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MECHAUZ

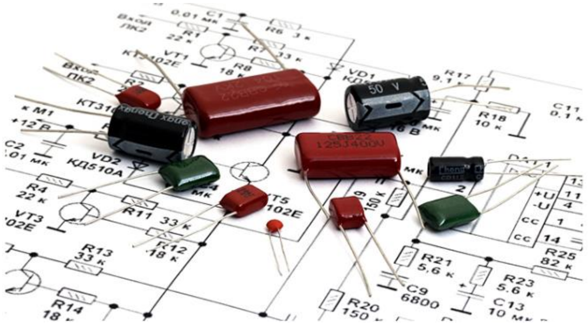
Tashkent State Technical University

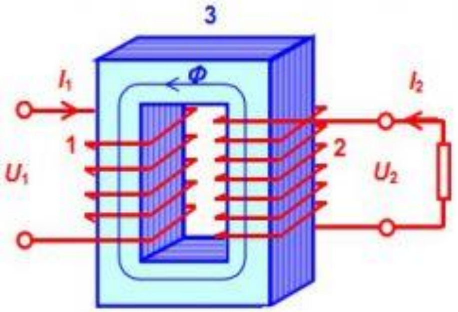
M. M. Abdullaev

Andijan, Uzbekistan, 2-6 October, 2023

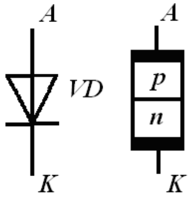
ΔΙΕΘΝΕΣ ΠΑΝΕΠΙΣΤΗΜΙΟ ΤΗΣ ΕΛΛΑΔΟΣ
SOUTH-EAST EUROPEAN RESEARCH CENTRE
VILNIUS TECH
LIEPAJA UNIVERSITY
Instituto Politécnico de Viana do Castelo
Andijan machine-building institute
TURIN POLYTECHNIC UNIVERSITY IN TASHKENT
Farg'ona Politexnika Instituti
Tashkent University of Information Technologies named after Muhammad al-Khwarizmi
Karshi Engineering Economics Institute
Tashkent State Technical University
Ministry of Higher and Secondary Specialised Education System of Uzbekistan

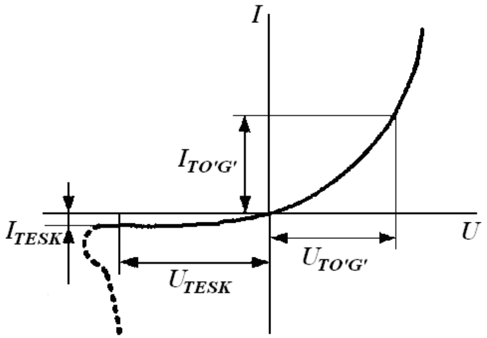
Passive discrete elements of schematics

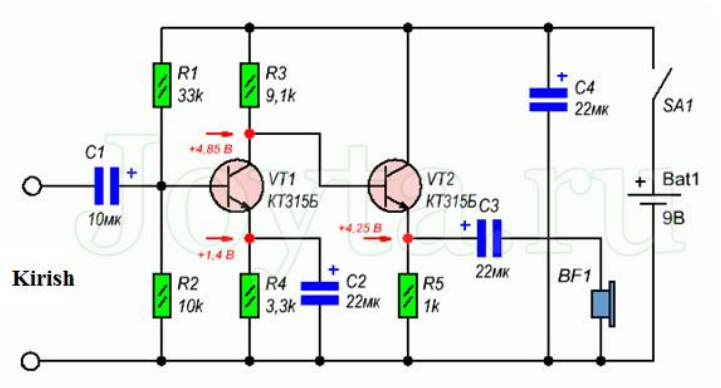




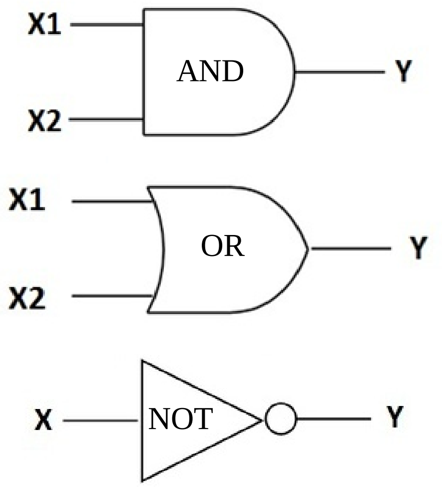
Active discrete elements of schematics



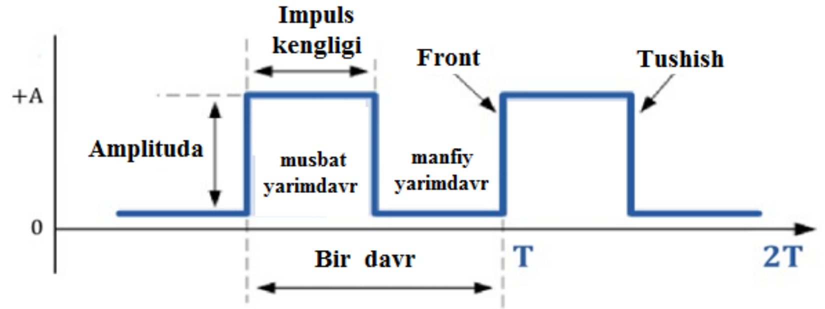


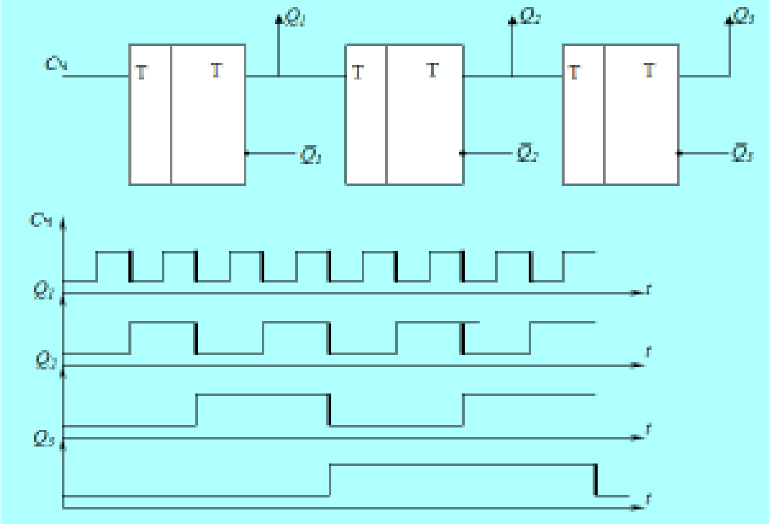


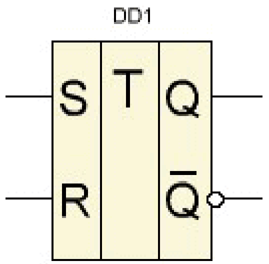
Digital schematic.

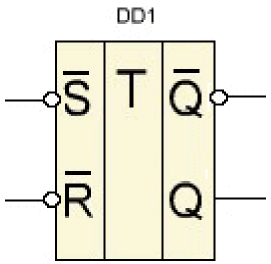


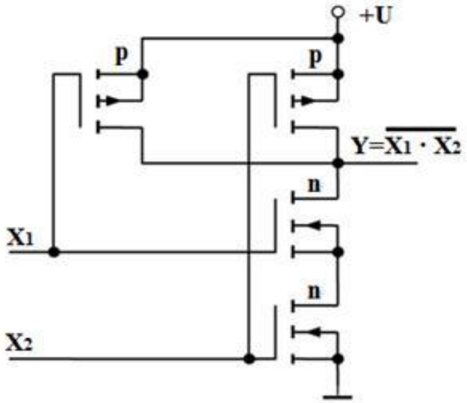
Logical functions.
Adders and halfadders
Encoders and decoders
Multiplexers and Demultiplexers
Memory elements–triggers
Registers.
Counting devices

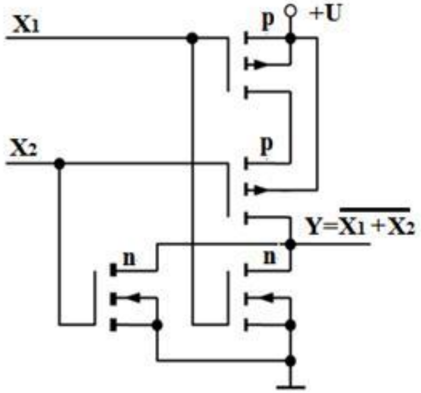






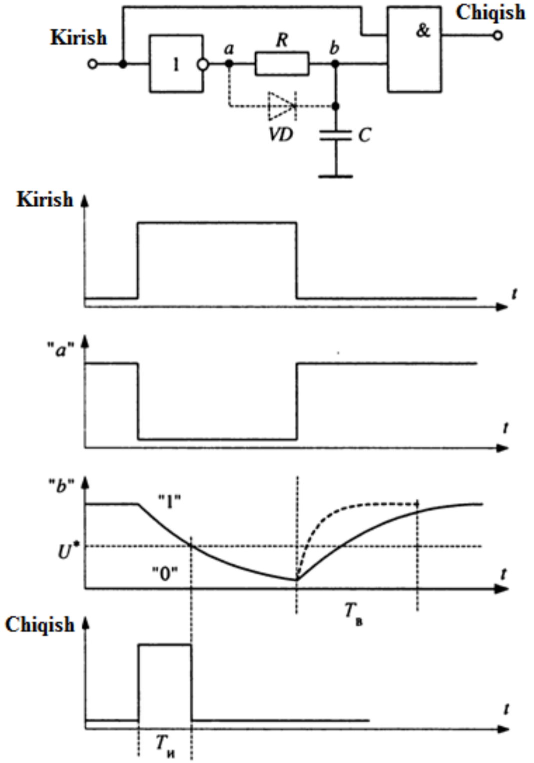


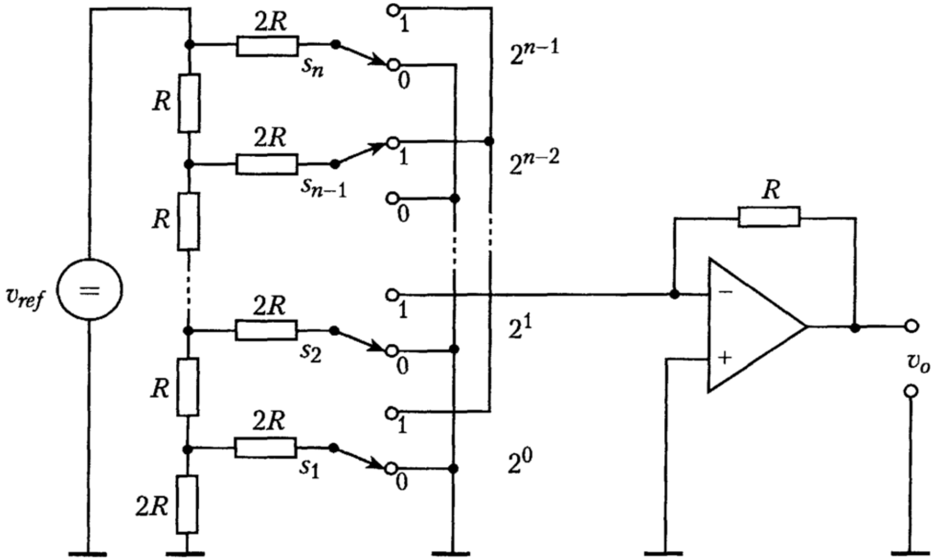


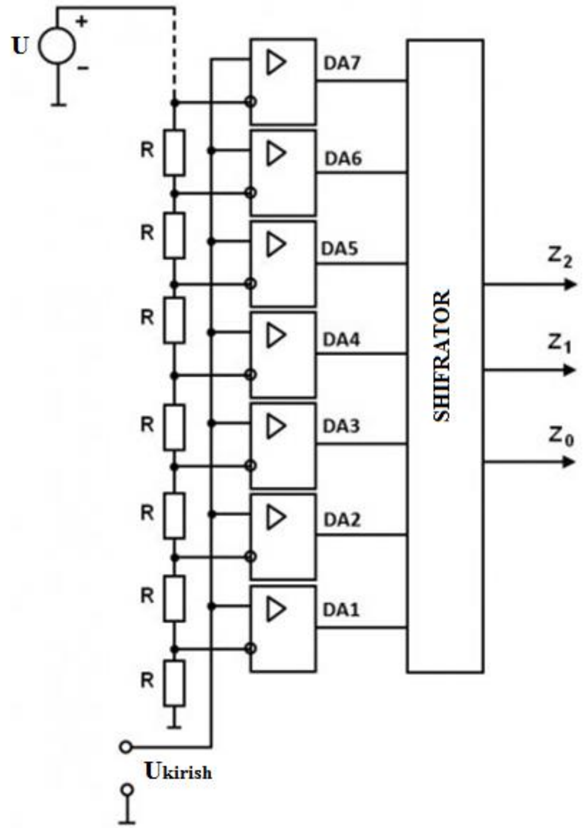


GENERATORS AND CONVERTERS

Clock pulses generators
Digital to analog converters
Analog to digital converters

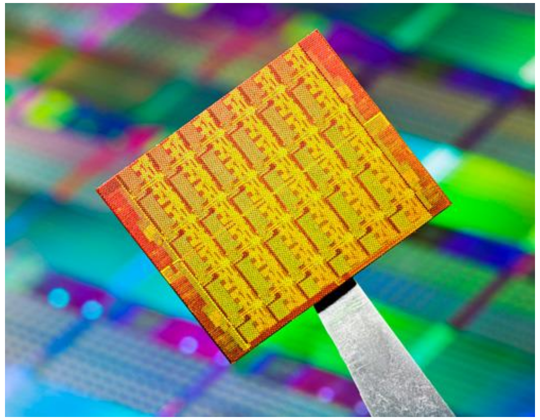


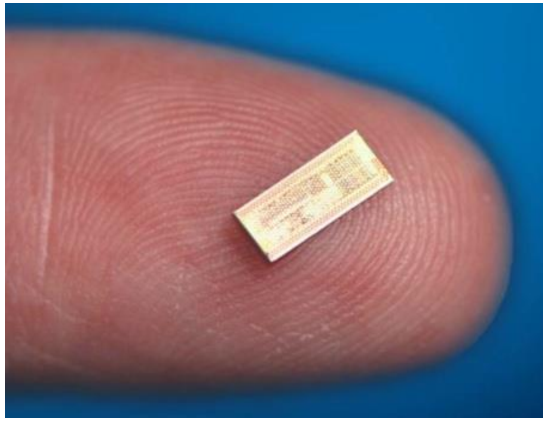




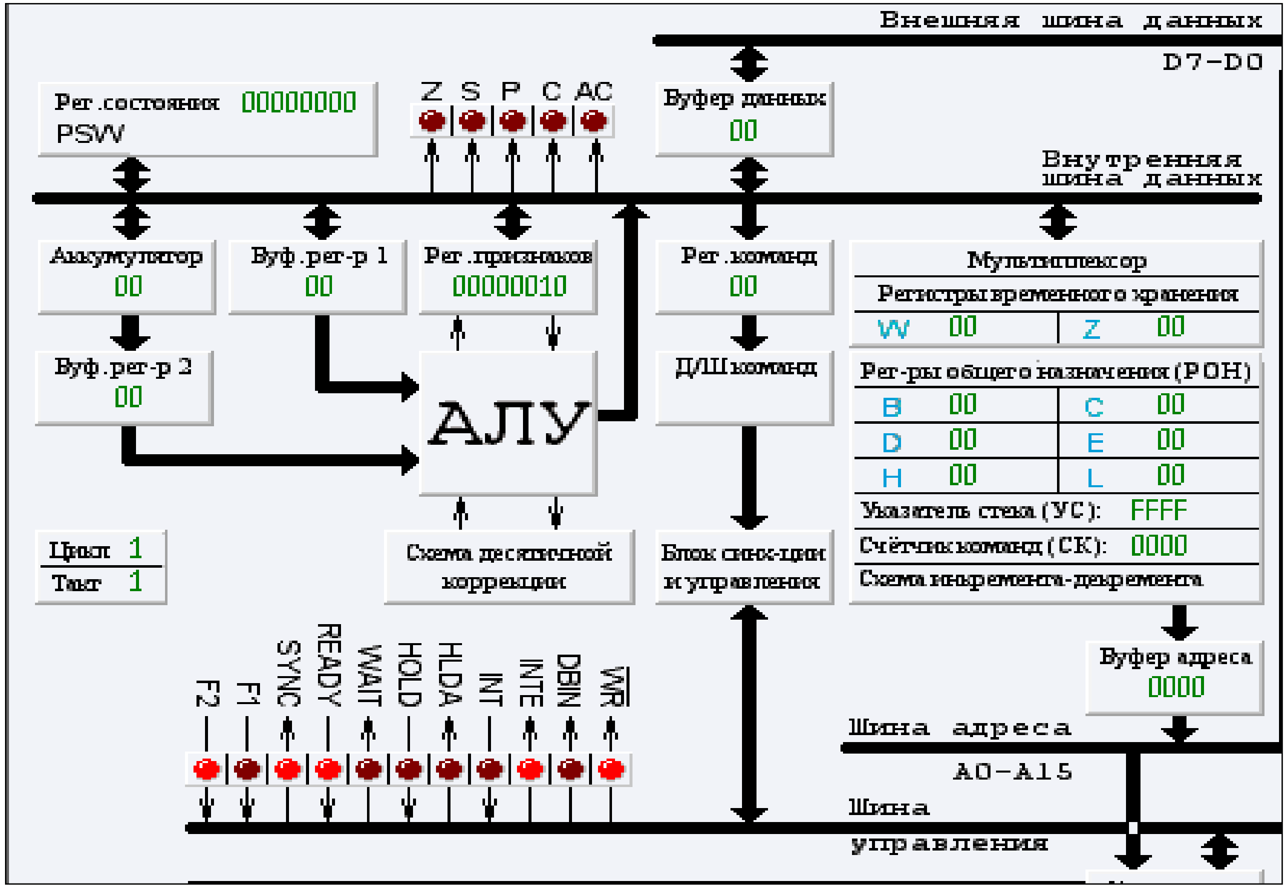
MICROPROCESSORS

The history of the creation of MP
Possibilities of using MP in the branches of modern technology and production





Internal structure of microprocessors

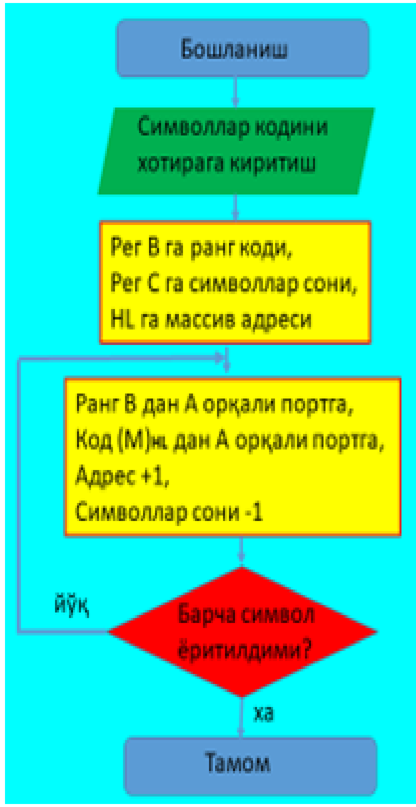


MICROASSEMBLER command system

№	Mnemonika	Sikllar soni	Taktlar soni	Natija belgilarini saqlovchi triggerlar: (S, Z, S, P)	Izox
1	MOV Ri, Rk	1	5	-----	Ri<= Rk
2	MVI Ri, data	3	10	-----	Ri<=data
3	LDA adr	4	13	-----	A <=M(adr)
4	STA adr	4	13	-----	M(adr)<= A
5	LDAX 2R	2	7	-----	A <= M(2R)
6	STAX 2R	2	7	-----	M(2R) <= A
7	LXI 2R, data16	3	10	-----	2R<= data16
8	LHLD adr	5	16	-----	HL <= (adr, adr+1)
9	SHLD adr	5	16	-----	(adr,adr+1) <= HL
10	SPHL	1	5	-----	SP <= HL
11	PUSH 2R	3	11	-----	(SP)+(SP-1)<=2R
12	POP 2R	3	10	-----	2R<= (SP)+(SP-1)
13	XCHG	1	4	-----	DE <=> HL
14	XTHL	5	18	-----	(SP) <=> HL

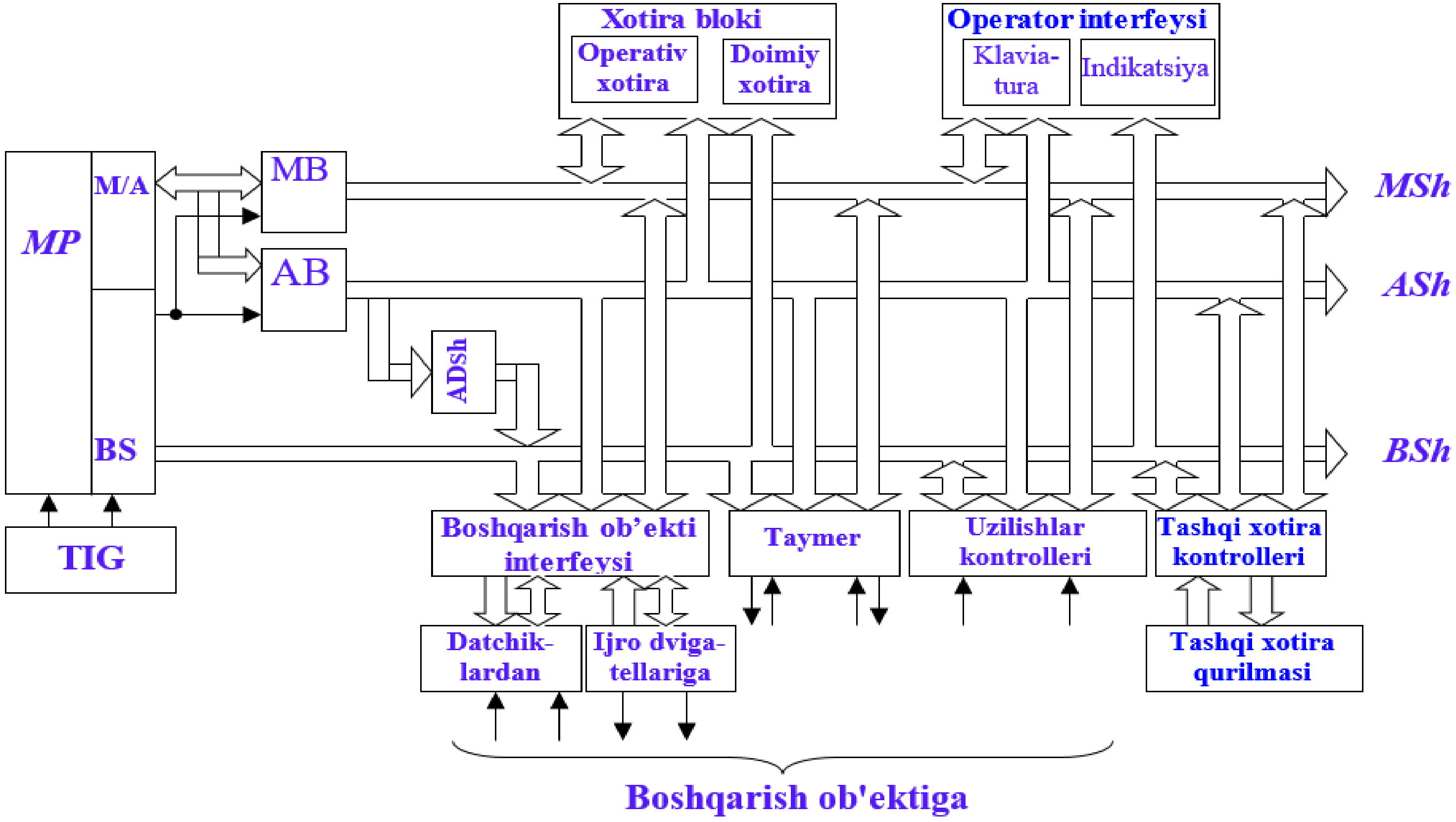
№	Mnemonika	Sikllar soni	Taktlar soni	Natija belgilarini saqlovchi triggerlar: (S, Z, S, P)	Izoh
1	ADD R	1	4	+++++	A <- A + R
2	ADC R	1	4	+++++	A <- A + R + Tg(C)
3	SUB R	1	4	+++++	A <- A -R
4	SBB R	1	4	+++++	A <- A – R+ Tg(C)
5	ADI data	2	7	+++++	A <- A + data
6	ACI data	2	7	+++++	A <- A + data + Tg(C)
7	SUI data	2	7	+++++	A <- A – data
8	SBI data	2	7	+++++	A <- A–data – Tg(C)
9	INR R	1	5	-++++	R<-R + 1
10	DCR R	1	5	-++++	R<- R - 1
11	DAA	1	4	+++++	A <- 2/10 korreksiya A
12	DAD 2R	3	10	+----	HL <- HL+2R
13	INX 2R	1	5	-----	R16 <- R16 + 1
14	DCX 2R	1	5	-----	R16 <- R16 - 1

Fundamentals of creating and configuring programs in microassembler language

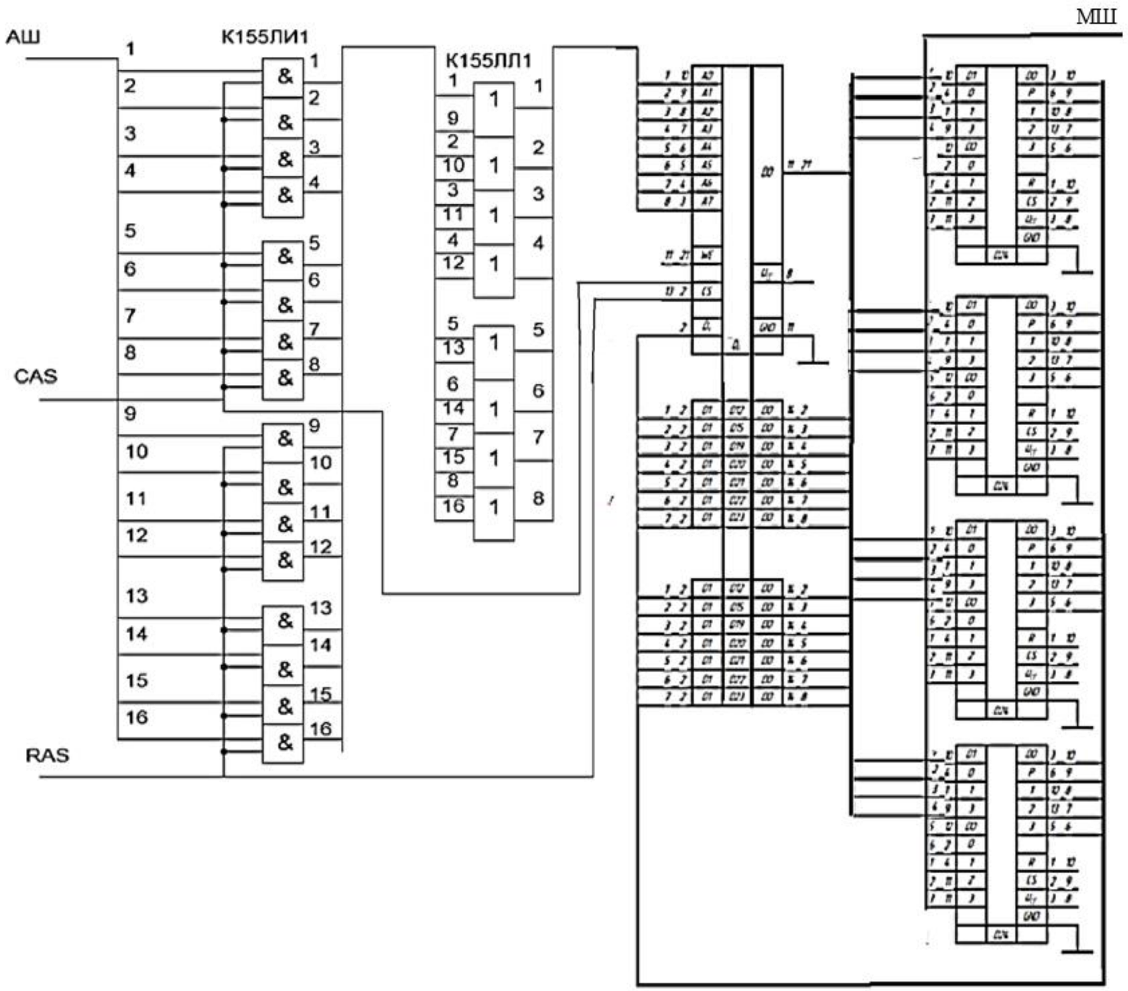


Адрес	Команда коди	Белги	Команда	Изох
0000	06 7F		MVI B, 7F	Рег В га ранг коди
0002	0E 08		MVI C, 08	Рег С га символлар сони
0004	21 15 00		LXI H, 0015	HL га массив адреси
0007	78	m1:	MOV A, B	Ранг В дан А га
0008	D3 00		OUT 00	А дан портга
000A	7E		MOV A, $(M)_{HL}$	Код $(M)_{HL}$ дан А га
000B	D3 00		OUT 00	А дан портга
000D	23		INX H	Адрес +1
000E	0D		DCX C	Символлар сони -1
000F	C2 07 00		JNZ m1	Барча символ ёритилдими?
0012	76		HLT	Тўхташ
Символлар кодлари				
0015	80			А
0016	81			Б
0017	82			В
....	....			....
000C	87			Ж

FUNDAMENTALS OF DESIGN OF MICROPROCESSOR CONTROL SYSTEMS



Memory devices used in microprocessor control systems and the basics of their design



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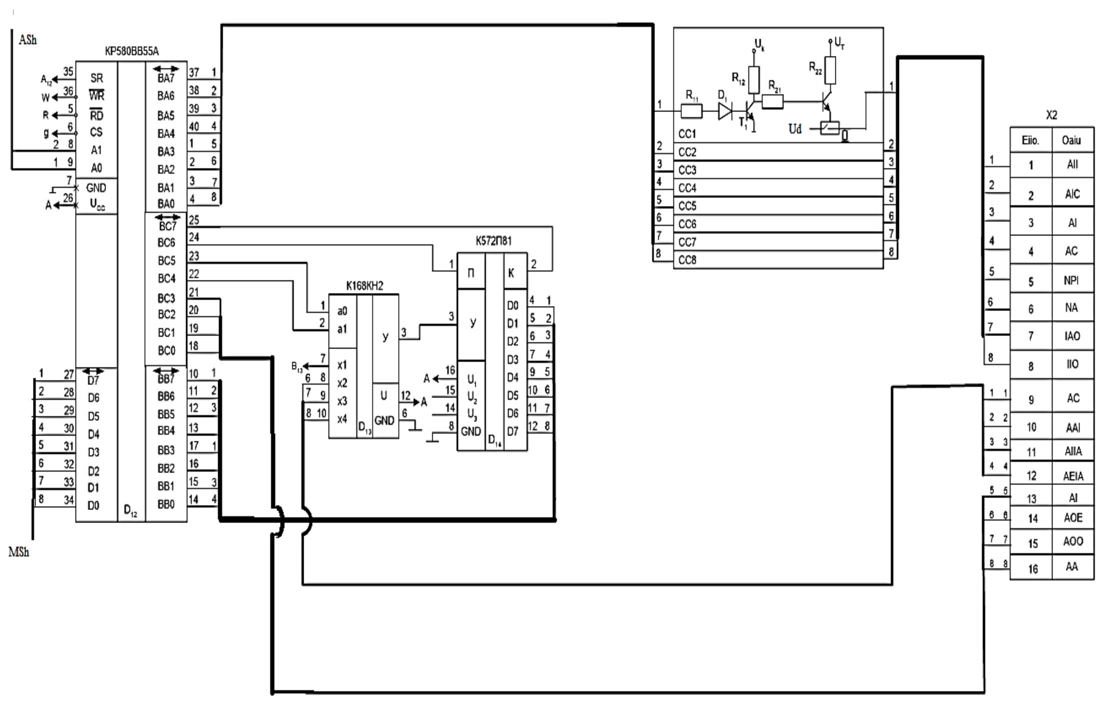
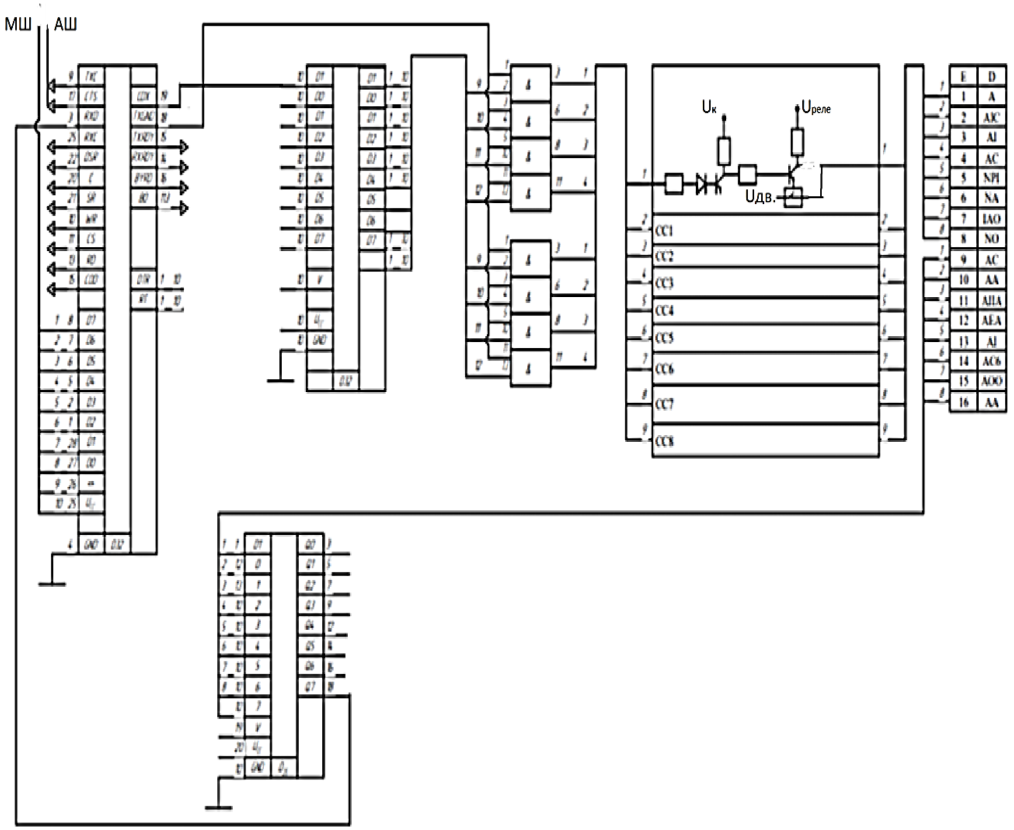
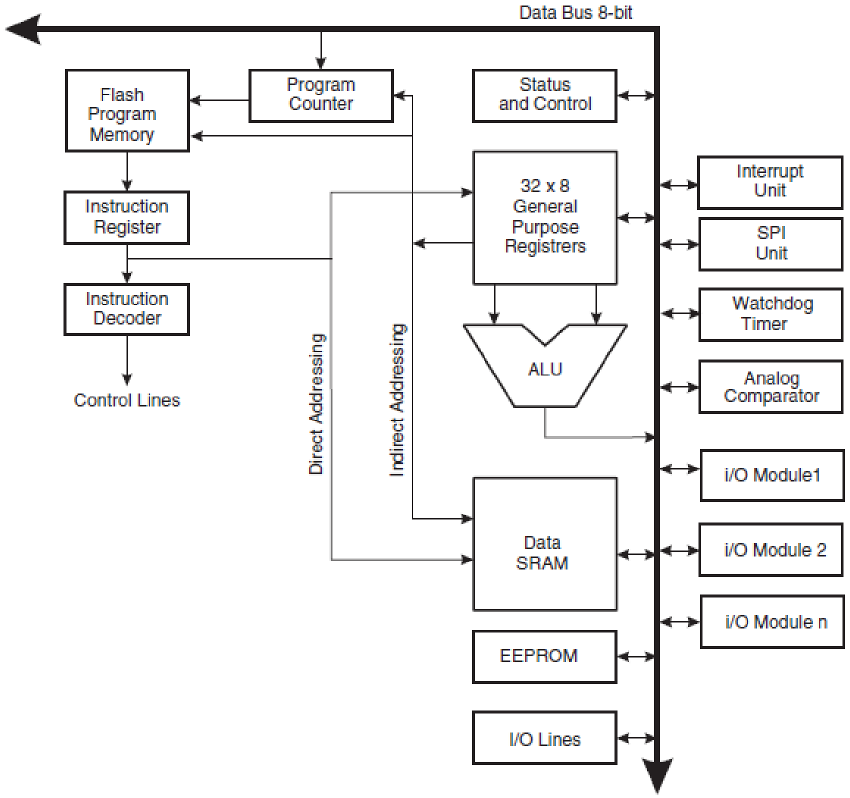
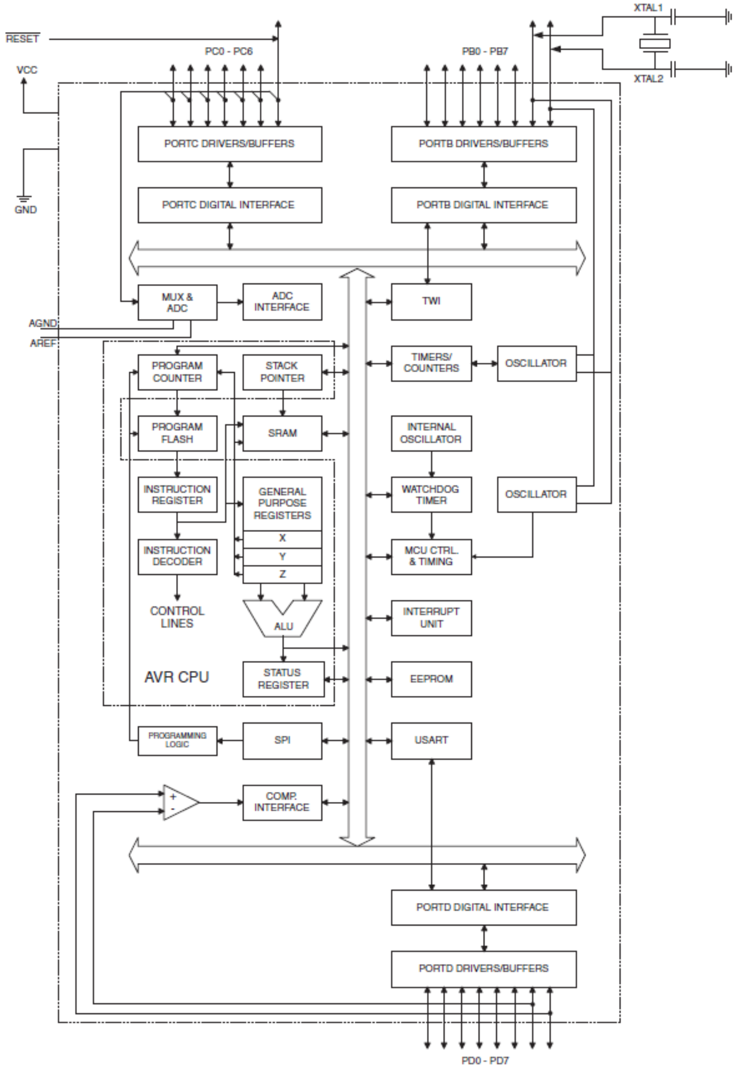
Interface devices for input/output of information of the microprocessor control system





Components of microcontrollers and their purpose





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