

Interactive comment on “Development of a new distributed hybrid seismic-electrical data acquisition station based on system–on-a-programmable-chip technology” by Qisheng Zhang et al.

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Thank you very much for your affirmation of my work and suggestions for the manuscript. (1) The clock of the ADC is divided by the high-precision clock source of SoPC. SoPC controls the ADS1271 through the SPI protocol, and uses the SYNC signal of the ADS1271 to realize synchronous data acquisition of each channel. At the same time, we all know that the data of the delta-sigma ADC just started to collect is unreal. We have performed corresponding operations during data processing to ensure the authenticity and validity of the data. SoPC uses FIFO to buffer data,

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avoiding the frequent interruption of ADC work. I wish my explanation can help you. I have added the relevant content in section 2.3. (2) As you said, the seismic channel is different from the electric structure. We have different commands to control the data acquisition of the two channels. The main control board can identify the channel type, calculate different delay time, and achieve high-precision synchronous acquisition of two channels according to the time. As for the LPF parameters, the cutoff frequency of the seismic channel is about 1.2 kHz and the cutoff frequency of the electrical channel is approximately 3.4 kHz. I have added the differences between the LPF parameters in the seismic channel and the electrical channel in Section 3.1. (3) I have redrawn Figure 7 and added the time scale of the delay. But please note that Figure 7 is only a schematic diagram to help the reader understand the transmission delay. The specific time needs to be calculated according to the formula and the actual test. (4) Thanks for your suggestion. I will add the spectral characteristics. (5) I will add the spectral characteristics of these signals. (6) I have corrected this error. (7) Sorry, I don't understand the question very well. The 200ns mentioned in the manuscript is the time synchronization accuracy between the various acquisition stations and it is related to delay due to time required on the transmission line, delay due to time spent in acquisition stations in the direction of synchronous transmission, delay due to processing time spent in slave power stations, and delay due to time spent in acquisition stations in the direction of asynchronous transmission. It has nothing to do with the frequency of the acquired signal and the dynamic range of the ADC. Thank you again for your comments.

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