

Register: pierce_cap_ctrl[3:0]	Cl_onchip	[pF]
0110	6.0	
0111	7.0	
1000	8.0	
1001	9.0	
1010	10.0	
1011	11.0	
1100	12.0	
1101	13.0	
1110	14.0	
1111	15.0	

7.3.2 RTC XO Design and Interface Specification

The RTC consists of two main blocks: The Programmable Gm stage and tuning capacitors. The programmable Gm stage is used to guarantee oscillation startup and to sustain oscillation. Tuning capacitors are used to adjust the XO center frequency and control the XO precision for different crystal models. The output of the XO is driven to the digital domain via a digital buffer stage with a supply voltage of 1.2V.

Table 7-5. RTC XO Interface

Pin Name	Function	Register Default
Digital Control Pins		
Pierce_res_ctrl	Control feedback resistance value: 0 = 20M Ω Feedback resistance 1 = 30M Ω Feedback resistance	0x0000
Pierce_cap_ctrl<3:0>	Control the internal tuning capacitors with step of 700fF: 0000=700fF 1111=11.2pF Refer to crystal datasheet to check for optimum tuning cap value	0x0000
Pierce_gm_ctrl<3:0>	Controls the Gm stage gain for different crystal mode: 0011= for crystal with shunt cap of 1.2pF 1000= for crystal with shunt cap >3pF	0x0000
VDD_XO	1.2V	

7.3.3 RTC Characterization with Gm Code Variation at Supply 1.2V and Temp. = 25°C

This section shows the RTC total drawn current and the XO accuracy versus different tuning capacitors and different GM codes, at a supply voltage of 1.2V and temperature = 25°C.

Figure 7-4. RTC Drawn Current vs. Tuning Caps at 25°C



