

Partial Teardown



▶ Original Video

▶ Begin

Note: Some information may come from other sources. All pictures from uploader unless noted otherwise.

Original Source Information

Source	YouTube
Uploader	EEVblog
Video Name	EEVblog #1317 - \$140 2CH 100MHz Fnirsi Tablet Oscilloscope Review
Posted Date	July 4, 2020

Donor Information

Donor	Not Applicable
Donor General Location	Not Applicable

Device Information

Device Type	Oscilloscope
Brand	FNIRSI
Device Name	Portable Tablet Oscilloscope
Device Model	1013D

Post Information

Post Date	September 29, 2020
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Device Analysis

Design Wins

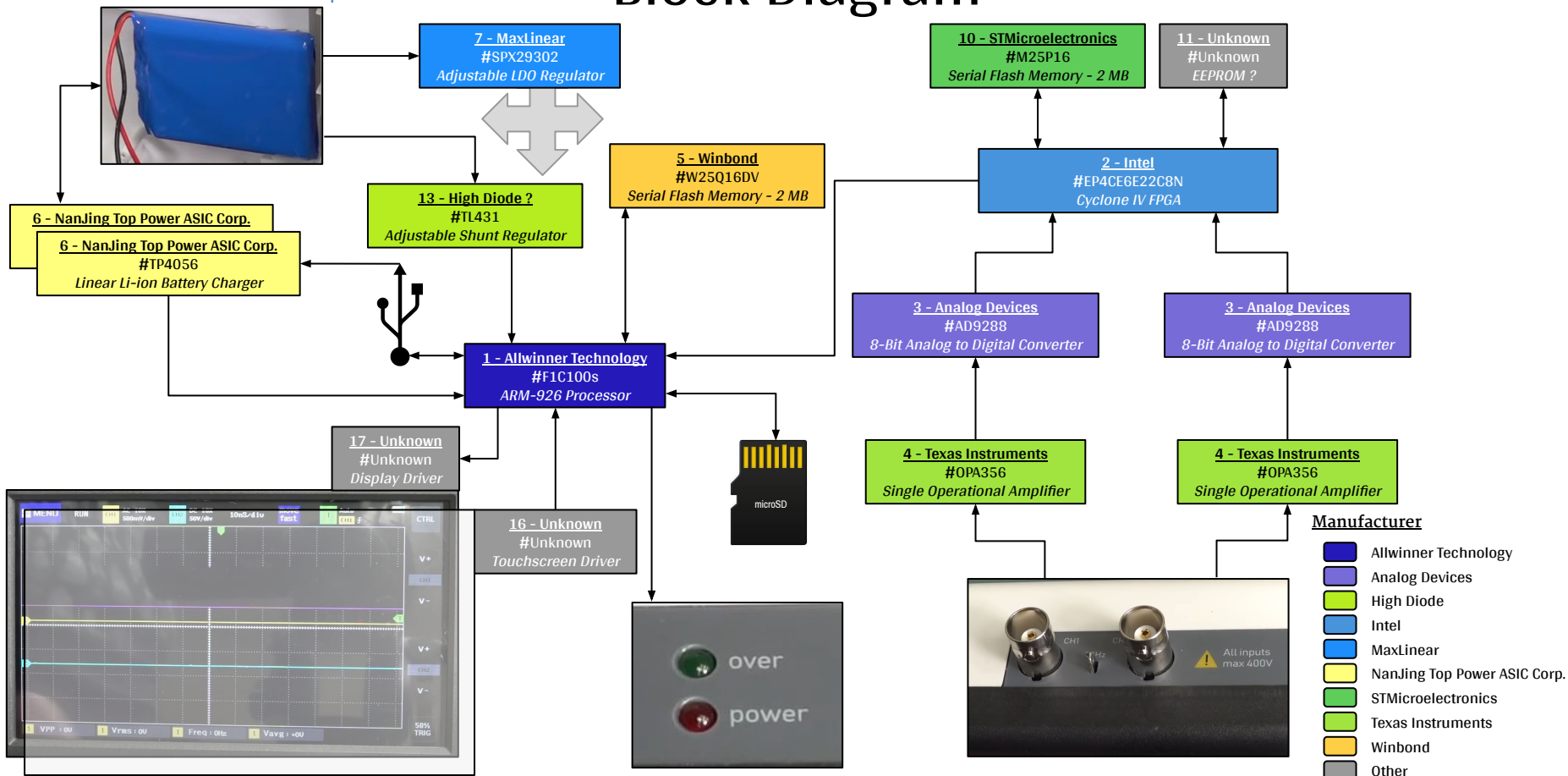
Purpose	Manufacturer	Part Number
Processor	Allwinner Technology	F1C100s
Data Processing FPGA	Intel	EP4CE6E22C8N
Flash Memory - Processor	Winbond	W25Q16DV
Flash Memory - FPGA	STMicroelectronics	M25P16
Analog to Digital Converter	Analog Devices	AD9288
Battery Charger IC	NanJing Top Power ASIC Corp.	TP4056 (x2)

FNIRSI 1013D Portable Tablet Oscilloscope uses a Allwinner Technology F1C100s Processor and a Intel FPGA for data processing. The analog to digital converter used here is a AD9288 by Analog Devices, which is the same as the other FNIRSI 5012H Handheld Pocket Oscilloscope. However the specifications listed is much higher than it really is. For screenshot storage, a microSD card was utilized instead of a NAND flash chip seen on other oscilloscopes.














The two serial flash memory ICs used in the devices are made by different manufacturer. No power management ICs were found in the device, and instead uses multiple regulators and and battery charger ICs in place of it.

Cost effectiveness was achieved by using no memory, a minimal amount of amplifiers, and multiple different regulation ICs instead of the power management IC (probably cheaper on the Chinese market by a few cents).

Block Diagram



Component Function Guide

Color	Chip Use	Examples
	Audio	Amplifiers/CODECs/Microphones
	Camera/Image	Image Sensors/Video Processors
	Connectivity	Antennas/Bluetooth/GPS/USB/WiFi Stuff
	Display/Touchscreen	Touchscreen/Display Drivers
	Logic	PLDs/FPGAs/Logic Gates
	Memory	EEPROMs/NAND/RAM/SDRAM
	Mixed Signal	DSPs/MCUs
	Power	Battery Protection/Charge Controllers/PMICs/Voltage Regulators
	Processor	Application/Baseband Processors
	Radio Frequency	Radio Frequency/Envelope Tracking Stuff
	Sensor	Accelerometer/Pressure/Temperature
	Other	LED Controllers/Operational Amplifiers
	Unknown	Chips with no predictions of use

Subsystems

LCD Flex IC Identification



16 - Unknown
#Unknown
Touchscreen Driver

Function

Display/Touchscreen

Subsystems - LCD Flex

Main PCB Side 1

Front Page

Device Analysis

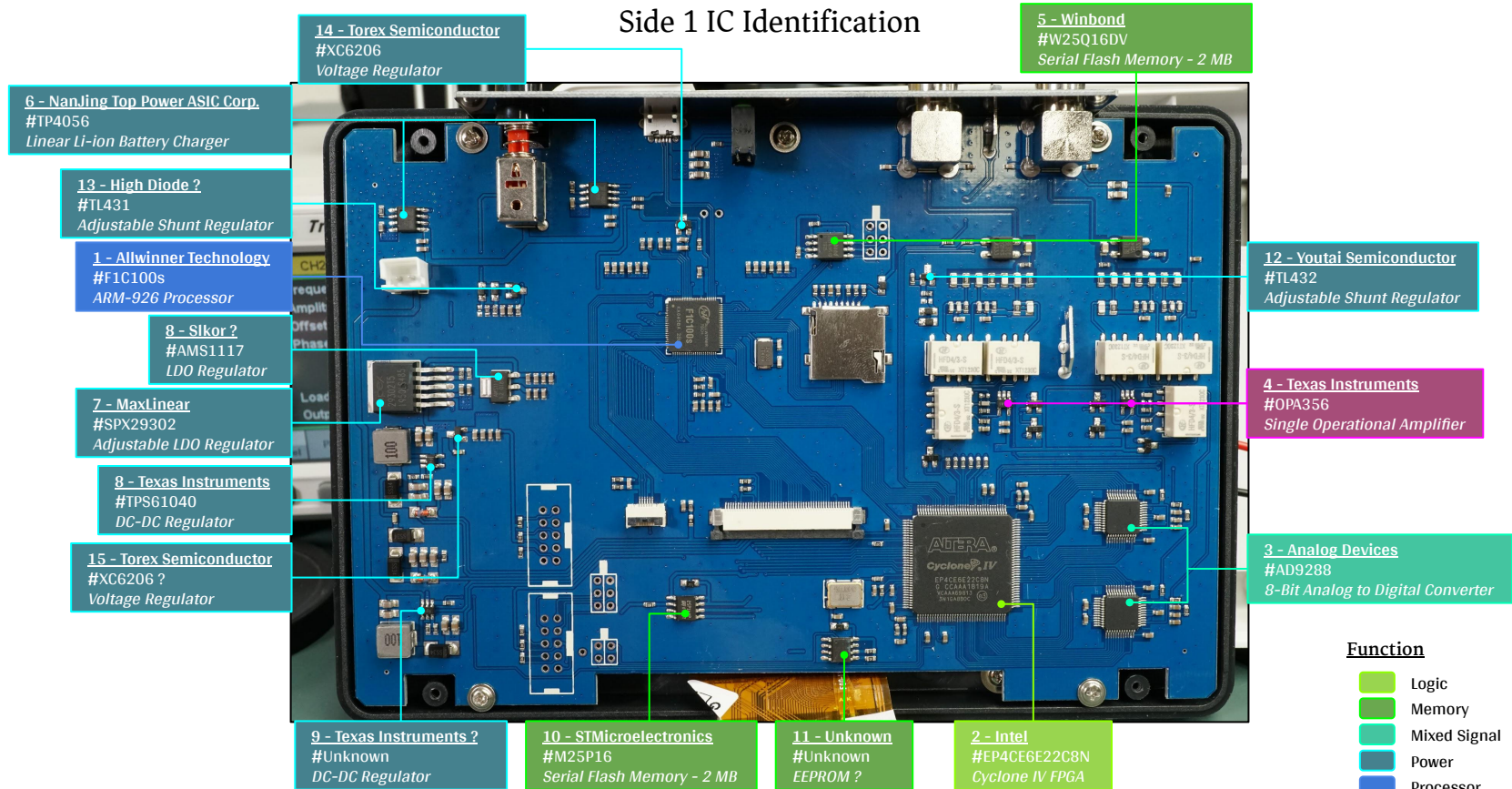
Block Diagram

Component Function Guide

Main PCB

Main Board

Side 1 IC Identification



Subsystems - LCD Flex

Main PCB Side 1

Front Page

Device Analysis

Block Diagram

Component Function Guide

Main PCB