LINDA RASCHKE'S KELTNER MODIFICATION

Many charting software packages use a Keltner channel modification developed by Linda Raschke rather than the original formulation proposed by Chester Keltner. That version is based on an exponentially smoothed moving average (EMA) and a multiple of the average true range added to and subtracted from the EMA. In general, that formula would be:

Middle Line MOV(C,20,EMA)
Upper Line MOV(C,20,EMA) + 2.5(ATR(20))
Lower Line MOV(C,20,EMA) - 2.5(ATR(20))

I have also seen the formula stated as:

Middle Line MOV(C,20,EMA)
Upper Line MOV(C,20,EMA) + 2.5(ATR(10))
Lower Line MOV(C,20,EMA) - 2.5(ATR(10))

Be aware that using the Raschke modification will not produce the same image on the chart or yield the same results as the formula used in this article. As a rule, the outer bands tend to confine more price movement and show more expansion and contraction fluctuations than the original Keltner formula.

However, for those readers who may wish to experiment with the Raschke version, I contacted Linda Raschke for additional information. My thanks to her for providing the following about her modification of the Keltner channels. She said:

> "Based on extensive modeling, I use a 20 EMA and 2.5 ATRs on both sides of the EMA. I have tested 25, 30, 35, 40 EMA as well as 2 ATRs and 3 ATRS — all combos tested with a positive expectation, so regardless of the exact parameters one chooses to use, using the Keltners to signal range expansion or increase in momentum proves it is a durable and robust indicator.
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> "Now, a 20 lookback is not right or wrong or optimal per se — it depends on how you are trying to use the Keltners. For your readership, I would suggest the longer lookback for a more stable period. But sometimes when we are using them for a breakout trigger, a shorter lookback period works better. Shorter (intraday) time frames will penetrate the Keltner channels more than a daily chart. Tick charts behave differently than time-based bar charts as well."