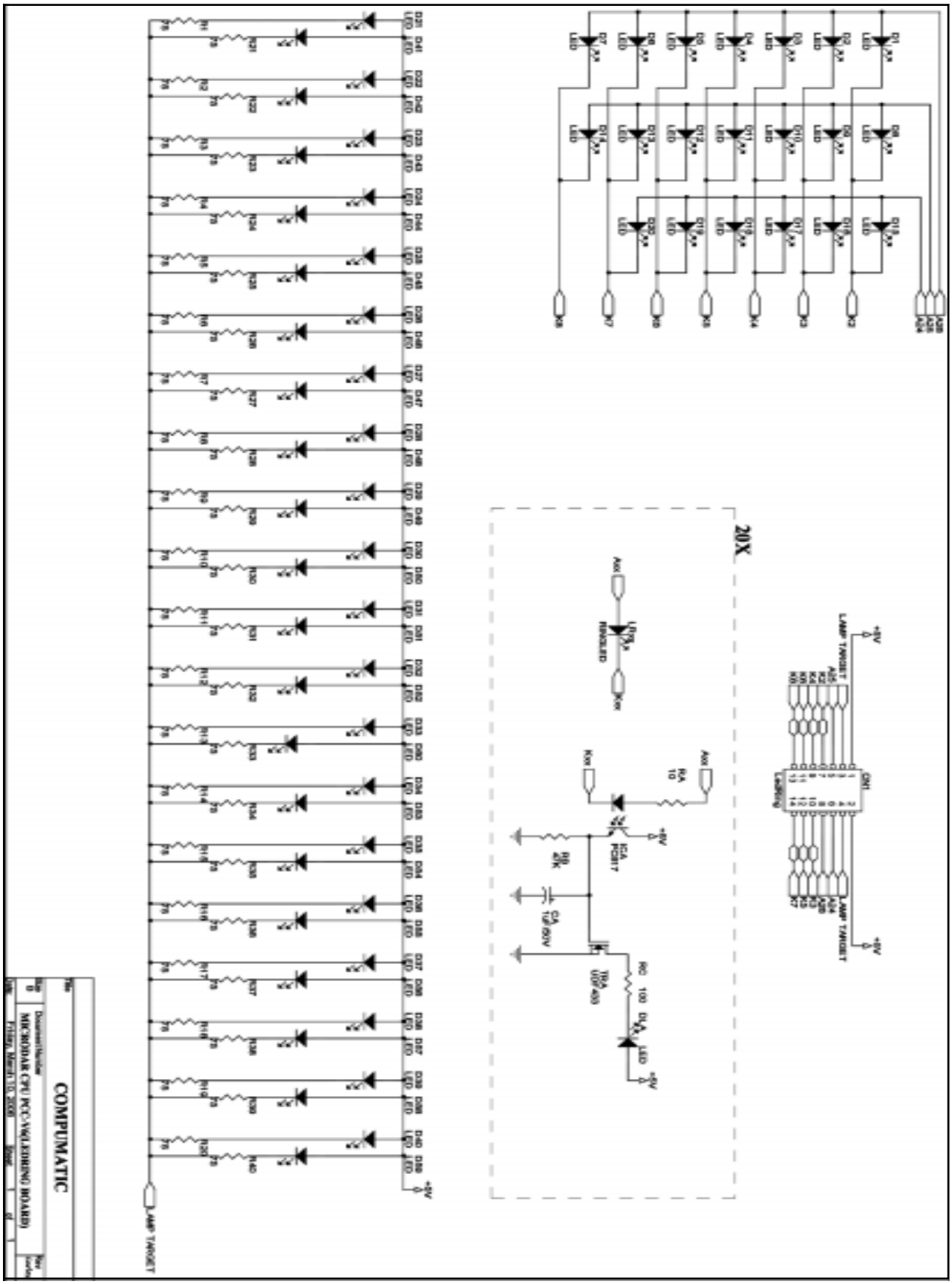
APPENDIX H- MINIDART DISPLAY (I/O) ELECTRONIC SCHEMATICS



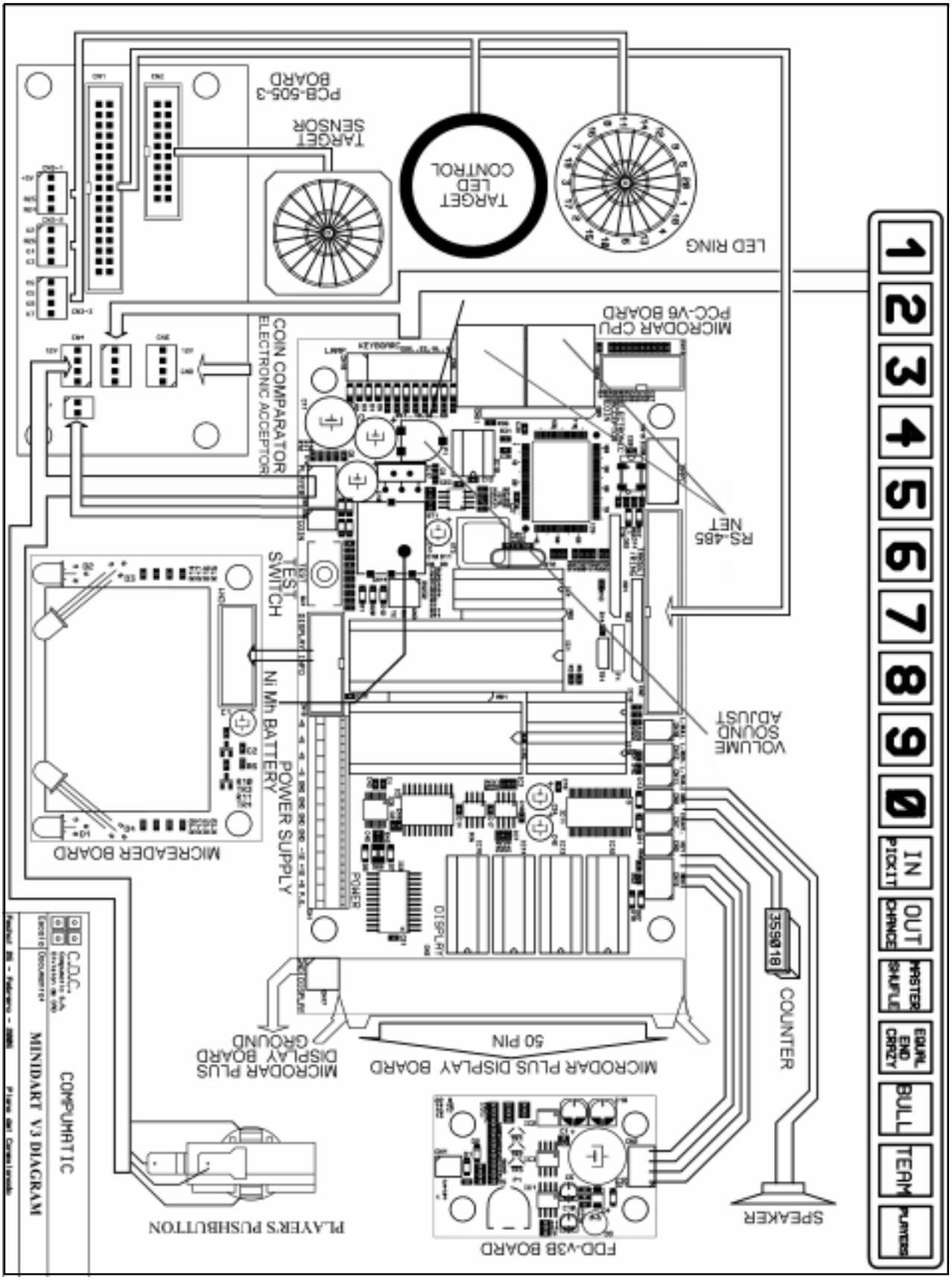
APPENDIX I- MINIDART DISPLAY AND LEDS MAP

	Kat1	Kat2	Kat3	Kat4	Kat5	Kat6	Kat7	Kat8	Kat9	Kat10	Kat11	Kat12	Kat13	Kat14	Kat15	EX0	EX1	EX2
ANODE 1	D22	D44	D66	D88	D110	D132	D154	D176	DP1G	DP5G	DP9G	DP13G	DP17G	DP21G	DP25G	DP29G	DP33G	DP37G
ANODE 2	D21	D43	D65	D87	D109	D131	D153	D175	DP1F	DP5F	DP9F	DP13F	DP17F	DP21F	DP25F	DP29F	DP33F	DP37F
ANODE 3	D20	D42	D64	D86	D108	D130	D152	D174	DP1E	DP5E	DP9E	DP13E	DP17E	DP21E	DP25E	DP29E	DP33E	DP37E
ANODE 4	D19	D41	D63	D85	D107	D129	D151	D173	DP1D	DP5D	DP9D	DP13D	DP17D	DP21D	DP25D	DP29D	DP33D	DP37D
ANODE 5	D18	D40	D62	D84	D106	D128	D150	D172	DP1C	DP5C	DP9C	DP13C	DP17C	DP21C	DP25C	DP29C	DP33C	DP37C
ANODE 6	D17	D39	D61	D83	D105	D127	D149	D171	DP1B	DP5B	DP9B	DP13B	DP17B	DP21B	DP25B	DP29B	DP33B	DP37B
ANODE 7	D16	D38	D60	D82	D104	D126	D148	D170	DP1A	DP5A	DP9A	DP13A	DP17A	DP21A	DP25A	DP29A	DP33A	DP37A
ANODE 8	D15	D37	D59	D81	D103	D125	D147	D169	DP41A	DP41B	DP41C	DP41D	DP41E	DP41F	DP41G		LP11	
ANODE 9	D14	D36	D58	D80	D102	D124	D146	D168	DP2G	DP6G	DP10G	DP14G	DP18G	DP22G	DP26G	DP30G	DP34G	DP38G
ANODE 10	D13	D35	D57	D79	D101	D123	D145	D167	DP2F	DP6F	DP10F	DP14F	DP18F	DP22F	DP26F	DP30F	DP34F	DP38F
ANODE 11	D12	D34	D56	D78	D100	D122	D144	D166	DP2E	DP6E	DP10E	DP14E	DP18E	DP22E	DP26E	DP30E	DP34E	DP38E
ANODE 12	D11	D33	D55	D77	D99	D121	D143	D165	DP2D	DP6D	DP10D	DP14D	DP18D	DP22D	DP26D	DP30D	DP34D	DP38D
ANODE 13	D10	D32	D54	D76	D98	D120	D142	D164	DP2C	DP6C	DP10C	DP14C	DP18C	DP22C	DP26C	DP30C	DP34C	DP38C
ANODE 14	D9	D31	D53	D75	D97	D119	D141	D163	DP2B	DP6B	DP10B	DP14B	DP18B	DP22B	DP26B	DP30B	DP34B	DP38B
ANODE 15	D8	D30	D52	D74	D96	D118	D140	D162	DP2A	DP6A	DP10A	DP14A	DP18A	DP22A	DP26A	DP30A	DP34A	DP38A
ANODE 16	D7	D29	D51	D73	D95	D117	D139	D161	DP42A	DP42B	DP42C	DP42D	DP42E	DP42F	DP42G	LP5	LP9	LP29
ANODE 17	D6	D28	D50	D72	D94	D116	D138	D160	DP3G	DP7G	DP11G	DP15G	DP19G	DP23G	DP27G	DP31G	DP35G	DP39G
ANODE 18	D5	D27	D49	D71	D93	D115	D137	D159	DP3F	DP7F	DP11F	DP15F	DP19F	DP23F	DP27F	DP31F	DP35F	DP39F
ANODE 19	D4	D26	D48	D70	D92	D114	D136	D158	DP3E	DP7E	DP11E	DP15E	DP19E	DP23E	DP27E	DP31E	DP35E	DP39E
ANODE 20	D3	D25	D47	D69	D91	D113	D135	D157	DP3D	DP7D	DP11D	DP15D	DP19D	DP23D	DP27D	DP31D	DP35D	DP39D
ANODE 21	D2	D24	D46	D68	D90	D112	D134	D156	DP3C	DP7C	DP11C	DP15C	DP19C	DP23C	DP27C	DP31C	DP35C	DP39C
ANODE 22	D1	D23	D45	D67	D89	D111	D133	D155	DP3B	DP7B	DP11B	DP15B	DP19B	DP23B	DP27B	DP31B	DP35B	DP39B
ANODE 23									DP3A	DP7A	DP11A	DP15A	DP19A	DP23A	DP27A	DP31A	DP35A	DP39A
ANODE 24		D191	D192	D193	D194	D195	D196	D197	DP43A	DP43B	DP43C	DP43D	DP43E	DP43F	DP43G		LP27	
ANODE 25		D184	D185	D186	D187	D188	D189	D190	DP4G	DP8G	DP12G	DP16G	DP20G	DP24G	DP28G	DP32G	DP36G	DP40G
ANODE 26		D177	D178	D179	D180	D181	D182	D183	DP4F	DP8F	DP12F	DP16F	DP20F	DP24F	DP28F	DP32F	DP36F	DP40F
ANODE 27	LP1	LP2	LP3	LP4	LP14	LP15	LP16	LP17	DP4E	DP8E	DP12E	DP16E	DP20E	DP24E	DP28E	DP32E	DP36E	DP40E
ANODE 28	D210	D205	D186	D196	D181	D191			DP4D	DP8D	DP12D	DP16D	DP20D	DP24D	DP28D	DP32D	DP36D	DP40D
ANODE 29									DP4C	DP8C	DP12C	DP16C	DP20C	DP24C	DP28C	DP32C	DP36C	DP40C
ANODE 30									DP4B	DP8B	DP12B	DP16B	DP20B	DP24B	DP28B	DP32B	DP36B	DP40B
ANODE 31	DP44A	DP44B	DP44C	DP44D	DP44E	DP44F	DP44G		DP4A	DP8A	DP12A	DP16A	DP20A	DP24A	DP28A	DP32A	DP36A	DP40A
ANODE 32	DP45A	DP45B	DP45C	DP45D	DP45E	DP45F	DP45G				LP8	LP10	LP28	LP30		LP7	LP6	LP26

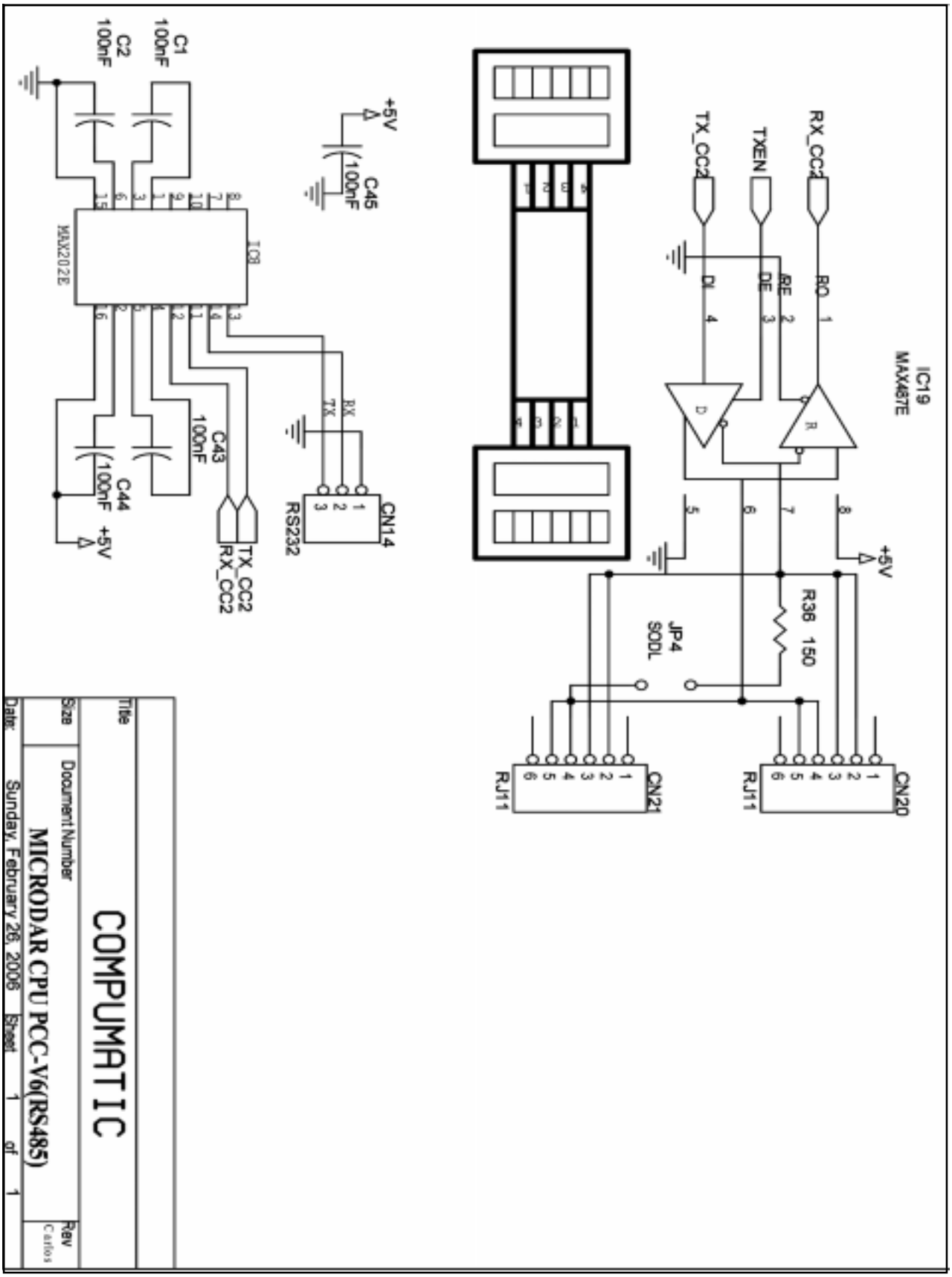
APPENDIX J- MINIDART LEDS RING ELECTRONIC SCHEMATICS



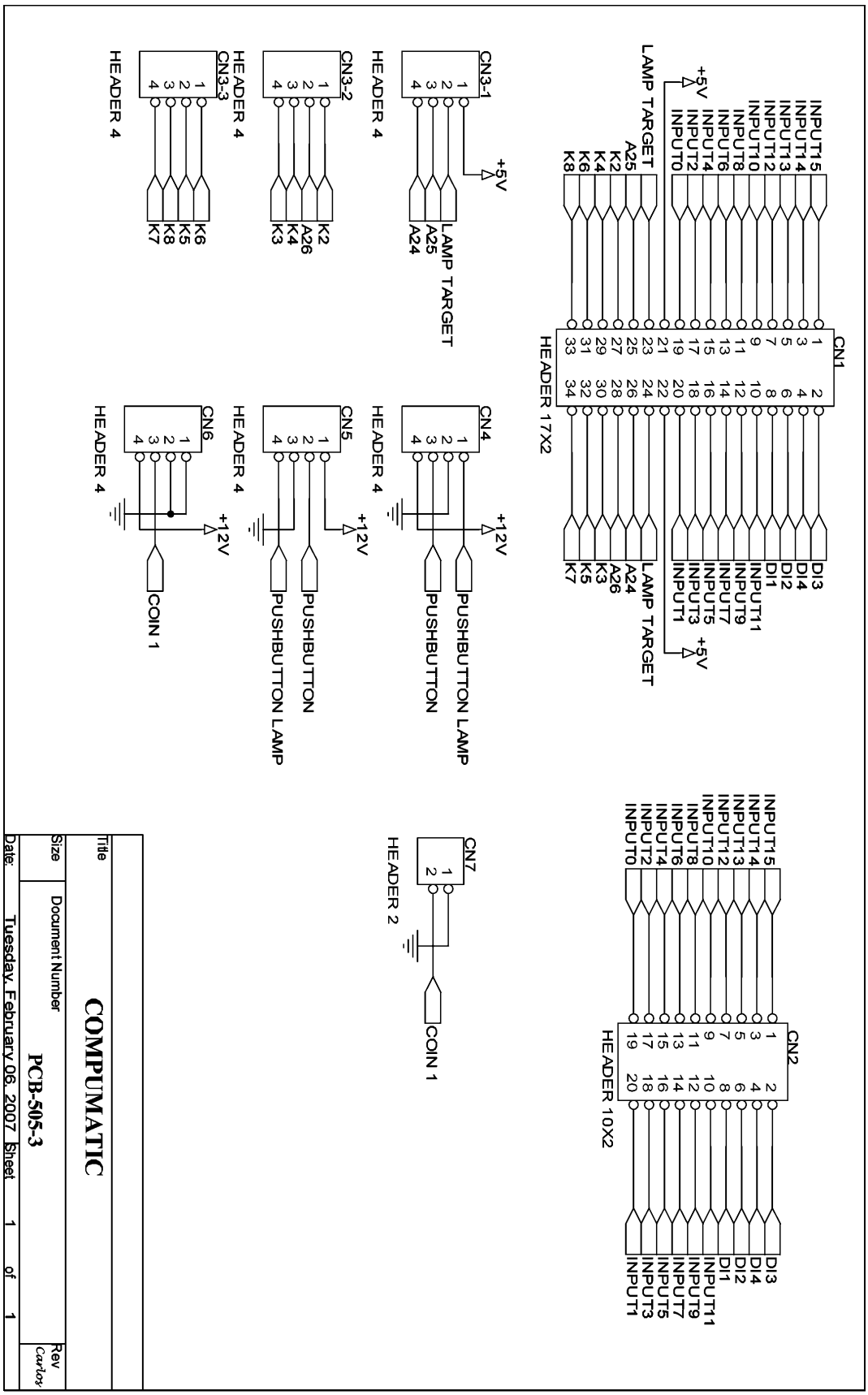
APPENDIX K- MINIDART CONNEXION PLAN



APPENDIX L- MINIDART RS(RS485) ELECTRONIC SCHEMATICS



APPENDIX M- MINIDART PCB-505-3



APPENDIX N- MINIDART TECHNICAL SPECIFICATIONS

USA-CANADA VERSION

Size (Hig.,dep.,wid.)	980 mm x 125 mm x 680 mm
Weight	40 kg.
Temperature range	Storage: -30 ºC a + 60 ºC Operating : -10 ºC a + 50 ºC Caution : Only indoor using machine
Input voltage range	110 V - 130 V
Frequency	60 Hz.
Consumition (220)	0,6 A aprox.
Audio power	3 W RMS.

EUROPEAN VERSION

Size (Hig.,dep.,wid.)	980 mm x 125 mm x 680 mm
Weight	40 kg.
Temperature range	Storage: -30 ºC a + 60 ºC Operating : -10 ºC a + 50 ºC Caution : Only indoor using machine
Input voltage range	210 V - 240 V
Frequency	50 Hz.
Consumition (220)	0,4 A aprox.
Audio power	3 W RMS.

COMPUMATIC

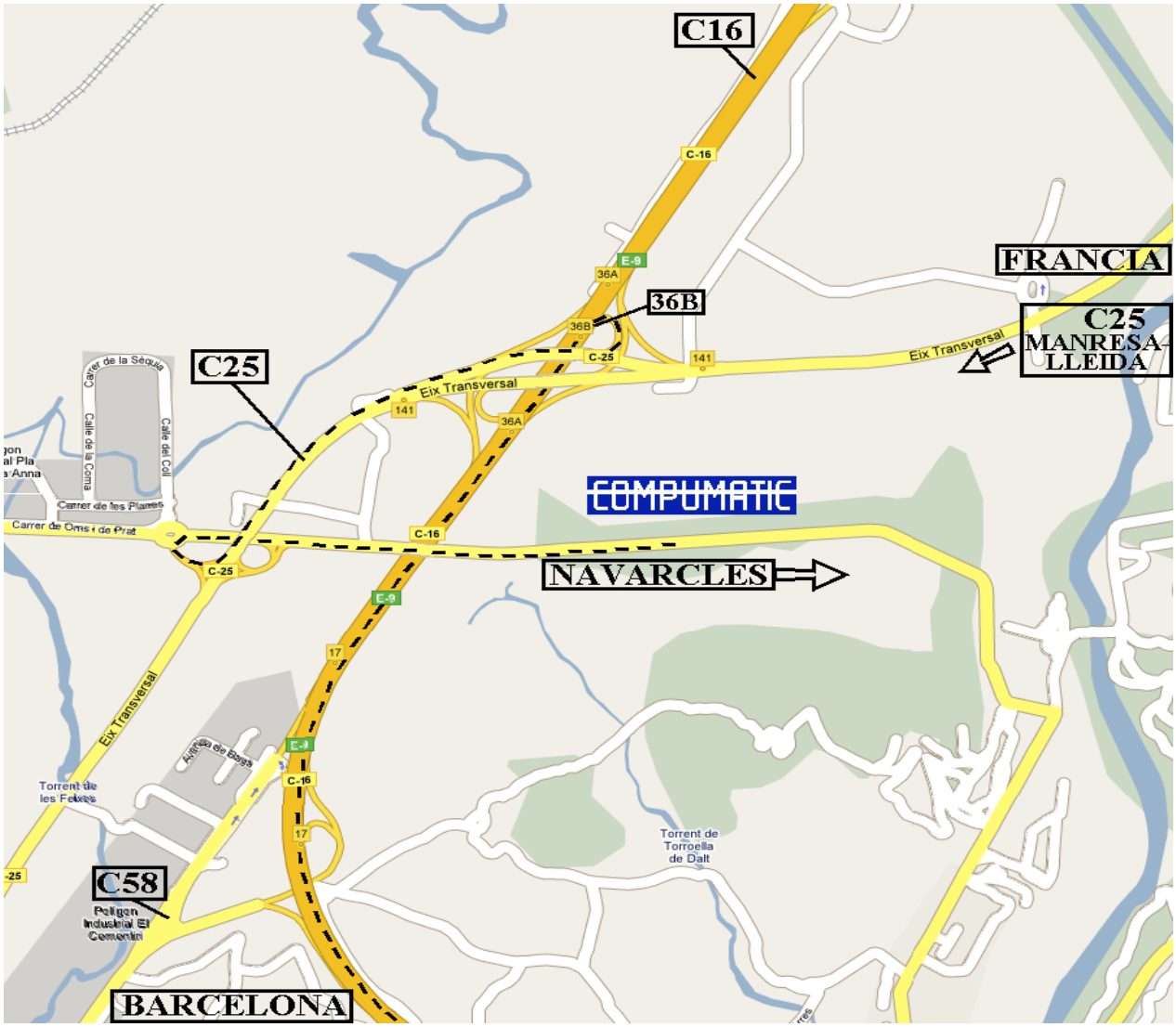
P. PLA DEL MAS NAVE 4 PONT DE CABRIANES

08650 SALLENT

BARCELONA (SPAIN)

Telf. 34-93-837.49.49

Fax. 34-93-396.08.25



WEB: http://www.compumatic.net

compumatic@compumatic.es :**E-MAIL**

ACCESS TO COMPUMATIC:

FROM BARCELONA CENTRE

Take C58 highwat Terrasa-Manresa. Take 36B out. C25 to Manresa-Lleida and take out to Navarcles.

ARRIVING FROM FRANCE

Take AP7 highway. Out to C25 Manresa-Lleida and take out to Navarcles.

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COMPUMATIC
POLIGONO INDUSTRIAL PLA DEL MAS NAVE 4 08650
PONT DE CABRIANES . SALLENT-BARCELONA (SPAIN)
TEL : 34 93 837 49 49 - FAX : 34 93 396 08 25
E - MAIL : compumatic@compumatic.es

Nº

MINIDART

On-Line Registration www.compumatic.net	**Please fill this warranty registration card immediately at the time of purchase and make on-line registration on our Web within 10 days. Otherwise will not be effective.**

PRODUCT WARRANTY CARD

COMPANY _____

FIRST NAME _____

LAST NAME _____ TELEPHONE _____

ADDRESS _____

EMAIL _____

DEALER NAME _____

PURCHASE DATE _____ (dd) _____ (mm) _____ (yyyy)

DEALER'S CHOP

THIS WARRANTY CARD IS VALID ONLY WITH THE PURCHASE INVOICE ACCORDING TO DE LAW.

FOLD

TERMS AND CONDITIONS

1. Customer must produce this warranty card when warranty service is requested during warranty period.
2. Warranty: Compumatic hardware products are warranted against defects material and workmanship. If Compumatic receives notice of such defects during the warranty period, Compumatic shall, at its opinion, either repair or replace hardware products which prove to be defective.
3. Place of Performance:

   Warranty services are provided by Compumatic, only at office in Barcelona-Spain.The Customer is requested to return warranty goods to the adress on this warranty card for warranty service. Other service points outside Spain will be listed on our web page if available.
4. Limited Warranty: Warranty shall not apply to defects resulting from:
   a. Improper of inadequate maintenance by Customer;
   b. Customer supplied software or interfacing;
   c. Unauthorized modification or misuse;
   d. Operation outside of the environmental specifications for the products, or
   e. Improper site preparation and maintenance.

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THE WARRANTY CARD HAS TO BE ENDORSED BY COMPUMATIC BEFORE THE WARRANTY IS VALIDATED.