

Aparatura pomiarowa stacji Hylaty

Ela6, Ela7, Ela8

praca sponsorowana przez grant MNiSW N307 050 32/2568

Dwerniczek, czerwiec 2008













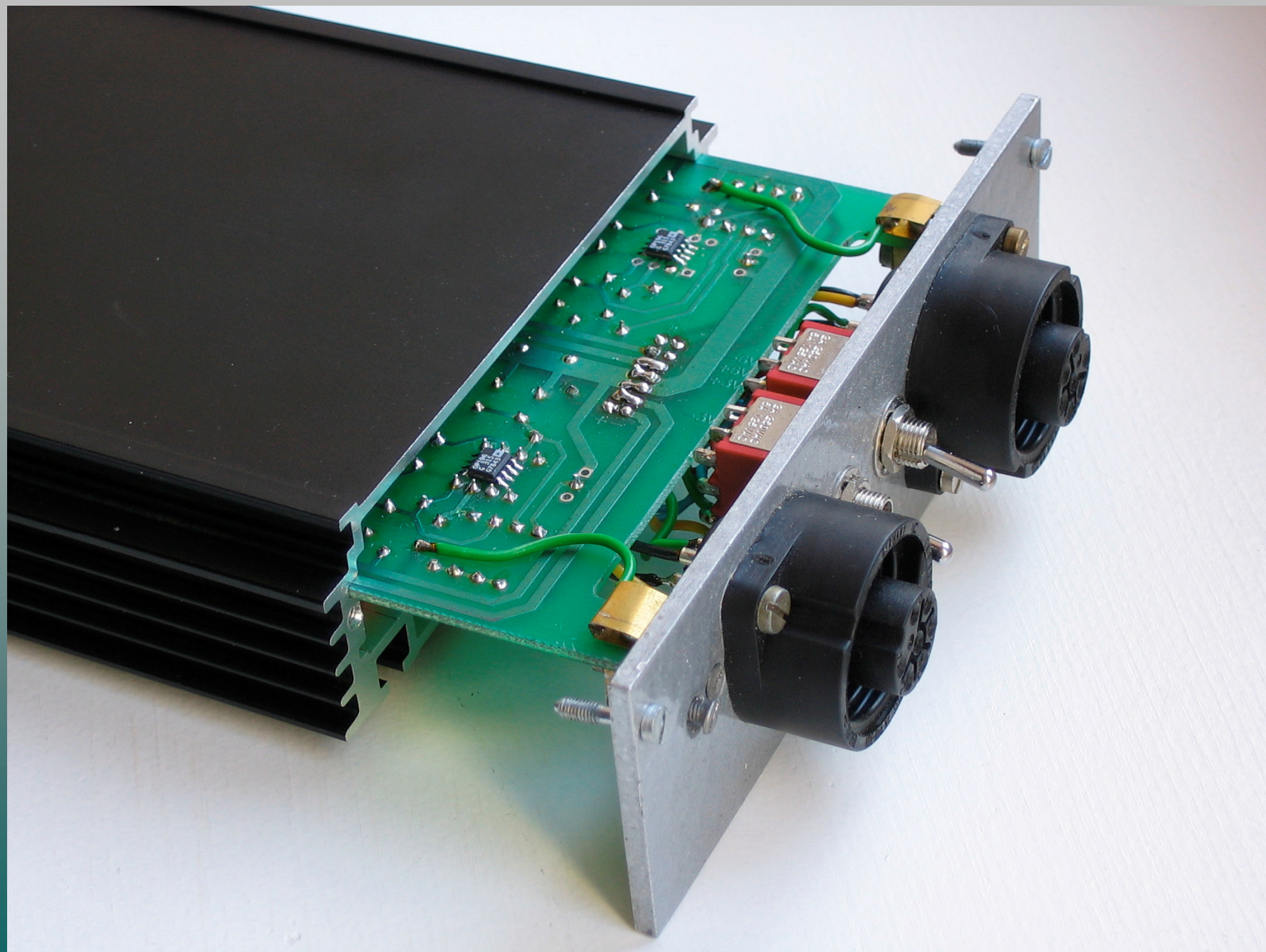
Antena AA1001 (MAG)

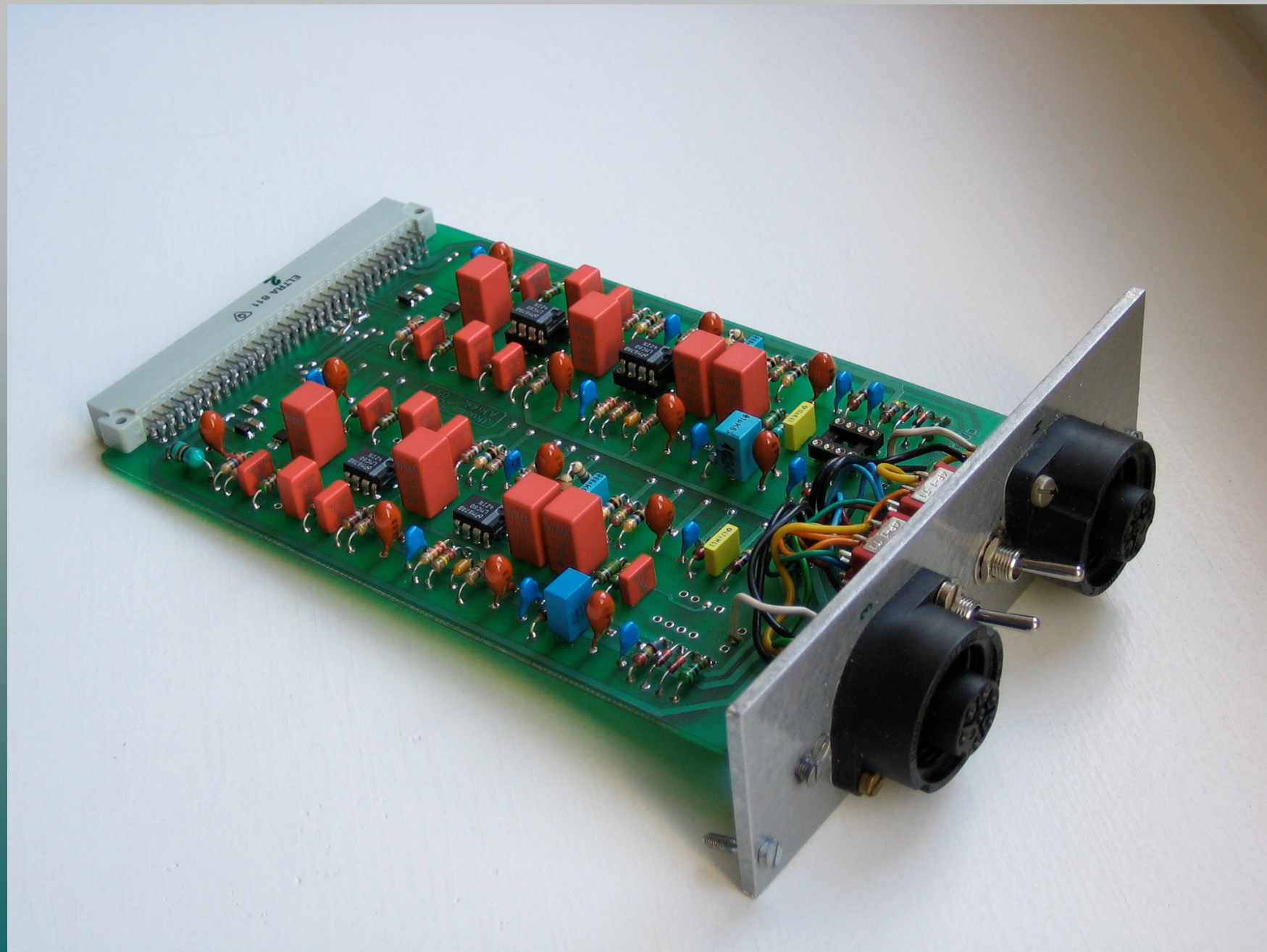
$$B_n \cong 0.07 \text{ [pT/} \sqrt{\text{Hz}} \text{]}$$

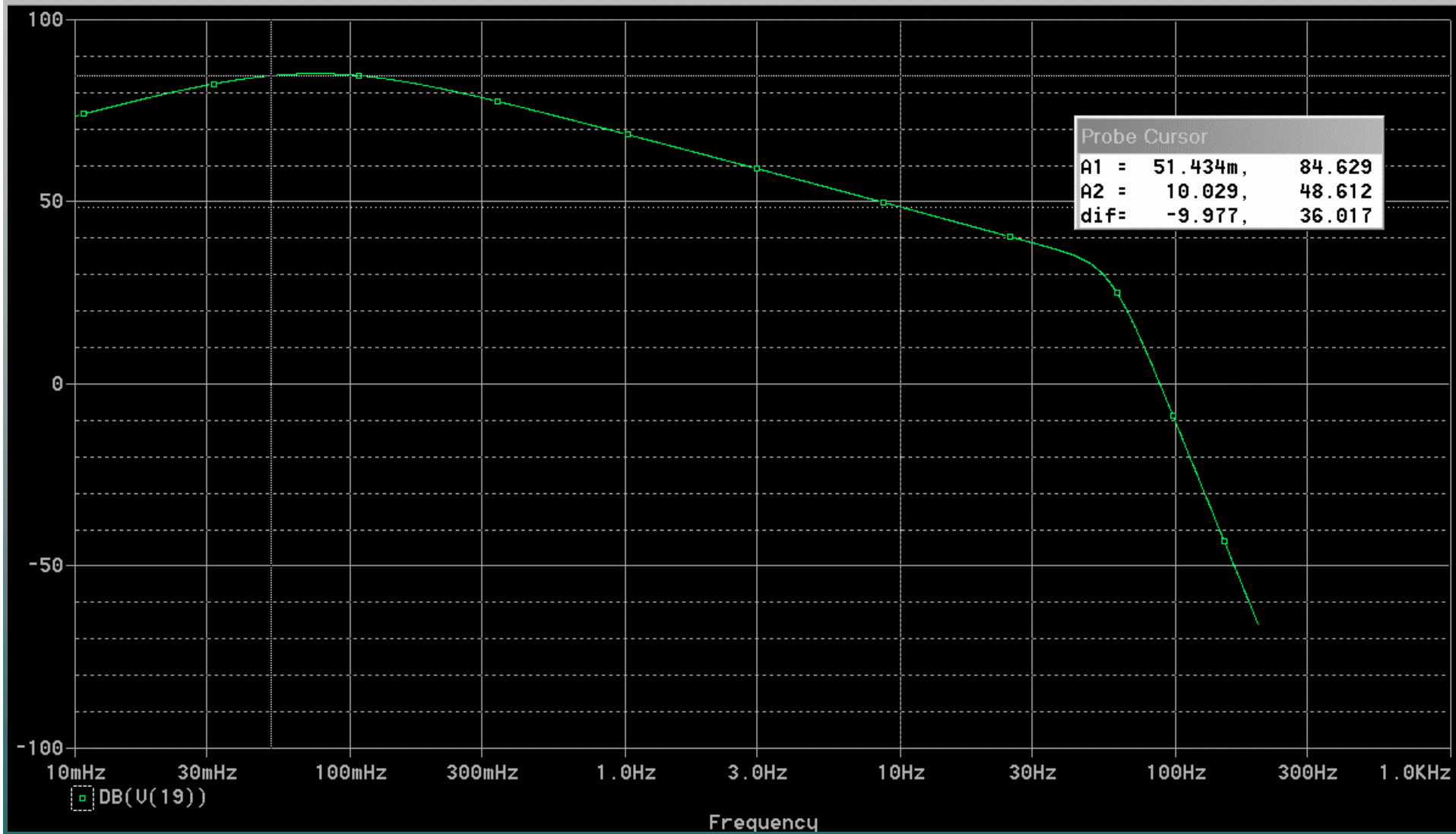
$$\Delta f = 0.01 - 100 \text{ [Hz]}$$

$$\alpha = 5 \text{ [mV/nT]} \text{ dla } 10 \text{ [Hz]}$$









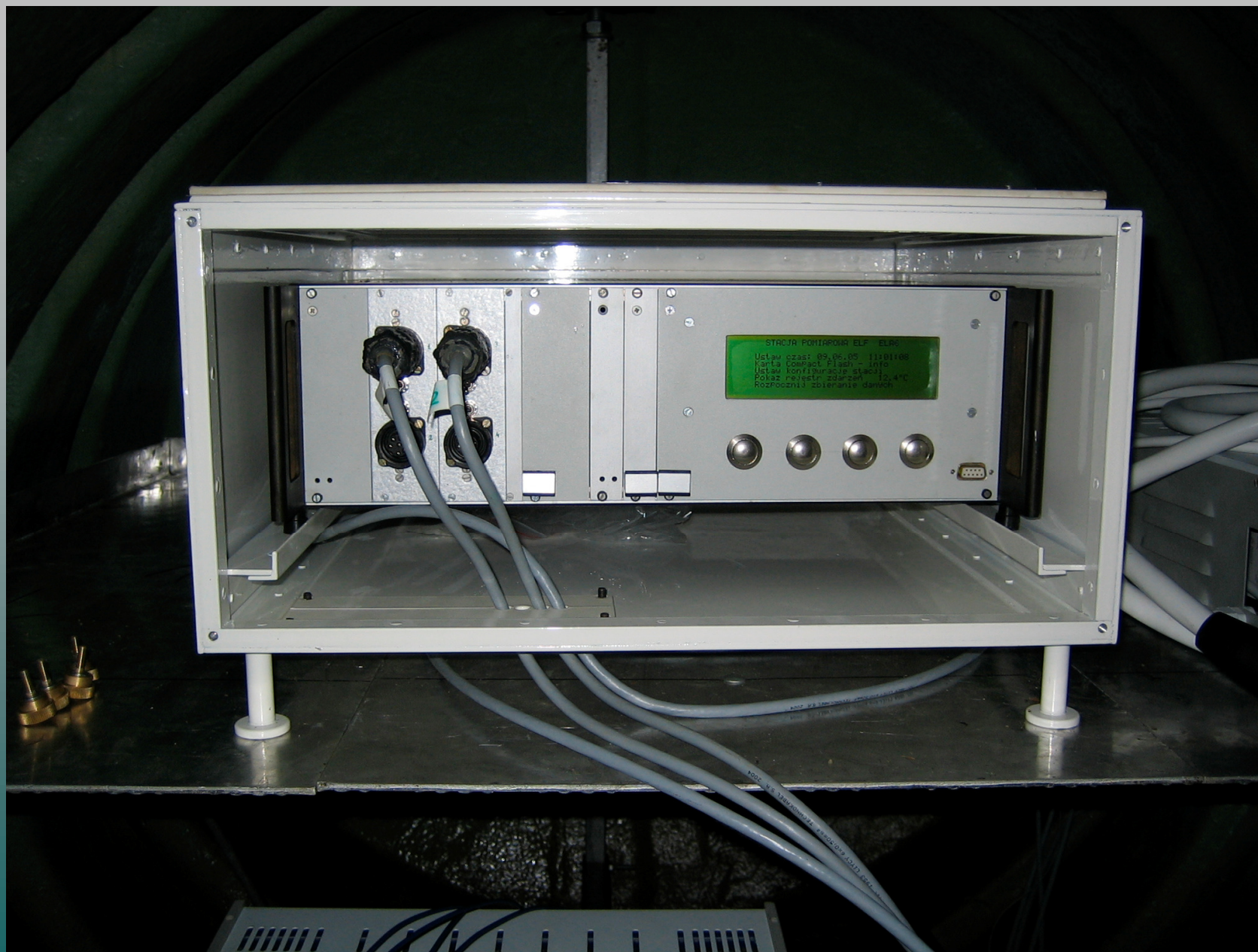
Czułość toru pomiarowego

- antena AA1001: 4.8 mV/nT dla 10Hz
- karta pomiarowa: 49dB (270x) dla 10Hz
- tor pomiarowy: 1.3V/nT dla 10Hz
- przetwornik A/D: 3.6 nT dla 10Hz













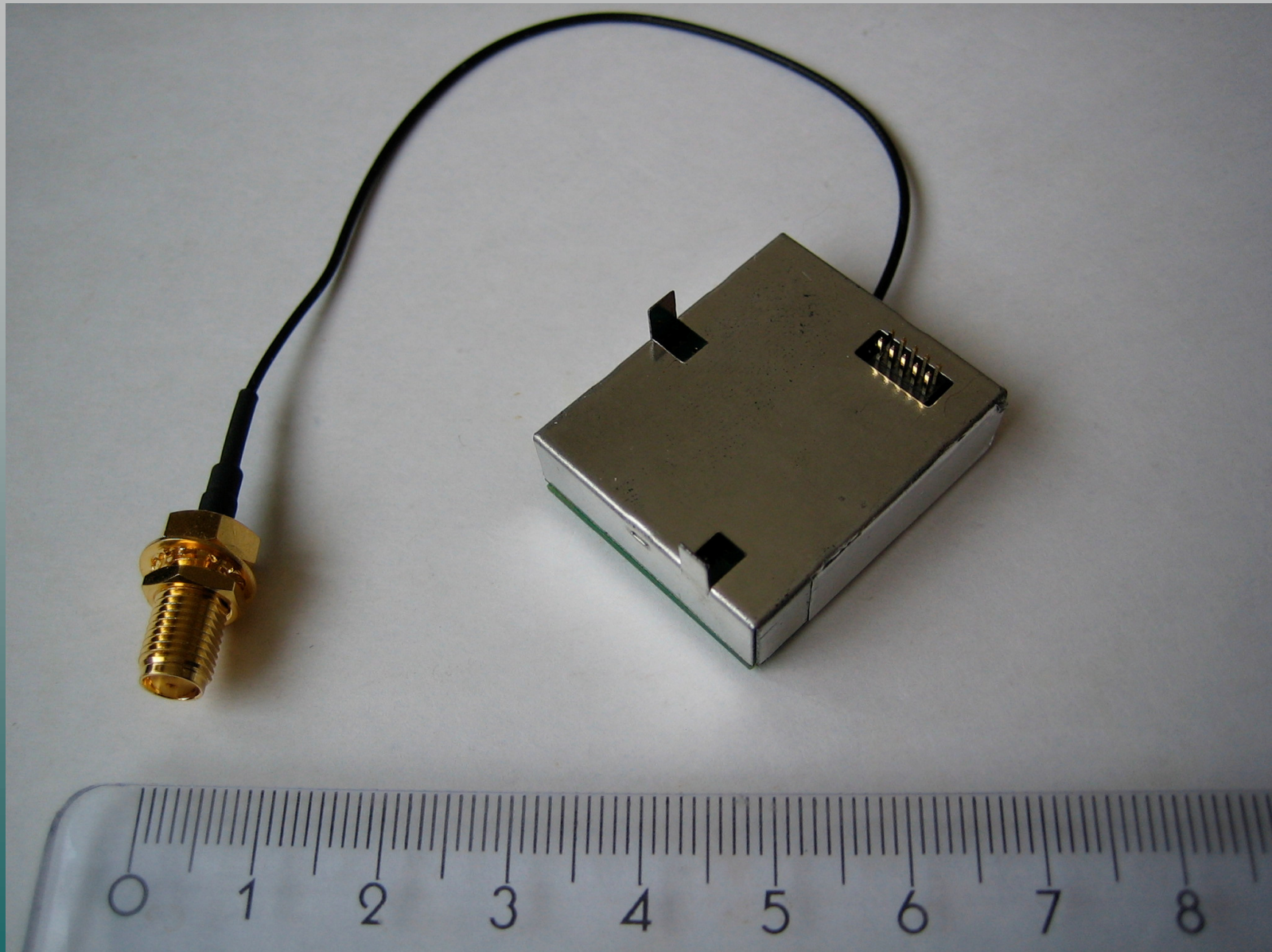


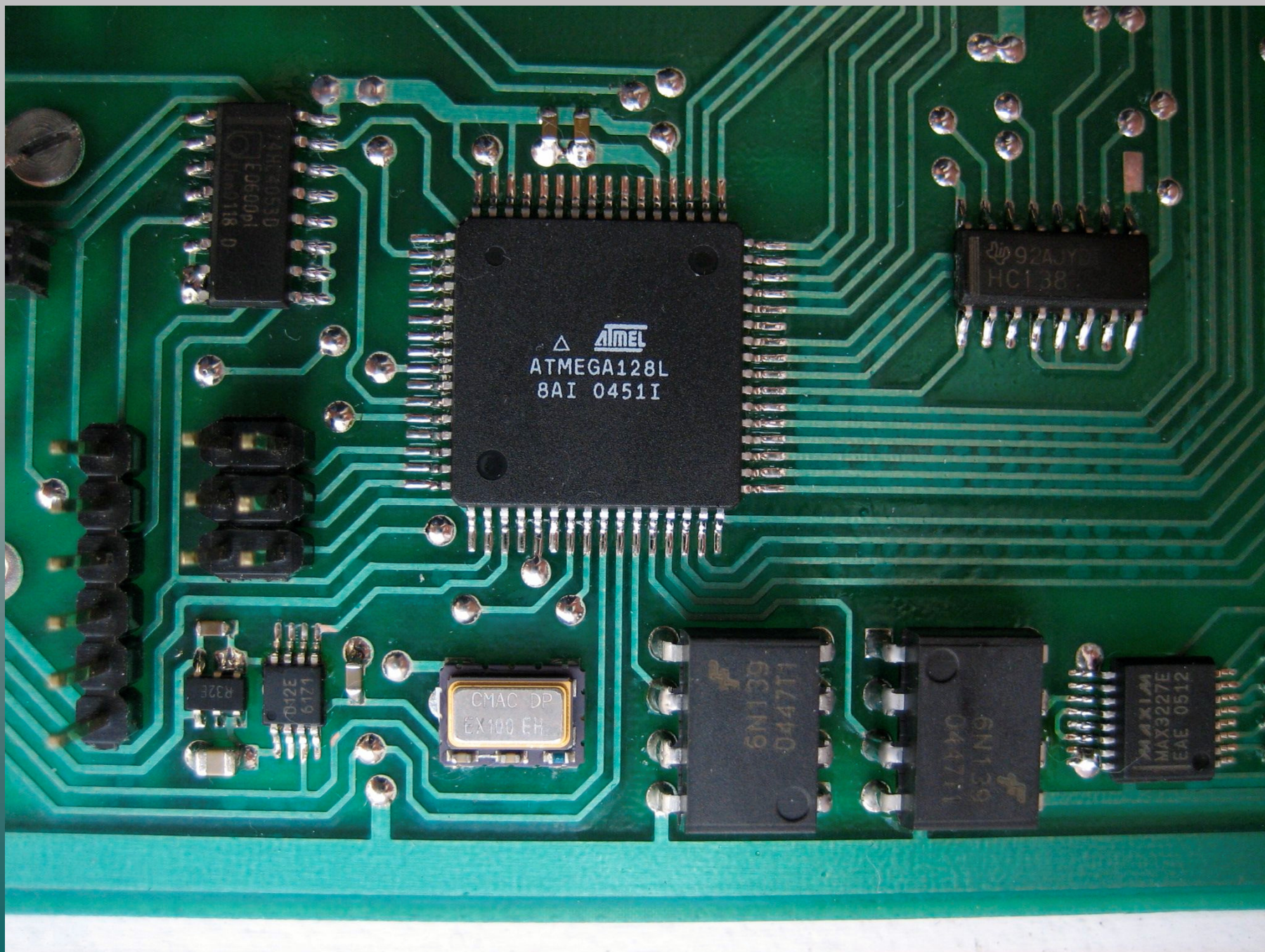


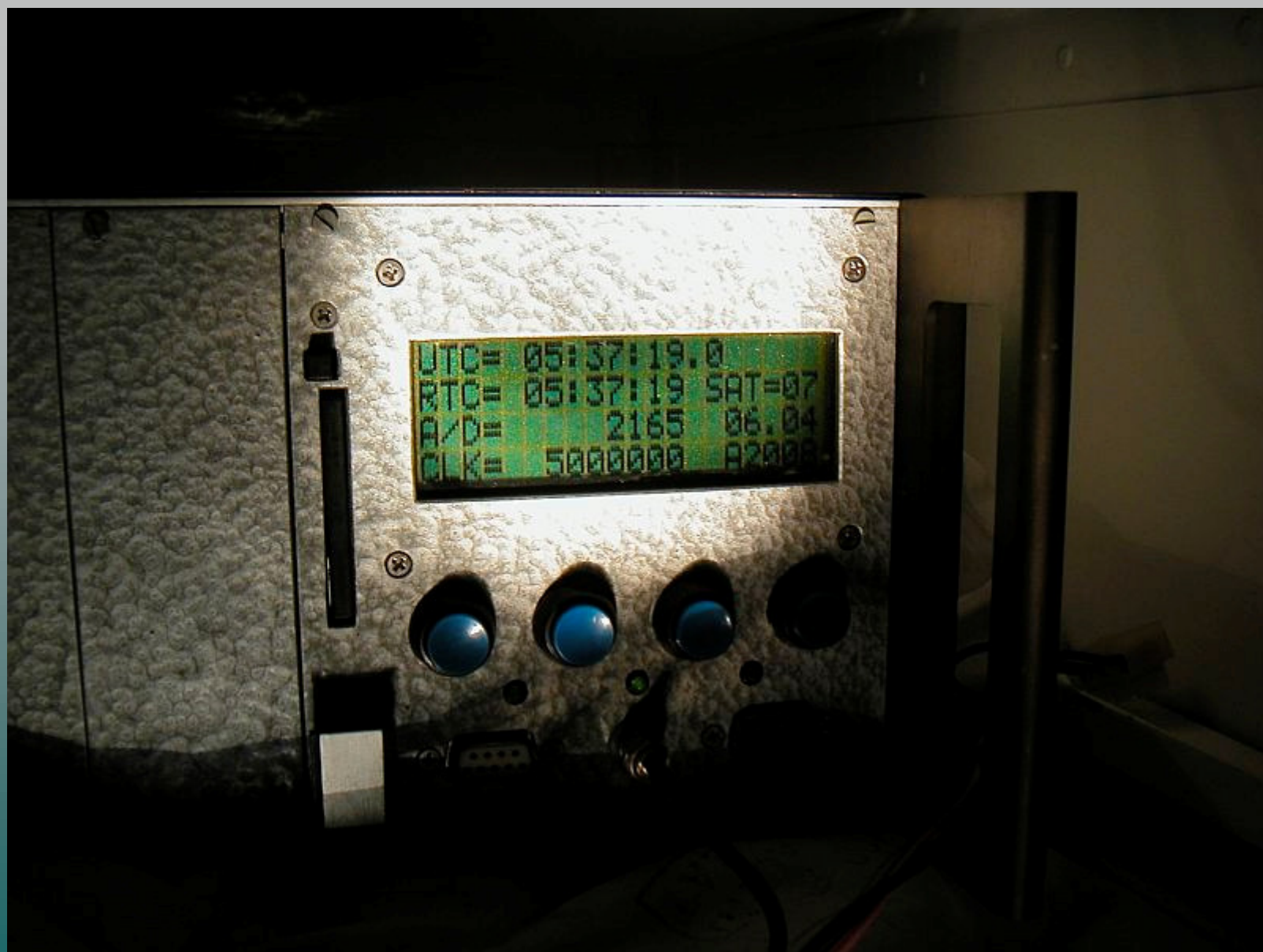






















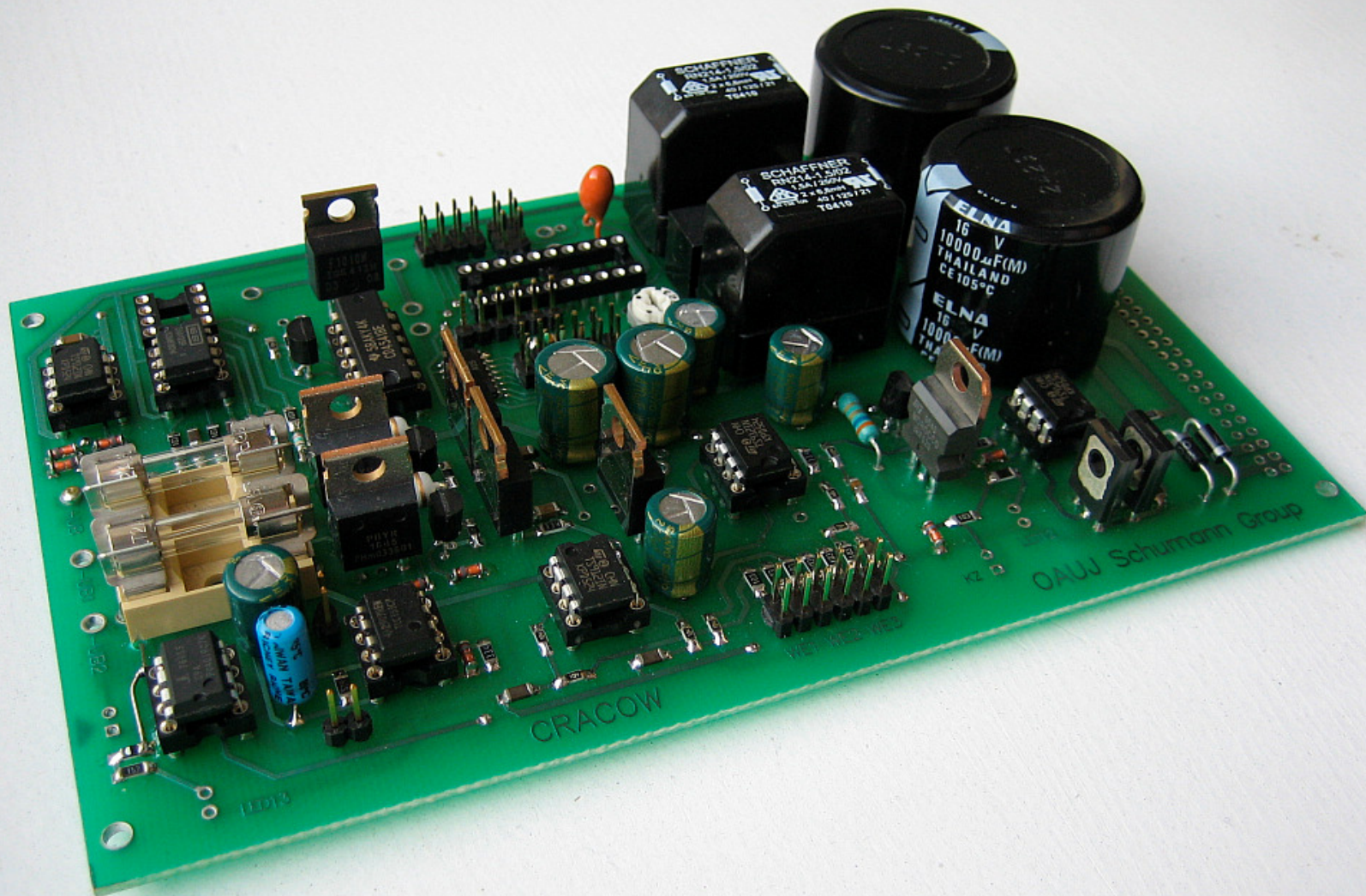






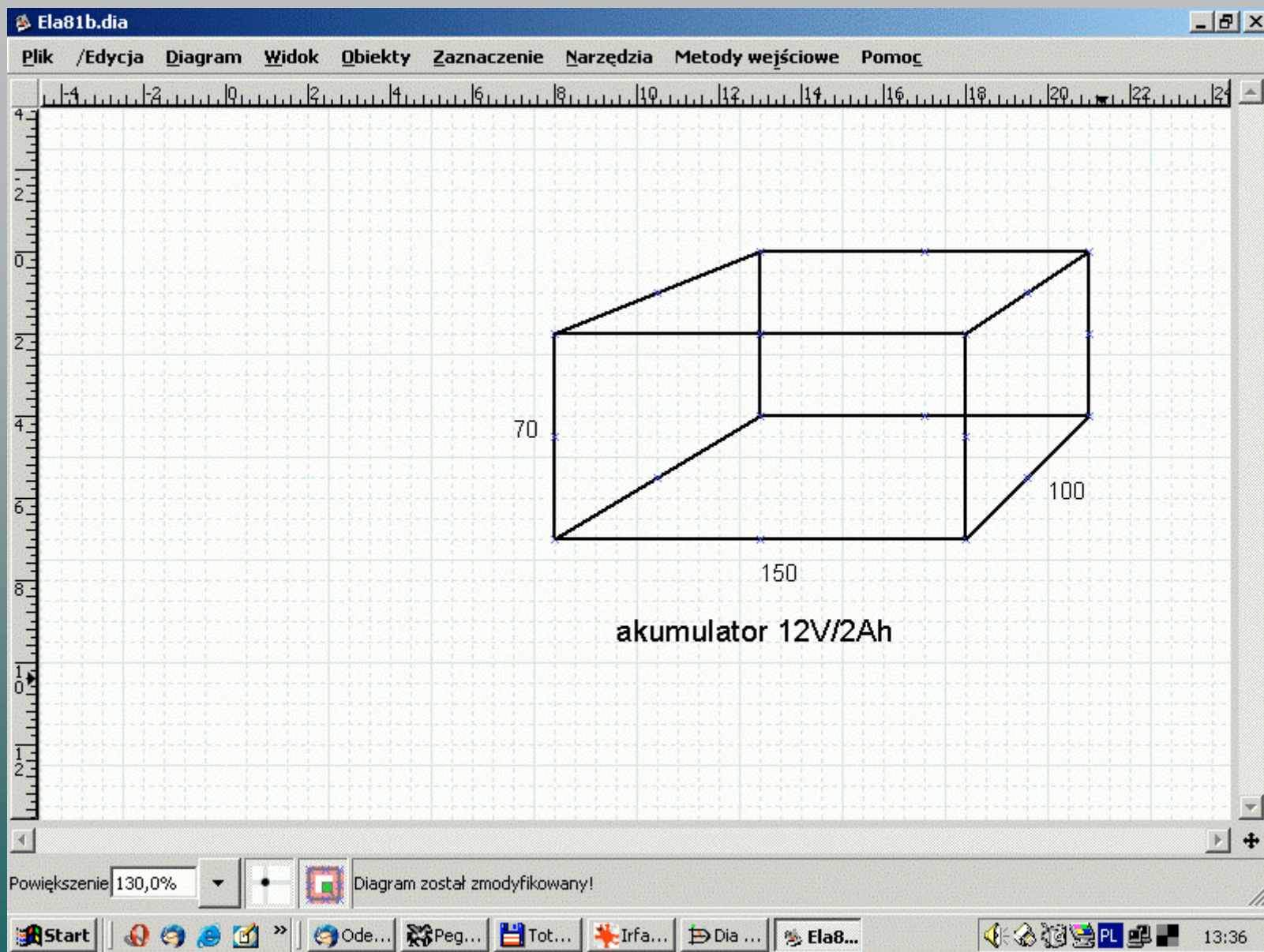


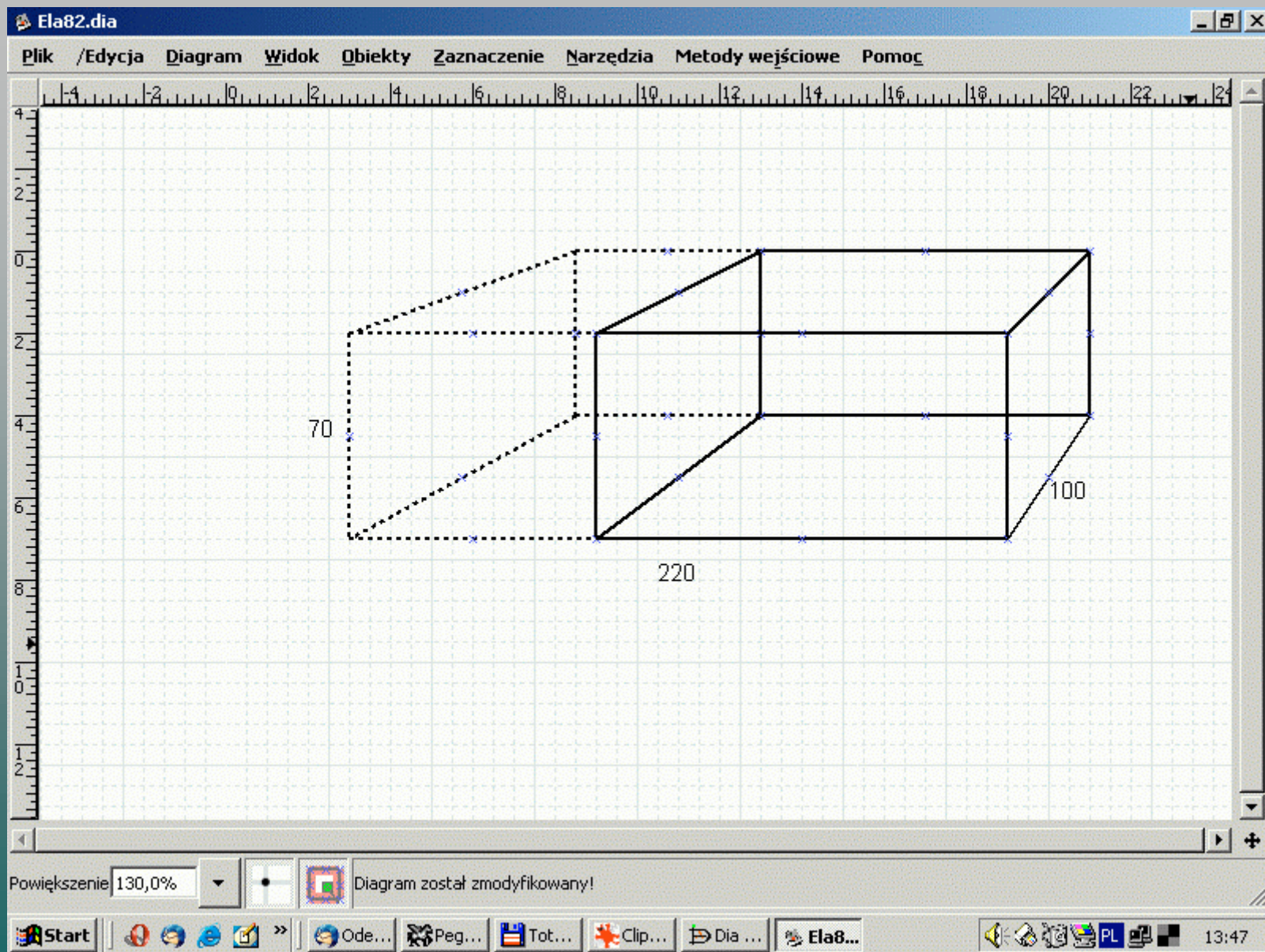


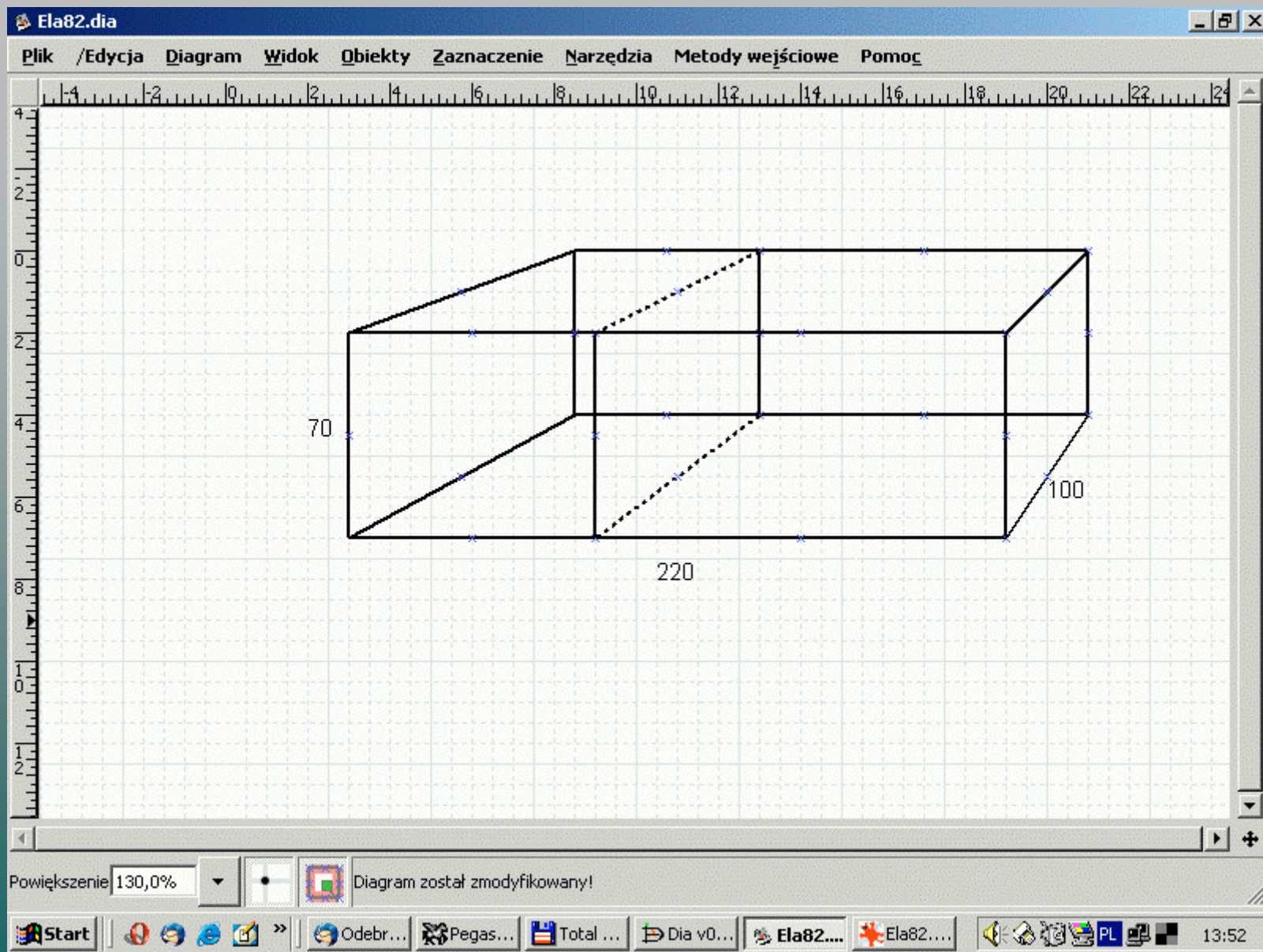


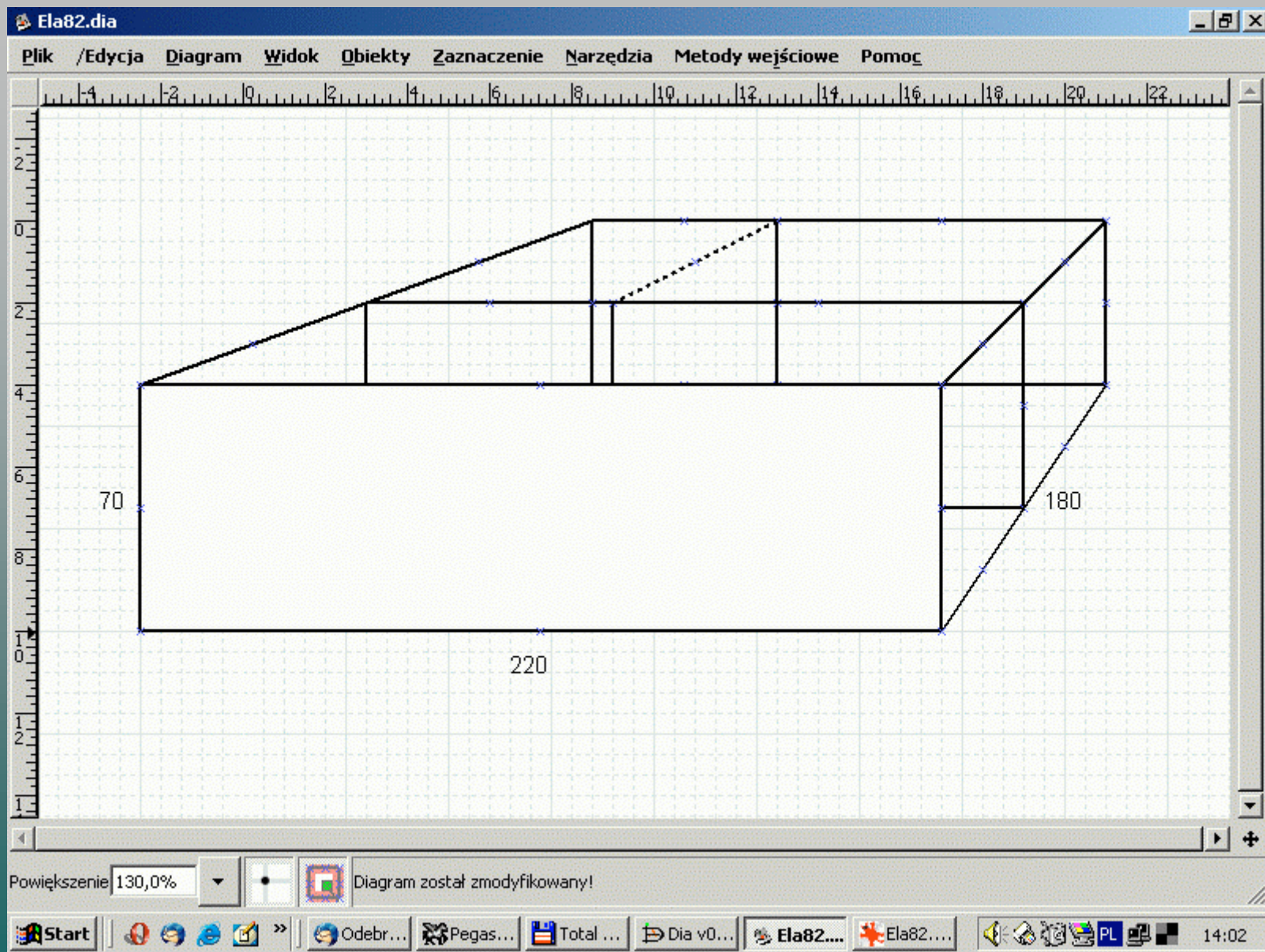
Ela 8, założenia konstrukcyjne

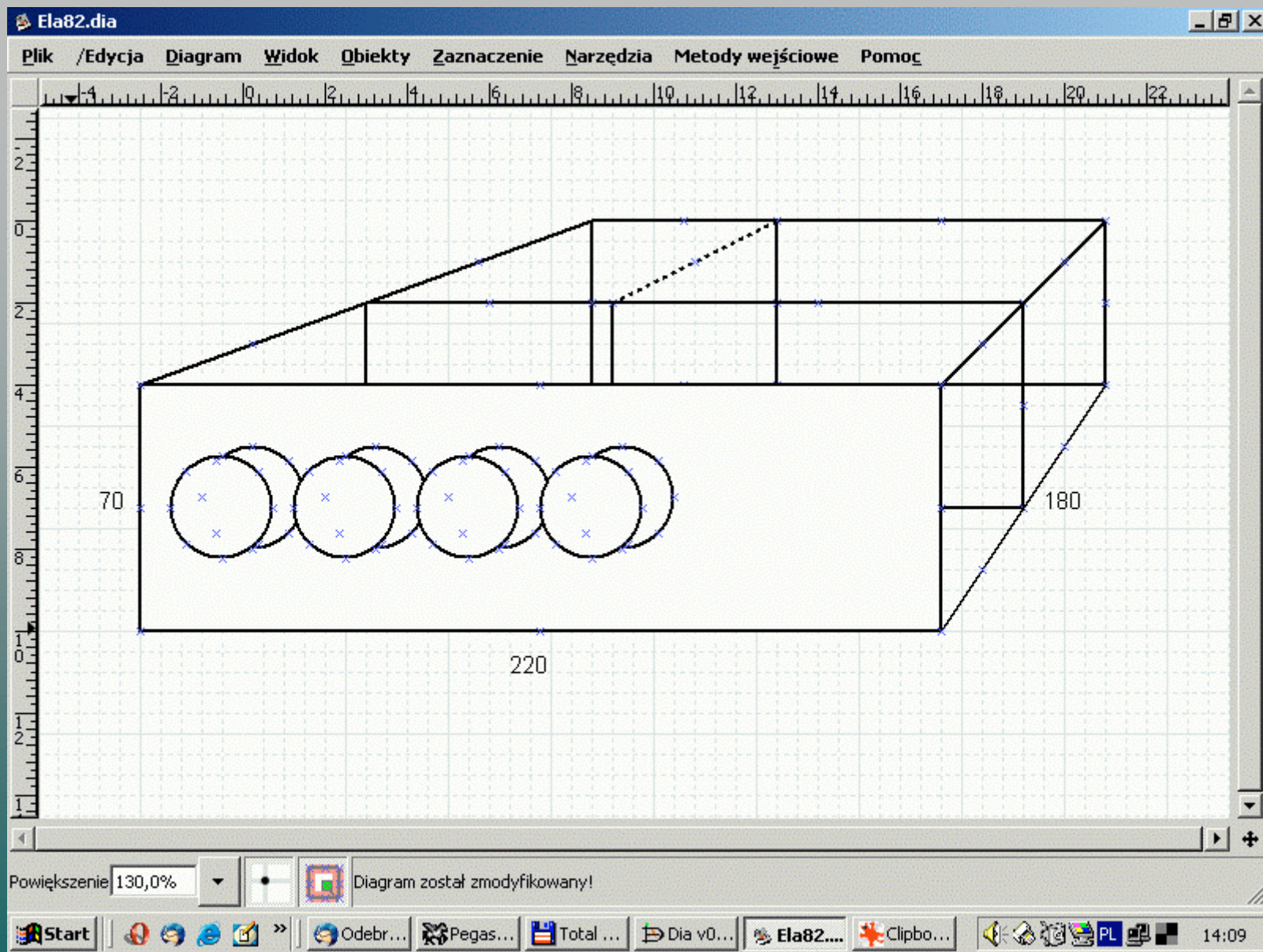
- Mała, kompaktowa obudowa (rezygnacja ze standardu EURO)
- Podniesienie odporności na warunki atmosferyczne (szczelność)
- Podniesienie odporności na przeciążenia i wibracje
- Zwiększenie zakresu autodiagnostyki :
 - pomiar i rejestracja temperatury oraz wilgotności
 - pomiar i rejestracja warunków zasilania
 - autokalibracja torów analogowych
- Poprawienie działania odbiornika GPS (nowszy model)
- Współpraca z zewnętrznym modemem GSM
- Zachowanie wypróbowanych i sprawdzonych rozwiązań :
 - rejestracja danych na kartach CF
 - regulacja zegara w oparciu o wzorzec czasu GPS

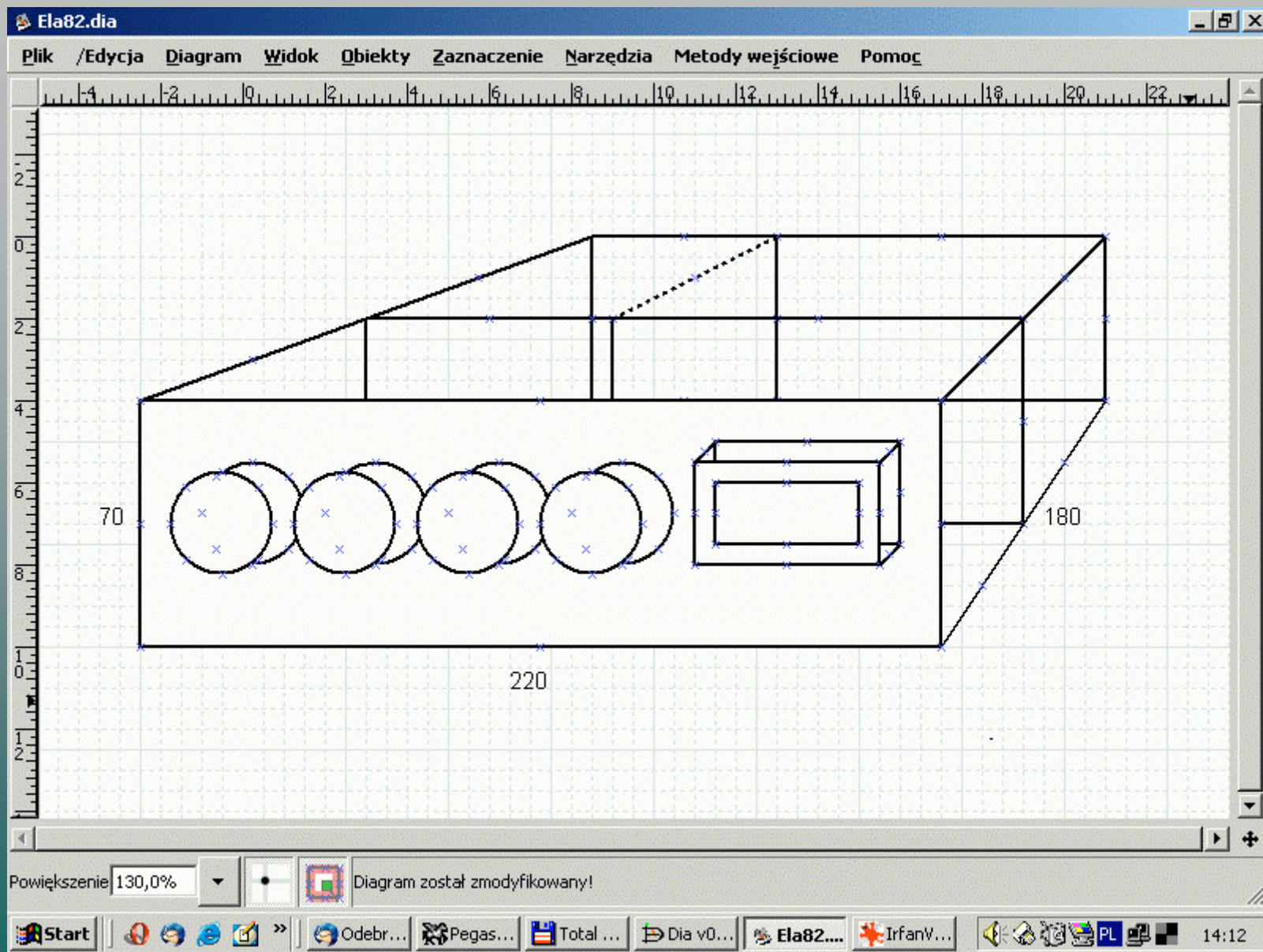


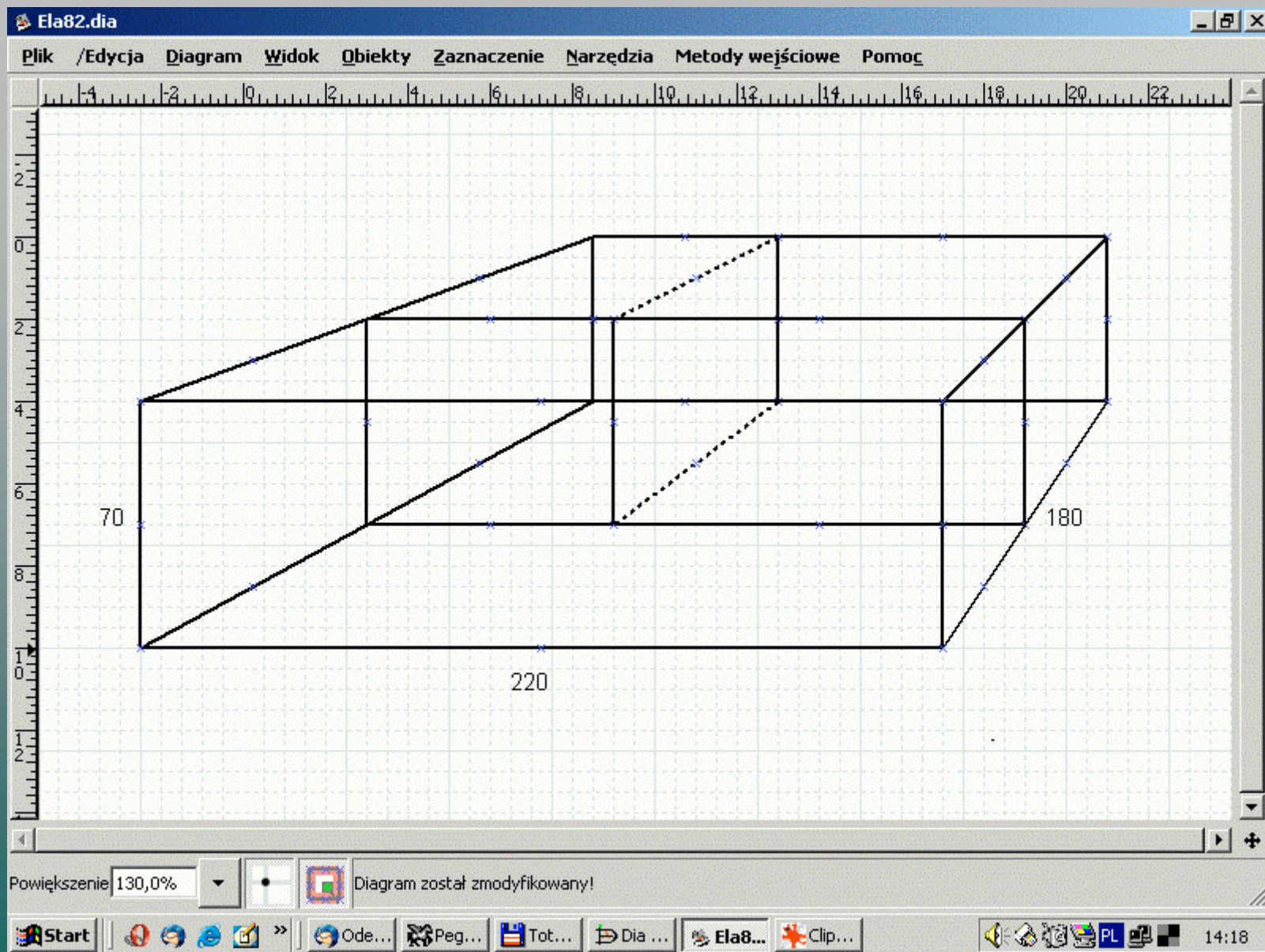


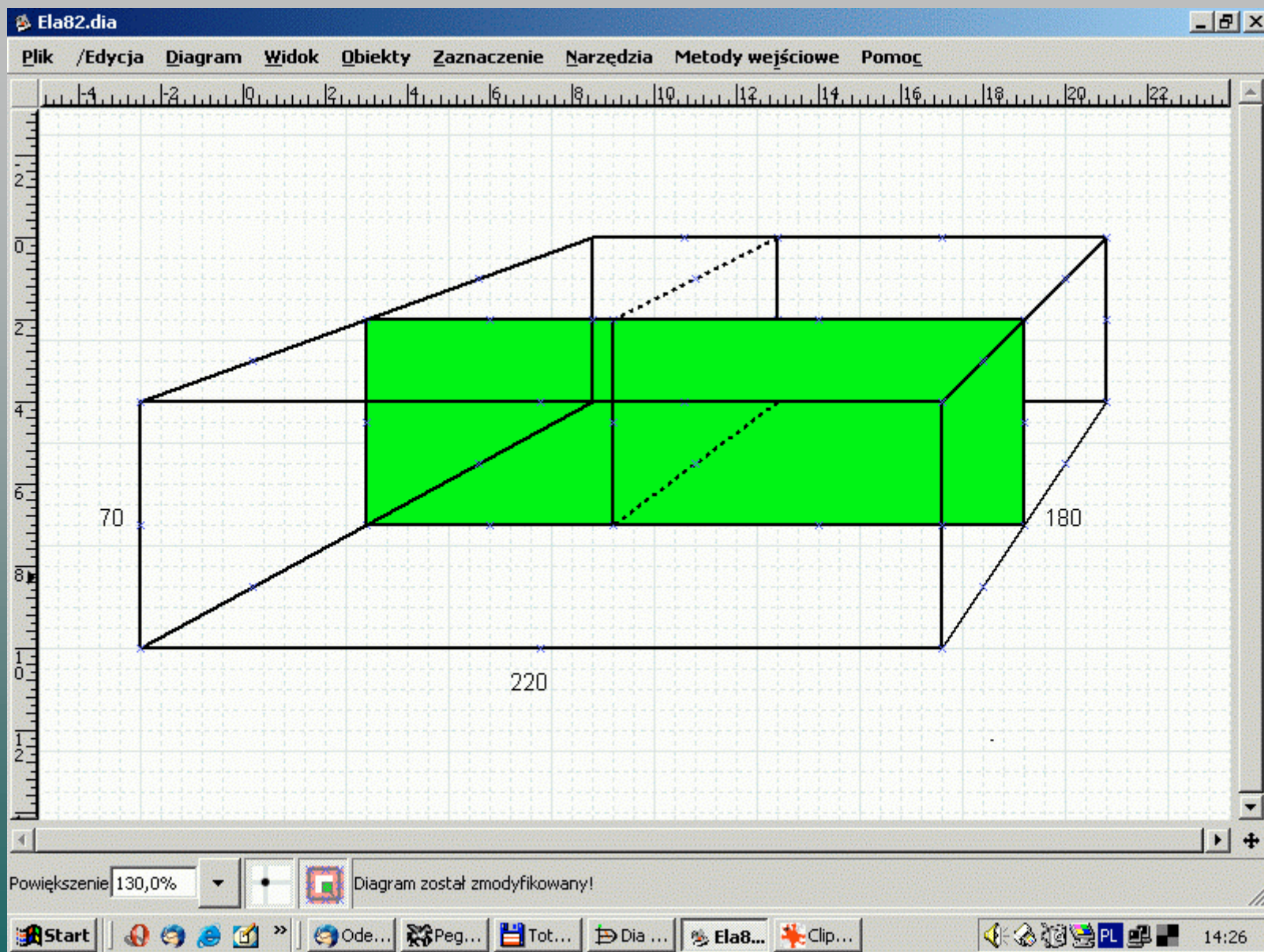


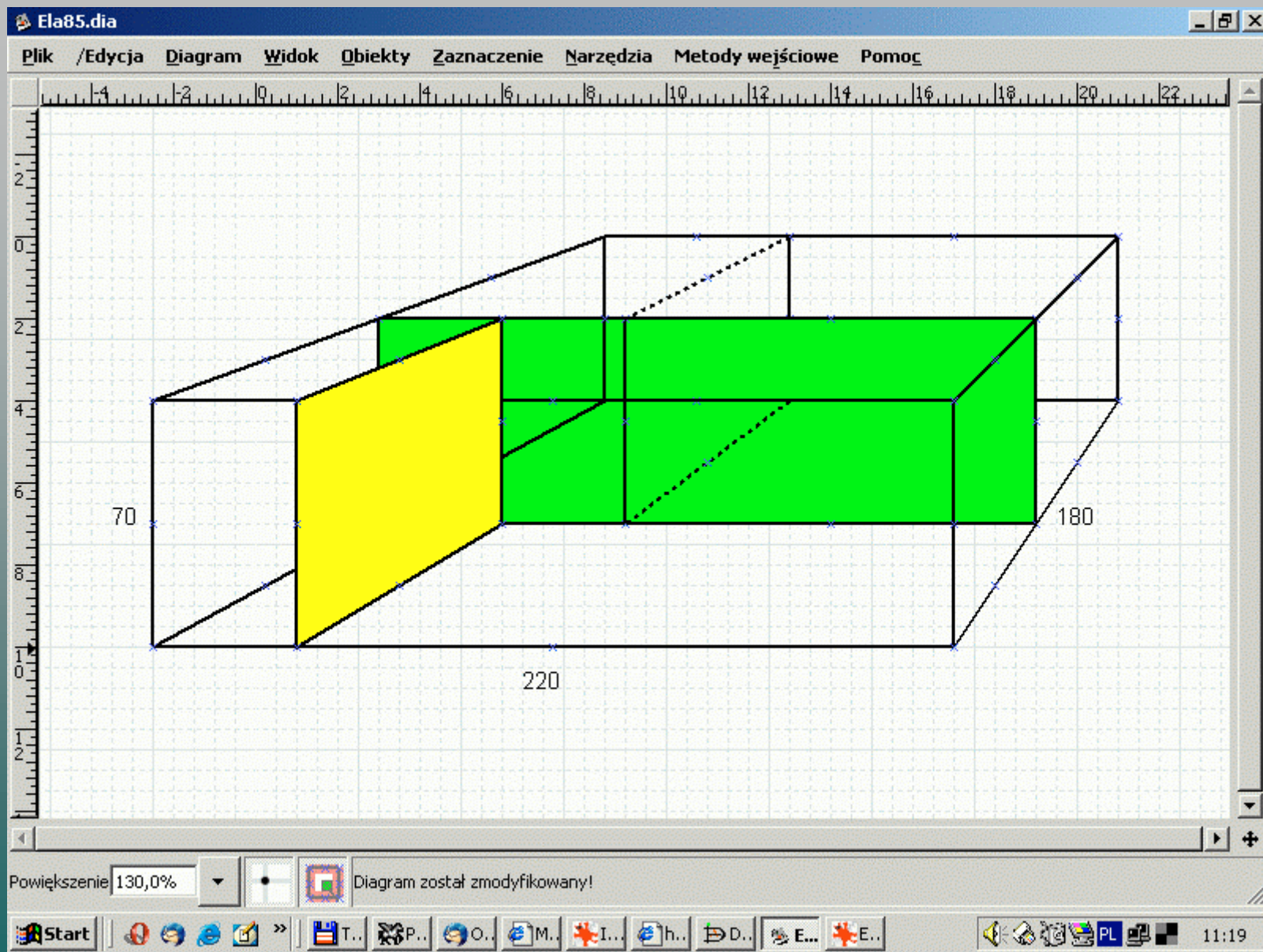


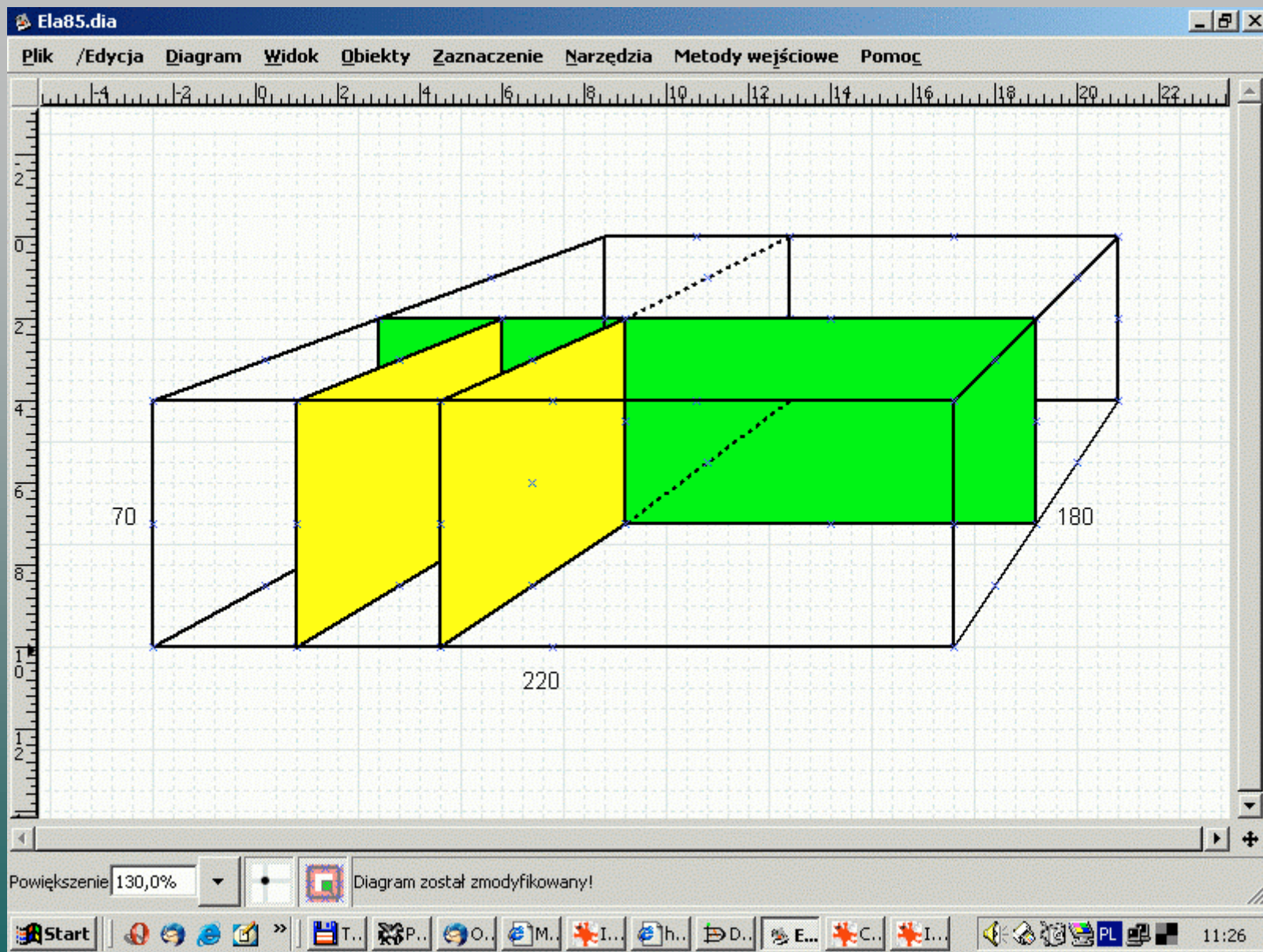


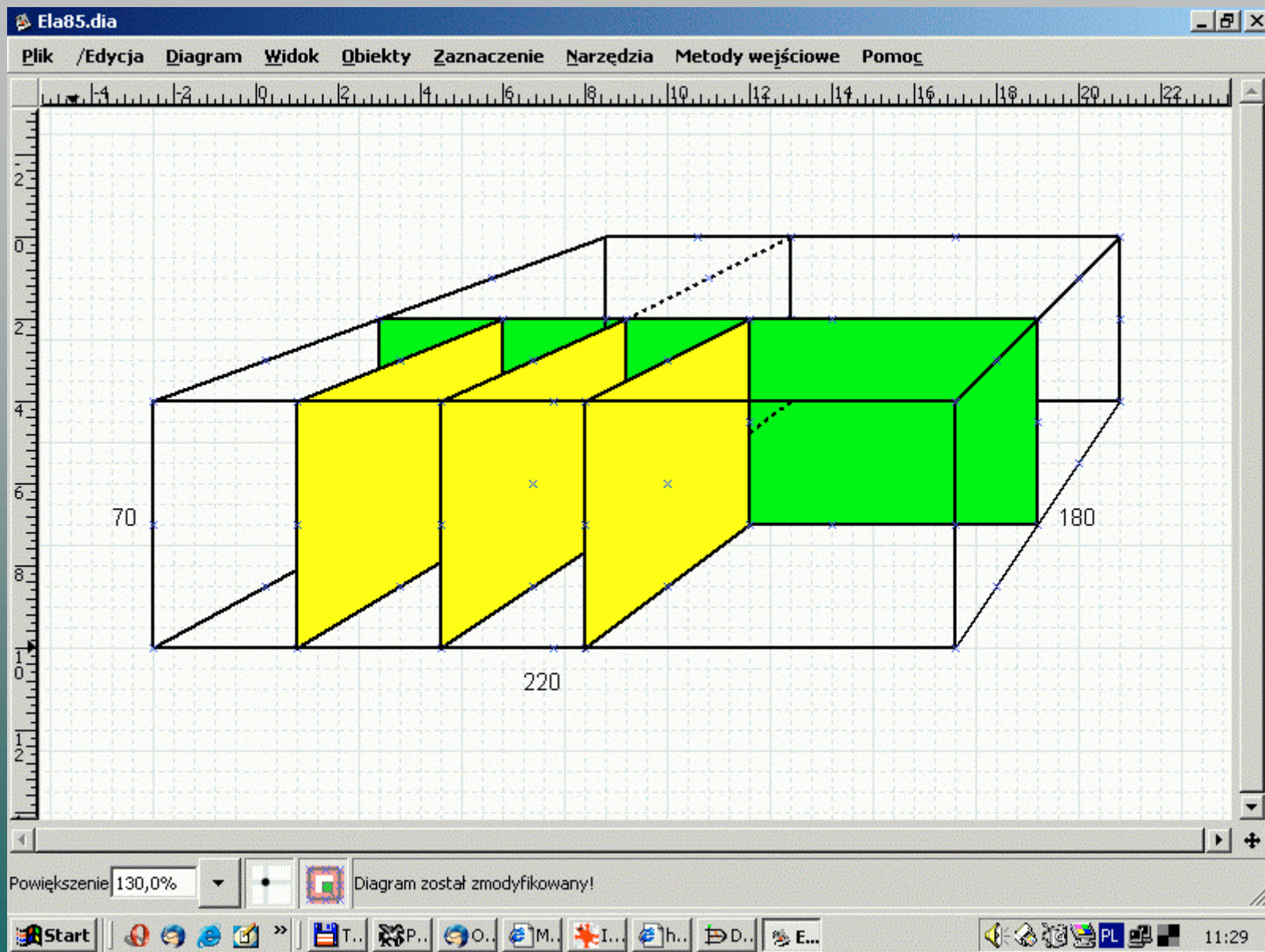


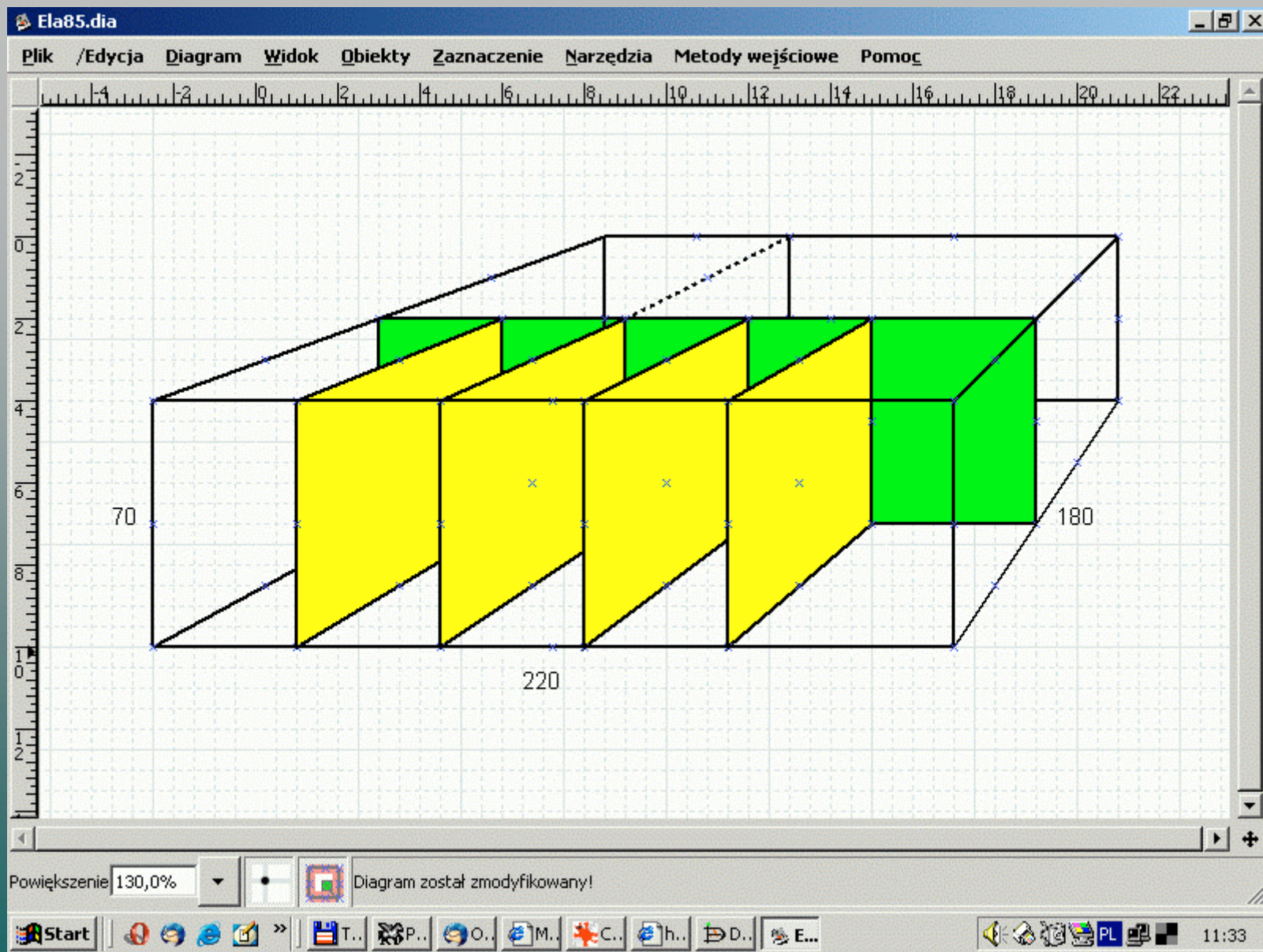


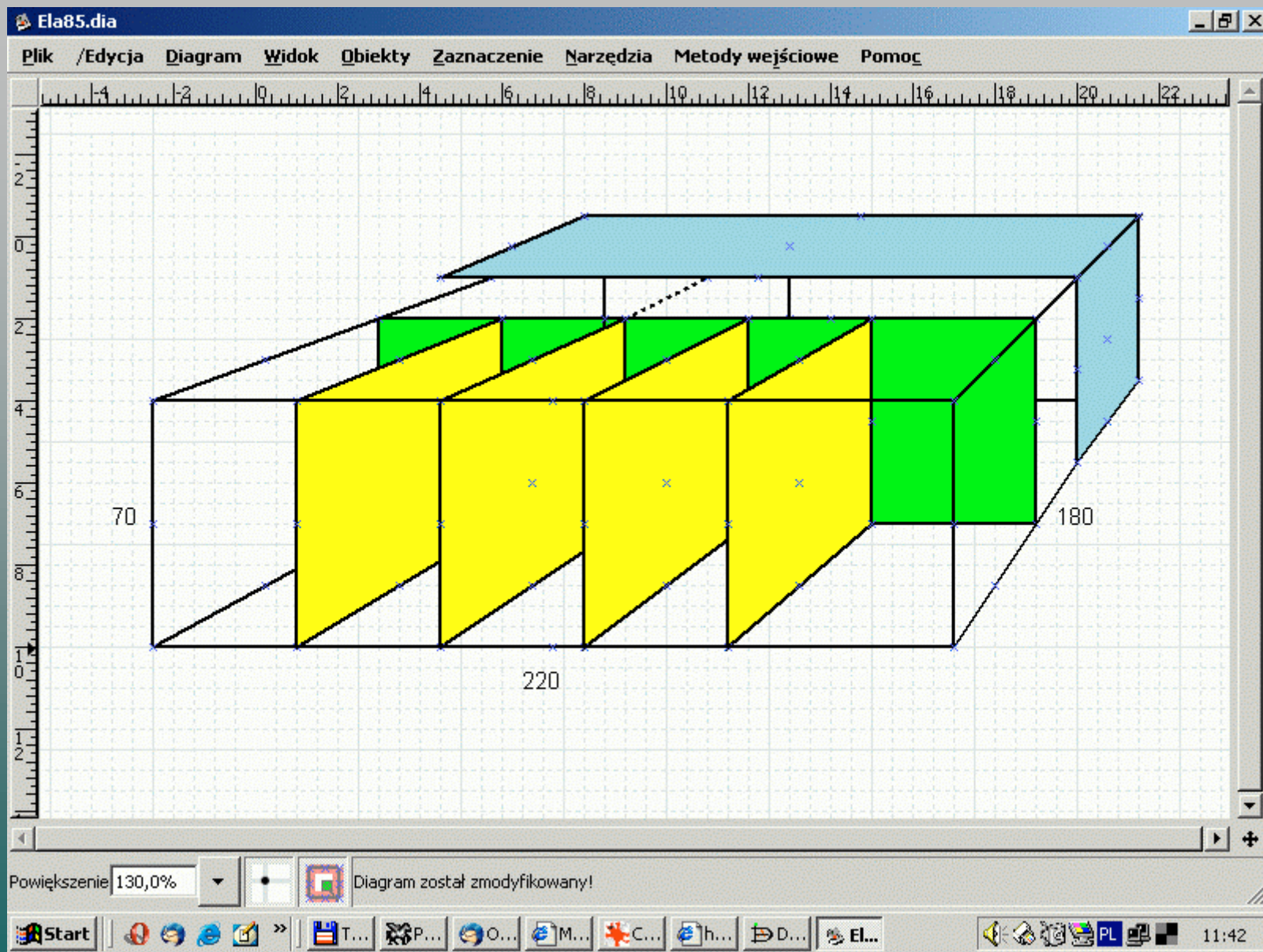


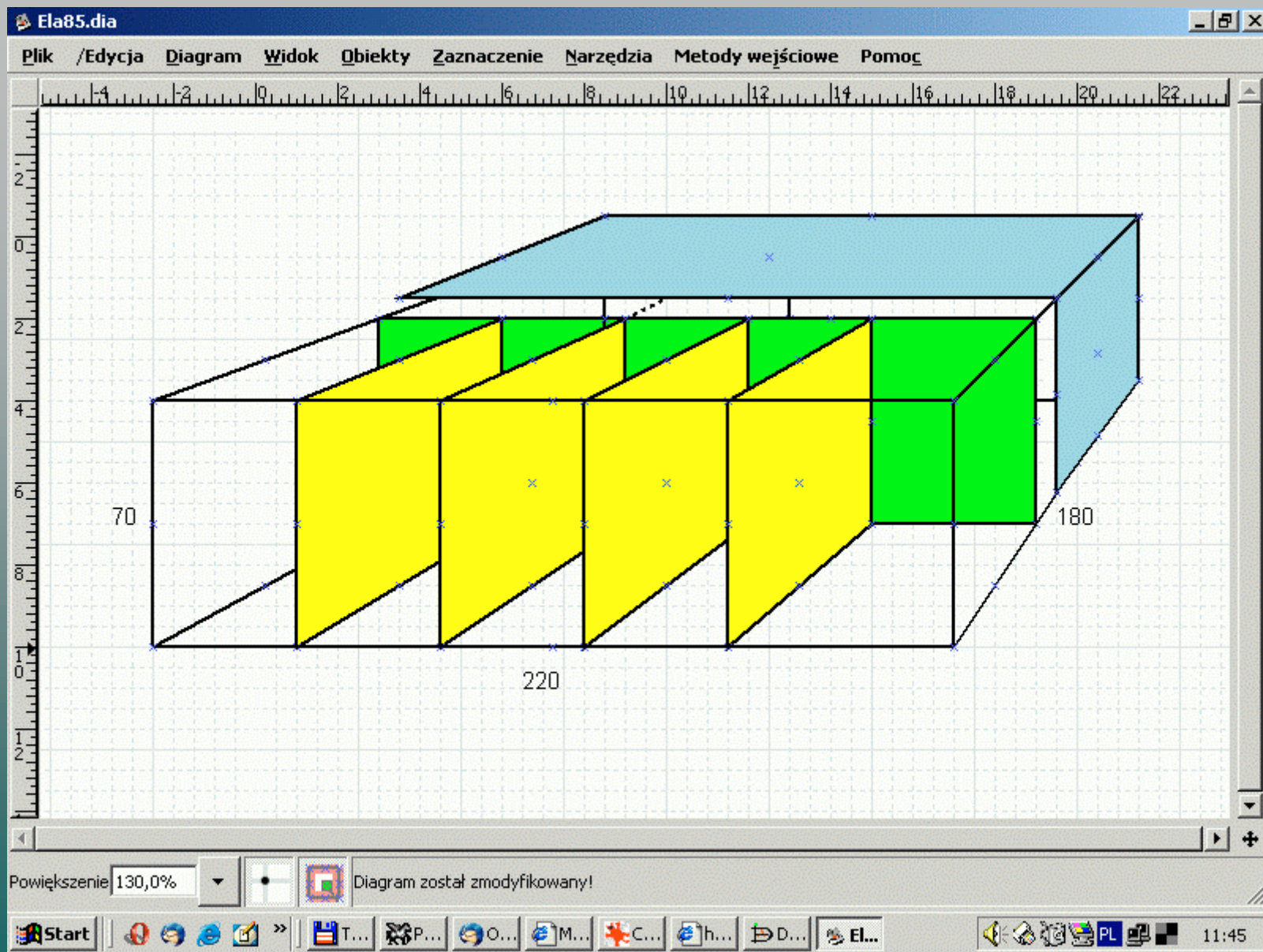


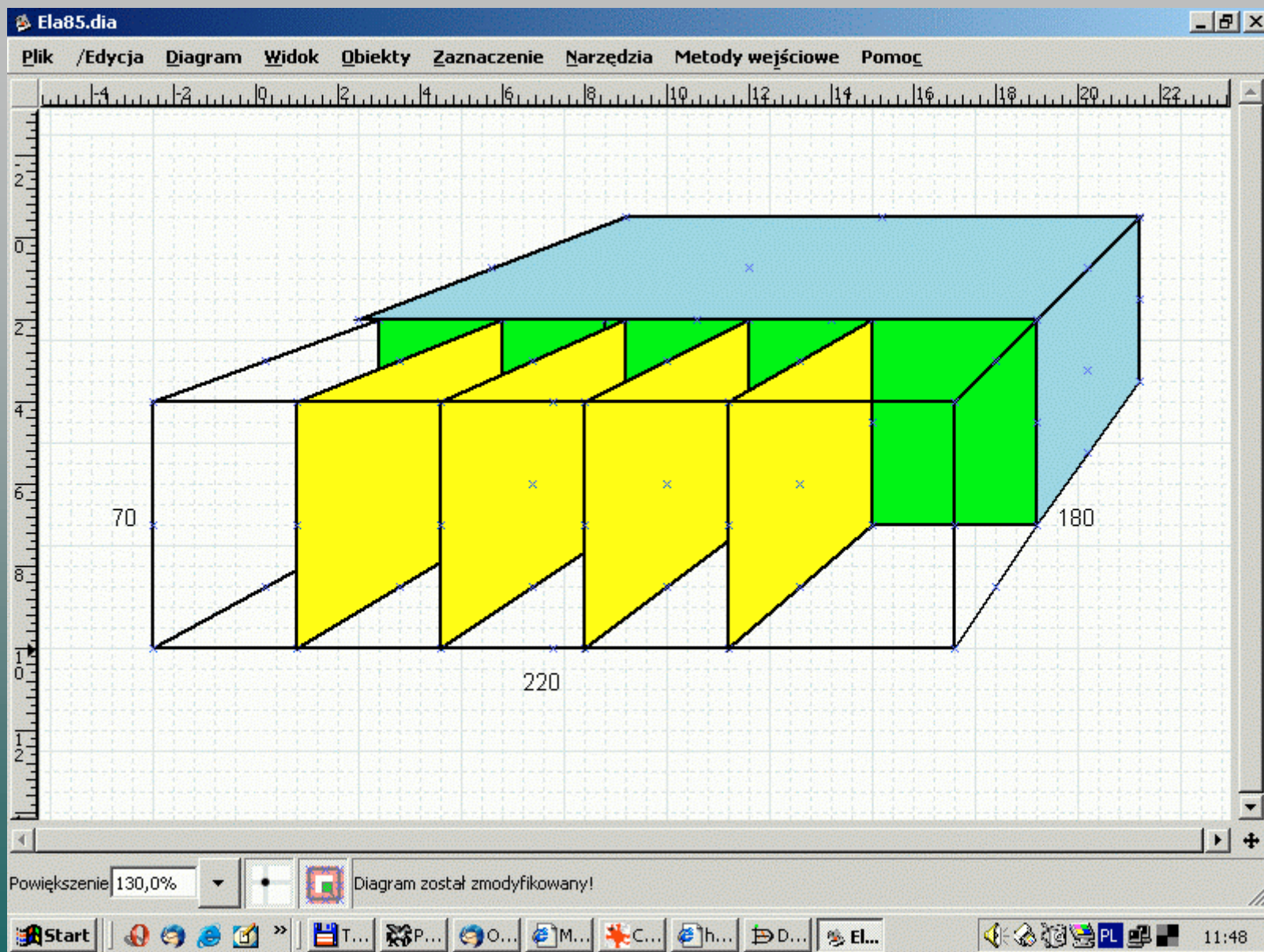


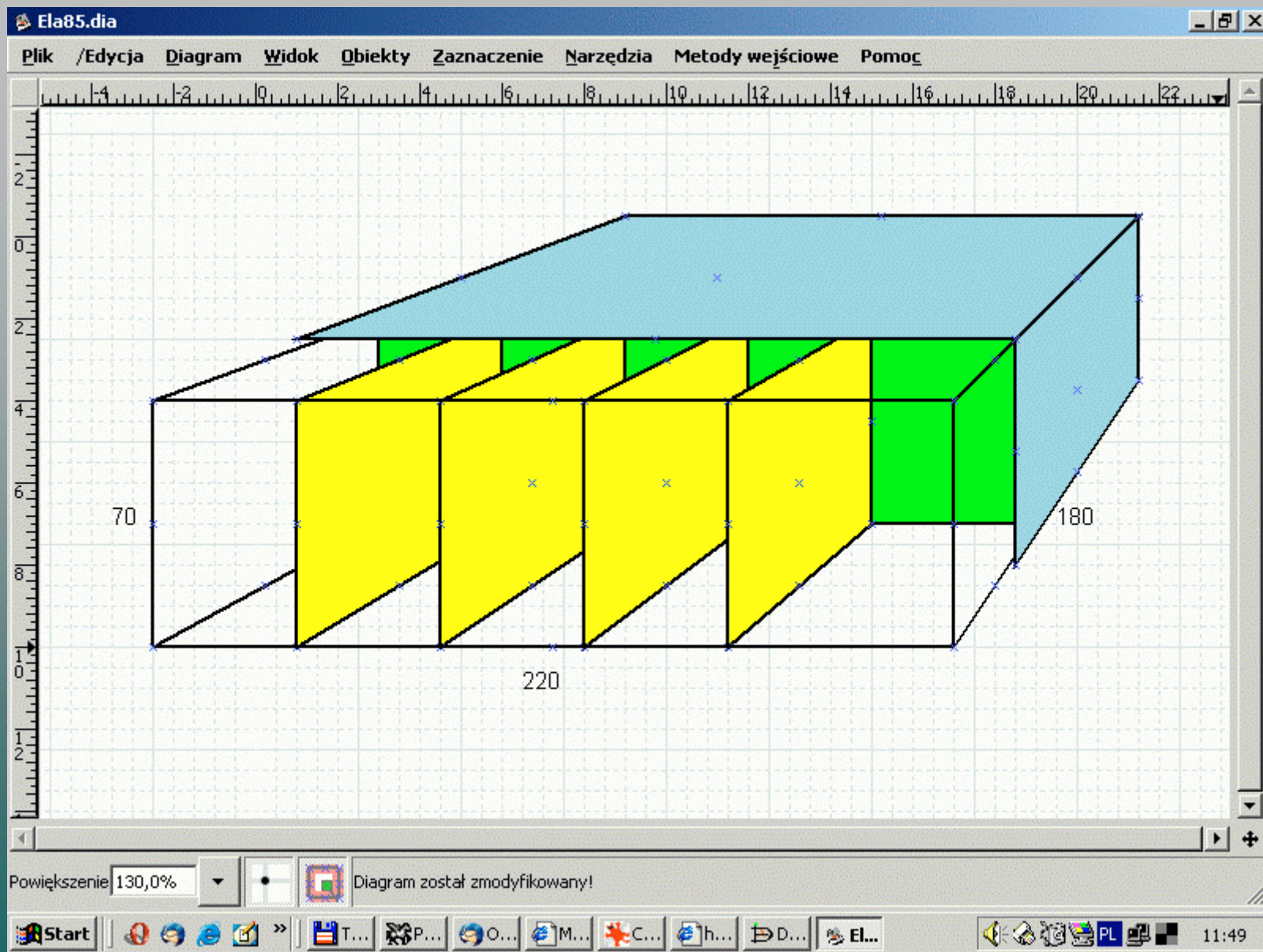


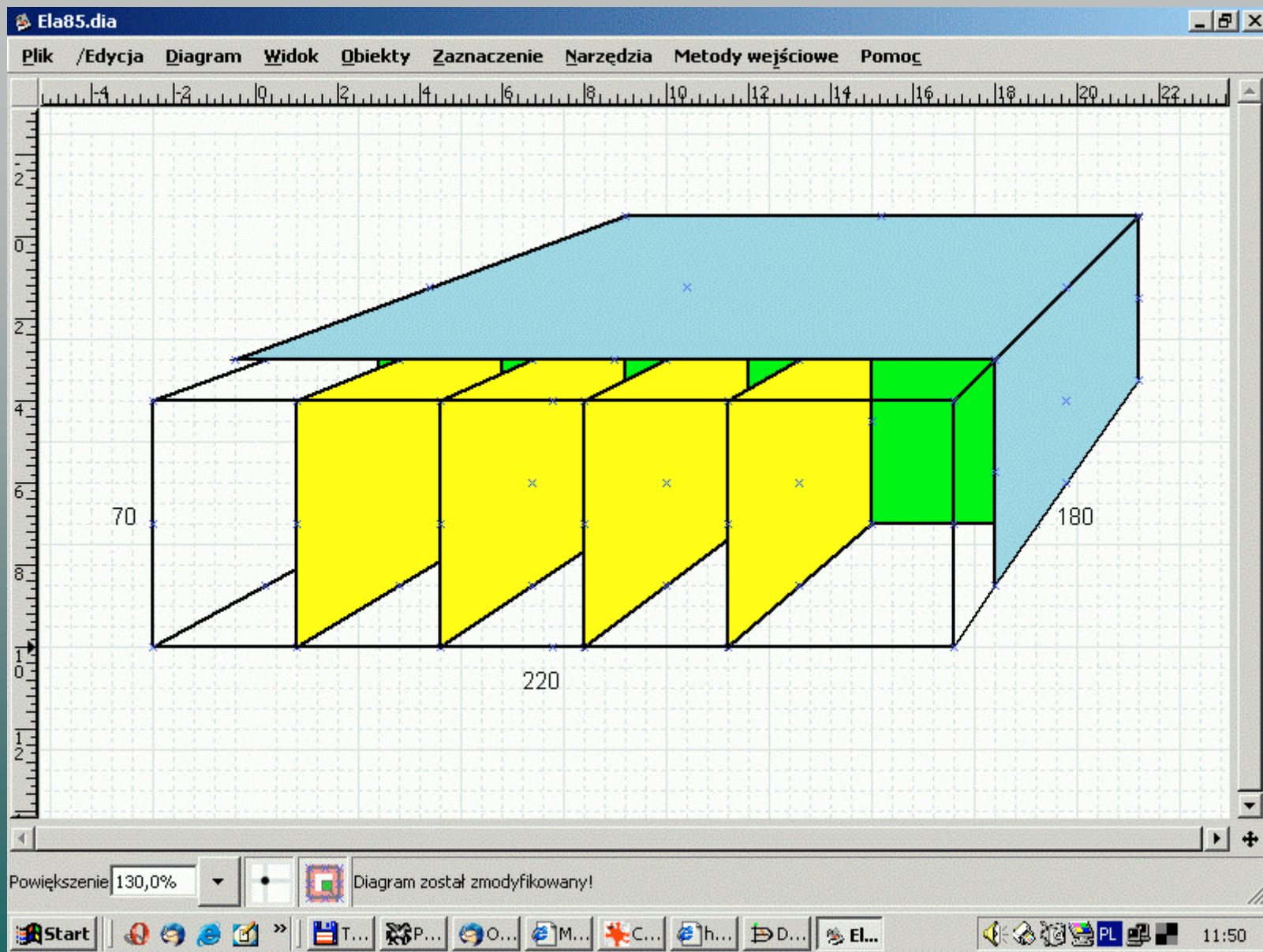


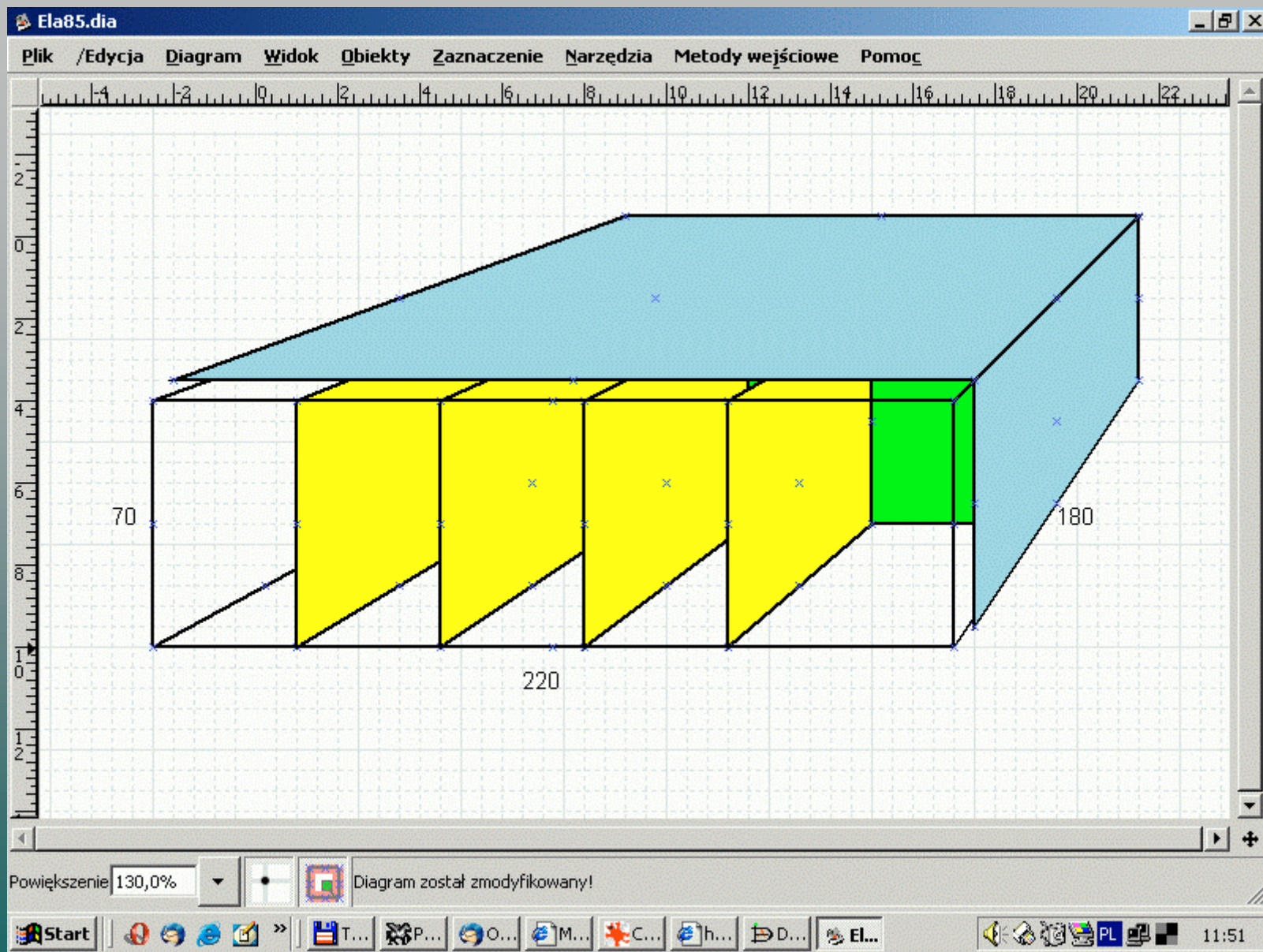


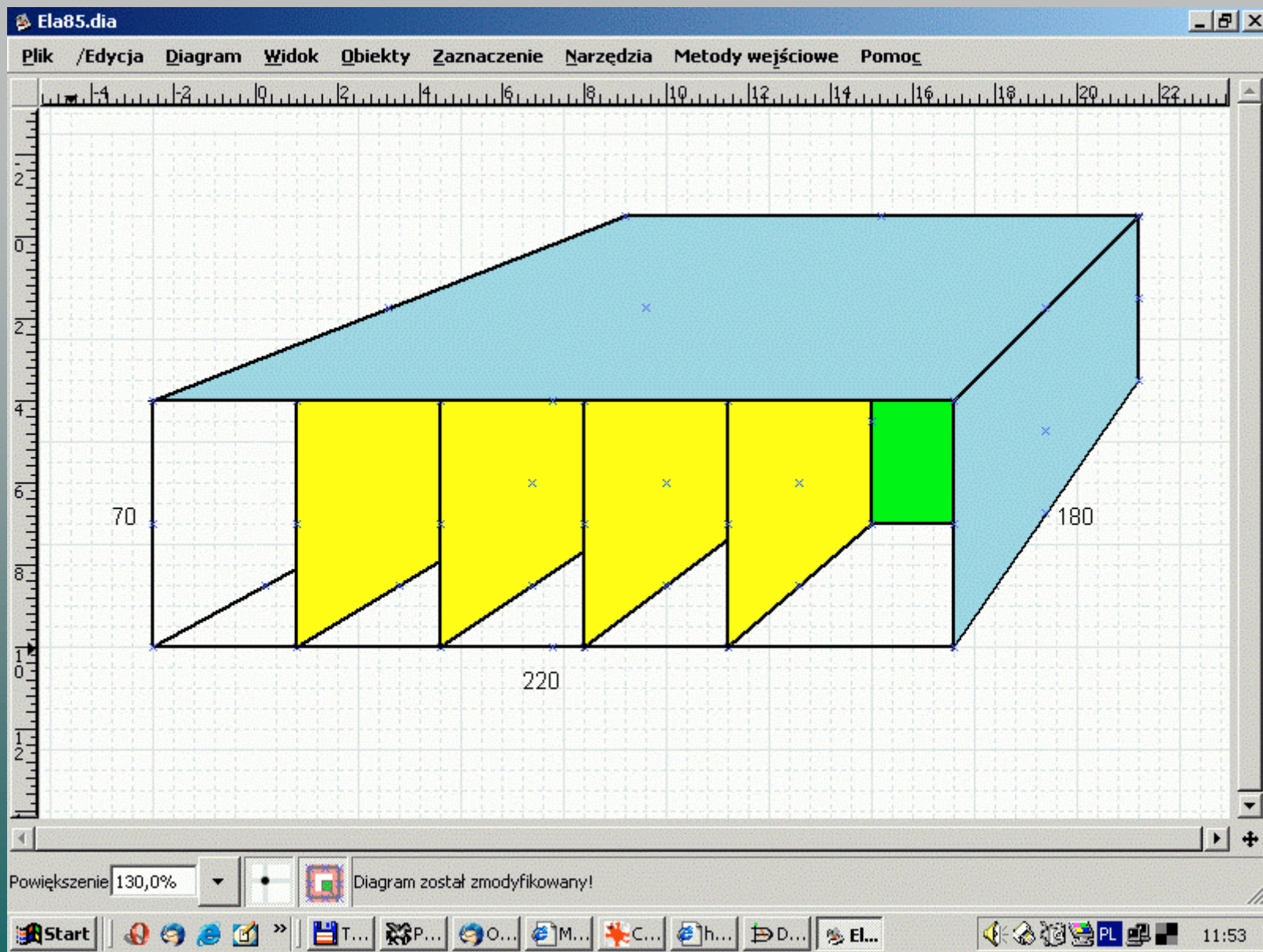


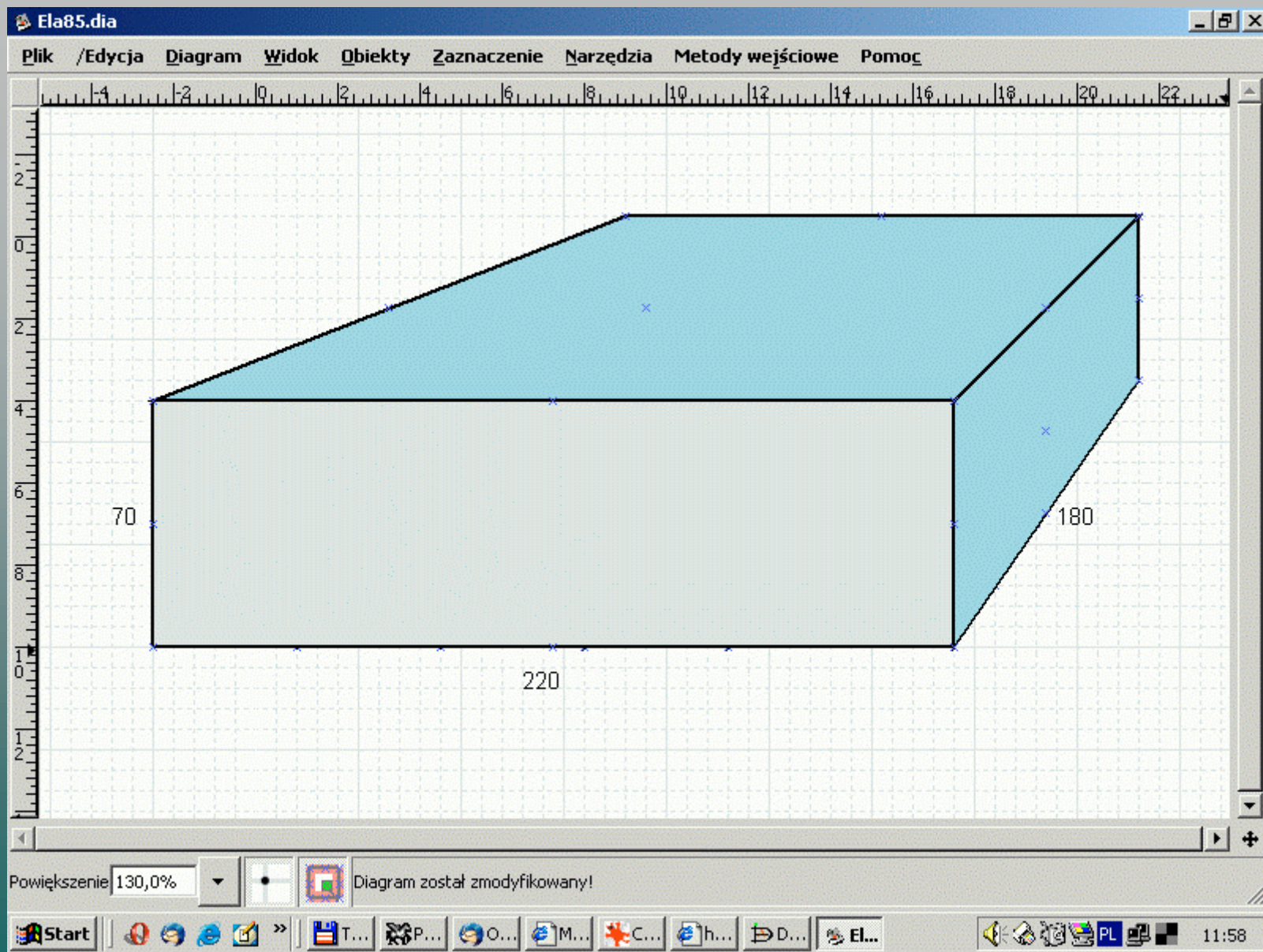


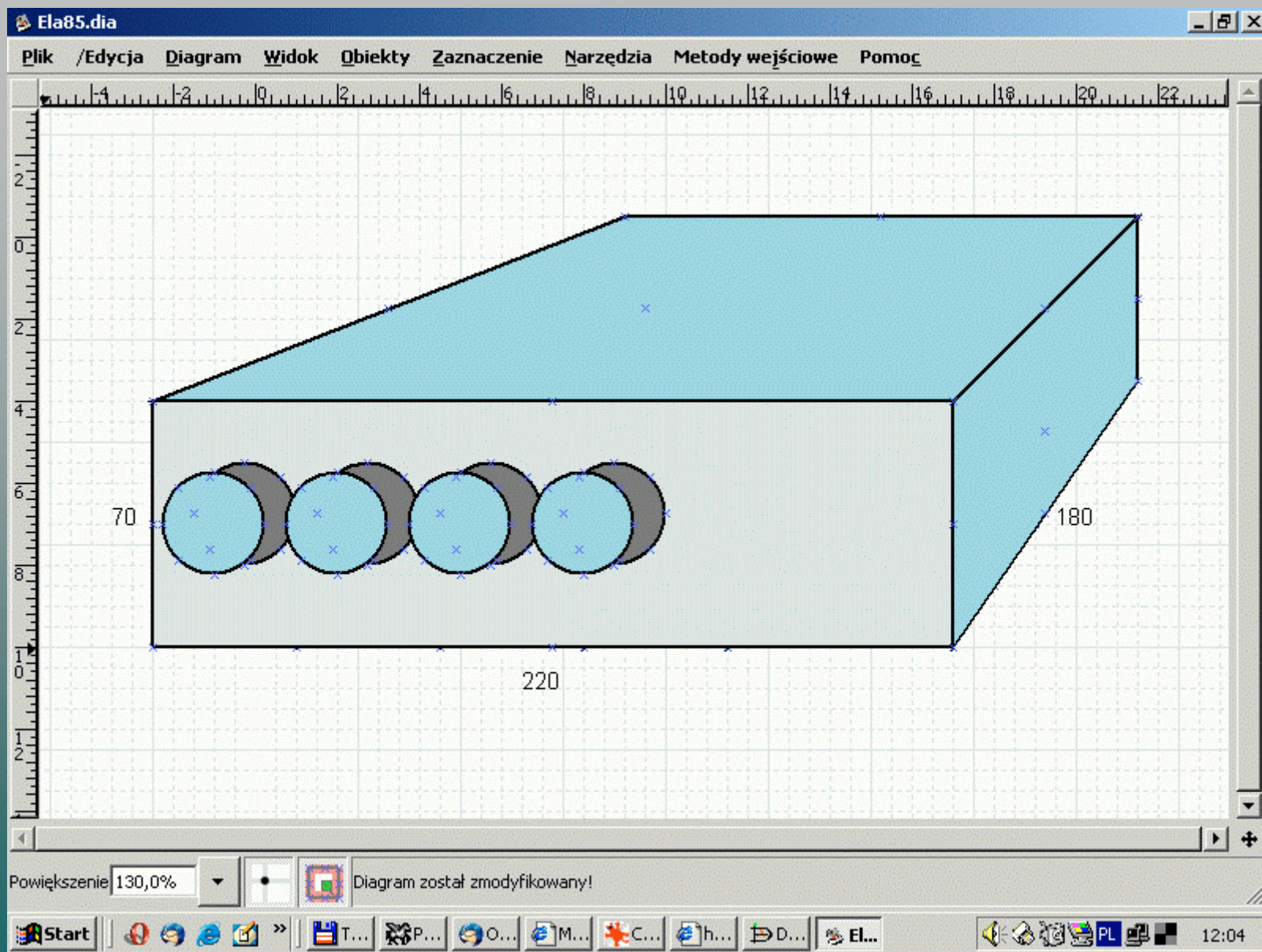


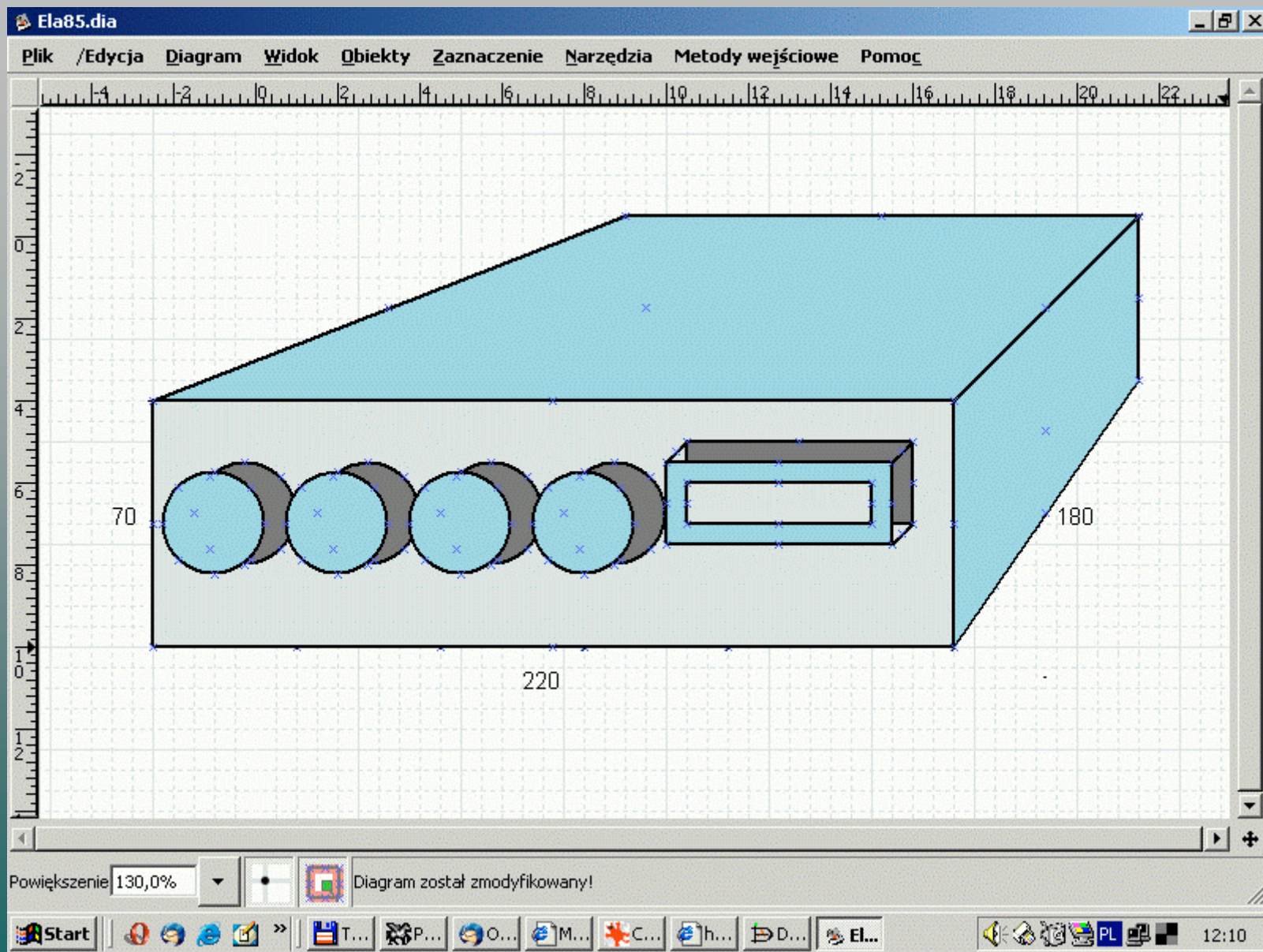


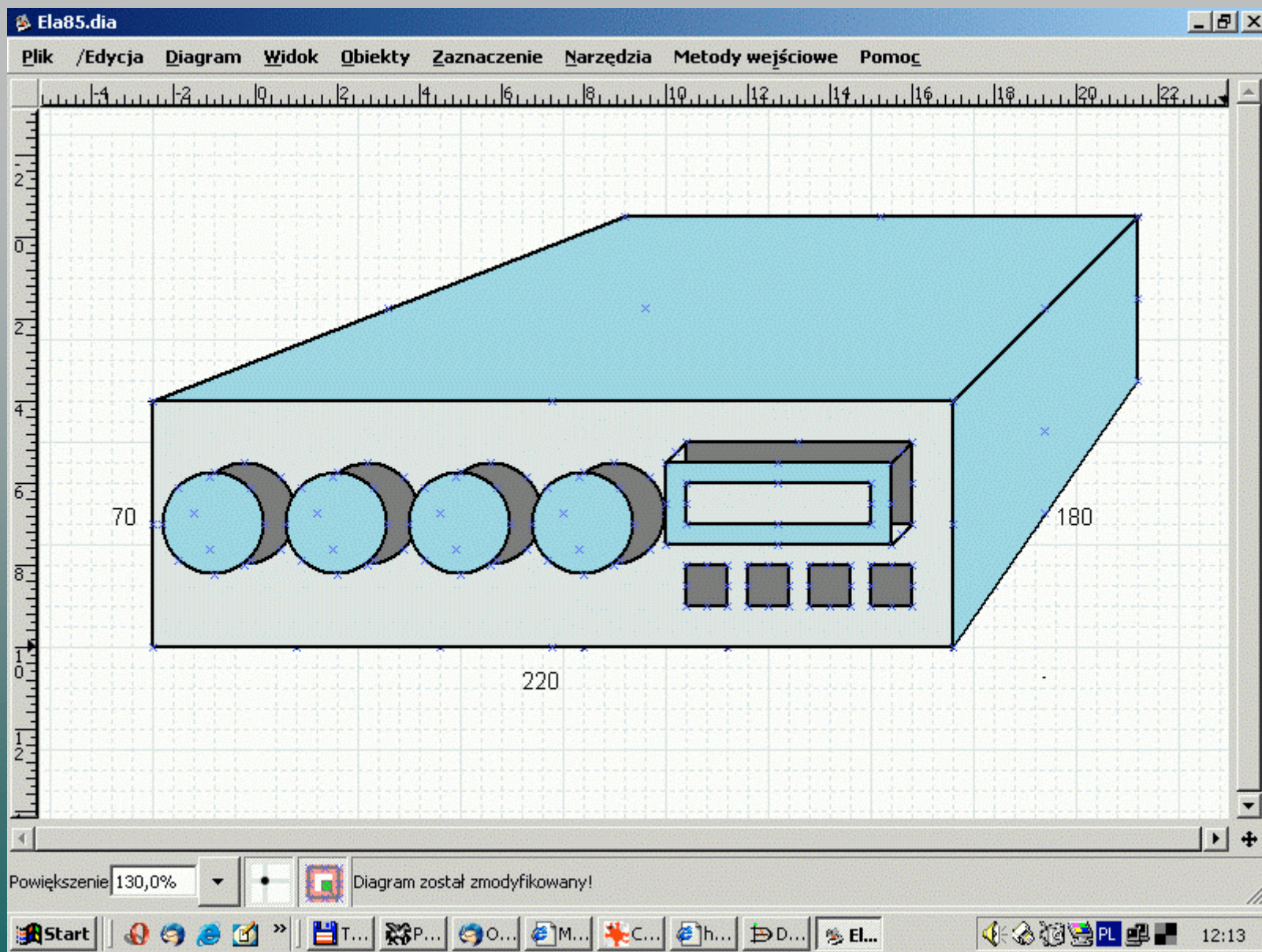


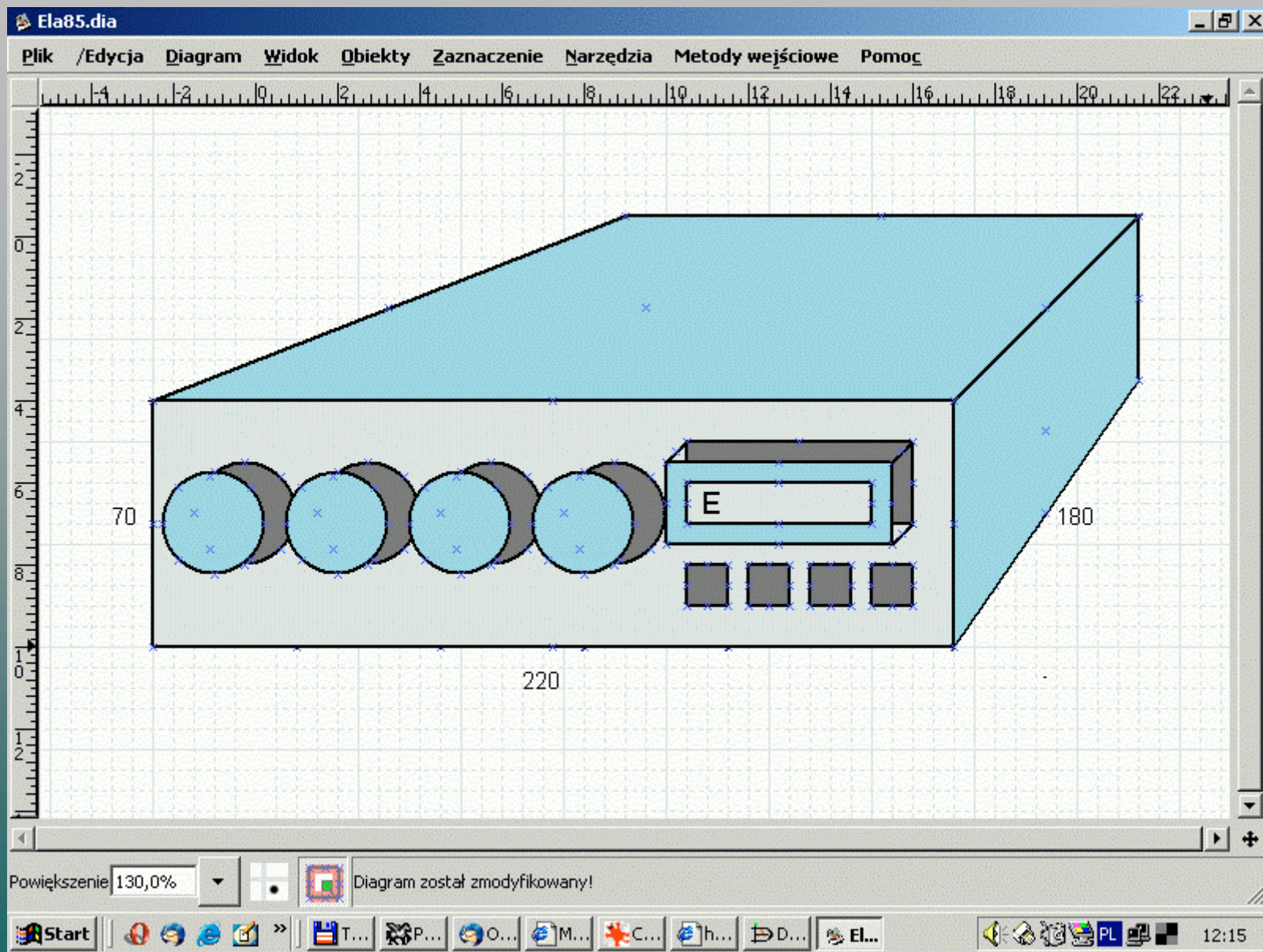


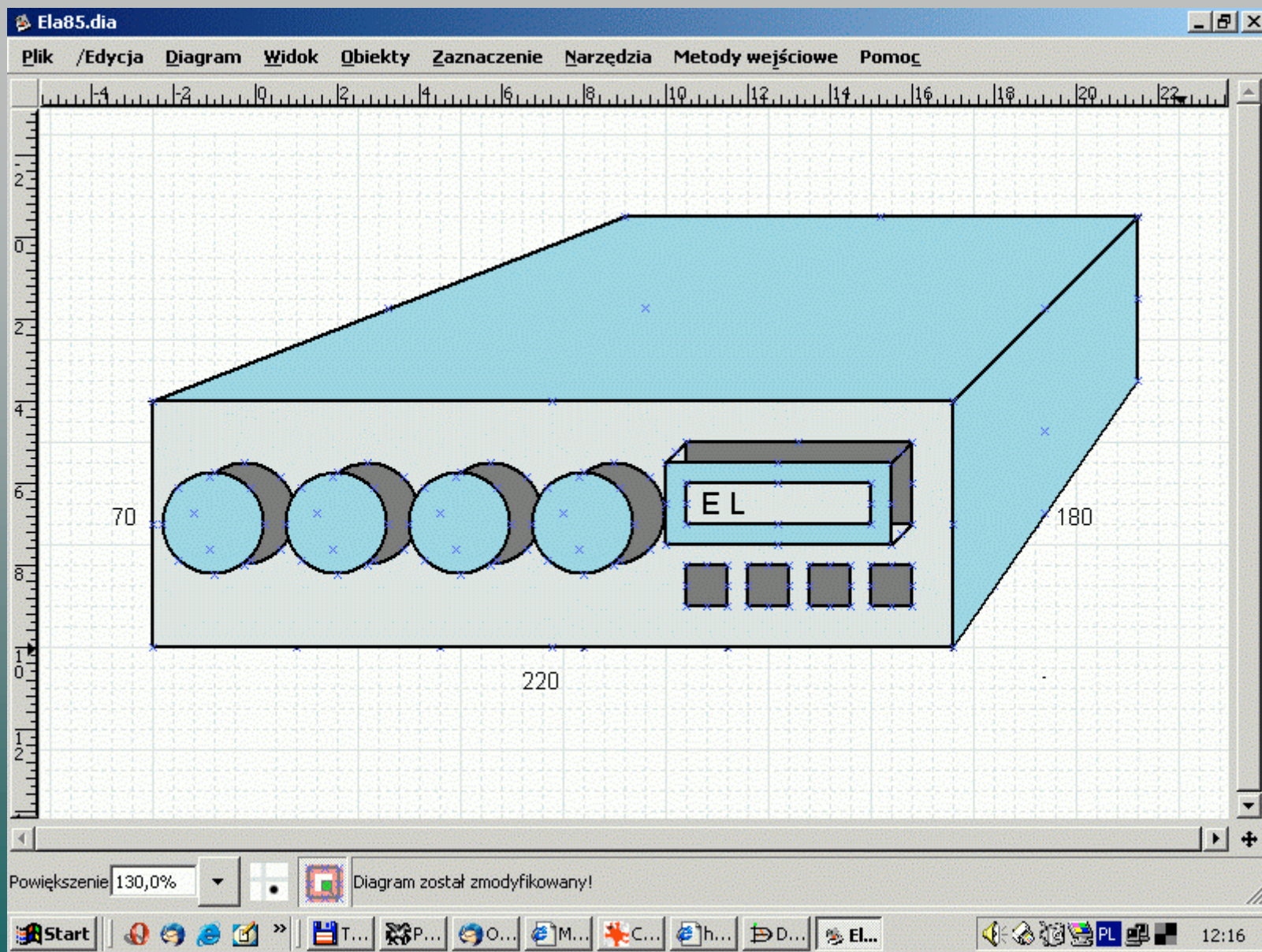


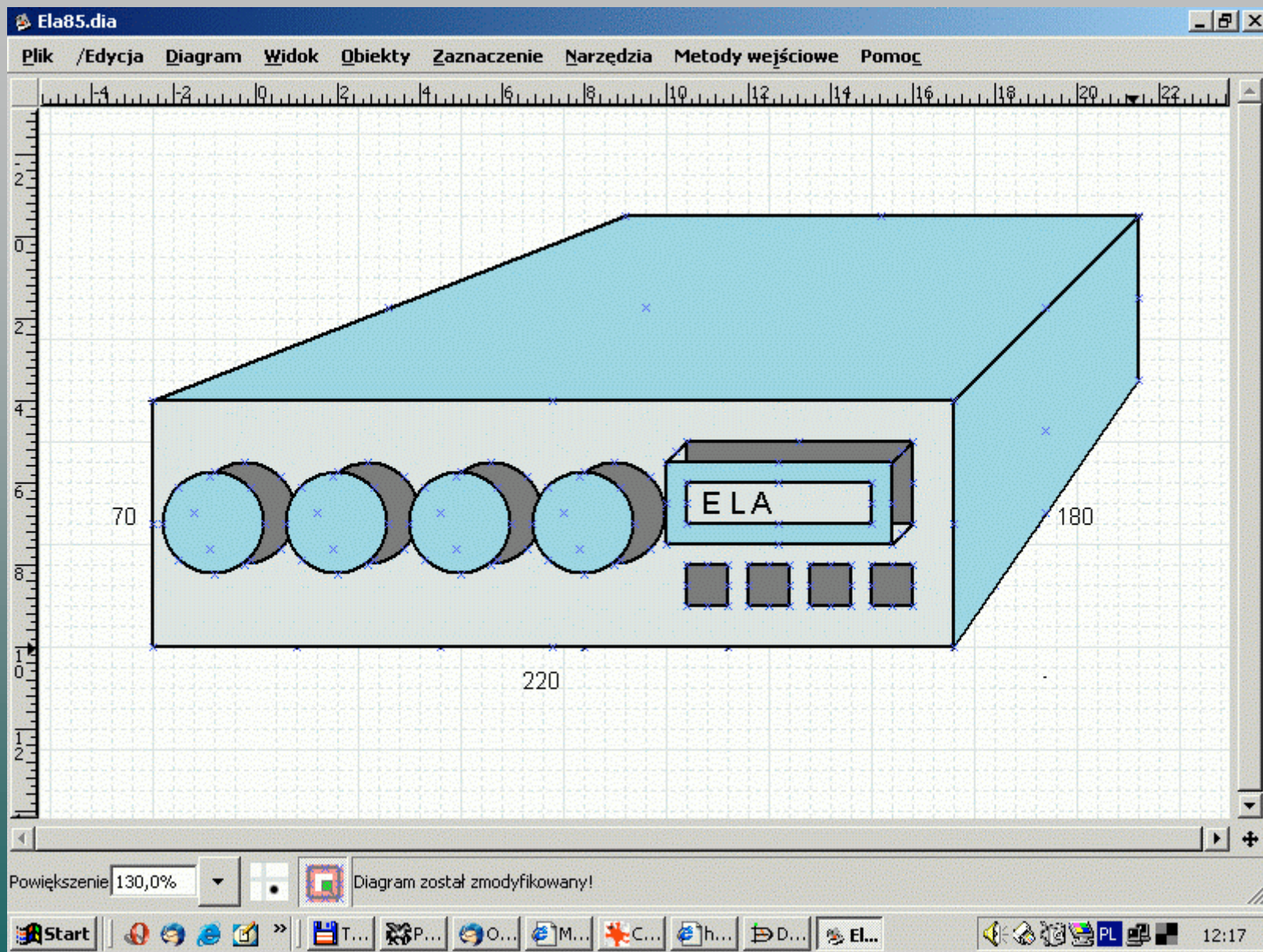


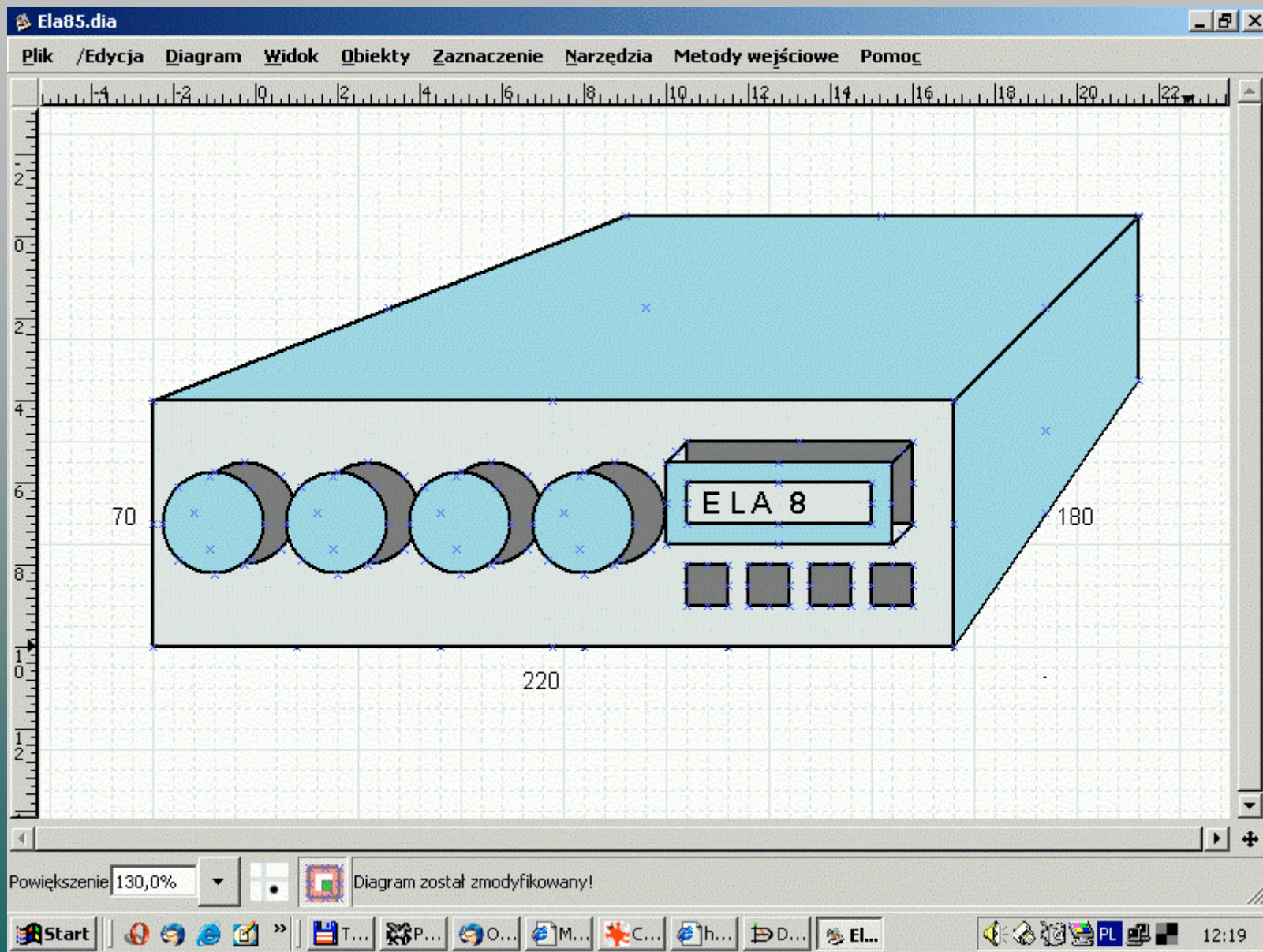














SIM600 Quad Band GSM/GPRS/EDGE Module



General features

Quad-Band GSM/GPRS 850/
900/

1800/ 1900 MHz
GPRS/EGPRS multi-slot class
12

GPRS mobile station class B
Compliant to GSM phase 2/2+

- Class 4 (2 W @ 850/900 MHz)
- Class 1 (1 W @

1800/1900MHz)

Dimensions: 54 * 33 * 2.5 mm

Weight: 14 g

smart
positioning

iTrax MP Family

iTrax300

iTrax300

OEM GPS Receiver Module

- **iTrax MP Compatible receiver**
- **Ultra High Sensitivity
with SiRFstarIII**
- **Market leading
Navigation Performance**
- **Extremely Fast TTFF**



OEM receiver for many Applications

Fastrax iTrax300 OEM GPS receiver module enables high performance navigation in the most stringent applications and solid fix even in harsh GPS visibility environments.

The iTrax300 receivers are ideally suited for both industrial tracking and navigation systems and battery operated consumer products like sports accessories, handheld computers, asset tracking devices, vehicle navigation devices and mobile phones.

iTrax300 Key Features:

- iTrax MP compatible
- SiRFstarIII chip set
- Tiny form factor – 16.2mm x 18.8mm x 2.3mm
- Low power consumption: 110mW @ 3.0V
- Ultra High Sensitivity –158 dBm (Tracking)
- NMEA & SiRF binary protocols
- Two serial ports
- 1PPS output
- GPIO available for custom purposes
- WAAS/EGNOS/MSAS support

The Push-to-Fix™ mode keeps the GPS time and satellite data valid allowing fast navigation fix on demand.

General: L1 frequency, C/A code (SPS)
20 independent tracking channels
Separate search and acquisition engine

Update rate: 1 fix/s (user configurable)

Accuracy: Position: 1.5 m (CEP50)
1.8 m (CEP95)
Velocity: 0.1m/s
Time: +/-1µs

TTFF: Cold Start (out of the box): 40s typ.
Warm Start 30s typ.
Hot start: 2s typ.

Sensitivity: Acquisition (cold): -143dBm
Navigation: -158dBm
Tracking: -158dBm

Power Drain (3.0V):

Navigating 1 fix/s: 110mW typ.
Stand-by state: 3mW typ.
Backup state: 45 µW typ.

Operating voltage:

Main Supply: +3.0V..3.3V
Back up Supply: +2.5V..3.3V

1 - ON_OFF	1PPS - 30
2 - BOOT	GPIO8 - 29
3 - GPIO14	VDD - 28
4 - GPIO2	GPIO10 - 27
5 - GND	GND - 26
6 - GPIO15	GND - 25
7 - GPIO4	RF - 24
8 - WAKEUP	GND - 23
9 - XRESET	GND - 22
10 - NC	NC - 21
11 - GND	GND - 20
12 - GPIO13	RXDB - 19
13 - GPIO1	RXDA - 18
14 - VDD_BACKUP	TXDA - 17
15 - GND	TXDB - 16

Operating temperature: -40C*..+85C

* Increased TTFF times may occur when operating temperature is between -40C and -30C

Storage temperature: -40C..+85C

I/O ports: 30 contact LGA
Two asynchronous serial ports
1PPS output
8xGPIO (one interrupt capable)

Protocol: NMEA 0183

SIRF Binary Protocol

Dimensions: 16.2mm x 18.8mm x 2.3mm (2.5 max)

Weight: 1.6 g

Antenna Input: LGA pad, 50ohm

Antenna bias: same as VDD

Chipset: SIRF GSC3-LP

SW Features: Adaptive TricklePower

Push-to-Fix

Extremely fast TTFF

Application board:





Dziękuję za uwagę