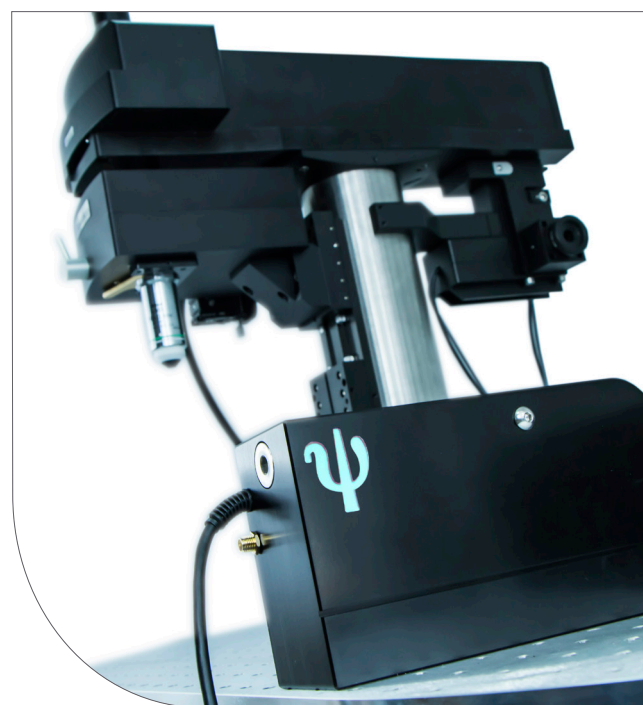
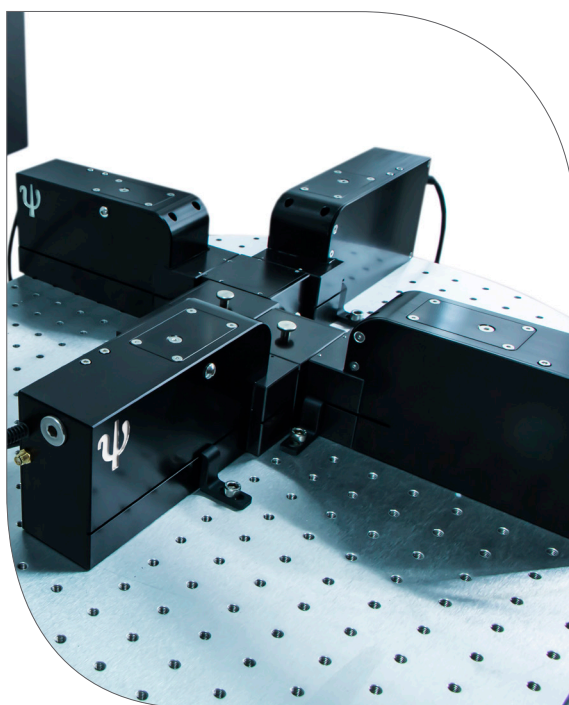
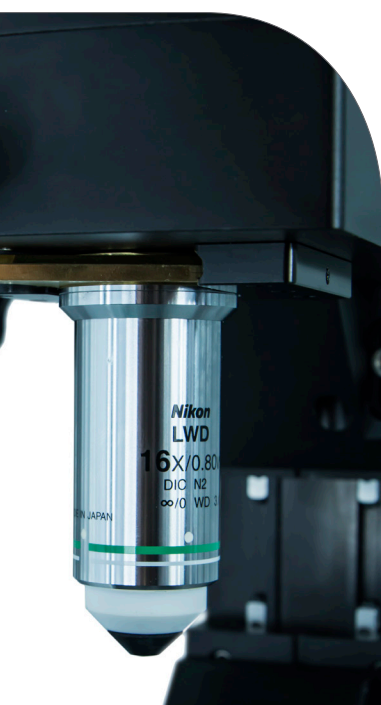


## ChromoFlex

The power of four.



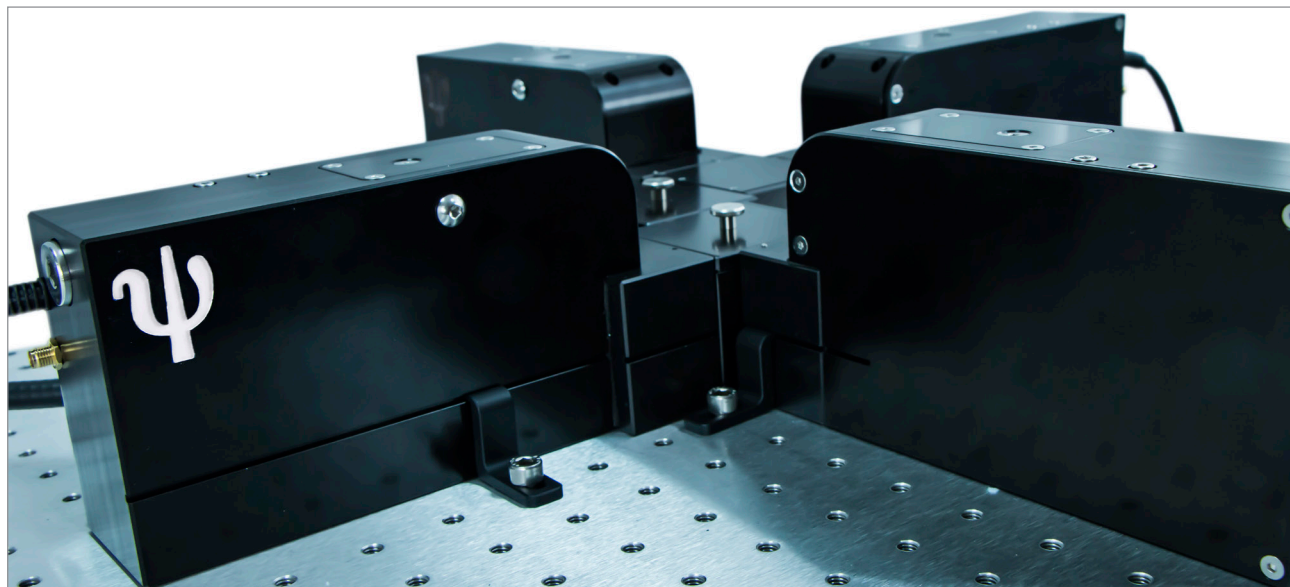
[www.scientifica.uk.com/chromoflex](http://www.scientifica.uk.com/chromoflex)

[www.scientifica.uk.com](http://www.scientifica.uk.com)

## ChromoFlex

### Multiple dyes in vivo

The Scientifica Chromoflex allows you to simultaneously image up to four different colour dyes from your sample with the increased sensitivity of GaAsP photomultiplier tubes (PMTs).



ChromoFlex with four GaAsP PMTs

#### As always, it's modular

Choose between a 2, 3 or 4 PMT system depending on your current budget and experimental requirements.

Simply add new PMT modules as your experimental needs develop.

#### Remote detector positioning

The ChromoFlex can be placed remotely on your antivibration table or another nearby surface. The two-metre liquid light guide (LLG) offers this flexibility.

The new space created above the objective lens allows for larger collection lenses and dichroic mirrors enabling even more efficient light collection.

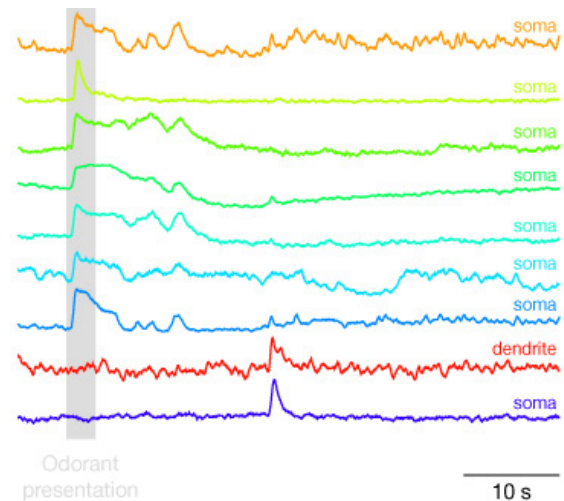
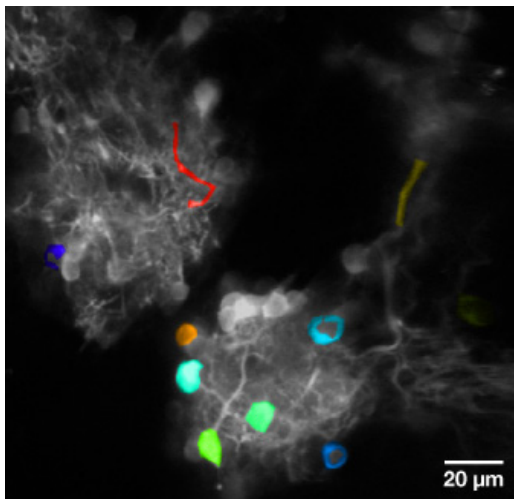
#### Superior light collection efficiency

The Chromoflex benefits from large collection optics which enables greater light-gathering from the objective back aperture (up to 8° of divergent light).

These optics, coupled with the liquid light guide, increase overall efficiency by up to 10% compared to our original multiphoton detection unit (MDU). This enables better detection of weak fluorescent signals, with the additional benefit of adding more PMTs when required.

## ChromoFlex in action at the Francis Crick Institute

Researchers from the Francis Crick Institute have provided data when using the Chromoflex. Odorant induced calcium transients in the mouse olfactory bulb in vivo. Activity was visualized with GCaMP6f using two-photon excitation and detected with a 2 PMT Chromoflex unit. Presentation of an odorant stimulus triggered a fluorescence increase in the cells surrounding the bottom glomerulus.

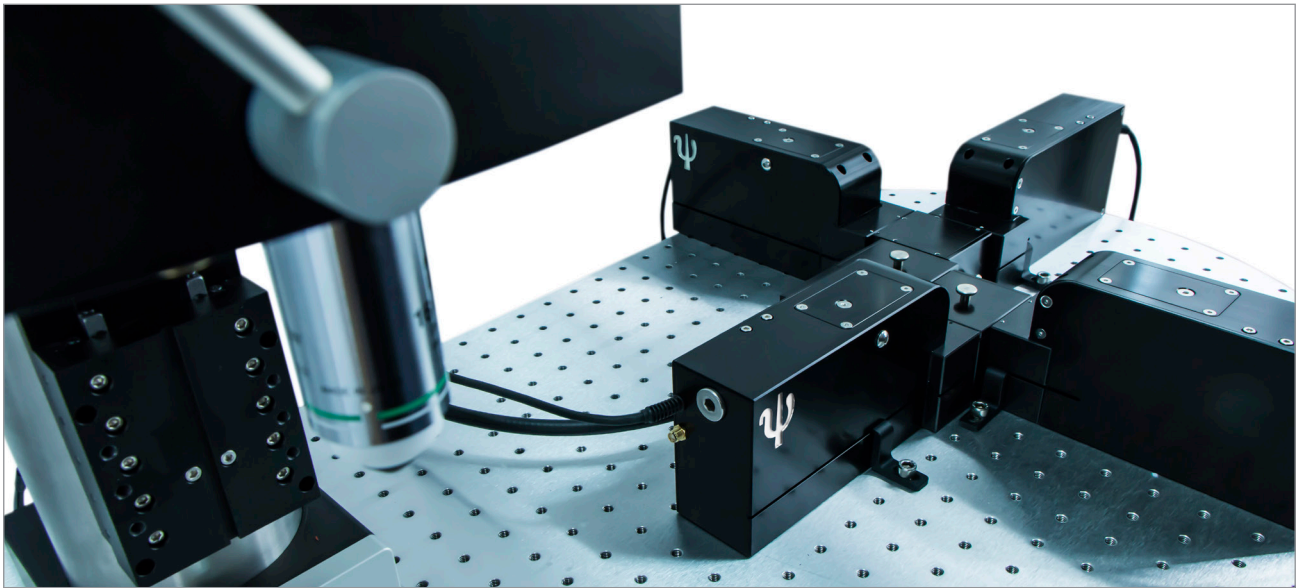


Data kindly acquired and provided by Dr Tobias Ackels and Dr Andreas Schaefer of the Francis Crick Institute

**Remote location**  
The detection module can be placed remotely on your antivibration table or another nearby surface.







### Four is better than two

The ChromoFlex is perfect for applications where the collection of more than two wavelengths of light is necessary and substage light collection isn't possible.

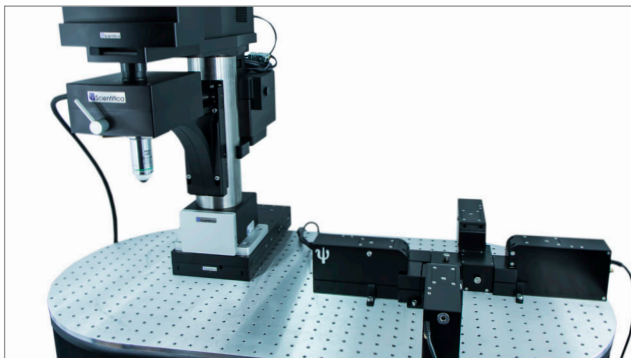
Additionally, it is also ideal for cell morphology studies where different cell types, subclasses or cellular structures are 'tagged' with numerous dyes.

ChromoFlex enables the identification of different cell types while co-expressing calcium indicators and voltage sensitive dyes.

### Liquid light guide technology

The light guide is suitable for transmission of all visible wavelengths. The LLG itself consists of a high refractive index liquid in a polymer jacket. Each end of the guide contains polished quartz windows covered with an anti-reflective coating for best possible transmission.

The LLG acts as a single optical transmission medium, similar to a single silica fibre. However, the much larger diameter of the LLG enables the delivery of higher power levels and the transmission efficiency is not limited by the dead space between bundles of silica fibres (packing losses).



# Multiphoton Software Options

## SciScan

### Scientifica's open-source data acquisition software

**SciScan** is a two-photon acquisition software package designed and built by Scientifica in collaboration with researchers as an easy to use research tool.

Scientifica's expert designed multiphoton acquisition software, **SciScan** is available for download from [sciscan.scientifica.uk.com](http://sciscan.scientifica.uk.com)



#### Simultaneous data collection

SciScan can be used to control all of Scientifica's galvo and resonant scanning two photon systems including the HyperScope for both in vivo and in vitro imaging applications.

The software, created in LabView and utilising popular National Instruments interface boards, can be provided "open source" to allow you to create custom modules and develop new functions.

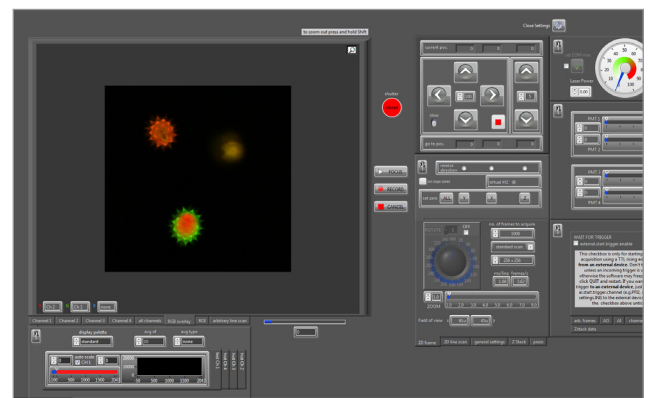
SciScan allows the collection of data from all ChromoFlex PMTs simultaneously.

The software contains integrated controls for Scientifica's multiphoton imaging systems and other industry standard instruments including Pockel cells, Piezo objective positioners, XY Stages and microscope focus drives.

#### Powerful modules

The new SciScript Module allows users to pre-program recording sequences and stage motions.

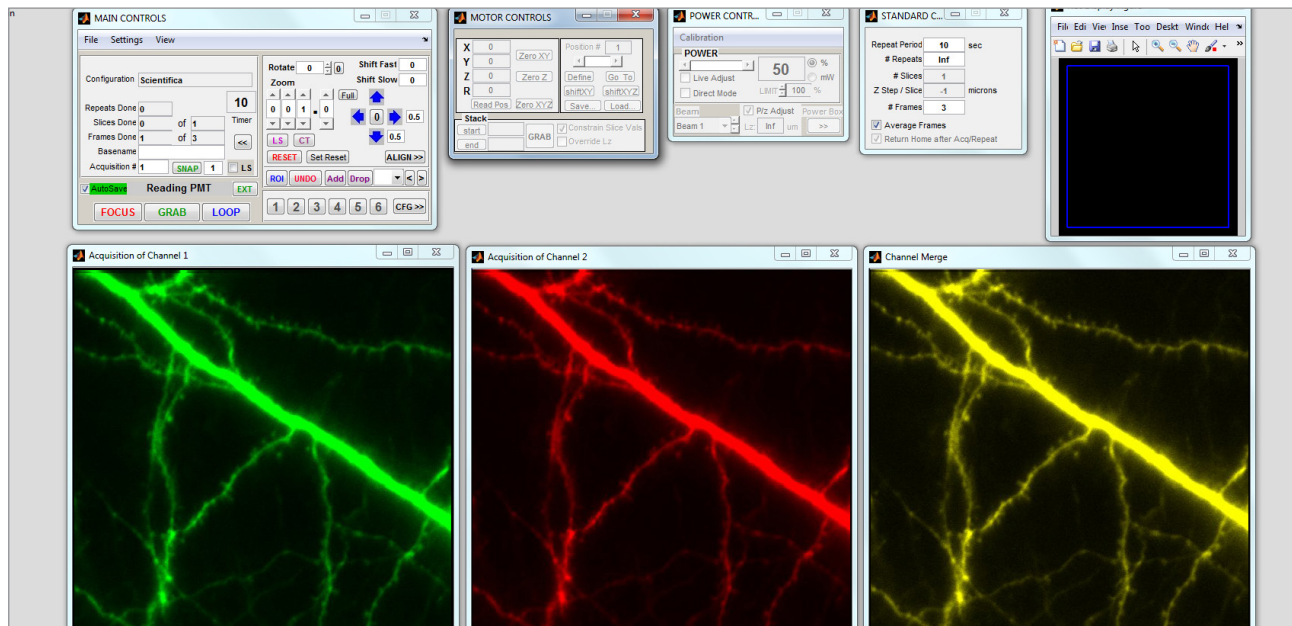
The Position Save Module enables chronic in vivo experiments with repeated imaging sessions over the course of days, weeks or months. It greatly simplifies the task of precisely repositioning the scan area over the same locations.



**NOTE:** Please speak to your sales representative for information on the licence required to drive this software.

# ScanImage software

Vidrio Technologies have fully integrated Scientifica's multiphoton hardware into their **ScanImage** software packages.

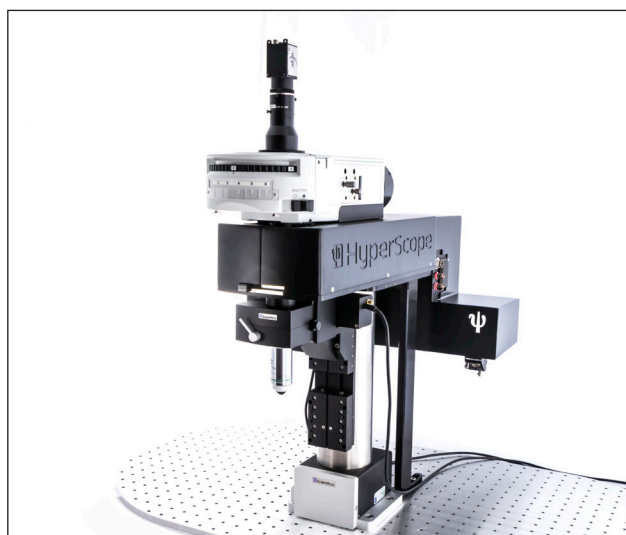
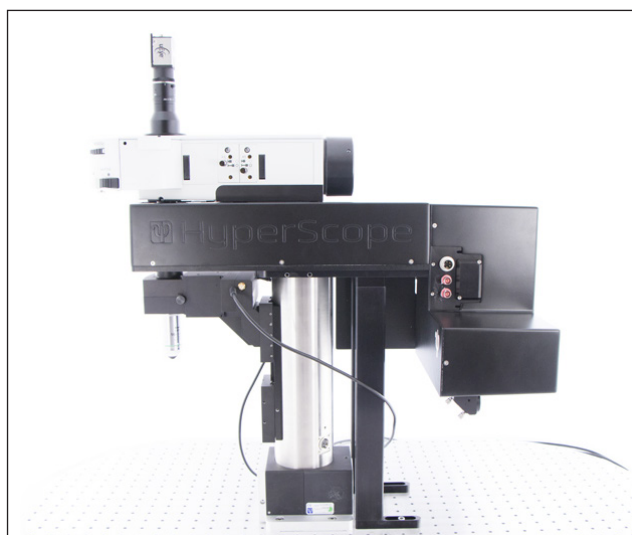


## Software functions

Researchers at the HHMI Janelia Farm Research Campus developed ScanImage specifically for neuroscience applications.

Input and output signals synchronise your software with additional hardware.

Please visit [www.scanimage.org](http://www.scanimage.org) for the most recent free software release for your galvo and resonant requirements and explore the premium licence pricing.

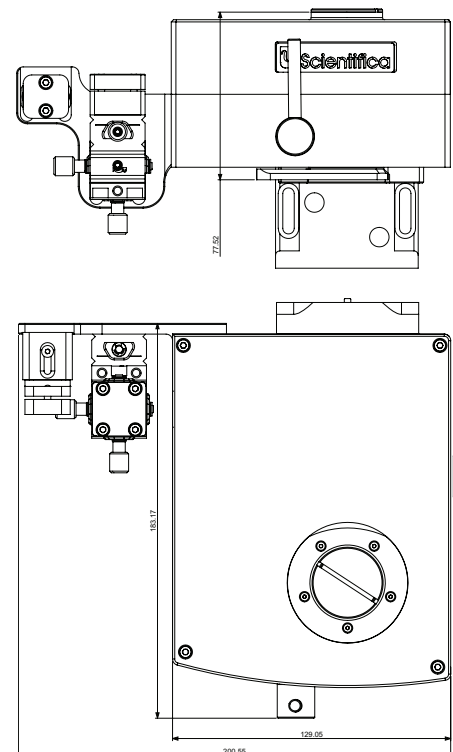
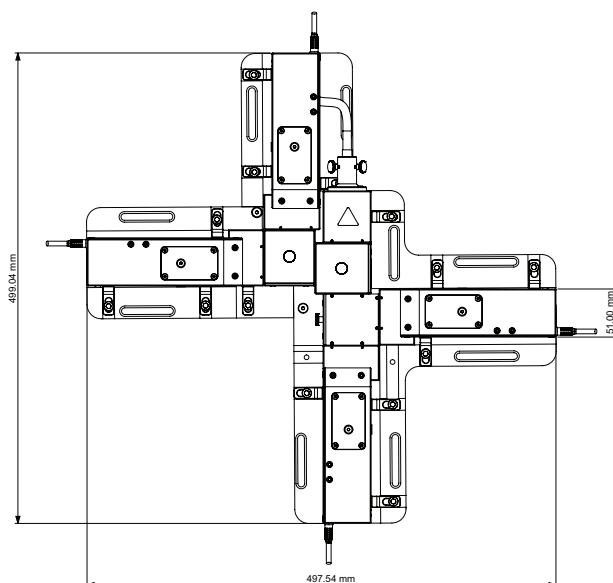


Also compatible with Scientifica's HyperScope. Find out more about this system at [www.scientifica.uk.com/hyperscope](http://www.scientifica.uk.com/hyperscope)

## Technical specifications

Laser/visible dichroic mirror	665 nm long-pass dichroic, factory-fitted (60 x 40 x 1 mm)
Laser blocking filter	680 nm short-pass filter, factory fitted
Objective max exit aperture	20 mm diameter
Angular collection	+/- 8 degrees maximum from 20 mm exit aperture
Objective compatibility	M32X0.75, M27X0.75, M25 X0.75 and RMS threaded objectives
Spectral filtration	To be specified with order and requires Scientifica filter cube, compatible with standard fluorescence filter sets (25 mm ø filters; 24 X 36 x 1 mm dichroic mirror)
Number of channels	Two, three and four channel options
Detector types	Hamamatsu H10771P-40 GaAsP - protected Hamamatsu H11706P-40 GaAsP - gated
Preamplifier bandwidth	20MHz fixed gain-Resonant scanning 1Mhz fixed gain-Galvo scanning Switchable gain/bandwidth-switchable system
Preamplifier gain	100000
High voltage control	Manual and/or software control
PMT protection	H10771P-40 - Integrated protection circuitry and remote light sensor H11706P-40 - Voltage gating functionality to avoid overload situations
Photocathode	Spectral response—300nm to 720nm Radiant Sensitivity— $17.6 \times 10^4$ A/W
External connections	Signal Output connector—SMA Gate input connector—BNC
Gated PMT shutter	Shutter width 1uS to 10mS Delay time 150nS Repetition rate 10KHz

## Schematics





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