

Overview

DARBEE Reveal technology creates a new level of image clarity. Details that were previously obscured will be enhanced. Fog, haze and poor light conditions are automatically compensated for.

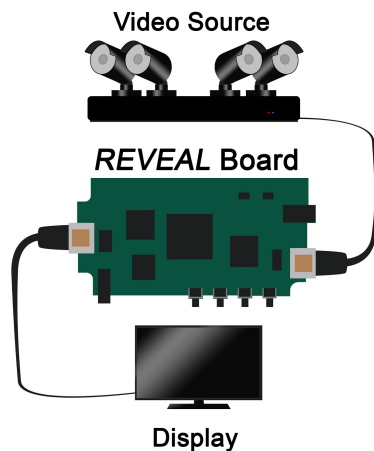
Going beyond conventional image processing for de-fogging, de-hazing, rainy, snowy and low quality lighting conditions.

Enabled by parallel processing in a single chip, *Reveal* represents the next generation of computational image processing for clarity and quality.

See targets of interest, more clearly!

Form

- **Video processing** – hardware or software
- **Easy to set up** – no installation
- **Easy to use** – simple controls, three modes
- **Small footprint** – compact form factor



Applications

- **CCTV** image quality is profoundly improved
- **Real time** see through fog and haze
- **Poor Weather** see through fog, haze, rain
- **Smoggy** air conditions
- **Review** poor quality legacy video
- **Improve** TCP/IP feeds



FPGA Based Requirements:

Tested on Altera Cyclone IV, up to 1080p60:

- <13K LEs
- 45Kbits of on-chip memory
- No external memory

Software Based Requirements:

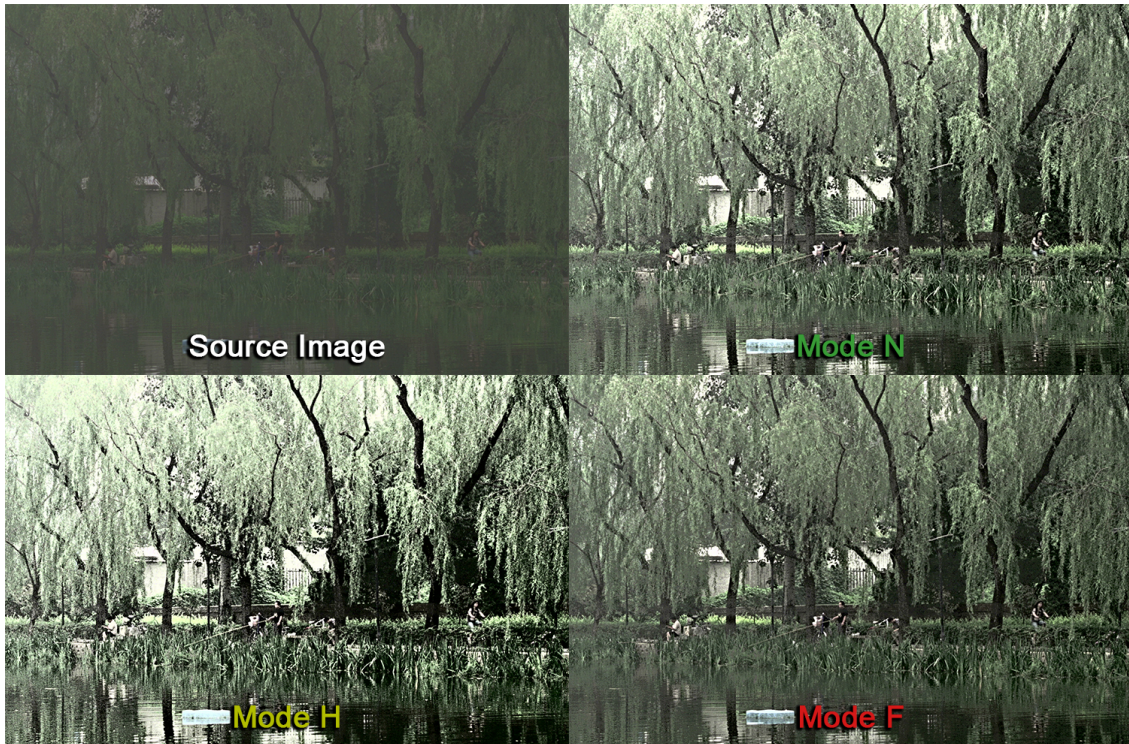
One frame of 1920x1080 requires:

- 4.2M memory read/writes
- 6.3M cache friendly memory read/writes
- 14.6M simple math operations
- 2.1M inverse square roots
- 2.1M integer divisions

Software Notes:

- Can perform in real-time, 1080p60, on a single core of a modern CPU.
- Raspberry Pi (BCM2835 SoC), without hardware acceleration, can do 480p30.
- Memory read/write width depends on size of a pixel in memory

Reveal allow the operator to see details out that would have otherwise gone unseen.



Each mode improves the image information in different regions

