



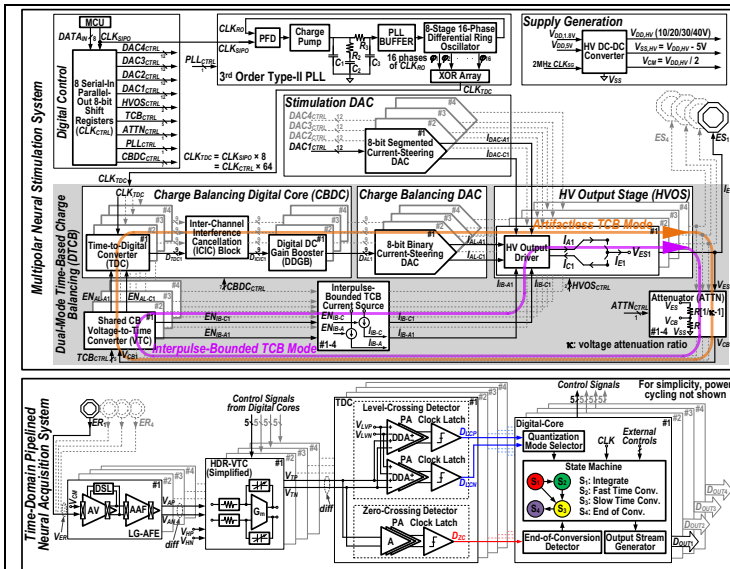


Fig. 1. The proposed ECoG-based bi-directional brain-computer interface (BD-BCI).

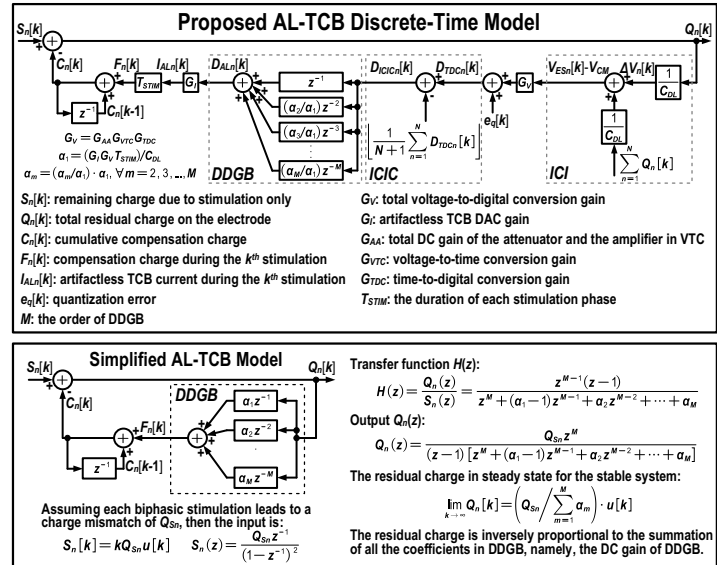


Fig. 3. The discrete-time model of the proposed AL-TCB and digital DC gain booster (DDGB).

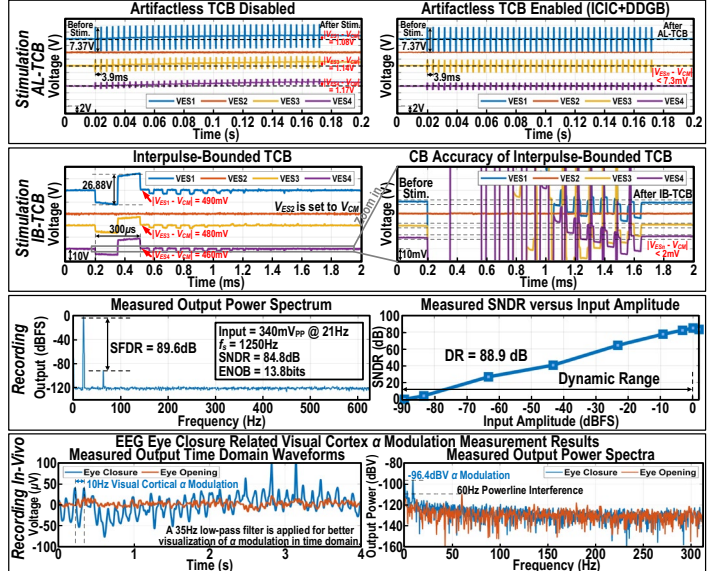


Fig. 5. In-vitro measurement results of AL-TCB and IB-TCB, electrical and in-vivo measurement results of the TPNA system.

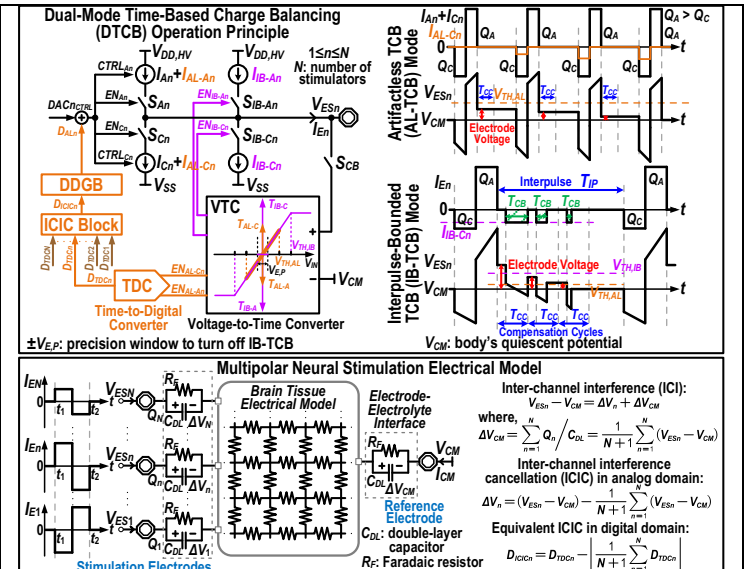


Fig. 2. DTCB operation principle, multipolar neural stimulation electrical model, and inter-channel interference cancellation (ICIC).

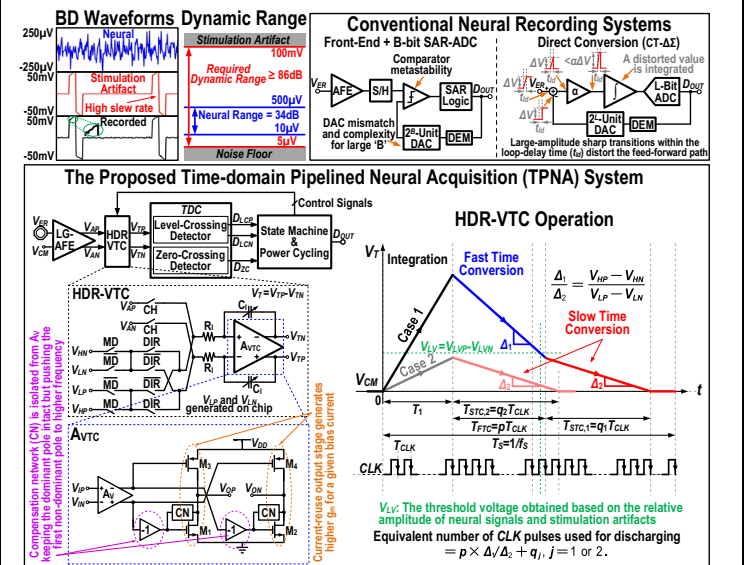


Fig. 4. DR challenges faced by ECoG-based BD-BCIs and time-domain pipelined neural acquisition (TPNA) system.

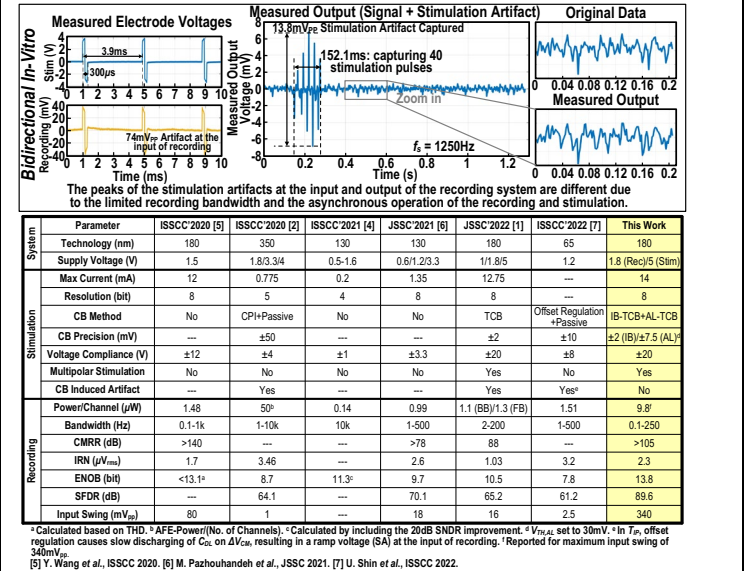


Fig. 6. In-vitro bidirectional phantom brain tissue experiment of the proposed BD-BCI and table of performance comparison.