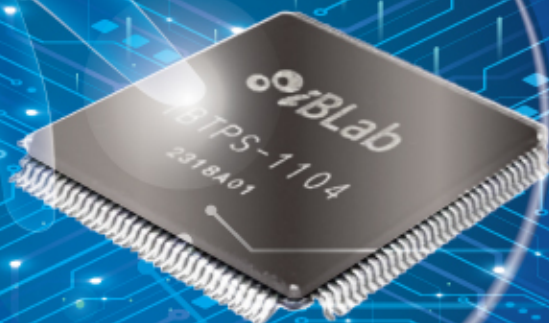


iBTPS1104.

FASTEST AI-BASED PCAP TOUCH CONTROLLER



With Machine Learning, Artificial Intelligence, and Neural Networks as its backbone, iBTPS-1104 is the most advanced Projected Capacitive Touch Controller today. Machine Learning (ML) collects, organizes, and classifies touched objects, allowing the Neural Network in the chip to quickly and accurately identify and track touched objects. At the same cost, iBTPS-1104 undoubtedly demonstrates a completely different level of efficiency. Under the control of MCU firmware, each analog input signal is strictly controlled by a fully adjustable front-end (FRONT-END) built-in device to ensure its quality. iBTPS-1104 spares no expense, and has built-in multi-row adjustable active analog filters and a Multi-Level Programmable Operation Amplifier to track and hold (T/H) signals, which is converted by a high-speed 12-BIT SAR ADC, and then it is sent backward to a dedicated Digital Signal Processing (DSP) to complete the work of the analog front-end. The dedicated DSP uses Multi-Mode Digital Filtering to reduce noise outside the operating frequency, evenize the touch signal according to the characteristics of the touch screen (COMPENSATION), perform Neural Network Operation Recognition about the peaks, and obtain the touch signal to transfer to the host. In the case of rather quiet environment, it provides a scanning speed of up to 500FPS for a 32" touch screen, might be ranking first in the world. iBTPS-1104 is the fusion of AI and touch technology, as well as the best integration of effective processing methods for TOUCH signals. It brings the best benefits to the operation and use. And, it is the brainchild of Imagination Broadway's decades of experience in the field.

Specifications and features

- Built-in 32-bit ARM M0 MCU
- Built-in neural network with more than a thousand neurons
- Built-in parallel adjustable active Butterworth high-order analog filter circuit
- Built-in 16-step multi-level amplification, programmable operation amplifiers
- Built-in parallel 12-BIT SAR high-speed ADC
- Built-in more than 200 selectable modes of Finite Impulse Response Digital filter(FIR)
- Dynamic environment tracking ,updating and correction
- Can be up to 500FPS scanning performance
- Learning-based parametric compensation algorithm
- Built-in 128KB flash memory
- I/O: USB/I2C/UART/GPIO
- Touch Control:
 - Supports channels (up to 44)
 - Supports touch screen TP size (up to 32")
 - Supports multiple Operating Systems
- Operating voltage and temperature: 3.0V~3.6V, -40°C ~ +80°C
- Power management: sleep/deep sleep (<6mA)



High Recognition
and Low False Rate



High-Speed Process
and Smooth Operation



Adapt to The Environment
and Adjust Intelligently



Intuitive to Use and
Easy to Maintain



Hybrid Filtering to
Best Noise Immunity



Smart

Trained with Machine Learning Process and deploy the parametric mechanics over built-in neural network engine for hardware acceleration. The trained AI DSP navigates the sensed touch signals to their best matching finger events.

Fast

With paralleled signal processes, starting from the input stage until they can be aggregated for Group Level evaluations, through various types and stages of DSP functions, the whole procedure is in its no-time-wait mode for the incredible touch performance.

Adaptable

When the variations of the way of touch control is needed for better control choice, mechanism of auto-sensing and setting to best-fit parameter set is activated for the needs. Special manual operation for certain analyzed results can also be inserted at right time.

Complete

Signals going through a streamlined procedure from the beginning (at input stage), passed through fully organized hardware and software, specialized structures to rectify, qualified and be recognized, and then pass over to the host to present the well-prepared Touch Status. All is done in its self-contained, no more, no less, only but complete.

