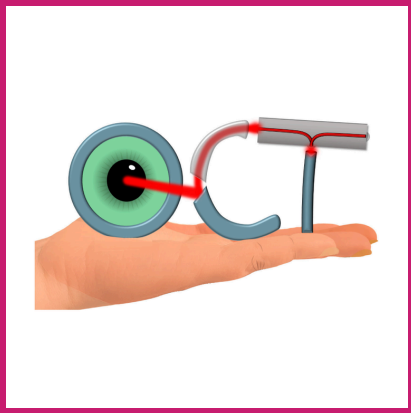
MedTech

PIONEAR

PIONEAR is a breakthrough in sound detection, using light instead of electricity to 'hear' the world. Traditional microphones rely on electrical signals, which can introduce noise and limit sensitivity. By harnessing the power of light, this technology reduces interference and energy use, paving the way for cleaner, faster, and more sustainable sensing. It's not just a microphone—it's the future of listening.

HandheldOCT Medical imaging is essential for diagnosing disease, however, traditional systems are bulky and expensive. The Handheld OCT (Optical Coherence Tomography) Chip changes that by shrinking advanced imaging technology into a portable device. OCT uses light waves to capture detailed, cross-sectional images of tissue—perfect for eye exams, skin analysis, and even early cancer detection, bringing high-quality imaging to clinics, remote areas, and even home healthcare. Why is this important? Early diagnosis saves lives, and portability means more people can benefit. By combining photonics with miniaturisation, this innovation puts powerful diagnostic tools in the palm of your hand. It's a step toward a future where healthcare is faster, smarter, and available to everyone.



CARDIS Cardiovascular disease (CVD) is one of the leading causes of death worldwide, and early detection is critical for saving lives. The CARDIS project has developed a unique photonic-based medical device to screen for arterial stiffness—a key marker for hypertension and heart disease. The device uses Laser Doppler Vibrometry (LDV), where a low-power laser measures tiny vibrations in the skin caused by the heartbeat, helping doctors identify patients at risk. At the heart of the device is a silicon photonics chip, which integrates complex optical functions into a compact, handheld system. This innovation enables fast, reliable, and non-invasive screening at the point of care bringing cutting-edge photonics into everyday healthcare, making early cardiovascular screening accessible and affordable.