

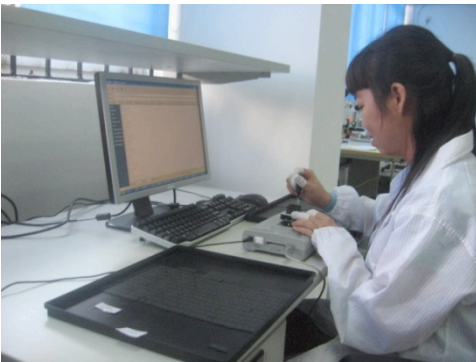
Digital Component Testing

Digital components include all those parts that are specifically designed to store and interact with digital programs (sequences of 0's and 1's). These products include MCU (micro-control unit), memory and one-time-programmable (OTP) devices.



The most effective way for testing these components is to utilize the program code designed by the component manufacturer. With these programs, we conduct PC-based testing for read and write capability, blanks and blocks on programmable devices, erase programs already loaded, and verify the program identification code for the device. These are the core functions of these devices so this method of testing is comprehensive. Counterfeit devices, previously used (OTP are useless after first-time program is loaded) and misrepresented (similar, but not same, function) will all be identified using this test method. We can even load programming if it is required!

Combined with a physical inspection, this is a proven method for determining form, fit, and function quality on the components. Of course, the variety of packages and devices is limitless – new products are developed daily and each is unique. White Horse has an inventory of over 35,000 programs from 194 component manufacturers!



With a minimum order of USD110.00 for line set-up, test pricing on these devices is USD0.33 per piece. Lead-time is approximately two days, depending on the number of pieces to be tested and current loading at the time of receipt. Prices for the test fixture for each device vary widely depending on the package style and pin count. Non-BGA devices with a pin count lower than 80 range between USD70 and USD265, and we have many fixtures already developed and in stock. BGA devices and pin counts higher than 80 have prices of USD320 and up. Your



Customer Service representative will provide set-up pricing, if applicable, with your quotation.

The following photos show samples of the test analysis of the Intel device captioned at the top of the article. Devices had multiple failure modes mixed with quality product. The components that passed testing were sorted from those that failed and shipped to end-user with no field failures.

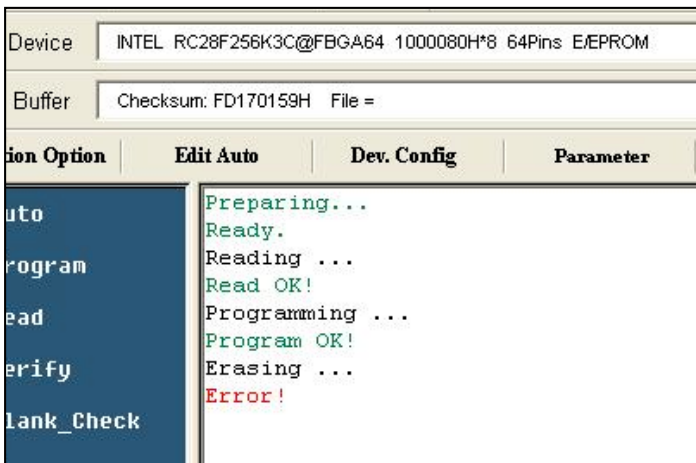


Figure 1 - Error on Program Erase

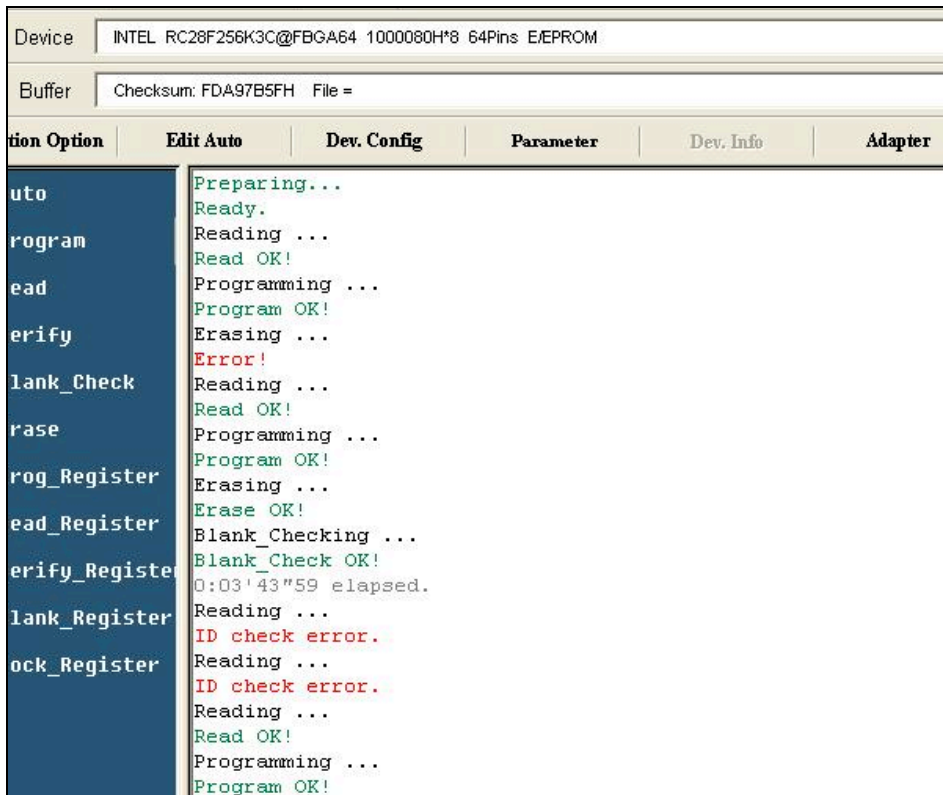


Figure 2 - Error on Wafer Identification

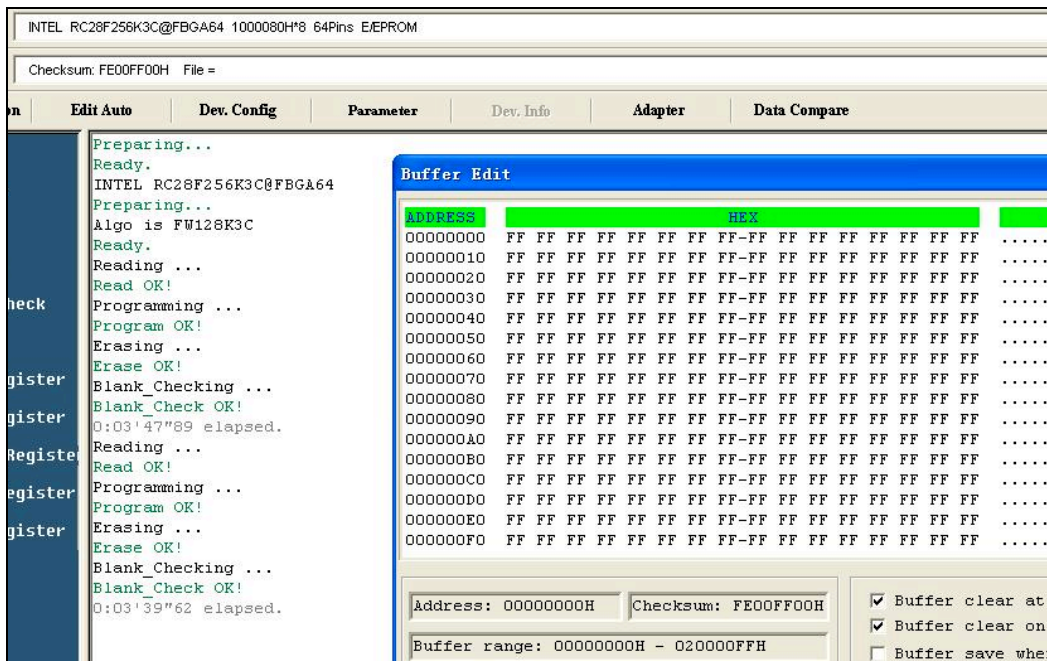


Figure 3 - Fully Functioning Device

For 100% testing, packaging fees may apply to re-tape the components. White Horse is currently offering a promotion on digital component testing for USD0.25 per piece with visual inspection for only USD90.00 or a complete physical inspection for USD200.00. Please contact your Customer Service representative for details.