Dear reviewer,

We truly appreciate the time and energy you dedicated in carefully reviewing our manuscript.
Your comments were highly helpful. We really appreciate your attention and comments on our manuscript. Our replies are listed as follows:

Comments 1:
Formula (4) for mean square relative error uses an undefined symbol $\bar{A}$;Include the formula for self-consistency checks of CSUMT-R apparent resistivity data.
Response 1:
Thank you for highlighting this ambiguity. We have revised Formula (4) and its description to explicitly define all symbols and clarify its dual use for both cross-instrument comparison and self-consistency validation:
Revised Formula (4):

$$m = \pm \sqrt{\frac{1}{2n}\sum_{i=1}^{n}\left(\frac{A_i - A_i^{'}}{\overline{A}}\right)^2} \tag{4}$$

and the $\overline{A}$ formula is

$$\overline{A} = \frac{A_i + A_i^{'}}{2} \tag{5}$$

(where n is the number of frequency points, A_i is apparent resistivity measured by CSUMT-R at the *i-th* frequency point, $A_i^{'}$ is Apparent resistivity measured by the reference instrument or the second measurement by CSUMT-R, $\overline{A}$ is mean of A_i and $A_i^{'}$).
Self comparison:
For CSUMT-R repeatability tests, A_i and $A_i^{'}$ represent two consecutive measurements at the same survey point. The mean square relative error m between repeated measurements was consistently <3%, confirming high instrument stability.

Comments 2:
The dynamic buffer DMA driver is a key innovation but lacks dedicated illustration. Replace Fig. 8 with a diagram explicitly detailing this mechanism.
Response 2:
We appreciate you raising this point. We have modified Fig. 8. During initialization, the DMA driver allocates memory space for the dynamic buffer. In the process of data transmission, the acquisition system writes data into the DDR. The DMA driver selects an appropriate buffer in real time according to the STA/LTA algorithm to ensure that data can be written into the SSD efficiently and accurately. The modified image is shown below:

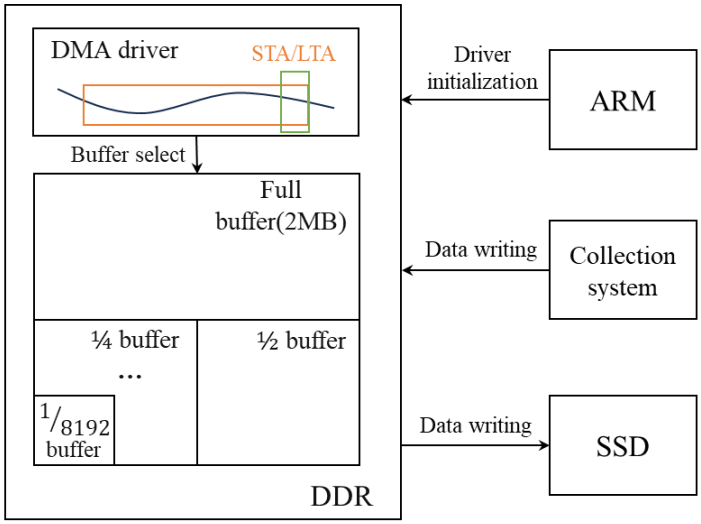

Figure 8. Schematic diagram of dynamic buffer DMA driver.

Comments 3:

Add an opening paragraph summarizing the core innovations.

Response 3:

Thank you so much for your comment. The core innovations of this study are:

(1) A dynamic buffer DMA driver with elastic memory pools (256B–2MB) that adapts to sampling rates (305 Hz–2.5 MHz), eliminating data loss at 320 Mbps transmission;

(2) Distributed hybrid networking integrating 5.8 GHz WLAN and 4G-IoT for multi-scenario field deployment, enabling real-time remote monitoring in complex terrains;

(3) Five-channel batch processing algorithms supporting independent calibration and real-time visualization of ultra-wideband EM data.

These advancements collectively establish a robust framework for intelligent electromagnetic exploration in challenging environments.

Comments 4:

Unify the term for the monitoring software to "upper-computer" throughout (e.g., Section 6 uses "host").

Response 4:

Thank you for your careful review of the manuscript. All instances of "host" (including in Section 6) have been replaced with "upper-computer" for consistency.