

**To:** jjacobs[jjacobs]  
**From:** Prashant Kantak  
**Sent:** Tue 8/11/1998 1:36:28 AM  
**Importance:** Normal  
**Subject:** ParkerVision  
**Categories:** text/plain; charset="us-ascii"

Jeff,

Obviously, not the same person I was talking about! I thought this was one of that Jeff's many companies.

Anyway, on to this one, it just sounds too good to be true! This is virtually the holy grail of RF receiver designs -- achievable and within practical limits! In recent years, with the advancement of DSP technology, there's been a push toward digitizing closer and closer to RF frequencies in receivers, but with the huge amount of processing power required to do this, it becomes impractical/expensive, especially in portable equipment.

Operation of an RF receiver:

Most receivers (tunable over the receiving range) convert their receiving frequencies to an intermediate (constant) frequency (IF) for further processing. In this manner, even though they may receive signals over various incoming frequencies, most of the processing can be done in IF thereby leveraging common components (that don't need to be tuned or switched in and out each time you tune in to a different frequency).

Consider the common FM radio, for example. The RF (front end) receives signals between 87MHz to 108MHz. This front end has the ability to tune in to a particular frequency depending on the station selected. Once this signal is tuned in, it is scaled down to a lower constant frequency (let's say 455KHz) regardless of the frequency it was received on by the front end. From this point, the IF processing stages perform the function of extracting the baseband signal (in the FM radio case, audio information upto about 15KHz). The baseband signal is then amplified by audio amp. circuitry and sent to the speaker.

PRKR's invention:

Claims to emilinate all the IF stages and go from a lean, mean front end RF to baseband!