

# Phase 2 Hardware Development



*ARISS Meeting at CSA  
April 5, 2002*

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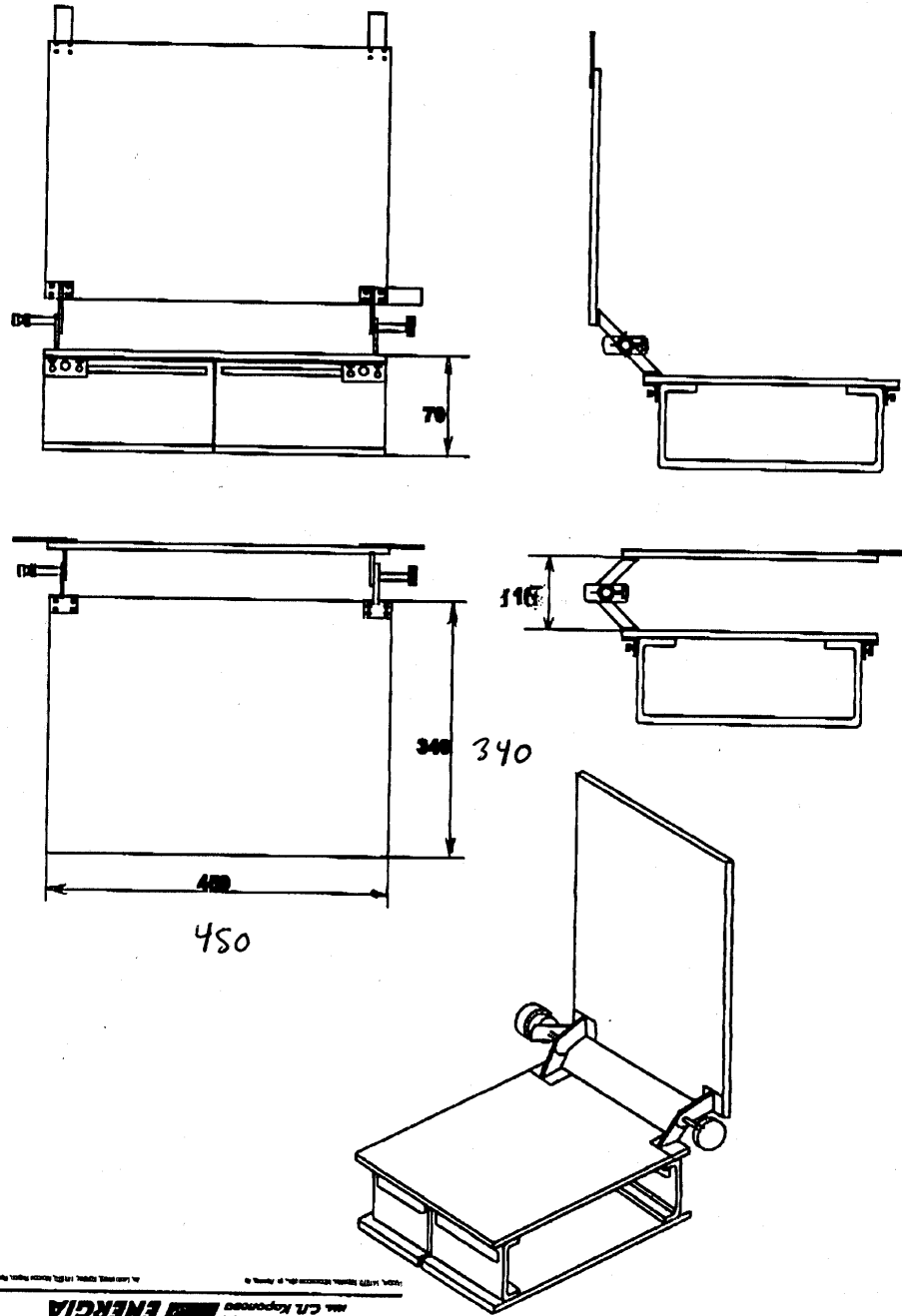
# Phase 2 System Description

- Installed in Service Module
- Uses new ARISS antenna systems
- Phase 2 system consists of:
  - SAREX Phase 1 70 cm radio hardware (Packet Module, Ericsson 70 cm Radio, adapter module, headset, cables)
  - Kenwood TM-D700 VHF/UHF radio system
  - Yaesu FT-100D HF radio system
  - Specially built Energia Power Supplies
  - Foldable Mounting Device

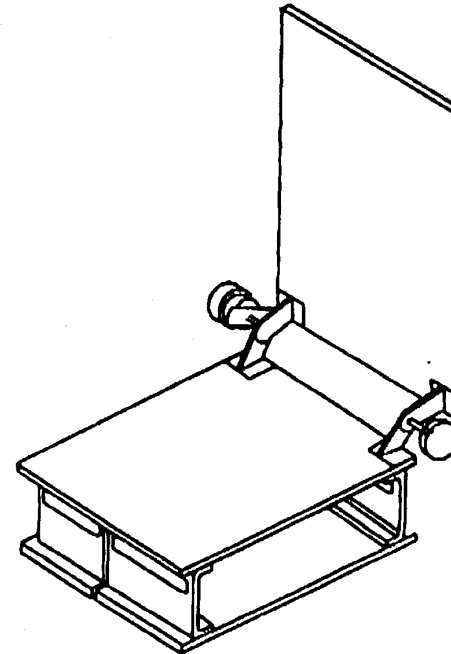
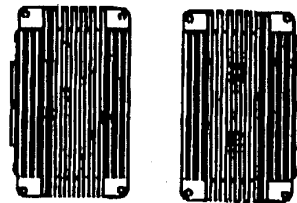
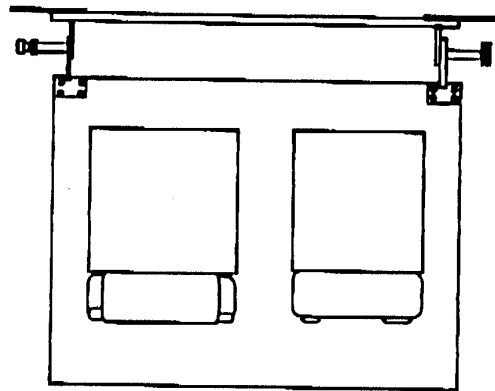
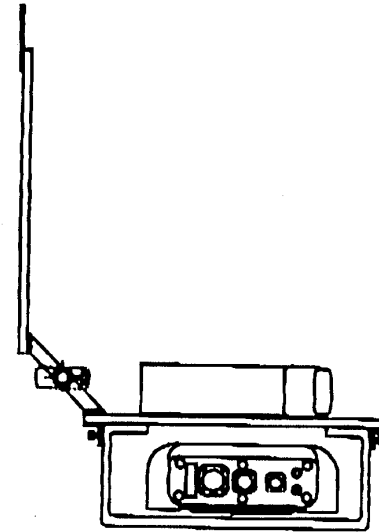
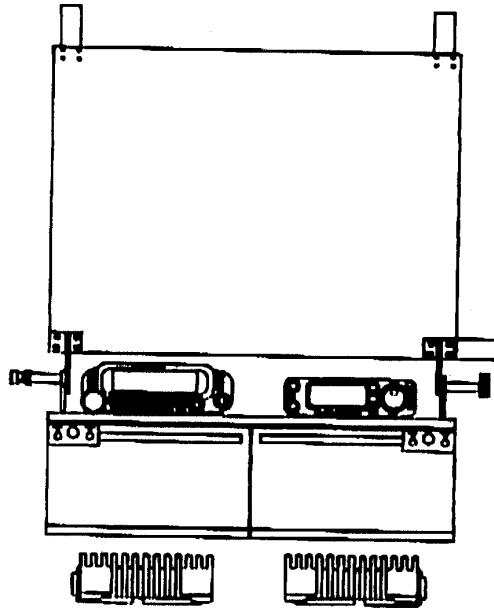
# Station 423



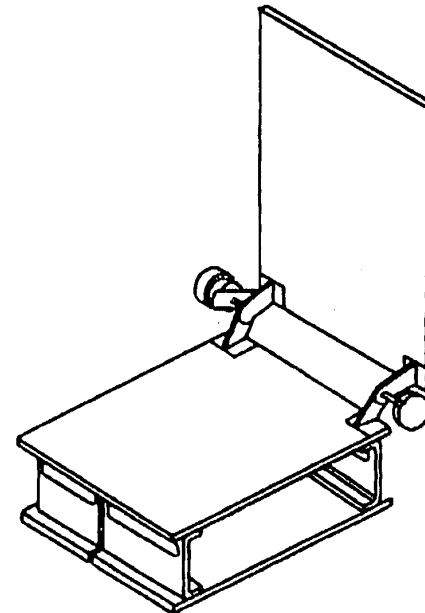
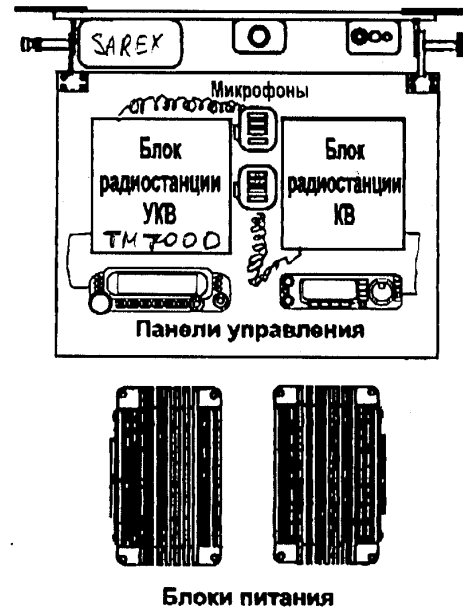
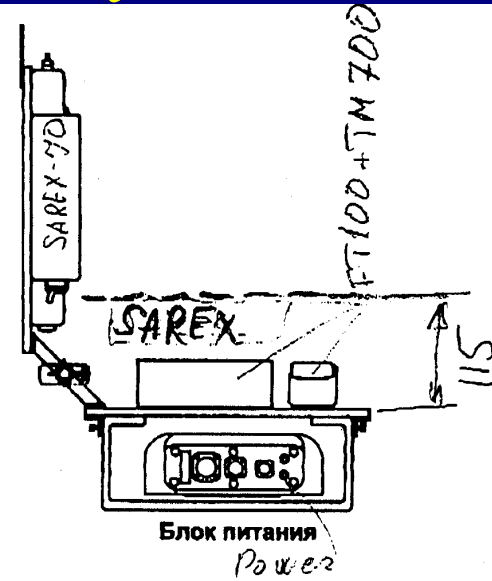
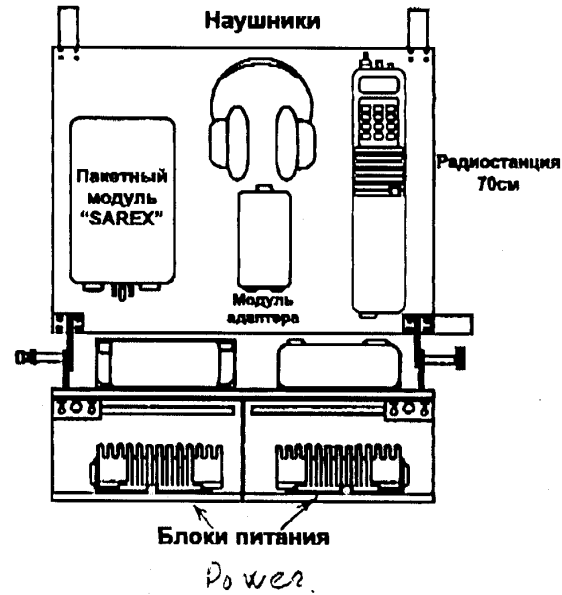
# Phase 2 System Layout



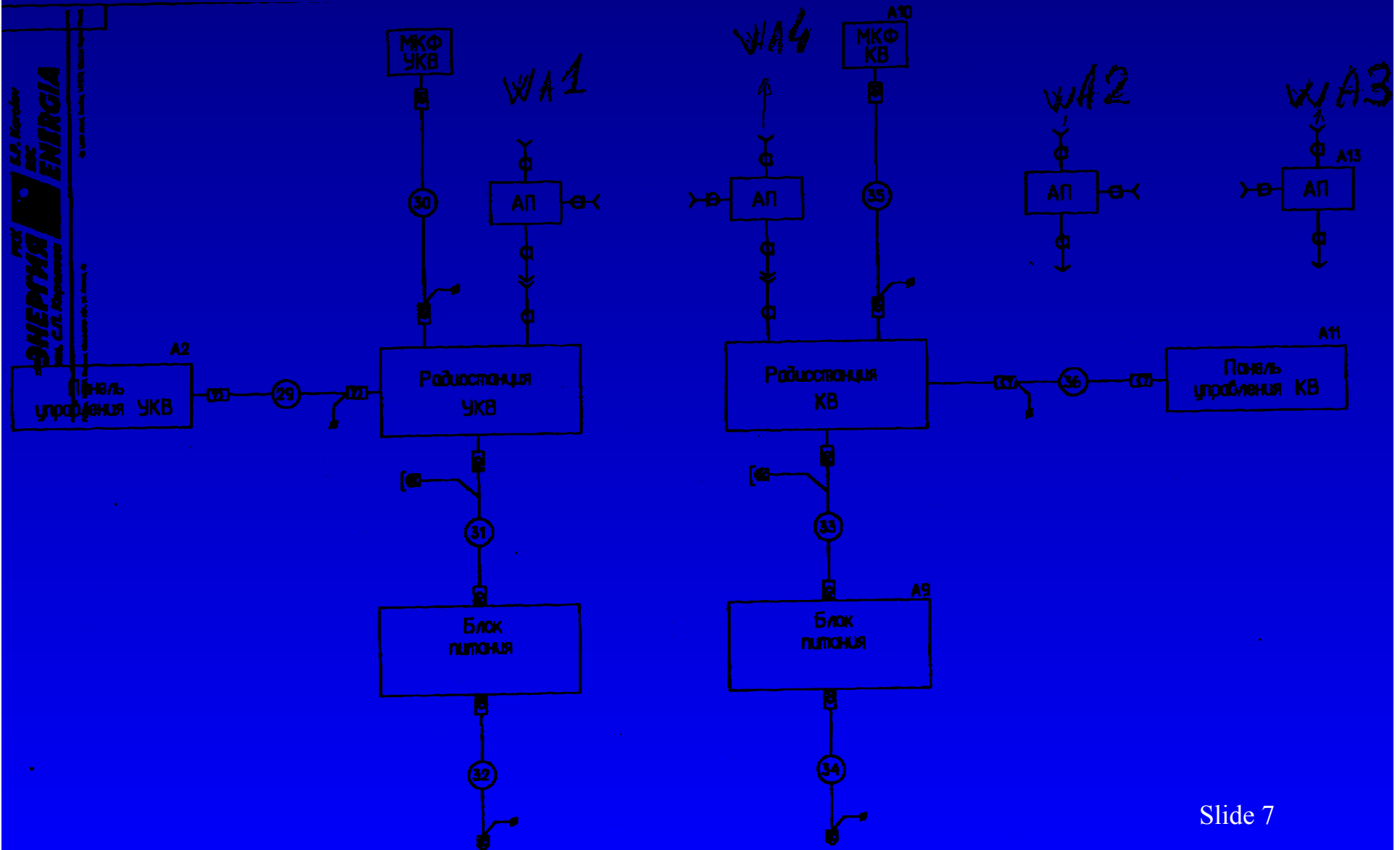
# Phase 2 System Layout



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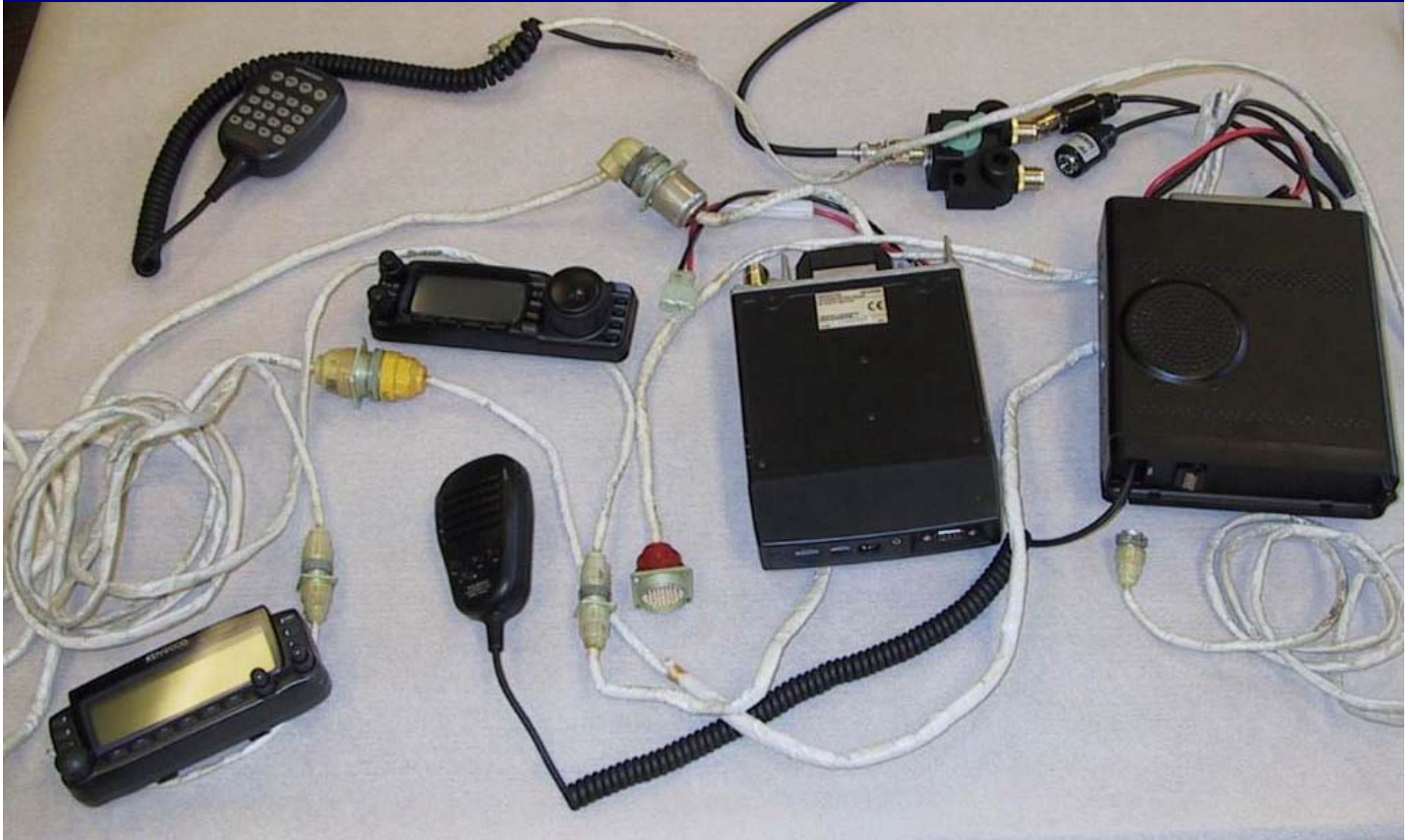
# Phase 2 Antenna System Schematic







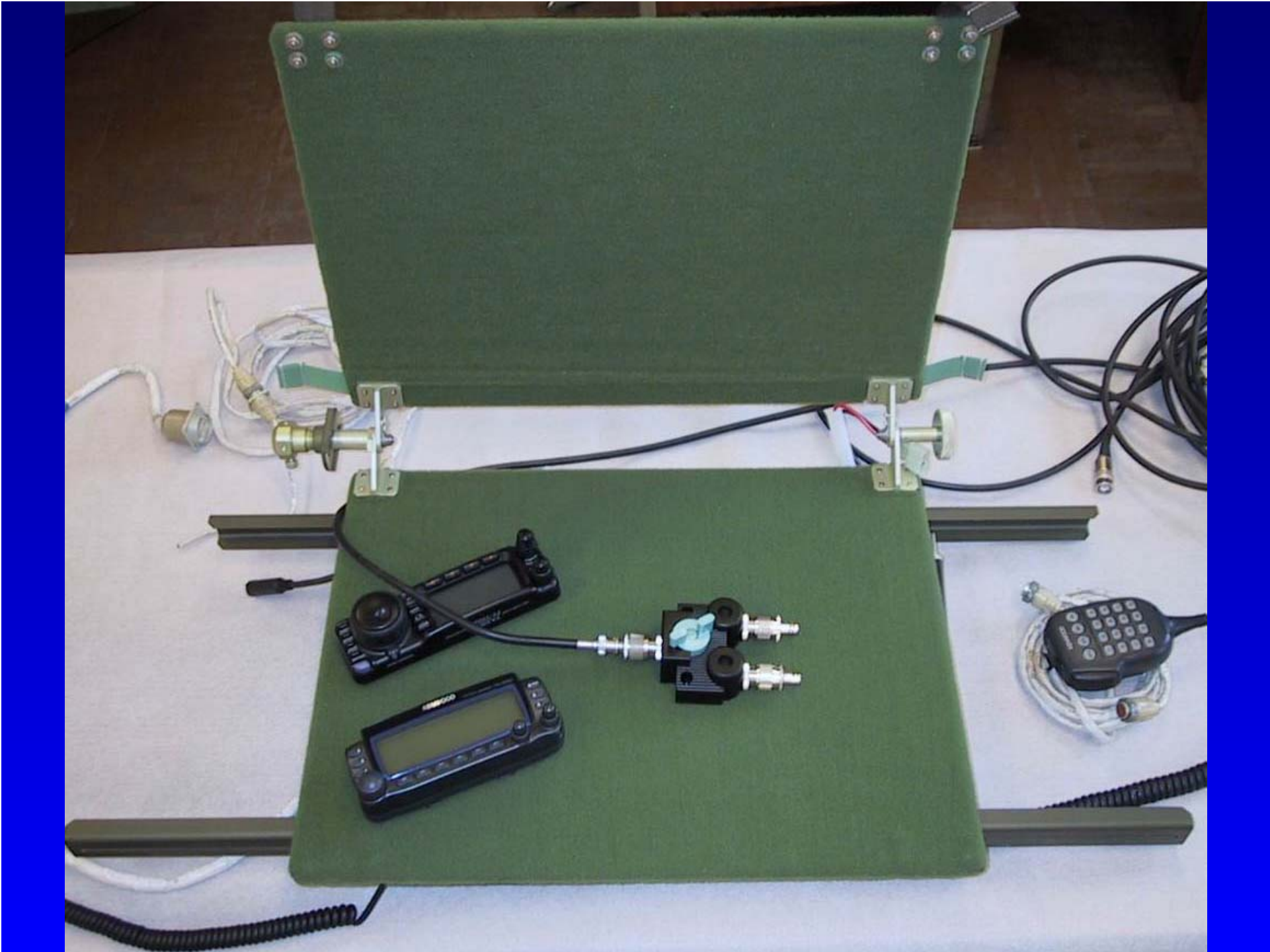


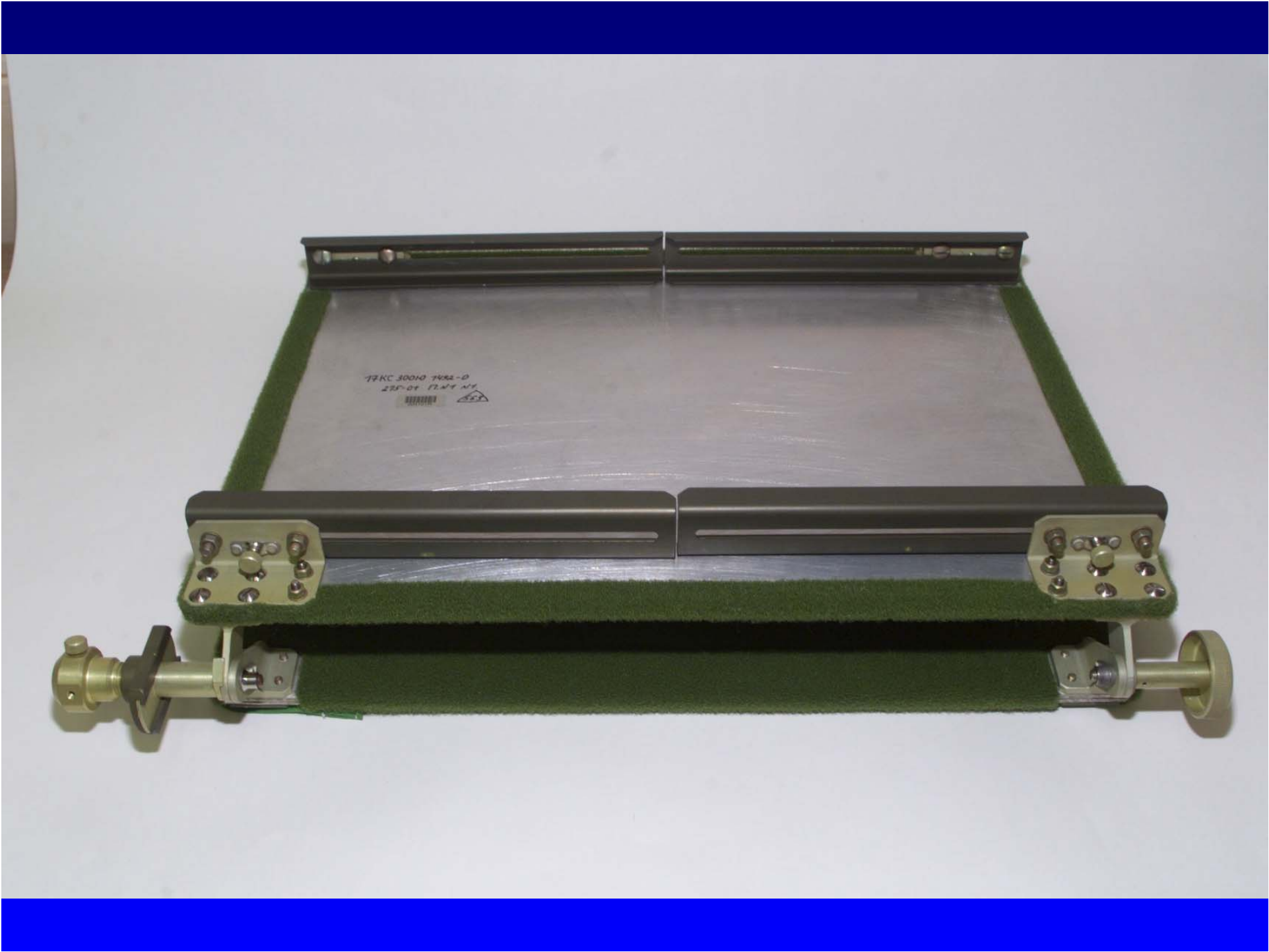


# Foldable Mounting Device





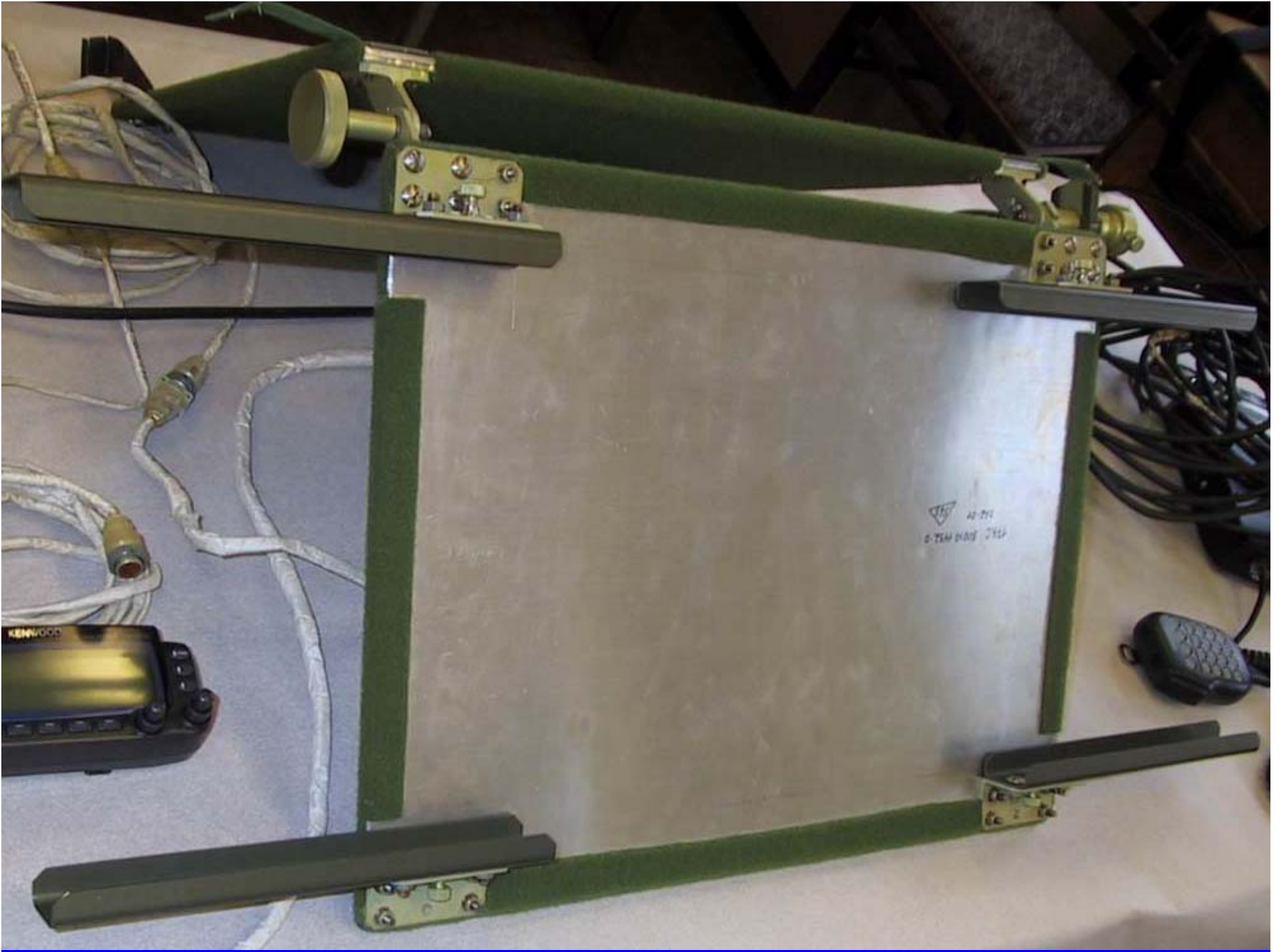












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S-TEAM 0103 2112

KENWOOD





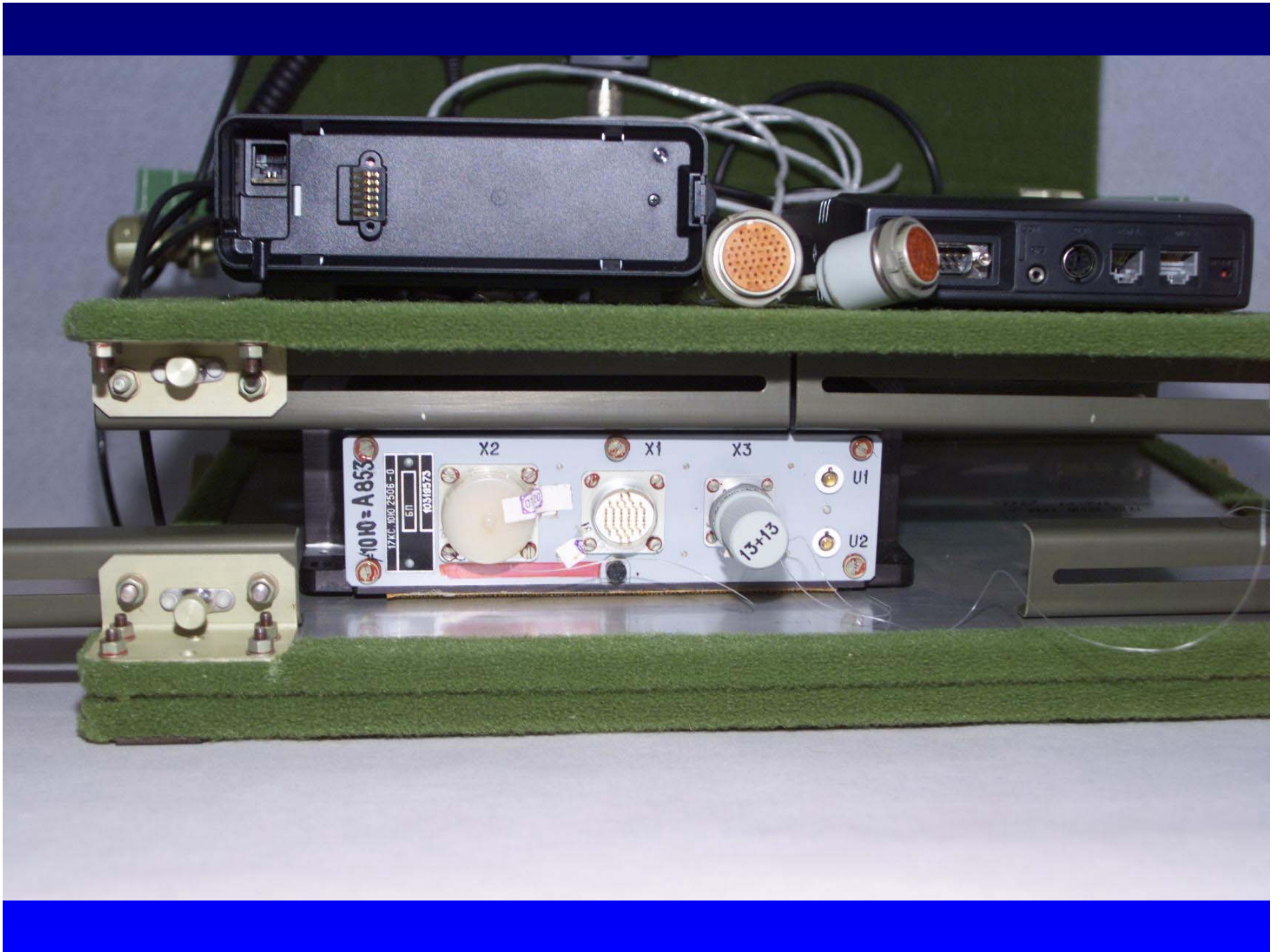




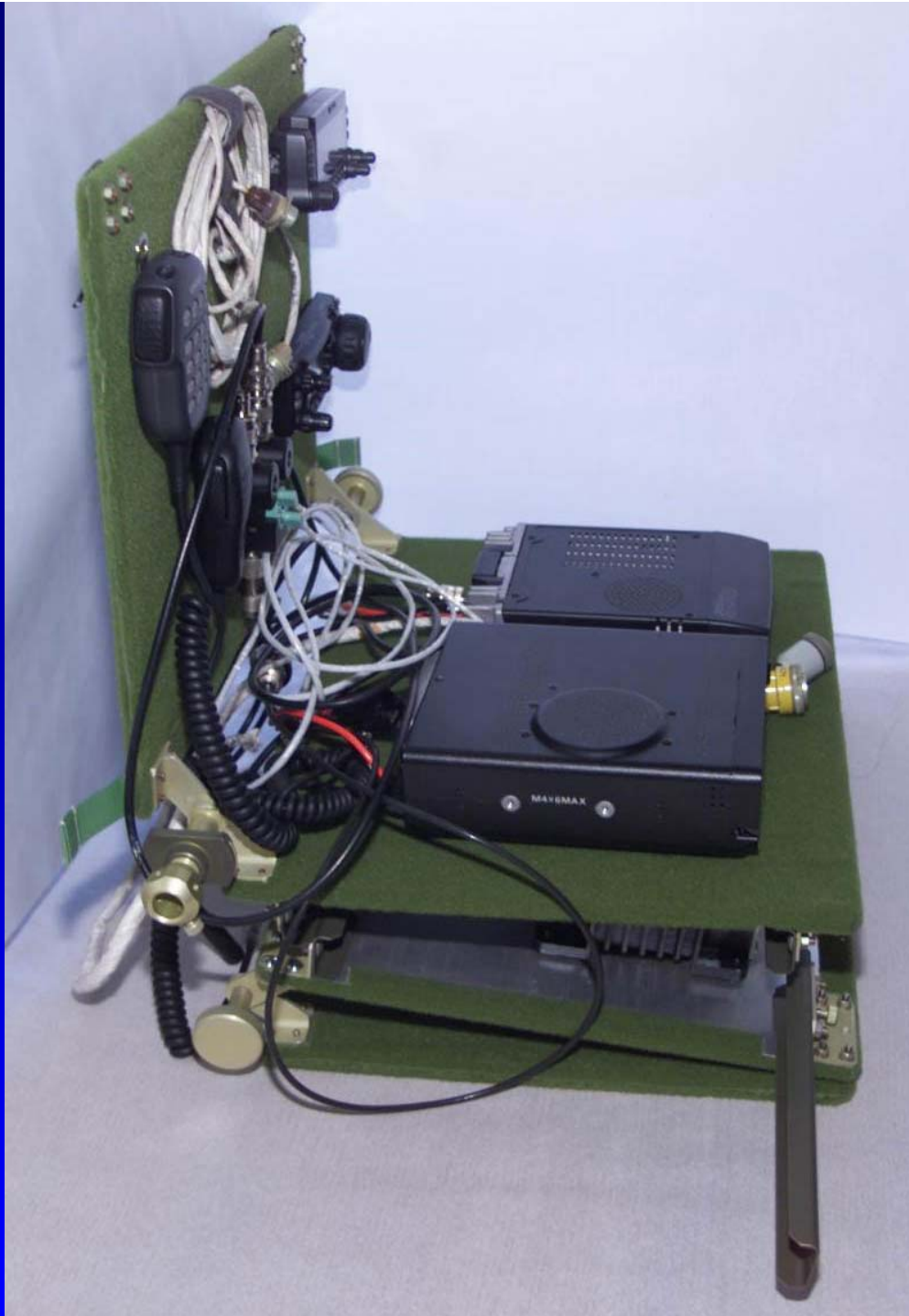


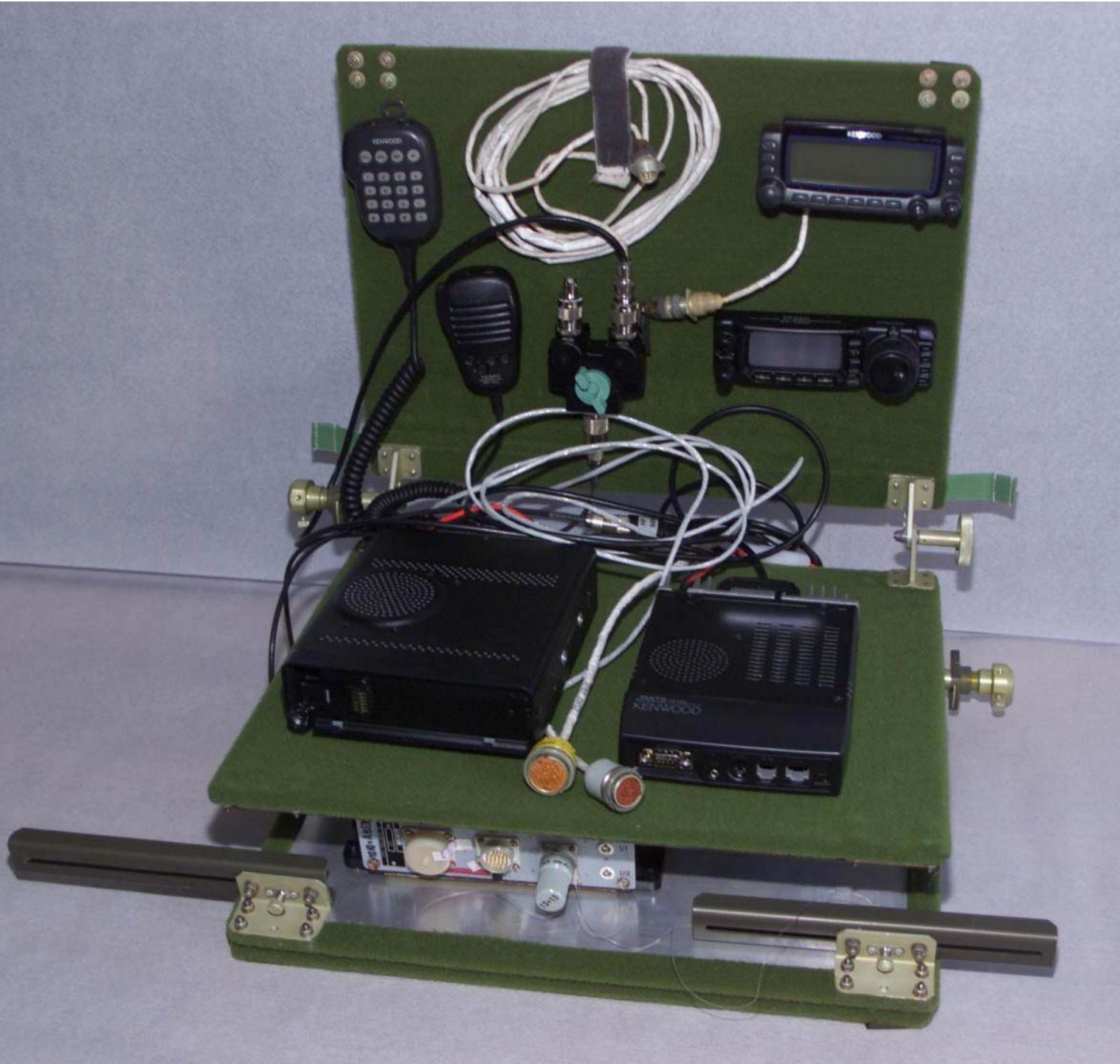






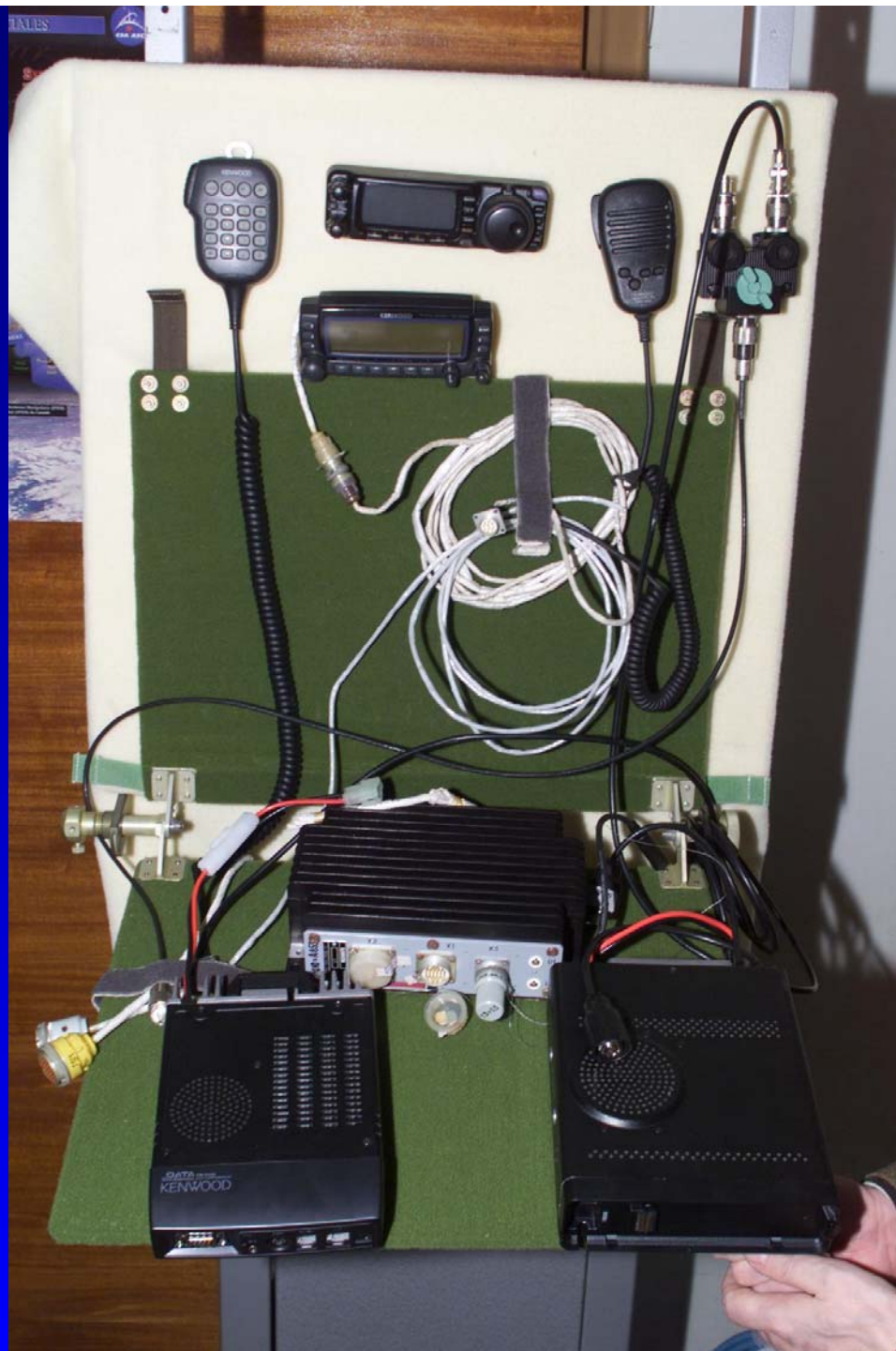








**4 meter cable  
Length between  
Transceivers and  
microphones,  
control panels, &  
speakers**





# Energia Thoughts on Hardware Requirements and Training

- RSC "E" requires 4 complete flight packages of Phase 2 equipment
- Crew training of the onboard equipment will be carried out by RSC "E" (2-4 hours).
- GCTC will use for training similar equipment, which they already have (TM 700).
- ARISS-US equipment requirements still needs to be determined
- For RSC "E" is required :
  - NASA supplied Cassette Speaker Kit (SED33105462-301) (for R3K - 2)
  - NASA Supplied Crewmember, Headphone Cable (305 mm) (for R3K – 2)

# FT-100D Accessories

## Energia Requirements

### (4 kits)

ATAS-100 - Active-Tuning  
Antenna System

ATBK-100 Antenna Base Kit

FC-20 for R3K (2)

FTS-27

FP-1023 for R3K (2)

FP-1030 for R3K (2)

LL-5 for R3K (2)

VL-1000

MH-36b6j DTMF Hand  
Mikrofone

MMB-48

MMB-62

MMB-67

SP-6 for R3K (2)

SP-7 for R3K (2)

MLS-100 for R3K (2)

VC-25 for R3K (2)

TCXO-8

XF-117A

XF-117C

XF-117CN

YH-77STA

YSK-100

T9021925 Power cable

CT-58 - interface cable

CT-39 - Packet  
interface cable

CT - 62 - CAT  
interface cable

Antenna Diplexer  
HF/UHF

Cable between a  
Transceiver FT-100  
control panel - 6  
pieces

# **Kenwood TM-D700 Accessories**

## **Energia Requirements**

### **(4 kits)**

**PG-4X**

**PG-4T**

**PG-5A**

**PG-2N**

**MC-53DM - DTMF**

**PS-33 for R3K**

**PG-3B**

**VS-3**