HYCON TECHNOLOGY

HY11P Series
Application Notice

ACM Voltage Operating Instructions

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1. Preface

To meet the demand of different applications, the users must setup different specifications of VDDA voltage source to provide power for the use of the sensors or the chip analogy circuits. This article provides the suggestion to achieve SD18 ADC high resolution specification by different ACM voltage condition so as to guarantee that SD18 ADC resolution (ENOB) may reach 17.5 bit (OSR: 32768) under different VDDA conditions.

2. Product Category

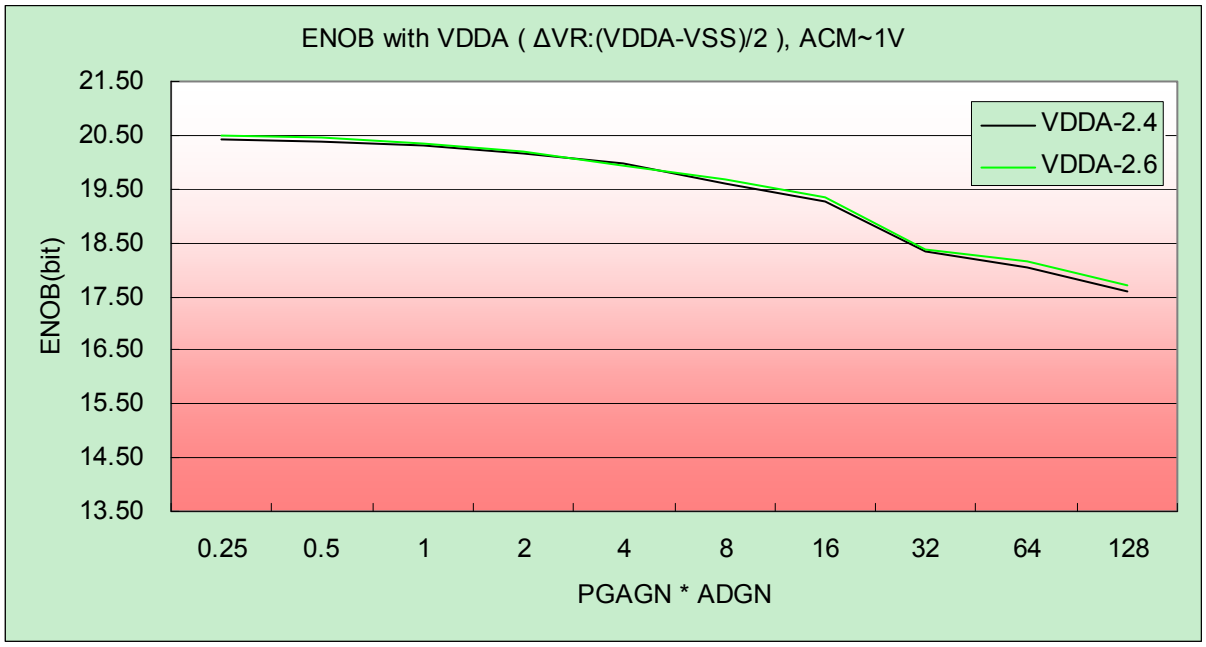
HY11P22, HY11P23. HY11P24 and HY11P14 are built-in ACM=1.0V and 1.2V for customers' selection.

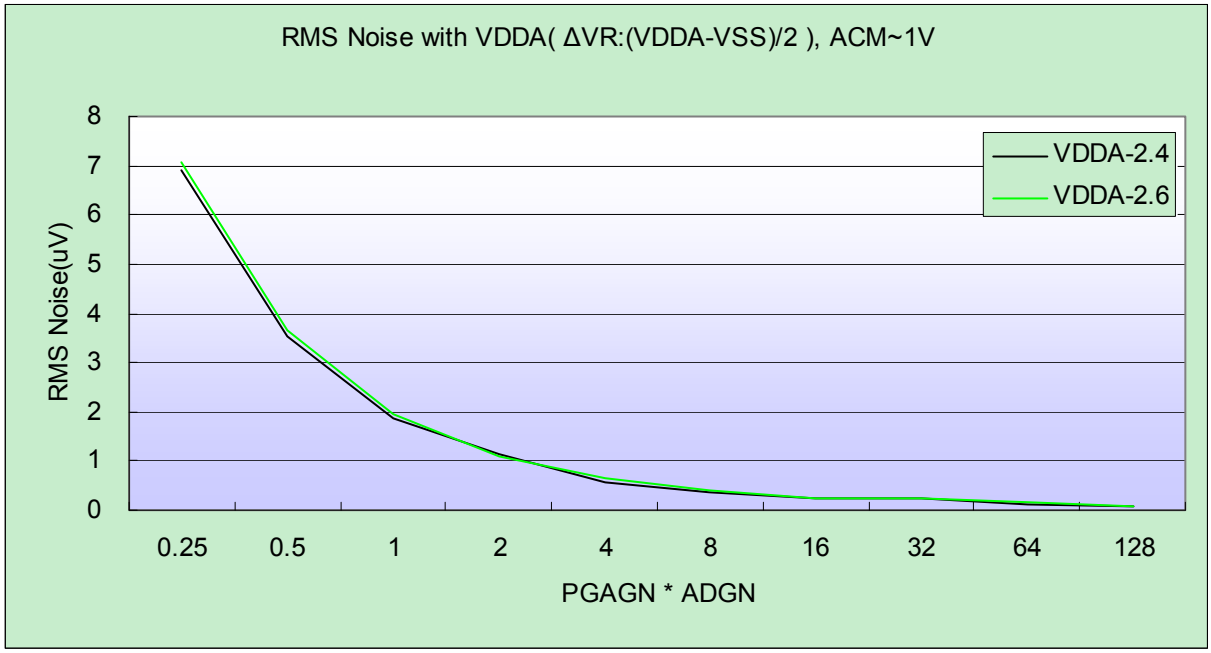
3. Plan Suggestion

◆ VDDA=2.4V, 2.6V

When using built-in regulated power VDDA=2.4V, 2.6V (VDDAX[1:0]=1xb), and the ADC differential reference voltage value is **smaller** than 1.4V, we suggest to configure the ACM voltage as 1.0V mode for reaching higher resolution specification.

The next table is the complete testing data of A/D ENOB under VDDA=2.4V and 2.6V setup by different built-in amplifications (PGAGN*ADGN):

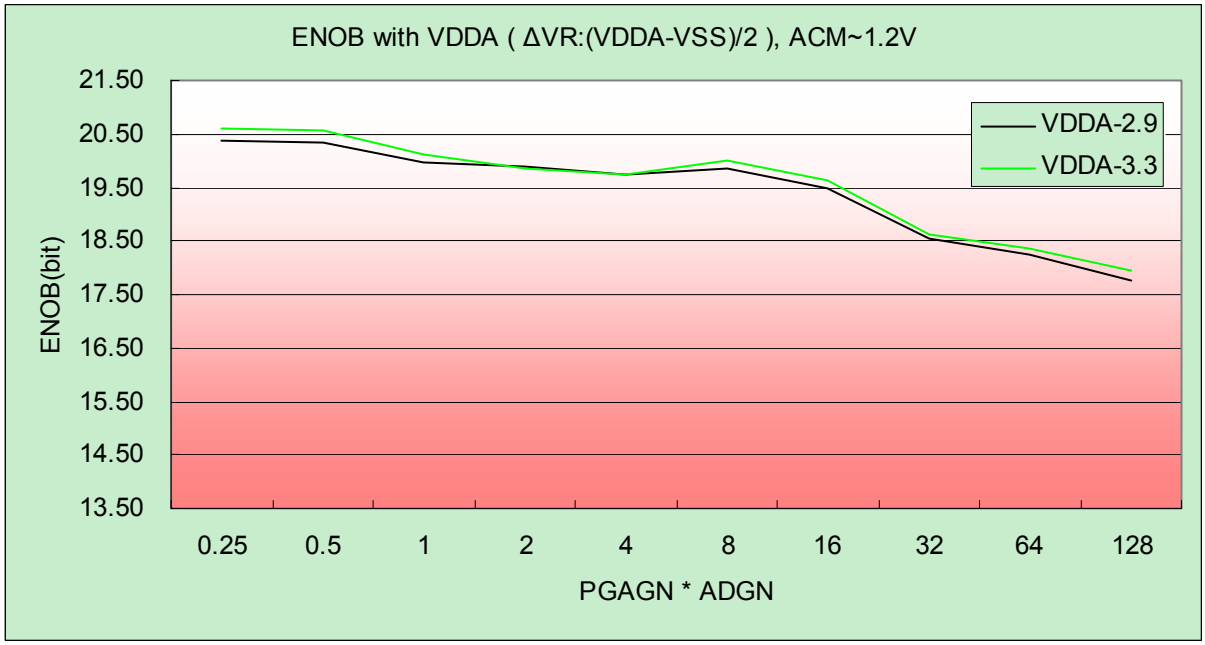


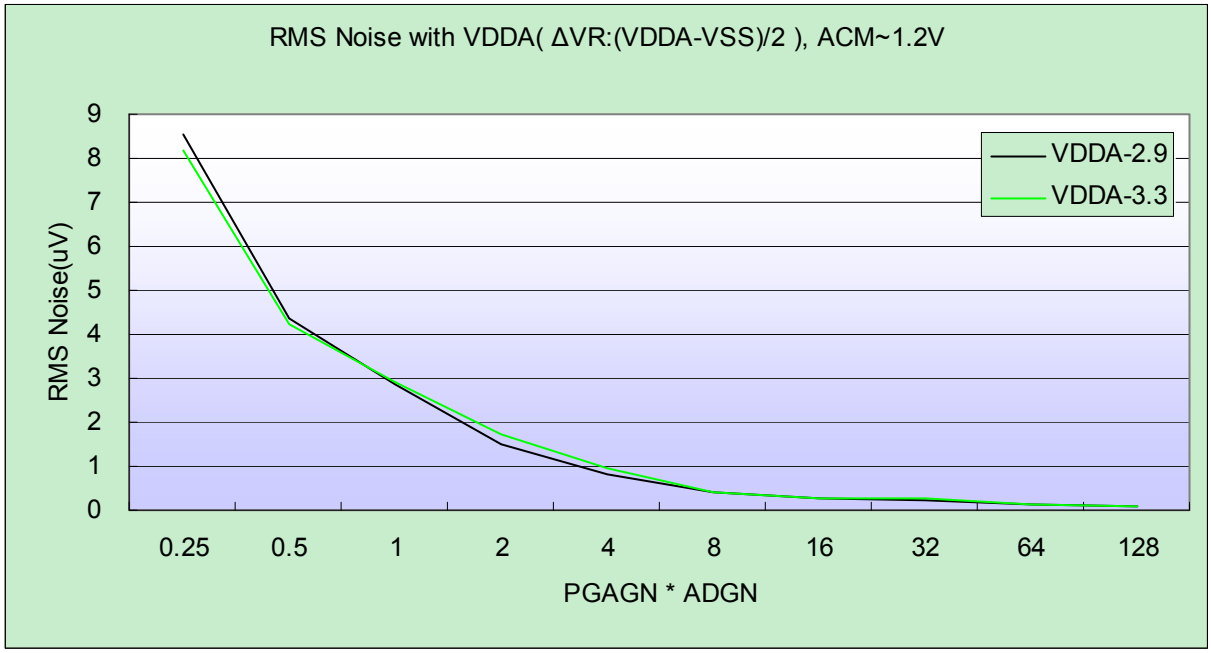


◆ VDDA=2.9V, 3.3V

When using built-in regulated power VDDA=2.9V, 3.3V (VDDAX[1:0]=0xb), and the ADC differential reference voltage value is **larger** than 1.4V, we suggest to establish the ACM voltage to be 1.0V mode for reaching the high resolution specification.

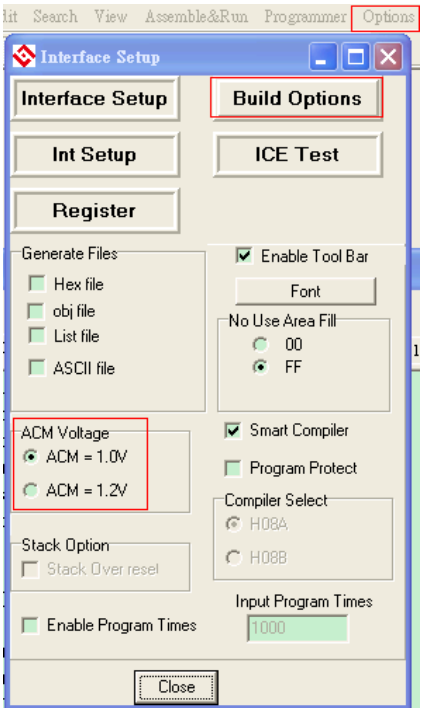
The next table is the complete testing data of A/D ENOB under VDDA=2.9V and 3.3V setup by different built-in amplification (PGAGN*ADGN):





4. Operating Setup

As the figure below, please open the HYIDE software, to select appropriate ACM Voltage in Options → Build Options according to the application.



5. Revision Record

Major differences are stated thereinafter:

Date	Version	Page	Revision Summary
2009/05/01	V01	ALL	First edition