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CROSS-BORDER COOPERATION IN THE MEDITERRANEAN

FruitFlyNet

A Location–aware System for Fruit Fly Monitoring and Pest Management Control

OliveFlynet pilot implementation in Jordan

Agricultural University of Athens

CRA
CONSIGLIO PER LA RICERCA E LA SPERIMENTAZIONE IN AGRICOLTURA

UIB Universitat de les Illes Balears

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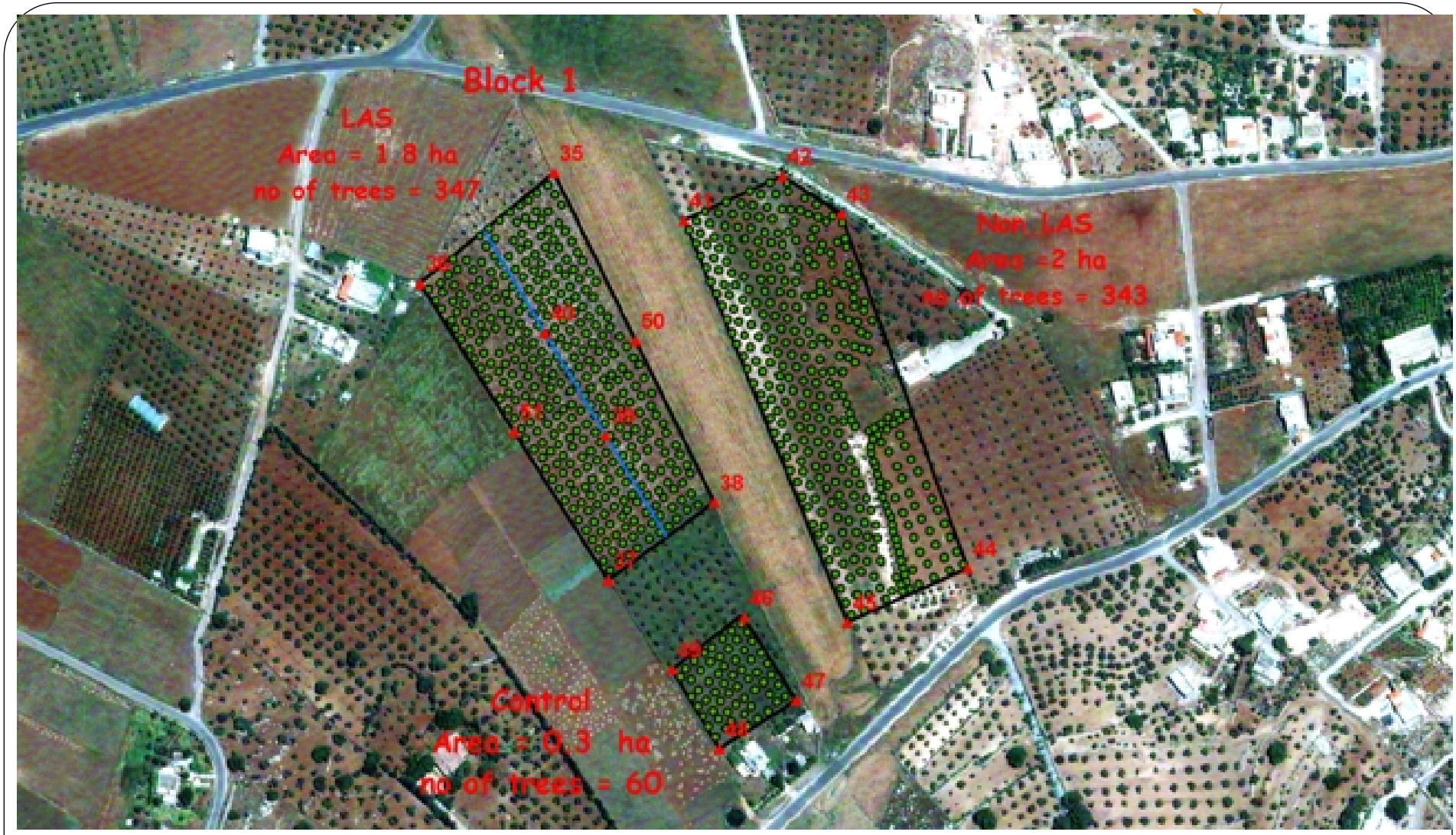
The 2007-2013 ENPI CBC Mediterranean Sea Basin Programme is a multilateral Cross-Border Cooperation initiative funded by the European Neighbourhood and Partnership Instrument (ENPI). The Programme objective is to promote the sustainable and harmonious cooperation process at the Mediterranean Basin level by dealing with the common challenges and enhancing its endogenous potential. It finances cooperation projects as a contribution to the economic, social, environmental and cultural development of the Mediterranean region. The following 14 countries participate in the Programme: Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Malta, Palestine, Portugal, Spain, Syria (participation currently suspended), Tunisia. The Joint Managing Authority (JMA) is the Autonomous Region of Sardinia (Italy). Official Programme languages are Arabic, English and French (www.enpicbcmed.eu).

The European Union is made up of 28 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development whilst maintaining cultural diversity, tolerance and individual freedoms. The European Union is committed to sharing its achievements and its values with countries and peoples beyond its borders.

The project FruitFlyNet total budget is 1.662.872,32€ and it is financed, on an amount of 1.496.585,09€ (90 %), by the European Union (ENPI CBC Mediterranean Sea Basin Programme) through the European Neighbourhood and Partnership Instrument.



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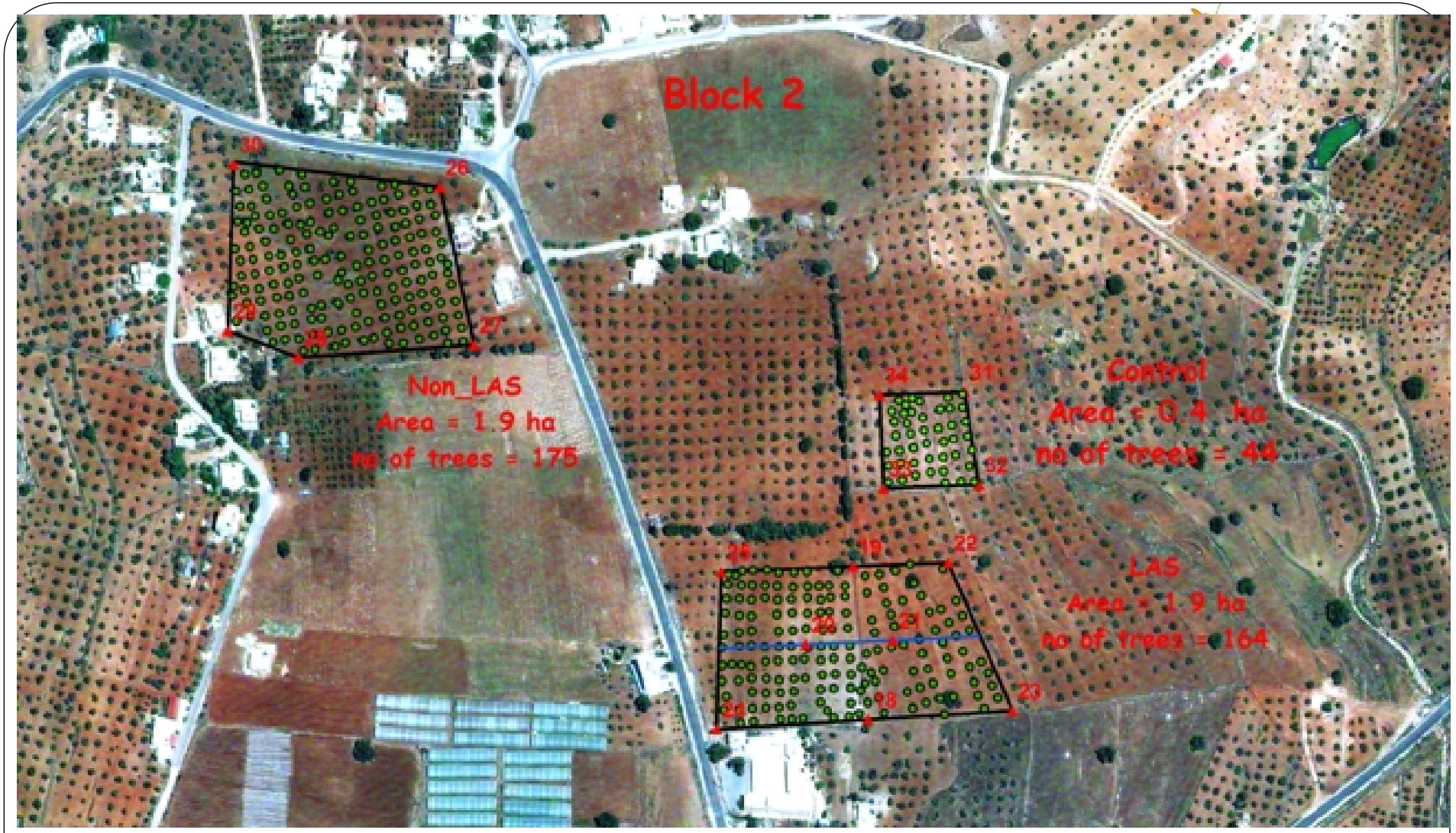

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Softwares

1. Controller board software
2. Raspberry-Node software
3. Raspberry-Server Software
4. PC infrared-graphical user interface software
5. Field server to central server software (done not tested)

No Static IP address- control within nodes and servers

6. Camera test and adjustment softwares

Configurations

- Raspberry
- Node
- ……etc

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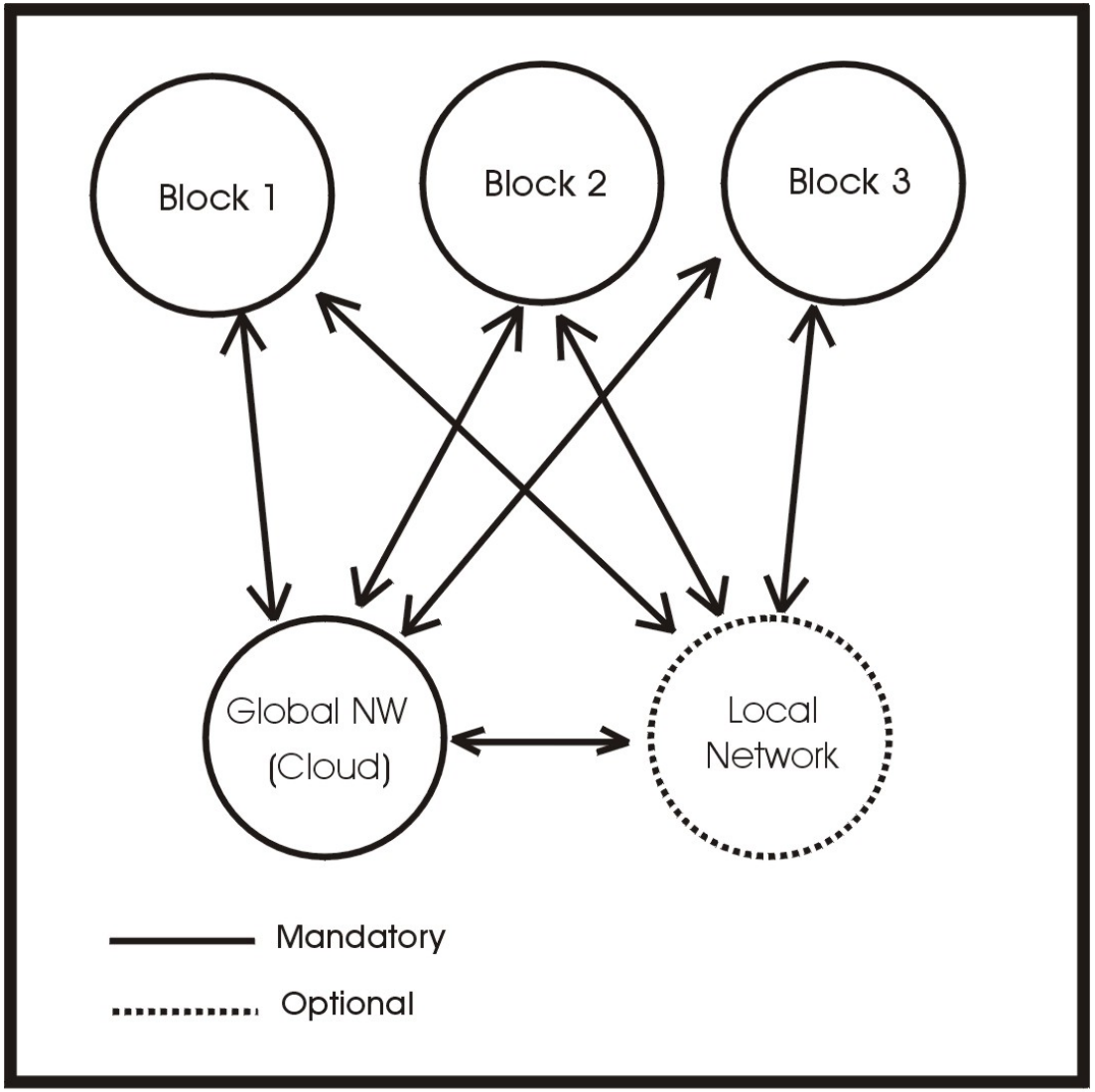

System Schema

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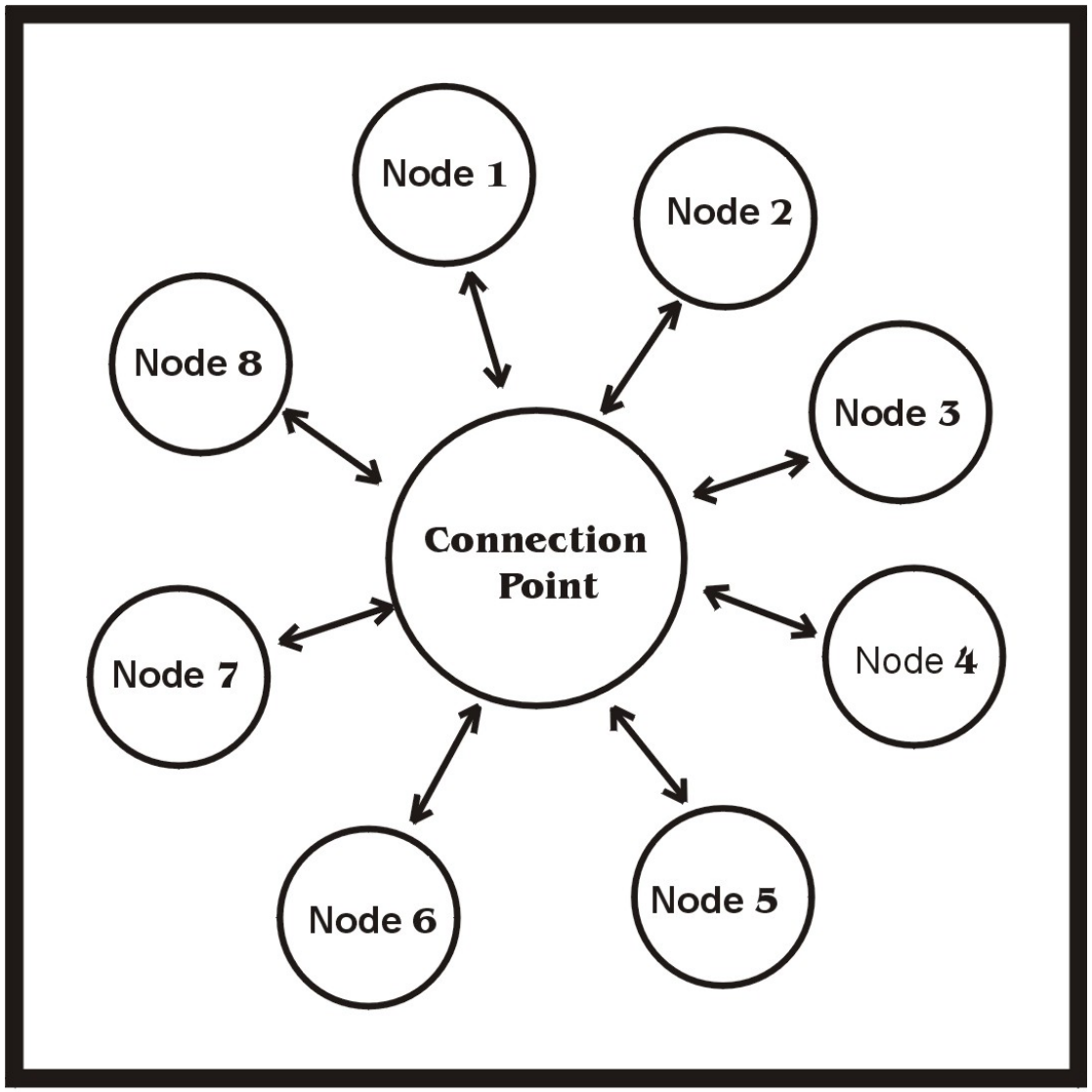

BLOCK SCHEMA

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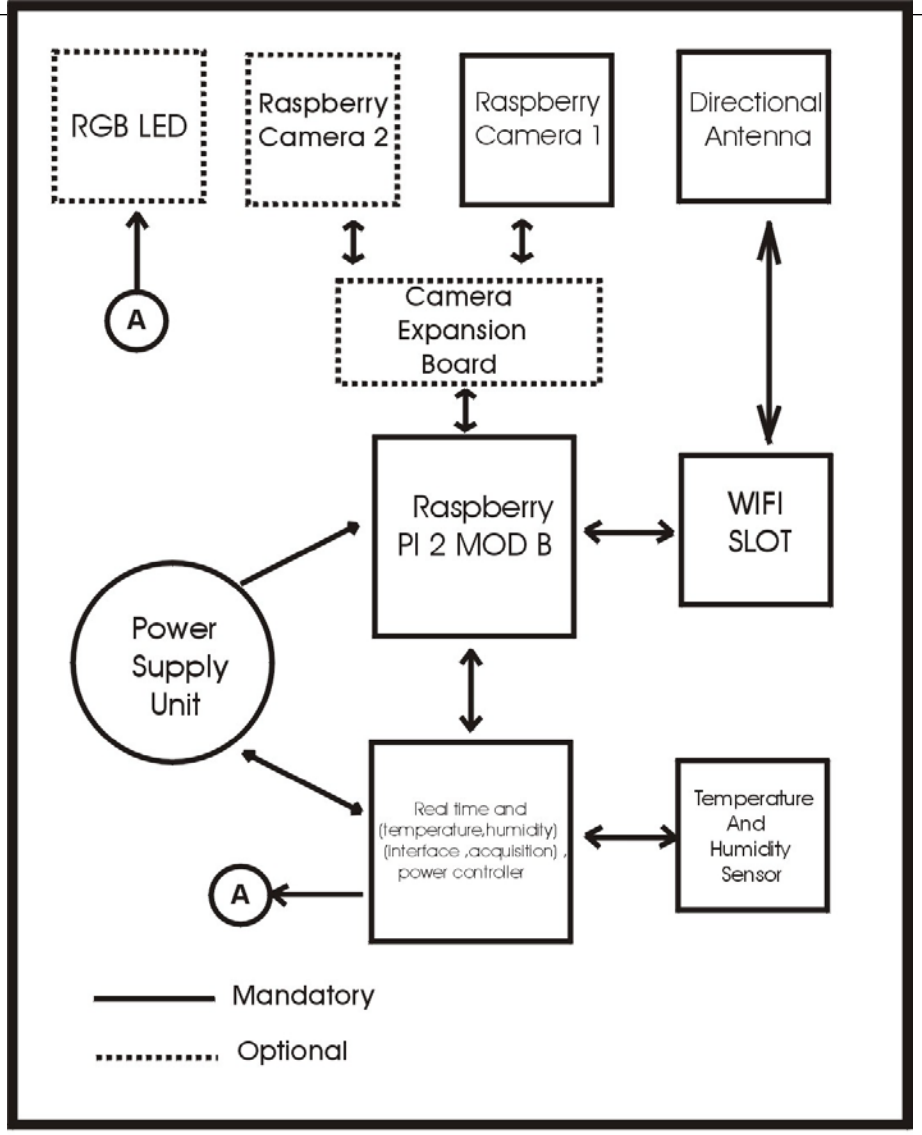

Node Block Diagram

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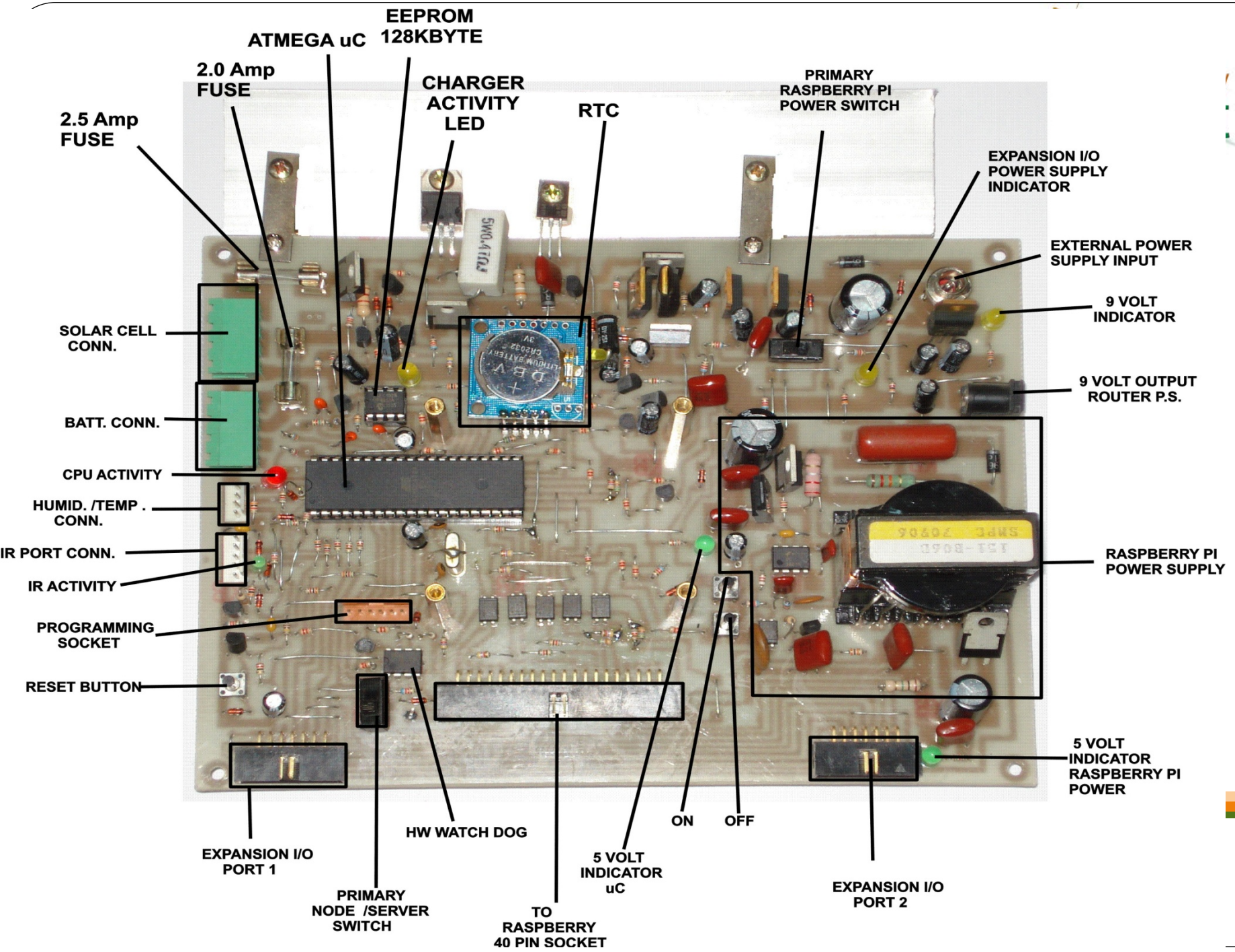
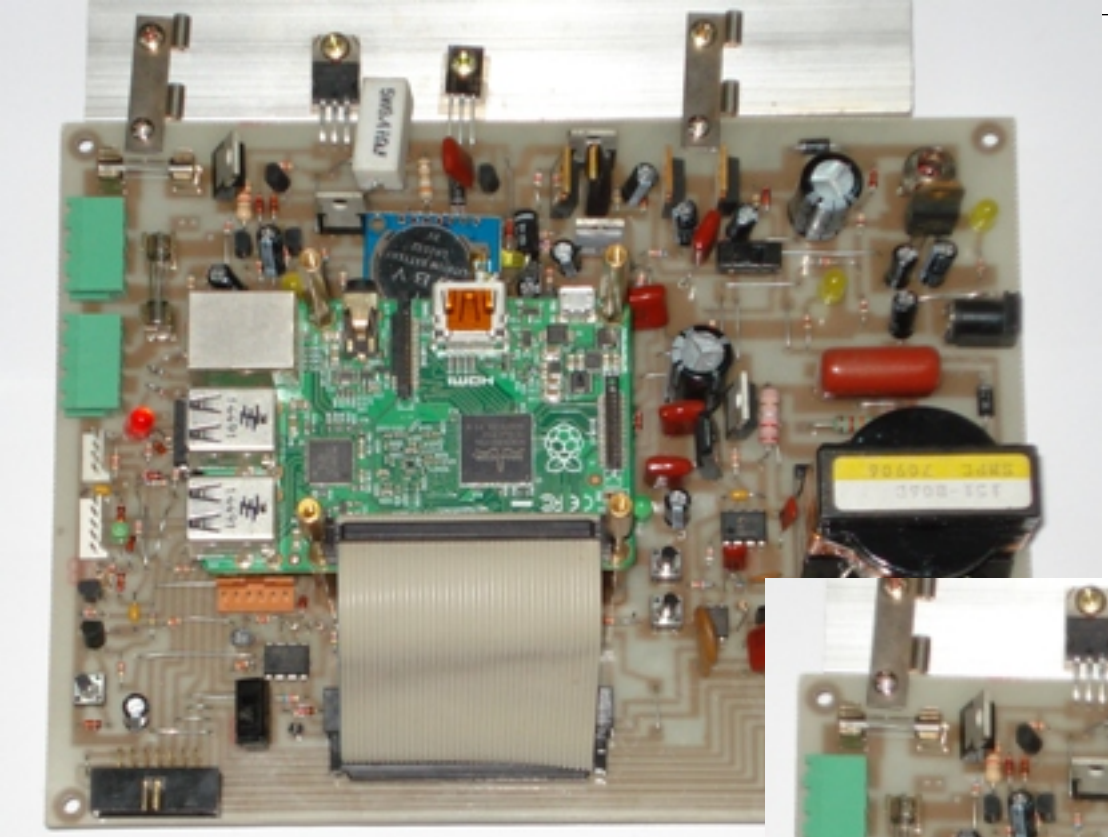
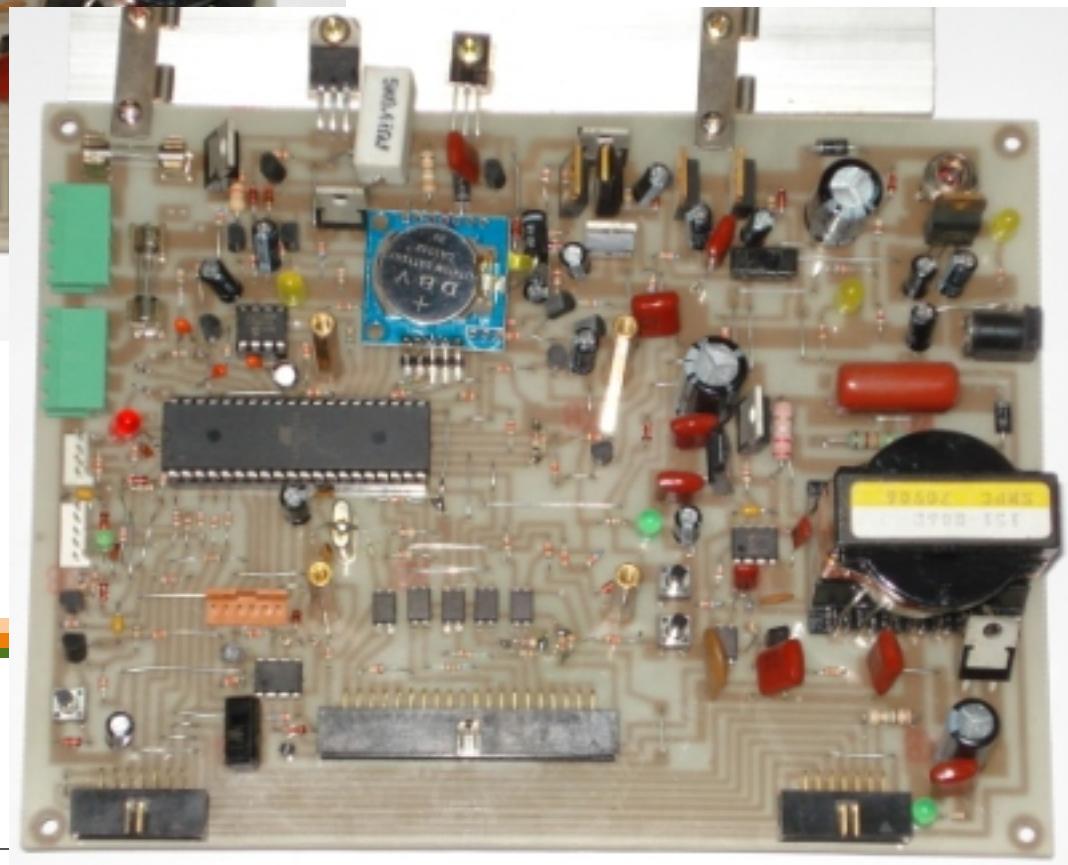
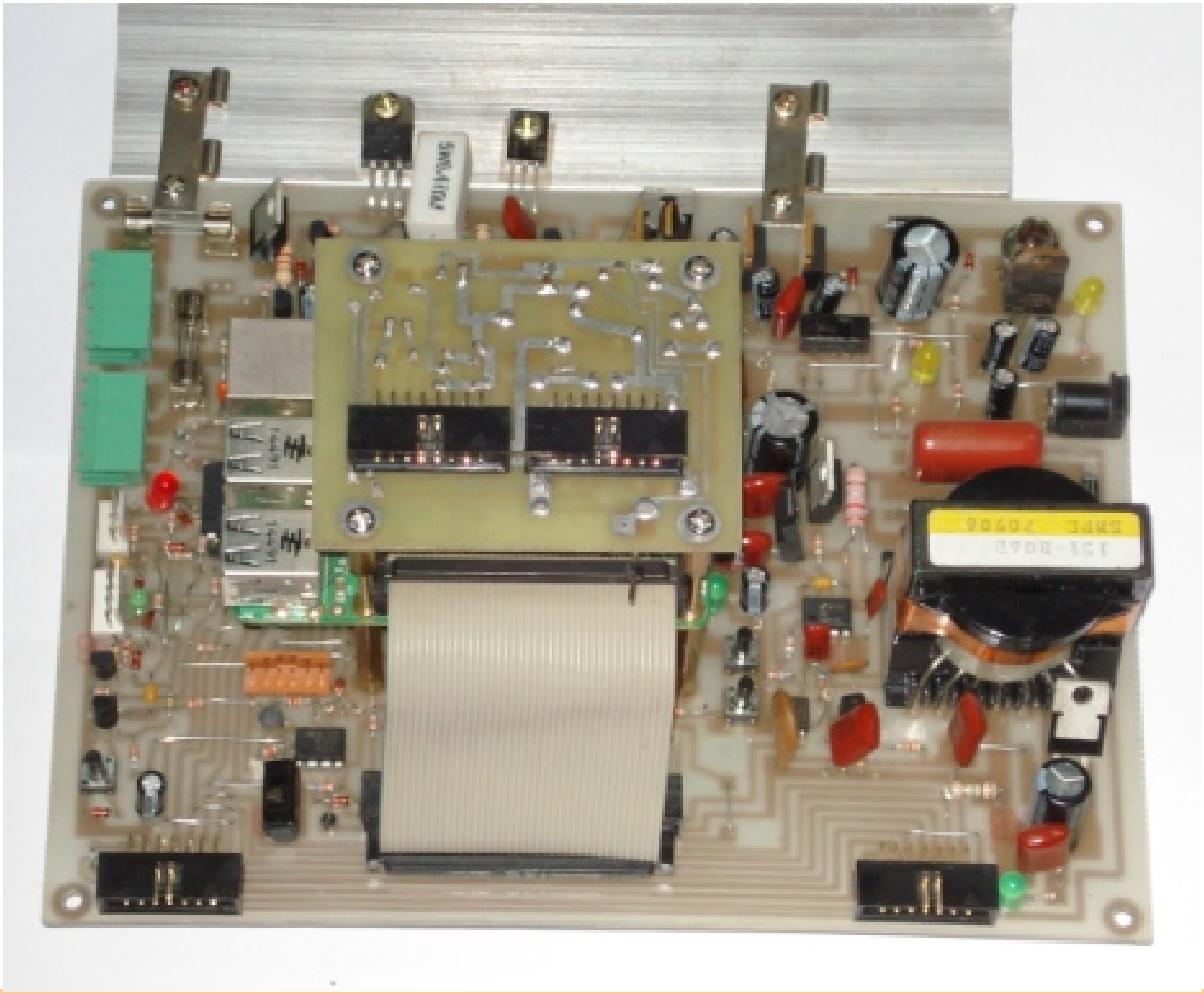

EEPROM
128KBYTE
ATMEGA uC
2.0 Amp
FUSE
2.5 Amp
FUSE
CHARGER
ACTIVITY
LED
RTC
PRIMARY
RASPBERRY PI
POWER SWITCH
EXPANSION I/O
POWER SUPPLY
INDICATOR
EXTERNAL POWER
SUPPLY INPUT
9 VOLT
INDICATOR
9 VOLT OUTPUT
ROUTER P.S.
SOLAR CELL
CONN.
BATT. CONN.
CPU ACTIVITY
HUMID. /TEMP .
CONN.
IR PORT CONN.
IR ACTIVITY
PROGRAMMING
SOCKET
RESET BUTTON
RASPBERRY PI
POWER SUPPLY
5 VOLT
INDICATOR
RASPBERRY PI
POWER
EXPANSION I/O
PORT 1
PRIMARY
NODE /SERVER
SWITCH
HW WATCH DOG
TO
RASPBERRY
40 PIN SOCKET
5 VOLT
INDICATOR
uC
ON
OFF
EXPANSION I/O
PORT 2

FruitFly Net







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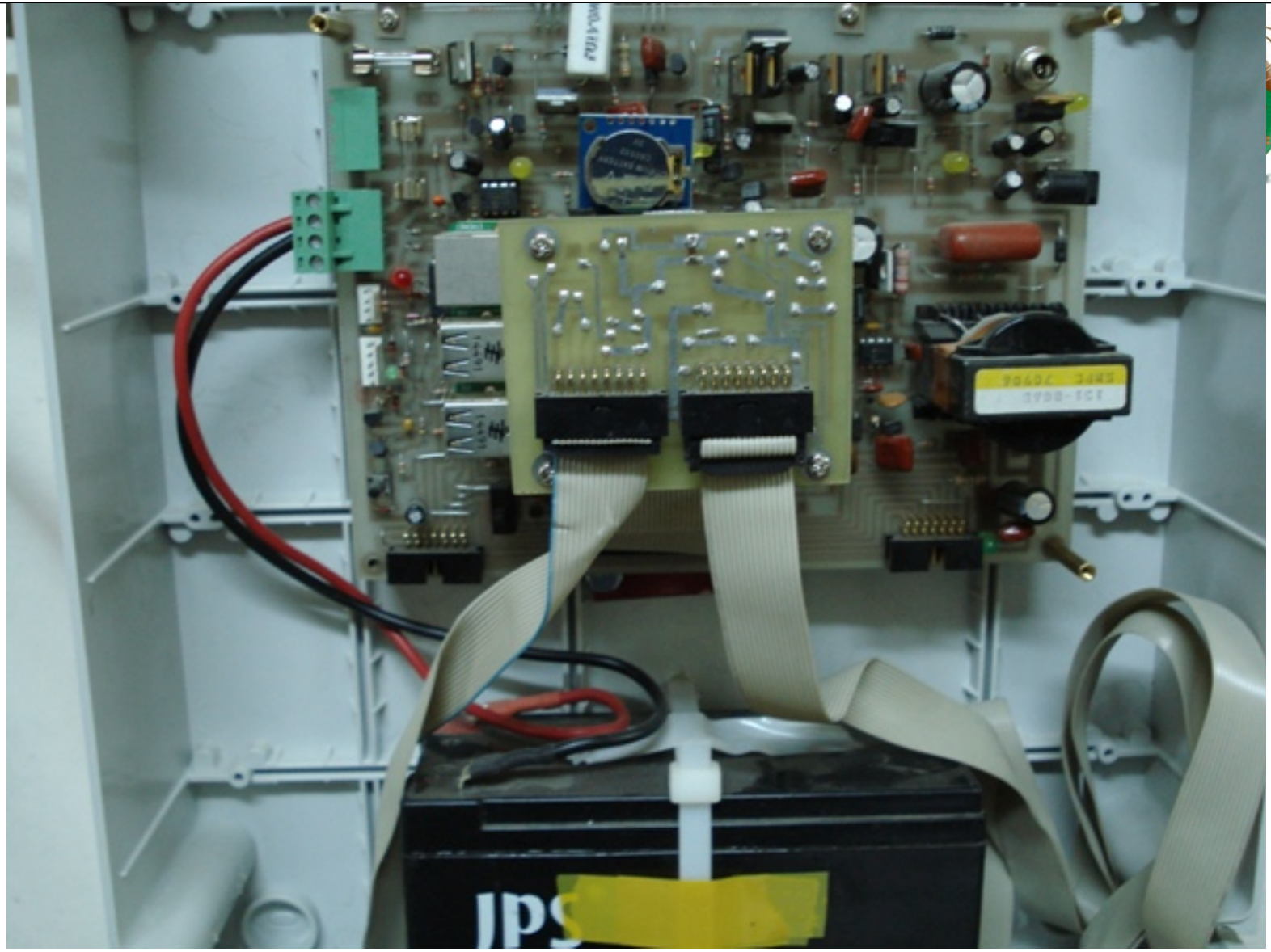

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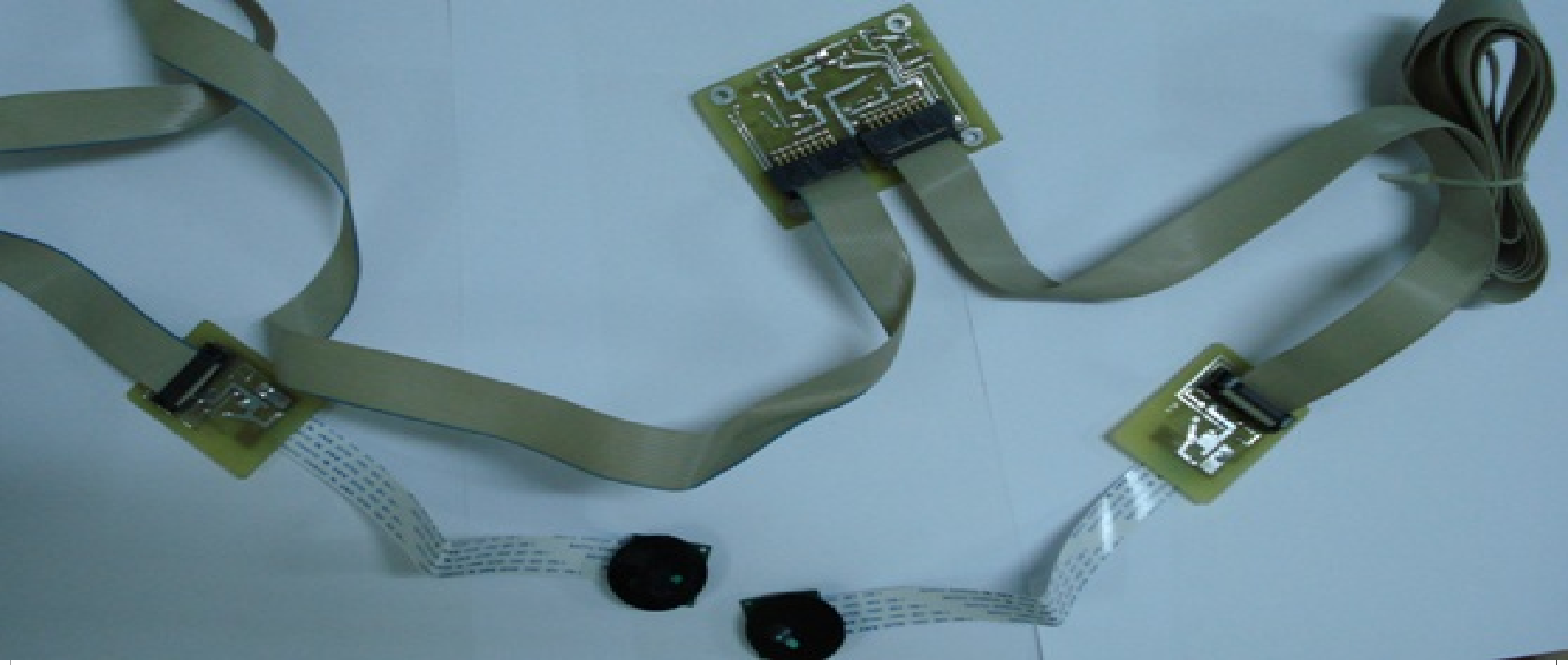

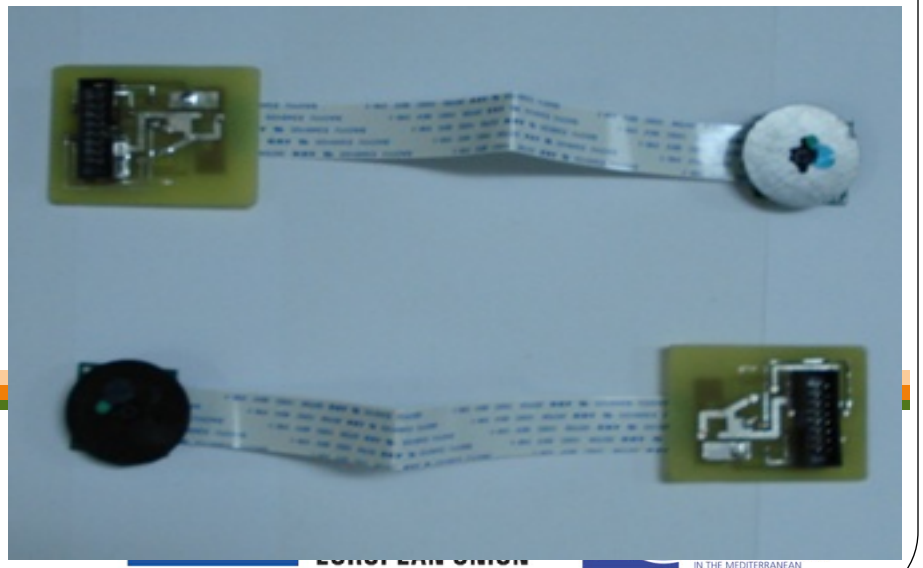

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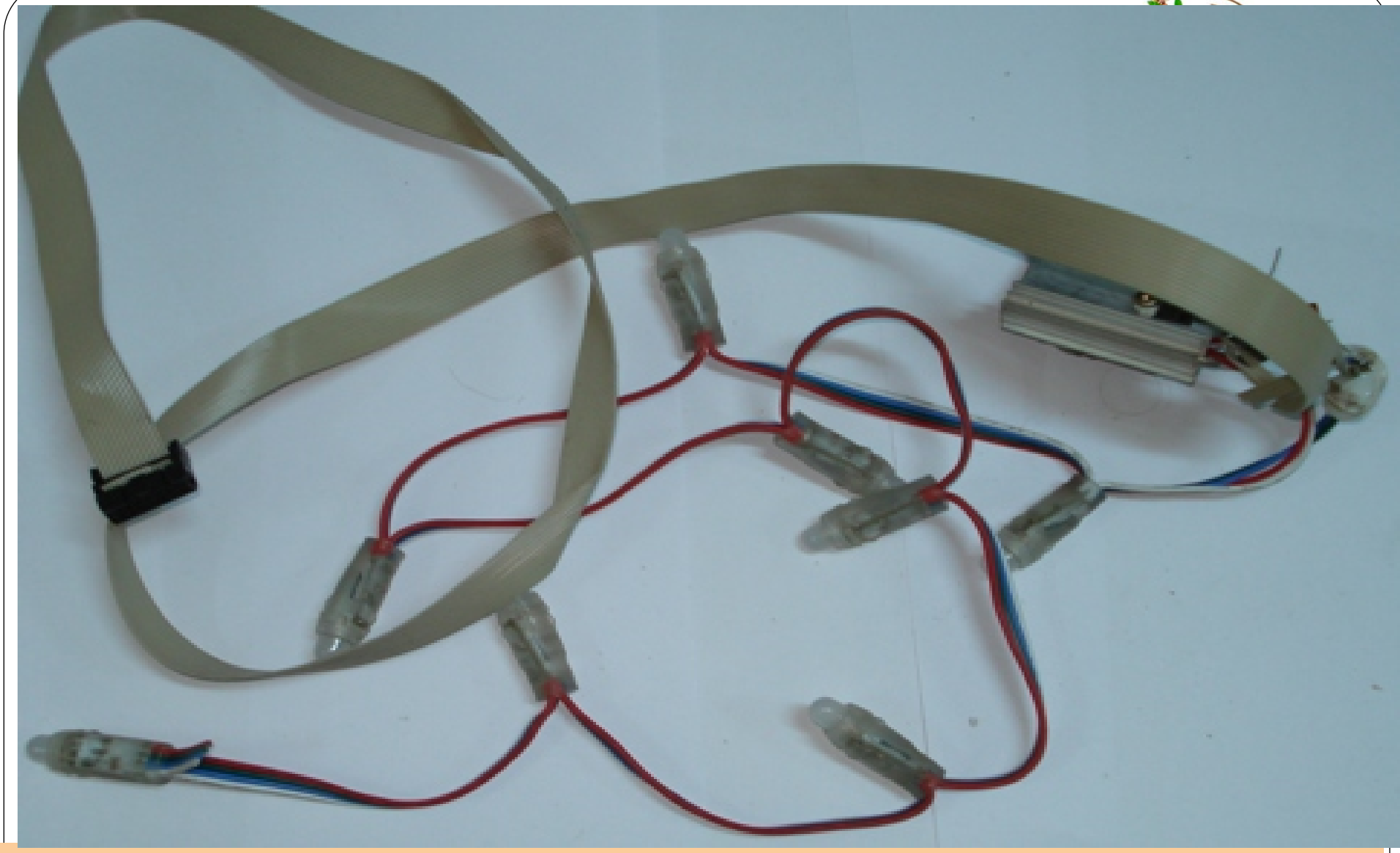

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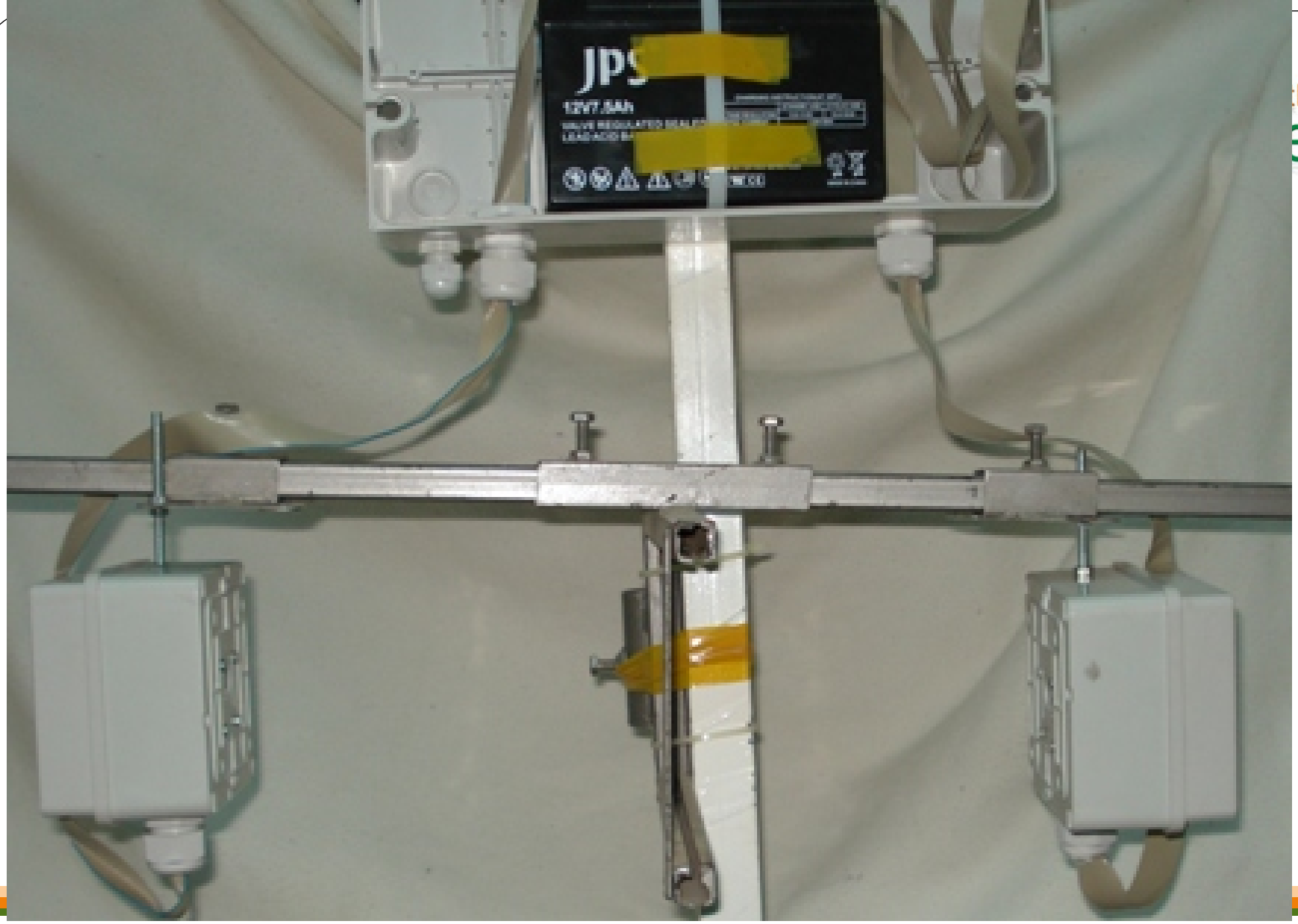

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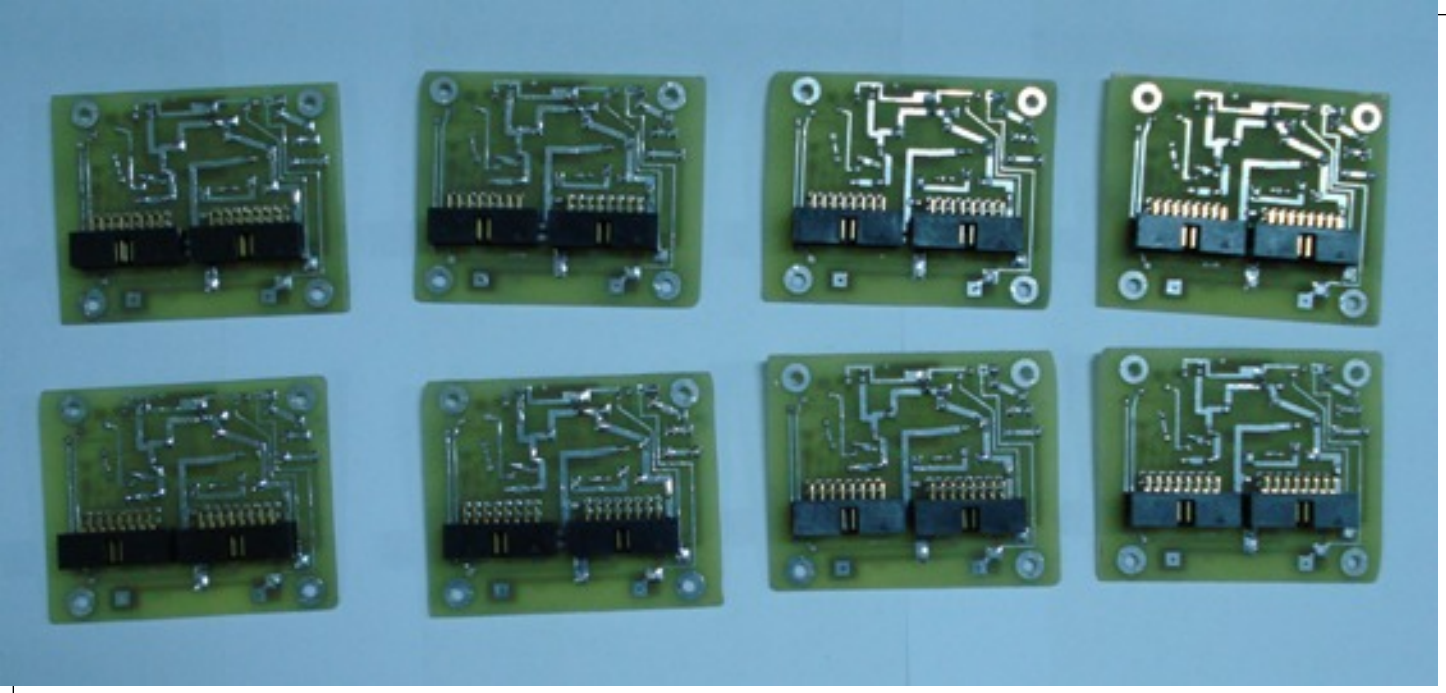

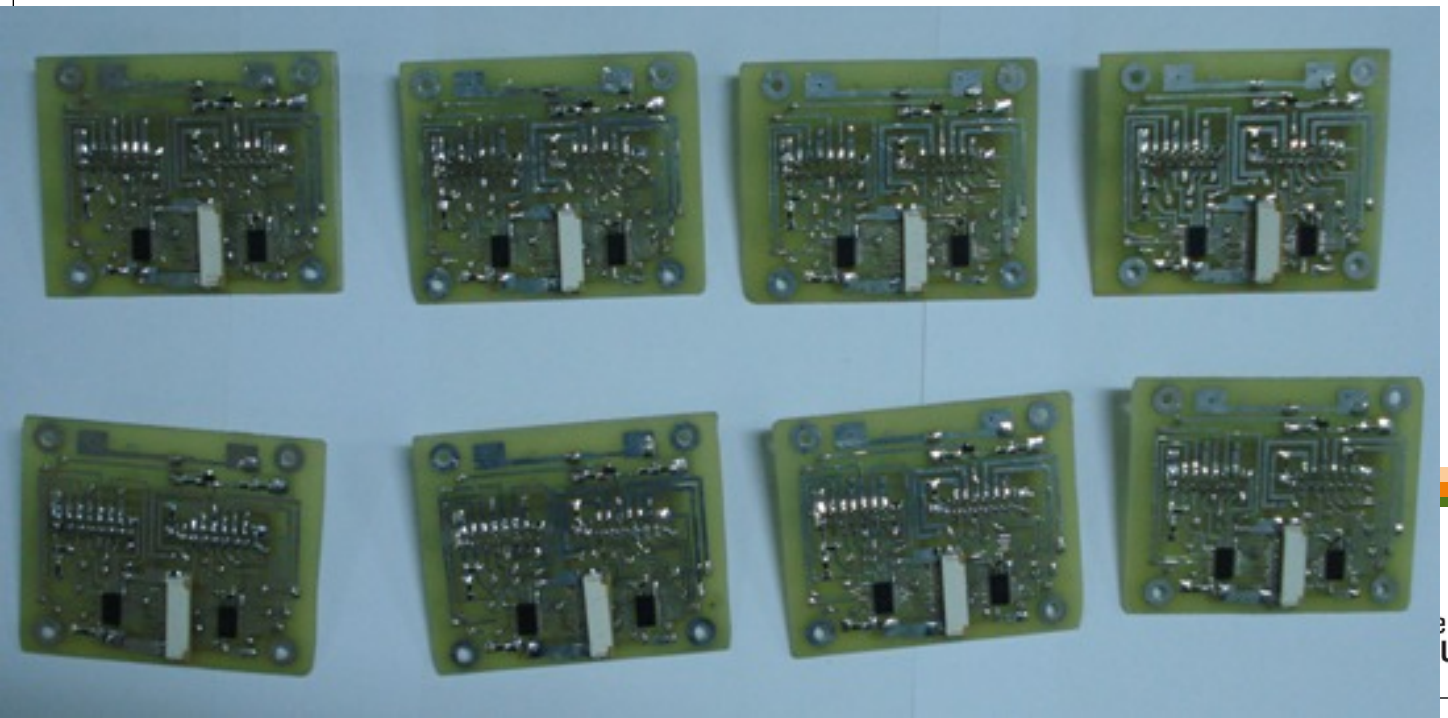

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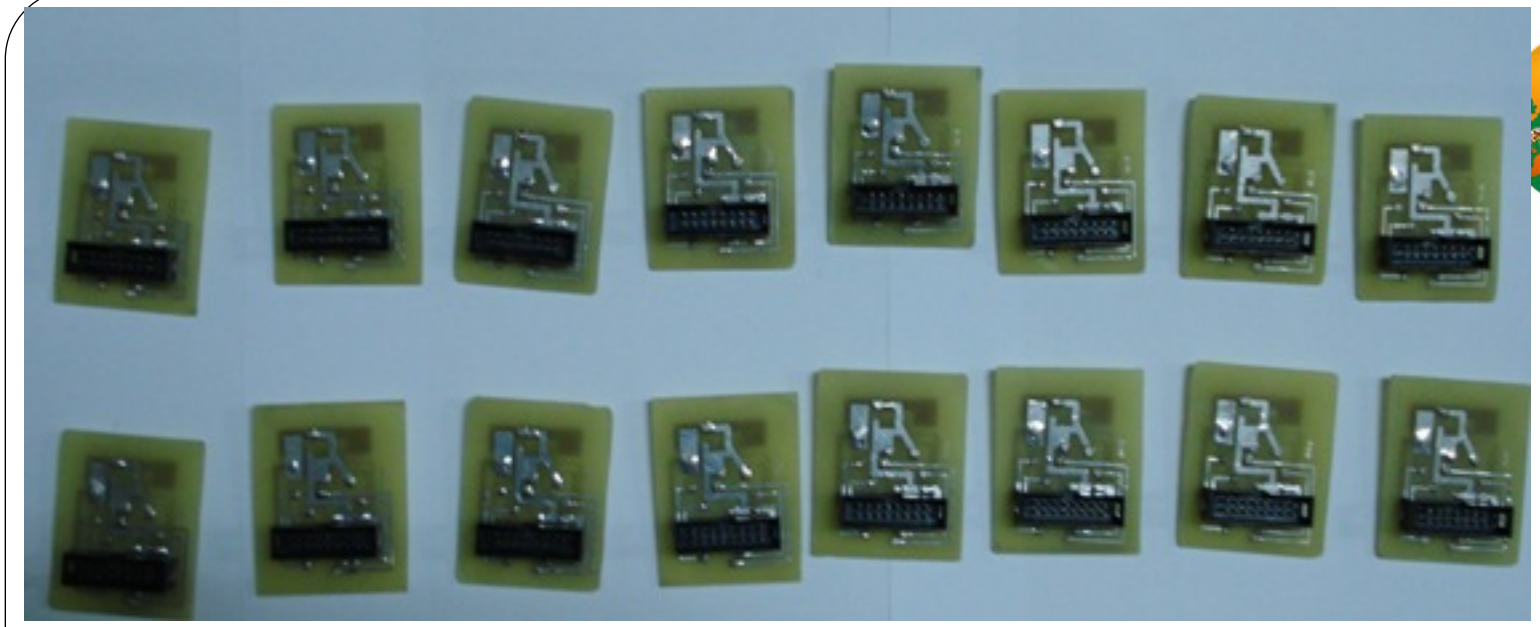

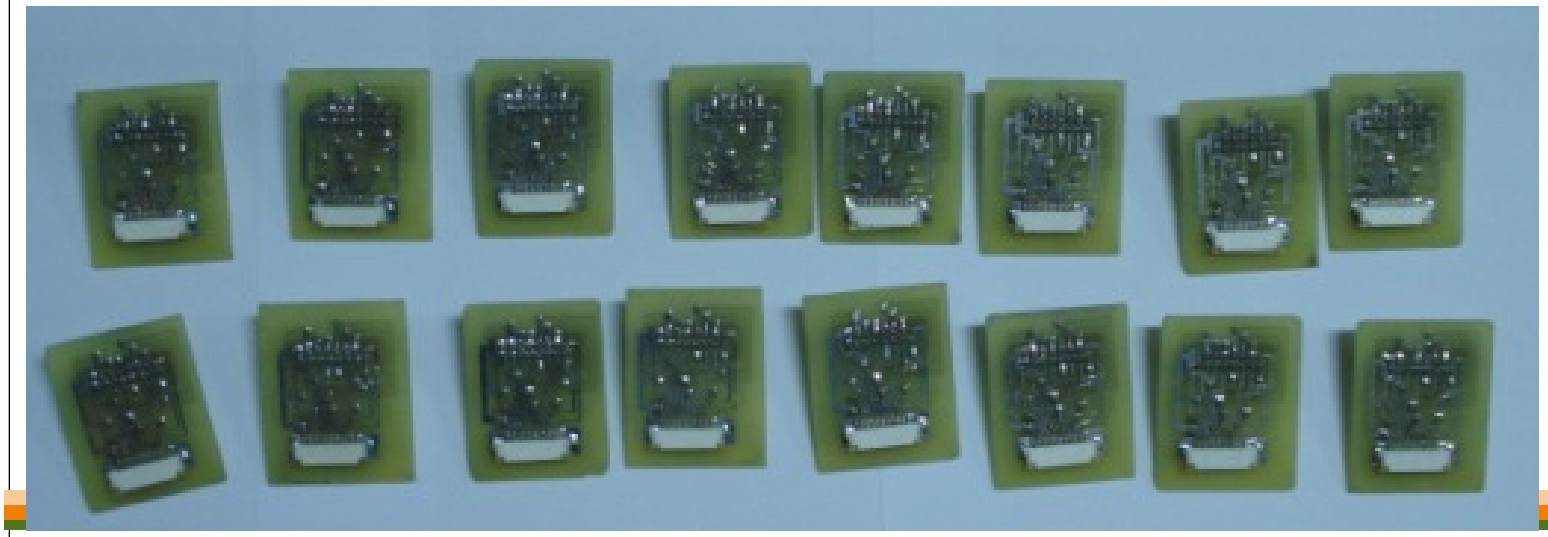

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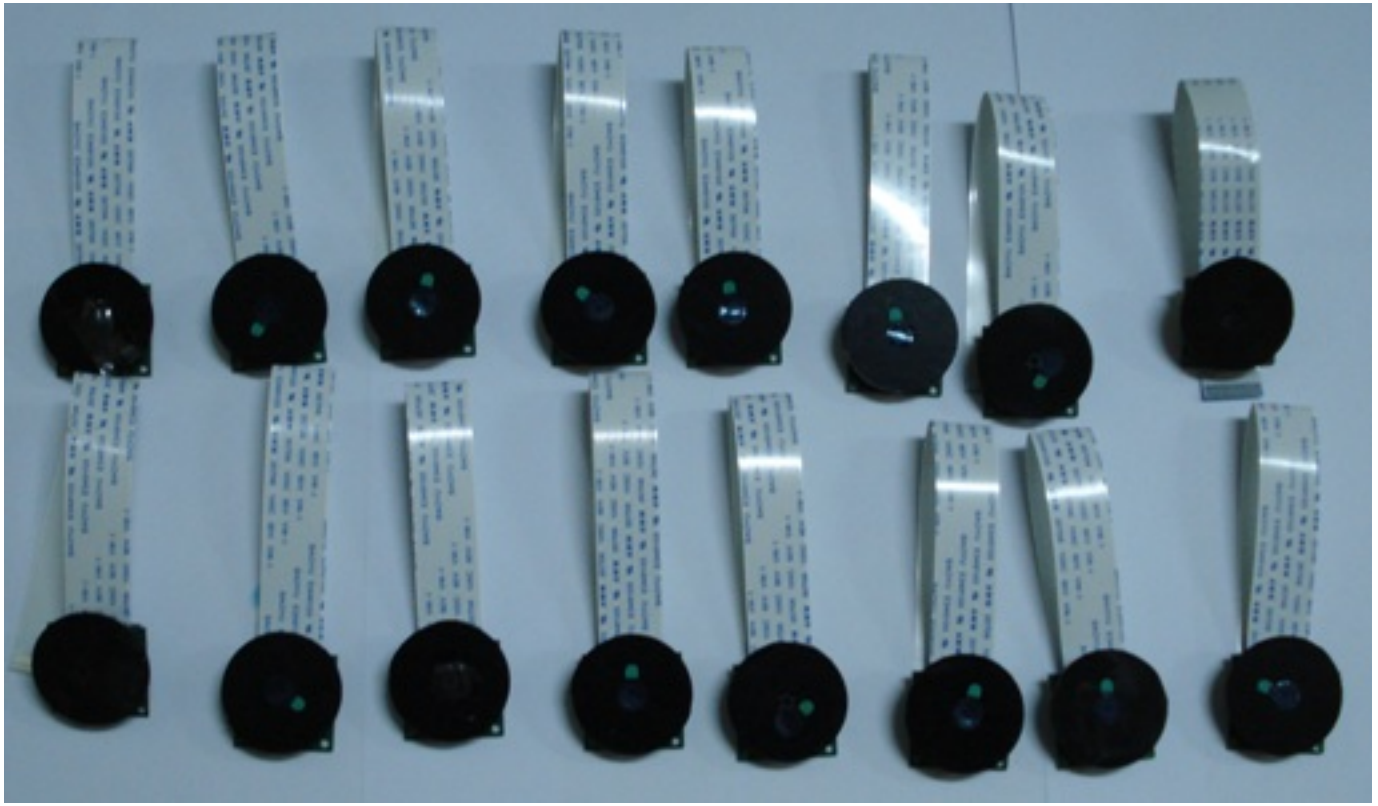

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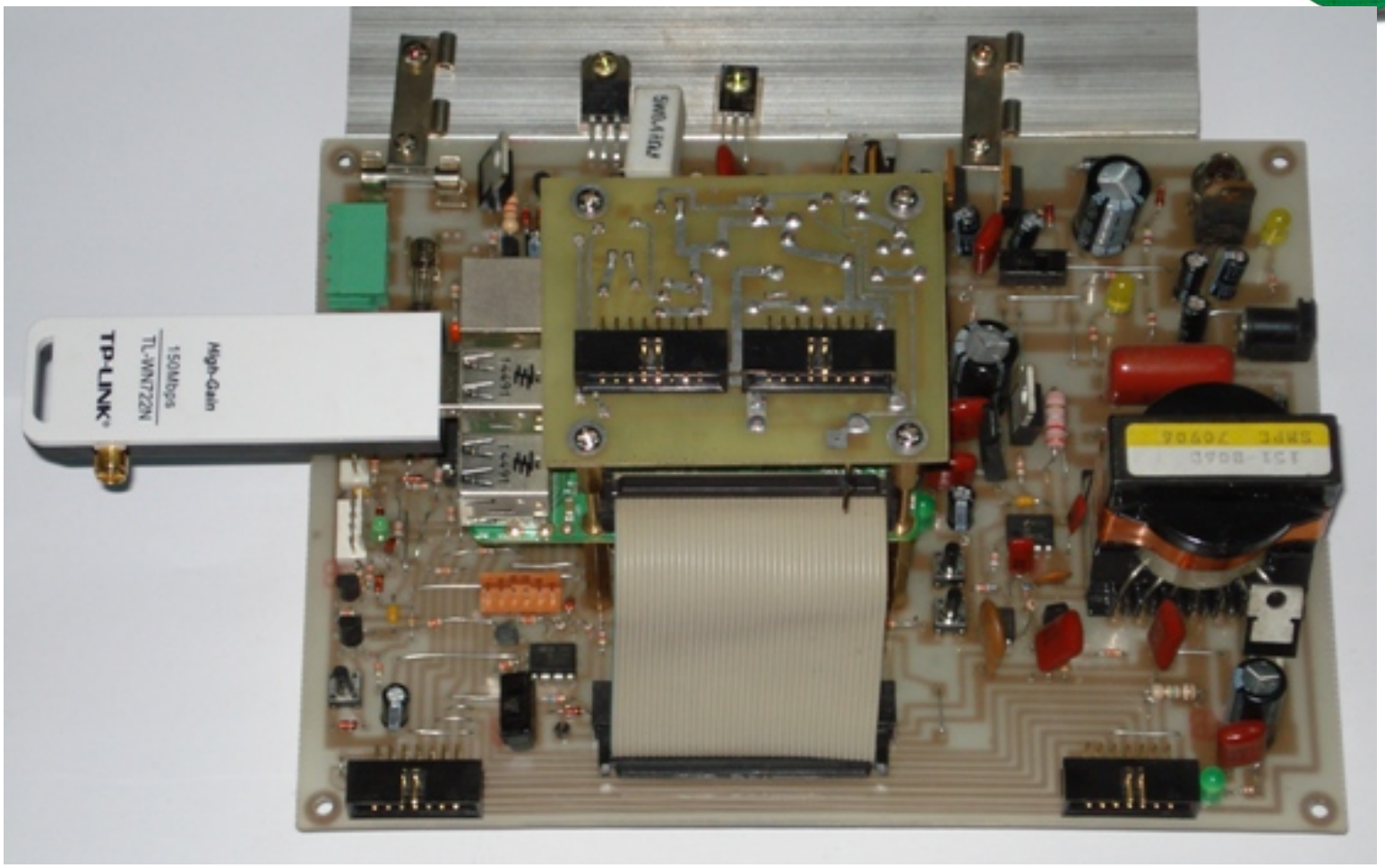

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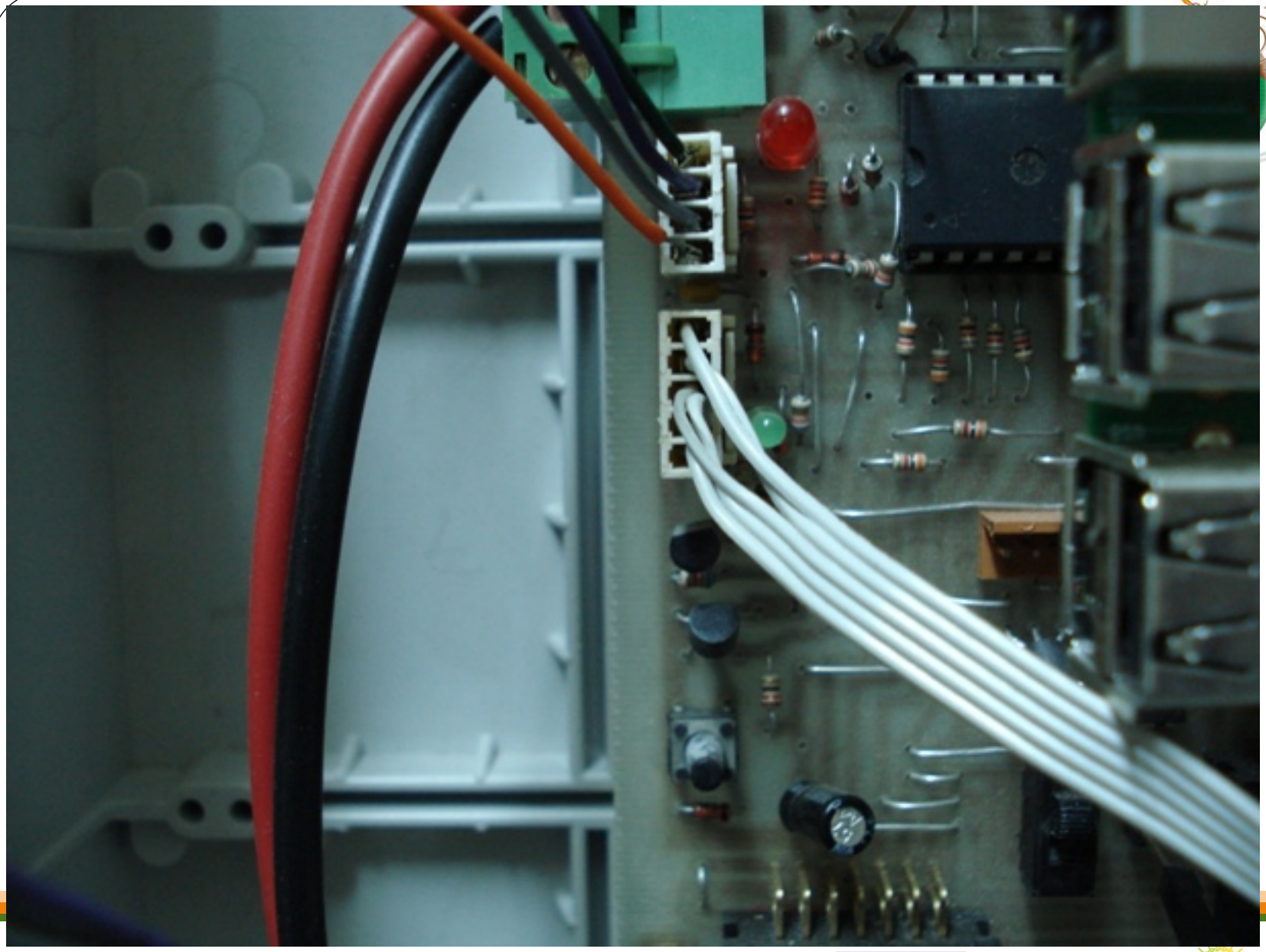

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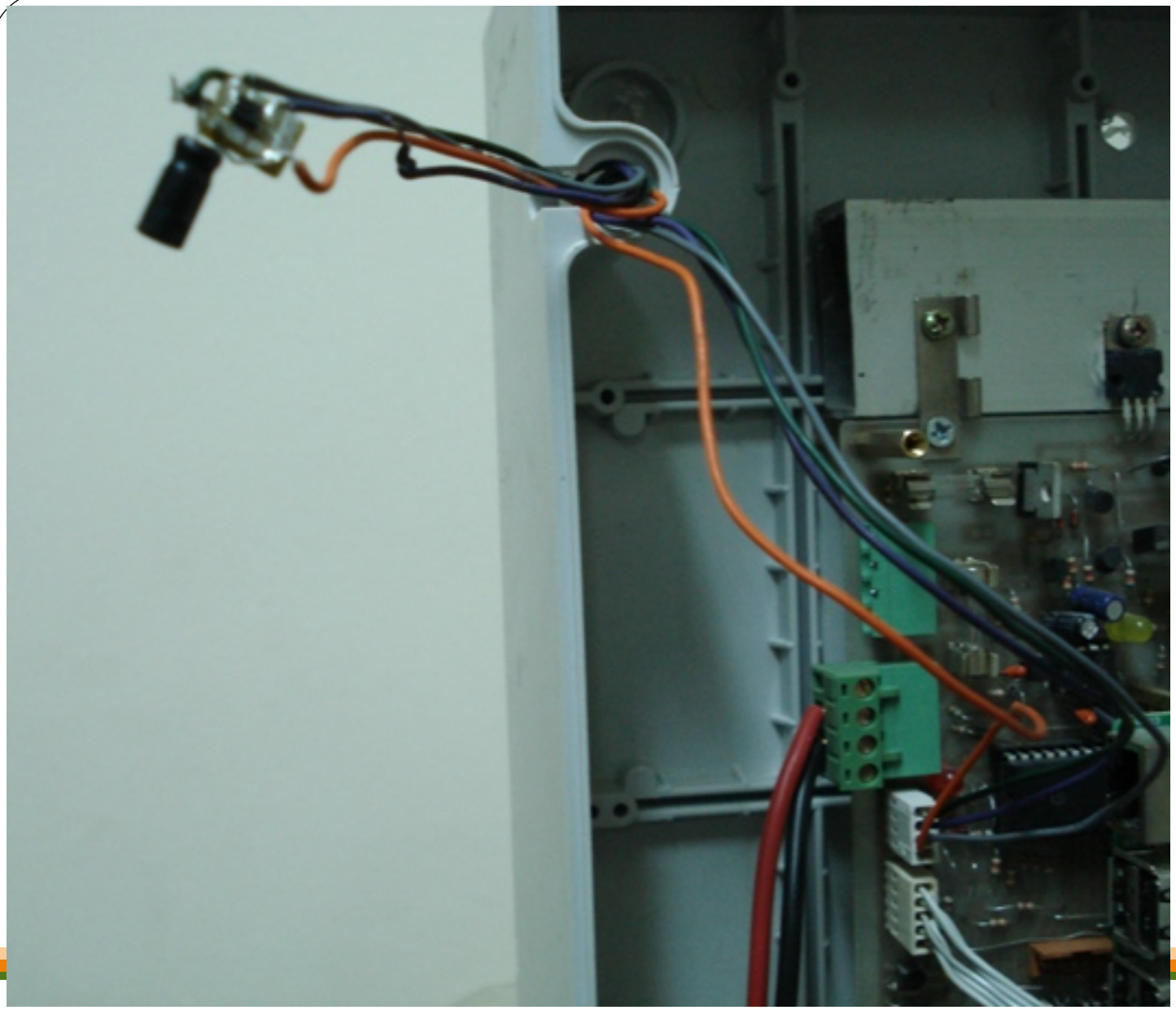

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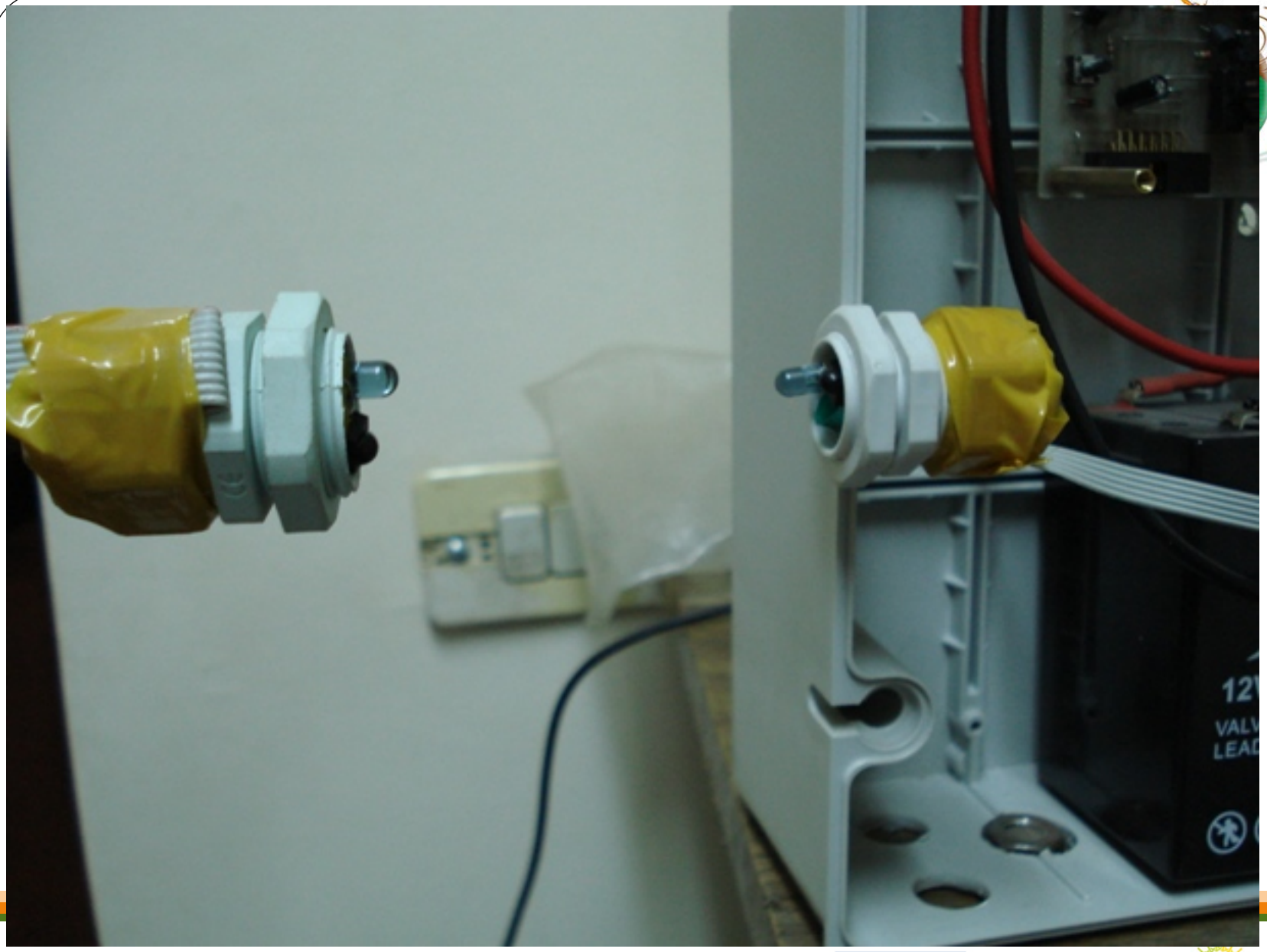

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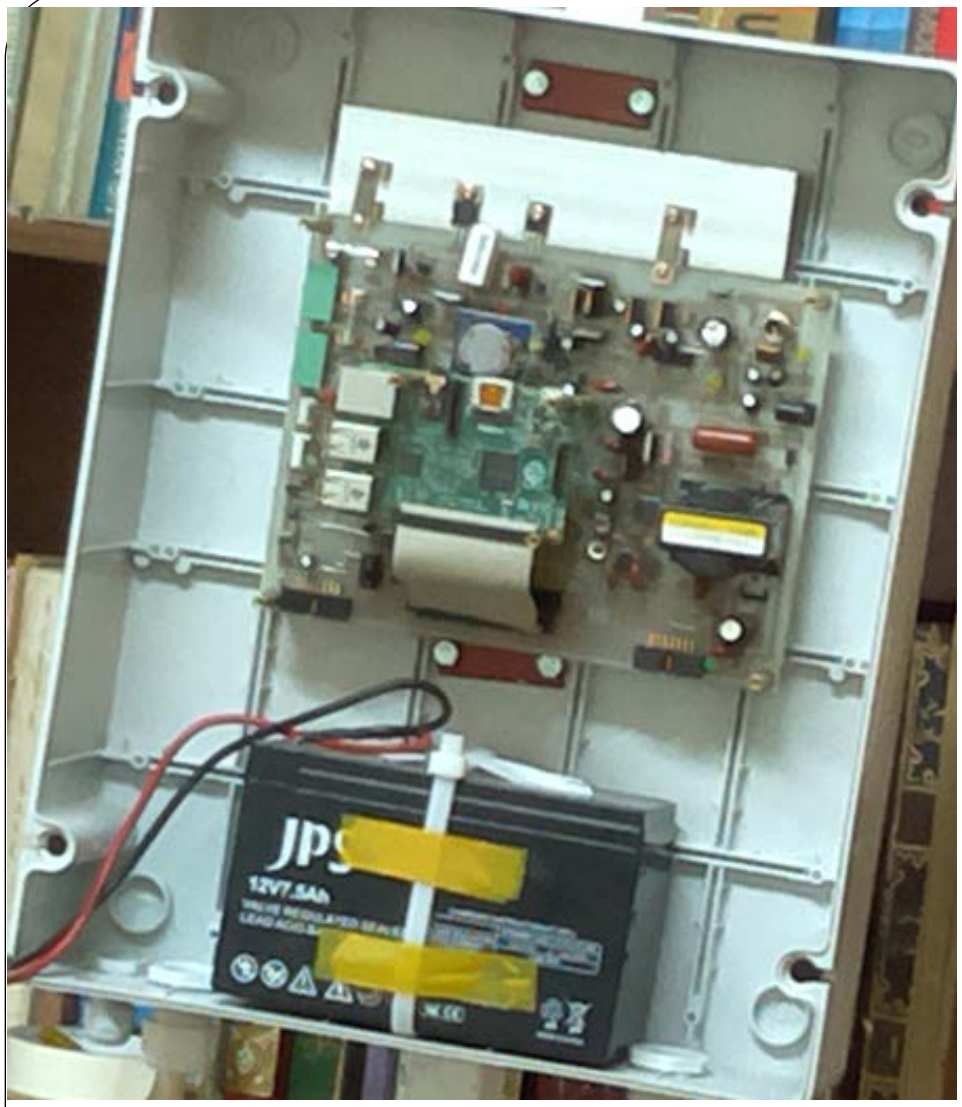

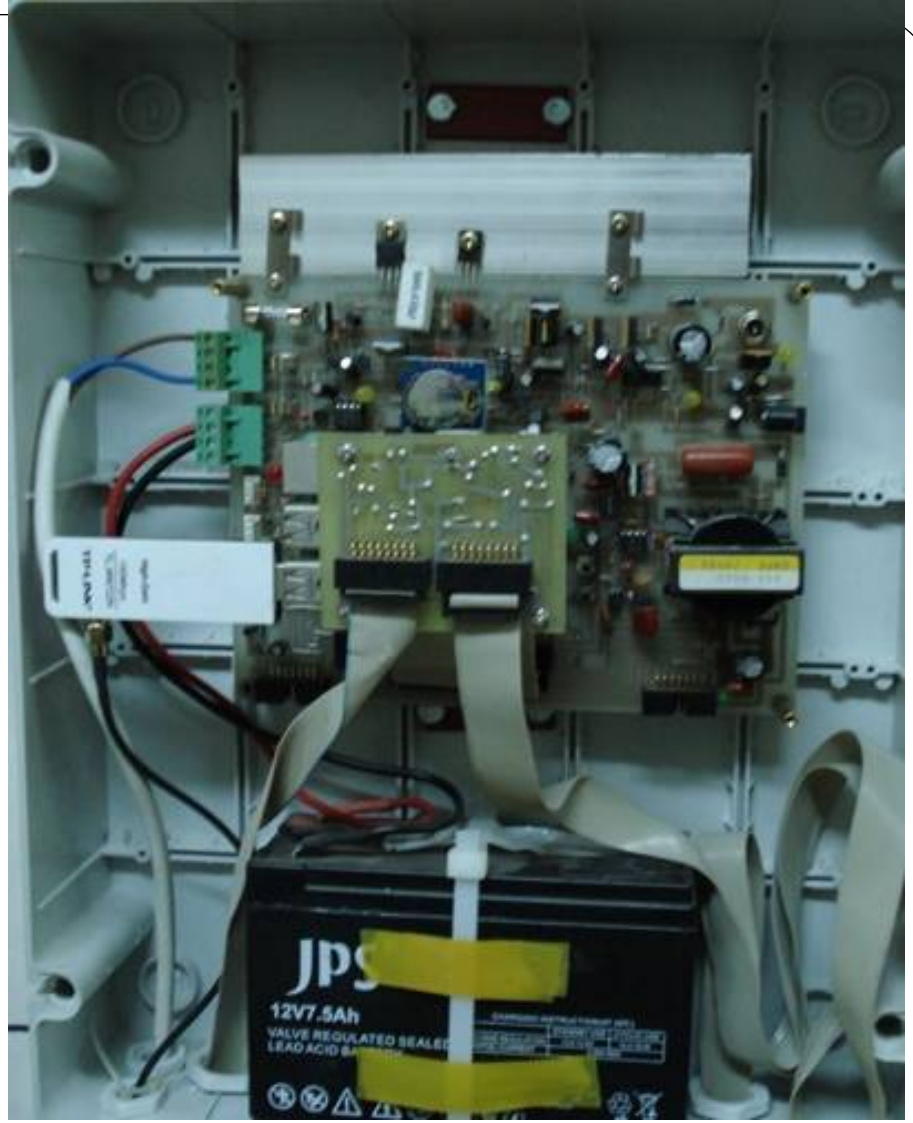

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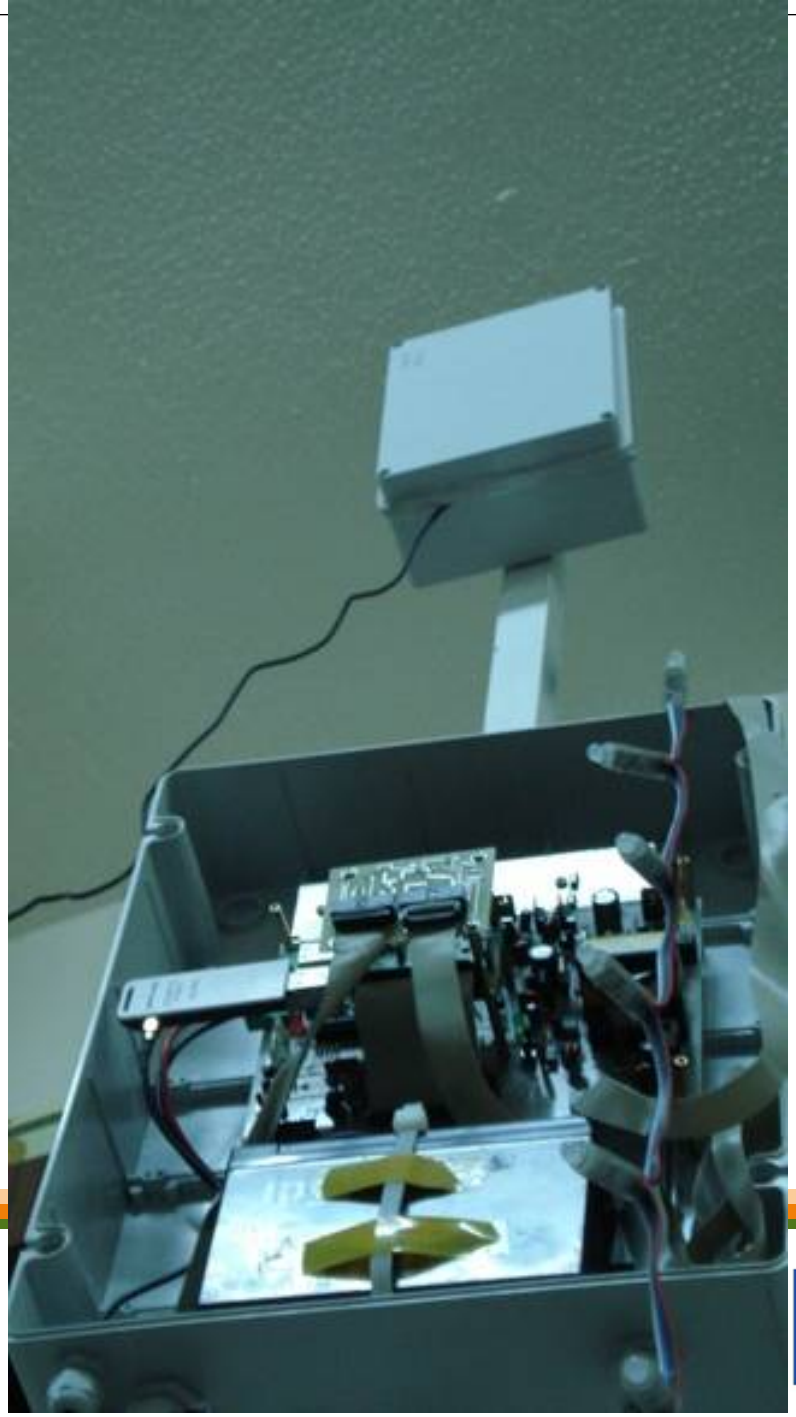

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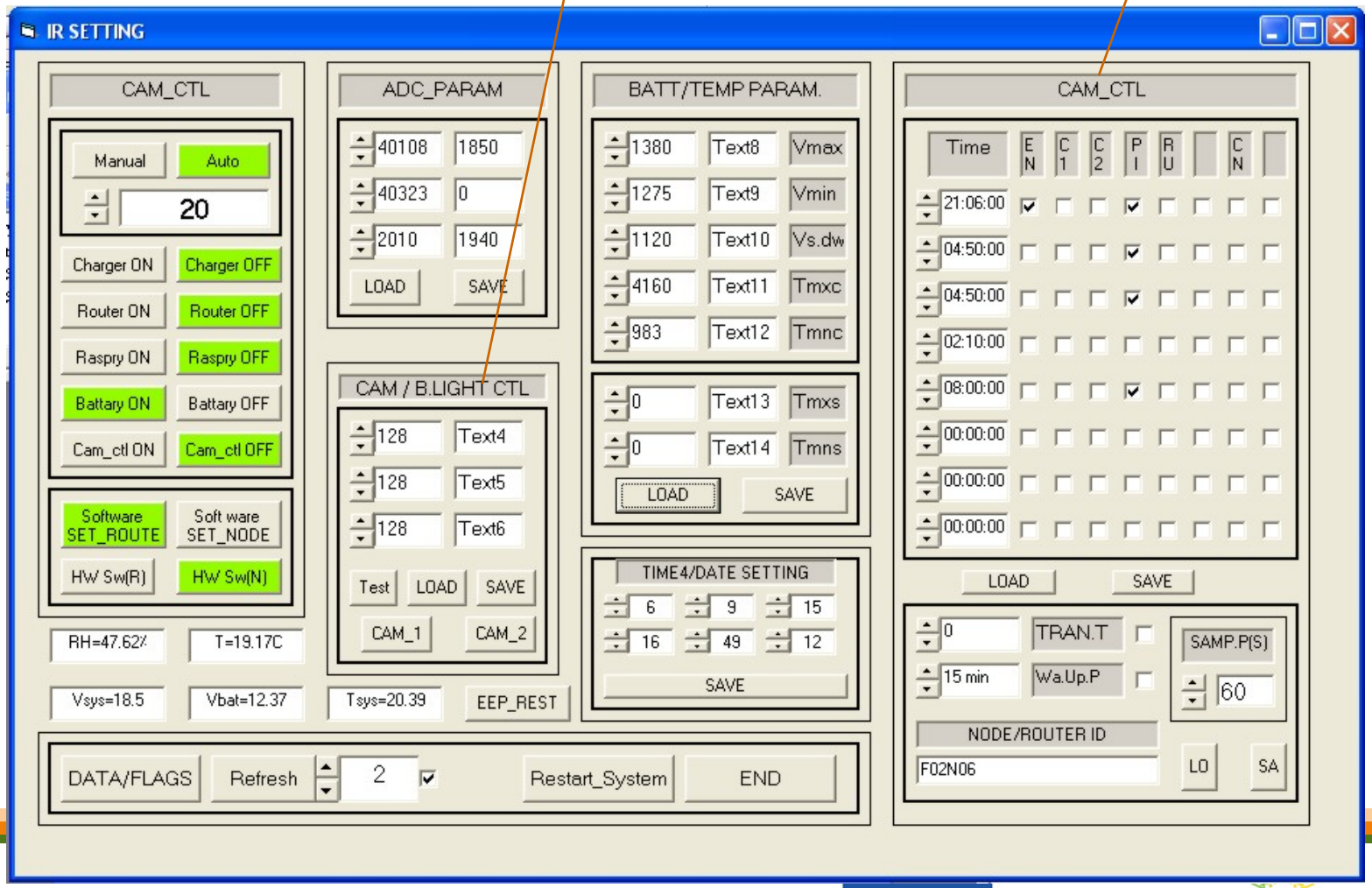
Camera backlight control

Timer control



Graphical user interface

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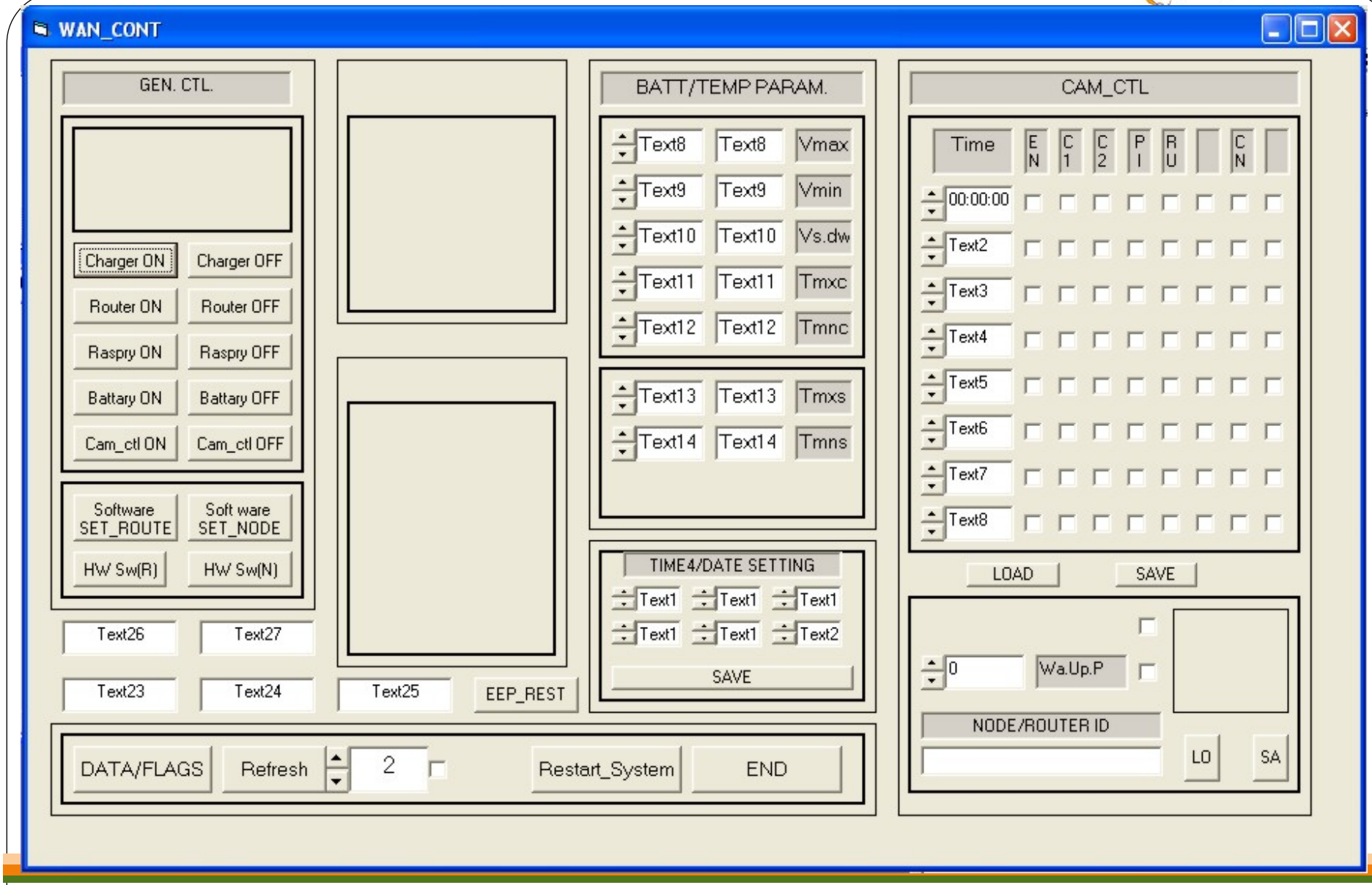

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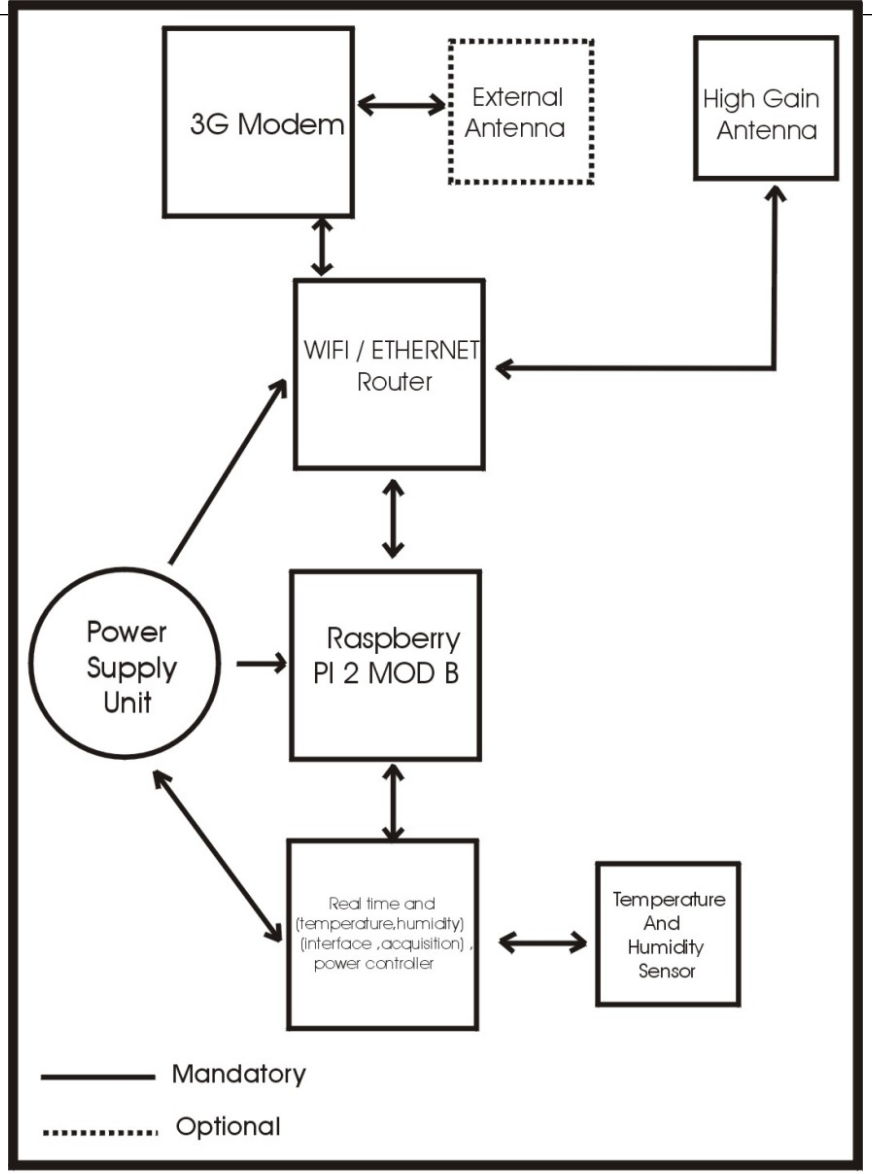

Connections Point Block Diagram

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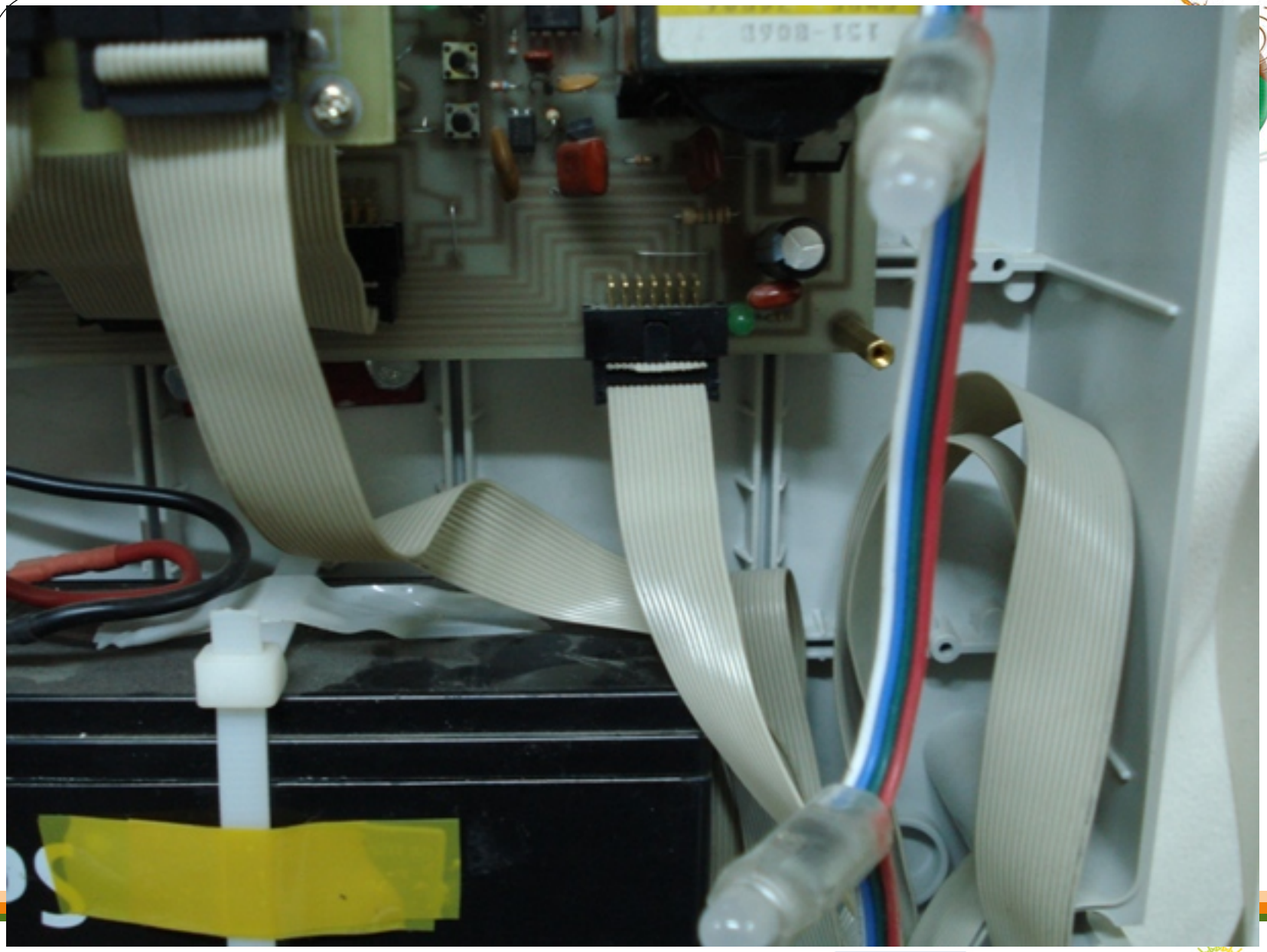

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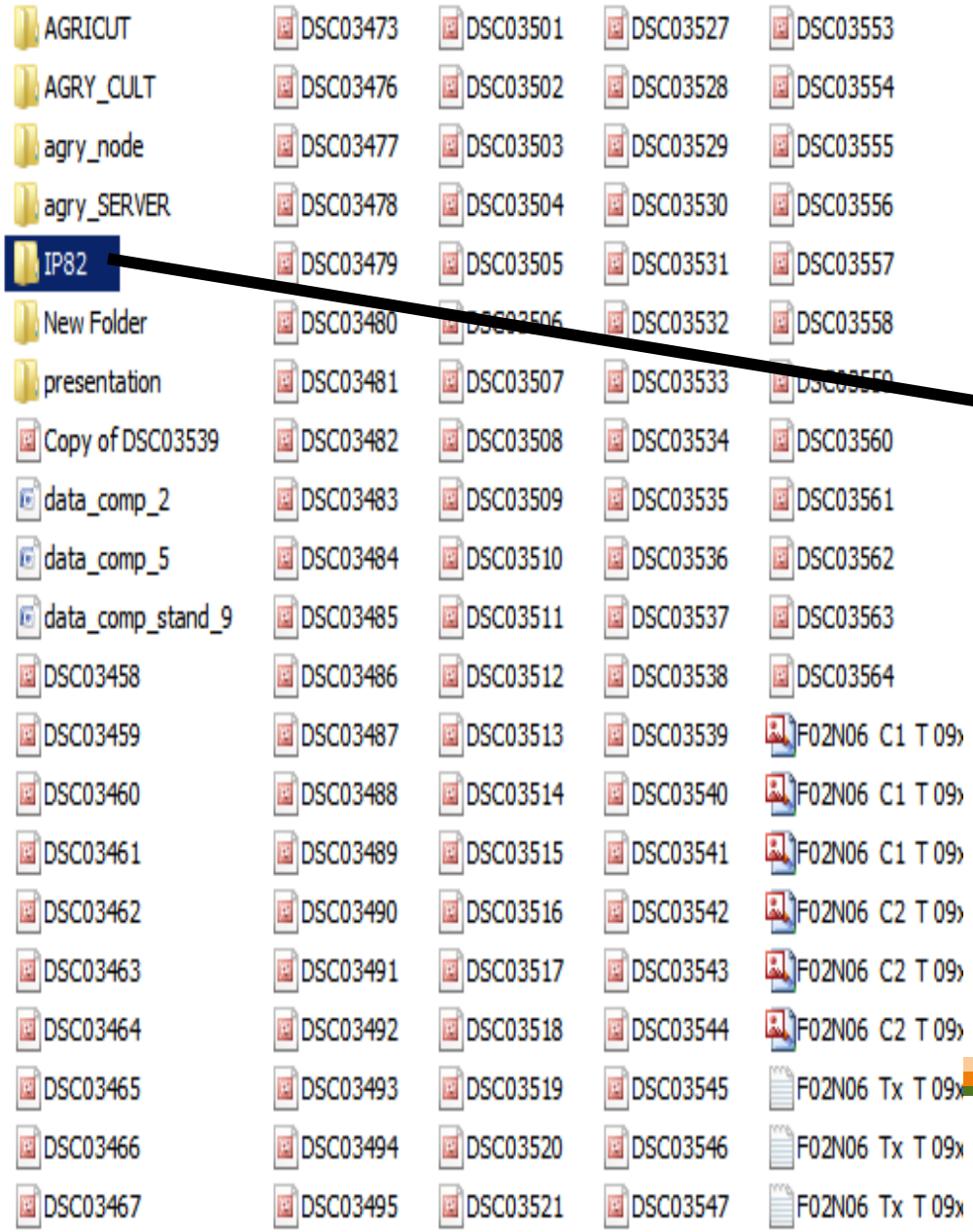

F02N06 C1 T 03x21 D 26x10x15 IP82
F02N06 C1 T 09x05 D 17x10x15 IP82
F02N06 C1 T 09x07 D 17x10x15 IP82
F02N06 C1 T 09x11 D 17x10x15 IP82
F02N06 C1 T 17x48 D 25x10x15 IP82
F02N06 C1 T 17x52 D 25x10x15 IP82
F02N06 C1 T 19x37 D 25x10x15 IP82
F02N06 C1 T 19x46 D 25x10x15 IP82
F02N06 C2 T 03x21 D 26x10x15 IP82
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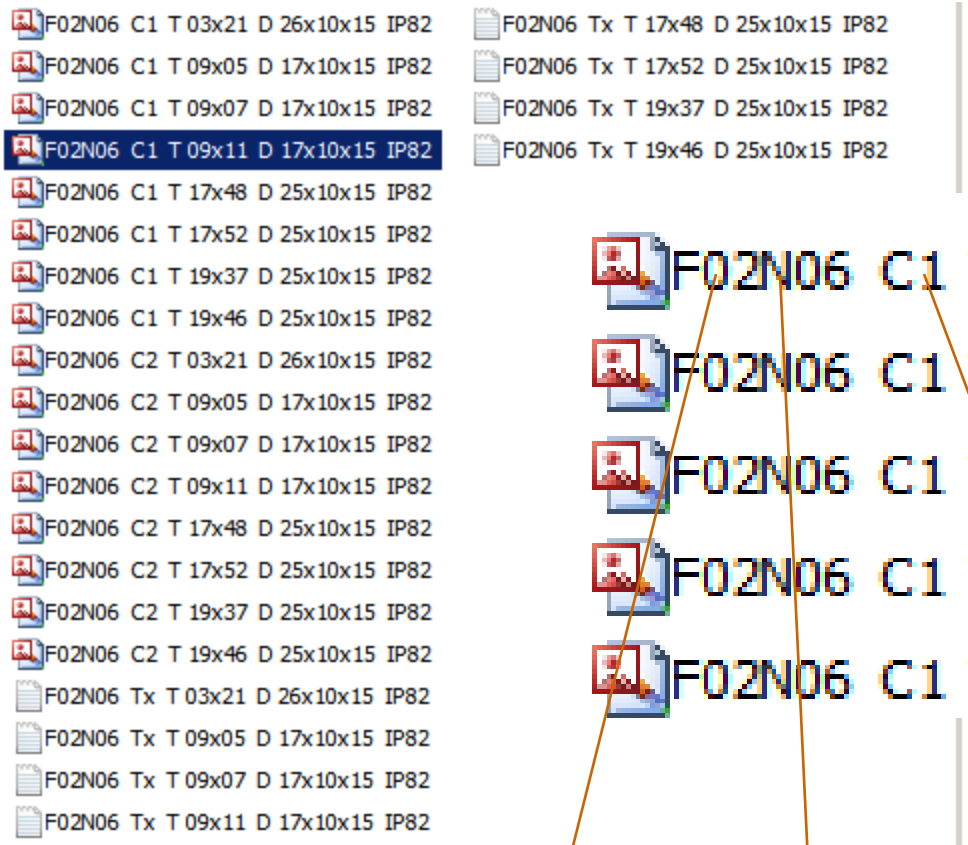

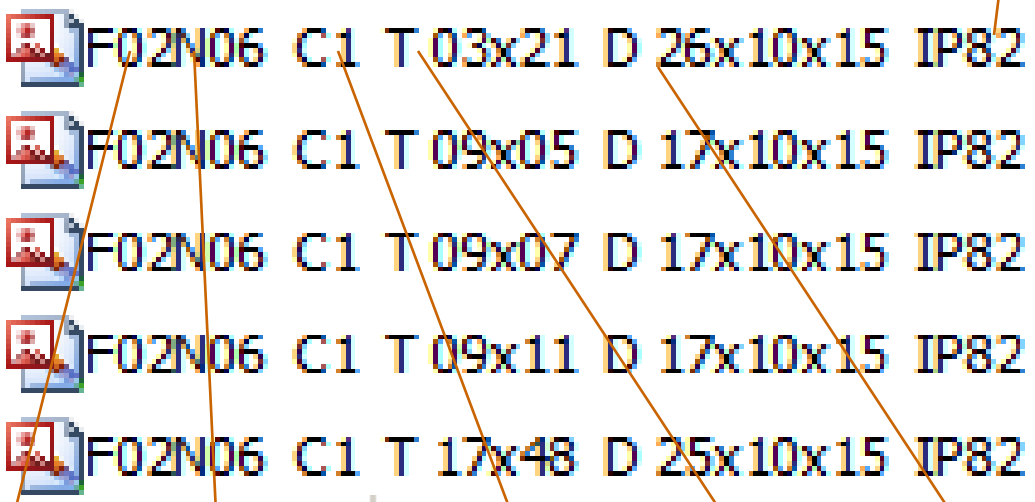

Node IP address

Field number 2

Node number 6

Camera Number 1

Time

Date

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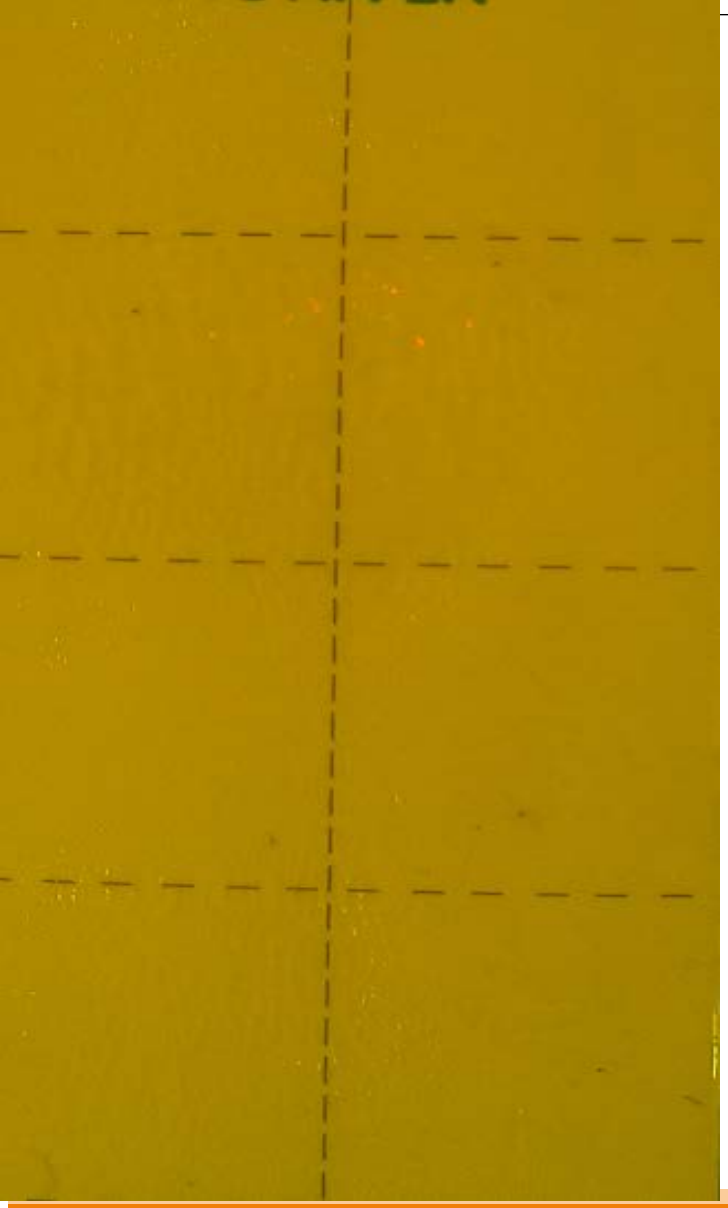

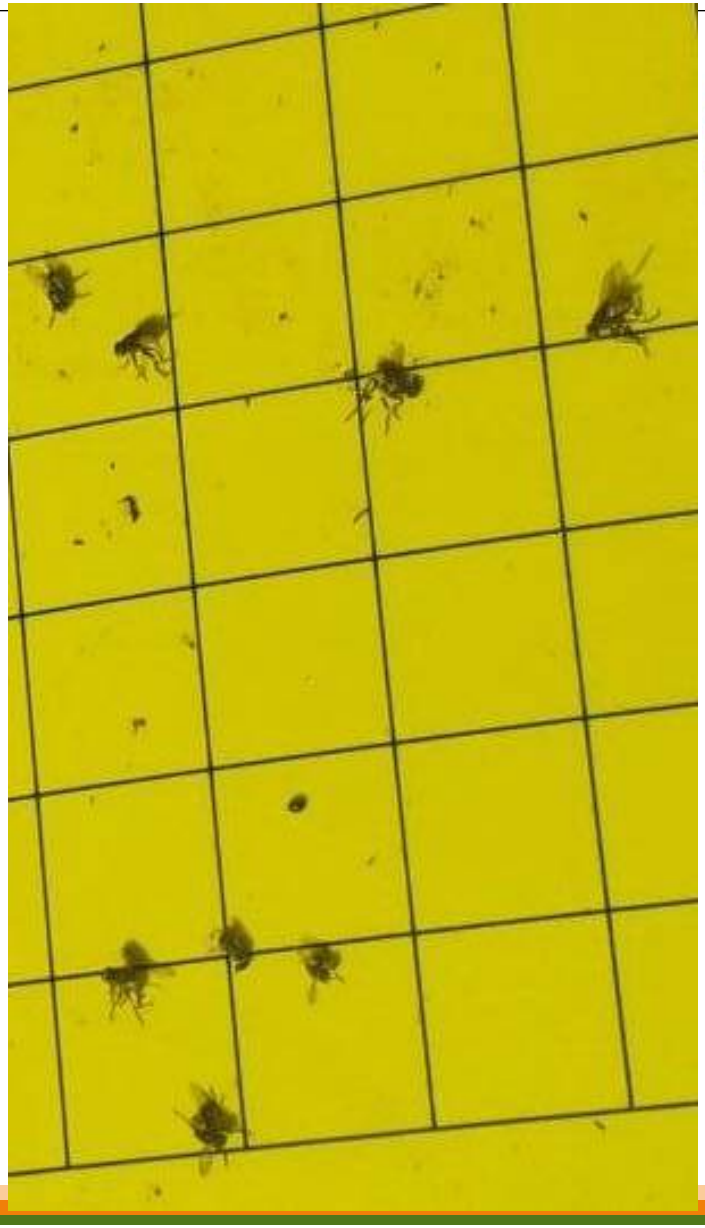

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Text file :
Date
Time
Humidity
Temperature
Solar cell voltage
V battery
System temperature
Flags

20/10/15	03:59	44.38	29.27	18.57	12.87	32.33	00000001	00010000
20/10/15	04:00	44.32	29.30	18.54	12.87	32.33	00000001	00010000
20/10/15	04:01	43.90	29.31	18.54	12.87	32.33	00000001	00011000
20/10/15	04:02	44.29	29.30	18.57	12.87	32.33	00000001	00011000
20/10/15	04:03	44.21	29.29	18.57	12.89	32.33	00000001	00011000
20/10/15	04:04	44.27	29.29	18.57	12.87	32.33	00000001	00011000
20/10/15	04:05	44.26	29.29	18.57	12.87	32.33	00000001	00010000
20/10/15	04:06	44.29	29.29	18.57	12.87	32.33	00000001	00010000
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20/10/15	04:13	44.37	29.29	18.57	12.87	32.33	00000001	00010000
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20/10/15	04:15	44.67	29.29	18.57	13.21	32.33	00000001	00010000
20/10/15	04:16	44.69	29.29	18.54	12.87	32.33	00000001	00011000
20/10/15	04:17	44.41	29.29	18.54	12.87	32.33	00000001	00011000
20/10/15	04:18	44.37	29.29	18.57	12.87	32.33	00000001	00011000
20/10/15	04:19	44.39	29.29	18.57	12.87	32.33	00000001	00011000
20/10/15	04:20	44.34	29.29	18.57	12.89	32.33	00000001	00010000
20/10/15	04:21	44.28	29.29	18.57	12.87	32.33	00000001	00010000
20/10/15	04:22	44.72	29.29	18.57	12.87	32.33	00000001	00010000
20/10/15	04:23	44.19	29.26	18.54	12.87	32.33	00000001	00010000
20/10/15	04:24	44.66	29.24	18.54	12.87	32.33	00000001	00010000
20/10/15	04:25	44.66	29.26	18.57	12.89	32.33	00000001	00010000
20/10/15	04:26	44.72	29.26	18.54	12.87	32.33	00000001	00010000
20/10/15	04:27	44.81	29.26	18.57	12.87	32.33	00000001	00010000
20/10/15	04:28	44.40	29.26	18.57	12.87	32.33	00000001	00010000
20/10/15	04:29	44.31	29.27	18.54	12.87	32.33	00000001	00010000
20/10/15	04:30	44.21	29.28	18.57	12.89	32.33	00000001	00010000
20/10/15	04:31	44.26	29.29	18.54	12.87	32.33	00000001	00011000
20/10/15	04:32	44.32	29.29	18.57	12.87	32.33	00000001	00011000
20/10/15	04:33	44.27	29.29	18.57	12.87	32.33	00000001	00011000

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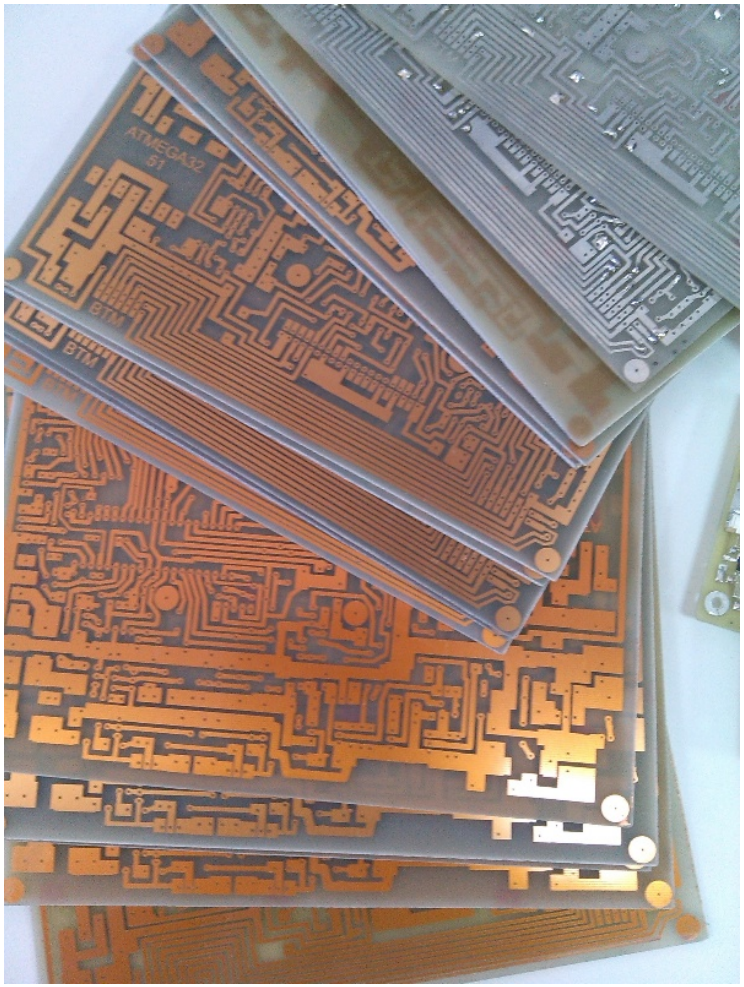

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Thank you
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