

# € Coin Acceptance

## Application Note For The X-20 Xeptor

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**Background:** It is not clear what wisdom resulted in the EU designing its € coin to be so nearly identical to the Thai 10 Baht coin, nor what later wisdom resulted in the design of the Turkish 1 Lira coin to be so nearly identical to both of these. Furthermore, the EU coin is manufactured in numerous mints and thus has bit more variation than other coins, further complicating the job of discriminating between the coins. The coins are close enough that without taking special measures, the other coins could be accepted as a € coin. Fortunately there are some subtitle differences between them that can be exploited to achieve high performance in both acceptance of the € coin and rejection of the others.



**€ Special Measures:** Because the € coin has significant importance in all of Europe, IDX has given special attention to the problem of the Thai 10 Baht coin and the Turkish 1 Lira coin. Starting with firmware version V4.0e processor chips date coded after May 2005 IDX has implemented a specific security algorithm to double check to see if a coin being accepted as € coin has either of the subtle differences of the 10 Baht or 1 Lira coins, which are not normally significant enough to cause rejection. Although discrimination is not perfect, the X-20 does now inherently have quite good rejection of these coins while maintaining very high acceptance rates of the € coin.

**Programming An Unwanted Coin:** The X-20 Xeptor allows you to learn a coin that you wish to reject by using the normal process for teaching it to accept a coin, however, prior to dropping the 6 sample coins, the button is pressed 13 times (13 is unlucky) to signify to the Xeptor that it is to reject coins matching this one. When a coin is later tested and is found to be within the acceptance window of both a legitimate coin and the Unwanted Coin, the Xeptor determines which coin signature it most closely matches to make its decision. Any of the X-20's six coin memories can be used for this function. If you are satisfied with the natural discrimination for these coins, IDX recommends that you do not additionally use the Unwanted Coin feature.

**Better Performance Note:** Due to the variation between € coins made at different European mints, you might find it necessary to have the Xeptor learn two slightly different versions of these € coins in order to improve the acceptance rate for some of them. However, if your population of coins is sufficiently consistent, it is better to program only a single Coin Memory for the € coin. The reason for this is that over time, if you have two Coin Memories programmed for the same coin, it is possible for one to self-tune towards one half of the population and the other to self-tune towards the other half of the population. While this will provide excellent acceptance of the good coin, it can result in acceptance of more bad coins because now there are two ways for it to be accepted and one of them is likely to be closer than it would if there were only a single average in a single Coin Memory.