

## ***Interactive comment on “The development and test research of multi-channel Synchronous transient electromagnetic receiver” by Fanqiang Lin et al.***

### **Anonymous Referee #1**

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The paper proposes a transient electromagnetic instrument with multi-channel synchronous and describes the experiment. They do a nice job of new TEM receiver. 1) “PPS”, “FPGA”, “ARM” should be explain for first mention 2) There are minor typo errors: page1 line7 change “128 k” to “128 kHz” Page 5 line 11, change “second pulse signal” to “pulse per second”, Page 8 change “40mS” to “40 ms”. 3) Section 4 presents some results of the performance on the field. However, it would be interesting to see some field work photo and instrument picture. 4) the lab test is too simple, the main performance of the receiver contains band width, signal to noise ratio, self-noise level, input full scale, power consumption, linearity, et al. and the table 1 ,table 2, figure2, figure 3, figure 4 are not the key performance test. 5) Field test used Phoenix T-4 trans-

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mitter, the authors should at least mention the performance of V8 receiver. And it may show the advantage of multi-channel TEM receiver. 6) In “introduction” and “Literature review” sections, there are too many words to describe the status in china, but it should be compare with international peer, and find the disadvantage of current instrument. The background and methodology and design have not been captured in detail. 7) The main innovation is multi-channel, add the result of filed test for supporting the advantage. 8) The description in the article is useful if the English is somewhat unclear. the English can be improved. 9) Could the authors discuss synchronous method in more detail?

Overall, the paper is well-written and presented. It proposes nice improvements to TEM receiver.

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