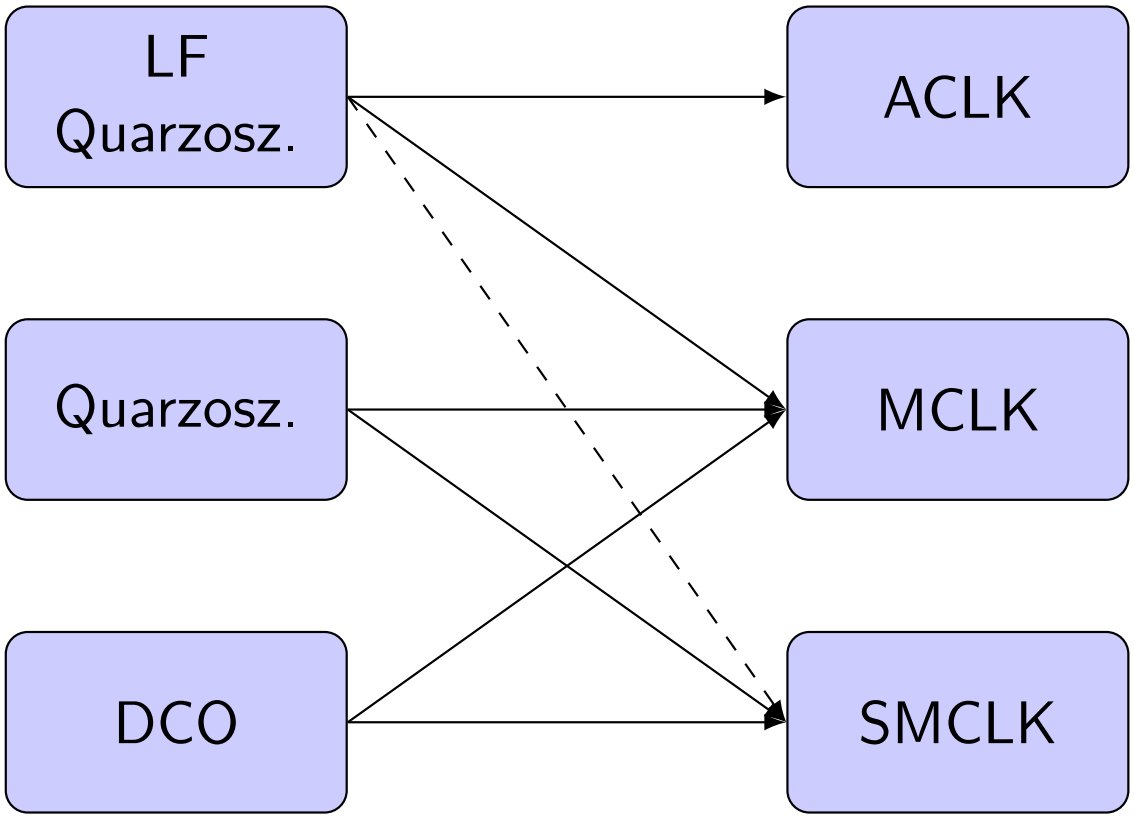
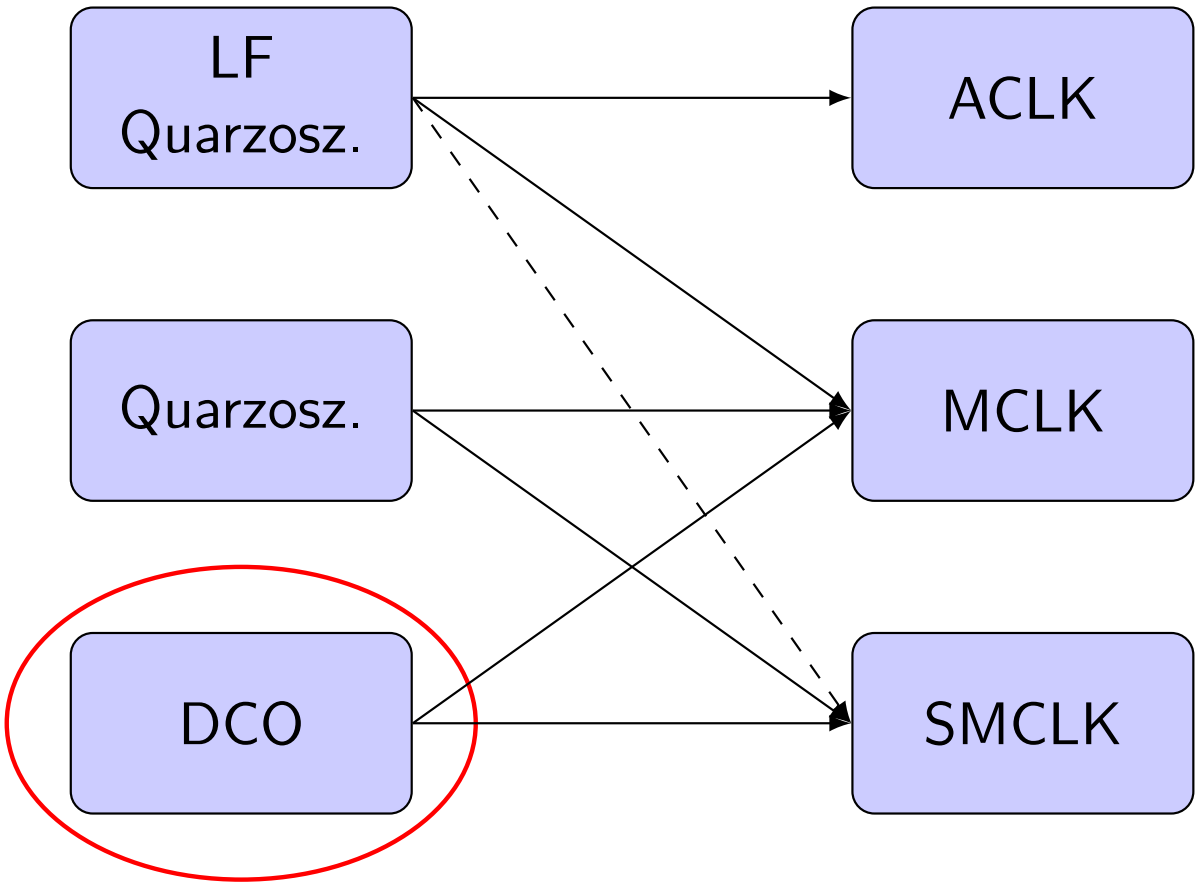
DCO

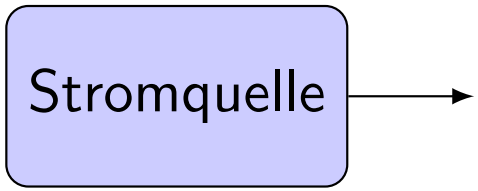
Digitally-Controlled Oscillator

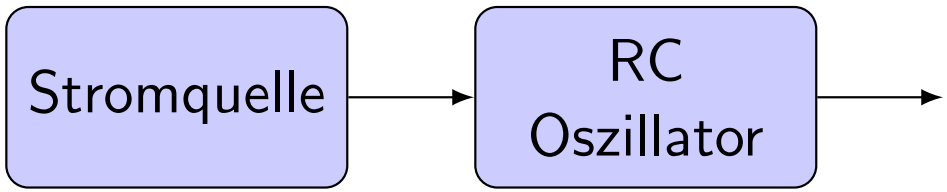
Daniel Winz

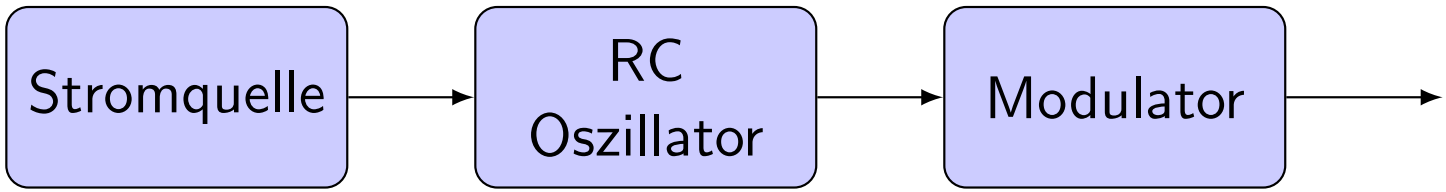
19. März 2013

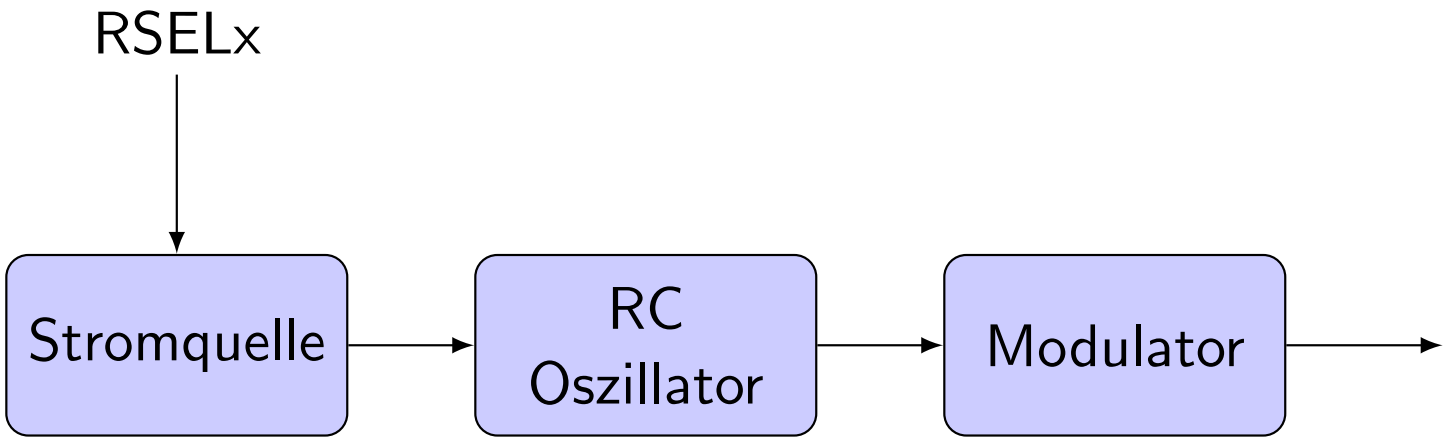

LF
Quarzosz.
Quarzosz.
DCO
ACLK
MCLK
SMCLK

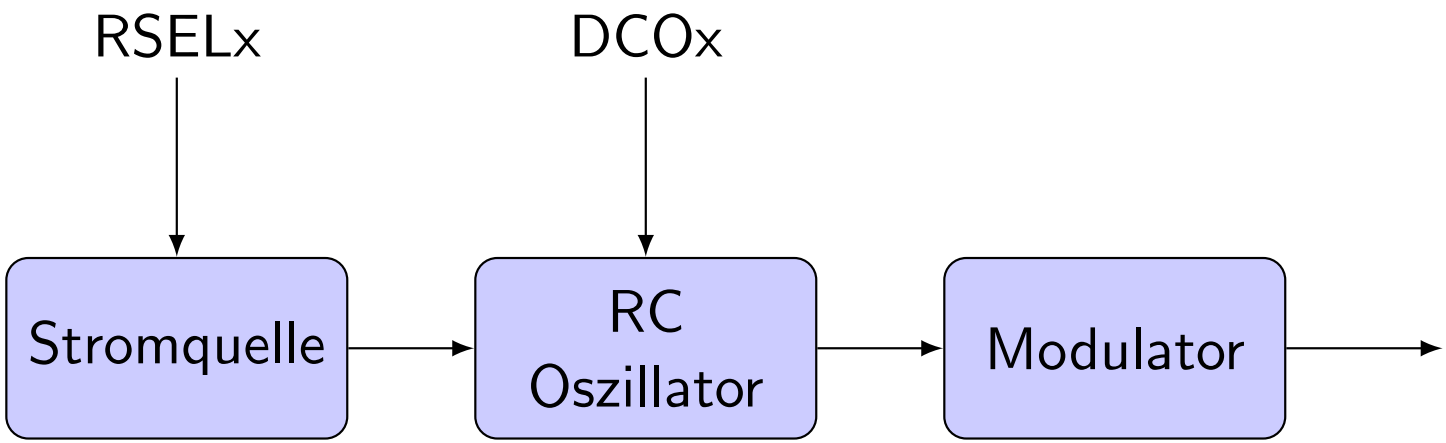

LF
Quarzosz.
Quarzosz.
DCO
ACLK
MCLK
SMCLK

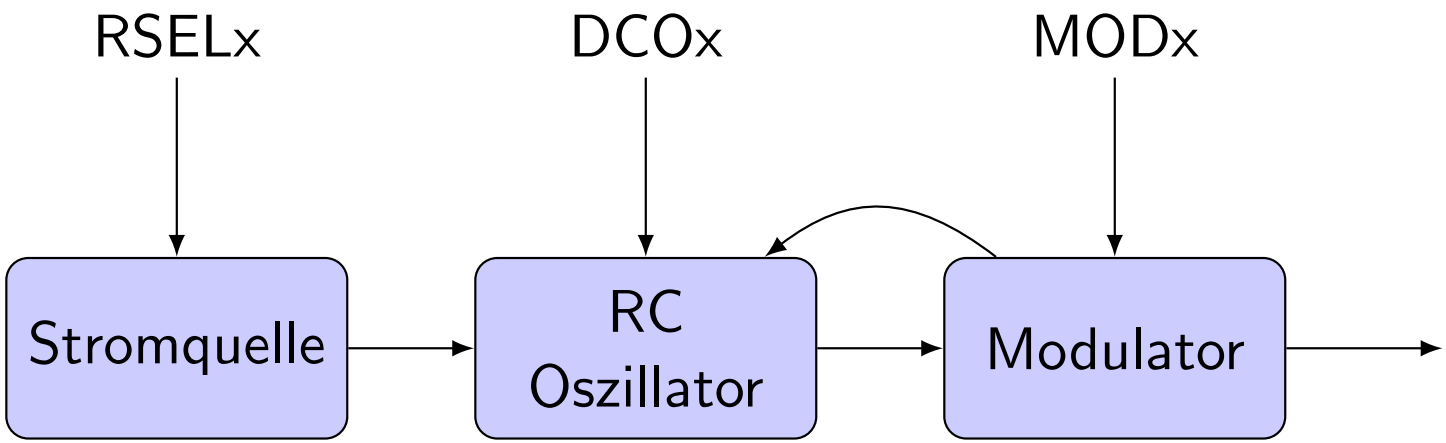

Stromquelle


Stromquelle
RC
Oszillator

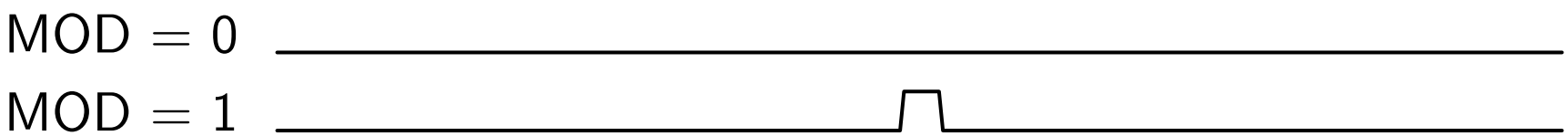

Stromquelle
RC
Oszillator
Modulator

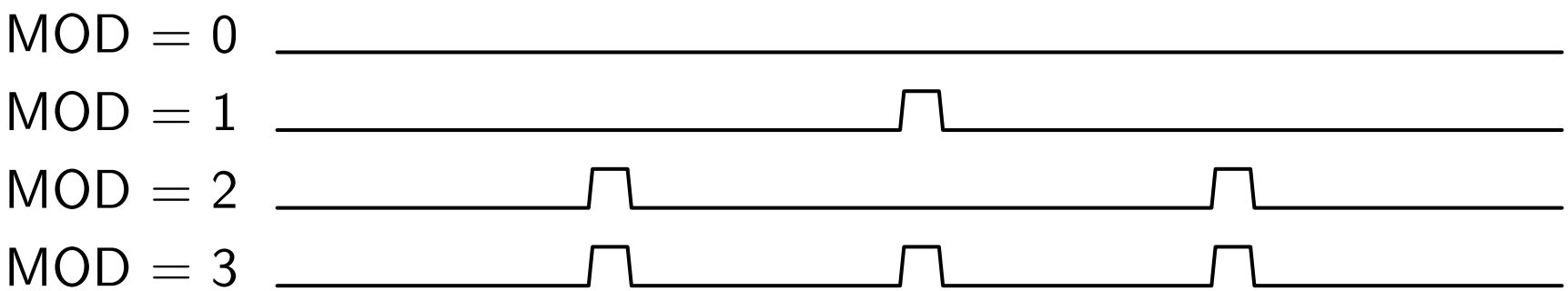

RSELx
Stromquelle
RC
Oszillator
Modulator

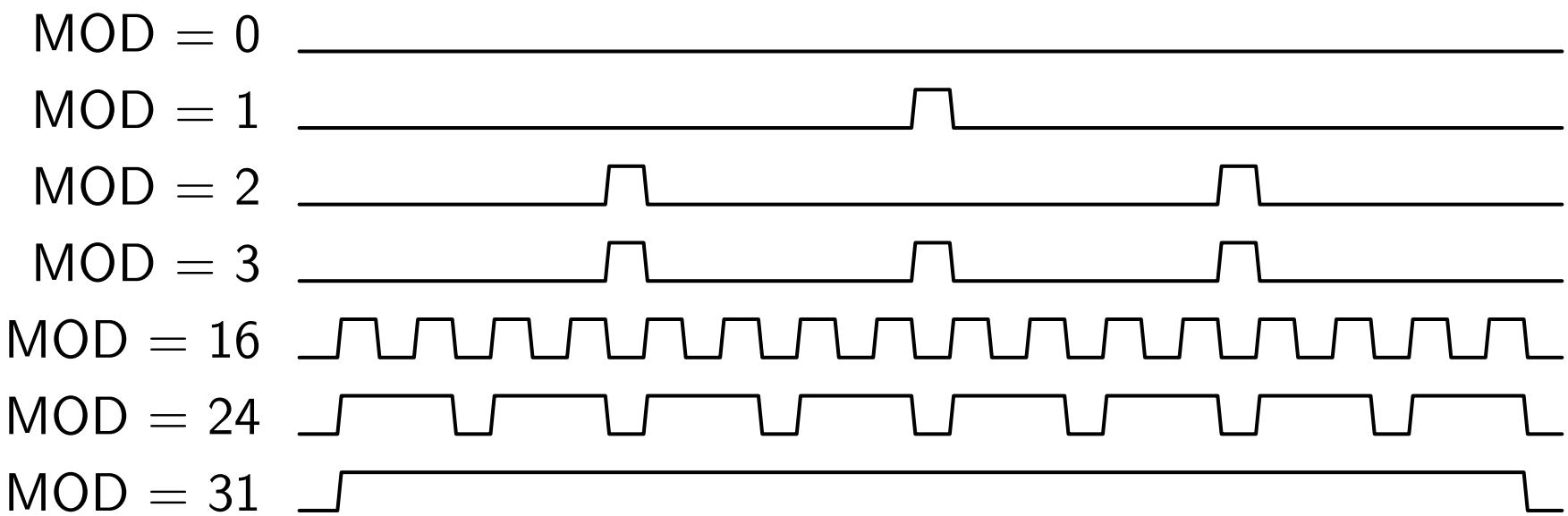

RSELx
DCOx
Stromquelle
RC
Oszillator
Modulator


RSELx
DCOx
MODx
Stromquelle
RC
Oszillator
Modulator

MOD = 0


MOD = 0
MOD = 1


MOD = 0
MOD = 1
MOD = 2
MOD = 3


MOD = 0
MOD = 1
MOD = 2
MOD = 3
MOD = 16
MOD = 24
MOD = 31

DCO Frequency

over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS	V_{CC}	MIN	TYP	MAX	UNIT
V_{CC}	Supply voltage	RSELx < 14		1.8		3.6	V
		RSELx = 14		2.2		3.6	
		RSELx = 15		3		3.6	
$f_{DCO(0,0)}$	DCO frequency (0, 0)	RSELx = 0, DCOx = 0, MODx = 0	3 V	0.06		0.14	MHz
$f_{DCO(0,3)}$	DCO frequency (0, 3)	RSELx = 0, DCOx = 3, MODx = 0	3 V	0.07		0.17	MHz
$f_{DCO(1,3)}$	DCO frequency (1, 3)	RSELx = 1, DCOx = 3, MODx = 0	3 V		0.15		MHz
$f_{DCO(2,3)}$	DCO frequency (2, 3)	RSELx = 2, DCOx = 3, MODx = 0	3 V		0.21		MHz

Abbildung: Auszug aus dem Datenblatt des MSP430G2553

- Texas Instruments

- Texas Instruments
  MSP430F2x $\rightarrow \pm 1\%$

- Texas Instruments MSP430F2x $\rightarrow \pm 1\%$
- Inbetriebnahme

- Texas Instruments MSP430F2x $\rightarrow \pm 1\%$
- Inbetriebnahme
- FLL