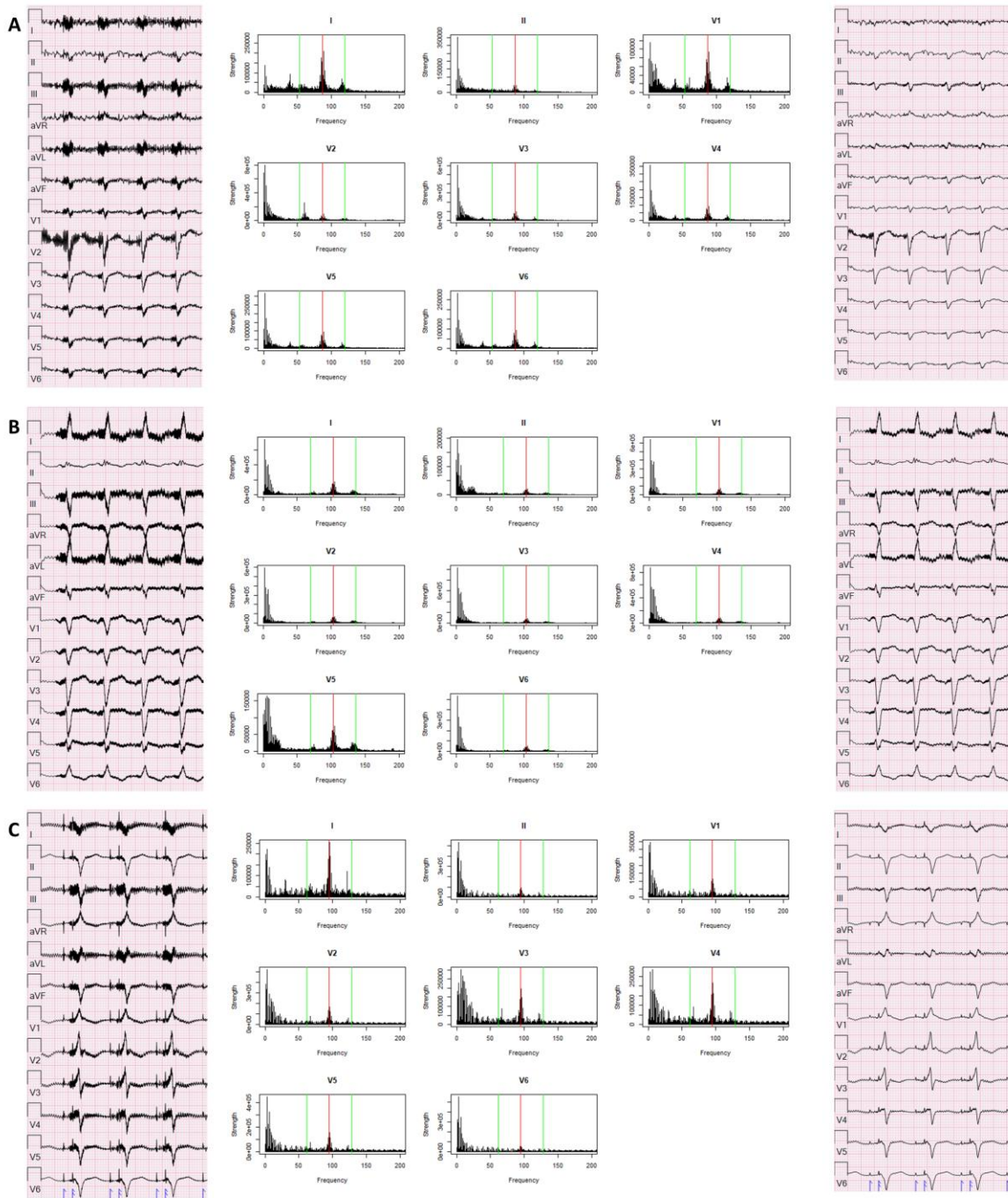


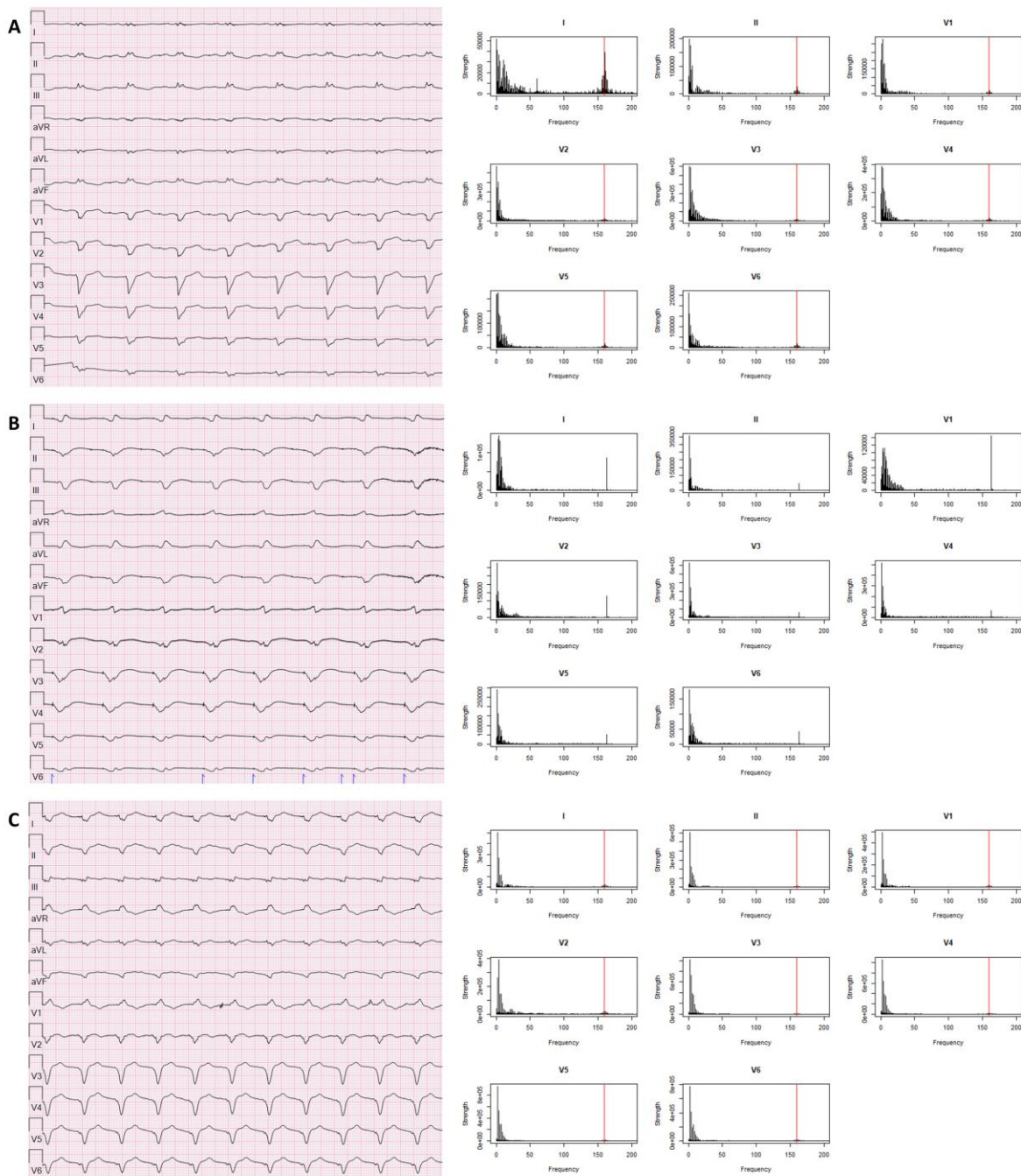
# **SUPPLEMENTAL MATERIAL**

**Figure S1. HeartMate 3 Spectral Profiles.**



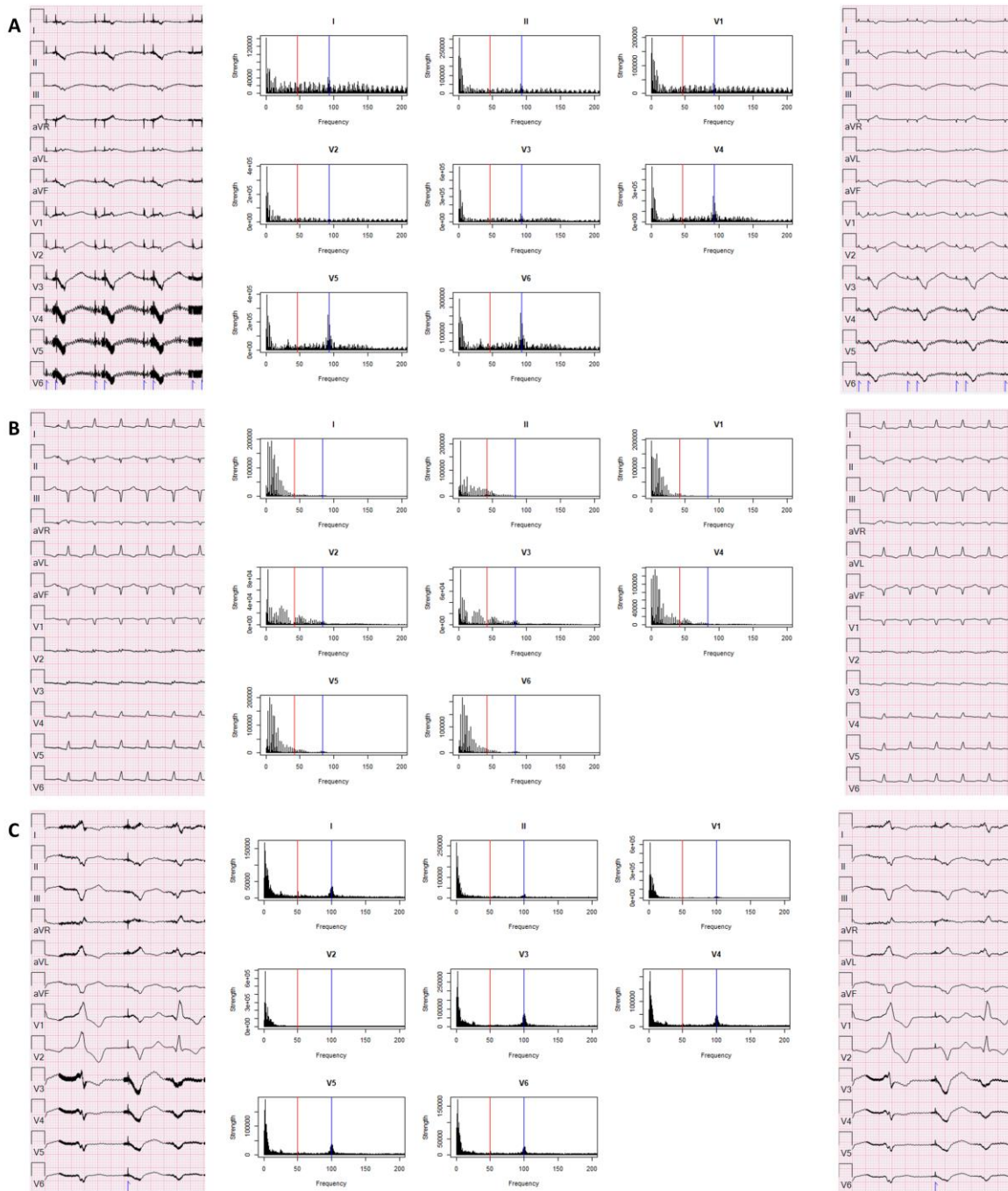
Electrocardiograms (ECGs) (left) and spectral profiles (middle), and ECGs with low pass filter adjusted to 40 Hz (right) from patients with HeartMate 3 left ventricular assist devices (LVADs) at different speeds, red line indicates LVAD rotational speed, green line is +/- 2000 RPM (artificial pulse). A: 5200 RPM (86.7 Hz); B: 6200 RPM (103 Hz); C: 5700 RPM (95 Hz).

**Figure S2. HeartMate 2 Spectral Profiles.**



Spectral profiles of ECGs from patients with HeartMate 2 left ventricular assist devices (LVADs) at different speeds, red line indicates LVAD rotational speed. The default low pass filter is 150 Hz A: 9600 RPM (160 Hz); B: 9800 RPM (163.3 Hz, red line omitted because it obscures peak); C: 9600 RPM (160 Hz).

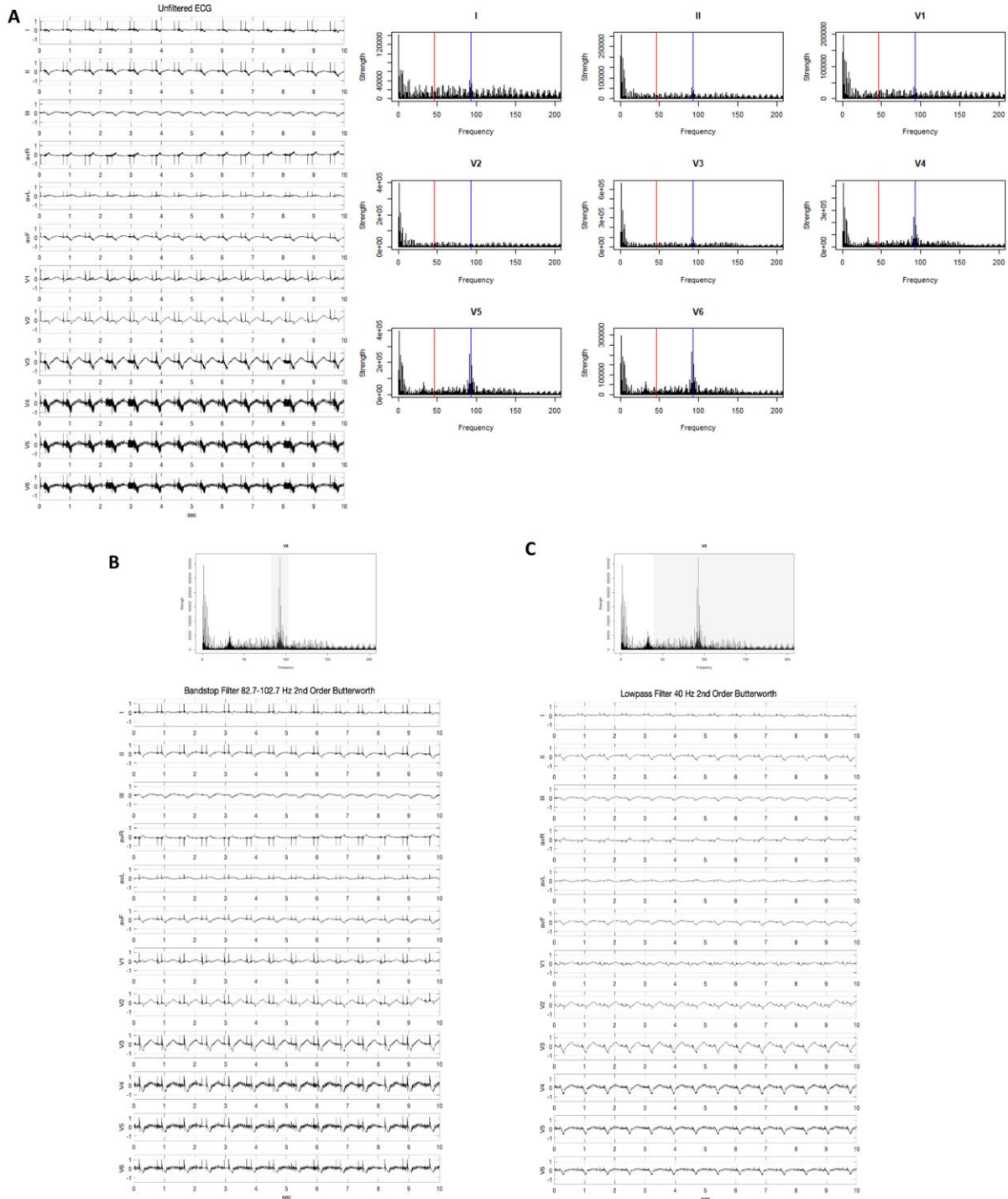
Figure S3. HeartWare Spectral Profiles.



Spectral profiles of ECGs from patients with HeartWare left ventricular assist devices (LVADs) at different speeds, red line indicates LVAD rotational speed, blue line indicates 2x LVAD rotational speed.

A: 2780 RPM (46.3 Hz); B: 2500 RPM (41.6 Hz); C: 3000 RPM (50 Hz).

**Figure S4. Filtering Solutions to LVAD Artifact in HeartWare.**



A) Electrocardiogram (ECG) and spectral profile of a patient with a HeartWare LVAD with red line indicating LVAD rotational speed (2,780 RPM/46.3 Hz) and blue line indicating 2x LVAD rotational speed (92.7 Hz). B) ECG after signal filtered through a 82.7-102.7 Hz bandstop filter. C) ECG after signal filtered through a 40 Hz low pass filter.