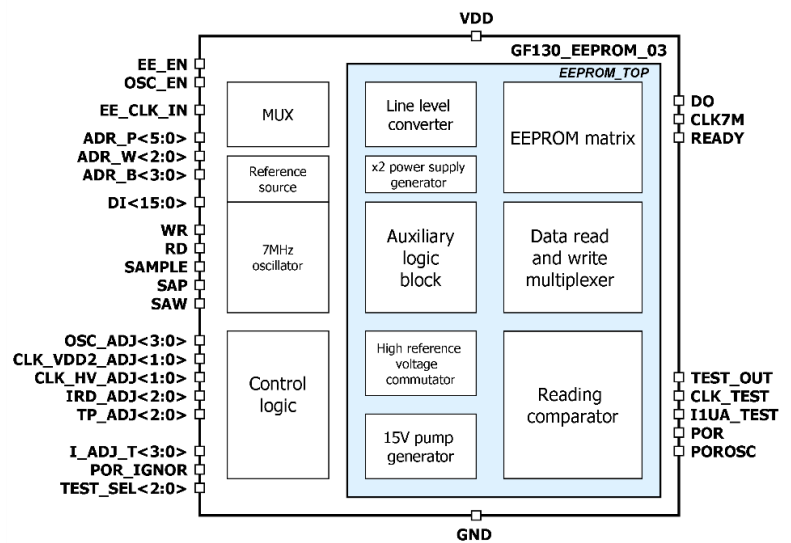


## 1Kbyte EEPROM IP with configuration 64p8w16bit

### OVERVIEW

The block is a nonvolatile electrically erasable programmable read-only memory (EEPROM) with volume 1 Kbyte (16(bit per word) x 8(words per page) x 64(pages)) with single-bit output data and parallel write data in one word. Data writing is performed by setting data at **DI<15:0>** and write process execute if signal **WR="1"**. Data **DI<15:0>**, page address **ADR\_P<5:0>**, word address in page **ADR\_W<2:0>** are latched into internal registers and cannot be changed until the end of the writing process. At the end of the writing, the **READY = "1"** flag is set. Data reading is carried out by specifying the page address **ADR\_P<5:0>**, word address in the page **ADR\_W<2:0>** and bit address in the word **ADR\_B<3:0>**. After applying the reading strobe, the **DO** signal is set at the output corresponding to the reading data from the corresponding addresses of the EEPROM cell. EEPROM also has a 7MHz built-in oscillator. The oscillator has frequency control inputs to compensate for process variation. Memory is optimized for usage in the industrial and commercial applications, requiring low power consumption and supply voltage.



IP technology: Global Foundries Embedded EEPROM 0.13um

IP status: silicon proven

Total area: 0.179mm<sup>2</sup>

### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit
			min	typ.	max	
Supply voltage	V <sub>dd</sub>	–	1.1	1.2	1.3	V
Operating temperature range	T	–	-40	+27	+125	°C
EEPROM size	S	–	–	1	–	Kbyte
Output clock frequency	F <sub>clk</sub>	adj_osc = "1000" (by default)	5.3	7.0	10.2	MHz
		adj_osc = "1111" (max setting)	8.7	–	–	
		adj_osc = "0000" (min setting)	–	–	5.7	
Frequency standard deviation	F <sub>σ</sub>	Mismatch + Process	–	9	–	%
Access time	t <sub>acc</sub>	–	–	150	350	ns
Time of writing process of one word	t <sub>wr</sub>	–	–	2.1	–	ms
Read setup time relative to read signal	t <sub>reads</sub>	–	10	–	–	us
Reference source current consumption	I <sub>CC_RS</sub>	–	2.3	3.6	6.2	uA
Oscillator current consumption	I <sub>CC_osc</sub>	Not including I <sub>CC_RS</sub>	4.8	7.2	12.6	uA
Current consumption in read mode	I <sub>read</sub>	Including I <sub>CC_CL</sub> *; not including I <sub>CC_osc</sub> , I <sub>CC_RS</sub>	2.9	3.8	7.6	uA
Average current consumption in write mode	I <sub>write_avg</sub>	Including I <sub>CC_CL</sub> ; not including I <sub>CC_osc</sub> , I <sub>CC_RS</sub>	22.0	28.9	49.5	uA
Standby current	I <sub>standby</sub>	–	–	<0.05	<0.1	uA
		T = +125°C	–	–	2.2	uA
Input logic-high level	V <sub>IH</sub>	For digital inputs	0.7*V <sub>dd</sub>	–	–	V
Input logic-low level	V <sub>IL</sub>		–	–	0.3	V

\*Note: I<sub>CC\_CL</sub> – Control Logic current consumption