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ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR (U)
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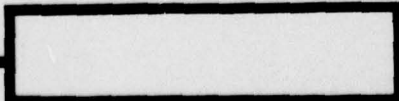
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K. Naeser



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ID(RS)I-1390-76 ✓

EDITED TRANSLATION

FTD-ID(RS)I-1390-76

15 October 1976

FTD-76-C-001027

ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR

By: K. Naeser

English pages: 4

Source: Vermessungs Technik, Vol 23, Nr 11,
November 1975, PP. 432-433.

Country of origin: East Germany

Translated by: Gale M. Weisenbarger

Requester: FTD/ETCK

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limited.

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ID(RS)I-1390-76

Date 15 Oct 1976

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ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR

K. Naeser

A series of desk-top electronic calculators from the USSR with the type designation ISKRA is becoming known and some types from the series are to be exported to the GDR. The series begins with simple four-function calculators and goes on to programmable calculators with the possibility for connecting external input and output devices. Table 1 gives a summary of the most important parameters of the ISKRA types.

Input is accomplished basically with a keyboard. For inputting commands there is a variously dimensioned function keyboard. A special input for commands is supplementarily provided in the case of the ISKRA 122. The ISKRA 123 has limited programmability. It stores a program of up to 71 commands which are to be input using the function

keyboard. The ISKRA 125 is completely programmable and also has comparison and jump operations. It has a special programming language. Program input can also be accomplished using magnetic cards or cassette magnetic tape. It is the basic model for a series of programmable desk-top calculators which differ from each other by various interchangeable microprograms. For ISKRA types 110-123 output is accomplished with digital display tubes. Only in the ISKRA 125 is a beam deflection tube used for display. The ISKRA 122 has a supplementary output channel and with the ISKRA 125 it is possible to connect a printer or to output onto cassette magnetic tape.

The operation times for addition and subtraction are between 0.02 and 0.05 s and for multiplication and division between 0.15 and 0.35 s.

The most important functions which are realized in individual types through permanent wiring are shown in Table 2.

From: Electronic desk-top calculators from the USSR.
Organization 8 (1974) 8, pg. 47-49.

Table 1. Parameters of ISKRA calculators.

ISKRA	110	111	112	121	122 123	125
(1) Wortlänge in Dezimalstellen	8	12	12	16	16	12
(2) Festkomma nach n Stellen; n =	0; 2; 4; 6	0; 1; 2; 3; 6; 10	(3) 0 bis 12	0 bis 16	0 bis 16	0 bis 12
(4) Gleitkomma	(5) nicht vorhanden	nicht vorhanden	nicht vorhanden	nicht vorhanden	nicht vorhanden	vorhanden
(6) Operandenspeicher	3	3	3	3	3	bis 100
(7) Konstantenspeicher	3	1	1	2	3	
(8) Zwischenwertspeicher	—	—	—	2	3	
(9) Masse [kg]	3,5	7	8	15	15	25
(10) Abmessung [mm ³]	260 × 280 × 110	365 × 305 × 120	365 × 305 × 120	405 × 385 × 127	405 × 385 × 127	(11) etwa 0,06 m ³

KEY: (1) Word length in decimal places; (2) Fixed decimal after n places; (3) to; (4) Floating decimal; (5) Not present; (6) Operand storage; (7) Constant storage; (8) Intermediate value storage; (9) Weight (kg); (10) Dimensions (mm³); (11) Approximately.

Table 2. Functions of ISKRA calculators. ((KEY: 1)

Addition/subtraction; 2) Multiplication/division; 3) Reciprocal division; 4) Percent calculation; 5) Operations with constants; 6) Summation in storage; 7) Raising to powers; 8) Extraction of roots; 9) Automatic rounding; 10) Operations with brackets; 11) Sign change; 12) Trigonometric functions; 13) Hyperbolic functions; 14) Natural logarithms; 15) Conversion of degree measure into arc measure; 16) Comparison; 17) Conditional operations; 18) With any exponents.))

ISKRA	110	111	112	121	122	123	125
(1) Addition/Subtraktion	x	x	x	x	x	x	x
(2) Multiplikation/Division	x	x	x	x	x	x	x
(3) Kehrwertdivision		x	x	x	x	x	x
(4) Prozentrechnung		x	x				
(5) Operationen mit Konstanten	x	x	x	x	x	x	
(6) Summierung im Speicher		x	x	x	x	x	x
(7) Potenzieren				x	x	x	x ¹⁾
(8) Radizieren				x	x	x	x
(9) automatisches Runden					x	x	
(10) Operationen mit Klammern					x	x	
(11) Zeichenverschiebung						x	
(12) trigonometrische Funktionen							x
(13) hyperbolische Funktionen							x
(14) natürlicher Logarithmus							x
(15) Umrechnung Grad- in Bogenmaß							x
(16) Vergleichen							x
(17) bedingte Operationen							x

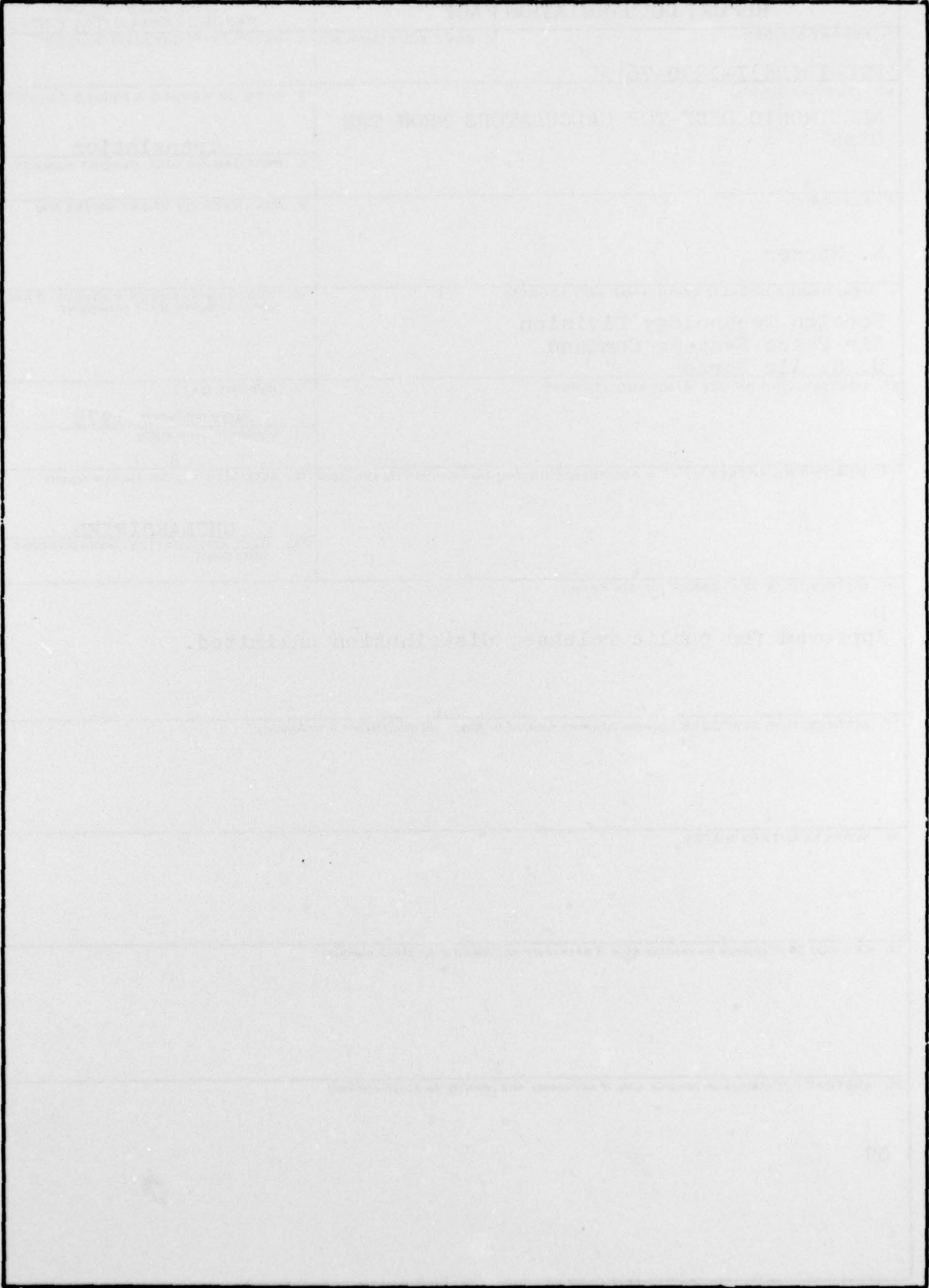
(18) ¹⁾ mit beliebigem Exponenten

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER FTD-ID(RS)I-1390-76 ✓	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR	5. TYPE OF REPORT & PERIOD COVERED Translation	
	6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) K. Naeser	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Foreign Technology Division Air Force Systems Command U. S. Air Force	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE November 1975	
	13. NUMBER OF PAGES 4	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) 09		

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