

Supplementary Material: Tunable Three-Wavelength Fiber Laser and Transient Switching between Three-Wavelength Soliton and Q-Switched Mode-Locked States

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Stability of three-wavelength fiber laser:

Firstly, signal-to-noise ratio (SNR) under wavelength tuning and multi-wavelength mode-locked state with Radio frequency spectrometer, and both were higher than 60 dB, which proved the mode-locked stability of these states. Taking the three-wavelength soliton state with relatively poor stability as an example, Fig. S1 (a) and (b) shows its repetition frequency at 3.125 MHz, and the SNR is 67 dB. Secondly, we compare the spectral tuning before and after two hours with the typical spectral state in the multi-wavelength soliton state, and the intensity decreases slightly, but the spectral profile is still very similar. On the whole, the fiber laser in this paper has good stability.

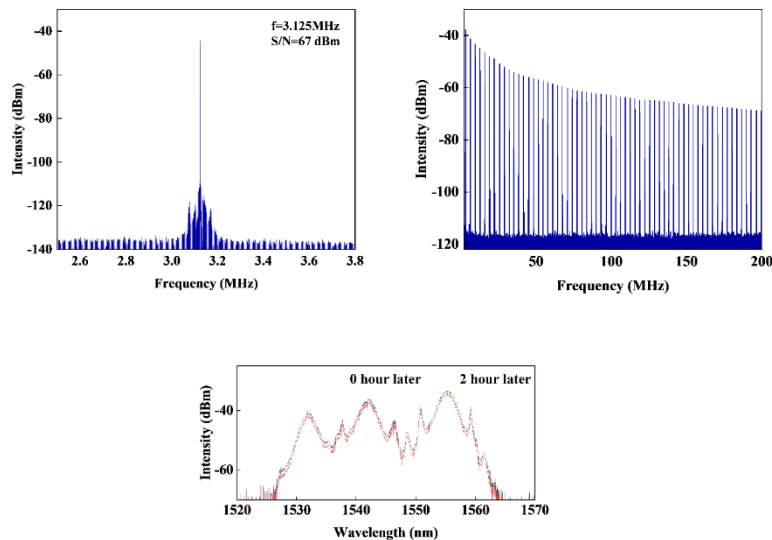


Fig.S1 (a) Repetition frequency and signal-to-noise ratio under RF spectrometer. (b) Spectral stability in 200 MHz range.