

Supplementary Information for

## **Simultaneous real-time visible and infrared video with single-pixel detectors**

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### **This Supplementary Information includes:**

Captions for videos 1-4

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**Video 1:** Video reconstructed in real-time for visible and SWIR wavelengths simultaneously. The visible band is displayed in full-colour (red,green,blue) and SWIR (800 - 1800 nm). Both reconstructions have been fully sampled at 32 x 32 pixel resolution and up-sampled and interpolated to 64 x 64 pixels in real-time with no additional time-lag.

**Video 2:** Video reconstructed in the presence of smoke when operating the camera with 100% sampling, i.e. no compression using the iterative algorithm described in the text. The visible and shortwave infrared video is reconstructed at 64 x 64 pixel resolution and up-sampled and interpolated to 128 x 128 pixels in real-time with no additional time-lag.

**Video 3:** Video reconstructed in the presence of smoke when operating the camera with 50% sampling, using the optimisation algorithm and evolutionary pattern selection described in the text. The visible and shortwave infrared video is reconstructed at 64 x 64 pixel resolution and up-sampled and interpolated to 128 x 128 pixels in real-time with no additional time-lag.

**Video 4:** Video reconstructed in the presence of smoke when operating the camera with 25% sampling, using the optimisation algorithm and evolutionary pattern selection described in the text. The visible and shortwave infrared video is reconstructed at 64 x 64 pixel resolution and up-sampled and interpolated to 128 x 128 pixels in real-time with no additional time-lag.