

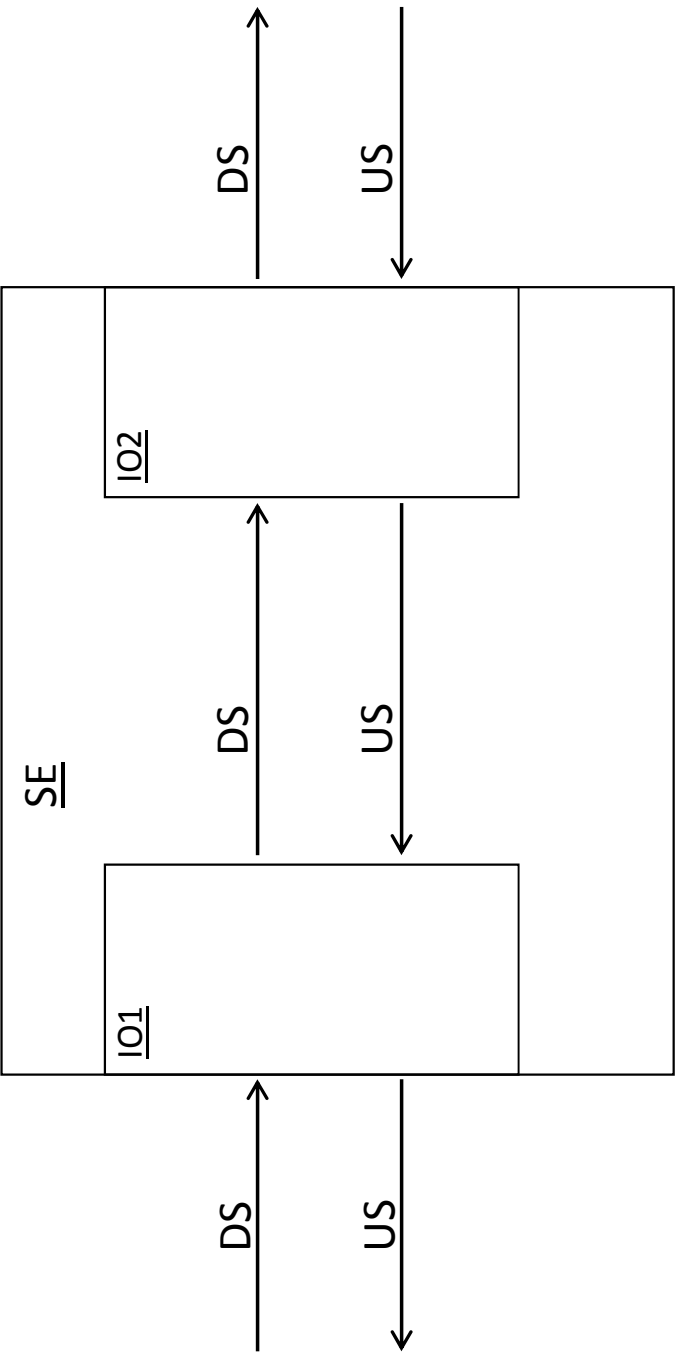


Fig. 1

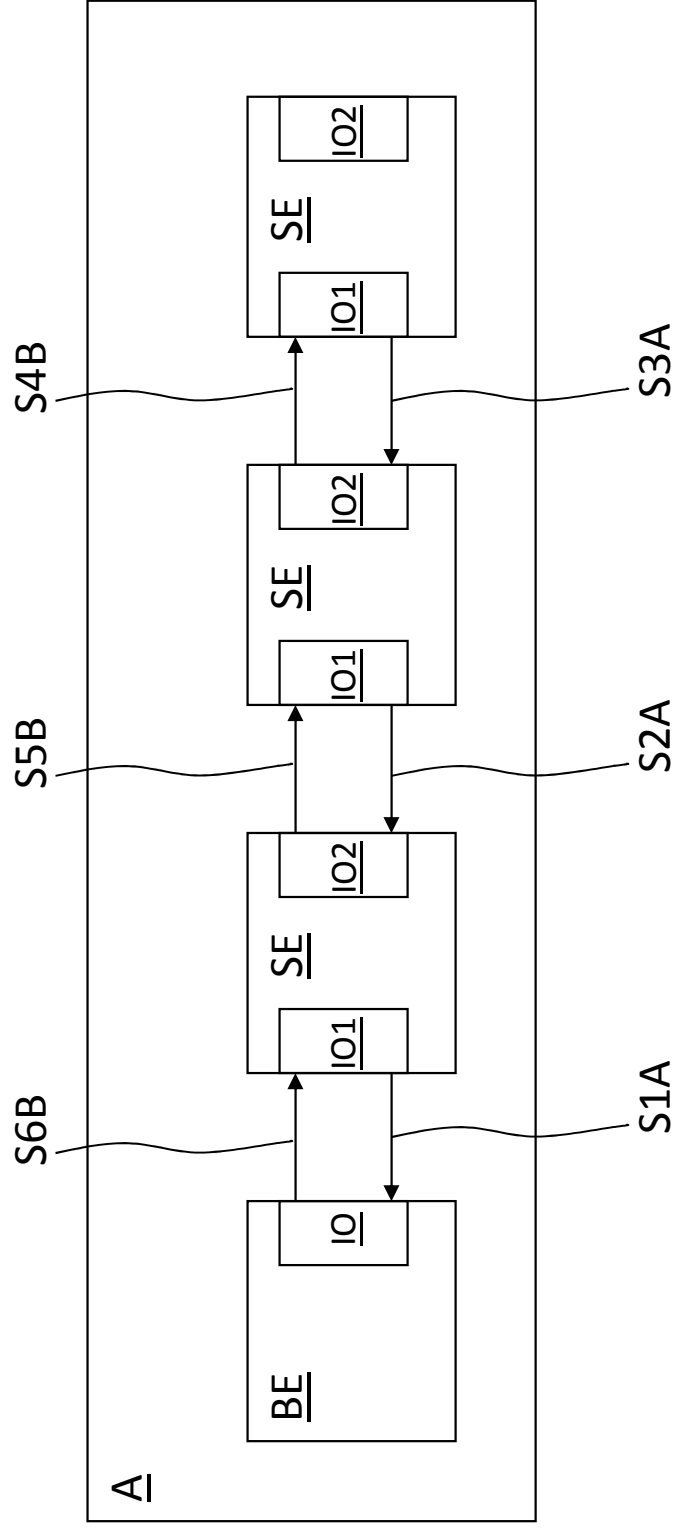


Fig. 2

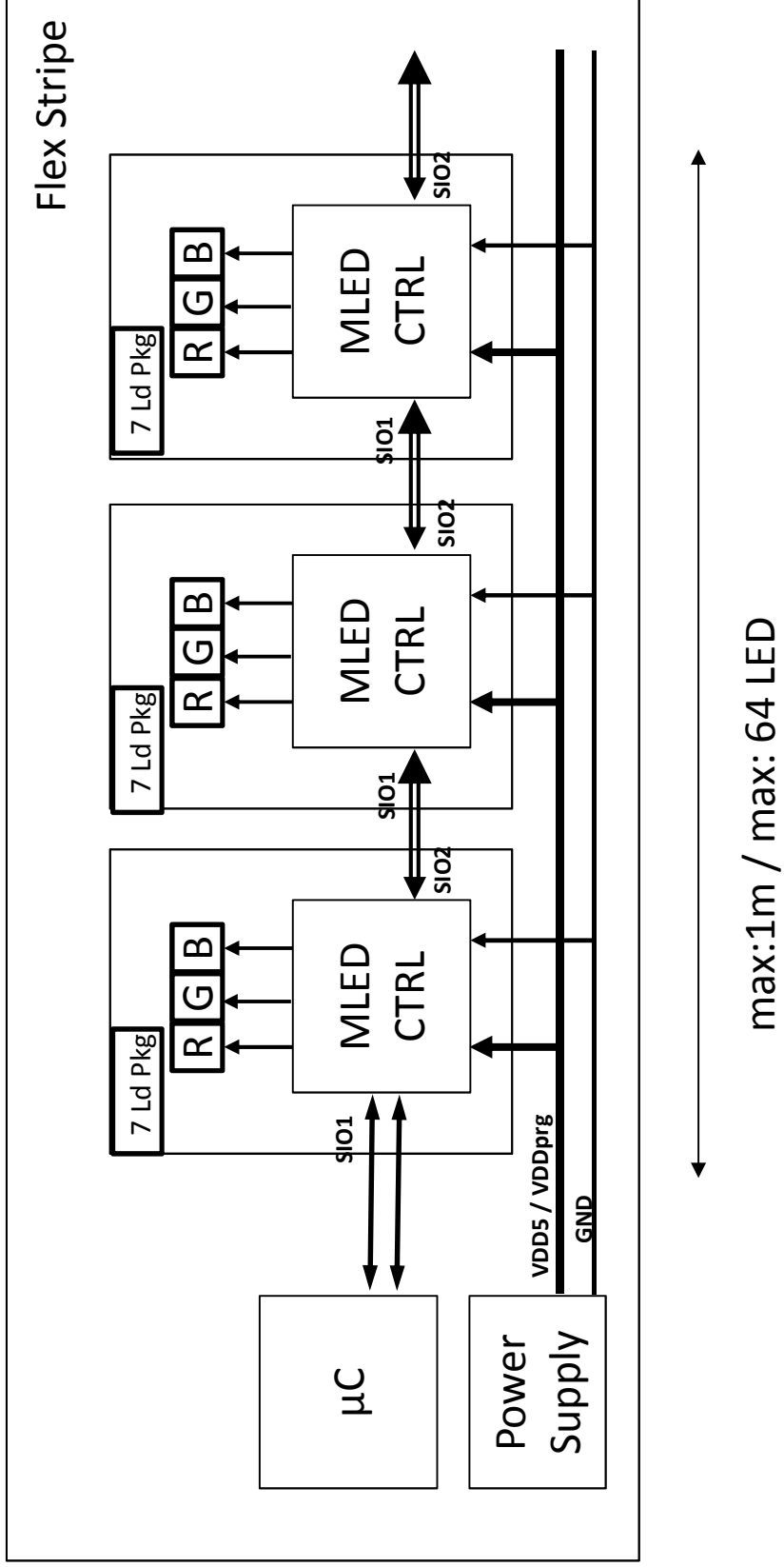


Fig. 3

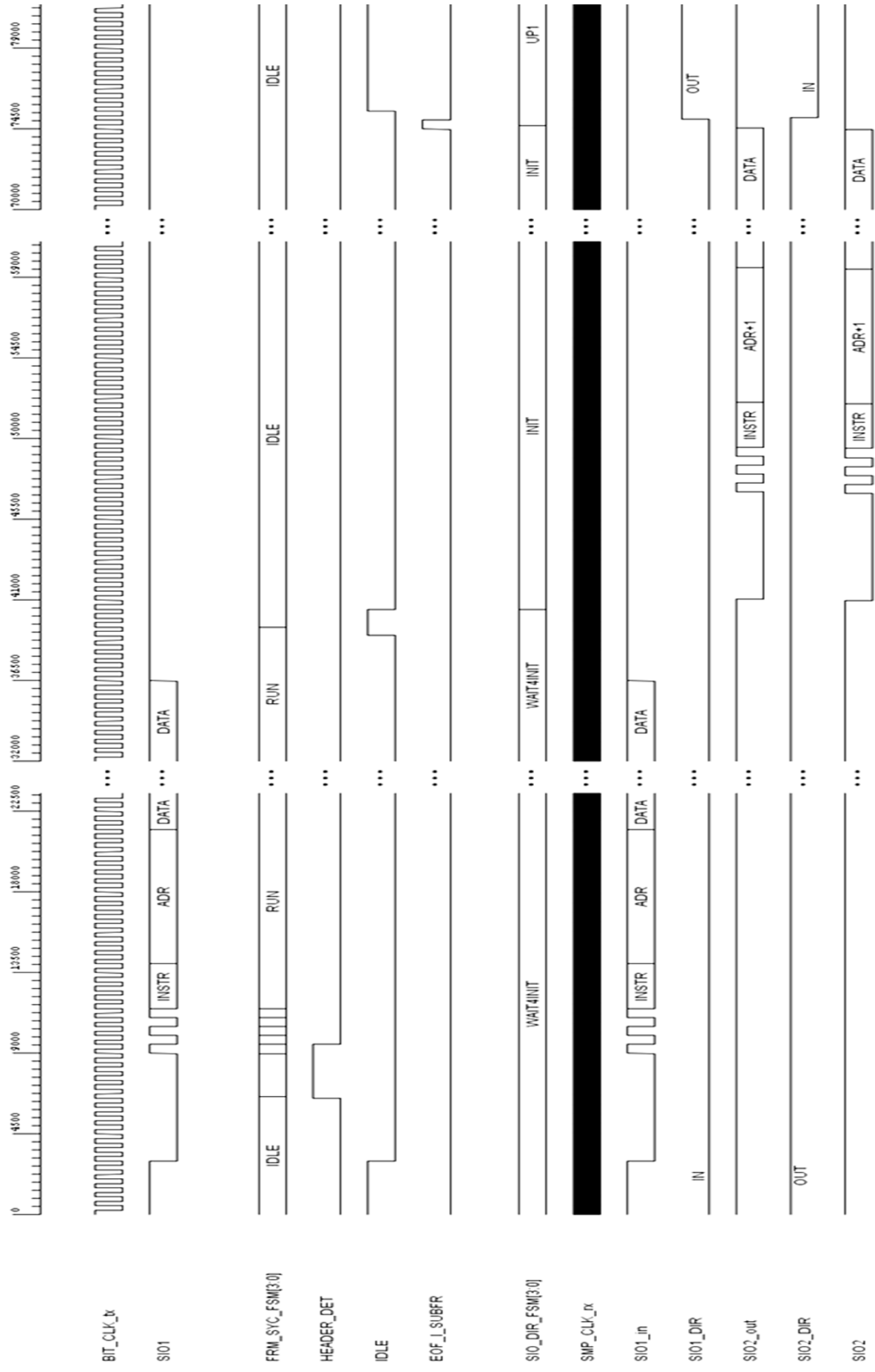


Fig. 4

	instr	dev adr	data	
Test Mode Test Number	0 0 0 0 1	x	0 0 : Broadcast	0 1 - 7 F : Device Addresses
	0 0 0 0	x	0 0 0 0 : Measure all what could be measured	
	0 0 0 1	x	0 0 0 1 : Measure reference voltage 1 (5V Supply)	
	0 0 1 0	x	0 0 1 0 : Measure reference voltage 2 (Programming voltage pin)	
	0 0 1 1	x	0 0 1 1 : Measure RED LED Vf	
	0 1 0 0	x	0 1 0 0 : Measure Green LED Vf	
	0 1 0 1	x	0 1 0 1 : Measure Blue LED Vf	
	0 1 1 0	x	0 1 1 0 : Measure SMP CLK toggling	
	0 1 1 1	x	0 1 1 1 : Measure Pulse CLK toggling	
	0 1 0 0	x	0 1 0 0 : Measure BIAS voltage	
Calibration Mode Select / Mode Test Parameter	0 0 0 1 0	x	0 - b b b : LED Select: 001b-red; 010-green; 100-blue	
	1 0 b b b	x	1 0 b b b : LED Select: 001b-red; 010-green; 100-blue	
	- b .. b	x	- b .. b : 10 Bit constant current value of selected LED	
	1 1 b b b	x	1 1 b b b : LED Select: 001b-red; 010-green; 100-blue	
RGB Mode RGB Value	0 0 1 0 0	x	- b .. b : 7 Bit increment for constant current value of selected LED	
	x x x x x	x	x x x x x : Set the RGB value of the selected device(s)	
Read Request Select Read Target only allowed on last subframe position	0 1 0 0 0	-		
	0 0 1	x	Read temperature values of all devices	Read Temp
	0 1 0	x	Read status values of all devices (dev adr, uv,...)	Read Status
	1	x	Diagnostic Read (<i>Values needs to be measured before w. Test Mode</i>)	Read Test Results
	1 0 0 0	x	Read reference voltage 1	Read Re. Volt1
	1 0	x	Read reference voltage 2	Read Ref. Volt2
	1 1	x	Read BIAS voltage	Read BIAS
	1 1 0 0	x	Read red led Vf (9bit)	Read Red LED El.Par
	1 1 0 1	x	Read green led Vf (9bit)	Read Green LED El.Par
	1 1 1 0	x	Read blue led Vf (9bit)	Read Blue LED El.Par
No Operation	0 0 0 0 0	x		
	x x x x x	x	Nop to complete D_MASTERFRAME or to fill-up before read request	NOP Dummy
				This is not IDLE!

Fig. 5

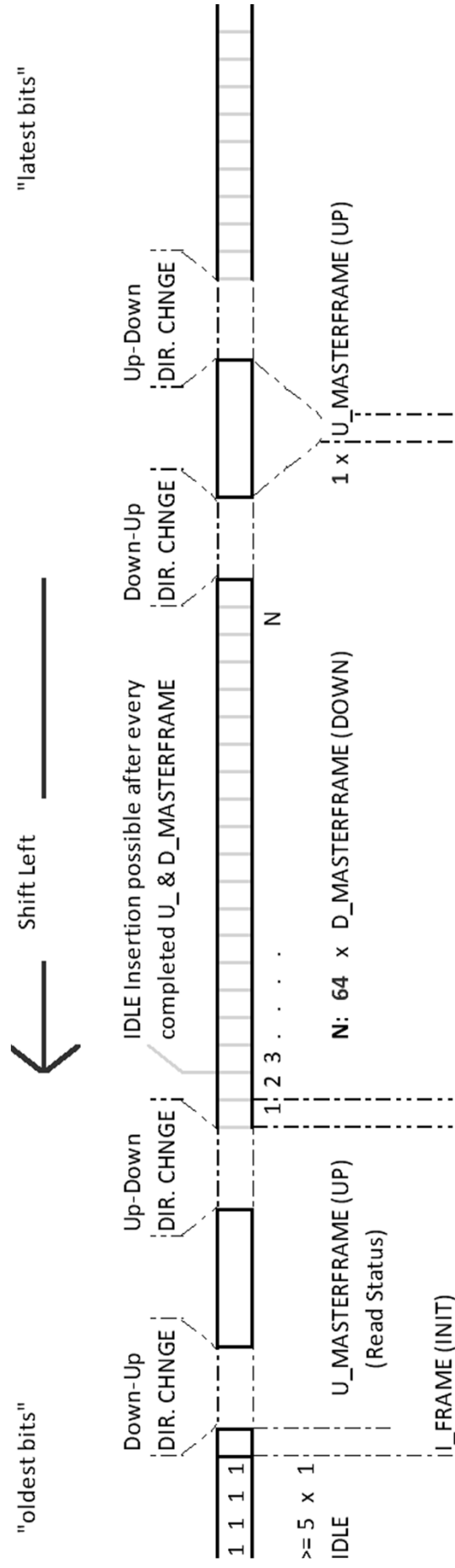


Fig. 6

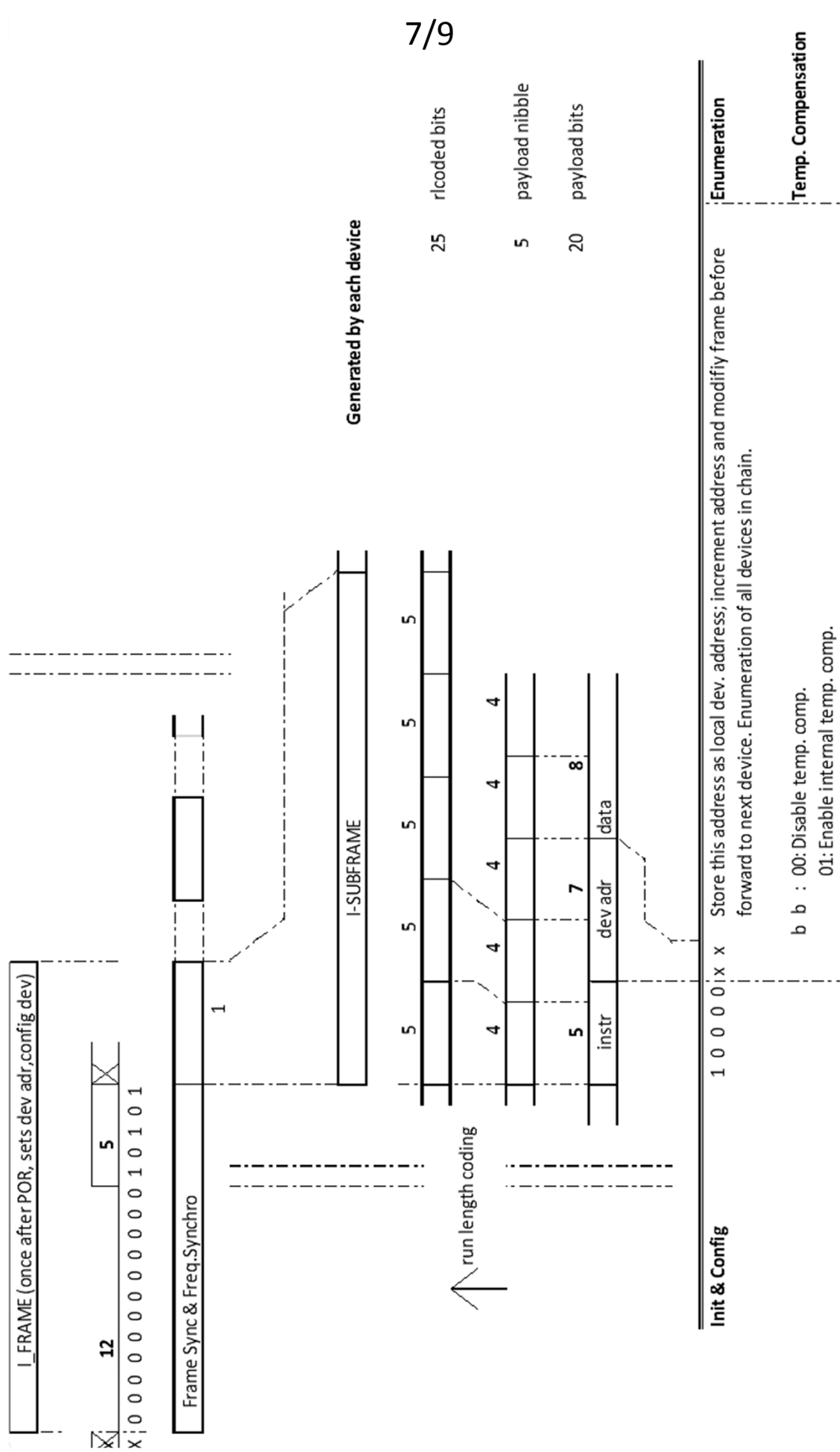


Fig. 7

MLED SIO RL Code	
0000	00100
0001	01001
0010	10100
0011	01010
0100	10001
0101	01011
0110	01110
0111	11001
1000	10010
1001	10011
1010	10110
1011	01101
1100	11010
1101	11011
1110	11100
1111	11101
Quiet	00000
Idle	11111
Start D_Frame	10101

* Any sequence with more than 5x1 is idle

Fig. 8

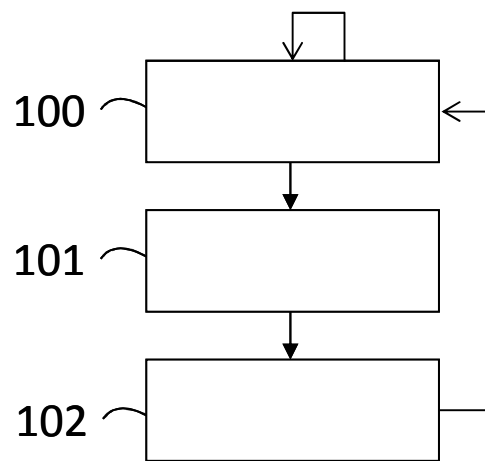


Fig. 9